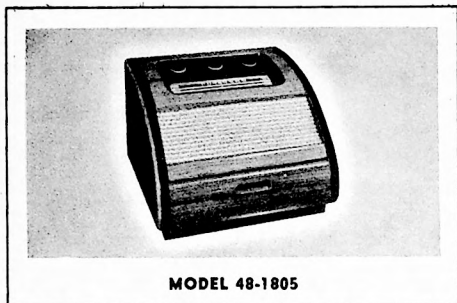


# PHILCO-TROPIC RADIO-PHONOGRAPH MODEL 48-1805



MODEL 48-1805

## SPECIFICATIONS

CABINET	Wood, Philcote finish
CIRCUIT	4-tube (plus dry-disc rectifier) superheterodyne
FREQUENCY RANGES	
Broadcast	540-1600 kc.
Short wave	4.75-19 mc.
AUDIO OUTPUT	1.6 watts
OPERATING VOLTAGE	105-125 volts, 50-60 cycles, a.c. only
POWER CONSUMPTION	
Radio	25 watts
Phonograph	45 watts
AERIAL	Philco Outdoor Aerial, Part No. 45-1494
INTERMEDIATE FREQUENCY	455 kc.
PHONOGRAPH	Philco Automatic Record Player, Model M-7 (for service information, see manual PR-1522)
PHILCO TUBES (4)	144T, 144A7, 144B, 50A5; also 100-ma. dry-disc rectifier, Philco Part No. 34-8003-1

TP-3698

## CALIBRATING DIAL BACKPLATE

When the radio chassis has been removed from the cabinet, dial calibration and alignment points should be marked on the backplate, below the pointer. First, make a mark  $1\frac{15}{16}$ " from the reference point, indicated in figure 1 by the line at the left-hand edge of the back-

plate; this mark locates the index point. Second, place the left-hand edge of the ruler at the index point, and make pencil marks on the backplate for the alignment points indicated.



Figure 1. Dial-Backplate Calibration Measurements

TP-4292

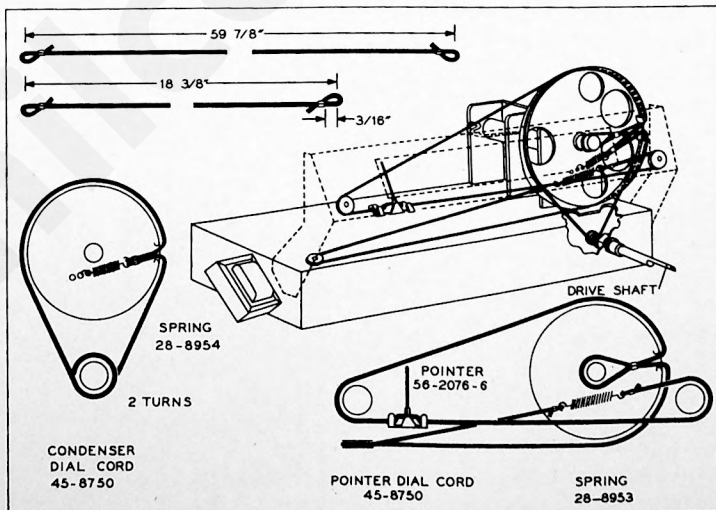
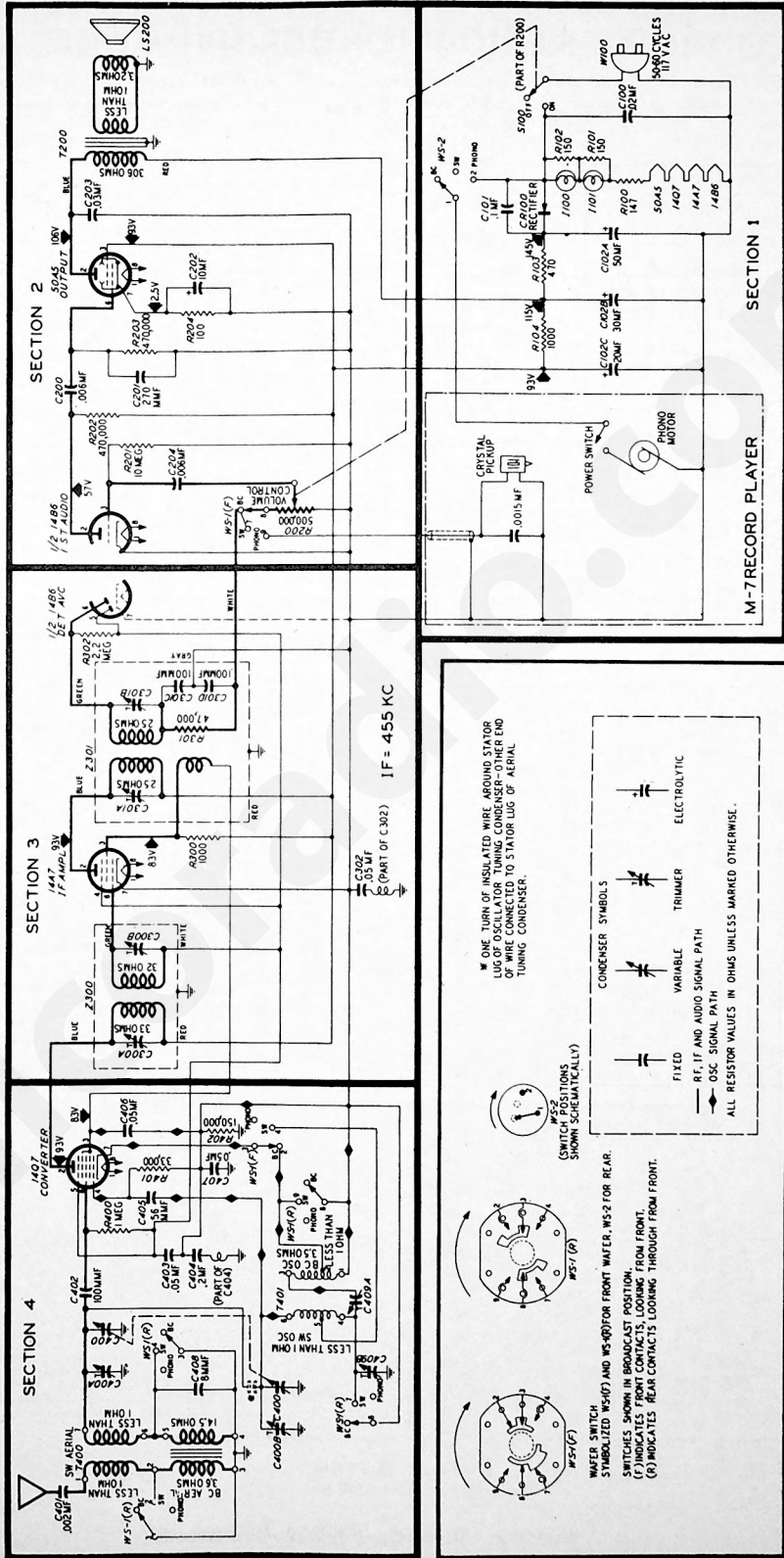


Figure 2. Drive-Cord Installation Details

TP-4070

**MODEL 48-1805**



TP-4091

**Figure 3. Philco-Tropic Radio-Phonograph Model 48-1805, Sectionalized Schematic Diagram.**

# ALIGNMENT PROCEDURE

**DIAL POINTER:** With tuning-condenser plates fully meshed, adjust pointer to coincide with index mark at low-frequency end of scale. See "CALIBRATING DIAL BACKPLATE."

**SIGNAL GENERATOR:** Connect ground lead to radio chassis, and output lead as indicated in chart. Use modulated output.

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTIONS TO RADIO	DIAL	BAND SWITCH	DIAL	SPECIAL INSTRUCTIONS	
1	Through .05-mf. condenser to stator of aerial tuning condenser (rear section).	455 kc.	B'DC'ST	Gang fully meshed.	Adjust trimmers, in order given, for maximum output.	C301B C301A C300B C300A
2	Through 400-ohm resistor to aerial lead.	17 mc.	SW	17 mc.	Adjust for maximum. Image should be heard with radio tuned to 16.1 mc.	C400B
3	Same as step 2.	17 mc.	SW	Tune to signal.	Adjust for maximum while rocking tuning control.	C400A
4					Preset C409A to 1/2 turn from tight position.	C409A
5	Through 200-mmf. condenser to aerial lead.	1500 kc.	B'DC'ST	1500 kc.	Adjust for maximum.	C409B
6	Same as step 5.	580 kc.	B'DC'ST	580 kc.	Adjust for maximum while rocking tuning control.	C409A
7	Repeat steps 5, 6, and 5 until no further increase is obtained.					

**OUTPUT METER:** Connect to left-hand (output) lug and center (chassis) lug of terminal panel, shown in figure 4.

**RADIO VOLUME CONTROL:** Set to maximum.  
**OUTPUT LEVEL:** During alignment, input signal must be attenuated to hold output-meter reading below 1.5 volts.

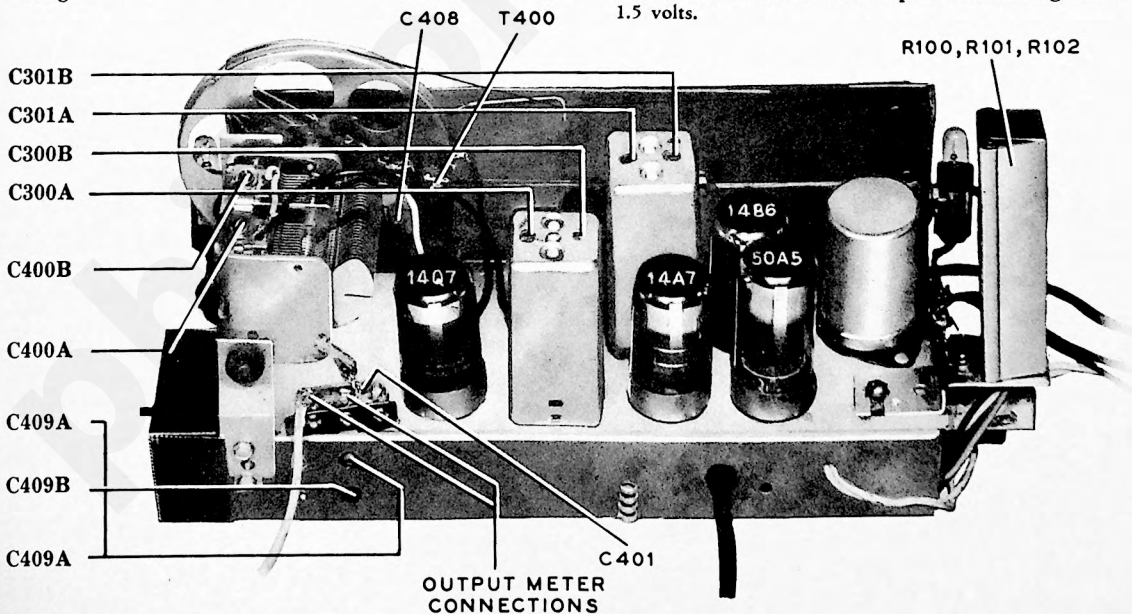


Figure 4. Top View, Showing Trimmer Locations

TP-4220

**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            |
| CR—dry-disc rectifier | S—switch              |
| I—pilot lamp          | T—transformer         |
| L—choke or coil       | WS—wafer switch       |
| LS—loud-speaker       | Z—electrical assembly |

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

**NOTE:** The wafer switch is not given a section-designating number since, in some radios, it performs functions in several sections.

- 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 amplifier, detector, and a-v-c circuits.
- 400-series components are in Section 4—the aerial and oscillator circuits.

A suffix letter identifies the part as a component of the assembly which bears an identical number without a suffix letter, and with perhaps a different prefix letter.

**REPLACEMENT PARTS LIST**

**NOTE:** Part numbers marked with an asterisk (\*) are 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 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**

Reference Symbol	Description	Service Part No.
C100	Condenser, line filter, .02 mf.	61-0108*
C101	Condenser, filter, .1 mf.	30-1226-12
C102	Condenser, electrolytic, 4-section	30-2568-18
C102A	Condenser, filter, 50 mf., 150v	Part of C102
C102B	Condenser, filter, 30 mf., 150v	Part of C102
C102C	Condenser, filter, 20 mf., 150v	Part of C102
C202	Condenser (see Section 2)	Part of C102
CR100	Rectifier, dry-disc (selenium)	34-8003-1
I100	Lamp, pilot	34-2068
I101	Lamp, pilot	34-2068
R100	Resistor, filament dropping, 147 ohms, 3.5w	33-3436-3
R101	Resistor, lamp shunt, 150 ohms	66-1153340*
R102	Resistor, lamp shunt, 150 ohms	66-1153340*
R103	Resistor, filter, 470 ohms	66-1473340*
R104	Resistor, filter, 1000 ohms	66-2104340
S100	Switch, a-c power	Part of R200
W100	Line cord and plug	L3199

**SECTION 2**

C200	Condenser, d-c blocking, .006 mf.	30-1226-2
C201	Condenser, by-pass, 270 mmf.	
C202	Condenser, cathode by-pass, 10 mf., 25v	Part of 30-2568-18
C203	Condenser, tone compensation, .03 mf.	45-3500-1*
C204	Condenser, d-c blocking, .006 mf.	30-1226-2
LS200	Speaker	36-1617-2
R200	Volume control (with a-c power switch), 500,000 ohms	33-5538-18
R201	Resistor, grid return, 10 megohms	66-6103340*
R202	Resistor, plate load, 470,000 ohms	66-4473340*
R203	Resistor, grid return, 470,000 ohms	66-4473340*
R204	Resistor, cathode bias,	
T200	Transformer, output	32-8310-2
WS-1(F)	Wafer switch, front section	Part of 42-1823
WS-1(R)	Wafer switch, rear section	Part of 42-1823
WS-2	Wafer switch section, phono power	Part of 42-1823

**SECTION 3**

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Condenser, trimmer	Part of Z301
C302	Condenser-and-choke assembly, by-pass, .05 mf.	76-2362
R300	Resistor, screen dropping, 1000 ohms	66-2103340
R301	Resistor, r-f filter, 47,000 ohms (Part of Z301)	66-3473340*

**Reference Symbol**

R302	Resistor, a-v-c filter, 2.2 megohms	66-5223340*
Z300	Transformer, 1st i-f	32-3976
Z301	Transformer, 2nd i-f	32-3948-10

**SECTION 4**

C400	Condenser, tuning gang	31-2722-2
C400A	Condenser, trimmer	Part of C400
C400B	Condenser, trimmer	Part of C400
C401	Condenser, blocking, .002 mf.	61-0062*
C402	Condenser, d-c blocking, 100 mmf.	
C403	Condenser, a-v-c filter, .05 mf.	30-1226
C404	Condenser-and-choke assembly, by-pass, 2 mf.	30-4644
C405	Condenser, d-c blocking, 56 mmf.	
C406	Condenser, screen by-pass, .05 mf.	61-0122*
C407	Condenser, r-f by-pass, .05 mf.	30-1226
C408	Condenser, loading, 8 mmf.	30-1224-13
C409	Condenser, padder assembly, 2-section	31-6476-5
C409A	Condenser, series padder, bc. osc.	Part of C409
C409B	Condenser, shunt trimmer, bc. osc.	Part of C409
R400	Resistor, grid return, 1 megohm	66-5103340*
R401	Resistor, grid return, 33,000 ohms	66-3333340*
R402	Resistor, leakage, 150,000 ohms	66-4153340*
T400	Transformer, bc. and s-w aerial	32-4191
T401	Transformer, bc. and s-w osc.	32-4192-1
WS-1(F)	Wafer-switch section	Part of 42-1823
WS-1(R)	Wafer-switch section	Part of 42-1823

**MISCELLANEOUS**

Description	Service Part No.
Backplate assembly (scale)	76-1940-1
Bolt, speaker mtg.	W2123
Cabinet	10664D
Baffle and cloth	40-6827
Baffle, wood	219-055
Cover, bottom	54-7243
Foot, rubber	54-4377
Fastener, snap	28-4279FA1
Scale, dial	27-5974
Screw, scale mtg.	1W2228FA9
Strap, scale mtg.	56-2261
Cord, drive (25-ft. spool), pointer or tuning-condenser	45-8750
Knob	54-4255
Plug, adapter (a.c.)	13275
Pointer	56-2076-6
Shaft assembly, drive	31-2718-2
Socket assembly, pilot lamp	27-6233-2
Socket, loktal	
Spring, drive	28-8954
Spring, pointer drive	28-8953

## REVISIONS TO 48-1805 SERVICE MANUAL

Reference Symbol	Description	Service Part No.
<b>Parts List Corrections</b>		
C201	Condenser, by-pass, 270 mmf.	60-10275407
R204	Resistor, cathode bias, 100 ohms	66-1103340
C402	Condenser, d-c blocking, 100 mmf.	60-10105407
C405	Condenser, d-c blocking, 56 mmf.	60-00515307
	Socket, Loktal	27-6138

### PRODUCTION CHANGES

#### Runs 1 and 2

Run 2 chassis were so marked through a stamping error. These chassis are identical to Run 1 in every respect.

#### Run 3

To reduce regeneration in the broadcast band, the following changes were made:

A 15,000-ohm resistor, R403, Part No. 66-3158340\*, was wired across the primary of the BC aerial transformer, T400, from lug 2 to lug 3.

A 100-mmf. condenser, C205, Part No. 60-10105407\*, was added, from the grid (pin 3) of the 14B6 tube to B-.

#### Run 4

The 5" round speaker was changed to a 4" x 6" oval p-m speaker, Part No. 36-1615-2.

### MOUNTING 220-VOLT STEP-DOWN TRANSFORMER

The step-down transformer, Part No. 32-8284, should be mounted in the position shown in the drawing below.

### CRITICAL LEAD DRESS

- To reduce hum pickup: The a-c power lead to S100 should be dressed away from the 14B6 socket. The white a-c lead from S100 to WS-2 should be dressed upward from the chassis, and toward the rear, and should be kept away from C204, the 14B6 socket, and the green diode lead.
- To obtain proper neutralization: C405 should be dressed away from C402. The orange lead from the oscillator section of C400 should be dressed upward from the chassis and away from C402. The green lead from the aerial section of C400 to T400 should be dressed away from the oscillator section of C400.
- To obtain proper tracking, near-by components and wiring should be dressed away from the oscillator coil, T401.

TP0-399

