PHILCO
1936
CHANGES IN MODELS
Since Publication of Each Service Bulletin

Grouped under each model and arranged according to Run Number.—Current models included.—Jan. 1 to Dec. 15, 1936.

The following pages contain complete listings of all major changes—involving changes in circuit, part numbers or anything of interest to the serviceman—in Philco receivers current at the time of printing. These changes date back to the date of publication of the last printing of the Philco Service Bulletin on each model; the number of the Bulletin is given in each case for reference.

Ownership of this folder in addition to Service Bulletins, gives the serviceman a complete record on each model; thus he will not be inconvenienced at finding, when servicing a current set, that it differs from that shown in the original Service Bulletin.

The Run Number is stamped on the top of the chassis with a rubber stamp.

The Code Number of the set is given on the chassis name plate or name label (at rear of chassis).

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**MODEL 38**

**Service Bulletin 160-A**

<table>
<thead>
<tr>
<th>Run 12</th>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume Control</td>
<td>33-5094 33-5164</td>
</tr>
</tbody>
</table>

The wiring of the control was also changed to eliminate noise caused by poor contact through the wiper arm. Referring to Fig. 3, condenser (40) was disconnected from top of the volume control and connected to the wiper arm terminal (center). Resistor (28) was disconnected from bottom of the primary and secondary of the antenna transformer (3) and connected to the top of the volume control.

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**MODEL 60**

**Service Bulletin 164**

<table>
<thead>
<tr>
<th>Dial Assembly</th>
<th>Old Part New Part</th>
</tr>
</thead>
</table>

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**MODEL 66**

**Service Bulletin 168**

<table>
<thead>
<tr>
<th>Dial Assembly</th>
<th>Old Part New Part</th>
</tr>
</thead>
</table>

---

**MODEL 89**

**Service Bulletin 146-B**

<table>
<thead>
<tr>
<th>Resistor</th>
<th>(28) 4409 (1.0 meg. ½ watt) 33-510344</th>
</tr>
</thead>
</table>

---

**MODEL 116**

**Service Bulletin 222**

A condenser was added from the end terminal of condenser (64) to ground. This addition was made to prevent oscillation. Condenser (50 mmf. mica) Part No. 36-1029.

<table>
<thead>
<tr>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor</td>
</tr>
</tbody>
</table>

---

**MODEL 116X**

**Service Bulletin 222-A**

<table>
<thead>
<tr>
<th>Volume Control</th>
<th>(68) 222 33-5262 33-5153</th>
</tr>
</thead>
</table>

---

**MODEL 600**

**Service Bulletin 236**

Beginning with run No. 3, the tuning condenser was changed to the new type having a knurled shaft similar to the one used in the Philco Model 64.

<table>
<thead>
<tr>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuning Condenser</td>
</tr>
<tr>
<td>Dial</td>
</tr>
<tr>
<td>Pointer</td>
</tr>
<tr>
<td>Knob (Tuning)</td>
</tr>
<tr>
<td>Knob (Volume Control)</td>
</tr>
</tbody>
</table>

---

**MODEL 602**

**Service Bulletin 237**

The tap between the speaker voice coil and the hum buckling coil should be grounded to minimise hum.

B.C. resistor (50) (125-15 ohms), is listed as Part No. 33-3225. The correct Part No. is 33-3255. The list price is $0.65.

Beginning with run No. 3 the tuning condenser assembly was changed to a vernier type. The part number of the tuning condenser, scale and pointer remain as shown on service Bulletin No. 227. The knobs were changed as follows:

<table>
<thead>
<tr>
<th>Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor (40) Part No. 33-51044 (1.0 meg. ½ watt) should be replaced with Part No. 33-510344 (1.0 meg. ½ watt).</td>
</tr>
</tbody>
</table>

The Filament Resistor listed as Part 33-3225 should be 33-3236.

---

**MODEL 610**

**Service Bulletin 217**

Change the Schematic Numbers in Fig. 3 as follows:

<table>
<thead>
<tr>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor (55) 33-1202 33-475133 (760,000 ohm, ½ watt) (760,000 ohm, ½ watt)</td>
</tr>
</tbody>
</table>

---

**MODEL 610**

**Service Bulletin 217-B**

Beginning with Run No. 15, the oscillator circuit was changed to improve the oscillator action at 6.0 M. C. Resistors (17) (5,000 ohm) and (18) (15,000 ohm) were removed. A resistor (32,000 ohms), Part No. 33-322133 was added from the switch terminal side of condenser (7) to ground. A 22 ohm resistor, Part No. 33-52133 was connected between the 6A7 cathode and ground.

<table>
<thead>
<tr>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor</td>
</tr>
<tr>
<td>Resistor</td>
</tr>
</tbody>
</table>

---

**MODEL 611**

**Service Bulletin 224**

The following parts are to be used in conjunction with the new wave band indicator. (Run 5).

<table>
<thead>
<tr>
<th>Schematic No. Old Part New Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave Band Switch</td>
</tr>
<tr>
<td>Pilot lamp bracket assembly</td>
</tr>
</tbody>
</table>

---

**MODEL 630**

**Service Bulletin 219**

The Schematic in Figure 3 indicates a field coil (64) resistance of 1140 ohms. The correct value is 640 ohms.

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**MODEL 641**

**Service Bulletin 227**

The tone control knob 27-4208 has been changed to 27-4211. The latter type uses a set screw instead of a spring.

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MODEL 643 Service Bulletin 226

The dial mask assembly was changed to the glowing arrow wave band indicator type.

Schematic No. Old Part New Part
Pilot Lamp .................. (54) 34-2065 34-2081
Tuning Condenser .. .. (4) 31-1624 31-1746
Scale Guard ................ (13) 37-2428 37-2450
Glowing Arrow Mask .... 37-2173
Scale Guard ................ (13) 37-2428 37-2450
Glowing Arrow Mask .... 37-2173

MODEL 645 Service Bulletin 234

Beginning with run No. 3, resistor (16) Part No. 33-351143 (51,600 ohms) was removed and a resistor, Part No. 33-352022-000 (15,000 ohms) was connected between the oscillator grid of the 6AB7 tube and the suppressor grid of the 6K7G I.F. tube. In Part No. 33-351161 was removed. Resistor (69) Part No. 33-3525234 (35,000 ohms, #2 watt) removed and a resistor Part No. 33-424143 (24,000 ohms, #2 watt) is connected in its place.

A condenser, Part No. 30-4114 (.06 mfd.) was added across the junction of the B.C. resistor to the grid of resistors (60) and (67).

Beginning with Run No. 5, the green and yellow leads of the audio input transformer (52) were reversed to reduce hum.

MODEL 651 Service Bulletin 223

To eliminate possibilities of I.F. oscillation the I.F. transformer leads should be separated from the receiver as much as possible. The 1st I.F. transformer leads separated from the 2nd I.F. transformer leads as much as possible.

To eliminate motor boiling at 540 K.C., the B-lead from the 4th inductor plate terminal of the 78 R.F. transformer was reversed on Receivers beginning with Run No. 191-11.

Beginning with run No. 94, wiring of the 1D5G, I.F. tube was reversed on Receivers beginning with Run No. 94.

To improve the operation of the Receiver, the filament wiring of the 1D5G, I.F. tube was reversed on Receivers beginning with Run No. 191-2.

Using Bulletin No. 255, Fig. 1 for reference, the left hand filament terminal marked "2 volts" is now grounded to the top lug in the chassis.

To improve the sensitivity in center of the broadcast band, remove resistor (19) Part No. 33-2112-150 ohms and replace it with resistor (18) Part No. 33-2112-100 ohms. This change is made to eliminate the possibility of a short circuit in these parts of the circuit.

MODEL 37-33 Service Bulletin 255

To improve the operation of the Receiver, the filament wiring of the ID5G, I.F. tube was reversed on Receivers beginning with Run No. 191-3.

Using Bulletin No. 255, Fig. 1 for reference, the left hand filament terminal marked "2 volts" is now grounded to the top lug in the chassis.

To improve the sensitivity in center of the broadcast band, remove resistor (19) Part No. 33-2112-150 ohms and replace it with resistor (18) Part No. 33-2112-100 ohms. This change is made to eliminate the possibility of a short circuit in these parts of the circuit.

MODEL 37-38 Service Bulletin 256

To improve the operation of the Receiver, the filament wiring of the ID5G, I.F. tube was reversed on Receivers beginning with Run No. 191-4.

Using Bulletin No. 256, Fig. 1 for reference, the "T" of the 1D5G socket will become "F" and grounded to the lug adjacent to the socket.

To improve the sensitivity in the center of the broadcast band, resistor (7) Part No. 33-132974-51,000 ohm resistor, Part No. 33-351339 is replaced with resistor (8) Part No. 33-351339. The resistor is removed from the range switch assembly and is connected directly to the "F" lug of the 78 R.F. transformer.

MODEL 37-84 (Code 122) Service Bulletin 244

Electrolytic Condenser (29) Part No. 30-2013, 4-8 mfd., has been changed to 30-2079, 8-8 mfd., on Receivers marked Run 5 and later.
MODEL 37-620 (Codes 121, 124) Service Bulletin 250
Chassis marked Run 3 have the new I.F. Transformer Assembly. Part No. 32-2100-X, 1st I.F. and Part No. 32-2102-X, 2nd I.F. Transformer. These transformers are designed to prevent microphonics.
To prevent oscillation in the I.F. stage, the following parts are changed on Receivers after May 20, 1936:

Schematic No. Part Original Part No. New Part No.
(64) Resistor .. 33-1211-400 ohms 33-1229-700 ohms
(65) Condenser 30-4206-06 mfd. 30-4446-25 mfd.

To reduce crackle at low volume, a condenser Part No. 30-1001, was connected from the arm of the volume control to ground.

New Part Numbers

When using I.F. Transformer, Part No. 32-2274 has a stabilizing winding which is placed in series with the suppressor grid of the 6K7G I.F. tube. The short or yellow colored lead is connected to the ground lug and the long lead to the suppressor grid.

Code 124
Parts in Model 37-620, code 124, which differ from those in the code 121 receiver are as follows:

Old Part No. New Part No.
Electrolytic Condenser (18) 30-2118 16 mfd. 30-2126 16 mfd.
Electrolytic Condenser (60) 30-2024 8 mfd.
Condenser (62) 30-2117 12 mfd.
Condenser (63) 30-2783-DG-05 mfd. Dual Condenser
Condenser (87) 3318-SU
A resistor Part No. 32-010239 (10 ohms) is connected in series with the electrolytic condenser (18).
Speaker X-3
Cone Assembly
Field Coll Assembly
Transformer
Baffle and Silk Assembly
Baffle and Silk Assembly
Rubber Mtg.澧
Rubber Mtg.澧
WF. P. Unit
Mtg. Bracket

Codes 121 and 124
When using I.F. Transformer, Part No. 32-2274, 1st I.F., and Part No. 32-2276, 2nd I.F. bias resistor (84), must be 400 ohms. Part No. 33-140339.

MODEL 37-623 Service Bulletin 259
To improve the operation of the Receiver, the filament wiring of the 6SKG I.F. tube was reversed on Receivers beginning with Run 3.
Using Fig. 1 of Bulletin 259 for reference, the ground terminal adjacent to the socket is now connected to the terminal marked "F" which is to the left of the centering pin. When connections are reversed be sure all connections are transferred from one contact to the other.

Incorrect Correct

Output Transformer (63) 32-7683 32-7693
Compensator (16) 81-2128 31-6121

MODEL 37-630 (Codes 121, 122) Service Bulletin 251
Chassis marked Run 5 have the new I.F. Transformer Assembly. Part No. 32-2100-X, 1st I.F. and 32-2105-X, 2nd I.F. These transformers are designed to prevent microphonics.
To prevent oscillation in the I.F. stage, the following parts are changed:

Schematic No. Part Original Part No. New Part No.
(64) Resistor ... 33-1211-400 ohms 33-1229-700 ohms
(65) Condenser 30-4206-06 mfd. 30-4446-25 mfd.

Power Transformer (65), Part No. 32-7638 has a stabilizing winding which is placed in series with the suppressor grid of the 6K7G I.F. tube. The short or yellow colored lead is connected to the ground lug and the long lead to the suppressor grid.

MODEL 37-640 (Codes 121) Service Bulletin 253
Chassis marked Run 2, have the new I.F. Transformers, Part No. 32-2100-X, 1st I.F. and Part No. 32-2102-X, 2nd I.F. These transformers are designed to prevent microphonics.
The Electrolytic Condensers in the Power Unit were changed on Receivers shown Run 3. Electrolytic Condenser (69) Part No. 30-2117, 12 mfd. is changed to 30-2274, 12 mfd. Electrolytic Condenser Part No. 30-2045, 8-10 mfd. is changed to 30-2163, 20-26 mfd.
To prevent oscillation in the I.F. stage, the following parts are changed on Receivers after the 14.

Schematic No. Part Original Part No. New Part No.
(30) Condenser 30-4206-06 mfd. 30-4446-25 mfd.
(74) Ant. Range Switch 42-1170 42-1180
(75) R. F. Range Switch 42-1172 42-1426
(76) Osc. Range Switch 42-1172 42-1426
(77) Resistor 33-1211-400 ohms 33-1229-700 ohms
This change is shown on Bulletin 253.
Transformer (10), on wiring diagram, number 4 lead of the transformer is shown connected to the correct, however, the three contacts should be connected together.

New Part Numbers

When using I.F. Transformer, Part No. 32-2274, 1st I.F., and Part No. 32-2276, 2nd I.F. bias resistor (82), must be 400 ohms. Part No. 33-140339.

MODEL 37-650 (Codes 121) Service Bulletin 254
Beginning with Run 2, the 6AS8 Tube Shield, Part No. 28-2756 and Shield Base, Part No. 32-2859, was removed. Interchange parts (30) and (43) on the parts list to conform with the diagram.

MODEL 36-660 Service Bulletin 257
The following parts changed to increase bass response:

Old Part New Part
Condenser (77) 30-4118—0.05 mfd. 30-4125—0.05 mfd.
Resistor (36) 33-1220-700 ohms, was 33-340339—440 ohms.

HUM ELIMINATION IN I.F. UNIT
To eliminate hum due to proximity of filament and grid leads, it is necessary to remove the 6SKG in the filament wiring from the 6SKG tube to the 5SG tube as far as possible away from the 6SKG control grid lead.

MODEL 37-690 Service Bulletin 267
ELIMINATING NOISY RESISTORS IN POWER UNIT
To eliminate the noise caused by the 80 and 325 ohm sections of resistor (177), (referring to Fig. 5 and the schematic diagram of Bulletin No. 267) using the following resistors, Part No. 33-3057, 75 ohms and Part No. 33-3131, 300 ohms, are now used in place of these sections. To replace these resistors proceed as follows:
First install a wiring panel (Part No. 01103) under condenser (170) mounting, the ground terminal is grounded after panel is in place. Then disconnect the green and white wire, from terminal 5 of resistor (177) and connect it to the wiring panel lug. Remove the wire from terminal 5 of resistor (177) and terminal 6 of power cable socket. Now connect resistor 33-3131, 300 ohms between the terminal panel lug and terminal 6 of power cable socket. Then add the 75 ohm resistor, Part No. 33-3057 between the terminal panel and terminal 3 of resistor (177). After doing this disconnect the brown wire from terminal 5 of (177) and connect it to any ground on the chassis.

DISCRIMINATOR UNIT
The following changes are made to reduce hum. All changes up to Run 5 are shown on the schematic diagram of Bulletin 267. Therefore, the following changes make the receiver circuit differences before and after Run 5.

Old Part New Part
Condenser (112X) 30-4113—0.05 mfd. 30-4445—(1 mfd.)
Condenser (107) 30-4078 33-340339
Condenser (143) 30-4213 33-340339
Condenser (144) 33-818-SU
Bakelite 33-818-DU (0.03 mfd. Double)

Bakelite (143) 0.03 mfd. which is now part of (144) 0.03 mfd. Part No. 33-818-DU (33-818 and Bakelite connected and connected as shown in the schematic diagram of Bulletin 267, was formerly a Bakelite condenser, Part No. 33-4216 — 0.02 mfd. This condenser (143), prior to run 5 was connected to the same terminal as condenser (142) .05 mfd., which goes to the volume control center lug.
A 60,000 ohm resistor, Part No. 33-9633 was removed in the discriminator unit. This resistor connected from resistor (108) 60,000 ohm, to the lug where Parts (99a) and (107) to choke (104) in the expanded position. The position of choke (104) is changed by rotating it 125° counterclockwise or to the minimum hum position with the base control (120) in the expanded position.

On receivers prior to Run 4, the screen circuit of the 6K7G automatic base amplifier was broken by the range switch contacts C-10 and C-11. The screen was formerly connected to C-10 and electrolytic condenser (99). The mid-tap of resistors (151) and (127) was connected to C-11. The plate circuit of the tube is now broken, in Run 4 and 5 receivers, and is connected as shown on the schematic diagram.

L.F. UNIT
Connect resistor (64) 490,000 ohms, Part No. 33-449339 across the expander potentiometer (62X).

Change (62X) condenser, Part No. 30-1032, 150 mfd. to 30-1031, 110 mfd.

POWER UNIT

Beginning with Run 3, the following changes are made:
To eliminate hum the connections from the 2nd Bass Amplifier 6J5G tube to the cable socket contacts, No. 11 and 13, in the power unit are reversed. This change is necessary due to wrong wiring. The grid of the 6J5G tube was wired to the shield and the shielded wire was grounded. Therefore, make sure the shielded wire is connected to the grid and the shield is grounded.

Connect a resistor (157X) 240,000 ohms, Part No. 33-42439 from Condenser (160) and Resistor (161) to the B supply contact of transformer (156).

Beginning with Run 6, electrolytic condenser (153) 2, 3, 3 mfd. Part No. 30-2159 is replaced with Part No. 30-2169. This change is to reduce minimum hum.

Interchange the condenser connections as follows:

<table>
<thead>
<tr>
<th>Part-No. 30-2159</th>
<th>Part-No. 30-2169</th>
</tr>
</thead>
<tbody>
<tr>
<td>(151) 2 mfd.—yellow</td>
<td>(152a) 2 mfd.—green</td>
</tr>
<tr>
<td>(153a) 3 mfd.—green</td>
<td>(153b) 3 mfd.—green</td>
</tr>
<tr>
<td>(153b) 3 mfd.—green</td>
<td>(153b) 3 mfd.—green</td>
</tr>
</tbody>
</table>

CORRECTION
A tubular condenser (67X), Part No. 30-4123, .05 mfd. is missing on the schematic diagram and the parts list. This condenser connects from the screen of the 6L7G R. F. Tube to ground.

MODEL 37-116 Service Bulletin 258
Resistor (50) was changed from 16,000 to 20,000 ohms on receivers marked Run No. 3. This change is shown on the service bulletin.

A condenser Part No. 30-4444, connected between the heater contact and ground of the 6K7G R. F. tube, was removed on receivers beginning with Run 4. This condenser was removed to prevent hum modulation on Range 5. This change is shown on Service Bulletin 258.

Electrolytic Condensers (126) and (127), Part No. 30-2028, 3 mfd. is changed to Part No. 30-2114, 4 mfd. beginning with receivers marked Run No. 5.

Resistors (110) and (111) 25,000 ohms have been removed from the automatic dial mechanism and relocating in the power unit, near the 6HG Sockets, beginning with receivers marked Run No. 6.

To obtain the proper selectivity curve in expanded position of I. F. Expanding Unit, and to avoid regeneration, dress the plate lead (white) of the 6L7G tube as follows: The plate lead should lay across the 6L7G socket, then pass into oscillator section close to the base, from here the wire must pass through the second aperture from front of R. F. Unit into the I. F. Unit.

Standard changes, all codes.

<table>
<thead>
<tr>
<th>Former Part No.</th>
<th>New Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor (48) 100 ohms</td>
<td>33-1219</td>
</tr>
<tr>
<td>Condenser (64) .05 mfd.</td>
<td>30-4444</td>
</tr>
<tr>
<td>Dial Screen Holder (Code 121)</td>
<td>31-1900</td>
</tr>
<tr>
<td>Dial Screen Holder (Code 123)</td>
<td>31-1945</td>
</tr>
<tr>
<td>Pilot Lamp Assembly</td>
<td>38-7909</td>
</tr>
</tbody>
</table>

To prevent clicks when tuning the bass compensation control on a very strong carrier, a 3 megohm resistor, Part No. 33-20239 was connected from the lug on which Resistor (103) and Condenser (104) are connected in the Audio unit to ground.

Two parts on the schematic diagram are listed as (135). One is a pilot lamp, the other a switch. The pilot lamp is correct as the number appears on the parts list. The switch is incorrect and should be changed to (135a) 2, 3 mfd.

This switch is used on the automatic dial mechanism and is listed on the parts list under "code 122" as "Plunger Stop and Switch Assembly, Part No. 45-2330.

Another switch located between parts (109) and (103) on the diagram with the wording "used on code 123" is used to short the audio system when using the automatic dial. This switch is located on the vernier drive assembly. The part numbers of the removable sections which contain the riveted contacts are 45-2350 and 28-2120.

Correction

<table>
<thead>
<tr>
<th>Incorrect Part</th>
<th>Correct Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condenser (131) .4898-DG .09 mfd.</td>
<td>3793-DG .015 mfd.</td>
</tr>
</tbody>
</table>

New Parts

Old Part New Part
Magnetic Tuning Transformer (81) 32-2217

DIAL DRIVE ASSEMBLIES

Drive assembly listed as No. 06522 on Model 30 should be 08450.

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December 15, 1936

PHILADELPHIA, PA.