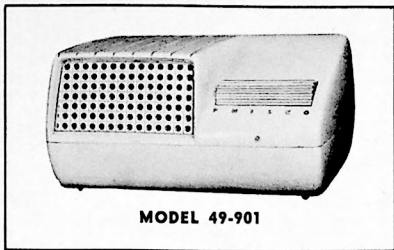


PHILCO RADIO MODEL 49-901

SPECIFICATIONS



CABINET.....Phenolic plastic, green or ivory
 CIRCUIT.....5-tube superheterodyne
 FREQUENCY RANGE.....540—1620 kc.
 AUDIO OUTPUT.....1 watt
 OPERATING VOLTAGE.....105—120 volts, a.c. or d.c.
 POWER CONSUMPTION.....30 watts
 AERIAL.....High-impedance loop; provision
 also for external aerial
 INTERMEDIATE FREQUENCY.....455 kc.
 PHILCO TUBES (5).....7A8, 14A7, 14B6, 50A5, 35Y4
 TP-6096A

STATION-SELECTOR ADJUSTMENTS

1. Turn on the power, and set the volume for normal volume level.
2. Couple the signal generator loosely as outlined in Note 1.
3. Allow the radio to warm up for 15 minutes.
4. Starting with the lowest frequency desired, set the signal generator, and depress the drum tuner as indicated in the chart. Adjust the associated oscillator tuning core and aerial trimmer for maximum output.

5. Detune the signal generator, and make a final adjustment of the tuning core and aerial trimmer while listening to the station for which the adjustment is being made.

6. Repeat steps 4 and 5 for each remaining station setting.

Note 1: Make up a 6-to-8 turn, 6-inch-diameter loop, using insulated wire; connect to generator leads and place near radio loop.

Note 2: For a more critical adjustment, a-v-c voltage may be used as a resonance indicator by connecting a 20,000-ohms-per-volt voltmeter from pin 6 of the 14B6 to test point B. Adjust for maximum.

STATION SETTING	FREQUENCY RANGE	OSCILLATOR TUNING CORE	AERIAL TRIMMER
1	540—900 kc.	TC400	C400A
2	600—1100 kc.	TC401	C400B
3	650—1200 kc.	TC402	C400C
4	850—1400 kc.	TC403	C400D
5	900—1600 kc.	TC404	C400E
6	900—1600 kc.	TC405	C400F

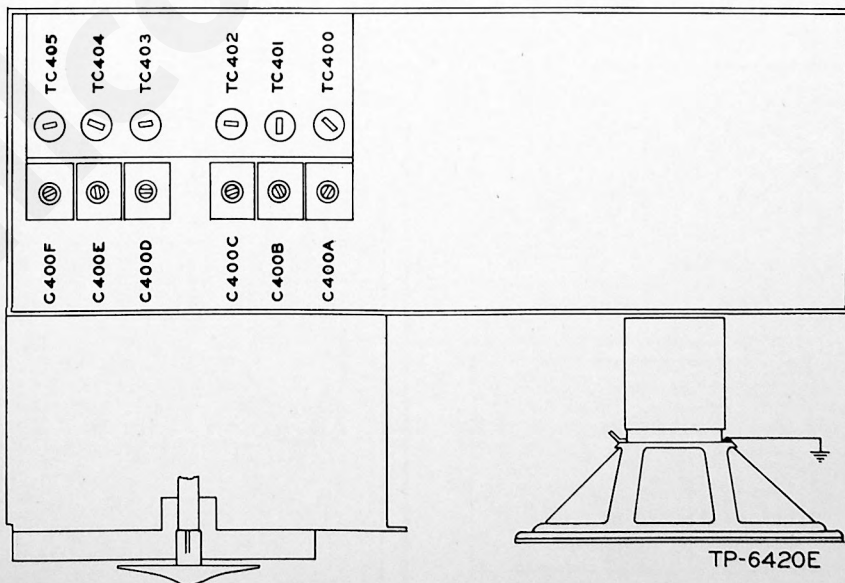
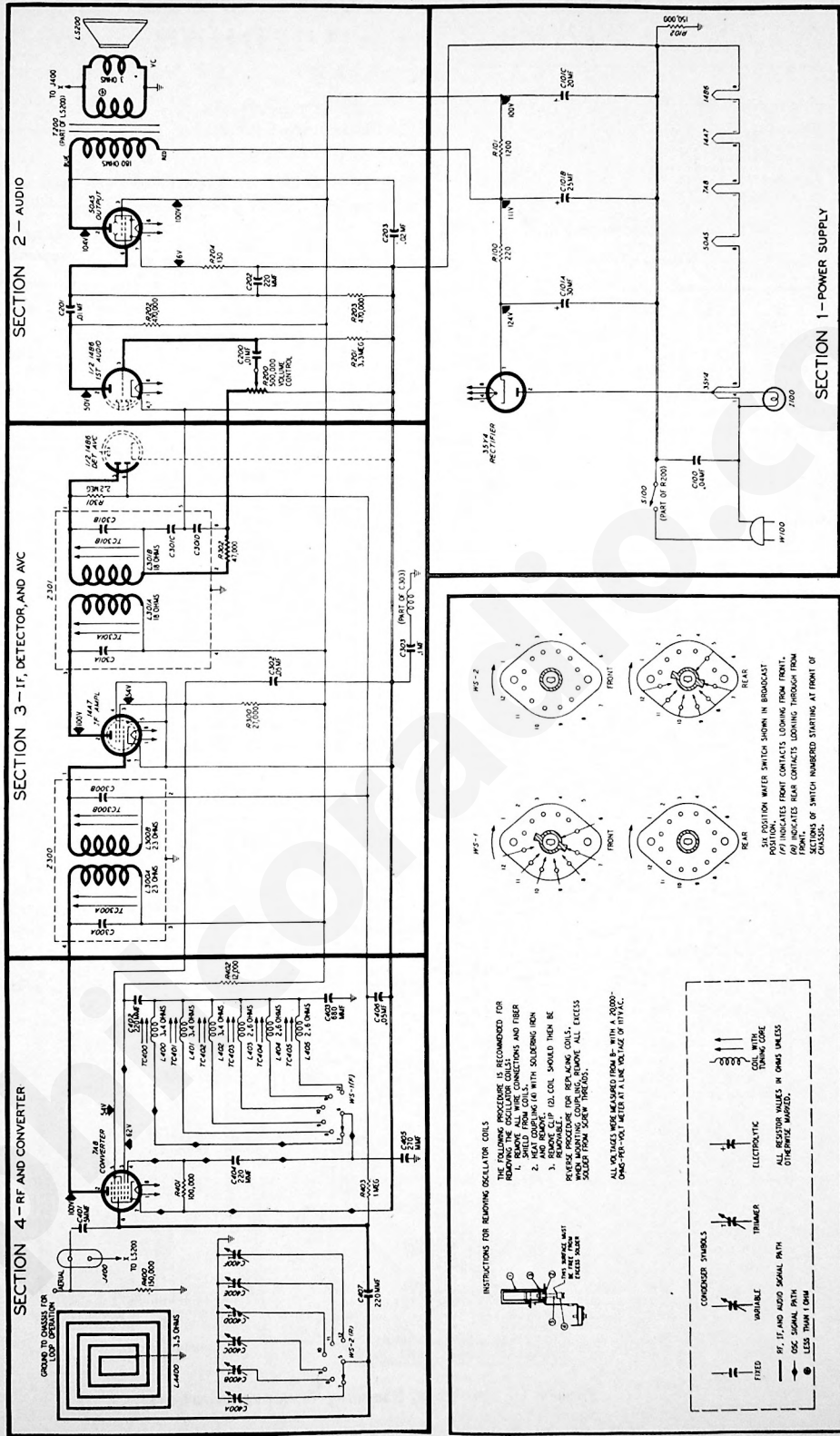


Figure 1. Bottom View, Showing Locations of Station-Selector Adjustments



INSTRUCTIONS FOR REMOVING OSCILLATE COILS

1. REMOVE ALL WIRE CONNECTIONS AND TIEPS INDICATING THE OSCILLATE COILS.
2. HEAT COILS (EITHER WITH SOLDERING IRON OR WITH AN IRON WIRE).
3. REMOVE CLIP (IF COIL SHOULD THEN BE REMOVED).
4. REMOVE COILS FROM BOARD.
5. REMOVE COILS FROM BOARD.
6. REMOVE COILS FROM BOARD.

ALL VOLTAGE WIRE MEASURED FROM E- WITH A 2000- OHM PER VOLT METER AT A LINE VOLTAGE OF 115VAC.

CONDENSER SYMBOLS

- FIXED
- VARIABLE
- 15, 15, AND ALSO SIGNAL PATH WITH LESS THAN 1.0M
- ELECTROLYTIC
- TRIMMER
- COIL WITH 100 OHM WIRE
- ALL RESISTOR VALUES IN OHMS UNLESS OTHERWISE INDICATED.

MS-1, MS-2

MS-1 FRONT REAR
MS-2 FRONT REAR

SEE SECTION SWITCH SHOWN IN BROADCAST POSITION. (F) INDICATES FRONT CONTACTS LOOKING FROM FRONT. (R) INDICATES REAR CONTACTS LOOKING THROUGH FROM FRONT.

SECTIONS OF SWITCH NUMBERED STARTING AT FRONT OF CHASSIS.

Figure 2. Philco Radio Model 49-901, Sectionalized Schematic Diagram.

ALIGNMENT PROCEDURE

I-F CIRCUITS

SIGNAL GENERATOR—Use AM r-f signal generator, with modulated output. Connect generator and set frequency as indicated in chart.

OUTPUT LEVEL—During alignment, signal-generator output must be attenuated to hold output-meter reading below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B-; output lead through .1-mf. condenser to pin 6 of 7A8 converter.	455 ke.	540 ke.	Adjust trimmers, in order given, for maximum output.	TC301B—2nd i-f sec. TC301A—2nd i-f pri. TC300B—1st i-f sec. TC300A—1st i-f pri.

RADIO CONTROLS—Set volume to maximum.

OUTPUT METER—Connect between left-hand terminal (viewed from rear) of J400 and chassis.

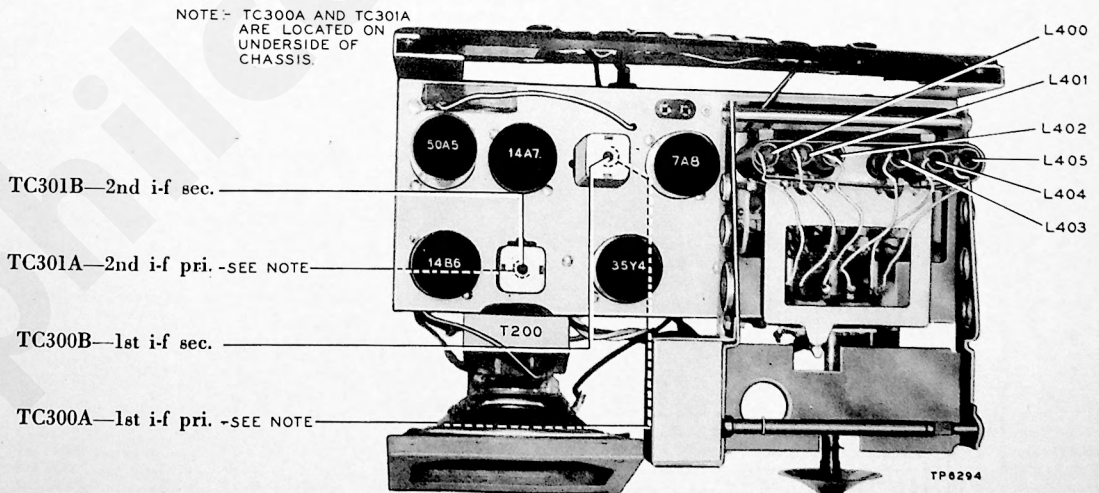


Figure 3. Top View, Showing Trimmer Locations

SYMBOLIZATION

The components in the radio circuit are symbolized according to the types of parts and the sections of the radio in which the parts are located. The prefix letter of the symbol designates the type of part, as follows:

- | | |
|-----------------|-----------------------|
| C—condenser | R—resistor |
| I—pilot lamp | S—switch |
| L—choke or coil | T—transformer |
| LA—loop aerial | W—line cord |
| LS—loud-speaker | WS—wafer switch |
| | Z—electrical assembly |

The number of the symbol designates the section in which the part is located, as follows:

- 100-series components are in Section 1—the power supply
- 200-series components are in Section 2—the audio circuits
- 300-series components are in Section 3—the i-f, detector, and a-v-c circuits
- 400-series components are in Section 4—the r-f and converter circuits

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) indicate general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and replacement parts list. The values substituted in any case are so chosen that the operation of the radio will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

SECTION 1—POWER SUPPLY

Reference Symbol	Description	Service Part No.
C100	Condenser, line filter, .04 mf.	45-3500-2*
C101	Condenser, electrolytic, 3-section.	30-2570-14*
C101A:	Condenser, filter, 30 mf.	Part of C101
C101B:	Condenser, filter, 25 mf.	Part of C101
C101C:	Condenser, filter, 20 mf.	Part of C101
I100	Lamp, pilot.	34-2068*
R100	Resistor, filter, 220 ohms.	66-1224340*
R101	Resistor, filter, 1200 ohms.	66-2123340*
R102	Resistor, leakage, 150,000 ohms.	66-4153340*
S100	Switch, on-off.	Part of R200
W100	Line cord and plug.	L2183*

SECTION 2—AUDIO CIRCUITS

C200	Condenser, blocking, .01 mf.	61-0120*
C201	Condenser, blocking, .01 mf.	61-0120*
C202	Condenser, by-pass, 220 mmf.	66-122001001*
C203	Condenser, tone compensation, .02 mf.	61-0108*
LS200	Speaker.	36-1627
R200	Volume control (with on-off switch), 500,000 ohms.	33-5556-6*
R201	Resistor, grid return, 3.3 megohms.	66-5333340*
R202	Resistor, plate load, 470,000 ohms.	66-4473340*
R203	Resistor, grid leak, 470,000 ohms.	66-4473340*
R204	Resistor, bias, 130 ohms.	66-1123340*
T200	Output transformer.	Part of LS200

SECTION 3—I-F, DETECTOR, AND A-V-C CIRCUITS

C300A	Condenser, fixed, 1st i-f primary.	Part of Z300
C300B	Condenser, fixed, 1st i-f secondary.	Part of Z300
C301A	Condenser, fixed, 2nd i-f primary.	Part of Z301
C301B	Condenser, fixed, 2nd i-f secondary.	Part of Z301
C301C	Condenser, i-f filter.	Part of Z301
C301D	Condenser, i-f filter.	Part of Z301
C302	Condenser, screen by-pass, .05 mf.	61-0122*
C303	Condenser (inductively wound), i-f by-pass, .1 mf.	30-4644-1†
R300	Resistor, screen dropping, 27,000 ohms.	66-3273340*
R301	Resistor, a-v-c filter, 2.2 megohms.	66-5223340*
R302	Resistor, diode load, 47,000 ohms.	66-3473340*
TC300A	Core, tuning, 1st i-f primary.	Part of Z300
TC300B	Core, tuning, 1st i-f secondary.	Part of Z300
TC301A	Core, tuning, 2nd i-f primary.	Part of Z301
TC301B	Core, tuning, 2nd i-f secondary.	Part of Z301
Z300	Transformer, 1st i-f.	32-4160-6
Z301	Transformer, 2nd i-f.	32-4240

† * #30-4644-1 special inductive wound capacitor should be replaced by a .1 mfd. capacitor part #45-3500-3 to conform with latest production run.

SECTION 4—R-F AND CONVERTER CIRCUITS

Reference Symbol	Description	Service Part No.
C400	Condenser assembly, trimmer, 6-section.	31-6510
C400A:	Condenser, trimmer, aerial.	Part of C400
C400B:	Condenser, trimmer, aerial.	Part of C400
C400C:	Condenser, trimmer, aerial.	Part of C400
C400D:	Condenser, trimmer, aerial.	Part of C400
C400E:	Condenser, trimmer, aerial.	Part of C400
C400F:	Condenser, trimmer, aerial.	Part of C400
C401	Condenser, blocking, 5 mmf.	30-1224-5*
C402	Condenser, d-c blocking, 220 mmf.	62-122001001*
C403	Condenser, r-f by-pass, 680 mmf.	60-10685401*
C404	Condenser, isolating, 220 mmf.	62-122001001*
C405	Condenser, r-f by-pass, 270 mmf.	30-1224-14*
C406	Condenser, a-v-c filter, .05 mf.	61-0122*
C407	Condenser, blocking, 220 mmf.	62-122001001*
J400	Accessory jack.	38-9161-7
LA400	Loop aerial	
	49-901 (ivory)	32-4315
	49-901 (green)	32-4315
	Tuning coils and trimmer-condenser assembly.	76-4082
C400	Aerial trimmer assembly, 6-section.	31-6510
L400, L401, or L402	Coil, osc.	32-4059-5*
L403, L404, or L405	Coil, osc.	32-4059-4*
TC400 through TC405	Tuning core, osc.	56-6100*
R400	Resistor, aerial loading, 150,000 ohms.	66-4153340*
R401	Resistor, bias, 100,000 ohms.	66-4103340*
R402	Resistor, osc. plate load, 12,000 ohms.	66-3123340*
R403	Resistor, grid return, 1 megohm.	66-5103340*
WS-1(F)	Switch-wafer section.	Part of 76-4057†
WS-2(R)	Switch-wafer section.	Part of 76-4057†

MISCELLANEOUS

Description	Service Part No.
Cabinet	
49-901 (ivory)	10719
49-901 (green)	10719A
Baffle and cloth	40-7560
Baffle, speaker	54-4636
Top (ivory)	54-4691
Top (green)	54-4691-1
Base (ivory)	54-4692
Base (green)	54-4692-1
Light shield	56-6307
Jewel, telltale	54-4304-1
Wheel assembly	76-4485
Roller-tuning assembly	76-4001
Roller-switch assembly	76-4057†
Bracket, mounting, base to top of cabinet.	56-6392FA3
Board-and-clamp assembly	76-4079
Tuning-assembly hardware (76-4082)	
Sleeve, adjusting (6)	55-1377
Bushing (12)	54-4610
Ring (6)	57-1684FA3
Link, adjusting (6)	56-4034
Mounting strip, trimmer	56-2250
Coupling (6)	56-5975
Pilot-lamp assembly	76-1179-7
Socket, Loktal (5)	27-6138*
† 76-4057 Roller switch assembly.	