

Electrical Specifications

Type of Circuit: Superheterodyne with Pentode Output.

| Power Supply: | Voltage | Frequency | Power Consumption |
|---------------|---------|-----------|-------------------|
| | 115 | 50 to 60 | 65 Watts |
| | 115 | 25 to 40 | 65 Watts |
| | 220 | 50 to 60 | 65 Watts |

Power transformers for the different voltages and frequencies are listed on the Parts List. Intermediate Frequency: 470 K. C.

Tuning Ranges: Three. Range 1—150 to 350 K. C.; Range 2—530 to 1720 K. C.; Range 3—5.7 to 18 M. C.

Philco Tubes Used: "Six. Two 6K7EG; one 6A8EG; one 6Q7EG; one 6F6EG; one 5Y4G. Speakers: "B" Cabinet—S7; "J" Cabinet—HS; "CS" Cabinet—K38.

*NOTE—Receivers in the United States use tubes without the "E" designation.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, Philco Model 088 (fundamental frequency 110 to 20,000 K. C.) is the correct instrument for this purpose; (2) Output Meter, Philco Model 025 Circuit Tester incorporates sensitive output meter and is recommended; (3) Fibre handle screw-driver (Philco Part No. 27-7059); (4) Special variable condenser (Philco Part No. 45-2325).
DIAL CALIBRATION—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the screw of dial hub, then turn dial until the glowing indicator is centered on the first index line of dial scale, with range switch in the long wave position. Now tighten the dial hub set screw in this position.
OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of one of the (6F6EG) tubes. Adjust the meter to use the (0-30) Volt Scale.

INTERMEDIATE FREQUENCY CIRCUIT

FREQUENCY 470 K. C.

1. Set controls as follows:

- Range Switch position 2 (Broadcast).
- Receiver dial at 580 K. C.
- Adjust signal generator for 470 K. C.
- Connect the 088 signal generator output lead through a 1 mfd. condenser to the control grid of the 6A8C tube and the ground connection to the chassis.

2. Adjust the following I. F. compensators for maximum output; (37a), (37), (31a) and (31).

RADIO FREQUENCY CIRCUIT

Tuning Range 5.7 to 18 M. C.

1. Set controls as follows:

- Range Switch position 3 (Shortwave).
- Connect the signal generator output lead and ground to terminals 1 and 3 on aerial input panel. Terminals 2 and 3 must be connected with the shorting link provided on the aerial panel.

2. Adjust compensators as follows for maximum output:

| Signal Generator and Receiver Dial | Compensators in order |
|------------------------------------|-----------------------|
| 18 M. C. (23B) | |
| 18 M. C. (8B), (4B) | |
| 18 M. C. (23B) | |

Use shunt condenser on (23B). (See Note A.) First contact from left rear underside view of R. F. Unit. Check image at 17.06 on receiver dial (see Note B).

Tuning Range 530-1720

1. Set controls as follows:

- Range Switch position 2 (Broadcast).
- Signal Generator to aerial panel as in Range 3.

2. Adjust compensators as follows for maximum output:

| Signal Generator and Receiver Dial | Compensators in order |
|--|-----------------------|
| 1600 K. C. (23A), (8A), (4A) | |
| 580 K. C. (25) Roll gang for maximum output point. | |
| 1600 K. C. (23A), (8A), (4A) | |
| 1500 K. C. (8A), (4A) | |

Tuning Range 150 to 350 K. C.

1. Set controls as follows:

- Range Switch position 1 (long wave).
- Signal Generator output lead to aerial panel through a 250 mmfd. condenser.

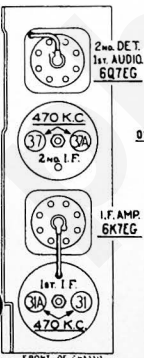


Fig. 2—I. F. Compensator

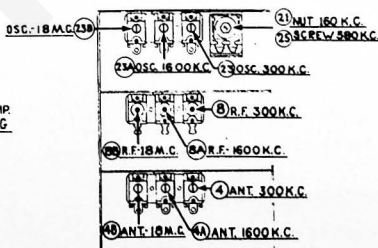


Fig. 3—R. F. Compensator

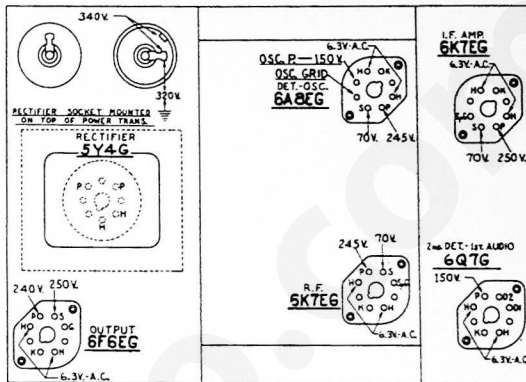


Fig. 1—Socket Voltages, Measured from Underside of Chassis

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

2. Adjust compensators as follows for maximum output:

| Signal Generator and Receiver Dial | Compensators in Order |
|--|-----------------------|
| 300 K. C. (23), (8), (4) | |
| 160 K. C. (21) Roll gang for maximum output. | |
| 300 K. C. (23), (8), (4) | |
| 160 K. C. (21) Roll gang for maximum output. | |
| 300 K. C. (23), (8), (4) | |

NOTE "A"—To eliminate the effect of the R. F. compensator detuning the Osc. circuit a variable tuning condenser, 350 Mmfd., Philco Part No. 45-2325 is connected from the oscillator compensators to ground when designated in the padding instruction above. Tune the added condenser from the minimum capacity position until the second harmonic of the receiver oscillator beats against the signal from the generator, resulting in a maximum indication on the output meter. Then adjust compensators as noted for maximum output.

NOTE "B"—To accurately adjust the compensator to the fundamental and not the image signal, turn the oscillator compensator to the maximum capacity position clockwise. Then slowly turn the compensators counter-clockwise until a second maximum peak is obtained on the output meter. The first peak is the image signal and the receiver must not be adjusted to it. If the above procedure is correctly performed, the image signal will be found 940 K. C. below the frequency being used on any high frequency band.

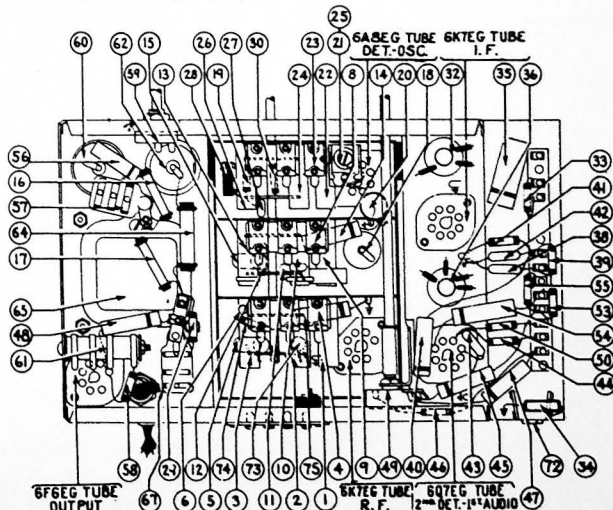
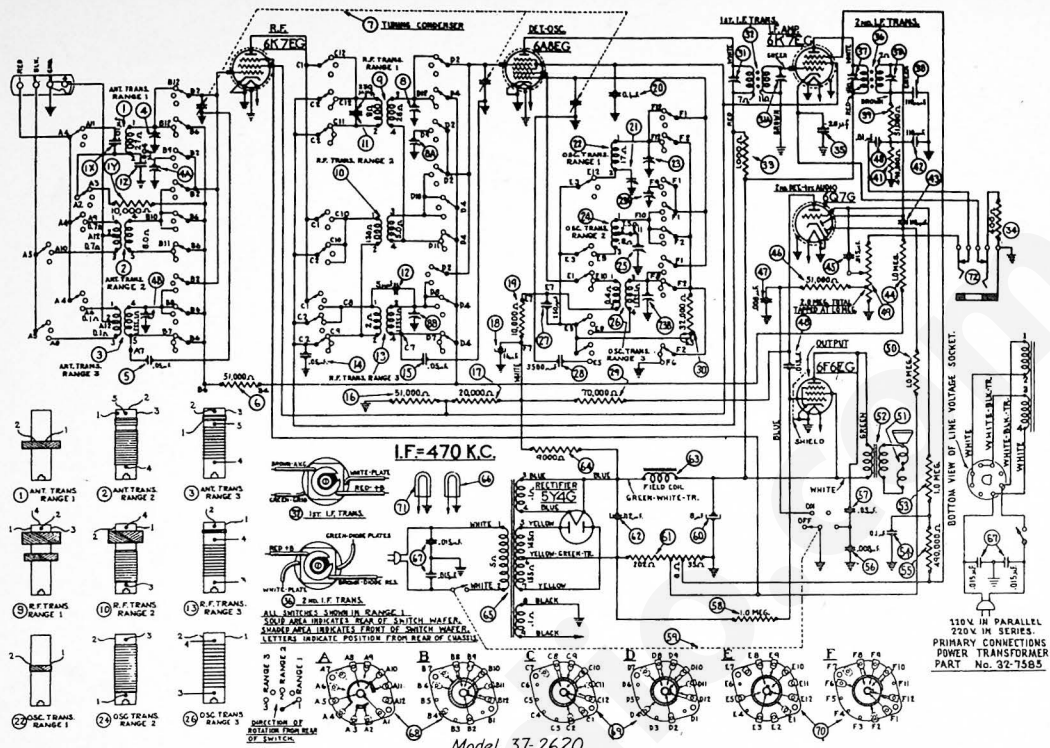


Fig. 4—Base View of Chassis



Model 37-2620

Replacement Parts—Model 2620

| Schem. No. | Description | Part No. | List Price | Schem. No. | Description | Part No. | List Price | Schem. No. | Description | Part No. | List Price |
|------------|---|--------------|------------|------------|--|-----------|------------|------------|------------------------------------|----------|------------|
| 1 | Antenna Transformer (Range 1) | 32-2218 | \$0.80 | 44 | Resistor (1 megohm 1/2 watt) | 33-510339 | \$0.20 | | Dial Clamp | 28-2987 | \$0.10 |
| 2 | Antenna Transformer (Range 2) | 32-2108 | .65 | 48 | Condenser (.015 mfd. Tubular) | 30-4358 | .20 | | Dial Hub Set Screw | W-1641 | .02 |
| 3 | Antenna Transformer (Range 3) | 32-2142 | .75 | 48 | Resistor (51000 ohms 1/2 watt) | 33-351339 | .20 | | Dial Guard | 28-7185 | .10 |
| 4 | Compensator Ant. 1500 K. C. | 31-6122 | .60 | 47 | Condenser (.006 mfd. Tubular) | 30-4112 | .20 | | Dial Cover | 27-8324 | .02 |
| 5 | Condenser (.05 mfd. Tubular) | 30-4020 | .20 | 48 | Condenser (.015 mfd. Tubular) | 30-4226 | .20 | | Thrust Spring | 28-8611 | .01 |
| 6 | Resistor (51000 ohms 1/2 watt) | 33-351339 | .20 | 49 | Volume Control | 33-5158 | 1.00 | | Thrust Washer | 28-3976 | .30 C |
| 7 | Tuning Condenser | 31-1818 | 4.50 | 50 | Resistor (1 megohm 1/2 watt) | 33-510339 | .20 | | Drive Gear | 31-1884 | .25 |
| 8 | Compensator (R. F. 1600 K. C.) | 31-6122 | .60 | 51 | Voice Coil and Cone, 57 Speaker | 36-3014 | .80 | | Vernier Drive | 31-1871 | .75 |
| 9 | R. F. Transformer (L. W.) | 32-2219 | .75 | 52 | Output Transformer S7 & HS Speaker | 32-7019 | .85 | | Mask | 27-5198 | .30 |
| 10 | R. F. Transformer (Broadcast) | 32-2105 | .65 | 53 | Resistor (1 megohm 1/2 watt) | 33-510339 | .20 | | Mask Arm Assembly | 31-1940 | .35 |
| 11 | Condenser (250 mmfd.) | 30-1032 | .25 | 55 | Resistor (1 megohm 1/2 watt) | 33-510339 | .20 | | Mask Guide on Lamp Bracket Support | 28-7844 | .15 |
| 12 | Condenser (3 mmfd. Mica) | 30-1077 | .20 | 55 | Resistor (490000 ohms 1/2 watt) | 33-448329 | .20 | | Mask Washer | 27-8318 | .50 C |
| 13 | R. F. Transformer (S. W.) | 32-2222 | .55 | 56 | Condenser (.008 mfd. Tubular) | 30-4112 | .20 | | Dial Screen Assembly | 38-7912 | .30 |
| 14 | Condenser (.05 mfd. Tubular) | 30-4123 | .20 | 57 | Condenser (.03 mfd.) | 8318-S1 | | | Volume Control Shaft | 38-8059 | .10 |
| 15 | Condenser (.05 mfd. Tubular) | 30-4020 | .20 | 58 | Resistor (1 megohm 1/2 watt) | 33-510339 | .20 | | Volume Control Shaft Spring | 28-4117 | .40 C |
| 16 | Resistor (51000 ohms 1 watt) | 33-351339 | .20 | 59 | Tone Control & A. C. Switch | 42-1182 | .75 | | Retaining Clips | 28-4394 | .03 |
| 17 | Resistor (20000 ohms 1 watt) | 33-320439 | .20 | 60 | Electrolytic Condenser (8 mfd.) | 30-2024 | 1.10 | | Socket 8 prong | 27-6658 | .11 |
| 18 | Electrolytic Condenser (16 mfd.) | 30-2118 | 1.65 | 61 | Bias Resistor | 33-3284 | 1.20 | | Socket 7 prong | 27-6057 | .11 |
| 19 | Resistor (10000 ohms 1/2 watt) | 33-310339 | .20 | 62 | Electrolytic Condenser (12 mfd.) | 30-2117 | 1.20 | | Tube Shield | 28-2726 | .10 |
| 20 | Condenser (1 mfd. Tubular) | 30-4170 | .25 | 63 | Field Coil Assembly, HS Speaker | 36-3690 | 2.75 | | Tube Shield Base | 28-3898 | .03 |
| 21 | Compensator (Osc. Series Nut 160 K. C.) | 31-6060 | .55 | 64 | Resistor (9000 ohms, 2 watt) | 33-290539 | 3.50 | | I. F. Shield | 38-7763 | .20 |
| 22 | Osc. Transformer (L. W.) | 32-2221 | .65 | 65 | Power Transformer (115 Volt 50-60 cycle) | 32-7583 | 4.30 | | Terminal Panel I. F. Unit | 38-7703 | .25 |
| 23 | Compensator (Osc. 1600 K. C.) | 31-6223 | .60 | | Power Transformer (115 Volt 25-40 cycle) | 32-7584 | 4.50 | | Grommet R. F. Unit | 27-4317 | .04 |
| 24 | Osc. Transformer (Broadcast) | 32-2120 | .40 | | Power Transformer (110-220 Volt 50-60 cycle) | 32-7585 | | | Sleeve Mtg. R. F. Unit | 28-2257 | .01 |
| 25 | Condenser (Screw 580 K. C.) | Part of (21) | | | | 34-2039 | .15 | | Speaker Mtg. R. F. Unit | 27-8339 | .40 C |
| 26 | Osc. Transformer (S. W.) | 32-2143 | .75 | | | 32-7584 | | | Scrap Mtg. R. F. Unit | W-729 | .45 C |
| 27 | Condenser (250 mmfd. Mica) | 30-1032 | .25 | | | | | | Washer Mtg. R. F. Unit | 28-3927 | .25 |
| 28 | Condenser (3500 mmfd. Semi-fixed) | 31-8097 | .50 | 66 | Pilot Lamp | 32-7585 | | | Antenna Panel | 38-1220 | .60 |
| 29 | Resistor (70000 ohms 1/2 watt) | 33-370339 | .20 | 67 | Condenser (.015-.015 mfd. Double Bakelite) | 3793-DG | .40 | | Speaker Cable | L-2181 | .25 |
| 30 | Resistor (39000 ohms 1/2 watt) | 33-322339 | .20 | | | | | | A. C. Cord | L-2183 | .40 |
| 31 | Compensator (1st I. F. Pri. 470 K. C.) Part of (39) | Part of (39) | | | | | | | Speaker S7-B Cabinet | 36-1009 | 5.75 |
| 32 | 1st I. F. Transformer | 32-2311 | | | | | | | Speaker HS-J Cabinet | 36-1262 | 6.25 |
| 33 | Resistor (1000 ohms 1/2 watt) | 33-210339 | .20 | | | | | | Knobs Tuning | 27-4330 | .10 |
| 34 | Resistor (400 ohm bakelite) | 33-1211 | .20 | | | | | | Knob Tuning Vernier | 27-4331 | .10 |
| 35 | Condenser (.25 mfd. Tubular) | 30-4446 | .20 | | | | | | Knobs Wave Switch | 27-4326 | .10 |
| 36 | 2nd I. F. Transformer | 32-2312 | 1.50 | | | | | | Knobs Tone & Volume | 27-4332 | .10 |
| 37 | Compensator (2nd I. F. Pri. 470 K. C.) Part of (42) | Part of (42) | | | | | | | Bezel Frame & Plate Assembly | 27-4332 | .75 |
| 38 | Condenser (110 mmfd. Mica) | 30-1031 | .20 | | | | | | Gasket | 40-5639 | .20 |
| 39 | Resistor (51000 ohms 1/2 watt) | 33-351339 | .20 | | | | | | Glass | 27-8311 | .01 |
| 40 | Condenser (.01 mfd. Tubular) | 30-4124 | .25 | | | | | | Ring | 28-3967 | .35 |
| 41 | Resistor (490000 ohms 1/2 watt) | 33-448329 | .20 | | | | | | Screw Bezel Mtg. | W-1644 | .50 C |
| 42 | Condenser (110 mmfd. Mica) | 30-1031 | .20 | | | | | | | | |
| 43 | Condenser (110 mmfd. Mica) | 30-1031 | .20 | | | | | | | | |

Prices Subject to Change Without Notice

PHILCO RADIO AND TELEVISION CORPORATION

Parts and Service Division

Philadelphia, Pa.