PHILCO . . . . RADIO SERVICE BULLETIN No. 338

Model 39

Specifications

TYPE OF CIRCUIT: Model 39 is a six (6) tube alternating current operated superheterodyne radio. This receiver is designed for maximum performance in remote localities. For this purpose the design includes a tuned R.F. Amplifier, two permeability tuned I.F. transformers, and planetary drive tuning. Other features of design include; three tuning ranges as listed below, automatic bass compensation, continuously variable tone control, automatic volume control, and a pentode output stage.

TUNING RANGES: 540-1720 Kc.; 2.3-7.1 Mc.; 7.0-22.0 Mc.

INTERMEDIATE FREQUENCY: 460 Kc.

POWER SUPPLY: 115 volts A.C. 60 cycle
115 volts A.C. 25 cycle

POWER CONSUMPTION: 40 watts.

AUDIO OUTPUT: 1.6 watts.

PHILCO TUBES USED: 7A7E, R.F. Amp.; 6J8EG, 1st Det. & Osc.; 78E, I.F. Amp.; 75, 2nd. Det., A.V.C. & 1st Audio; 41E, Output; and 84, Rectifier

CABINET DIMENSIONS: Height 13⅞", Width 18", Depth 10¾".

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED

1. **Signal Generator** with a frequency range from 115 to 32,500 K.C., such as Philco Model 177.

2. **Aligning Indicator,** Philco Model 028, vacuum tube voltmeter and circuit tester incorporates sensitive audio output meter and vacuum tube voltmeter. This instrument can be used as an aligning indicator.

3. **Fibre Handle Screw Driver,** Philco Part No. 45-2610, and fibre wrench, Philco Part No. 3164.

CONNECTING ALIGNING INSTRUMENTS

To align the receiver accurately, connect an audio output meter, such as Philco Model 028, to the speaker voice coil terminals or to the plate and screen terminals of the 41E tube. Adjust the compensators as shown in the tabulation below. If the aligning meter goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR			RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections	Dummy Ant. Note B	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	Grid Cap 6J8EG	.1 mfd.	460 K.C.	580 K.C.	Vol. Max. Range Switch "Broadcast"	32A-32B 37A-37B	
2	Antenna Terminal	400 ohm	21.0 M.C.	21.0 M.C.	Vol. Max. Range Switch "Sw 2"	31, 4A, 4B	Notes A, C, D
3	Antenna Terminal	400 ohm	6.0 M.C.	6.0 M.C.	Vol. Max. Range Switch "Sw 1"	16A	Notes C, D
4	Antenna Terminal	200 mmfd.	1500 K.C.	1500 K.C.	Vol. Max. Range Switch "Broadcast"	16B	Note C
5	Antenna Terminal	200 mmfd.	600 K.C.	600 K.C.	Vol. Max. Range Switch "Broadcast"	18	Note C
6	Repeat Operation No. 4 again.						

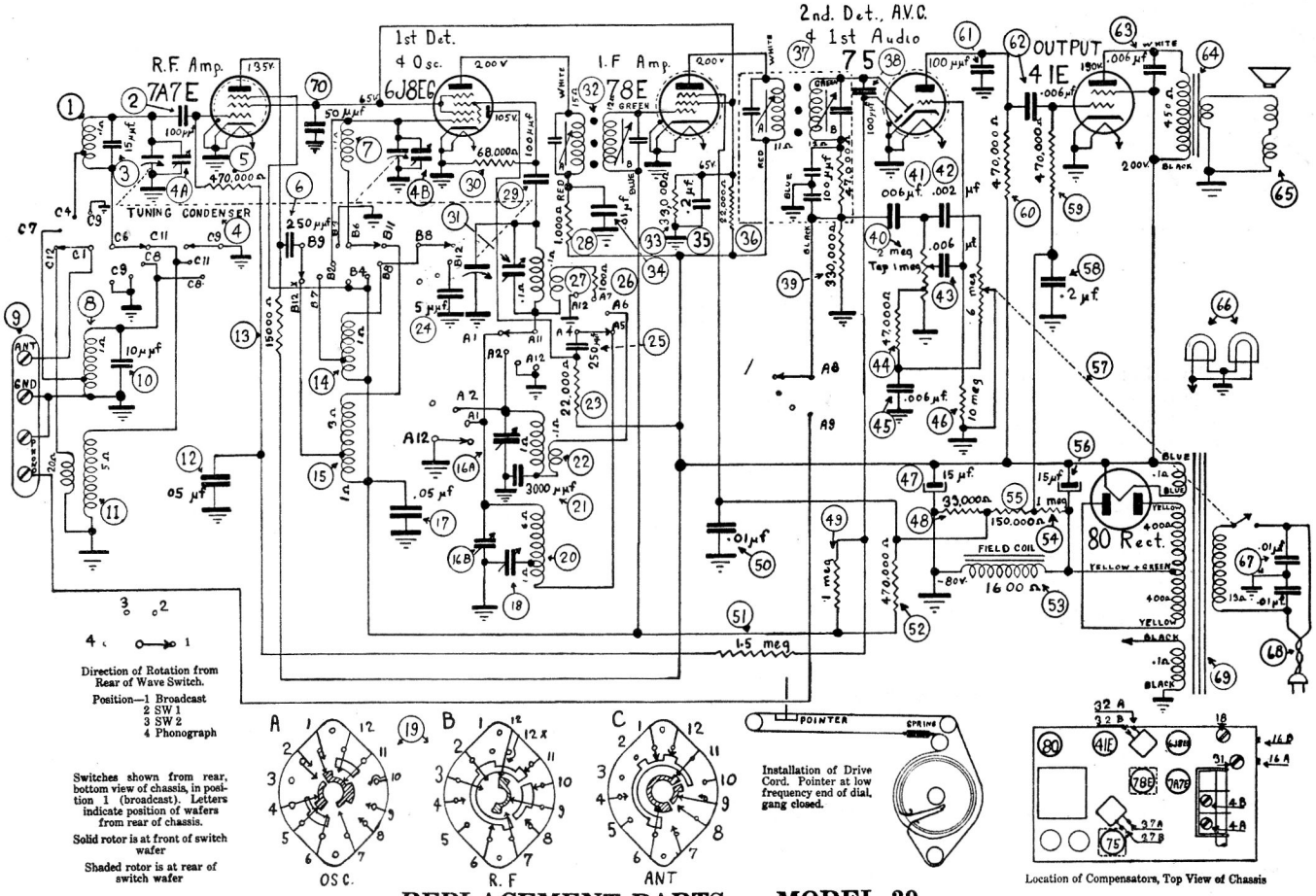
NOTE A—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE B—When adjusting the compensators, the high side of the signal generator is connected in series with a suitable dummy as shown in the column headed "Dummy Antenna" to the receiver at the point shown in the column headed "Output Connections". The ground or low side of the generator is connected to the chassis of the receiver.

NOTE C—When adjusting the low and high frequency oscillator compensators of Range One (Broadcast), the oscillator compensator of Range Two (Sw 1) or the Antenna and R.F. compensators of the high frequency tuning range (Sw 2), the receiver Tuning Condenser must be adjusted (rolled) as follows. First tune the compensator for maximum output, then vary the tuning condenser for maximum output. Now turn the compensator slightly to left or right and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

NOTE D—To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a second peak is obtained on the output meter. Adjust the compensator for maximum output at this second peak.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the receiver dial 920 K.C. below the frequency being used on any high frequency range.

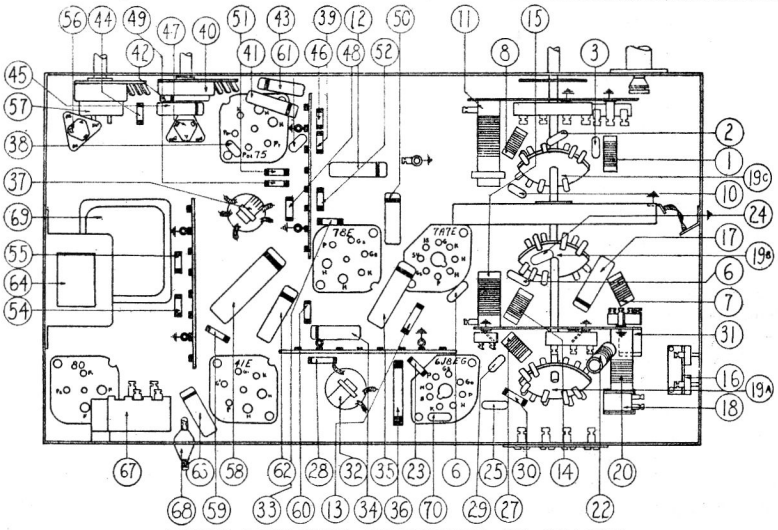


REPLACEMENT PARTS — MODEL 39

Schem. No.	Description	Part No.
1	Short Wave Ant. Trans.	32-3415
2	Mica Condenser (100 mmf.)	60-110157
3	Mica Condenser (15 mmf.)	60-015337
4	Tuning Condenser	31-2444
5	Resistor (470,000 ohm, 1/3 watt)	33-447244
6	Mica Condenser (250 mmf.)	60-125157
7	Short Wave R.F. Trans.	32-3416
8	Police Ant. Trans.	32-3419
9	Antenna Terminal Panel	38-9744
10	Mica Condenser (10 mmf.)	60-010337
11	Broadcast Ant. Trans.	32-3422
12	Tubular Condenser (.05 mf.)	30-4519
13	Resistor (15,000 ohm, ½ watt)	33-315344
14	Police R.F. Trans.	32-3420
15	Broadcast R.F. Trans.	32-3417
16	Dual Padder	31-6287
17	Tubular Condenser (.05 mf.)	30-4519
18	Padder	31-6260
19	Wave Switch	42-1564
20	Broadcast Osc. Trans.	32-3423
21	Mica Condenser (3,000 mmf.)	60-230124
22	Police Osc. Trans.	32-3421
23	Resistor (22,000 ohm, 1/3 watt)	33-322244
24	Mica Condenser (5 mmf.)	60-005357
25	Mica Condenser (250 mmf.)	60-125157
26	Resistor (100 ohm, ½ watt)	33-110344
27	Short Wave Osc. Trans.	32-3418
28	Resistor (1,000 ohm, ½ watt)	33-210344
29	Mica Condenser (100 mmf.)	60-110157
30	Resistor (68,000 ohm, 1/3 watt)	33-368244
31	Padder	31-6345
32	1st I.F. Trans. Assembly	32-2429
33	Resistor (33,000 ohm, ½ watt)	33-333344
34	Tubular Condenser (.01 mf.)	30-4572
35	Tubular Condenser (.2 mf.)	30-4536
36	Resistor (22,000 ohm, 1 watt)	33-322444
37	2nd I.F. Trans. Assembly	32-3430
38	Mica Condenser (100 mmf.)	60-110157
39	Resistor (330,000 ohm, 1/3 watt)	33-433244
40	Volume Control	33-5392
41	Tubular Condenser (.006 mf.)	30-4591
42	Tubular Condenser (.002 mf.)	30-4579
43	Tubular Condenser (.006 mf.)	30-4591
44	Resistor (47,000 ohm, 1/3 watt)	33-347244
45	Tubular Condenser (.006 mf.)	30-4591
46	Resistor (10 meg, 1/3 watt)	33-610244
47	Electrolytic Condenser	30-2464
48	Resistor (33,000 ohm, ½ watt)	33-333344
49	Resistor (1 meg, 1/3 watt)	33-510244
50	Tubular Condenser (.01 mf.)	30-4572
51	Resistor (1.5 meg, 1/3 watt)	33-515244
52	Resistor (470,000 ohm, 1/3 watt)	33-447244
53	Field Coil	32-9576
54	Resistor (1 meg, 1/3 watt)	33-510244
55	Resistor (150,000 ohm, 1/3 watt)	33-415244
56	Electrolytic Condenser	30-2464
57	Tone Control & Power Switch	33-5393
58	Tubular Condenser (.2 mf.)	30-4536
59	Resistor (470,000 ohm, 1/3 watt)	33-447244
60	Resistor (470,000 ohm, 1/3 watt)	33-447244
61	Mica Condenser (1000 mmf.)	60-110157
62	Tubular Condenser (.006 mf.)	30-4591
63	Tubular Condenser (.006 mf.)	30-4591
64	Output Trans.	32-8123
65	Voice Coil & Cone Assembly	36-4103
66	Pilot Bulb	34-2064
67	Line Condenser	3903ODG
68	Line Cord	L-3199C
69	Power Trans., 60 cycle	12-0006
	25 cycle	12-0005

MISCELLANEOUS PARTS

Schem. No.	Description	Part No.
	Dial Scale	27-5583
	Dial Drum	31-2454
	Spring	28-8751
	Pointer	56-1276
	Drive Cord	31-2458
	Dial Clamp	56-1745FA3
	Tube Shield (square)	28-2726
	Tube Shield (round)	56-1566
	Electrolytic Insulator	27-9506
	Socket, 4 prong	27-6044
	Socket, 6 prong	26-6036
	Socket, octal	27-6058
	Socket, loctal	27-6131
	Speaker	36-1452
	Speaker Cable	41-3459
	Knob, Volt. Cont. & Wave Switch	27-4332
	Knob, Tone Control	27-4872
	Knob, Tuning (large)	27-4330
	Knob, Tuning (small)	27-4862
	Cabinet	01-0006



PARTS LOCATION, UNDERSIDE OF CHASSIS