R.C.A. Victor Co., Inc.

Model: 810T4	Chassis:	Year: Pre October 1938
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources
Riders Volume 9 - RCA 9-180
Riders Volume 9 - RCA 9-181
Riders Volume 9 - RCA 9-182
Riders Volume 9 - RCA 9-183
Riders Volume 9 - RCA 9-184

MODEL 810T4
Parts List

RCA MFG. CO., INC.

RADIOTRON COMPLEMENT

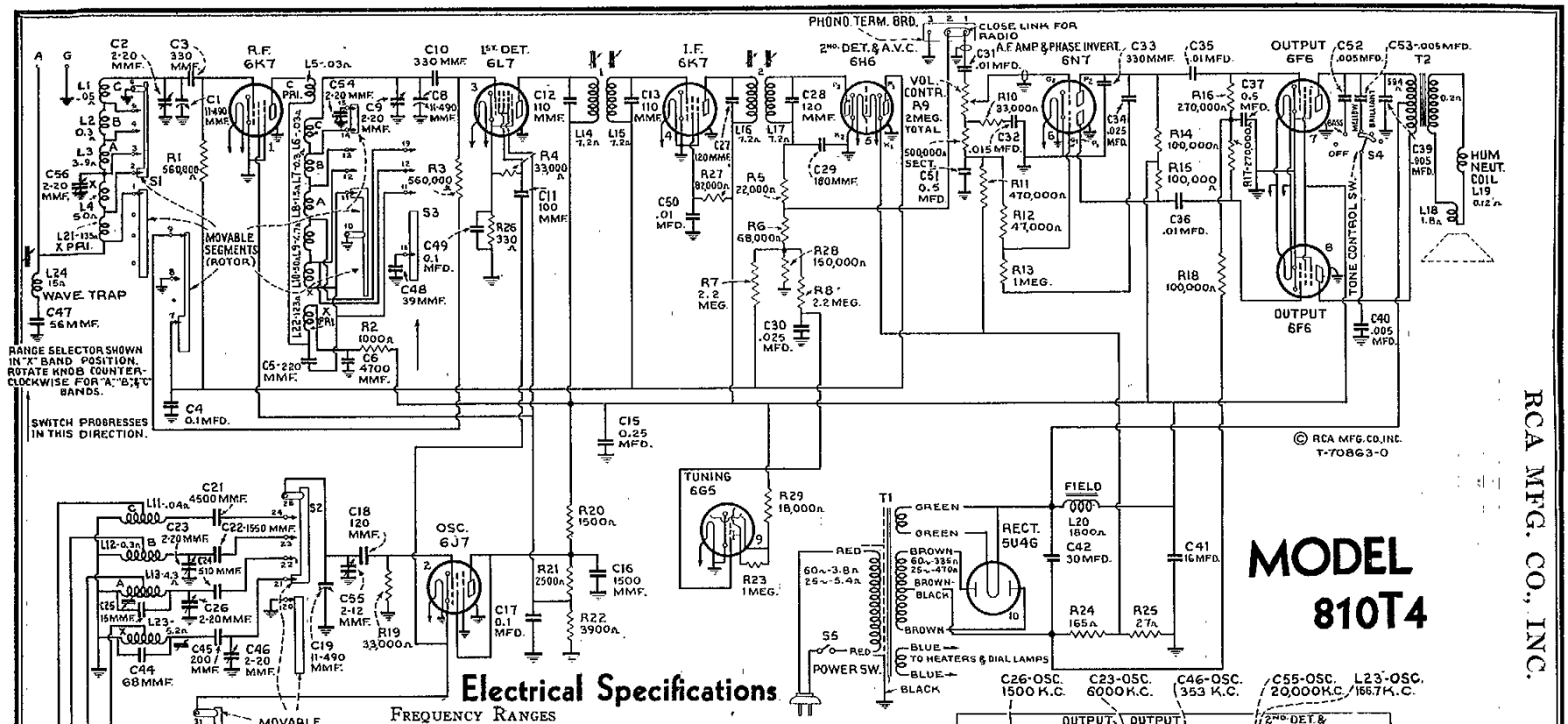
(1) RCA-6K7 ..... R-F Amplifier
(2) RCA-6J7 ..... Heterodyne Oscillator
(3) RCA-6L7 ..... First Detector
(4) RCA-6K7 ..... Intermediate Amplifier
(5) RCA-6H6 ..... Second Detector and A.V.C.
(6) RCA-6N7 ..... Phase Inverter A-F Amplifier
(7) RCA-6F6 ..... Power Output
(8) RCA-6F6 ..... Power Output
(9) RCA-6G5 ..... "Magic Eye" Tuning Tube
(10) RCA-5U4G ..... Full-Wave Rectifier

REPLACEMENT PARTS

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION
	RECEIVER ASSEMBLIES
12038	Band—Rubber band for tuning tube
14384	Belt—Variable condenser drive belt
14517	Board—Antenna and ground terminal board
12717	Board—Phonograph terminal board
14338	Bushing—Variable condenser mounting bushing assembly
14524	Cable—Band indicator cable, approximately 6½ inches long
14523	Cable—Tone control indicator cable, approximately 3 inches long
14394	Cable—Tuning tube cable and socket
11350	Cap—Grid contact cap
12607	Cap—First I-F transformer shield top
12581	Cap—Second I-F transformer shield top
12384	Capacitor—Adjustable trimmer (long) (C2, C9, C23, C26, C46, C54, C56)
12714	Capacitor—Adjustable trimmer (medium) (C55)
12396	Capacitor—15 Mmfd. (C25)
13545	Capacitor—39 Mmfd. (C48)
12723	Capacitor—56 Mmfd. (C47)
30233	Capacitor—68 Mmfd. (C44)
12720	Capacitor—100 Mmfd. (C11)
14262	Capacitor—110 Mmfd. (C12, C13)
12404	Capacitor—120 Mmfd. (C27, C28)
12724	Capacitor—120 Mmfd. (C18)
12406	Capacitor—180 Mmfd. (C29)
30232	Capacitor—200 Mmfd. (C45)
14546	Capacitor—220 Mmfd. (C5)
12952	Capacitor—330 Mmfd. (C3, C10, C33)
30231	Capacitor—510 Mmfd. (C24)
13762	Capacitor—1,500 Mmfd. (C16)
12729	Capacitor—1,550 Mmfd. (C22)
12728	Capacitor—4,500 Mmfd. (C21)
12397	Capacitor—4,700 Mmfd. (C6)
4838	Capacitor—.005 Mfd. (C39, C40, C52, C53)
13138	Capacitor—.01 Mfd. (C31, C35, C36, C50)
11315	Capacitor—.015 Mfd. (C32)
4870	Capacitor—.025 Mfd. (C30, C34)
4839	Capacitor—0.1 Mfd. (C4, C17, C49)
12484	Capacitor—0.25 Mfd. (C15)
12741	Capacitor—0.5 Mfd. (C37, C51)
5212	Capacitor—16 Mfd. (C41)
14531	Capacitor—25 Mfd. (C42)
30228	Coil—Antenna coil and shield—A, B, C, and X bands (L1, L2, L3, L4, L21)
14516	Coil—Oscillator coil and shield—A, B, and C bands (L11, L12, L13)
12881	Coil—Oscillator coil and shield—X band only (L23)
30229	Coil—R-F coil and shield—A, B, C, and X bands (L5, L6, L7, L8, L9, L10, L22)
14513	Condenser—3-gang variable tuning condenser (C1, C8, C19)
5040	Connector—4-contact female connector for reproducer cable
30567	Connector—4-contact female connector with metal shell for reproducer cable in later production
12006	Core—Adjustable core and stud for transformer, Stock Nos. 14376 and 14308
12800	Core—Adjustable core and stud for coil, Stock No. 14516
30230	Dial—Station selector dial scale, complete with tuning tube escutcheon
14514	Drive—Variable condenser vernier drive pinion gear and shaft
14345	Drum—Variable condenser drive belt drum, complete with set screws
14387	Escutcheon—Tuning tube escutcheon
11982	Fastener—Dial scale fastener
30085	Gear—Indicator drive gear and hub, and pointer stem and gear
14341	Idler—Station selector drive belt idler
14519	Indicator—Station selector indicator pointer
14382	Indicator—Vernier indicator pointer
5226	Lamp—Dial lamp
14028	Nut—Jamb nut for adjustable trimmer capacitor, Stock Nos. 12714 and 12384
12471	Plate—6J7 Radiotron socket mounting plate and rubber cushions—less socket
14340	Pulley—Station selector drive belt pulley and knob shaft
30227	Reflector—Dial reflector and bracket, complete with dial lamp bracket, tuning tube bracket and tone and band indicators
13250	Resistor—330 ohms, carbon type, ½ watt (R26)
14720	Resistor—1,000 ohms, carbon type, ½ watt (R2)
14078	Resistor—18,000 ohms, carbon type, 1 watt (R29)
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R5)
11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R19)
13735	Resistor—33,000 ohms, carbon type, ½ watt (R4, R10)
11646	Resistor—47,000 ohms, carbon type, ½ watt (R12)
12333	Resistor—68,000 ohms, carbon type, ½ watt (R6)
8064	Resistor—82,000 ohms, carbon type, ½ watt (R27)
11281	Resistor—100,000 ohms, carbon type, 1/10 watt (R18)
5145	Resistor—100,000 ohms, carbon type, ½ watt (R14, R15)
5027	Resistor—150,000 ohms, carbon type, ½ watt (R28)
11453	Resistor—270,000 ohms, carbon type, 1/10 watt (R16, R17)
11172	Resistor—470,000 ohms, carbon type, ½ watt (R11)
11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R3)
12013	Resistor—1 megohm, carbon type, 1/10 watt (R23)
13730	Resistor—1 megohm, carbon type, ½ watt (R13)
11626	Resistor—2.2 megohms, carbon type, ½ watt (R7, R8)
14532	Resistor—Voltage divider — comprising one 1,500 ohm, one 2,500 ohm, one 3,900 ohm, one 27 ohm, and one 165 ohm sections (R20, R21, R22, R24, R25)
14343	Retainer—Station selector knob shaft and pulley retainer
14350	Screw—No. 8-32 x 3/16 square-head set-screw for drum, Stock No. 14345, gear, Stock No. 30085, and hub and arm on band indicator cable
12799	Shield—Antenna or R-F coil shield
12008	Shield—First or second I-F transformer shield
14375	Shield—Oscillator coil shield for Stock No. 14516
12883	Shield—Oscillator coil shield for Stock No. 12881
14114	Socket—Dial lamp socket
11195	Socket—5-contact 5U4G Radiotron socket
11196	Socket—8-contact 6F6, 6H6, 6K7, 6L7, 6J7, or 6N7 Radiotron socket
12907	Spring—Tension spring for indicator drum gear, Stock No. 30085
14342	Spring—Tension spring for idler, Stock No. 14341
12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12800
30084	Switch—High-frequency tone and power switch (S4, S5)
30226	Switch—Range switch (S1, S2, S3)
12654	Trap—Wave trap (L24)
14376	Transformer—First I-F transformer (L14, L15, C12, C13)
14308	Transformer—Second I-F transformer (L16, L17, C27, C28, C29, R5)
11212	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
11213	Transformer—Power transformer, 105-250 volts, 50-60 cycles (T1)
14335	Volume Control (R9)
14379	Washer—Felt washer for indicator pointer
	REPRODUCER ASSEMBLIES (RL-63F-2)
14356	Board—3-contact reproducer terminal board
13866	Cap—Cone center dust cap
11234	Coil—Field coil (L20)
11469	Coil—Hum neutralizing coil (L19)
12642	Cone—Reproducer cone and dust cap (L18)
5039	Plug—4-contact male plug for reproducer
14533	Reproducer, complete
14358	Screw—Screw, washer, and lockwasher to hold core in yoke
14534	Transformer—Output transformer (T2)
14357	Washer—Spring washer to hold field coil
	MISCELLANEOUS ASSEMBLIES
5040	Connector—4-contact female connector for reproducer interconnecting cable in later production
30568	Connector—4-contact male connector for reproducer interconnecting cable in later production
30234	Escutcheon—Station selector escutcheon and crystal, complete with tone and band indicating strips
14611	Index—Tone control indicating strip—mounts in station selector escutcheon
30235	Index—Band indicating strip—mounts in station selector escutcheon
14359	Knob—Station selector knob
14269	Knob—Volume control, tone control, or range switch knob
11377	Screw—Chassis mounting screw and washer assembly
4982	Spring—Retaining spring for knob, Stock No. 14359
14270	Spring—Retaining spring for knob, Stock No. 14269

Height	20¼ inches	Weight (shipping)	43 pounds
Width	17¼ inches	Chassis Base Dimensions	14⅞ inches x 9¾ inches x 3¼ inches
Depth	11 11/16 inches	Over-all Chassis Height	9¾ inches
Weight (net)	33 pounds		



MODEL 810T4

Electrical Specifications

Frequency Ranges

"Long Wave" (X)..... 2,000-850 meters (150-353 kc)
"Medium Wave" (A)..... 565-180 meters (531-1,666 kc)
"Short Wave 1" (B)..... 2.1-6.8 mc (143-44.1 meters)
"Short Wave 2" (C)..... 6.8-22 mc (44.1-13.64 meters)
Intermediate Frequency..... 460 kc

R-F Alignment Frequencies

"Short Wave 2" (C)..... 20,000 kc (osc., det., ant.)
"Short Wave 1" (B)..... 6,000 kc (osc.)
"Medium Wave" (A)..... 600 kc (osc.), 1,500 kc (osc.)
"Long Wave" (X). 166.7 kc (osc.), 353 kc (osc., det., ant.)
Pilot Lamps (5)..... Mazda No. 46, 6.3 volts, 0.25 amp.

Power Output

Undistorted..... 10 watts
Maximum..... 12.5 watts

Loudspeaker

Type..... 8-inch Electrodynamic
Impedance (v.c.) 2.2 ohms at 400 cycles

Power Supply Ratings

Rating A..... 105-125 volts, 50-60 cycles, 135 watts
Rating B..... 105-125 volts, 25-60 cycles, 135 watts
Rating J..... 100-130/140-160/195-250 volts, 40-60 cycles, 135 watts

Operating Controls. (1) Power Switch—Tone; (2) Tuning (large inner knob), Range Selector (small outer knob, left to right "X," "A," "B," "C"); (3) Volume

Tuning Drive Ratio..... 20 to 1

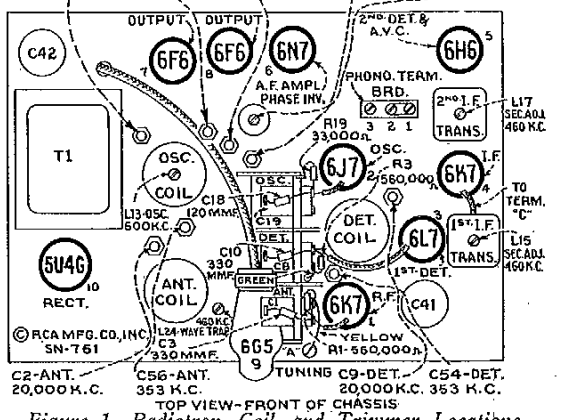
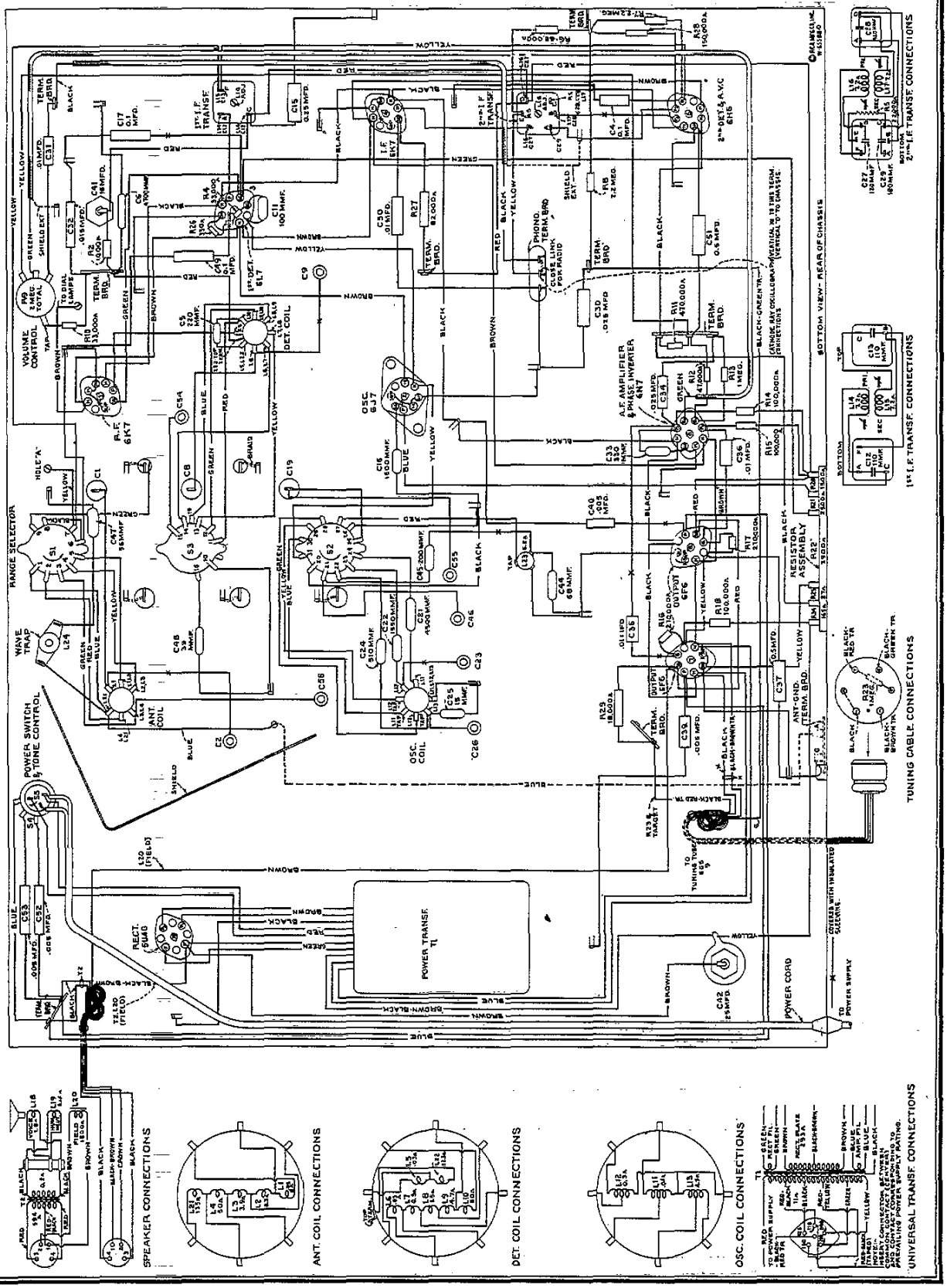


Figure 1—Radiotron, Coil, and Trimmer Locations

MODEL 810T4
Chassis Wiring
Coils

RCA MFG. CO., INC.



RCA MFG. CO., INC.

MODEL 810T4
Lead Dress, Voltage
Notes, Trimmers

General Description

This receiver employs a ten-tube, four-band, "Magic Brain," superheterodyne circuit, the arrangement of which is shown by the Schematic Circuit Diagram. Features of design include an r-f amplifier stage; "qumulative-wound" "A" antenna and r-f transformers for high signal-to-noise ratio; magnetite-core, i-f transformers and low-frequency "X" and "A" oscillator tracking; automatic volume control; phonograph terminal board; "Magic Eye" tuning tube; plunger-type, air-dielectric trimming capacitors; aural-compensated, audio-volume control; "Bass-Mellow-Brilliant" tone control; audio phase-inverter voltage amplifier; push-pull, power-output stage; improved dust-proof electrodynamic loudspeaker; a new sunburst dial with short-wave stations listed by name and illuminated band and tone indicators; and the improved "Magic Voice."

Service Data

The various diagrams of this booklet contain such information as will be needed to isolate causes for defective operation if such develops. The ratings of the resistors, capacitors, coils, etc., are indicated adjacent to the symbols signifying these parts on the diagrams. Identification titles such as R1, L1, C1, etc., provide reference between the illustrations and Replacement Parts List. The coils, transformer windings, and reactors are rated in terms of d-c resistance to permit continuity checks.

Loudspeaker.—Centering of the loudspeaker is made in the usual manner with three narrow celluloid or paper feelers after first removing the front dust cover. This may be removed by softening its cement with a light application of acetone, using care not to allow the acetone to flow into the air gap. The dust cover should be cemented back in place with ambroid upon completion of adjustment.

Precautionary Lead Dress.—(1) Twist yellow, blue, and green leads from oscillator coil to S2. (2) Dress C45 and C21 away from C55. (3) Dress black lead from S2 to ground lance away from C55. (4) Dress yellow lead from 6J7 socket to S2 under bus on 6J7 socket. (5) Make lead from S3 to ground 2½ inches long and dress away from chassis. (6) Twist filament leads. (7) Dress shielded lead from C31 to phono. term. board away from 6L7 socket. (8) Dress yellow lead from term. "K" of 6J7 to C11 away from chassis and from brown filament lead. (9) Dress all molded capacitors perpendicular to chassis. (10) Dress filament leads away from terms. "G1" and "G2" of 6N7. (11) Twist blue leads from terms. "P" of 6F6's. Make the following as short as possible: (12) Lead from oscillator coils to ground. (13) Lead from S2 to C19. (14) Lead from detector coil to S3. (15) Lead from detector coil to C8. (16) Lead from S1 to chassis ground lance. (17) Lead from antenna coil to S1. (18) Lead from antenna coil to C1. (19) Yellow lead from 2nd i-f transformer to phono. term. board. When necessary to replace bus leads, use only wire having same diameter as original.

Phonograph Attachment.—A terminal board is provided for connecting a phonograph into the audio amplifying circuit. RCA Victor Models R-93, R-93-A, R-93-2, or R-94 Record Players should be connected as follows: Remove link between terminals 1 and 2 on terminal board. Connect green wire in Radio-Record switch cable to terminal 1, yellow to terminal 2, and shield extension to terminal 3. Tape unused red and blue leads separately. Connect a 2-conductor twisted cable between the Record Player binding posts and the screw terminals on Radio-Record switch. If additional volume is desired, connect an RCA Stock No. 9632 transformer between the two-conductor twisted cable and the screw-terminals on Radio-Record switch as follows: yellow and brown transformer leads and one side of twisted cable to ground screw-terminal on switch; black transformer lead to other side of twisted cable; and blue transformer lead to other screw-terminal on switch.

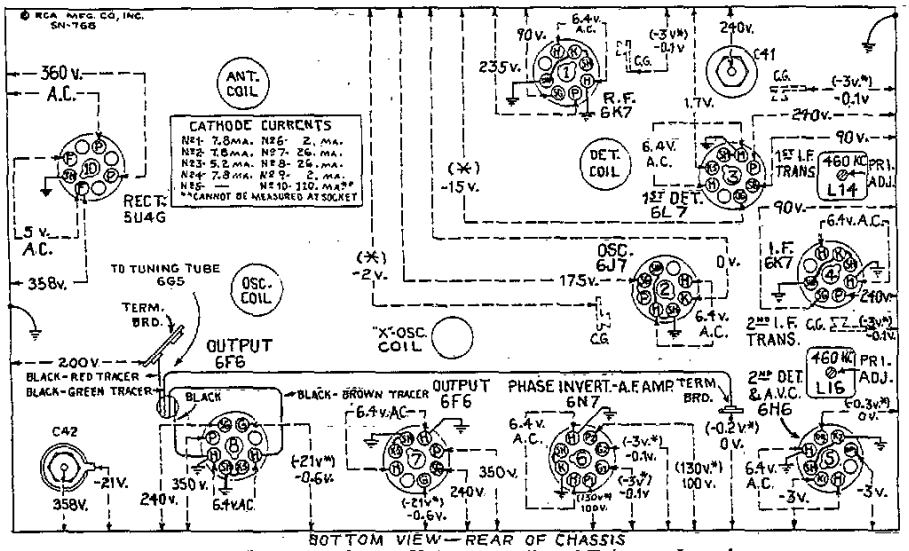


Figure 2—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc or 300 meters, "A" band ("Medium Wave")—No signal being received—Volume control minimum

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading. The other value (generally lower) is the actual measured voltage and differs from the value shown in parentheses because of the additional loading of the voltmeter through the high series circuit resistance.

Voltage values as specified should hold within ±20% when the receiver is normally operative at its rated line voltage. To duplicate the conditions under which the voltages were measured requires a 1,000-ohm-per-volt d-c meter, having ranges of 10, 50, 250 and 500 volts. Use the nearest range above the specified measured voltage. A-c voltages were measured with a corresponding a-c meter.

MODEL 810T4
Alignment

RCA MFG. CO., INC.

Alignment Procedure

Calibrate the tuning dial by adjusting main dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position; then adjust the small (vernier) pointer to "0." These are friction adjustments.

Perform alignment in proper order, tabulated below, starting with No. 1 and following all operations across, then No. 2, etc. Adjustment locations are shown on figures 1 and 2.

Cathode-ray alignment is highly preferable; the connections to the chassis are shown on figure 4. If an output indicator is used, connect it across the loudspeaker voice-coil and advance the receiver volume control to full-volume position.

Connect the "low" output terminal of the test oscillator to the receiver "G" (ground) terminal for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the rec er to obtain an observable output indication. This will avoid a-v-c action.

The term "Dummy antenna" means the device which must be connected between the "high" test-oscillator output and the point of connection to the receiver in order to obtain ideal alignment. "No signal, 545-400 meters" means that the receiver should be tuned to a point between 545 and 400 meters where no signal or interference is received from a station or local (heterodyne) oscillator. In extreme noisy locations, one end of C10 (top of gang) should be unsoldered during i-f alignment.

Conversion of kilocycles (kc) to meters for alignment frequencies is as follows: 20,000 kc (20 mc) = 15 meters; 6,000 kc (6 mc) = 50 meters; 1,500 kc = 200 meters; 600 kc = 500 meters; 460 kc = 652 meters; 353 kc = 850 meters; and 166.7 kc = 1,800 meters.

For further details on alignment, refer to booklet "RCA Victor Receiver Alignment."

Order of Alignment	Test Oscillator			Range Selector	Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting					
1	6K7 I-F Grid Cap	.001 Mfd.	460 kc	"Medium Wave"	No Signal 545-400 meters	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"Medium Wave"	No Signal 545-400 meters	1st I-F Trans.	L14 and L15	Max. (peak)
3	Ant. Term.	200 Mmfd.	460 kc	"Medium Wave"	No signal 545-400 meters	Wave Trap	L24	Minimum Output
4	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Osc.	C55	Max. (peak)*
5	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Det.	C9	Max. (peak)†
6	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Ant.	C2	Max. (peak)‡
7	Ant. Term.	300 Ohms	6,000 kc	"Short Wave 1"	6 mc	"B" Osc.	C23	Max. (peak)*
8	Ant. Term.	200 Mmfd.	600 kc	"Medium Wave"	500 meters	"A" L-F Osc.	L13	Max. (peak)
9	Ant. Term.	200 Mmfd.	1,500 kc	"Medium Wave"	200 meters	"A" H-F Osc.	C26	Max. (peak)
10	Ant. Term.	200 Mmfd.	600 kc	"Medium Wave"	500 meters	"A" L-F Osc.	L13	Max. (peak)
11	Ant. Term.	200 Mmfd.	1,500 kc	"Medium Wave"	200 meters	"A" H-F Osc.	C26	Max. (peak)
12	Ant. Term.	200 Mmfd.	166.7 kc	"Long Wave"	1,800 meters	"X" L-F Osc.	L23	Max. (peak)
13	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" H-F Osc.	C46	Max. (peak)
14	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" Det.	C54	Max. (peak)
15	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" Ant.	C56	Max. (peak)
16	Ant. Term.	200 Mmfd.	166.7 kc	"Long Wave"	1,800 meters	"X" L-F Osc.	L23	Max. (peak)
17	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" H-F Osc.	C46	Max. (peak)

* Use minimum capacity peak if two peaks can be obtained.
† Use maximum capacity peak if two peaks can be obtained.
‡ After this adjustment, check for image signal by shifting receiver dial to 19,080 mc.