

# PHILCO . . . . . Model 39-18, Codes 121 & 122



## SERVICE BULLETIN No. 301 for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

### SPECIFICATIONS

**TYPE OF CIRCUIT:** A. C. - D. C. operated; superhetrodyne circuit, covering standard broadcast (540 K. C. to 1720 K. C.) frequency; Automatic Volume Control; and pentode output.

Codes 121 and 122 chassis of this model are similar with the exception of Speaker and Cabinet.

The receiver is designed to operate from a "Philco Utility Aerial," part No. 45-2450. This aerial system should be used to obtain maximum performance from the receiver.

**POWER SUPPLY:** Voltage—115 volts A. C. or D. C. Power consumption—55 watts.

**INTERMEDIATE FREQUENCY:** 470 K. C.

**TUNING RANGE:** 540 to 1720 K. C.

**PHILCO TUBES USED:** 1—6A7, 1st detector and oscillator; 1—78, I. F.; 1—75, 2nd detector, Automatic Volume Control, and 1st audio; 1—43, Output; 1—25Z5, Rectifier; and 1—BKV51DJ, ballast tube.

**TUNING MECHANISM:** Pulley and cable drive for Manual tuning. Push-Button for Automatic Tuning. The procedure for adjusting and operating the Automatic Tuning Push-Buttons will be found in the instructions supplied with each set.

**CABINETS:** Code 121 chassis in type "T" cabinet. Code 122 chassis in type "F" cabinet.

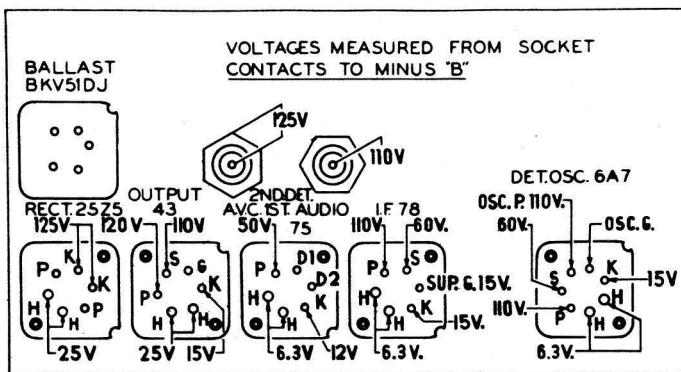


Fig. 1. Socket Voltage—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 027 Circuit Tester, which contains a sensitive voltmeter. Volume Control at minimum—Tuning Condenser set for no signal—line voltage 115 A. C.

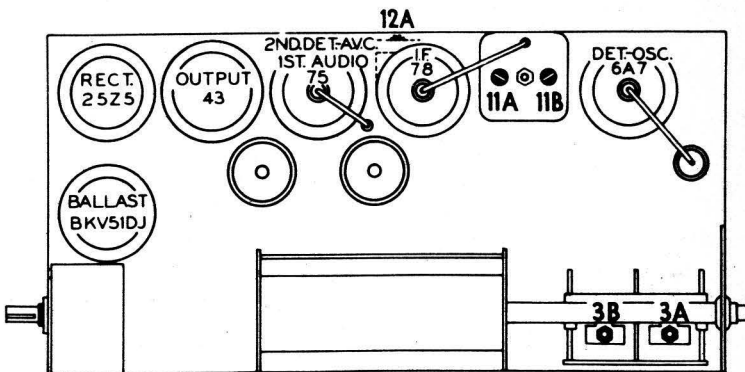


Fig. 2. Locations of Compensators

### Alignment of Compensators

**EQUIPMENT REQUIRED:**

- (1) Signal Generator; Philco Model 077 Signal Generator, which has a fundamental frequency range from 115 to 36,000 KC., is the correct instrument for this purpose.
- (2) Output meter; Philco Model 027 Circuit Tester incorporates a sensitive output meter and is recommended.

- (3) Philco Fiber Handle Screw Driver, part No. 27-7059 and Fiber Wrench, part No. 2164.
- (4) Philco Set Transformer, part No. 32-2763.

**OUTPUT METER:**

The Philco 027 Output Meter is connected to the plate and cathode terminals of the Type 43 tube. Set the meter to use the 0-30 volt scale.

Operations in Order	Signal Generator			Receiver			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	6A7 Grid	.1 mf.	470 KC	580 KC	Vol. Cont. Max.	(12A) (11A) (11B)	See Note B
2	Ant. Ter.	100 mmf.	1550 KC	1550 KC	Vol. Cont. Max.	(3B) (3A)	See Note C See Note D

**NOTE A**—The "Dummy Antenna" consists of a condenser connected in series with the signal generator output lead (high side). Use the capacity as specified in each step of the above procedure.

**NOTE B**—Insert the signal generator output lead into the "Med" jack and the ground lead into the "Gnd" jack of the signal generator. Connect the other end of the output lead to terminal No. 1 on the Set Transformer, part No. 32-2763, and the cable ground to terminal No. 2. Nos. 3 and 4 terminals of Set Transformer are then connected to the chassis and 6A7 grid respectively of the receiver with short pieces of wire. Insert the 0.1 mf. in series with the No. 4 lead which connects to the grid.

**NOTE C—DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To

adjust the dial proceed as follows: With the push button unit disconnected from the gang, the pointer is to be set on the extreme left edge of the index line (low frequency end of the scale) with the gang closed. The gang is then opened until the pointer is at the right edge of the index line and, with the push-button shaft at its closed stop, the push-button coupling is tightened on the gang shaft.

**NOTE D**—Insert the signal generator output lead into the "Med" jack and the ground lead into the "Gnd" jack of the signal generator. Connect the other end of the output lead to terminal No. 1 on the Set Transformer, part No. 32-2763, and the cable ground to terminal No. 2. Nos. 3 and 4 terminals of Set Transformer are then connected to the chassis and antenna lead respectively of the receiver with short pieces of wire. Insert the 100 mmf. in series with the No. 4 lead which connects to the antenna lead.

# REPLACEMENT PARTS

## Model 39-18, Codes 121 & 122

Schem. No.	Description	Part No.
1	Condenser (.001 mfd. tubular)	30-4453
2	Antenna Transformer	32-3039
3	Tuning Condenser Assembly	31-2265
4	Condenser (.15 mfd. tubular)	30-4505
5	Condenser (.05 mfd. tubular)	30-4519
6	Resistor (120,000 ohms, 1/2 watt)	33-412339
7	Condenser (110 mmf., mica)	30-1031
8	Condenser (25 mmf., silver plated mica)	30-1112
9	Oscillator Transformer	32-3040
10	Condenser (.5 mf., tubular)	30-4551
11	1st I. F. Transformer Assembly	32-3075
12	2nd I. F. Transformer Assembly	32-2944
13	Resistor (51,000 ohms, 1/2 watt)	33-351339
14	Resistor (2.0 megohms, 1/2 watt)	33-520339
15	Resistor (2.0 megohms, 1/2 watt)	33-520339
16	Condenser (.02 mf., tubular)	30-4516
17	Resistor (25,000 ohms, 1/2 watt)	33-325339
18	Volume Control and On-Off Switch	33-5276
19	Condenser (.1 mf., tubular)	30-4499
20	Condenser (.01 mf., tubular)	30-4572
21	Resistor (4.0 megohms, 1/2 watt)	33-540339
22	Condenser (.01 mf., tubular)	30-4572
23	Resistor (190,000 ohms, 1/2 watt)	33-419339
24	Resistor (490,000 ohms, 1/2 watt)	33-449339
25	Condenser (.1 mf., tubular)	30-4499
26	Resistor (51,000 ohms, 1/2 watt)	33-351339
27	Resistor (190,000 ohms, 1/2 watt)	33-419339
28	Condenser (.02 mf., tubular)	30-4215
29	Output Transformer	32-7986
30	Cone and Voice Coil Assembly (Speaker Part No. 36-1444-1)	36-4083
	(Speaker Part No. 36-1444-3)	36-4085
	Cone and Voice Coil Assembly (Speaker Part No. 36-1445)	36-4086
31	Resistor (1400 ohms, 1/2 watt)	33-214339
32	Condenser (20 mf., electrolytic)	30-2245
33	Condenser (40 mf., electrolytic)	30-2332
34	Condenser (.05 mf., tubular)	30-4444
35	Resistor (300 ohms, wire wound)	33-130431
36	Resistor (28 ohms, 1/2 watt)	33-028339
37	†Field Coil for Speaker (Pt. No. 36-1444)	
	†Field Coil for Speaker (Pt. No. 36-1445)	
38	Pilot Lamp	34-2068
39	Pilot Lamp	34-2068
40	Condenser (.03 mf., tubular)	30-4449

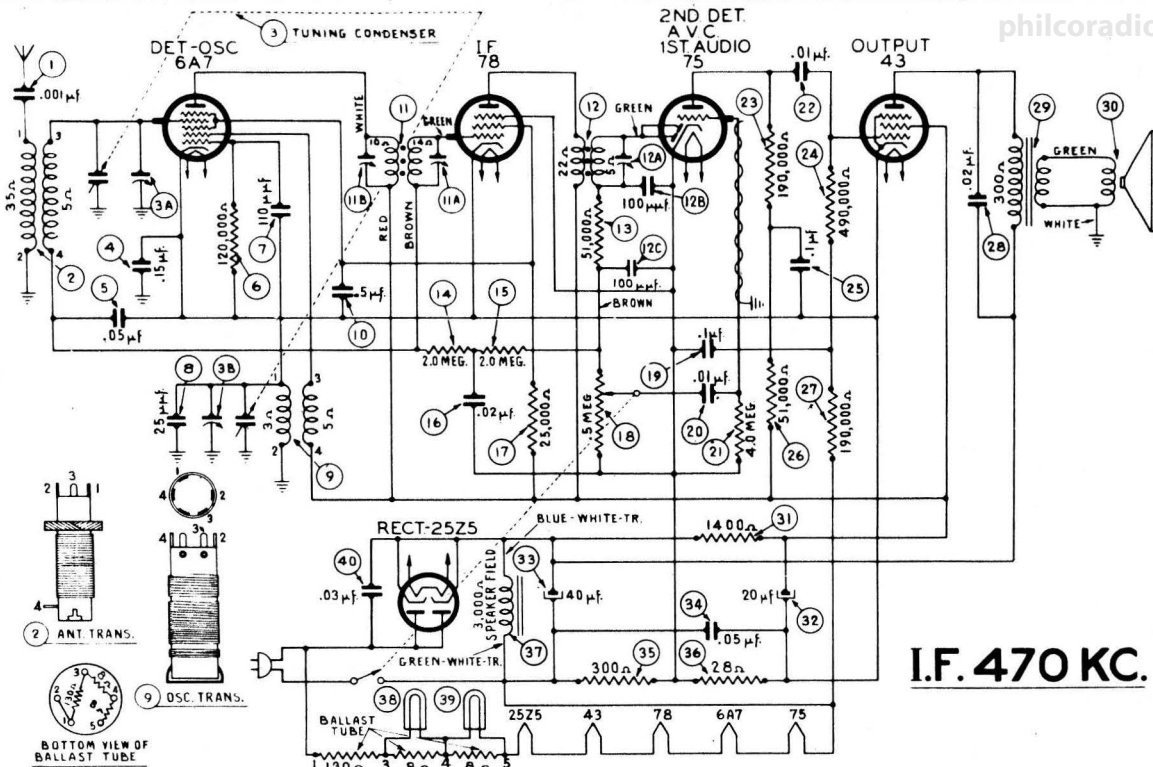


Fig. 3. Schematic Diagram, Model 39-18, Code 121-122

Description	Part No.
Dial Tuning Spring (cord)	28-8919
Clip (Mtg. R. F. Coils)	28-5002
Clip (Mtg. R. F. Coils)	28-5003
Escutcheon Plate (extension shafts, F Cabinet)	56-1051
Escutcheon Pin	W-950
Felt (Dial Lamps)	27-9222
Knob (Tuning)	27-4750
Knob (Volume)	27-4753
Mtg. Rubber (Tuning Condenser)	27-4596
Pilot Lamp Socket Assembly	38-9649
Pointer	28-5934
Push-Button	27-4749
Screw (Tuning Knob)	28-6882
Shaft Extension (Volume, F Cabinet)	38-9640
Shaft Extension (Tuning, F Cabinet)	28-6928
Sleeve-long Tuning Shaft Extension (F Cabinet)	28-6935
Sleeve-short Tuning Shaft (T and F Cabinet)	28-6887
Spring-retaining Volume Ext. Shaft	28-8915
*Speaker (T Cabinet, code 121) optional	36-1444-3
Speaker (F Cabinet)	36-1445
Socket (5 prong)	27-6035
Socket (6 prong)	27-6036
Socket (7 prong)	27-6107
Tab Kit (Stations)	40-6391

\* When ordering Speaker or Cone assembly specify which of the small numbers (-1 or -3) following the part number is required.  
 † Replace Speaker.

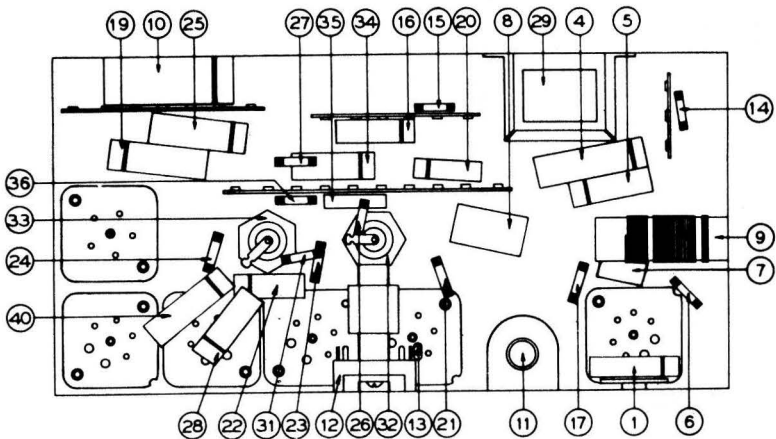


Fig. 4. Part Locations, Underside of Chassis

## Miscellaneous Parts

Description	Part No.
Automatic Tuning Unit	31-2282
Bezel Dial	40-6364
Bezel Gasket (Dial)	27-9174
Bezel (Push-Button)	28-5929
Bezel Clamp (Push-Button)	28-5153
Bezel Gasket (Push-Button)	27-9218
Cable and Plug (Power)	L-2778
Dial and Frame Assembly	31-2283
Dial Tuning Drum Assembly	31-2281
Dial Tuning Cord Assembly	31-2275

**PHILCO RADIO AND TELEVISION CORPORATION**  
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