

## Philco Radio & Television Corp.

**Model:** 66

**Chassis:**

**Year:** Pre October 1934

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

[Riders Volume 5 - PHILCO 5-31](#)

[Riders Volume 5 - PHILCO 5-32](#)

[Riders Volume 5 - PHILCO 5-33](#)

PHILCO RADIO & TELEV. CORP.

MODEL 66  
Alignment Data  
Voltage  
Parts List

Model 66

Model 66 is a five-tube superheterodyne radio receiver, capable of receiving either standard broadcasts (and police calls up to 1720 K.C.), or short-wave stations within a frequency range of 5.5 to 16.0 megacycles. The frequency range on standard broadcast is 540-1720 kilocycles.

The tubes used are: Type 6A7 detector-oscillator, type 78 intermediate frequency, type 75 2d detector, type 42 output and type 80 rectifier. The intermediate frequency of the Model 66 is 460 K.C. and the power consumption is 60 watts.

Adjusting Compensating Condensers

The adjustment of the compensating condensers in Model 66 Receiver requires the use of an accurate signal generator such as Philco Model 024, an efficient output meter (Philco Model 012 or Model 025 are recommended), and a suitable fibre hex wrench. Connect the output meter to the plate and cathode prongs of the 42 output tube.

Adjustments are made in the following order:

(1)—I. F. (Intermediate Frequency)—Remove grid clip from cap on 6A7 tube and connect antenna lead from signal generator to cap of tube. Connect ground lead to ground post on set. Turn on set and signal generator; set wave switch of latter to 460 K. C. (the I. F. of Model 66) and dial of set at 540, wave band switch to left. Adjust each of the four I. F. compensating condensers (7, 10, 12 and 14) in turn so that maximum reading is obtained in the output meter. If the meter reading goes off scale, adjust the attenuator on the signal generator so as to get a lower reading. These I. F. condensers (visible in Fig. 4) are adjusted by inserting the

hex wrench thru the holes in rear of chassis sub-base (except one to extreme left when facing rear of set). Two of the holes are covered by small metal buttons which can be removed temporarily by hand.

(2)—WAVE TRAP—Replace grid clip on cap of 6A7 tube and connect antenna lead from signal generator to antenna post on set. Set signal generator at 460 K. C. and adjust wave trap (1) so as to get MINIMUM reading in output meter.

(3)—ANT. and OSC. H. F.—These adjustments (7 and 11) are located on top of the tuning condenser assembly at right (facing front of set) and adjusted from above. The "ANT" (7) is nearest front of set. Set signal generator at 1700 and dial of set at 1700 and adjust these two condensers to get maximum output meter reading.

(4)—OSC. L. F.—This condenser (10) is located underneath chassis (see Fig. 4) and is reached from underneath. Set dial of set and signal generator switch at 600, and adjust for maximum reading.

Replacement Parts for Model 66

| No. on Figs. | Description   | Part No.    | List Price | No. on Figs. | Description  | Part No.   | List Price |
|--------------|---|-------------|------------|--------------|--|------------|------------|
| (1)          | Wave Trap.....                                      | 98-5199     | \$0.30     | (28)         | Resistor (70,000 ohms) (Violet-Black-Orange).....  | 33-1115    | .25        |
| (2)          | Wave-band Switch.....                               | 42-1066     | .90        | (29)         | Resistor (70 000 ohms) (Violet-Black-Orange).....  | 33-1115    | .25        |
| (3)          | Resistor (10,000 ohms) (Brown-Black-Orange).....    | 33-1000     | .25        | (30)         | Condenser (.00011 Mfd. Mica).....                  | 30-1006    | .35        |
| (4)          | Antenna Transformer.....                            | 32-1412     | .85        | (31)         | Condenser (.02 Mfd. Tubular).....                  | 30-4118    | .30        |
| (5)          | Condenser (.000015 Mfd.).....                       | 30-1030     | .35        | (32)         | Resistor (500,000 ohms) (Yellow-White-Yellow)..... | 6097       | .25        |
| (6)          | Tuning Condenser Assembly.....                      | 31-1231     | 3.65       | (33)         | Tone Control.....                                  | 30-4192    | .50        |
| (7)          | Compensating Condenser (ANT).....                   | Part of (3) | .....      | (34)         | Condensers in Tone Control.....                    | Inside (3) | .....      |
| (8)          | Resistor (200 ohms Flexible) (Red-Black-Brown)..... | 7217        | .20        | (35)         | Output Transformer.....                            | 32-7019    | 1.25       |
| (9)          | Condenser (.05 Mfd. Tubular).....                   | 30-4020     | .35        | (36)         | Voice Coil & Cone Assembly (8-12).....             | 36-3014    | .60        |
| (10)         | Resistor (50,000 ohms) (Green-Green-Orange).....    | 6098        | .25        | (37)         | Field Coil and Pot. Assembly (8-12).....           | 36-3341    | 2.75       |
| (11)         | Compensating Condenser (OSC. HF).....               | Part of (3) | .....      | (38)         | Resistor (2 Megohms) (Red-Black-Green).....        | 33-1025    | .25        |
| (12)         | Condenser (.003 Mfd. Mica).....                     | 30-1028     | .60        | (39)         | Volume Control and On-Off Switch.....              | 33-6006    | 1.45       |
| (13)         | Compensating Condenser (Osc. I. F.).....            | 04000-S     | .35        | (40)         | Condenser (.01 Mfd.) (Bakelite Block).....         | 3903-AB    | .25        |
| (14)         | Condenser (.0008 Mfd. Mica).....                    | 5878        | .35        | (41)         | Resistor (1 Megohm) (Brown-Black-Green).....       | 33-1096    | .25        |
| (15)         | Resistor (32,000 ohms) (Orange-Red-Orange).....     | 5279        | .25        | (42)         | Condenser (.1 Mfd.).....                           | 30-4122    | .35        |
| (16)         | Oscillator Transformer.....                         | 32-1413     | .60        | (43)         | Resistor (.1 Meg.) (White-White-Orange).....       | 6099       | .25        |
| (17)         | Compensating Condenser (1st I. F. Pri.).....        | 04000M      | .20        | (44)         | Resistor (B C. Wire-wound) (22-255 ohms).....      | 33-3037    | .20        |
| (18)         | 1st I. F. Transformer.....                          | 32-1414     | 1.00       | (45)         | Resistor (.1 Meg.) (White-White-Orange).....       | 6099       | \$0.25     |
| (19)         | Compensating Condenser (1st I. F. Secondary).....   | 04000M      | .20        | (46)         | Condenser (.05 Mfd. Tubular).....                  | 30-4123    | .35        |
| (20)         | Resistor (400 ohms Flexible).....                   | 33-3016     | .20        | (47)         | Resistor (37,000 ohms) (Orange-Violet-Orange)..... | 33-1098    | .35        |
| (21)         | Condenser (.05 Mfd. Tubular).....                   | 30-4020     | .35        | (48)         | Filter Choke.....                                  | 32-7018    | 1.50       |
| (22)         | Compensating Condenser (2d I. F. Primary).....      | 04000M      | .20        | (49)         | Condenser (Electrolytic—6 Mfd.).....               | 30-2021    | 1.55       |
| (23)         | 2d I. F. Transformer.....                           | 32-1415     | \$1.00     | (50)         | Condenser (Electrolytic—8-8 Mfd.).....             | 30-2028    | 2.40       |
| (24)         | Compensating Condenser (2d I. F. Secondary).....    | 04000J      | .20        | (51)         | Condenser (.09 Mfd. Bakelite Block).....           | 4999-D     | .35        |
| (25)         | Resistor (50,000 ohms) (Green-Brown-Orange).....    | 6098        | .25        | (52)         | Power Transformer.....                             | 8046       | 3.45       |
| (26)         | Condenser (.0001 Mfd. Twin Bakelite Block).....     | 8035-B      | .25        | (53)         | Condenser (.015 Mfd. Bakelite Block).....          | 3793-W     | .35        |
| (27)         | Condenser (.1 Mfd. Tubular).....                    | 30-4170     | .35        | (54)         | Condenser (.05 Mfd. Tubular).....                  | 30-4020    | .35        |
|              |   |             |            | (55)         | Dial Light.....                                    | 6008       | .11        |
|              |   |             |            |              | Four Prong Socket.....                             | 7844       | .10        |
|              |   |             |            |              | Six Prong Socket.....                              | 7547       | .11        |
|              |   |             |            |              | Seven Prong Socket.....                            | 27-6005    | .11        |
|              |   |             |            |              | Tube Shield.....                                   | 28-1107    | .10        |
|              |   |             |            |              | Chassis Mounting Screw.....                        | W-587      | 3.00C      |
|              |   |             |            |              | Chassis Mounting Washer (Metal).....               | W-315      | .50C       |
|              |   |             |            |              | Chassis Mounting Washer (Rubber).....              | 5199       | .04        |
|              |   |             |            |              | Knob (Large).....                                  | 27-4051    | .10        |
|              |   |             |            |              | Knob (Small).....                                  | 27-4052    | .10        |
|              |   |             |            |              | Dial Assembly.....                                 | 31-1224    | .30        |
|              |   |             |            |              | Dial Scale.....                                    | 27-5067    | .10        |
|              |   |             |            |              | A. C. Cord and Plug Assembly.....                  | " 3A       | .60        |

Tube Socket Voltages—Line Voltage 115

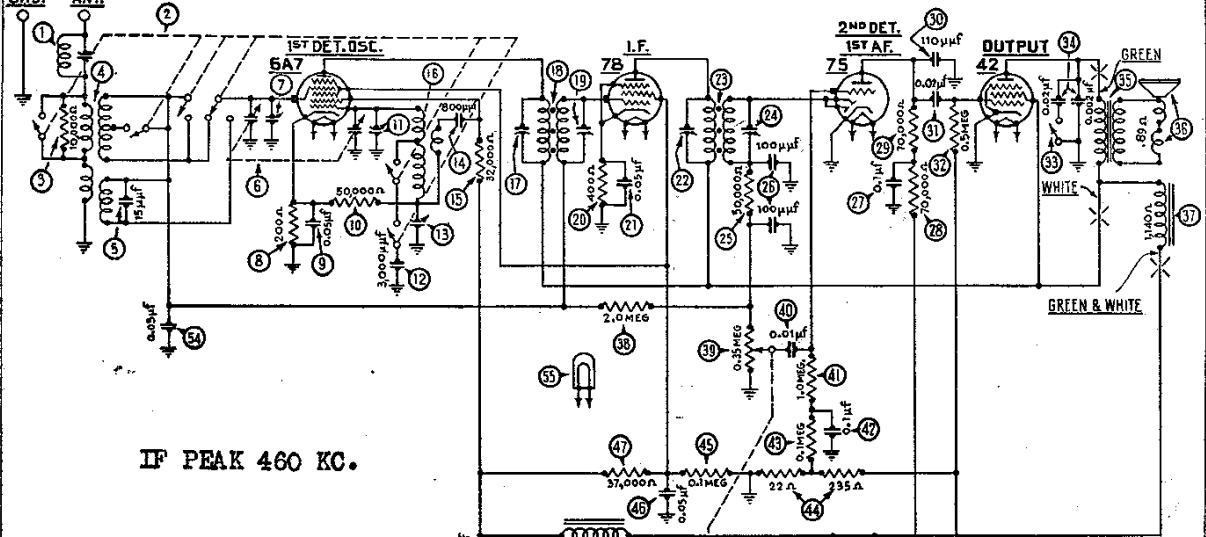
| Tube                | 6A7       | 78    | 75      | 42     | 80    |
|---------------------|-----------|-------|---------|--------|-------|
| Circuit             | Det. Osc. | I. F. | 2d Det. | Output | Rect. |
| Filament (F-F)..... | 6.3       | 6.3   | 6.3     | 6.3    | 5.0   |
| Plate (P-K).....    | 260       | 260   | 160     | * 250  | 240   |
| Screen (SG-K).....  | 85        | 85    | ...     | 260    | ...   |
| Cathode (K-F).....  | 2.1       | 2.2   | 0       | 0      | ...   |

6A7-G1-K; 20; 6A7-G2-K; 130.

The above voltages were obtained by using a high resistance multi-range DC voltmeter, and an AC voltmeter for filaments. Tests made with test prods applied to tube sockets at underside of chassis (see Fig. 1). Volume control at maximum, dial at low frequency end of scale.

MODEL 66  
Schematic  
Layouts  
END. ANT.

PHILCO RADIO & TELEV. CORP.



IF PEAK 460 KC.

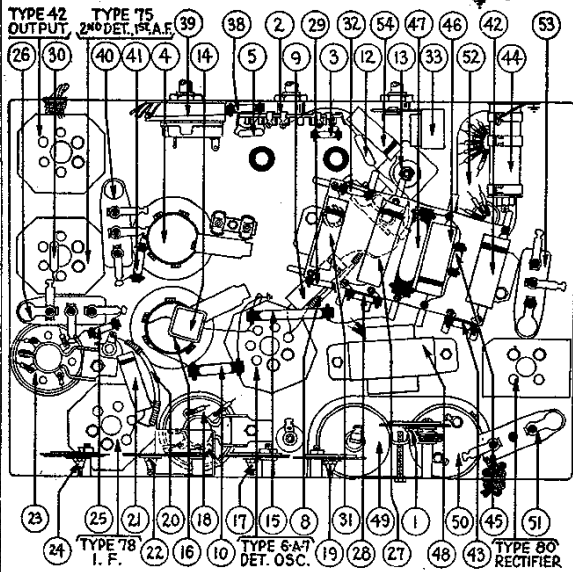


Fig. 4—Base View

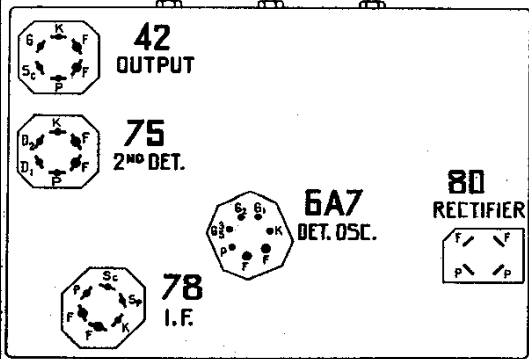
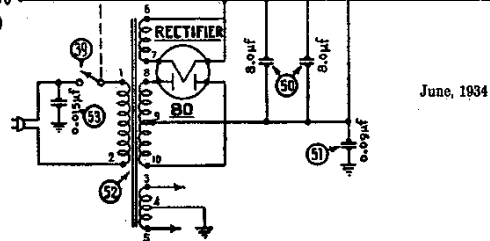


Fig. 1—Tube Sockets (Underside)



June, 1934

Power Transformer Data

| Terminals | Volts   | Circuit            | Color of Leads      |
|-----------|---------|--------------------|---------------------|
| 1-2       | 105-125 | Primary            | White               |
| 3-5       | 6.3     | Filaments          | Black               |
| 6-7       | 5.0     | Filament of 80     | Blue                |
| 8-10      | 680     | Plates of 80       | Yellow              |
| 4         | ...     | Center Tap of 3-5  | Black—Yellow Tracer |
| 9         | ...     | Center Tap of 8-10 | Yellow—Green Tracer |

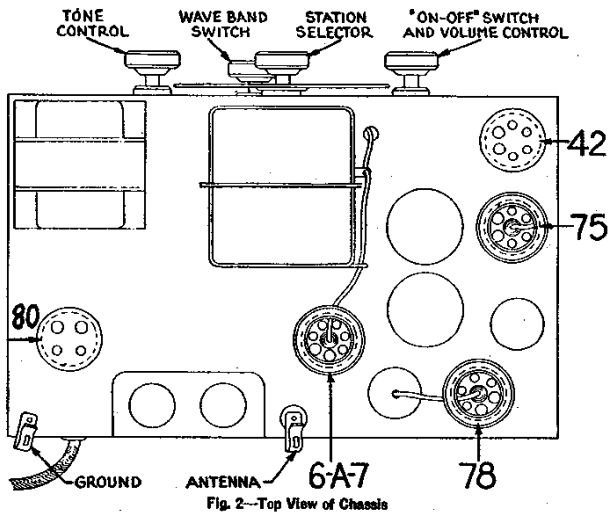


Fig. 2—Top View of Chassis

## PHILCO RADIO &amp; TELEV. CORP.

**Model 49**

A change in the Shadowmeter Circuit on this model becomes effective with Run No. 4. This is in order to reduce the current thru the shadowmeter.

Referring to Figure 3 of Service Bulletin No. 199, the lead from the primary of Ⓣ (2nd I. F. transformer) is removed from one side of the Shadowmeter Ⓣ and connected to the other side. Resistor Ⓣ, Part No. 5809 is omitted.

In list of tubes for Model 49 (DC), correct to read 2 type 78 instead of 3.

Starting with Run No. 3, Part Ⓣ, 3615AX By-Pass Condenser will be replaced with 3615BB. This change facilitates wiring in the factory.

**Model 66**

Starting with Run No. 9 the following changes in compensating condensers will be made, which will make padding adjustments less critical.

Replace condenser Ⓣ, 04000M with an 04000J, and condenser Ⓣ 04000M with an 04000A.

Connect a mica condenser, Part No. 30-1029 (.00005 mfd.) across Ⓣ.

Effective July 1st, a new wave trap will be used. Part Ⓣ in diagram will be Part No. 38-5994 instead of 38-5199 previously used. The new wave trap uses an improved construction which facilitates mounting.

Starting July 10th, a 70-ohm wire wound resistor Part No. 33-1129 will be added. Connected in series with condenser Ⓣ on the oscillator coil side. This will prevent oscillation at extreme high frequency end of the short wave band.

The part number of the Tone Control on Model 66 will be 30-4212 instead of 30-4192 previously used. No change in wiring needed. The new Tone Control gives a slight desirable increase in response to high notes.

Effective August 1st, a 50 Mmfd. Mica Condenser, Part No. 30-1029 was added across the secondary of the 2nd I. F. Transformer. This makes adjustment of the 2nd I. F. Padder smoother and easier.

At the same time a 20,000 Ohm Resistor, Part No. 6650 was added, connected between the arm of the wave-band switch and the grounded junction of Ⓣ and Ⓣ. This corrects any tendency toward oscillation on the high end of the short-wave band.

A 70-Ohm flexible wire-wound resistor is also added, Part No. 33-3027, connected in series between condenser Ⓣ and the upper end (on diagram) of the oscillator transformer plate winding.

**CURRENT MODELS—IMPROVEMENT IN COMPENSATING CONDENSER**

To prevent any tendency to "Frequency Drifting" in current models, a bakelite washer and a metal washer are now being used on top of the Compensating Condenser, in place of the fibre washer previously used.

Part No. of bakelite washer is 27-4109, and of the metal washer (placed on top of bakelite) is W-1331. These two replace the old fibre washer Part No. 3500.