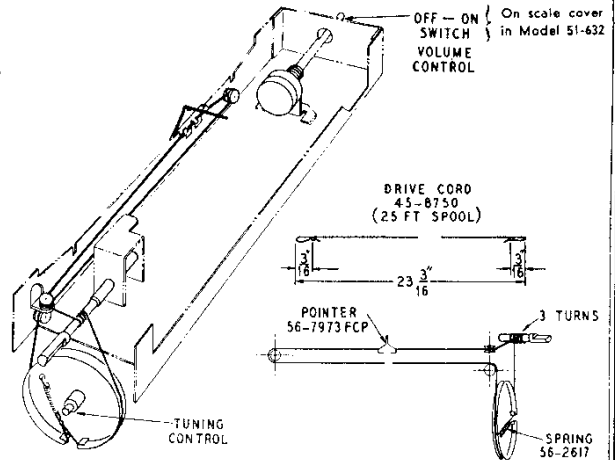


**SPECIFICATIONS**

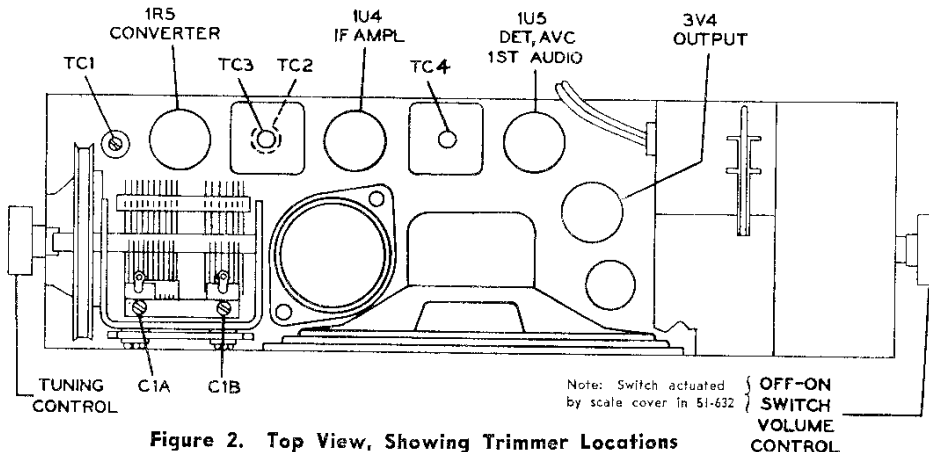
**CABINET** ..... Plastic, portable  
**CIRCUIT** ..... Four-tube superheterodyne plus selenium rectifier  
**FREQUENCY RANGE** ..... 540-1620 kc.  
**AUDIO OUTPUT**  
 A-C Operation ..... 150 mw.  
 Battery Operation ..... 150 mw.  
**OPERATING VOLTAGE** ..... 117 volts, a.c./d.c., or 1.5-volt "A" and 90-volt "B" battery  
**POWER CONSUMPTION**  
 A-C Operation ..... 11 watts  
 Battery Operation ..... 13 ma. from 90-volt "B" 250 ma. from 1.5-volt "A"  
**AERIAL** ..... Built-in high-impedance loop; provision for connecting external aerial.  
**INTERMEDIATE FREQUENCY** 455 kc.  
**PHILCO TUBES (4)** ..... 1R5 converter, 1U4 i.f. ampl., 1U5 det.-a.v.c., 1st audio, 3V4 output  
**BATTERY TYPE** ..... P-364



**Figure 1. Drive-Cord Installation Details**

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .1-μf. condenser to antenna section of tuning condenser.	455 kc.	Tuning gang fully meshed	Adjust in order given, for maximum output.	TC4—2nd i.f. sec. TC3—1st i.f. sec. TC2—1st i.f. pri.
2	Radiating loop. See note below.	1620 kc.	1620 kc.	Adjust for maximum output.	C1B—osc. trimmer C1A—aerial trimmer
3	Same as step 2.	535 kc.	Tuning gang fully meshed	Adjust for maximum output; then repeat steps 2 and 3 until no further increase in output is obtained. This step SHOULD NOT be necessary unless the oscillator transformer has been replaced.	TC1—osc. core

**RADIATING LOOP:** Make up a six-to-eight turn, 6-inch-diameter loop, using insulated wire; connect to signal-generator leads, and place near radio loop aerial.



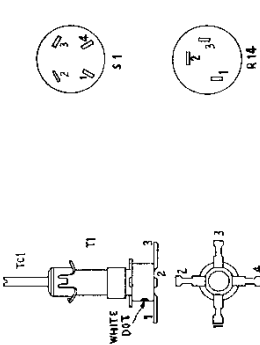
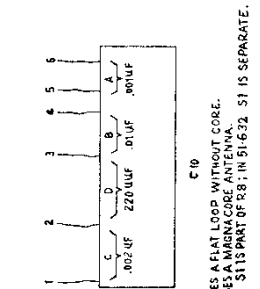
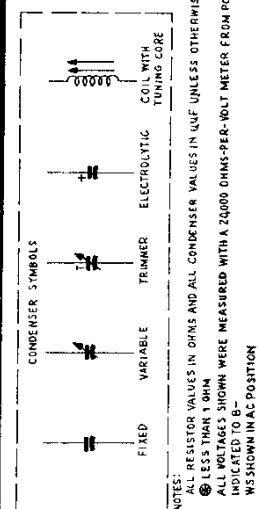
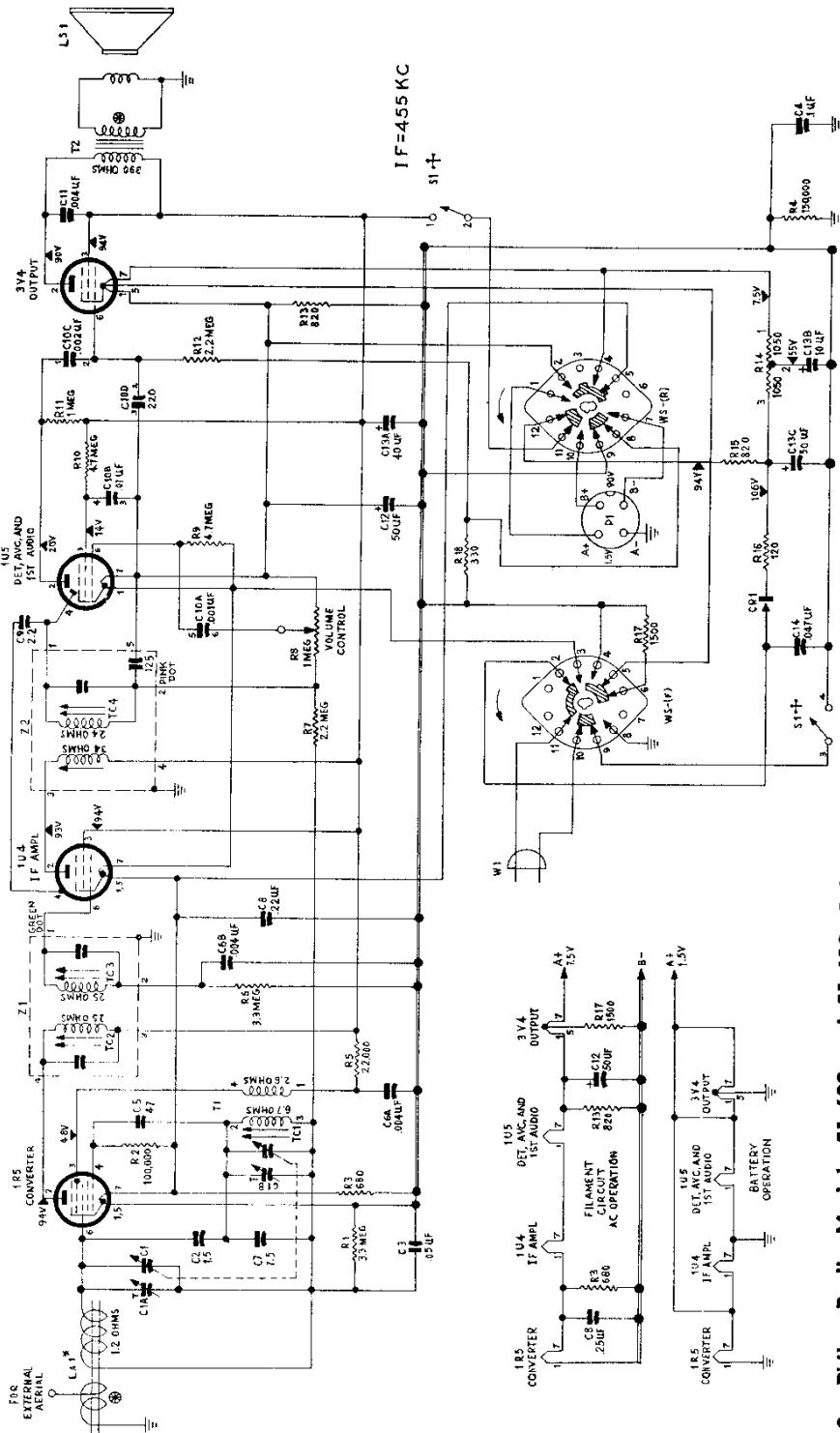
**Figure 2. Top View, Showing Trimmer Locations**  
**ALIGNMENT PROCEDURE**

**DIAL POINTER**—With tuning-condenser plates fully meshed, set pointer to coincide with first index hole above pointer.

**OUTPUT METER**—Connect across speaker voice coil terminals.

**SIGNAL GENERATOR**—Connect signal generator as indicated in chart. Use modulated output.

**RADIO CONTROLS**—Set volume control to maximum. Set tuning control and signal-generator frequency as indicated in chart.



NOTES:

- ALL RESISTOR VALUES IN OHMS AND ALL CONDENSER VALUES IN  $\mu$ F UNLESS OTHERWISE MARKED.
- ⊕ LESS THAN 1 OHM
- ⊙ ALL VOLTAGES SHOWN WERE MEASURED WITH A 20000 OHMS-PER-VOLT METER FROM POINTS INDICATED TO B-
- ⊕ SHOWN IN AC POSITION

\* 51-629 USES A FLAT LOAD WITHOUT CORE.  
 \* 51-632 USES A MURRAY CORE ANTENNA.  
 † IN 51-629 S1 IS PART OF R.8; IN 51-632, S1 IS SEPARATE.

Figure 3. Philco Radio Models 51-629 and 51-632, Schematic Diagram

MODELS 51-629,  
51-632

**OUTPUT LEVEL**—During alignment, signal-generator output must be attenuated to maintain output-meter reading below .5 volt.

**NOTE:** While the radio is being aligned, the batteries (if used) should be in the same position with respect to the chassis and loop as they are in the cabinet.

## 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."

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang, 2-section Model 51-629 ..... Model 51-632 .....	31-2735-3 31-2735-2	R15	Resistor, filter, 820 ohms .....	66-1828340*
C1A	Condenser, trimmer, antenna .....	Part of C1	R16	Resistor, current limiting, 120 ohms .....	33-1334-14
C1B	Condenser, trimmer, oscillator .....	Part of C1	R17	Resistor, bias, 1500 ohms .....	66-2158340*
C2	Condenser, neutralizing, 1.5 $\mu$ f. ....	30-1221-3	R18	Resistor, bias, 330 ohms .....	66-1338340*
C3	Condenser, a-v-c by-pass, .05 $\mu$ f. ....	61-0122*	S1	Switch, off-on Model 51-629 ..... Model 51-632 .....	Part of R8 42-1941
C4	Condenser, i-f by-pass, 1 $\mu$ f. ....	61-0113*	T1	Transformer, oscillator .....	32-4453
C5	Condenser, d-c blocking, 47 $\mu$ f. ....	62-051009001*	T2	Transformer, output .....	32-8434
C6	Condenser, dual ceramic .....	30-1239	W1	Line cord .....	41-3821-6*
C6A	Condenser, osc. B+ by-pass, .004 $\mu$ f. ....	Part of C6	WS	Water switch, voltage change-over .....	42-1925
C6B	Condenser, grid by-pass, .004 $\mu$ f. ....	Part of C6	Z1	Transformer, 1st i-f .....	32-4160-4A
C7	Condenser, temperature compensation, 7.5 $\mu$ f. ....	30-1224-65	Z2	Transformer, 2nd i-f .....	32-4454-1A
C8	Condenser, filament by-pass, .22 $\mu$ f. ....	45-3505-49	<b>MISCELLANEOUS</b>		
C9	Condenser, neutralizing, 2.2 $\mu$ f. ....	30-1221-4	<b>Description</b>		<b>Service Part No.</b>
C10	Condenser, ceramic, 4-section .....	30-1237	Cabinet (Maroon), 51-629 .....		10816
C10A	Condenser, d-c blocking, .001 $\mu$ f. ....	Part of C10	Back, maroon .....		54-4810
C10B	Condenser, screen by-pass, .01 $\mu$ f. ....	Part of C10	Cabinet (Green), 51-629 .....		10816-1
C10C	Condenser, d-c blocking, .002 $\mu$ f. ....	Part of C10	Back, green .....		54-4810-1
C10D	Condenser, grid by-pass, 220 $\mu$ f. ....	Part of C10	Clip, back (2) .....		56-3807
C11	Condenser, tone compensation, .004 $\mu$ f. ....	61-0179*	Fastener, back (2) .....		1W30660FE7
C12	Condenser, electrolytic, filament by-pass, 50 $\mu$ f., 25v .....	30-2417-12	Handle and bracket assembly .....		76-6198
C13	Condenser, electrolytic, 3-section .....	30-2568-39	Hinge (2) .....		56-7968
C13A	Condenser, filter, 40 $\mu$ f., 150v .....	Part of C13	Knob (2) .....		76-6206
C13B	Condenser, filter, 10 $\mu$ f., 150v .....	Part of C13	Pointer .....		56-7973-1FCP
C13C	Condenser, filter, 50 $\mu$ f., 150v .....	Part of C13	Scale, dial .....		54-5098
C14	Condenser, line by-pass, .047 $\mu$ f. ....	45-3505-45*	Clip (2), scale mounting .....		56-8449FA3
CR1	Selenium rectifier, 75 ma. at 117 volts .....	34-8003-1*	Cabinet (Maroon), 51-632 .....		10815
LA1	Loop aerial Model 51-629 (flat loop) .....	32-4052-52	Back .....		54-4806
	Model 51-632 (Magna core) .....	32-4455-1	Baffle and cloth assembly .....		40-7924
LS1	Speaker, 4-inch p-m .....	38-1627-11	Clip, back (2) .....		56-3807-3
R1	Resistor, grid return, 3.3 megohms .....	66-5338340*	Cover and lid assembly .....		76-6146
R2	Resistor, grid return, 100,000 ohms .....	66-4108340*	Fastener, back (2) .....		1W60660FE7
R3	Resistor, bias, 880 ohms .....	66-1688340*	Handle .....		76-6177
R4	Resistor, leakage, 150,000 ohms .....	66-4158340*	Hinge (2) .....		56-7968
R5	Resistor, oscillator dropping, 22,000 ohms .....	66-3228340*	Knob and escutcheon assembly (2) .....		76-6210
R6	Resistor, grid return, 3.3 megohms .....	66-5338340*	Pointer .....		56-7973-1FCP
R7	Resistor, a-v-c filter, 2.2 megohms .....	66-5228340*	Scale, dial .....		54-5097
R8	Volume control, 1 megohm Model 51-629 (with "off-on" switch) .....	33-5566-21	Cable and plug, battery .....		41-3477-2
	Model 51-632 (control only) .....	33-5565-23	Insulator, electrolytic-condenser mounting .....		27-9508
R9	Resistor, grid return, 4.7 megohms .....	66-5478340*	Mount, rubber, tuning gang (3) .....		27-4099-3
R10	Resistor, screen dropping, 4.7 megohms .....	66-5478340*	Spring, drive cord .....		56-2617
R11	Resistor, plate load, 1 megohm .....	66-5108340*	Socket, tube, 1R5 and 1U4 (2) .....		27-6203
R12	Resistor, grid return, 2.2 megohms .....	66-5228340*	Socket, tube, 1U5 and 3V4 (2) .....		27-6203-12
R13	Resistor, bias, 820 ohms .....	66-1828340*	Tube shield, 1U5 .....		56-3978-1FA3
R14	Resistor, filament dropping and filter, 2100 ohms (center-tapped) .....	33-3445	Tuning shaft .....		56-7906FA42
			Retaining ring .....		1W60978FA3