



SERVICE BULLETIN No. 302 for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

SPECIFICATIONS

TYPE OF CIRCUIT: A. C. operated; superhetrodyne circuit with two tuning ranges, covering standard broadcast (540 K. C. to 1720 K. C.) and short wave (5.6 M. C. to 18.0 M. C.) frequencies; 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 Safety Aerial," part No. 40-6370. This aerial system should be used to obtain maximum performance from the receiver.

POWER SUPPLY: Voltage—115 volts. Frequency—25-60 cycles. Power consumption—40 watts.

INTERMEDIATE FREQUENCY: 460 K. C.

TUNING RANGES:

M. C.

AUDIO OUTPUT: 2 watts.

TUBES USED: Five tubes: 1-6A7E, 1st detector and oscillator; 1-78E, I. F.; 1-75, 2nd detector, Automatic Volume Control, and 1st audio; 1-41E, Output; and 1-84, Rectifier.

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

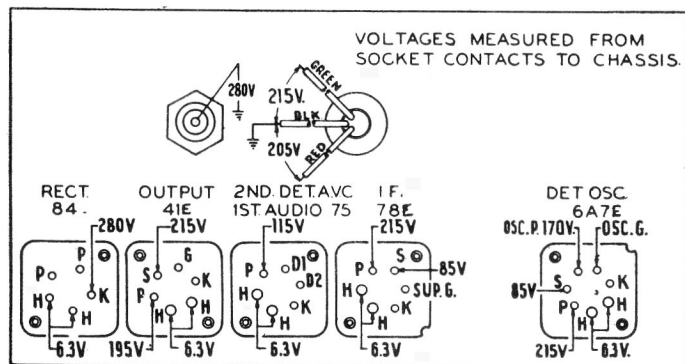


Fig. 1. Socket Voltage—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 026 Circuit Tester, which contains a sensitive voltmeter. Volume Control at minimum—Tuning Condenser set for no signal—line voltage 115 A. C.

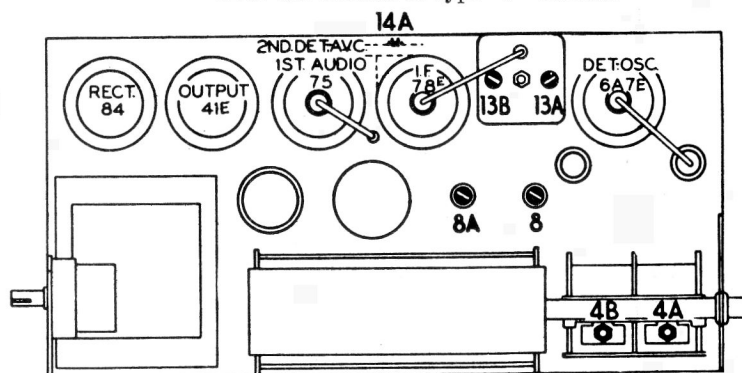


Fig. 2. Locations of Compensators

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED: (1) Signal Generator, Philco Model 177 Signal Generator which has a fundamental frequency range from 115 to 32,500 K. C. is the correct instrument for this purpose. (2) Output meter: Philco Model 026 Circuit Tester, incorporates a sensitive output meter and is recommended. (3) Philco Fibre Handle

Screw Driver, part No. 27-7059 and Fibre Wrench, part No. 7696.

OUTPUT METER: The Philco 026 Output Meter is connected to the plate and cathode terminals of the type 41E 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	6A7E Grid	.1 mf.	460 K. C.	580 KC	Vol. Cont. (max.)	(14A) (13B) (13A)	
2	Ant. Ter.	100 mmf.	18 MC	18 MC	"	(4B)	Note B
3	"	"	1550 KC	1550 KC	"	(8) (4A)	
4	"	"	580 K. C.	580 KC	"	(8A)	Roll Tuning Condenser
5	"	"	1550 KC	1550 KC	"	(8)	

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—**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.

REPLACEMENT PARTS

Model 39-319, Codes 121 & 122

Schem. No.	Description	Part No.	Description	Part No.
1	Antenna Transformer (short-wave)	32-2822	Bezel Gasket (dial)	27-9174
2	Antenna Transformer (broadcast)	32-2821	Bezel Gasket (Push-Button)	28-5929
3	Condenser (.05 mfd.)	30-4519	Bezel Gasket (Push-Button)	27-9218
4	Tuning Condenser Ass'y	31-2273	Power Cable & Plug	28-5153
5	Resistor (51,000 ohms 1/2 watt)	32-2823	Speaker Cable (F. Cabinet)	L-2839
6	Oscillator Transformer	32-351344	Dial & Frame Ass'y	31-2298
7	Resistor (20 ohms 1/2 watt)	32-3036	Dial Tuning Drum Ass'y	31-2281
8	Compensator (2 sections)	32-020344	Dial Tuning Cord Ass'y	31-2275
9	Condenser (370 m m f d. silver plated mica)	31-6257	Dial Tuning Spring (cord)	28-8919
10	Condenser (3500 mmfd.)	30-1110	Clip (Mounting R. F. Coils) small	28-5002
11	Condenser (250 mmfd.)	30-1094	Clip (Mounting R. F. Coils) large	28-5003
12	Resistor (5,000 ohms 1/2 watt)	30-1032	Escutcheon Plate (Extension shafts for F Cabinet)	56-1051
13	First I. F. Transformer	32-250344	Escutcheon Pin	W-950
14	Second I. F. Transformer	32-3075	Knob (tuning)	27-4750
15	Resistor (51,000 ohms 1/2 watt)	32-2944	Knob (volume)	27-4753
16	Condenser (.03 mfd.)	32-351344	Knob (wave switch)	27-4754
17	Resistor (32,000 ohms, 1/2 watt)	30-4449	Pilot Lamp Socket Ass'y	38-9612
18	Resistor (10,000 ohms, 1 watt)	32-322344	Push-Button	28-5934
19	Resistor (1 meg. 1/2 watt)	32-310444	Screw (tuning knob)	28-4749
20	Volume Control On-Off Switch	32-510344	Shaft Extension (vol. & w. sw.) code 122 only	28-6882
21	Resistor (1 meg. 1/2 watt)	32-5276	Shaft Extension (tuning) code 122 only	38-9640
22	Condenser (110 mmfd.)	30-1031	Sleeve-Long Tuning Shaft	28-6928
23	Condenser (250 mmfd.)	30-1032	only	
24	Condenser (.01 mfd.)	30-4572	Sleeve-Short Tuning Shaft	28-6935
25	Resistor (99,000 ohm, 1/2 watt)	32-399344	Speaker (F Cabinet)	36-1449
26	Resistor (490,000 ohm, 1/2 watt)	32-4033	† (T Cabinet) optional	36-1426-3
27	Resistor (490,000 ohm, 1/2 watt)	32-4034	Spring (retaining volume shaft)	36-1426-1
28	Condenser (.1 mfd.)	32-443844	Socket (5 prong)	28-8915
29	Condenser (.01 mfd.)	30-4439	Socket (6 prong)	27-6085
30	Resistor (4 meg. 1/2 watt)	30-4479	Socket (7 prong)	27-6086
31	Condenser (8 mfd., 4 mfd.)	32-7975	Tab Kit	27-6107
32	Condenser (.01 mfd.)	32-7974		27-5431
33	Output Transformer	30-2323		
34	*Cone & Voice Coil Ass'y for speaker part number 36-1426-1	30-4572		
35	†Field Coil for speaker part number 36-1426	32-7980		
36	Condenser (Electrolytic 12 mfd.)	36-4033		
37	Resistor (250 ohms, 1 watt)	36-4035		
38	Power Transformer	36-4036		
39	25 cycle 60 cycle			
40	Condenser (.01 mf.-.01 mf., bakelite)			
41	Pilot Lamp			
42	Pilot Lamp			
43	Wave Switch			
	Automatic Tuning Unit (complete)			
	Bezel Ass'y (dial)			

† Parts not supplied. Replace Speaker.
* When ordering Speaker or Cone Assembly specify which of the small numbers (-1 or -3) following the part number is required.

PHILCO PRODUCTS LIMITED

Parts and Service Division

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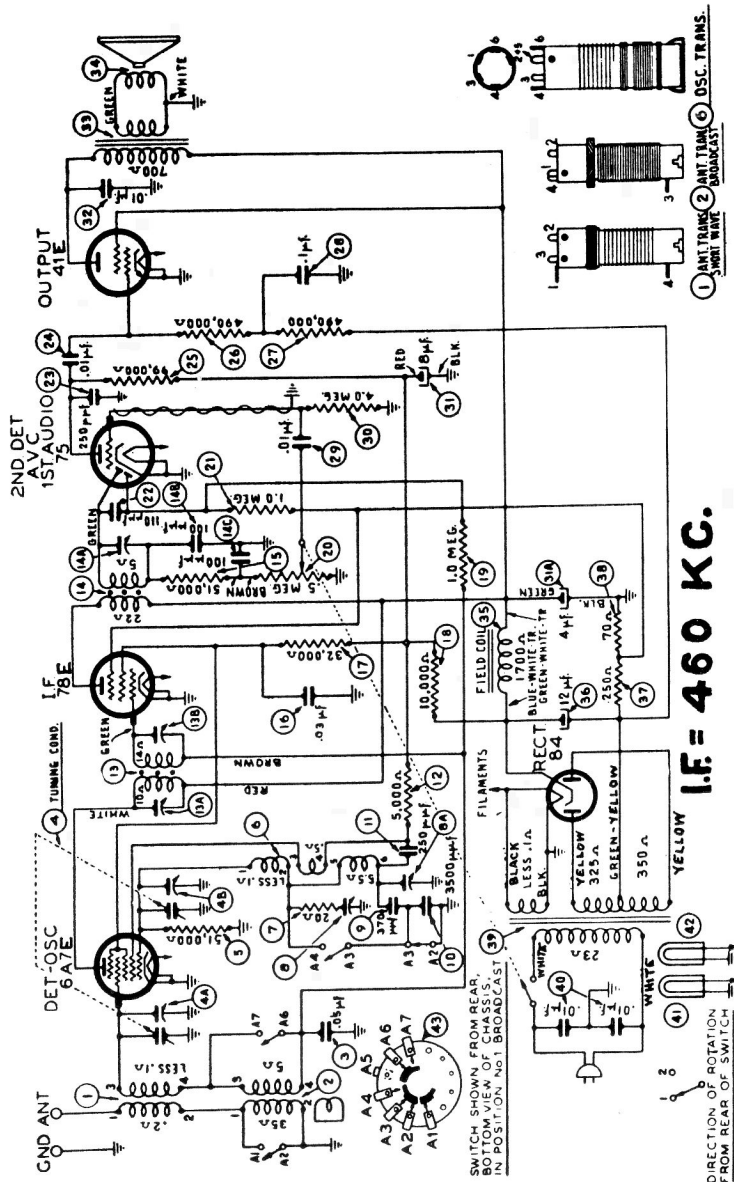


Fig. 3. Schematic Diagram, Model 39-319, Code 121-122

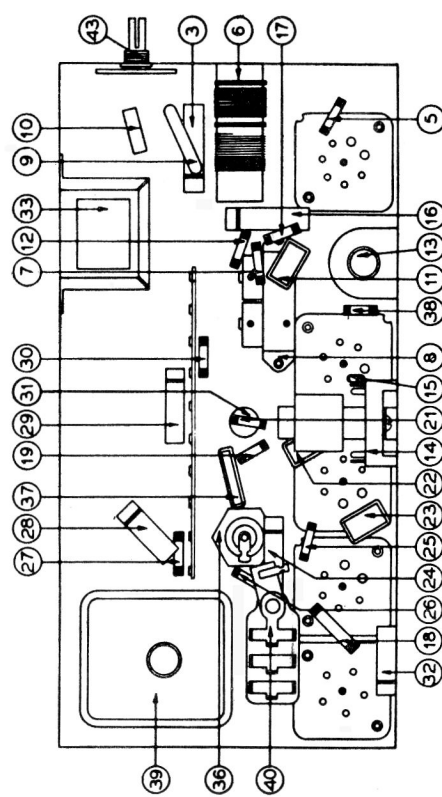


Fig. 4. Part Locations, Underside of Chassis