

## Philco Radio & Television Corp.

**Model:** 16( Codes 125, 126)

**Chassis:**

**Year:** Pre November 1935

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

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**MODEL 16**  
**Codes 125,126,127**  
**Alignment, Trimmers**

**PHILCO RADIO & TELEV. CORP.**

## Adjusting Compensating Condensers

Model 16 (Codes 125, 126, 127)

### Adjustment of I. F.

1. Remove the antenna connection from the receiver, disconnect the grid clip from the first detector (type 77 tube), and connect the "ANT" output terminal of the Model 048 or 024 signal generator to the grid cap of this tube; connect the "GND" terminal of the signal generator to the "GND" terminal of the receiver.

2. Connect the 0 to 20 volt range of the output meter in the Model 048 or 025 tester to the plate prongs of the two output tubes or to the two bottom prongs of the speaker plug.

3. Adjust the signal generator to a frequency of 460 K.C. Place the receiver in operation with the dial turned to the low frequency end of the broadcast band, wave band switch to extreme left, and with the volume control adjusted near its maximum setting. Adjust the signal generator attenuator for approximately half-scale reading of the output meter.

4. Using the Philco fibre adjusting screw driver, part No. 27-7059, adjust the I. F. compensating condensers in the following order to give maximum reading in the output meter: ①, ②, ③, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩, ⑪, ⑫, ⑬, ⑭, ⑮, ⑯, ⑰, ⑱, ⑲, ⑳, ㉑, ㉒, ㉓, ㉔, ㉕, ㉖, ㉗, ㉘, ㉙, ㉚, ㉛, ㉜, ㉝, ㉞, ㉟, ㊱, ㊲, ㊳, ㊴, ㊵, ㊶, ㊷, ㊸, ㊹, ㊺, ㊻, ㊼, ㊽, ㊾, ㊿.

### Adjustment of Wave-Trap

1. Connect the signal generator leads to the antenna and ground terminals of the receiver. Replace the grid clip on the first detector grid cap.

2. Set the wave-band switch of the receiver to the extreme left (broadcast position) (Range No. 1, 550-1500 K.C.), and turn the station selector to 550 K.C.

3. With the signal generator in operation at 460 K.C., adjust the wave-trap ① condenser until a minimum reading is obtained on the output meter. The Philco fibre wrench, part No. 3164, is used for this adjustment.

### Adjustment of High Frequency Padders

1. Leaving the output meter connected to the receiver connect the Philco Model 091 signal generator to the antenna and ground terminals of the chassis and place the signal generator in operation.

2. Turn the wave-band switch to Range 4 (extreme right) and adjust the station selector to 18.0 megacycles, at which point the fifth harmonic of the 3600 K.C. signal will be heard. By means of the Philco padder wrench, part No. 3164, adjust the oscillator, R.F. and antenna padders for maximum reading in the output meter and in the order mentioned. These padders

are numbered ⑳, ㉑ and ㉒, respectively in figure No. 4. To make certain that the adjustment has been correctly made check the sixth harmonic at 21.6 M.C. on the dial.

3. Turn the wave-band switch to Range 3 (4.1-10.0 M.C.) and adjust the tuning dial to 7.2 M.C. (the second harmonic of the 3600 K.C. signal). Adjust the oscillator, R.F. and antenna padders (⑳, ㉑ and ㉒, respectively) for maximum output. Check the calibration of the dial at the upper portion of the third band by tuning in the image of the 10.8 M.C. signal at approximately 9.9 on the dial. (If there is an appreciable error in calibration at this point, readjust padder ㉑ for maximum output. Return the dial to the 7.2 M.C. position, tuning for maximum output. Readjust padders ㉑ and ㉒.)

4. Turn the wave-band switch to scale No. 2 (1.5-4.0 M.C.) and tune in the fundamental frequency from the signal generator at 3.6 M.C. Adjust padders ㉑, ㉒ and ㉓ for maximum output.

5. At this point it will again be necessary to make use of the broadcast type signal generator Models 024, 048 or equivalent. Connect the output of this signal generator to the antenna and ground terminals of the chassis. Turn the station selector dial to 1.5 M.C. (Range 2) and adjust the signal generator to the same frequency (1500 K.C.). Adjust padder ㉔ (nut).

6. Turn the wave-band switch to Range No. 1 (broadcast band) and set the dial at 1500 K.C. Adjust the signal generator to this frequency and adjust padders ㉕, ㉖ and ㉗ for maximum output.

7. Tune the receiver and the signal generator to 600 K.C. and adjust padder ㉘ (screw) for maximum output.

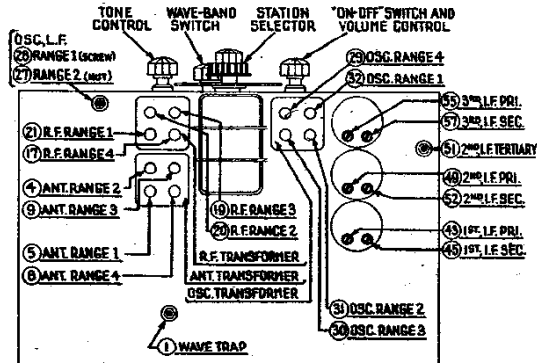


Fig. 4—Locations of Compensating Condensers

### Power Transformer Data Line Voltage 120

Terminals	A.C. Volts	Circuit	Color of Leads
1-2	120	Primary	White
3-5	*720	Plates of Rectifier	Yellow
6-7	5.0	Filament of Rectifier	Blue
8-9	6.3	Filaments	Black
4	...	Center Tap of 3-5	Yellow—Green Tracer

\*780 in code 126

PHILCO RADIO & TELEV. CORP.

MODEL 16  
Codes 125, 126  
Chassis, Parts

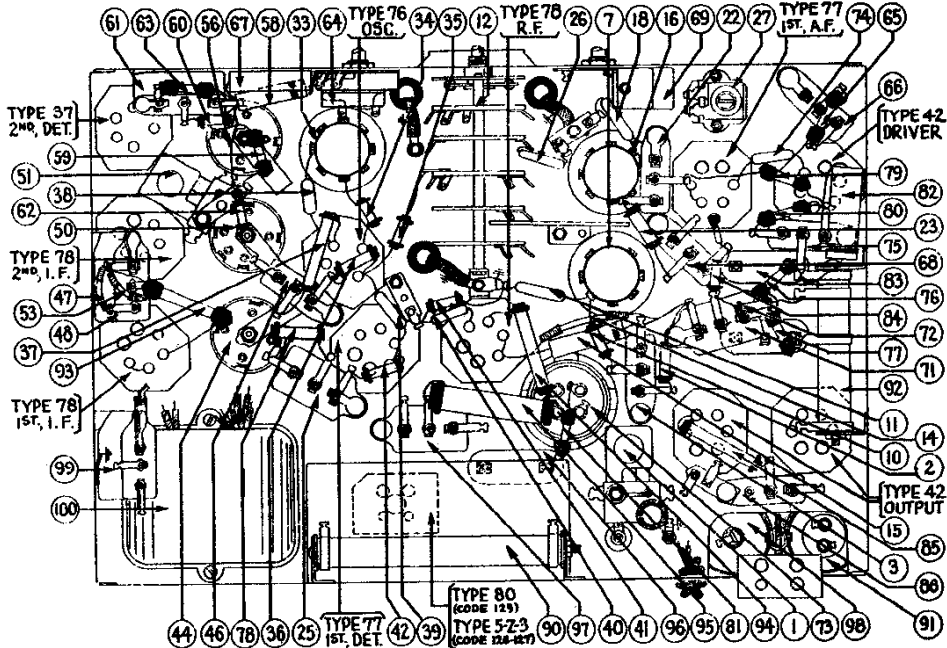


Fig. 3—Underside of Chassis, showing Parts

REPLACEMENT PARTS—MODEL 16—CODES 125 AND 126

No. on Diagram	Description	Part No.	List Price	No. on Diagram	Description	Part No.	List Price
1	Wave Trap.....	38-6049	\$0.30	49	Condenser (.03 Mfd. Bakelite Block).....	3218 F	.....
2	Condenser (.0006 Mfd. Mica).....	30-10491	.35	50	Condenser (.05 Mfd. Tubular).....	30-4600	\$0.35
3	Antenna Choke Assembly.....	32-15144	.35	51	Condenser (.01 Mfd. Bakelite Block).....	3903 G	.25
4	Condenser (.000025 Mfd. Mica).....	30-1044	.35	52	Condenser (.01 Mfd. Bakelite Block).....	30-4204	.75
5	Compensating Condenser (Ant. Band 2).....	Part of 31-6026	.....	53	Tone Control.....	Part of 49	.....
6	Compensating Condenser (Ant. Band 1).....	Part of 31-6026	.....	54	Condenser (.15 Mfd. Bakelite Block).....	6287 J	.40
7	Condenser (.00015 Mfd. Mica).....	30-1059	.35	55	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517	.20
8	Ant. Transformer.....	32-1447	.....	56	Condenser (Electrolytic—1, 1.2 Mfd.).....	30-2078	2.45
9	Compensating Condenser (Ant. Band 4).....	Part of 31-6026	.....	57	Condenser (.00011 Mfd. Mica).....	36-1031	.35
10	Compensating Condenser (Ant. Band 3).....	Part of 31-6026	.....	58	Condenser (.05 Mfd. Bakelite Block).....	3815 AD	.35
11	Condenser (.00015 Mfd. Mica).....	30-1030	.30	59	Resistor (160,000 ohms) (Brown-Blue-Yellow).....	5331	.20
12	Resistor (.25 Meg.) (Red-Yellow-Yellow).....	4410	.20	60	Resistor (.1 Meg.) (White-White-Orange).....	4411	.20
13	Condenser (.003 Mfd. Mica).....	7301	.45	61	Resistor (5000 ohms) (Green-Black-Red).....	4411	.20
14	Wave Band Switch.....	42-1079	2.50	62	Resistor (7000 ohms) (Violet-Black-Orange).....	5385	.30
15	Tuning Condenser Assembly.....	31-1350	6.50	63	Resistor (1 Meg.) (White-White-Orange).....	4411	.20
16	Resistor (500 ohms Flexible Wirewound).....	6977	.20	64	Resistor (1 Meg.) (Brown-Black-Green).....	4409	.20
17	Condenser (.05 Mfd. Tubular).....	30-4020	.35	65	Condenser (.25 Mfd. Tubular).....	30-4146	.40
18	R.F. Transformer.....	32-1458	.....	66	Audio Transformer.....	32-1057	2.75
19	Compensating Condenser (R.F.; Band 4).....	Part of 31-6026	.....	67	Resistor (.1 Meg.) (Brown-Black-Green).....	32-1057	.40
20	Condenser (.006 Mfd. Mica).....	30-1045	.50	68	Resistor (10000 ohms).....	3524	.35
21	Compensating Condenser (R.F.; Band 3).....	Part of 31-6026	.....	69	Condenser (.01 Mfd. Bakelite Block).....	3003 F	.35
22	Compensating Condenser (R.F.; Band 2).....	Part of 31-6026	.....	70	Output Transformer (U-2).....	32-7052	2.00
23	Compensating Condenser (R.F.; Band 1).....	Part of 31-6026	.....	71	Resistor (U-2).....	32-7075	1.40
24	Condenser (.05 Mfd. Bakelite Block).....	3615 BL	.30	72	Resistor (U-2).....	35-3061	1.40
25	Resistor (1000 ohms) (Brown-Black-Red).....	45-2028	2.50	73	Voice Coil and Cone Assembly (H-13).....	02025	1.20
26	Shadowcaster.....	3015 BS	.40	74	Field Coil and Pot Assembly (H-13).....	36-3088	8.00
27	Condenser (.05 Mfd. Twin Bakelite Block).....	30-1042	.40	75	Resistor (B.C. Wirewound 7750 ohms).....	36-3104	2.70
28	Condenser (.002 Mfd. Mica).....	31-6028	.55	76	Condenser (Electrolytic—8 & 10 Mfd.).....	30-2045 (code 125)	1.80
29	Compensating Condenser (Osc. I.F.; Range 2).....	32-1499	2.40	77	Resistor (Voltage Divider—20 ohms, 180 ohms, 180 ohms).....	33-3021	.20
30	Compensating Condenser (Osc. I.F.; Range 1).....	33-1129	.20	78	Resistor (30000 ohms) (Orange-Black-Orange).....	7534	.20
31	Compensating Condenser (Osc. H.F.; Range 4).....	33-1900	.20	79	Resistor (10000 ohms) (Brown-Black-Orange).....	3524	.20
32	Compensating Condenser (Osc. H.F.; Range 3).....	5837	.20	80	Resistor (10000 ohms) (Brown-Orange-Orange) (3-watt).....	6450	.40
33	Compensating Condenser (Osc. H.F.; Range 2).....	5837	.20	81	Filter Choke.....	32-7056	2.20
34	Compensating Condenser (Osc. H.F.; Range 1).....	5837	.20	82	Condenser (.3 Mfd. Bakelite Block).....	6287 F	.40
35	Oscillator Transformer.....	3524	.20	83	Condenser (Electrolytic—8 Mfd.).....	30-2029 (code 125)	1.10
36	Resistor (70 ohms) (Violet-Black-Black).....	5378	.25	84	Condenser (.015 Mfd. Twin).....	30-3011 (code 126)	1.40
37	Resistor (1000 ohms) (Brown-Black-Orange).....	5837	.20	85	Power Transformer 60 Cycle 115 Volts (code 125).....	2795 E	.40
38	Resistor (1000 ohms) (Brown-Black-Red).....	5837	.20	86	Power Transformer 25 Cycle 115 Volts (code 125).....	32-7291	7.00
39	Resistor (10000 ohms) (Brown-Black-Orange).....	5837	.20	87	Power Transformer 25 Cycle 115 Volts (code 126).....	32-7292	9.25
40	Condenser (.0008 Mfd. Mica).....	5896	.35	88	Power Transformer 60 Cycle 115 Volts (code 126).....	32-7283	7.00
41	Condenser (.00125 Mfd. Mica).....	4519	.35	89	Power Transformer 25 Cycle 115 Volts (code 126).....	32-7294	7.00
42	Condenser (.0011 Mfd. Mica).....	4519	.35	90	Power Transformer 25 Cycle 115 Volts (code 126).....	32-7294	7.00
43	Resistor (2 Meg.) (Red-Black-Green).....	33-1025	.20	91	Beam Compensation Switch (Toggle Type).....	2253	.45
44	Resistor (8000 ohms) (Gray-Black-Red).....	33-1157	.20	92	Pilot Lamp (Dial Section).....	34-2031	.45
45	Compensating Condenser (1st I.F. Pri.).....	Part of 49	.....	93	Pilot Lamp (Dial Section).....	34-2031	.12
46	1st I.F. Transformer.....	32-1188	.65	94	Pilot Lamp (Dial Section).....	34-2031	.12
47	Compensating Condenser (1st I.F. Sec.).....	Part of 49	.....	95	Pilot Lamp (Dial Section).....	34-2031	.12
48	Condenser (.05 Mfd. Bakelite Block).....	3615 AA	.35	96	Tube Socket (4 Prong).....	7544	.12
49	Resistor (500 ohms Flexible Wirewound).....	6977	.20	97	Tube Socket (5 Prong).....	27-4013	.11
50	Compensating Condenser (2nd I.F. Pri.).....	Part of 49	.....	98	Tube Socket (6 Prong).....	7547	.31
51	2nd I.F. Transformer.....	32-1470	.....	99	Speaker Socket.....	7828	.10
52	Compensating Condenser (2nd I.F. Tertiary).....	04000R	.45	100	Tube Shield (Short Type).....	28-1820	.06
53	Compensating Condenser (2nd I.F. Sec.).....	Part of 49	.....		Dial Assembly.....	31-1287	.....
54	Resistor (500 ohms Flexible Wirewound).....	6977	.20		Dial Scale.....	27-5064	.50
55	Compensating Condenser (3rd I.F. Pri.).....	Part of 49	.....		Chassis Mounting Screw (code 125).....	W 1356A	2.60 C
56	3rd I.F. Transformer.....	32-1189	.65		Chassis Mounting.....	27-4116	.05
57	Compensating Condenser (3rd I.F. Sec.).....	Part of 49	.....		Chassis Mounting Foot.....	27-7497	.35 C
58	Condenser (.05 Mfd. Tubular).....	30-4123	.35		Chassis Mounting Foot Plate.....	29-2089	.35 C
59	Resistor (1000 ohms) (Brown-Black-Red).....	5837	.20		Chassis Mounting Washer.....	27-4051	.10
60	Resistor (1 Meg.) (White-White-Orange).....	6099	.20		Knob (Waveband Switch, code 126).....	27-4052	.10
61	Condenser (.0001 Mfd. Twin Bakelite Block).....	8035 B	.25		Knob (Volume Control and Tone Control).....	27-4139	.10
62	Resistor (2 Meg.) (Red-Black-Green).....	33-1025	.20		Knob (Station Selector).....	27-4140	.10
63	Resistor (33000 ohms) (Orange-Orange-Yellow).....	6046	.20		Knob (Fine Tuning Control).....	27-4140	.10
64	Volume Control (33000 ohms total) & On-Off Switch.....	33-5022	1.45		Beam Compensation Switch Plate.....	28-2415	.06
65	Resistor (32000 ohms) (Orange-Red-Orange).....	6270	.20				

\*31-6028; list price \$0.85.

\*After Run No. 5; 30-2025, list price \$1.35.