

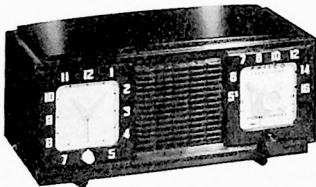
# PHILCO RADIO-CLOCK MODELS 53-700 AND 53-701

## SPECIFICATIONS

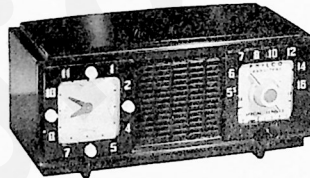
**CABINET** ..... Molded phenolic  
**CIRCUIT** ..... Four-tube Superheterodyne (plus rectifier)  
**FREQUENCY RANGES**  
 Standard Broadcast ..... 540—1620 kc.  
 Special Services ..... 1700—3400 kc.  
**AUDIO OUTPUT** ..... 1 watt  
**OPERATING VOLTAGE** ..... 117 volts, a.c.

**POWER CONSUMPTION** ..... 30 watts  
**AERIAL** ..... High-impedance loop

**INTERMEDIATE FREQUENCY** ..... 455 kc.  
**PHILCO TUBES** ..... 12BE6 converter, 12BA6 i-f amplifier,  
 12AV6 det.—a.v.c.—1st audio,  
 35C5 output, 35W4 rectifier



MODEL 53-700



MODEL 53-701

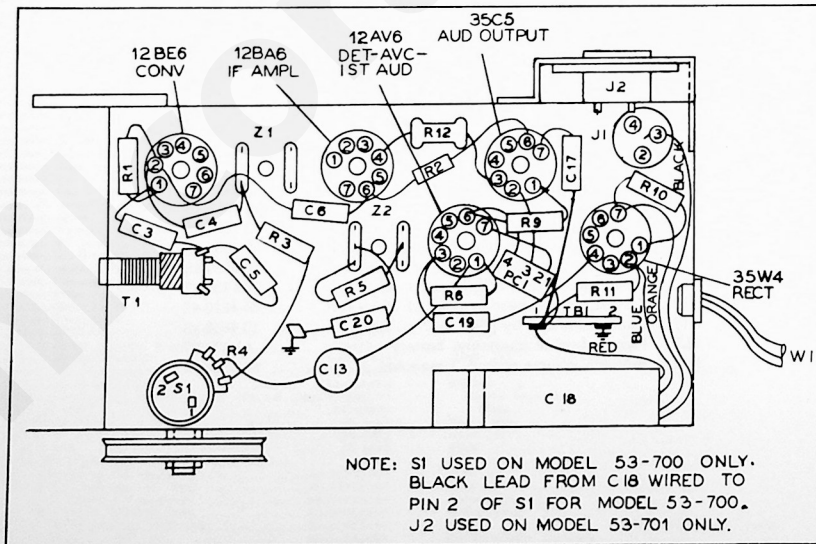


Figure 1. Base View, Showing Symbolized Chassis

TP2-1487

## ALIGNMENT PROCEDURE

**RADIO CONTROLS**—Set volume control to maximum. Set tuning control and band switch 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.

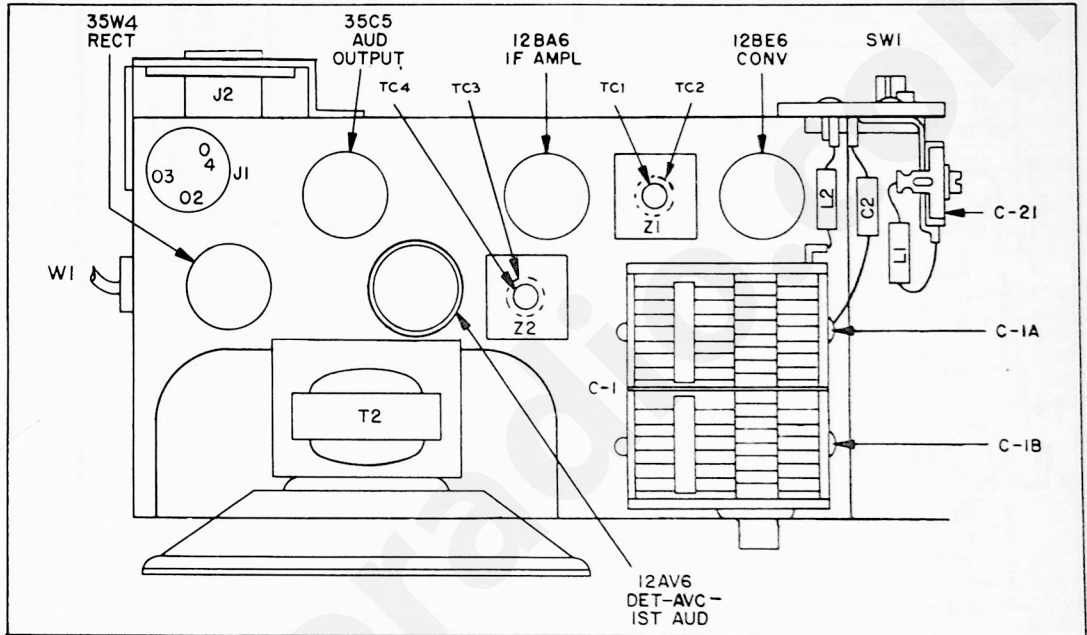


Figure 2. Top View, Showing Trimmer Locations

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## ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	BAND SWITCH SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B-; output lead through a .1- $\mu$ f. condenser to grid (pin 7) of 12BE6.	455 kc.	Tuning gang fully open	Broadcast	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.	$\approx$ 1620 kc.	Broadcast	Adjust trimmer for maximum output.	C1-B—osc.
3	Same as step 2.	1500 kc.	1500 kc.	Broadcast	Adjust trimmer for maximum output.	C1-A—aerial (broadcast)
4	Same as step 2.	3200 kc.	3200 kc.	Special Services	Adjust trimmer for maximum output.	C21—aerial (special services)

**NOTE:** Make up a 6–8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads, and place near radio loop.

\*For proper adjustment of the oscillator trimmer, fully open the tuning gang and insert a .006-inch, non-metallic shim between the heel of the rotor and the top of the stator plates. Close the tuning gang sufficiently to hold the shim in place, and then remove the shim without disturbing the gang setting.

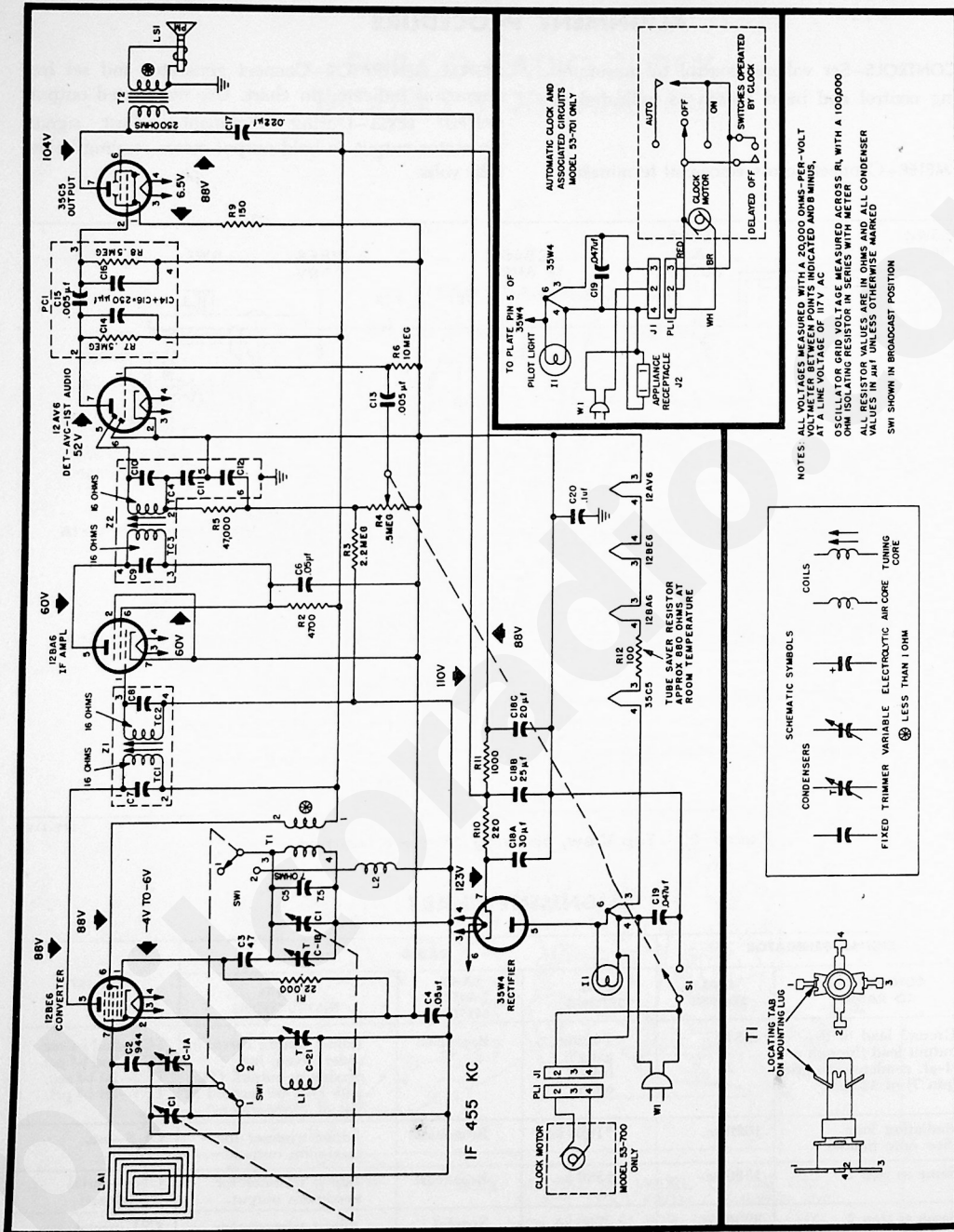


Figure 3. Philco Radio-Clock Models 53-700 and 53-701, Schematic Diagram

## REVISIONS AND ADDITIONS TO MODELS 53-700 AND 53-701 SERVICE MANUAL

### PARTS LIST ADDITIONS

Reference Symbol	Description	Service Part No.
PCI	Printed circuit .....	30-6001
Description		Service Part No.
Socket, tube (12AV6) .....		27-6203-14
Socket, clock .....		27-6273-7

### PARTS LIST CORRECTIONS

Reference Symbol	Description	Service Part No.
C4	Condenser, a-v-c by-pass, .047 $\mu$ f. ....	30-4650-45
C6	Condenser, screen by-pass, .047 $\mu$ f. ....	30-4650-45
C17	Condenser, tone compensation, .022 $\mu$ f. ....	30-4650-60
C18	Condenser, electrolytic, 3-section .....	45-3037
C19	Condenser, line by-pass, .047 $\mu$ f. ....	30-4650-62
C20	Condenser, B <sub>1</sub> to chassis, .2 $\mu$ f. ....	30-4676
PL1	Plug, clock assembly .....	54-4878-2

#### MODEL 53-700

Description	Service Part No.
<b>Cabinet</b>	
Mahogany .....	10924
Ivory .....	10924-3
<b>Knob</b>	
Clock (ivory cabinet) .....	54-4983
Clock (mahogany cabinet) .....	54-4983-1
Station selector	
Mahogany or ivory .....	54-4978-1
Off-on	
Mahogany .....	27-4815-10
Ivory .....	54-4118

#### MODEL 53-701

<b>Cabinet</b>	
Mahogany .....	10924-1
Ivory .....	10924-2
Ebony .....	10924-6
Olive green .....	10924-7
Cherry .....	10924-8
Sand .....	10924-10
<b>Knob</b>	
Clock (4 required) .....	54-4983
Station selector .....	54-4978-1
Off-on	
Mahogany .....	27-4815-10
Any color except mahogany .....	54-4118

### PRODUCTION CHANGES

#### RUN 2

C20, the leakage condenser, was removed from the circuit. The lead of L2 attached to the frame of the tuning condenser was removed and wired to the a-v-c side of C21.

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.
C1	Condenser, tuning gang	31-2751-13
C1A	Condenser, R-F trimmer	Part of C1
C1B	Condenser, oscillator trimmer	Part of C1
C2	Condenser, antenna series tracker, 944 $\mu$ f.	30-1220-65
C3	Condenser, oscillator grid, 47 $\mu$ f.	30-1230-4
C4	Condenser, a-v-c by-pass, .05 $\mu$ f.	
C5	Condenser, drift compensation, 7.5 $\mu$ f.	30-1224-83
C6	Condenser, screen by-pass, .05 $\mu$ f.	
C7	Condenser, i-f tuning	Part of Z1
C8	Condenser, i-f tuning	Part of Z1
C9	Condenser, i-f tuning	Part of Z2
C10	Condenser, i-f tuning	Part of Z2
C11	Condenser, detector filtering	Part of Z2
C12	Condenser, detector filtering	Part of Z2
C13	Condenser, audio coupling, .005 $\mu$ f.	30-1238-1
C14	Condenser, plate by-pass	Part of PC1
C15	Condenser, audio coupling, .005 $\mu$ f.	Part of PC1
C16	Condenser, compensating	Part of PC1
C17	Condenser, tone compensation, .022 $\mu$ f.	
C18	Condenser, electrolytic, 3-section	
C18A	Condenser, filter, 30 $\mu$ f., 150v	Part of C18
C18B	Condenser, filter, 25 $\mu$ f., 150v	Part of C18
C18C	Condenser, filter, 20 $\mu$ f., 150v	Part of C18
C19	Condenser, line by-pass, .05 $\mu$ f.	
C20	Condenser, B minus to chassis, .1 $\mu$ f.	
C21	Condenser, trimmer, special services	31-6473-29
I1	Lamp, pilot	34-2068
J1	Jack, clock	27-6273
J2	Jack, appliance receptacle, a-c	76-3931
L1	Coil, aerial, special services	32-4561-3
L2	Coil, oscillator shunt	32-4562-2
LA1	Loop, part of cabinet back	
LS1	Speaker, p-m	36-1627-8
PL1	Plug, clock assembly	
R1	Resistor, oscillator grid, 22,000 ohms	66-3228340*
R2	Resistor, i-f screen dropping, 4700 ohms	66-2748340*
R3	Resistor, a-v-c filter, 2.2 megohms	66-5228340*
R4	Resistor, volume control, .5 megohm	
	Model 700	33-5566-41
	Model 701	33-5565
R5	Resistor, diode load, 47,000 ohms	66-3478340*

Reference Symbol	Description	Service Part No.
R6	Resistor, grid return, 10 megohms	66-6108340
R7	Resistor, plate load, 500,000 ohms	Part of PC1
R8	Resistor, grid return, 500,000 ohms	Part of PC1
R9	Resistor, cathode bias, 150 ohms	66-1158340*
R10	Resistor, B plus filter, 220 ohms	66-1224340*
R11	Resistor, B plus filter, 1000 ohms	66-2108340*
R12	Resistor, tube saver, 100 ohms	33-1343-3
S1	Switch, off-on	Part of R4
SW1	Switch, broadcast-special services	42-1796-2
T1	Transformer, oscillator	32-4453-6
T2	Transformer, output	32-8384*
W1	Line cord	L-2183*
Z1	Transformer, 1st i-f	32-4161A
Z2	Transformer, 2nd i-f	32-4240A

MISCELLANEOUS

Description	Service Part No.
Cabinet	
Model 53-700	
Model 53-700-I	
Model 53-701	
Model 53-701-I	
Knobs	
Model 53-700	
Clock	
Station selector	
Off-on	
Model 53-700-1	
Clock	
Station selector	
Off-on	
Model 53-701	
Clock (4)	
Station selector	
Off-on	
Model 53-701-1	
Clock (4)	
Station selector	
Off-on	
Clock	
Model 53-700	41-2041
Model 53-701	41-2041-1
Back-and-loop assembly	
Model 700	76-7757-1
Model 701	76-7757
Shield, tube	56-5629FA3
Clip, pilot lamp	W2563FA3
Socket, miniature (5)	27-6265
Socket assembly, pilot lamp	27-6233-6
Window, radio dial	54-4977