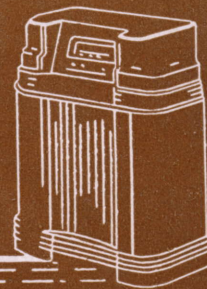


PHILCO SERVICE



HOME RADIO



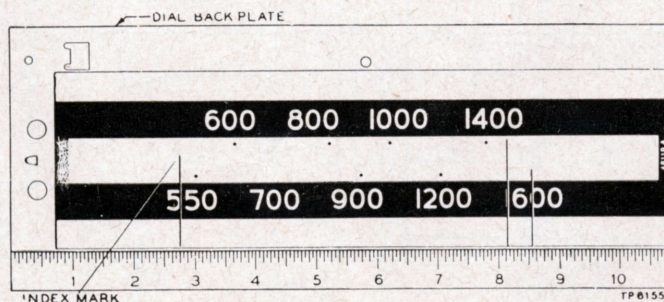
PHILCO RADIO - PHONOGRAPH MODEL

731, 731-2

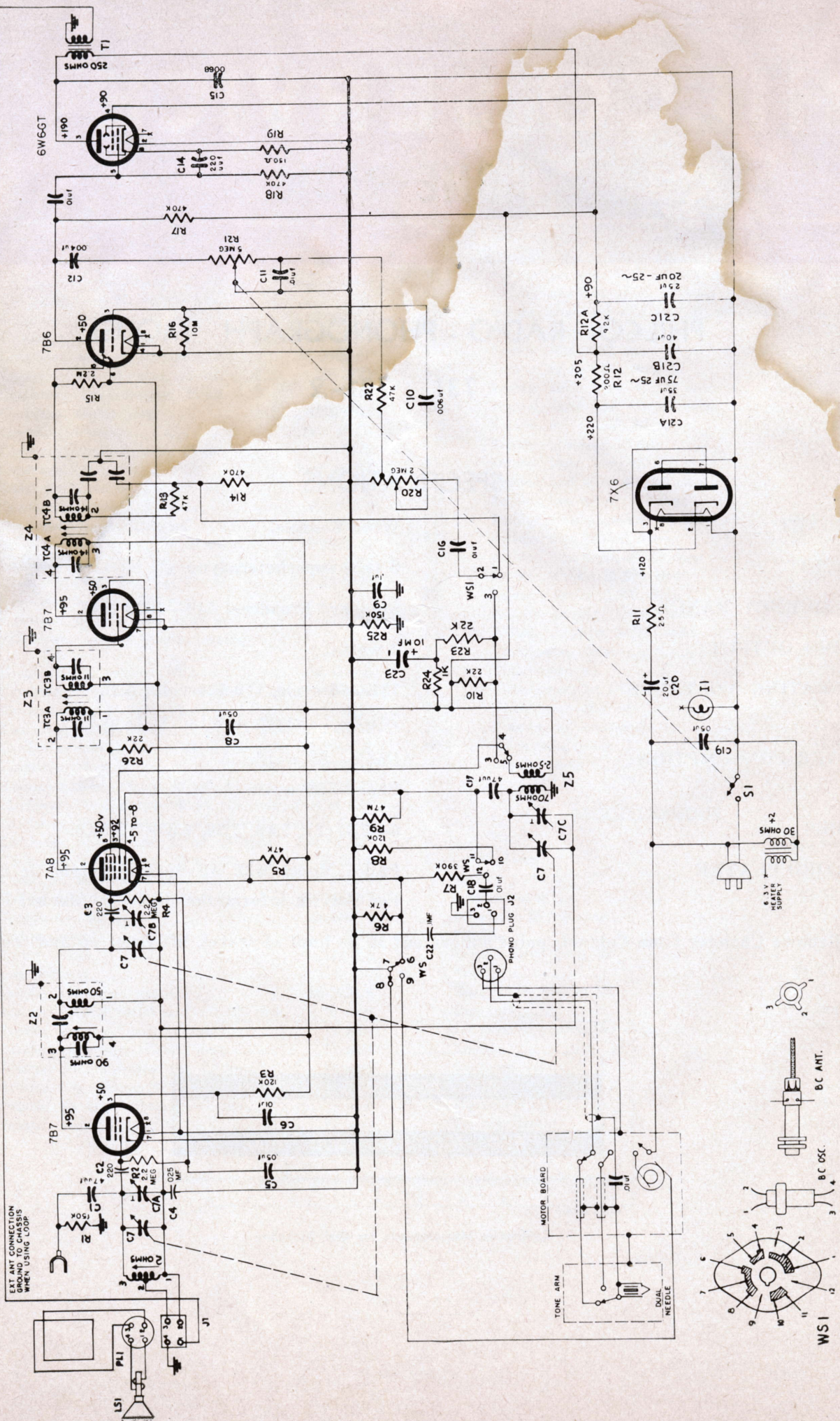
SPECIFICATIONS

CABINET	Wood Console.
CIRCUIT	6 tube superheterodyne.
FREQUENCY RANGE	Standard Broadcast 540—1620 K.C.
AUDIO OUTPUT	3 watts.
OPERATING VOLTAGES	731—60 cycle, 110-120 volts A.C. 731-2—25 cycle, 110-120 volts A.C.
POWER CONSUMPTION	Radio—65 watts Phono—30 watts
TUBES	6—7B7(2), 7A8, 7B6, 6W6GT, 7X6.
RECORD PLAYER	Philco Model M22 All Speeds Automatic Changer. For Service Information Refer to Manual PR 1923.

To Remove Changer from Cabinet, pull Changer out to its limit of travel, lift front up and remove.



Calibration Measurements for Dial Backplate



ALIGNMENT PROCEDURE

MODEL 731-731-2

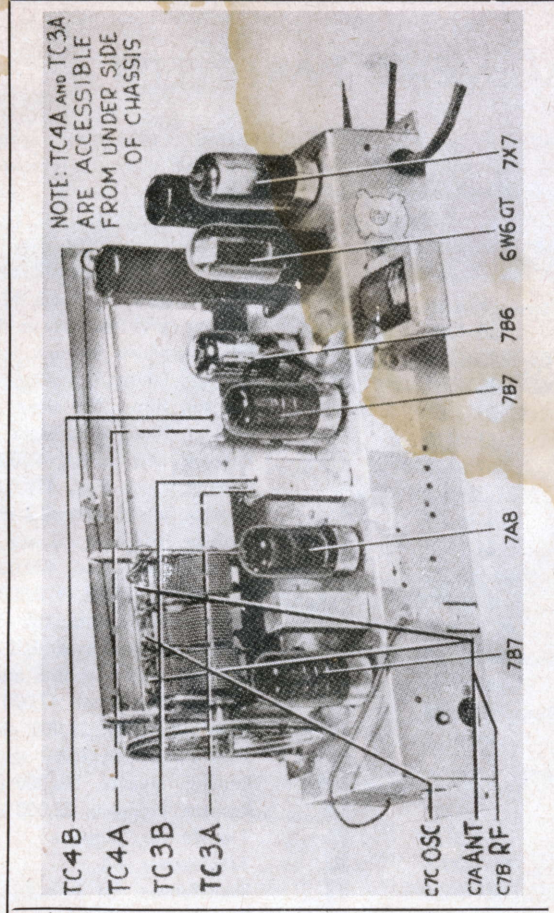
RADIO CONTROLS — Set volume controls to maximum, turn tone control fully counterclockwise, and set radio-phonograph switch to radio position.

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

DIAL — Calibration and pointer-index measurements are shown in figure 7. With tuning condenser fully meshed, set pointer to index mark.

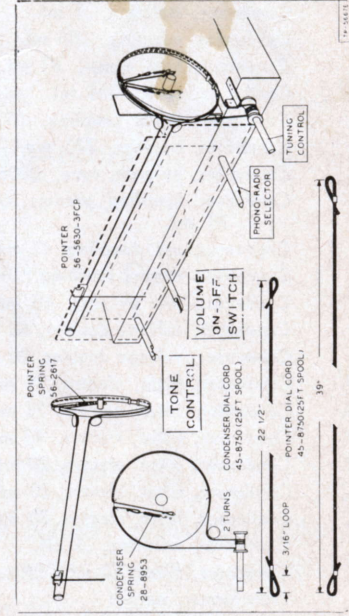
OUTPUT METER—Connect across voice coil.
SIGNAL GENERATOR—Connect as indicated in chart. Use modulated output.

Step	SIGNAL GENERATOR		RADIO	
	Connection to Radio	Dial Setting	Dial Setting	Special Instructions
1	Ground lead to B—; output lead through .1-mf. condenser to mixer grid (pin 6 of 7A8).	460 kc.	540 kc.	Adjust tuning cores, in order given, for maximum output.
2	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust trimmer for maximum output.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust trimmer for maximum output.



Top View, Showing Trimmer Locations and Tube

RADIATING LOOP: Make up a 6–8 turn, 6-inch diameter loop from insulated wire; connect to signal-generator leads and place near radio loop aerial. The loop aerial must be connected.
NOTE: If RF Transformer is replaced, it is necessary to adjust for maximum output at 600 kc.



Drive-Cord Installation Details

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) indicate general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and replacement 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, series blocking, 5 mmf.	30-1227	R8	Resistor, pre amp. load, 120,000 ohms	1/2 watt
C2	Condenser, isolating, 220 mmf.	62-122001001*	R9	Resistor, grid load, phono, 4.7 meg.	1/2 watt
C3	Condenser, isolating, 220 mmf.	62-122001001*	R10	Resistor, phono pre amp. load, 22,000 ohms	1/2 watt
C4	Condenser, isolating, .025 mf.	45-3505-61*	R11	Resistor, limiter, 25 ohms	33-1334-5
C5	Condenser, a-v-c by-pass, .05 mf.	61-0170*	R12	Resistor, filter, 200 ohms	33-3435-32
C6	Condenser, screen by-pass, .01 mf.	61-0120*	R12A	Resistor, filter, 9200 ohms	Part of R12
C7	Condenser, tuning gang	31-2748-2	R13	Resistor, diode filter, 47,000 ohms	1/2 watt
C7A	Condenser, trimmer	Part of C7	R14	Resistor, diode load, 470,000 ohms	1/2 watt
C8	Condenser, screen by-pass, .05 mf.	61-0170*	R15	Resistor, a-v-c filter, 2.2 meg.	1/2 watt
C7C	Condenser, trimmer	Part of C7	R16	Resistor, grid load, 10 meg.	1/2 watt
C8	Condenser, screen by-pass, .05 mf.	61-0170*	R17	Resistor, plate load, 470,000 ohms	1/2 watt
C9	Condenser, isolating, .1 mf.	45-3500-8*	R18	Resistor, grid load, 470,000 ohms	1/2 watt
C10	Condenser, coupling, .006 mf.	45-3505-40*	R19	Resistor, bias output, 150 ohms	1 watt
C11	Condenser, bass comp., .01 mf.	45-3505-41*	R20	Resistor, volume control, 2 meg.	33-5535-29
C12	Condenser, tone, .004 mf.	30-4623	R21	Resistor, tone control, 5 meg.	33-5566-19
C13	Condenser, audio coupling, .01 mf.	61-0120*	R22	Resistor, bass boost, 47,000 ohms	1/2 watt
C14	Condenser, by-pass, 220 mmf.		R23	Resistor, divider, 22,000 ohms	1/2 watt
C15	Condenser, by-pass, tone, .0068 mf.	45-3505-57*	R24	Resistor, divider, 1,000 ohms	1/2 watt
C16	Condenser, coupling, preamp. coupling, .01 mf.	61-0120*	R25	Resistor, Bleeder, 150,000 ohms	1/2 watt
C17	Condenser, osc. coupling, 47 mmf.	30-1227-5	R26	Resistor, dropping, 22,000 ohms	1/2 watt
C18	Condenser, Phono, isolating, .01 mf.	61-0120*	Z1	Transformer, antenna	32-4413-2
C19	Condenser, line by-pass, .05 mf.	61-0170*	Z2	Transformer, r-f	32-4399-4
C20	Condenser, voltage doubler, 40 mf., 25 cycle	30-2568-28	Z3	Transformer, 1st i-f	32-4160
C20	Condenser, voltage doubler, 20 mf., 60 cycle	30-2568-22	Z4	Transformer, 2nd i-f	32-4240
C21A	Condenser, filter, electro, 75 mf., 25 cycle	30-2568-42	Z5	Transformer, oscillator	32-4263
C21A	Condenser, filter, electro, 75 mf., 60 cycle	30-2568-45	WS1	Phono radio switch	42-1926
C21B	Condenser, filter, electro, 40 mf., 25 cycle	Part of C21	S1	Switch, off-on	Part of R21
C21B	Condenser, filter, electro, 20 mf., 60 cycle	Part of C21A			
C21C	Condenser, filter, electro, 20 mf., 25 cycle	Part of C21			
C21C	Condenser, filter, electro, 20 mf., 60 cycle	Part of C21A			
C22	Condenser, isolating, .1 mf.	45-3500-8*			
C23	Condenser, filter, 10 mf., 300v.	30-2417-11			
T1	Transformer, output	32-8460-1			
J1	Socket, antenna	27-6174			
J2	Socket, phono	27-6252			
LA1	Loop Antenna				
LS1	Speaker, permanent magnet	36-1626-6			
R1	Resistor, external aerial load, 150,000 ohms	1/2 watt			
R2	Resistor, a-v-c, r-f grid, 2.2 meg.	1/2 watt			
R3	Resistor, r-f screen, 120,000 ohms	1/2 watt			
R4	Resistor, a-v-c converter grid, 2.2 meg.	1/2 watt			
R5	Resistor, B+ bleeder, 47,000 ohms	1/2 watt			
R6	Resistor, pre amp cathode, 4700 ohms	1/2 watt			
R7	Resistor, phono input, 390,000	1/2 watt			

MISCELLANEOUS

Description	Service Part No.
Cabinet Hardware	
Scale	54-5100-1
Panel diffusing	54-7606-1
Drive cord, 25 foot spool	45-8750
Pointer	56-5630-3
Spring, pointer gang, kit	45-9245
Knobs	54-4718-12
Gang rubber mounts, kit	45-9081
Door pulls	76-6241
I-F transformer mounting clips	56-4109
Knobs	54-4718-6
Bin Lamp, 110v.	34-2477
Knife hinge, pair	45-6036
Lid support	76-6275
Bin lamp socket	27-6233-2