

MODELS 51-629,
51-632

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 if ampl., 1U5 det.-a.v.c.-1st audio, 3V4 output
- BATTERY TYPE P-364

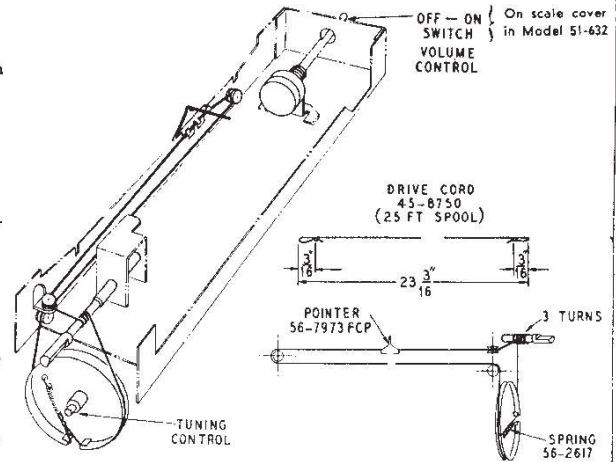


Figure 1. Drive-Cord Installation Details

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .1- μ f. 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.

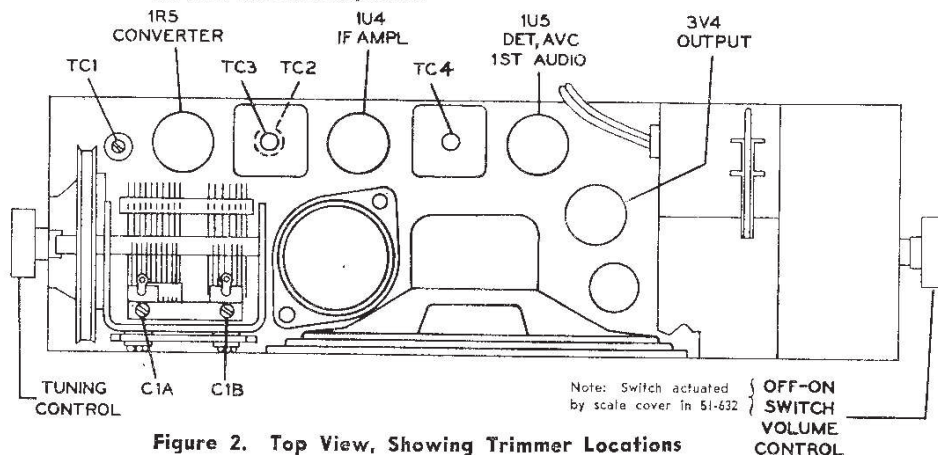


Figure 2. Top View, Showing Trimmer Locations
ALIGNMENT PROCEDURE

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.

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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 μ f.	30-1221-3	R18	Resistor, bias, 330 ohms	66-1338340*
C3	Condenser, a-v-c by-pass, .05 μ 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 μ f.	61-0113*	T1	Transformer, oscillator	32-4453
C5	Condenser, d-c blocking, 47 μ f.	62-051003001*	T2	Transformer, output	32-8434
C6	Condenser, dual ceramic	30-1239	W1	Line cord	41-3821-6*
C6A	Condenser, osc. B+ by-pass, .004 μ f.	Part of C6	WS	Wafer switch, voltage change-over	42-1925
C6B	Condenser, grid by-pass, .004 μ f.	Part of C6	Z1	Transformer, 1st i-f	32-4160-4A
C7	Condenser, temperature compensation, 7.5 μ f.	30-1224-65	Z2	Transformer, 2nd i-f	32-4454-1A
C8	Condenser, filament by-pass, .22 μ f.	45-3505-49	MISCELLANEOUS		
C9	Condenser, neutralizing, 2.2 μ f.	30-1221-4	Description	Service Part No.	
C10	Condenser, ceramic, 4-section	30-1237	Cabinet (Maroon), 51-629	10816	
C10A	Condenser, d-c blocking, .001 μ f.	Part of C10	Back, maroon	54-4810	
C10B	Condenser, screen by-pass, .01 μ f.	Part of C10	Cabinet (Green), 51-629	10816-1	
C10C	Condenser, d-c blocking, .002 μ f.	Part of C10	Back, green	54-4810-1	
C10D	Condenser, grid by-pass, 220 μ f.	Part of C10	Clip, back (2)	56-3807	
C11	Condenser, tone compensation, .004 μ f.	61-0179*	Fastener, back (2)	1W30660FE7	
C12	Condenser, electrolytic, filament by-pass, 50 μ 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 μ f., 150v	Part of C13	Knob (2)	76-6206	
C13B	Condenser, filter, 10 μ f., 150v	Part of C13	Pointer	56-7973-1FCP	
C13C	Condenser, filter, 50 μ f., 150v	Part of C13	Scale, dial	54-5098	
C14	Condenser, line by-pass, .047 μ 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	36-1627-11	Clip, back (2)	53-3807-3	
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, 680 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	

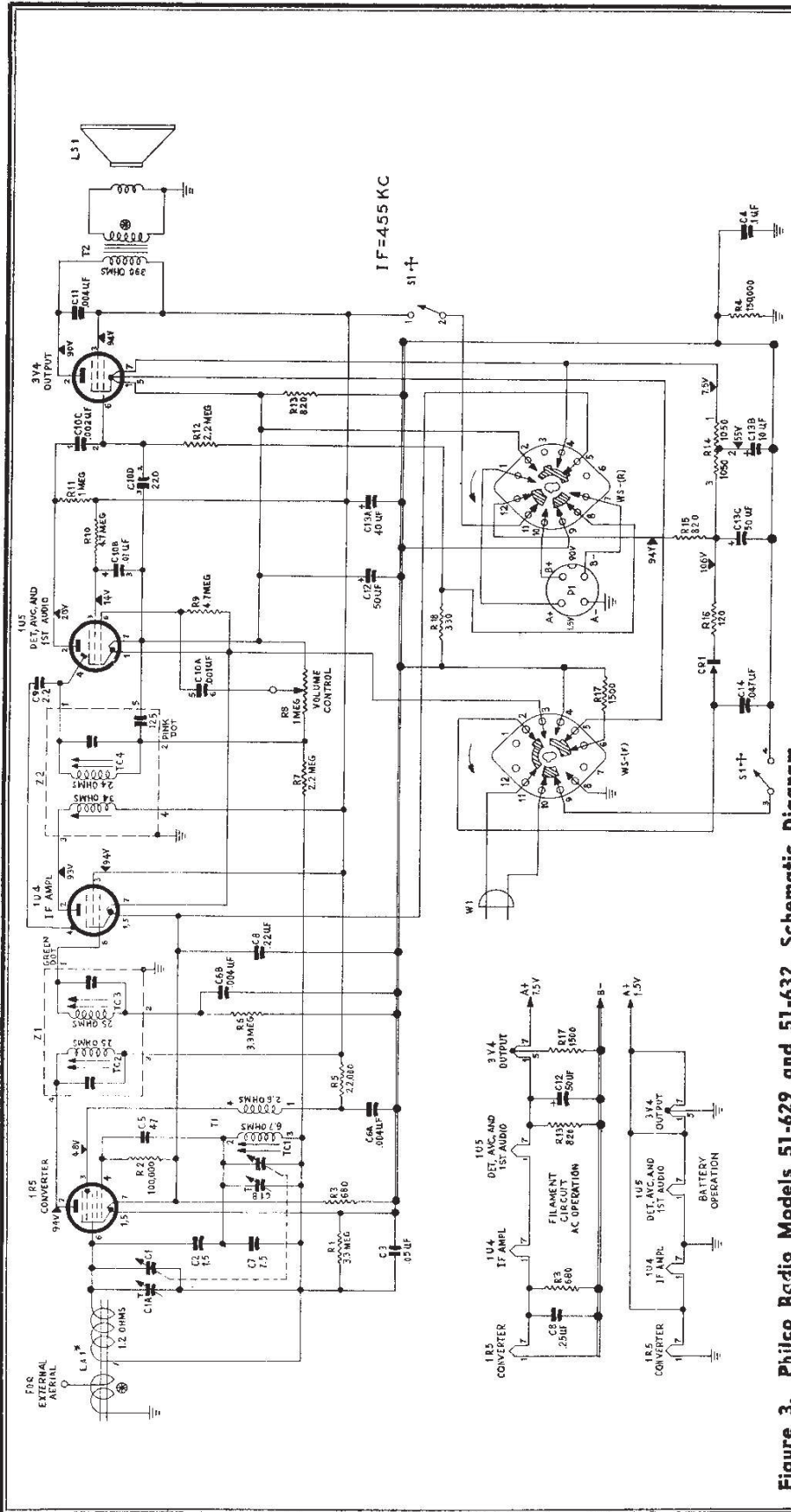
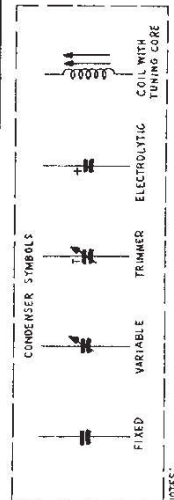
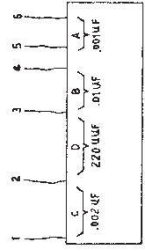


Figure 3. Philco Radio Models 51-629 and 51-632, Schematic Diagram



NOTES:
 ALL RESISTOR VALUES IN OHMS AND ALL CONDENSER VALUES IN UUF UNLESS OTHERWISE MARKED.
 ALL VOLTAGES SHOWN WERE MEASURED WITH A 20000 OHMS-PER-VOLT METER FROM POINTS INDICATED TO B-
 WS SHOWN IN AC POSITION



* 51-629 USES A FLAT LOOP ANTENNA WITH CORE.
 51-632 USES A MAGNACORE ANTENNA.
 † IN 51-629 S1 IS PART OF R.8; IN 51-632, S1 IS SEPARATE.

