



## Models 201, 202, 204, 205

### SPECIFICATIONS

#### MODELS 201, 202, 204, 205

**TYPE OF CIRCUIT:** Philco Models 201, 202, 204 and 205 are all four tube, battery operated superheterodyne radios intended for standard broadcast reception. Model 204 has the additional feature of electric push-button tuning.

**TUNING RANGE:** Models 201, 202, 204 -- 540 to 1700 K.C.  
Model 205 -- 540 to 1600 K.C.

**INTERMEDIATE FREQUENCY:** 460 K.C.

**PHILCO TUBES USED:** 1 - 1A7EG, 1st Detector and Oscillator; 1 - 1N5EG, I.F. Amplifier; 1 - 1H5G, 2nd Detector, A.F. Amplifier and Automatic Volume Control; and 1 - 1A5EG Power Output, except Model 205 which has one 1C5EG Power Output Tube.

**BATTERIES REQUIRED:** These models require 1 1/2 volts of "A" power and 90 volts of "B" power. The power may be supplied from a separate "A" battery and two "B" batteries, or from an "AB" power pack containing the required batteries in a single unit.

**BATTERY CURRENT:** Model 201, "A" Battery - 200 M.A.  
"B" Battery - 9 M.A.  
Models 202, 204, "A" Battery - 200 M.A.  
"B" Battery - 7.5 M.A.  
Model 205, "A" Battery - 250 M.A.  
"B" Battery - 12 M.A.

### PROCEDURE FOR SETTING AND OPERATING

#### THE ELECTRIC PUSH-BUTTON TUNING

##### MODEL 204

Select five of your most dependable broadcast stations and remove their call letters from the station call letter tab sheets supplied. Place the call letters in the windows above the buttons, making sure that each respective button covers the frequency of the station for which it is to be used. The frequencies of these stations may be found by consulting any station list. The frequency range of the buttons and corresponding padders is as follows:

| Padders<br>(right to left from rear) | Circuit | Buttons<br>(left to right from front) | Frequency Range         |
|--------------------------------------|---------|---------------------------------------|-------------------------|
| 1                                    | Ant.    | 1                                     | 540 to 1030 kilocycles  |
| 2                                    | Osc.    |                                       |                         |
| 3                                    | Ant.    | 2                                     | 650 to 1100 kilocycles  |
| 4                                    | Osc.    |                                       |                         |
| 5                                    | Ant.    | 3                                     | 650 to 1100 kilocycles  |
| 6                                    | Osc.    |                                       |                         |
| 7                                    | Ant.    | 4                                     | 740 to 1240 kilocycles  |
| 8                                    | Osc.    |                                       |                         |
| 9                                    | Ant.    | 5                                     | 1160 to 1600 kilocycles |
| 10                                   | Osc.    |                                       |                         |
|                                      |         | 6                                     | Dial                    |

The left-hand button, looking at the front of the cabinet, corresponds to the two right-hand padder screws, looking at the rear, and covers the lowest frequency range.

With the "DIAL" button depressed, tune in the station whose call letters appear above the left-hand button. Then depressing the left-hand button, tune in this station by rotating the No. (2) "OSC" screw (next to the right end of the unit, looking at the rear of the chassis). (NOTE: Inherent characteristics of these padders may cause some of them to cover a lower range than required to cover the broadcast band. This may cause the receiver to howl or flutter when a station button is depressed. To correct this, loosen the "ANT" padder corresponding to the depressed station button.) Turn the "OSC" screw slowly and listen carefully or the station may be passed without noticing it. After the "OSC" screw has been adjusted for maximum volume, the corresponding "ANT" screw should be adjusted for maximum. For some stations, it may be necessary to re-adjust the "OSC" screw after the "ANT" screw has been set. Switching from the "DIAL" to the automatic push button will enable you to make sure you have the correct station tuned in. When the first station has been set, the same procedure should be followed for the remaining buttons, first tuning in the desired station by means of the "Station Selector."

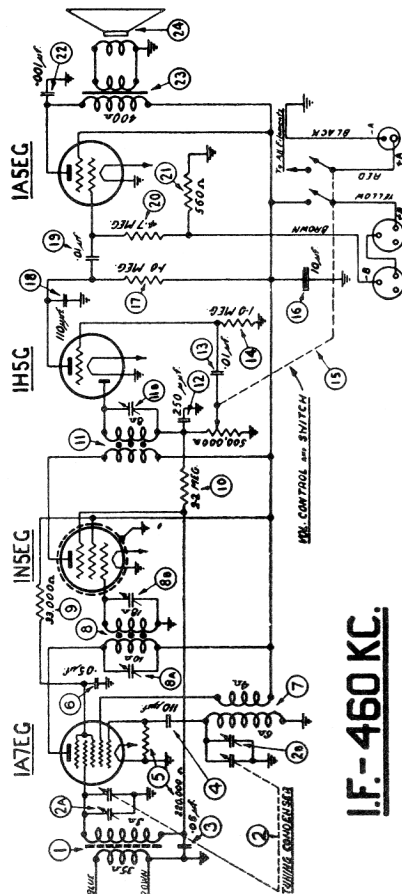
To tune the receiver with the "Push-Buttons," simply press in the button which is under the call letters of the desired station. Your station will be received instantly. The volume of the program may be controlled with the manual volume control.

REPLACEMENT PARTS  
PHILCO 201

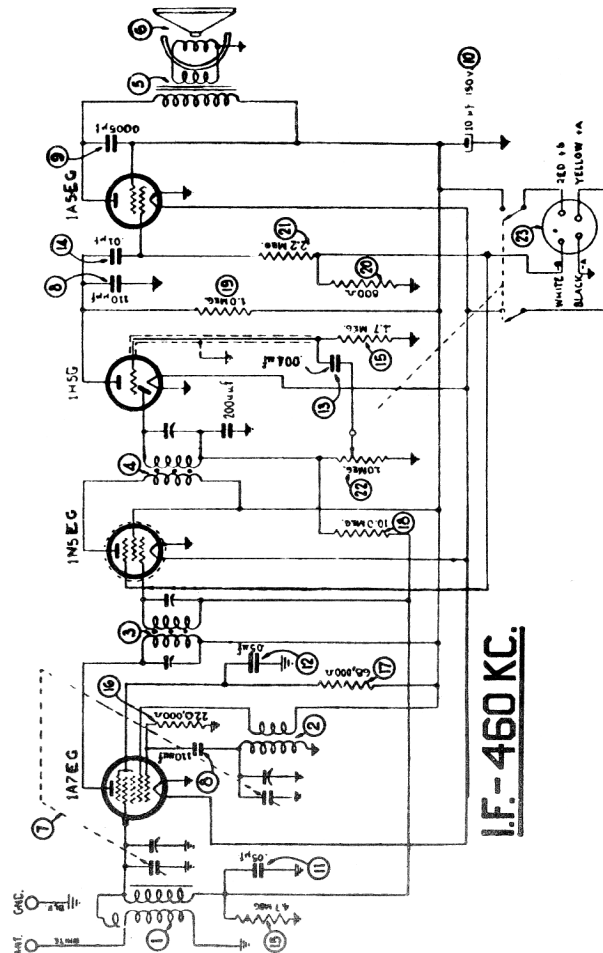
| Schem. No. | Description                    | Philco Part No. | Schem. No. | Description                    | Philco Part No.          |
|------------|--------------------------------|-----------------|------------|--------------------------------|--------------------------|
| 1          | Antenna Coil.....              | 32-3151         | 18         | Mica Cond. (110 Mmfd.).....    | 30-1031                  |
| 2          | Tuning Condenser.....          | 31-2354         | 19         | Tubular Cond. (.01 Mfd.).....  | 30-4581                  |
| 3          | Tubular Cond. (.05 Mfd.).....  | 30-4519         | 20         | Resistor (4.7 Megohms).....    | 33-547344                |
| 4          | Mica Cond. (110 Mmfd.).....    | 30-1031         | 21         | Resistor (560 ohms).....       | 33-155336                |
| 5          | Resistor (220,000 ohms).....   | 33-422344       | 22         | Tubular Cond. (.001 Mfd.)..... | 30-4592                  |
| 6          | Tubular Cond. (.05 Mfd.).....  | 30-4519         | 23         | Output Transformer.....        | Part of Complete Speaker |
| 7          | Oscillator Coil.....           | 32-3152         |            |                                |                          |
| 8          | 1st I.F. Transformer.....      | 32-3347         | 24         | Cone & Voice Coil Ass'y.....   | Part of Complete Speaker |
| 9          | Resistor (33,000 ohms).....    | 33-333344       |            |                                |                          |
| 10         | Resistor (2.2 Megohm).....     | 33-522344       |            |                                |                          |
| 11         | 2nd I.F. Transformer.....      | 32-3348         |            |                                |                          |
| 12         | Mica Cond. (250 Mmfd.).....    | 30-1032         |            |                                |                          |
| 13         | Tubular Cond. (.01 Mfd.).....  | 30-4581         |            |                                |                          |
| 14         | Resistor (1.0 Megohm).....     | 33-510344       |            |                                |                          |
| 15         | Switch and Volume Control..... | 33-5347         |            |                                |                          |
| 16         | Elec. Cond. (10 Mfd.).....     | 30-2396         |            |                                |                          |
| 17         | Resistor (1.0 Megohm).....     | 33-510344       |            |                                |                          |

REPLACEMENT PARTS  
PHILCO 202

| Schem. No. | Description                            | Philco Part No. | Schem. No. | Description                                        | Philco Part No. |
|------------|----------------------------------------|-----------------|------------|----------------------------------------------------|-----------------|
| 1          | Antenna Transformer.....               | 32-3183         | 15         | Resistor (4.7 meg., 1/2 watt).....                 | 33-547344       |
| 2          | Oscillator Transformer.....            | 32-3184         | 16         | Resistor (220,000 ohms, 1/2 watt).....             | 33-422344       |
| 3          | 1st I.F. Transformer.....              | 32-3198         | 17         | Resistor (68,000 ohms, 1/2 watt).....              | 33-368344       |
| 4          | 2nd I.F. Transformer.....              | 32-3199         | 18         | Resistor (10 meg., 1/2 watt).....                  | 33-610344       |
| 5          | Output Transformer.....                | 32-8051         | 19         | Resistor (1 meg., 1/2 watt).....                   | 33-510344       |
| 6          | Speaker.....                           | 36-1477         | 20         | Resistor (800 ohms, 1/2 watt).....                 | 33-180336       |
| 7          | Tuning Condenser.....                  | 31-2373         | 21         | Resistor (2.2 meg., 1/2 watt).....                 | 33-522344       |
| 8          | Moulded Mica Condenser (110 mmf.)..... | 30-1130         | 22         | Volume Control (1 meg., with D.P.S.T. Switch)..... | 33-5321         |
| 9          | Moulded Mica Condenser (500 mmf.)..... | 30-1114         | 23         | Battery Cable.....                                 | 41-3498         |
| 10         | Electrolytic Cond. (10 mf.).....       | 30-2396         |            | Flag Arm Spring.....                               | 28-8949         |
| 11         | Tubular Condenser (.05 mf.).....       | 30-4519         |            | Flag Arm Transfer Lever Assembly.....              | 38-9843         |
| 12         | Tubular Condenser (.05 mf.).....       | 30-4444         |            | Flag Cam Assembly.....                             | 38-9861         |
| 13         | Tubular Condenser (.004 mf.).....      | 30-4578         |            | Flag Assembly.....                                 | 38-9844         |
| 14         | Tubular Condenser (.01 mf.).....       | 30-4572         |            |                                                    |                 |

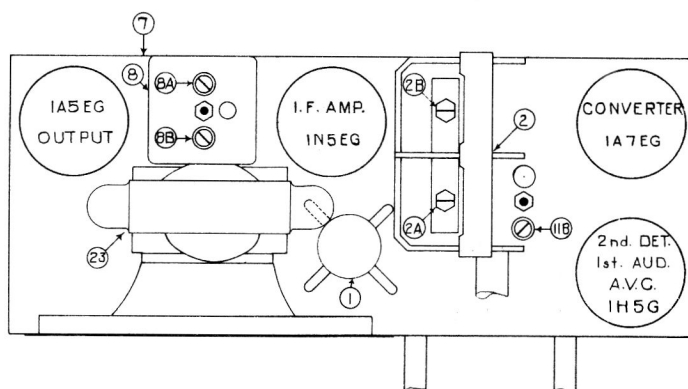
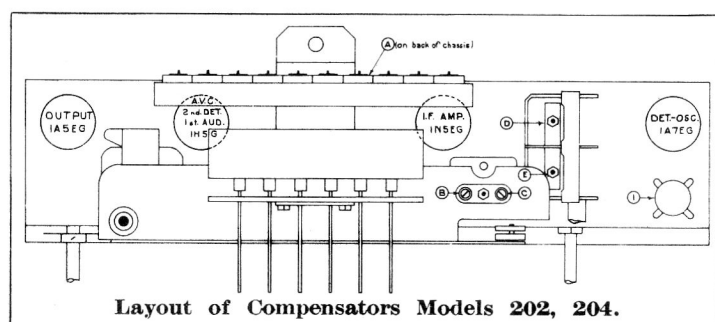
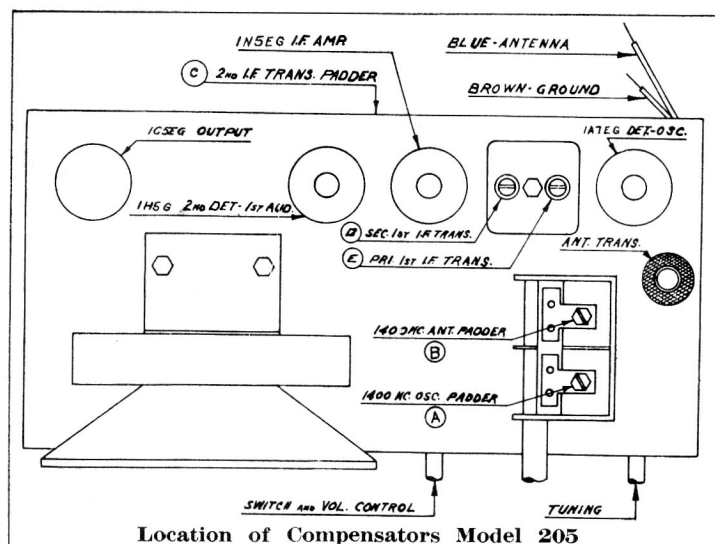


Schematic Diagram Model 201



Schematic Diagram Model 202





## ALIGNMENT OF COMPENSATORS

### EQUIPMENT REQUIRED

(1) Signal Generator,—Philco Model 177 Signal Generator which has a fundamental frequency range from 115 to 32,500 KC. is the correct instrument for this purpose.

(2) Output meter,—Philco Model 028 Circuit Tester, incorporates a sensitive output meter and is recommended.

(3) Philco Fibre Handle Screw Driver, part No. 45-2610 and Fibre Wrench, part No. 7696.

**OUTPUT METER:** The Philco 028 Output Meter is connected to the plate and screen terminals of the output tube and adjusted for the 0 to 30 scale. After connecting the output meter, adjust the compensators in the order as shown in the tabulation below. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

### MODEL 201

| Operations in Order | SIGNAL GENERATOR               |              | RECEIVER     |                 |                     | SPECIAL INSTRUCTIONS |
|---------------------|--------------------------------|--------------|--------------|-----------------|---------------------|----------------------|
|                     | Output connections to receiver | Dial Setting | Dial Setting | Control Setting | Adjust Compensators |                      |
| 1                   | High side to 1A7EG grid cap    | 460 K.C.     | 580 K.C.     | Vol. Max.       | 11B, 8B, 8A         | See Note A           |
| 2                   | High side to Ant. lead         | 1500 K.C.    | 1500 K.C.    | Vol. Max.       | 2B, 2A              | Note B, C.           |

### MODELS 202, 204

| Operations in Order | SIGNAL GENERATOR               |              | RECEIVER     |                 |                     | SPECIAL INSTRUCTIONS |
|---------------------|--------------------------------|--------------|--------------|-----------------|---------------------|----------------------|
|                     | Output connections to receiver | Dial Setting | Dial Setting | Control Setting | Adjust Compensators |                      |
| 1                   | High side to 1A7EG grid cap    | 460 K.C.     | 580 K.C.     | Vol. Max.       | A, B, C.            | See Note A           |
| 2                   | High side to Ant. lead         | 1500 K.C.    | 1500 K.C.    | Vol. Max.       | D, E.               | Note B, C.           |

### MODEL 205

| Operations in Order | SIGNAL GENERATOR               |              | RECEIVER     |                 |                     | SPECIAL INSTRUCTIONS |
|---------------------|--------------------------------|--------------|--------------|-----------------|---------------------|----------------------|
|                     | Output connections to receiver | Dial Setting | Dial Setting | Control Setting | Adjust Compensators |                      |
| 1                   | High side to 1A7EG grid cap    | 460 K.C.     | 580 K.C.     | Vol. Max.       | C, D, E.            | See Note A           |
| 2                   | High side to Ant. lead         | 1500 K.C.    | 1500 K.C.    | Vol. Max.       | A, B.               | Note B, C.           |

**NOTE A:** When adjusting the I.F. padders the high side of the signal generator is connected through a .1 mfd. condenser to the grid cap of the 1A7EG tube. The ground side of the signal generator is connected to the ground lead of the receiver.

**NOTE B—DIAL CALIBRATION:** Before adjusting the R.F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity) set the dial pointer on the small dot below 550 K.C. (Models 201, 205). In Models 202 and 204, with tuning condenser in the closed position (maximum capacity) set the dial pointer on the small dot until it is over the index mark to the left of 540 K.C.

**NOTE C:** When aligning the R.F. padders the high side of the signal generator is connected through a 200 Mmfd. condenser to the antenna lead of the receiver. The ground lead to the generator is connected to the ground lead of the receiver.

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