Models 38-7, Code 121, 124; 38-8, Code 121; 38-9, Code 121

Electrical Specifications

Models 38-7, 38-8 and 38-9 receivers employ a six tube A.C. operated superheterodyne circuit with such features as: Two tuning ranges covering standard and short wave broadcasts; Philco foreign tuning system; automatic volume control; bass compensation; tone control, and pentode audio output circuit.

The same circuit is used for each receiver. The features, however such as, tuning mechanism, speakers and cabinets differ in each model.

Model 38-7 in addition to the features given above employs the Philco automatic tuning mechanism with cone-centric tuning. The chassis of this model is built into a console cabinet type XX, Table Cabinet Type "T" and is designated code 121. The same chassis built into a type "CS" cabinet is identified as code 124.

Model 38-8 differs from the 38-7 in that a manually operated tuning mechanism with shadowmeter tuning is used. This receiver is built into a type "X" cabinet with a type "HS" dynamic speaker.

Model 38-9 is identically the same as model 38-8 with the exception that the shadowmeter is not used, and that the speaker and cabinet types differ. This model is assembled in a type "T" cabinet with dynamic speaker type "S7" and a "K" type cabinet using a dynamic speaker type "HS".

POWER SUPPLY:

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Frequency</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>50 to 60 cycles</td>
<td>70 Watts</td>
</tr>
<tr>
<td>115</td>
<td>25 to 40 cycles</td>
<td>70 Watts</td>
</tr>
<tr>
<td>115/220V</td>
<td>50 to 60 cycles</td>
<td>70 Watts</td>
</tr>
</tbody>
</table>

Different transformers are required for operation on the frequencies listed above. These are shown on the Parts List.

INTERMEDIATE FREQUENCY: 470 K. C.

TUNING RANGES: Two Range one 530 to 1720 K. C. Range two 5.7 to 18.2 M. C.

UNDISTORTED OUTPUT: 3 watts.


TONE CONTROL: Three positions with A. C. switch attached.

CABINETS AND SPEAKERS:

<table>
<thead>
<tr>
<th>Models 38-7 Code 121</th>
<th>Models 38-8 Code 121</th>
<th>Models 38-9 Code 121</th>
</tr>
</thead>
<tbody>
<tr>
<td>38-7 Code 121</td>
<td>XX</td>
<td>H31</td>
</tr>
<tr>
<td>38-7 Code 121</td>
<td>T</td>
<td>K41</td>
</tr>
<tr>
<td>38-7 Code 124</td>
<td>CS</td>
<td>K41</td>
</tr>
<tr>
<td>38-8 Code 121</td>
<td>X</td>
<td>HS</td>
</tr>
<tr>
<td>38-9 Code 121</td>
<td>K</td>
<td>HS</td>
</tr>
<tr>
<td>38-9 Code 121</td>
<td>T</td>
<td>S7</td>
</tr>
<tr>
<td>38-9 Code 121</td>
<td>X</td>
<td>HS</td>
</tr>
</tbody>
</table>

SERVICE DATA FOR AUTOMATIC TUNING MECHANISM—MODEL 7

Complete information for setting the stations on the cone-centric tuning mechanism of Model 38-7 is covered in the instruction form no. (39-5533) which is supplied with each set.

A few major assemblies of the automatic cone-centric tuning mechanism are listed on page 3 of this bulletin. A complete list of replacement parts, however, and detailed service data for the automatic mechanism, will be found in bulletin 282.

SHADOW METER ADJUSTMENT

Model 38-8

Apply power to the receiver and allow tubes to warm up. Then adjust shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are 3/8 of an inch from each end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.

2. Remove the rectifier tube from its socket, and rotate the shadowmeter coil until shadow reaches minimum width. This width should not exceed 3/32 of an inch.

3. Replace the SY4G rectifier tube in its socket. The shadow should then widen to not more than 3/16 inch or less than 1/16 inch from each side of the screen measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 again.

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Models 38-7, Code 121, 124; 38-8, Code 121; 38-9, Code 121
REPLACEMENT PARTS

Fig. 4. Part Locations, Underside of Chassis.
ALIGNMENT OF COMPENSATOR

EQUIPMENT REQUIRED: (1) Signal Generator, using a fundamental frequency covering the intermediate and tuning ranges of the receivers. 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 No. 3164.

OUTPUT METER: The 026 output meter is connected to the plate and cathode terminals of the 6F6G tube. 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.

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 38-7: 1. Loosen the shaft coupling set screws, using wrench Part No. 45-2481; then turn the tuning condenser to the maximum capacity position (plate fully meshed). Now turn the selector knob until the dial pointer is on the small black circle 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 from the small circle (clockwise), see Fig. 5. Leave pointer in this position and loosen coupling set screws. 3. After loosening set screws, turn the selector knob until pointer is again on the small black dot at low frequency end of Range One scale. Be careful when turning the selector knob that the position of tuning condenser is not disturbed. Tighten coupling set screws with condenser and dial pointer in this position.

Models 8 and 9: 1. Turn the tuning condenser to maximum capacity position (plates fully meshed). 2. Loosen the clamp of dial, then turn the dial—being careful that position of tuning condenser is not disturbed—until the glowing indicator is centered on the middle index line at the low frequency end of Range One scale. Tighten the dial clamp in this position.

NOTE—Before the following adjustments are performed, the receiver must be turned on and allowed to heat for 15 minutes.

INTERMEDIATE FREQUENCY CIRCUIT

Insert the signal generator 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. compensator 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 compensators (19B), (19A), (13B), and (13A) for maximum output. If the output meter goes off scale when adjusting the compensators retard signal generator attenuator.

NOTE—When the oscillator compensator is adjusted in the above manner, the oscillator output at 580 K.C. will be found (much weaker) by turning the receiver dial 940 K.C. below the frequency being used on any high frequency range.

PHILCO RADIO AND TELEVISION CORPORATION
Parts and Service Division

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The GENUINE PHILCO REPLACEMENTS listed in this bulletin MUST BE USED to obtain the Accurate Balanced Performance BUILT INTO THESE PHILCO MODELS

Fig. 6 Dial Calibration
Models 88-8; 38-9
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