

PHILCO RADIO MODEL 51-629 and 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 i-f ampl., 1U5 det.-a.v.c., 1st audio, 3V4 output
BATTERY TYPE	P-364

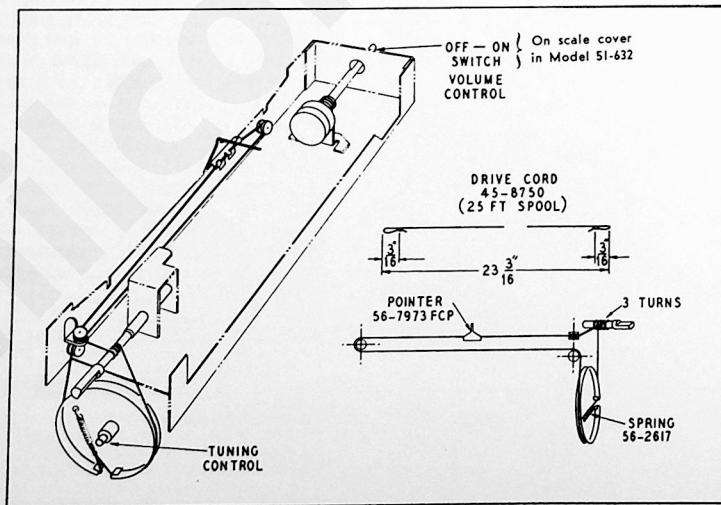


Figure 1. Drive-Cord Installation Details

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.

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.

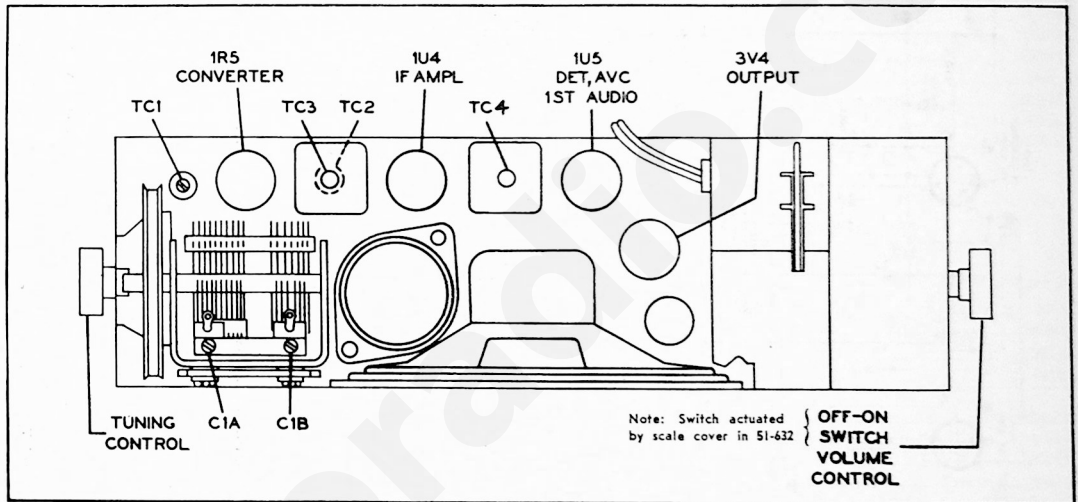


Figure 2. Top View, Showing Trimmer Locations

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.

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.
C1	Condenser, tuning gang, 2-section Model 51-629 _____ Model 51-632 _____	31-2735-3 31-2735-2
C1A	Condenser, trimmer, antenna _____	Part of C1
C1B	Condenser, trimmer, oscillator _____	Part of C1
C2	Condenser, neutralizing, 1.5 μ f. _____	30-1221-3
C3	Condenser, a-v-c by-pass, .05 μ f. _____	61-0122*
C4	Condenser, i-f by-pass, 1 μ f. _____	61-0113*
C5	Condenser, d-c blocking, 47 μ f. _____	62-051009001*
C6	Condenser, dual ceramic _____	30-1239
C6A	Condenser, osc. B+ by-pass, .004 μ f. _____	Part of C6
C6B	Condenser, grid by-pass, .004 μ f. _____	Part of C6
C7	Condenser, temperature compensation, 7.5 μ f. _____	30-1224-65 45-3505-49
C8	Condenser, filament by-pass, 22 μ f. _____	30-1221-4
C9	Condenser, neutralizing, 2.2 μ f. _____	30-1221-4
C10	Condenser, ceramic, 4-section _____	30-1237
C10A	Condenser, d-c blocking, .001 μ f. _____	Part of C10
C10B	Condenser, screen by-pass, .01 μ f. _____	Part of C10
C10C	Condenser, d-c blocking, .002 μ f. _____	Part of C10
C10D	Condenser, grid by-pass, 220 μ f. _____	Part of C10
C11	Condenser, tone compensation, .004 μ f. _____	61-0179*
C12	Condenser, electrolytic, filament by-pass, 50 μ f., 25v _____	30-2417-12 30-2568-39
C13	Condenser, electrolytic, 3-section _____	30-2568-39
C13A	Condenser, filter, 40 μ f., 150v _____	Part of C13
C13B	Condenser, filter, 10 μ f., 150v _____	Part of C13
C13C	Condenser, filter, 50 μ f., 150v _____	Part of C13
C14	Condenser, line by-pass, .047 μ f. _____	45-3505-45*
CR1	Selenium rectifier, 75 ma. at 117 volts _____	34-8003-1*
LA1	Loop aerial Model 51-629 (flat loop) _____ Model 51-632 (Magna core) _____	32-4052-52 32-4455-1
LS1	Speaker, 4-inch p-m _____	36-1627-11
R1	Resistor, grid return, 3.3 megohms _____	66-5338340*
R2	Resistor, grid return, 100,000 ohms _____	66-4108340*
R3	Resistor, bias, 680 ohms _____	66-1688340*
R4	Resistor, leakage, 150,000 ohms _____	66-4158340*
R5	Resistor, oscillator dropping, 22,000 ohms _____	66-3228340*
R6	Resistor, grid return, 3.3 megohms _____	66-5338340*
R7	Resistor, a-v-c filter, 2.2 megohms _____	66-5228340*
R8	Volume control, 1 megohm Model 51-629 (with "off-on" switch) _____ Model 51-632 (control only) _____	33-5566-21 33-5565-23
R9	Resistor, grid return, 4.7 megohms _____	66-5478340*
R10	Resistor, screen dropping, 4.7 megohms _____	66-5478340*
R11	Resistor, plate load, 1 megohm _____	66-5108340*
R12	Resistor, grid return, 2.2 megohms _____	66-5228340*
R13	Resistor, bias, 820 ohms _____	66-1828340*
R14	Resistor, filament dropping and filter, 2100 ohms (center-tapped) _____	33-3445
R15	Resistor, filter, 820 ohms _____	66-1828340*
R16	Resistor, current limiting, 120 ohms _____	33-1334-14

Reference Symbol	Description	Service Part No.
R17	Resistor, bias, 1500 ohms _____	66-2158340*
R18	Resistor, bias, 330 ohms _____	66-1338340*
S1	Switch, off-on Model 51-629 _____ Model 51-632 _____	Part of R8 42-1941
T1	Transformer, oscillator _____	32-4453
T2	Transformer, output _____	32-8434
W1	Line cord _____	41-3821-6*
WS	Water switch, voltage change-over _____	42-1925
Z1	Transformer, 1st i-f _____	32-4160-4A
Z2	Transformer, 2nd i-f _____	32-4454-1A

MISCELLANEOUS

Description	Service Part No.
Cabinet (Maroon), 51-629 _____	10816
Back, maroon _____	54-4810
Cabinet (Green), 51-629 _____	10816-1
Back, green _____	54-4810-1
Clip, back (2) _____	
Fastener, back (2) _____	1W30660FE7
Handle and bracket assembly _____	76-6198
Hinge (2) _____	56-7968
Knob (2) _____	76-6206
Pointer _____	56-7973-1
Scale, dial _____	54-5098
Clip (2), scale mounting _____	56-8449FA3
Cabinet (Maroon), 51-632 _____	10815
Back _____	54-4806
Baffle and cloth assembly _____	40-7924
Clip, back (2) _____	56-3807-3
Cover and lid assembly _____	76-6146
Fastener, back (2) _____	1W60660FE7
Handle _____	76-6177
Hinge (2) _____	56-7968
Knob and escutcheon assembly (2) _____	76-6210
Pointer _____	56-7973
Scale, dial _____	54-5097
Cable and plug, battery _____	41-3477-2
Insulator, electrolytic-condenser mounting _____	27-9508
Mount, rubber, tuning gang (3) _____	27-4099-3
Spring, drive cord _____	56-2617
Socket, tube, 1R5 and 1U4 (2) _____	27-6203
Socket, tube, 1U5 and 3V4 (2) _____	27-6203-12
Tube shield, 1U5 _____	56-3978-1FA3
Tuning shaft _____	56-7906FA42
Retaining ring _____	1W60978FA3

**CORRECTIONS TO PARTS LIST
MODELS 51-629 AND 51-632**

MODEL 51-632

Description	Service Part No.
Clip, back (2)	56-3807-3

Run 2

To improve sensitivity, the oscillator transformer, T1, was changed to Part No. 32-4453-1. The 2.2- μ f. condenser, C9, was changed to 1.5 μ f., Part No. 30-1221-3.

Also, same change as for Model 51-631, Run 2.

PRODUCTION CHANGES

MODEL 51-629

Run 2

To reduce harmonic beat, a shield, Part No. 56-8942, for the 1U5 tube, was added.