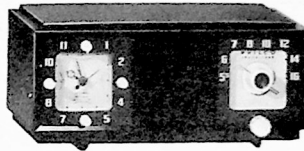


PHILCO RADIO-CLOCK MODEL 53-701X



MODEL 53-701X SPECIFICATIONS

CABINETMolded phenolic
 CIRCUITFour-tube superheterodyne (plus rectifier)
 FREQUENCY RANGE540—1620 kc.
 AUDIO OUTPUT1 watt
 OPERATING VOLTAGE117 volts, a.c.
 POWER CONSUMPTION30 watts
 ANTENNAHigh-impedance loop

INTERMEDIATE FREQUENCY455 kc.
 PHILCO TUBES12BE6, converter; 12BA6, i-f amplifier;
 12AV6, det.—a.v.c.—1st audio; 35C5,
 output; 35W4, rectifier

NOTE: The antenna is mounted on the cabinet back. When removing the cabinet back, use care to avoid breaking the antenna leads.

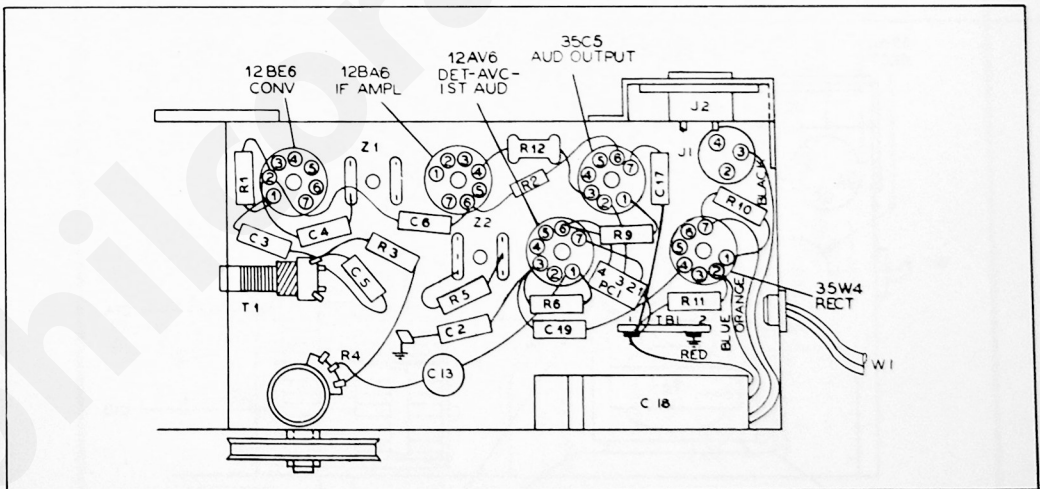


Figure 1. Base View, Showing Parts Placement

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ALIGNMENT PROCEDURE

RADIO CONTROLS—Set volume control to maximum. Set tuning control as indicated in chart.

OUTPUT METER—Connect across voice-coil terminals.

SIGNAL GENERATOR—Connect generator and set frequency as indicated in chart. Use modulated output.

OUTPUT LEVEL—During alignment, adjust signal-generator output to hold output-meter reading below 1.25 volts.

ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B-; output lead through a .1- μ f. condenser to grid (pin 7) of 12BE6.	455 kc.	Tuning gang fully open.	Adjust tuning cores, in order given, for maximum output. (TC1 and TC4 are located at top of transformers.)	TC4—2nd i-f sec. TC3—2nd i-f pri. TC2—1st i-f sec. TC1—1st i-f pri.
2	Radiating loop (see note below).	1620 kc.	1620 kc.*	Adjust trimmer for maximum output.	C1B—osc.
3	Same as step 2.	1500 kc.	1500 kc.†	Adjust trimmer for maximum output.	C1A—antenna

NOTE: Make a 6—8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads, and place about 1 foot from radio loop. The position of the radio loop with respect to the chassis should be approximately the same as when both are mounted in the cabinet.

* To set the tuning gang to 1620 kc., fully open the gang and insert a .006-inch, nonmetallic shim between the heel of the rotor and the top of the stator plates. Close the gang sufficiently to hold the shim in place, and then remove the shim without disturbing the gang setting.

† To set the radio to 1500 kc., place chassis in cabinet, attach knob to indicate previous setting of 1620 kc., and tune until pointer indicates 1500 kc. Then remove knob and take chassis from cabinet without disturbing gang setting.

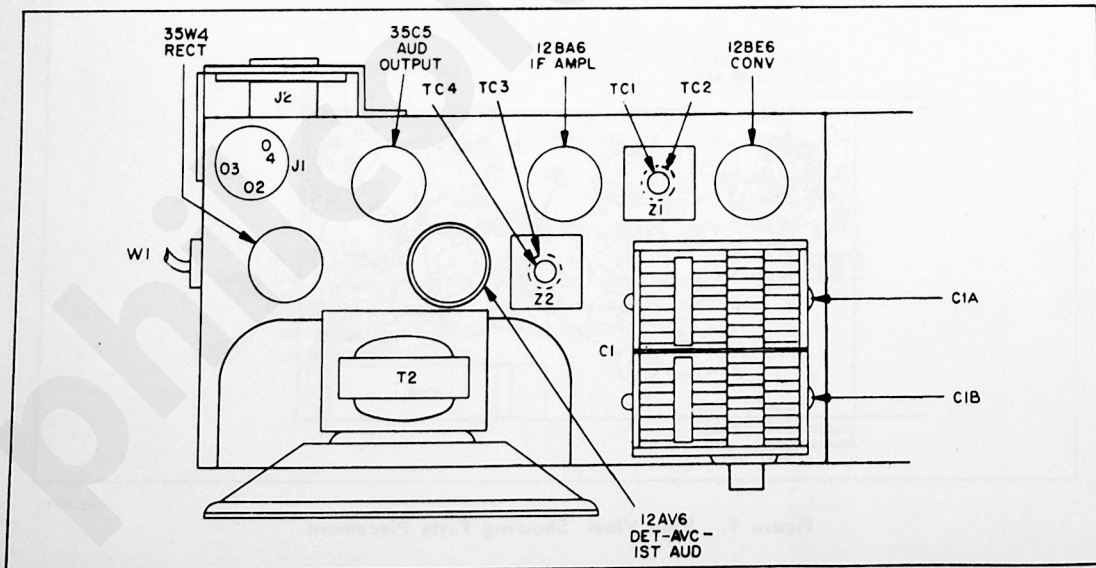


Figure 2. Top View, Showing Tuning Adjustments

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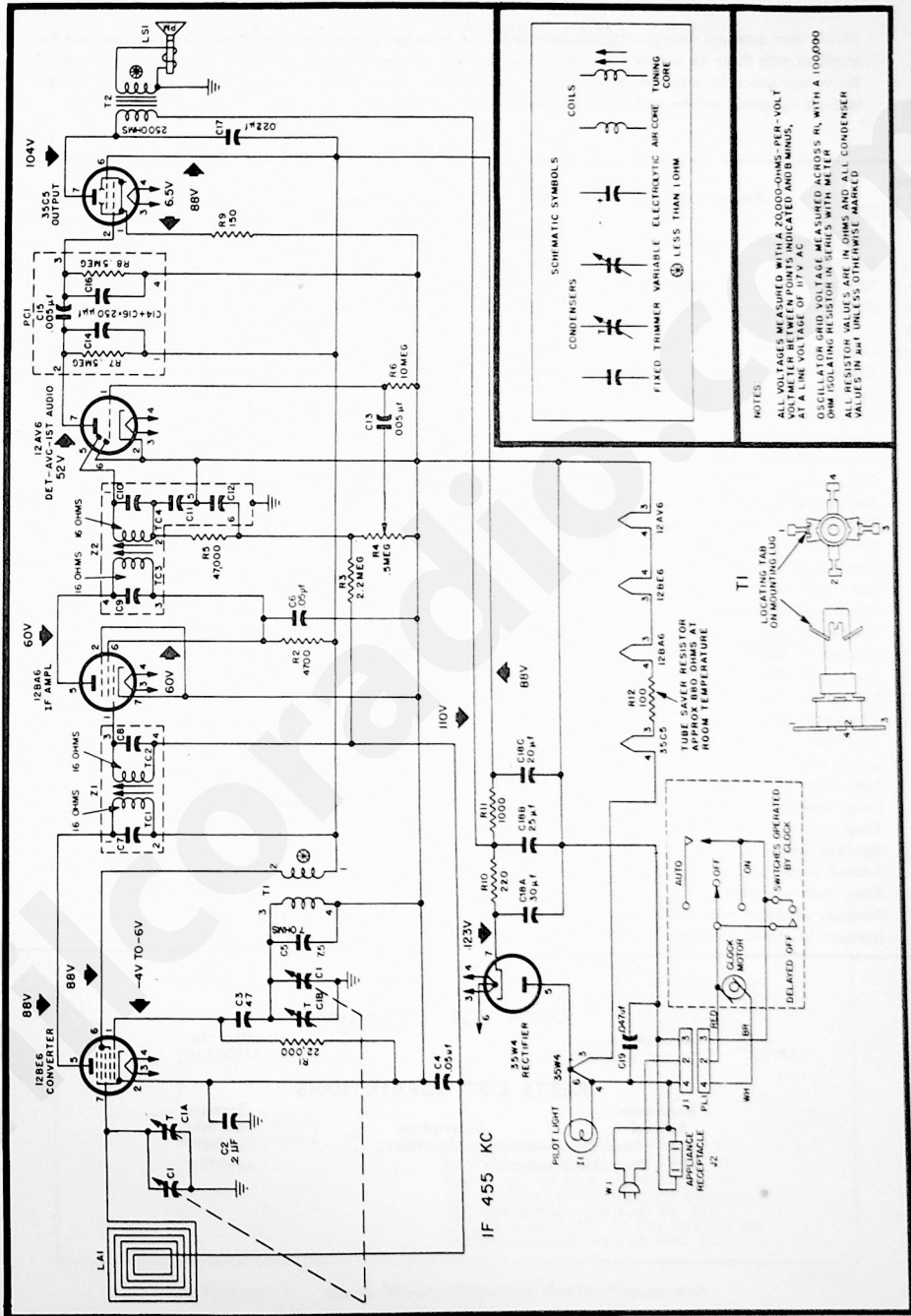


Figure 3. Philco Radio-Clock Model 53-701X, Schematic Diagram

TP2-3230

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 will be unchanged. 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	31-2751-13	R3	Resistor, a-v-c filter, 2.2 megohms	66-5228340*
C1A	Condenser, r-f trimmer	Part of C1	R4	Resistor, volume control, .5 megohm	33-5566-41
C1B	Condenser, oscillator trimmer	Part of C1	R5	Resistor, diode load, 47,000 ohms	66-3478340*
C2	Condenser, B- to chassis, .2 μ f.	30-4650-49	R6	Resistor, grid return, 10 megohms	66-6108340
C3	Condenser, oscillator grid, 47 μ f.	30-1230-4	R7	Resistor, plate load, 500,000 ohms	Part of PC1
C4	Condenser, a-v-c by-pass, .05 μ f.	30-4650-45*	R8	Resistor, grid return, 500,000 ohms	Part of PC1
C5	Condenser, drift compensation, 7.5 μ f.	30-1224-83	R9	Resistor, cathode bias, 150 ohms	66-1158340*
C6	Condenser, screen by-pass, .05 μ f.	30-4650-45*	R10	Resistor, B plus filter, 220 ohms, 1 watt	66-1224340*
C7	Condenser, i-f tuning	Part of Z1	R11	Resistor, B plus filter, 1000 ohms	66-2108340*
C8	Condenser, i-f tuning	Part of Z1	R12	Resistor, tube saver, 100 ohms	33-1343-3
C9	Condenser, i-f tuning	Part of Z2	T1	Transformer, oscillator	33-4453-6
C10	Condenser, i-f tuning	Part of Z2	T2	Transformer, output	32-8384*
C11	Condenser, detector filtering	Part of Z2	W1	Line cord	L2183*
C12	Condenser, detector filtering	Part of Z2	Z1	Transformer, 1st i-f	32-4161A
C13	Condenser, audio coupling, .005 μ f.	30-1238-1	Z2	Transformer, 2nd i-f	32-4240A
C14	Condenser, plate by-pass	Part of PC1	MISCELLANEOUS		
C15	Condenser, audio coupling, .005 μ f.	Part of PC1	Description		
C16	Condenser, compensating	Part of PC1	Service Part No.		
C17	Condenser, tone compensation, .022 μ f.	30-4650-43*	Cabinet	10924-6	
C18	Condenser, electrolytic, 3-section		Knobs		
C18A	Condenser, filter, 30 μ f., 150v	Part of C18	Clock (4 required)	54-4983	
C18B	Condenser, filter, 25 μ f., 150v	Part of C18	Station selector	54-4978	
C18C	Condenser, filter, 20 μ f., 150v	Part of C18	Off-on	54-4118	
C19	Condenser, line by-pass, .047 μ f.	30-4650-45*	Clock	41-2041-1	
I1	Lamp, pilot	34-2068	Back-and-loop assembly	76-7757-3	
J1	Jack, clock	27-6273	Shield, tube	56-5629FA3	
J2	Jack, appliance receptacle, a-c	76-3931	Clip, pilot lamp	W2563FA3	
LA1	Loop	Part of cabinet back	Socket, miniature (5 required)	27-6265*	
LS1	Speaker, p-m	36-1627-8	Socket assembly, pilot lamp	27-6233-6	
PC1	Printed circuit	30-6001	Window, radio dial	54-4977-2	
PL1	Plug, clock assembly				
R1	Resistor, oscillator grid, 22,000 ohms	66-3228340*			
R2	Resistor, i-f screen dropping, 4700 ohms	66-2478340*			

PARTS LIST ADDITIONS

Description	Service Part No.
Socket, tube (12AV6)	27-6203-14

PARTS LIST CORRECTIONS

Reference Symbol	Description	Service Part No.
C18	Condenser, electrolytic, 3-section	45-3037
PL1	Plug, clock assembly	54-4878-2