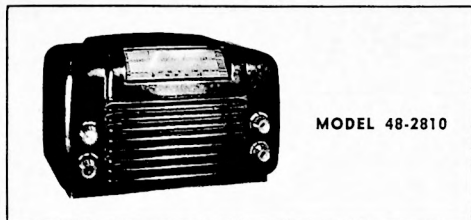


PHILCO-TROPIC RADIO MODEL 48-2810



MODEL 48-2810

SPECIFICATIONS

CABINET	Bakelite
CIRCUIT	5-tube superheterodyne (provision for external record player)

TUNING RANGES

Standard Broadcast	590—200 meters (510—1500 kc.)
Short Wave	51.8—16.6 meters (5.8—18.0 mc.)
Long Wave	2140—750 meters (140—400 kc.)

AUDIO OUTPUT

1.3 watts at 117v input; 2.2 watts at 234v input.

OPERATING VOLTAGES

105—125 or 210—250 volts, a.c. or d.c.

POWER CONSUMPTION

25 watts at 117v input; 55 watts at 234v input.

AERIAL

Philco Outdoor Aerial, Part No. 45-1494

INTERMEDIATE FREQUENCY

455 kc.

PHILCO TUBES (5)

14S7, 7B7, 14B6, 50A5, 35Y4

TP-3681B

CALIBRATING DIAL BACKPLATE

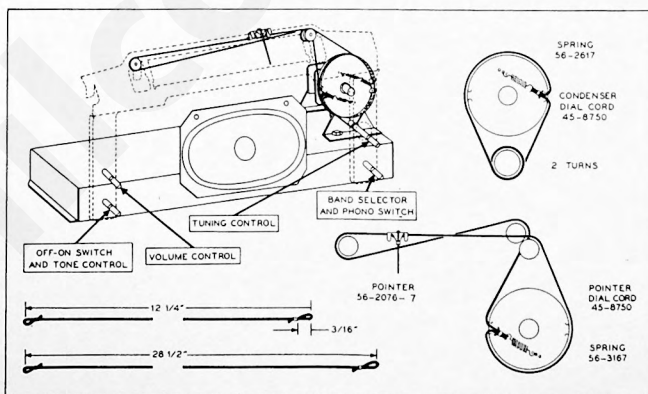
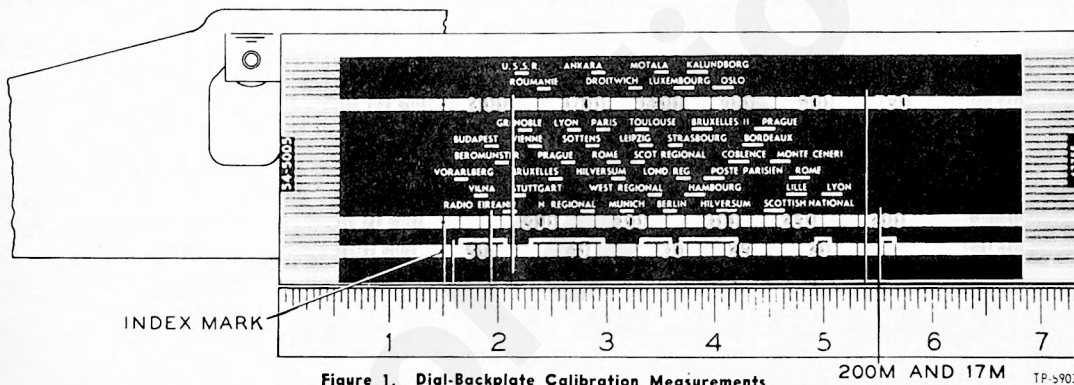
When the radio chassis has been removed from the cabinet, dial calibration and alignment points may be marked on the dial backplate below the pointer.

The method of measuring for these points is illustrated in figure 1. Hold a ruler against the scale backplate, with the start of the ruler at the reference point shown, and mark pencil dots at the proper points for the required frequency settings. When the ruler is correctly placed, the index mark is approxi-

mately $1\frac{1}{2}$ " from the reference point.

With the tuning gang fully meshed, the pointer should be adjusted on the dial drive cord to coincide with the index mark.

After the chassis is installed in the cabinet, the dial pointer should be readjusted to coincide with the index mark on the dial. Coincidence of the pointer and index mark should occur with the tuning condenser fully meshed.



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	LS—loud speaker	T—transformer
L—pilot lamp	R—resistor	WS—water switch
L—choke or coil	S—switch	Z—electrical assembly

The number of the symbol designates the section in which the part is located, as follows:
 105-series components are in Section 1 — the power supply
 200-series components are in Section 2 — the audio circuit
 300-series components are in Section 3 — the I-F amplifier, detector, and a v.c. circuit
 400-series components are in Section 4 — the r-f and converter circuits

MODEL 48-2810

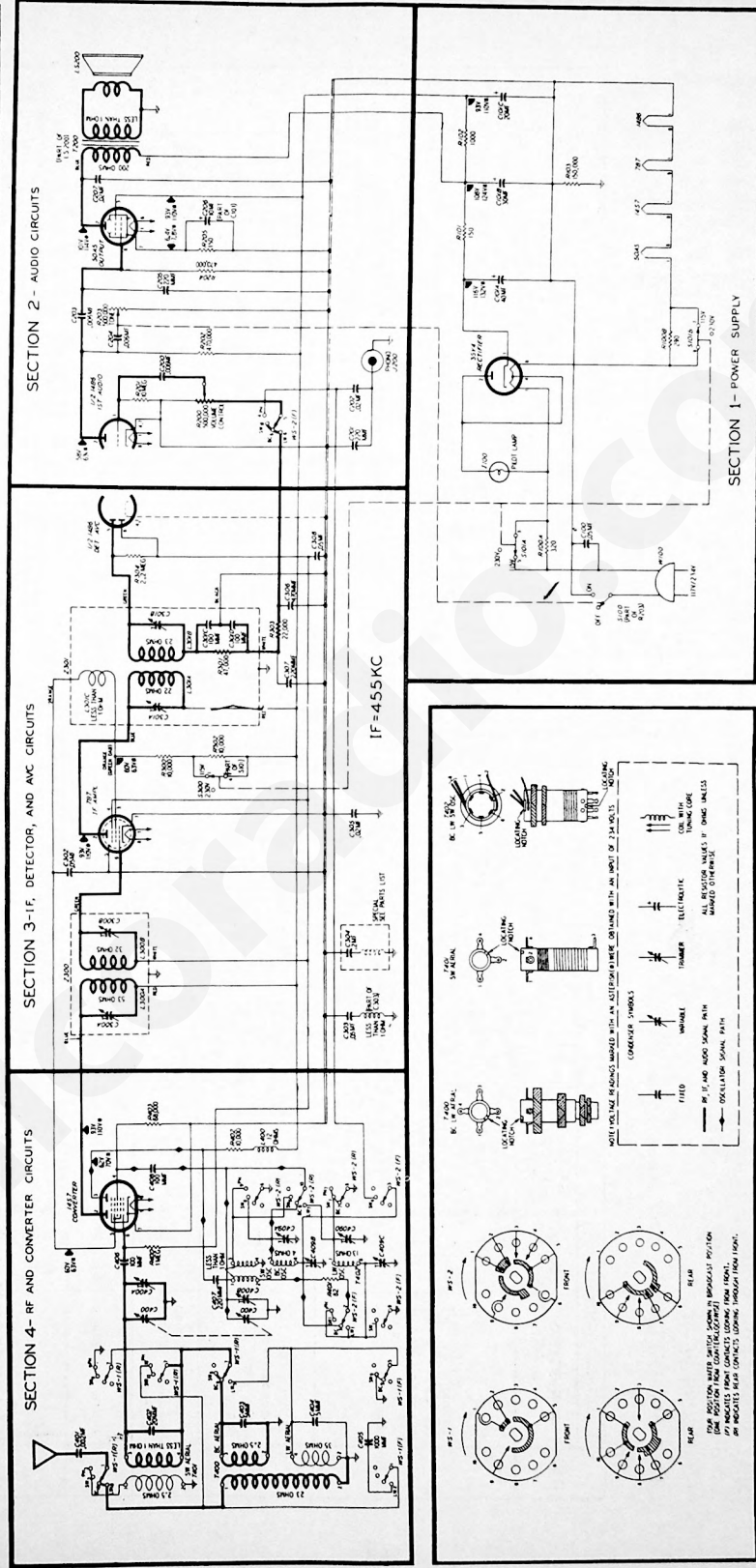


Figure 3. Philco-Tropic Radio Model 48-2810, Sectionalized Schematic Diagram.

1P-5379

ALIGNMENT PROCEDURE

CAUTION: Before connecting the radio to the power source, make certain that the voltage change-over switch is correctly set for the line voltage.

DIAL POINTER: With tuning-condenser gang fully closed, adjust dial pointer to coincide with index mark at low-frequency end of dial (see figure 1).

OUTPUT METER: Connect across voice-coil terminals.

SIGNAL GENERATOR: Connect grounded lead to B-, and output lead as indicated in chart. Use modulated output.

RADIO CONTROLS: Set volume control to maximum, and tone control nearly to "off" position. Set band switch and tuning control as indicated in chart.

OUTPUT LEVEL: During alignment, adjust generator output to hold output-meter indication below 1.5 volts.

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTION TO RADIO	DIAL SETTING	BAND SWITCH SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .1 mf. condenser to top of aerial section of tuning gang (see figure 4).	455 kc.	BC	590 M	Adjust, in order given, for maximum output.	C301B— 2nd i.f. sec. C301A— 2nd i.f. pri. C300B— 1st i.f. sec. C300A— 1st i.f. pri.
2	Through 400-ohm non-inductive resistor to aerial lead.	17.6 mc.	SW	17 M	Adjust for maximum.	C400B— SW osc. C400A— SW aerial
3	Through 200-mmf. condenser to aerial lead.	1500 kc.	BC	200 M	Adjust for maximum while rocking tuning control.	C409A— BC osc. (shunt)
4	Same as step 3.	545.4 kc.	BC	550 M	Adjust for maximum while rocking tuning control.	C409B— BC osc. (series)
5	Same as step 3.	375 kc.	LW	800 M	Adjust for maximum while rocking tuning control.	C408C— LW osc. (shunt)
6	Same as step 3.	150 kc.	LW	2000 M	Adjust for maximum while rocking tuning control.	C409D— LW osc. (series)
7	Repeat steps 3 and 4, then 5 and 6, until no further improvement is obtained.					

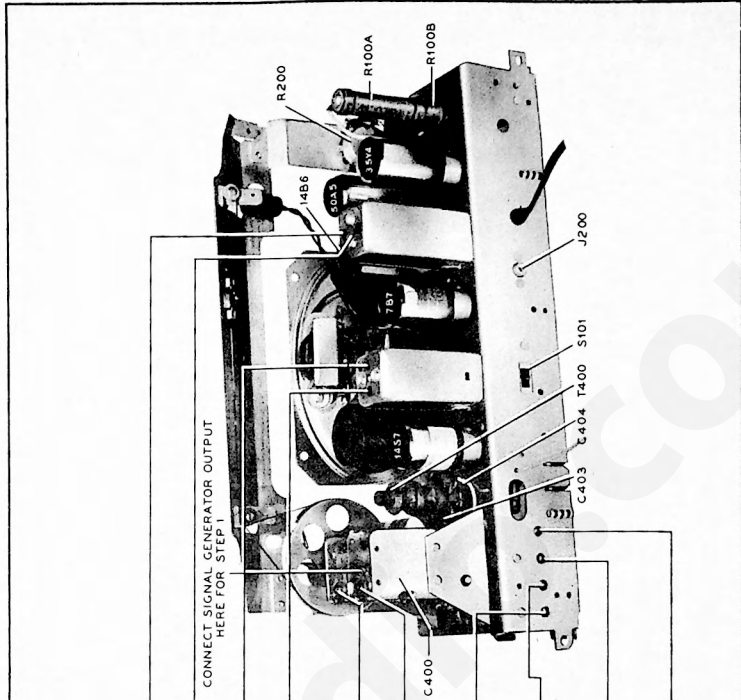


Figure 4. Top View, Showing Trimmer Locations

MODEL 48-2810

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts; 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 POWER SUPPLY

Reference Symbol	Description	Service Part. No.
C100	Condenser, line by-pass, .05 mf.
C101	Condenser, electrolytic, 3-section	Part of 30-2568-12†
C101A	Condenser, filter, 40 mf., 200v	Part of C101
C101B	Condenser, filter, 30 mf., 200v	Part of C101
C101C	Condenser, filter, 20 mf., 200v	Part of C101
I100	Pilot lamp	34-2088
R100	Resistor, 2-section	33-3440-1
R100A	Resistor, drooping, 320 ohms, 20w	Part of R100
R100B	Resistor, drooping, 290 ohms, 7w	Part of R100
R101	Resistor, filter, 150 ohms	66-1154340*
R102	Resistor, filter, 1000 ohms	66-2103340*
R103	Resistor, leakage, 150,000 ohms	66-4153340*
S100	Switch, power on-off	Part of 33-5538-32‡
S101	Switch, voltage change-over	Part of 42-1553-3§
W100	Line cord and plug	L-2183*

SECTION 2 AUDIO CIRCUITS

C200	Condenser, d-c blocking, .006 mf.
C201	Condenser, by-pass, 220 mmf.	62-122001001*
C202	Condenser, d-c blocking, .02 mf.	61-0108*
C203	Condenser, d-c blocking, .006 mf.
C204	Condenser, tone compensation, .006 mf.
C205	Condenser, r-f by-pass, 220 mmf.	62-122001001*
C206	Condenser, cathode by-pass, 10 mf.	Part of 30-2568-12†
C207	Condenser, tone compensation, .02 mf.	61-0108*
J200	Socket, phono	27-6186*
LS200	Speaker (includes T200)	36-1615-8
R200	Volume control, 500,000 ohms	33-5539-21
R201	Resistor, grid return, 10 megohms	66-6103340*
R202	Resistor, plate load, 470,000 ohms	66-4473340*
R203	Tone control, 500,000 ohms	Part of 33-5538-32‡
R204	Resistor, grid return, 470,000 ohms	66-4473340*
R205	Resistor, cathode bias, 150 ohms	66-1153340*
T200	Transformer, output (part of LS200)	32-8296-5
WS-2(F)	Switch-wafer section	Part of 42-1856-3§

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

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Condenser, trimmer	Part of Z301
C301C	Condenser, i-f filter, 100 mmf. (part of Z301)	60-10105407*
C301D	Condenser, i-f filter, 100 mmf. (part of Z301)	60-10105407*
C302	Condenser, screen by-pass, .05 mf.	61-0170*
C303	Condenser-and-choke assembly, i-f by-pass, .05 mf.	61-0122*
C304	Condenser, special inductive, i-f by-pass, .2 mf.	30-4644
C305	Condenser, r-f by-pass, .02 mf.	61-0108*
C308	Condenser, a-v-c filter, 470 mmf.	62-147001001
C307	Condenser, a-v-c filter, 220 mmf.	62-122001001*
C308	Condenser, a-v-c by-pass, .05 mf.	61-0122*
L300A	Coil, 1st i-f primary	Part of Z300
L300B	Coil, 1st i-f secondary	Part of Z300
L301A	Coil, 2nd i-f primary	Part of Z301
L301B	Coil, 2nd i-f secondary	Part of Z301
L301C	Coil, 2nd i-f tertiary	Part of Z301

†30-2568-12 Condenser, electrolytic, 4-section (includes C101 and C206)

‡33-5538-32 Tone control and on-off switch (R203 and S100)

§42-1553-3 Switch, voltage change-over (includes S101A, S101B, S300)

SECTION 3 (Continued) I-F, DETECTOR, AND A-V-C CIRCUITS

Reference Symbol	Description	Service Part. No.
R300	Resistor, screen drooping, 10,000 ohms	66-3103340*
R301	Resistor, a-v-c filter, 47,000 ohms (part of Z301)	66-3473340*
R302	Resistor, screen drooping, 10,000 ohms	66-3103340*
R303	Resistor, filter, 22,000 ohms	66-3223340*
R304	Resistor, a-v-c filter, 2.2 megohms	66-5223340*
S300	Switch, voltage change-over	Part of 42-1553-3§
Z300	Transformer, 1st i-f	32-3976
Z301	Transformer, 2nd i-f	32-4032

SECTION 4 R-F AND CONVERTER CIRCUITS

C400	Condenser, tuning gang	31-2722-1
C400A	Condenser, trimmer, SW aerial	Part of C400
C400B	Condenser, trimmer, SW osc.	Part of C400
C401	Condenser, blocking, .002 mf.	61-0062*
C402	Condenser, shunt, 20 mmf.	60-00205307*
C403	Condenser, shunt, 5 mmf.	30-1224-5*
C404	Condenser, shunt, 5 mmf.	30-1224-5*
C405	Condenser, series, 1000 mmf.	60-20105401*
C406	Condenser, blocking, 100 mmf.	60-10105407*
C407	Condenser, d-c blocking, 220 mmf.	62-122001001*
C408	Condenser, d-c blocking, 100 mmf.	60-10105407*
C409	Condenser, trimmer, 4-section	31-6414-4
C409A	Condenser, shunt trimmer, BC osc.	Part of C409
C409B	Condenser, series padder, BC osc.	Part of C409
C409C	Condenser, series padder, LW osc.	Part of C409
C409D	Condenser, shunt trimmer, LW osc.	Part of C409
L400	Coil, r-f choke	32-4007
R400	Resistor, grid return, 1 megohm	66-5103340*
R401	Resistor, stabilizing, 82 ohms	66-0823340*
R402	Resistor, plate load, 10,000 ohms	66-3103340*
R403	Resistor, grid return, 68,000 ohms	66-3683340*
T400	Transformer, BC, LW aerial	32-4287
T401	Transformer, SW aerial	32-4286
T402	Transformer, BC, LW, SW oscillator	32-4288
WS	Wafer-switch, 2-section	42-1856§
WS-1	Wafer-switch section	Part of 42-1856-3§
WS-2	Wafer-switch section	Part of 42-1856-3§

MISCELLANEOUS

Description	Service Part No.
Baffle and cloth	40-6929
Cabinet, less scale	10618B
Cabinet, ivory, less scale	10618D
Cabinet back	54-7412
Cord, drive (25-ft. spool)	45-8750*
Dial backplate assembly	76-3892
Dial scale	54-5005
Drive shaft	56-4790
Drive-shaft bushing	27-9437
Knob	54-4376
Knob, ivory	54-4375
Pilot-lamp-socket assembly	27-6233-1
Plug, adapter, a-c line	L-3275*
Pointer	56-2076-7
Scale strap, l. h.	56-2671FA3
Scale strap, r. h.	56-2672FA3
Socket, loktal	27-6139*
Spring, pointer drive	56-3167
Spring, tuning-condenser drive	56-2617

§42-1856 Band (wafer) switch, 2-section

‡33-5538-32 Tone control and on-off switch (R203 and S100)

†30-2568-12 Condenser, electrolytic, 4-section (includes C101 and C206)

REVISIONS TO 48-2810 SERVICE MANUAL

Reference Symbol	Description	Service Part No.
Parts List Corrections		
C100	Condenser, line by-pass, .05 mf.	61-0170*
C200	Condenser, d-c blocking, .006 mf.	45-3500-7*
C203	Condenser, d-c blocking, .006 mf.	45-3500-7*
C204	Condenser, tone compensation, .006 mf.	45-3500-7*

PRODUCTION CHANGES

No production changes were made in this model.