

PHILCO TRANSITONE SERVICE BROADCAST

JANUARY, 1934

Adjusting the Philco Superheterodyne Auto Radio Receivers

MODEL 5

THE intermediate frequency used is 460 K. C. Set up the signal generator for this frequency.

Disconnect the grid lead from the 6A7 tube. Then connect the test lead to the grid of this tube and ground the shield on the Receiver housing. Use the fibre adjusting wrench for all adjustments.

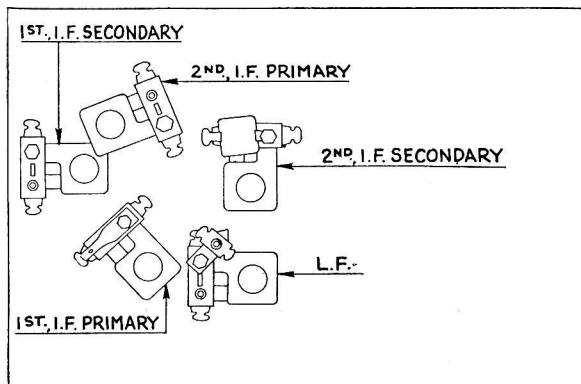


FIG. 1. MODEL 5—I. F. 460 K. C.

Padder "L.F." Turn the adjusting nut in until tight. Then back off one full turn. Leave this condenser in this position until the last step.

Now adjust the first I. F. primary condenser. With the Receiver and signal generator turned on and the signal generator set for 460 K. C., turn the Receiver volume control on full and adjust the attenuator. Then adjust the padder for maximum reading on the output meter.

Next adjust the first I. F. secondary condenser. Adjust the attenuator so that a half-scale reading is obtained. This should be repeated with each adjustment if necessary. Adjust the padder for maximum reading. Repeat this procedure in the next two adjustments.

The next adjustment in order is the second I. F. primary condenser. This is then followed by the second I. F. secondary condenser. These are indicated on the illustration. (Fig. 1.)

Remove the signal generator connections from the 6A7 tube and reconnect the Receiver grid lead to this tube. The signal generator setting must now be changed to 1500 K. C.

The Receiver volume control must be turned on full, the oscillator lead connected to the antenna lead-in and the shield to the Receiver housing. To obtain the correct setting of the tuning condenser, open the plates as wide as possible. Place a piece of paper on the stator plates and then turn the rotor out until it strikes the paper.

Oscillator Adjustment. This is the padder on the second section of the tuning condenser (section nearest drive mechanism). Adjust for maximum reading.

Antenna Adjustment. This is the remaining padder on the tuning condenser. Remove the paper from the tuning condenser and set the condenser and signal generator for 1400 K. C. Adjust the padder for maximum reading.

Low Frequency Adjustment. Set the signal generator for 600 K. C. and tune the Receiver to this frequency. Adjust the padder for maximum reading. After completing these operations, readjust the antenna padder at 1400 K. C.

MODELS 6, 9 AND 12 (CODE 122)

I. F. Stages. Remove the grid clip from the detector-oscillator tube and connect the output of the signal generator to the control grid. The detector-oscillator is the second tube from the right.

With the Receiver and signal generator turned "on," set the signal generator for 260 K. C. and adjust the attenuator so that

a half-scale reading is obtained on the output meter, with the Receiver volume control turned on full.

Using a Philco fibre wrench, adjust the second I. F. condenser.

The correct adjustment is obtained when the maximum reading is secured on the meter.

Next adjust the secondary and primary I. F. condensers. These are the right-hand ones on Fig. 2.

Disconnect the signal generator and reconnect the clip to the control grid.

High Frequency Adjustments. Connect the output of the signal generator to the antenna lead and the housing of the Receiver. With the Receiver turned on and the signal generator set for 1400 K. C., tune the Receiver to 1400 K. C. and adjust the third padder on the tuning condenser for maximum signal. This is the one on the extreme left of the housing. The purpose of this adjustment is to line up the condenser so that 1400 K. C. is tuned in at 140 on the scale when the scale is set properly.

It may be necessary to adjust the first two compensators on the tuning condenser at 1400 K. C. in order to get a strong enough signal through.

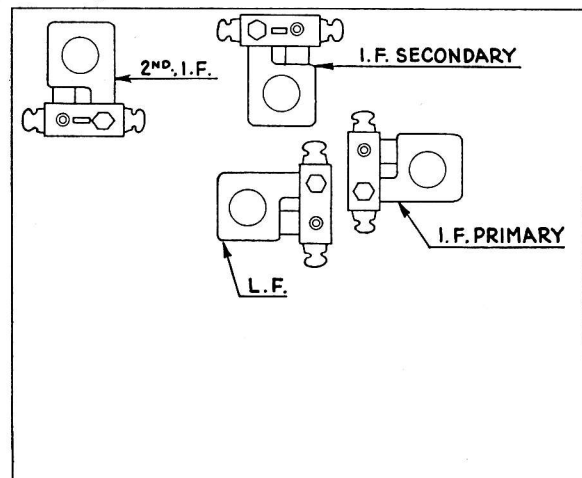


FIG. 2. MODELS 6, 9 AND 12.—(CODE 122) I. F. 260 K. C.

R. F. Adjustments. After the detector-oscillator has been padded at 1400 K. C. adjust the first and second R. F. condensers on tuning condensers at 1400 K. C.

Low Frequency Adjustment. Now tune the Receiver and signal generator to 700 K. C., and adjust the condenser (L.F.) on Fig. 2. During this operation the tuning condenser must be shifted and the compensator must be adjusted to bring in the maximum signal.

After this has been done, check the adjustment of the high-frequency condenser at 1400 K. C. again.

MODELS 7, 8 AND 12 (CODE 121)

Intermediate Frequency or I. F. Stages. Remove the grid clip from the detector-oscillator tube and connect the output of the signal generator to the control grid. The detector-oscillator is the second tube from the right.

With the Receiver and signal generator turned "on," set the signal generator for 175 K. C. Adjust the attenuator so that a half-scale reading on the output meter is obtained with the Receiver volume control turned on full.

Using a Philco fibre wrench, adjust the second I. F. condenser. This is the one in the upper left-hand corner of Fig. 3.

The correct adjustment is obtained when the maximum reading is secured on the meter.

Next adjust the secondary and primary I. F. condensers. These are the two shown at right on Figs. 3 and 4.

The PHILCO ALL-PURPOSE 048 SET TESTER, the modern, compact, portable complete testing equipment should be used when adjusting any radio Receiver. Dealer Net Price, \$48.60.

PHILCO TRANSITONE SERVICE BROADCAST

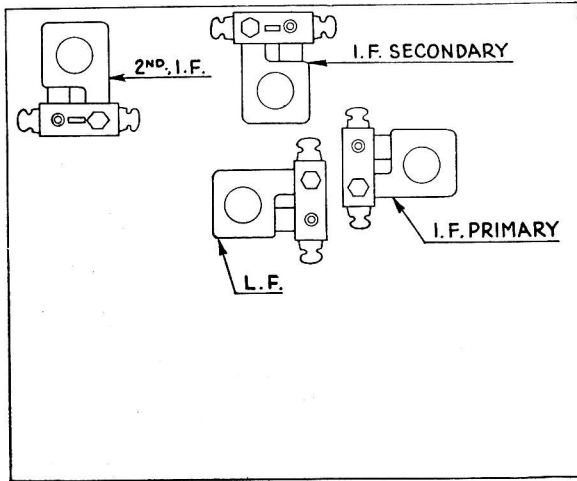


FIG. 3. MODEL 7.—I. F. 175 K. C.

Disconnect the signal generator lead and reconnect the clip to the control grid.

High Frequency Compensator. Connect the output of the signal generator to the antenna lead and the housing of the Receiver. With the Receiver turned on and the signal generator set for 1400 K. C., tune the Receiver to 1400 K. C. and adjust the third padder on the tuning condenser for maximum signal. This is the one on the extreme left of the housing. The purpose of this adjustment is to line up the condenser so that 1400 K. C. is tuned in at 140 on the scale when the scale is set properly.

It may be necessary to adjust the first two compensators on the tuning condensers at 1400 K. C. in order to get a strong enough signal through.

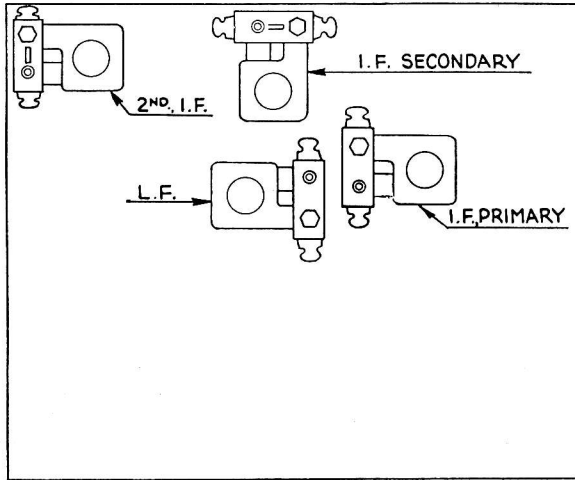


FIG. 4. MODELS 8 AND 12 (Code 121) I. F. 175 K. C.

R. F. Compensators. After the detector-oscillator has been padded at 1400 K. C., adjust the first and second R. F. Condensers on tuning condenser at 1400 K. C.

Low Frequency Condenser. Set the signal generator to 700 K. C. Now tune the Receiver sharply. Adjust the L. F. condenser shown near the center of Figs. 3 and 4. During this operation the tuning condenser must be shifted and the compensators must be adjusted to bring in the maximum signal.

After this has been done, check the adjustment of the high-frequency condenser at 1400 K. C. again.

MODEL 10

I. F. A new style I. F. transformer complete with adjusting condensers is used in the Model 10.

The condensers are placed in the top of the shield can, one above the other.

The primary I. F. condenser is adjusted by means of the screw slot, accessible through the hole in the top of the shield can. The secondary is adjusted by means of the small hex nut, also accessible through the hole in the top of the shield.

Remove the speaker lid from the Receiver and disconnect the antenna lead from the Receiver. Remove the grid cap from the 6A7 tube. (For location see Fig. 5.)

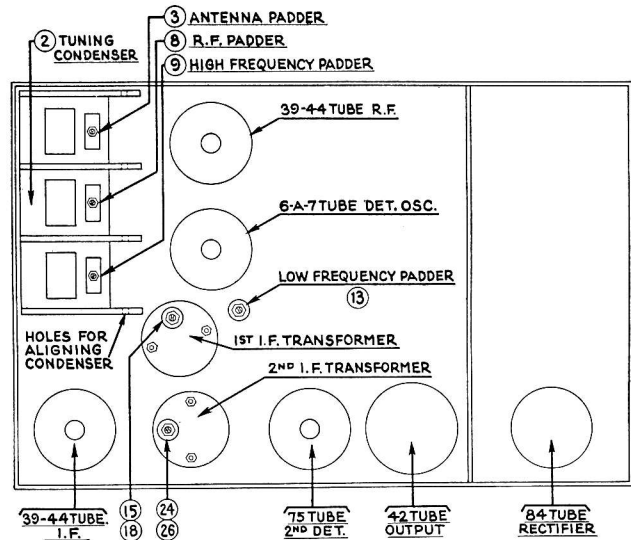


FIG. 5. MODEL 10—I. F. 260 K. C.

Set up the signal generator and adjust it to exactly 260 K. C. Connect signal generator lead to the grid cap of the 6A7 tube. (See Fig. 5.) The output meter must be connected by means of an adapter to the small prong of the speaker plug and to the chassis.

The Receiver volume control must be turned on to approximately full volume and the attenuator in the generator set for a half-scale reading of the output meter.

The condensers 24 and 26 are adjusted first (Fig. 5). Turn the adjusting screw all the way in. A metal screw driver can be used for this. Then, with generator attenuator set so there is approximately half-scale reading, adjust the nut with a fibre wrench for the maximum reading on the output meter.

Then adjust the screw for maximum reading on the meter. This adjustment is critical. Note the maximum reading obtained and then turn the screw in again and readjust, just bringing the adjustment up to the maximum reading. Do not pass it and then back off.

Repeat the above procedure with the condensers 15 and 18.

After adjusting the first I. F. stage, remove signal generator lead from the 6A7 tube and reconnect the grid lead to the 6A7 tube. Connect the antenna lead to the Receiver. Set signal generator to 1500 K. C. and then connect signal generator lead to the antenna lead.

H. F. There are four holes in line, one in each of the sections of the tuning condenser housing. (See Fig. 5.) Place a nail of the size that fits snugly through the holes and then turn the condenser plates out of mesh until they strike against the nail.

With the tuning condenser in this position adjust the high-frequency condenser until the maximum reading is obtained in the output meter. This is the true setting for 1500 K. C., 150 on the dial scale.

R. F. and Ant. Next turn the condenser plates in mesh to 140 on the scale, 1400 K. C., and set the signal generator for 1400 K. C. Adjust R. F. condenser and the antenna condenser for maximum reading on the output meter.

L. F. Turn the condenser plates in mesh to 60 on the scale, 600 K. C., and readjust the signal generator to this frequency. Adjust the low-frequency condenser for the maximum meter reading.

Recheck the adjustments and then remove all test leads. If this procedure has been carefully followed and an accurately calibrated oscillator or signal generator used, the Receiver is adjusted properly.

The PHILCO MODEL 059 UNIVERSAL TEST CABINET, the universal test equipment for the shop. Dealer Net Price, \$90.00.

PHILCO TRANSITONE
REG. U. S. PAT. OFF.
PHILADELPHIA, PA.