

PORTABLE VICTROLA MODEL 0-1 0-11 0-15



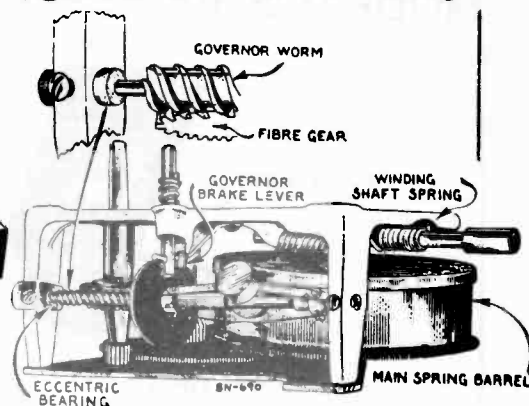
MODEL 0-1



MODEL 0-11



MODEL 0-15



REPLACEMENT PARTS

MODEL 0-1

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
13849	Arm—Tone arm less sound box	13874	Horn—Tone arm horn
13877	Board—Motor mounting board only (black)	13846	Indicator—Speed regulator arm and pointer
13878	Board—Motor mounting board only (brown)	13861	Key—Winding key
13850	Brake—Turntable brake complete	13854	Motor—Spring motor complete
13845	Cap—Turntable spindle cap	13865	Screw—Needle holding screw—Pkg. of 5
13875	Case—Carrying case only (black)	13860	Shaft—Winding key shaft and socket—Less winding gear
13876	Case—Carrying case only (brown)	13848	Sound box
13853	Cover—Needle cup hinged cover	13856	Spindle—Motor spindle and two gears assembled
13852	Cup—Needle cup	13851	Spring—Turntable brake spring—Pkg. of 5
13847	Escutcheon—Speed regulator escutcheon	13835	Spring—Mainspring, spring barrel and drive gear
13855	Gear—Intermediate drive gear and shaft	13873	Turntable—Complete with black cover
13858	Gear—Winding worm gear—Located on winding key shaft	13844	Turntable—Complete with brown cover
13859	Gear—Winding gear—Located on spring barrel shaft	14181	Turntable—Complete with blue cover
13857	Governor—Governor assembly complete	13862	Weight—Governor weight and spring—Pkg. of 3

MODEL 0-11

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
13849	Arm—Tone arm less sound box	13854	Motor—Spring motor complete
13850	Brake—Turntable brake complete	13865	Screw—Needle holding screw
13845	Cap—Turntable spindle cap	13860	Shaft—Winding key shaft and socket—Less winding gear
13852	Cup—Needle cup	30368	Sound box
13847	Escutcheon—Speed regulator escutcheon	13856	Spindle—Motor spindle and two gears assembled
13855	Gear—Intermediate drive gear and shaft	13851	Spring—Turntable brake spring
13858	Gear—Winding worm gear—Located on winding key shaft	13835	Spring—Mainspring, spring barrel and drive gear
13859	Gear—Winding gear—Located on spring barrel shaft	13873	Turntable—Complete with black cover
13857	Governor—Governor assembly complete	13844	Turntable—Complete with brown cover
13846	Indicator—Speed regulator arm and pointer	14181	Turntable—Complete with blue cover
13861	Key—Winding key	13862	Weight—Governor weight and spring

Stock No.	MODEL 0-15 DESCRIPTION	Stock No.	DESCRIPTION
30087	Arm—Tone arm less sound box	30094	Key—Winding key
30088	Brake—Turntable brake complete	13854	Motor—Spring motor complete
30089	Cap—Turntable spindle cap	13865	Screw—Needle holding screw
30090	Cover—Needle cup hinged cover	13860	Shaft—Winding key shaft and socket—Less winding gear
30091	Cup—Needle cup	30095	Sound box
30092	Escutcheon—Speed regulator escutcheon	13856	Spindle—Motor spindle and two gears assembled
13855	Gear—Intermediate drive gear and shaft	13851	Spring—Turntable brake spring
13858	Gear—Winding worm gear—Located on winding key shaft	13835	Spring—Mainspring, spring barrel and drive gear
13859	Gear—Winding gear—Located on spring barrel shaft	30096	Turntable—Complete with brown cover
13857	Governor—Governor assembly complete	13862	Weight—Governor weight and spring
30093	Indicator—Speed regulator arm and pointer		

PORTABLE VICTROLA (1935 PRODUCTION) MODEL 2-19

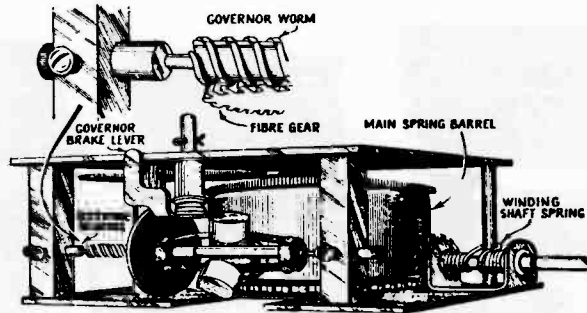
MODEL 2-19



MOTOR

CAUTION.—ALLOW THE MOTOR MECHANISM TO RUN DOWN COMPLETELY BEFORE ATTEMPTING ADJUSTMENT, REPAIRS OR REPLACEMENTS.

Motor Main Spring. In case of main spring failure, it is recommended that the entire spring barrel and gear be replaced, since the procedure of spring installation requires a good deal of care and involves slight danger. The additional cost of the spring barrel is offset by the saving in labor.



GOVERNOR ADJUSTMENT

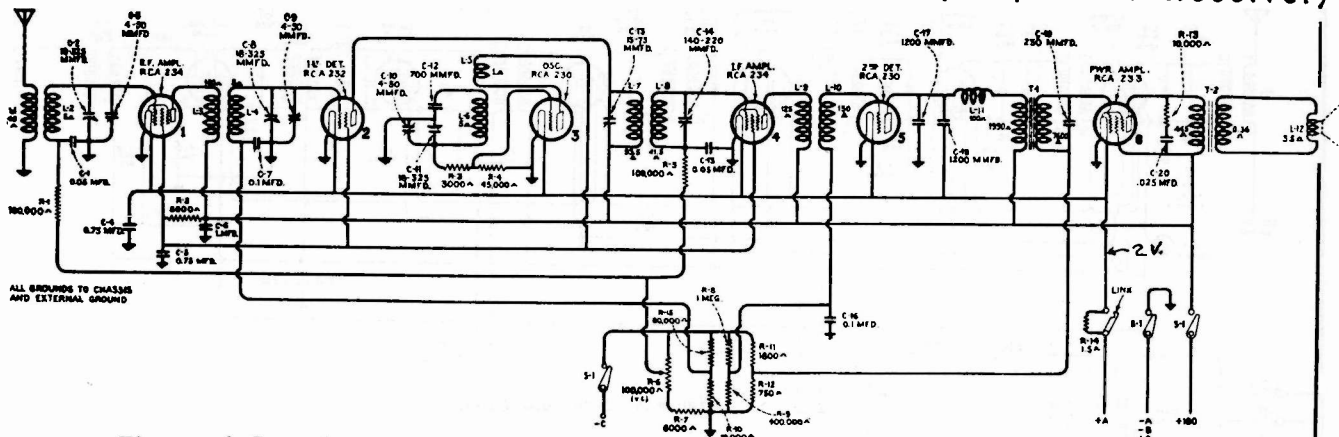
The mesh of the worm and fibre gears is adjustable by rotation of the two governor spindle bearings. This operation shifts the spindle bearing holes, due to their eccentric locations in the bearing parts as shown in the illustration. To obtain the proper mesh between the gears, turn the bearings so that the worm moves in toward the fibre gear and binding occurs. Then gradually "back off" on the bearings until smooth operation is obtained. The action of the mechanism can be tested by spinning the governor during the adjustment and noting how freely it operates. It is important to have the two spindle bearing holes accurately aligned with each other.

REPLACEMENT PARTS

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

Stock No.	Description	Stock No.	Description
7720	Arm—Tone arm assembly.....	7935	Leather—Friction leather for turntable brake—Package of 10.....
7943	Barrel—Spring barrel—Complete with winding gear and drive gear.....	7933	Lever—Speed regulator lever and plate.....
7946	Board—Motor board with horn—Less hardware and motor—Green.....	7228	Lubricant—RCA Victor spring lubricant—1 pint can.....
7947	Board—Motor board and horn—Less hardware and motor—Blue.....	7931	Motor—Motor complete with spindle cap.....
4113	Bracket—Sound box rest bracket.....	7226	Motor grease—RCA Victor motor grease—1 pint can.....
7930	Brake—Turntable brake.....	7227	Motor oil—RCA Victor motor oil—1 pint can.....
7950	Cabinet—Complete with handle and catches—Black.....	7936	Nut—Motor mounting nut assembly—Comprising 2 nuts, 1 washer, 1 lockwasher and 1 rubber cushion.....
7951	Cabinet—Complete with handles and catches—Blue.....	7941	Plate—Top plate assembly.....
7932	Cap—Turntable spindle cap.....	7944	Regulator shaft—Complete with friction lever and pad with cotter pin.....
4116	Catch—Cabinet catch—Complete with mounting rivets—Package of 2.....	4115	Screw and washer—Motor board mounting screw and washer—Package of 3.....
7949	Clamp—Record clamp with rivets.....	6933	Sound box—Complete with needle screw.....
4109	Cup—Needle cup.....	4118	Screw—Needle holding screw—Package of 10.....
7948	Escutcheon.....	7939	Spindle—Turntable spindle—Complete with two gears.....
7945	Gear—Intermediate gear, pinion and shaft.....	7957	Spring—Main spring for motor.....
7938	Gear—Winding gear, sleeve and shaft.....	7934	Spring—Coil spring for turntable brake—Package of 10.....
7940	Governor assembly—Comprising governor spindle, disc, collar, governor weights and springs.....	7942	Spring—Winding lock spring (ratchet).....
7937	Governor weight and spring assembly.....	4114	Support—Lid support.....
6838	Handle—Carrying handle.....	7928	Turntable—Green.....
7927	Holder—Needle holder.....	7929	Turntable—Blue.....
7926	Key—Winding key.....		

MODEL R-3-B (Battery Operated Receiver)



Electrical Specifications

Figure A—Schematic Circuit Diagram

- "A" Battery Current.....0.55 Ampere
- "B" Battery Current (Max. Volume Control)..0.032 Ampere
- Type and Number of Radiotrons.....2 RCA-234,
1 RCA-232, 2 RCA-230, 1 RCA-233—Total, 6.
- Undistorted Output.....0.4 Watt

Important—When using 3-volt "A" supply as shown in Figure 2 (b), be sure to open the link connecting terminals 1 and 2 on the rear of the chassis. For 2-volt "A" supply as in Figure 2 (a), the link should be closed. The proper link position is shown by the inset in each diagram.



REPLACEMENT PARTS

Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES	
2012	Capacitor - 1,200 mmfd - (C-17)
2532	Capacitor - 230 mmfd - (C-19)
2747	Cap - Contact cap
2963	Resistor - 8,000 ohms - Carbon, 1 watt (R-2).
2994	Coil (L-11)
3076	Resistor - 1 megohm - Carbon - 1/2 watt (R-8)
3078	Resistor - 10,000 ohms - Carbon - 1/2 watt - (R-13, R-10)
3079	Resistor - 40,000 ohms - Carbon - 1/2 watt - (R-4)
3118	Resistor - 100,000 ohms - Carbon - 1/4 watt - (R-1)
3252	Resistor - 100,000 ohms - Carbon - 1/2 watt - (R-5)
3297	Resistor - 80,000 ohms - Carbon - 1/2 watt - (R-15)
3358	Resistor - 3,000 ohms - Carbon - 1/2 watt - (R-3)
3368	Socket - UX type Radiotron socket
3382	Resistor - 750 ohms - Carbon - 1/2 watt (R-12)
3456	Capacitor - 0.05 mfd (C-1, C-15)
3460	Capacitor - 1,200 mmfd - (C-17)
3471	Capacitor - 0.025 mfd - (C-20)
3509	Socket - Five contact Radiotron socket.
3510	Shaft - Tuning condenser drive shaft.
3511	Scale - Dial scale and drum
3512	Switch - Operating switch (S-1)
3513	Capacitor - 700 mmfd - (C-12)

Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES (Continued)	
3515	Resistor - 1,800 ohms - Carbon - 1/2 watt - (R-11)
6142	Resistor - 6,000 ohms - Carbon - 1/2 watt - (R-7)
6228	Resistor - 200,000 ohms - Carbon - 1/2 watt
6249	Resistor - 1.5 ohms - Flexible type (R-14)
6280	Resistor - 400,000 ohms - Carbon - 1/2 watt - (R-9)
6315	Resistor - 45,000 ohms - Carbon - 1/2 watt - (R-4)
6333	Cable - Battery cable
6414	Capacitor pack - Comprising one 1.0 mfd., two 0.75 mfd. and two 0.1 mfd. (C-5, C-6, C-7)
6415	Transformer assembly - Comprising interstage and output transformer (T-1, T-2)
6416	Transformer - First I-F transformer
6417	Transformer - Second I-F transformer.
6418	Coil - Detector oscillator coil
6419	Coil - R.F. coil
6463	Volume control, - 100,000 ohms (R-6)
7241	Condenser - 3 gang variable tuning.

LOUDSPEAKER ASSEMBLY

6166	Board - Terminal board, two terminals
8983	Magnet assembly - Comprising cone bracket core and magnet.
8984	Cone - Speaker paper cone

MODELS R-3-C & R-25 (200/230 VOLTS D.C.)

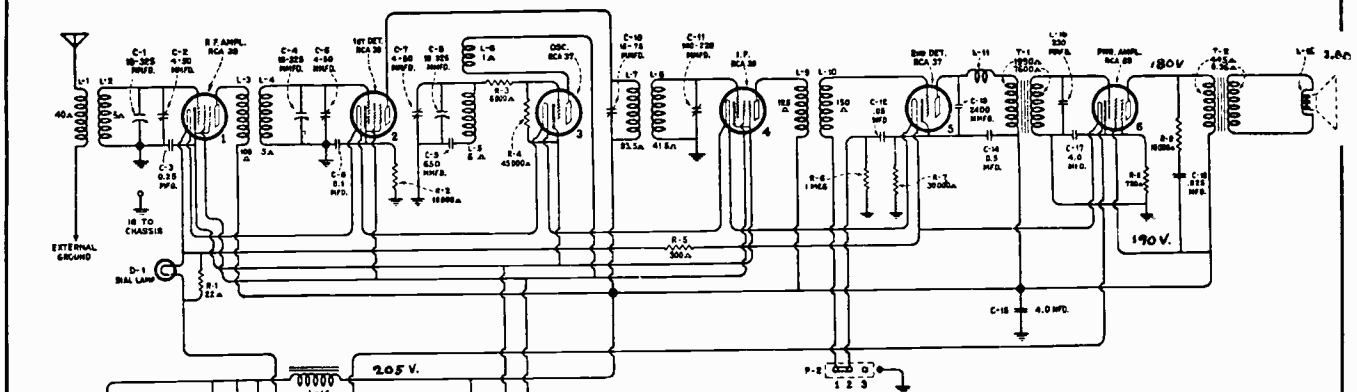


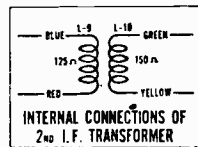
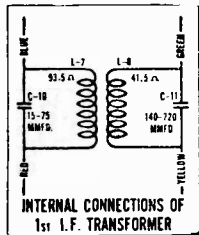
Figure A—Schematic Circuit

DIAL CALIBRATION:

With tuning condenser fully meshed, set dial so that end calibration coincides with pointer.

Connect low side of test oscillator to ground wire of receiver during 1400 kc alignment.

DO NOT CONNECT EXTERNAL GROUND TO CHASSIS.



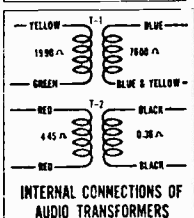
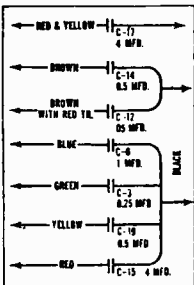
Electrical Specifications

- Voltage Rating..... 200-230 Volts
- Power Consumption..... 115 Watts
- Radiotrons Required
3 RCA-39, 2 RCA-37, 1 RCA-89—Total, 6
- Undistorted Output..... 0.7 Watt
- Intermediate Frequency..... 175 K. C.
- R. F. and Oscillator Line-up Frequency..... 1400 K. C. Only

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with .01 mfd	175 kc	Quiet Point	S & P of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 kc	140	Osc., Det. and R-F Trimmers on gang condenser

RECEIVER ASSEMBLIES

Stock No.	DESCRIPTION
2532	Capacitor—230 mmfd.—Package of 5.....
2731	Resistor—10,000 ohms—Carbon type—1 watt—Package of 5.....
2746	Socket—Pilot lamp socket.....
3076	Resistor—1 megohm—Carbon type—½ watt—Package of 5.....
3077	Resistor—30,000 ohms—Carbon type—½ watt—Package of 5.....
3078	Resistor—10,000 ohms—Carbon type—½ watt—Package of 5.....
3384	Capacitor—650 mmfd.—Located on detector and oscillator coil—Package of 5.....
3461	Coil—Second detector plate choke coil.....
3471	Capacitor—0.025 mfd.....
3472	Capacitor—0.0024 mfd.....
3517	Switch—Double pole—Single throw.....
3518	Shaft—Tuning condenser drive shaft.....
3519	Resistor—9,000 ohms—Carbon type—3 watts.....
3520	Resistor—Porcelain type—Wire wound—322 ohms—Tapped at 22 ohms.....
3566	Socket—Radiotron 5 contact socket.....
3608	Resistor—720 ohms—Carbon type—1 watt—Package of 5.....
6142	Resistor—6,000 ohms—Carbon type—½ watt—Package of 5.....
6315	Resistor—45,000 ohms—Carbon type—½ watt—Package of 5.....
6421	Transformer—Audio transformer assembly—Comprising interstage and output transformer in metal container.....



Stock No.	DESCRIPTION
6422	Capacitor assembly—Comprising two 4.0 mfd., two 0.5 mfd., one 0.25 mfd., one 0.1 mfd. and one 0.05 mfd. capacitors in metal container.....
6423	Transformer—First intermediate frequency transformer.....
6424	Transformer—Second intermediate frequency transformer.....
6425	Coil—Detector and oscillator coil.....
6426	Coil—R. F. coil.....
6427	Scale—Dial scale and drum.....
6428	Resistor—Porcelain type—995 ohms—Tapped at 290 ohms.....
6468	Volume control—Complete with mounting nut.....
7054	Cord—Power cord.....
7241	Condenser—3 gang variable tuning condenser assembly.....
7485	Socket—Radiotron 6 contact socket.....
7496	Shield—Radiotron tube shield.....
7518	Reactor—Filter reactor.....

REPRODUCER ASSEMBLIES

3005	Screw assembly—Comprising 4 screws, 8 nuts, 4 washers and 4 eyelets.....
6184	Board—Terminal board with three terminals—Package of 5.....
7442	Cone—Reproducer cone complete—Package of 5.....
8702	Ring—Cone retaining ring.....
8977	Coil assembly—Comprising field coil, cone bracket and magnet.....

Set Broadcast receiver dial to 1100 kc.

Short Wave Converter SW-3

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RANGE SWITCH TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	Antenna in series with 300-Ohm Resistor	15200 kc	1	c2 †
2		11800 kc	2	c3 *
3		9550 kc	3	c4 †
4		8150 kc	4	c5 *
5			4	c1 Rock Gang

Switch Position	Range (K. C.)
1	15600-14650
2	12350-11400
3	9950- 9000
4	6700- 5750
5	1500- 550



RCA Victor R-24 with SW-3 Converter

* Use minimum capacity peak.
 † Use maximum capacity peak.

SPECIFICATIONS

- Type of Circuit.....Super-Heterodyne Converter for use with standard broadcast receiver
- Type and Number of Radiotrons—A. C.....1 RCA-58, 1 RCA-56—Total, 2
- Type and Number of Radiotrons—Battery.....1 RCA-230, 1 RCA-232—Total, 2
- Type of Tuning....All tuning is done by means of the I. F. Amplifier, which is the broadcast receiver
- Broadcasting Ranges.....

}	6000 K. C. to 6150 K. C.—49 Meters
	9500 K. C. to 9600 K. C.—31 Meters
	11700 K. C. to 11900 K. C.—25 Meters
	15100 K. C. to 15350 K. C.—19 Meters

Requirements of Receiver for use with Converter.....High impedance antenna transformer primary insulated from the chassis or other circuits; a source of 2.5 volt current capable of supplying 2 amperes additional and a source of 180-260 volt plate current supplying an additional 5 M. A. The cabinet must also be acoustically correct, as the tendency to howl is increased by the addition of the converter.

The RCA Victor Short Wave Converter SW-3 is a two-tube Super-Heterodyne Converter that may be used with standard broadcast band receivers. By means of the Converter, short wave broadcasting stations may be received merely by tuning with the broadcast receiver. A selector switch allows choice of the short wave band that it is desired to receive.

A number of RCA Victor receivers include this Converter.

The oscillator frequencies should be the following values for the taps indicated:

Band	Oscillator Frequency	Trimming Capacitor
19 Meter	14100 K. C.	C-2
25 Meter	12900 K. C.	C-3
31 Meter	8450 K. C.	C-4
49 Meter	7250 K. C.	C-5

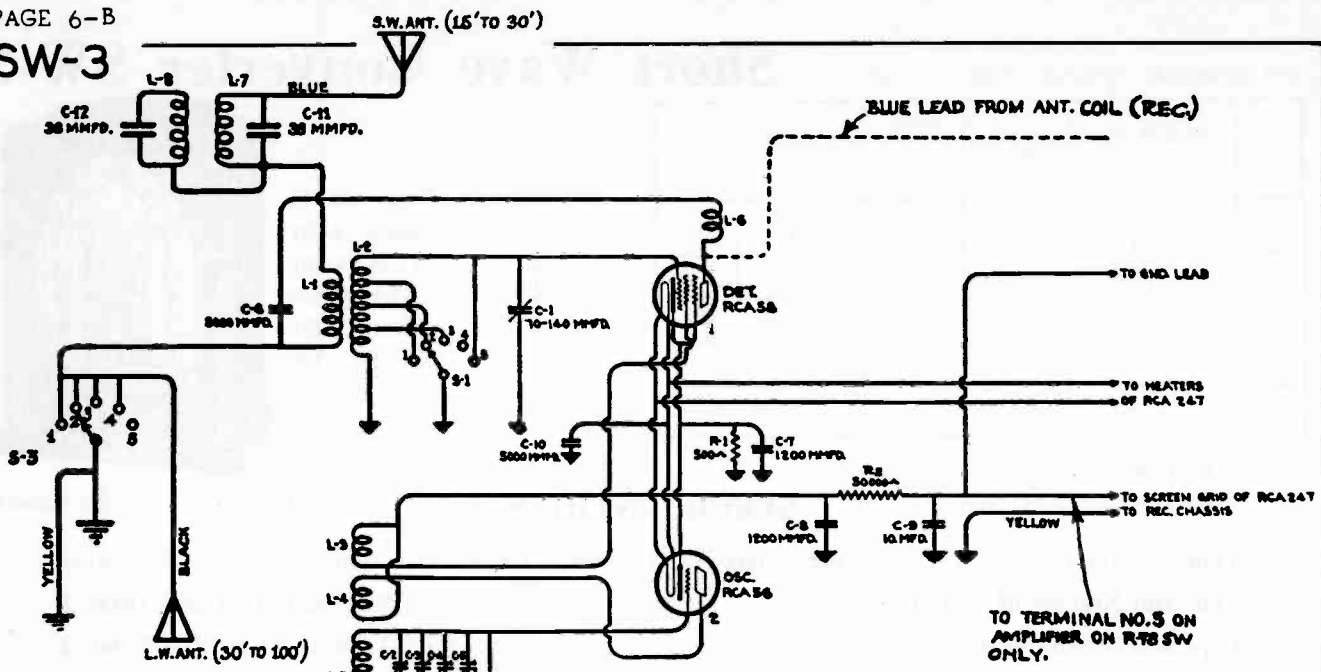
If a frequency meter or a calibrated receiver is available, either will be suitable for checking or adjusting these capacitors. If such equipment is not available then the following method may be used:

The frequency of the oscillator may be checked by adding or subtracting the dial reading in kilocycles from the operating frequency of the station being received. The instruction book lists a number of stations with their correct operating frequency. The dial reading should be added or subtracted as follows:

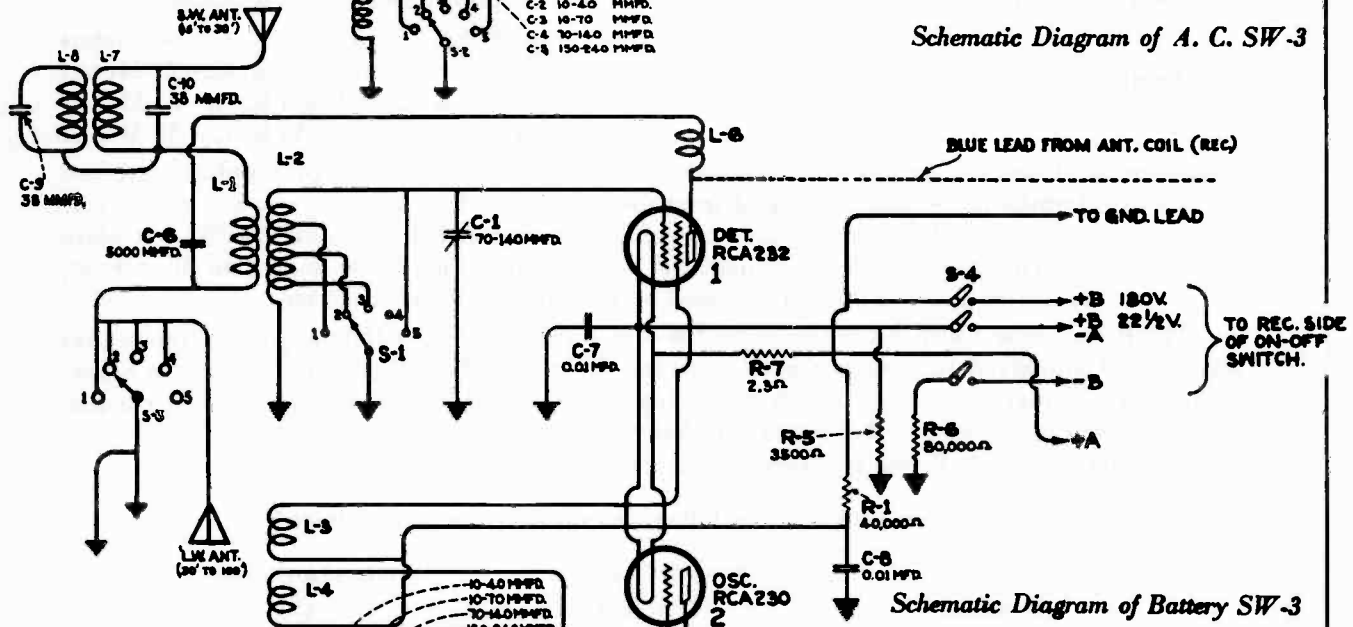
- 19 Meter Tap..... Subtract dial reading.
- 25 Meter Tap..... Add dial reading.
- 31 Meter Tap..... Subtract dial reading.
- 49 Meter Tap..... Add dial reading.

It will be noted that when the oscillator trimmer capacitors are properly adjusted, all stations operating in the assigned bands will fall between 950 and 1300 K. C. on the receiver dial. The purpose of the oscillator capacitors is to adjust this range and is *not* a sensitivity adjustment.

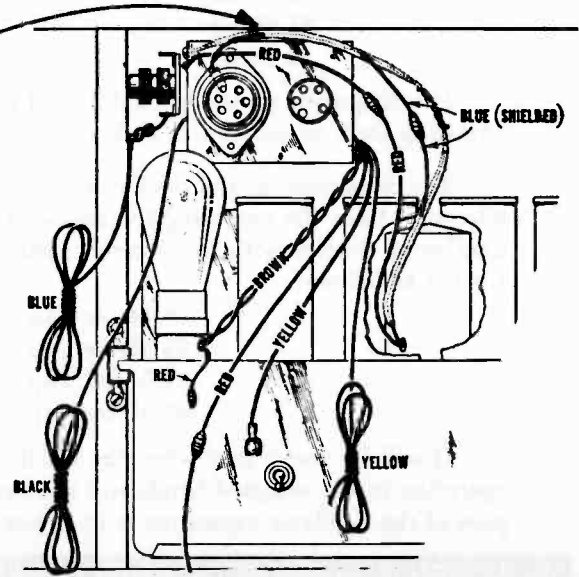
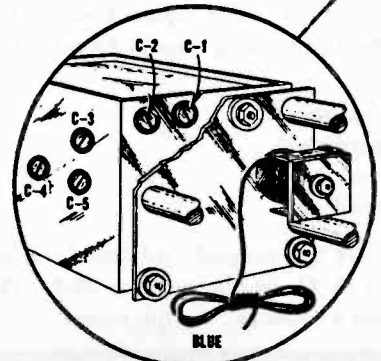
SW-3



Schematic Diagram of A. C. SW-3



Schematic Diagram of Battery SW-3

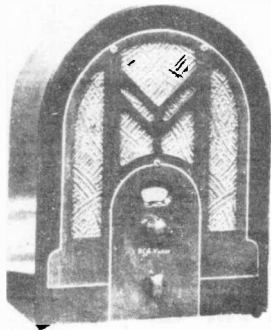


REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
	SW-3 A. C.		
2012	Capacitor—1200 mmfd.....	3501	Capacitor — 38 mmfd. — Located on rejector coil.....
2747	Contact cap—Package of 5.....	3504	Shield—Detector shield.....
2969	Resistor—50,000 ohms—Carbon type—1 watt—Package of 5.....	3576	Resistor—2.3 ohms—Flexible type—Package of 5.....
2932	Capacitor—5000 mmfd.....	3577	Resistor—3,500 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....
3383	Resistor—500 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....	3578	Capacitor—0.01 mfd.....
3420	Switch—Range selector switch.....	3579	Resistor—63 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....
3421	Coil—Oscillator coil.....	6100	Coil—Choke coil.....
3422	Capacitor — Adjustable capacitor — 10 mmfd. to 40 mmfd. and 70 mmfd. to 140 mmfd.....	6109	Knob—Range switch selector knob—Package of 5.....
3423	Capacitor — Adjustable capacitor — 70 mmfd. to 140 mmfd. and 150 mmfd. to 240 mmfd.....	6300	Socket—4 contact Radiotron socket.....
3424	Coil—Detector coil.....	6379	Coil—Detector coil.....
3425	Capacitor — Adjustable capacitor — 10 mmfd. to 70 mmfd.....	6380	Coil—Oscillator coil.....
3426	Escutcheon — Range selector switch escutcheon.....	7488	Shield—Detector tube shield top.....
3427	Capacitor—10 mfd. capacitor.....		SPECIAL PARTS FOR R-24-A, R-24-B, RE-81 and RAE-84 RECEIVER ASSEMBLIES
3428	Plate—Converter mounting plate assembly.....	3502	Base and mounting bracket for R. F. coil.....
3429	Screw—Converter mounting screw—Package of 3.....	3503	Shield—R. F. coil shield.....
3500	Coil—Rejector coil—Located on mounting plate.....	6111	Coil—R. F. coil complete with mounting bracket.....
3501	Capacitor — 38 mmfd. — Located on resistor board.....		SPECIAL PARTS FOR R-24-A RECEIVER ASSEMBLIES
3504	Shield—Detector shield.....	3522	Resistor—17,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....
6100	Coil—Choke coil.....		REPRODUCER ASSEMBLIES
6109	Knob—Range selector switch knob—Package of 5.....	6390	Transformer—Output transformer.....
6350	Adaptor—Five prong adaptor plug complete with leads.....	8976	Coil assembly—Comprising field coil magnet and cone support.....
7484	Socket—UY type Radiotron socket.....		SPECIAL PARTS FOR R-24-B RECEIVER ASSEMBLIES
7485	Socket—Radiotron 6 contact socket.....	3048	Resistor—500,000 ohms—Carbon type — $\frac{1}{2}$ watt—Package of 5.....
	SW-3 (Battery)	3079	Resistor—40,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....
2747	Contact cap—Package of 5.....	6312	Capacitor—650 mmfd.—Package of 5.....
2932	Capacitor—5000 mmfd.....		SPECIAL PARTS FOR RE-81
3045	Resistor—40,000 ohms—1 watt—Carbon type—Package of 5.....	7587	Transformer—Filament transformer.....
3297	Resistor—80,000 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....		SPECIAL PARTS FOR RAE-84
3420	Switch—Range selector switch.....	3048	Resistor—500,000 ohms—Carbon type — $\frac{1}{2}$ watt—Package of 5.....
3422	Capacitor — Adjustable capacitor — 10 mmfd. to 40 mmfd. and 70 mmfd. to 140 mmfd.....	3505	Capacitor—0.1 mfd.....
3423	Capacitor — Adjustable capacitor — 70 mmfd. to 140 mmfd. and 150 mmfd. to 240 mmfd.....	3506	Knob—Range switch selector knob.....
3425	Capacitor — Adjustable capacitor — 10 mmfd. to 70 mmfd.....	3523	Capacitor pack—Comprising two 0.05 mfd. capacitors in metal container.....
3426	Escutcheon — Range selector switch escutcheon.....		SPECIAL PARTS FOR RE-81 and RAE-84
3428	Plate—Converter mounting plate assembly.....	6412	Capacitor—10 mfd.....
3429	Screw—Converter mounting screw—Package of 3.....	6413	Meter—Tuning meter.....
3500	Coil—Rejector coil.....		

MODEL 4T A-C, Superheterodyne-Reflex Receiver



MODEL 4T

Specifications

RADIOTRON COMPLEMENT

- (1) RCA-6A7.....First Detector-Oscillator
- (2) RCA-6B7....I-F., 2nd Det., Audio, and A.V.C.
- (3) RCA-41.....Power Output
- (4) RCA-1V.....Half-Wave Rectifier

Frequency Range.....540-1,720 kc.
 Intermediate Frequency.....460 kc.
 Alignment Frequencies.....460 kc. (I.F.), 1,500 kc. (antenna and oscillator)

POWER SUPPLY RATINGS

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

POWER OUTPUT

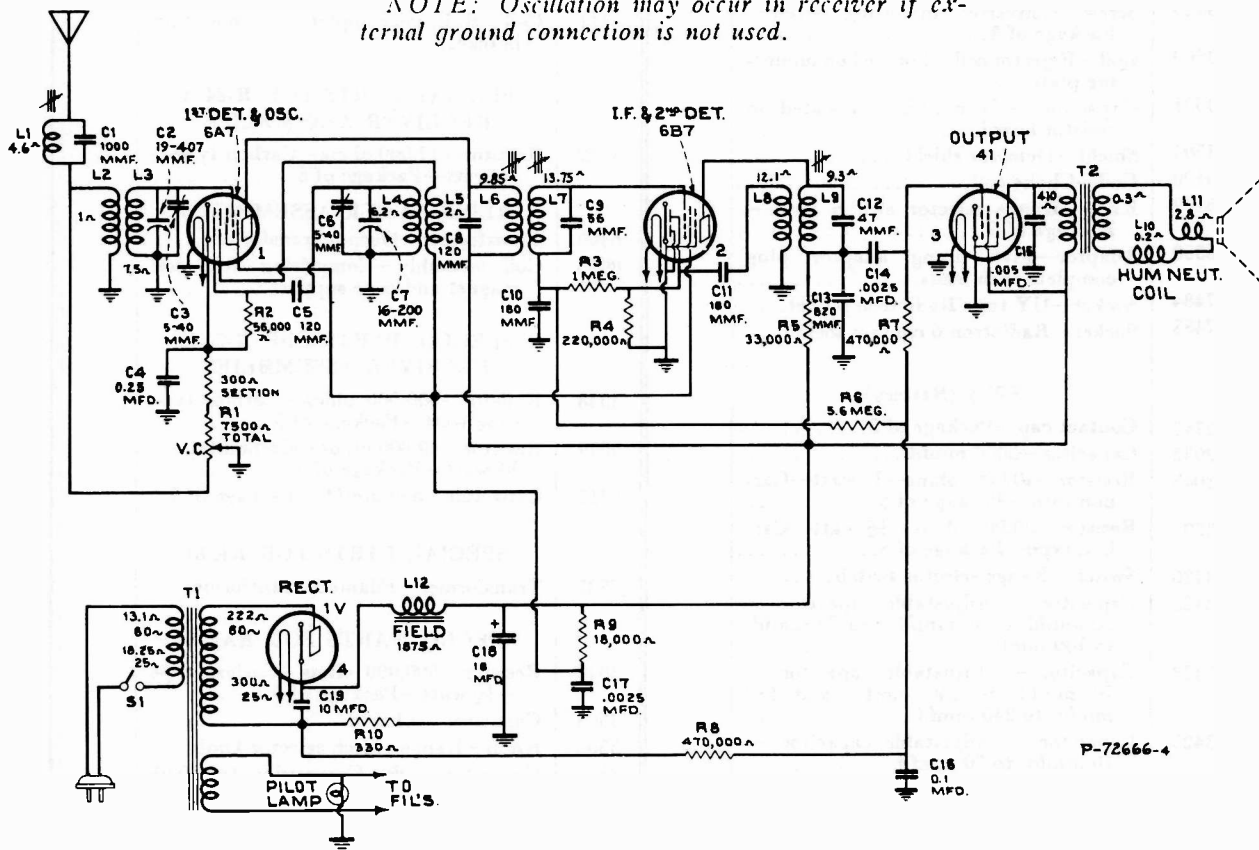
Undistorted.....1.75 watts
 Maximum.....2.5 watts

LOUDSPEAKER

Type.....Electrodynamic
 Impedance (V.C.).....3.2 ohms at 400 cycles

Pilot Lamp.....Mazda No. 46, 6.3 volts, 0.25 amperes

NOTE: Oscillation may occur in receiver if external ground connection is not used.



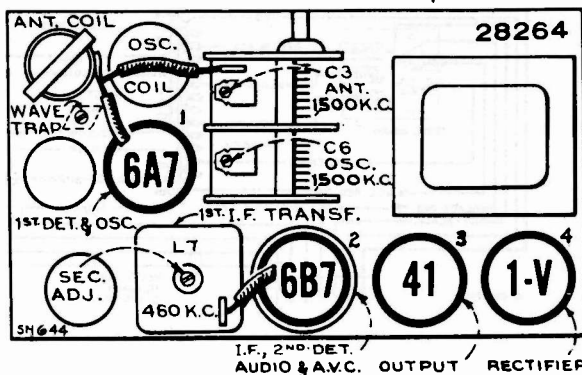
—Schematic Circuit Diagram

* On some instruments C-4 is .05 mfd. Make all replacements with Stock No. 4840.

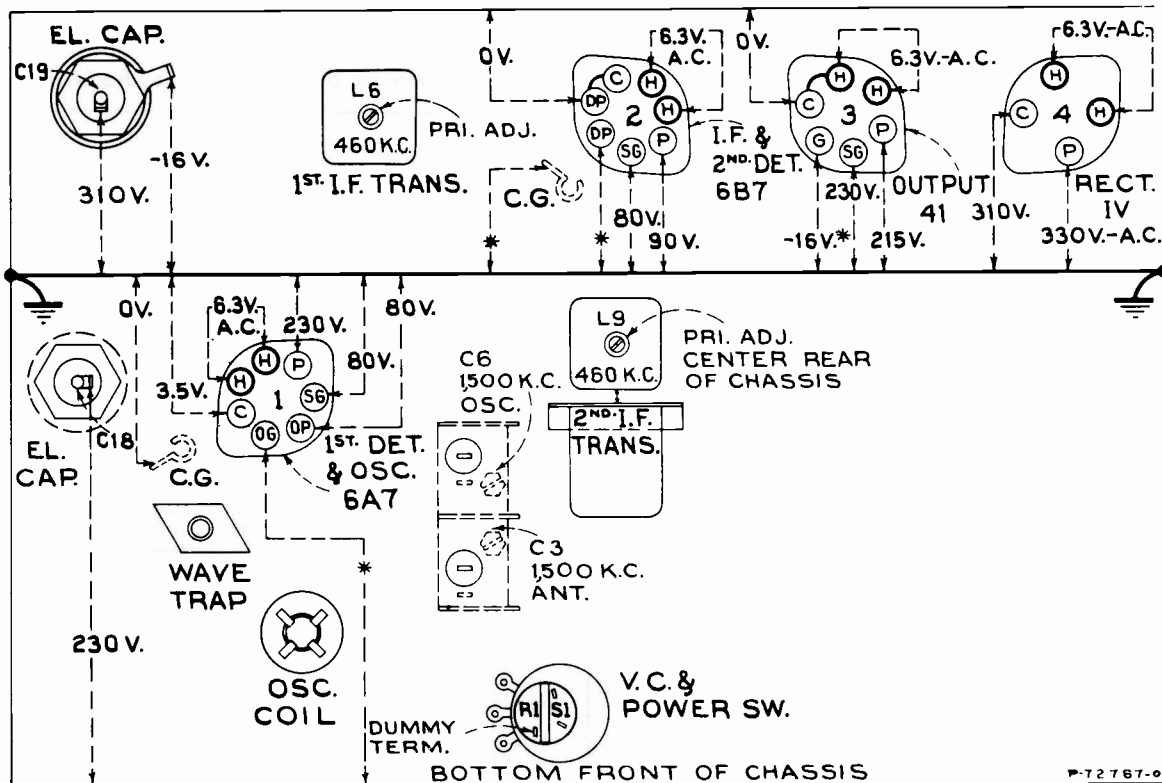
DIAL CALIBRATION:

With tuning condenser fully meshed, set pointer to coincide with extreme end calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 kc	Quiet Point near 800 kc	L9 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L7, L6 1st I-F Trans.
3	Antenna in series with 200 mmfd	1500 kc	1500 kc	L1 Minimum Output Wave Trap
4				C6, C3 Osc. Ant.



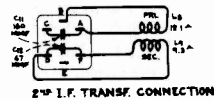
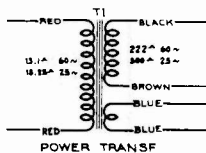
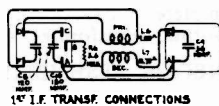
Radiotron, Coil, and Trimmer Locations



* CANNOT BE MEASURED WITH ORDINARY VOLTMETER.

Radiotron Socket Voltages and Trimmer Locations

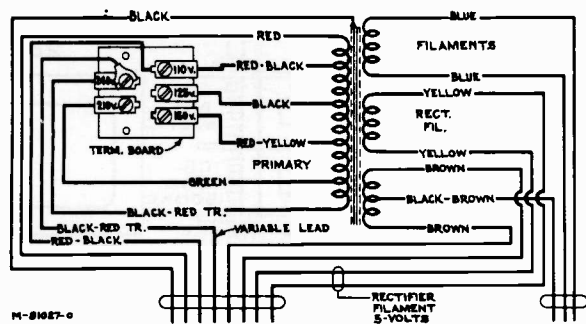
Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc.—No signal being received—Volume Control Maximum



SERVICE HINTS

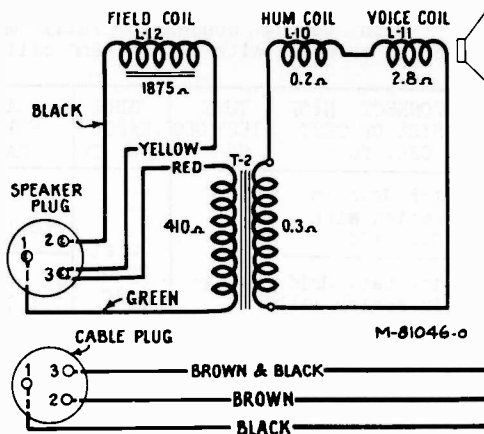
- (1) Hum or distortion when tuned to a station may be due to improper connection of resistor R-2.

4T



Primary Resistance - 23.6 ohms Total
Secondary Resistance - 180 ohms Total

Universal Transformer



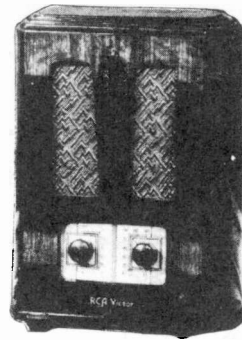
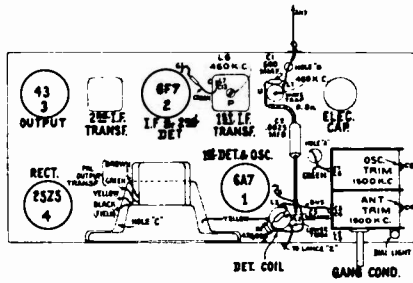
Loudspeaker Wiring

REPLACEMENT PARTS

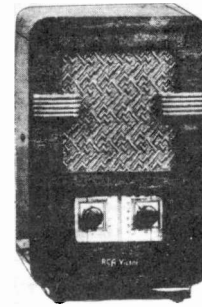
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
6956	Cap—Radiotron shield top for Stock No. 3942	12607	Shield—First I.F. transformer shield cap..
12118	Cap—Grid contact cap—Package of 5...	11126	Shield—Oscillator coil shield.....
12405	Capacitor—47 Mmfd. (C12).....	3942	Shield—Radiotron shield.....
12629	Capacitor—56 Mmfd. (C9).....	12408	Shield—Second I.F. transformer shield...
12404	Capacitor—120 Mmfd. (C8).....	4794	Socket—4-contact rectifier RCA-1V Radiotron socket.....
12634	Capacitor—120 Mmfd. (C5).....	4786	Socket—6-contact RCA-41 Radiotron socket
12406	Capacitor—180 Mmfd. (C10, C11)....	4787	Socket—7-contact RCA-6A7 or RCA-6B7 Radiotron socket.....
12536	Capacitor—820 Mmfd. (C13).....	12625	Socket—Dial lamp socket, bracket and indicator
12635	Capacitor—1,000 Mmfd. (C1).....	12007	Spring—Retaining spring for Stock No. 12006—Package of 10.....
5107	Capacitor—.0025 Mfd. (C14, C17)....	12627	Transformer—First I.F. transformer (L6, L7, C8, C9, C10, R6).....
4838	Capacitor—.005 Mfd. (C15).....	11664	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1).....
4841	Capacitor—0.1 Mfd. (C16).....	11665	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1).....
4840	Capacitor—0.25 Mfd. (C4).....	11666	Transformer—Power transformer, 100-130, 140-160, 195-250 volts, 40-60 cycles
11240	Capacitor—10 Mfd. (C19).....	12630	Transformer—Second I.F. transformer (L8, L9, C11, C12).....
5212	Capacitor—18 Mfd. (C18).....	12631	Trap—Wave trap (L1).....
11661	Coil—Antenna coil (L2, L3).....	11663	Volume Control—Volume control and operating switch (R1, S1).....
11662	Coil—Oscillator coil (L4, L5).....	REPRODUCER ASSEMBLIES	
12624	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7).....	12446	Coil—Neutralizing coil (L10).....
12006	Core—Core and stud assembly for Stock Nos. 12627, 12630 and 12631.....	12576	Coil—Reproducer field coil (L12).....
12632	Dial—Indicator dial scale.....	12574	Cone—Reproducer cone complete (L11).....
12626	Indicator—Tuning indicator for Stock No. 12625—Package of 10.....	5118	Connector—3-contact male connector plug for Reproducer.....
4340	Lamp—Dial lamp—Package of 5.....	5119	Connector—3-contact female connector plug for Reproducer.....
11670	Resistor—330 ohms, carbon type, 1 watt (R10)—Package of 5.....	9698	Reproducer, complete.....
11671	Resistor—18,000 ohms, carbon type, 2 watt (R9).....	12575	Transformer—Output transformer (T2).....
11669	Resistor—33,000 ohms, carbon type, 1 watt (R5)—Package of 5.....	MISCELLANEOUS ASSEMBLIES	
12286	Resistor—56,000 ohms, Insulated, 1/4 watt (R2)—Package of 5.....	11347	Knob—Station selector knob—Package of 5
12264	Resistor—220,000 ohms, Insulated, 1/4 watt (R4)—Package of 5.....	12638	Knob—Volume control knob—Package of 5
12285	Resistor—470,000 ohms, Insulated, 1/4 watt (R7, R8)—Package of 5.....	11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12638—Package of 5.....
12200	Resistor—1 megohm, Insulated, 1/4 watt (R3)—Package of 5.....		
12628	Resistor—5.6 megohm, carbon type, 1/10 watt (R6)—Package of 5.....		
12633	Screw—Set screw for dial, Stock No. 12632—Package of 10.....		
12008	Shield—First I.F. transformer shield.....		

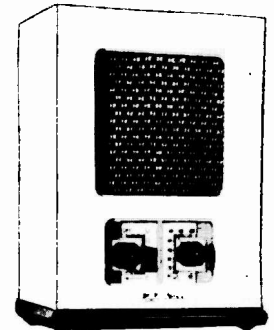
AC-DC, Superheterodyne MODELS 4X, 4X3, and 4X4



MODEL 4X



MODEL 4X3



MODEL 4X4

FREQUENCY RANGE
 "Standard Broadcast" (A)..... 540-1,720 kc

ALIGNMENT FREQUENCIES
 "Standard Broadcast" (A)...1,500 kc (osc. and ant.)

Intermediate Frequency.....460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A7.....First Detector-Oscillator
- (2) RCA-6F7.....I. F. and Second Detector

- (3) RCA-43.....Power Output
- (4) RCA-25Z5.....Half-wave Rectifier

Power Supply Rating (105-125 volts).....50-60 cycles—55 watts, D.C.—50 watts

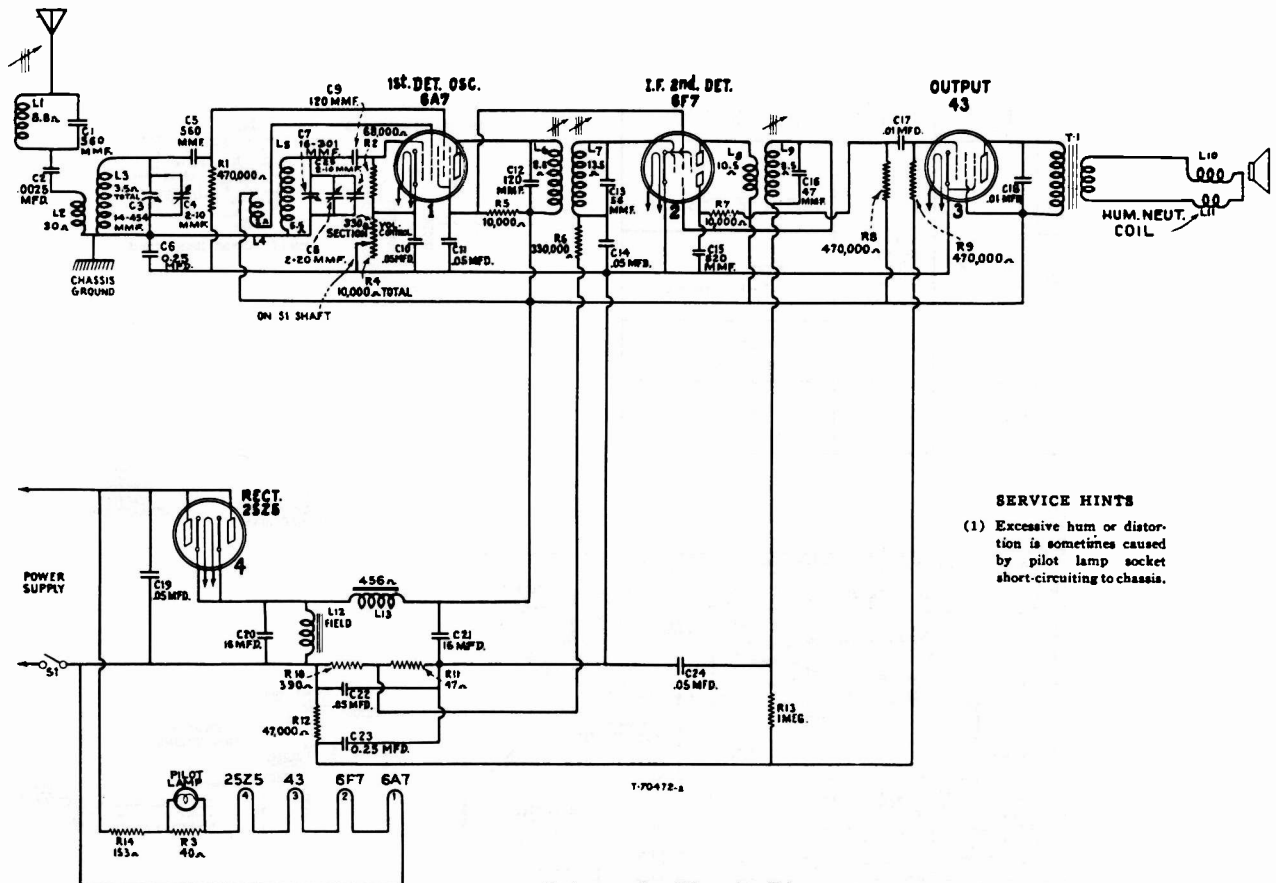
POWER OUTPUT

Undistorted.....0.3 watts A.C., 0.25 watts D.C.
 Maximum.....0.8 watts A.C., 0.6 watts D.C.

LOUDSPEAKER

Type.....Electrodynamic
 Impedance (v.c.) {M80864-1, 4.5 ohms } at 400 cycles
 {M80864-2, 3.0 ohms }

Pilot Lamp.....Mazda No. 40, 6.3 volts, 0.15 ampere

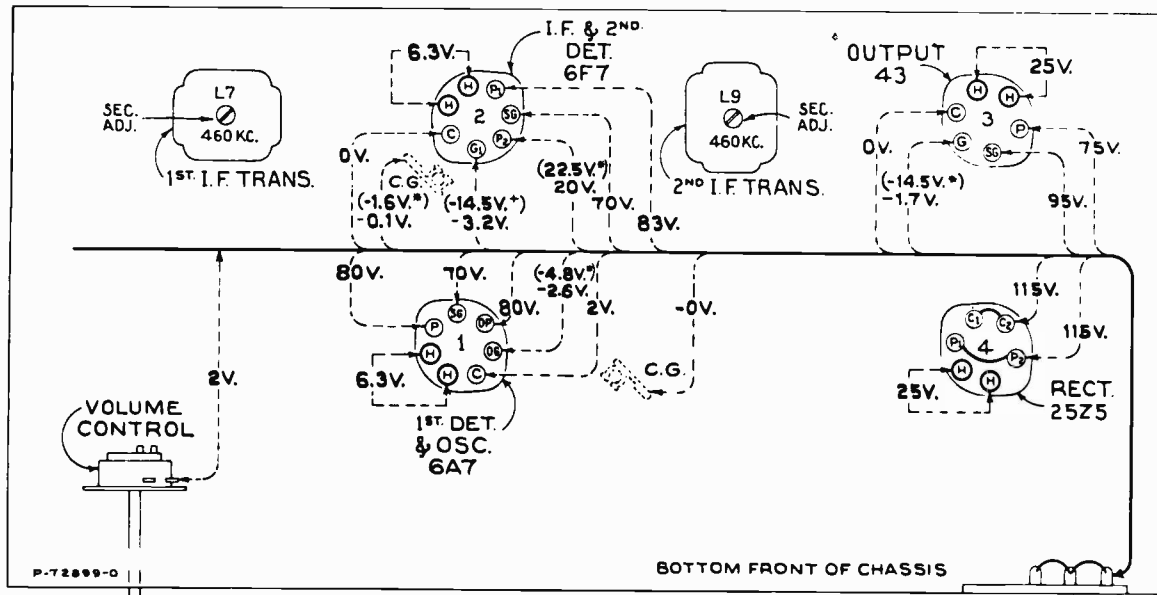


SERVICE HINTS

- (1) Excessive hum or distortion is sometimes caused by pilot lamp socket short-circuiting to chassis.

—Schematic Circuit Diagram

4X, 4X3 & 4X4



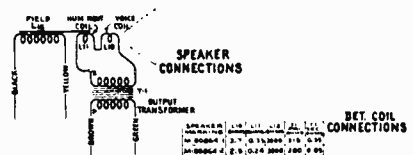
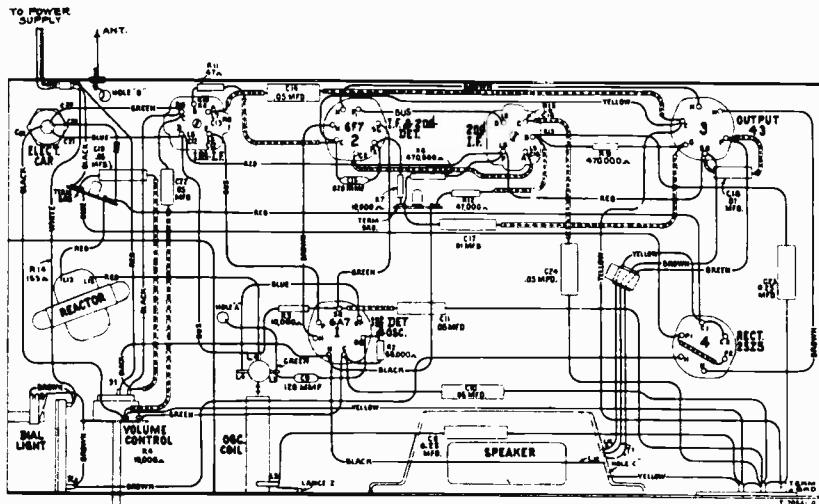
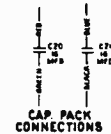
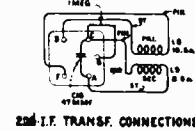
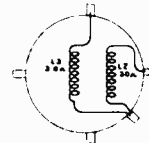
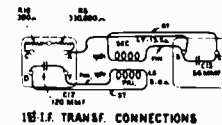
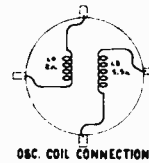
Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—For 115-volt d-c supply approximately 10% lower
 Tuned to approximately 550 kc—No signal being received—
 Volume control maximum

DIAL CALIBRATION:

With tuning condenser fully meshed, set pointer to coincide with extreme end calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 kc	Quiet Point near 500 kc	L9 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L7 and L8 1st I-F Trans.
3	Antenna in series with 200 mmfd	1500 kc	1500 kc	L1 Minimum Output Wave Trap
4				C8, C4 Osc. Ant.



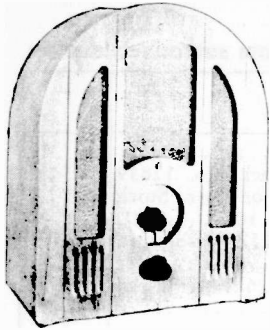
4X, 4X3 & 4X4

REPLACEMENT PARTS

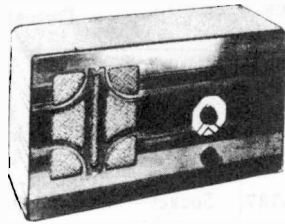
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12118	Cap—Grid contact cap—Package of 5...	12218	Shield—Radiotron shield.....
12405	Capacitor—47 Mmfd. (C16).....	12607	Shield—Shield top for Stock No. 12839
12629	Capacitor—56 Mmfd. (C13).....	12007	Spring—Retaining spring of core Stock No. 12006—Package of 10.....
12404	Capacitor—120 Mmfd. (C12).....	4786	Socket—6-contact 43 or 25Z5 radiotron socket.....
12724	Capacitor—120 Mmfd. (C9).....	4787	Socket—7-contact 6A7 or 6F7 radiotron socket.....
12537	Capacitor—560 Mmfd. (C1, C5).....	12846	Socket—Dial lamp socket.....
12536	Capacitor—820 Mmfd. (C15).....	12839	Transformer—First I.F. transformer complete (L6, L7, C12, C13, R6, R10)...
5107	Capacitor—.0025 Mfd. (C2).....	12840	Transformer—Second I.F. transformer complete (L8, L9, C16, R13).....
4858	Capacitor—.01 Mfd. (C17, C18).....	12497	Trap—Wave trap (L1).....
4836	Capacitor—.05 Mfd. (C10, C11, C14, C22, C24).....	12836	Volume Control and power switch (R4, S1).....
4886	Capacitor—.05 Mfd. (C19).....	REPRODUCER ASSEMBLIES (M80864-1)	
4840	Capacitor—0.25 Mfd. (C23).....	12499	Coil—Field coil (L12).....
12484	Capacitor—0.25 Mfd. (C6).....	12731	Coil—Neutralizing coil (L11).....
12844	Capacitor—Pack comprising 2 sections each 16 Mfd. (C20, C21).....	12498	Cone—Reproducer cone and dust cap (L10).....
12837	Coil—Antenna coil (L2, L3).....	9684	Reproducer Complete.....
12838	Coil—Oscillator coil (L4, L5).....	12500	Transformer—Output transformer (T1)...
12842	Condenser—2-gang variable tuning condenser (C3, C4, C7, C8).....	REPRODUCER ASSEMBLIES (M80864-2)	
12847	Cord—Power cord, 153 ohm resistance (R14).....	13149	Coil—Reproducer field and neutralizing coil (L11, L12).....
12006	Core—Adjustable core and stud for Stock No. 12497, 12839 and 12840.....	13148	Cone—Reproducer cone complete (L10)
4340	Lamp—Dial lamp, 6.3 volt—Package of 5	9750	Reproducer—Speaker complete.....
12409	Lead—Antenna lead approximately 20 feet long.....	13151	Transformer—Output transformer (T1)...
12843	Reactor—Iron core reactor (L13).....	MISCELLANEOUS ASSEMBLIES	
12848	Resistor—47 ohm—insulated—1/4 watt—Package of 5 (R11).....	12834	Dial—Station selector dial scale (4X and 4X3).....
12841	Resistor—390 ohm—carbon type—1/10 watt—Package of 5 (R10).....	12935	Dial—Station selector dial scale (Used on 4X4 only).....
12265	Resistor—10,000 ohm—insulated—1/4 watt—Package of 5 (R5, R7).....	12833	Knob—Station selector knob—Package of 5 (4X and 4X3).....
12412	Resistor—47,000 ohm—insulated—1/4 watt—Package of 5 (R12).....	12934	Knob—Station selector knob—Package of 5 (4X4 only).....
12696	Resistor—68,000 ohm—insulated—1/4 watt—Package of 5 (R2).....	12933	Knob—Volume control knob—Package of 5 (4X4 only).....
11297	Resistor—330,000 ohm—carbon type—1/10 watt—Package of 5 (R6).....	12673	Knob—Volume control knob—Package of 5 (4X and 4X3).....
11452	Resistor—470,000 ohm—carbon type—1/10 watt—Package of 5 (R1).....	12835	Screw—Chassis mounting screw and washers—Package of 10.....
12285	Resistor—470,000 ohm—insulated—1/4 watt—Package of 5 (R8, R9).....	4119	Screw—Set screw for knob Stock No. 12673, 12833, 12933 and 12934—Package of 20.....
12013	Resistor—1 meg—carbon type—1/10 watt—Package of 5 (R13).....		
12845	Resistor—Wire wound 40 ohms (R3)...		
12008	Shield—I.F. transformer shield for Stock No. 12839.....		
12408	Shield—I.F. transformer shield for Stock No. 12840.....		

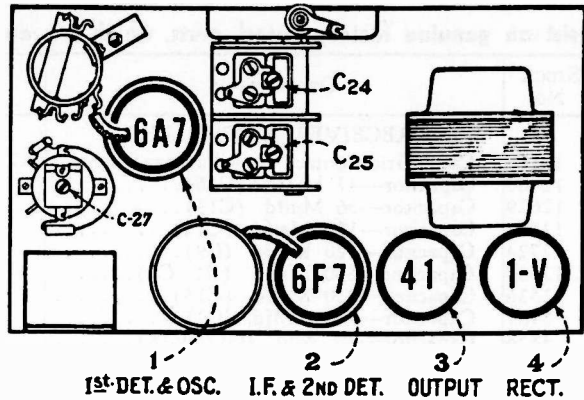
MODELS T 4-8 and T 4-9 Four-Tube, Single Band, A-C



MODEL T 4-8



MODEL T 4-9

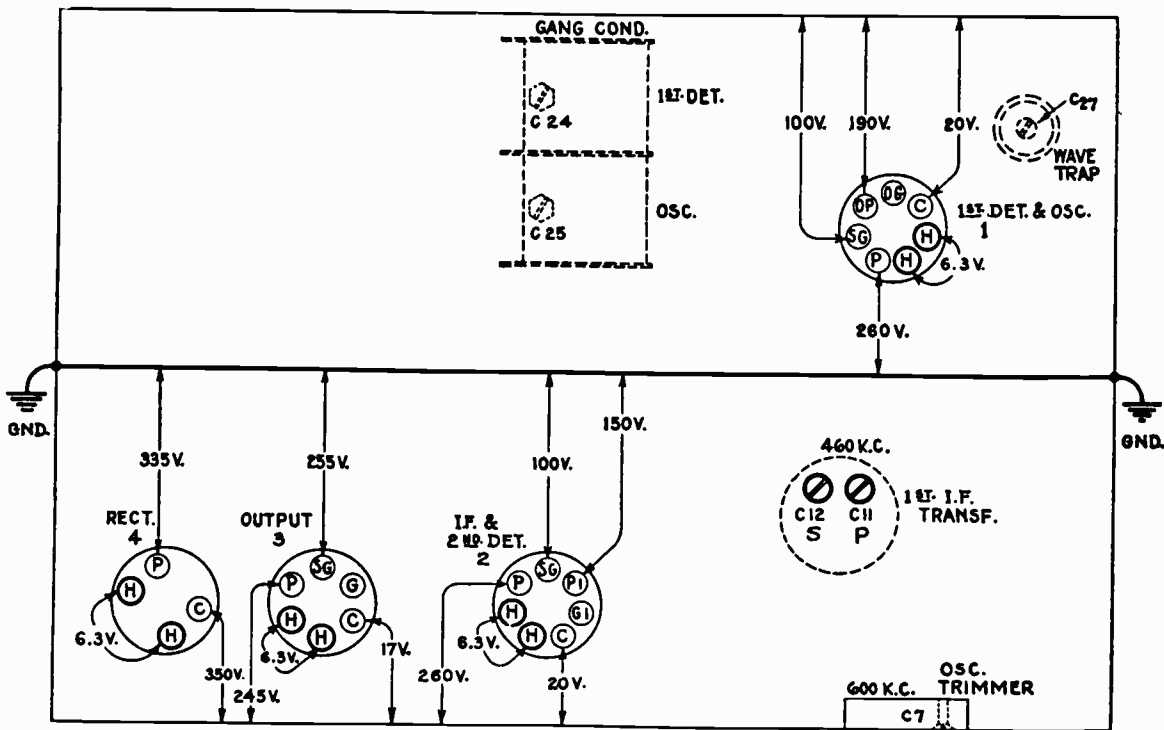


1 1st-DET. & OSC. 2 I.F. & 2ND DET. 3 OUTPUT 4 RECT.

SPECIFICATIONS

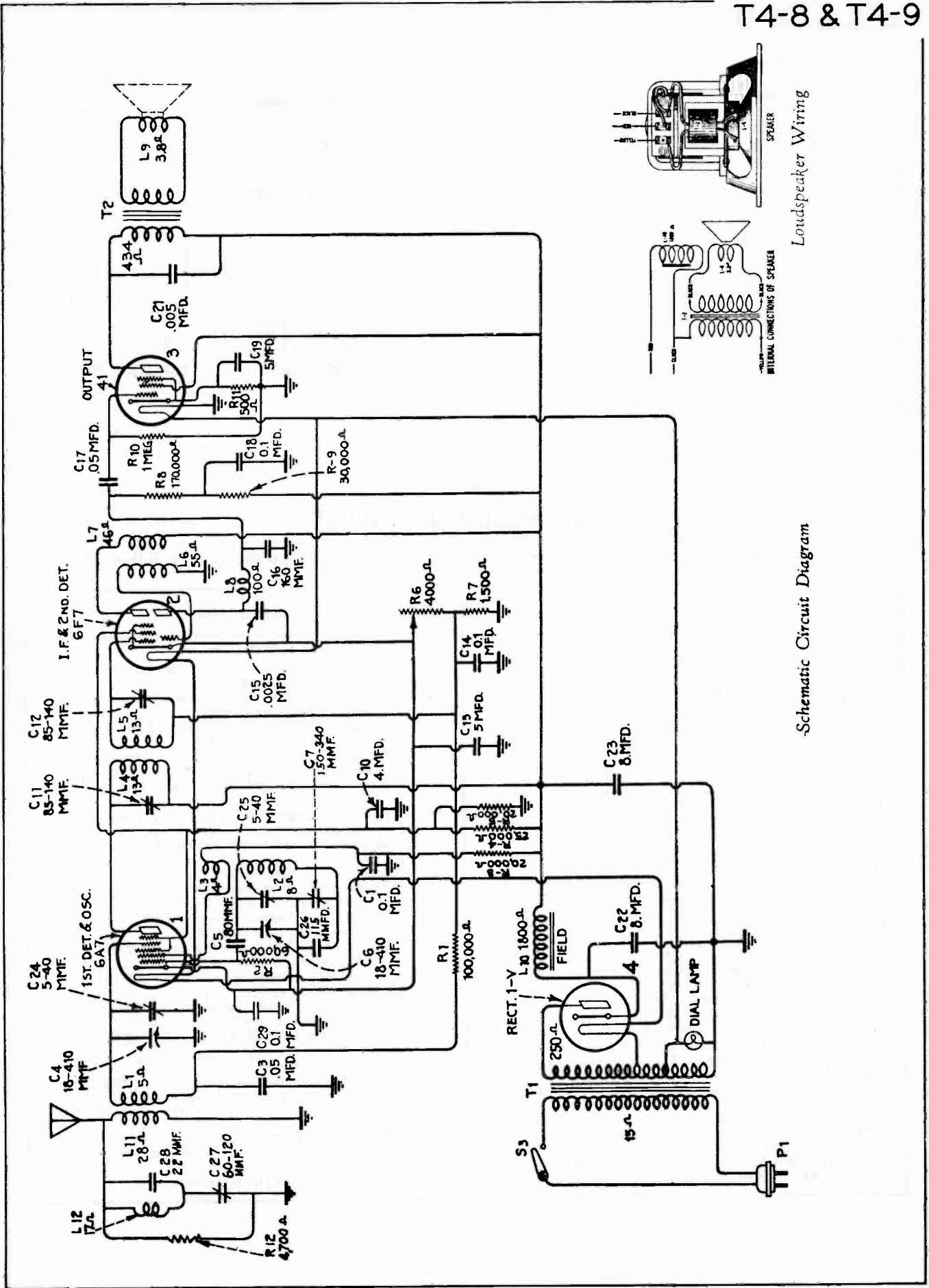
Radiotron Locations

Type of Circuit.....	Superheterodyne			
Radiotron Complement	(1) RCA-6A7, First Detector and Oscillator (2) RCA-6F7, I-F Amplifier and Second Detector (3) RCA-41, Power Output Amplifier (4) RCA-1v, Half-wave Rectifier			
Tuning Range.....	540-1720 kc.			
Intermediate Frequency.....	460 kc.			
Alignment Frequencies.....	460 kc. (i.f.), 600 kc. (det., osc.), 1720 kc. (det., osc.)			
Voltage and Frequency Ratings.....	<table border="0"> <tr> <td>105-125 volts, 50-60 cycles</td> </tr> <tr> <td>105-125 volts, 25-60 cycles</td> </tr> <tr> <td>200-250 volts, 50-60 cycles</td> </tr> </table>	105-125 volts, 50-60 cycles	105-125 volts, 25-60 cycles	200-250 volts, 50-60 cycles
105-125 volts, 50-60 cycles				
105-125 volts, 25-60 cycles				
200-250 volts, 50-60 cycles				
Power Consumption.....	40 watts at 115 volts			
Undistorted Audio Output.....	1.75 watts			
Maximum Audio Output.....	2.50 watts			
Loudspeaker.....	6 inch, Electrodynamic			

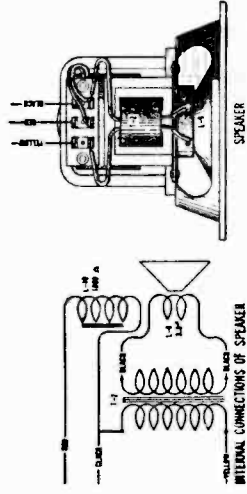


Trimmer Locations and Radiotron Socket Voltages to Chassis
Measured at 120 volts A-C Supply—No Signal — Volume Control Maximum

T4-8 & T4-9



Schematic Circuit Diagram



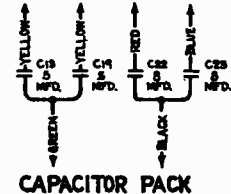
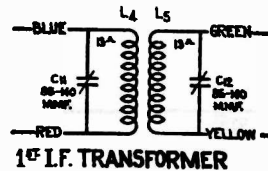
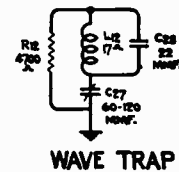
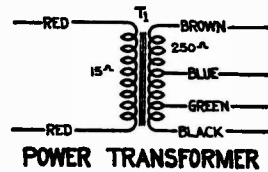
Loudspeaker Wiring

T4-8 & T4-9

DIAL CALIBRATION:

With tuning condenser fully meshed, check dial calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01 mfd	480 kc	Quiet Point near 800 kc	C12, C11 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 kc	1400 kc	G27 Wave Trap Minimum Output
3				C25, C24 Osc. Ant.
4				C7 L-F Osc. (Rock Gang)
5	<i>Repeat Step 3</i>			



REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
4244	Cap—Grid contact cap—Package of 5....	3602	Resistor—60,000 ohms—Carbon type—1/4 watt (R2)—Package of 5.....
4000	Capacitor—Adjustable capacitor (C7)....	3118	Resistor—100,000 ohms—Carbon type—1/4 watt (R1)—Package of 5.....
3459	Capacitor—80 mmfd. (C5).....	3869	Resistor—170,000 ohms—Carbon type—1/2 watt (R8)—Package of 5.....
11302	Capacitor—115 mmfd. (C26).....	3076	Resistor—1 megohm—Carbon type—1/2 watt (R10)—Package of 5.....
3865	Capacitor—160 mmfd. (C16).....	3584	Ring—Oscillator coil shield ring—Package of 5.....
5107	Capacitor—0.0025 mfd. (C15).....	6665	Shield—Oscillator coil shield and bracket assembly.....
6787	Capacitor—0.005 mfd. (C21).....	3942	Shield—I. F. and second detector Radiotron shield.....
4836	Capacitor—0.05 mfd. (C3).....	8098	Socket—Dial lamp socket.....
4886	Capacitor—0.05 mfd. (C17).....	11187	Transformer—First intermediate frequency transformer (L4, L5, C11, C12).....
4835	Capacitor—0.1 mfd. (C1).....	6663	Transformer—Second intermediate frequency transformer (L6, L7).....
4885	Capacitor—0.1 mfd. (C14, C18).....	9465	Transformer—Power transformer—105-125 volts—25-50 cycles.....
4841	Capacitor—0.1 mfd. (C29).....	9464	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....
6832	Capacitor—4.0 mfd. (C10).....	9466	Transformer—Power transformer—200-250 volts—50-60 cycles.....
6661	Capacitor pack—Comprising two 5.0 mfd. and two 8.0 mfd. capacitors (C13, C19, C22, C23).....	11224	Trap—Wave trap (R12, L12, C27, C28).
5051	Coil—Antenna coil (L1, L11, C3, R1)....	REPRODUCER ASSEMBLIES	
3857	Coil—Choke coil (L8).....	9548	Coil assembly—Comprising field coil, magnet and cone support (L10).....
5050	Coil—Oscillator coil (L2, L3).....	9588	Cone—Reproducer cone—(L9)—Package of 5.....
6660	Condenser—Two-gang variable tuning condenser (C4, C6, C24, C25).....	9547	Reproducer—Complete.....
6667	Volume control (R6, S3).....	4447	Shield—Terminal board shield for reproducer.....
11301	Dial—Station selector dial.....	4803	Transformer—Output transformer (T2)...
4340	Lamp—Dial lamp—Package of 5.....		
3632	Resistor—500 ohms—Carbon type—1 watt (R11)—Package of 5.....		
3047	Resistor—1500 ohms—Carbon type—1/2 watt (R7)—Package of 5.....		
6114	Resistor—20,000 ohms—Carbon type—1 watt (R3, R5)—Package of 5.....		
3889	Resistor—25,000 ohms—Carbon type—3 watt (R4).....		
3077	Resistor—30,000 ohms—Carbon type—1/2 watt (R9)—Package of 5.....		

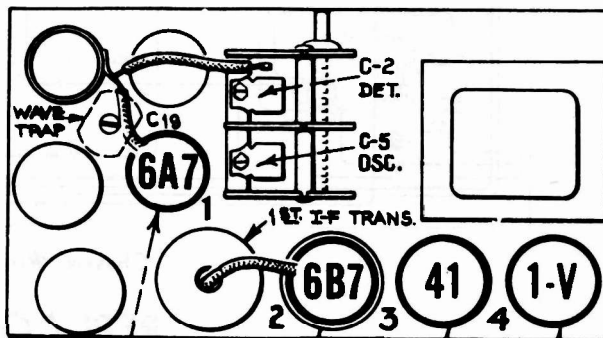
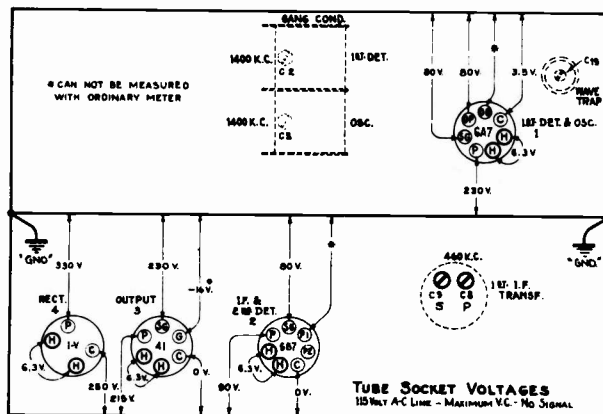
MODELS T 4-8A and T 4-9A

These instruments are similar to Models T 4-8 and T 4-9 except for several circuit modifications. The major differences include:—rearrangement of wave-trap circuit, removal of oscillator low frequency trimmer, replacement of the RCA-6F7 with an RCA-6B7, and reflexing of the i-f stage for additional audio amplification. The intermediate frequency remains at 460 kc. The antenna and oscillator coils are to be aligned only at 1400 kc. Refer to T 4-8 and T 4-9. Service Notes for loudspeaker data, power ratings and specifications.

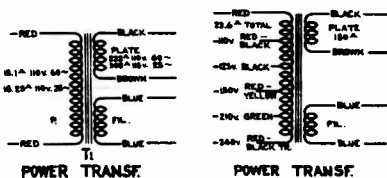
DIAL CALIBRATION:

With tuning condenser fully meshed, check dial calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01 mfd	460 kc	Quiet Point near 600 kc	C12, C11 1st I-F Trans.
2	Antenna in series with 200 mmfd			C27 Wave Trap Minimum Output
3		1400 kc	1400 kc	C25, C24 Osc. Ant.

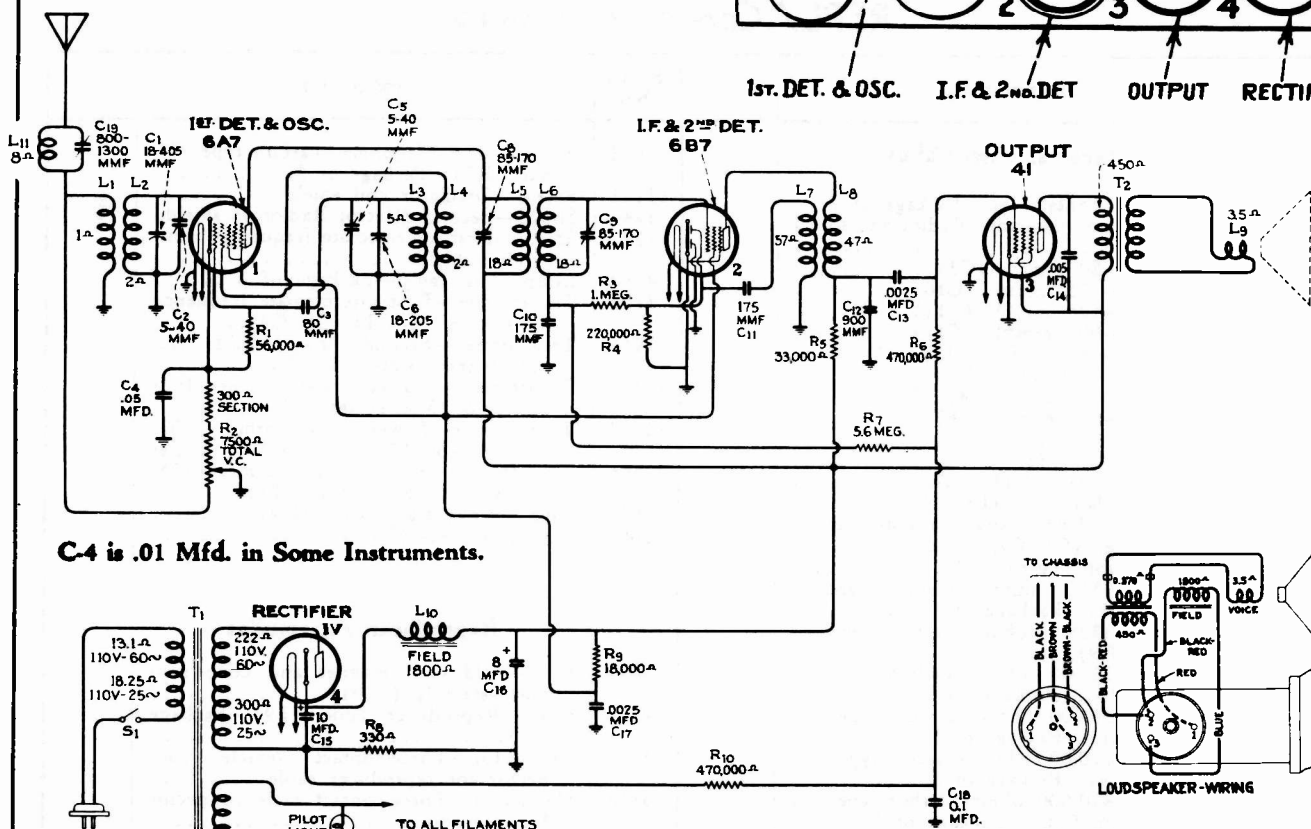


1st. DET. & OSC. I.F. & 2nd. DET. OUTPUT RECTIFIER

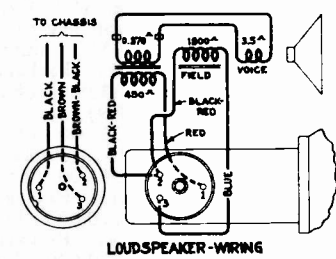


POWER TRANSF.

POWER TRANSF.



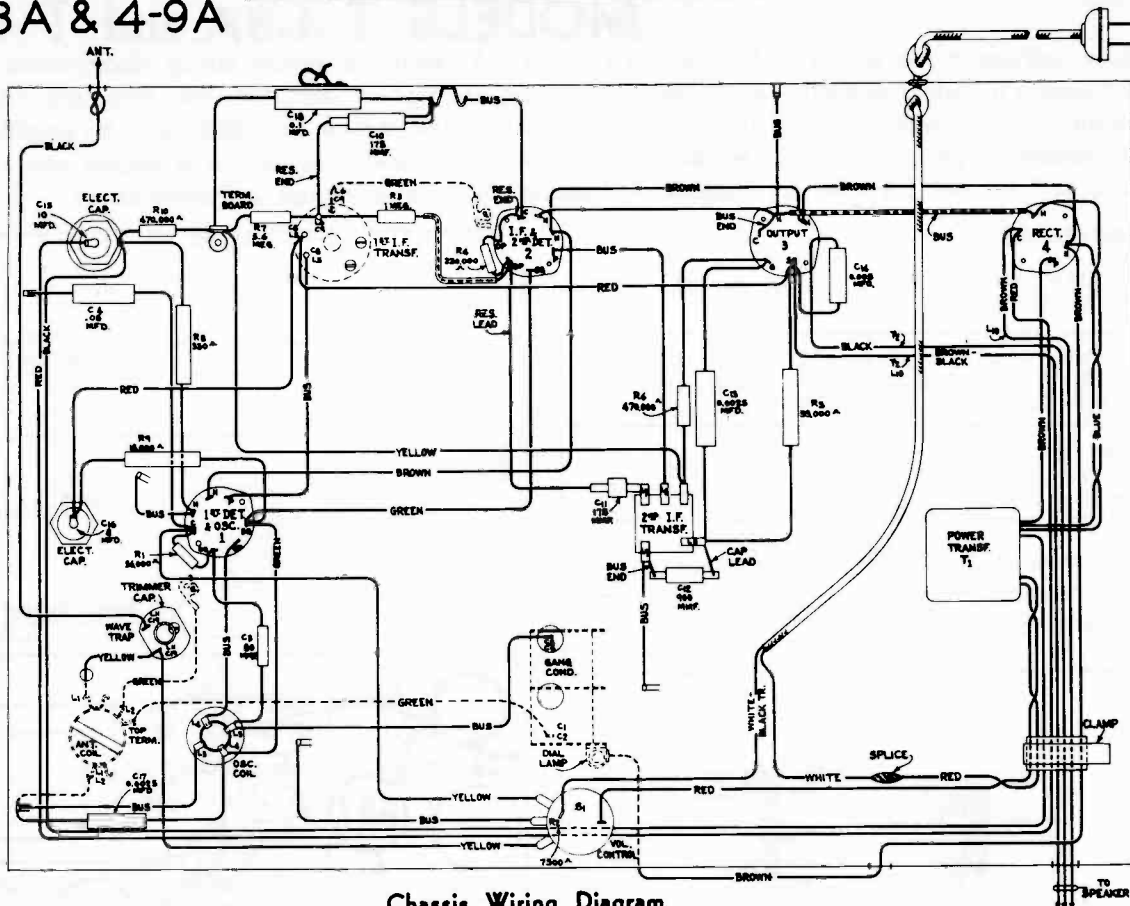
C-4 is .01 Mfd. in Some Instruments.



LOUDSPEAKER-WIRING

Schematic Circuit Diagram T 4-8A and T 4-9A

T4-8A & 4-9A

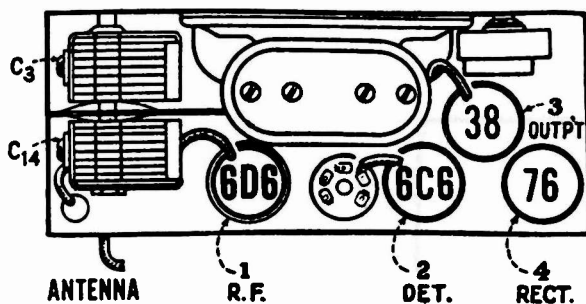


Chassis Wiring Diagram

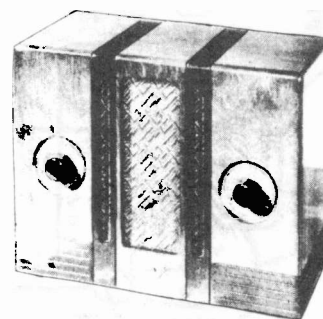
REPLACEMENT PARTS

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
Receiver Assemblies			
4244	Cap—Grid contact cap—Package of 5...	11668	Resistor—5.6 Megohms—carbon type—1/4 watt (R7)—Package of 5.....
6956	Cap—Second detector Radiotron shield cap	11126	Shield—Oscillator coil shield.....
4246	Capacitor—80 mmfd. (C3).....	3942	Shield—Second detector Radiotron shield.
5116	Capacitor—175 mmfd. (C10).....	11390	Shield—First intermediate frequency transformer shield.....
11500	Capacitor—175 mmfd. (C11).....	4340	Lamp—Dial lamp—Package of 5.....
3784	Capacitor—900 mmfd. (C12).....	5152	Transformer—First intermediate frequency transformer (L5, L6, C8, C9).....
5107	Capacitor—.0025 mfd. (C13, C17).....	7955	Transformer—Second intermediate frequency transformer (L7, L8).....
4868	Capacitor—.005 mfd. (C14).....	11665	Transformer—Power transformer—105-125 volts 25-50 cycles.....
4836	Capacitor—.05 mfd. (C4).....	11666	Transformer—Power transformer—100-130/140-160/195-250 volts 40-60 cycles
4841	Capacitor—0.1 mfd. (C18).....	11664	Transformer—Power transformer—105-125 volts 50-60 cycles—(T1).....
11497	Capacitor—8 mfd. (C16).....	11667	Trap—Wave trap (L11, C19).....
11240	Capacitor—10 mfd. (C15).....	11663	Volume control (R2, S1).....
11661	Coil—Antenna coil (L1, L2).....		
11662	Coil—Oscillator coil (L3, L4).....		
11660	Condenser—Two gang variable tuning condenser (C1, C2, C5, C6).....		
11659	Dial—Station selector dial.....		
11670	Resistor—330 ohms—carbon type—1 watt (R8)—Package of 5.....		
11671	Resistor—18,000 ohms—carbon type—2 watts (R9).....		
11669	Resistor—33,000 ohms—carbon type—1 watt (R5)—Package of 5.....		
5029	Resistor—56,000 ohms—carbon type—1/4 watt (R1)—Package of 5.....		
5158	Resistor—220,000 ohms—carbon type—1/4 watt (R4)—Package of 5.....		
11172	Resistor—470,000 ohms—carbon type—1/4 watt (R6, R10)—Package of 5.....		
3033	Resistor—1 Megohm—carbon type—1/4 watt (R3)—Package of 5.....		
			Reproducer Assemblies
		11672	Coil—Field coil, magnet and cone support assembly (L10).....
		9588	Cone—Reproducer cone (L9)—Package of 5.....
		5119	Connector—Three-contact female connector for reproducer cable.....
		5118	Connector—Three-contact male connector for reproducer.....
		9630	Reproducer—Complete.....
		4893	Transformer—Output transformer (T2).....

Tuned R.F., A-C, D-C Receiver MODEL T 4-10



Tube Location Layout



MODEL T 4-10

ELECTRICAL SPECIFICATIONS

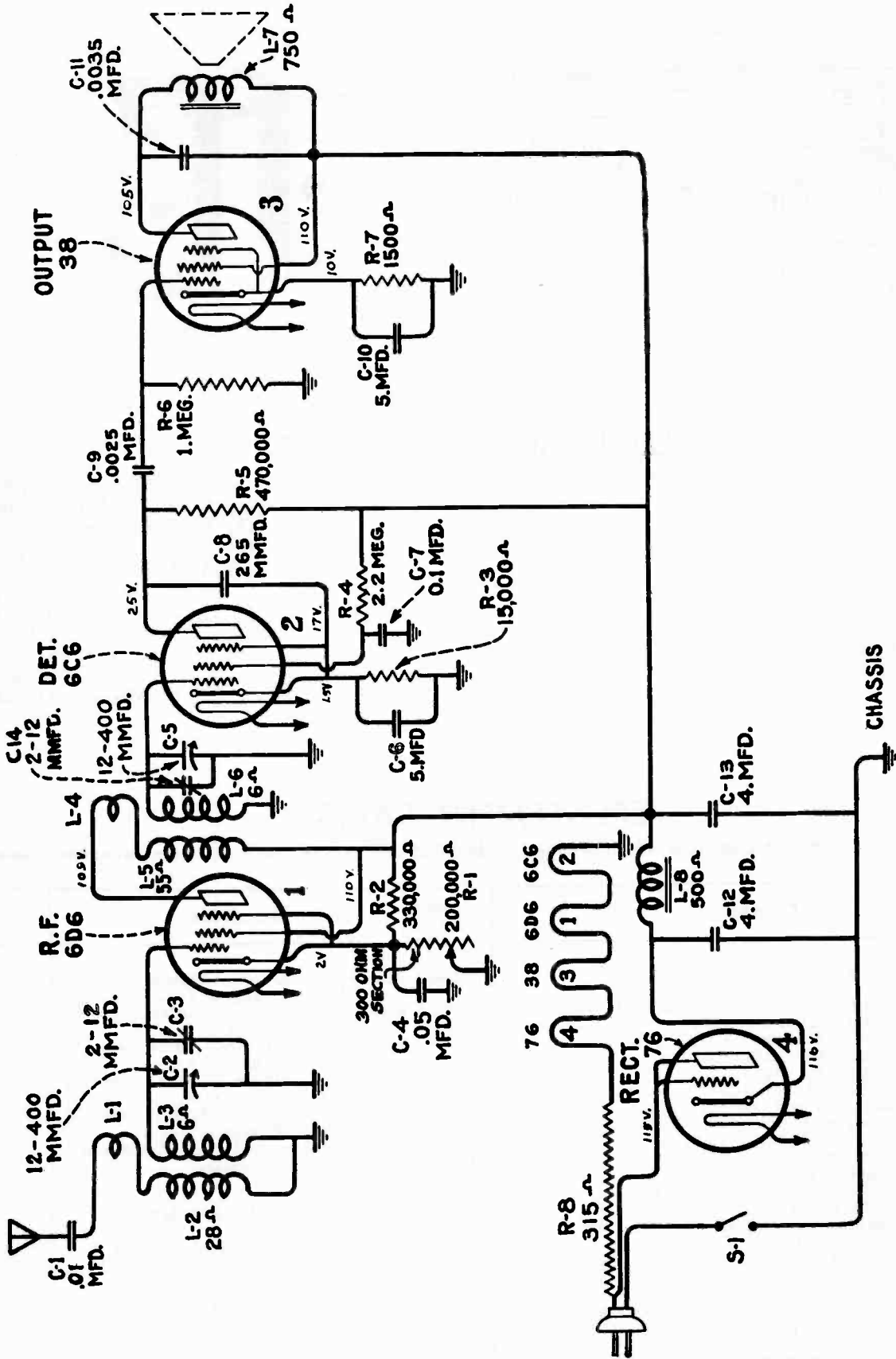
Type of Circuit.....	Two Circuit, Tuned R.F.				
Radiotron Complement.....	<table border="0"> <tr> <td>(1) RCA-6D6, R-F Amplifier</td> </tr> <tr> <td>(2) RCA-6C6, Detector</td> </tr> <tr> <td>(3) RCA-38, Power Amplifier</td> </tr> <tr> <td>(4) RCA-76, Rectifier</td> </tr> </table>	(1) RCA-6D6, R-F Amplifier	(2) RCA-6C6, Detector	(3) RCA-38, Power Amplifier	(4) RCA-76, Rectifier
(1) RCA-6D6, R-F Amplifier					
(2) RCA-6C6, Detector					
(3) RCA-38, Power Amplifier					
(4) RCA-76, Rectifier					
Tuning Range.....	540 kc. to 1712 kc.				
Alignment Frequency.....	1720 kc.				
Voltage Rating.....	100-125 volts				
Frequency Rating (a.c.).....	25-133 cycles				
Maximum Power Output.....	0.40 watts				
Loudspeaker.....	Magnetic (5 inch)				

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
4244	Cap—Grid contact cap—Package of 5....	3998	Resistor—15,000 ohm—Carbon type—1/4 watt (R3)—Package of 5.....
11135	Capacitor—265 mmfd. (C8).....	5108	Resistor—330,000 ohm—Carbon type—1/4 watt (R2)—Package of 5.....
5107	Capacitor—.0025 mfd. (C9).....	11172	Resistor—470,000 ohm—Carbon type—1/4 watt (R5)—Package of 5.....
5005	Capacitor—.0035 mfd. (C11).....	3033	Resistor—1 megohm—Carbon type—1/4 watt (R6)—Package of 5.....
4858	Capacitor—.01 mfd. (C1).....	11151	Resistor—2.2 megohm—Carbon type—1/4 watt (R4)—Package of 5.....
4836	Capacitor—.05 mfd. (C4).....	5129	Ring—Radiotron shield ring—Package of 5
4841	Capacitor—.1 mfd. (C7).....	11265	Shield—Radiotron shield.....
11268	Capacitor pack—Comprising two 4.0 mfd. capacitors (C12, C13).....	REPRODUCER ASSEMBLIES	
7956	Capacitor pack—Comprising two 5.0 mfd. capacitors (C6, C10).....	9471	Cone—Reproducer cone—Package of 5...
6821	Coil—Detector coil (L4, L5, L6).....	7713	Mechanism—Reproducer mechanism—Complete
11261	Coil—RF coil (L1, L2, L3).....	9470	Reproducer—Complete (L7).....
11260	Condenser—Two-gang variable tuning condenser (C2, C3, C5, C14).....	7712	Support—Cone support.....
11263	Volume control (R1, S1).....		
11267	Cord—Power cord—315 ohms (R8).....		
3537	Reactor—Filter reactor (L8).....		
4408	Resistor—1500 ohm—Carbon type—1/4 watt (R7)—Package of 10.....		

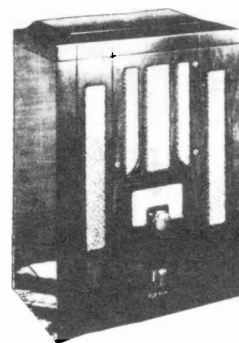
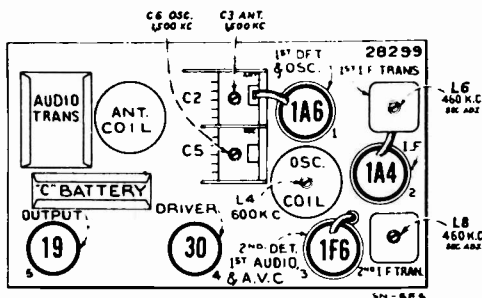
T4-10



Schematic Circuit Diagram

Five-Tube, Single-Band, Battery-Operated

MODEL 5BT



MODEL 5BT

Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGE	530-1,800 kc	ALIGNMENT FREQUENCIES	600 kc (osc.), 1,500 kc (osc., ant.)
Intermediate Frequency	460 kc		
RADIOTRON COMPLEMENT			
(1) RCA-1A6	First Detector—Oscillator	(3) RCA-1F6 ...	Second Detector—A. F.—A.V.C.
(2) RCA-1A4	Intermediate Amplifier	(4) RCA-30	Audio Driver
Pilot Lamp (1)	Mazda 2.0 volts, .06 ampere, miniature screw base		
BATTERIES REQUIRED			
"A," one plug-in 2½-volt Air-cell (heavy duty), or one 2-volt storage battery; "B," three 45-volt B batteries (heavy duty); "C" one 7½-volt C battery and two bias cells (Stock No. 12681)			
CURRENT CONSUMPTION			
"A" at 2 volts	0.54 amp.		
"B" at 135 volts	18 ma.		
Fuse Rating	½ ampere		
POWER OUTPUT (135 volts "B" Battery)			
Undistorted	1.3 watts		
Maximum	2.2 watts		
LOUDSPEAKER (Permanent-Magnet Dynamic)	Impedance (V. C.) 2.2 ohms at 400 cycles		

Alignment Procedure

With tuning condenser fully meshed, set dial so that pointer coincides with 530 calibration.

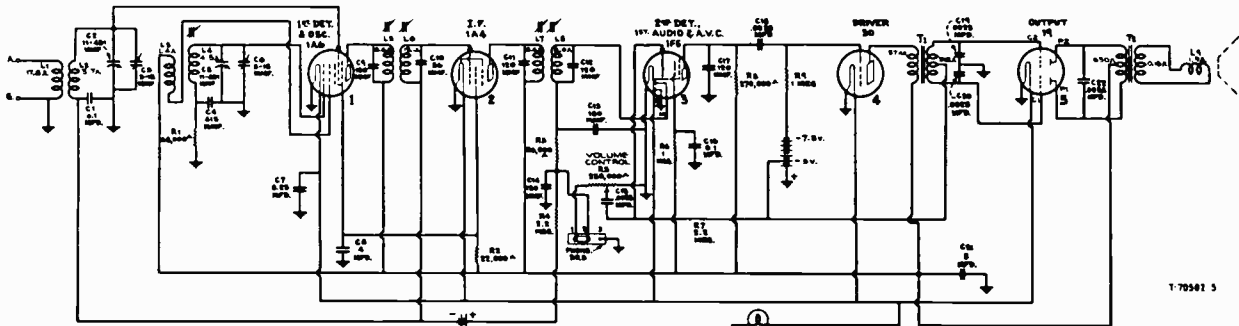
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet Point near 600 kc	L8, L7 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L6, L5 1st I-F Trans.
3	Antenna in series with 200 mmfd	1500 kc	1500 kc	C6, C3 Osc. Ant.
4		600 kc	600 kc	L4 L-F Osc. Rock Gang
5		Repeat Step 3		

Power Supply

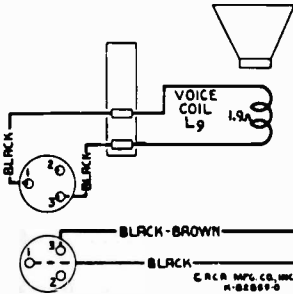
Filament voltage for this receiver is obtained from either a 2½-volt Air-cell or a 2-volt storage battery. When the Air-cell is used, the 0.43 ohm resistor R10 must be connected in series with the A-battery lead

When operating on a 2-volt storage battery, this resistor R10 should be removed.

5BT

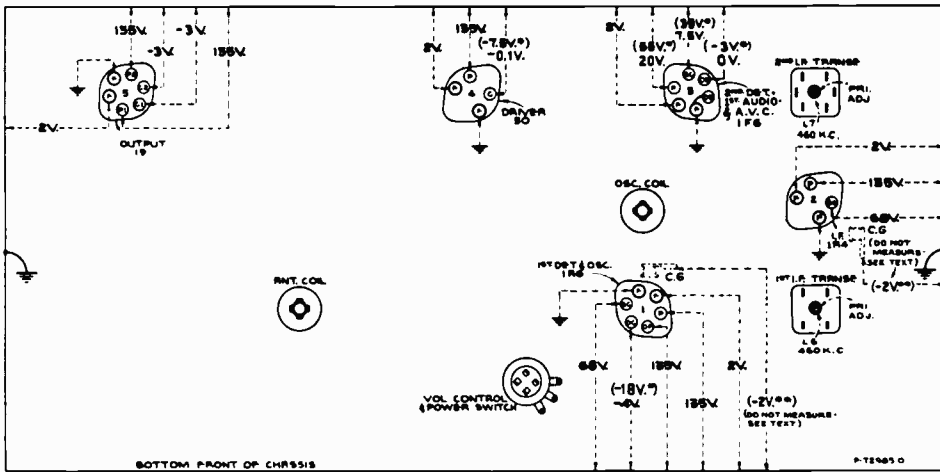
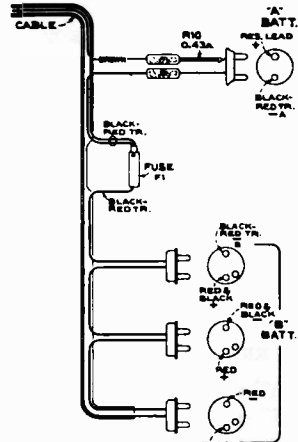
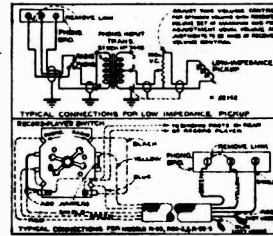


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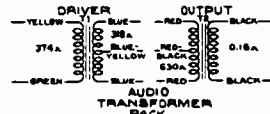
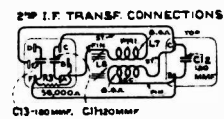
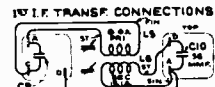


Loudspeaker Wiring

Schematic Circuit Diagram



*** NEVER MEASURE UNDER ORDINARY CONDITIONS—SEE TEXT.



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc—No signal being received—Volume control optional

CAUTION: Do not attempt to measure voltages on control grids of RCA-1A6 or RCA-1A4, with any conventional voltmeter, due to presence of bias cells.

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

Radiotron Plate Current Readings Measured with Milliammeter Connected at Tube Socket Plate Terminals under Conditions Similar to Those of Voltage Measurements

(1) RCA-1A6—1st. Det.	2.26 ma.
—Osc.	1.86 ma.
(2) RCA-1A4—I.F.	3.6 ma.
(3) RCA-1F6—2nd Det.—A.F.—A.V.C.	0.3 ma.
(4) RCA-30—Driver	3.8 ma.
(5) RCA-49—Output	2.8 ma.***
(** Total plate current.)	

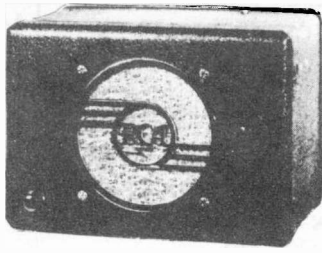
5BT

REPLACEMENT PARTS

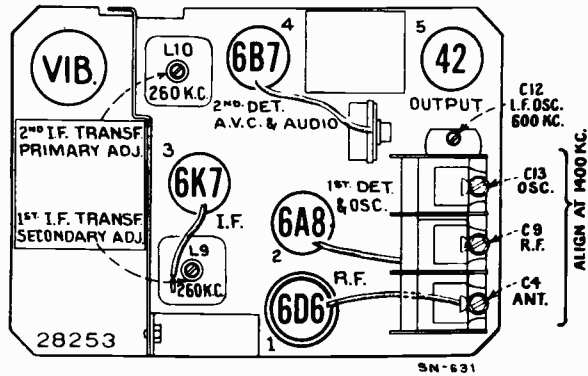
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
13216	Board—Antenna and ground terminal board		12009	Resistor—68,000 ohms, carbon type, ¼ watt—Package of 5 (R1)	
12717	Board—Phonograph terminal board		11323	Resistor—270,000 ohms, carbon type, ¼ watt—Package of 5 (R8)	
4289	Body—Female section of fuse holder—Package of 10		12200	Resistor—1 meg., insulated, ¼ watt—Package of 5 (R6, R9)	
4286	Bushing—Bushing and ferrule assembly for fuse holder—Package of 10		11626	Resistor—2.2 meg., carbon type, ¼ watt—Package of 5 (R4, R7)	
13217	Cable—Battery cable complete with four 2-contact male connectors, fuse holder and fuse		13296	Shield—Coil shield for coil Stock Nos. 13293 and 13294	
4288	Cap—Male section of fuse holder—Package of 10		12008	Shield—First or second I. F. transformer shield	
12629	Capacitor—56 Mmfd. (C10)		12607	Shield—First I. F. transformer shield top	
12404	Capacitor—120 Mmfd. (C9, C11, C12)		12581	Shield—Second I. F. transformer shield top	
12724	Capacitor—120 Mmfd. (C14, C17)		3682	Shield—1A4, 1A6, or 1F6 Radiotron shield	
12406	Capacitor—180 Mmfd. (C13)		8098	Socket—Dial lamp socket	
13297	Capacitor—415 Mmfd. (C4)		4794	Socket—4-contact 1A4 or 30 Radiotron socket	
5107	Capacitor—.0025 Mfd. (C15, C19, C20)		4786	Socket—6-contact 1A6, 1F6 or 19 Radiotron socket	
5005	Capacitor—.0035 Mfd. (C18, C22)		12007	Spring—Retaining spring for core, Stock No. 12006—Package of 10	
4841	Capacitor—0.1 Mfd. (C1, C16)		4284	Spring—Spring for female section fuse holder—Package of 10	
4840	Capacitor—0.25 Mfd. (C7)		12803	Transformer—Audio transformer pack (T1, T2)	
13295	Capacitor Pack—Comprising one 4 mfd. and one 8 mfd. sections (C8, C21)		12801	Transformer—First I. F. transformer (L5, L6, C9, C10)	
13293	Coil—Antenna coil with shield (L1, L2)		12802	Transformer—Second I. F. transformer (L7, L8, C11, C12, C13, R3)	
13294	Coil—Oscillator coil with shield (L3, L4)		13214	Volume control and power switch (R5, S1, S2)	
13212	Condenser—2-gang variable tuning condenser (C2, C3, C5, C6)		4285	Washer—Insulating washer for female section of fuse holder—Package of 10	
12828	Connector—2-contact male connector for cable, Stock No. 13217			REPRODUCER ASSEMBLIES	
12827	Connector—2-contact and guide pin male connector for cable Stock No. 13217		12642	Cone—Reproducer cone and dust cap	
5119	Connector—3-contact female connector for speaker cable		5118	Plug—3-contact male connector for reproducer	
12006	Core—Adjustable core and stud assembly for Stock Nos. 12801 and 12802		9712	Reproducer—Complete	
12681	Cell—Bias cell			MISCELLANEOUS ASSEMBLIES	
13391	Dial—Station selector dial scale		12638	Knob—Station selector control knob—Package of 5	
3748	Fuse—½ ampere—Package of 5 (F1)		11347	Knob—Volume control knob—Package of 5	
13215	Holder—Bias cell holder		11377	Screw—Chassis mounting screw assembly—Package of 4	
13213	Indicator—Station selector indicator pointer		11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12638—Package of 5	
4290	Insulator—Insulator for female section of fuse holders—Package of 10				
4348	Lamp—Dial lamp				
13298	Resistor—Flexible type, 0.43 ohm—Package of 5 (R10)				
11305	Resistor—22,000 ohms, carbon type, ¼ watt—Package of 5 (R2)				
11282	Resistor—56,000 ohms, carbon type, 1/10 watt—Package of 5 (R3)				

MODEL 5M Five-Tube Automobile Receiver



MODEL 5M



Radiotron, Coil, and Trimmer Locations

Electrical Specifications

RADIOTRON COMPLEMENT

- (1) RCA-6D6.....Radio Frequency Amplifier
- (2) RCA-6A8.....First Detector-Oscillator

- (3) RCA-6K7.....Intermediate Amplifier
- (4) RCA-6B7..Second Det., A-F Amp., and A.V.C.
- (5) RCA-42.....Power Output

Tuning Range540 to 1,600 kc.

OUTPUT RATING

Maximum4 Watts
Undistorted2.25 Watts

LOUDSPEAKER

TypeElectrodynamic
Impedance (V. C.).....3 Ohms at 400 Cycles

POWER RATING

Supply Voltage6.3 Volts (Storage Battery)
Current Drain6.5 Amperes at 6.3 Volts
Fuse Protection15 Amperes
Pilot LampMazda No. 44, 6.3 Volts

Alignment Procedure

With tuning condenser fully meshed set dial so that pointer coincides with end calibration beyond 55 on dial scale. Reset dial on known station near 1000 kc after installation.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	280 kc	Quiet point near 60	L11 L10 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L9 L8 1st I-F Trans.
3	Antenna in series with 175 mmfd (See Note below)	1400 kc	140	C13 C9 C4 Osc. R-F Ant.
4		600 kc	60	C12 L-F Osc. (Rock Gang)
5		Repeat Step 3		

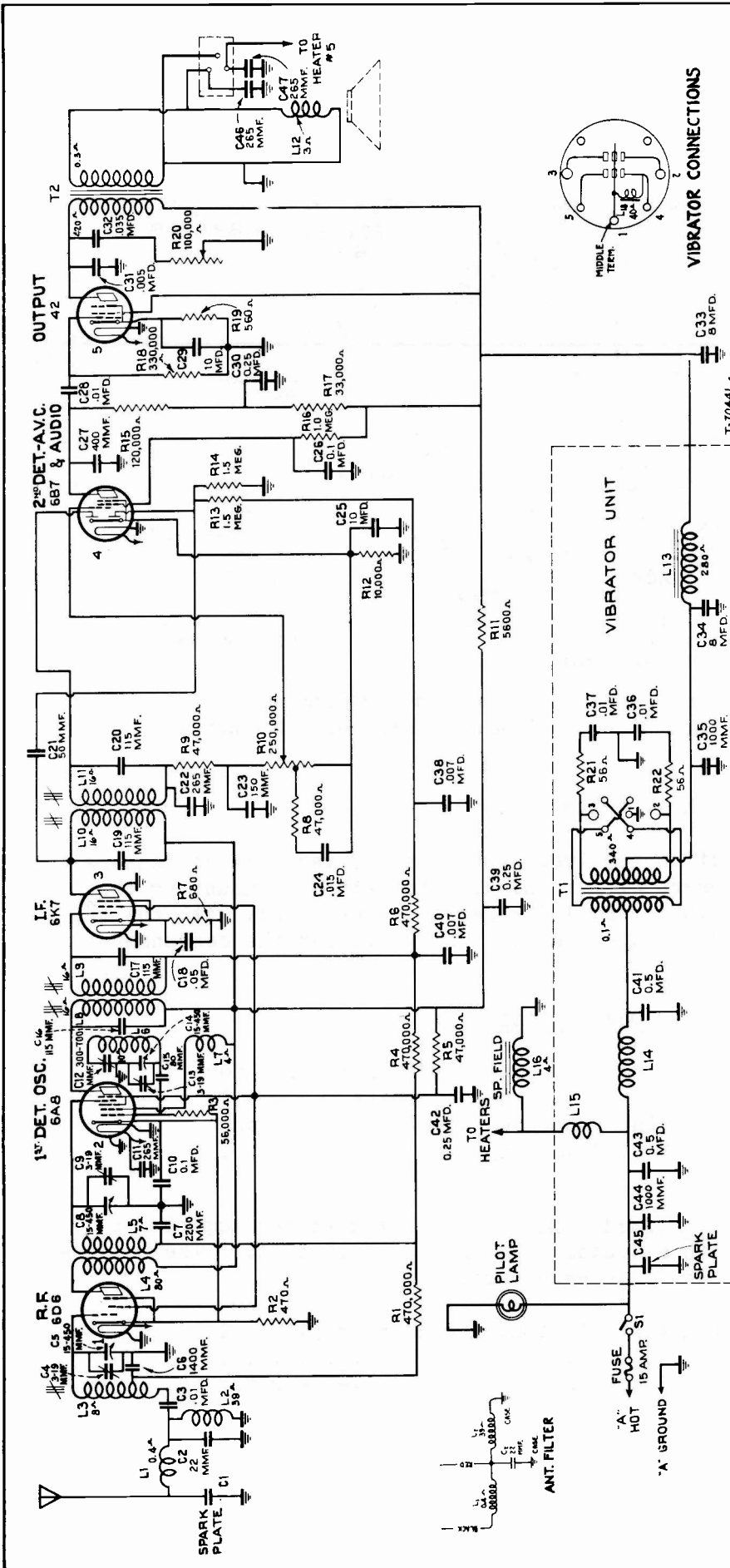
NOTE: Use 1000 mmfd for those receivers in which C3 has been changed from 0.01 mfd to 500 mmfd. A capacitor of 50 to 60 mmfd should be connected from antenna to chassis during R-F alignment.

With auto antenna connected to receiver adjust C4 (antenna) for maximum output on weak station near 1400 kc.

NOTE: For r-f alignment of receivers in which the tubular paper condenser C-3 (.01 mfd.) has been replaced by the small molded condenser, 500 mmfd. (change easily identified by reference to Figure 2 and bottom of chassis), use a .001 mfd. capacitor in series with the antenna lead and test oscillator.

There should be a shunt capacitor of 50 or 60 mmfd. from the antenna lead at the receiver to ground.

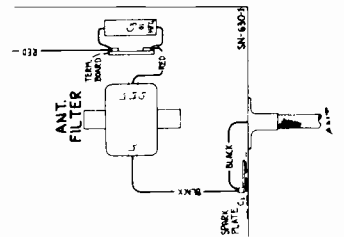
NOTE: The antenna coil has a molded core which is adjusted at the factory for the correct inductance. This adjustment should not be disturbed.



NOTE: Certain models of 1936 automobiles are equipped with "high-capacitance type" (400 mmfd. or greater) built-in antennas. The 1936 models of Dodge, De Soto, and Chrysler are examples of automobiles so equipped. Installation of receiver in automobiles with such "high-capacity" antennas necessitates the following modification of the antenna circuit of the receiver to suit the characteristics of the antenna installation:

Remove the tubular paper-covered capacitor C-3 (.01 mfd.) and replace with the small molded type capacitor (500 mmfd.) furnished with Escutcheon Kit for respective model of automobile.

Schematic Circuit Diagram

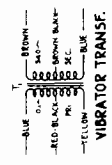


SERVICE HINTS

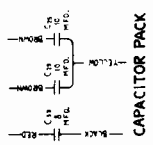
Howl when tuned to, or tuning in, a station is generally correctable by loosening the screws supporting gang tuning condenser to provide increased flexibility.



VIBRATOR CONNECTIONS

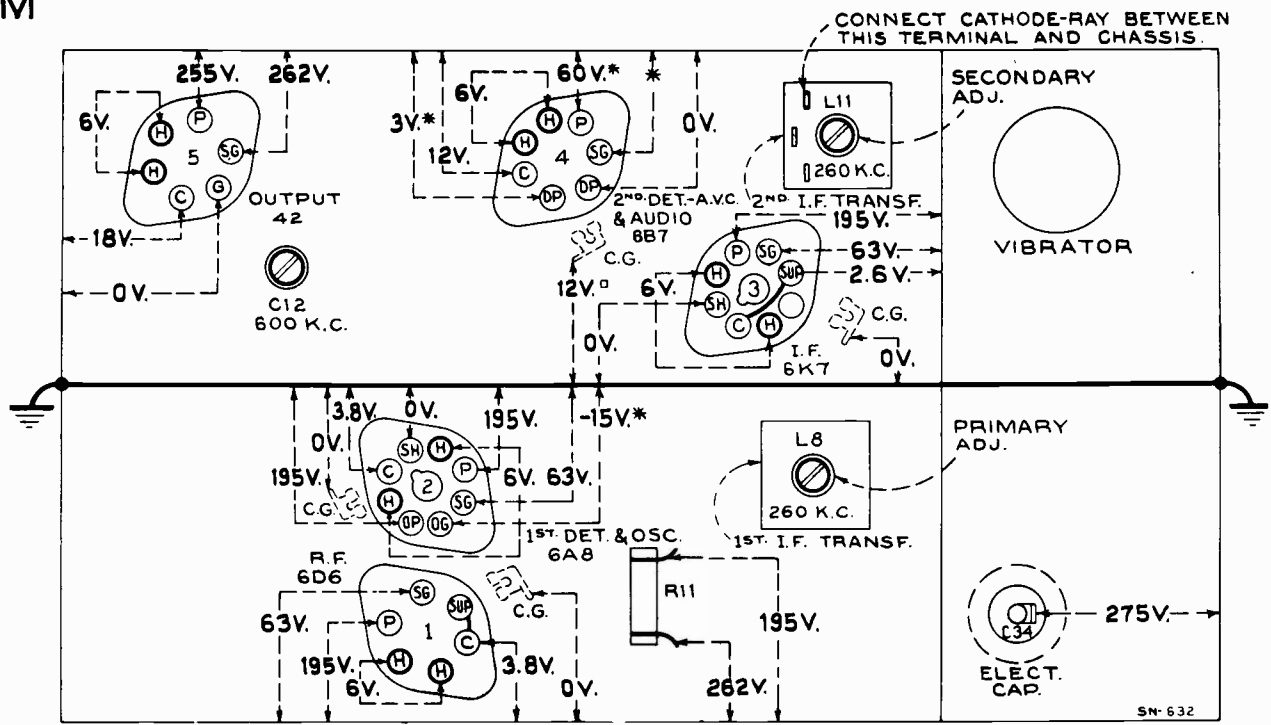


OUTPUT TRANSF.



CAPACITOR PACK

5M



* THIS VALUE MAY VARY APPRECIABLY.
 □ VOLUME CONTROL AT MINIMUM SETTING.

BOTTOM VIEW OF CHASSIS

Radiotron Socket Voltages and Trimmer Locations
 (Measured at 6.3 volts battery supply—Volume Control Maximum—No Signal)

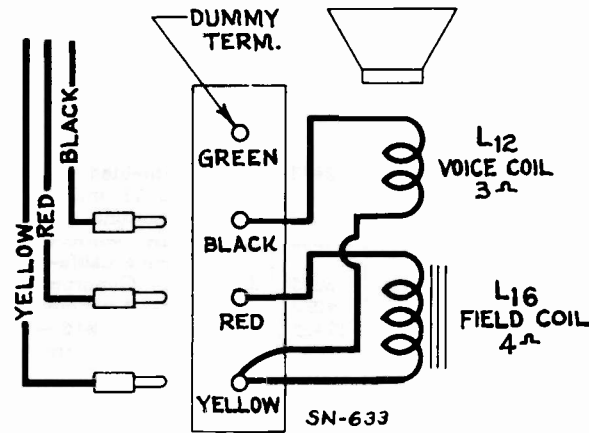
First Production (Serial Nos. below 200,000)

On the first production receivers, two types of variable condensers are used. These condensers differ only in the method of mounting the drive gear. Stock Nos. 12221 and 12222 gears are used only with the tuning condenser not having a tapped shaft. The gears for the condenser with a tapped shaft are:

<u>Stock No.</u>	<u>Description</u>
13145	Gear--Variable tuning condenser shaft drive gear for use on tuning condenser with tapped shaft
13146	Gear--Variable tuning condenser worm--for use with drive gear Stock No. 13145 only

Second Production Receivers (Serial Nos. 200,000 and above) employed a tuning drive mechanism with a tuning drive ratio of 16 to 1. The following parts are applicable to these receivers:

13371	Condenser--3-gang variable tuning condenser (16 to 1 ratio)
13372	Gear--Variable tuning condenser shaft drive gear for Stock No. 13371
13373	Gear--Variable tuning condenser worm gear and mounting bracket for use with drive gear Stock No. 13372
13414	Box--Control box complete less flexible shafts



Loudspeaker Schematic and Wiring

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
	RECEIVER ASSEMBLIES		
12511	Cap—Grid contact cap—Package of 5	12239	Filter—Antenna filter—(L1, L2, C2)
11130	Capacitor—Adjustable capacitor—(C12)	12221	Gear—Variable tuning condenser shaft drive gear (without tapped shaft)
11289	Capacitor—50 Mmfd.—(C21)	12222	Gear—Variable tuning condenser worm gear (use with No. 12221 only)
12270	Capacitor—80 Mmfd.—(C15)	12242	Guide—Station selector shaft guide
11998	Capacitor—115 Mmfd.—(C16, C17, C19, C20)	12483	Pin—Contact pin for speaker leads—Package of 5
12725	Capacitor—150 Mmfd.—(C23)	12485	Pin—Contact pin for tone control lead—Package of 5
11181	Capacitor—265 Mmfd.—(C11, C46, C47)	12232	Reactor—Filter reactor—iron core—(L13)
12761	Capacitor—265 Mmfd.—(C22)	5034	Resistor—56 ohm—carbon type, 1/2 watt—(R21, R22)—Package of 5
11171	Capacitor—400 Mmfd.—(C27)	12512	Resistor—470 ohm—insulated, 1/4 watt—(R2)—Package of 5
12762	Capacitor—1,000 Mmfd.—(C35, C44)	11845	Resistor—560 ohm—carbon type, 1 watt—(R19)—Package of 5
12268	Capacitor—1,400 Mmfd.—(C6)	12262	Resistor—680 ohm—insulated, 1/4 watt—(R7)—Package of 5
12269	Capacitor—2,200 Mmfd.—(C7)	8097	Resistor—5,600 ohm—carbon type, 2 watt—(R11)
5148	Capacitor—.007 Mfd.—(C38, C40)	12288	Resistor—10,000 ohm—insulated, 1/4 watt—(R12)—Package of 5
4838	Capacitor—.005 Mfd.—(C31)	12454	Resistor—33,000 ohm—insulated, 1/4 watt—(R17)—Package of 5
4858	Capacitor—.01 Mfd.—(C3, C28)	5132	Resistor—47,000 ohm—carbon type, 1/10 watt—(R8, R9)—Package of 5
11315	Capacitor—.015 Mfd.—(C24)	12073	Resistor—47,000 ohm—carbon type, 1 watt—(R5)—Package of 5
5196	Capacitor—.035 Mfd.—(C32)	12286	Resistor—56,000 ohm—insulated, 1/4 watt—(R3)—Package of 5
4836	Capacitor—.05 Mfd.—(C18)	12455	Resistor—120,000 ohm—insulated, 1/4 watt—(R15)—Package of 5
4839	Capacitor—.1 Mfd.—(C26)	12452	Resistor—330,000 ohm—insulated, 1/4 watt—(R18)—Package of 5
4841	Capacitor—.1 Mfd.—(C10)	11452	Resistor—470,000 ohm—carbon type, 1/10 watt—(R4, R6)—Package of 5
12237	Capacitor—.25 Mfd.—(C39, C42)	12285	Resistor—470,000 ohm—insulated, 1/4 watt—(R1)—Package of 5
12484	Capacitor—.25 Mfd.—(C30)	12200	Resistor—1 megohm—insulated, 1/4 watt—(R16)—Package of 5
5019	Capacitor—.5 Mfd.—(C41)		
12234	Capacitor—.8 Mfd.—(C34)		
12233	Capacitor Pack—Comprising 2 sections each, .01 Mfd.—(C36, C37)		
12238	Capacitor Pack—Comprising one 8 Mfd. and two 10 Mfd. sections—(C25, C29, C33)		
12223	Coil—Antenna coil—(L3)		
12235	Coil—Choke coil—(L14)		
12225	Coil—Oscillator coil—(L6, L7)		
12224	Coil—R. F. coil—(L4, L5)		
12220	Condenser—3-gang variable tuning condenser—(C4, C5, C8, C9, C13, C14)		
12006	Core—Adjustable core for I. F. transformer Stock No. 12228 and No. 12229		
12289	Coupling—Station selector flexible shaft coupling		

5M

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
12287	Resistor—1.5 megohm—insulated, ¼ watt—(R13, R14)—Package of 5	12509	Button—Plug button for receiver housing
3584	Ring—Retaining ring for R. F. or oscillator coil—Package of 5	12444	Cable—Shielded antenna cable, approx. 8 in. long, complete with female section of connector
5129	Ring—Radiotron shield ring—Package of 5	12473	Cable—Shielded antenna lead-in cable, approx. 31 in. long, complete with 2 male sections of connector
3623	Shield—R. F. or oscillator coil shield	4288	Cap—Male connector cap for "A" lead or antenna cable—Package of 10
12290	Shield—Radiotron shield	5025	Capacitor—Generator capacitor
4786	Socket—6-contact 6D6 or 42 Radiotron socket	4293	Capacitor—Ammeter capacitor
4787	Socket—7-contact 6B7 Radiotron socket	11418	Capacitor—.5 Mfd.—(C43)
12227	Socket—8-contact 6A8 or 6K7 Radiotron socket	4291	Clip—"A" lead ammeter clip—Package of 10
12241	Socket—Vibrator socket	12443	Cover—Receiver housing top cover
12226	Stud—Variable tuning condenser mounting stud assembly—Package of 4	12442	Cover—Receiver housing bottom cover assembly
12228	Transformer—First I. F. transformer—(L8, L9, C16, C17, R4, R6)	12247	Fastener—Receiver housing top cover fastener—Package of 10
12364	Transformer—Output transformer—(T2)	4286	Ferrule—Antenna cable or "A" lead connector ferrule and bushing—Package of 10
12229	Transformer—Second I. F. transformer—(L10, L11, C19, C20, C22, R9)	5023	Fuse—"A" lead fuse—15 amp.—Package of 5
12231	Transformer—Vibrator power transformer—(T1)	12449	Grille—Speaker grille assembly
12236	Vibrator—Vibrator complete	12441	Housing—Receiver housing complete
12365	Volume Control—(R10)	4290	Insulator—Fuse connector insulator—Package of 10
	CONTROL BOX AND FLEXIBLE SHAFT ASSEMBLIES	4323	Knob—Tone control knob—Package of 5
12505	Box—Control box complete—less flexible shafts	12445	Lead—"A" lead (set end), approx. 8 in. long, complete with male section of connector
12578	Dial—Station selector indicator dial (standard)	12501	Plate—Name plate and mounting screws
12579	Knob—Station selector (tuning) knob (standard)	12447	Screw—Speaker mounting assembly—Comprising 1 screw, 1 nut, and 1 lock-washer to mount speaker in case—Package of 4
12580	Knob—Volume control knob (standard)	12252	Screw—No. 8 self-tapping hex. head screw—used on receiver housing—Package of 10
11891	Lamp—Control box dial lamp—Package of 5	12248	Socket—3-contact socket and bracket assembly for reproducer cable
12504	Shaft—Tuning control flexible shaft complete, approx. 21½ in. long	12502	Socket—Pin socket and bracket assembly for tone control lead
12503	Shaft—Volume control flexible shaft complete, approx. 21½ in. long	4284	Spring—Antenna cable connector spring—Package of 10
	REPRODUCER ASSEMBLIES	12448	Stud—Receiver mounting stud assembly—Comprising 1 stud, 1 washer, 1 lock-washer and 1 nut
12482	Board—Reproducer terminal board	5024	Suppressor—Distributor suppressor
12450	Coil—Field coil—(L16)	12249	Tone Control—(R20)
12451	Cone—Reproducer cone complete—(L12)	4285	Washer—Antenna cable connector insulating washer—Package of 10
9687	Reproducer—Reproducer complete		
	MISCELLANEOUS ASSEMBLIES		
4287	Body—Antenna cable female connector body—Package of 10		
4289	Body—"A" lead fuse connector body—Package of 10		

The following parts are additional to those listed for Model 5M.

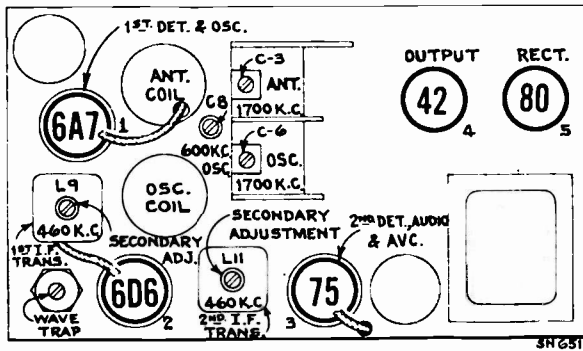
Control Box Assemblies

13147 Gear--Pinion gear and slotted shaft assembly
 13452 Switch--"On-off" operating switch

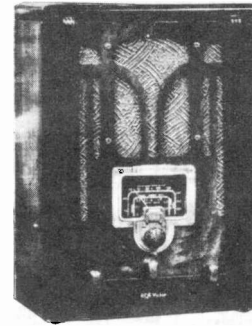
Miscellaneous Assemblies

13006 Sleeve--Tuning or volume control flexible shaft sleeve

Five-Tube, Two-Band, A-C Receiver MODEL 5T



Radiotron, Coil, and Trimmer Locations



MODEL 5T

Electrical Specifications

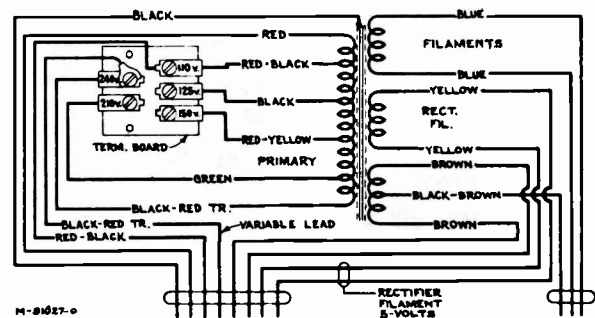
FREQUENCY RANGES	ALIGNMENT FREQUENCIES
"Standard broadcast" (A)..... 540-1,820 kc.	"Standard broadcast" (A).....
"Short wave" (B)..... 1,820-6,600 kc.	600 kc. (osc.), 1,700 kc. (osc., ant.)
Intermediate Frequency.....	"Short wave" (B)..... None required
	460 kc.
RADIOTRON COMPLEMENT	(3) RCA-75.... Second Det., A-F Amp. and A.V.C.
(1) RCA-6A7..... First Det.--Oscillator	(4) RCA-42..... Audio Power Amplifier
(2) RCA-6D6..... Intermediate Amplifier	(5) RCA-80..... Full-Wave Rectifier
Pilot Lamps (3).....	Mazda No. 46, 6.3 volts, 0.25 amperes
POWER SUPPLY RATINGS	
Rating A.....	105-125 volts, 50-60 cycles, 80 watts
Rating B.....	105-125 volts, 25-60 cycles, 80 watts
Rating C.....	100-130/140-160/195-250 volts, 40-60 cycles, 80 watts
POWER OUTPUT RATING	LOUDSPEAKER
Undistorted..... 2.0 watts	Type..... Electrodynamic
Maximum..... 4.5 watts	Voice Coil Impedance..... 2.2 ohms at 400 cycles

Alignment Procedure

DIAL CALIBRATION:

With tune condenser fully meshed set pointer to coincide with 53 calibration on BC Band scale.

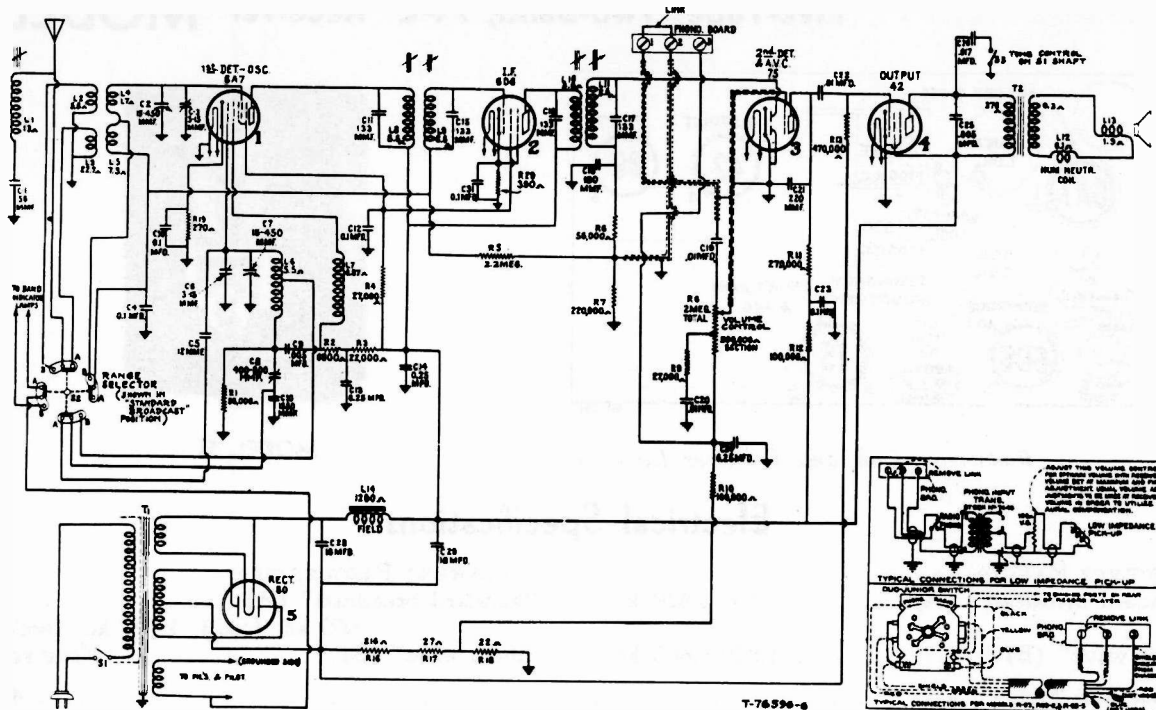
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd		Quiet point near 600 kc "BC" Band	L11 L10 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd	460 kc		L9 L8 1st I-F Trans.
3				L1 (Wave Trap) Minimum Output
4	Antenna in series with 200 mmfd	1700 kc	1700 kc "BC" Band	C6 C3 Osc. Ant.
5		1700 kc	600 kc "BC" Band	C8 (L-F Osc.) Rock Gang
6				Repeat Step 4



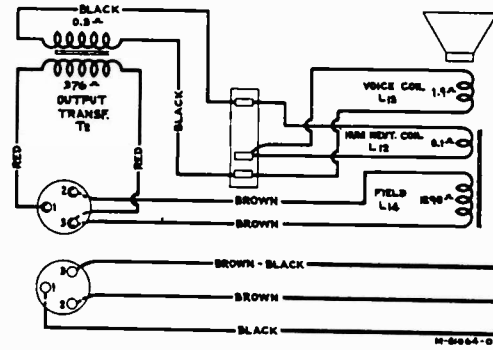
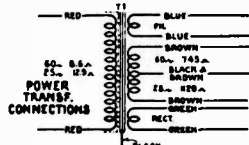
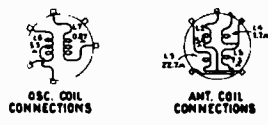
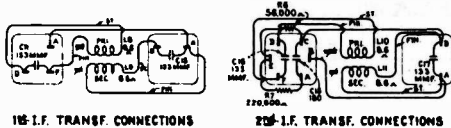
Primary Resistance—24.5 ohms Total
Secondary Resistance—760 ohms Total

Universal Transformer

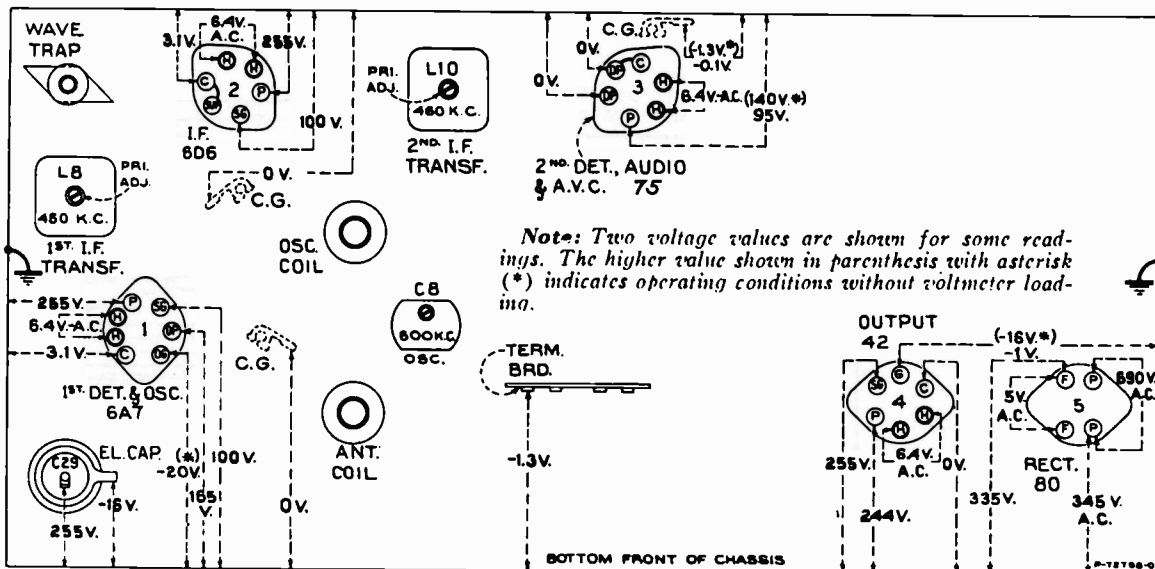
5T



Schematic Circuit Diagram



Loudspeaker Wiring



Radiotron Socket Voltages, Coil and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc. ("Standard broadcast")—No signal being received—Volume control minimum

REPLACEMENT PARTS

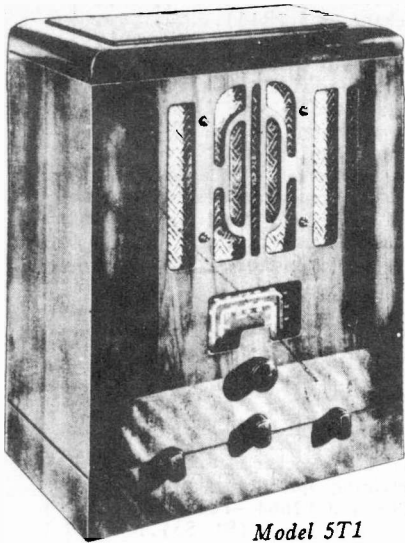
RECEIVER ASSEMBLIES			
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....	11172	Resistor—470,000 ohm, carbon type, ¼ watt—Package of 5 (R13).....
11591	Button—Chassis plug button.....	11626	Resistor—2.2 megohm, carbon type, ¼ watt—Package of 5 (R5).....
12118	Cap—Grid contact cap—Package of 5...	12004	Resistor—Voltage divider resistor—Comprising one 216 ohm, one 27 ohm and one 22 ohm sections (R16, R17, R18).
11465	Capacitor—Adjustable capacitor (C8)...	12650	Shield—Antenna coil shield.....
12659	Capacitor—12 Mmfd. (C5).....	12735	Shield—Dial lamp shield—Package of 5..
12661	Capacitor—56 Mmfd. (C1).....	12607	Shield—First I.F. transformer shield top.
12946	Capacitor—133 Mmfd. (C11, C15, C16, C17)	12008	Shield—First or second I.F. transformer shield
12406	Capacitor—180 Mmfd. (C18).....	12651	Shield—Oscillator coil shield.....
12662	Capacitor—220 Mmfd. (C21).....	12581	Shield—Second I.F. transformer shield top
12660	Capacitor—1,350 Mmfd. (C10).....	3950	Shield—6D6 Radiotron shield.....
4868	Capacitor—.005 Mfd. (C9, C25).....	3682	Shield—6A7 or 75 Radiotron shield.....
4858	Capacitor—.01 Mfd. (C19, C20, C22)...	4794	Socket—4-contact rectifier Radiotron socket
11451	Capacitor—.017 Mfd. (C26).....	4786	Socket—6-contact 42, 75 and 6D6 Radiotron socket.....
4841	Capacitor—.1 Mfd. (C4, C12, C23, C30, C31)	4787	Socket—7-contact 6A7 Radiotron socket.
4840	Capacitor—.25 Mfd. (C13, C24).....	11199	Socket—Dial lamp socket.....
5170	Capacitor—.25 Mfd. (C14).....	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12664—Package of 10
11240	Capacitor—.10 Mfd. (C28).....	11460	Tone Control and Switch (S1, S3).....
5212	Capacitor—.18 Mfd. (C29).....	13106	Transformer—First I.F. transformer, complete (L8, L9, C11, C15).....
12648	Coil—Antenna coil—less shield (L2, L3, L4, L5).....	12644	Transformer—Power transformer, 115 volt, 60 cycle (T1).....
12649	Coil—Oscillator coil—less shield (L6, L7)	12645	Transformer—Power transformer, 115 volt, 25 cycle (T1).....
12643	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7).....	12646	Transformer—Power transformer, 240-210-150-125-110 volts, 60 cycle (T1)..
5119	Connector—3-contact female speaker cable connector	13107	Transformer—Second I.F. transformer, complete (L10, L11, C16, C17, C18, R6, R7).....
12006	Core—Adjustable core and stud assembly for I.F. transformer, Stock Nos. 12652 and 12653.....	12654	Trap—Wave trap (L1).....
12664	Core—Adjustable core and stud assembly for wave trap, Stock No. 12654.....	13144	Volume Control (R8).....
12658	Dial—Station selector dial.....	REPRODUCER ASSEMBLIES	
12656	Drive—Variable condenser drive shaft and pinion	12641	Board—3-contact reproducer terminal board
12655	Gear—Large gear located on variable condenser shaft.....	12640	Bracket—Output transformer mounting bracket
12657	Indicator—Station selector indicator.....	12012	Coil—Field coil (L14).....
5226	Lamp—Dial lamp—Package of 5.....	11469	Coil—Neutralizing coil (L12).....
12663	Mask—Dial light diffuser, complete with red and green colored screen.....	12642	Cone—Reproducer cone and dust cap (L13)
12647	Range Switch (S2).....	5118	Connector—3-contact male speaker cable connector
12206	Resistor—270 ohm, carbon type, ¼ watt—Package of 5 (R19).....	9699	Reproducer, complete.....
12261	Resistor—390 ohm, insulated, ¼ watt—Package of 5 (R20).....	11253	Transformer—Output transformer (T2)..
8070	Resistor—22,000 ohm, carbon type, ½ watt—Package of 5 (R3).....	11886	Washer—Spring washer to hold field coil securely—Package of 5.....
11400	Resistor—27,000 ohm, carbon type, ¼ watt—Package of 5 (R9).....	MISCELLANEOUS ASSEMBLIES	
12011	Resistor—27,000 ohm, carbon type, 1 watt—Package of 5 (R4).....	12639	Escutcheon—Station selector escutcheon and crystal assembly.....
11282	Resistor—56,000 ohm, carbon type, 1/10 watt—Package of 5 (R6).....	12638	Knob—Station selector knob—Package of 5.....
5029	Resistor—56,000 ohm, carbon type, ¼ watt—Package of 5 (R1).....	11347	Knob—Tone control, volume control or range switch knob—Package of 5.....
11454	Resistor—6,800 ohm, carbon type, ¼ watt—Package of 5 (R2).....	11586	Screw—Chassis mounting screw No. 14x1 in—Package of 10.....
5145	Resistor—100,000 ohm, carbon type, ¼ watt—Package of 5 (R10, R12).....	11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12638—Package of 5.
11398	Resistor—220,000 ohm, carbon type, 1/10 watt—Package of 5 (R7).....		
11323	Resistor—270,000 ohm, carbon type, ¼ watt—Package of 5 (R11).....		

On Model 5T, two different speakers are used which are readily identified by the following numbers stamped on them: (1) RL-63C1 and (2) 72203-5. Replacement parts for No. RL-63C1 are listed in the Service Data for Model 5T while the replacement parts for No. 72203-5 are listed below:

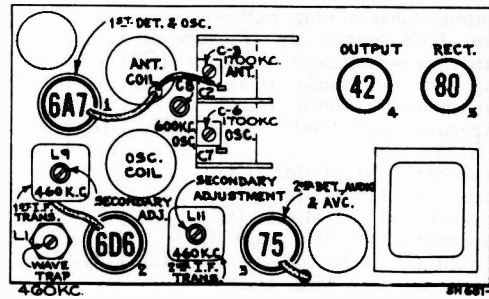
Stock No.	Description
9579	Coil - Field coil
9533	Cone - Reproducer cone mounted and centered in housing
5118	Connector - 3-contact male connector for reproducer
9578	Reproducer complete
4818	Transformer - Output transformer

MODEL 5T1

Five-Tube, Two-Band, A-C Receiver



Model 5T1



Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A)..... 540-1,820 kc
 "Short Wave" (B)..... 1,820-6,600 kc

ALIGNMENT FREQUENCIES

"Standard Broadcast" (A).....
 600 kc (osc.), 1,700 kc (osc., ant.)
 "Short Wave" (B)..... None required

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6A7..... First Detector—Oscillator
 (2) RCA-6D6..... Intermediate Amplifier

(3) RCA-75..... Secnd Det., A-F Amp. and A.V.C.
 (4) RCA-42..... Audio Power Amplifier
 (5) RCA-80..... Full-Wave Rectifier

Pilot Lamp (1)..... Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

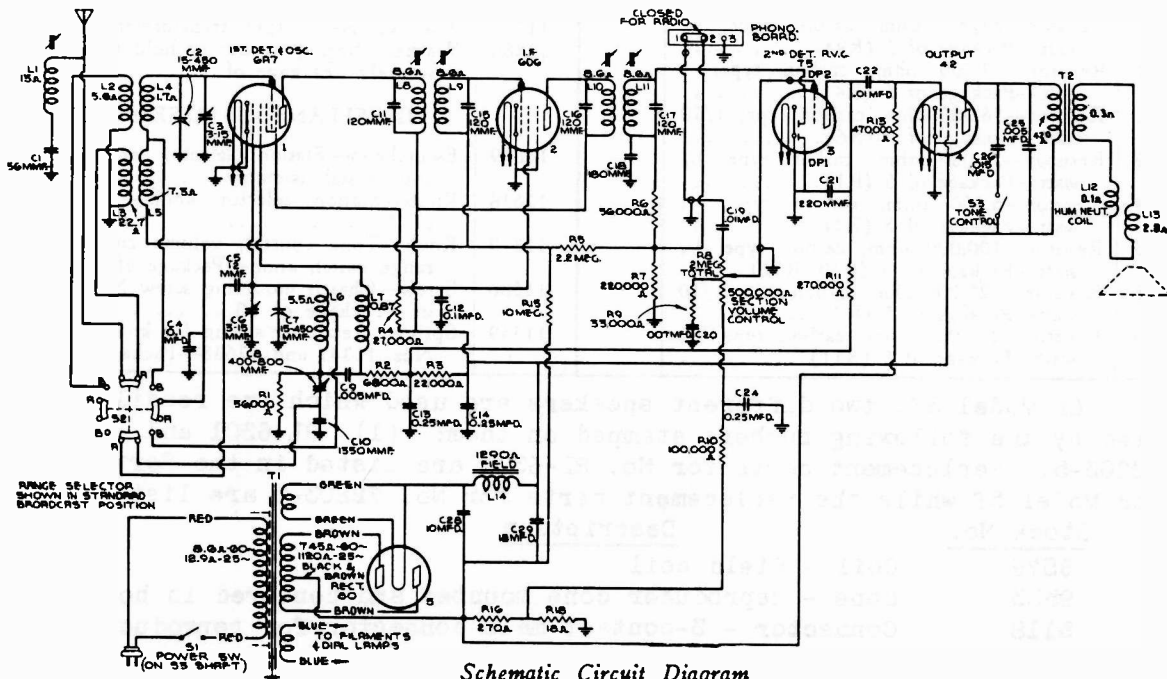
Rating A..... 105-125 volts, 50-60 cycles, 80 watts
 Rating B..... 105-125 volts, 25-60 cycles, 80 watts
 Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 80 watts

POWER OUTPUT RATING

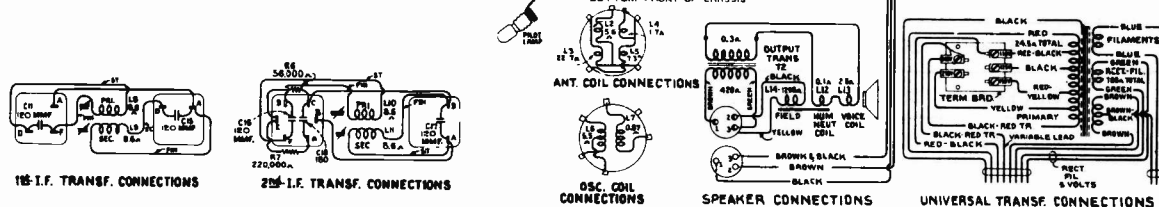
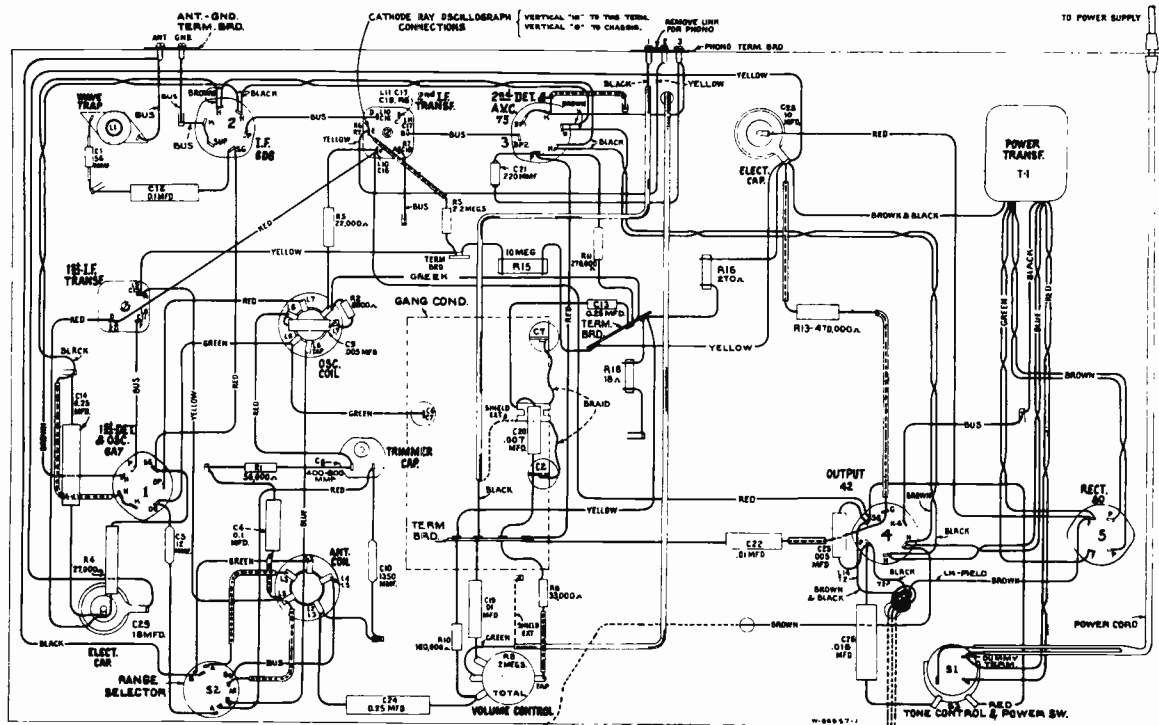
Undistorted..... 2.0 watts
 Maximum..... 4.5 watts

LOUDSPEAKER

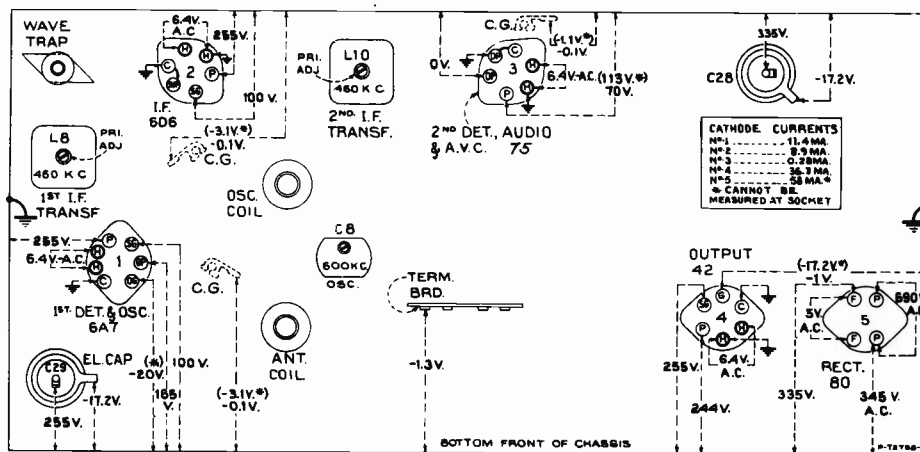
Type..... Electrodynamic
 Voice Coil Impedance..... 3.2 ohms at 400 cycles



Schematic Circuit Diagram



Chassis Wiring Diagram



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—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.

Phonograph Attachment.—A terminal board is provided for connecting a phonograph into the audio-amplifying circuit. RCA Victor Models R-93, R-93-2, R-93-A, or R-94 Record Players should be connected as follows: Remove link between terminals 1 and 2 on receiver. 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.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the extreme low-frequency end calibration mark on the "Standard broadcast" dial scale with the two-gang tuning condenser in full-mesh position.

Perform alignment in proper order tabulated below, starting with No. 1 and following all operations across, then No. 2, etc.

Cathode-ray alignment is preferable; the connections to the chassis are shown on figure. 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 chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver 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, 550-750 kc" means that the receiver should be tuned to a point between 550 and 750 kc where no signal is received from a station or the local (heterodyne) oscillator.

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

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	6D6 i-f Grid Cap	.001 Mfd.	460 kc	No signal 550-750 kc	2nd i-f Trans.	L10 and L11	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	No signal 550-750 kc	1st i-f Trans.	L8 and L9	Max. (peak)
3	Ant. Post	200 Mmfd.	460 kc	No signal S. W. Band	Wave Trap	L1	Minimum Output
4	Ant. Post	200 Mmfd.	600 kc	600 kc	L-F Osc.	C8	Max. (peak)
5	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	H-F Osc.	C6	Max. (peak)
6	Ant. Post	200 Mmfd.	600 kc	Rock thru 600 kc	L-F Osc.	C8	Max. (peak)
7	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	H-F Osc.	C6	Max. (peak)
8	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	Ant.	C3	Max. (peak)

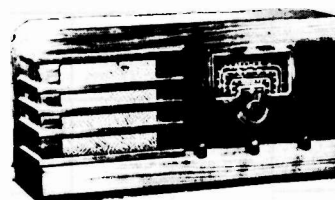
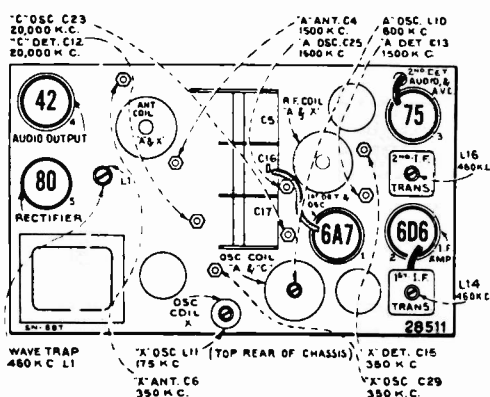
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12930	Board—Antenna and ground terminal board	11398	Resistor—220,000 ohm, carbon type, 1/10 watt (R7)
5237	Bushing—Variable condenser mounting bushing assembly	11323	Resistor—270,000 ohm, carbon type, 1/2 watt (R11)
11591	Button—Chassis plug button	12285	Resistor—470,000 ohm, insulated, 1/2 watt (R13)
12118	Cap—Grid contact cap	11626	Resistor—2.2 megohm, carbon type, 1/2 watt (R5)
11465	Capacitor—Adjustable capacitor (C8)	13673	Resistor—10 megohm, carbon type, 1/2 watt (R15)
12659	Capacitor—12 Mmfd. (C5)	12650	Shield—Antenna coil shield
12661	Capacitor—56 Mmfd. (C1)	12607	Shield—First I-F transformer shield top
12946	Capacitor—133 Mmfd. (C11, C15, C16, C17)	12008	Shield—First or second I.F. transformer shield
12406	Capacitor—180 Mmfd. (C18)	12651	Shield—Oscillator coil shield
12662	Capacitor—220 Mmfd. (C21)	12581	Shield—Second I.F. transformer shield top
12660	Capacitor—1,350 Mmfd. (C10)	3950	Shield—6D6 Radiotron shield
4868	Capacitor—.005 Mfd. (C9, C25)	3682	Shield—6A7 or 75 Radiotron shield
5148	Capacitor—.007 Mfd. (C20)	4794	Socket—4-contact rectifier Radiotron socket
4858	Capacitor—.01 Mfd. (C22)	4786	Socket—6-contact 42, 75 and 6D6 Radiotron socket
13138	Capacitor—.01 Mfd. (C19)	4787	Socket—7-contact 6A7 Radiotron socket
11315	Capacitor—.015 Mfd. (C26)	11199	Socket—Dial lamp socket
4841	Capacitor—.1 Mfd. (C4, C12)	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12664
4840	Capacitor—.25 Mfd. (C13, C24)	13664	Tone Control and Switch (S1, S3)
5170	Capacitor—.25 Mfd. (C14)	13106	Transformer—First I.F. transformer, complete (L8, L9, C11, C15)
11240	Capacitor—.10 Mfd. (C18)	13107	Transformer—Second I.F. transformer, complete (L10, L11, C16, C17, C18, R6, R7)
5212	Capacitor—.18 Mfd. (C29)	12644	Transformer—Power transformer, 115 volt, 60 cycle (T1)
12648	Coil—Antenna coil—less shield (L2, L3, L4, L5)	12645	Transformer—Power transformer, 115 volt, 25 cycle (T1)
12649	Coil—Oscillator coil—less shield (L6, L7)	12646	Transformer—Power transformer, 240-210-150-125-110 volts, 60 cycle (T1)
13662	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7)	12654	Trap—Wave trap (L1)
5119	Connector—3-contact female speaker cable connector	13144	Volume Control (R8)
12006	Core—Adjustable core and stud assembly for I-F transformer, Stock Nos. 12652 and 12653	REPRODUCER ASSEMBLIES	
12664	Core—Adjustable core and stud assembly for wave trap, Stock No. 12654	13676	Coil—Field coil (L14)
13666	Dial—Station selector dial	13677	Cone—Reproducer cone and dust cap (L13)
13663	Drive—Variable condenser drive shaft and pinion	5118	Connector—3-contact male speaker cable connector
12657	Indicator—Station selector indicator	9798	Reproducer, complete
5226	Lamp—Dial lamp	13678	Transformer—Output transformer (T2)
13665	Range Switch (S2)	MISCELLANEOUS ASSEMBLIES	
13674	Resistor—18 ohms, carbon type, 1/2 watt (R18)	13672	Crystal—Station selector crystal
13675	Resistor—270 ohms, carbon type, 1 watt (R16)	12638	Knob—Station selector knob
8070	Resistor—22,000 ohm, carbon type, 1/2 watt (R3)	11347	Knob—Tone control, volume control or range switch knob
12011	Resistor—27,000 ohm, carbon type, 1 watt (R4)	11456	Spring—Chassis mounting screw assembly
11364	Resistor—33,000 ohms, carbon type, 1/2 watt (R9)	11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12638
11282	Resistor—56,000 ohm, carbon type, 1/10 watt (R6)		
5029	Resistor—56,000 ohm, carbon type, 1/2 watt (R1)		
11454	Resistor—6,800 ohm, carbon type, 1/2 watt (R2)		
5145	Resistor—100,000 ohm, carbon type, 1/2 watt (R10)		

MODEL 5T4

Five-Tube, Three-Band, A-C Receiver



MODEL 5T4

Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY OR WAVE-LENGTH RANGES

Band "X" ... 145-350 kc (approx. 2,068-857 meters)
 Band "A" .. 525-1,550 kc (approx. 571-193 meters)
 Band "C" 5.8-22 megacycles

ALIGNMENT FREQUENCIES

Band "X" 175 kc (osc.), 350 kc (osc., det., ant.)
 Band "A" .. 600 kc (osc.), 1,500 kc (osc., det., ant.)
 Band "C" 20,000 kc (osc., ant.)

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A7 First Det.—Oscillator
- (2) RCA-6D6 Intermediate Amplifier
- Pilot Lamps (2)

- (3) RCA-75 .. Second Det., A-F Amp. and A.V.C.
- (4) RCA-42 Audio Power Amplifier
- (5) RCA-80 Full-Wave Rectifier
- Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

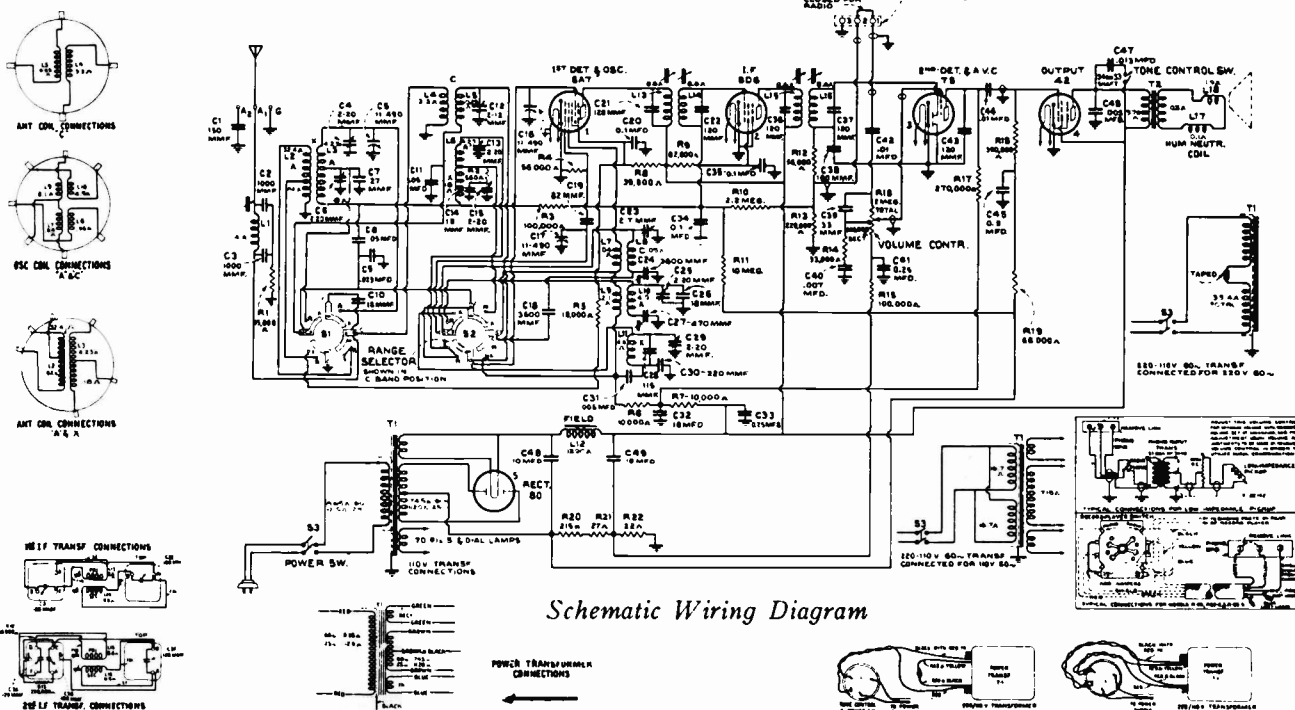
Rating A 105-125 volts, 50-60 cycles, 75 watts
 Rating B 105-125 volts, 25-50 cycles, 75 watts
 Rating C ... 100-125/200-250 volts, 50-60 cycles, 75 watts

POWER OUTPUT RATING

Undistorted 2.0 watts
 Maximum 4.5 watts

LOUDSPEAKER

Type Electrodynamic
 Voice Coil Impedance 2.2 ohms at 400 cycles



Schematic Wiring Diagram

5T4

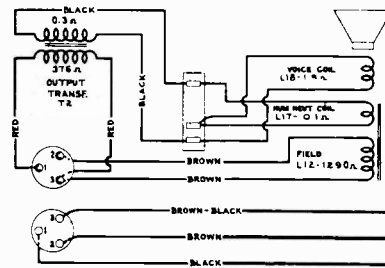
Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with extreme right hand end calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet point near 800 kc "A" Band	L16 L15 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L14 L13 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 (Wave Trap) Minimum Output
4	Antenna in series with 300 ohms	20000 kc	20 mc "C" Band	C23† C12▲ Osc. Ant.
5	Antenna in series with 200 mmfd	1500 kc	1500 kc "A" Band	C25 C13 C4 Osc. R-F Ant.
6		600 kc	600 kc "A" Band	L10 L-F Osc. Rock Gang
7		Repeat Step 5		
8		350 kc	350 kc "X" Band	C29 C15 C6 Osc. R-F Ant.
9		175 kc	175 kc "X" Band	L11 L-F Osc. Rock Gang
10	Repeat Step 8			

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG



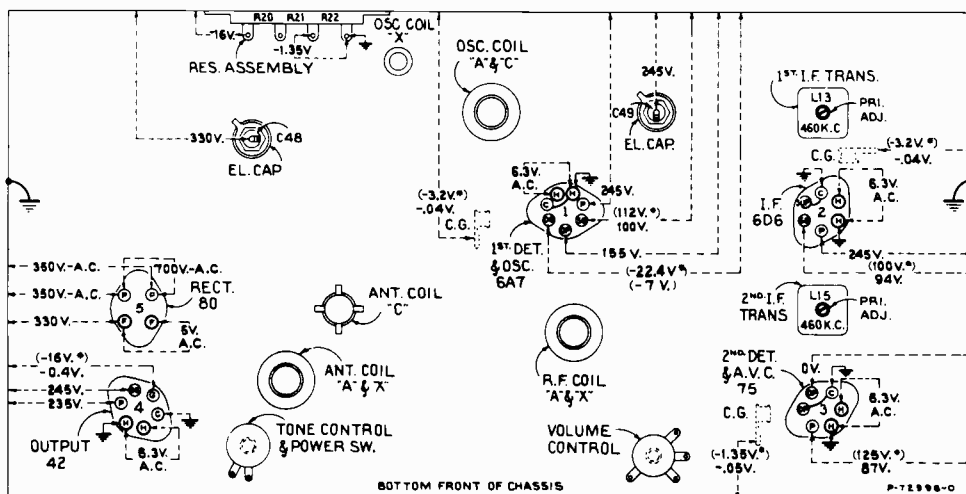
Loudspeaker Wiring

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminal under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6A7—1st Det.—Osc. 12.4 ma.
- (2) RCA-6D6—I. F. Amp. 10.2 ma.
- (3) RCA-75—2nd Det., A.V.C. and A. F. 0.23 ma.
- (4) RCA-42—Power Amp. 39 ma.
- (5) RCA-80—Rectifier 64 ma.*

(*Cannot be measured at socket)



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—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.

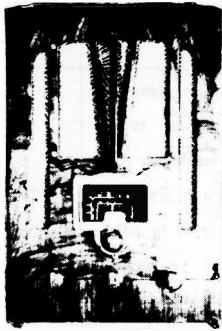
REPLACEMENT PARTS

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

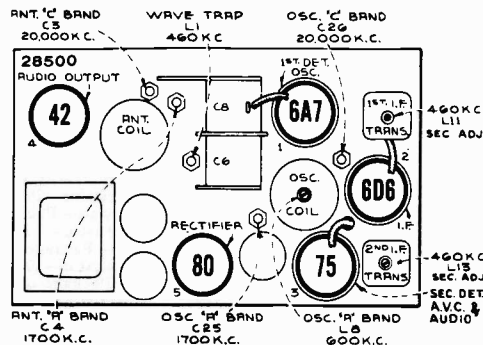
Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12806	Board—Antenna and ground terminal board	5145	Resistor—100,000 ohms, carbon type, ¼ watt—Package of 5 (R3, R15)
12717	Board—Phonograph terminal board	11398	Resistor—220,000 ohms, carbon type, 1/10 watt—Package of 5 (R13)
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3	12199	Resistor—270,000 ohms, insulated, ¼ watt—Package of 5 (R17)
12118	Cap—Grid contact cap—Package of 5	11847	Resistor—390,000 ohms, carbon type, ¼ watt—Package of 5 (R19)
12722	Capacitor—15 Mmfd. (C10, C14, C26)	11626	Resistor—2.2 meg., carbon type, ¼ watt—Package of 5 (R10)
13605	Capacitor—27 Mmfd. (C7)	13601	Resistor—10 meg., insulated, ¼ watt—Package of 5 (R11)
12948	Capacitor—33 Mmfd. (C39)	12004	Resistor—Voltage divider resistor, comprising one 216-ohm, one 27-ohm and one 22-ohm sections (R20, R20, R22)
12813	Capacitor—82 Mmfd. (C19)	12008	Shield—First or second I. F. transformer shield
13604	Capacitor—115 Mmfd. (C28)	12607	Shield—First I. F. transformer shield top
12724	Capacitor—120 Mmfd. (C43)	12581	Shield—Second I. F. transformer shield top
12404	Capacitor—120 Mmfd. (C21, C22, C36, C37)	4233	Shield—6D6 Radiotron shield
12725	Capacitor—150 Mmfd. (C1)	3682	Shield—6A7 or 75 Radiotron shield
12406	Capacitor—180 Mmfd. (C38)	11383	Shield—42 Radiotron shield
13602	Capacitor—220 Mmfd. (C30)	13591	Shield—Chassis bottom shield and mounting foot assembly
13603	Capacitor—470 Mmfd. (C27)	12710	Shield—Coil shield for Stock Nos. 13587 and 13588
13593	Capacitor—1,000 Mmfd. (C2, C3)	12799	Shield—Coil shield for Stock No. 12798
12811	Capacitor—3,600 Mmfd. (C18, C24)	12883	Shield—Coil shield for Stock No. 13590
4868	Capacitor—.005 Mfd. (C31)	4794	Socket—4-contact 80 Radiotron socket
4838	Capacitor—.005 Mfd. (C46)	4786	Socket—6-contact 6D6, 42 or 75 Radiotron socket
5148	Capacitor—.007 Mfd. (C40)	4787	Socket—7-contact 6A7 Radiotron socket
13138	Capacitor—.01 Mfd. (C42)	11199	Socket—Dial lamp socket
4858	Capacitor—.01 Mfd. (C44)	12007	Spring—Retaining spring for core, Stock Nos. 12006, 12800, 12882, 12664—Package of 10
11315	Capacitor—.015 Mfd. (C47)	13585	Switch—Range switch (S1, S2)
13606	Capacitor—.025 Mfd. (C9)	13586	Switch—Tone control and power switch (S3, S4)
13607	Capacitor—.05 Mfd. (C8)	12652	Transformer—First I. F. transformer (L13, L14, C21, C22)
4836	Capacitor—.05 Mfd. (C11)	13392	Transformer—Power transformer, 100-120 volts, 50-60 cycles (T1)
4841	Capacitor—.01 Mfd. (C20, C34, C35)	13566	Transformer—Power transformer, 100-120 volts, 25-50 cycles (T1)
4840	Capacitor—.025 Mfd. (C41)	13393	Transformer—Power transformer, 110 and 220 volts, 50-60 cycles (T1)
5170	Capacitor—.025 Mfd. (C33)	12653	Transformer—Second I. F. transformer (L15, L16, C36, C37, C38, R12, R13)
12741	Capacitor—.05 Mfd. (C45)	13592	Trap—Wave-trap complete (L1, C2, C3, R1)
11240	Capacitor—.10 Mfd. (C48)	13144	Volume control (R16)
5212	Capacitor—.18 Mfd. (C32, C49)	REPRODUCER ASSEMBLIES	
12807	Capacitor—Trimmer capacitor (C23)	12641	Board—3-contact reproducer terminal board
12714	Capacitor—Trimmer capacitor (C12)	12640	Bracket—Output transformer mounting bracket
12884	Capacitor—Trimmer capacitor (C4, C6, C13, C15, C25, C29)	12012	Coil—Field coil (L12)
13587	Coil—Antenna coil and shield, X and A bands (L2, L3)	11469	Coil—Neutralizing coil (L17)
13589	Coil—Antenna coil, C band (L4, L5)	12642	Cone—Reproducer cone and dust cap (L18)
12798	Coil—Oscillator coil and shield, A and C bands (L7, L8, L9, L10)	5118	Connector—3-contact male speaker cable connector
13590	Coil—Oscillator coil and shield, X band (L11)	9699	Reproducer—Reproducer complete
13588	Coil—R. F. coil and shield, X and A bands (L6)	11253	Transformer—Output transformer (T2)
13584	Condenser—3-gang variable tuning condenser (C5, C16, C17)	11886	Washer—Spring washer to hold field coil securely—Package of 5
5119	Connector—3-contact female speaker cable connector	MISCELLANEOUS ASSEMBLIES	
11979	Connector—2-contact male connector for power cable, mounts on back of cabinet	11824	Connector—2-contact female power cord connector
12006	Core—Adjustable core and stud for I. F. transformer, Stock Nos. 12652 and 12653	11823	Cord—Power cord and connector assembly
12800	Core—Adjustable core and stud for Stock No. 12798	12698	Escutcheon—Station selector escutcheon and crystal
12882	Core—Adjustable core and stud for Stock No. 13590	12699	Knob—Large station selector knob—Package of 5
12664	Core—Adjustable core and stud for wave-trap, Stock No. 13592	12700	Knob—Small (vernier) station selector knob—Package of 5
13595	Dial—Station selector dial and mounting bracket assembly	11582	Knob—Range switch knob—Package of 5
12702	Drive—Vernier drive and pinion gear for variable condenser	11347	Knob—Volume control or tone control and power switch knob—Package of 5
12712	Indicator—Station selector indicator pointer	11210	Screw—Chassis mounting screw assembly, comprising one screw, one washer and one lockwasher—Package of 4
5226	Lamp—Dial lamp—Package of 5	11349	Spring—Retaining spring for knob, Stock Nos. 11347, 11582, 12700—Package of 5
11324	Resistor—560 ohms, carbon type, ¼ watt—Package of 5 (R2)	4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10
3078	Resistor—10,000 ohms, carbon type, ¼ watt—Package of 5 (R6, R7)		
13594	Resistor—15,000 ohms, carbon type, 1/10 watt—Package of 5 (R1)		
3219	Resistor—18,000 ohms, carbon type, ¼ watt—Package of 5 (R5)		
11364	Resistor—33,000 ohms, carbon type, ¼ watt—Package of 5 (R14)		
13206	Resistor—39,000 ohms, carbon type, 2 watts (R8)		
5029	Resistor—56,000 ohms, carbon type, ¼ watt—Package of 5 (R4)		
11282	Resistor—56,000 ohms, carbon type, 1/10 watt—Package of 5 (R12)		
12333	Resistor—68,000 ohms, carbon type, ¼ watt—Package of 5 (R19)		
8064	Resistor—82,000 ohms, carbon type, ¼ watt—Package of 5 (R9)		

MODELS 5T5 and 5U

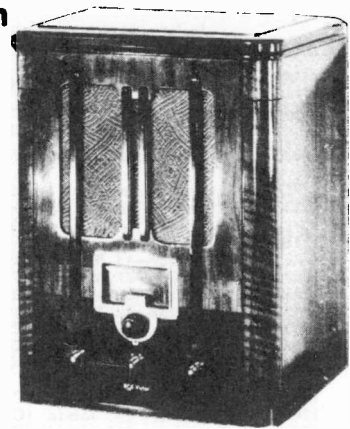
Five-Tube, Two-Band, A-C, Radio and Radio-Phonograph



MODEL 5T5



Radiotron, Coil, and Trimmer Locations



MODEL 5U

Electrical Specifications

FREQUENCY RANGES

“Standard broadcast” (A) 530-1,900 kc
 “Short wave” (C) 5,800-21,600 kc

ALIGNMENT FREQUENCIES

“Standard broadcast” (A)
 600 kc (osc.), 1,700 kc (osc., ant.)
 “Short wave” (C) 20,000 kc

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- | | |
|--|--|
| (1) RCA-6A7 First Det.—Oscillator | (3) RCA-75 .. Second Det., A-F Amp. and A.V.C. |
| (2) RCA-6D6 Intermediate Amplifier | (4) RCA-42 Audio Power Amplifier |
| | (5) RCA-80 Full-Wave Rectifier |

Pilot Lamp (1) Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

Rating A-6 105-125 volts, 60 cycles, 80 watts
 Rating A-5 105-125 volts, 50 cycles, 80 watts
 Rating B-2 105-125 volts, 25 cycles, 80 watts
 Rating C-6 105-125/200-250 volts, 60 cycles, 80 watts
 Rating C-5 105-125/200-250 volts, 50 cycles, 80 watts

LOUDSPEAKER

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

POWER OUTPUT

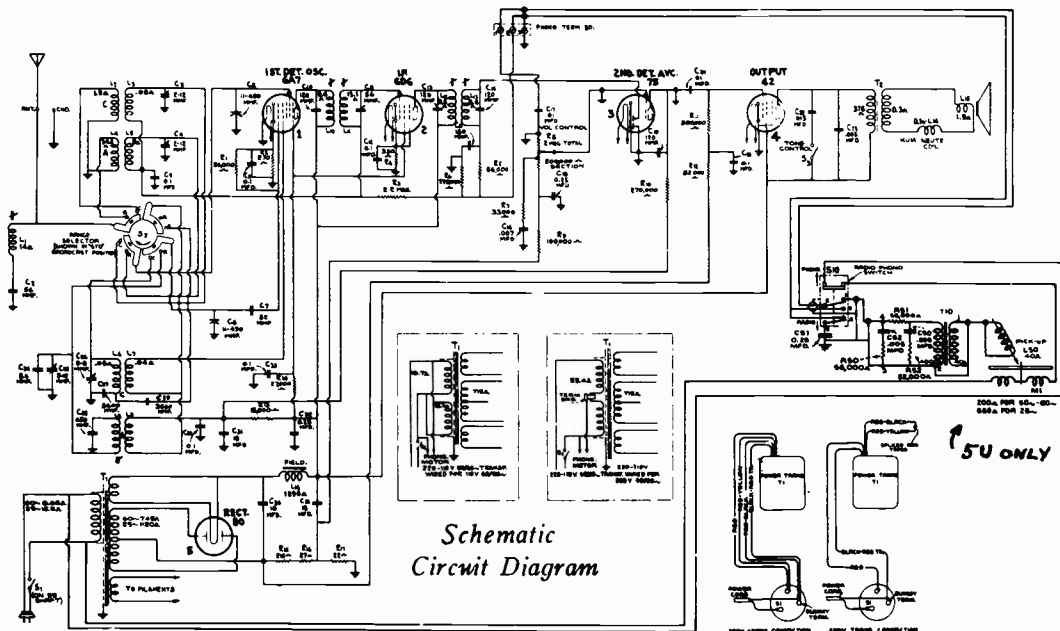
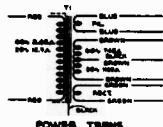
Undistorted 2.0 watts
 Maximum 4.5 watts

RADIO ONLY—75 WATTS.

PHONOGRAPH - 5U-

Type Manual
 Turntable Speed 78 r.p.m.
 Type of Pickup Low-impedance magnetic
 Pickup Impedance 96 ohms at 1,000 cycles

L8, 4.9 ohms
 L9, 2.1 ohms



Schematic Circuit Diagram

Alignment Procedure

DIAL CALIBRATION:

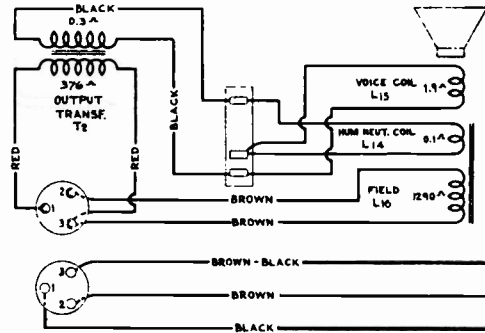
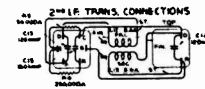
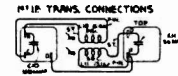
With tuning condenser fully meshed set pointer to end calibration at low frequency end of BC Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc "A" Band	L13 L12 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L11 L10 1st I-F Trans.
3				L1 (Wave Trap) Minimum Output
4	Antenna in series with 200 mmfd	1700 kc	1700 kc "A" Band	C25 C4 Osc. Ant.
5		600 kc	600 kc "A" Band	L8 L-F Osc. Rock Gang
6		Repeat Step 4		
7	Antenna in series with 300 ohms	20000 kc	20 mc "C" Band	C25† C5▲ Osc. Ant.

Osc. tracks 460 kc above signal on all bands.

† Use minimum capacity peak

▲ Use maximum capacity peak - ROCK GANG



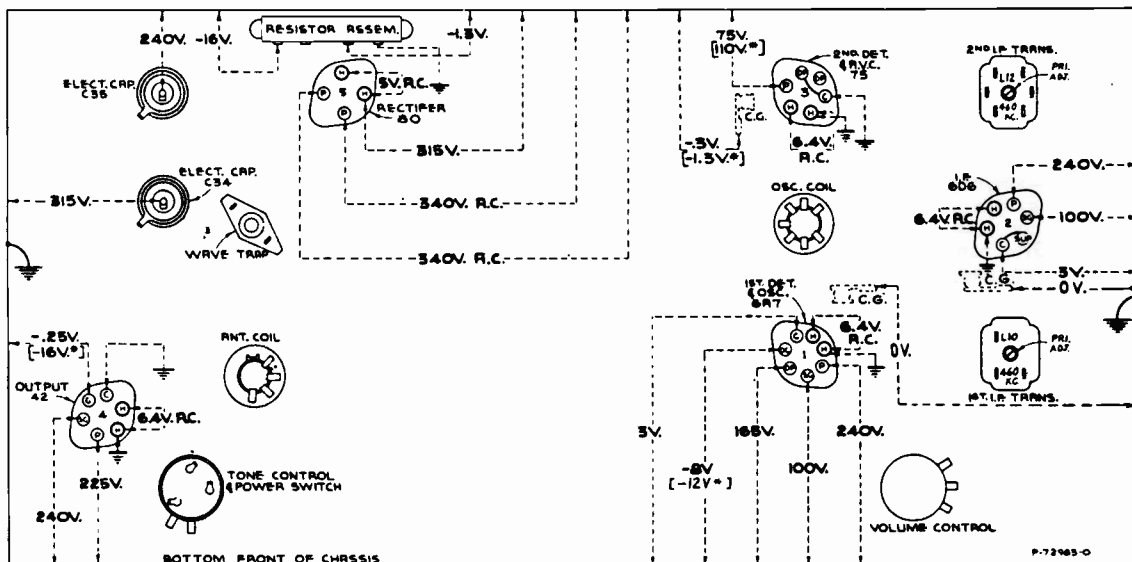
Loudspeaker Wiring

Radiotron Plate Current Readings

Measured with Milliammeter Connected at Tube Socket Plate Terminals Under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6A7—1st Det.—Osc. 11 ma.
- (2) RCA-6D6—I. F. Amp. 10 ma.
- (3) RCA-75—2nd Det., A.V.C. and A. F.. 0.22 ma.
- (4) RCA-42—Power Amp. 42 ma.
- (5) RCA-80—Rectifier 63 ma.*

(*Cannot be measured at socket.)

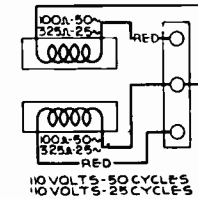
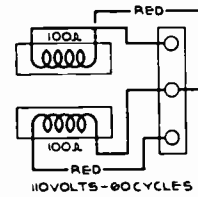
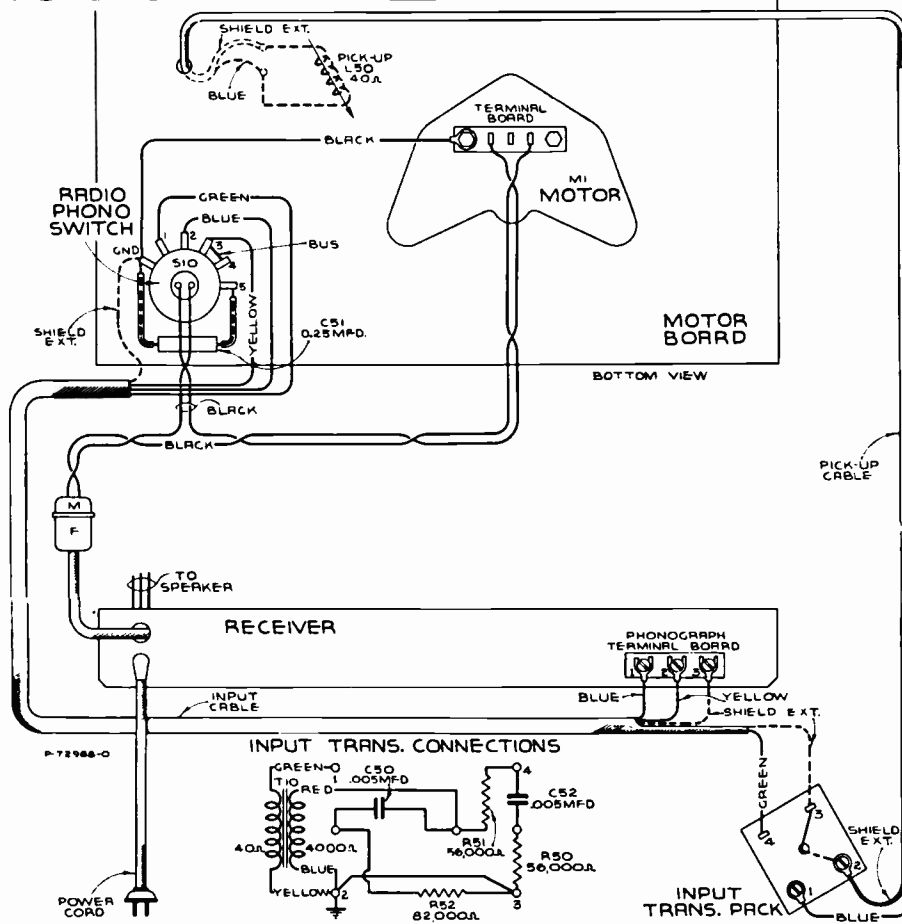


Radiotron Socket Voltages, Coil and Trimmer Locations.

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard broadcast")—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.

5T5 & 5U



MOTOR WIRING CONNECTIONS

Assembly Wiring MODEL 5U

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
13216	Board—Antenna and ground terminal board	12797	Coil—Antenna coil and shield (L2, L3, L4, L5)
12717	Board—Phonograph terminal board	12798	Coil—Oscillator coil and shield (L6, L7, L8, L9)
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3	12701	Condenser—2-gang variable tuning condenser (C6, C8)
12118	Cap—Grid contact cap—Package of 5	5119	Connector—3-contact female connector for speaker cable
12714	Capacitor—Adjustable trimmer (C3, C4, C25)	12006	Core—Adjustable core and stud for Stock Nos. 12653 and 12801
12807	Capacitor—Adjustable trimmer (C26)	12664	Core—Adjustable core and stud for Stock No. 12654
12973	Capacitor—5.6 Mmfd. (C24)	13313	Dial—Station selector dial
12723	Capacitor—56 Mmfd. (C2)	12702	Drive—Vernier drive for variable condenser
12629	Capacitor—56 Mmfd. (C11)	13314	Indicator—Station selector indicator pointer
13394	Capacitor—82 Mmfd. (C7)	5226	Lamp—Dial lamp, 6.3 volts—Package of 5
12724	Capacitor—120 Mmfd. (C19)	13310	Resistor—Voltage divider comprising one 216-ohm, one 27-ohm and one 22-ohm sections (R15, R16, R17)
12404	Capacitor—120 Mmfd. (C10, C13, C14)	6135	Resistor—270 ohms, carbon type, ¼ watt—Package of 5 (R2)
12406	Capacitor—180 Mmfd. (C15)	11296	Resistor—330 ohms, carbon type, ¼ watt—Package of 5 (R4)
12812	Capacitor—450 Mmfd. (C28)	12759	Resistor—15,000 ohms, carbon type, ½ watt—Package of 5 (R13)
12811	Capacitor—3,600 Mmfd. (C27, C29)	12011	Resistor—27,000 ohms, carbon type, 1 watt—Package of 5 (R14)
4868	Capacitor—.005 Mfd. (C23)		
5148	Capacitor—.007 Mfd. (C16)		
11315	Capacitor—.015 Mfd. (C22)		
4858	Capacitor—.01 Mfd. (C17, C20, C30)		
4840	Capacitor—0.25 Mfd. (C18)		
5170	Capacitor—0.25 Mfd. (C32)		
4841	Capacitor—0.1 Mfd. (C5, C9, C12, C21, C33)		
11240	Capacitor—10 Mfd. (C34)		
5212	Capacitor—18 Mfd. (C31, C35)		

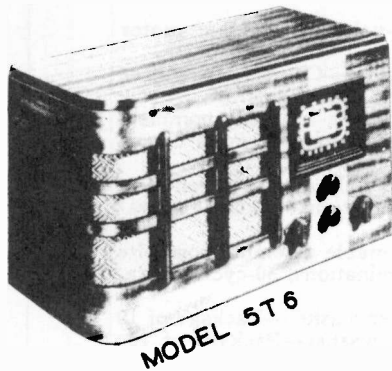
REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
11364	Resistor—33,000 ohms, carbon type, ¼ watt—Package of 5 (R7)	12083	Motor—105-125-volt, 50-cycle motor (M1)
5029	Resistor—56,000 ohms, carbon type, ¼ watt—Package of 5 (R1)	9733	Motor—105-125-volt, 25-cycle motor (M1)
11282	Resistor—56,000 ohms, carbon type, 1/10 watt—Package of 5 (R5)	9734	Motor—200-250-volt, 50-cycle motor (M1)
11365	Resistor—82,000 ohms, carbon type, ¼ watt—Package of 5 (R12)	4456	Motor accessories—Comprising three nuts, one shield and one screw
5145	Resistor—100,000 ohms, carbon type, ¼ watt—Package of 5 (R9)	12048	Turntable—Turntable assembly complete with rotor laminations, 60-cycle operation
11398	Resistor—220,000 ohms, carbon type, 1/10 watt—Package of 5 (R6)	13084	Turntable—Turntable assembly complete with rotor laminations—25-cycle operation
11323	Resistor—270,000 ohms, carbon type, ¼ watt—Package of 5 (R10)	12049	Turntable—Turntable assembly complete with rotor laminations, 50-cycle operation
11847	Resistor—390,000 ohms, carbon type, ¼ watt—Package of 5 (R11)	4083	Washer—Leather washer—Package of 10
11626	Resistor—2.2 meg., carbon type, ¼ watt—Package of 5 (R3)	4084	Washer—Metal washer—Package of 10
12651	Shield—Antenna coil shield	PICKUP AND ARM ASSEMBLIES	
13311	Shield—Chassis end shield and rubber mounting foot assembly—Package of 2	3812	Armature—Pickup armature (L50)
12607	Shield—First I. F. transformer shield top	13568	Coil—Pickup coil
12008	Shield—I. F. transformer shield	4543	Damper—Damper block complete with damper clamp, washer
12799	Shield—Oscillator coil shield	13567	Pickup and arm assembly complete
12581	Shield—Second I. F. transformer shield top	3811	Screw—Needle holding screw—Package of 10
3682	Shield—6A7 or 75 Radiotron shield	REPRODUCER ASSEMBLIES	
3950	Shield—6D6 Radiotron shield	12641	Board—3-contact reproducer terminal board
4794	Socket—4-contact 80 Radiotron socket	12640	Bracket—Output transformer mounting bracket
4786	Socket—6-contact 6D6, 42 or 75 Radiotron socket	12012	Coil—Field coil (L16)
4787	Socket—7-contact 6A7 Radiotron socket	11469	Coil—Neutralizing coil (L14)
11199	Socket—Dial lamp socket	12642	Cone—Reproducer cone and dust cap (L15)
12007	Spring—Retaining spring for Stock Nos. 12006 and 12664—Package of 10	5118	Connector—3-contact male speaker cable connector
12796	Switch—Range switch (S2)	9699	Reproducer—Complete
13309	Switch—Tone control and power switch (S1, S3)	11253	Transformer—Output transformer (T2)
12801	Transformer—First I. F. transformer complete (L10, L11, C10, C11)	11886	Washer—Spring washer to hold field coil securely—Package of 5
12653	Transformer—Second I. F. transformer complete (L12, L13, C13, C14, C15, R5, R6)	MISCELLANEOUS ASSEMBLIES	
13392	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)	13564	Cable—3-conductor shielded input cable, approximately 32½ inches long, connects receiver to radio-record switch
13566	Transformer—Power transformer, 105-125 volts, 25-50 cycles (T1)	4840	Capacitor—0.25 Mfd. (C51)
13393	Transformer—Power transformer, 110 and 220 volts, 50-60 cycles (T1)	12785	Crystal—Station selector escutcheon and crystal
12654	Trap—Wave-trap complete (L1)	12699	Knob—Large station selector knob—Package of 5
13144	Volume control (R8)	12700	Knob—Small (vernier) station selector knob—Package of 5
MOTOR ASSEMBLIES			
10194	Ball—Steel ball bearing—Package of 20	11347	Knob—Volume control, tone control, range switch or radio-record switch knob—Package of 5
11740	Base—Motor base and bearing assembly	11377	Screw—Chassis mounting screw assembly, comprising one screw, one washer and one lockwasher—Package of 4
11733	Coil—Stator assembly, comprising coil and laminations, 105-125-volt, 60-cycle operation	11869	Screw—Motor mounting screw assembly, comprising one screw, three metal washers, two rubber washers, one lockwasher, two spacers and one nut—Package of 3
11734	Coil—Stator assembly, comprising coil and laminations, 105-125-volt, 50-cycle operation	11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12700—Package of 5
11735	Coil—Stator assembly, comprising coil and laminations, 105-125-volt, 25-cycle operation	4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10
13081	Coil—Stator coil assembly, comprising coil and laminations, 200-250-volt, 50-cycle operation	13563	Switch—Radio-record switch (S10)
11748	Damper—Motor damper assembly, comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer	13565	Transformer—Phonograph input transformer (T10, C50, C52, R50, R51, R52)
12082	Motor—105-125-volt, 60-cycle motor (M1)		

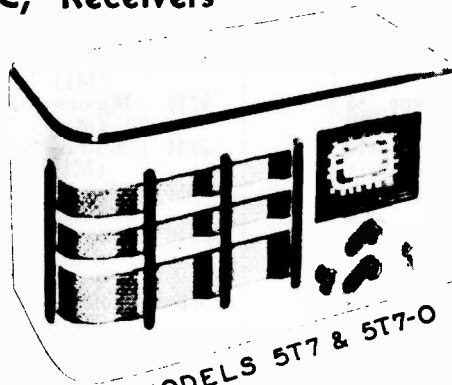
NOTE: Stock No's. 13564 Cable, 4880 Capacitor C51
11889 Screw Assembly, 11563 Switch and 13565
Transformer. USED WITH MODEL 5U ONLY.

MODELS 5T6, 5T7, 5T7-O & 5T8

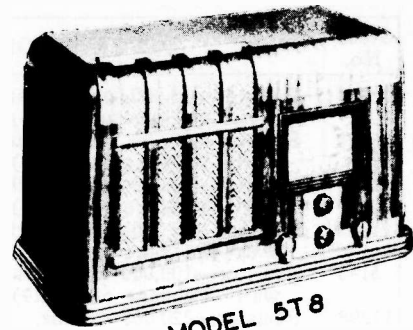
Five-Tube, Two-Band, A-C, Receivers



MODEL 5T6



MODELS 5T7 & 5T7-O



MODEL 5T8

Electrical Specifications

FREQUENCY RANGES

"Standard broadcast" (A)..... 540-1,820 kc
 "Short wave" (B)..... 1,820-6,600 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Det.—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier

- (3) RCA-6Q7..... Second Det., A-F Amp. and A.V.C.
- (4) RCA-6F6..... Audio Power Amplifier
- (5) RCA-5W4..... Full-Wave Rectifier

Pilot Lamps (3).. Mazda No. 46, 6.3 volts, 0.25 amperes

LOUDSPEAKER

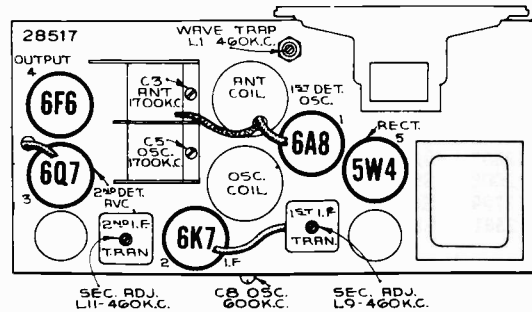
Type..... Electrodynamic
 Voice Coil Impedance..... 2 1/4 ohms at 400 cycles

POWER SUPPLY RATINGS

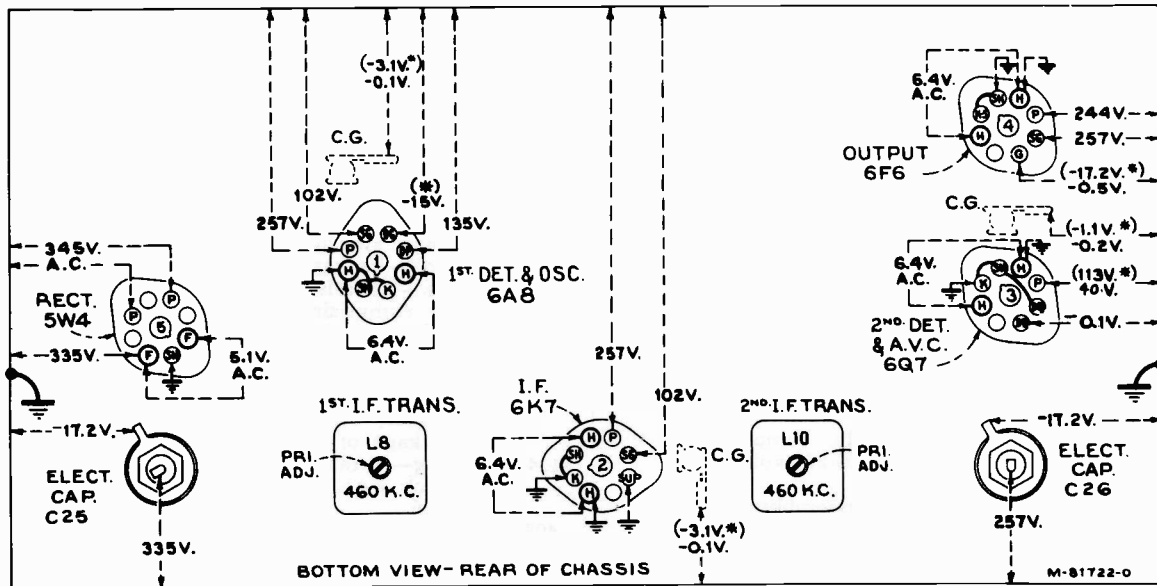
Rating A 105-125 volts, 50-60 cycles, 80 watts
 Rating B 105-125 volts, 25-60 cycles, 80 watts
 Rating C 100-130/140-160/195-250 volts, 40-60 cycles, 80 watts

POWER OUTPUT RATING

Undistorted..... 2.0 watts
 Maximum..... 4.5 watts



Radiotron, Coil, and Trimmer Locations

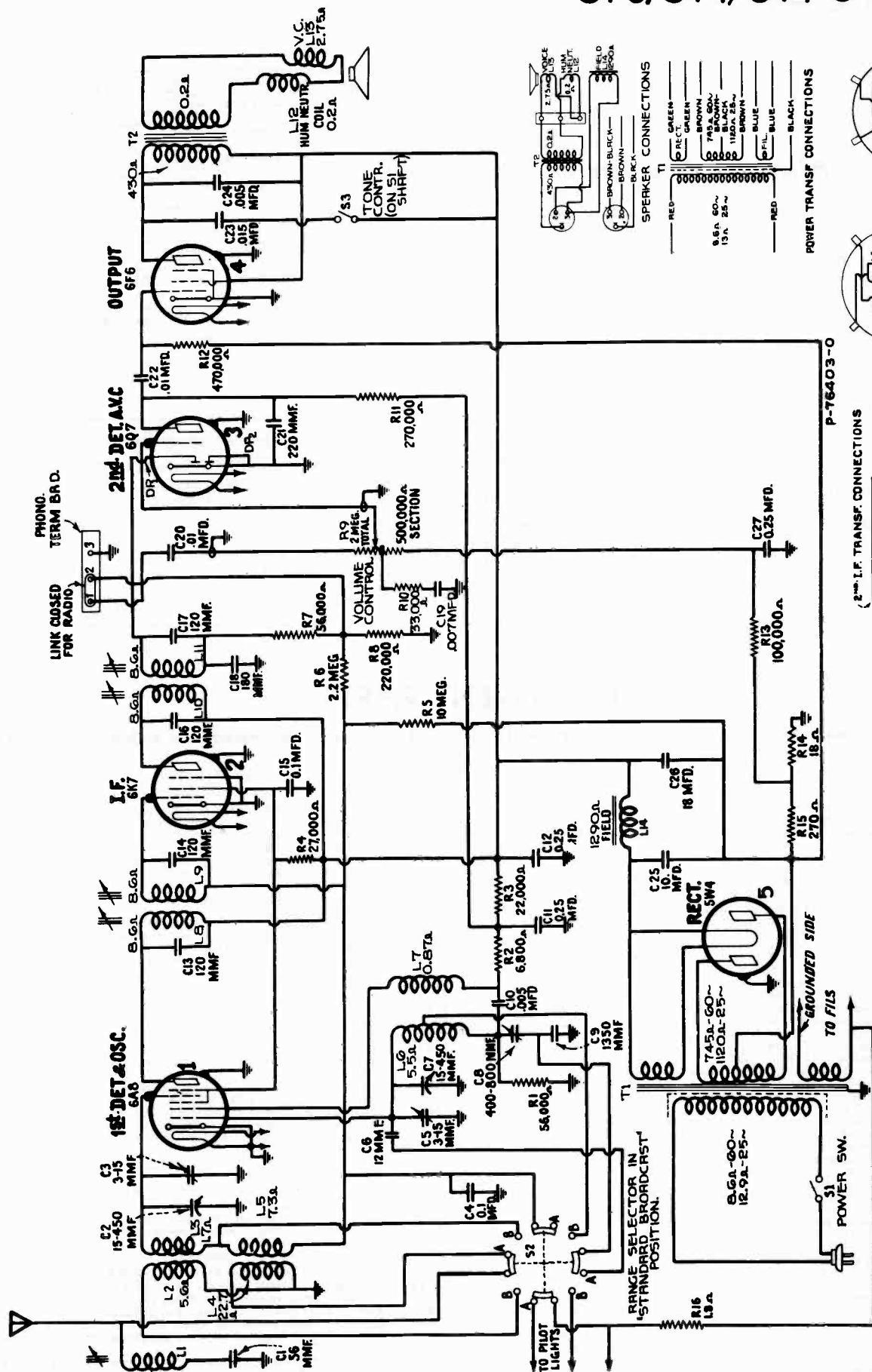


Radiotron Socket Voltages, Coil, and Trimmer Locations

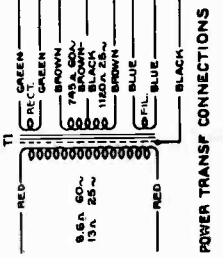
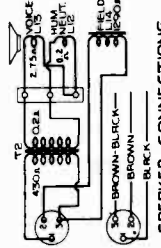
Measured at 115 volts, 60-cycle supply—
 Tuned to approximately 1,000 kc ("Standard broadcast")—
 No signal being received—Volume control minimum

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

5T6, 5T7, 5T7-O & 5T8



The small, black, insulated 1.8 ohm resistor (R16), which connects from the "hot" side of the 6F6 heater circuit to the terminal strip directly behind the volume control, should be replaced on all chassis passing through service shops for repair. The replacement resistor, Stock #18501 is a wire-wound type, with the resistance element enclosed in a ceramic tube. This resistor is in series with the pilot lamps and serves to reduce voltage.

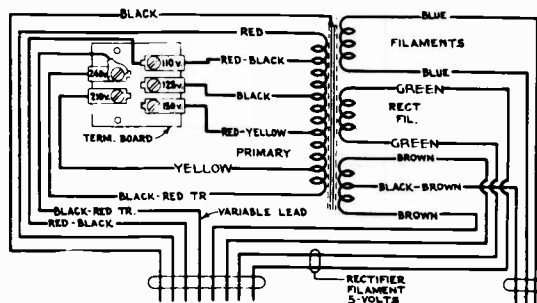


ANT. COIL CONNECTIONS OSC. COIL CONNECTIONS

5T6, 5T7, 5T7-O & 5T8

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	6K7 I-F Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc "BC" Band	L11 L10 2nd I-F Trans.
2	6A8 Det. Grid in series with 0.01 mfd			L9 L8 1st I-F Trans.
3				L1 Wave Trap Minimum Output
4	Antenna in series with 200 mmfd	1700 kc	1700 kc "BC" Band	C5 C3 Osc. Ant.
5		600 kc	600 kc "BC" Band	C8 L-F Osc. Rock Gang
6		<i>Repeat Step 4</i>		



Primary resistance—24.5 ohms total
 Secondary resistance—760 ohms total
Universal Transformer

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6A8—1st Det.—Osc. 11.7 ma.
 - (2) RCA-6K7—I. F. Amp. 9.4 ma.
 - (3) RCA-6Q7—2nd Det., A.V.C. and A. F. ... 0.3 ma.
 - (4) RCA-6F6—Power Amp. 39.6 ma.
 - (5) RCA-5W4—Rectifier. 61.0 ma.*
- * Cannot be measured at socket.

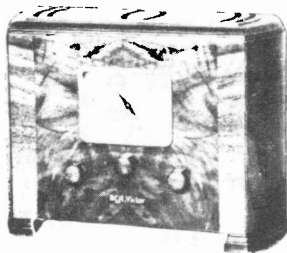
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
13098	Board—Antenna and ground terminal board	11398	Resistor—220,000 ohm, carbon type, 1/10 watt (R8)
12717	Board—Phonograph terminal board	11323	Resistor—270,000 ohm, carbon type, 1/2 watt (R11)
5237	Bushing—Variable condenser mounting bushing assembly	11172	Resistor—470,000 ohm, carbon type, 1/2 watt (R12)
12511	Cap—Grid contact cap	11626	Resistor—2.2 megohm, carbon type, 1/2 watt (R6)
11465	Capacitor—Adjustable capacitor (C8)	13673	Resistor—10 megohm, carbon type, 1/2 watt (R5)
12659	Capacitor—12 Mmfd. (C6)	4669	Screw—No. 8-32x5/32 set screw for drive disc, Stock No. 13816
12661	Capacitor—56 Mmfd. (C1)	12650	Shield—Antenna coil shield
12404	Capacitor—120 Mmfd. (C13, C14, C16, C17)	12735	Shield—Dial lamp shield
12406	Capacitor—180 Mmfd. (C18)	12607	Shield—First I.F. transformer shield top
13818	Capacitor—220 Mmfd. (C21)	12008	Shield—First or second I.F. transformer shield
12660	Capacitor—1,350 Mmfd. (C9)	12651	Shield—Oscillator coil shield
4868	Capacitor—.005 Mfd. (C10, C24)	12581	Shield—Second I.F. transformer shield top
5148	Capacitor—.007 Mfd. (C19)	11195	Socket—5-contact 5W4 Radiotron socket
13138	Capacitor—.01 Mfd. (C20)	11196	Socket—8-contact 6A8, 6F6, 6K7 or 6Q7 Radiotron socket
4858	Capacitor—.01 Mfd. (C22)	11199	Socket—Dial lamp socket
11315	Capacitor—.015 Mfd. (C23)	12007	Sprng—Retaining spring for core, Stock Nos. 12006 and 12664
4841	Capacitor—.01 Mfd. (C4, C15)	13813	Tone Control and Power Switch (S1, S3)
4840	Capacitor—.025 Mfd. (C11, C27)	13106	Transformer—First I.F. transformer, complete (L8, L9, C13, C14)
5170	Capacitor—.025 Mfd. (C12)	13107	Transformer—Second I.F. transformer, complete (L10, L11, C16, C17, C18, R7, R8)
11240	Capacitor—.10 Mfd. (C25)	12644	Transformer—Power transformer, 115 volt, 60 cycle (T1)
5212	Capacitor—.18 Mfd. (C26)	12645	Transformer—Power transformer, 115 volt, 25 cycle (T1)
12648	Coil—Antenna coil—less shield (L2, L3, L4, L5)	12646	Transformer—Power transformer, 240-210, 150-125-110 volts, 60 cycle (T1)
12649	Coil—Oscillator coil—less shield (L6, L7)	12854	Trap—Wave trap (L1)
13811	Condenser—2-gang variable tuning condenser (C2, C3, C5, C7)	13144	Volume Control (R9)
5119	Connector—3-contact female speaker cable connector	REPRODUCER ASSEMBLIES	
12006	Core—Adjustable core and stud assembly for I.F. transformer, Stock Nos. 12652 and 12653	13822	Coil—Field coil (L14)
12664	Core—Adjustable core and stud assembly for wave trap, Stock No. 12654	13821	Cone—Reproducer cone and dust cap (L13)
13814	Dial—Station selector dial	5118	Connector—3-contact male speaker cable connector
13816	Disc—Station selector drive disc and lamp socket assembly	9776	Reproducer, complete
13815	Drive—Variable condenser drive shaft, spool and bearing	13823	Transformer—Output transformer (T2)
14301	Fuse—1/2 amp. resistor-fuse, 1.8 ohms (R16)	MISCELLANEOUS ASSEMBLIES	
13817	Indicator—Station selector indicator	13824	Escutcheon—Station selector escutcheon
5228	Lamp—Dial lamp	12873	Knob—Station selector or volume control knob
13812	Range Switch (S2)	13825	Knob—Tone control or range switch knob
13874	Resistor—18 ohm, carbon type, 1/2 watt (R14)	11586	Screw—Chassis mounting screw No. 14x1 in.
13819	Resistor—270 ohm, wire wound, 1.1 watt (R15)	13885	Screw—No. 8-32x1/2 in. headless set screw for knob, Stock No. 13825
8070	Resistor—22,000 ohm, carbon type, 1/2 watt (R3)	4119	Screw—No. 8-32x1/2 in. headless set screw for knob, Stock No. 12673
12011	Resistor—27,000 ohm, carbon type, 1 watt (R4)		
11364	Resistor—33,000 ohm, carbon type, 1/2 watt (R10)		
11282	Resistor—56,000 ohm, carbon type, 1/10 watt (R7)		
5029	Resistor—56,000 ohm, carbon type, 1/2 watt (R1)		
11454	Resistor—6,800 ohm, carbon type, 1/2 watt (R2)		
5145	Resistor—100,000 ohm, carbon type, 1/2 watt (R13)		

MODELS 5X, 5X3, 5X4 5XA, 5XA3, and 5XA4

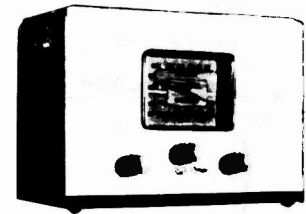
Five-Tube, Two-Band, AC-DC, Receivers



MODELS 5X & 5XA



MODELS 5X3 & 5XA3



MODELS 5X4 & 5XA4

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A)..... 540-1,800 kc.
 "Short Wave" (B).....1,800-6,500 kc.

ALIGNMENT FREQUENCIES

"Standard Broadcast" (A)
 600 kc. (osc.); 1,700 kc. (osc. and ant.)
 "Short Wave" (B).....None required

Intermediate Frequency.....460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6A7.....First Detector-Oscillator
- (2) RCA-78.....Intermediate Amplifier

- (3) RCA-75.....Second Detector, A-F, and A.V.C.
- (4) RCA-43.....Power Output
- (5) RCA-25Z5.....Rectifier

Power Supply Rating (105-125 volts).....50-60 cycles—60 watts, D-C—50 watts

POWER OUTPUT

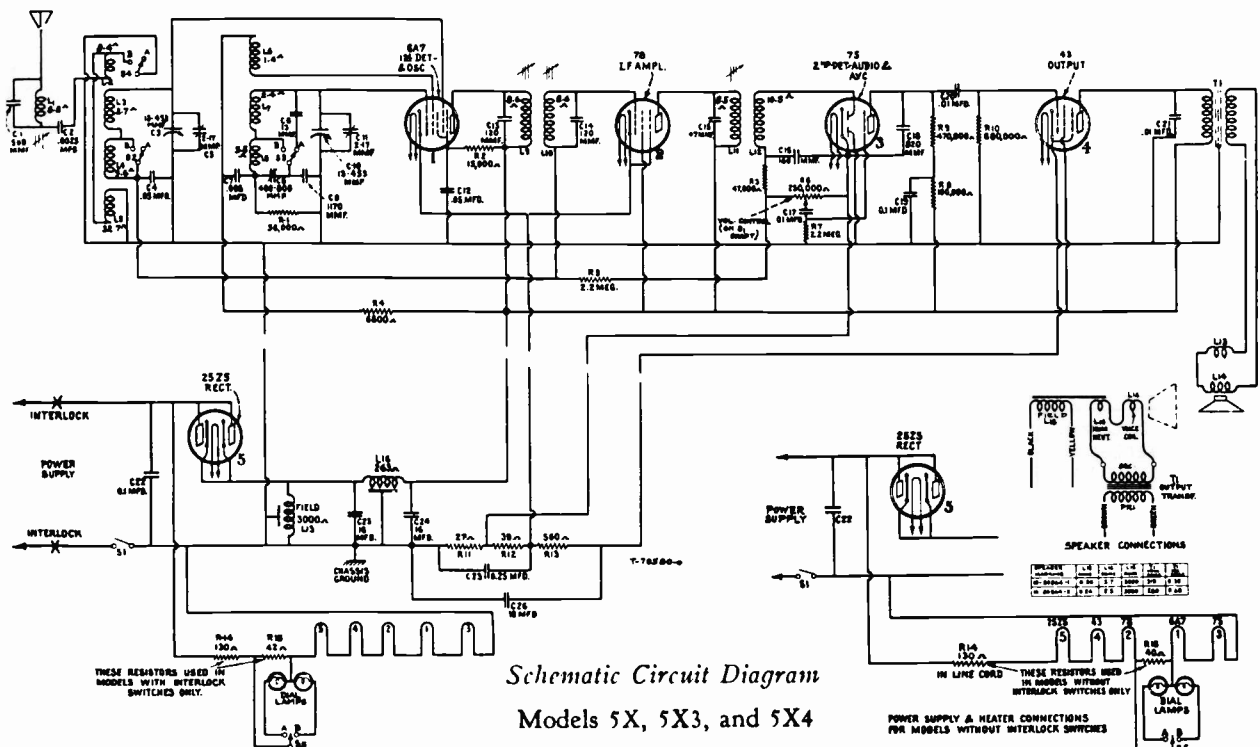
Undistorted.....0.4 watts AC, 0.3 watts DC
 Maximum.....0.9 watts AC, 0.8 watts DC

LOUDSPEAKER

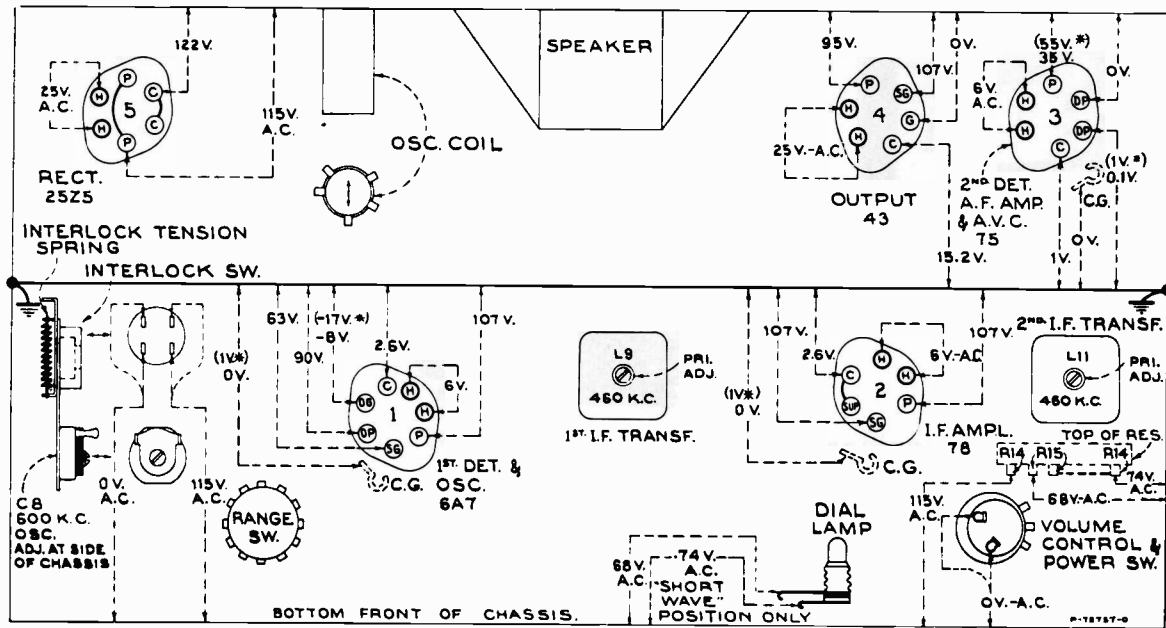
Type.....Electrodynamic
 Impedance (v.c.) {M80864-1, 4.5 ohms } at 400 cycles
 {M80864-2, 3.0 ohms }

Pilot Lamps (2).....Mazda No. 40, 6.3 volts, 0.15 amperes

RCA Victor Models 5XA, 5XA3, and 5XA4 are similar to RCA Victor Models 5X, 5X3, and 5X4 respectively. Technical Information and Service Data for Models 5X, 5X3, and 5X4 is directly applicable except as contained herein.

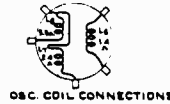
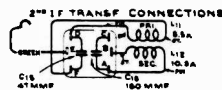
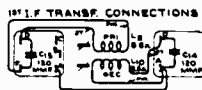


5X, 5X3, 5X4, 5XA, 5XA3 & 5XA4



Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—For 115-volt d-c supply approximately 10% lower
 Tuned to approximately 1,000 kc. ("Standard broadcast" range)—No signal being received—
 Volume control setting optional



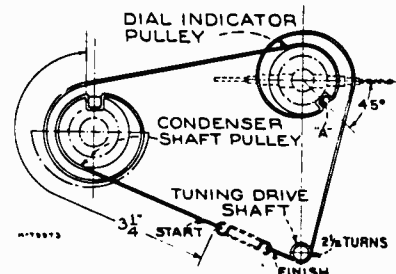
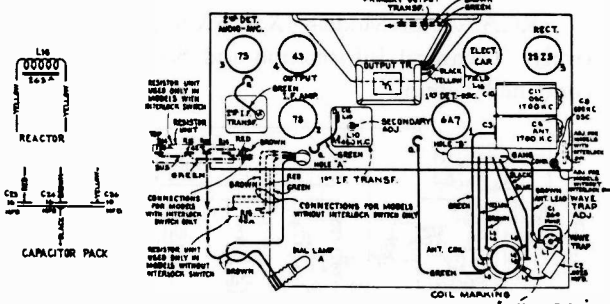
Alignment Procedure

DIAL CALIBRATION:

With tuning condenser fully meshed set pointer to bottom horizontal line at low frequency end of BC scale.

Do not connect external ground to chassis.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd			L12 L11 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc "BC" Band	L10 L9 1st I-F Trans.
3				L1 (Wave Trap) Minimum Output
4	Antenna in series with 80 mmfd	1700 kc	1700 kc "BC" Band	C11 C5 Osc. Ant.
5		600 kc	600 kc "BC" Band	C8 (L-F Osc.) Rock Gang
6				Repeat Step 4



Tuning Drive Cord Mechanism

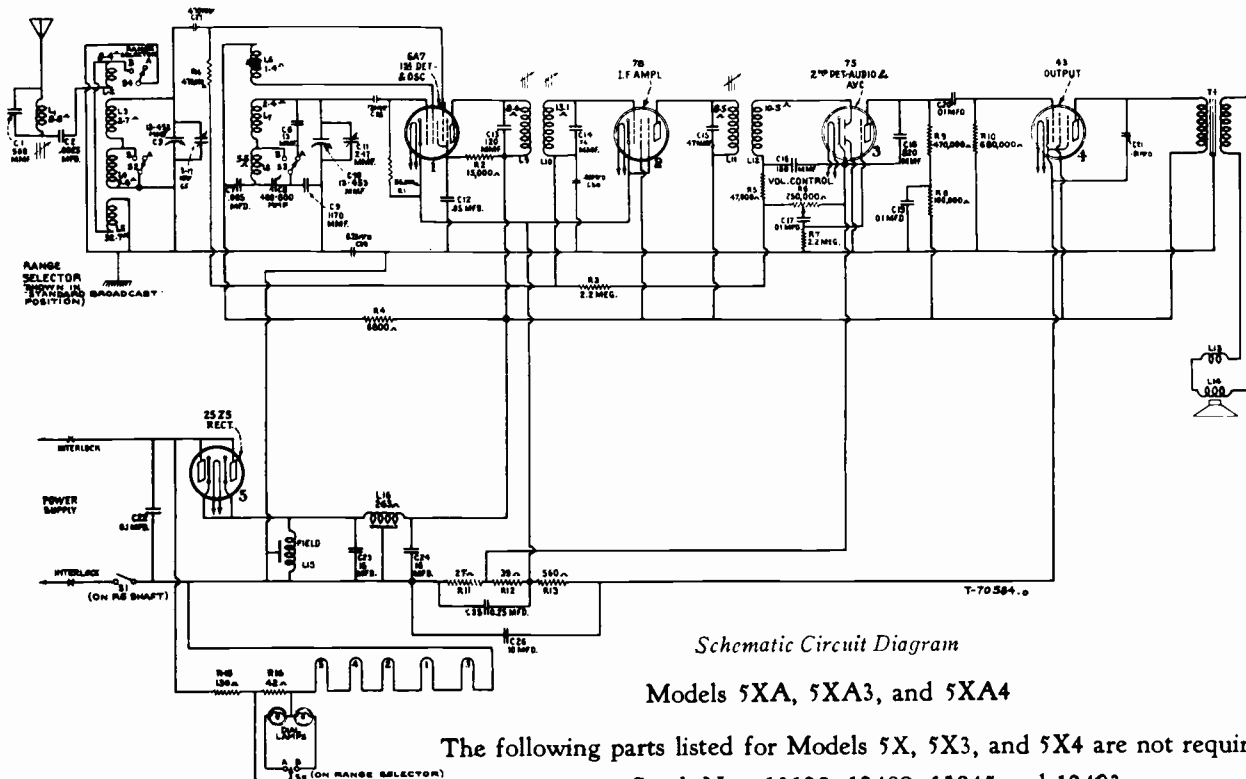
Rear view of drive assembly showing threading of drive cord with variable condenser plates in full mesh. To perform this operation, unsolder the four leads (connected between antenna coil and range selector switch) from the range selector switch, unsolder antenna lead-in wire from wave-trap terminal, unsolder lead from rear section of gang tuning condenser, and remove the four screws which secure the tuning drive frame to the chassis proper. This frame with gang tuning condenser still attached may now be easily removed for the threading operation.

5X, 5X3, 5X4, 5XA, 5XA3 & 5XA4

Late production Model 5X instruments incorporate a few minor changes from the original Model 5X. These changes are: (1) a fixed tuned wave-trap used in place of the adjustable wave-trap; and (2) a few component part changes as listed below. All Specifications and Service Data for Model 5X are directly applicable to these instruments except, under "Alignment procedure", omit the wave-trap adjustment.

Stock No.	Description
11414	Capacitor--0.1 Mfd. (C19)
13837	Capacitor pack--Comprising one 10Mfd. and two 16 Mfd. sections (C23, C24, C26)
12695	Resistor--15,000 ohms, insulated, 1/4 watt (R2)
12679	Resistor--2.2 megohms, insulated, 1/4 watt (R3, R7)
13836	Switch--Range switch (S2, S3, S4, S5)
13838	Trap--Wave trap (L1, C1)
13149	Coil--Reproducer field coil (L13, L15)

Stock Nos. 12537, 4835, 12398, 12410, 12411, 12399, 3404, 12402, 12395, 12497, 12499, 12731, 12498, 9684, 12500, 13150, 13071, 12936, and 12937 are not used in Model 5X with fixed wave-trap.



The following parts listed for Models 5X, 5X3, and 5X4 are not required:
Stock Nos. 13128, 12409, 13845 and 12403.

The parts listed below are required in addition to the remaining parts for Models 5X, 5X3, and 5X4.

Stock No.	DESCRIPTION
12629	Capacitor—56 Mmfd. (C14)
12724	Capacitor—120 Mmfd. (C28)
13052	Capacitor—470 Mmfd. (C27)
12484	Capacitor—0.25 Mfd. (C29)
13199	Lead—Antenna lead, approximately 20 feet long
11172	Resistor—470,000 ohms—carbon type, 1/4 watt (R16)—Package of 5
12801	Transformer—First intermediate frequency transformer, complete with shield (L9, L10, C13, C14)

5X, 5X3, 5X4, 5XA, 5XA3 & 5XA4

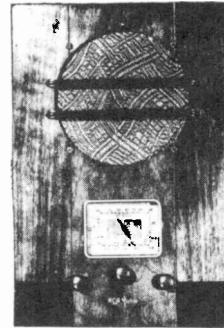
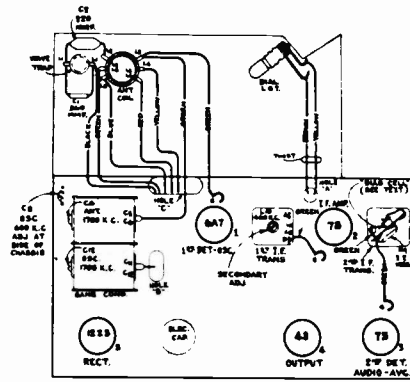
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
11409	Band—Tube shield rubber band—Package of 5.....	12408	Shield—Second I.F. transformer shield...
12118	Cap—Grid contact cap—Package of 5....	12396	Shield—75 or 78 Radiotron shield.....
11465	Capacitor—Adjustable capacitor (C8)....	3404	Spring—Power switch spring—Package of 10.....
12535	Capacitor—13 Mmfd. (C6).....	12007	Spring—Retaining spring for core Stock No. 12006—Package of 10.....
12405	Capacitor—47 Mmfd. (C15).....	12402	Switch—Interlocking switch and cover...
12404	Capacitor—120 Mmfd. (C13, C14).....	12395	Switch—Range switch (S2, S3, S4, S5)..
12406	Capacitor—180 Mmfd. (C16).....	12403	Transformer—First intermediate frequency transformer, complete with shield (L9, L10, C13, C14).....
12537	Capacitor—560 Mmfd. (C1).....	12407	Transformer—Second intermediate frequency transformer, complete with shield (L11, L12, C15, C16).....
12536	Capacitor—820 Mmfd. (C18).....	12497	Trap—Wave trap (L1).....
12534	Capacitor—1,170 Mmfd. (C9).....	12394	Volume Control—Volume control and power switch (R6, S1).....
5107	Capacitor—.0025 Mfd. (C2).....	REPRODUCER ASSEMBLIES (M80864-1)	
4868	Capacitor—.005 Mfd. (C7).....	12499	Coil—Reproducer field coil (L15).....
4858	Capacitor—.01 Mfd. (C17, C20, C21)...	12731	Coil—Reproducer neutralizing coil (L13)..
4836	Capacitor—.05 Mfd. (C4).....	12498	Cone—Reproducer cone, complete (L14)..
4886	Capacitor—.05 Mfd. (C12).....	9684	Reproducer—Speaker, complete.....
4839	Capacitor—.1 Mfd. (C22).....	12500	Transformer—Output transformer (T1)..
4835	Capacitor—.1 Mfd. (C19).....	REPRODUCER ASSEMBLIES (M80864-2)	
4840	Capacitor—.25 Mfd. (C25).....	13149	Coil—Reproducer field coil (L13, L15)..
12398	Capacitor Pack—Comprising two 16 Mfd. and one 10 Mfd. section (C23, C24, C26).....	13148	Cone—Reproducer cone, complete (L14)..
4358	Clamp—Mounting clamp for capacitor Stock No. 12398.....	9750	Reproducer—Speaker, complete.....
12495	Coil—Antenna coil (L2, L3, L4, L5)....	13151	Transformer—Output transformer (T1)
12496	Coil—Oscillator coil (L6, L7, L8).....	DRIVE ASSEMBLIES	
13128	Cord—Power cord (130 ohm resistor R14) (Models without interlock switch only).....	12401	Condenser—2-gang variable tuning condenser (C3, C5, C10, C11).....
12006	Core—Adjustable core for Stock Nos. 12403, 12407 and 12497.....	12420	Cord—Variable tuning condenser drive cord—Package of 5.....
4340	Lamp—Dial lamp—Package of 5.....	12608	Dial—Dial scale—Used on Models 5X and 5X3 only.....
12409	Lead—Antenna lead, approximately 20 feet long.....	13071	Dial—Dial scale—Used on Model 5X4 only.....
12397	Reactor—Filter reactor (L16).....	12419	Indicator—Station selector indicator pointer.....
12453	Resistor—27 ohm—insulated, 1/4 watt (R11)—Package of 5.....	12416	Pulley—Indicator pointer drive pulley and shaft.....
12415	Resistor—39 ohm—insulated, 1/4 watt (R12)—Package of 5.....	12417	Pulley—Variable tuning condenser shaft pulley, with set screws.....
12414	Resistor—560 ohm—insulated, 1/4 watt (R13)—Package of 5.....	12418	Screw—8-32x3/16 in. milled head, cupped point set screw for condenser drive pulley Stock No. 12417—Package of 10..
12265	Resistor—6,800 ohm—insulated, 1/4 watt (R4)—Package of 5.....	12422	Shaft—Variable tuning condenser drive (knob) shaft.....
12410	Resistor—15,000 ohm—insulated, 1/4 watt (R2)—Package of 5.....	12421	Spring—Variable tuning condenser drive cord tension spring—Package of 10...
12412	Resistor—47,000 ohm—insulated, 1/4 watt (R5)—Package of 5.....	MISCELLANEOUS ASSEMBLIES	
12286	Resistor—56,000 ohm—insulated, 1/4 watt (R1)—Package of 5.....	12548	Crystal—Station selector crystal and bezel—Used on Models 5X and 5X3 only..
12263	Resistor—100,000 ohm—insulated, 1/4 watt (R8)—Package of 5.....	12936	Crystal—Station selector crystal and bezel—Used on Model 5X4 only.....
12285	Resistor—470,000 ohm—insulated, 1/4 watt (R9)—Package of 5.....	12673	Knob—Station selector, volume control or range switch knob—Package of 5—Used on Models 5X and 5X3 only....
12413	Resistor—680,000 ohm—insulated, 1/4 watt (R10)—Package of 5.....	12937	Knob—Station selector, volume control or range switch knob—Package of 5—Used on Model 5X4 only.....
12411	Resistor—2.2 megohm—insulated, 1/4 watt (R3, R7)—Package of 5.....	4119	Screw—Set screw for knob Stock No. 12673 and 12937—Package of 20.....
12399	Resistor—Comprising one 130 ohm and one 42 ohm sections (R14, R15) (Models with interlock switch only)...		
12845	Resistor—40 ohm—wire wound (R15) (Models without interlock switch only)...		
4786	Socket—6-contact 78, 75, 43 or 25Z5 Radiotron socket.....		
4787	Socket—7-contact 6A7 Radiotron socket.....		
12400	Socket—Dial lamp socket.....		
12008	Shield—First I.F. transformer shield.....		
12607	Shield—First I.F. transformer shield top.....		

MODEL 5X2

Five-Tube, Two-Band, AC-DC, Superheterodyne Receiver



MODEL 5X2

Electrical Specifications

FREQUENCY RANGES
 "Standard broadcast"..... 540-1,800 kc.
 "Short-wave"..... 1,800-6,500 kc.

ALIGNMENT FREQUENCIES
 "Standard broadcast"..... 600 kc. (osc.); 1,700 kc. (osc. and ant.)
 "Short-wave"..... None Required

Intermediate Frequency..... 460 kc.

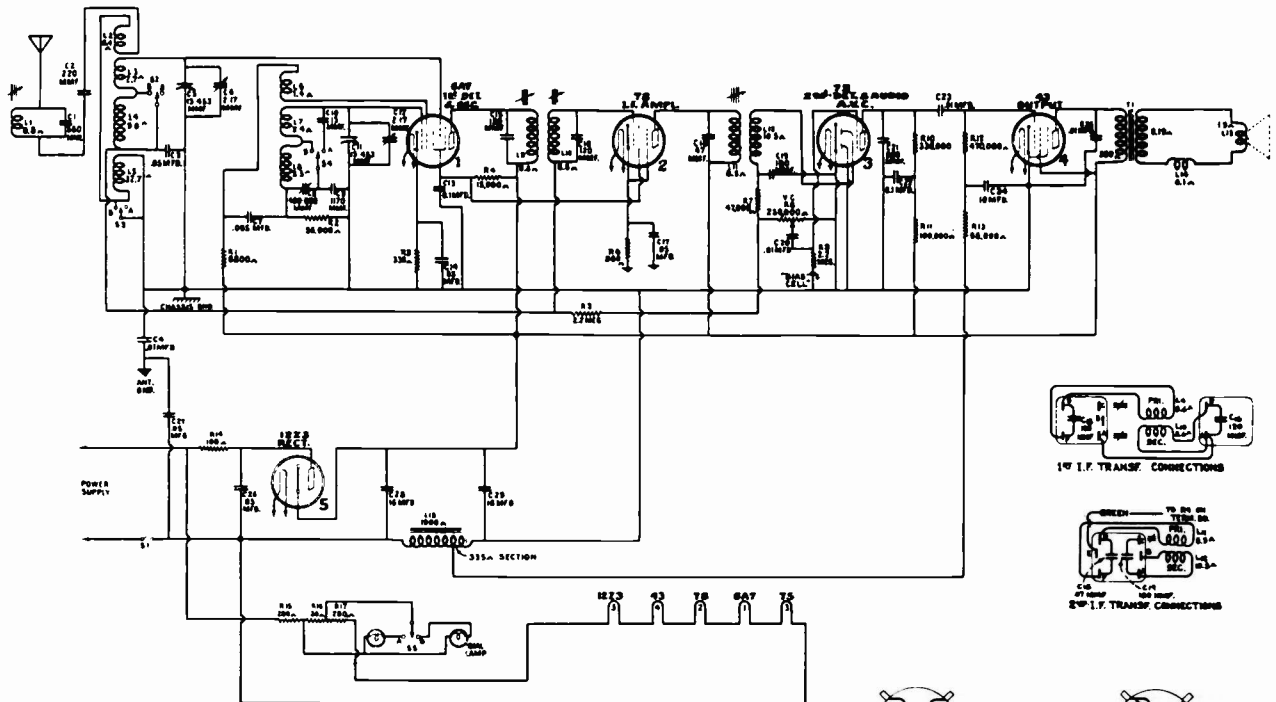
RADIOTRON COMPLEMENT
 (1) RCA-6A7..... First Detector-Oscillator
 (2) RCA-78..... Intermediate Amplifier
 (3) RCA-75..... Second Detector, A-F, and A.V.C.
 (4) RCA-43..... Power Output
 (5) RCA-12Z3..... Rectifier

POWER SUPPLY
 200-250 volts, 50-100 cycles..... 120 watts

200-250 volts, D.C..... 110 watts

POWER OUTPUT
 Undistorted..... 0.9 watts A-C, 0.7 watts D-C
 Maximum..... 2 watts A-C, 1.6 watts D-C
 Pilot Lamps (2)..... Mazda No. 40, 6.3 volts, 0.15 amperes

LOUDSPEAKER
 Type..... Electrodynamic
 Voice Coil Impedance..... 2.2 ohms at 400 cycles

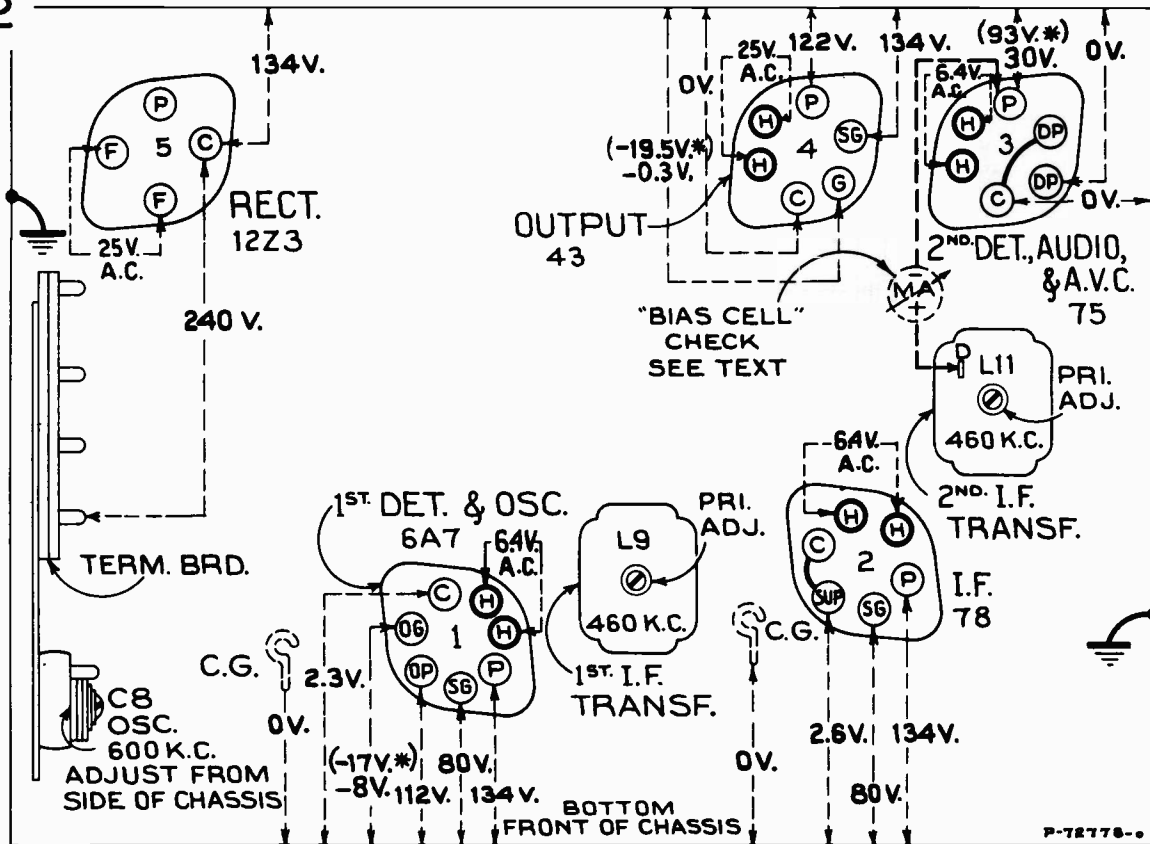


If distortion or poor sensitivity is apparent, check the connections of the Brown and Blue-Yellow leads of the speaker field to certify that they are properly attached to the connector terminals.

Schematic Circuit Diagram



5X2



CAUTION: NEVER CONNECT VOLTMETER TO CONTROL GRID OF TUBE N° 3 (RCA-75)-SEE TEXT.

Radiotron Socket Voltages and Trimmer Locations

Measured at 230 volts, 60 cycle supply—For 230 volt D-C approximately 10% lower
 Tuned to approximately 1,000 kc. ("Standard broadcast" position)—No signal being received—
 Volume control setting optional

Alignment Procedure

DIAL CALIBRATION:

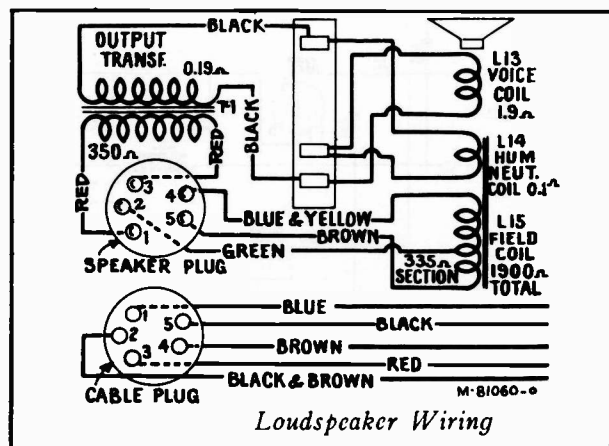
With tuning condenser fully meshed set pointer to bottom horizontal line at low frequency end of BC scale.

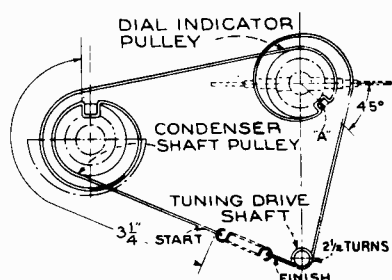
Do not connect external ground to chassis.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd.			L11 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc "BC" Band	L10 L9 1st I-F Trans.
3				L1 (Wave Trap) Minimum Output
4	Antenna in series with 80 mmfd	1700 kc	1700 kc "BC" Band	C12 C6 Osc. Ant.
5		600 kc	600 kc "BC" Band	C8 (L-F Osc.) Rock Gang
6	Repeat Step 4			

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

CAUTION: The voltage between the RCA-75 control grid and ground should never be measured. All ordinary meters will paralyze the "Bias Cell," see figures 1 and 2, in this circuit for a period of approximately one to two hours. To check "Bias Cell," connect 0-1 M.A. milliammeter as shown on figure . A satisfactory cell should give a steady reading on the meter between 0.3 and 0.65 M.A. when used with a good RCA-75 tube.





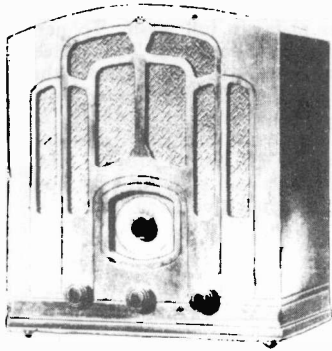
Tuning Drive Cord Mechanism

Rear view of drive assembly showing threading of drive cord with variable condenser plates in full mesh. To perform this operation, unsolder the four leads (connected between antenna coil and range selector switch) from the range selector switch, unsolder antenna lead-in wire from wave-trap terminal, unsolder lead from rear section of gang tuning condenser, and remove the four screws which secure the tuning drive frame to the chassis proper. This frame with gang tuning condenser still attached may now be easily removed for the threading operation.

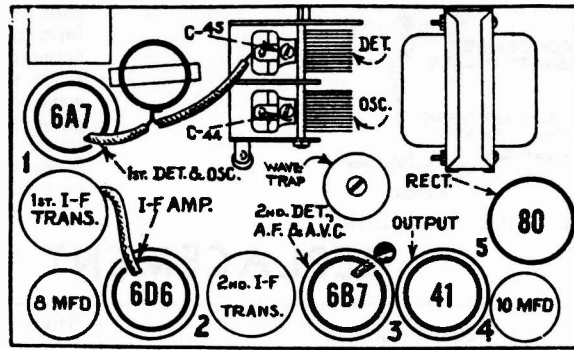
REPLACEMENT PARTS

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
11409	Band—Rubber band for first I.F. Transformer—Package of 5.....	4794	Socket—4-contact 12Z3 Radiotron socket
12118	Cap—Grid contact cap—Package of 5....	4786	Socket—6-contact 43, 75, or 78 Radiotron socket.....
11978	Capacitor—Adjustable capacitor (C8)...	4787	Socket—7-contact 6A7 Radiotron socket..
12535	Capacitor—13 Mmfd. (C10).....	12007	Spring—Retaining spring for Stock No. 12006—Package of 10.....
12405	Capacitor—47 Mmfd. (C18).....	12403	Transformer—First I.F. transformer with shield (L9, L10, C15, C16).....
12404	Capacitor—120 Mmfd. (C15, C16)....	12676	Transformer—Second I.F. transformer complete with shield (L11, L12, C18, C19, R3).....
12406	Capacitor—180 Mmfd. (C19).....	12497	Trap—Wave trap (L1).....
12694	Capacitor—220 Mmfd. (C2).....	12394	Volume Control—Control and power switch (R8, S1).....
12537	Capacitor—560 Mmfd. (C1).....	DRIVE ASSEMBLY	
12536	Capacitor—820 Mmfd. (C21).....	12401	Condenser—2-gang variable tuning condenser (C5, C6, C11, C12).....
12534	Capacitor—1,170 Mmfd. (C9).....	12420	Cord—Variable tuning condenser drive cord—Package of 5.....
4868	Capacitor—.005 Mfd. (C7).....	12608	Dial—Station selector dial scale.....
4858	Capacitor—.01 Mfd. (C4, C20, C23, C25)	12419	Indicator—Station selector indicator pointer
4836	Capacitor—.05 Mfd. (C3, C14, C17)....	12416	Pulley—Indicator pointer shaft and pulley
12078	Capacitor—.05 Mfd. (C26, C27).....	12417	Pulley—Variable tuning condenser pulley and set screws.....
4841	Capacitor—0.1 Mfd. (C13, C22).....	12418	Screw—8-32x3/16 milled head, cupped point, set screw for pulley Stock No. 12417—Package of 10.....
12682	Capacitor—10 Mfd. (C24).....	12422	Shaft—Variable condenser tuning knob shaft.....
12677	Capacitor—2 Sections each 16 Mfd. (C28, C29).....	12421	Spring—Drive cord tension spring—Package of 10.....
12681	Cell—Bias cell for Stock No. 12676....	REPRODUCER ASSEMBLY	
12495	Coil—Antenna coil (L2, L3, L4, L5)...	12641	Board—Reproducer terminal board.....
12680	Coil—Coil windings and form only for second I.F. transformer Stock No. 12676 (L11, L12).....	12640	Bracket—Output transformer mounting bracket.....
12496	Coil—Oscillator coil (L6, L7, L8).....	12674	Coil—Reproducer field coil (L15).....
12006	Core—Adjustable core for Stock No. 12403, 12497 and 12676.....	11469	Coil—Reproducer neutralizing coil (L14)
4340	Lamp—Dial lamp—6.3 volt—Package of 5	12642	Cone—Reproducer cone and dust cap (L13).....
12409	Lead—Antenna lead—approximately 20 feet long.....	12493	Connector—5-contact female connector for reproducer cable.....
12395	Range Switch—(S2, S3, S4, S5).....	12567	Connector—5-contact male connector for reproducer cable.....
12697	Resistor—100 ohm, flexible type (R14)—Package of 5.....	9711	Reproducer complete.....
12481	Resistor—330 ohm, insulated, 1/4 watt, (R3)—Package of 5.....	11828	Transformer—Output transformer (T1)...
12414	Resistor—560 ohm, insulated 1/4 watt, (R6)—Package of 5.....	11886	Washer—Spring washer to hold field coil securely—Package of 5.....
12265	Resistor—6,800 ohm, insulated, 1/4 watt, (R1)—Package of 5.....	MISCELLANEOUS ASSEMBLY	
12695	Resistor—15,000 ohm, insulated, 1/4 watt, (R4)—Package of 5.....	12548	Crystal—Dial escutcheon and crystal....
12412	Resistor—47,000 ohm, insulated, 1/4 watt, (R7)—Package of 5.....	12673	Knob—Station selector, volume control or range switch knob—Package of 5.....
12286	Resistor—56,000 ohm, insulated, 1/4 watt, (R2)—Package of 5.....	12672	Resistor—Wire wound ballast and line resistor comprising two 280 ohm sections and one 42 ohm section (R15, R16, R17).....
12696	Resistor—68,000 ohm, insulated, 1/4 watt, (R13)—Package of 5.....	11210	Screw—Chassis mounting screw assembly comprising 1 screw, 1 lockwasher and 1 washer—Package of 4.....
12263	Resistor—100,000 ohm, insulated, 1/4 watt, (R11)—Package of 5.....	4119	Screw—Set screw for knob Stock No. 12673—Package of 20.....
12452	Resistor—330,000 ohm, insulated, 1/4 watt, (R10)—Package of 5.....		
12285	Resistor—470,000 ohm, insulated, 1/4 watt, (R12)—Package of 5.....		
12679	Resistor—2.2 Megohm, insulated, 1/4 watt, (R5, R9)—Package of 5.....		
12008	Shield—First I.F. transformer shield....		
12607	Shield—First I.F. transformer shield top		
12218	Shield—Radiotron shield.....		
12678	Shield—Second I.F. transformer shield complete with bias cell holder.....		
12400	Socket—Dial lamp socket.....		

MODEL T 5-2 Five-Tube, Two-Band, A-C, Superheterodyne Receiver



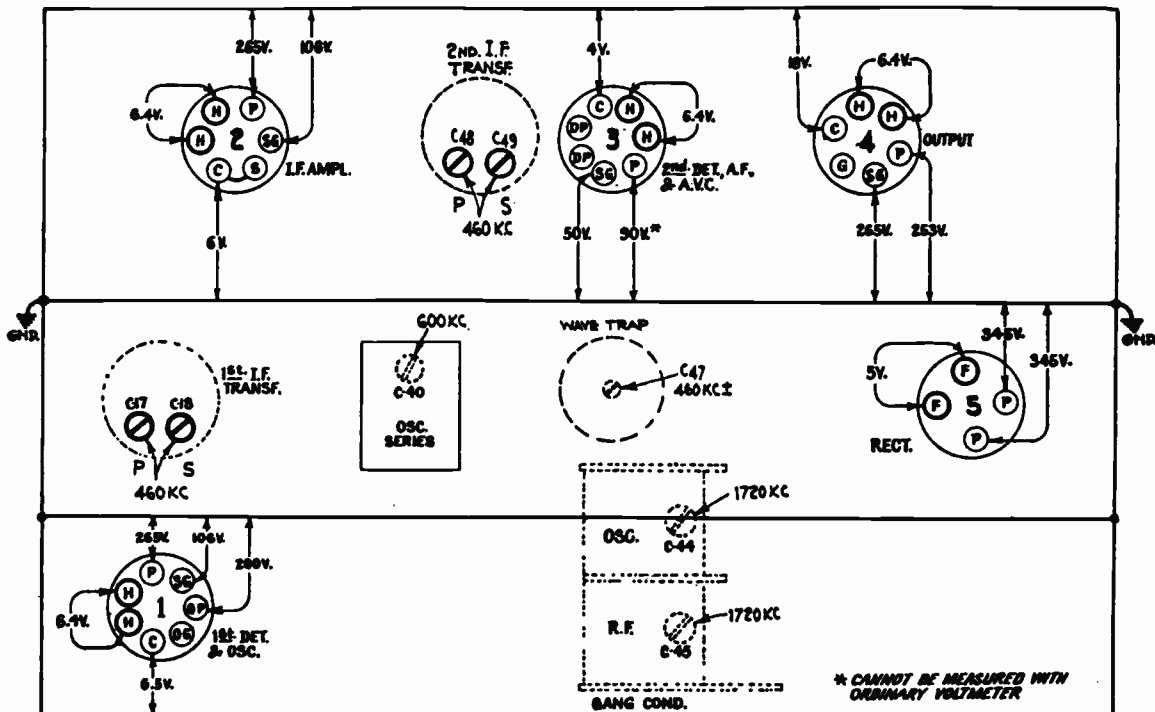
MODEL T 5-2



Radiotron Locations

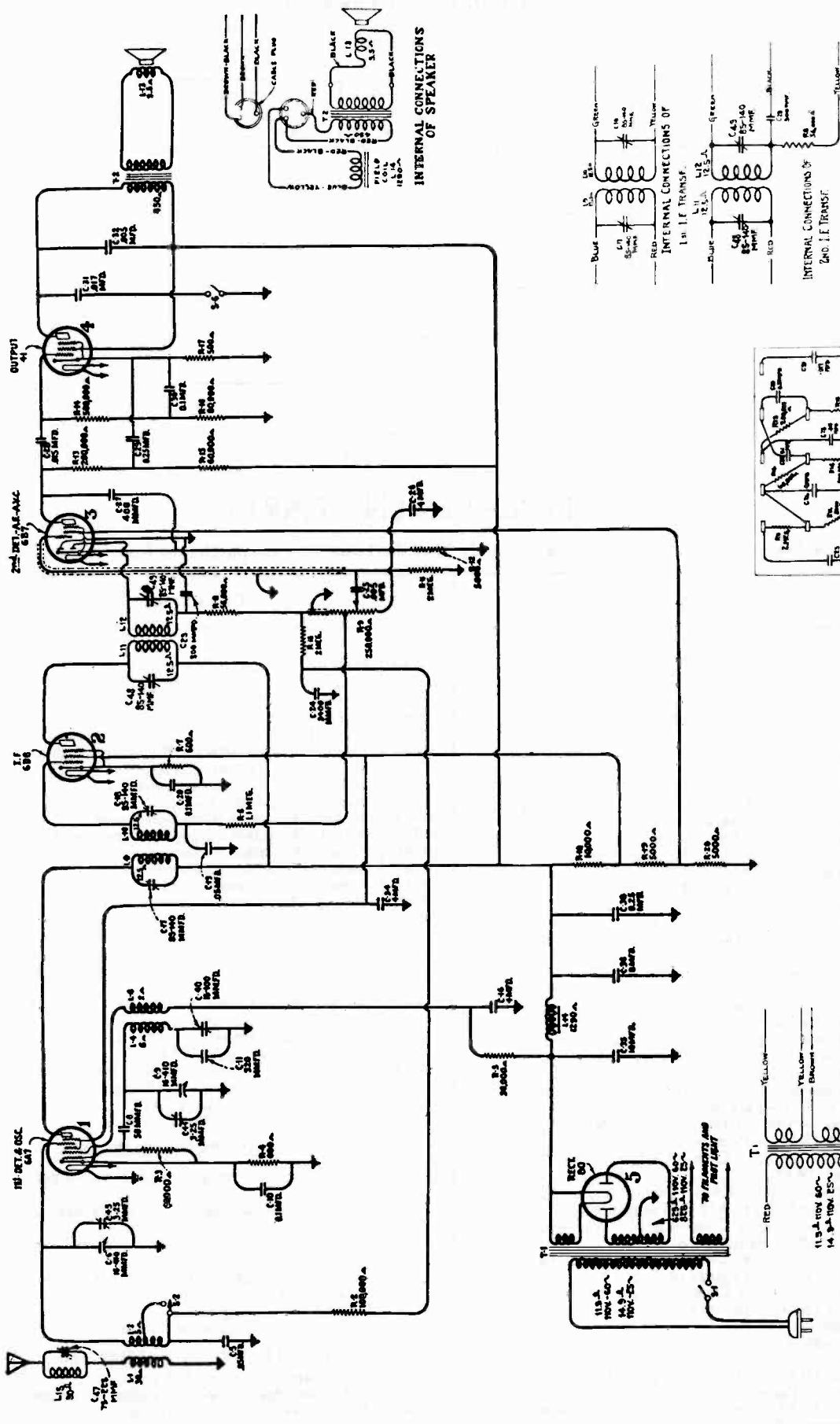
ELECTRICAL SPECIFICATIONS

Voltage and Frequency Ratings.....	{ 105-125 Volts, 50-60 Cycles 105-125 Volts, 25-60 Cycles 100-130/140-160/195-250 Volts, 50-60 Cycles
Power Consumption.....	.80 Watts
Radiotrons and Functions.....	{ (1) RCA-6A7, First Detector and Oscillator (2) RCA-6D6, I.F. Amplifier (3) RCA-6B7, Second Detector—Audio Amplifier—A.V.C. (4) RCA-41, Power Output (5) RCA-80, Rectifier
Tuning Frequency Ranges.....	540 kc. to 1720 kc. and 1600 kc. to 3500 kc.
Alignment Frequencies.....	460 kc. (I.F.), 1720 kc. (R.F. and Oscillator) 600 kc. (Oscillator)
Undistorted Output	1.75 Watts
Maximum Output.....	3.50 Watts
Loudspeaker6-Inch, Electro-Dynamic

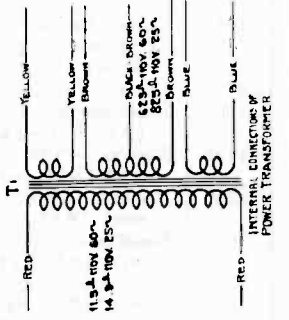
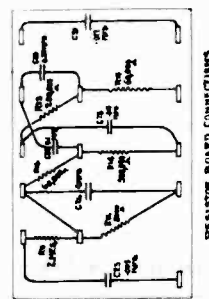
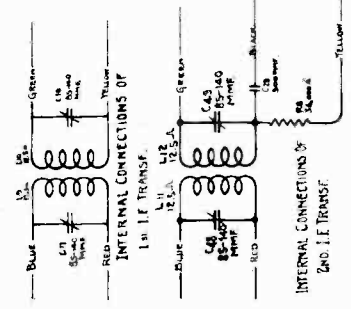
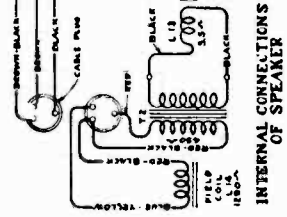


Trimmer Locations and Radiotron Socket Voltages (Measured at 115 volts A. C. Supply—Maximum Volume Control—No Signal)

* CANNOT BE MEASURED WITH ORDINARY VOLTMETER



Schematic Circuit Diagram



T5-2

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with radial line adjacent to dial reading of 540 kc.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc	C49 C48 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C18 C17 1st I-F Trans.
3				C47 (Wave Trap) Minimum Output
4	Antenna in series with 200 mmfd	1720 kc	1720 kc	C44 C45 Osc. Ant.
5		600 kc	600 kc	C40 Rock Gang L-F Osc.
6		Repeat Step 4		

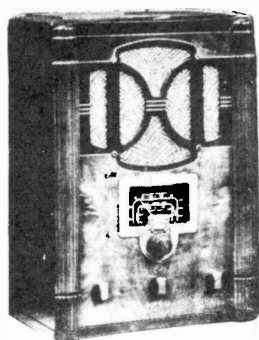
REPLACEMENT PARTS

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

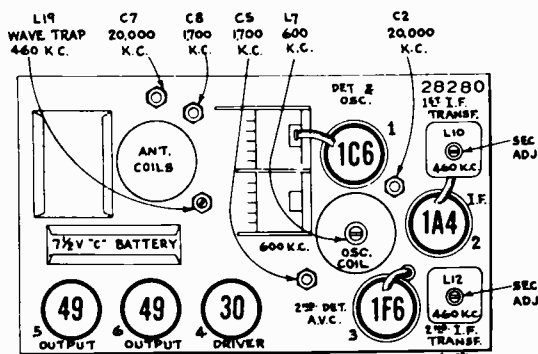
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
4244	Cap—Contact cap—Package of 5.....	3584	Ring—Oscillator coil retaining ring—Pack- age of 5.....
3861	Capacitor—Adjustable capacitor (C40)....	3623	Shield—Oscillator coil shield.....
5094	Capacitor—50 MMfd. (C8).....	3942	Shield—First detector and output Radiotron shield.....
5151	Capacitor—320 MMfd. (C11).....	3782	Shield—Second detector Radiotron shield..
4297	Capacitor—400 MMfd. (C27).....	7487	Shield—I.F. Radiotron shield.....
4881	Capacitor—3400 MMfd. (C24).....	5186	Shield—I.F. Transformer shield.....
4868	Capacitor—0.005 Mfd. (C25, C32).....	3858	Socket—Dial lamp socket.....
11315	Capacitor—0.015 Mfd. (C28).....	4784	Socket—4-contact Radiotron socket.....
4906	Capacitor—0.017 Mfd. (C31).....	4785	Socket—6-contact output Radiotron socket.
4836	Capacitor—0.05 Mfd. (C5, C19).....	4786	Socket—6-contact Radiotron socket.....
4841	Capacitor—0.1 Mfd. (C10, C20, C30)....	4787	Socket—7-contact Radiotron socket.....
3597	Capacitor—0.25 Mfd. (C29, C38).....	5053	Switch—Range switch (S2).....
3796	Capacitor—40 Mfd. (C26).....	4905	Switch—Tone control switch (S6).....
4428	Capacitor—8.0 Mfd. (C36).....	4900	Transformer—First intermediate frequency transformer—(L9, L10, C17, C18).....
7790	Capacitor—10.0 Mfd. (C35).....	11477	Transformer—Second intermediate fre- quency transformer (L11, L12, C23, C48, C49, R8).....
7589	Capacitor Pack—Comprising two 4.0 Mfd. capacitors (C16, C34).....	4898	Transformer—Power transformer—105-125 volts—25-60 cycles.....
4358	Clamp—Capacitor mounting clamp for Stock No. 4428 and No. 7790.....	4897	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....
5051	Coil—Antenna coil (L1, L2, C5, R2)....	4899	Transformer—Power transformer—105- 125/200-240 volts—40-60 cycles.....
5050	Coil—Oscillator coil (L4, L6).....	11479	Trap—Wave trap (L15, C47).....
11475	Condenser—2-gang variable tuning con- denser (C6, C9, C44, C45).....	4429	Volume Control—(R9, S1).....
11476	Drive—Variable condenser drive.....	REPRODUCER ASSEMBLIES	
3708	Resistor—600 Ohm—Carbon type—1/4 watt (R4, R7)—Package of 5.....	9587	Coil—Field coil, magnet and cone support (L14).....
4436	Resistor—5000 Ohm—Carbon type—1/4 watt (R12)—Package of 10.....	9588	Cone—Reproducer cone (L13)—Package of 5.....
2240	Resistor—30,000 Ohm—Carbon type—1 watt (R5).....	5118	Connector—3-contact male connector for reproducer cable.....
3602	Resistor—60,000 Ohm—Carbon type—1/4 watt (R3, R15, R16)—Package of 5...	5119	Connector—3-contact female connector for reproducer cable.....
3118	Resistor—100,000 Ohm—Carbon type—1/4 watt (R2)—Package of 5.....	9586	Reproducer—Complete.....
3116	Resistor—200,000 Ohm—Carbon type—1/4 watt (R13)—Package of 5.....	4893	Transformer—Output transformer (T2)...
6186	Resistor—500,000 Ohm—Carbon type—1/4 watt (R14)—Package of 5.....	MISCELLANEOUS ASSEMBLIES	
4783	Resistor—1,100,000 Ohm—Carbon type— 1/4 watt (R6)—Package of 5.....	11835	Dial—Station selector dial scale.....
6242	Resistor—2 Megohm—Carbon type—1/4 watt (R10, R11)—Package of 5.....	11478	Indicator—Station selector indicator pointer
4721	Resistor—Tapped resistor—One 500 Ohm, two 5,000 Ohm, and one 10,000 Ohm sections (R17, R18, R19, R20).....	4340	Lamp—Station selector dial lamp—Package 5.....

MODELS 6BT, 6BK, 6BT6, and 6BK6

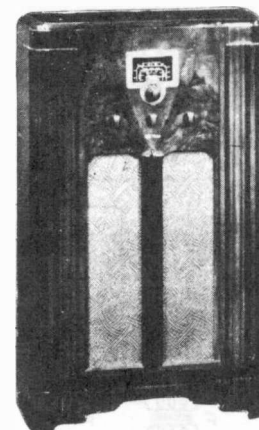
Six-Tube, Two-Band, Battery-Operated, Superheterodyne Receivers



MODELS 6BT & 6BT6



Radiotron, Coil, and Trimmer Locations



MODELS 6BK & 6BK6

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A)..... 530-1,900 kc

"Short Wave" (C)..... 5,800-21,600 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-1C6..... First-detector-Oscillator
- (2) RCA-1A4..... Intermediate Amplifier
- (3) RCA-1F6..... Second-detector-A.F.-A.V.C.

ALIGNMENT FREQUENCIES

- "Standard Broadcast" (A).....
600 kc (osc.), 1,700 kc (osc., ant.)
- "Short Wave" (C)..... 20,000 kc (osc., ant.)

- (4) RCA-30..... Audio Driver
- (5) RCA-49..... Power Output
- (6) RCA-49..... Power Output

Pilot Lamps..... 6BT or 6BK (1); 6BT6 or 6BK6 (2); Mazda 2.0 volts, .06 ampere, miniature screw base

BATTERIES REQUIRED

6BT or 6BK..... "A," one plug-in 2 1/2-volt Air-cell (Eveready A-600 or equivalent), or one 2-volt storage battery; "B," three 45-volt B batteries (Burgess No. 21308, Eveready No. 486, or equivalent); "C," one 7 1/2-volt C battery (Burgess No. 5540, Eveready No. 773, or equivalent), and four bias cells (Stock No. 12681).

6BT6 or 6BK6..... "A," one 6-volt storage battery; "B," none required, "C," one 7 1/2-volt C battery (Burgess No. 5540, Eveready No. 773, or equivalent), and four bias cells (Stock No. 12681)

CURRENT CONSUMPTION

	6BT or 6BK	6BT6 or 6BK6
"A" at 2 volts.....	0.52 amp. (pilot lamp off)	
"A" at 2 volts.....	0.58 amp. (pilot lamp on)	
"A" at 6.0 volts.....		1.35 amps.
"A" at 6.3 volts.....		1.40 amps.
"B" at 135 volts.....	19 ma.	(Supplied from vibrator)
Fuse Rating.....	1/2 amp.	3 amp.

POWER OUTPUT

Undistorted.....	1.2 watts	1.0 watts
Maximum.....	2.2 watts	1.6 watts

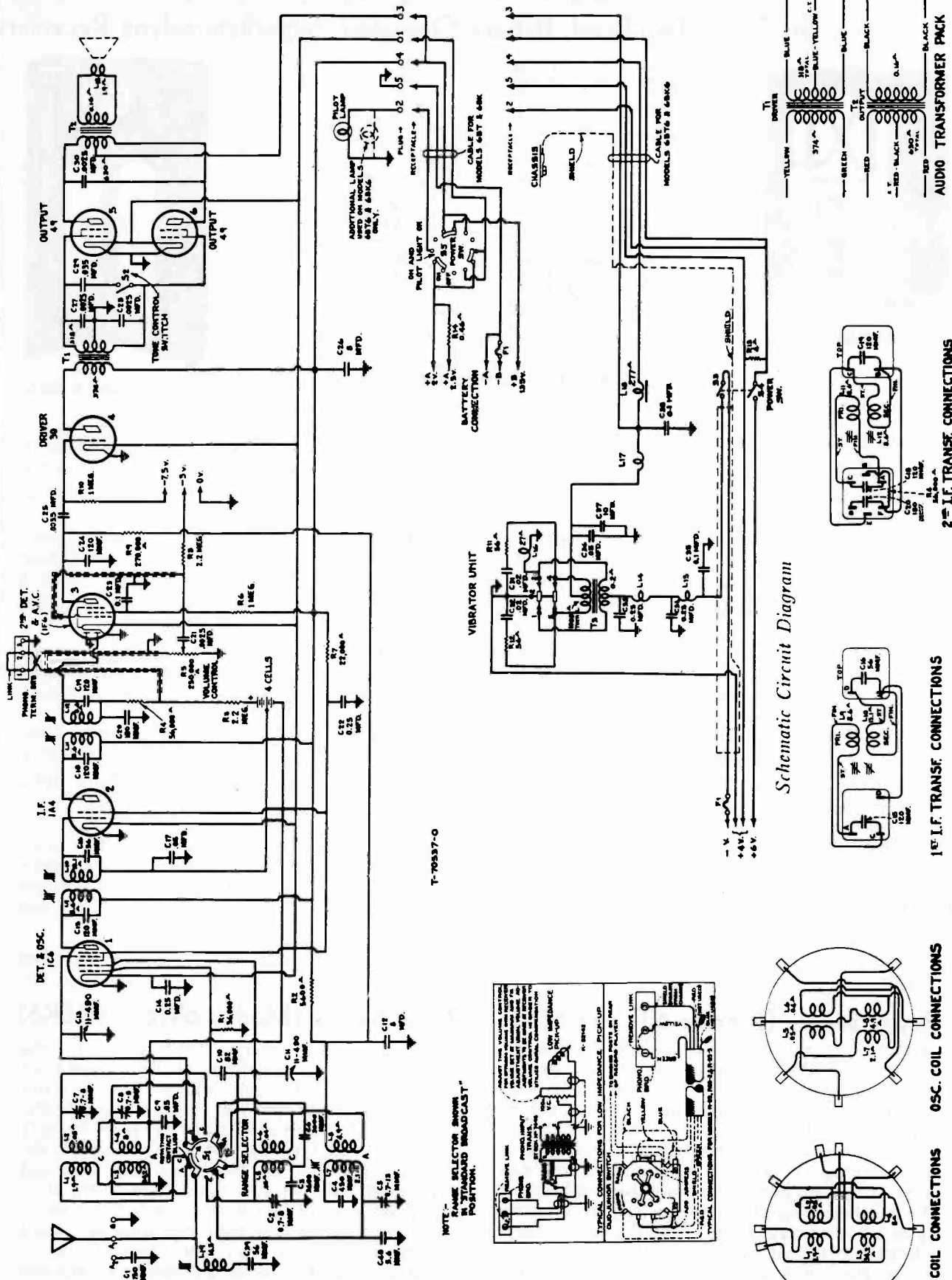
Power Supply (Models 6BT and 6BK)

Filament voltage for these receivers is obtained from either a 2 1/2-volt Air-cell or a 2-volt storage battery. When the Air-cell is used, the 0.46-ohm resistor R14 must be connected in series with the A-battery lead as shown on figure . When operating on a 2-volt storage battery, this resistor R14 should be removed. Plugs are provided on the battery cable (see figure) for plugging in the Air-cell and B batteries. The A-battery plug should be removed when operating on a 2-volt storage battery. The 7 1/2-volt C battery is located on the top-side of the chassis and securely held in place by a metal cover (see figure). The four bias cells are located underneath the chassis

Power Supply (Models 6BT6 and 6BK6)

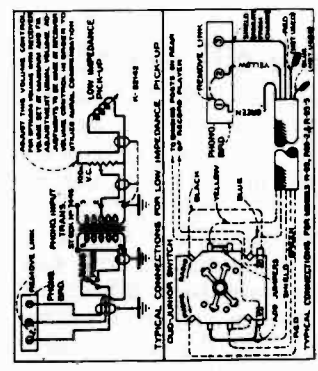
A 6-volt storage battery supplies power for the vibrator and for the tube filaments. Four connections are required to the 6-volt battery. The + 6-volt (black) lead and the + 4-volt (blue) lead supply filament voltage to the receiver, while the + 4-volt (red) lead and - volt (yellow) lead supply voltage to the vibrator power unit. The two 4-volt leads (blue and red) should make separate connections to the same battery strap to avoid against vibrator buzz which might otherwise result if these two leads are joined together or touch each other. The 7 1/2-volt C battery is located on the top-side of the receiver chassis and securely held in place by a metal cover. The four bias cells are located underneath the receiver chassis

6BT, 6BK, 6BT6 & 6BK6



T-70937-0

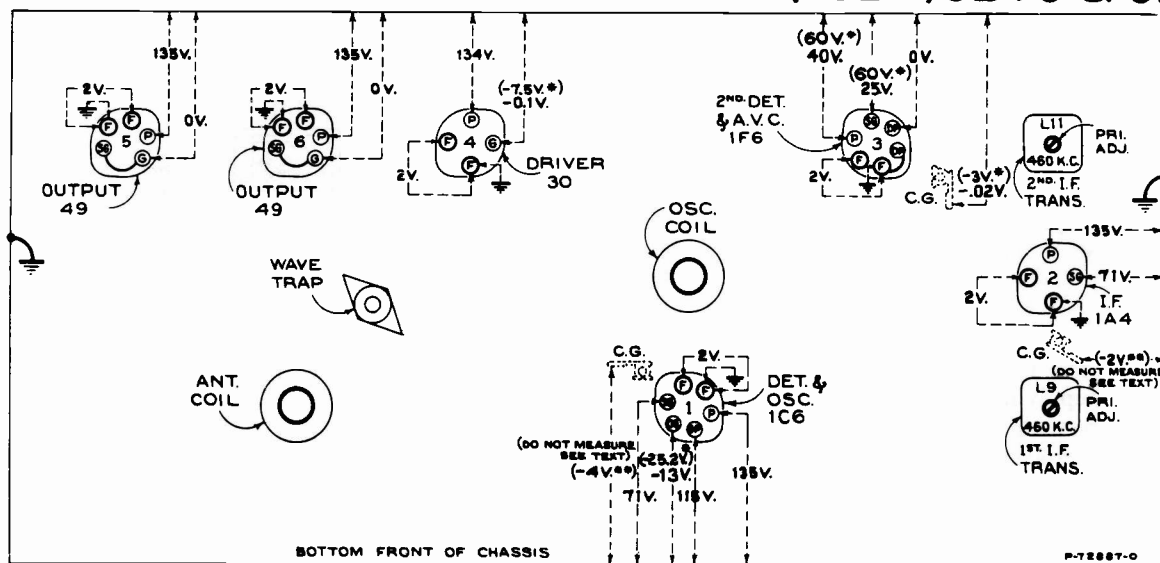
NOTE: RANGE SELECTOR SWITCH IN "STANDARD BROADCAST" POSITION.



Schematic Circuit Diagram

Models 6BT and 6BK may be used with CV-8 Vibrator Unit. Refer to CV-8 for details.

6BT, 6BK, 6BT6 & 6BK6



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc ("Standard broadcast")—No signal being received—Volume control optional

Radiotron Plate Current Readings

Measured with Milliammeter Connected at Tube Socket Plate Terminals under Conditions Similar to Those of Voltage Measurements

- (1) RCA-1C6—1st. Det. 1.2 ma.
—Osc. 3.7 ma.
- (2) RCA-1A4—I.F. 3.4 ma.
- (3) RCA-1F6—2nd Det.—A.F.—A.V.C... 0.3 ma.
- (4) RCA-30—Driver 4.0 ma.
- (5) RCA-49—Output 1.6 ma.
- (6) RCA-49—Output 1.6 ma.

CAUTION: Do not attempt to measure voltages on control grids of RCA-1C6 or RCA-1A4, with any conventional voltmeter, due to presence of bias cells. See "Caution" under "Service data" for method of measuring these cells.

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

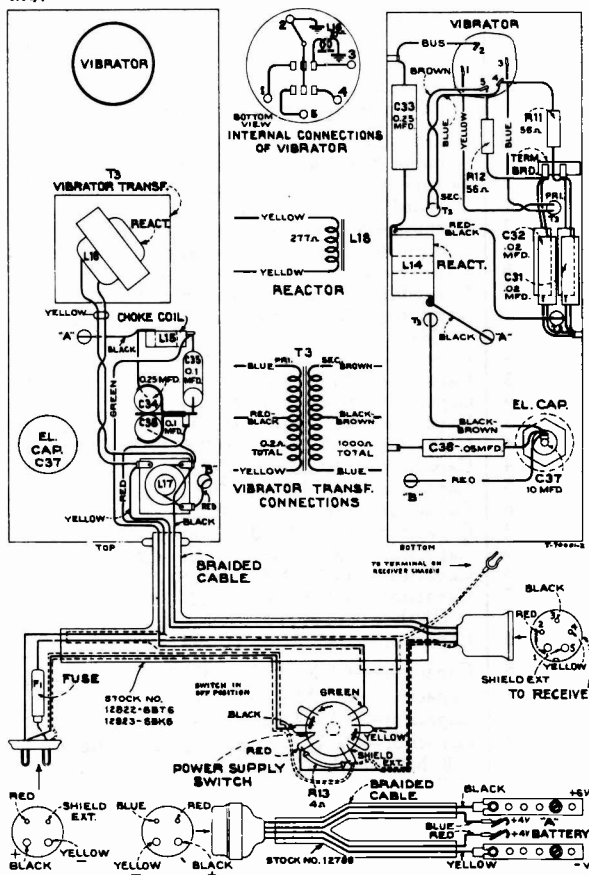
With tuning condenser fully meshed set pointer to coincide with 530 calibration on BC Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd			L12 L11 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd	460 kc	Quiet point near 800 kc "BC" Band	L10 L9 1st I-F Trans.
3				L1 Wave Trap Minimum output
4	Antenna in series with 200 mmfd	1700 kc	1700 kc "BC" Band	C5 C8 Osc. Ant.
5		800 kc	800 kc "BC" Band	L7 L-F Osc. Rock Gang
6	<i>Repeat Step 4</i>			
7	Antenna in series with 300 ohms	20000 kc	20 mc "SW" Band	C2† C7▲ Osc. Ant.

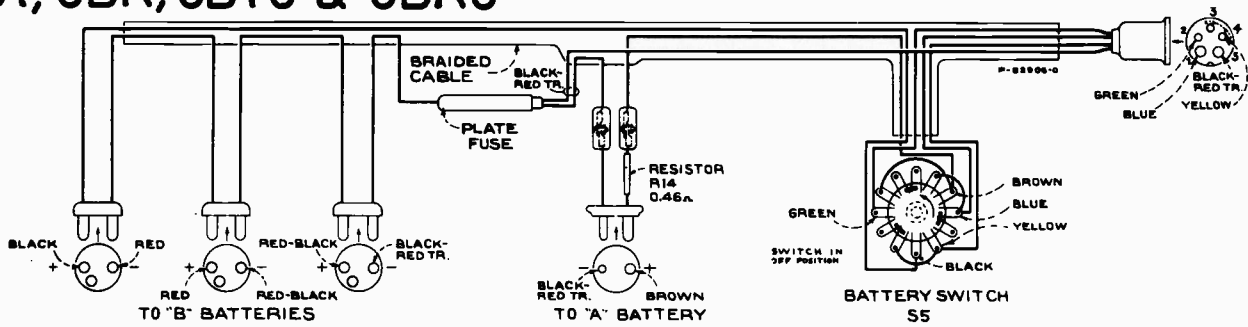
Osc tracks 460 kc above signal on all bands

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG



6BT, 6BK, 6BT6 & 6BK6



Battery Cable (6BT and 6BK)
(Stock No. 12826)

Caution: The four bias cells are used only for the purpose of supplying bias potential and should never be measured with an ordinary voltmeter or other device which draws any current. A simple check on these cells may be made by connecting a milliammeter in the plate circuit of the RCA-1C6 tube and noting the plate current reading. Then remove the two bias cells (3 and 4), being careful that the spring contact clips do not short-circuit them during removal. Connect a 4-volt battery between the + and - 4v. terminals of the bias cell board, and again note the plate current reading. If the first reading obtained (with bias cells) is more than 40% from the latter reading (with 4-volt battery), all bias cells should be replaced. This 40% difference is equivalent to a change of approximately 25% battery voltage.

SERVICE HINTS (Models 6BT6 and 6BK6)

- (1) Hum or noisy reception will be promoted by poor connection of the blue and red battery leads. These two leads must be kept physically separated as far as possible.
- (2) If charging apparatus is associated with the 6BT6-6BK6, a 0.25 mfd. capacitor should be inserted in the receiver ground lead.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES		5119	Connector—3-contact female connector for speaker cable.....
12806	Board—3-contact antenna and ground terminal board and bracket, assembled....	12805	Connector—5-contact male receptacle, located on rear of receiver chassis for power cable.....
12717	Board—3-contact phonograph terminal board.....	12800	Core—Adjustable core and stud for Stock No. 12798.....
5237	Bushing—Variable condenser mounting bushing, assembly—Package of 3.....	12006	Core—Adjustable core and stud for Stock Nos. 12801 and 12802.....
12118	Cap—Grid contact cap—Package of 5....	12664	Core—Adjustable core and stud for Stock No. 12654.....
12714	Capacitor—Adjustable trimmer (C5)....	12809	Dial—Station selector dial.....
12807	Capacitor—Adjustable trimmer (C2, C7, C8).....	12702	Drive—Vernier drive, complete, for variable tuning condenser.....
12814	Capacitor—5.6 Mmfd. (C40).....	12808	Holder—Bias cell holder.....
12723	Capacitor—56 Mmfd. (C39).....	12657	Indicator—Station selector indicator pointer.....
12629	Capacitor—56 Mmfd. (C16).....	4348	Lamp—Dial lamp—2-volt.....
12813	Capacitor—82 Mmfd. (C10).....	12810	Mask—Dial light diffuser.....
12404	Capacitor—120 Mmfd. (C15, C18, C19)....	11647	Resistor—5,600 ohm, carbon type, 1/4 watt—Package of 5 (R2).....
12724	Capacitor—120 Mmfd. (C24).....	11305	Resistor—22,000 ohm, carbon type, 1/4 watt—Package of 5 (R7).....
12725	Capacitor—150 Mmfd. (C1).....	11282	Resistor—56,000 ohm, carbon type, 1/10 watt—Package of 5 (R4).....
12406	Capacitor—180 Mmfd. (C20).....	12286	Resistor—56,000 ohm, insulated type, 1/4 watt—Package of 5 (R1).....
12812	Capacitor—450 Mmfd. (C4).....	11323	Resistor—270,000 ohm, carbon type, 1/4 watt—Package of 5 (R9).....
12811	Capacitor—3,600 Mmfd. (C3, C6).....	3033	Resistor—1 meg., carbon type, 1/4 watt—Package of 5 (R6).....
5005	Capacitor—.0035 Mfd. (C25).....	12200	Resistor—1 meg., insulated type, 1/4 watt—Package of 5 (R10).....
5107	Capacitor—.0025 Mfd. (C21, C27, C28, C30).....	11626	Resistor—2.2 meg., carbon type, 1/4 watt—Package of 5 (R8).....
5196	Capacitor—.035 Mfd. (C29).....	12679	Resistor—2.2 meg., insulated type, 1/4 watt—Package of 5 (R3).....
4836	Capacitor—.05 Mfd. (C9, C17).....		
4841	Capacitor—0.1 Mfd. (C23).....		
4840	Capacitor—0.25 Mfd. (C14, C22).....		
12804	Capacitor—Pack, comprising 2 sections, 8 Mfd. each (C12, C26).....		
12681	Cell—Bias cell.....		
12797	Coil—Antenna coil and shield, complete (L1, L2, L3, L4).....		
12798	Coil—Oscillator coil and shield, complete (L5, L6, L7, L8).....		
12701	Condenser—2-gang variable tuning condenser (C11, C13).....		

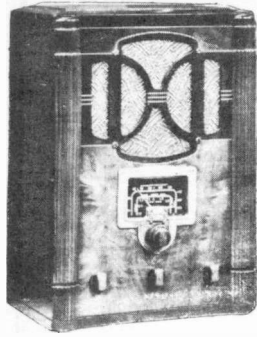
REPLACEMENT PARTS—Continued

6BT, 6BK, 6BT6 & 6BK6

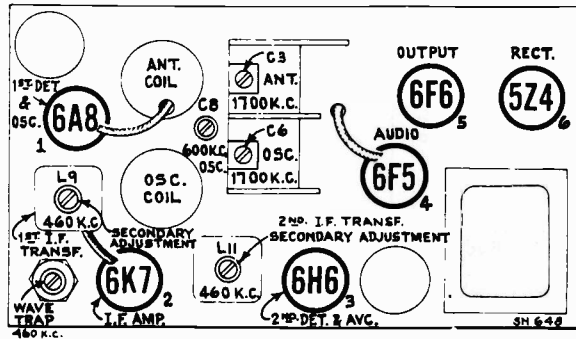
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
12651	Shield—Coil shield for Stock No. 12797.		
12799	Shield—Coil shield for Stock No. 12798.		
12008	Shield—I. F. transformer shield for Stock Nos. 12801 and 12802.....		
12581	Shield—I. F. transformer shield top for Stock No. 12802.....		
12607	Shield—I. F. transformer shield top for Stock No. 12801.....		
3682	Shield—Radiotron shield.....		
4794	Socket—4-contact 1A4 or 30 Radiotron socket.....		
4814	Socket—5-contact 49 Radiotron socket...		
4786	Socket—6-contact 1C6 or 1F6 Radiotron socket.....		
11199	Socket—Dial lamp socket.....		
12007	Spring—Retaining spring for core, Stock Nos. 12800, 12006 and 12664—Package of 10.....		
12796	Switch—Range switch (S1).....		
12795	Switch—Tone control switch (S2).....		
12803	Transformer—Audio transformer pack (T1, T2).....		
12801	Transformer—1st I. F. transformer, complete (L9, L10, C15, C16).....		
12802	Transformer—2nd I. F. transformer, complete (L11, L12, C18, C19, C20, R4).		
12654	Trap—Wave-trap (L19).....		
11589	Volume Control (R5).....		
	VIBRATOR ASSEMBLIES 6BT6 — 6BK6		
4289	Body—Fuse connector female body—Package of 10.....		
12822	Cable—Power cable (set end), approximately 63 in. long, complete with one 5-contact female connector and one 4-contact male connector—less power switch—Used in Table Model only....		
12823	Cable—Power cable (set end), approximately 44 in. long, complete with one 5-contact female connector and one 4-contact male connector—less power switch—Used in Console Model only..		
4288	Cap—Fuse connector male cap—Package of 10.....		
4836	Capacitor—.05 Mfd. (C36).....		
4937	Capacitor—.01 Mfd. (2 used in parallel) (C31, C32).....		
4841	Capacitor—.01 Mfd. (C35).....		
12821	Capacitor—.01 Mfd. (C38).....		
12820	Capacitor—.025 Mfd. (C34).....		
4840	Capacitor—.025 Mfd. (C33).....		
11387	Capacitor—10 Mfd. (C37).....		
12819	Coil—Vibrator choke coil and terminal board assembly (L17).....		
12179	Coil—Vibrator choke coil (L15).....		
12793	Connector—4-contact male connector for power cable.....		
12791	Connector—5-contact female connector and cover for power cable.....		
4286	Ferrule—Fuse connector ferrule and bushing—Package of 10.....		
10907	Fuse—3 amp.—Package of 5 (F1).....		
4290	Insulator—Fuse connector body insulator—Package of 10.....		
12815	Reactor—Air core reactor (L14).....		
12818	Reactor—Iron core (L18).....		
12825	Resistor—4 ohm, flexible type (R13)....		
5034	Resistor—56 ohm, carbon type, 1/2 watt—Package of 5 (R11, R12).....		
4814	Socket—5-contact vibrator socket.....		
4284	Spring—Fuse connector spring—Package of 10.....		
12824	Switch—Power switch (S3, S4).....		
12816	Transformer—Vibrator transformer (T3)		
12817	Vibrator—Complete (L16).....		
4285	Washer—Fuse connector insulating washer		
			REPRODUCER ASSEMBLIES Console Model 6BK — 6BK6
12667	Cone—Reproducer cone and dust cap (L13).....		
5118	Plug—3-contact male connector for reproducer.....		
9713	Reproducer—Complete.....		
			REPRODUCER ASSEMBLIES Table Model 6BT — 6BT6
12642	Cone—Reproducer cone and dust cap (L13).....		
5118	Plug—3-contact male connector for reproducer.....		
9712	Reproducer—Complete.....		
			MISCELLANEOUS ASSEMBLIES
4289	Body—Fuse connector female body—Package of 10 (6BT·6BK).....		
12826	Cable—Power cable (set end), approximately 60 in. long, complete with four 2-contact male connectors and one 5-contact female connector—less power switch (6BT·6BK).....		
12786	Cable—Power cable (battery section), complete with battery connectors and female section of 4-contact connector (6BT6·6BK6).....		
4288	Cap—Fuse connector male cap—Package of 10 (6BT·6BK).....		
12827	Connector—2-contact and guide pin male connector and cover for power cable (6BT·6BK).....		
12828	Connector—2-contact male connector for power cable (6BT·6BK).....		
12788	Connector—4-volt battery connector for Stock No. 12786—Package of 2 (6BT6·6BK6).....		
12790	Connector—4-contact female connector for cable, Stock No. 12786.....		
12791	Connector—5-contact female connector and cover for power cable (6BT·6BK)		
12787	Connector—6-volt battery connector for Stock No. 12786—Package of 2 (6BT6·6BK6).....		
12785	Crystal—Station selector dial escutcheon and crystal.....		
4286	Ferrule—Fuse connector ferrule and bushing—Package of 10 (6BT·6BK).....		
3748	Fuse—1/2 amp.—Package of 5 (6BT·6BK) (F1).....		
4290	Insulator—Fuse connector body insulator—Package of 10 (6BT·6BK).....		
12699	Knob—Station selector knob (large)....		
12700	Knob—Station selector vernier knob		
11347	Knob—Volume control, range switch, tone switch or power switch knob—		
12830	Resistor—0.46 ohm, flexible type—Package of 5 (R14) (6BT·6BK only)....		
11377	Screw—Chassis mounting screw assembly for table model only—Package of 4....		
11210	Screw—Chassis mounting screw assembly for console model only—Package of 4.		
12789	Screw—Cone point set screw for connector, Stock No. 12788—Package of 10 (6BT6·6BK6 only).....		
4284	Spring—Fuse connector spring—Package of 10 (6BT·6BK only).....		
11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12700—Package of 5.		
4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10.....		
12829	Switch—Power switch (6BT·6BK only) (S5).....		
4285	Washer—Fuse connector insulating washer		

MODELS 6T and 6K

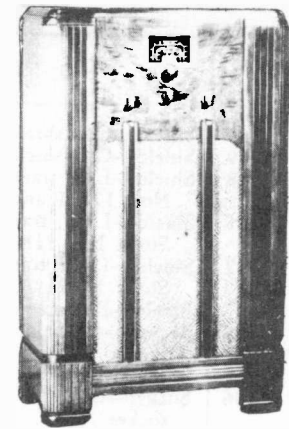
Six-Tube, Two-Band, A-C, Superheterodyne Receivers



MODEL 6T



Radiotron, Coil, and Trimmer Locations



MODELS 6K & 6K1

Electrical Specifications

FREQUENCY RANGES

"Standard broadcast" (A)..... 540-1,820 kc.

"Short wave" (B).....1,820-6,600 kc.

Intermediate Frequency.....460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6A8.....First Det.—Oscillator
- (2) RCA-6K7.....Intermediate Amplifier
- (3) RCA-6H6.....Second Det.—A.V.C.

ALIGNMENT FREQUENCIES

"Standard broadcast" (A).....

600 kc. (osc.), 1,700 kc. (osc., ant.)

"Short wave" (B).....None required

Pilot Lamps (3).....Mazda No. 46, 6.3 volts, 0.25 amperes

POWER SUPPLY RATINGS

Rating A..... 105-125 volts, 50-60 cycles, 80 watts

Rating B..... 105-125 volts, 25-60 cycles, 80 watts

Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 80 watts

POWER OUTPUT RATING

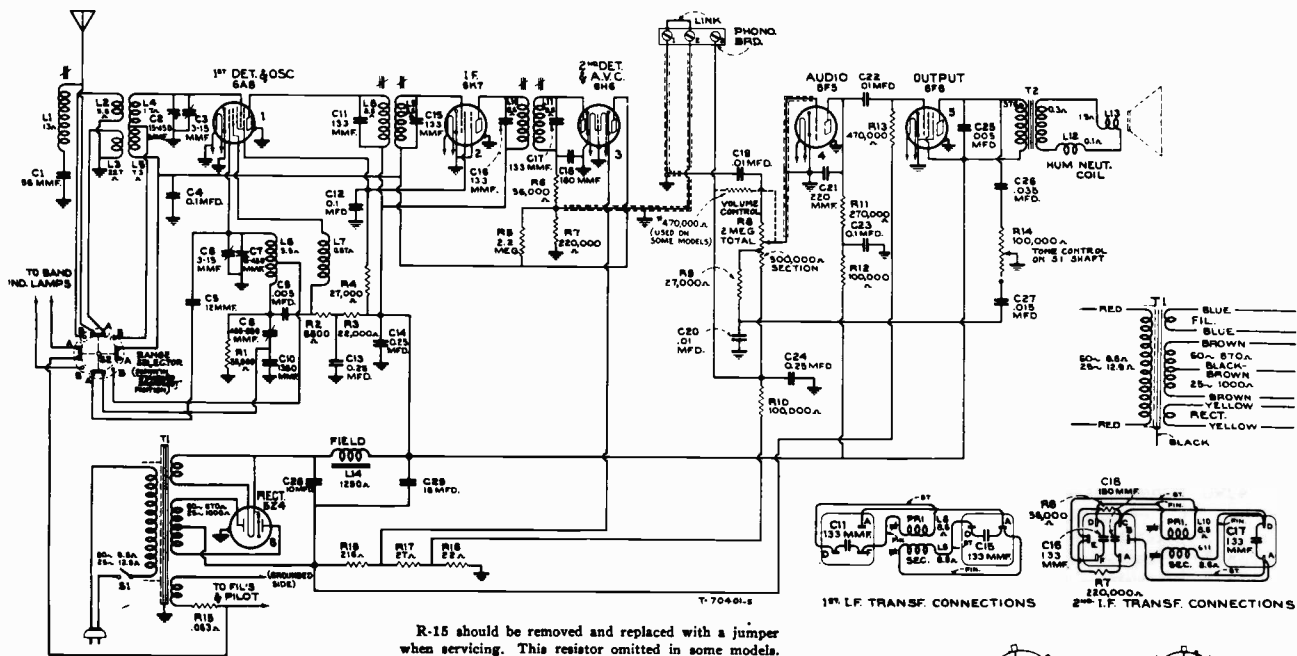
Undistorted..... 2.0 watts

Maximum..... 4.5 watts

LOUDSPEAKER

Type..... Electrodynamic

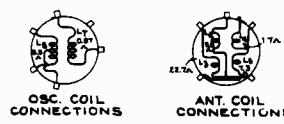
Voice Coil Impedance..... 2.2 ohms at 400 cycles



R-15 should be removed and replaced with a jumper when servicing. This resistor omitted in some models.

Schematic Circuit Diagram

(* 470,000-ohm resistor not required when replacing volume control with Stk. No. 13144)



REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....	11626	Resistor—2.2 megohm, carbon type, 1/4 watt—Package of 5 (R5).....
12511	Cap—Grid contact cap—Package of 5...	12004	Resistor—Voltage divider resistor—Comprising one 216 ohm, one 27 ohm and one 22 ohm sections (R16, R17, R18).
11465	Capacitor—Adjustable capacitor (C8)...	12008	Shield—First or second I.F. transformer shield
12659	Capacitor—12 Mmfd. (C5).....	12650	Shield—Antenna coil shield.....
12661	Capacitor—.56 Mmfd. (C1).....	12735	Shield—Dial lamp shield—Package of 5..
12946	Capacitor—133 Mmfd. (C11, C15, C16, C17)	12607	Shield—First I.F. transformer shield top.
12406	Capacitor—180 Mmfd. (C18).....	12651	Shield—Oscillator coil shield.....
12662	Capacitor—220 Mmfd. (C21).....	12581	Shield—Second I.F. transformer shield top
12660	Capacitor—1,350 Mmfd. (C10).....	11199	Socket—Dial lamp socket.....
4868	Capacitor—.005 Mfd. (C9, C25).....	11195	Socket—5-contact 5Z4 radiotron socket..
11315	Capacitor—.015 Mfd. (C27).....	11198	Socket—7-contact 6F5, 6H6 or 6K7 radiotron socket.....
12670	Capacitor—.035 Mfd. (C26).....	11196	Socket—8-contact 6A8 or 6F6 radiotron socket
4858	Capacitor—.01 Mfd. (C19, C20, C22)...	12007	Spring—Retaining spring for core Stock No. 12006 and 12664—Package of 10..
4841	Capacitor—.01 Mfd. (C4, C23).....	12668	Tone Control and Switch (R14, S1)....
11414	Capacitor—.01 Mfd. (C12).....	13106	Transformer—First I.F. transformer, complete (L8, L9, C11, C15).....
4840	Capacitor—.025 Mfd. (C13, C24).....	11999	Transformer—Power transformer, 105-125 volt, 50-60 cycle (T1).....
5170	Capacitor—.025 Mfd. (C14).....	12132	Transformer—Power transformer, 105-125 volt, 25-50 cycle (T1).....
11240	Capacitor—10 Mfd. (C28).....	12133	Transformer—Power transformer, 100-250 volt, 40-60 cycle (T1).....
5212	Capacitor—18 Mfd. (C29).....	13107	Transformer—Second I.F. transformer, complete (L10, L11, C16, C17, C18, R6, R7).....
12648	Coil—Antenna coil less shield (L2 L3, L4, L5).....	12654	Trap—Wave trap (L1).....
12649	Coil—Oscillator coil less shield (L6, L7)	13144	Volume Control (R8).....
12643	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7).....	REPRODUCER ASSEMBLIES	
5119	Connector—3-contact female speaker cable connector	12641	Board—3-contact reproducer terminal board
12006	Core—Adjustable core and stud for I.F. transformer, Stock Nos. 12652 and 12653	12640	Bracket—Output transformer mounting bracket and clamp.....
12664	Core—Adjustable core and stud for wave trap, Stock No. 12654.....	12012	Coil—Field coil (L14).....
12658	Dial—Station selector dial.....	11469	Coil—Neutralizing coil (L12).....
12656	Drive—Variable condenser drive shaft and pinion	12642	Cone—Reproducer cone and dust cap (L13) (Model 6T).....
12655	Gear—Large gear located on variable condenser shaft.....	12667	Cone—Reproducer cone and dust cap (L13) (Model 6K).....
12657	Indicator—Station selector indicator.....	5118	Connector—3-contact male speaker cable connector
5226	Lamp—Dial lamp—Package of 5.....	12666	Cover—Speaker cover (Model 6K).....
12663	Mask—Dial light diffuser, complete with red and green colored screen.....	9696	Reproducer complete (Model 6K).....
12647	Range Switch (S2).....	9699	Reproducer complete (Model 6T).....
11454	Resistor—6,800 ohm, carbon type, 1/4 watt—Package of 5 (R2).....	11253	Transformer—Output transformer (T2).....
8070	Resistor—22,000 ohm, carbon type, 1/2 watt—Package of 5 (R3).....	11886	Washer—Spring washer to hold field coil securely—Package of 5.....
11400	Resistor—27,000 ohm, carbon type, 1/4 watt—Package of 5 (R9).....	MISCELLANEOUS ASSEMBLIES	
12011	Resistor—27,000 ohm, carbon type, 1 watt—Package of 5 (R4).....	12639	Escutcheon—Station selector escutcheon and crystal.....
5029	Resistor—56,000 ohm, carbon type, 1/4 watt—Package of 5 (R1).....	12638	Knob—Station selector knob—Package of 5.....
11282	Resistor—56,000 ohm, carbon type, 1/10 watt—Package of 5 (R6).....	11582	Knob—Tone control knob—Package of 5
12263	Resistor—100,000 ohm, insulated, 1/4 watt—Package of 5 (R12).....	11347	Knob—Volume control or range switch knob—Package of 5.....
3118	Resistor—100,000 ohm, carbon type, 1/4 watt—Package of 5 (R10).....	11586	Screw—Receiver mounting screw No. 14x1 in.—Package of 10.....
11398	Resistor—220,000 ohm, carbon type, 1/10 watt—Package of 5 (R7).....	11349	Spring—Retaining spring for knob, Stock Nos. 11347, 11582, and 12638—Package of 5.....
11453	Resistor—270,000 ohm, carbon type, 1/10 watt—Package of 5 (R11).....		
11452	Resistor—470,000 ohm, carbon type, 1/10 watt—Package of 5 (R13).....		

MODEL 6K1

This receiver is similar to Model 6K except for minor changes which include: (1) An RCA-5W4 rectifier used in place of the RCA-5Z4. (2) The .063-ohm heater resistor (R15) is omitted. (3) A three-point tone control (S3) used in place of the variable tone control (R14). (4) Different power transformers.

The tone control (S3) is connected as follows: Viewing tone control from rear and starting from counter-clockwise lug, lug 1 connects to a .017 mfd. capacitor (C30), the other side of this capacitor (C30) connects to chassis. Lug 2 connects to the junction of capacitor (C20) and resistor (R9). Lug 3 is not used. Lug 4 connects direct to the plate contact of socket No. 5.

The d-c resistance of the power transformers are: No. 12644, Pri. 8.6 ohms, Sec. 745 ohms. No. 12645, Pri. 12.9 ohms, Sec. 1120 ohms. No. 12646, Pri. 24.5 ohms, Sec. 760 ohms. The voltages for the RCA-5W4 rectifier are: Plate to plate, 692 volts. Either plate to chassis-ground, 346 volts. All other voltages remain the same.

All Service Data for Model 6K are directly applicable to these receivers except the changes stated above and the Replacement Parts listed below.

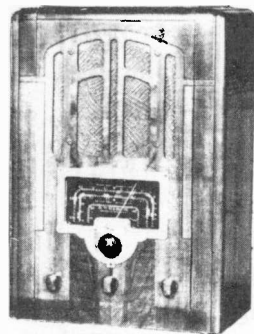
<u>Stock No.</u>	<u>Description</u>
12930	Board--Antenna and ground terminal board
12717	Board--Phonograph terminal board
11451	Capacitor--.017 Mfd. (C30)
13918	Dial--Station Selector dial
5145	Resistor--100,000 ohms, carbon type, 1/4 watt (R10)
11195	Socket--5-contact 5W4 Radiotron socket
13681	Tone control and power switch (S1, S3)
12644	Transformer--Power transformer, 105-125 volts, 50-60 cycles (T1)
12645	Transformer--Power transformer, 105-125 volts, 25-60 cycles (T1)
12646	Transformer--Power transformer, 100-130/140-160/ 195-250 volts, 40-60 cycles (T1)
11347	Knob--Tone control knob

Stock Nos. 11315, 12670, 12658, 12669, 3118, 12668, 11999, 12132, 12133, and 11582 are not used in Model 6K1.

MODELS 6T2, 6K2, 6T10, 6K10 & 7U

Six-Tube, Three-Band, A-C, Superheterodyne Receivers

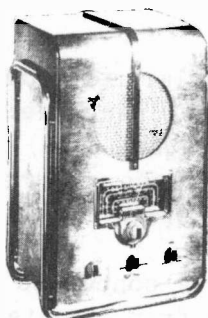
Seven-Tube, Radio—Phonograph



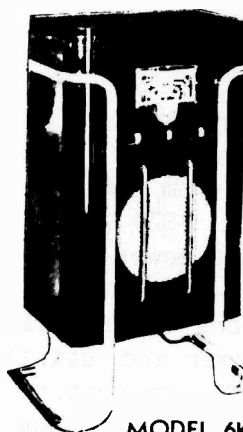
MODEL 6T2



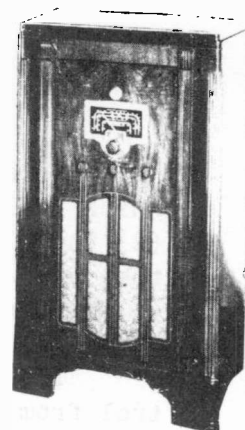
MODEL 6K2



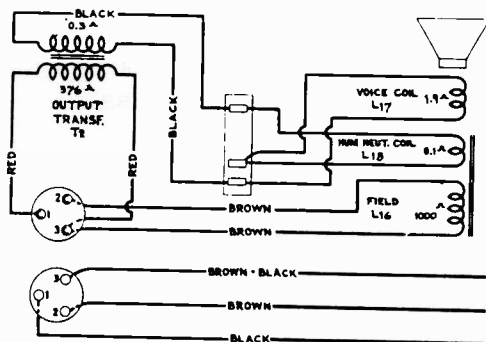
MODEL 6T10



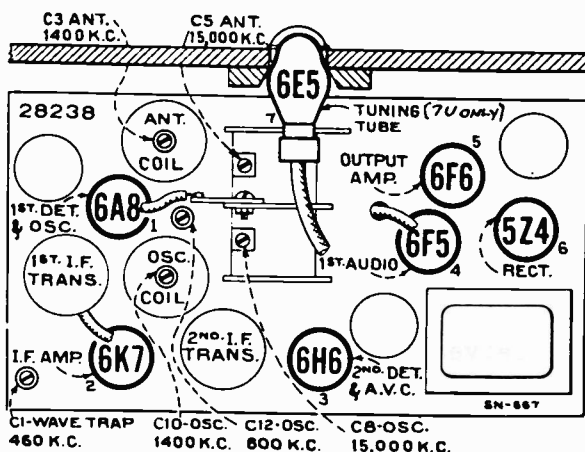
MODEL 6K10



MODEL 7U



Loudspeaker Wiring



Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

- "Standard broadcast" (A)..... 540- 1,625 kc.
- "Medium wave" (B)1,625- 5,700 kc.
- "Short wave" (C)5,700-18,000 kc.

Intermediate Frequency

RADIOTRON COMPLEMENT

- (1) RCA-6A8 First-detector-oscillator
- (2) RCA-6K7 Intermediate amplifier
- (3) RCA-6H6 Second-detector-a.v.c.

Pilot Lamps (5)

POWER SUPPLY RATINGS

- Rating A-6105-125 volts, 60 cycles, 95 watts
- Rating A-5105-125 volts, 50 cycles, 95 watts
- Rating B-2105-125 volts, 25 cycles, 95 watts
- Rating C-6105-130/140-160/200-250 volts, 60 cycles, 95 watts
- Rating C-5105-130/140-160/200-250 volts, 50 cycles, 95 watts

POWER OUTPUT

- Undistorted2.0 watts
- Maximum4.5 watts

PHONOGRAPH (7U)

- TypeManual
- Turntable Speed78 r.p.m.

ALIGNMENT FREQUENCIES

- "Standard broadcast" (A) ...600 kc. (osc.), 1,400 kc. (osc. and ant.)
- "Medium wave" (B)None required
- "Short wave" (C)15,000 kc. (osc. and ant.)

- (4) RCA-6F5 Audio voltage amplifier
- (5) RCA-6F6 Audio power amplifier
- (6) RCA-5Z4 Full-wave rectifier
- (7) RCA-6E5 (7U ONLY) Tuning tube

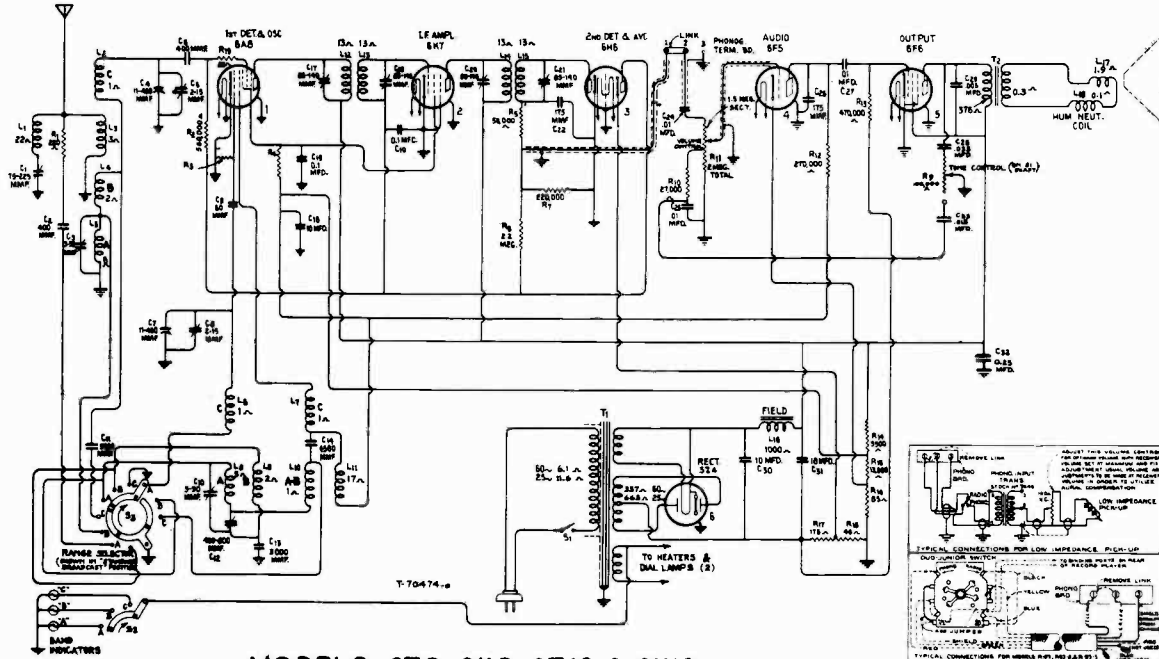
Mazda No. 46, 6.3 volts, 0.25 amperes

LOUDSPEAKER

- TypeElectrodynamic
- Impedance (v.c.)2.2 ohms at 400 cycles

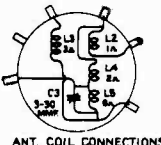
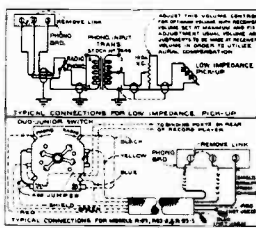
- Type of PickupHigh-impedance magnetic
- Pickup Impedance1,400 ohms at 1,000 cycles

6T2, 6K2, 6T10, 6K10 & 7U

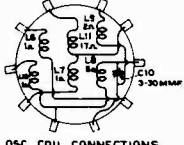


MODELS 6T2 6K2 6T10 & 6K10
Schematic Circuit Diagram

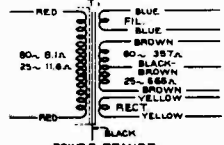
R3, 56,000 ohms
R4, 22,000 ohms



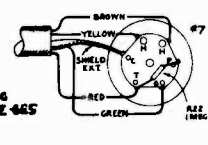
ANT. COIL CONNECTIONS



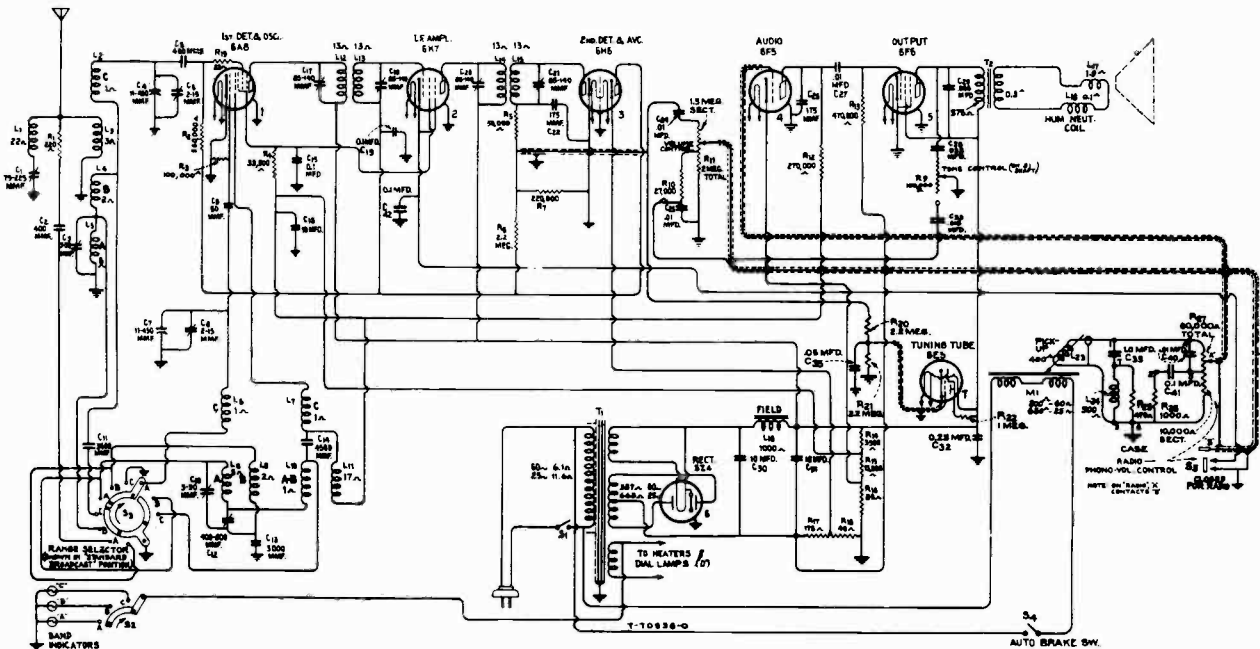
OSC. COIL CONNECTIONS



POWER TRANSF.

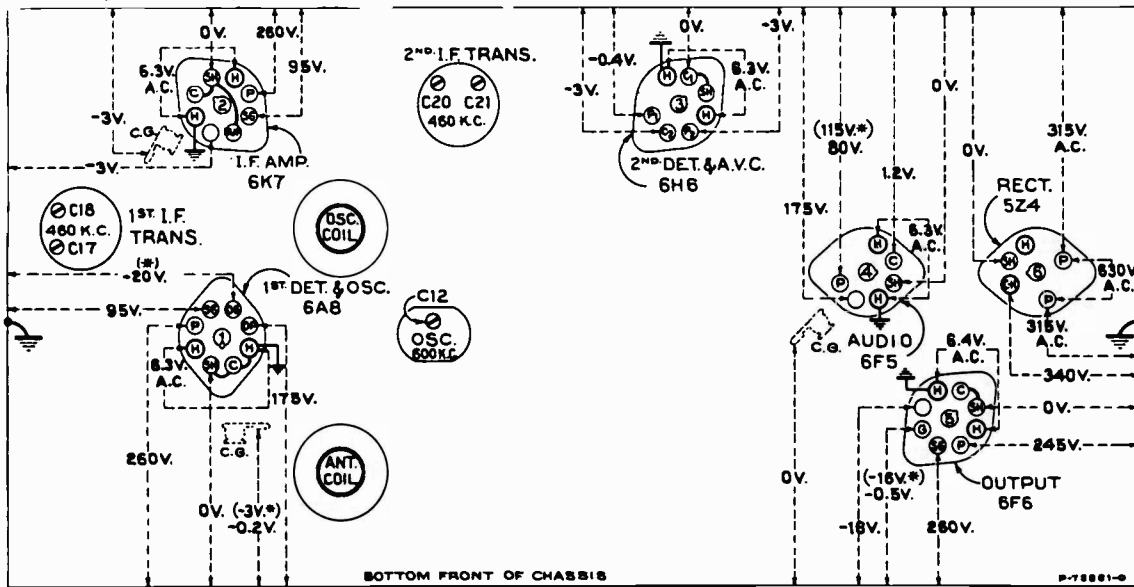


TUNING TUBE 6E5



MODEL 7U - Schematic Circuit Diagram

6T2, 6K2, 6T10, 6K10 & 7U



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc "Standard broadcast" Radio-Phono-volume "Radio"—No signal being received—Volume control minimum

Note: Two voltage values are shown for some readings. The higher value shown in parentheses with asterisk () indicates operating conditions without volt-meter loading.*

Alignment Procedure

DIAL CALIBRATION:

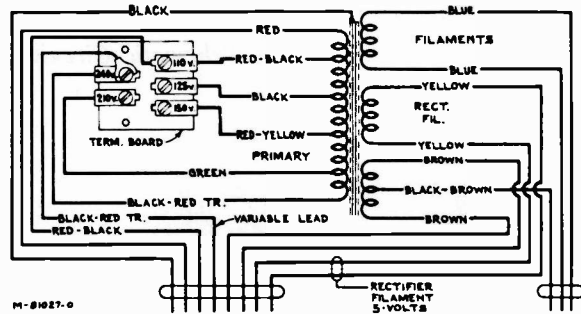
With tuning condenser fully meshed, set pointer to extreme end calibration at low frequency end of BC Band.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet Point near 600 kc "BC" Band	C20, C21 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C17, C18 1st I-F Trans.
3	Antenna in series with 200 mmfd			C1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	15000 kc	15000 kc "SW" Band	C8 † C5 ▲ Osc. Ant.
5	Antenna in series with 200 mmfd	1400 kc	1400 kc "BC" Band	C10 C3 Osc. Ant.
6		600 kc	600 kc "BC" Band	C12 L-F Osc. Rock Gang
7		Repeat Step 5		

Osc. tracks 460 kc above signal on all bands.

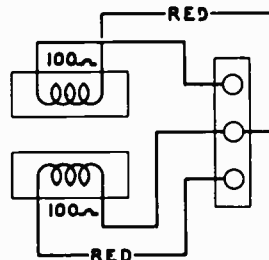
† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

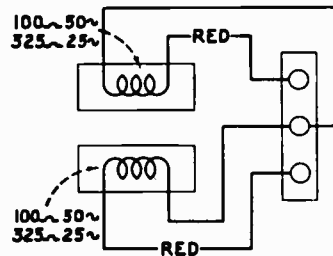


Primary Resistance—17.3 ohms total
Secondary Resistance—355 ohms total

Universal Transformer

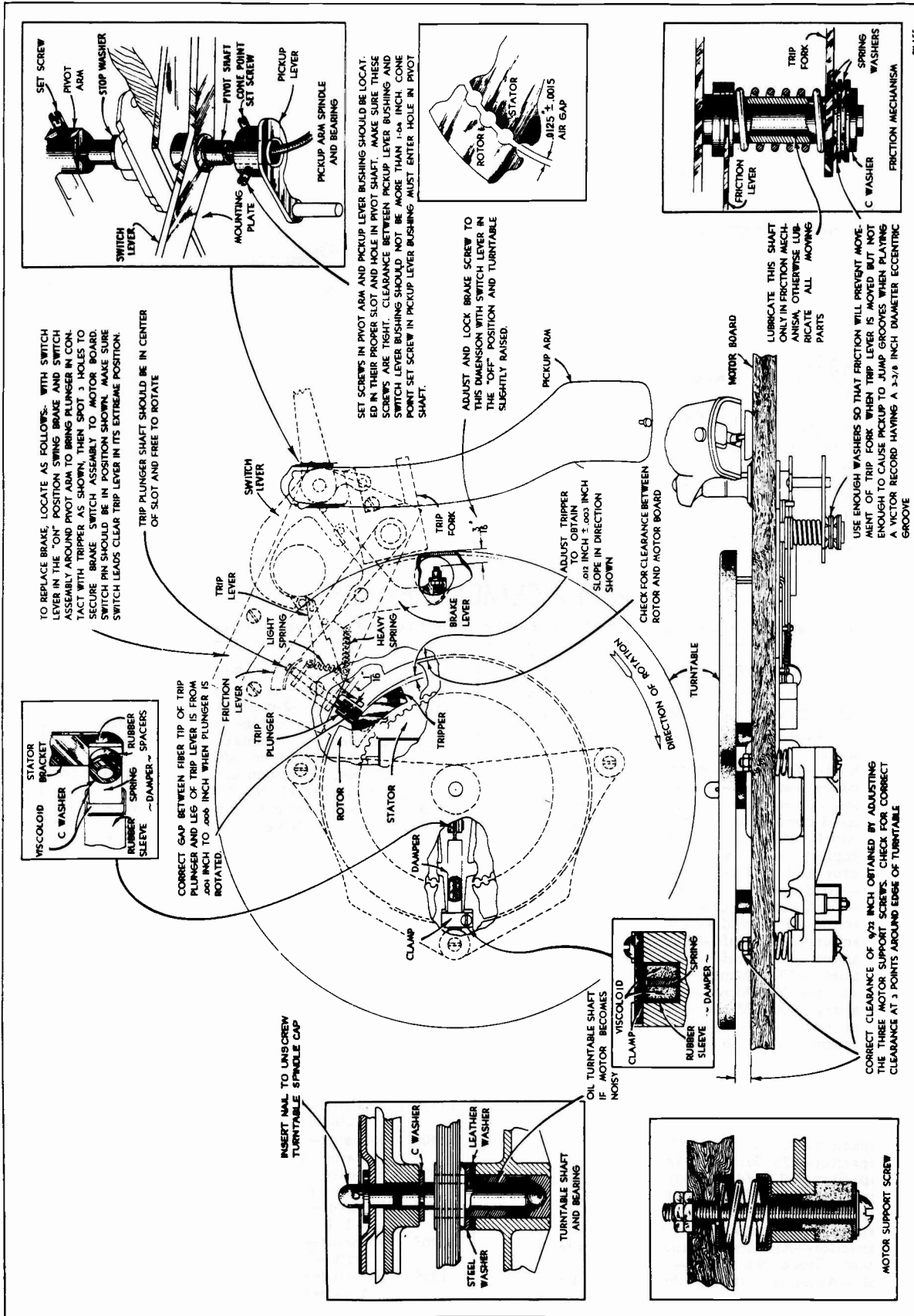


110VOLTS 60 CYCLES
MOTOR WIRING CONNECTIONS



110VOLTS 50 CYCLES
110VOLTS 25 CYCLES

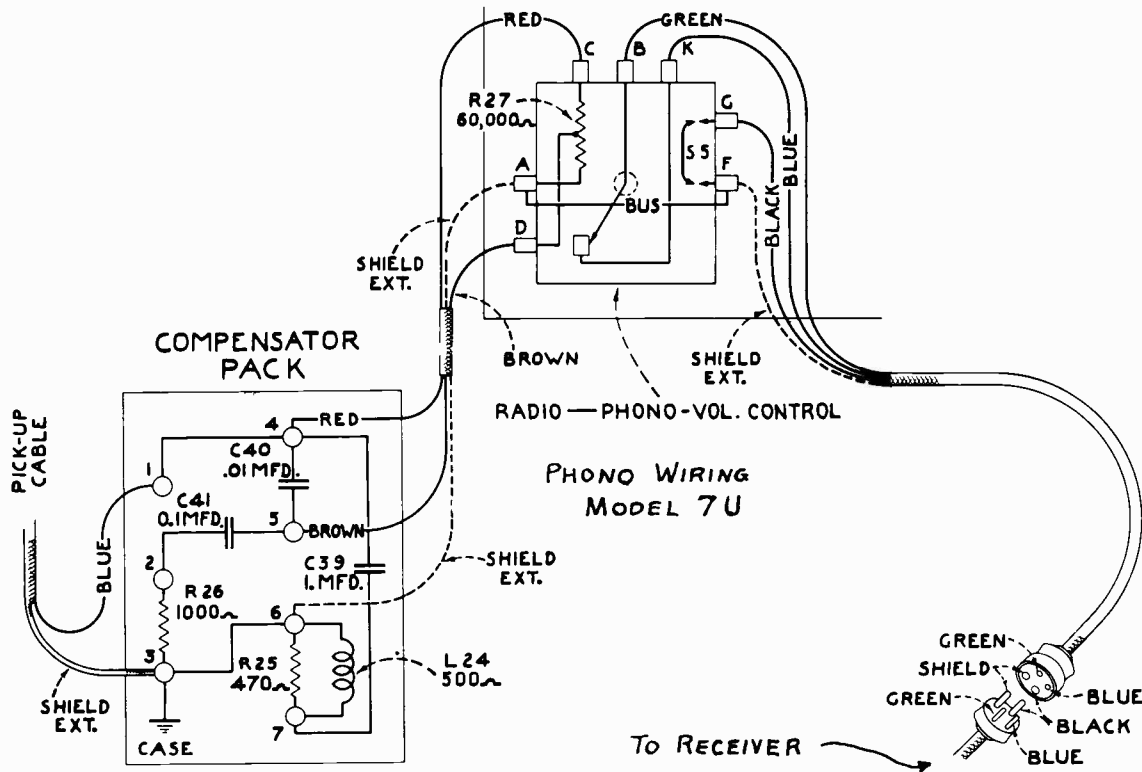
6T2, 6K2, 6T10, 6K10 & 7U



Model 7U Motor Board Adjustments

SP-53

6T2, 6K2, 6T10, 6K10 & 7U



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12930	Board—Antenna and ground terminal board	4573	Connector—2-contact female connector for motor cable—receiver section
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3	5119	Connector—3-contact female connector for chassis reproducer cable
11888	Cable—Tuning lamp cable and socket	6123	Connector—4-contact male connector for cable, Stock No. 12032
12032	Cable—3-conductor, shielded, volume control cable, approx. 8 inches long, complete with 4-contact male connector and grid contact cap	12768	Drive—Variable tuning condenser vernier drive
11350	Cap—Grid contact cap—Package of 5	11619	Foot—Chassis mounting foot and bracket assembly—Package of 2
12511	Cap—Grid contact cap—Package of 5	12770	Holder—Dial scale holder and lamp bracket assembly
11289	Capacitor—50 Mmfd.—(C9)	12712	Indicator—Station selector indicator pointer
11623	Capacitor—175 Mmfd.—(C22, C26)	4340	Lamp—Dial lamp—Package of 5
11290	Capacitor—400 Mmfd. (C2, C6)	12718	Mask—Dial light diffuser complete with red, orange and green-colored screen
11622	Capacitor—3000 Mmfd.—(C13)	11466	Resistor—Voltage divider—comprising one 3,500-ohm, one 13,000-ohm, one 85-ohm, one 40-ohm and one 175-ohm sections—(R14, R15, R16, R17, R18)
11621	Capacitor—3600 Mmfd.—(C11)	11624	Resistor—22 ohms—Flexible type complete with grid contact cap—(R19)
11287	Capacitor—4500 Mmfd.—(C14)	11620	Resistor—220 ohms—Carbon type—1/10 watt—(R1)—Package of 5
4868	Capacitor—.005 Mfd.—(C29)	11400	Resistor—27,000 ohms—Carbon type—1/4 watt—(R10)—Package of 5
11315	Capacitor—.015 Mfd.—(C33)	8072	Resistor—33,000 ohms—Carbon type—1/2 watt—(R4)—Package of 5
12670	Capacitor—.035 Mfd.—(C28)	11282	Resistor—56,000 ohms—Carbon Type—1/10 watt—(R5)—Package of 5
11395	Capacitor—.01 Mfd.—(C24)	12263	Resistor—100,000 ohms—insulated—1/4 watt—Package of 5—(R3)
4858	Capacitor—.01 Mfd.—(C25, C27)	11398	Resistor—220,000 ohms—Carbon type—1/10 watt—(R7)—Package of 5
4836	Capacitor—.05 Mfd.—(C35)	11453	Resistor—270,000 ohms—Carbon type—1/10 watt—(R12)—Package of 5
11414	Capacitor—.1 Mfd.—(C15, C42)	11452	Resistor—470,000 ohms—Carbon type—1/10 watt—(R13)—Package of 5
4841	Capacitor—.1 Mfd.—(C19)		
5170	Capacitor—.25 Mfd.—(C32)		
11240	Capacitor—10 Mfd.—(C30)		
11387	Capacitor—10 Mfd.—(C16)		
5212	Capacitor—18 Mfd.—(C31)		
11465	Capacitor—Adjustable trimmer—(C12)		
11256	Capacitor—Adjustable trimmer for wave-trap, Stock No. 11391—(C1)		
11617	Coil—Antenna coil less shield—(L2, L3, L4, L5, C3, R1)		
11618	Coil—Oscillator coil less shield—(L6, L7, L8, L9, L10, L11, C10)		
12767	Condenser—2-gang variable tuning condenser—(C4, C5, C7, C8)		

6T2, 6K2, 6T10, 6K10 & 7U

Replacement Parts (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
11397	Resistor—560,000 ohms—Carbon type—1/10 watt—(R2)—Package of 5		
12013	Resistor—1 megohm—Carbon type—1/10 watt—(R22)—Package of 5		
11626	Resistor—2.2 megohms—Carbon type—1/4 watt—(R6, R20, R21)—Package of 5		
11603	Shield—Coil shield for Stock Nos. 11617 and 11618		
12735	Shield—Dial lamp shield—Package of 5		
11390	Shield—I. F. transformer shield for Stock Nos. 11388 and 11389		
11199	Socket—Dial lamp socket		
12771	Socket—Dial lamp socket—Located at top of dial scale		
11381	Socket—Tuning lamp socket and cover		
11195	Socket—5-contact 5Z4 Radiotron socket		
11198	Socket—7-contact 6F5 or 6H6 Radiotron socket		
11196	Socket—8-contact 6A8, 6F6 or 6K7 Radiotron socket		
12769	Switch—Range switch—(S2, S3)		
12668	Tone Control and Power Switch—(R9, S1)		
11391	Trap—Wave trap—(L1, C1)		
11388	Transformer—First I. F. transformer less shield—(L12, L13, C17, C18)		
11389	Transformer—Second I. F. transformer less shield—(L14, L15, C20, C21, C22, R5, R7)		
11848	Transformer—Power transformer—100-125-volts, 50-60 cycles—(T1)		
11849	Transformer—Power transformer—100-125-volts, 25-40 cycles—(T1)		
11850	Transformer—Power transformer—105-250-volts, 40-60 cycles—(T1)		
13144	Volume control—(R11)		
ADDITIONAL REPLACEMENT PARTS MODELS 6T2, 6K2, 6T10 AND 6K10			
12717	Board - Phono. terminal board.		
12772	Bracket - Top dial lamp socket bracket.		
8070	Resistor - 22,000 ohms (R4).		
12286	Resistor - 56,000 ohms (R3).		
12792	Dial - Station selector dial.		
Stock No. 12032 Cable, 4836 Capacitor (C35), 4572 Connector 8072 Resistor (R4), 12263 Resistor (R3), 12013 Resistor (R22) and 11381 Socket used in Model 7U only.			
MODELS 6T2, 6K2, 6T10 AND 6K10 REPRODUCER ASSEMBLIES			
11232	Board—Reproducer terminal board		
8060	Bracket—Output transformer mounting bracket and clamp		
11470	Coil—Field coil—(L16)		
11469	Coil—Neutralizing coil—(L18)		
11235	Cone—Reproducer cone complete—(L17)—(Model 6T2)		
11258	Cone—Reproducer cone complete—(L17)—(Model 6K2)		
5118	Connector—3-contact male connector for speaker cable		
12666	Cover—Speaker cover (Model 6K2)		
9621	Reproducer complete (Model 6T2)		
9622	Reproducer complete (Model 6K2)		
11253	Transformer—Output transformer—(T2)		
11886	Washer—Spring washer to hold field coil securely—Package of 5		
			MODELS 6T2 AND 6K2 MISCELLANEOUS ASSEMBLIES
		12698	Crystal—Station selector crystal and escutcheon
		11582	Knob—Range switch knob—Package of 5
		11610	Knob—Station selector knob—includes large and small knob—Package of 5
		11347	Knob—Tone control or volume control knob—Package of 5
		11377	Screw—Chassis mounting screw assembly used on Model 6T2—Package of 4
		11210	Screw—Chassis mounting screw assembly—Used on Model 6K2—Package of 4
		11349	Spring—Retaining spring for knob—Stock No. 11347, No. 11582 and small knob of Stock No. 11610—Package of 5
		4982	Spring—Retaining spring for large knob of Stock No. 11610—Package of 10
			MODELS 6T10 and 6K10 MISCELLANEOUS ASSEMBLIES
		13303	Crystal - Station selector escutcheon and crystal
		13304	Knob - Large station selector knob Model 6T10 only
		13395	Knob - Large station selector knob Model 6K10 only
		13305	Knob - Small (vernier) station selector knob - Model 6T10 only
		13396	Knob - Small (vernier) station selector knob - Model 6K10 only
		13306	Knob - Tone control, volume control, or range-switch knob - Model 6T10 only
		13278	Knob - Tone control, volume control, or range-switch knob - Model 6K10 only
		11210	Screw - Chassis mounting screw assembly - Model 6K10 only
		11377	Screw - Chassis mounting screw assembly - Model 6T10 only
		4982	Spring - Retaining spring for knob Stock No. 13304 and 13395
		11349	Spring - Retaining spring for knob Stock No. 13278, 13305, 13306, and 13396

6T2, 6K2, 6T10, 6K10 & 7U

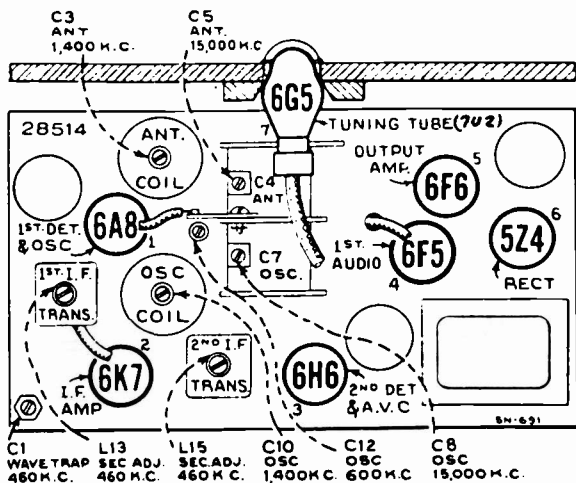
REPLACEMENT PARTS (Continued) 7U ONLY

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR BOARD ASSEMBLIES					
11751	Bushing—Motor mounting bushing and spring assembly, comprising one bushing, one large washer, one cup washer, one spring, one small washer and two nuts		11748	and laminations—105-125 volts, 25-cycle operation	
13065	Lever—Brake mechanism actuating lever, fastens to pivot shaft under base		11741	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer	
3261	Rest—Pickup rubber rest—Package of 5		11742	Motor—105-125 volts, 60-cycle motor complete—(M1)	
11750	Screw—No. 4-40 x 9/32, cone pointed, headless set screw for lever, Stock No. 13065—Package of 10		11743	Motor—105-125 volts, 50-cycle motor complete	
			11744	Motor—105-125 volts, 25-cycle motor complete	
			11746	Trippler—Automatic brake tripper—located on rotor laminations	
AUTOMATIC BRAKE AND SWITCH ASSEMBLIES					
13099	Brake—Automatic brake and switch complete		11737	Turntable—Turntable assembly—complete with rotor laminations—60-cycle operation	
4577	Connector—2-contact male connector for brake switch power supply leads		11738	Turntable—Turntable assembly—complete with rotor laminations—50-cycle operation	
12932	Lever—Friction lever assembly complete		11739	Turntable—Turntable assembly—complete with rotor laminations—25-cycle operation	
11753	Plunger—Automatic brake trip plunger		4083	Washer—Leather washer—Package of 10	
12043	Screw—Automatic brake screw and friction leather assembly		4084	Washer—Metal washer—Package of 10	
11756	Spring—Automatic brake trip lever spring—Package of 10		MISCELLANEOUS ASSEMBLIES		
11757	Spring—Automatic brake lever spring—Package of 10		11762	Box—Used needle box	
11755	Switch—Automatic brake switch—(S4)		11996	Bracket—Tuning lamp mounting bracket and clamp	
PICKUP AND ARM ASSEMBLIES					
11731	Armature—Pickup armature		12030	Cable—2-conductor shielded cable, approx. 18 inches long, connects phonograph volume control to compensator pack	
11732	Coil—Pickup coil—(L23)		12031	Cable—3-conductor shielded cable, approx. 19 inches long, complete with 4-contact female connector, connects phonograph volume to receiver	
4543	Damper—Pickup damper block complete with damper plate		11272	Clamp—Cable clamp for phonograph volume control cable, Stock Nos. 12030 and 12031—Package of 5	
12931	Pickup and arm complete		11760	Compensator—Phonograph compensator pack, comprising one 470-ohm and one 1,000-ohm resistors, one .01 Mfd., one .1 Mfd. and one 1 Mfd. capacitors and one .25 Henry reactor—(L24, C39, C40, C41, R25, R26)	
11951	Screw—Needle holding screw—Package of 10		4153	Connector—4-contact female connector for cable, Stock No. 12031	
REPRODUCER ASSEMBLIES					
11232	Board—Terminal board assembly		12666	Cover—Reproducer cover	
11231	Bolt—Yoke and core assembly bolt and nut		12698	Escutcheon—Station selector escutcheon and crystal	
8060	Bracket—Output transformer mounting bracket		12742	Escutcheon—Tuning tube escutcheon	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5		11347	Knob—Phonograph volume control, receiver volume control, or range switch knob—Package of 5	
11470	Coil—Field coil—(L16)		11610	Knob—Station selector knob—includes one large and one small knob—Package of 5	
11469	Neutralizing coil—(L18)		11582	Knob—Tone and power switch knob—Package of 5	
11258	Cone—Reproducer cone—(L17)—Package of 5		11763	Receptacle—Needle receptacle	
5118	Connector—3-contact male connector for reproducer		11210	Screw—Chassis mounting screw assembly—comprising one screw, one washer, and one lockwasher—Package of 4	
5119	Connector—3-contact female connector for reproducer cable		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10	
9622	Reproducer complete		11349	Spring—Retaining spring for small knob in Stock Nos. 11610, 11347 and 11582—Package of 5	
11253	Transformer—Output transformer—(T2)		11695	Volume Control—Phonograph volume control and switch—(R27, S5)	
11886	Washer—Spring washer used to hold field coil securely—Package of 5				
MOTOR ASSEMBLIES					
10194	Ball—Steel ball bearing—Package of 20				
11740	Base—Motor base and bearing assembly				
11745	Cap—Turntable spindle cap—Package of 5				
11733	Coil—Stator assembly—comprising coil and laminations—105-125 volts, 60-cycle operation				
11734	Coil—Stator assembly—comprising coil and laminations—105-125 volts, 50-cycle operation				
11735	Coil—Stator assembly—comprising coil				

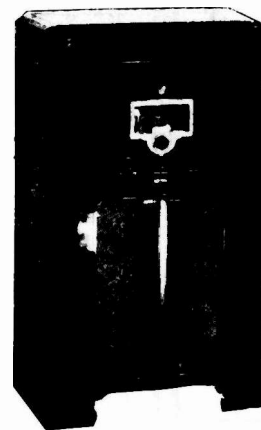
MODELS 6K2 (2 ND.PRODUCTION) & 7U2

Six-Tube, Three-Band, A-C, Superheterodyne Receiver

Seven-Tube, Radio — Phonograph



Radiotron, Coil, and Trimmer Locations



MODEL 7U2

Electrical Specifications

FREQUENCY RANGES

- "Standard broadcast" (A) 540- 1,625 kc
- "Medium wave" (B) 1,625- 5,700 kc
- "Short wave" (C) 5,700-18,000 kc

ALIGNMENT FREQUENCIES

- "Standard broadcast" (A) ... 600 kc (osc.), 1,400 kc (osc. and ant.)
- "Medium wave" (B) None required
- "Short wave" (C) 15,000 kc (osc. and ant.)

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8 First-detector-oscillator
- (2) RCA-6K7 Intermediate amplifier
- (3) RCA-6H6 Second-detector-a.v.c.

- (4) RCA-6F5 Audio voltage amplifier
- (5) RCA-6F6 Audio power amplifier
- (6) RCA-5Z4 Full-wave rectifier
- (7) RCA-6G5 ..(7U2) Tuning tube

Pilot Lamps (5) Mazda No. 46, 6.3 volts, 0.25 amperes

POWER SUPPLY RATINGS

		TOTAL RADIO AND PHONOGRAPH	
Rating A-6	105-125 volts, 60 cycles	95 watts	120 watts
Rating A-5	105-125 volts, 50 cycles	95 watts	120 watts
Rating B-2	105-125 volts, 25 cycles	95 watts	120 watts
Rating C-6	105-130/140-160/200-250 volts, 60 cycles	95 watts	120 watts
Rating C-5	105-130/140-160/200-250 volts, 50 cycles	95 watts	120 watts

POWER OUTPUT

- Undistorted 2.0 watts
- Maximum 4.5 watts

LOUDSPEAKER

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

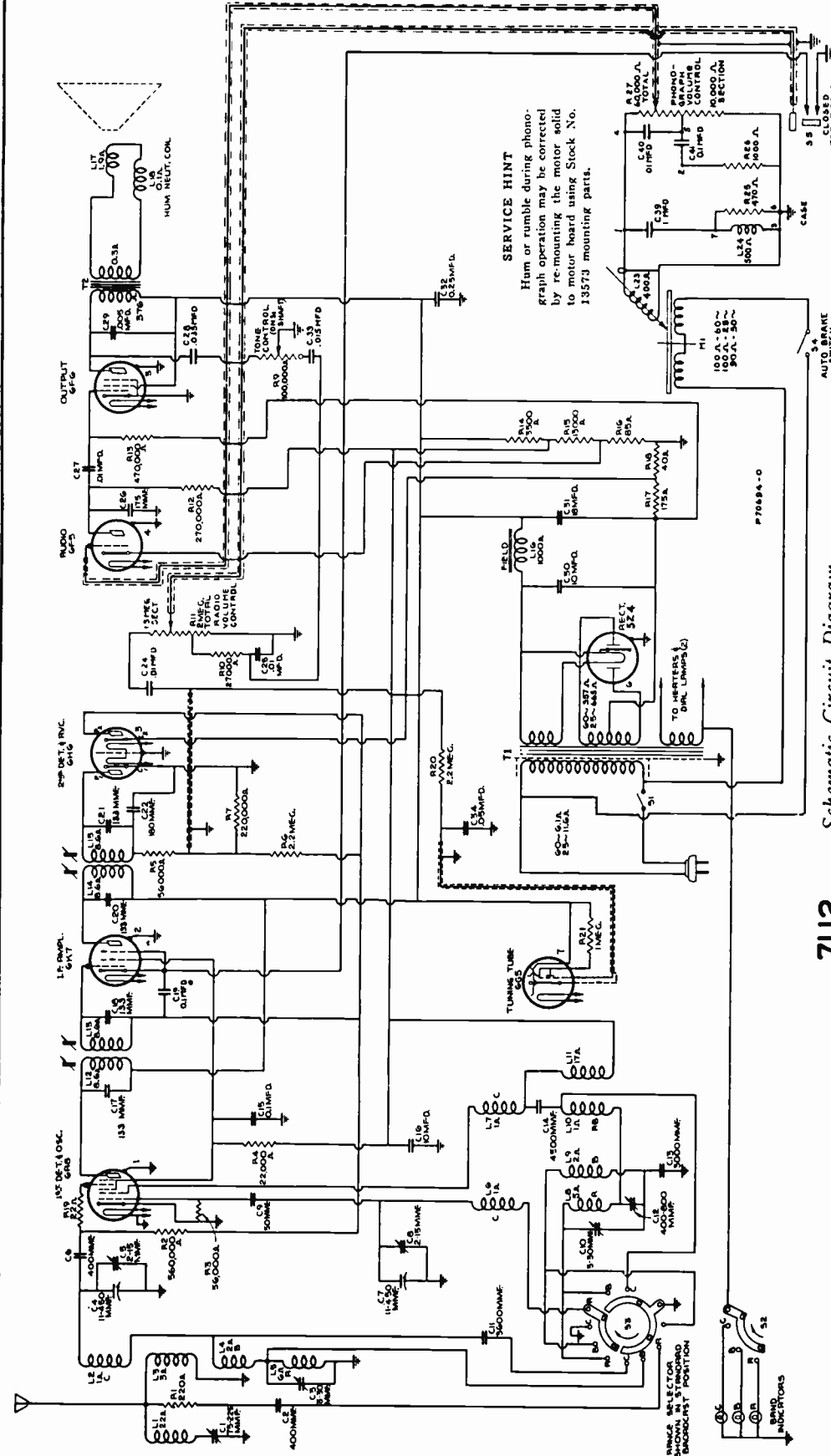
PHONOGRAPH (7U2)

- Type Manual
- Turntable Speed 78 r.p.m.

- Type of Pickup High-impedance magnetic
- Pickup Impedance 1,400 ohms at 1,000 cycles

Model 6K2 (2nd Production) differs from the original production in that magnetite core I-F transformers are used. The speaker and a few component parts are changed.

6K2 & 7U2



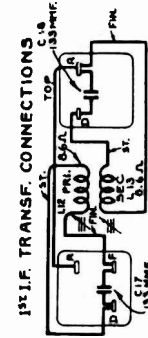
SERVICE HINT

Hum or rumble during phonograph operation may be corrected by re-mounting the motor solid to motor board using Stock No. 13573 mounting parts.

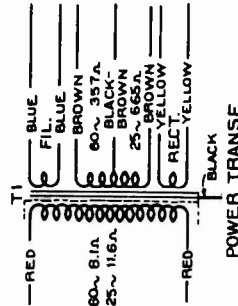
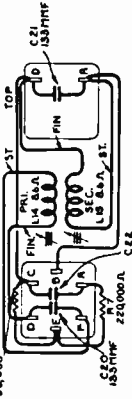
7U2 Schematic Circuit Diagram



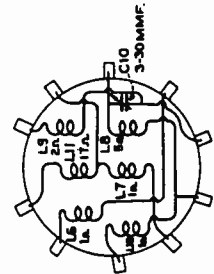
TUNING TUBE CONNECTIONS



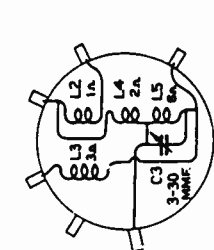
2nd I.F. TRANSF. CONNECTIONS



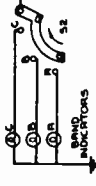
POWER TRANSF.



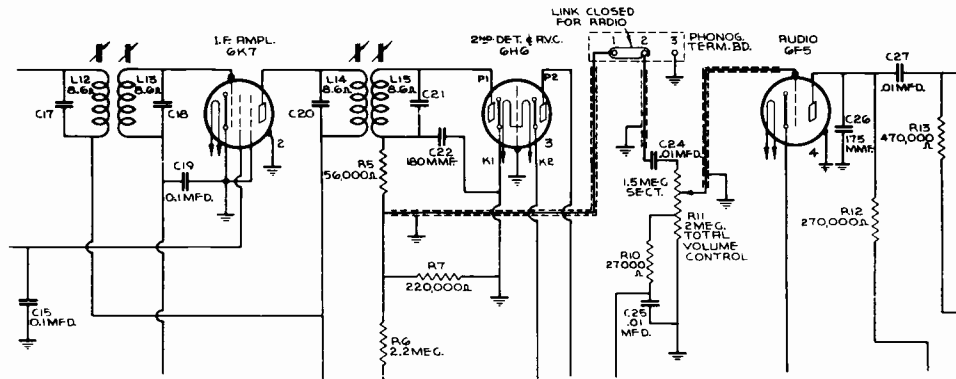
ANT. COIL CONNECTIONS



OSC. COIL CONNECTIONS

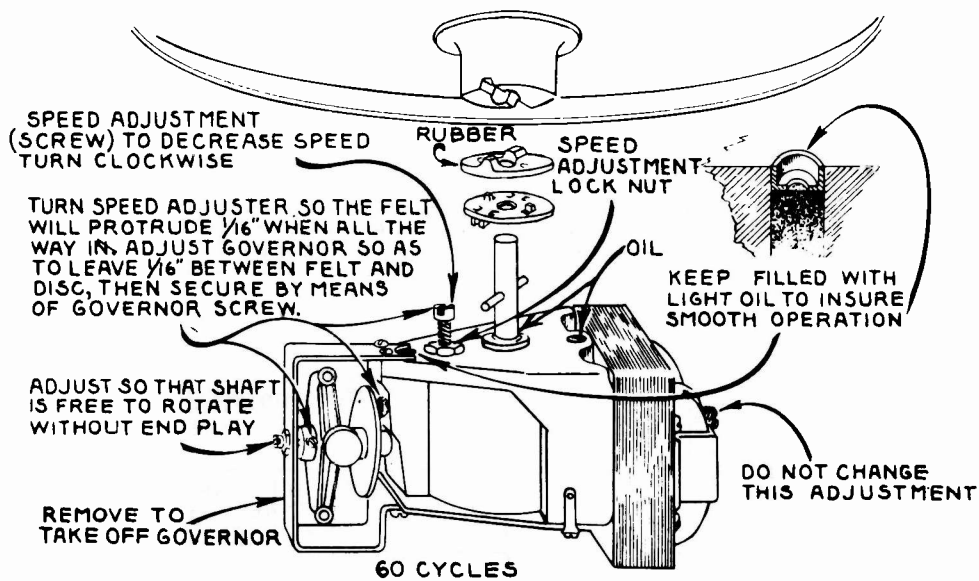


BAND SELECTOR SWITCH POSITION INDICATORS

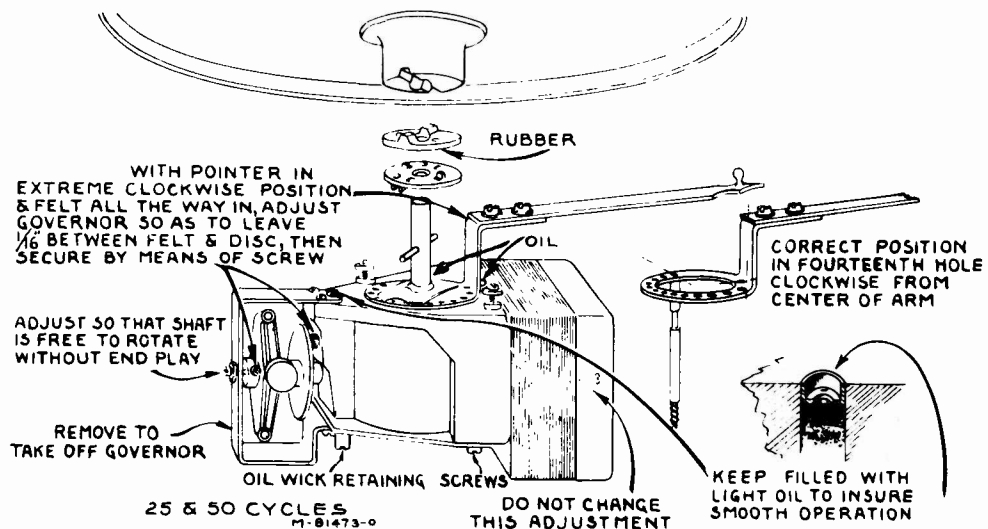


Schematic Circuit Diagram

(Model 6K2, Second Production)

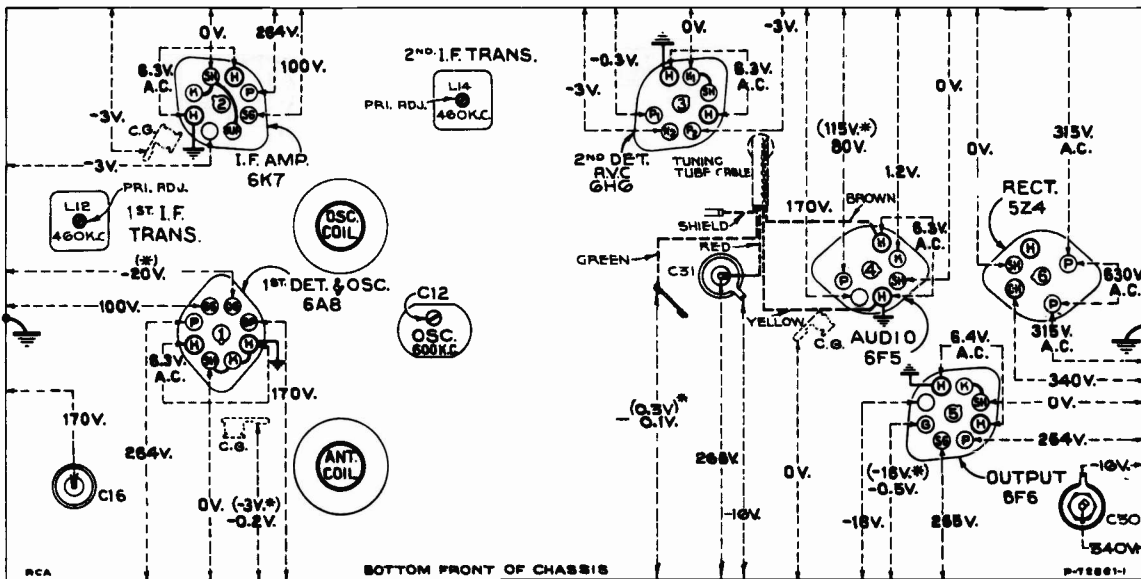


Details of 60-Cycle Motor



Details of 25- or 50-Cycle Motor

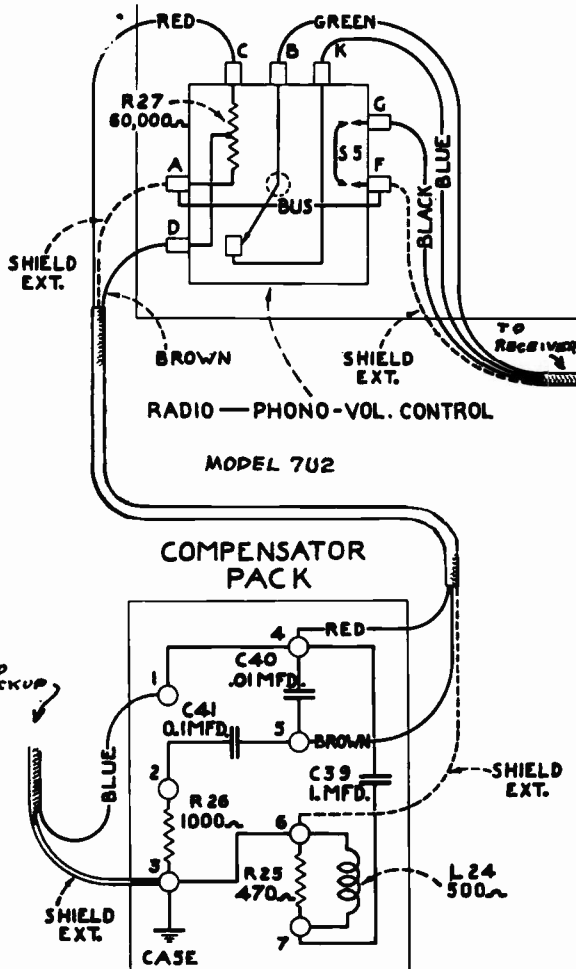
6K2 & 7U2



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard broadcast")—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.*



Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	6K7 I-F Grid in series with 0.01 mfd			L15 L14 2nd I-F Trans.
2	6AB Det. Grid in series with 0.01 mfd	400 kc	Quiet point near 600 kc "A" Band	L13 L12 1st I-F Trans.
3	Antenna in series with 200 mmfd			C1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	15000 kc	15000 kc "C" Band	C8† C5▲ Osc. Ant.
5		1400 kc	1400 kc "A" Band	C10 C3 Osc. Ant.
6	Antenna in series with 200 mmfd	600 kc	600 kc "A" Band	C12 L-F Osc. Rock Gang
7				Repeat Step 5

Oscillator Tracks 400 kc above signal on Band "A" & "B"

Oscillator Tracks 400 kc below signal on Band "C"

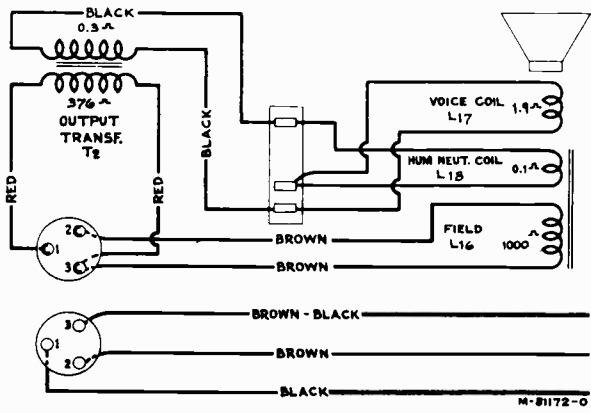
† Use maximum capacity peak.

▲ Rock Gang

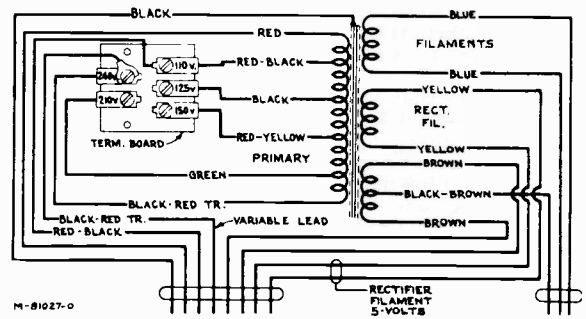
6K2 & 7U2

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
REPRODUCER ASSEMBLIES			PICKUP AND ARM ASSEMBLIES		
12641	Board—Terminal board assembly		11731	Armature—Pickup armature	
12640	Bracket—Output transformer mounting bracket		11732	Coil—Pickup coil (L23)	
13600	Coil—Field coil (L16)		4543	Damper—Pickup damper block complete with damper plate	
11469	Neutralizing coil (L18)		13579	Pickup and arm complete	
12667	Cone—Reproducer cone (L17)		11951	Screw—Needle holding screw—Package of 10	
5118	Connector—3-contact male connector for reproducer		MISCELLANEOUS ASSEMBLIES		
5119	Connector—3-contact female connector for reproducer cable		11762	Box—Used needle box	
9766	Reproducer complete		11996	Bracket—Tuning lamp mounting bracket and clamp	
11253	Transformer—Output transformer (T2)		12030	Cable—2-conductor shielded cable, approx. 18 inches long, connects phonograph volume control to compensator pack	
11886	Washer—Spring washer used to hold field coil securely—Package of 5		12031	Cable—3-conductor shielded cable, approx. 19 inches long, complete with 4-contact female connector, connects phonograph volume to receiver	
MOTOR ASSEMBLIES			11272	Clamp—Cable clamp for phonograph volume control cable, Stock Nos. 12030 and 12031—Package of 5	
13576	Motor—105-125 volts, 60-cycle motor complete (M1)		11760	Compensator—Phonograph compensator pack, comprising one 470-ohm and one 1,000-ohm resistors, one .01 Mfd., one .1 Mfd. and one 1 Mfd. capacitors and one .25 Henry reactor, L24, C39, C40, C41, R25, R26)	
13577	Motor—105-125 volts, 50-cycle motor complete		4153	Connector—4-contact female connector for cable, Stock No. 12031	
13578	Motor—105-125 volts, 25-cycle motor complete		12666	Cover—Reproducer cover	
13583	Regulator—Motor speed regulator pointer, used on 25- and 50-cycle motors only		12698	Escutcheon—Station selector escutcheon and crystal	
MOTOR BOARD ASSEMBLIES			12742	Escutcheon—Tuning tube escutcheon	
4577	Connector—2-contact male connector for motor leads		11347	Knob—Phonograph volume control, receiver volume control, or range switch knob—Package of 5	
13575	Escutcheon—Motor speed regulator escutcheon for 25- or 50-cycle motors only		12699	Knob—Large station selector knob—Package of 5	
13065	Lever—Brake mechanism actuating lever, fastens to pivot shaft under base		12700	Knob—Small (vernier) station selector knob—Package of 5	
3261	Rest—Pickup rubber rest—Package of 5		11582	Knob—Tone and power switch knob—Package of 5	
13573	Screw—Motor mounting screw assembly, for 60-cycle motor only—Package of 3		11763	Receptacle—Needle receptacle	
13574	Screw—Motor mounting screw assembly, for 25- or 50-cycle motors only—Package of 3		11210	Screw—Chassis mounting screw assembly, comprising one screw, one washer, and one lockwasher—Package of 4	
11750	Screw—No. 4-40 x 9/32, cone pointed, headless set screw for lever, Stock No. 13065—Package of 10		4982	Spring—Retaining spring for large knob in Stock No. 12699—Package of 10	
AUTOMATIC BRAKE AND SWITCH ASSEMBLIES			11349	Spring—Retaining spring for small knob in Stock Nos. 12699, 11347 and 11582—Package of 5	
13582	Brake—Automatic brake and switch complete		11696	Turntable—Complete	
4577	Connector—2-contact male connector for brake switch power supply leads		11695	Volume control—Phonograph volume control and switch (R27, S5)	
3994	Cover—Switch cover and screw				
10174	Springs—Complete set of springs for automatic brake—Package of 2 sets				
3322	Switch—Automatic brake switch (S4)				



Loudspeaker Wiring

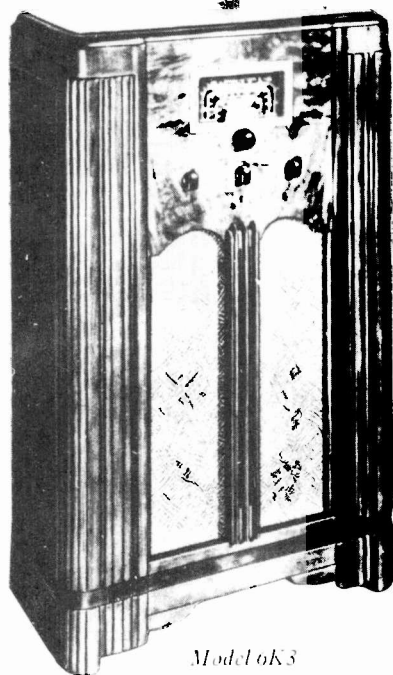


Primary Resistance—17.3 ohms total
 Secondary Resistance—355 ohms total

Universal Transformer

MODELS 6K3, 7K1 & 7T1

Six- and Seven-Tube, Three-Band, A-C, Superheterodyne Receivers



Model 6K3



Model 7K1



Model 7T1

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A).....	540—1,625 kc
"Medium Wave" (B).....	1,625—5,700 kc
"Short Wave" (C).....	5,700—18,000 kc

Intermediate Frequency.....

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6H6..... Second Detector—A.V.C.

Pilot Lamps (5)..... 7T1 and 7K1, Mazda No. 40, 6.3 volts, 0.15 amp.; 6K3, Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

Rating A.....	105-125 volts, 50-60 cycles, 90 watts
Rating B.....	105-125 volts, 25-60 cycles, 90 watts
Rating C.....	100-130/140-160/195-250 volts, 40-60 cycles, 90 watts

POWER OUTPUT

Undistorted.....	2.0 watts
Maximum.....	4.5 watts

ALIGNMENT FREQUENCIES

"Standard Broadcast" (A).....	600 kc (osc.), 1,400 kc (osc. and ant.)
"Medium Wave" (B).....	None required
"Short Wave" (C).....	15,000 kc (osc. and ant.)

..... 460 kc

- (4) RCA-6F5..... Audio Voltage Amplifier
- (5) RCA-6F6..... Audio Power Amplifier
- (6) RCA-5W4..... Full-Wave Rectifier
- (7) RCA-6G5—(Models 7T1 and 7K1 only) Tuning Tube

LOUDSPEAKER

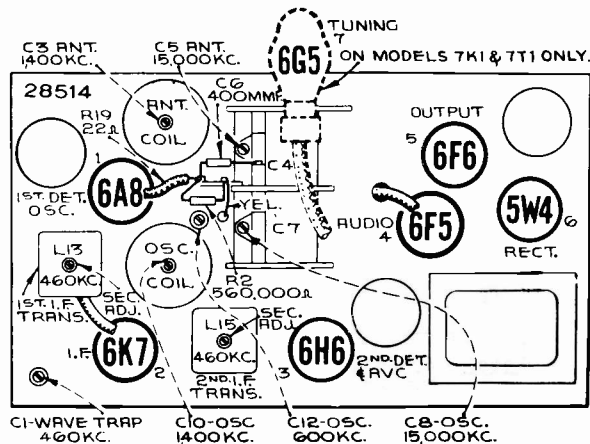
Type..... Electrodynamic
Impedance (v.c.)..... 2.2 ohms at 400 cycles

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

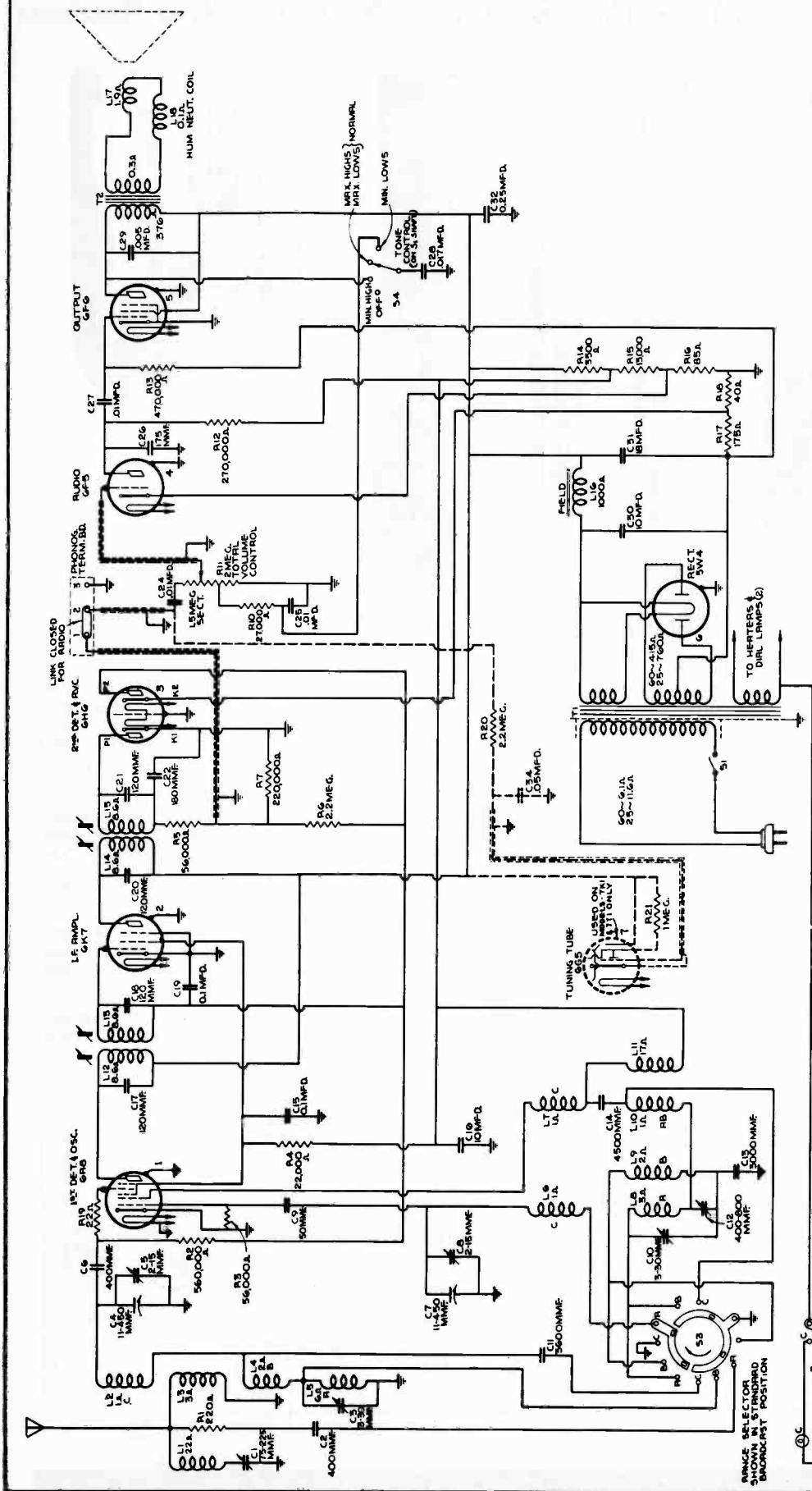
- (1) RCA-6A8—1st Det.—Osc..... 12.3 ma.
- (2) RCA-6K7—I-F Amp..... 9.8 ma.
- (3) RCA-6H6—2nd Det. and A.V.C..... 0.2 ma.
- (4) RCA-6F5—Audio Driver..... 34.0 ma.
- (5) RCA-6F6—Power Amplifier..... 76.0 ma.*
- (6) RCA-5W4—Rectifier..... 2.0 ma.
- (7) RCA-6G5—Tuning Tube..... 2.0 ma.

*Cannot be measured at socket.

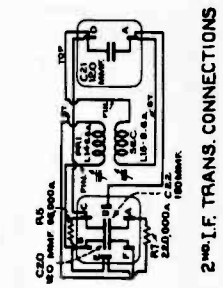


Radiotron, Coil, and Trimmer Locations

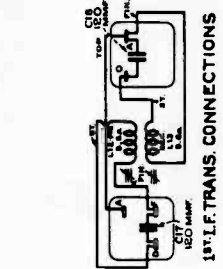
6K3, 7K1 & 7T1



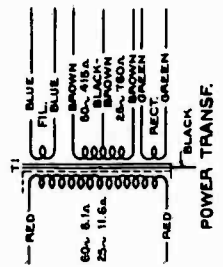
Schematic Circuit Diagram



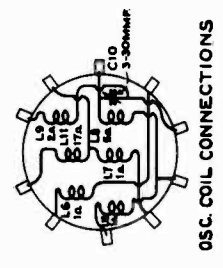
2ND I.F. TRANS. CONNECTIONS



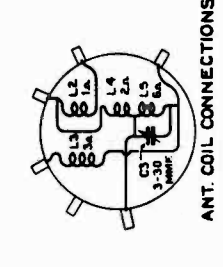
1ST I.F. TRANS. CONNECTIONS



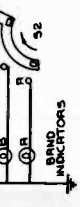
POWER TRANSF.



OSC. COIL CONNECTIONS



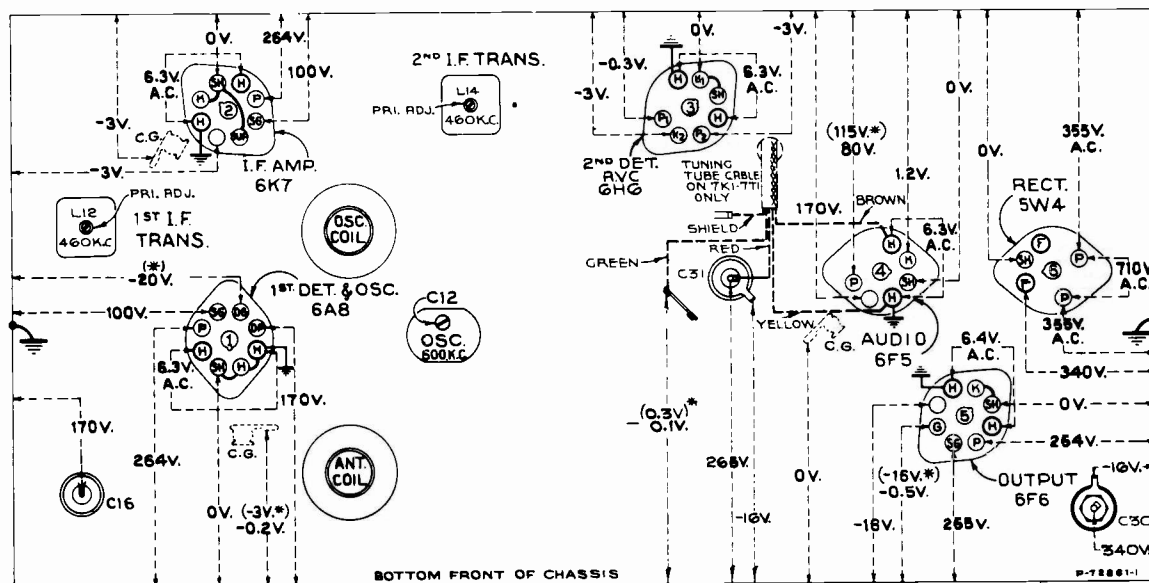
ANT. COIL CONNECTIONS



BAND INDICATORS

BAND SELECTOR SHOWN IN STANDARD BROADCAST POSITION

6K3, 7K1 & 7T1



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard broadcast")—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.*

Alignment Procedure

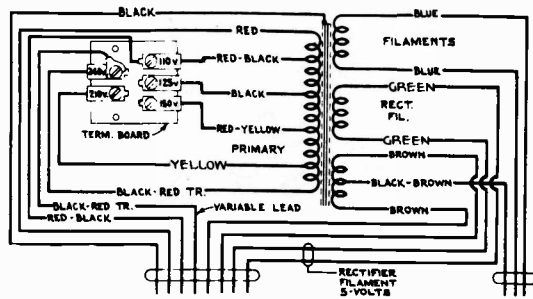
Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on "Standard broadcast" scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

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

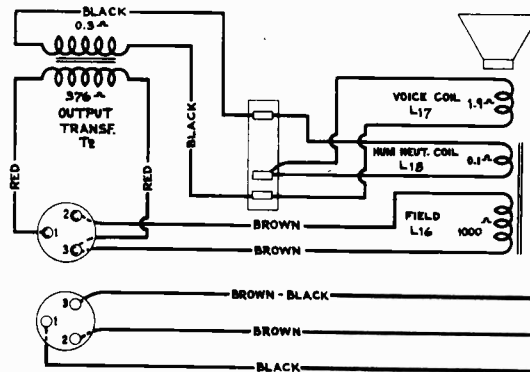
The term "Dummy antenna" means the device which must be connected between the "high" test-oscillator output and the point of connection to the receiver in order to obtain ideal alignment. "No signal, 550-750 kc" means that the receiver should be tuned to a point between 550 and 750 kc where no signal or interference is received from a station or local (heterodyne) oscillator.

Order of Alignment	Test Oscillator			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	No signal 550-750 kc	2nd i-f Trans.	L14 and L15	Max. (peak)
2	6A8 Det. Grid Cap	.001 Mfd.	460 kc	No signal 550-750 kc	1st i-f Trans.	L12 and L13	Max. (peak)
3	Ant. Post	200 Mmfd.	460 kc	No signal 550-750 kc	Wave Trap	C1	Minimum Output
4	Ant. Post	300 Ohms	15,000 kc	15,000 kc	"C" Osc.	C8	Max (peak)*
5	Ant. Post	300 Ohms	15,000 kc	Rock thru 15,000 kc	"C" Ant.	C5	Max. (peak)
6	Ant. Post	200 Mmfd.	600 kc	600 kc	L-F Osc.	C12	Max. (peak)
7	Ant. Post	200 Mmfd.	1,400 kc	1,400 kc	H-F Osc.	C10	Max. (peak)
8	Ant. Post	200 Mmfd.	1,400 kc	1,400 kc	"A" Ant.	C3	Max. (peak)
9	Ant. Post	200 Mmfd.	600 kc	Rock thru 600 kc	L-F Osc.	C12	Max. (peak)
10	Ant. Post	200 Mmfd.	1,400 kc	1,400 kc	H-F Osc.	C10	Max. (peak)
11	Ant. Post	200 Mmfd.	1,400 kc	1,400 kc	"A" Ant.	C3	Max. (peak)

* Use maximum capacity peak if two peaks can be obtained.



Primary resistance—17.3 ohms total
Secondary resistance—108 ohms total
Universal Transformer



Loudspeaker Wiring

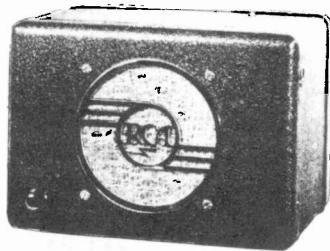
REPLACEMENT PARTS

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

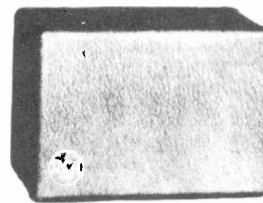
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12930	Board—Antenna and ground terminal board	12013	Resistor—1 megohm—Carbon type—1/10 watt (R21)—Models 7T1 and 7K1 only
12717	Board—Phonograph terminal board	11828	Resistor—2.2 megohms—Carbon type— $\frac{1}{4}$ watt (R6, R20)
12772	Bracket—Top dial lamp socket bracket	12008	Shield—I. F. transformer shield for Stock Nos. 13106 and 13107
5237	Bushing—Variable tuning condenser mounting bushing assembly	12607	Shield—First I. F. transformer shield top
11888	Cable—Tuning tube cable and socket—Models 7T1 and 7K1 only	12581	Shield—Second I. F. transformer shield top
12511	Cap—Grid contact cap	11803	Shield—Coil shield for Stock Nos. 11617 and 11618
11350	Cap—Grid contact cap used on resistor—Stock No. 11824	12735	Shield—Dial lamp shield
11465	Capacitor—Adjustable capacitor (C12)	12771	Socket—Dial lamp socket—Located at top of dial scale assembly
11256	Capacitor—Adjustable trimmer (C1)	11199	Socket—Dial lamp socket
12404	Capacitor—120 Mmfd. (C17, C18, C20, C21)	11195	Socket—5-contact 5W4 Radiotron socket
11289	Capacitor—50 Mmfd. (C9)	11198	Socket—7-contact 6F5, 6H6 Radiotron socket
11823	Capacitor—175 Mmfd. (C26)	11196	Socket—8-contact 6A8, 6F6 or 6K7 Radiotron socket
12408	Capacitor—180 Mmfd. (C22)	11381	Socket—Tuning tube socket and cover—Models 7T1 and 7K1 only
11290	Capacitor—400 Mmfd. (C2, C6)	12007	Spring—Retaining spring for core, Stock No. 12006
11822	Capacitor—3000 Mmfd. (C13)	12769	Switch—Range switch (S2, S3)
11821	Capacitor—3600 Mmfd. (C11)	13681	Tone Control—Tone and power switch (S1, S4)
11287	Capacitor—4500 Mmfd. (C14)	13106	Transformer—First I. F. transformer (L12, L13, C17, C18)
4868	Capacitor—.005 Mfd. (C29)	13107	Transformer—Second I. F. transformer (L14, L15, C20, C21, C22, R5, R7)
11395	Capacitor—.01 Mfd. (C24)	11458	Transformer—Power transformer—105-125-volt, 50-60-cycle (T1)
4858	Capacitor—.01 Mfd. (C25, C27)	11585	Transformer—Power transformer—105-125-volt, 25-40-cycle (T1)
11315	Capacitor—.015 Mfd. (C33)	11584	Transformer—Power transformer—105-250-volt, 40-60-cycle (T1)
11451	Capacitor—.017 Mfd. (C28)	11391	Trap—Wave trap (L1, C1)
4836	Capacitor—.05 Mfd. (C34)—Models 7T1 and 7K1 only	13144	Volume Control (R11)
4841	Capacitor—0.1 Mfd. (C19)	REPRODUCER ASSEMBLIES	
11414	Capacitor—0.1 Mfd. (C15)	12641	Board—Reproducer terminal board
5170	Capacitor—0.25 Mfd. (C32)	12640	Bracket—Output transformer mounting bracket and clamp
11387	Capacitor—10 Mfd. (C16)	13600	Coil—Field coil (L16)
11240	Capacitor—10 Mfd. (C30)	11469	Coil—Neutralizing coil (L18)
5212	Capacitor—18 Mfd. (C31)	12842	Cone—Reproducer cone complete (L17)—Model 7T1
11817	Coil—Antenna coil less shield (L2, L3, L4, L5, C3, R1)	12867	Cone—Reproducer cone complete (L17)—Models 6K3 and 7K1
11618	Coil—Oscillator coil less shield (L6, L7, L8, L9, L10, L11, C10)	5118	Connector—3-contact male connector for speaker cable
13597	Condenser—2-gang variable tuning condenser (C4, C5, C7, C8)	9771	Reproducer complete—Model 7T1
5119	Connector—3-contact female connector for speaker cable	9786	Reproducer complete—Models 6K3 and 7K1
12006	Core—Adjustable core and stud for Stock Nos. 13106 and 13107	11253	Transformer—Output transformer (T2)
13682	Dial—Station selector dial	11886	Washer—Spring washer to hold field coil securely
13598	Drive—Variable tuning condenser vernier drive	MISCELLANEOUS ASSEMBLIES	
13599	Foot—Chassis mounting foot and bracket	12038	Band—Rubber band for tuning tube
12770	Holder—Dial scale holder and lamp bracket assembly less bracket for top dial lamp socket	13615	Bracket—Tuning tube mounting bracket and clamp
12712	Indicator—Station selector indicator pointer	12698	Crystal—Station selector crystal and escutcheon
4340	Lamp—Dial lamp—Models 7T1 and 7K1 only	12742	Escutcheon—Tuning tube escutcheon
5226	Lamp—Dial lamp—Model 6K3 only	12699	Knob—Large station selector knob
13683	Mask—Dial light diffuser complete with colored screen	12700	Knob—Small (vernier) station selector knob
11466	Resistor—Voltage divider resistor—comprising one 3,500-ohm, one 13,000-ohm, one 85-ohm, one 40-ohm and one 175-ohm sections (R14, R15, R16, R17, R18)	11347	Knob—Tone control, range switch or volume control knob
11824	Resistor—22 ohms—Flexible type complete with grid contact cap (R19)	11377	Screw—Chassis mounting screw assembly—Used on Model 7T1
11820	Resistor—220 ohms—Carbon type—1/10 watt (R1)	11210	Screw—Chassis mounting screw assembly—Used on Models 6K3 and 7K1
8070	Resistor—22,000 ohms—Carbon type— $\frac{1}{4}$ watt (R4)	11349	Spring—Retaining spring for knob—Stock Nos. 11347 and 12700
11400	Resistor—27,000 ohms—Carbon type— $\frac{1}{4}$ watt (R10)	4982	Spring—Retaining spring for knob—Stock No. 12699
12286	Resistor—56,000 ohms—Insulated— $\frac{1}{4}$ watt (R3)		
11282	Resistor—56,000 ohms—Carbon type—1/10 watt (R5)		
11398	Resistor—220,000 ohms—Carbon type—1/10 watt (R7)		
11453	Resistor—270,000 ohms—Carbon type—1/10 watt (R12)		
11452	Resistor—470,000 ohms—Carbon type—1/10 watt (R13)		
11397	Resistor—560,000 ohms—Carbon type—1/10 watt (R2)		

MODELS 6M AND 6M2

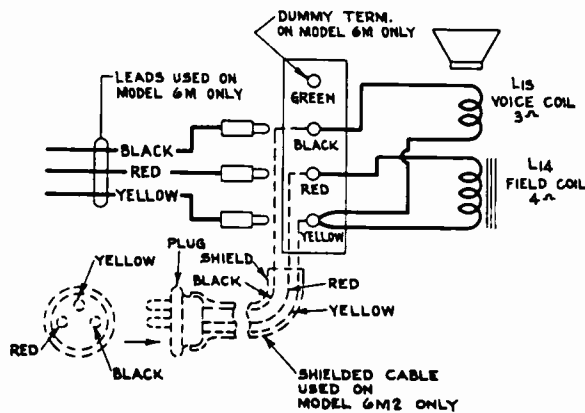
Six-Tube, Superheterodyne Automobile Receivers



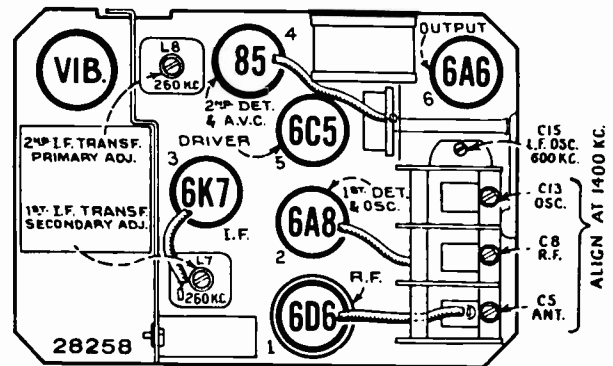
MODEL 6M



MODEL 6M2



Loudspeaker Schematic and Wiring



Radiotron, Coil, and Trimmer Locations

Electrical Specifications

RADIOTRON COMPLEMENT

- | | |
|---|--|
| (1) RCA-6D6.....Radio-Frequency Amplifier | (4) RCA-85..... Second Detector, A-F, and A.V.C. |
| (2) RCA-6A8.....First Detector-Oscillator | (5) RCA-6C5..... Driver |
| (3) RCA-6K7.....Intermediate Amplifier | (6) RCA-6A6.....Power Output Amplifier |

Tuning Range 540 to 1,600 kc.

OUTPUT RATING

Maximum 9.0 Watts
 Undistorted 6.0 Watts

LOUDSPEAKER

Type Electrodynamic
 Impedance (v. c.)..... 3 Ohms at 400 Cycles

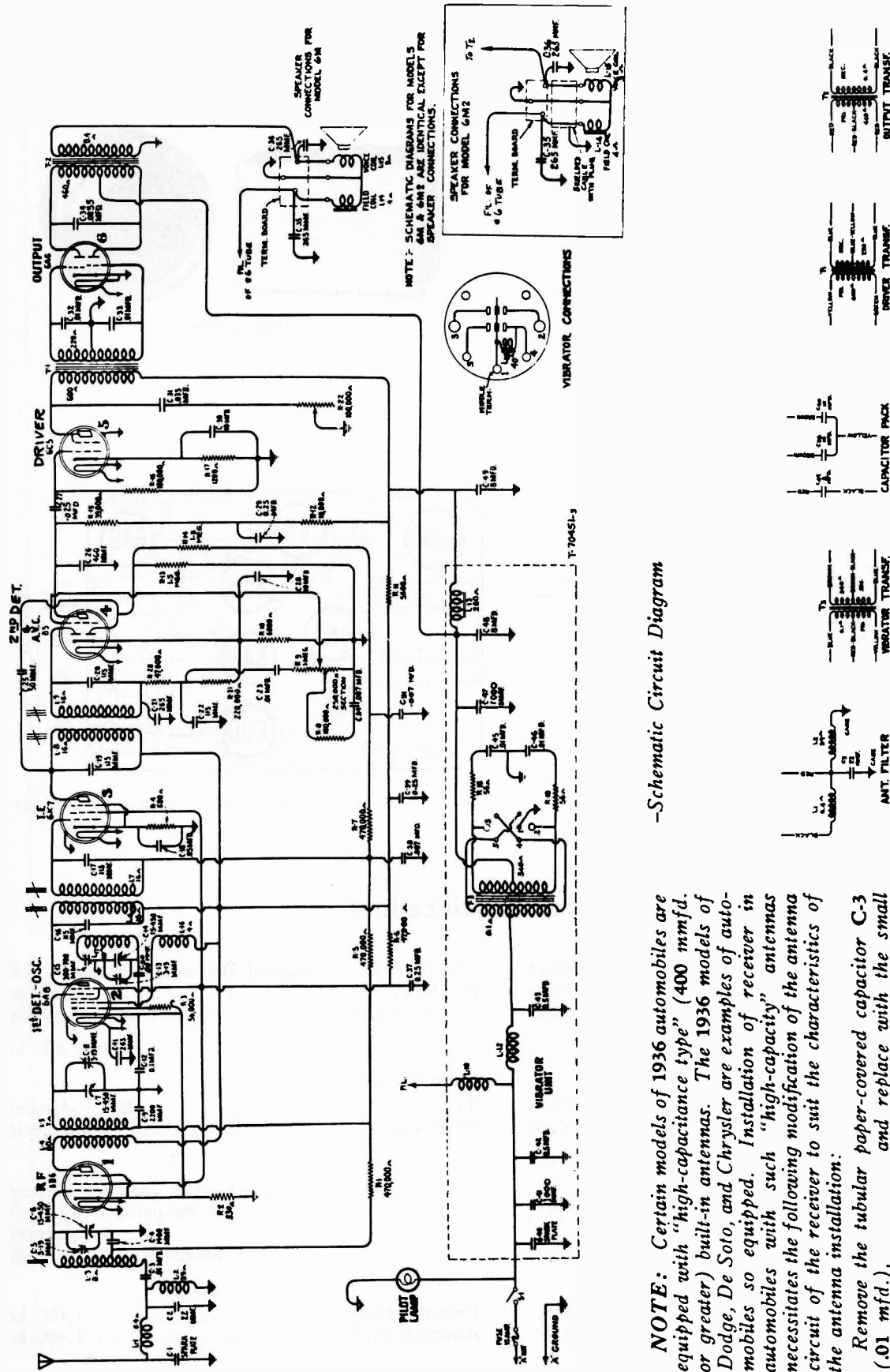
POWER RATING

Supply Voltage 6.3 Volts (Storage Battery)
 Current Drain 7.3 Amperes at 6.3 Volts
 Fuse Protection 15 Amperes
 Pilot Lamp Mazda No. 44, 6.3 Volts

ALIGNMENT FREQUENCIES

I. F. Transformers260 kc.	Detector Coil1,400 kc.
Oscillator Coil600 kc. and 1,400 kc.	Antenna Coil1,400 kc.

6M & 6M2

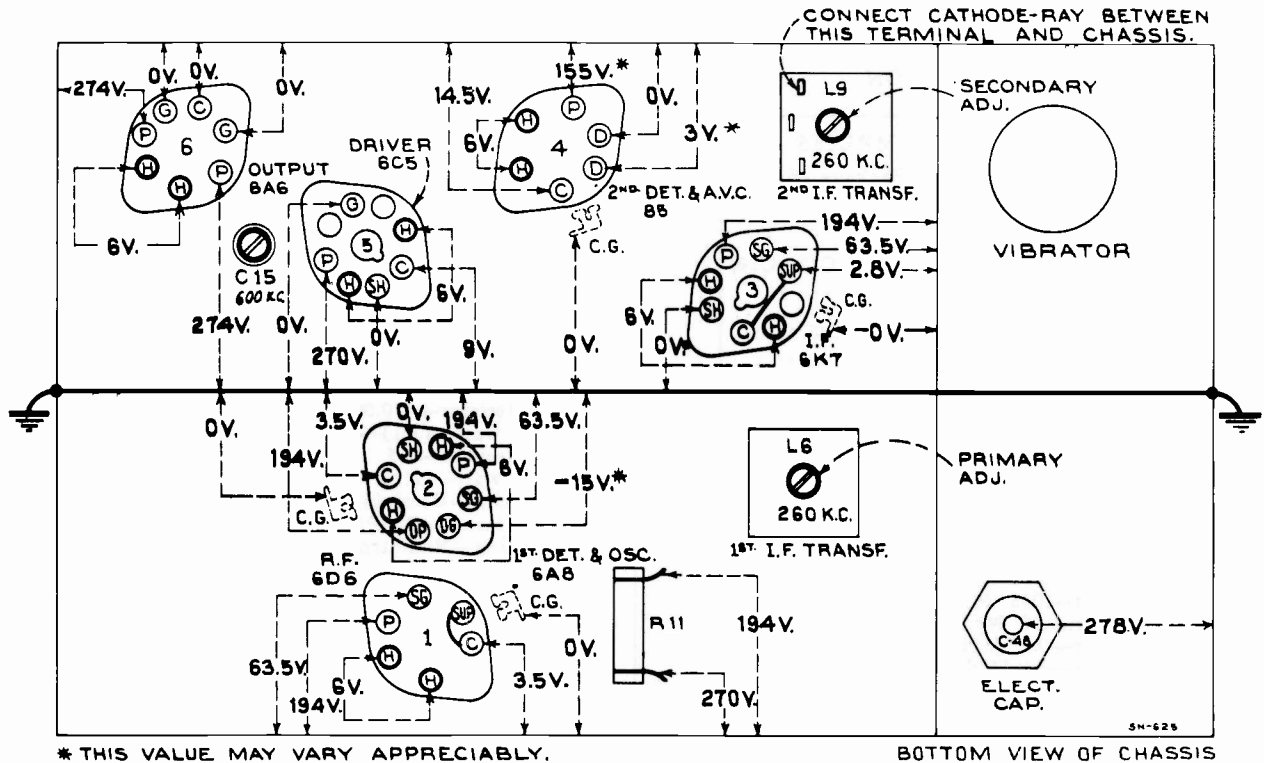


-Schematic Circuit Diagram

NOTE: Certain models of 1936 automobiles are equipped with "high-capacitance type" (400 mmfd. or greater) built-in antennas. The 1936 models of Dodge, De Soto, and Chrysler are examples of automobiles so equipped. Installation of receiver in automobiles with such "high-capacity" antennas necessitates the following modification of the antenna circuit of the receiver to suit the characteristics of the antenna installation:

Remove the tubular paper-covered capacitor C-3 (.01 mfd.), and replace with the small molded type capacitor (500 mmfd.) furnished with Escutcheon Kit for respective model of automobile.

6M & 6M2



—Radiotron Socket Voltages and Trimmer Locations
(Measured at 6.3 volts battery supply—Volume Control Maximum—No Signal)

Alignment Procedure

With tuning condenser fully meshed turn pointer adjusting screw so that pointer coincides with end calibration (below 55) on dial scale.

NOTE: The antenna coil has a molded core which is adjusted at the factory for the correct inductance. This adjustment should not be disturbed.

NOTE: For r-f alignment of receivers in which the tubular paper condenser C-3 (.01 mfd.) has been replaced by the small molded condenser 500 mmfd. (change easily identified by reference to Figure 2 and bottom of chassis), use a .001 mfd. capacitor instead of the 175 mmfd. capacitor in series with the antenna lead and test oscillator.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	280 kc	Quiet point near 800 kc	L9 L8 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L7 L6 1st L-F Trans.
3	Antenna in series with 175 mmfd. (See Note)	1400 kc	1400 kc	C13 C8 C5 Osc. Det. Ant.
4	Use shunt capacitor of 50 mmfd from antenna to ground	600 kc	600 kc	C15 L-F Osc. Rock Gang
5		Repeat Step 3		

6M & 6M2

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
12511	Cap—Grid contact cap—Package of 5		12073	Resistor—47,000 ohm—carbon type, 1 watt—(R6)—Package of 5	
11130	Capacitor—Adjustable capacitor—(C15)		12286	Resistor—56,000 ohm—insulated, ¼ watt—(R3)—Package of 5	
11289	Capacitor—50 Mmfd.—(C25)		12263	Resistor—100,000 ohm—insulated, ¼ watt—(R16)—Package of 5	
12270	Capacitor—80 Mmfd.—(C50)		11281	Resistor—100,000 ohm—carbon type, 1/10 watt—(R8)—Package of 5	
11998	Capacitor—115 Mmfd.—(C16, C17, C19, C20)		12264	Resistor—220,000 ohm—insulated, ¼ watt—(R21)—Package of 5	
12725	Capacitor—150 Mmfd.—(C22)		11452	Resistor—470,000 ohm—carbon type, 1/10 watt—(R5, R7)—Package of 5	
11181	Capacitor—265 Mmfd.—(C11, C35, C36)		12285	Resistor—470,000 ohm—insulated, ¼ watt—(R1)—Package of 5	
12781	Capacitor—265 Mmfd.—(C21)		12287	Resistor—1.5 megohm—insulated, ¼ watt—(R13, R14)—Package of 5	
11171	Capacitor—400 Mmfd.—(C28)		3584	Ring—Retaining ring for R. F. or oscillator coil—Package of 5	
12782	Capacitor—1,000 Mmfd.—(C41, C47)		5129	Ring—Radiotron shield ring—Package of 5	
12268	Capacitor—1,400 Mmfd.—(C4)		3623	Shield—R. F. or oscillator coil shield	
12269	Capacitor—2,200 Mmfd.—(C9)		12290	Shield—Radiotron shield	
5005	Capacitor—.0035 Mfd.—(C34)		4786	Socket—6-contact 6D6 or 85 Radiotron socket	
5148	Capacitor—.007 Mfd.—(C24, C38, C51)		12243	Socket—7-contact 6A6 Radiotron socket	
4858	Capacitor—.01 Mfd.—(C3, C23, C32, C33)		12227	Socket—8-contact 6A8, 6C5 or 6K7 Radiotron socket	
4870	Capacitor—.025 Mfd.—(C27)		12241	Socket—Vibrator socket	
5196	Capacitor—.035 Mfd.—(C31)		12226	Stud—Variable tuning condenser mounting stud assembly—Package of 4	
4836	Capacitor—.05 Mfd.—(C18)		12228	Transformer—First I. F.—(L6, L7, C16, C17, R5, R7)	
4841	Capacitor—.01 Mfd.—(C12)		12230	Transformer—Output transformer—(T1, T2)	
12237	Capacitor—.25 Mfd.—(C29, C37, C39)		12229	Transformer—Second I. F. transformer—(L8, L9, C19, C20, C21, R20)	
5019	Capacitor—.5 Mfd.—(C43)		12231	Transformer—Vibrator power transformer—(T3)	
12234	Capacitor—.8 Mfd.—(C48)		12236	Vibrator complete	
12233	Capacitor Pack—Comprising 2 sections each .01 Mfd.—(C45, C46)		12240	Volume Control—(R9)	
12238	Capacitor Pack—Comprising one 8 Mfd. and two 10 Mfd. sections—(C28, C30, C49)		CONTROL BOX AND FLEXIBLE SHAFT ASSEMBLIES		
12223	Coil—Antenna coil—(L3)		12505	Box—Control box complete—less flexible shafts	
12235	Coil—Choke coil—(L12)		12578	Dial—Station selector indicator dial (standard)	
12225	Coil—Oscillator coil—(L16, L17)		12579	Knob—Station selector (tuning) knob (standard)	
12224	Coil—R. F. coil—(L4, L5)		12580	Knob—Volume control knob (standard)	
12220	Condenser—3-gang variable tuning condenser—(C5, C 6,C7, C8, C13, C14)		11891	Lamp—Control box dial lamp—Package of 5	
12006	Core—Adjustable core for I. F. transformer Stock No. 12228 and No. 12229		12504	Shaft—Tuning control flexible shaft complete—approx. 21½ in. long	
12289	Coupling—Station selector flexible shaft coupling		12503	Shaft—Volume control flexible shaft complete—approx. 21½ in. long	
12239	Filter—Antenna filter—(L1, L2, C2)		13147	Gear—Pinion gear and slotted shaft assembly	
12221	Gear—Variable tuning condenser shaft drive gear (without tapped shaft)		13452	Switch—"On-Off" operating switch.	
12222	Gear—Variable tuning condenser worm gear (use with No. 12221 only)		13008	Sleeve—Tuning or volume control flexible shaft sleeve—Package of 2.	
12242	Guide—Station selector shaft guide		REPRODUCER ASSEMBLIES, MODEL 6M		
12483	Pin—Contact pin for speaker leads (used in 6M only)—Package of 5		12482	Board—Reproducer terminal board	
12485	Pin—Contact pin for tone control lead (used in 6M only)—Package of 5		12450	Coil—Field coil—(L14)	
12232	Reactor—Filter reactor—iron core—(L13)		12451	Cone—Reproducer cone complete—(L15)	
5034	Resistor—56 ohm—carbon type, ½ watt—(R18, R19)—Package of 5		9687	Reproducer—Reproducer complete	
12481	Resistor—330 ohm—insulated, ¼ watt—(R2)—Package of 5				
12262	Resistor—680 ohm—insulated, ¼ watt—(R4)—Package of 5				
12267	Resistor—1,200 ohm—insulated, ¼ watt—(R17)—Package of 5				
8097	Resistor—5,600 ohm—carbon type, 2 watt—(R11)				
12265	Resistor—6,800 ohm—insulated, ¼ watt—(R10)—Package of 5				
12288	Resistor—10,000 ohm—insulated, ¼ watt—(R12)—Package of 5				
12266	Resistor—39,000 ohm—insulated, ¼ watt—(R15)—Package of 5				
5132	Resistor—47,000 ohm—carbon type, 1/10 watt—(R20)—Package of 5				

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	REPRODUCER ASSEMBLIES, MODEL 6M2		12507	Plate—Name plate and mounting screws (used in 6M2 only)	
12526	Board—2-contact reproducer terminal board		12508	Plate—RCA monogram and rivets (used on 6M2 only)	
12525	Cable—Shielded reproducer cable complete with 3-contact male connector		12609	Ring—Rubber ring for speaker mounting (used on 6M2 only)	
12524	Coil—Field coil—(L14)		12459	Screw—Speaker mounting screw assembly, consisting of 1 screw, 1 nut, and 1 lockwasher to mount speaker in case (used on 6M only)—Package of 4	
12523	Cone—Reproducer cone—(L15)		12533	Screw—Self-tapping slotted hex. head, 1/4 in. long, used in receiver housing—Package of 10	
12527	Housing—Reproducer housing complete		4393	Screw—Set screw for tone control knob Stock No. 4132 (used on 6M2 only)—Package of 10	
9691	Reproducer—Reproducer complete		12248	Socket—3-contact socket and bracket assembly for reproducer cable	
12528	Screw—Reproducer housing screw—Package of 5		12502	Socket—Pin socket and bracket assembly for tone control lead	
11984	Connector - 3 contact male connector for reproducer cable.		4284	Spring—Antenna cable connector spring—Package of 10	
	MISCELLANEOUS ASSEMBLIES		12448	Stud—Receiver mounting stud assembly, comprising 1 stud, 1 washer, 1 lockwasher and 1 nut	
4287	Body—Antenna cable female connector body—Package of 10		12254	Stud—Speaker mounting stud assembly, comprising 1 stud, 1 spacer, 1 washer and 2 nuts (used in 6M2 only)	
4289	Body—"A" lead fuse connector body—Package of 10		5024	Suppressor—Distributor suppressor	
12510	Button—Plug button for receiver housing (used on 6M only)		12249	Tone Control—(R22)	
12444	Cable—Shielded antenna cable approx. 8 in. long, complete with female-section of connector		4285	Washer—Antenna cable connector insulating washer—Package of 10	
12473	Cable—Shielded antenna lead-in cable, approx. 31 in. long, complete with 2 male connections of connector				
4288	Cap—Male connector cap for "A" lead or antenna cable—Package of 10				
5025	Capacitor—Generator capacitor				
4293	Capacitor—Ammeter capacitor				
11418	Capacitor—.5 Mfd.—(C42)				
4291	Clip—"A" lead ammeter clip—Package of 10				
12457	Cover—Receiver housing top cover (used on 6M only)				
12458	Cover—Receiver housing bottom cover assembly (used on 6M only)				
12461	Cover—Receiver case bottom cover (used in 6M2 only)				
12462	Cover—Receiver case top cover (used in 6M2 only)				
12532	Fastener—Receiver housing top cover fastener—Package of 10				
4286	Ferrule—Antenna cable or "A" lead connector ferrule and bushing—Package of 10				
5023	Fuse—"A" lead fuse—15 amp.—Package of 5				
12629	Grille—Speaker grille assembly (used on 6M only)				
12456	Housing—Receiver housing complete (used on 6M only)				
12460	Housing—Receiver case complete (used on 6M2 only)				
4290	Insulator—Fuse connector insulator—Package of 10				
4323	Knob—Tone control knob (used on 6M only)—Package of 5				
4132	Knob—Tone control knob (used on 6M2 only)—Package of 5				
12445	Lead—"A" lead (set end), approx. 8 in. long, complete with male section of connector				
12506	Plate—Name plate and mounting screws (used in 6M only)				

FIRST PRODUCTION (BELOW SERIAL #200,000)

Two types of variable condensers are used. Stock No. 12221 and 12222 gears used only with tuning condenser not having a tapped shaft. The gears for condenser with tapped shaft are:

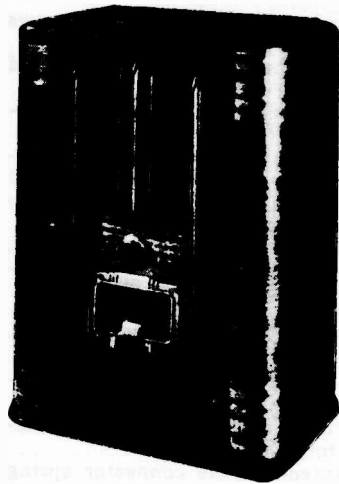
Stock No.	DESCRIPTION
13145	Gear - Tuning condenser shaft drive gear for use on condenser with tapped shaft.
13146	Gear - Tuning condenser worn - for use with Stock No. 13145 only.

SECOND PRODUCTION (ABOVE SERIAL #200,000)
THE FOLLOWING PARTS ARE APPLICABLE

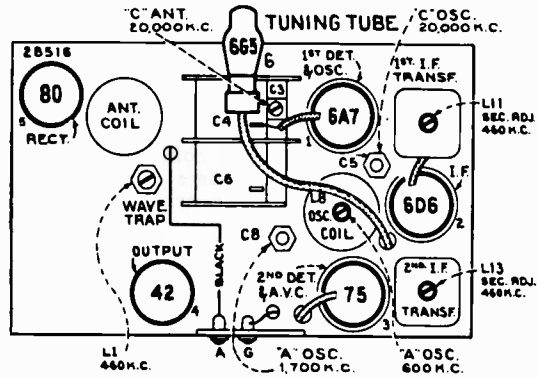
13371	Condenser - 3 gang variable tuning condenser (16 to 1 ratio).
13372	Gear - Tuning condenser shaft drive gear for Stock No. 13371.
13373	Gear - Tuning condenser worn and mounting bracket for use with Stock No. 13372.
13414	Box - Control box complete less flexible shaft sleeve - Package of 2.

MODEL 6T5

Six-Tube, Two-Band, A-C, Superheterodyne Receiver



Model 6T5



-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A) 530-1,900 kc
 "Short Wave" (C) 5,800-21,600 kc

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A7 First Detector—Oscillator
- (2) RCA-6D6 Intermediate Amplifier
- (3) RCA-75 Second Det., A-F Amp. and A.V.C.

Pilot Lamp (1)

POWER SUPPLY RATINGS

Rating A 105-125 volts, 50-60 cycles, 75 watts
 Rating B 105-125 volts, 25-60 cycles, 75 watts
 Rating C 100-125/200-250 volts, 50-60 cycles, 75 watts

POWER OUTPUT RATING

Undistorted 2.0 watts
 Maximum 4.5 watts

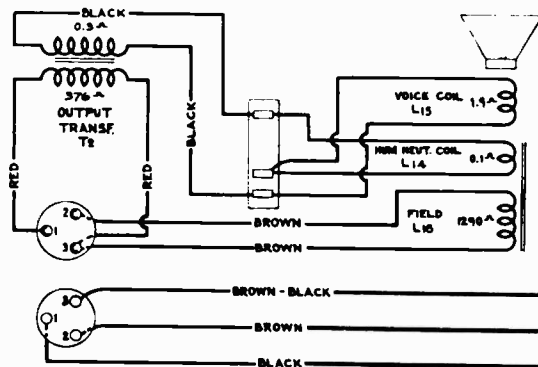
ALIGNMENT FREQUENCIES

"Standard Broadcast" (A) 600 kc (osc.), 1,700 kc (osc.)
 "Short Wave" (C) 20,000 kc (osc., ant.)

- (4) RCA-42 Audio Power Amplifier
 - (5) RCA-80 Full-Wave Rectifier
 - (6) RCA-6G5 Tuning Tube
- Mazda No. 46, 6.3 volts, 0.25 ampere

LOUDSPEAKER

Type Electrodynamic
 Voice Coil Impedance 2 1/4 ohms at 400 cycles



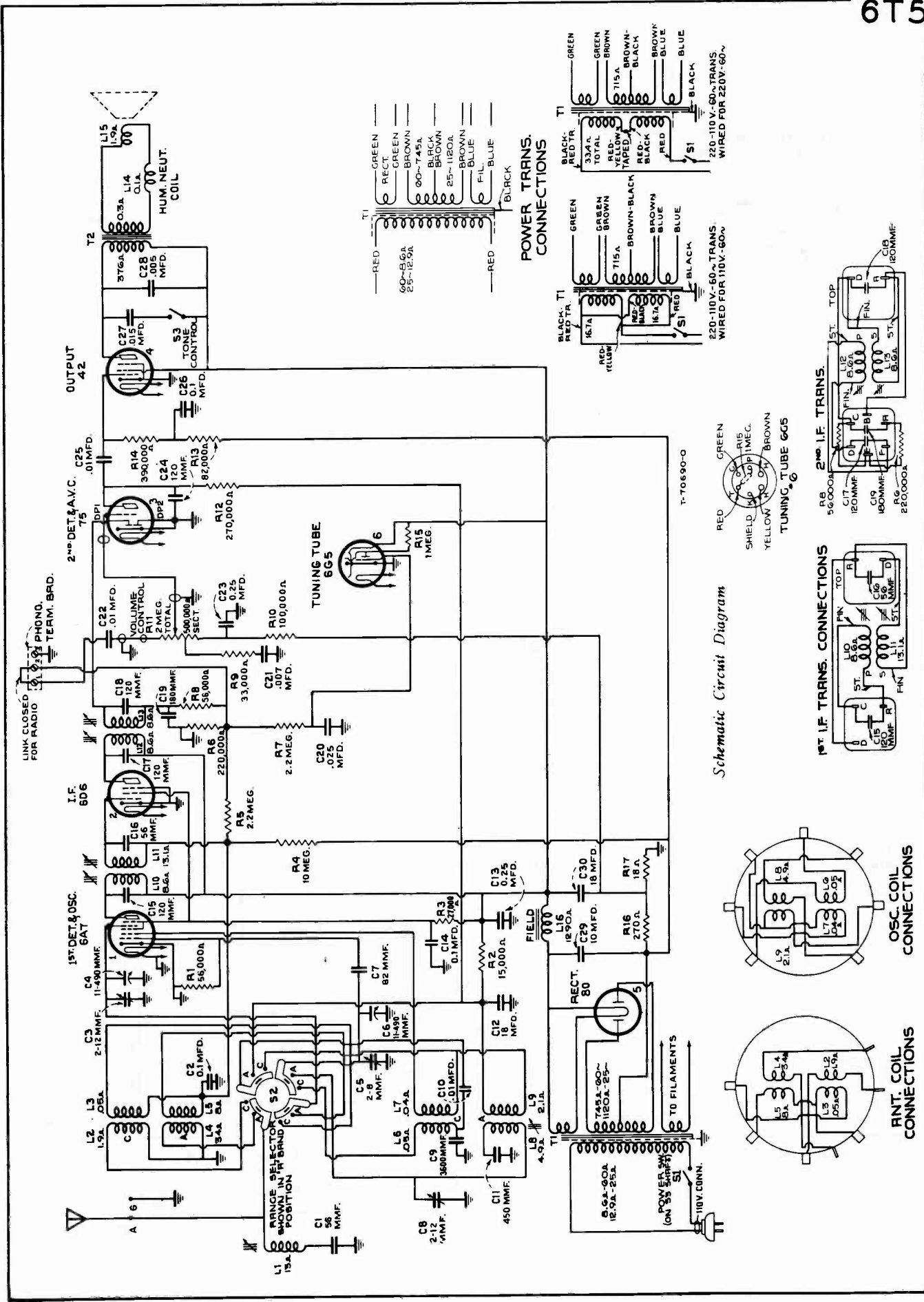
Loudspeaker Wiring

Radiotron Cathode Current Readings

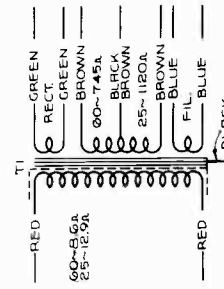
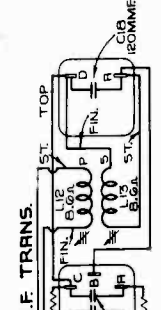
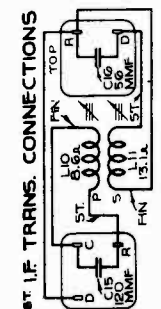
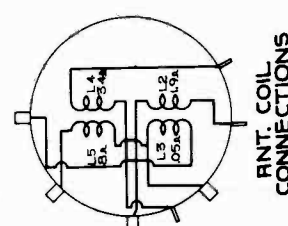
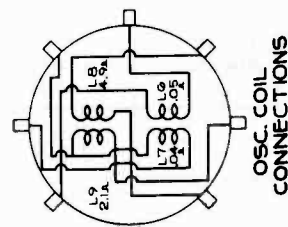
Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

(1) RCA-6A7—1st Det.—Osc.	11.0 ma.
(2) RCA-6D6—I-F Amp.	10.0 ma.
(3) RCA-75—2nd Det., A.V.C. and A. F.	0.22 ma.
(4) RCA-42—Power Amplifier	42.0 ma.
(5) RCA-80—Rectifier	66.0 ma.*
(6) RCA-6G5—Tuning Tube	2.0 ma.

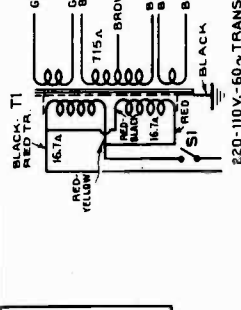
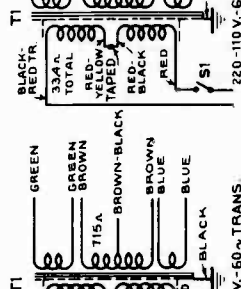
(*Cannot be measured at socket.)



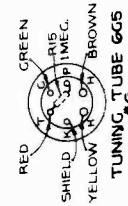
Schematic Circuit Diagram



POWER TRANS. CONNECTIONS



T-10690-0



220-110V-60-TRANS WIRED FOR 220V-60~

220-110V-60-TRANS WIRED FOR 220V-60~

TO FILAMENTS

110V. CONN.

POWER SW. (ON 3V. EXP. 2)

8.6A-90A 12.9A-25A

FILED

RECT. 80

FIELD

18.90A

10 MFD.

C29

18 MFD.

C30

18 MFD.

C31

18 MFD.

C32

18 MFD.

C33

18 MFD.

C34

18 MFD.

C35

18 MFD.

C36

18 MFD.

C37

18 MFD.

C38

18 MFD.

C39

18 MFD.

C40

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C41

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C42

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C43

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C44

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C45

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C46

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C47

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C48

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C79

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C80

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C81

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C82

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C83

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C84

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C85

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C86

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C87

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C88

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C89

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C90

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C91

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C92

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C93

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C94

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C95

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C96

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C97

18 MFD.

C98

18 MFD.

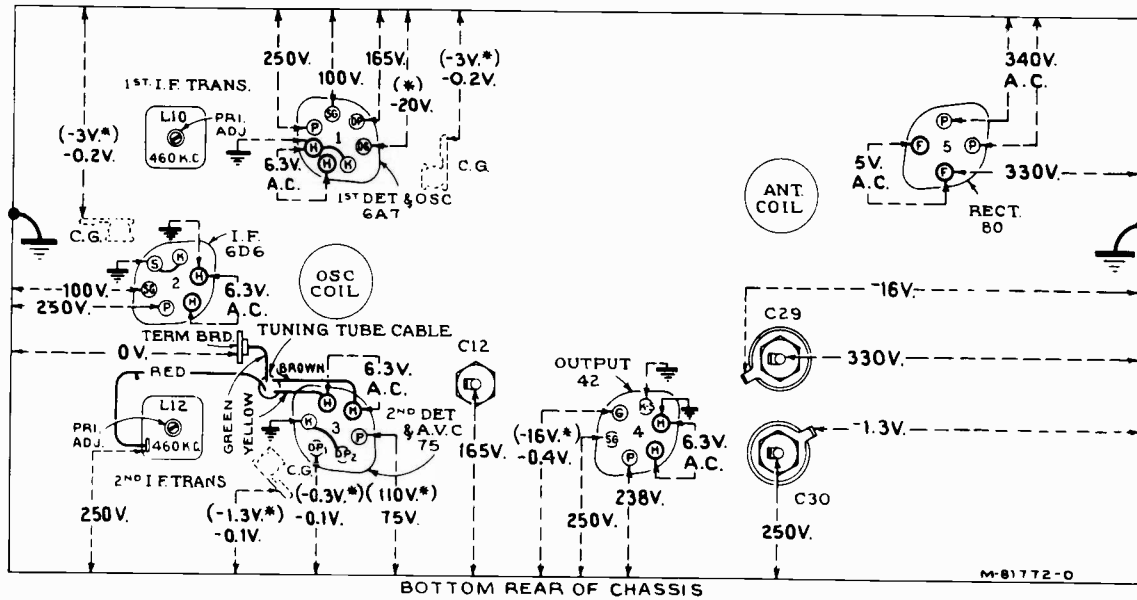
C99

18 MFD.

C100

18 MFD.

6T5



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc (“Standard broadcast”)—
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.*

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on “Standard broadcast” scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Connect the “low” output terminal of the test oscillator to the receiver chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver to obtain an observable output indication. This will avoid a-v-c action.

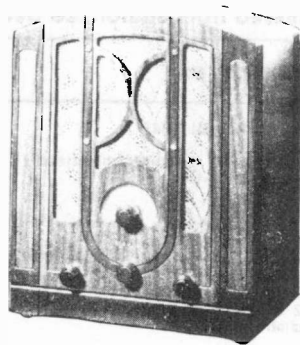
The term “Dummy antenna” means the device which must be connected between the “high” test-oscillator output and the point of connection to the receiver in order to obtain ideal alignment. “No signal, 550-750 kc” means that the receiver should be tuned to a point between 550 and 750 kc where no signal or interference is received from a station or local (heterodyne) oscillator.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	6D6 I-F Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L12 and L13	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L10 and L11	Max. (peak)
3	Ant. Post	200 Mmfd.	460 kc	No Signal S-W Band	Wave Trap	L1	Minimum Output
4	Ant. Post	300 Ohms	20,000 kc	20,000 kc	“C” Osc.	C5	Max. (peak)*
5	Ant. Post	300 Ohms	20,000 kc	Rock Thru 20,000 kc	“C” Ant.	C3	Max. (peak)†
6	Ant. Post	200 Mmfd.	600 kc	600 kc	“A” L-F Osc.	L8	Max. (peak)
7	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	“A” H-F Osc.	C8	Max. (peak)
8	Ant. Post	200 Mmfd.	600 kc	Rock Thru 600 kc	“A” L-F Osc.	L8	Max. (peak)
9	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	“A” H-F Osc.	C8	Max. (peak)

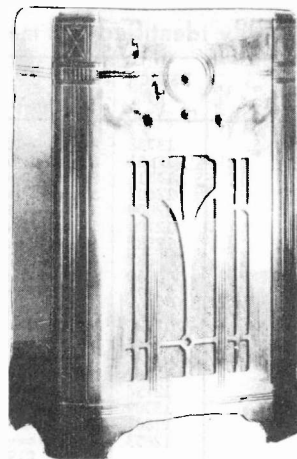
* Use minimum capacity peak.
† Use maximum capacity peak.

MODELS BT 6-3, BC 6-4 AND BT 6-10

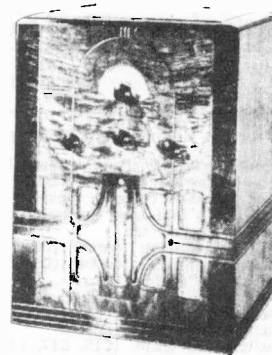
Six-Tube, Two-Band, Superheterodyne, Battery Receivers



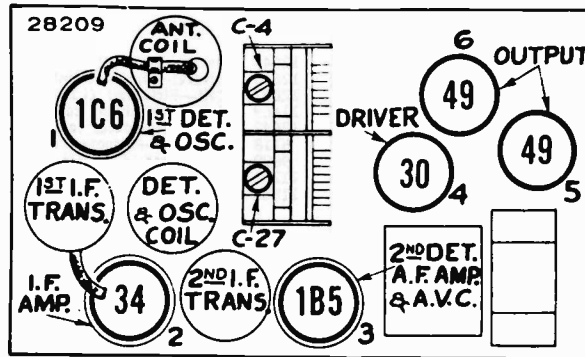
MODEL BT 6-3



MODEL BC 6-4



MODEL BT 6-10



-Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Broadcast..... 540-1850 kc.
Shortwave..... 1850-6900 kc.

ALIGNMENT FREQUENCIES

Broadcast..... 600 kc. (osc.), 1720 kc. (osc., ant.)
Shortwave..... None required

Intermediate Frequency..... 460 kc.

RADIOTRON COMPLEMENT

- (1) RCA 1C6..... First Detector and Oscillator
- (2) RCA 34..... Intermediate Amplifier
- (3) RCA 1B5..... Detector, A.F. and A.V.C.
- (4) RCA 30..... Audio Driver Amplifier
- (5) RCA 49..... Power Output Amplifier
- (6) RCA 49..... Power Output Amplifier

BATTERIES REQUIRED

"A" Supply..... Eveready Aircell or 2 volt storage cell
"B" Supply..... 3-45 volt, heavy or medium duty, plug-in type
"C" Supply..... 3-4½ volt (with 3 volt tap), plug-in type

CURRENT DRAIN

"A"..... 0.52 Amperes
"B"..... 16 Milliamperes
Screen..... 3 Milliamperes

LOUDSPEAKER

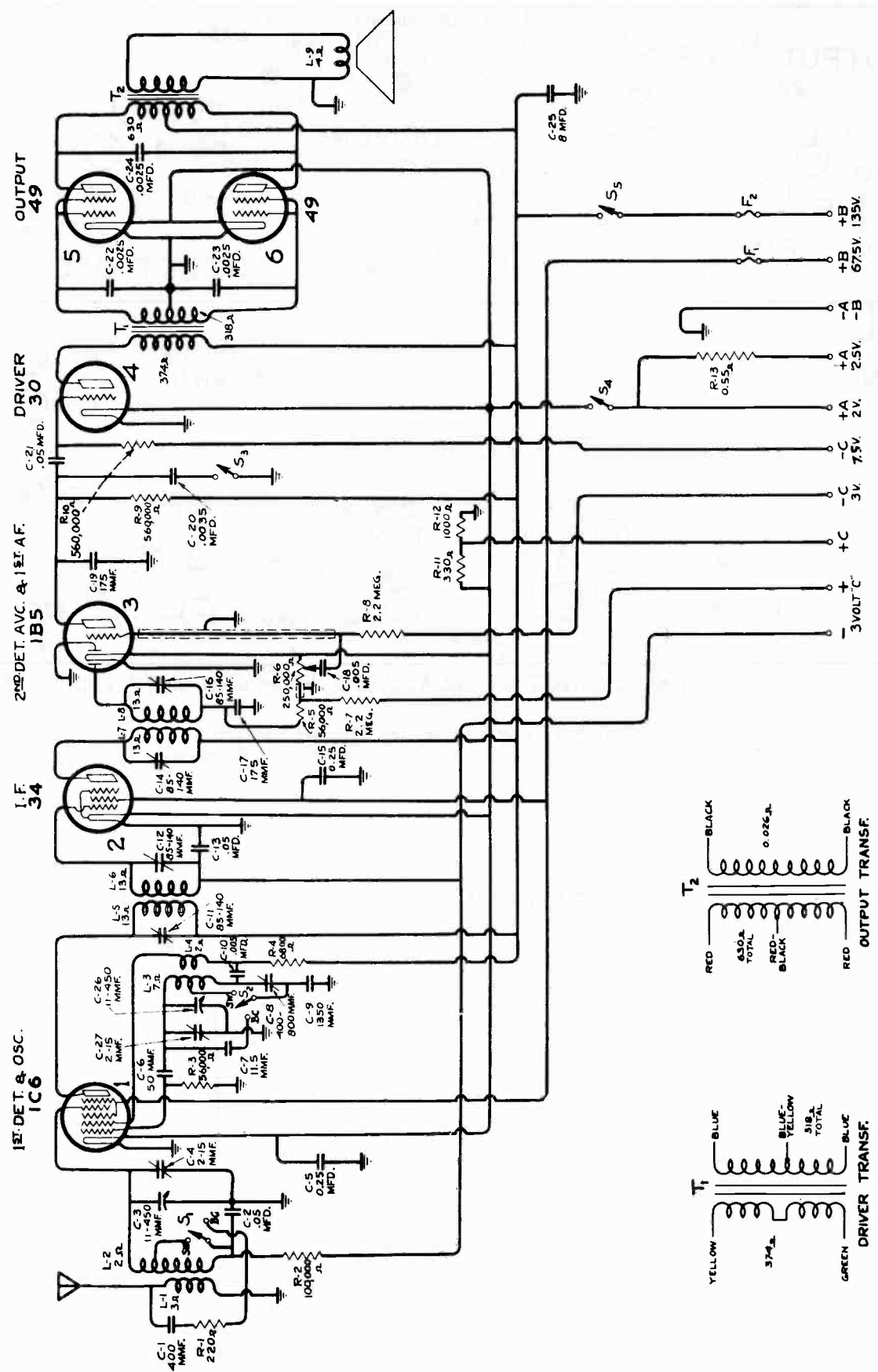
Table Models..... 8 inch, Permanent Magnet
Console Model..... 10 inch, Permanent Magnet

FUSE RATING ½ Ampere

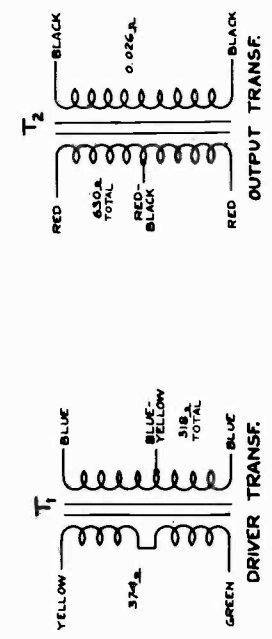
POWER OUTPUT

Undistorted..... 1.2 Watts
Maximum..... 2.2 Watts

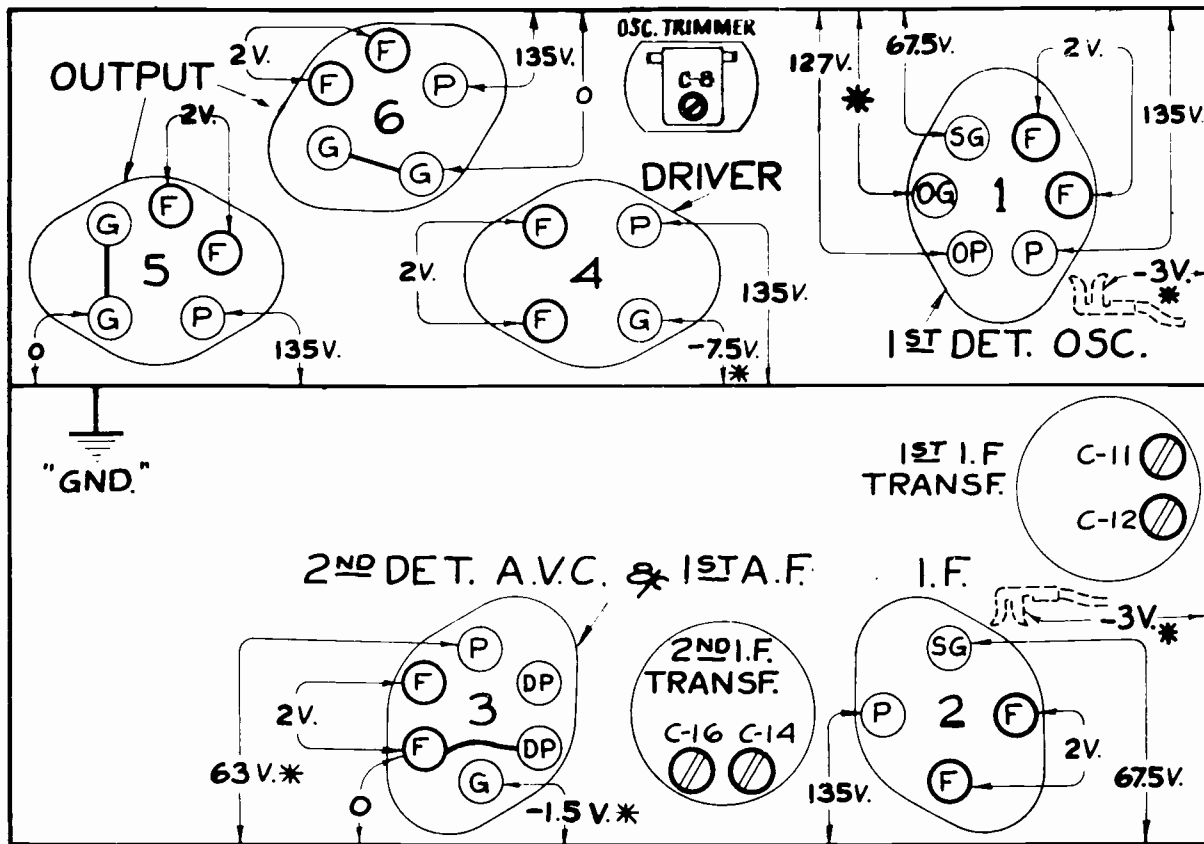
BT6-3, BC 6-4 & BT6-10



Schematic Circuit Diagram



BT 6-3, BC 6-4 & BT 6-10



(*) CANNOT BE MEASURED WITH ORDINARY VOLTMETER

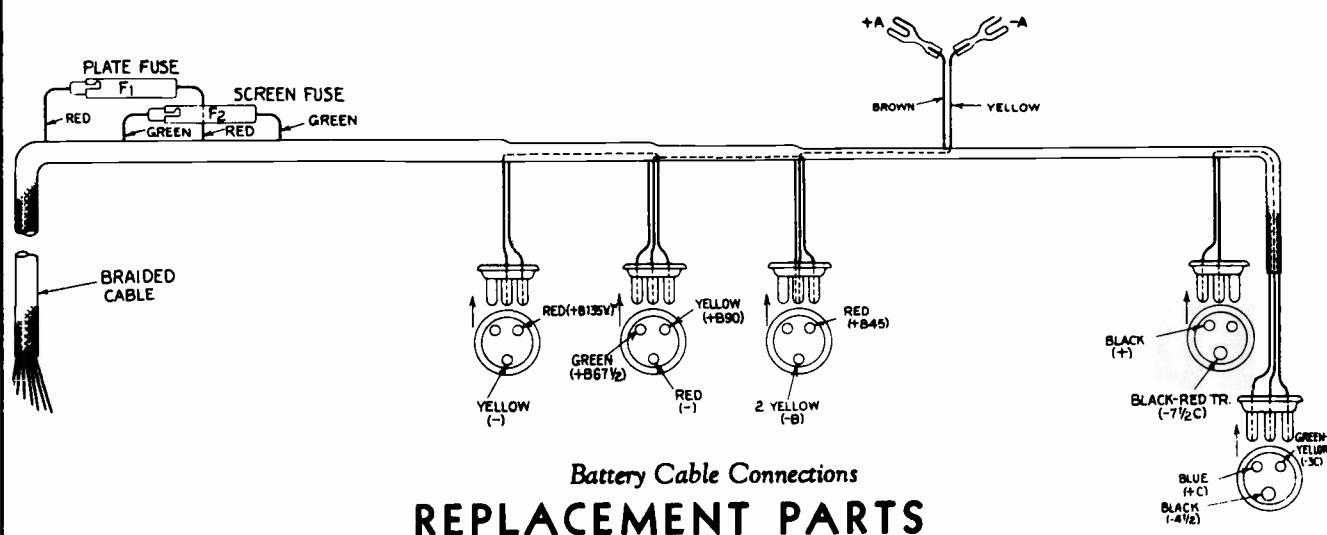
—Radiotron Socket Voltages and Trimmer Locations
 Measured at Normal Battery Voltages—No Signal Being Received

Alignment Procedure

With gang condenser fully meshed, set dial pointer to coincide with horizontal line at low frequency end of Broadcast Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet Point near 600 kc "BC" Band	C16, C14 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C12, C11 1st I-F Trans.
3	Antenna in series with	1720 kc	1720 kc "BC" Band	C27 (Osc.) C4 (Ant.)
4	200 mmfd	600 kc	600 kc "BC" Band	C8 Rock Gang (L-F Osc.)
5		Repeat Step 3		

BT 6-3, BC 6-4 & BT 6-10



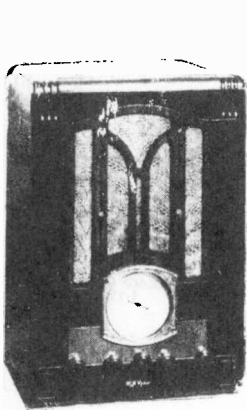
Battery Cable Connections REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
11465	Capacitor—Adjustable capacitor—(C-8)...		11593	Transformer—Second intermediate frequency transformer—(L7, L8, C14, C16, C17, R5).....	
11450	Capacitor—11.5 MMfd—(C7).....		11589	Volume Control—(R6).....	
11289	Capacitor—50 MMfd—(C6).....		MISCELLANEOUS ASSEMBLIES		
5116	Capacitor—175 MMfd—(C19).....		4289	Body—Fuse connector body—Package of 10.....	
11171	Capacitor—400 MMfd—(C1).....		4288	Cap—Fuse connector cap—Package of 10.....	
11597	Capacitor—13.50 MMfd—(C9).....		6516	Connector—Fuse connector—complete... ..	
5107	Capacitor—.0025 Mfd—(C22, C23, C24).....		11340	Connector—Three contact male connector with three small prongs—for "B" battery connections.....	
5005	Capacitor—.0035 Mfd—(C20).....		11341	Connector—Three contact male connector with two small and one large prong—for "C" battery connection.....	
4868	Capacitor—.005 Mfd—(C10, C18).....		11627	Dial—Station selector dial.....	
4836	Capacitor—.05 Mfd—(C2, C13, C21).....		4286	Ferrule—Fuse connector—ferrule and bushing—Package of 10.....	
4840	Capacitor—0.25 Mfd—(C5, C15).....		3748	Fuse—1/2 Ampere fuse—(F1, F2)—Package of 5.....	
11595	Capacitor—.8 Mfd—(C25).....		4290	Insulator—Fuse connector insulator—Package of 10.....	
11590	Coil—Antenna coil—(L1, L2).....		11587	Resistor—0.55 Ohms—Flexible type, complete with terminal (R13).....	
11463	Coil—Oscillator coil—(L3, L4).....		4284	Spring—Fuse connector spring—Package of 10.....	
11457	Condenser—Two gang variable tuning condenser—(C3, C4, C26, C27).....		4285	Washer—Fuse connector insulating washer—Package of 10.....	
11467	Indicator—Station selector indicator pointer		REPRODUCER ASSEMBLIES (Table Models BT 6-3, BT 6-10)		
11174	Resistor—220 Ohms—Carbon type—1/4 watt—(R1)—Package of 5.....		9539	Cone—Reproducer cone—(L9)—Package of 5.....	
11296	Resistor—330 Ohms—Carbon type—1/4 watt—(R11)—Package of 5.....		9540	Magnet Assembly—Comprising cone bracket, core, and magnet.....	
5112	Resistor—1000 Ohms—Carbon type—1/4 watt—(R12)—Package of 5.....		9538	Reproducer—Complete.....	
11454	Resistor—6800 Ohms—Carbon type—1/4 watt—(R4)—Package of 5.....		REPRODUCER ASSEMBLIES (Console Model BC 6-4)		
5029	Resistor—56,000 Ohms—Carbon type—1/4 watt—(R3)—Package of 5.....		9432	Cone—Reproducer cone—complete with voice coil—(L9).....	
3118	Resistor—100,000 Ohms—Carbon type—1/4 watt—(R2)—Package of 5.....		7820	Magnet—Cone housing and magnet assembly.....	
5035	Resistor—560,000 Ohms—Carbon type—1/4 watt—(R9, R10)—Package of 5.....		7819	Reproducer—Complete.....	
11626	Resistor—2.2 Megohms—Carbon type—1/4 watt—(R7, R8)—Package of 5.....				
11464	Shield—Antenna or oscillator coil shield.				
3682	Shield—First or Second detector Radiotron shield.....				
3056	Shield—Intermediate frequency Radiotron shield—Package of 2.....				
11390	Shield—Intermediate frequency transformer shield.....				
11461	Switch—Range switch—(S1, S2).....				
11588	Switch—Tone control and power switch—(S3, S4, S5).....				
5238	Terminal—Antenna terminal board with clip, insulation strip and rivets.....				
11594	Transformer—Audio driver and output transformer pack—(T1, T2).....				
11592	Transformer—First intermediate frequency transformer—(L5, L6, C11, C12).....				

MODELS BT 6-5 AND BC 6-6

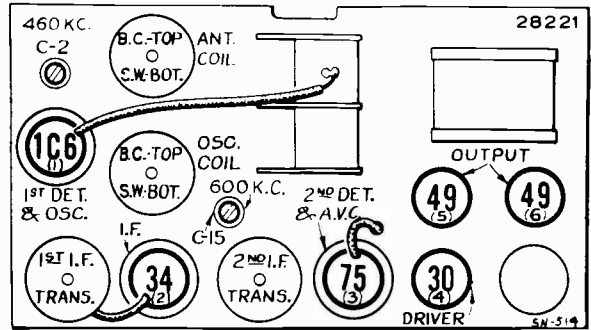
Six-Tube, Two-Band, Superheterodyne, Battery-Vibrator Receivers



MODEL BT 6-5



MODEL BC 6-6



Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Band A..... 540- 1,720 kc.
 Band C..... 5,600-18,000 kc.

ALIGNMENT FREQUENCIES

Band A..... 600 kc. (osc.); 1,720 kc. (osc., ant.)
 Band C..... 18,000 kc. (osc., ant.)

Intermediate Frequency 460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-1C6.....First Detector and Oscillator
- (2) RCA-34.....Intermediate Amplifier
- (3) RCA-75.....Second Det., A.F., and A.V.C.

- (4) RCA-30.....Audio Driver Amplifier
- (5) RCA-49.....Power Output Amplifier
- (6) RCA-49.....Power Output Amplifier

BATTERIES REQUIRED

"A" Supply..... Storage Battery (6-volt)
 "B" Supply..... None
 "C" Supply..... None

LOUDSPEAKER

Table Model..... 8 inch Permanent Magnet
 Console Model..... 10 inch Permanent Magnet

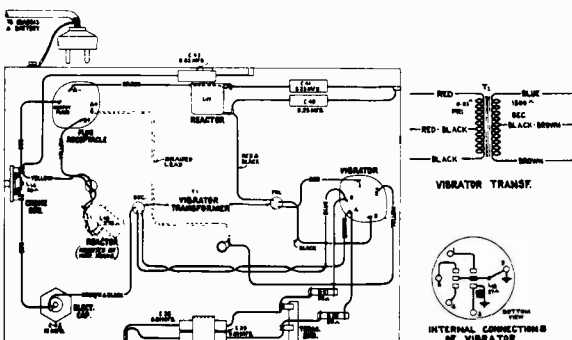
CURRENT DRAIN

"A" Battery..... 1.5 Amperes

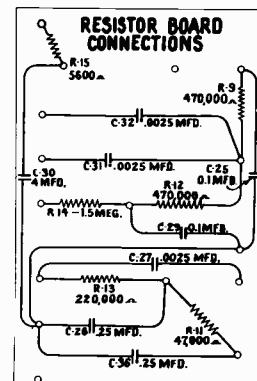
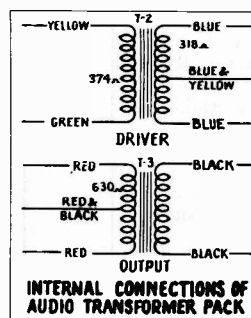
POWER OUTPUT

Undistorted..... 0.8 Watt
 Maximum..... 1.2 Watts

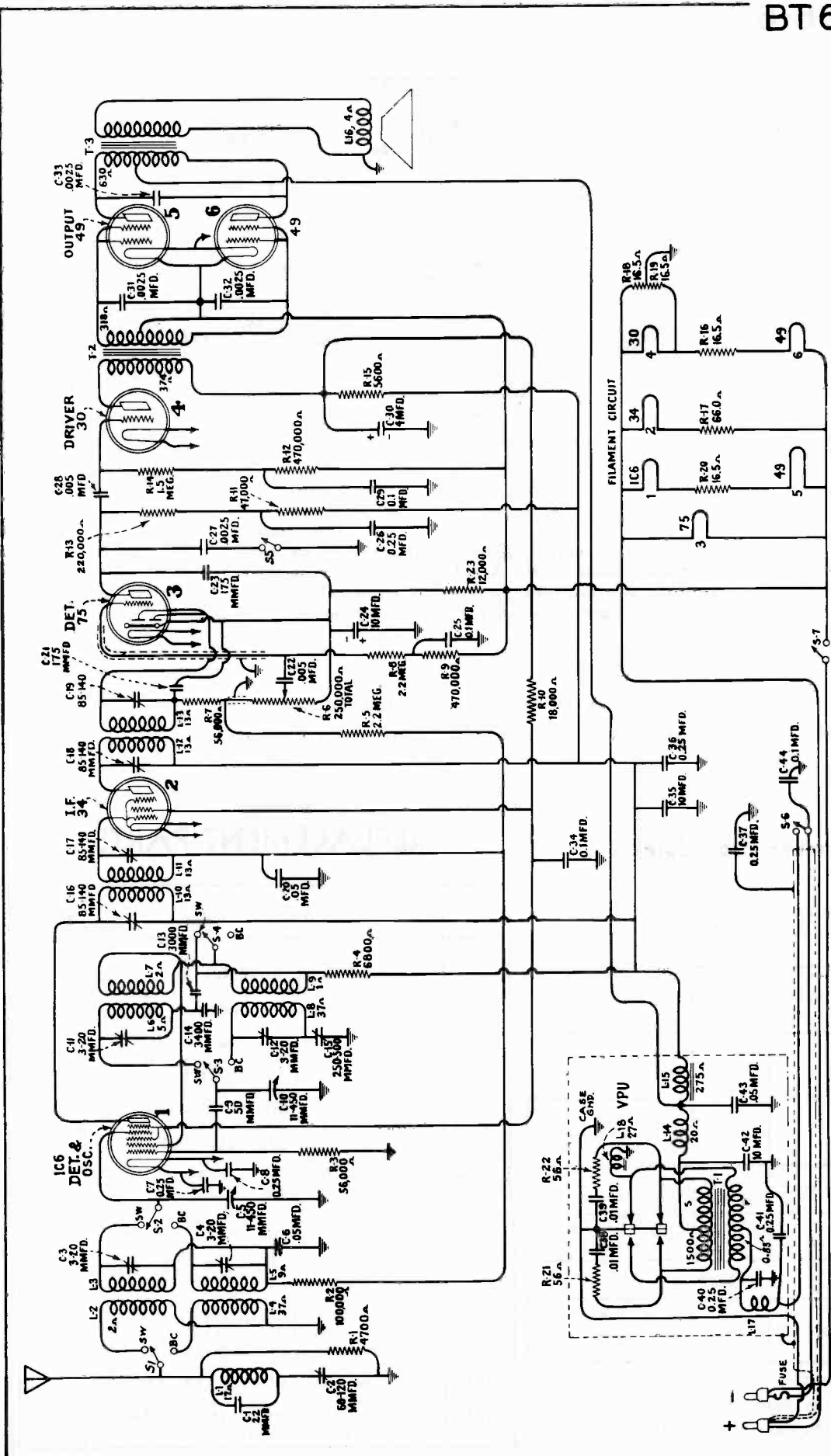
FUSE RATING 15 Amperes



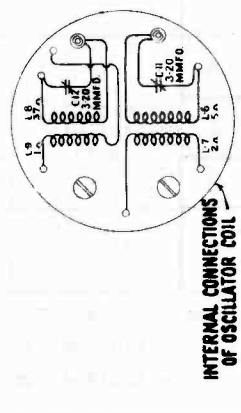
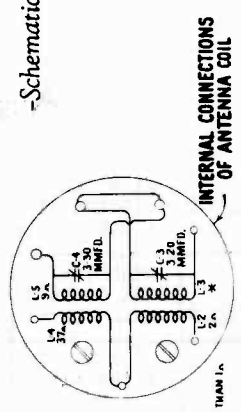
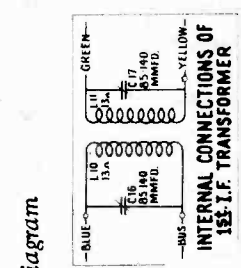
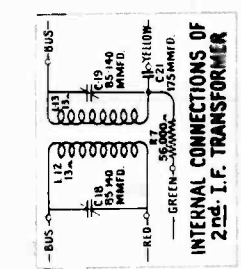
Vibrator Power Unit Wiring



BT 6-5 & BC 6-6

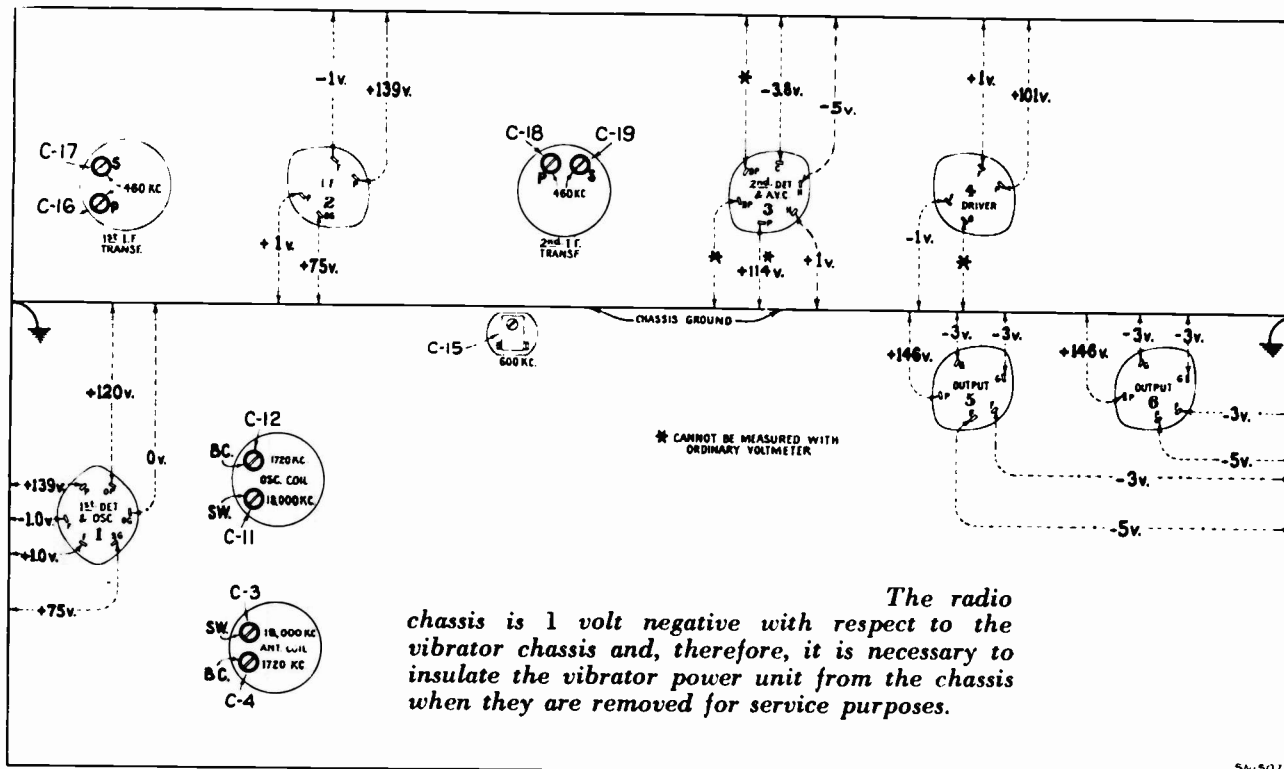


-Schematic Circuit Diagram



* LESS THAN 1A

BT 6-5 & BC 6-6



The radio chassis is 1 volt negative with respect to the vibrator chassis and, therefore, it is necessary to insulate the vibrator power unit from the chassis when they are removed for service purposes.

54-507

—Radiotron Socket Voltages and Trimmer Locations
Measured at Normal Battery Voltage —No Signal Being Received

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd.	460 kc	Quiet point near 600 kc A Band	C19 C18 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C17 C16 1st I-F Trans.
3		1720 kc	1720 kc A Band	C12 C4 Osc. Ant.
4	Antenna in series with 200 mmfd	600 kc	600 kc A Band	C15 L-F Osc. (Rock Gang)
5				Repeat Step 3
6	Antenna in series with 300 ohms	18000 kc	18 mc C Band	C11† C3▲ Osc. Ant.

Osc. tracks 460 kc above signal on all bands.
† Use minimum capacity peak.
▲ Use maximum capacity peak - ROCK GANG

REPLACEMENT PARTS

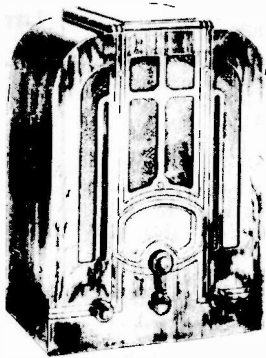
STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES		
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3.....	
11223	Capacitor—Adjustable capacitor—(C15)..	
11292	Capacitor—22 MMfd.—(C1).....	
11289	Capacitor—50 MMfd.—(C9).....	
5116	Capacitor—175 MMfd.—(C23).....	
11622	Capacitor—3000 MMfd.—(C13).....	
4439	Capacitor—3400 MMfd.—(C14).....	
5107	Capacitor—.0025 Mfd.—(C27, C31, C32, C33).....	
4868	Capacitor—.005 Mfd.—(C28).....	
5242	Capacitor—.005 Mfd.—(C22).....	
4836	Capacitor—.05 Mfd.—(C6, C20).....	
4841	Capacitor—0.1 Mfd.—(C25, C29, C34, C44).....	
4840	Capacitor—0.25 Mfd.—(C7, C8, C26, C36, C37).....	
6832	Capacitor—4 Mfd.—(C30).....	
11387	Capacitor—10 Mfd.—(C35).....	
11645	Capacitor—10 Mfd.—(C24).....	
11639	Coil—Antenna coil—(L2, L3, L4, L5, C3, C4).....	
11640	Coil—Oscillator coil—(L6, L7, L8, L9, C11, C12).....	
11638	Condenser—Two-gang variable tuning condenser (C5, C10).....	

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
11648	Foot—Chassis foot and bracket assembly—Package of 2.....		4840	Capacitor—.25 Mfd.—(C40, C41).....	
11134	Resistor—16.5 ohms—Flexible type—(R16, R20)—Package of 5.....		11387	Capacitor—10 Mfd.—(C42).....	
11611	Resistor—16.5 ohms—Flexible type—(R18, R19)—Package of 5.....		11655	Coil—Choke coil—(L14).....	
11473	Resistor—66 ohms—Flexible type—(R17)—Package of 5.....		11657	Reactor—Filter reactor—(L15).....	
11650	Resistor—4700 ohms—Carbon type—1/10 watt—(R1)—Package of 5.....		11652	Reactor—(L17).....	
11647	Resistor—5600 ohms—Carbon type—1/4 watt—(R15)—Package of 5.....		5034	Resistor—56 ohms—Carbon type—1/2 watt—(R21, R22)—Package of 5....	
11726	Resistor—6800 ohms—Carbon type—1/4 watt—(R4)—Package of 5.....		4794	Socket—4-contact socket for cable plug connector.....	
5109	Resistor—12,000 ohms—Carbon type—1/4 watt—(R23)—Package of 5.....		4814	Socket—5-contact vibrator socket.....	
11175	Resistor—18,000 ohms—Carbon type—1/4 watt—(R10)—Package of 5.....		11653	Transformer—Vibrator transformer—(T1).....	
11646	Resistor—47,000 ohms—Carbon type—1/4 watt—(R11)—Package of 5.....		11656	Vibrator.....	
5029	Resistor—56,000 ohms—Carbon type—1/4 watt—(R3)—Package of 5.....		4289	MISCELLANEOUS ASSEMBLIES	
11281	Resistor—100,000 ohms—Carbon type—1/10 watt—(R2)—Package of 5.....		11635	Body—Fuse connector body—Package of 10.....	
5158	Resistor—220,000 ohms—Carbon type—1/4 watt—(R13)—Package of 5.....		11636	Cable—Battery cable complete with four-contact male connector, fuse connector and two-contact pins—for table model	
11172	Resistor—470,000 ohms—Carbon type—1/4 watt—(R9, R12)—Package of 5....		4288	Cable—Battery cable complete with four-contact male connector, fuse connector, and two-contact pins—for console model.....	
4241	Resistor—1.5 megohms—Carbon type—1/4 watt—(R14)—Package of 5.....		11634	Cap—Fuse connector cap—Package of 10	
11626	Resistor—2.2 megohms—Carbon type—1/4 watt—(R5, R8)—Package of 5....		6516	Connector—Clip and strap connector assembly for storage battery—Package of 2.....	
11641	Shield—Antenna or oscillator coil shield.		11570	Connector—Fuse connector—complete... for battery cable.....	
11390	Shield—Intermediate frequency transformer shield.....		11337	Escutcheon—Station selector escutcheon.	
3682	Shield—Radiotron (1C6 or 75) shield..		4286	Ferrule—Fuse connector ferrule and bushing—Package of 10.....	
3056	Shield—Radiotron (34) shield—Package of 2.....		5023	Fuse—15 Ampere fuse—Package of 5....	
4794	Socket—4-contact Radiotron (30 or 34) socket.....		6614	Glass—Station selector dial glass.....	
4814	Socket—5-contact Radiotron (49) socket		4290	Insulator—Fuse connector insulator—Package of 10.....	
4786	Socket—6-contact Radiotron (1C6 or 75) socket.....		11346	Knob—Station selector knob—Package of 5.....	
11643	Switch—Power switch—(S6, S7).....		11455	Knob—Volume control, tone control, range switch or power switch knob—Package of 5.....	
11642	Switch—Range switch—(S1, S2, S3, S4)		11637	Pin—Contact pin—for battery cable—colored black—Package of 5.....	
11644	Switch—Tone control switch—(S5)....		11658	Pin—Contact pin—for battery cable—colored red—Package of 5.....	
5238	Terminal—Antenna terminal board with clip, insulating strip and rivets.....		4678	Ring—Station selector dial glass retaining ring—Package of 5.....	
11594	Transformer—Audio driver and output transformer pack—(T2, T3).....		5210	Screw—Chassis mounting screw assembly—Package of 4.....	
11592	Transformer—First intermediate frequency transformer—(L10, L11, C16, C17)..		11348	Screw—No. 8-32x7/16-in. headless cupped point set screw—for knob, stock No. 11346—Package of 10.....	
11593	Transformer—Second intermediate frequency transformer—(L12, L13, C18, C19, C21, R7).....		4284	Spring—Fuse connector spring—Package of 10.....	
11649	Trap—Wave trap—(L1, C1, C2, R1)..		11349	Spring—Retaining spring for knob, stock No. 11455—Package of 5.....	
11589	Volume control—(R6).....		4285	Washer—Fuse connector insulating washer—Package of 10.....	
10194	DRIVE ASSEMBLIES			REPRODUCER ASSEMBLIES	
4422	Ball—Steel ball for drive assembly—Package of 20.....		9539	Cone—Reproducer cone (L9)—Package of 5.....	
11674	Clutch—Tuning condenser drive clutch assembly—comprising drive shaft, balls, ring, spring and washers assembled...		9540	Magnet Assembly—Comprising cone bracket, core and magnet.....	
11651	Dial—Station selector dial.....		9538	Reproducer—Complete.....	
4520	Drive—Variable tuning condenser drive assembly.....			REPRODUCER ASSEMBLIES	
4669	Indicator—Station selector indicator pointer.....		9432	Cone—Reproducer cone—complete with voice coil—(L9).....	
11654	Screw—No. 8-32x5/32-in. set screw for condenser assembly—Package of 10...		7820	Magnet—Cone housing and magnet assembly.....	
4836	POWER UNIT ASSEMBLIES		7819	Reproducer—Complete.....	
	Capacitor—.01 Mfd.—(C38, C39).....				
	Capacitor—.05 Mfd.—(C43).....				

MODELS T 6-1 C 6-2 T7-12 and C7-14

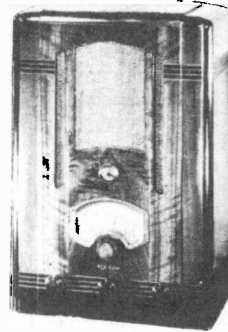
Six- and Seven-Tube, Three-Band, A-C, Superheterodyne Receivers



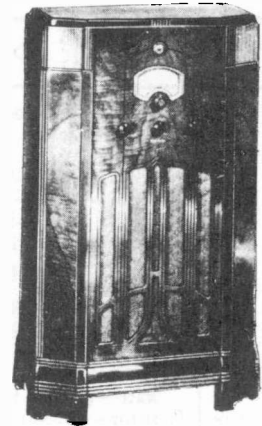
MODEL T 6-1



MODEL C 6-2



MODEL T 7-12



MODEL C 7-14

Electrical Specifications

RADIOTRON COMPLEMENT - T6-1 & C6-2

- (1) RCA-6A8.....First Detector-Oscillator
- (2) RCA-6K7.....Intermediate Amplifier
- (3) RCA-6H6.....Second Detector-A.V.C.
- (4) RCA-6F5.....Audio Voltage Amplifier
- (5) RCA-6F6.....Audio Power Amplifier
- (6) RCA-80.....Full Wave Rectifier

FREQUENCY RANGES

- Band A.....540—1625 kc.
- Band B.....1625—5700 kc.
- Band C.....5700—18000 kc.

Intermediate Frequency.....460 kc.

POWER SUPPLY RATINGS

- | | | |
|---------------|---|--|
| | — T6-1 & C6-2 — | |
| Rating A..... | 105—125 volts, 50—60 cycles, 85 watts | |
| Rating B..... | 105—125 volts, 25—60 cycles, 90 watts | |
| Rating C..... | 100—130/140—160/195—250 volts, 40—60 cycles, 85 watts | |

POWER OUTPUT

- Undistorted.....2.0 watts
- Maximum.....4.5 watts

RADIOTRON COMPLEMENT - T 7-12 & C 7-14

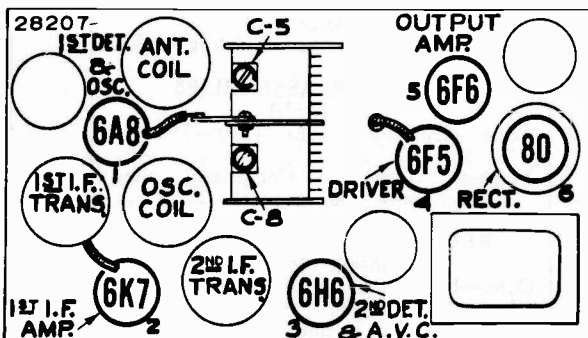
- (1) RCA-6A8.....First Detector—Oscillator
- (2) RCA-6K7.....Intermediate Amplifier
- (3) RCA-6H6.....Second Detector—A.V.C.
- (4) RCA-6F5.....Audio Voltage Amplifier
- (5) RCA-6F6.....Audio Power Amplifier
- (6) RCA-5Z4.....Full Wave Rectifier
- (7) RCA-6E5.....Tuning Indicator

ALIGNMENT FREQUENCIES

- Band A.....600 kc. (osc.), 1400 kc. (osc., ant.)
- Band B.....None required
- Band C.....18000 kc. (osc., ant.)

LOUDSPEAKER

- Type.....Electrodynamic
- Voice Coil Impedance.....2.25 ohms—400 cycles



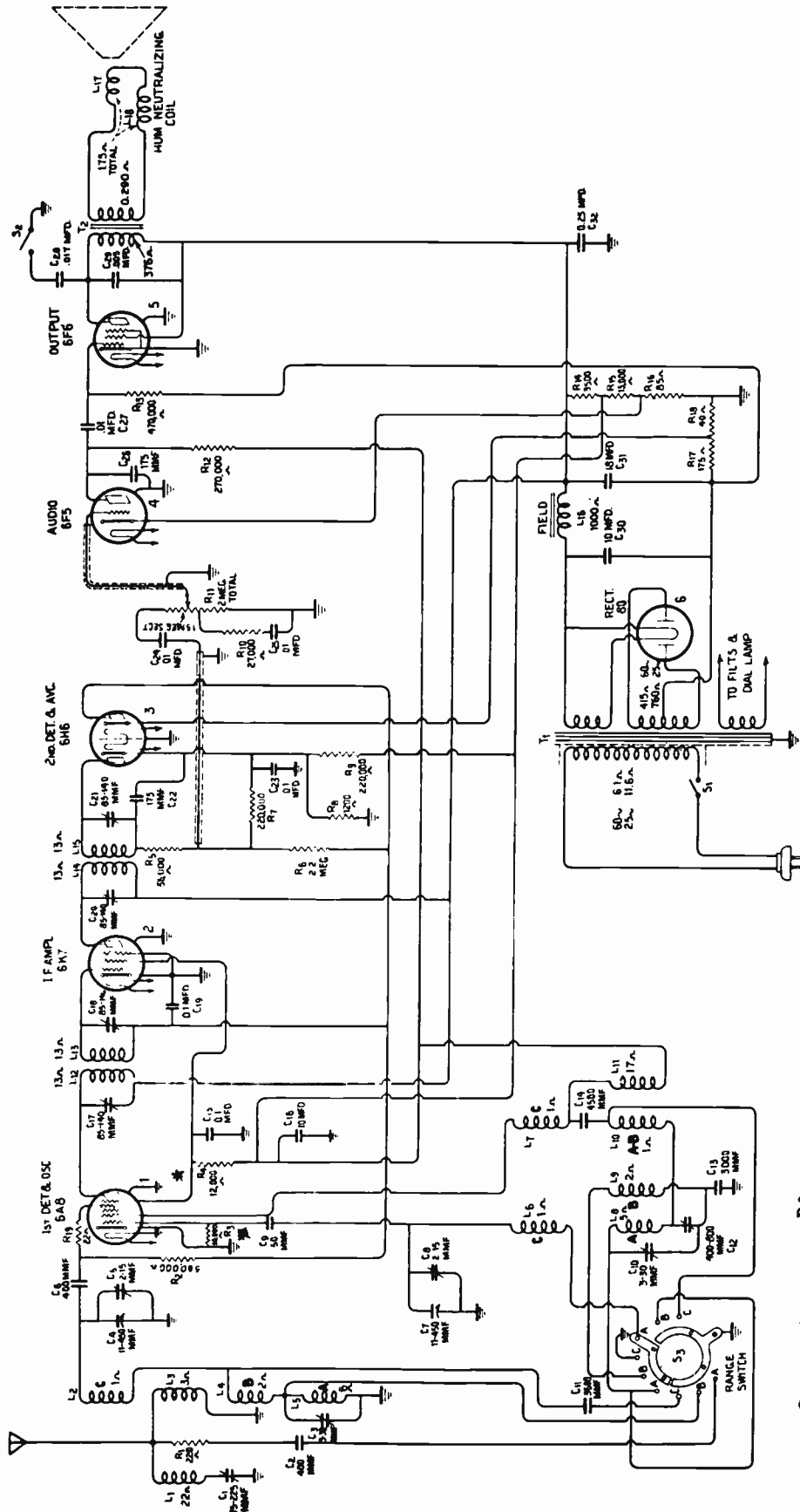
Radiotron and Coil Locations

Models T6-1 and C6-2 (with metal rectifier)

Service Data for Models T6-1 and C6-2 are directly applicable to these instruments except as follows:

- (1) The schematic and wiring diagrams for metal rectifier socket are shown.
- (2) Washer Stock No. 11886 should be used for replacement instead of Stock No. 11230 in all Models T6-1 and C6-2. See parts list herein for description.
- (3) Refer to Substitute and Additional Replacement Parts contained herein for other parts changes.

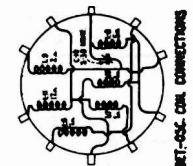
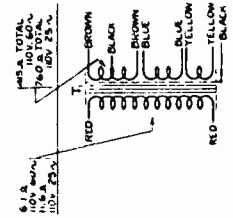
T6-1, C6-2, T7-12 & C7-14



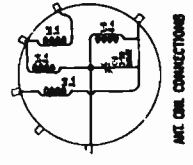
T6-1 & C6-2 - Schematic Circuit Diagram

On some instruments, R-8, R-9 and C-23 are omitted and the RCA-6H6 first Cathode is directly grounded.

On some instruments R3, is 100,000 ohms and R4 is 33,000 ohms.

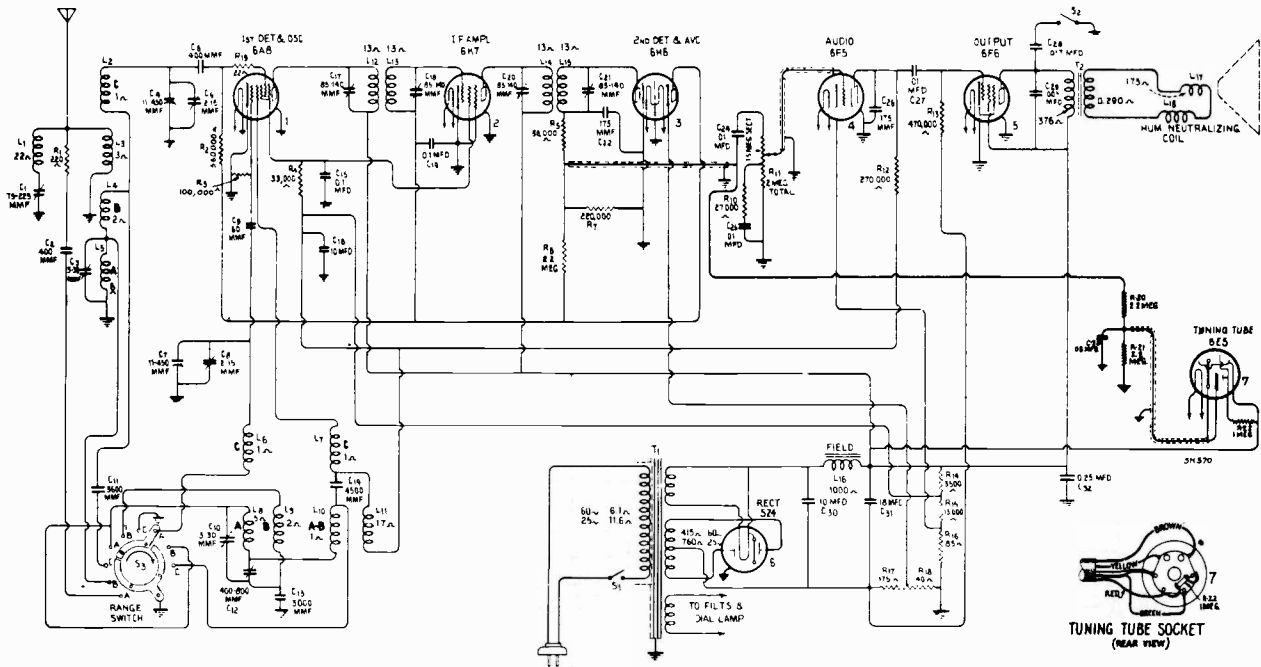


1ST-OSC. COIL CONNECTIONS



ANT. COIL CONNECTIONS

T6-1, C6-2, T7-12 & C7-14



T7-12 & C7-14 Schematic Circuit Diagram

Alignment Procedure

With tuning condenser fully meshed set dial pointer to coincide with dial reading of 530 on A Band scale.

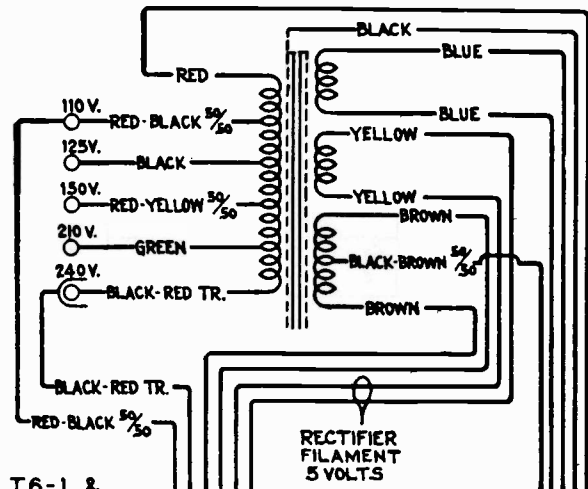
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 kc	Quiet point near 600 kc "A" Band	C21 C20 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C18 C17 1st I-F Trans.
3	Antenna in series with 200 mmfd			(Wave Trap) Minimum Output
4	Antenna in series with 300 ohms	18000 kc	18 mc "C" Band	C8† C5▲ Osc. Ant.
5	Antenna in series with 200 mmfd	1400 kc	1400 kc "A" Band	C10 C3 Osc. Ant.
6		600 kc	600 kc "A" Band	C12 L-F Osc. Rock Gang
7	Repeat Step 4			
8	Repeat Step 5			

Osc. tracks 460 kc above signal on A Band.

Osc. tracks 460 kc below signal on C Band.

† Use maximum capacity peak.

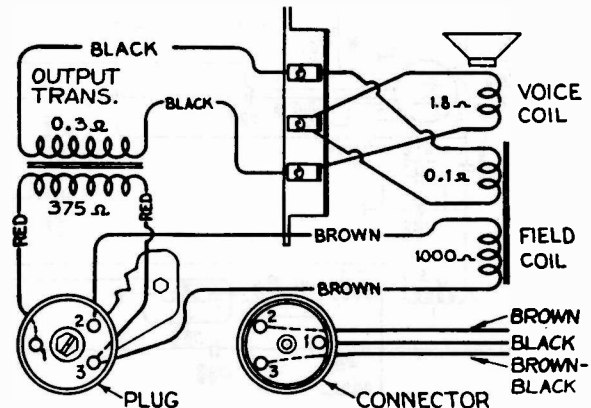
▲ Use minimum capacity peak - ROCK GANG.



T6-1 & C6-2 ONLY

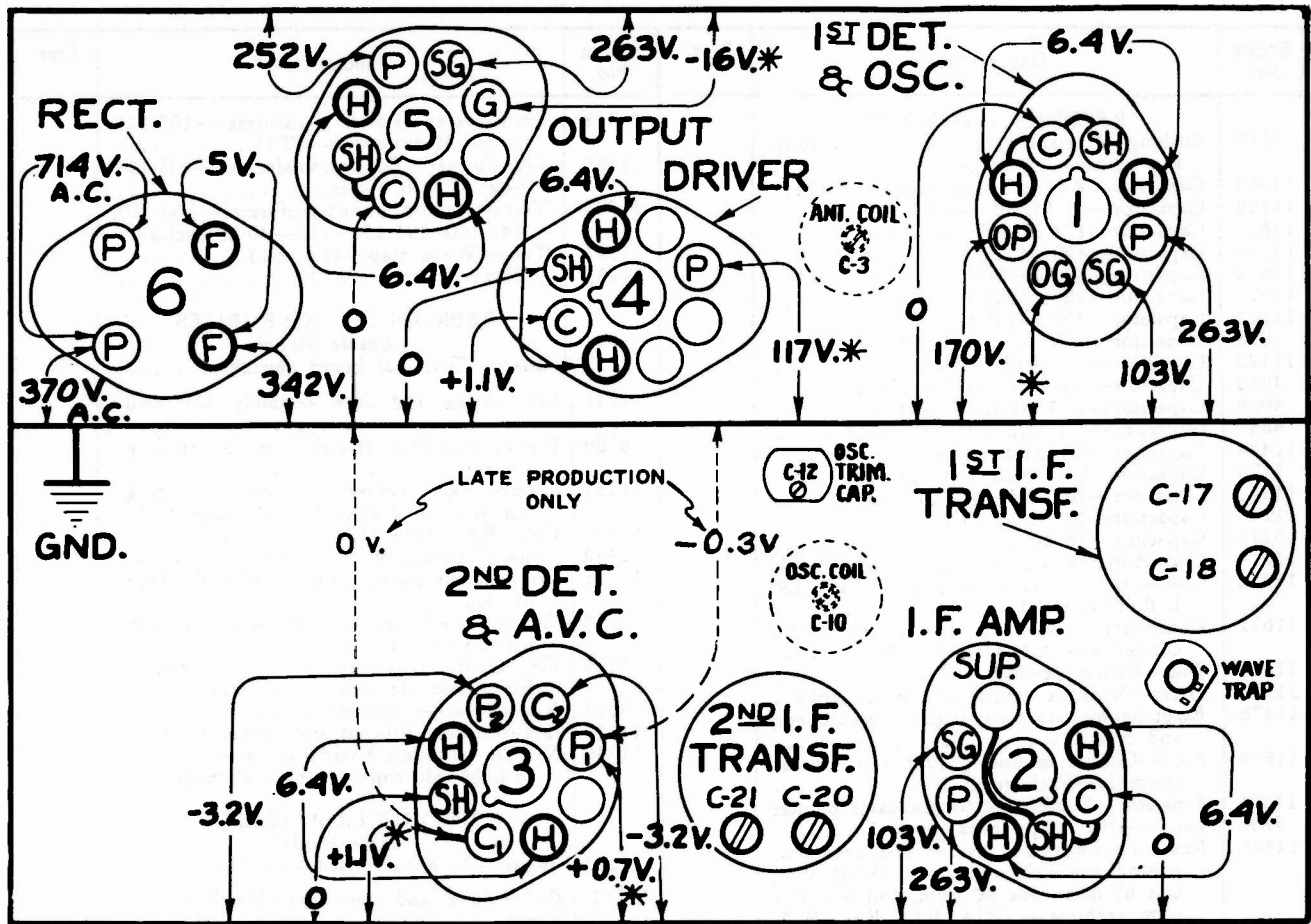
Primary Resistance—17.3 ohms, Total Secondary Resistance—408 ohms, Total

Universal Transformer



-Loudspeaker Wiring

T6-1, C6-2, T7-12 & C7-14



(*) CANNOT BE MEASURED WITH ORDINARY VOLTMETER

—Radiotron Socket Voltages
Measured at 115 volts, 60 cycle supply—No signal being received

General Description — T7-12 & C7-14

These two models are similar to RCA Victor Models T6-1 and C6-2 respectively. The changes consist of (1) the addition of an RCA-6E5 Tuning Indicator, (2) an RCA-5Z4 all-metal rectifier used in place of the RCA-80, and (3) new cabinet design. All service data for Models T6-1 and C6-2 are directly applicable to these instruments except as follows:
Secondary resistance of Universal Transformer, 355 ohms total.

Tuning Tube Cable voltages: Yellow, 0 v.; Brown, 6.4 v. a-c; Red, 263 v.; and Green, 0 v.

The following parts listed for Models T6-1 and C6-2 are not required: Stock Nos. 4841 (C23), 11615, 11376, 11396, 11283, 5158, 11383, 11458, 11585, 11584, and 11230.

The parts listed below are required in addition to the remaining parts for Models T6-1 and C6-2 :

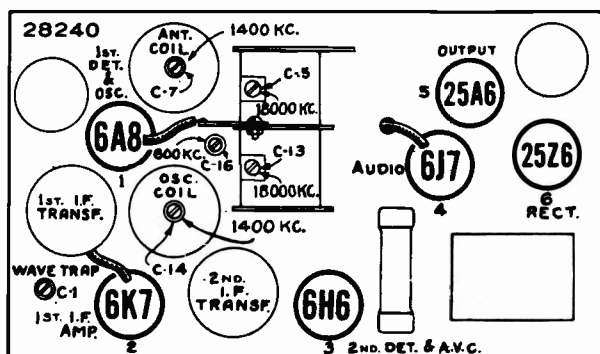
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
11996	Bracket—Tuning tube mounting bracket and clamp assembly.....		11377	Screw—Chassis mounting screw assembly —Table model—Package of 4.....	
11888	Cable—Tuning tube cable, complete with socket		11199	Socket—Dial lamp socket.....	
4836	Capacitor—.05 Mfd. (C35).....		11381	Socket—Tuning tube socket and cover...	
11894	Dial—Station selector dial scale.....		11195	Socket—5-contact rectifier Radiotron socket	
11276	Escutcheon—Tuning tube escutcheon....		11198	Socket—7-contact Radiotron socket.....	
11893	Indicator—Station selector indicator pointer		11196	Socket—8-contact Radiotron socket.....	
11455	Knob—Volume control or power switch knob—Package of 5.....		11349	Spring—Retaining Spring for knob, Stock Nos. 11455 and 11609, and small knob in Stock No. 11610—Package of 5....	
11609	Knob—Range switch knob—Package of 5		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10...	
11610	Knob—Station selector knob assembly, comprising one large and one small knob—Package of 5.....		11848	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
11382	Resistor—1 megohm—carbon type—1/10-watt (R22)—Package of 5.....		11849	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
11626	Resistor—2.2 megohms — carbon type — 1/4-watt (R20, R21)—Package of 5....		11850	Transformer—Power transformer—100-130 —140-160—195-250 volts—40-60 cycles	
11210	Screw—Chassis mounting screw assembly —Console model—Package of 4.....		11886	Washer—Spring washer used to hold field coil securely—Package of .5.....	

T6-1, C6-2, T7-12 & C7-14 REPLACEMENT PARTS—T6-1 & C6-2

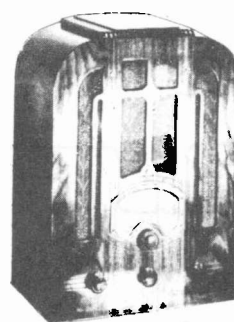
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
5237	Bushing—Variable tuning condenser mounting bushing—Package of 3.....		11458	Transformer—Power transformer—105-125 volts—50-60 cycles—(T1).....	
11465	Capacitor—Adjustable capacitor—(C12)..		11585	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
11289	Capacitor—50 MMfd.—(C9).....		11584	Transformer—Power transformer—100-130, 140-160, 195-250 volts—40-60 cycles...	
11623	Capacitor—175 MMfd.—(C26).....		11391	Trap—Wave trap—(L1, C1).....	
11290	Capacitor—400 MMfd.—(C2, C6).....		11237	Volume Control—(R11).....	
11622	Capacitor—3000 MMfd.—(C13).....		REPRODUCER ASSEMBLIES		
11621	Capacitor—3600 MMfd.—(C11).....		Console Model		
11287	Capacitor—4500 MMfd.—(C14).....		11232	Board—Terminal board assembly.....	
4868	Capacitor—.005 Mfd.—(C29).....		11231	Bolt—Yoke and core assembly bolt and nut	
11395	Capacitor—.01 Mfd.—(C24).....		8060	Bracket—Output transformer mounting bracket	
4858	Capacitor—.01 Mfd.—(C25, C27).....		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5.	
4906	Capacitor—.017 Mfd.—(C28).....		11470	Coil—Field coil—(L16).....	
4841	Capacitor—.01 Mfd.—(C19, C23)*.....		11469	Coil—Neutralizing coil—(L18).....	
11414	Capacitor—.01 Mfd.—(C15).....		11258	Cone—Reproducer cone—(L17)—Package of 5.....	
5170	Capacitor—.025 Mfd.—(C32).....		5118	Connector—Three contact male connector for reproducer.....	
11387	Capacitor—10 Mfd.—(C16).....		5119	Connector—Three contact female connector for reproducer cable.....	
11240	Capacitor—10 Mfd.—(C30).....		9622	Reproducer—Complete	
5212	Capacitor—18 Mfd.—(C31).....		11253	Transformer—Output transformer—(T2).	
11617	Coil—Antenna coil—(L2, L3, L4, L5, C3R1)		11230	Washer—Binders board "C" washer—used to hold field coil assembly—Package of 5	
11618	Coil—Oscillator coil—(L6, L7, L8, L9, L10, L11, C10).....		REPRODUCER ASSEMBLIES		
11612	Condenser—Two-gang variable tuning condenser—(C4, C5, C7, C8).....		Table Model		
11615	Dial—Station selector dial.....		11232	Board—Terminal board assembly.....	
11613	Drive—Variable tuning condenser drive..		11231	Bolt—Yoke and core assembly bolt and nut	
11376	Escutcheon—Station selector escutcheon and crystal.....		8060	Bracket—Output transformer mounting bracket	
11619	Foot—Chassis mounting foot and bracket assembly—Package of 2.....		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5.	
11396	Indicator—Station selector indicator pointer		11470	Coil—Field coil—(L16).....	
5226	Lamp—Dial lamp—Package of 5.....		11469	Coil—Neutralizing coil—(L18).....	
11466	Resistor—Voltage divider resistor—comprising one 3500 ohm, one 13000 ohm, one 85 ohm, one 40 ohm, and one 175 ohm sections —(R14, R15, R16, R17, R18)		11235	Cone—Reproducer cone—(L17)—Package of 5.....	
11624	Resistor—22 Ohms—Flexible type—complete with contact cap—(R19).....		5118	Connector—Three contact male connector for reproducer.....	
11620	Resistor—220 Ohms—Carbon type—1/10 watt—(R1)—Package of 5.....		5119	Connector—Three contact female connector for reproducer cable.....	
11283	Resistor—1200 Ohms—Carbon type—1/4 watt—(R8)*—Package of 5.....		9621	Reproducer—Complete	
**	3066 Resistor—12,000 Ohms—Carbon type—1 watt—(R4)—Package of 5.....		11253	Transformer—Output transformer—(T2).	
11400	Resistor—27,000 Ohms—Carbon type—1/4 watt—(R10)—Package of 5.....		11230	Washer—Binders board "C" washer—used to hold field coil assembly—Package of 5	
**	5029 Resistor—56,000 Ohms—Carbon type—1/4 watt—(R3)—Package of 5.....		Models T6-1 and C6-2 (with metal rectifier)		
5158	Resistor—220,000 Ohms—Carbon type—1/4 watt—(R9)*—Package of 5.....		8072	Resistor—33,000 ohms—Carbon type—1/2 watt—(R4)—Package of 5.....	
11453	Resistor—270,000 Ohms—Carbon type—1/10 watt—(R12)—Package of 5.....		3118	Resistor—100,000 ohms—Carbon type—1/4 watt—(R3)—Package of 5.....	
11452	Resistor—470,000 Ohms—Carbon type—1/10 watt—(R13)—Package of 5.....		11848	Transformer—Power transformer—105-125 volts—50-60 cycles—(T1).....	
11397	Resistor—560,000 Ohms—Carbon type—1/10 watt—(R2)—Package of 5.....		11849	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
11626	Resistor—2.2 Megohms—Carbon type—1/4 watt—(R6)—Package of 5.....		11850	Transformer—Power transformer—100-130/140-160/195-250 volts—40-60 cycles	
11603	Shield—Antenna or oscillator coil shield..		11886	Washer—Spring washer—Used to hold field coil securely—Package of 5.....	
11390	Shield—Intermediate frequency transformer shield		Stock Nos. 4841 (C23), 11283, 3066, 5029, 5158, 11383, 11458, 11585, and 11584 are not used in chassis having metal rectifier.		
11383	Shield—Rectifier Radiotron shield.....				
11614	Spring—Coil spring for large gears on variable tuning condenser—Package of 10				
11616	Switch—Range switch—(S3).....				
11460	Switch—Tone control and power switch—(S1, S2).....				
5238	Terminal—Antenna terminal board, with clip				
11388	Transformer—First intermediate frequency transformer—(L12, L13, C17, C18)...				
11389	Transformer—Second intermediate frequency transformer —(L14, L15, C20, C21, C22, R5, R7).....				
			* R8, R9, C23 used in some models		
			** 8072 Resistor— 33,000 Ohms—1/2 watt—(R4)		
			3118 Resistor—100,000 Ohms—1/4 watt—(R3)		

MODELS T 6-7 and C 6-8

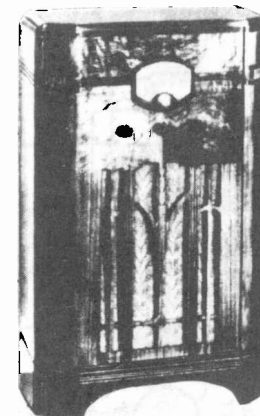
Six-Tube, Three-Band, A-C, D-C, Superheterodyne Receivers



-Radiotron, Coil and Trimmer Locations
-R. F. Trimmer Adjustment



MODEL T 6-7



MODEL C 6-8

Electrical Specifications

RADIOTRON COMPLEMENT

- | | |
|---|---|
| (1) RCA-6A8.....First Detector-Oscillator | (4) RCA-6J7.....Audio Voltage Amplifier |
| (2) RCA-6K7.....Intermediate Amplifier | (5) RCA-25A6.....Audio Power Amplifier |
| (3) RCA-6H6.....Second Detector—A.V.C. | (6) RCA-25Z6.....Half-Wave Rectifier |

FREQUENCY RANGES

- Band A..... 540- 1,600 kc.
 Band B..... 1,600- 5,500 kc.
 Band C..... 5,500-18,000 kc.

ALIGNMENT FREQUENCIES

- Band A..... 600 kc. (osc.), 1,400 kc. (osc., ant.)
 Band B..... None required
 Band C..... 18,000 kc. (osc., ant.)

Intermediate Frequency.....460 kc.

POWER SUPPLY RATINGS

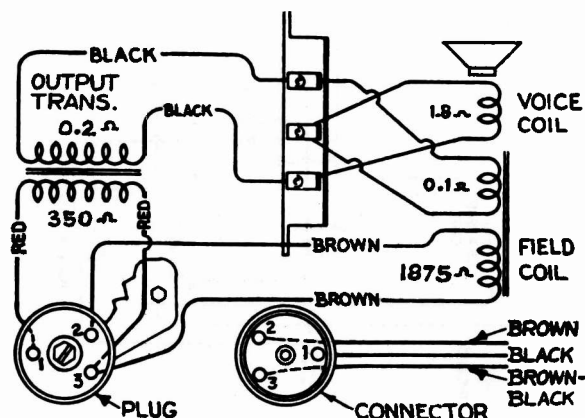
- | | |
|----------------|--|
| Rating A | { 105-125 Volts, 50-100 Cycles, 60 Watts |
| | { 105-125 Volts, D-C 50 Watts |
| Rating B | { 105-125 Volts, 25-100 Cycles, 80 Watts |
| | { 105-125 Volts, D-C 50 Watts |

POWER OUTPUT (125 V. Line)

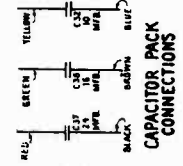
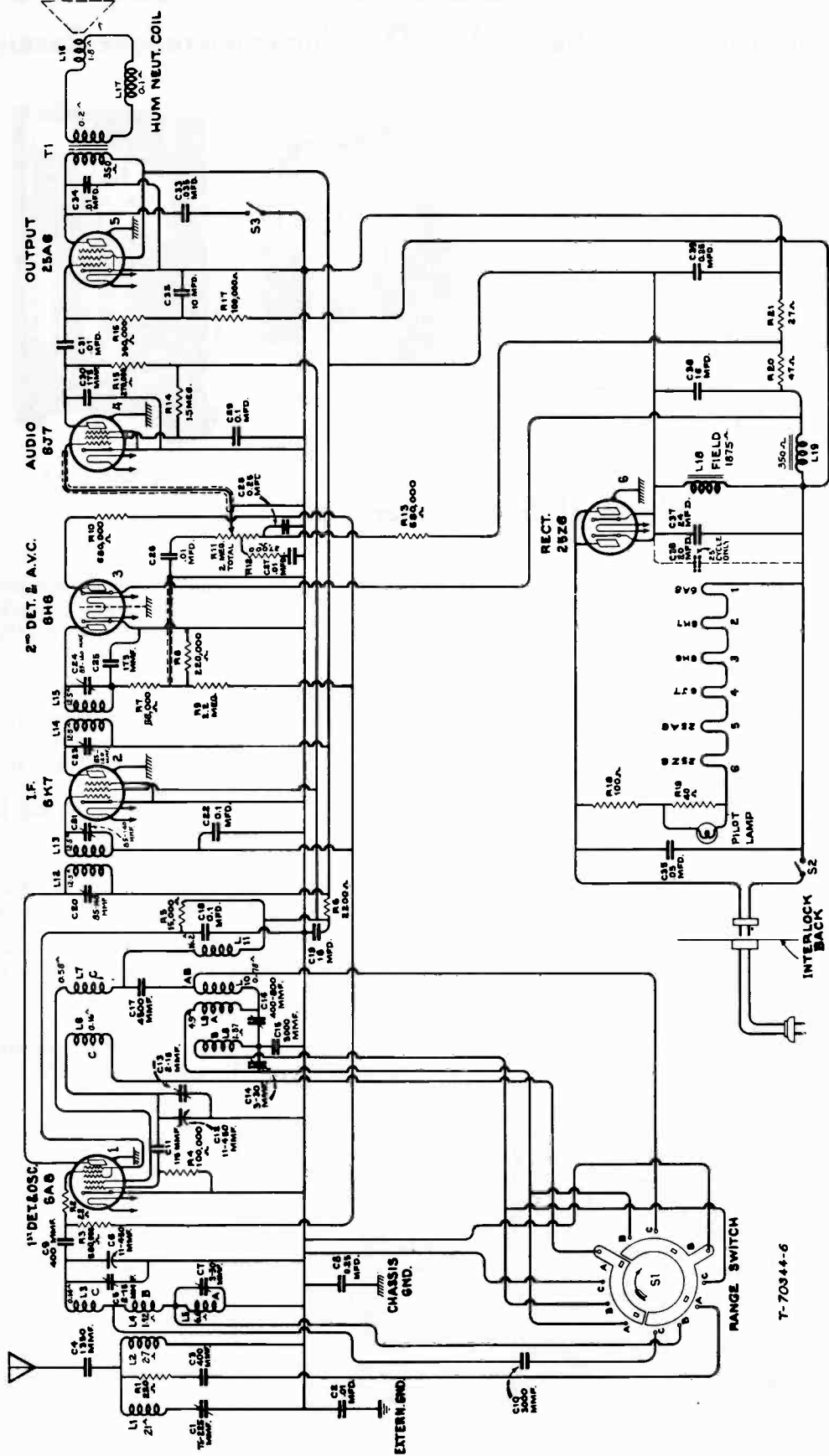
- Undistorted ..0.5 Watt (A-C)....0.4 Watt (D-C)
 Maximum1.2 Watts (A-C)....1.0 Watt (A-C)

LOUDSPEAKER

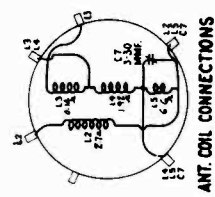
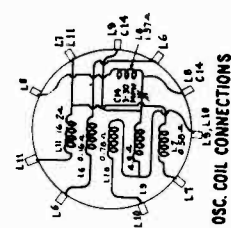
- TypeElectrodynamic
 Voice Coil Impedance.....2.25 Ohms—400 Cycles



Loudspeaker Wiring

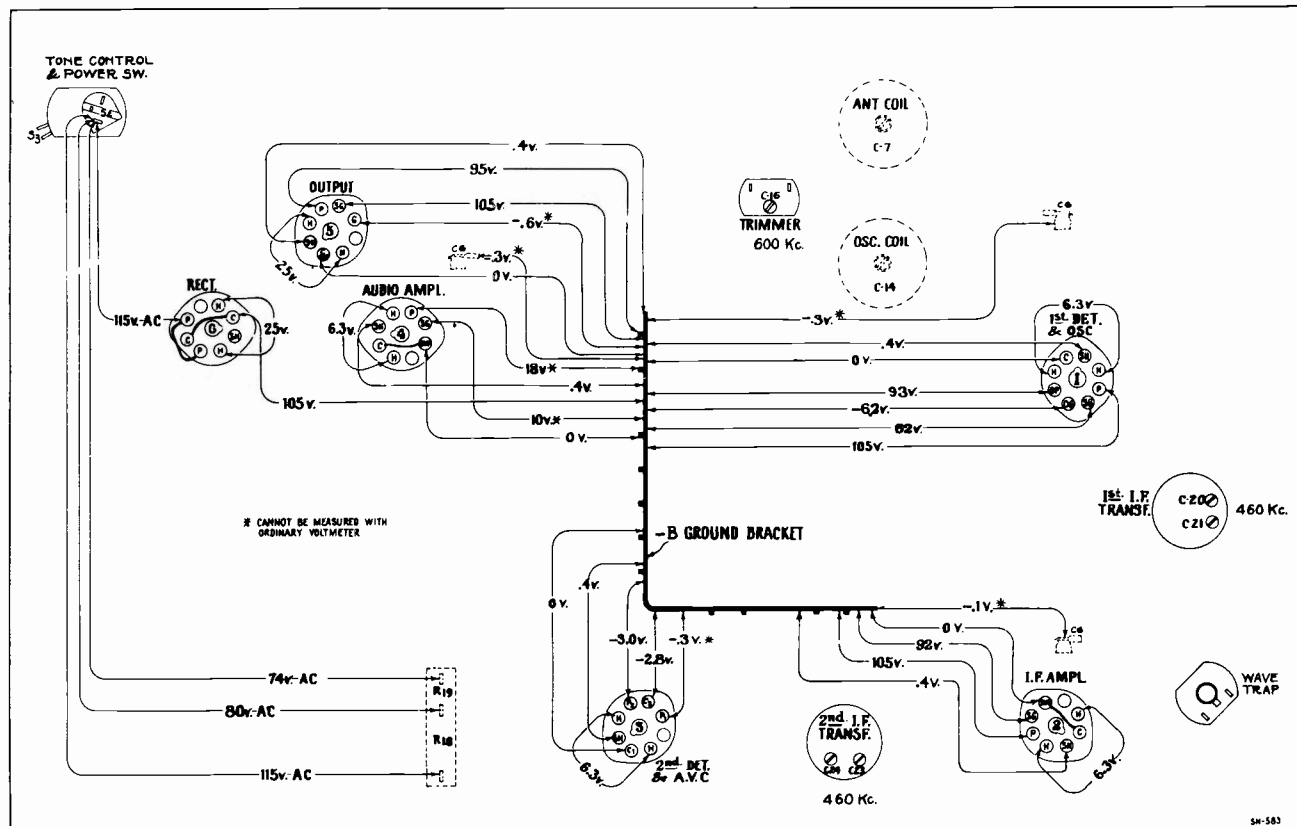


Schematic Circuit Diagram



T-70944-6

T6-7 & C6-8



Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with 530 calibration at low frequency end of A Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	C24 C23 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C21 C20 1st I-F Trans.
3	Antenna in series with 200 mmfd			C1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	18000 Kc	18 Mc "C" Band	C13† C5 ▲ Osc. Ant.
5	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "A" Band	C14 C7 Osc. Ant.
6		600 Kc	600 Kc "A" Band	C16 L-F Osc. Rock Gang
7	Repeat Step 4			
8	Repeat Step 5			

Osc. tracks 460 Kc above signal on A Band.

Osc. tracks 460 Kc below signal on C Band.

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG.

-Radiotron Socket Voltages

Measured at 115 volts, 60-cycle supply-
-For 115 volt D-C approximately 5% lower
Tuned to approximately 900 kc. (Band A)-
-No Signal Being Received-

REPLACEMENT PARTS

Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES		
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3	
11350	Cap—Grid contact cap—Package of 5	
11465	Capacitor—Adjustable capacitor—(C16)	
11291	Capacitor—115 Mmfd.—(C11)	
5116	Capacitor—175 Mmfd.—(C30)	
11290	Capacitor—400 Mmfd.—(C3, C9)	
11449	Capacitor—1350 Mmfd.—(C4)	
11622	Capacitor—3000 Mmfd.—(C10, C15)	
11287	Capacitor—4500 Mmfd.—(C17)	
5196	Capacitor—.035 Mfd.—(C33)	
4858	Capacitor—.01 Mfd.—(C2, C27, C31, C34)	
11395	Capacitor—.01 Mfd.—(C26)	
4886	Capacitor—.05 Mfd.—(C35)	
4840	Capacitor—0.25 Mfd.—(C28)	
5170	Capacitor—0.25 Mfd.—(C8, C35)	
4839	Capacitor—0.1 Mfd.—(C18)	
4841	Capacitor—0.1 Mfd.—(C22, C29)	
5212	Capacitor—18 Mfd.—(C19)	
11821	Capacitor Pack—Comprising one 24 Mfd., one 16 Mfd., and one 10 Mfd. sections—(C32, C37, C38)	

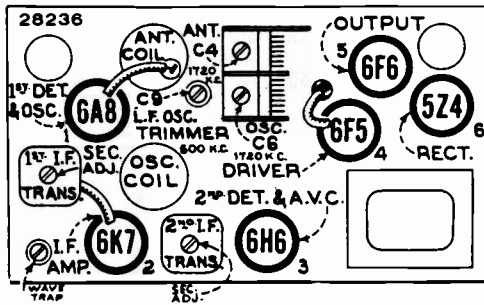
T6-7 & C 6-8

REPLACEMENT PARTS (Continued)

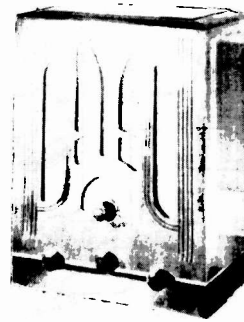
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
11617	Coil—Antenna coil—(L2, L3, L4, L5, C7, R1)		11389	Transformer—Second intermediate frequency transformer—(L14, L15, C23, C24, C25, R7, R8)	
11618	Coil—Oscillator coil—(L6, L7, L8, L9, L10, L11, C14)		11391	Trap—Wave trap—(L1, C1)	
11612	Condenser—2-gang variable tuning condenser—(C5, C6, C12, C13)		11237	Volume control—(R11)	
11979	Connector—2-contact male connection plug		REPRODUCER ASSEMBLIES CONSOLE MODEL		
11974	Dial—Station selector dial scale		11232	Board—Terminal board assembly	
11613	Drive—Variable tuning condenser drive		11231	Bolt—Yoke and core assembly bolt and nut	
11893	Indicator—Station selector indicator pointer		8060	Bracket—Output transformer mounting bracket	
4340	Lamp—Dial lamp—Package of 5		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
11818	Reactor—Filter reactor—(L19)		11827	Coil—Field coil—(L18)	
11977	Resistor—Wire wound—Comprising one 100- and one 40-ohm section—(R18, R19)		11469	Coil—Neutralizing coil—(L17)	
11624	Resistor—22 ohms—Flexible type—complete with contact cap—(R2)		11258	Cone—Reproducer cone complete—(L16)—Package of 5	
11955	Resistor—27 ohms—Carbon type— $\frac{1}{4}$ watt—(R21)—Package of 5		5118	Connector—Three-contact male connector for reproducer	
11372	Resistor—47 ohms—Carbon type— $\frac{1}{4}$ watt—(R20)—Package of 5		5119	Connector—Three-contact female connector for reproducer cable	
5159	Resistor—2,200 ohms—Carbon type— $\frac{1}{4}$ watt—(R6)—Package of 5		11828	Transformer—Output transformer—(T1)	
3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R5)—Package of 5		11886	Washer—Spring washer—used to hold speaker field coil securely—Package of 5	
11400	Resistor—27,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R12)—Package of 5		REPRODUCER ASSEMBLIES TABLE MODEL		
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R4, R17)—Package of 5		11827	Coil—Field coil—(L18)	
11323	Resistor—270,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R15)—Package of 5		11235	Cone—Reproducer cone—(L16)—Package of 5	
11847	Resistor—390,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R16)—Package of 5		5118	Connector—Three-contact male connector for reproducer	
11811	Resistor—680,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R10)—Package of 5		5119	Connector—Three-contact female connector for reproducer cable	
11980	Resistor—680,000 ohms—Carbon type— $\frac{1}{10}$ watt—(R3, R13)—Package of 5		11826	Reproducer complete	
11981	Resistor—1.5 megohms—Carbon type— $\frac{1}{10}$ watt—(R14)—Package of 5		11828	Transformer—Output transformer—(T1)	
11626	Resistor—2.2 megohms—Carbon type— $\frac{1}{4}$ watt—(R9)—Package of 5		MISCELLANEOUS ASSEMBLIES		
11603	Shield—Antenna or oscillator coil shield		11823	Cord—Power cord and connector assembly	
11390	Shield—Intermediate frequency transformer shield		11376	Escutcheon—Station selector escutcheon and crystal	
3529	Socket—Dial lamp socket		11609	Knob—Range switch knob—Package of 5	
11198	Socket—7-contact 6J7, 25Z6 or 25A6 Radiotron socket		11973	Knob—Station selector knob assembly—comprising one large and one small knob—Package of 5	
11196	Socket—8-contact 6H6, 6K7 or 6A8 Radiotron socket		11455	Knob—Volume control or tone control knob—Package of 5	
11614	Spring—Coil spring for large gears on variable tuning condenser—Package of 10		11210	Screw—Chassis mounting screw assembly for Console Model—Package of 4	
11975	Switch—Range switch—(S1)		11377	Screw—Chassis mounting screw assembly for Table Model—Package of 4	
11460	Switch—Tone control and power switch—(S2, S3)		11348	Screw—8-32 x 7/16" headless cupped-point set screw for small knob in Stock No. 11973—Package of 10	
5238	Terminal—Antenna terminal board with clip insulating strip and rivets		11349	Spring—Retaining spring for knobs—Stock No. 11455 and No. 11609—Package of 5	
11976	Terminal—Ground terminal clip assembly		4982	Spring—Retaining spring for large knobs—Stock No. 11973—Package of 10	
11388	Transformer—First intermediate frequency transformer—(L12, L13, C20, C21)				

MODELS T6-11 and C6-12

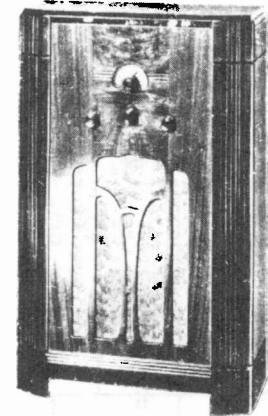
Six-Tube, Two-Band, A-C, Superheterodyne Receivers



-Radiotron and Coil Locations



MODEL T 6-11



MODEL C 6-12

Electrical Specifications

FREQUENCY RANGES

Broadcast Band (A) 540-1,850 kc.
 Short-wave Band (B) 1,850-6,900 kc.

ALIGNMENT FREQUENCIES

Band (A) 600 kc. (osc.), 1,720 kc. (osc., ant.)
 Band (B) No Adjustments Required

Intermediate Frequency 460 kc.

RADIOTRON COMPLEMENT

- | | |
|---|---|
| (1) RCA-6A8.....First Detector-Oscillator | (4) RCA-6F5.....Audio Voltage Amplifier |
| (2) RCA-6K7.....Intermediate Amplifier | (5) RCA-6F6.....Audio Power Amplifier |
| (3) RCA-6H6.....Second Detector-A.V.C. | (6) RCA-5Z4.....Full-wave Rectifier |

POWER SUPPLY RATINGS

Rating A 105-125 Volts, 50-60 Cycles, 75 Watts
 Rating B 105-125 Volts, 25-60 Cycles, 75 Watts
 Rating C 100-130/140-160/195-250 Volts, 40-60 Cycles, 75 Watts

POWER OUTPUT RATINGS

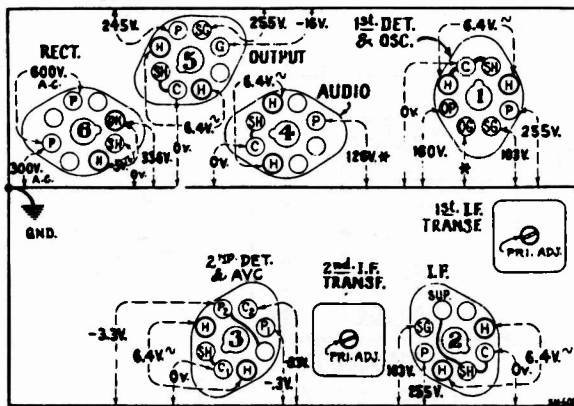
Undistorted 2.0 Watts
 Maximum 4.5 Watts

LOUDSPEAKER

Type Electrodynamic
 Voice Coil Impedance..... 2.25 Ohms at 400 Cycles

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of BC Band scale.

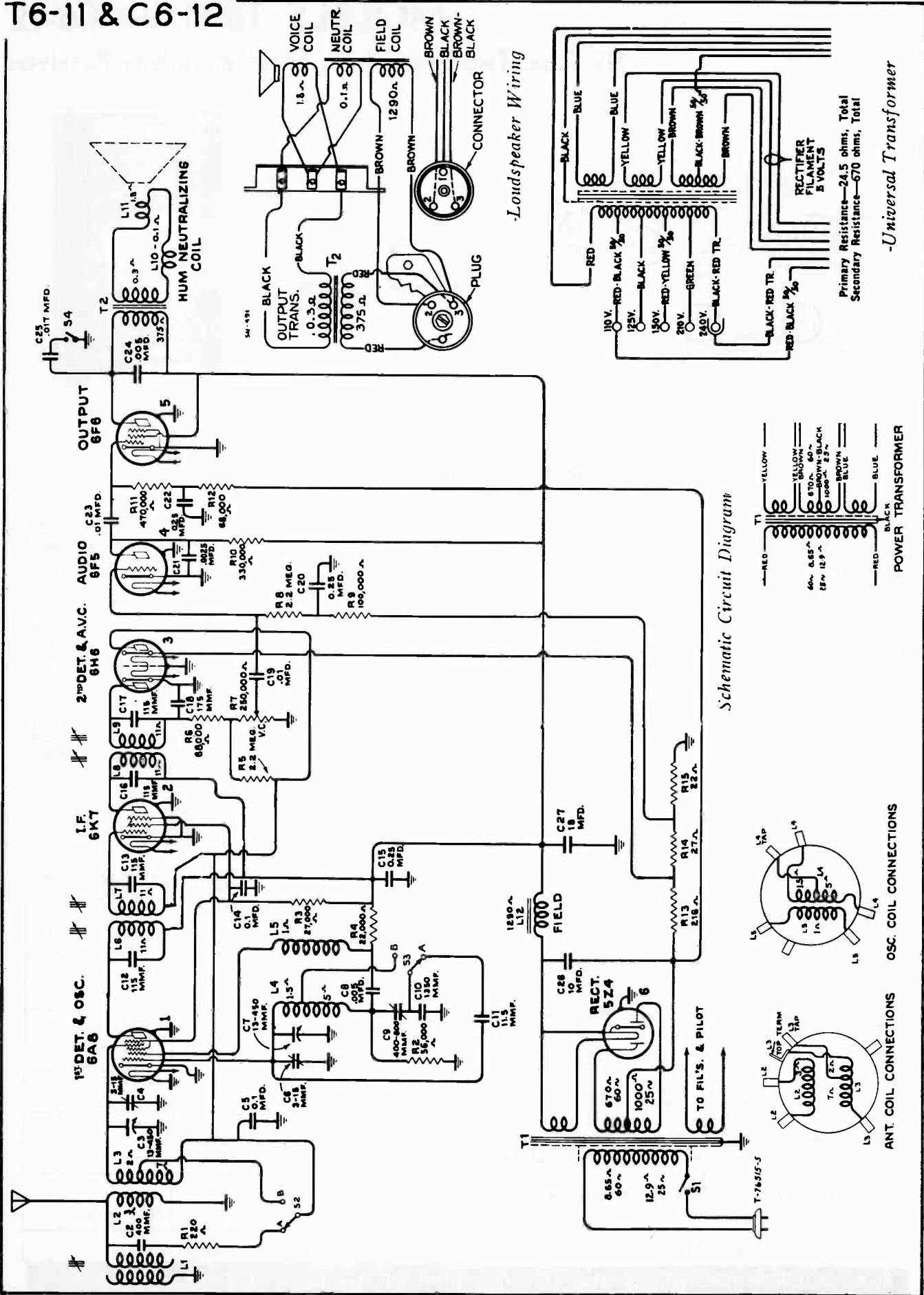
Alignment Procedure



Measured at 115 volts, 60 cycle supply
 Radiotron Socket Voltages

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 800 Kc "BC" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3				Wave Trap Minimum Output
4	Antenna in series with 200 mfd	1720 Kc	1720 Kc "BC" Band	C6 C4 Osc. Ant.
5		600 Kc	600 Kc "BC" Band	C9 L-F Osc. Rock Gang
6	Repeat Step 4			

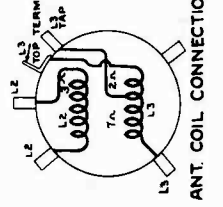
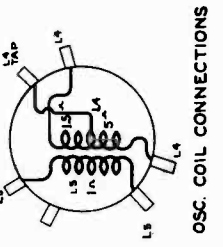
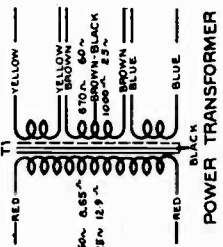
T6-11 & C6-12



Schematic Circuit Diagram

Loudspeaker Wiring

Universal Transformer



Primary Resistance—24.5 ohms, Total
Secondary Resistance—670 ohms, Total

OSC. COIL CONNECTIONS

ANT. COIL CONNECTIONS

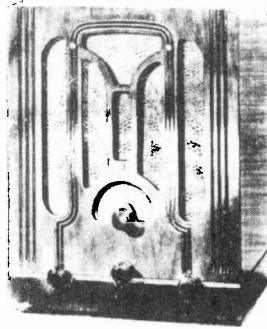
REPLACEMENT PARTS

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

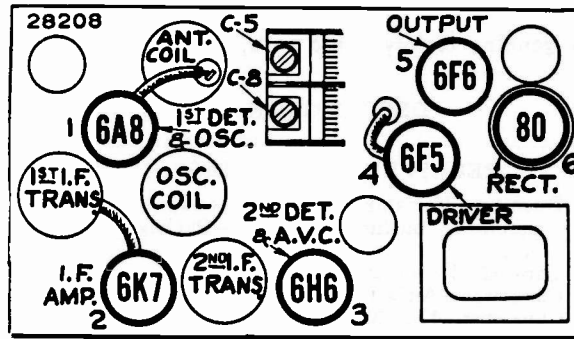
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3		11195	Socket—5-contact 5Z4 Radiotron socket	
11350	Cap—Grid contact cap—Package of 5		11198	Socket—7-contact 6K7, 6H6 or 6F5 Radiotron socket	
11465	Capacitor—Adjustable capacitor—(C9)		11196	Socket—8-contact 6A8 or 6F6 Radiotron socket	
11450	Capacitor—11.5 Mmfd.—(C11)		12007	Spring—Retaining spring for adjustable core in stock Nos. 12002, 12003, 12005—Package of 10	
11998	Capacitor—115 Mmfd.—(C12, C13, C16, C17)		11461	Switch—Range switch—(S2, S3)	
11500	Capacitor—175 Mmfd.—(C18)		12001	Switch—Tone control switch—(S4)	
4297	Capacitor—400 Mmfd.—(C2)		5238	Terminal—Antenna terminal clip assembly	
11449	Capacitor—1,350 Mmfd.—(C10)		12002	Transformer—First intermediate frequency transformer complete with shield—(L6, L7, C12, C13)	
5107	Capacitor—.0025 Mfd.—(C21)		11999	Transformer—Power transformer, 105-125 volts, 50-60 cycles—(T1)	
4868	Capacitor—.005 Mfd.—(C8, C24)		12132	Transformer—Power transformer, 105-125 volts, 25 to 50 cycles	
4858	Capacitor—.01 Mfd.—(C19, C23)		12133	Transformer—Power transformer, 110-220 volts, 60 cycles	
11451	Capacitor—.017 Mfd.—(C25)		12003	Transformer—Second intermediate frequency transformer complete with shield—(L8, L9, C16, C17, C18)	
4840	Capacitor—.25 Mfd.—(C20, C22)		12005	Trap—Wave trap—(L1)	
5170	Capacitor—.25 Mfd.—(C15)		12000	Volume control—Volume control and power switch—(R7, S1)	
4841	Capacitor—.1 Mfd.—(C5)		MISCELLANEOUS ASSEMBLIES		
4835	Capacitor—.1 Mfd.—(C14)		11455	Knob—Station selector, volume control, tone control or power switch knob—Package of 5	
11240	Capacitor—10 Mfd.—(C26)		11456	Screw—Chassis mounting screw assembly—for Model T6-11—Package of 2	
5212	Capacitor—18 Mfd.—(C27)		11586	Screw—Chassis mounting screw assembly—for Model C6-12—Package of 10	
11462	Coil—Antenna coil—(L2, L3)		11349	Spring—Retaining spring for knob stock No. 11455—Package of 5	
11463	Coil—Oscillator coil—(L4, L5)		REPRODUCER ASSEMBLIES		
11457	Condenser—2-gang variable tuning condenser—(C3, C4, C6, C7)		11232	Board—Terminal board assembly with two lead wire clips	
12006	Core—Adjustable core for wave trap stock No. 12005 and i-f transformer stock Nos. 12002 and 12003		11231	Bolt—Yoke and core assembly bolt and nut	
11583	Dial—Station selector dial scale		8060	Bracket—Output transformer mounting bracket	
12042	Drive—Vernier drive for tuning condenser stock No. 11457		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
11467	Indicator—Station selector indicator pointer		12012	Coil—Field coil—(L12)	
5226	Lamp—Dial lamp—Package of 5		11469	Coil—Neutralizing coil—(L10)	
12004	Resistor—Voltage divider resistor—comprising one 216-ohm, one 27-ohm, and one 22-ohm sections—(R13, R14, R15)		11235	Cone—Reproducer cone—(L11)—Package of 5—(Table Model)	
11174	Resistor—220 ohms—carbon type— $\frac{1}{4}$ watt—(R1)—Package of 5		11258	Cone—Reproducer cone—(L11)—Package of 5—(Console Model)	
8070	Resistor—22,000 ohms—carbon type— $\frac{1}{2}$ watt—(R4)—Package of 5		5118	Connector—3-contact male connector for reproducer	
12011	Resistor—27,000 ohms—carbon type—1 watt—(R3)—Package of 5		5119	Connector—3-contact female connector for reproducer cable	
5029	Resistor—56,000 ohms—carbon type— $\frac{1}{4}$ watt—(R2)—Package of 5		9638	Reproducer complete—(Table Model)	
12009	Resistor—68,000 ohms—carbon type— $\frac{1}{4}$ watt—(R12)—Package of 5		9639	Reproducer complete—(Console Model)	
12010	Resistor—68,000 ohms—carbon type— $\frac{1}{10}$ watt—(R6)—Package of 5		11253	Transformer—Output transformer—(T2)	
3118	Resistor—100,000 ohms—carbon type— $\frac{1}{4}$ watt—(R9)—Package of 5		11886	Washer—Spring washer used to hold field coil securely—Package of 5	
11297	Resistor—330,000 ohms—carbon type— $\frac{1}{10}$ watt—(R10)—Package of 5				
11452	Resistor—470,000 ohms—carbon type— $\frac{1}{10}$ watt—(R11)—Package of 5				
11626	Resistor—2.2 megohms—carbon type— $\frac{1}{4}$ watt—(R5, R8)—Package of 5				
11464	Shield—Antenna or oscillator coil shield				
12008	Shield—Intermediate frequency transformer shield for stock No. 12002 and 12003				
8098	Socket—Dial lamp socket				

MODEL T 6-9

Six-Tube, Two-Band, A-C, Superheterodyne, Table Receiver



MODEL T 6-9



Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Broadcast Band (A)540-1850 kc.
Shortwave Band (B)1850-6900 kc.

ALIGNMENT FREQUENCIES

Broadcast Band (A)600 kc. and 1720 kc.
Shortwave Band (B)No Adjustments Required

RADIOTRON COMPLEMENT

- (1) RCA-6A8First Detector-Oscillator
- (2) RCA-6K7Intermediate Amplifier
- (3) RCA-6H6Second Detector-A.V.C.
- (4) RCA-6F5Audio Voltage Amplifier
- (5) RCA-6F6Audio Power Amplifier
- (6) RCA-80Full Wave Rectifier

VOLTAGE AND FREQUENCY

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

Power Consumption90 watts

Intermediate Frequency.....460 kc.

POWER OUTPUT

Undistorted2.0 watts
Maximum4.5 watts

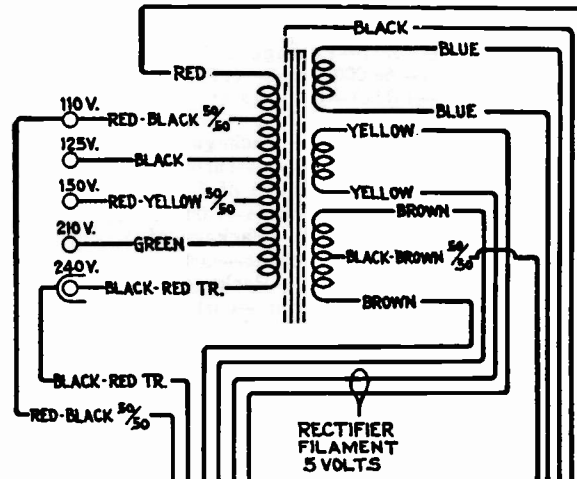
LOUDSPEAKER

Type8 inch, Electrodynamic
Voice Coil Impedance.....2.25 ohms at 400 cycles

Alignment Procedure

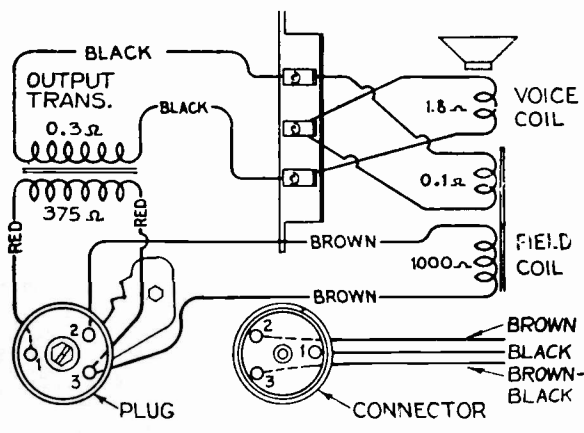
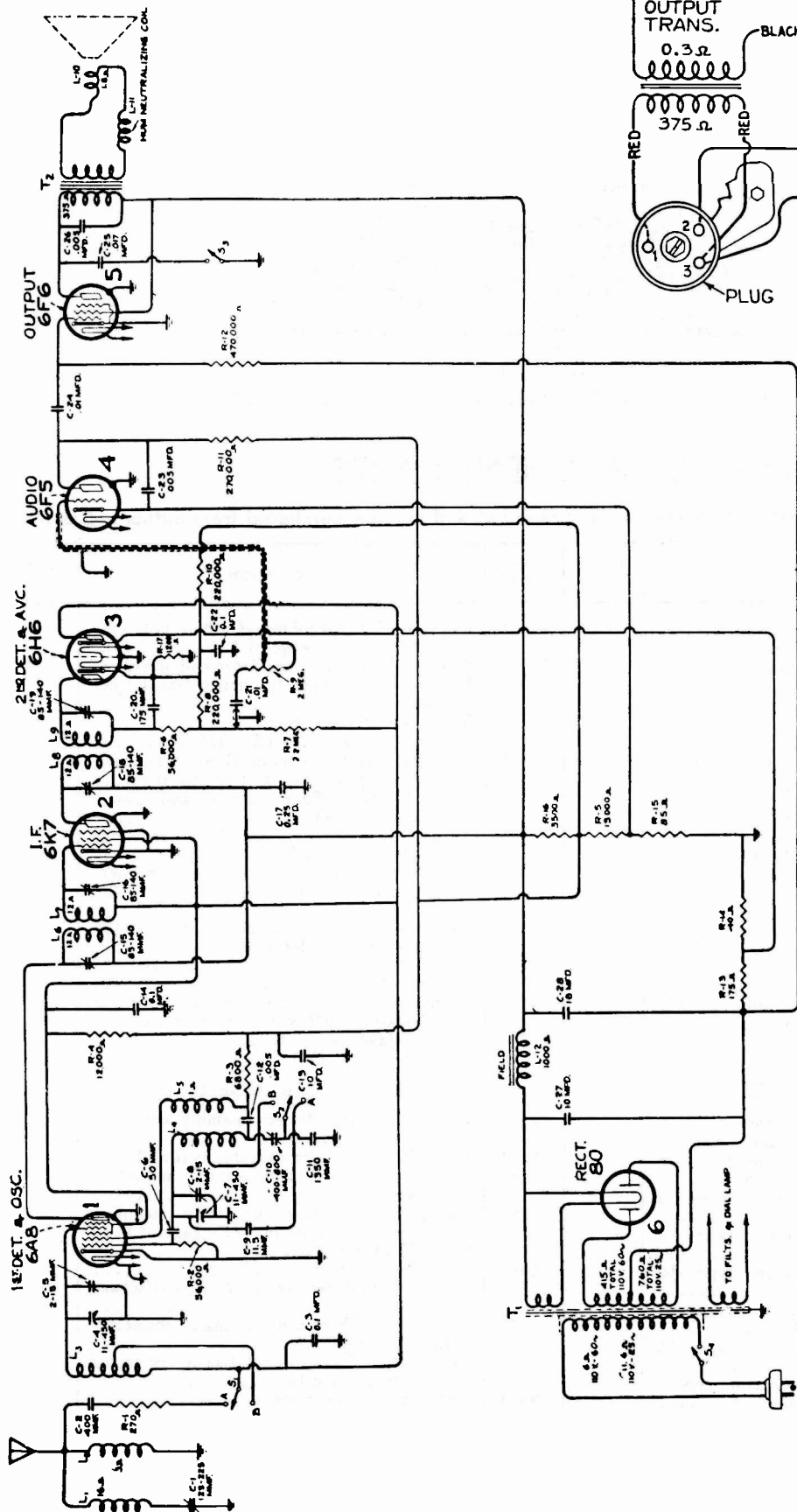
With tuning condenser fully meshed set pointer to horizontal line at low frequency end of BC Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid. in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "BC" Band	C19 C18 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C16 C15 1st I-F Trans.
3				Wave Trap Minimum Output
4	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "BC" Band	C8 C5 Osc. Ant.
5		600 Kc	600 Kc "BC" Band	C10 L-F Osc. Rock Gang
6				Repeat Step 4



Primary Resistance—17.3 ohms, Total
Secondary Resistance—400 ohms, Total

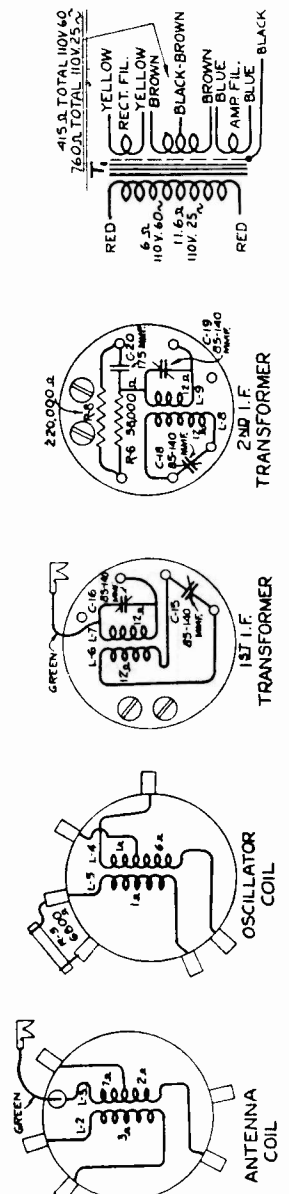
Universal Transformer



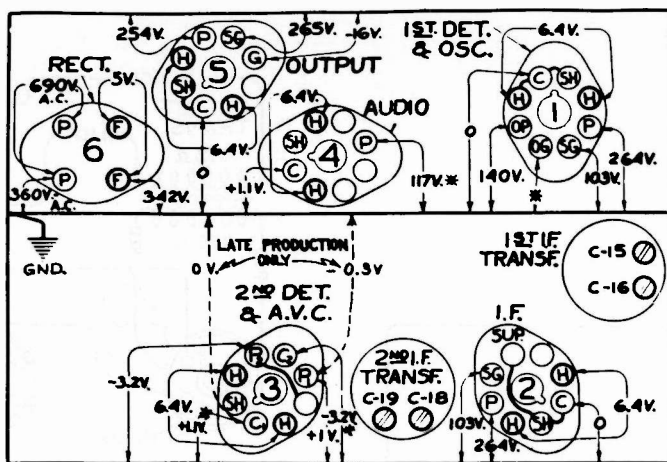
Loudspeaker Wiring

Schematic Circuit Diagram

On some instruments, R-10, R-17 and C-22 are omitted and the RCA-6H6 first Cathode is directly grounded.



T6-9



—Radiotron Socket Voltages
 Measured at 115 volts, 60 cycle supply—No signal being received

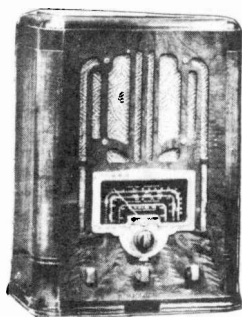
T6-9 REPLACEMENT PARTS

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

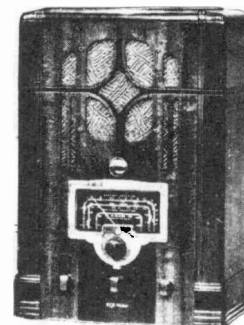
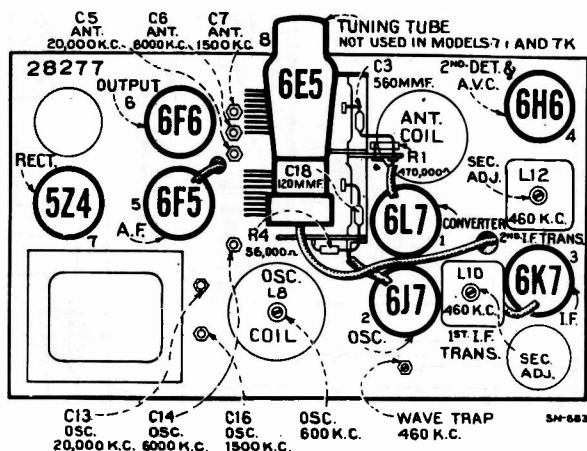
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
11468	Bracket—Dial mounting bracket		11626	Resistor—2.2 Megohms—Carbon type—1/4 watt (R7)—Package of 5	
11465	Capacitor—Adjustable capacitor—(C10) ..		11464	Shield—Antenna or oscillator coil shield...	
11450	Capacitor—11.5 Mmfd. (C9)		11390	Shield—Intermediate frequency transformer shield	
11289	Capacitor—50 Mmfd. (C6)		11383	Shield—Radiotron shield	
4297	Capacitor—400 Mmfd. (C2)		11461	Switch—Range switch (S1, S2)	
11449	Capacitor—1350 Mmfd. (C11)		5238	Terminal—Antenna terminal board assembly —with clip, insulation strip and rivets...	
4868	Capacitor—0.005 Mfd. (C12, C23, C26) ..		11460	Tone Control—Tone control and power switch (S3, S4)	
4858	Capacitor—0.01 Mfd. (C24)		11388	Transformer—First intermediate frequency transformer (L6, L7, C15, C16)	
4624	Capacitor—0.01 Mfd. (C21)		11389	Transformer—Second intermediate frequency transformer (L8, L9, C18, C19, C20, R6, R8)	
11451	Capacitor—0.017 Mfd. (C25)		11458	Transformer—Power transformer—105-125 volts—50-60 cycles (T1)	
11414	Capacitor—0.1 Mfd. (C14)		11585	Transformer—Power transformer—105-125 volts—25-50 cycles	
4841	Capacitor—0.1 Mfd. (C3, C22*)		11584	Transformer—Power transformer—100-130/140-160/195-250 volts—40-60 cycles....	
5170	Capacitor—0.25 Mfd. (C17)		11391	Trap—Wave trap (L1, C1)	
11387	Capacitor—10 Mfd. (C13)		11459	Volume Control (R9)	
11240	Capacitor—10 Mfd. (C27)		REPRODUCER ASSEMBLIES		
5212	Capacitor—18 Mfd. (C28)		11232	Board—Terminal board assembly with two lead wire clips	
11462	Coil—Antenna coil (L2, L3)		11231	Bolt—Yoke and core assembly bolt and nut.	
11463	Coil—Oscillator coil (L4, L5)		8060	Bracket—Output transformer mounting bracket	
11457	Condenser—Two-gang variable tuning condenser—complete with mounting bushing assembly (C4, C5, C7, C8)		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5...	
11583	Dial—Dial scale		11470	Coil—Field coil (L12)	
12042	Drive—Vernier drive for tuning condenser		11469	Coil—Neutralizing coil (L11)	
11467	Indicator—Station selector indicator pointer		11235	Cone—Reproducer cone (L10)—Package of 5	
5226	Lamp—Dial lamp—Package of 5		5118	Connector—Three-contact male connector for reproducer	
11466	Resistor—Voltage divider resistor—comprising one 3,500 ohm, one 13,000 ohm, one 85 ohm, one 40 ohm and one 175 ohm sections (R5, R13, R14, R15, R16)		5119	Connector—Three-contact female connector for reproducer cable	
6135	Resistor—270 Ohms—Carbon type—1/4 watt (R1)—Package of 5		9621	Reproducer—Complete	
11283	Resistor—1200 Ohms—Carbon type—1/4 watt (R17*)—Package of 5		11253	Transformer—Output transformer (T2)	
11454	Resistor—6800 Ohms—Carbon type—1/4 watt (R3)—Package of 5		11230	Washer—Binders board "C" washer—Used to hold field coil assembly—Package of 5.	
3066	Resistor—12,000 Ohms—Carbon type—1 watt (R4)—Package of 5		* C-22, R-10 and R-17 used in some models		
5029	Resistor—56,000 Ohms—Carbon type—1/4 watt (R2)—Package of 5				
11453	Resistor—270,000 Ohms—Carbon type—1/10 watt (R11)—Package of 5				
11452	Resistor—470,000 Ohms—Carbon type—1/10 watt (R12)—Package of 5				
5158	Resistor—220,000 Ohms—Carbon type—1/4 watt (R10*)—Package of 5				

MODELS 7T, 7K, 8K, 8K1, 8T & 8T10

Seven-Tube and Eight-Tube, Three-Band, A-C, Superheterodyne Receivers

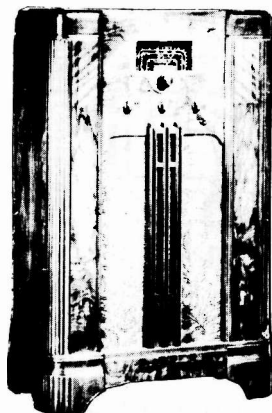


MODEL 7T

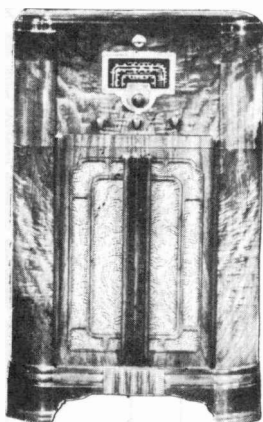


MODEL 8T

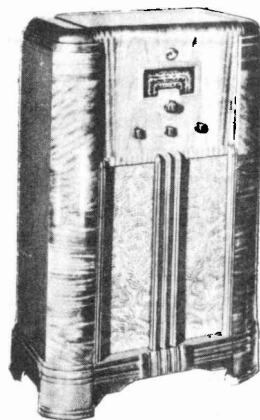
• Radiotron, Coil, and Trimmer Locations



MODEL 7K



MODEL 8K



MODEL 8K1



MODEL 8T10

Electrical Specifications

FREQUENCY RANGES
 "Standard Broadcast"..... 530- 1,800 kc
 "Medium Wave"..... 1,800- 6,300 kc
 "Short Wave"..... 6,300-22,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- | | |
|---|--|
| (1) RCA-6L7.....First Detector | (5) RCA-6F5.....Audio Voltage Amplifier |
| (2) RCA-6J7.....Oscillator | (6) RCA-6F6.....Power Output |
| (3) RCA-6K7.....Intermediate Amplifier | (7) RCA-5Z4.....Full-Wave Rectifier |
| (4) RCA-6H6.....Second Detector and A.V.C. | (8) RCA-6E5 (Models 8T and 8K only). Tuning Tube |
| Pilot Lamps (3).....Mazda No. 46, 6.3 volts, 0.25 amperes | |

POWER-SUPPLY RATINGS

Rating A..... 105-125 volts, 50-60 cycles, 80 watts
 Rating B..... 105-125 volts, 25-60 cycles, 80 watts
 Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 80 watts

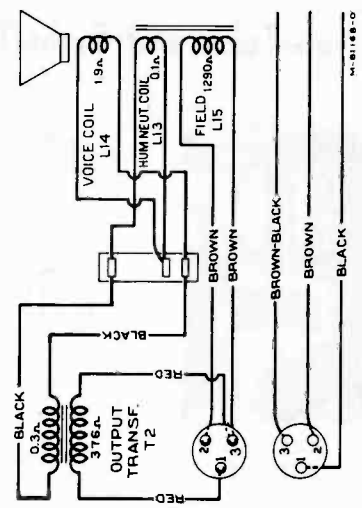
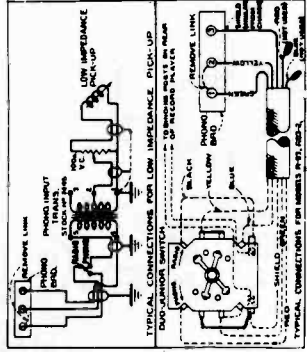
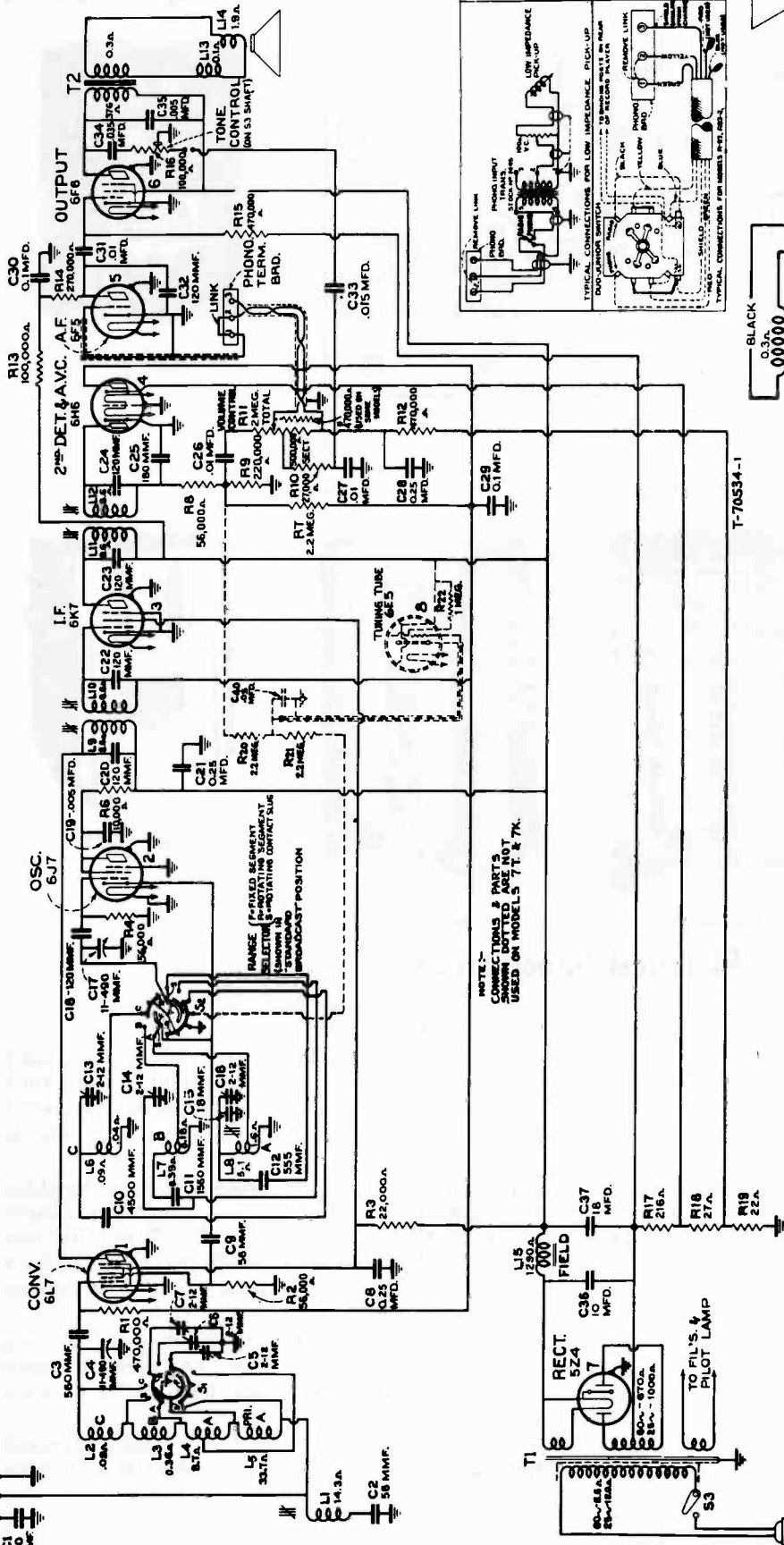
POWER OUTPUT

Undistorted..... 2 watts
 Maximum..... 4.5 watts

LOUDSPEAKER

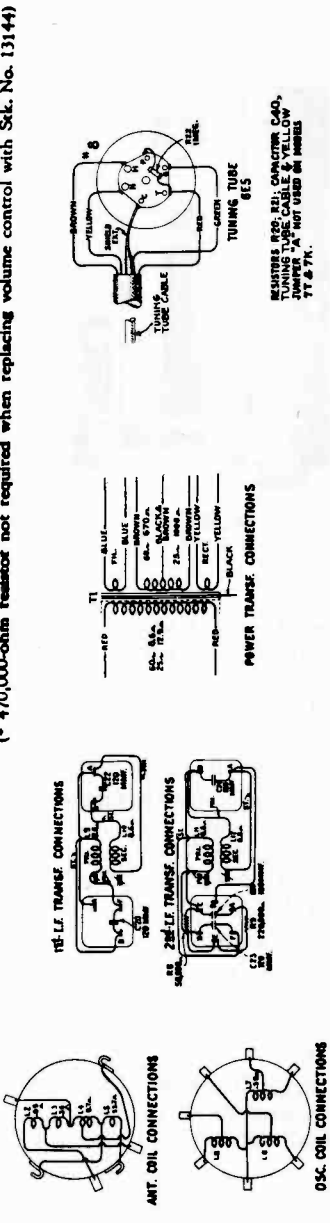
Type..... Electrodynamic
 Impedance (V.C.)..... 2.2 ohms at 400 cycles

7T, 7K, 8K, 8K1, 8T & 8T10



Loudspeaker Wiring

Schematic Circuit Diagram
(* 470,000-ohm resistor not required when replacing volume control with Stk. No. 13144)



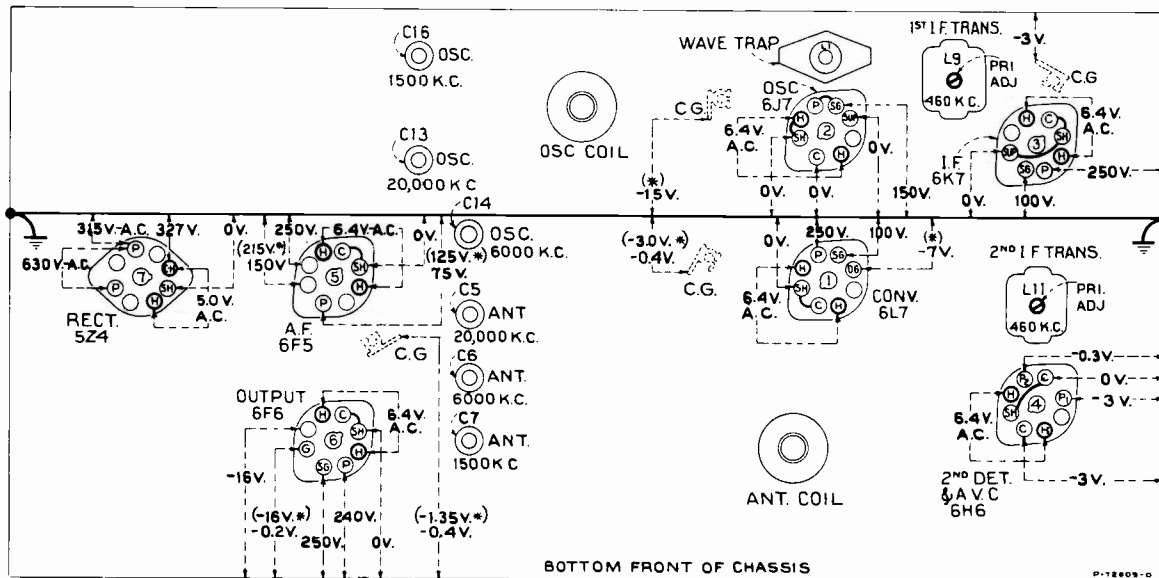
NOTE: USE 6E5 CAPACITOR COIL NUMBER 14 NOT USED ON MODELS 7T & 7K.

NOTE: CONNECTIONS & PARTS SHOWN DOTTED ARE NOT USED ON MODELS 7T & 7K.

RANGE (FIXED BANDWIDTH SELECTOR) - ROTATING CONTACT SLUG (COMMON) - POSITION BROADCAST

T-70534-1

7T, 7K, 8K, 8K1, 8T & 8T10



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—Volume control minimum

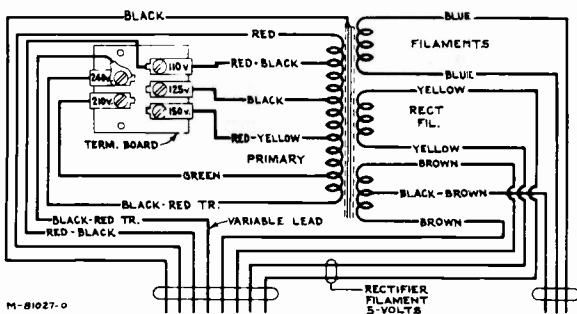
Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading. The lower value is the actual measured voltage and differs from the higher value because of the additional loading of the voltmeter through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

Alignment Procedure

With tuning condenser fully meshed setpointer to end calibration at low frequency end of BC Band scale.

CATHODE RAY OSCILLOGRAPH CONNECTIONS:

Connect vertical "H" to junction of R7-R8.
Connect vertical "O" to chassis.



Primary resistance—24.5 ohms total
Secondary resistance—668 ohms total
—Universal Transformer

Tuning Indicator

An RCA-6E5 cathode-ray tuning tube is used as a means of visually indicating when the receiver is accurately tuned to the incoming signal. This tube consists of an amplifier section and a cathode-ray section built in the same glass envelope. Maximum sensitivity of the tuning indicator is acquired in the "Short wave" position of the range selector S2 by removing the ground connection from resistor R21. In this position, resistors R20 and R21 no longer act as a voltage divider and maximum voltage is applied to the grid of the tuning tube.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "BC" Band	L12 L11 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			L10 L9 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	20000 Kc	20 Mc "SW" Band	C13† C5▲ Osc. Ant.
5		6000 Kc	6000 Kc "MED" Band	C14† C8 Osc. Ant.
6	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "BC" Band	C16 C7 Osc. Ant.
7		600 Kc	600 Kc "BC" Band	L8 L-F Osc. Rock Gang
8	Repeat Step 6			

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

7T, 7K, 8K, 8K1, 8T & 8T10

MODEL 8T10

The chassis and speaker for this instrument are identical to Model 8T. All Service Data for Model 8T are directly applicable to these instruments except the Replacement Parts for Miscellaneous Assemblies which are listed below.

STOCK NO.	DESCRIPTION
MISCELLANEOUS ASSEMBLIES	
11996	BRACKET - Tuning tube mounting bracket and clamp
13303	CRYSTAL - Station selector escutcheon and crystal
13275	ESCUTCHEON - Tuning tube escutcheon
13315	KNOB - Large station selector knob
13316	KNCB - Small (vernier) station selector knob
13317	KNOB - Volume control, tone control, or range switch knob
11377	SCREW - Chassis mounting screw assembly
4982	SPRING - Retaining spring for knob Stock No. 13315
11349	SPRING - Retaining spring for knob Stock No. 13316, and 13317

MODEL 8K1

This receiver is identical to Model 8K except for cabinet design. All Service Data for Model 8K are directly applicable to these receivers except the Replacement Parts listed below

<u>Stock No.</u>	<u>Description</u>
13993	Dial--Station selector dial scale
13683	Mask--Dial light diffuser with colored screens
13615	Bracket--Tuning tube mounting bracket and clamp

Stock Nos. 12703, 12718, and 11996 are not used in Model 8K1.

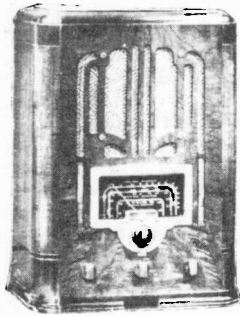
REPLACEMENT PARTS

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

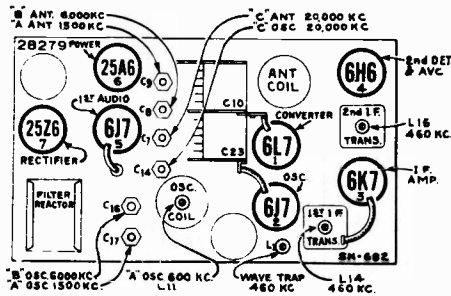
Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
12706	Arm—Hub and arm complete for operating shutter (located on range switch shaft)		12714	Capacitor—Adjustable capacitor (C5, C6, C7, C13, C14, C16).....	
12716	Board—Antenna and ground terminal board		12722	Capacitor—18 Mmfd. (C15).....	
12717	Board—Phonograph terminal board.....		12723	Capacitor—56 Mmfd. (C9).....	
5237	Bushing—Variable capacitor mounting bushing assembly—Package of 3.....		12726	Capacitor—56 Mmfd. (C2).....	
12730	Cable—Shielded cable approximately 14½ in. long—volume control to phono terminal board.....		12724	Capacitor—120 Mmfd. (C18, C32).....	
11625	Cable—Tuning tube cable and socket complete (Models 8T and 8K).....		12404	Capacitor—120 Mmfd. (C20, C22, C23, C24)	
12511	Cap—Grid contact cap—Package of 5..		12725	Capacitor—150 Mmfd. (C1).....	
			12406	Capacitor—180 Mmfd. (C25).....	
			12727	Capacitor—555 Mmfd. (C12).....	
			12537	Capacitor—560 Mmfd. (C3).....	
			12729	Capacitor—1,550 Mmfd. (C11).....	
			12728	Capacitor—4,500 Mmfd. (C10).....	
			4868	Capacitor—.005 Mfd. (C19, C35).....	
			4858	Capacitor—.01 Mfd. (C26, C27; C31)..	

MODELS 7X & 7X1

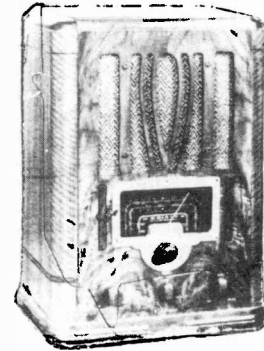
Seven-Tube, Three-Band, AC-DC, Superheterodyne Receivers



MODEL 7X



Radiotron, Coil, and Trimmer Locations



MODEL 7X1

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A) 530-1,780 kc.
- "Medium Wave" (B) 1,780-6,300 kc.
- "Short Wave" (C) 6,300-22,000 kc.

ALIGNMENT FREQUENCIES

- "Standard Broadcast" (A) 600 kc. (osc.), 1,500 kc. (osc., ant.)
- "Medium Wave" (B) 6,000 kc. (osc., ant.)
- "Short Wave" (C) 20,000 kc. (osc., ant.)

Intermediate Frequency 460 kc.

RADIOTRON COMPLEMENT

- | | |
|--|---|
| (1) RCA-6L7 First Detector (Converter) | (4) RCA-6H6 Second Detector-A.V.C. |
| (2) RCA-6J7 Oscillator | (5) RCA-6J7 Audio Voltage Amplifier |
| (3) RCA-6K7 Intermediate Amplifier | (6) RCA-25A6 Audio Power Amplifier |
| | (7) RCA-25Z6 Half-Wave Rectifier |

Pilot Lights (3) Mazda No. 40, 6.3 volts, 0.15 ampere

POWER SUPPLY RATINGS

- D. C. Rating 105-125 volts, 45 watts
- A. C. Rating 105-125 volts, 25-100 cycles, 50 watts

- | | |
|---|---|
| Power Output (125 volt, A. C. line) | Power Output (125 volt, D. C. line) |
| Undistorted 0.6 watt | Undistorted 0.5 watt |
| Maximum 1.5 watts | Maximum 1.2 watts |

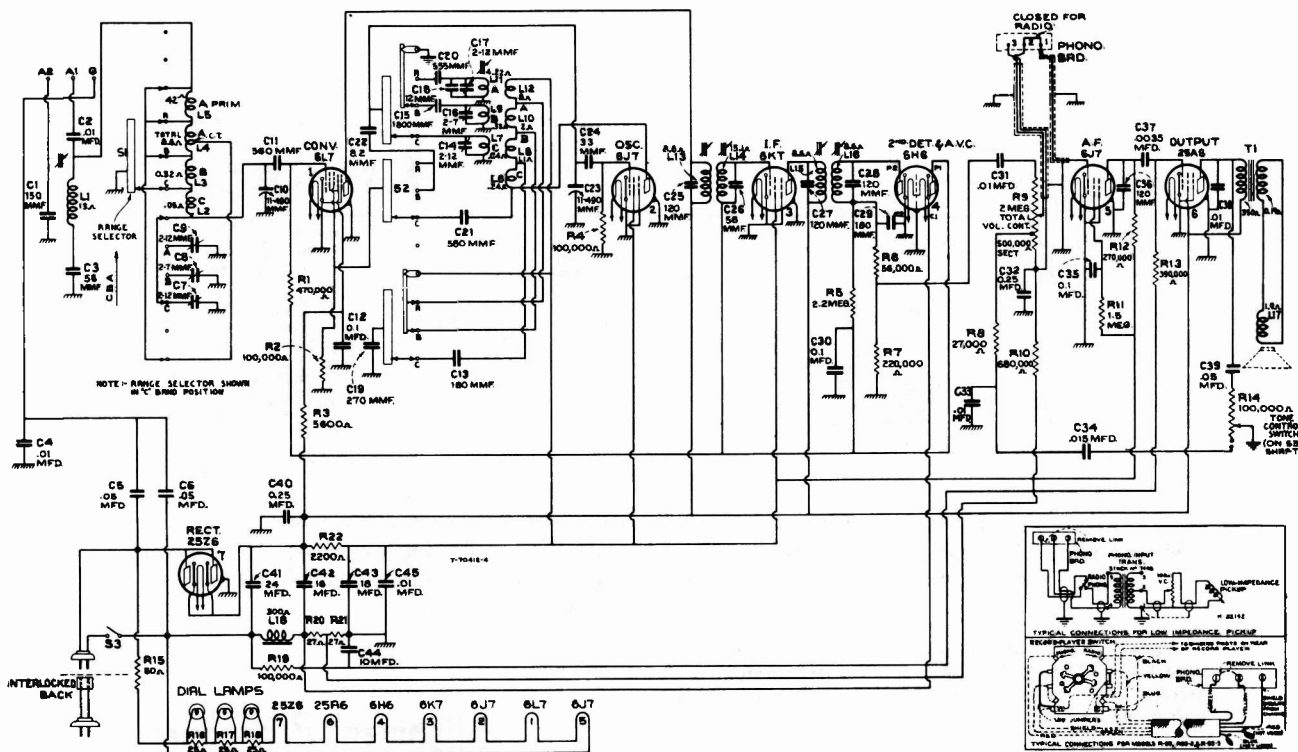
LOUDSPEAKER (Permanent-Magnet Dynamic) Impedance (V. C.) 2.25 ohms at 400 cycles

MODEL 7X1

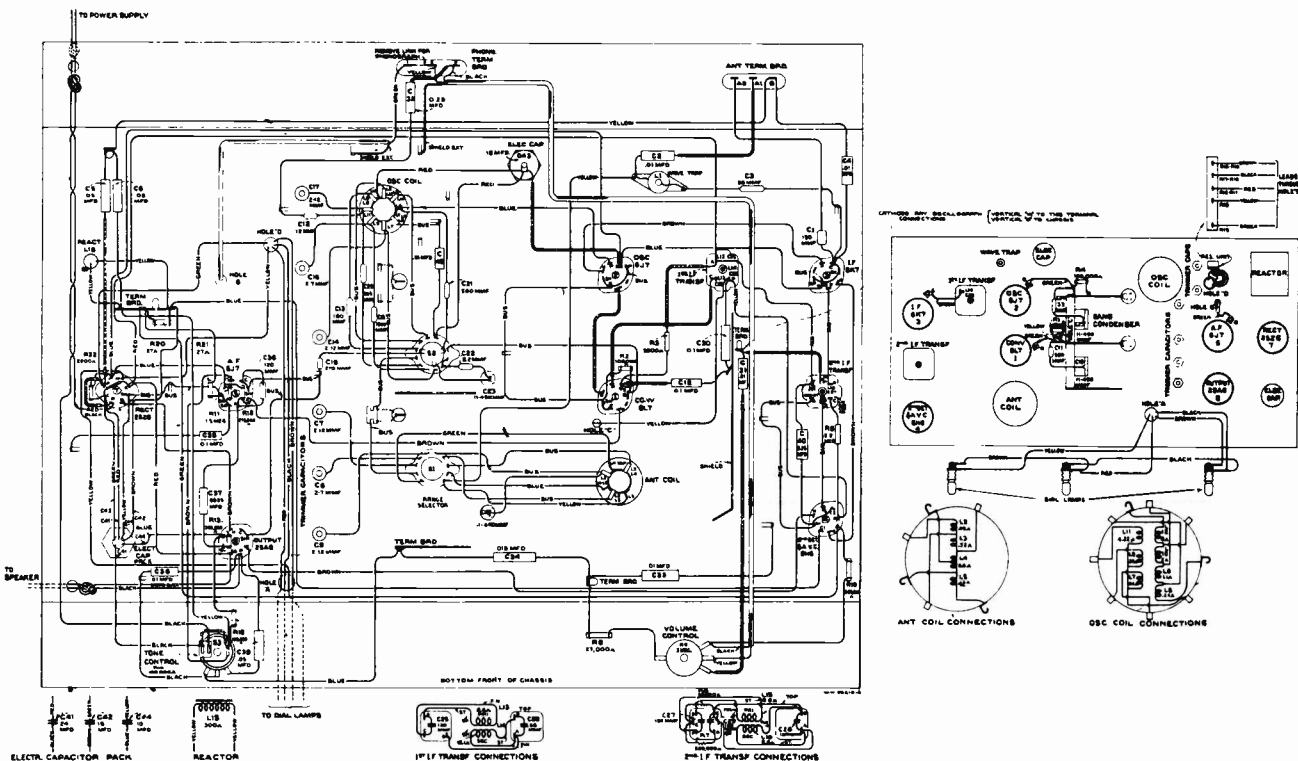
All Service Data for Model 7X are directly applicable to these receivers except the Replacement Parts listed below.

<u>Stock No.</u>	<u>Description</u>
14136	Dial--Station selector dial scale
13683	Mask--Dial light diffuser complete with colored screen
14171	Socket--Dial lamp socket
13866	Cap--Reproducer cone dust cap
9712	Reproducer complete less output transformer and bracket

Stock Nos. 12996, 12718, 3529, and 9717 are not used in Model 7X1.



Schematic Circuit Diagram



Chassis Wiring Diagram

7X & 7X1

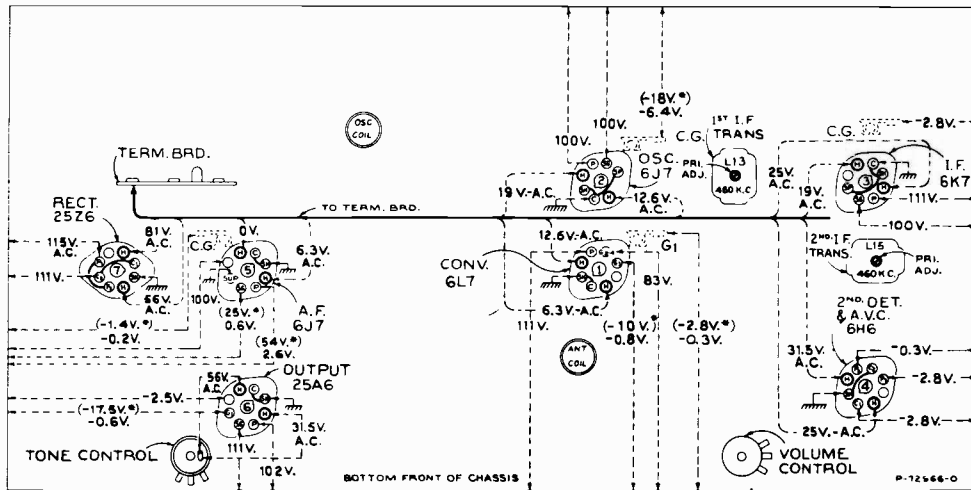


Figure 5—Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—For 115-volt d-c supply approximately 10% lower—
Tuned to approximately 1,000 kc—No signal being received—Tone control optional—
Volume control maximum

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

With tuning condenser fully meshed set dial pointer to coincide with 530 on low frequency end of BC Band scale.

Radiotron Cathode Current Readings	
Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements	
(1) RCA-6L7—Converter	7.5 ma.
(2) RCA-6J7—Osc.	3.5 ma.
(3) RCA-6K7—I. F. Amp.	8.5 ma.
(4) RCA-6H6—2nd Det.-A.V.C.	—
(5) RCA-6J7—Audio	0.22 ma.
(6) RCA-25A6—Power	27.0 ma.
(7) RCA-25Z6—Rectifier	48.0 ma.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "BC" Band	L16 L15 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L14 L13 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	20000 Kc	20000 Kc "SW" Band	C14† C7▲ Osc. Ant.
5		8000 Kc	6000 Kc "MED" Band	C16† C8 Osc. Ant.
6	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "BC" Band	C17 C9 Osc. Ant.
7		800 Kc	800 Kc "BC" Band	L11 Rock Gang 600 Kc Osc.
8	Repeat Step 6			

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

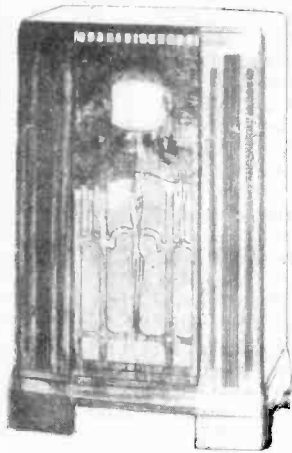
REPLACEMENT PARTS

7X & 7X1

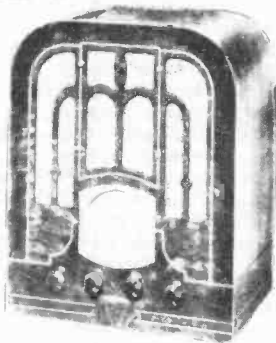
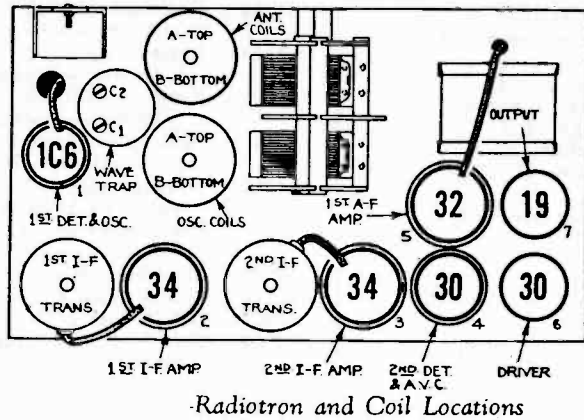
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
12716	Board—Antenna and ground terminal board		11398	Resistor—220,000 ohms, carbon type, 1/10 watt—Package of 5 (R7)	
12717	Board—Phonograph terminal board		11453	Resistor—270,000 ohms, carbon type, 1/10 watt—Package of 5 (R12)	
5237	Bushing—Tuning condenser mounting bushing assembly—Package of 3		13005	Resistor—390,000 ohms, carbon type, 1/10 watt—Package of 5 (R13)	
12511	Cap—Grid contact cap—Package of 5		11452	Resistor—470,000 ohms, carbon type, 1/10 watt—Package of 5 (R1)	
12714	Capacitor—Adjustable trimmer (C7, C9, C16, C17)		11811	Resistor—680,000 ohms, carbon type, ¼ watt—Package of 5 (R10)	
12807	Capacitor—Adjustable trimmer (C8, C14)		4241	Resistor—1.5 meg., carbon type, ¼ watt—Package of 5 (R11)	
13001	Capacitor—8.2 Mmfd. (C22)		12651	Shield—Coil shield for Stock No. 12708	
13002	Capacitor—12 Mmfd. (C18)		12710	Shield—Coil shield for Stock No. 12709	
12948	Capacitor—33 Mmfd. (C24)		12607	Shield—1st I. F. transformer shield cap.	
12723	Capacitor—56 Mmfd. (C3)		12008	Shield—I. F. transformer shield for Stock Nos. 12801, 12653	
12629	Capacitor—56 Mmfd. (C26)		12581	Shield—2nd I. F. transformer shield cap.	
12404	Capacitor—120 Mmfd. (C25, C27, C28)		12110	Shield—Top cap shield for 6J7 Radiotron	
12724	Capacitor—120 Mmfd. (C36)		12704	Shutter—Dial scale holder and shutter assembly	
12725	Capacitor—150 Mmfd. (C1)		11198	Socket—7-contact 6J7, 6K7 or 6L7 Radiotron socket	
12406	Capacitor—180 Mmfd. (C29)		11196	Socket—8-contact 25A6, 25Z6, 6H6 or 6J7 Radiotron socket	
13003	Capacitor—180 Mmfd. (C13)		3529	Socket—Dial lamp socket	
12488	Capacitor—270 Mmfd. (C19)		12007	Spring—Retaining spring for Stock Nos. 12800, 12006 and 12664—Package of 10	
12537	Capacitor—560 Mmfd. (C11, C21)		12849	Spring—Tension spring for band indicator shutter link—Package of 5	
12727	Capacitor—555 Mmfd. (C20)		12668	Tone control and power switch (R14, S3)	
12947	Capacitor—1,800 Mmfd. (C15)		12801	Transformer—First I. F. transformer complete (L13, L14, C25, C26)	
5005	Capacitor—.0035 Mfd. (C37)		12653	Transformer—Second I. F. transformer complete (L15, L16, C27, C28, C29, R6, R7)	
11315	Capacitor—.015 Mfd. (C34)		12654	Trap—Wave trap complete (L1)	
4886	Capacitor—.05 Mfd. (C5, C6, C39)		13144	Volume control (R9)	
4841	Capacitor—.01 Mfd. (C12, C30, C35)			REPRODUCER ASSEMBLIES	
4858	Capacitor—.01 Mfd. (C2, C4, C31, C33, C38, C45)		12914	Board—2-contact reproducer terminal board	
5170	Capacitor—.025 Mfd. (C32)		12640	Bracket—Output transformer mounting bracket	
4840	Capacitor—.025 Mfd. (C40)		12642	Cone—Reproducer cone and dust cap (L17)	
5212	Capacitor—18 Mfd. (C43)		5118	Connector—3-contact male connector for speaker leads	
12998	Capacitor—Pack comprising one 24 Mfd., one 16 Mfd. and on 10 Mfd. sections (C41, C42, C44)		9717	Reproducer complete	
12708	Coil—Antenna coil and shield (L2, L3, L4, L5)		11828	Transformer—Output transformer (T1)	
12943	Coil—Oscillator coil and shield (L6, L7, L8, L9, L10, L11, L12)			MISCELLANEOUS ASSEMBLIES	
12701	Condenser—2-gang variable tuning condenser (C10, C23)		11824	Connector—2-contact female connector for power cord, Stock No. 11823	
11979	Connector—2-contact male connector for power leads		11823	Cord—Power cord complete	
5119	Connector—3-contact female connector for speaker leads		12698	Crystal—Station selector escutcheon and crystal	
12800	Core—Adjustable core and stud for Stock No. 12709		12699	Knob—Large station selector knob—Package of 5	
12006	Core—Adjustable core and stud for Stock No. 12801 and No. 12653		12992	Knob—Small vernier station selector knob—Package of 5	
12664	Core—Adjustable core and stud for Stock No. 12654		12995	Knob—Tone and power switch knob—Package of 5	
12996	Dial—Station selector dial scale		12994	Knob—Volume control or range switch knob—Package of 5	
12702	Drive—Vernier drive for tuning condenser		11377	Screw—Chassis mounting screw assembly—Package of 4	
12712	Indicator—Station selector indicator pointer		12993	Screw—8-32 x ¼ headless set screw for knob, Stock Nos. 12992, 12993, 12994 and 12995—Package of 10	
4340	Lamp—Dial lamp—Package of 5		4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10	
12718	Mask—Dial light diffuser complete with colored screen		12679	Resistor—2.2 meg., insulated, ¼ watt—Package of 5 (R5)	
12997	Range switch—(S1, S2)		13000	Resistor—Ballast resistor, comprising one 50-ohm and three 40-ohm sections (R15, R16, R17, R18)	
12999	Reactor—Filter reactor (L18)		4669	Screw—8-32 set screw for Stock No. 12704—Package of 10	
11955	Resistor—27 ohms, carbon type, ¼ watt—Package of 5 (R21)				
12453	Resistor—27 ohms, insulated, ¼ watt—Package of 5 (R20)				
13004	Resistor—2,200 ohms, carbon type, ½ watt—Package of 5 (R22)				
11647	Resistor—5,600 ohms, carbon type, ¼ watt—Package of 5 (R3)				
11400	Resistor—27,000 ohms, carbon type, ¼ watt—Package of 5 (R3)				
11282	Resistor—56,000 ohms, carbon type, 1/10 watt—Package of 5 (R6)				
11281	Resistor—100,000 ohms, carbon type, 1/10 watt—Package of 5 (R4)				
5145	Resistor—100,000 ohms, carbon type, ¼ watt—Package of 5 (R2, R19)				

MODELS BT 7-8, BC 7-9, 135-B & 235-B

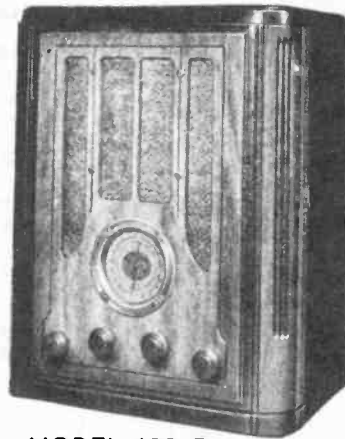
Seven-Tube, Two-Band, Superheterodyne, Battery Receivers



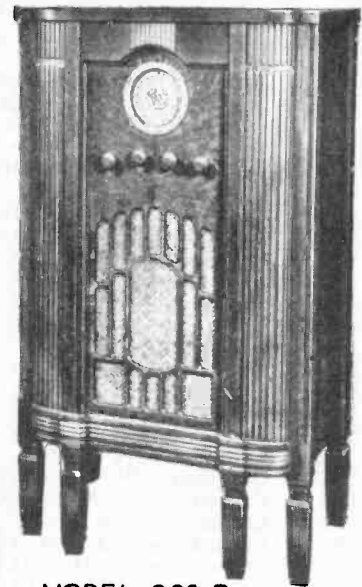
MODEL BC 7-9



MODEL BT 7-8



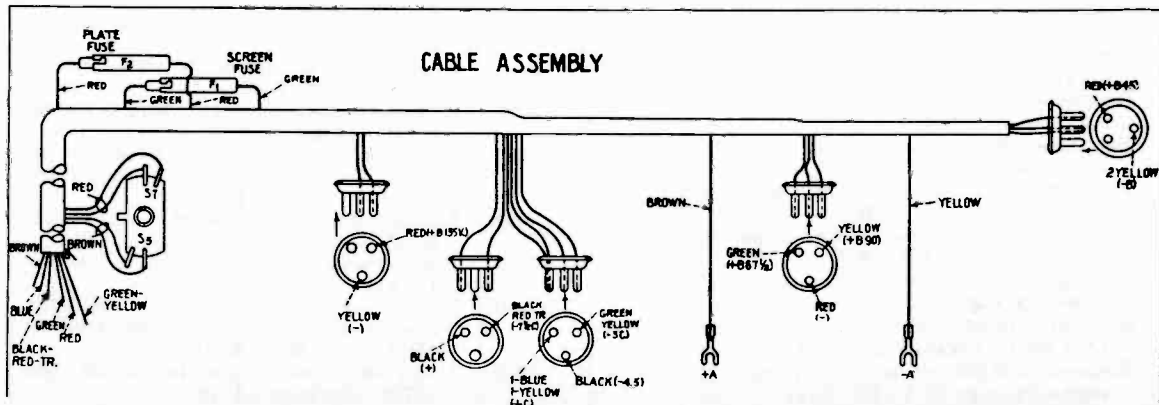
MODEL 135-B



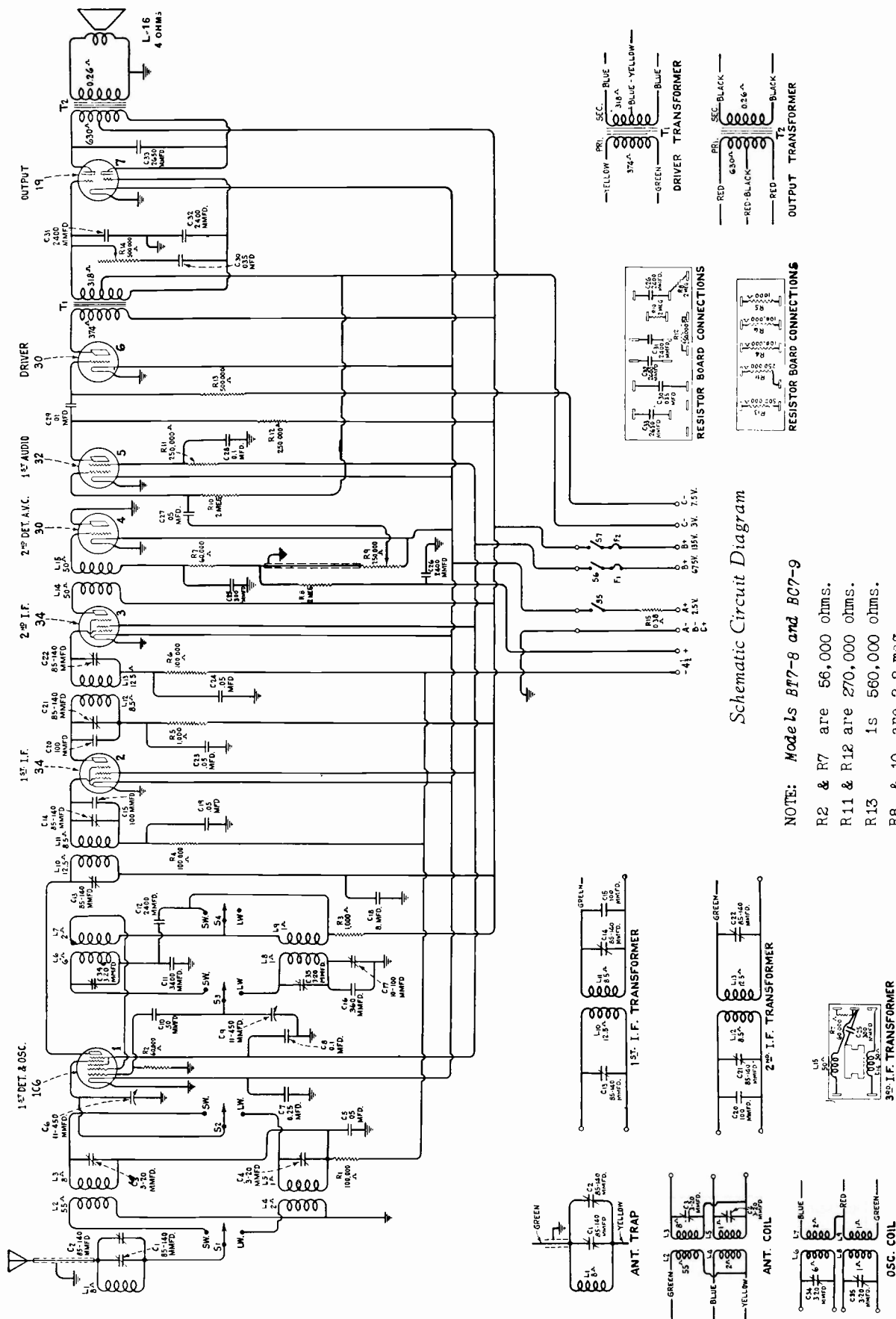
MODEL 235-B

ELECTRICAL SPECIFICATIONS

Type and Number of Radiotrons.....	1 RCA-1C6, 2 RCA-34, 2 RCA-30, 1 RCA-32, 1 RCA-19—Total, 7
Total "A" Battery Current.....	0.68 Ampere
Maximum "B" Battery Current.....	21 M. A.
Tuning Ranges	540-1720 kc. and 5400-18000 kc.
Maximum Undistorted Output.....	1.2 Watts
Maximum Output.....	2.2 Watts
Line-up Frequencies	460 kc., 600 kc., 1720 kc., and 18000 kc.



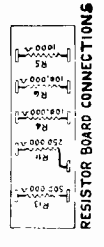
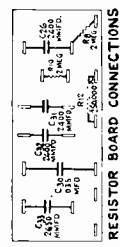
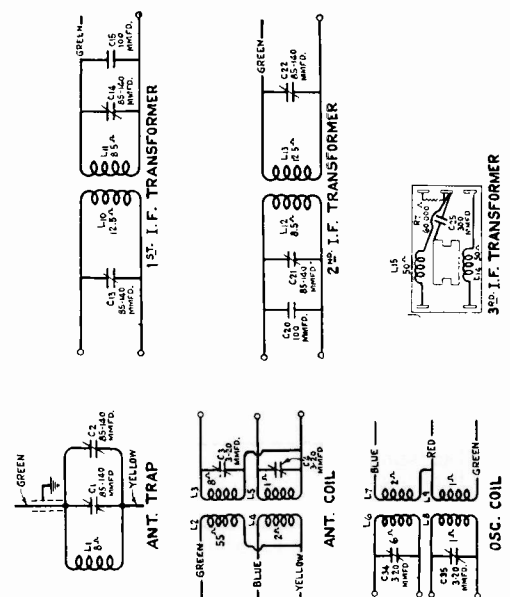
BT 7-8, BC 7-9, 135-B & 235-B



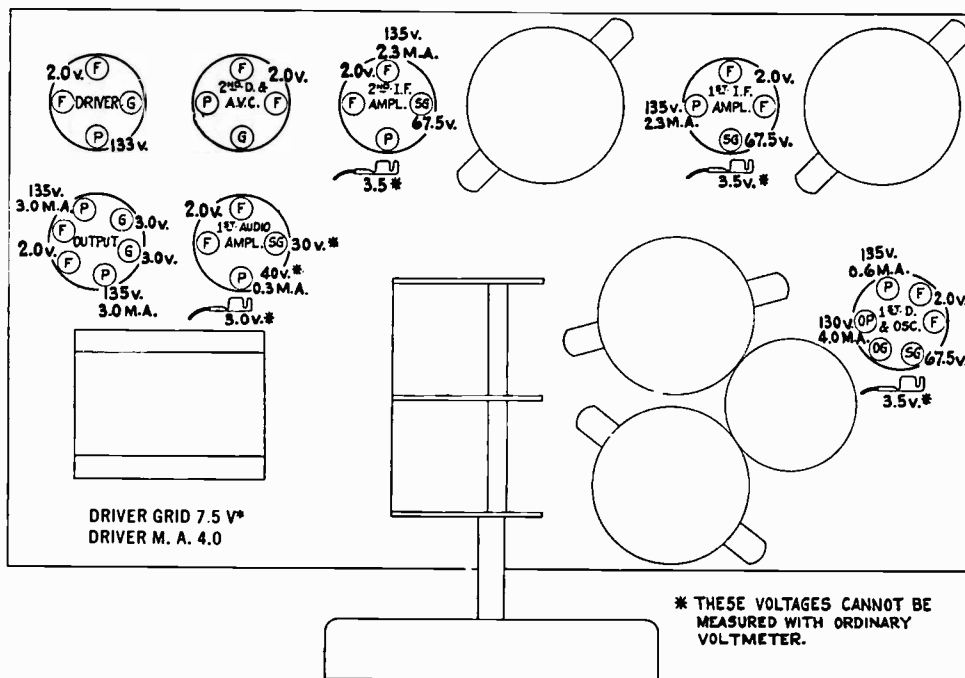
Schematic Circuit Diagram

NOTE: Models BT 7-8 and BC 7-9

- R2 & R7 are 56,000 ohms.
- R11 & R12 are 270,000 ohms.
- R13 is 560,000 ohms.
- R8 & 10 are 2.2 meg.



BT7-8, BC7-9, 135-B & 235-B



DRIVER GRID 7.5 V*
DRIVER M. A. 4.0

* THESE VOLTAGES CANNOT BE MEASURED WITH ORDINARY VOLTMETER.

-Radiotron Socket Voltages

Volume Control at Maximum—No Signal—135 Volt "B" Battery—
4.5 and 7.5-Volt Bias Batteries

Alignment Procedure

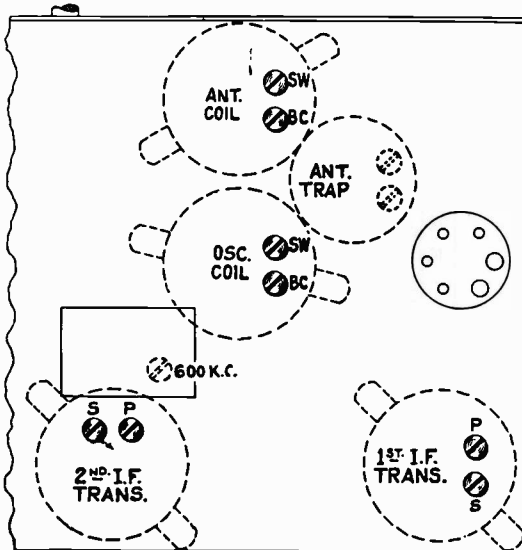
With tuning condenser fully meshed set pointer to coincide with 540 dial calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "BC" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3				C1 Wave Trap Minimum Output
4	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "BC" Band	C35 C4 Osc. Ant.
5		600 Kc	600 Kc "BC" Band	C17 L-F Osc. Rock Gang
6	Repeat Step 4			
7	Antenna in series with 300 ohms	18000 Kc	18 Mc "SW" Band	C34† C3▲ Osc. Ant.

Osc. tracks 460 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.



BOTTOM VIEW

Location of Line-Up Capacitors

BT 7-8 and BC 7-9 REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
4427	Bracket—Volume control or tone control mounting bracket.....		4538	quency transformer (L12, L13, C20, C21, C22)	
4244	Cap—Grid contact cap—Package of 5.....			Transformer—Third intermediate frequency transformer (L14, L15, R7, C45).....	
3861	Capacitor—Adjustable capacitor (C17).....		DRIVE ASSEMBLIES		
11289	Capacitor—50 MMfd. (C10).....		10194	Ball—Steel ball—Package of 20.....	
3794	Capacitor—100 MMfd. (C15, C20).....		4422	Clutch—Tuning condenser drive clutch assembly—comprising shaft, balls, ring, spring and washers—assembled.....	
3981	Capacitor—300 MMfd. (C25).....		11342	Dial—Station selector dial.....	
11413	Capacitor—360 MMfd. (C16).....		4586	Drive—Variable tuning condenser drive assembly—complete	
4801	Capacitor—2400 MMfd. (C12, C31, C32).....		4520	Indicator—Station selector indicator pointer	
2749	Capacitor—2400 MMfd. (C26).....		4669	Screw—No. 8-32 $\frac{3}{32}$ " set screw for variable condenser drive assembly—Package of 10	
4529	Capacitor—2650 MMfd. (C33).....		REPRODUCER ASSEMBLIES		
4439	Capacitor—3400 MMfd. (C11).....		(TABLE MODEL—BT 7-8)		
5196	Capacitor—0.035 Mfd. (C30).....		9539	Cone—Reproducer cone—Package of 5—(L16)	
4883	Capacitor—0.01 Mfd. (C29).....		9540	Magnet assembly—Comprising cone bracket, core, and magnet.....	
4518	Capacitor—0.05 Mfd. (C27).....		9538	Reproducer—Complete—(L16)	
4836	Capacitor—0.05 Mfd. (C5, C19, C23, C24)		REPRODUCER ASSEMBLIES		
4841	Capacitor—0.1 Mfd. (C8, C28).....		(CONSOLE MODEL—BC 7-9)		
4840	Capacitor—0.25 Mfd. (C7).....		9432	Cone—Reproducer cone—complete with voice coil (L16).....	
11344	Capacitor—8 Mfd. (C18).....		7820	Magnet—Cone housing and magnet assembly	
4430	Coil—Antenna coil (L2, L3, L4, L5, C3, C4)		7819	Reproducer—Complete—(L16)	
4432	Coil—Oscillator coil (L6, L7, L8, L9, C34, C35)		MISCELLANEOUS ASSEMBLIES		
4539	Coil and shield assembly—Antenna trap circuit		11343	Cable—Main battery cable complete with three stock #11340 connectors, two stock #11341, connectors, two stock #6516 fuse connectors, two stock #3748 fuses—except, less one stock #11339 switch.....	
4504	Condenser—Two-gang variable tuning condenser (C6, C9).....		6516	Connector—Fuse connector.....	
11338	Volume control—(R9).....		11340	Connector—3-contact male connector with three small prongs—for "B" battery connections	
5112	Resistor—1000 Ohms—Carbon type— $\frac{1}{4}$ Watt—(R5)—Package of 5.....		11341	Connector—3-contact male connector with two small and one large prong for "C" battery connections.....	
5029	Resistor—56,000 Ohms—Carbon type— $\frac{1}{4}$ Watt—(R2, R7)—Package of 5.....		11337	Escutcheon—Station selector escutcheon...	
3118	Resistor—100,000 Ohms—Carbon type— $\frac{1}{4}$ Watt—(R1, R4, R6)—Package of 5.....		6176	Escutcheon—Off-on operating switch escutcheon—Package of 5.....	
11323	Resistor—270,000 Ohms—Carbon type— $\frac{1}{4}$ Watt—(R11, R12)—Package of 5.....		3748	Fuse— $\frac{1}{2}$ ampere F1—Package of 5.....	
5035	Resistor—560,000 Ohms—Carbon type— $\frac{1}{4}$ Watt—(R13)—Package of 5.....		6614	Glass—Station selector dial glass.....	
11151	Resistor—2.2 Megohms—Carbon type— $\frac{1}{4}$ Watt—(R8, R10)—Package of 5.....		3088	Knob—Operating switch knob and screw—Package of 5.....	
4521	Shield—Antenna, oscillator, or intermediate frequency coil shield.....		4449	Knob—Station selector, volume control, tone or range switch knob—Package of 5.....	
3942	Shield—First detector, oscillator Radiotron shield		4644	Resistor—.38 Ohms—Flexible type—Filament series resistor—(R15)—Package of 5	
7487	Shield—Second detector Radiotron shield..		4678	Ring—Dial glass retaining ring—Package of 5	
3056	Shield—First or second intermediate frequency, or first audio Radiotron shield—Package of 2.....		3238	Screw—No. 6-40 $1\frac{1}{32}$ " Knurled head screw for knob, stock 3088—Package of 10...	
4532	Socket—4-contact first audio Radiotron socket		4945	Screw—Chassis mounting screw assembly—Console Model.....	
6980	Socket—4-contact intermediate frequency, second detector or driver Radiotron socket		4446	Screw—Chassis mounting screw assembly—Table Model.....	
4232	Socket—6-contact first detector, oscillator Radiotron socket.....		4613	Screw—No. 8-32 $\frac{3}{16}$ " headless set screw for station selector volume control, tone control switch, or range switch knob—Package of 10.....	
4531	Socket—6-contact output Radiotron socket.				
5053	Switch—Tone control switch (S6).....				
11339	Switch—Operating switch—less knob (stock #3088) and escutcheon (stock #6176)—(S5, S7).....				
4437	Switch—Range switch (S1, S2, S3, S4)...				
4533	Transformer—Audio transformer pack comprising driver and output transformer (T1, T2).....				
4431	Transformer—First intermediate frequency transformer—(L10, L11, C13, C14, C15)				
7840	Transformer—Second intermediate fre-				

BT7-8, BC7-9, 135-B & 235-B

135-B & 235-B

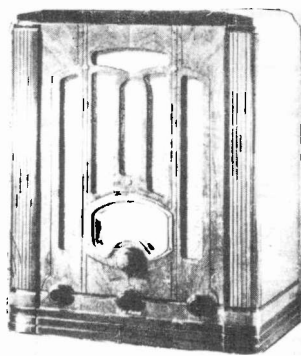
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES			REPRODUCER ASSEMBLIES (TABLE MODEL)		
4427	Bracket—Volume or tone control mounting bracket		9539	Cone—Reproducer cone—Package of 5	
2747	Cap—Contact cap—Package of 5		9540	Magnet assembly—Comprising cone bracket core and magnet	
4498	Capacitor—8 mfd. (C18)		9538	Reproducer complete	
4442	Capacitor—50 mmfd. (C10)		DRIVE ASSEMBLY		
3981	Capacitor—300 mmfd. (C25)		4422	Clutch—Condenser drive clutch assembly complete	
4413	Capacitor—360 mmfd. (C16)		4641	Dial—Station selector dial (console model)	
2749	Capacitor—2400 mmfd. (C26)		4588	Dial—Station selector dial (table model)	
4440	Capacitor—2400 mmfd. (C12, C31, C32)		4586	Drive—Variable tuning condenser drive assembly complete	
4529	Capacitor—2650 mmfd. (C33)		4587	Pointer—Station selector pointer (table model)	
4439	Capacitor—3400 mmfd. (C11)		4363	Pointer—Station selector pointer (console model)	
4212	Capacitor—0.01 mfd. (C29)		MISCELLANEOUS ASSEMBLIES		
4518	Capacitor—0.05 mfd. (C27)		6706	Bezel—Metal bezel (escutcheon) for station selector dial glass (table model)	
4417	Capacitor—0.05 mfd. (C5, C19, C23, C24)		6840	Bezel—Metal bezel (escutcheon) for station selector dial glass (console model)	
4643	Capacitor—0.035 mfd. (C30)		4289	Body—Fuse connector body—Package of 10	
3877	Capacitor—0.1 mfd. (C8, C28)		4642	Cable—Battery cable—8-conductor—Complete with switch and connectors (table model)	
4537	Capacitor—0.25 mfd. (C7)		4542	Cable—8-conductor battery cable complete with switch and connectors (console model)	
3861	Capacitor—Adjustable trimmer capacitor (C17)		4288	Cap—Fuse connector cap—Package of 10	
4430	Coil—Antenna coil (L2, L3, L4, L5, C3, C4)		6516	Connector—Fuse connector complete	
4432	Coil—Oscillator coil (L6, L7, L8, L9)		6176	Escutcheon—"OFF-ON" operating switch escutcheon—Package of 5	
4539	Coil and shield assembly—Antenna trap circuit (L1, C1, C2)		4286	Ferrule—Fuse connector ferrule and bushing—Package of 10	
4504	Condenser—2-gang variable tuning condenser (C6, C9)		3748	Fuse—0.5 ampere—Package of 5	
4687	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R3, R5)		6614	Glass—Station selector dial glass (console model)	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R7)—Package of 5		6707	Glass—Station selector dial glass (table model)	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R4, R6)—Package of 5		4290	Insulator—Fuse connector insulator—Package of 10	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11, R12)—Package of 5		3088	Knob—Operating switch knob—Package of 5	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5		4449	Knob—Station selector, volume control, tone control or range switch knob—Package of 5	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R8, R10)—Package of 5		4644	Resistor—0.42 ohms—Flexible type—Filament series (R15)—Package of 5	
4521	Shield—Antenna, oscillator or I. F. transformer shield		6615	Ring—Retaining ring for dial glass—Package of 5 (console model)	
4103	Shield—Driver Radiotron shield		6708	Ring—Retaining ring for dial glass—Package of 5 (table model)	
4145	Shield—First detector and oscillator Radiotron shield		4638	Screw—Chassis mounting screw assembly—Comprising eight cushions, four screws, four washers, four lockwashers and four spacers	
3056	Shield—First I. F. amplifier Radiotron shield—Package of 2		3238	Screw—6-40- $\frac{1}{2}$ " knurled head—Set screw for operating switch knob No. 3088—Package of 10	
4530	Socket—4-contact Radiotron socket		4613	Screw—8-32- $\frac{1}{4}$ " headless set screw for station selector volume control, tone control or range switch knob—Package of 10	
4532	Socket—4-contact audio amplifier—Radiotron socket		4284	Spring—Fuse connector spring—Package of 10	
4232	Socket—6-contact Radiotron socket		4540	Switch—Operating switch	
4531	Socket—6-contact output Radiotron socket		4285	Washer—Fuse connector insulating washer—Package of 10	
4534	Switch—Range switch (S1, S2, S3, S4, SW, LW)				
4536	Tone control (R14)				
4431	Transformer—First intermediate transformer (L10, L11, C13, C14, C15)				
7840	Transformer—Second intermediate transformer (L12, L13, C20, C21, C22)				
4538	Transformer—Third intermediate frequency transformer (L14, L15)				
4533	Transformer pack—Audio transformer pack—Comprising driver and output transformer (T1, T2)				
4535	Volume control (R9)				
REPRODUCER ASSEMBLIES (CONSOLE MODEL)					
4541	Cable—2-conductor reproducer cable				
9432	Cone—Reproducer cone (L16)				
7820	Magnet—Cone housing and magnet assembly				
7819	Reproducer complete				
4234	Rivet—Cone mounting rivet—Package of 100				

MODELS T 7-5, C 7-6 and D7-7

Seven-Tube, Three-Band, A-C, Superheterodyne Receivers and Radio-Phonograph



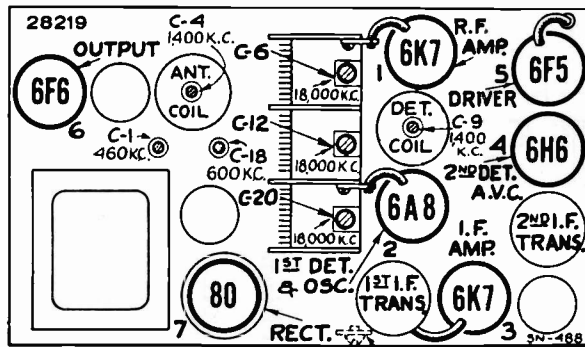
MODEL T 7-5



MODEL C 7-6



MODEL D 7-7



1400K.C. OSC. (C-15) ADJ. CENTER REAR OF CHASSIS

Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Band A.....	540- 1,625 kc.
Band B.....	1,625- 5,700 kc.
Band C.....	5,700-18,000 kc.

ALIGNMENT FREQUENCIES

Band A....	600 kc. (osc.), 1,400 kc. (osc., det., ant.)
Band B.....	None required
Band C.....	18,000 kc. (osc., det., ant.)

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... Radio-Frequency Amplifier
- (2) RCA-6A8..... First Detector-Oscillator
- (3) RCA-6K7..... Intermediate Amplifier

- (4) RCA-6H6..... Second Detector-A.V.C.
- (5) RCA-6F5..... Audio Voltage Amplifier
- (6) RCA-6F6..... Audio Power Amplifier
- (7) RCA-80..... Full-Wave Rectifier

POWER SUPPLY RATINGS

— D7-7 —

Rating A-6.....	105-125 Volts, 60 Cycles, 105 Watts
Rating A-5.....	105-125 Volts, 50 Cycles, 105 Watts
Rating B-2.....	105-125 Volts, 25 Cycles, 110 Watts
Rating C-6... 105-130/140-160/200-250 Volts,	60 Cycles, 105 Watts
Rating C-5... 105-130/140-160/200-250 Volts,	50 Cycles, 105 Watts

— T7-5 & C7-6 —

Rating A...	50-60 Cycles, 100 Watts
Rating B...	25-60 Cycles, 105 Watts
Rating C...	40-60 Cycles, 105 Watts

PHONOGRAPH D7-7

Type Manual

Turntable Speed 78 R.P.M.

Type of Pickup High-Impedance Magnetic

Pickup Impedance 1,400 Ohms at 1,000 Cycles

POWER OUTPUT

Undistorted..... 2.25 Watts

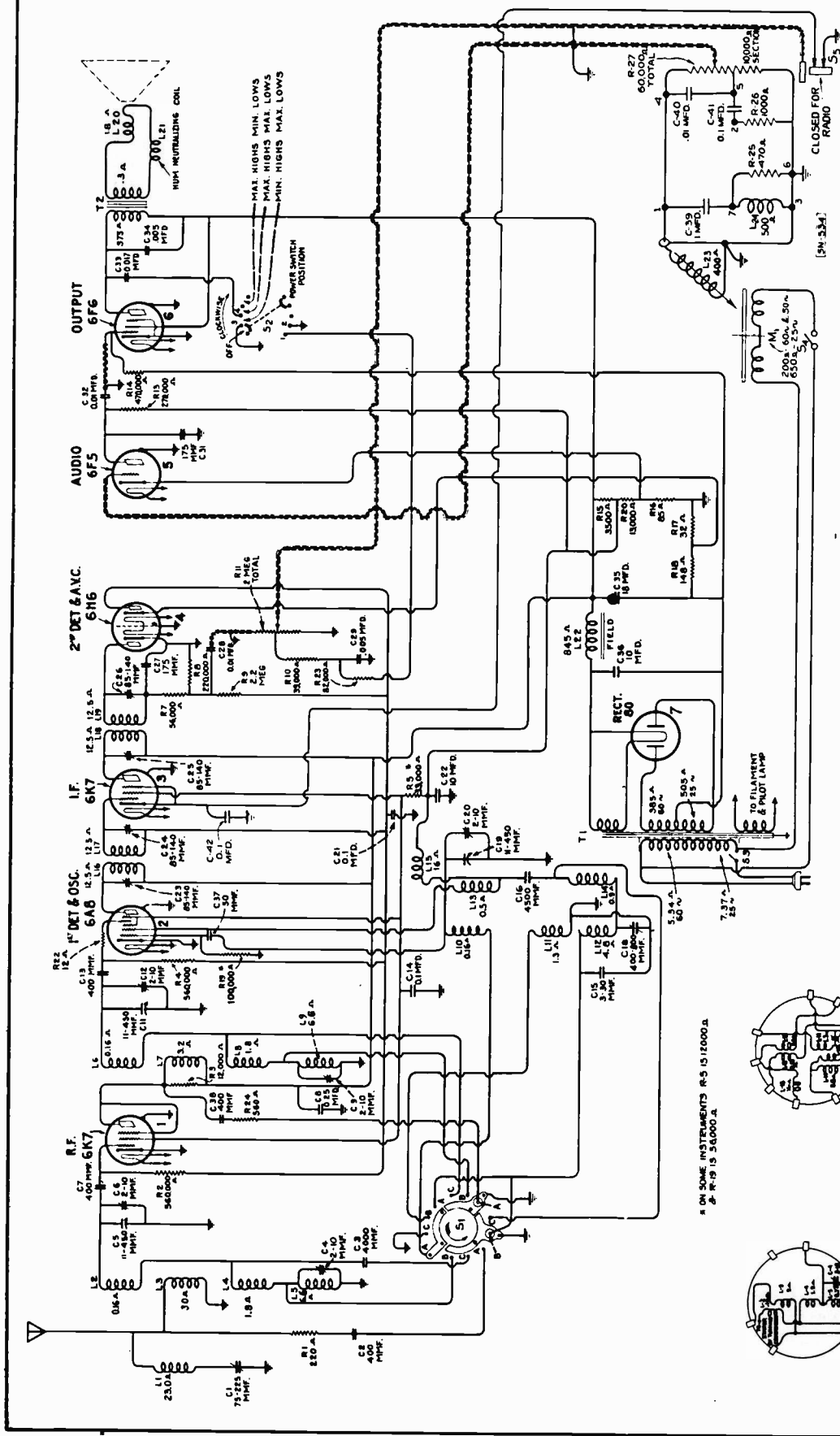
Maximum..... 5.0 Watts

LOUDSPEAKER

Type..... Electrodynamic

Voice Coil Impedance..... 2.25 ohms at 400 cycles

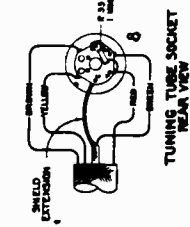
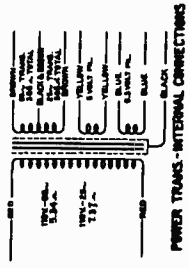
T7-5, C7-6 & D7-7



Schematic Circuit Diagram Model D7-7

NOTE: Models T7-5 and C7-6

Cathode of 6K7 I-F amp. is connected direct to chassis.
 Grid of 6F5 A-F amp. is connected direct to volume control.
 Capacitor C42 used in Model D7-7 only.



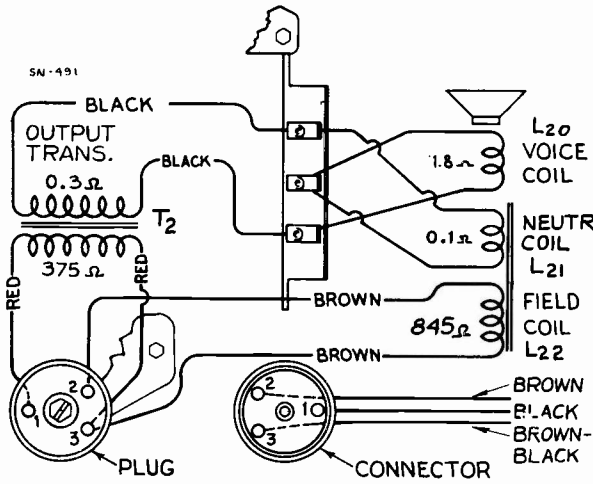
ANT. COIL - INTERNAL CONNECTIONS

OSC. COIL - INTERNAL CONNECTIONS

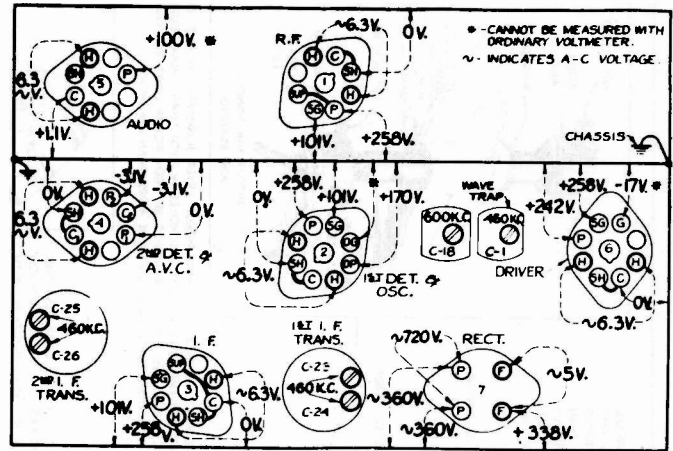
DET. COIL - INTERNAL CONNECTIONS

* ON SOME INSTRUMENTS R5 IS 10000 Ω
 † R-19 IS 54000 Ω

T7-5, C7-6 & D7-7

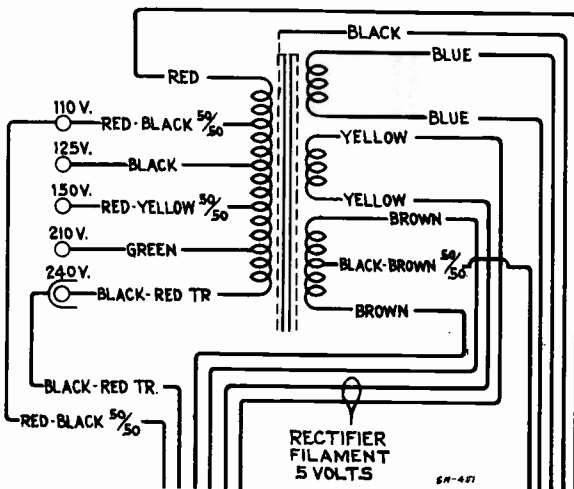


-Loudspeaker Wiring



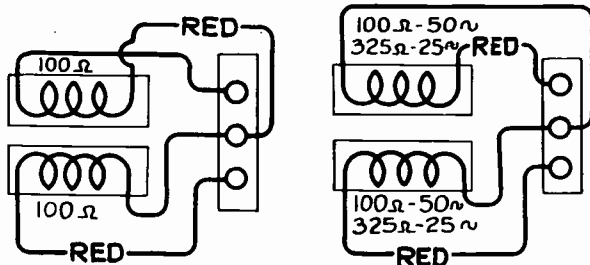
-Radiotron Socket Voltages

Measured at 115 volts, 60 cycles—No signal input



Primary Resistance—10.5 ohms, Total
Secondary Resistance—330 ohms, Total

-Universal Transformer



110VOLTS-60CYCLES

110VOLTS-50CYCLES
110VOLTS-25CYCLES

MOTOR WIRING CONNECTIONS

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with 530 calibration on A Band scale.

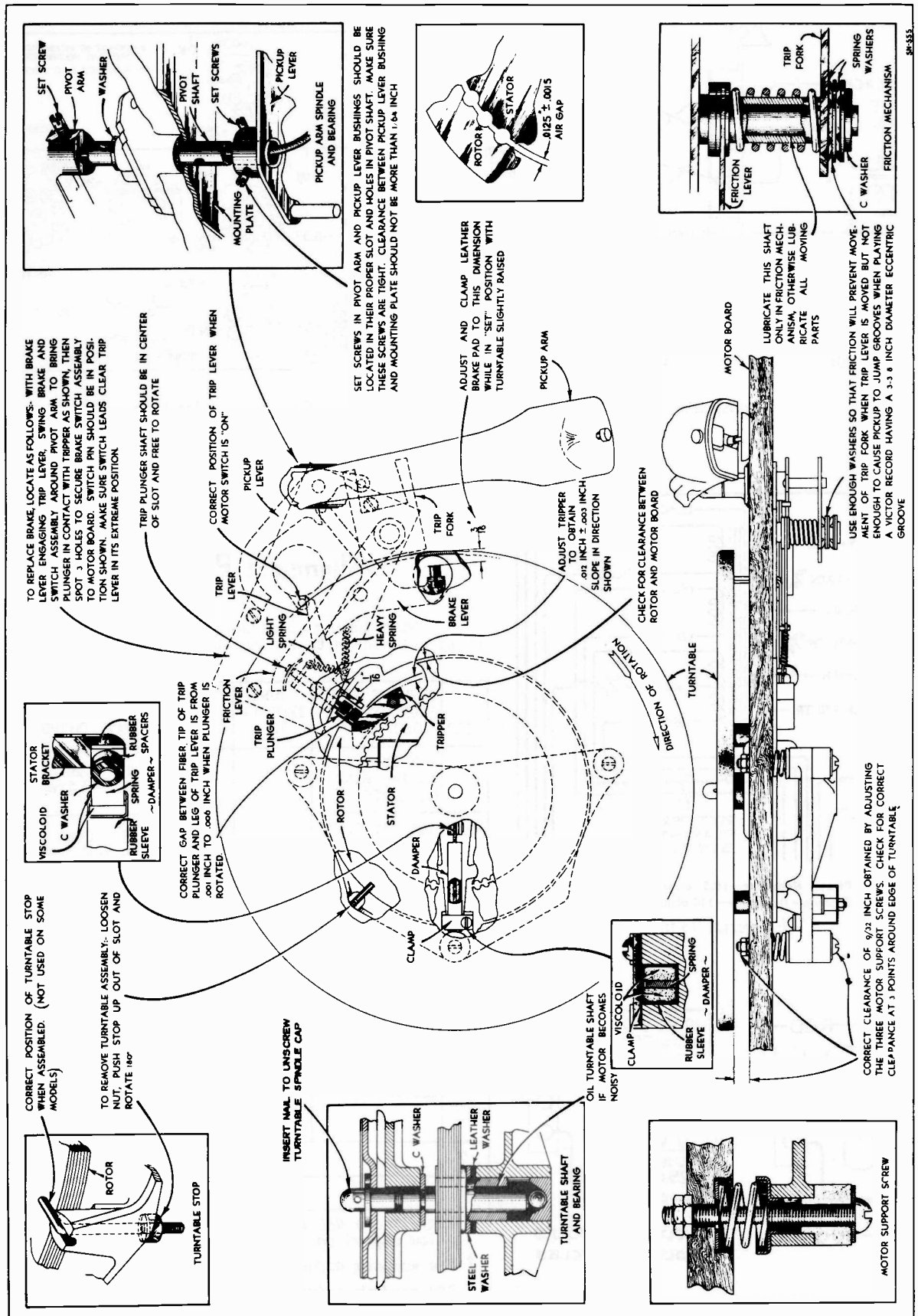
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	C25 C28 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C23 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd			C1 Wave Trap Minimum Output
4	Antenna in series with 300 ohm	18000 Kc	18 Mc "C" Band	C20† C12▲ C6 Osc. R-F Ant.
5	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "A" Band	C15 C9 C4 Osc. R-F Ant.
6		600 Kc	600 Kc "A" Band	C18 L-F Osc. Rock Gang
7	Repeat Step 4			
8	Repeat Step 5			

Osc. tracks 480 Kc above signal on A Band and below signal on C Band.

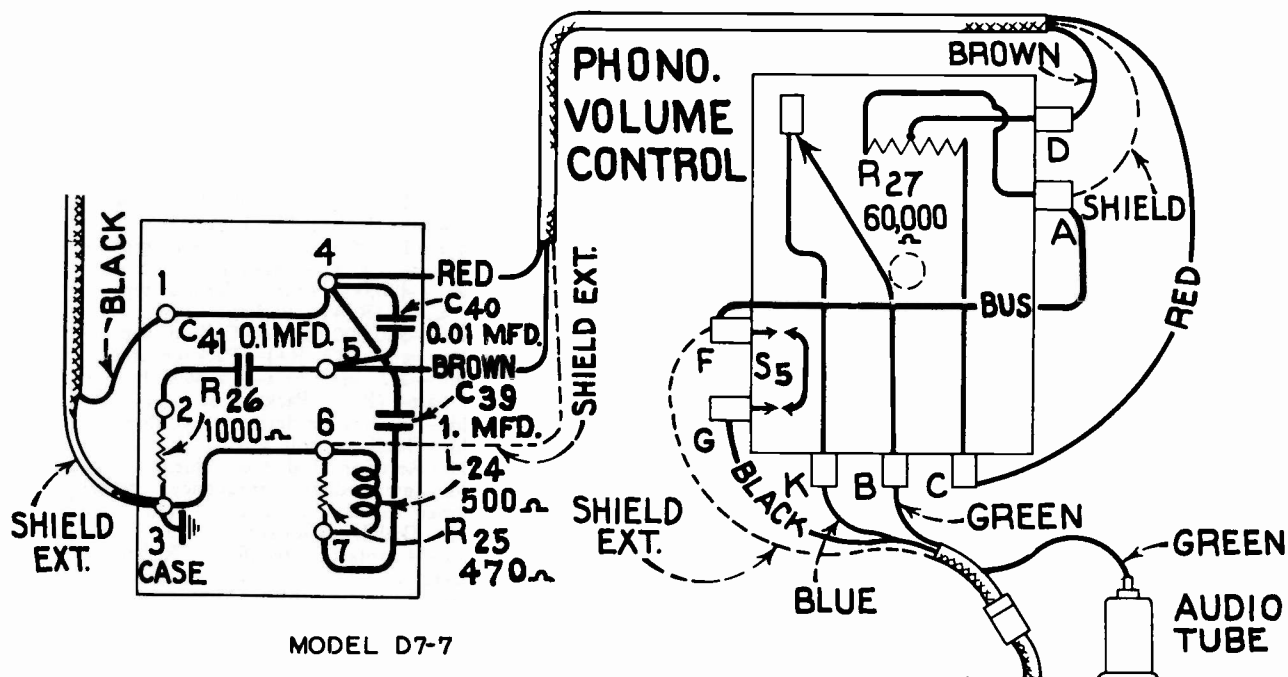
† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG

T7-5, C7-6 & D7-7



-Motor Board Adjustments Model D77



Compensator Pack and Phono. Volume Control Connections

On receiver Models T 7-5 three different type speakers are used. They can be readily identified by the following numbers stamped on them: (1) RL 63-4, (2) 76365-1, and (3) 76365-3.

	Stock No.	DESCRIPTION
76365-1 	11836	CONE—Reproducer cone.....
	5118	CONNECTOR—3-contact male connector for reproducer.....
	9634	REPRODUCER—Complete.....
	11837	TRANSFORMER—Output transformer.. (Field and hum coils not removable.)
76365-3 	11844	COIL—Field coil.....
	11842	COIL—Hum neutralizing coil.....
	11838	CONE—Reproducer cone.....
	5118	CONNECTOR—3-contact male connector for reproducer.....
	9635	REPRODUCER—Complete.....
	11839	SPRING—Reproducer center support casting clamping spring—Package of 2.
11843	TRANSFORMER—Output transformer..	

T7-5, C7-6 & D7-7

REPLACEMENT PARTS

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

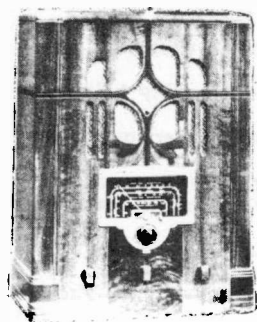
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3.....		11282	Resistor—56,000 ohms—Carbon type—1/10 watt—(R19*)—Package of 5...	
11759	Cable—Two-conductor shielded cable—complete with four-contact female connector.....		11365	Resistor—82,000 ohms—Carbon type—1/4 watt—(R23)—Package of 5.....	
11758	Cable—Three-conductor shielded cable—complete with four-contact male connector and grid contact cap—connects phonograph volume control to chassis cable.....		3118	Resistor—100,000 ohms—Carbon type—1/4 watt—(R19*)—Package of 5.....	
11350	Cap—Contact cap—Package of 5.....		11323	Resistor—270,000 ohms—Carbon type—1/4 watt—(R13)—Package of 5.....	
11465	Capacitor—Adjustable capacitor—(C18).....		11172	Resistor—470,000 ohms—Carbon type—1/4 watt—(R14)—Package of 5.....	
11289	Capacitor—50 MMfd.—(C37).....		11397	Resistor—560,000 ohms—Carbon type—1/10 watt—(R2, R4)—Package of 5..	
5116	Capacitor—175 MMfd.—(C31).....		11626	Resistor—2.2 megohms—Carbon type—1/4 watt—(R9)—Package of 5.....	
11290	Capacitor—400 MMfd.—(C2, C7, C13, C38).....		11603	Shield—Antenna or detector coil shield..	
11401	Capacitor—4000 MMfd.—(C3).....		11604	Shield—Oscillator coil shield.....	
4868	Capacitor—.005 Mfd.—(C29, C34).....		11383	Shield—Rectifier Radiotron shield.....	
4906	Capacitor—.017 Mfd.—(C33).....		11390	Shield—Intermediate frequency transformer shield.....	
11395	Capacitor—.01 Mfd.—(C28).....		11199	Socket—Dial lamp socket.....	
4858	Capacitor—.01 Mfd.—(C32).....		4794	Socket—4-contact rectifier Radiotron socket.....	
11414	Capacitor—.01 Mfd.—(C42).....		11198	Socket—7-contact 6K7—6F5—or 6H6 Radiotron socket.....	
4839	Capacitor—.01 Mfd.—(C14).....		11196	Socket—8-contact 6A8 or 6F6 Radiotron socket.....	
4841	Capacitor—.01 Mfd.—(C21).....		11386	Switch—Range switch—(S1).....	
5170	Capacitor—.025 Mfd.—(C8).....		11392	Switch—Tone control and power switch assembly—(S2, S3).....	
11240	Capacitor—10 Mfd.—(C36).....		11388	Transformer—First intermediate frequency transformer—(L16, L17, C23, C24)...	
11387	Capacitor—10 Mfd.—(C22).....		11389	Transformer—Second intermediate frequency transformer—(L18, L19, C25, C26, C27, R7, R8).....	
5212	Capacitor—18 Mfd.—(C35).....		11384	Transformer—Power transformer—105-125 volts—50-60 cycles—(T1).....	
5238	Clip—Antenna terminal board with clip, insulating strip and rivets.....		11725	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
11600	Coil—Antenna coil—(L2, L3, L4, L5, C4, R1).....		11727	Transformer—Power transformer—105-130, 140-160, 195-250 volts—40-60 cycles.....	
11601	Coil—Detector coil—(L6, L7, L8, L9, C9, R3).....		11391	Trap—Wave trap—(L1, C1).....	
11602	Coil—Oscillator coil—(L10, L11, L12, L13, L14, L15, C15, C16).....		11237	Volume Control—(R11).....	
6123	Connector—Four-contact male connector for cable, Stock No. 11758.....		PICKUP AND ARM ASSEMBLY		
4153	Connector—Four-contact female connector for cable, Stock No. 11759.....		11731	Armature—Pickup armature.....	
11385	Condenser—Three gang variable tuning condenser—(C5, C6, C11, C12, C19, C20).....		11730	Cable—Pickup cable.....	
11673	Dial—Station selector dial.....		11732	Coil—Pickup coil (L23).....	
11394	Foot—Chassis foot assembly—Package of 2.....		4543	Damper—Pickup damper block complete with damper plate.....	
11396	Indicator—Station selector indicator pointer.....		11728	Pickup and Arm Assembly—Complete... 3811	
5226	Lamp—Dial lamp—Package of 5.....		3811	Screw—Needle holding screw—Package of 10.....	
11393	Resistor—Voltage divider resistor—comprising one 3,500 ohm and one 13,000 ohm sections—(R15, R20).....		MOTOR ASSEMBLY		
11329	Resistor—Voltage divider resistor—comprising one 85 ohm, one 148 ohm, one 32 ohm sections—(R16, R17, R18).....		10194	Ball—Steel ball bearing—Package of 20..	
11369	Resistor—12 ohms—flexible type complete with contact cap—(R22).....		11740	Base—Motor base and bearing assembly..	
11324	Resistor—560 ohms—Carbon type—1/4 watt—(R24)—Package of 5.....		11745	Cap—Turntable spindle cap—Package of 5.....	
3066	Resistor—12,000 ohms—Carbon type—1 watt—(R5*)—Package of 5.....		11733	Coil—Stator assembly—comprising coil and laminations—105-125 volt, 60 cycle operation.....	
8072	Resistor—33,000 ohms—Carbon type—1/2 watt—(R5*)—Package of 5.....		11734	Coil—Stator assembly—comprising coil and laminations—105-125 volt, 50 cycle operation.....	
11322	Resistor—39,000 ohms—Carbon type—1/4 watt—(R10)—Package of 5.....		11735	Coil—Stator assembly—comprising coil and laminations—105-125 volt, 25 cycle operation.....	
<p>Stock No. 11758 Cable, 11759 Cable, 11414 Capacitor (C42), 6123 Connector and 4153 Connector used with Model D7-7 only.</p>					
* Refer to Schematic Diagram.					

REPLACEMENT PARTS—Continued **T7-5, C7-6 & D7-7**

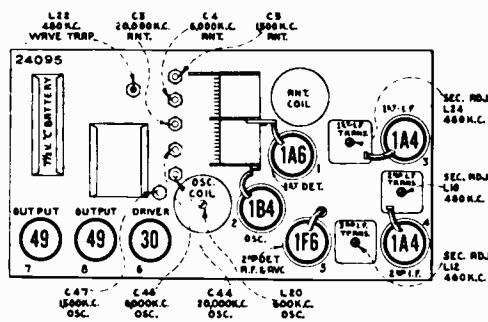
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
11748	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer.....			REPRODUCER ASSEMBLIES	
11741	Motor—105-125 volts—60 cycle motor complete (MI).....		11232	Board—Terminal board with two lead wire clips	
11742	Motor—105-125 volts—50 cycle motor complete		11231	Bolt—Yoke and core assembly bolt and nut	
11743	Motor—105-125 volts—25 cycle motor complete		8060	Bracket—Output transformer mounting bracket	
11746	Tripper—Automatic brake tripper—located on rotor laminations.....		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
11737	Turntable—Turntable assembly—complete with rotor laminations—60 cycle operation		11254	Coil—Field coil—(L20)	
11738	Turntable—Turntable assembly—complete with rotor laminations—50 cycle operation		11233	Coil—Neutralizing coil—(L21)	
11739	Turntable—Turntable assembly—complete with rotor laminations—25 cycle operation		11235	Cone—Reproducer cone—(L22)—Package of 5	
4083	Washer—Leather washer—Package of 10		5119	Connector—3-contact female connector for reproducer cable	
4084	Washer—Metal washer—Package of 10..		5118	Connector—3-contact male connector for reproducer	
	MOTOR BOARD ASSEMBLY		9618	Reproducer—Complete	
11752	Brake—Automatic brake and switch—complete		11253	Transformer—Output transformer—(T2)	
11751	Bushing—Motor mounting bushing and spring assembly—comprising one bushing, one large washer, one cup washer, one spring, one small washer and two nuts		11886	Washer—Spring washer used to hold field coil securely—Package of 5	
4577	Connector—Two-contact male connector for power supply cable.....			MISCELLANEOUS ASSEMBLIES T7-5&C7-6	
2947	Leather—Automatic brake friction leather—Package of 20.....		11376	Escutcheon—Station selector escutcheon and crystal.....	
11749	Lever—Brake mechanism actuating lever—fastens to pivot shaft under base of pickup arm.....		11582	Knob—Range switch knob—Package of 5	
11754	Lever—Friction lever assembly—complete		11610	Knob—Station selector knob assembly—comprising one small and one large knob—Package of 5.....	
11753	Plunger—Automatic brake trip plunger..		11347	Knob—Volume control or tone control knob—Package of 5.....	
3261	Rest—Pickup rubber rest—Package of 5..		11210	Screw—Chassis mounting screw assembly—Console Model—Package of 4.....	
11750	Screw—No. 4-40x9/32-in. cone pointed headless set screw for brake mechanism actuating lever, Stock No. 11749—Package of 10.....		11377	Screw—Chassis mounting screw assembly—Table Model—Package of 4.....	
11756	Spring—Automatic stop mechanism trip lever spring—Package of 10.....		11349	Spring—Retaining spring for knobs, Stock No. 11347, No. 11582 and small knob in Stock No. 11610—Package of 5...	
11757	Spring—Automatic stop mechanism brake lever spring—Package of 10.....		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10..	
11755	Switch—Automatic brake switch (S4)..			MISCELLANEOUS ASSEMBLIES—D7-7	
	REPRODUCER ASSEMBLIES		11762	Box—Used needle box.....	
	Console Models		11764	Cable—Two-conductor shielded cable approximately 28 in. long, connects phonograph volume control to compensator pack.....	
11232	Board—Terminal board assembly with two lead wire clips		11760	Compensator—Phonograph compensator pack—Comprising one 470 ohm and one 1,000 ohm resistors, one .01 Mfd., one 0.1 Mfd. and one 1.0 Mfd. capacitors, and one 0.25H reactor—(R25, R26, C39, C40, C41, L24).....	
11231	Bolt—Yoke and core assembly bolt and nut		11376	Escutcheon—Station selector escutcheon and crystal.....	
8060	Bracket—Output transformer mounting bracket		11582	Knob—Range switch knob—Package of 5	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5		11347	Knob—Volume control, power switch or phonograph volume control knob—Package of 5.....	
11254	Coil—Field coil—(L20)		11610	Knob—Station selector knob assembly—comprising one large and one small knob—Package of 5.....	
11233	Coil—Hum neutralizing coil—(L21)....		11763	Receptacle—Needle receptacle.....	
11258	Cone—Reproducer cone—(L22)—Package of 5		11210	Screw—Chassis mounting screw assembly—Package of 4.....	
5118	Connector—3-contact male connector for reproducer		11761	Screw—Motor board screw and finishing washer assembly—Package of 10.....	
5119	Connector—3-contact female connector plug for reproducer cable		11349	Spring—Retaining spring for knobs, Stock No. 11347, No. 11582 and small knob in Stock No. 11610—Package of 5...	
9619	Reproducer—Complete		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10..	
11253	Transformer—Output transformer—(T2)		11695	Volume Control—Phonograph volume control (R27, S5).....	
11886	Washer—Spring washer used to hold field coil securely—Package of 5				

MODELS 8BT, 8BK, 8BT6, and 8BK6

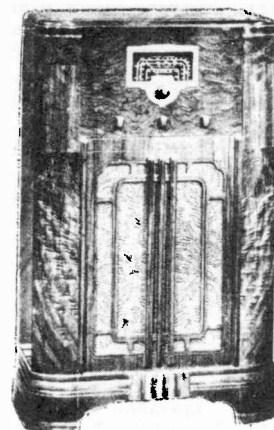
Eight-Tube, Three-Band, Battery-Operated, Superheterodyne Receivers



MODELS 8BT & 8BT6



-Radiotron, Coil, and Trimmer Locations



MODELS 8BK & 8BK6

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A)..... 530-1,780 kc
- "Medium Wave" (B)..... 1,780-6,300 kc
- "Short Wave" (C)..... 6,300-22,000 kc
- Intermediate Frequency..... 460 kc

ALIGNMENT FREQUENCIES

- "Standard Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc., ant.)
- "Medium Wave" (B)..... 6,000 kc (osc., ant.)
- "Short Wave" (C)..... 20,000 kc (osc., ant.)

RADIOTRON COMPLEMENT

- (1) RCA-1A6..... First Detector
- (2) RCA-1B4..... Heterodyne Oscillator
- (3) RCA-1A4..... First Intermediate Amplifier
- (4) RCA-1A4..... Second Intermediate Amplifier
- (5) RCA-1F6..... Second Detector—A.F.—A.V.C
- (6) RCA-30..... Audio Driver
- (7) RCA-49..... Power Output
- (8) RCA-49..... Power Output

Pilot Lamps..... 8BT or 8BK (1); 8BT6 or 8BK6 (2); 2.0 volts, .06 ampere, miniature screw base, T-3/4 clear

BATTERIES REQUIRED

- 8BT or 8BK..... "A," one plug-in 2 1/2-volt Air-cell (Eveready A-600 or equivalent), or one 2-volt storage battery; "B," three 45-volt, heavy duty, plug-in type B batteries; "C," one 7 1/2-volt C battery tapped at -3 volts; and four bias cells (Stock No. 12681).
- 8BT6 or 8BK6..... "A," one 6-volt storage battery; "B," none required; "C," one 7 1/2-volt C battery tapped at -3 volts; and four bias cells (Stock No. 12681).

CURRENT CONSUMPTION

- | | | |
|-----------------------|----------------------------|--------------------------|
| | 8BT or 8BK | 8BT6 or 8BK6 |
| "A" at 2 volts..... | 0.58 amp. (pilot lamp off) | |
| "A" at 2 volts..... | 0.64 amp. (pilot lamp on) | |
| "A" at 6.0 volts..... | | 1.35 amps. |
| "A" at 6.3 volts..... | | 1.40 amps. |
| "B" at 135 volts..... | 19 ma. | (Supplied from vibrator) |
| Fuse Rating..... | 1/2 amp. | 3 amp. |

POWER OUTPUT

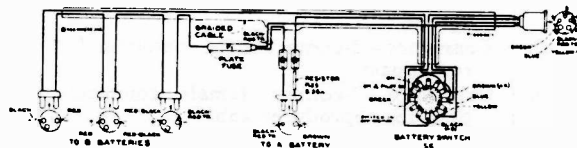
- Undistorted..... 1.2 watts..... 1.0 watts
- Maximum..... 2.2 watts..... 1.6 watts

Models 8BT & 8BK may be used with CV-8 vibrator unit. See CV-8 for details.

Power Supply (Models 8BT and 8BK)

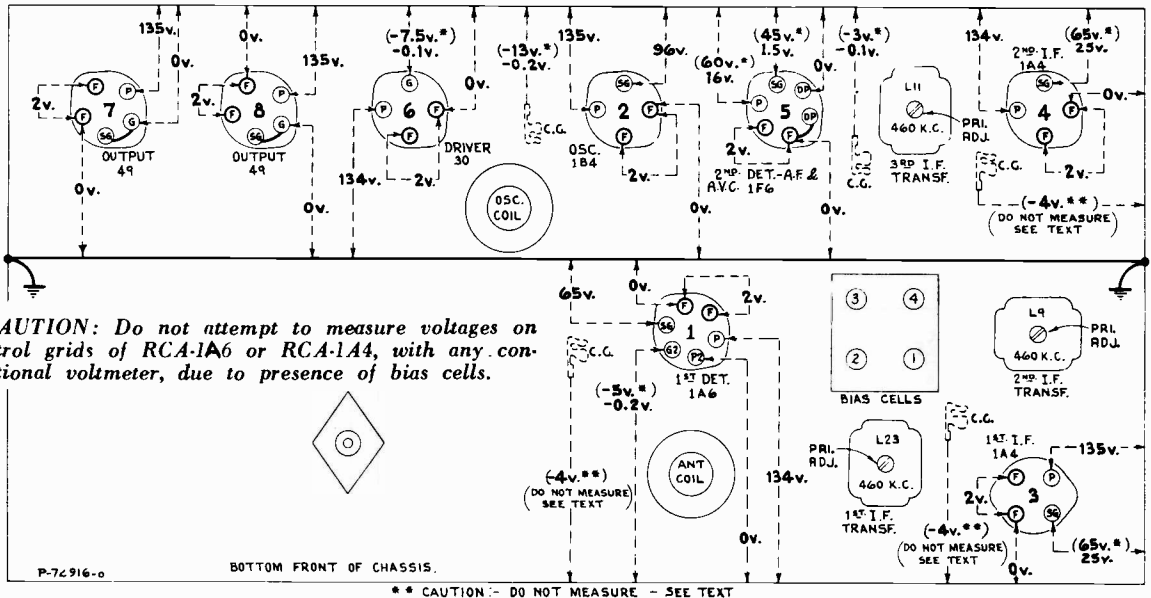
Filament voltage for these receivers is obtained from either a 2 1/2-volt Air-cell or a 2-volt storage battery. When the Air-cell is used, the 0.36 ohm resistor R25 must be connected in series with the A-battery lead as shown in figure 9. When operating on a 2-volt storage battery, this resistor R25 should be removed. Plugs are provided on the battery cable (see figure 9) for plugging in the Air-cell and B batteries. The A-battery plug should be removed when

operating on a 2-volt storage battery. The 7 1/2-volt C battery is located on the top-side of the chassis and securely held in place by a metal cover (see figure 3). The four bias cells are located underneath the chassis



Battery Cable (8BT and 8BK)
(Stock No. 12938)

8BT, 8BK, 8BT6 & 8BK6



CAUTION: Do not attempt to measure voltages on control grids of RCA-1A6 or RCA-1A4, with any conventional voltmeter, due to presence of bias cells.

—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc (“Standard broadcast”)—No signal being received—Volume control optional

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

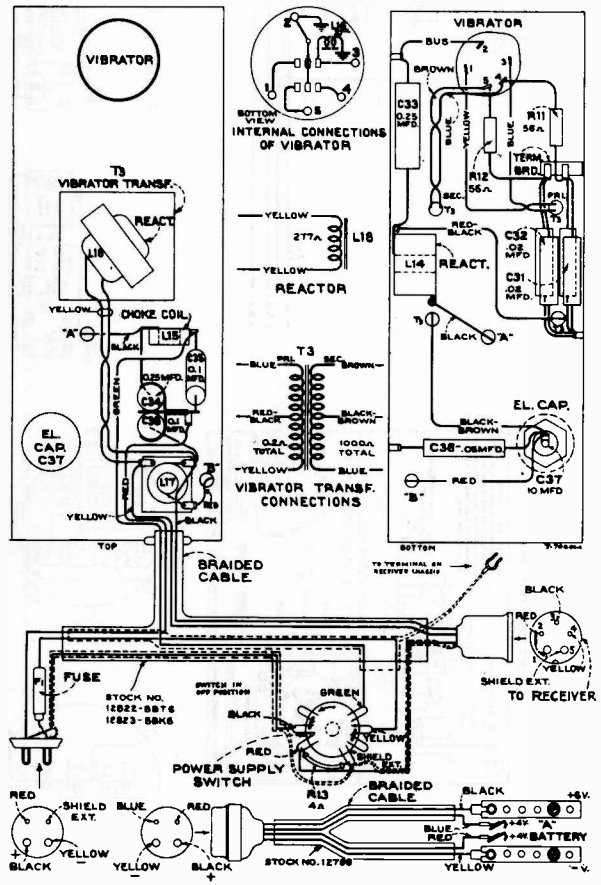
With tuning condenser fully meshed set pointer to coincide with 530 calibration at low frequency end of BC Band.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd	480 Kc	Quiet point near 600 Kc "BC" Band	L12 L10 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd			L10 L9 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			L24 L23 1st I-F Trans.
4	Antenna in series with 200 ohms			L22 Wave Trap Minimum Output
5	Antenna in series with 300 ohms	20000 Kc	.20 Mc "SW" Band	C44† C3▲ Osc. Ant.
6		6000 Kc	6 Mc "MED" Band	C46† C4 Osc. Ant.
7		1500 Kc	1500 Kc "BC" Band	C47 C5 Osc. Ant.
8	Antenna in series with 200 mmfd	600 Kc	600 Kc "BC" Band	L20 L-F Osc. Rock Gang
9	Repeat Step 7			

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.



Power Unit Wiring (8BT6 and 8BK6)

8BT, 8BK, 8BT6 & 8BK6

Power Supply (Models 8BT6 and 8BK6)

A 6-volt storage battery supplies power for the vibrator and for the tube filaments. Four connections are required to the 6-volt battery. The +6-volt (black) lead and the +4-volt (blue) lead supply filament voltage to the receiver, while the +4-volt (red) lead and -volt (yellow) lead supply voltage to the vibrator power unit. The two 4-volt leads (blue and red) should make separate connections to the same battery strap to avoid against vibrator buzz which might otherwise result if these two leads are joined together or touch each other. The 7½-volt C battery is located on the top-side of the receiver chassis and securely held in place by a metal cover (see figure 3). The four bias cells are located underneath the receiver chassis

Radiotron Plate Current Readings	
Measured with Milliammeter Connected at Tube Socket Plate Terminals under Conditions Similar to Those of Voltage Measurements	
(1) RCA-1A6—1st Det.	1.2 ma.
(2) RCA-1B4—Osc.	3.8 ma.
(3) RCA-1A4—1st I.F.	0.9 ma.
(4) RCA-1A4—2nd I.F.	0.9 ma.
(5) RCA-1F6—2nd Det.—A.F.—A.V.C..	0.25 ma.
(6) RCA-30 —Driver	3.2 ma.
(7) RCA-49 —Output	1.5 ma.
(8) RCA-49 —Output	1.5 ma.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
12806	Board—3-contact antenna and ground terminal board and bracket assembly.....		12681	Cell—Bias cell.....	
12717	Board—3-contact phonograph terminal board		12940	Dial—Station selector dial.....	
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....		12702	Drive—Vernier drive complete for variable tuning condenser.....	
12118	Cap—Grid contact cap—Package of 5.....		12808	Holder—Bias cell holder.....	
12714	Capacitor—Adjustable trimmer (C3, C4, C5, C44, C46, C47).....		12712	Indicator—Station selector indicator pointer	
12814	Capacitor—5.6 Mmfd. (C51).....		4348	Lamp—Dial lamp, 2-volt.....	
12896	Capacitor—15 Mmfd. (C59).....		12941	Mask—Dial light diffuser.....	
12948	Capacitor—33 Mmfd. (C52).....		5112	Resistor—1,000 ohm—carbon type—¼ watt—Package of 5 (R15, R20).....	
12723	Capacitor—56 Mmfd. (C2).....		11305	Resistor—22,000 ohm—carbon type—¼ watt—Package of 5 (R24).....	
12950	Capacitor—120 Mmfd. (C50).....		11364	Resistor—33,000 ohm—carbon type—¼ watt—Package of 5 (R22).....	
12404	Capacitor—120 Mmfd. (C18, C19, C20).....		12454	Resistor—33,000 ohm—insulated type—¼ watt—Package of 5 (R14).....	
12724	Capacitor—120 Mmfd. (C24).....		11282	Resistor—56,000 ohm—carbon type—1/10 watt—Package of 5 (R4).....	
12946	Capacitor—130 Mmfd. (C11, C12, C15, C16)		5029	Resistor—56,000 ohm—carbon type—¼ watt—Package of 5 (R26).....	
12725	Capacitor—150 Mmfd. (C1).....		5145	Resistor—100,000 ohm—carbon type—¼ watt—Package of 5 (R16, R18).....	
12952	Capacitor—330 Mmfd. (C49).....		12478	Resistor—150,000 ohm—carbon type—1/10 watt—Package of 5 (R23).....	
12727	Capacitor—555 Mmfd. (C48).....		5158	Resistor—220,000 ohm—carbon type—¼ watt—Package of 5 (R17, R19).....	
12537	Capacitor—560 Mmfd. (C6).....		11323	Resistor—270,000 ohm—carbon type—¼ watt—Package of 5 (R9).....	
12947	Capacitor—1,800 Mmfd. (C45).....		11452	Resistor—470,000 ohm—carbon type—1/10 watt—Package of 5 (R1).....	
12951	Capacitor—2,200 Mmfd. (C42).....		3033	Resistor—1 meg.—carbon type—¼ watt —Package of 5 (R2, R6).....	
5107	Capacitor—.0025 Mfd. (C21, C27, C28).....		12200	Resistor—1 meg.—insulated type—¼ watt —Package of 5 (R10).....	
5005	Capacitor—.0035 Mfd. (C25).....		11626	Resistor—2.2 meg.—carbon type—¼ watt —Package of 5 (R3, R8).....	
4868	Capacitor—.005 Mfd. (C30).....		12651	Shield—Coil shield for Stock No. 12708..	
4858	Capacitor—.01 Mfd. (C9, C10, C13, C14, C40, C41, C55, C56).....		12710	Shield—Coil shield for Stock No. 12943..	
5196	Capacitor—.035 Mfd. (C29).....		12008	Shield—I.F. transformer shield for Stock No. 12945 and 12949.....	
4841	Capacitor—.01 Mfd. (C17, C57).....		12581	Shield—I.F. transformer shield top for Stock No. 12949.....	
4840	Capacitor—.025 Mfd. (C8, C23, C39, C58)		12607	Shield—I.F. transformer shield top for Stock No. 12945.....	
12804	Capacitor—Pack, comprising 2 sections 8 Mfd. each (C43, C54).....		4236	Shield—Front 1A4 Radiotron shield....	
12179	Coil—Choke coil (L25).....		3682	Shield—1A4, 1B4, 1A6 or 1F6 Radiotron shield	
12708	Coil—Antenna coil and shield complete (L1, L2, L3, L4).....		4794	Socket—4-contact 1A4, 1B4 or 30 Radiotron socket.....	
12943	Coil—Oscillator coil and shield complete (L5, L6, L7, L8, L19, L20, L21).....		4814	Socket—5-contact 49 Radiotron socket...	
12701	Condenser—2-gang variable tuning condenser (C7, C53).....		4786	Socket—6-contact 1A6 or 1F6 Radiotron socket	
5119	Connector—3-contact female connector for speaker cable.....		11199	Socket—Dial lamp socket.....	
12805	Connector—5-contact male receptacle located on rear of receiver chassis for power cable.....				
12800	Core—Adjustable core and stud for Stock No. 12943.....				
12006	Core—Adjustable core and stud for Stock No. 12945 and 12949.....				
12664	Core—Adjustable core and stud for Stock No. 12654.....				

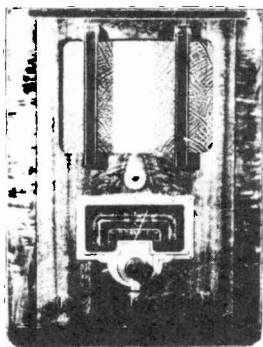
8BT, 8BK, 8BT6 & 8BK6

REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
12007	Spring—Retaining spring for core Stock Nos. 12800, 12006 and 12664—Package of 10.....		12824	Switch—Power switch (S3, S4).....	
12942	Switch—Range switch (S1, S2).....		12816	Transformer—Vibrator transformer (T3)	
11219	Tone Control—(R21).....		12817	Vibrator—Complete (L16).....	
12944	Transformer—Audio transformer pack (T1, T2).....		4285	Washer—Fuse connector insulating washer—Package of 10.....	
12945	Transformer—First I.F. transformer complete (L23, L24, C11, C12).....			MISCELLANEOUS ASSEMBLIES	
12945	Transformer—Second I.F. transformer complete (L9, L10, C15, C16).....		4289	Body—Fuse connector female body—Package of 10 (8BT—8BK).....	
12949	Transformer—Third I.F. transformer complete (L11, L12, C18, C19, C20, R4)..		12938	Cable—Power cable (set end) approximately 60-in. long complete with four 2-contact male connectors and one 5-contact female connector—less power switch (8BT—8BK).....	
12654	Trap—Wave trap (L22).....		12786	Cable—Power cable (battery section) complete with battery connectors and female section of 4-contact connector (8BT6—8BK6).....	
11589	Volume Control—(R5).....		4288	Cap—Fuse connector male cap—Package of 10 (8BT—8BK).....	
	REPRODUCER ASSEMBLIES		12827	Connector—2-contact and guide pin male connector and cover for power cable Stock No. 12938 (8BT—8BK).....	
	Console Model 8BK—8BK6		12828	Connector—2-contact male connector for power cable Stock No. 12938 (8BT—8BK).....	
12667	Cone—Reproducer cone and dust cap (L13).....		12788	Connector—4-volt battery connector for Stock No. 12786—Package of 2 (8BT6—8BK6).....	
5118	Plug—3-contact male connector for reproducer.....		12790	Connector—4-contact female connector for cable Stock No. 12786 (8BT6—8BK6)	
9713	Reproducer—Complete.....		12791	Connector—5-contact female connector and cover for power cable for Stock No. 12938 (8BT—8BK).....	
	REPRODUCER ASSEMBLIES		12787	Connector—6-volt battery connector for Stock No. 12786—Package of 2 (8BT6—8BK6).....	
	Table Model 8BT—8BT6		12698	Crystal—Station selector dial escutcheon and crystal.....	
12642	Cone—Reproducer cone and dust cap (L13).....		4286	Ferrule—Fuse connector ferrule and bushing—Package of 10 (8BT—8BK).....	
5118	Plug—3-contact male connector for reproducer.....		3748	Fuse—1/2 ampere—Package of 5 (F1) (8BT—8BK).....	
9712	Reproducer—Complete.....		4290	Insulator—Fuse connector body insulator—Package of 10 (8BT—8BK).....	
	VIBRATOR ASSEMBLIES		12699	Knob—Station selector knob (large)—Package of 5.....	
	8BT6—8BK6		12700	Knob—Station selector vernier knob (small)—Package of 5.....	
4289	Body—Fuse connector female body—Package of 10.....		11347	Knob—Volume control, range switch, tone switch or power switch knob—Package of 5.....	
12822	Cable—Power cable (set end) approximately 63-in. long complete with one 5-contact female connector and one 4-contact male connector—less power switch—used in 8BT6 Model only....		12939	Resistor—0.36 ohm—flexible type—Package of 5 (R25) (8BT—8BK).....	
12823	Cable—Power cable (set end) approximately 44-in. long complete with one 5-contact female connector and one 4-contact male connector—less power switch—used in 8BK6 Model only....		11377	Screw—Chassis mounting screw assembly for table model only—Package of 4 (8BT—8BT6).....	
4288	Cap—Fuse connector male cap—Package of 10.....		11210	Screw—Chassis mounting screw assembly for console model only—Package of 4 (8BK—8BK6).....	
4937	Capacitor—.01 Mfd. (2 used in parallel) (C31, C32).....		12789	Screw—Cone point set screw for connector Stock No. 12788—Package of 10 (8BT6—8BK6).....	
4836	Capacitor—.05 Mfd. (C36).....		4284	Spring—Fuse connector spring—Package of 10 (8BT—8BK).....	
4841	Capacitor—.01 Mfd. (C35).....		11349	Spring—Retaining spring for knob Stock No. 11347 and 12700—Package of 5..	
12821	Capacitor—.01 Mfd. (C38).....		4982	Spring—Retaining spring for knob Stock No. 12699—Package of 10.....	
12820	Capacitor—.025 Mfd. (C34).....		12829	Switch—Power switch (S3) (8BT—8BK)	
4840	Capacitor—.025 Mfd. (C33).....		4285	Washer—Fuse connector insulating washer—Package of 10 (8BT—8BK).....	
11387	Capacitor—10 Mfd. (C37).....				
12819	Coil—Vibrator choke coil and terminal board assembly (L17).....				
12179	Coil—Vibrator choke coil (L15).....				
12793	Connector—4-contact male connector for power cable.....				
12791	Connector—5-contact female connector and cover for power cable.....				
4286	Ferrule—Fuse connector ferrule and bushing—Package of 10.....				
10907	Fuse—3-ampere—Package of 5 (F1)....				
4290	Insulator—Fuse connector body insulator—Package of 10.....				
12815	Reactor—Air core reactor (L14).....				
12818	Reactor—Iron core (L18).....				
12825	Resistor—4 ohm—flexible type—(R13)..				
5034	Resistor—56 ohm—carbon type—1/2 watt—Package of 5 (R11, R12).....				
4814	Socket—5-contact vibrator socket.....				
4284	Spring—Fuse connector spring—Package of 10.....				

MODELS 8T2, 8T11, 8K11 8U and 8U2

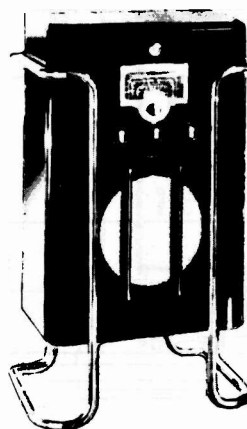
Eight-Tube, Three-Band, A-C, Superheterodyne Receivers and Radio-Phonographs



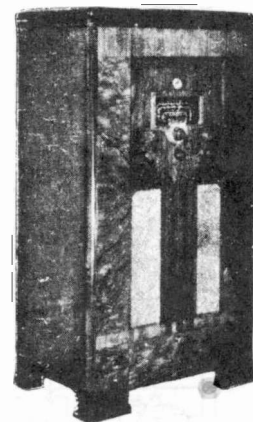
MODEL 8T2



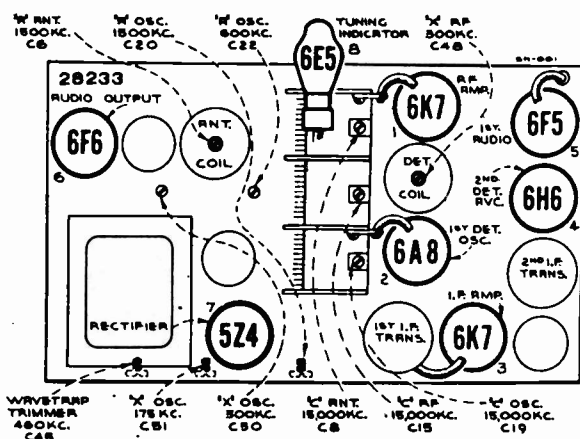
MODEL 8T11



MODEL 8K11



MODELS 8U & 8U2



-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Long Wave" (X)	155-320 kc
"Medium Wave" (A)	530-1,500 kc
"Short Wave" (C)	5,400-18,000 kc

Intermediate Frequency

RADIOTRON COMPLEMENT

- (1) RCA-6K7 Radio-Frequency Amplifier
- (2) RCA-6A8 First Detector—Oscillator
- (3) RCA-6K7 Intermediate Amplifier
- (4) RCA-6H6 Second Detector—A.V.C.

ALIGNMENT FREQUENCIES

"Long Wave" (X)	175 kc (osc.), 300 kc (osc., det., ant.)
"Medium Wave" (A)	600 kc (osc.), 1,500 kc (osc., det., ant.)
"Short Wave" (C)	15,000 kc (osc., det., ant.)

Pilot Lamps (3)

POWER SUPPLY RATING

	— 8U & 8U2 —	— 8T2 8T11 & 8K11
Rating A	105-125 volts, 50-60 cycles, 135 watts	50-60 cycles, 100 watts
Rating B	105-125 volts, 25 cycles, 140 watts	25-60 cycles, 105 watts
Rating C	100-130/140-160/195-250 volts, 50-60 cycles, 135 watts	40-60 cycles, 100 watts

POWER OUTPUT RATING

Undistorted	2 1/4 watts
Maximum	5 watts

LOUDSPEAKER

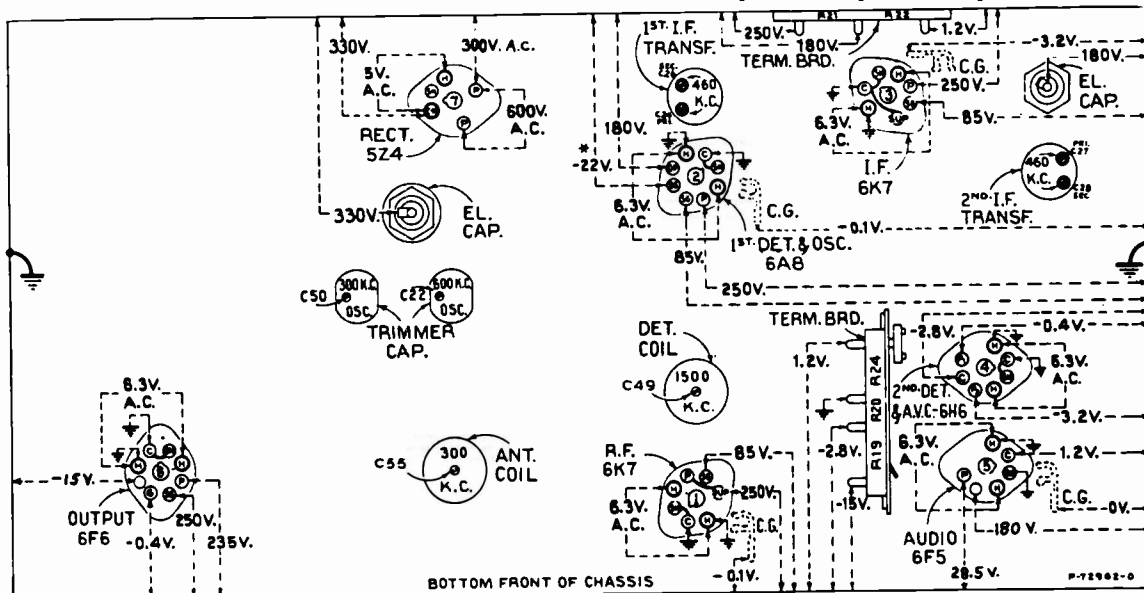
Type	Electrodynamic
Voice Coil Impedance	2.25 ohms at 400 cycles

PHONOGRAPH 8U & 8U2

Type	Manual
Turntable Speed (adjustable)	78 r.p.m.

Type of Pickup	Low-impedance Magnetic
Pickup Impedance	8 1/2 ohms at 1,000 cycles

8T2, 8T11, 8K11, 8U & 8U2



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with 520 calibration at low frequency end of A Band.

Note: The asterisk (*) value may vary appreciably.

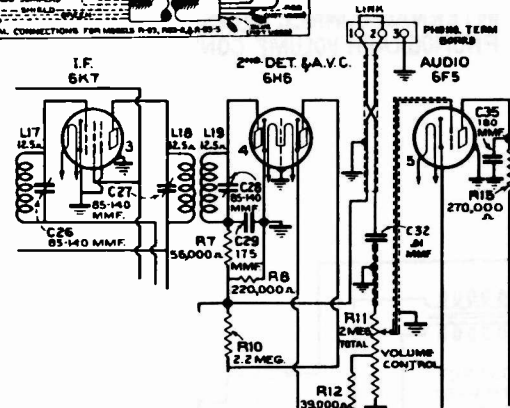
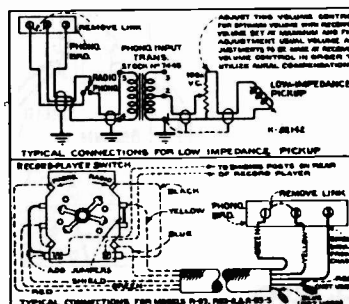
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 800 Kc "A" Band	C28 C27 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C28 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd			C45 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	15000 Kc	15 Mc "C" Band	C19 [†] C15 [▲] C8 Osc. R-F Ant.
5	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "A" Band	C20 C49 C8 Osc. R-F Ant.
6	Antenna in series with 200 mmfd	600 Kc	600 Kc "A" Band	C22 L-F Osc. Rock Gang
7	Repeat Step 4			
8	Repeat Step 5			
9	Antenna in series with 200 mmfd	300 Kc	300 Kc "X" Band	C50 C48 C55 Osc. R-F Ant.
10		175 Kc	175 Kc "X" Band	C51 L-F Osc. Rock Gang
11	Repeat Step 9			

Osc. tracks 480 Kc above signal on A & X Bands.

Osc. tracks 480 Kc below signal on C Band.

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG



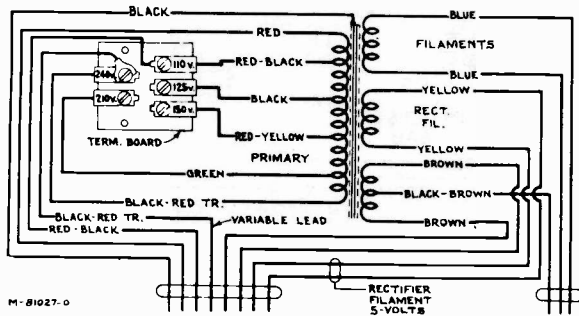
PHONO. PICKUP CONNECTIONS MODELS 8T2, 8T11 AND 8K11

Radiotron Cathode Current Readings
Measured with Milliammeter Connected at Tube Socket Cathode Terminals under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6K7—R-F 12.5 ma.
- (2) RCA-6A8—Det.-Osc. 13.8 ma.
- (3) RCA-6K7—I.F. 9.0 ma.
- (4) RCA-6H6—2nd Det.-A.V.C. ... —
- (5) RCA-6F5—Audio 0.25 ma.
- (6) RCA-6F6—Power 40.0 ma.
- (7) RCA-5Z4—Rect. 90.0 ma.*
- (8) RCA-6E5—Eye 3.0 ma.

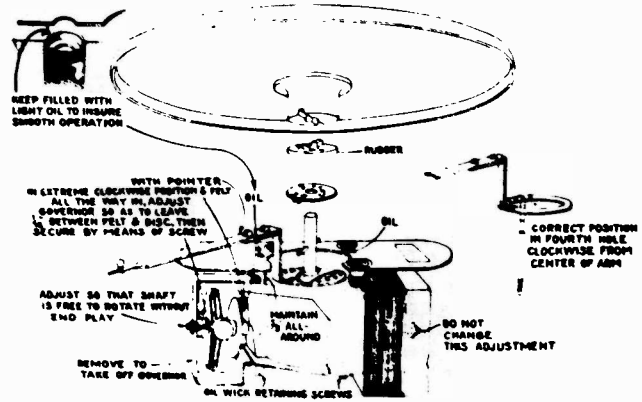
(* Cannot be measured at socket.)

8T2, 8T11, 8K11, 8U & 8U2

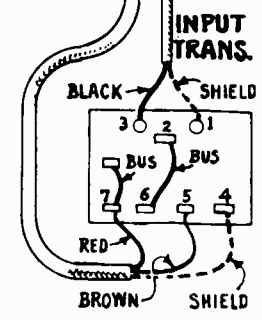
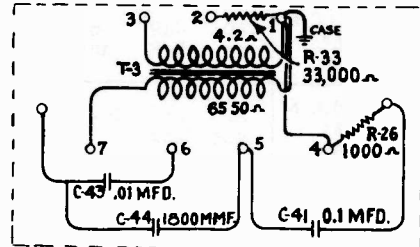
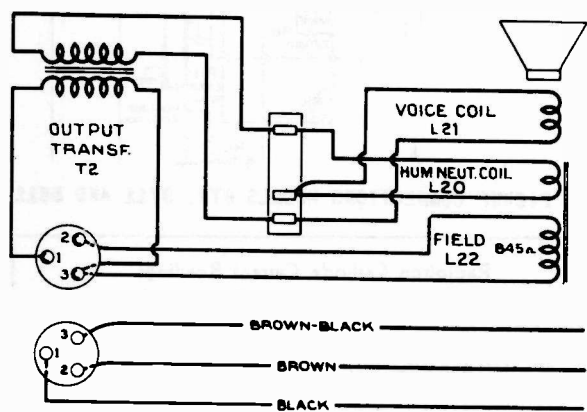
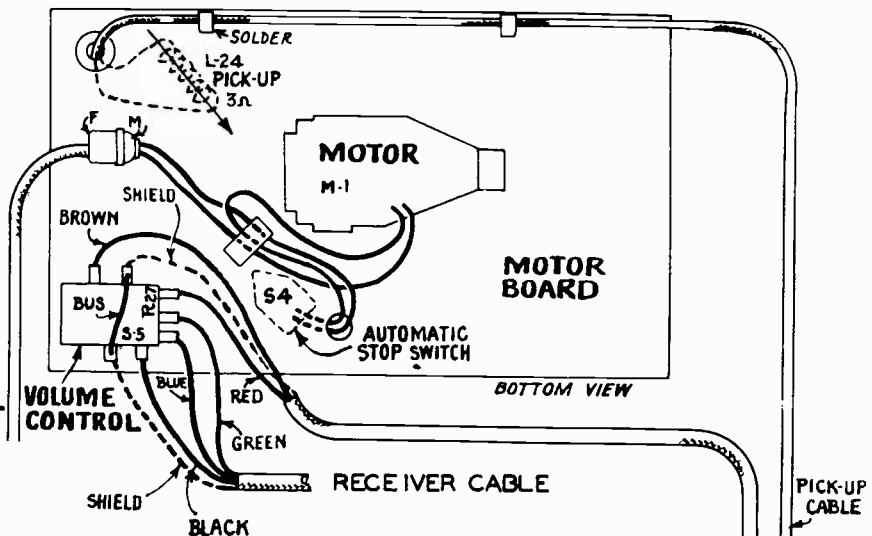
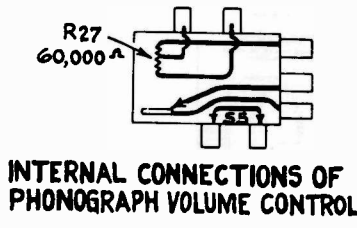


Primary resistance—10.5 ohms total
Secondary resistance—265 ohms total

-Universal Transformer



Motor Details



INTERNAL CONNECTIONS OF INPUT TRANSFORMER PACK
PHONO. CONNECTIONS — 8U & 8U2

TYPE	L21	L20	L22	PR	TR	SEC
76365-1	7.0	0.2	274	0.9		
76365-2	1.8	0.1	434	0.16		
RL63-4	1.9	0.1	276	0.3		

-Loudspeaker Wiring

Coil resistances type RL70-1, same as RL63-4

Model 8T2 uses speaker No. RL-63-4, RL-63E2, 76365-1 or 76365-3.
Model 8T11 uses speaker No. RL-63-4.
Models 8K11, 8U and 8U2 use speaker No. RL-70-1.

8T2, 8T11, 8K11, 8U & 8U2

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	8U & 8U2		3389	Rod—Eccentric automatic brake trip rod—Package of 5	
	MOTOR ASSEMBLIES		3387	Screw assembly—Pickup mounting screw assembly—comprising one screw, one lockwasher and one nut—Package of 10	
11703	Governor—Governor complete for phonograph motor—Stock No. 11701 or No. 11702		11549	Screw—Pickup front cover screw—Package of 10	
11701	Motor—Phonograph turntable motor—110 volts—50 to 60 cycles—(M1)		11547	Screw—Pickup needle holding screw—Package of 10	
	MOTOR BOARD ASSEMBLIES			8U & 8U2	
4594	Box—Used needle box (cup)			MISCELLANEOUS ASSEMBLIES	
4577	Connector—2-contact male connector for motor cable		11996	Bracket—Tuning tube mounting bracket and clamp	
7084	Cover—Turntable cover		11947	Cable—2-conductor shielded cable, approximately 35 inches long—connects volume control to input transformer	
11704	Damper—Turntable rubber damper and damper plate		11948	Cable—3-conductor shielded volume control cable (control end)—complete with 4-contact male connector	
4596	Escutcheon—Speed regulator escutcheon plate		6123	Connector—4-contact male connector for volume control cable	
4597	Screw—Motor mounting screw assembly—comprising four screws, four lockwashers, four spacers, and four nuts		12698	Crystal—Station selector escutcheon and crystal	
11696	Turntable—Complete		11276	Escutcheon—Tuning tube escutcheon	
11695	Volume control—Phonograph volume control—(R27, S5)		11347	Knob—Phonograph volume control, radio volume control, range switch, or tone control and power switch knob—Package of 5	
	ECCENTRIC AUTOMATIC BRAKE SWITCH ASSEMBLIES		11610	Knob—Station selector knob assembly, comprising one large and one small knob—Package of 5	
3994	Cover—Eccentric automatic switch cover and screw		12556	Receptacle—Needle holder	
10174	Springs—Automatic brake springs—comprising one each of four springs—Package of 2 sets		11210	Screw—Chassis mounting screw assembly—Package of 4	
6896	Switch—Eccentric automatic brake and switch assembly—less switch cover		11349	Spring—Retaining spring for knob Stk. No. 11347, and small knob in Stk. No. 11610—Package of 5	
3322	Switch—Eccentric automatic switch only—less cover—(S13)		4982	Spring—Retaining spring for large knob in Stk. No. 11610—Package of 10	
	PICKUP AND ARM ASSEMBLIES		3391	Spring—Suspension spring and washer assembly for mounting motor board, comprising 1 bolt, 1 top spring, 1 bottom spring, 2 cup washers, 1 C washer and 1 cap nut	
11944	Arm—Pickup arm complete—less pickup unit		11949	Transformer—Phonograph input transformer pack, comprising one input transformer, one 1,800 Mmfd., one .01 Mfd. and one 0.1 Mfd. capacitors and one 1,000-ohm, one 33,000-ohm resistors (T3, C41, C43, C44, R26, R33)	
13404	Armature—Pickup armature				
11548	Back—Pickup housing back				
11946	Coil—Pickup coil—(L24)				
3521	Cover—Pickup back cover				
11708	Cover—Pickup front cover				
12354	Damper—Pickup damper				
3516	Damper—Pickup arm damper—comprising one upper and one lower damper, one upper bushing and one lower bearing				
3390	Escutcheon—Pickup arm escutcheon				
11945	Pickup unit—Complete—(L24)				

Model 8U (Motor No. 56992-1)

On Model 8U, two different motors are used which are readily identified by the following numbers stamped on the motor nameplate: (1) 72444-1 and (2) 56992-1. No. 72444-1 is an induction motor with a governor-type speed regulator while No. 56992-1 is a synchronous motor. Replacement parts for No. 72444-1 are listed in the Service Data for Model 8U while the replacement parts for No. 56992-1 are listed below:

<u>Stock No.</u>	<u>Description</u>
8989	Motor complete, 105-125 volts, 60 cycles
8993	Rotor and shaft for Stock No. 8989
3398	Spring - Motor mounting spring assembly
3817	Stud - Motor mounting stud

8T2, 8T11, 8K11, 8U & 8U2

REPLACEMENT PARTS (Continued)

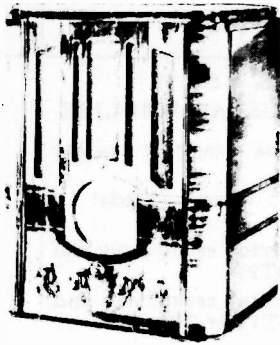
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	REPRODUCER ASSEMBLIES			8T2 8T11 & 8K11	
	Speaker No. RL63-4 or RL70-1			MISCELLANEOUS ASSEMBLIES	
11232	Board—Terminal board with two lead wire clips		11996	Bracket—Tuning tube mounting bracket and clamp	
11231	Bolt—Yoke and core assembly bolt and nut		12666	Cover—Reproducer cover—(Model 8K11)	
8060	Bracket—Output transformer mounting bracket		12698	Crystal—Station selector escutcheon and crystal—(Model 8T2)	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5		13303	Crystal—Station selector escutcheon and crystal—(Model 8T11 or 8K11)	
11254	Coil—Field coil—(L22)		11276	Escutcheon—Tuning tube escutcheon—(Model 8T2)	
11233	Coil—Neutralizing coil (L20)		13275	Escutcheon—Tuning tube escutcheon (Model 8T11 or 8K11)	
11235	Cone—Reproducer cone—(L21)—(Speaker No. RL63-4)—Models 8T2 or 8T11		11347	Knob—Range switch, tone control or volume control knob—Package of 5 (Model 8T2)	
11258	Cone—Reproducer cone—(L21)—(Speaker No. RL70-1)—Model 8K11		11610	Knob—Station selector knob—includes one large and one small knob—Package of 5—(Model 8T2)	
5119	Connector—3-contact female connector for reproducer cable		13304	Knob—Large station selector knob—Model 8T11 only—Package of 5	
5118	Connector—3 contact male connector for reproducer		13395	Knob—Large station selector knob—Model 8K11 only—Package of 5	
9618	Reproducer—Complete (Speaker No. RL63-4)—Models 8T2 or 8T11		13305	Knob—Small (Vernier) Station selector knob—Model 8T11 only—Package of 5	
9619	Reproducer—Complete (Speaker No. RL70-1)—Model 8K11		13396	Knob—Small (Vernier) Station selector knob—Model 8K11 only—Package of 5	
11253	Transformer—Output transformer—(T2)		13306	Knob—Tone control, volume control or range switch knob—Model 8T11 only—Package of 5	
11886	Washer—Spring washer used to hold field coil securely—Package of 5		13278	Knob—Tone control, volume control or range switch knob—Model 8K11 only—Package of 5	
	Speaker No. 76365-1		11210	Screw—Chassis mounting screw assembly for console model only—Package of 4	
11836	Cone—Reproducer cone		11377	Screw—Chassis mounting screw assembly for table model only—Package of 4	
5118	Connector—3-contact male connector for reproducer		4982	Spring—Retaining spring for large knob in Stk. No. 11610, 13304 and 13395—Package of 10	
9634	Reproducer—Complete		11349	Spring—Retaining spring for knob Stk. No. 11347, 13278, 13305, 13306, 13396 and small knob in Stk. No. 11610—Package of 5	
11837	Transformer—Output transformer (Field and hum coils are not removable)				
	Speaker No. 76365-3				
11844	Coil—Field coil				
11842	Coil—Hum neutralizing coil				
11838	Cone—Reproducer Cone				
5118	Connector—3 contact male connector for reproducer				
9635	Reproducer—Complete				
11839	Spring—Reproducer center support clamping spring—Package of 2				
11843	Transformer—Output transformer				

Model 8T2 (Speaker No. RL-63E2)Stock No.Description

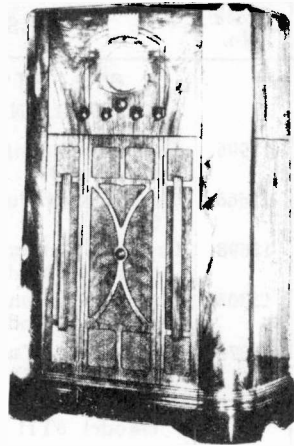
12641	Board - Reproducer terminal board
12640	Bracket - Output transformer mounting bracket
11254	Coil - Field coil
11233	Coil - Hum neutralizing coil
12642	Cone - Reproducer cone and dust cap
5118	Connector - 3-contact male connector for reproducer
9773	Reproducer complete
11253	Transformer - Output transformer
11886	Washer - Spring washer to hold field coil securely

MODELS T 8-14, C 8-15, C9-4 and T9-10

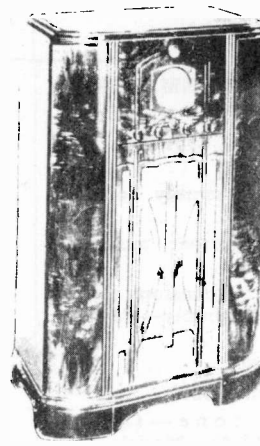
Eight- and Nine-Tube, Three-Band, A-C, Superheterodyne Receivers



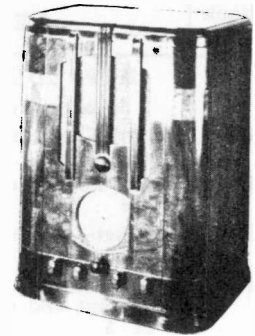
MODEL T 8-14



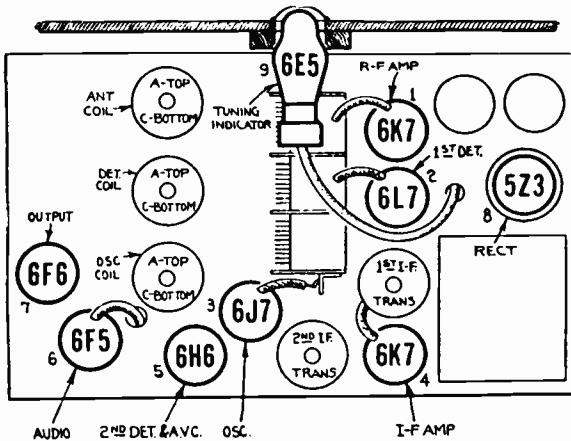
MODEL C 8-15



MODELS C 9-4



MODEL T 9-10



Coil and Radiotron Locations

* NOTE: RADIOTRON 5Z3 USED IN T8-14, C8-15 AND 1935 PRODUCTION OF C9-4. TUNING INDICATOR 6E5 USED IN MODELS C9-4 AND T9-10 ONLY.

Electrical Specifications

FREQUENCY RANGES

Band A.....540-1,800 kc.
 Band B.....1,800-6,000 kc.
 Band C.....6,000-18,000 kc.

ALIGNMENT FREQUENCIES

Band A...600 kc. (osc.), 1,720 kc. (osc., det., ant.)
 Band B.....6,132 kc. (osc., det., ant.)
 Band C.....18,000 kc. (osc., det., ant.)

Intermediate Frequency.....460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7.....Radio-Frequency Amplifier
- (2) RCA-6L7.....First Detector
- (3) RCA-6J7.....Heterodyne Oscillator
- (4) RCA-6K7.....Intermediate Amplifier

- (5) RCA-6H6.....Second Detector and A.V.C.
- (6) RCA-6F5.....Audio Amplifier
- (7) RCA-6F6.....Power Output Amplifier
- (8)*RCA-5Z4.....Full Wave Rectifier
- (9)*RCA-6E5.....Tuning Indicator

POWER SUPPLY RATINGS

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

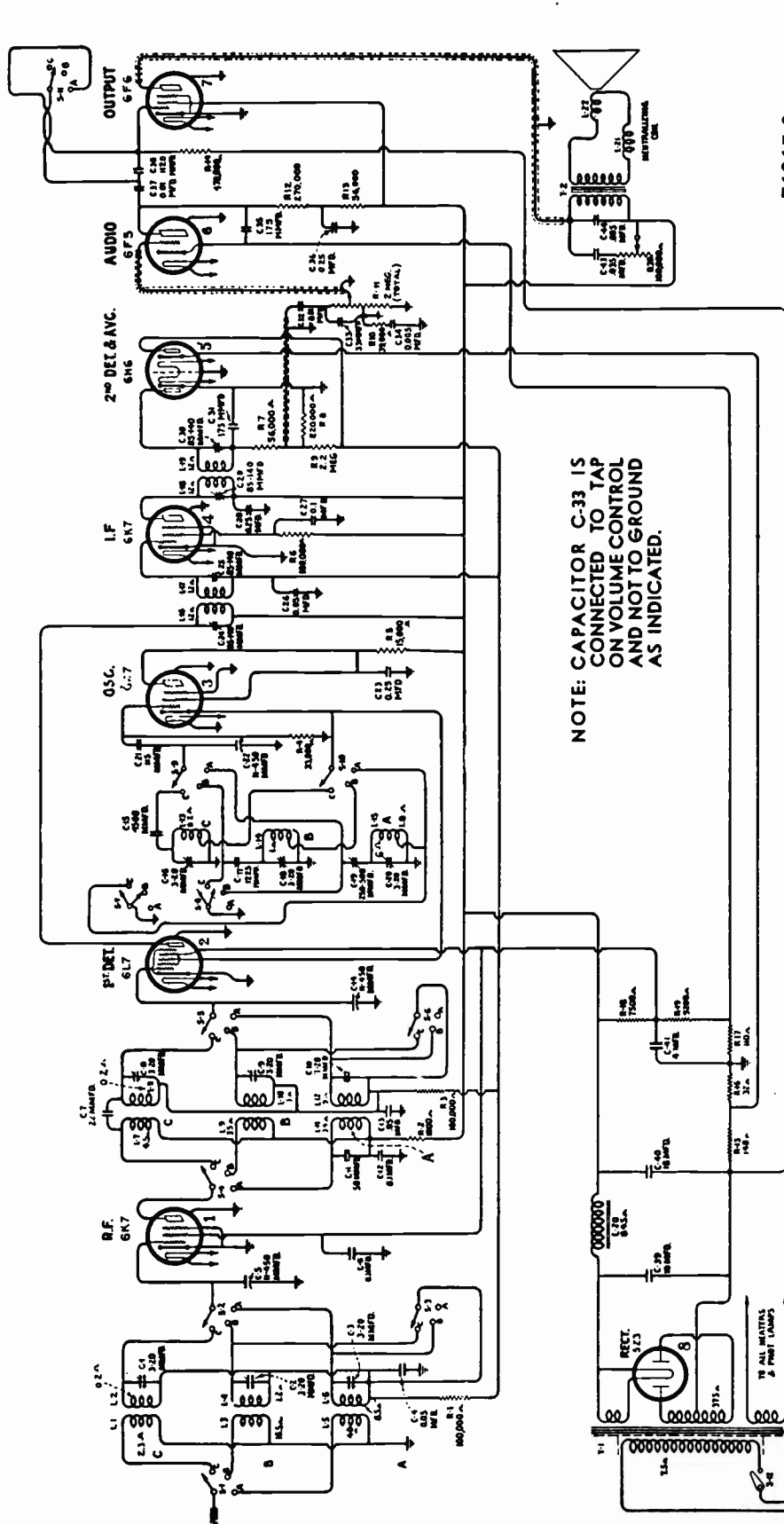
LOUDSPEAKER

Type.....Electrodynamic
 Voice Coil Impedance.....2¼ Ohms at 400 Cycles

POWER OUTPUT RATINGS

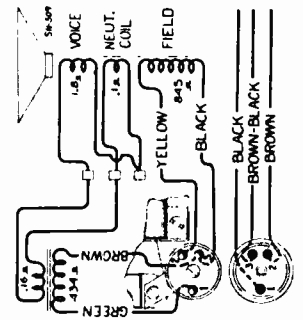
Undistorted.....2 Watts
 Maximum.....4½ Watts

T8-14, C8-15, C9-4 & T9-10

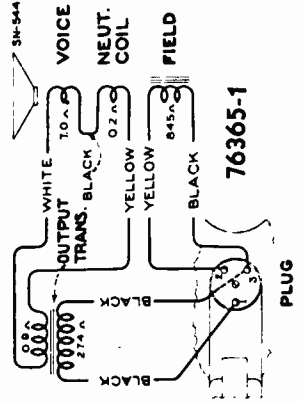


NOTE: CAPACITOR C-33 IS CONNECTED TO TAP ON VOLUME CONTROL AND NOT TO GROUND AS INDICATED.

76365-3



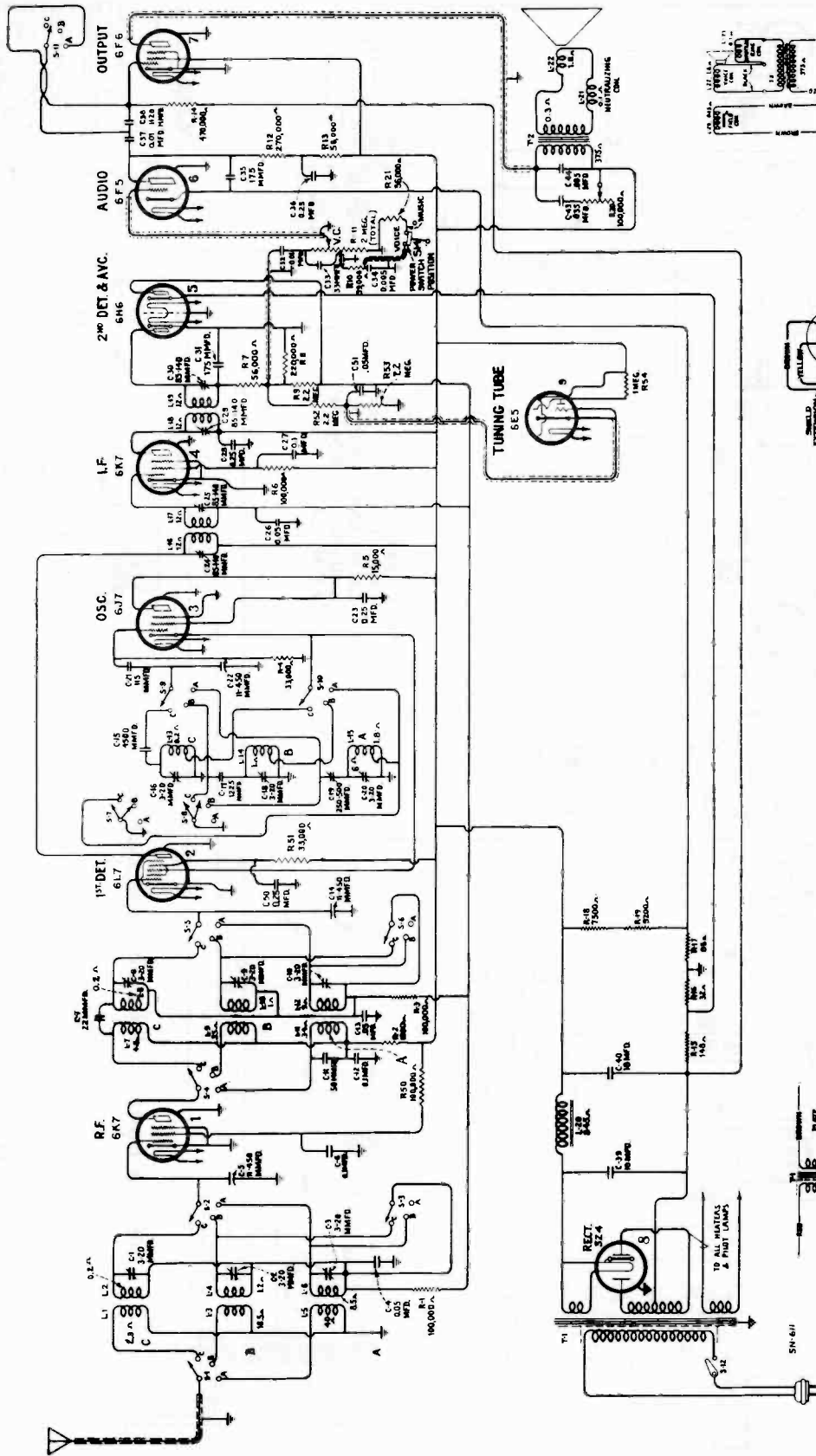
76365-1



T8-14 & C8-15 - Schematic Circuit Diagram

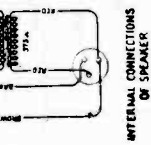
On receiver Model T 8-14, three different type speakers are used They can be readily identified by the following numbers stamped on them
 (1) RL 63-4, (2) 76365-1, and (3) 76365-3.

T8-14, C8-15, C9-4 & T9-10

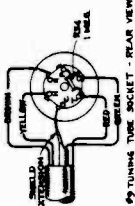


C9-4 & T9-10 - Schematic Circuit Diagram

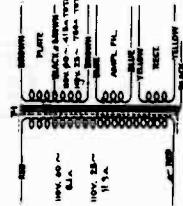
NOTE: 1936 PRODUCTION C9-4, USES 5Z9 RECTIFIER. VOICE
 - MUSIC SWITCH (S1A) AND RESISTOR (R21) OMITTED.



INTERNAL CONNECTIONS OF SPEAKER



6E3 TUNING TUBE SOCKET - REAR VIEW.

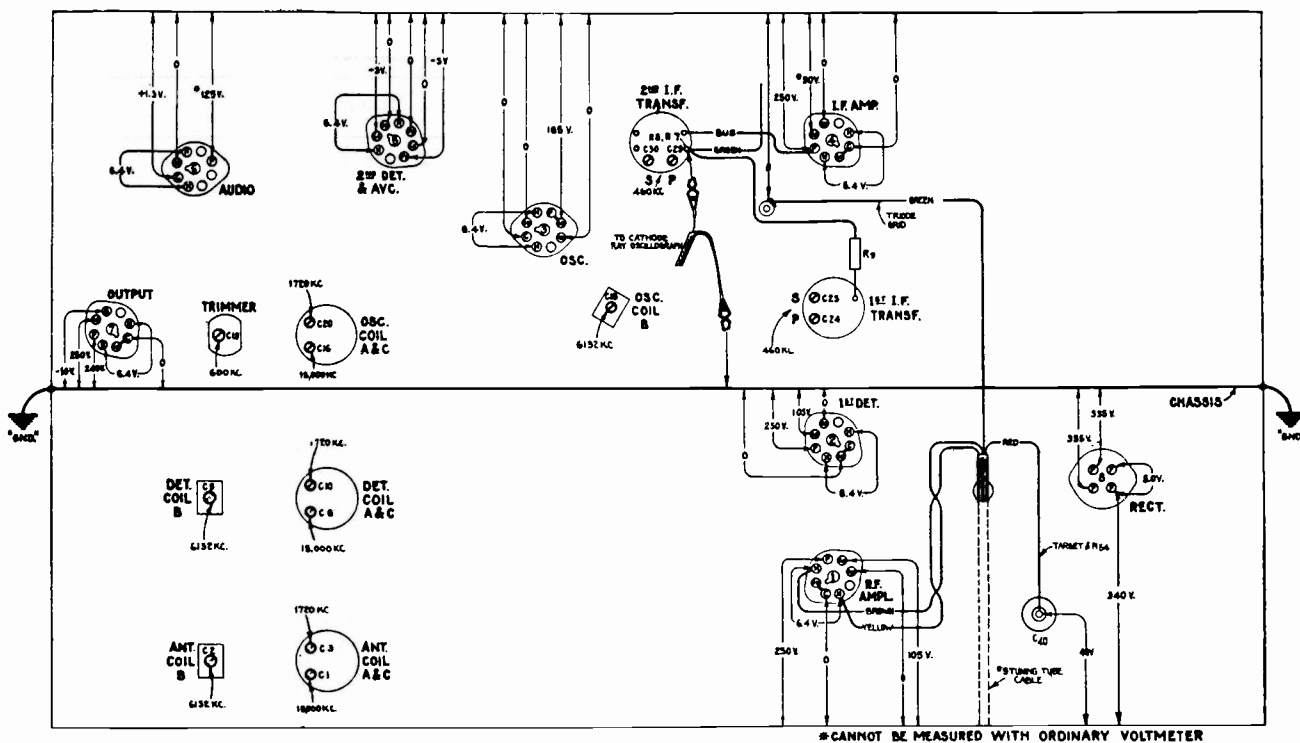


INTERNAL CONNECTIONS OF POWER TRANSFORMER



TO ALL INITIALS & FINAL TURNS

T8-14, C8-15, C9-4 & T9-10



-Trimmer Locations and Radiotron Socket Voltages
Measured at 115 volts A.C.—No Signal—Volume Control Maximum

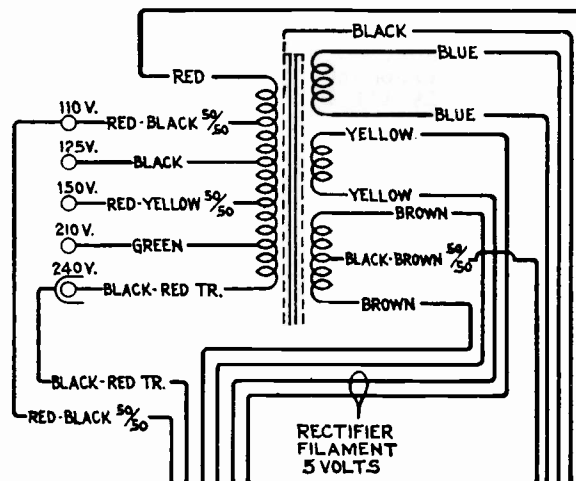
Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc #A# Band	C30 C29 2nd I-F Trans.
2	1st Det. in series with 0.01 mfd			C25 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc #A# Band	C20 C10 C3 Osc. R-F Ant.
4		600 Kc	600 Kc #A# Band	C19 L-F Osc. Rock Gang
5	<i>Repeat Step 3</i>			
6	Antenna in series with 300 ohms	6132 Kc	6132 Kc #B# Band	C18† C9 C2 Osc. R-F Ant.
7		18000 Kc	18 Mc #C# Band	C16† C8 C1 Osc. R-F Ant.

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.



-Universal Power Transformer Connections

POWER TRANSFORMER RESISTANCES

	USED ON	PRIMARY	SECONDARY
60cy.	#11241 T8-14, C8-15	7.5 ohms	375 ohms
60cy.	#11330 C9-4 (1935)	3.8 ohms	316 ohms
60cy.	#11803 C9-4 (1936) T9-10	6.1 ohms	415 ohms
25cy.	#11242 C9-4 (1935) T8-14, C8-15	8 ohms	670 ohms
25cy.	#11804 C9-4 (1936) T9-10	11.6 ohms	780 ohms
Univ.	#11243 C9-4 (1935) T8-14, C8-15	10.3 ohms	383 ohms
Univ.	#11805 C9-4 (1936) T9-10	17.3 ohms	400 ohms

T8-14, C8-15, C9-4 & T9-10

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
C9-4 (1936 PROD.) & T9-10			RECEIVER ASSEMBLIES		
4427	Bracket—Volume control or high frequency tone control mounting bracket.		11151	Resistor—2.2 megohms—Carbon Type—1/4 watt—(R9, R52, R53)—Package of 5	
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3		5249	Shield—Antenna, detector or oscillator coil shield	
11350	Cap—Contact cap—Package of 5		5250	Shield—Intermediate frequency transformer shield	
11223	Capacitor—Adjustable capacitor (C19)		11222	Socket—Dial lamp socket	
11292	Capacitor—22 MMfd. (C7)		11195	Socket—5-contact rectifier radiotron socket	
11321	Capacitor—33 MMfd. (C33)		11313	Socket—5-contact radiotron socket	
11289	Capacitor—50 MMfd. (C11)		11198	Socket—7-contact radiotron socket	
11291	Capacitor—115 MMfd. (C21)		11236	Switch—Band switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11)	
11623	Capacitor—175 MMfd. (C31)		5224	Switch—Tone control and power switch (S12, S14)	
5116	Capacitor—175 MMfd. (C35)		5238	Terminal—Antenna terminal clip assembly	
4409	Capacitor—1120 MMfd. (C38)		11238	Tone Control—High frequency tone control (R20)	
11288	Capacitor—1225 MMfd. (C17)		11216	Transformer—First intermediate frequency transformer (L16, L17, C24, C25)	
11287	Capacitor—4500 MMfd. (C15)		11239	Transformer—Second Intermediate frequency transformer (L18, L19, C29, C30, C31, R7, R8)	
4868	Capacitor—0.005 Mfd. (C34, C44)		11803	Transformer—Power transformer—105-125 volts—50-60 cycles (T1)	
4624	Capacitor—0.01 Mfd. (C32)		11804	Transformer—Power transformer—105-125 volts—25-60 cycles	
4858	Capacitor—0.01 Mfd. (C37)		11805	Transformer—Power transformer—100-130, 140-160, 195-250 volts—40-60 cycles	
5196	Capacitor—0.035 Mfd. (C43)		11237	Volume Control—(R11)	
4836	Capacitor—0.05 Mfd. (C4, C13, C26)		MODELS T8-14 & C8-15		
4886	Capacitor—0.05 Mfd. (C51)		11248	Capacitor—4 Mfd. (C41)	
4885	Capacitor—0.1 Mfd. (C6, C12, C27)		4748	Clamp—Capacitor mounting clamp assembly—for stock #11248	
5170	Capacitor—0.25 Mfd. (C23, C28, C36, C50)		11245	Resistor—Voltage divider resistor, comprising one 148 ohm, one 32 ohm and one 110 ohm section—(R15, R16, R17)	
11240	Capacitor—10 Mfd. (C39)		11273	Shield—Rectifier Radiotron shield	
5212	Capacitor—18 Mfd. (C40)		4794	Socket—4-contact rectifier Radiotron socket.	
11272	Clamp—Antenna cable clamp—Located near antenna terminal		11133	Switch—Power switch—(S12)	
5215	Coil—Antenna coil (A and C Bands)—(L1, L2, L5, L6, C1, C3)		11238	Tone Control—High frequency tone control (R20)	
5245	Coil—Antenna coil (B Band)—(L3, L4, C2)		Change Stock No. From To		
5216	Coil—Detector coil (A and C Bands)—(L7, L8, L11, L12, C8, C10)		11803	Transformer	11241
5246	Coil—Detector coil (B Band)—(L9, L10, C9)		11804	Transformer	11242
5217	Coil—Oscillator coil (A and C Bands)—(L13, L15, C16, C20)		11805	Transformer	11243
5247	Coil—Oscillator coil (B Band)—(L14, C18)		Stock No's 11331 Cable, 11276 Escutcheon, 11382 Resistor, 11381 Socket, 4886 Capacitor and 5033 resistor. Not used with Models T8-14 and C8-15.		
11214	Condenser—3-gang variable tuning condenser (C5, C14, C22)		1935 PRODUCTION MODEL C9-4		
4340	Lamp—Dial lamp—Package of 5		Add Stock No.		
11710	Lead—Shielded lead for antenna		4794	Socket - 4 contact rectifier socket.	
8041	Plate—R.F. or I.F. coil shield locking plate—Package of 2		11273	Shield - Rectifier tube shield.	
11244	Resistor—Voltage divider resistor, comprising one 7500 ohm and one 9200 ohm section—(R18, R19)		11133	Switch - Power switch.	
11329	Resistor—Voltage divider resistor, comprising one 148 ohm, one 32 ohm and one 85 ohm section—(R15, R16, R17)		11181	Bracket - Tuning tube mounting bracket.	
5112	Resistor—1000 ohm—Carbon Type—1/4 watt—(R2)—Package of 5		11182	Clamp - Tuning tube mounting clamp.	
5114	Resistor—15,000 ohm—Carbon Type—1 watt—(R5)		Change Stock No. From To		
11300	Resistor—33,000 ohm—Carbon Type—1/10 watt—(R4)—Package of 5		11803	Transformer	11330
5033	Resistor—33,000 ohm—Carbon Type—1 watt—(R51)—Package of 5		11804	Transformer	11242
11322	Resistor—39,000 ohm—Carbon Type—1/4 watt—(R10)—Package of 5		11805	Transformer	11243
5029	Resistor—56,000 ohm—Carbon Type—1/4 watt—(R13, R21)—Package of 5		Stock No's 11195 Socket, 5224 Switch and 11998 Bracket used in 1936 production models only.		
3118	Resistor—100,000 ohm—Carbon Type—1/4 watt—(R1, R3, R6, R50)—Package of 5				
11323	Resistor—270,000 ohm—Carbon Type—1/4 watt—(R12)—Package of 5				
11172	Resistor—470,000 ohm—Carbon Type—1/4 watt—(R14)—Package of 5				

T 8-14, C8-15, C9-4 & T9-10

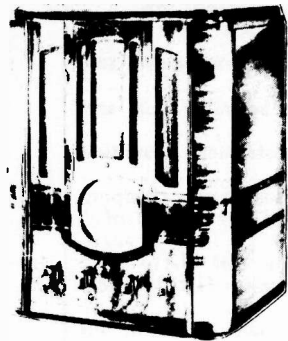
REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
DRIVE ASSEMBLIES			REPRODUCER ASSEMBLIES		
4362	Arm—Band indicator operating arm.....		11232	Board—Terminal board assembly with two lead wire clips.....	
10194	Ball—Steel ball—Package of 20.....		11231	Bolt—Yoke and core assembly bolt and nut	
4422	Clutch—Tuning condenser drive clutch assembly—comprising drive shaft, balls, ring, spring and washers—sembled..		8060	Bracket—Output transformer mounting bracket	
11328	Dial—Dial scale.....		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
11252	Drive—Variable tuning condenser drive assembly		11254	Coil—Field coil (L20).....	
4520	Indicator—Station selector indicator pointer		11233	Coil—Hum neutralizing coil (L21).....	
11226	Indicator—Band indicator pointer assembly—comprising indicator pointer, arm, link and stud.....		11258	Cone—Reproducer cone—(L22)—Package of 5.....	
3993	Screw—No. 6-32-5/32-in. square head set screw for band indicator operating arm—Package of 10.....		5118	Connector—3-contact male connector for reproducer	
4669	Screw—No. 8-32-5/32-in. set screw for variable condenser drive assembly—Package of 10.....		5119	Connector—3-contact female connector plug for reproducer cable.....	
4377	Spring—Band indicator operating arm spring—Package of 5.....		9619	Reproducer—Complete	
4378	Stud—Band indicator operating arm stud and nut assembly—Package of 5.....		11253	Transformer—Output transformer (T2)..	
			11886	Washer—Spring washer used to hold field coil securely—Package of 5.....	
REPRODUCER ASSEMBLIES			MISCELLANEOUS ASSEMBLIES		
	Table Model				
	SPEAKER RL-63-4				
11232	Board—Terminal board with two lead wire clips.....		11996	Bracket—Tuning tube mounting bracket and clamp assembly.....	
11231	Bolt—Yoke and core assembly bolt and nut		11331	Cable—Tuning lamp cable—complete with socket	
8060	Bracket—Output transformer mounting bracket		11276	Escutcheon—Tuning lamp escutcheon...	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5.....		11337	Escutcheon—Station selector escutcheon..	
11254	Coil—Field coil (L20).....		6614	Glass—Station selector dial glass.....	
11233	Coil—Neutralizing coil (L21).....		11346	Knob—Station selector knob—Package of 5	
11235	Cone—Reproducer cone—(L22)—Package of 5.....		11347	Knob—Volume control, tone control, range switch or power switch knob—Package of 5.....	
5119	Connector—3-contact female connector for reproducer cable.....		11246	Foot—Chassis mounting foot and bracket assembly—Package of 2.....	
5118	Connector—3-contact male connector for reproducer		11382	Resistor—1 megohm—Carbon Type—1/10 watt (R54)—Package of 5.....	
9618	Reproducer—Complete		4678	Ring—Spring retaining ring for dial glass—Package of 5.....	
11253	Transformer—Output transformer (T2)..		5210	Screw—Chassis mounting screw assembly—for console model—Package of 4...	
11886	Washer—Spring washer used to hold field coil securely—Package of 5.....		11210	Screw—Chassis mounting screw assembly—for table model—Package of 4.....	
	76365-1		11348	Screw—No. 8-32-7/16-in. headless cupped point set screw for knob, Stock No. 11346—Package of 10.....	
11836	CONE—Reproducer cone.....		11381	Socket—Tuning lamp socket and cover..	
5118	CONNECTOR—3-contact male connector for reproducer.....		11349	Spring—Retaining spring for knob, Stock No. 11347—Package of 5.....	
9634	REPRODUCER—Complete.....				
11837	TRANSFORMER—Output transformer.. (Field and hum coils not removable.)				
	76365-3				
11844	COIL—Field coil.....				
11842	COIL—Hum neutralizing coil.....				
11838	CONE—Reproducer cone.....				
5118	CONNECTOR—3-contact male connector for reproducer.....				
9635	REPRODUCER—Complete.....				
11839	SPRING—Reproducer center support casting clamping spring—Package of 2.				
11843	TRANSFORMER—Output transformer..				

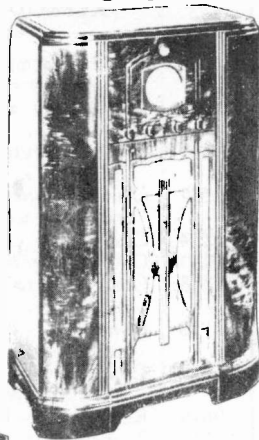
NOTE: Radiotron 523 used in T8-14, C8-15 and 1935 production of C9-4. Tuning indicator 6E5 used in Models C9-4 and T9-10 only.

MODELS T 8-16, C 8-17, C 9-6, T 9-9 and D9-19

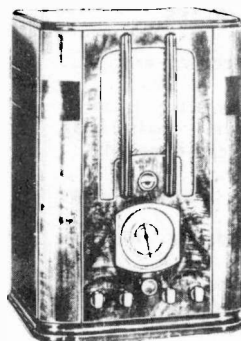
Eight- and Nine-Tube, Three-Band, A-C, Superheterodyne Receivers and Nine-Tube Radio-Phonograph



MODEL T 8-16



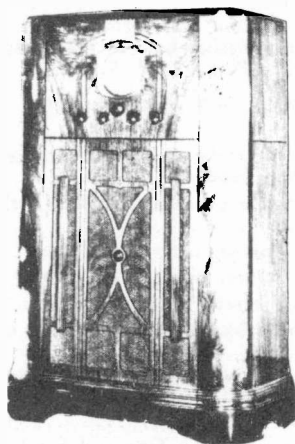
MODEL C 9-6



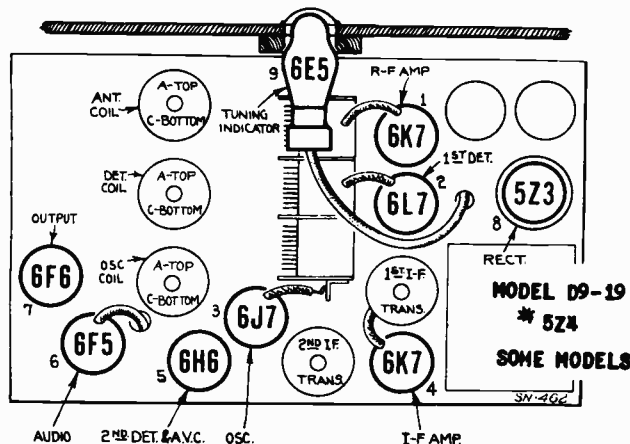
MODEL T 9-9



MODEL D 9-19



MODEL C 8-17



-Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Band X	140 kc.— 410 kc.
Band A	540 kc.— 1,800 kc.
Band C	5,700 kc.—18,000 kc.

Intermediate Frequency

460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7.....Radio-Frequency Amplifier
- (2) RCA-6L7.....First Detector
- (3) RCA-6J7.....Heterodyne Oscillator
- (4) RCA-6K7.....Intermediate Amplifier

ALIGNMENT FREQUENCIES

Band X	150 kc. (osc.), 400 kc. (osc., ant., det.)
Band A	600 kc. (osc.), 1,720 kc. (osc., ant., det.)
Band C	18,000 kc. (osc., ant., det.)

- (5) RCA-6H6.....Second Detector and A.V.C.
- (6) RCA-6F5.....Audio Amplifier
- (7) RCA-6F6.....Power Output Amplifier
- (8)*RCA-5Z3.....Full Wave Rectifier
- (9) RCA-6E5.....Tuning Indicator

POWER SUPPLY RATINGS

Rating A	105—125 volts, 50—60 cycles, 140 watts	- D9-19	- RADIO ONLY -
Rating B	105—125 volts, 25 cycles, 140 watts	50—60 cycles, 105 watts	50—60 cycles, 105 watts
Rating C	100—130/140—160/195—250 volts, 50—60 cycles, 140 watts	25—60 cycles, 105 watts	40—60 cycles, 105 watts

LOUDSPEAKER

Type Electrodynamic
 Voice Coil Impedance.....2 1/4 Ohms at 400 Cycles

POWER OUTPUT RATINGS

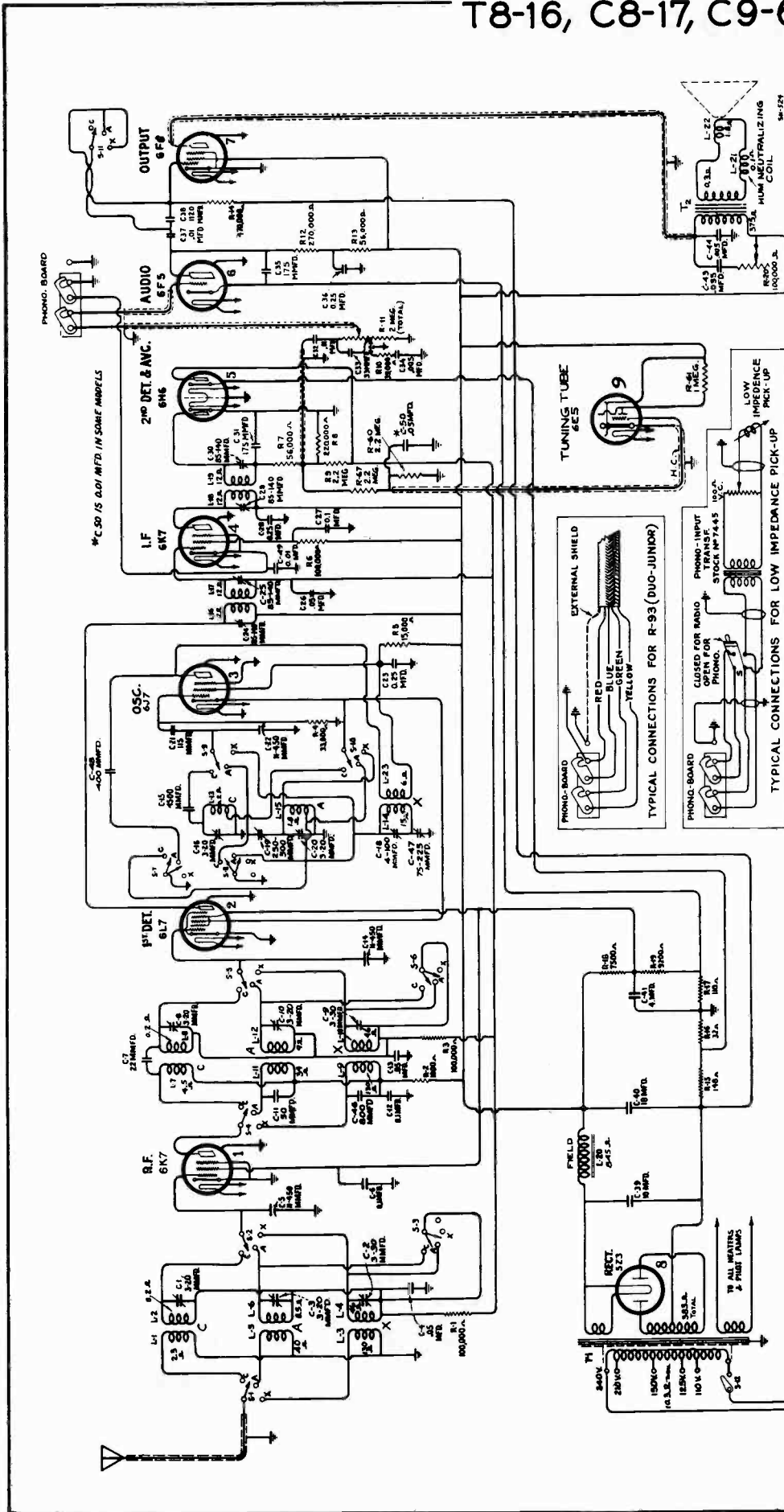
Undistorted 2 Watts
 Maximum 4 1/2 Watts

PHONOGRAPH MODEL D9-19

Type Manual
 Turntable Speed..... (Adjustable) 78 R.P.M.

Type of Pickup Improved High-Impedance Magnetic
 Pickup Impedance..... 2,800 Ohms at 1,000 Cycles

T8-16, C8-17, C9-6, T9-9 & D9-19



MODELS C9-6 & T9-9 -Schematic Circuit Diagram

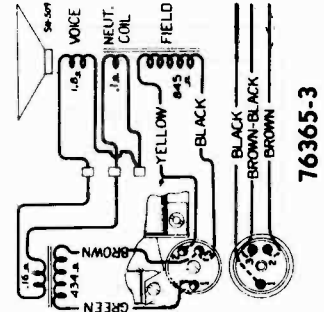
Range Switch

The band change switch has several functions. It exchanges the antenna, detector and oscillator coils in order to select the range desired. At the same time, it shorts out the unused coils so as to eliminate their absorptive effects. It also varies the fidelity by shorting a coupling condenser in the audio system to provide the desired reproduction for short as well as long wave reception.

NOTE: MODELS T8-16 AND C8-17 TUNING TUBE 6E5 NOT USED.

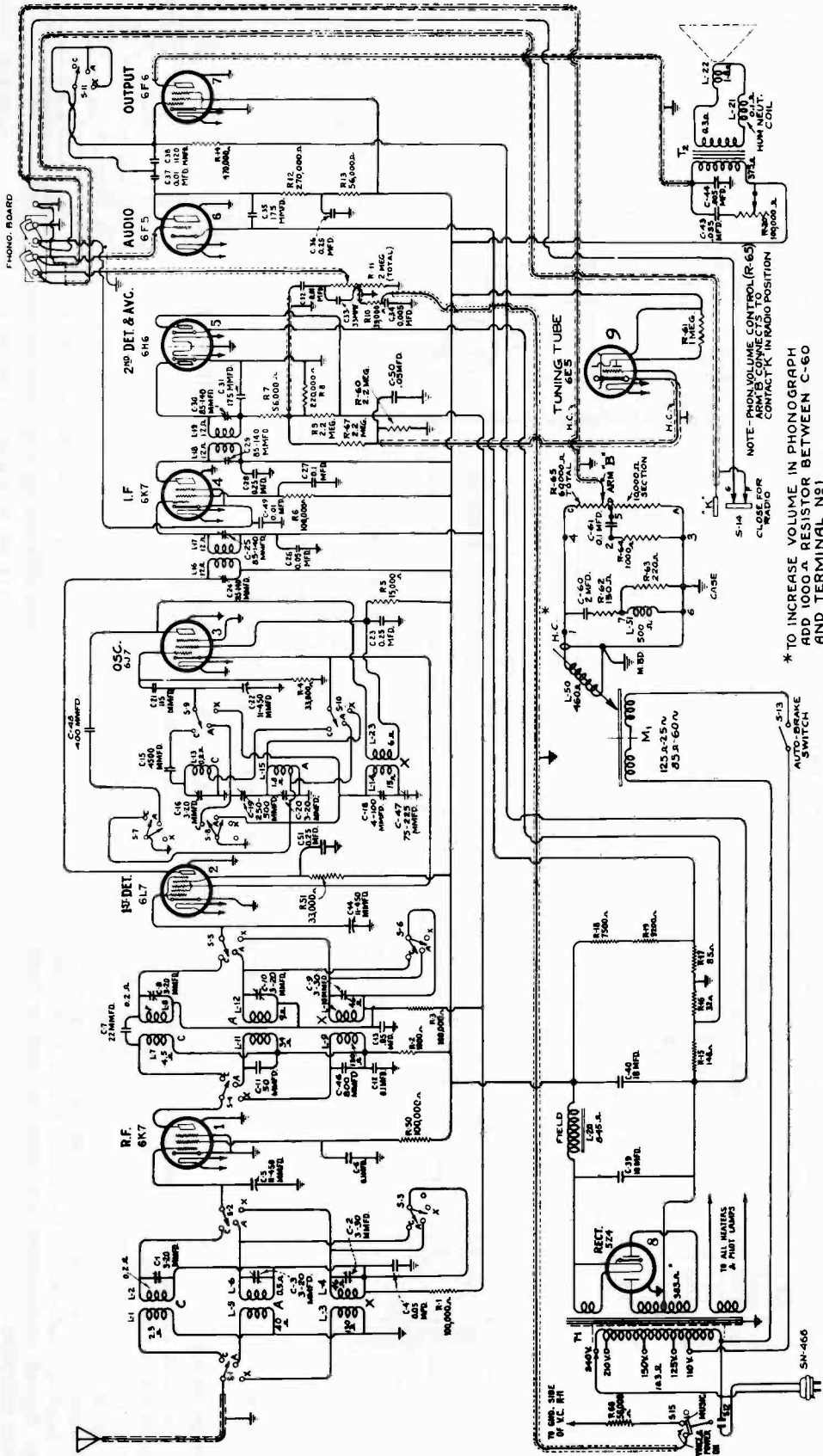
R60, R61, R67 AND C50 OMITTED.

On receiver Model T 8-16, two different type speakers are used:
 (1) RL 63-4 and (2) 76365-3.



76365-3

T8-16, C8-17, C9-6, T9-9 & D9-19

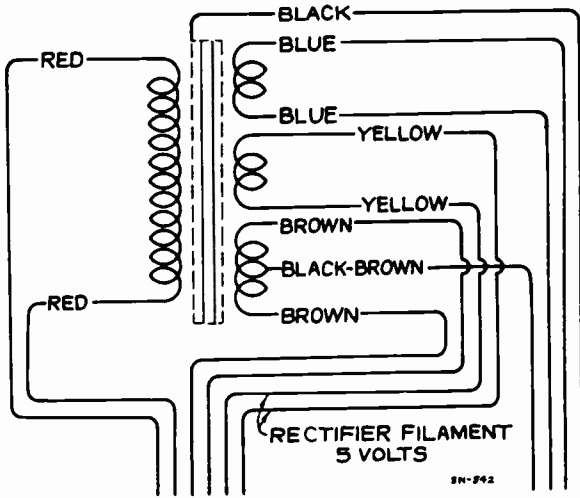


-Schematic Circuit Diagram
 (Model D9-19 with metal rectifier and low-frequency tone control)
 (Refer to preceding page for schematic diagram of receiver chassis of original production D9-19).

WIRE	GAUGE	COLOR	TERMINALS
20	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
22	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
24	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
26	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
28	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
30	30	BLACK	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

INTERNAL CONNECTIONS OF POWER TRANSFORMER

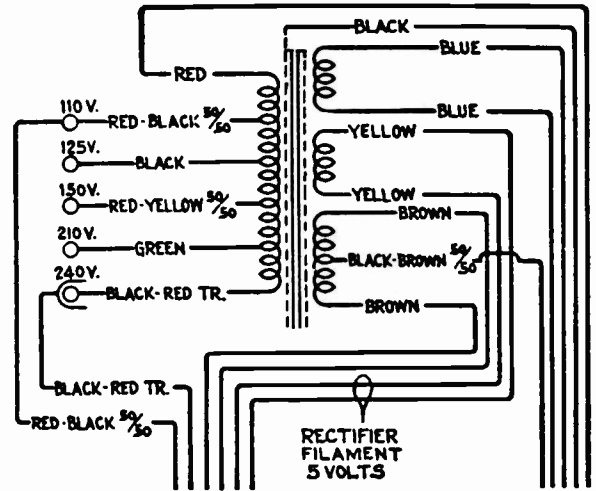
T8-16, C8-17, C9-6, T9-9 & D9-19



-Standard Power Transformer Connections

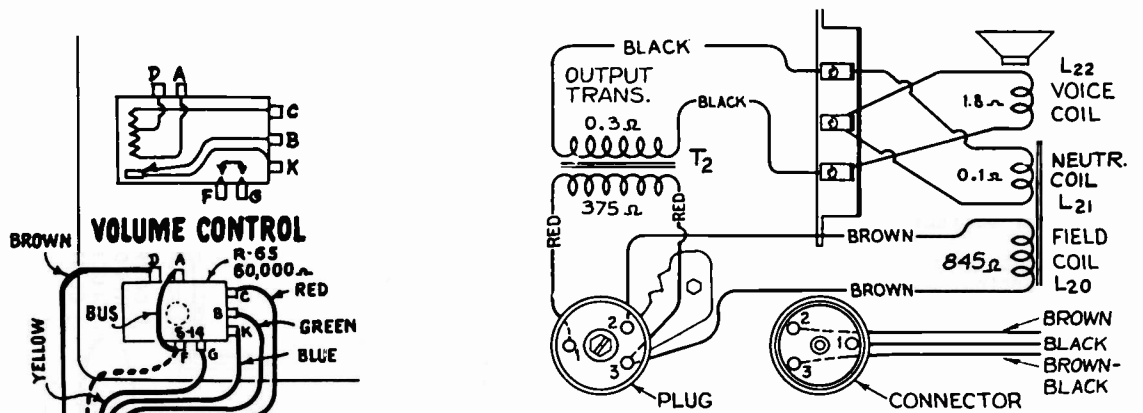
Stock No. 11242

Pri. Res.—8.0 ohms, total
Sec. Res.—670 ohms, total



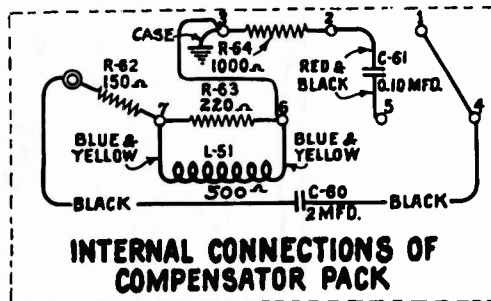
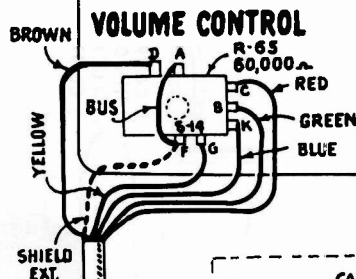
-Universal Power Transformer Connections

Pri. Res.—10.3 Ohms, Total
Sec. Res.—383 Ohms, Total

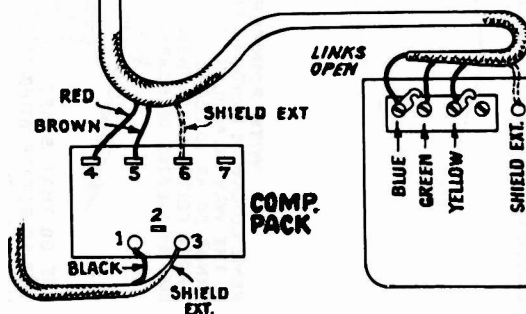


Loudspeaker Wiring

CONSOLE MODELS

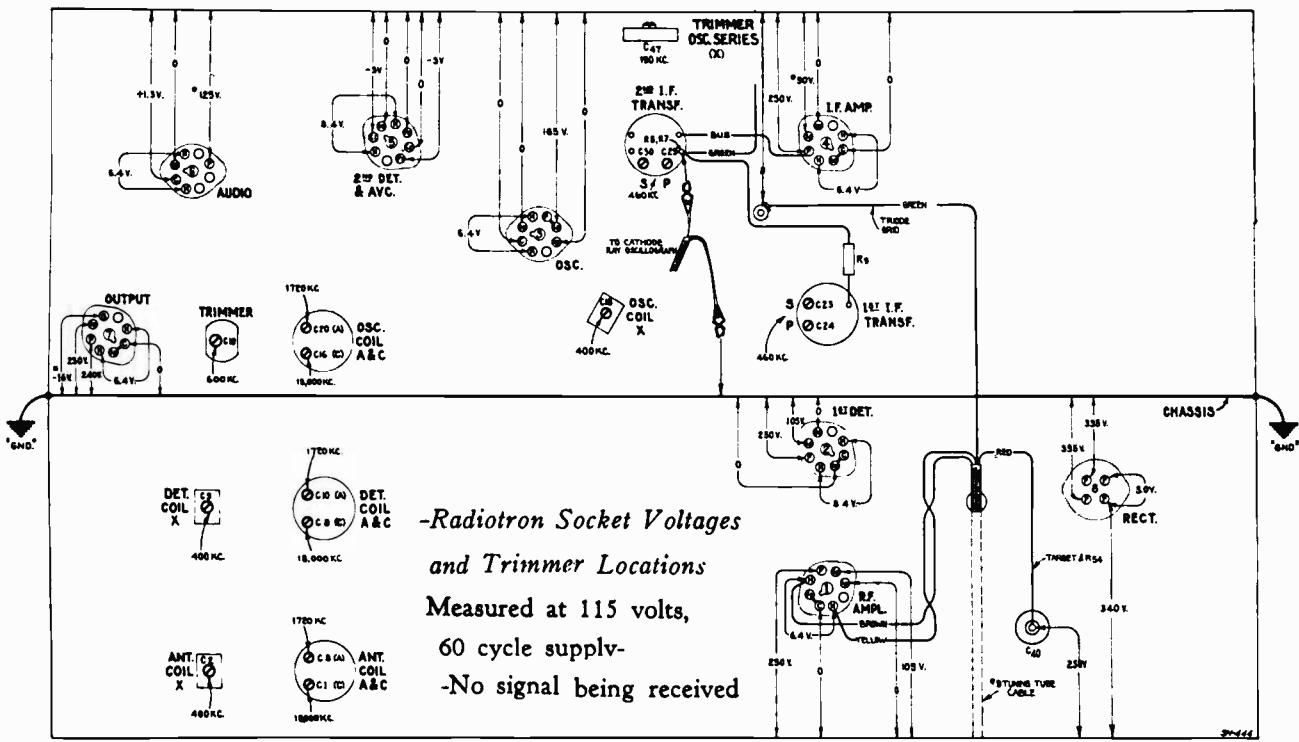


INTERNAL CONNECTIONS OF COMPENSATOR PACK



MODEL D9-19
PHONOGRAPH CONNECTIONS

T8-16, C8-17, C9-6, T9-9 & D9-19



*-Radiotron Socket Voltages
and Trimmer Locations
Measured at 115 volts,
60 cycle supply-
-No signal being received*

⊛ CANNOT BE MEASURED WITH ORDINARY VOLTMETER

DIAL CALIBRATION:

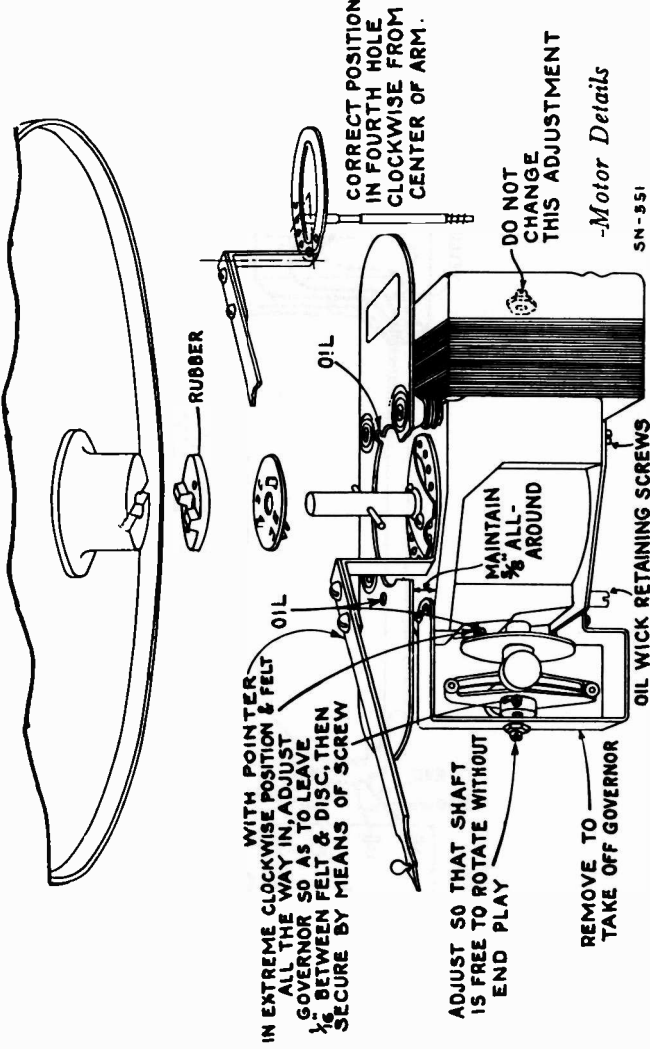
With tuning condenser fully meshed set pointer to horizontal line at low frequency end of A Band scale.

CATHODE RAY OSCILLOGRAPH CONNECTIONS:

Connect vertical "H" to junction of R7, R8, R9.
Connect vertical "0" to chassis.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	C29 C30 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C25 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	C20 C10 C3 Osc. R-F Ant.
4		600 Kc	600 Kc "A" Band	C19 L-F Osc. Rock Gang
5		Repeat Step 3		
6		400 Kc	400 Kc "X" Band	C18 C9 C2 Osc. R-F Ant.
7		160 Kc	160 Kc "X" Band	C47 L-F Osc. Rock Gang
8	Repeat Step 6			
9	Antenna in series with 300 ohms	18000 Kc	18 Mc "C" Band	C16† C8 C1 Osc. R-F Ant.

Osc. tracks 460 Kc above signal on all bands.
† Use minimum capacity peak.



CORRECT POSITION IN FOURTH HOLE IN CLOCKWISE FROM CENTER OF ARM.

DO NOT CHANGE THIS ADJUSTMENT

-Motor Details

SN - 551

MOTOR ADJUSTMENT:

WITH POINTER IN EXTREME CLOCKWISE POSITION & FELT ALL THE WAY IN, ADJUST GOVERNOR SO AS TO LEAVE 1/2" BETWEEN FELT & DISC. THEN SECURE BY MEANS OF SCREW

ADJUST SO THAT SHAFT IS FREE TO ROTATE WITHOUT END PLAY

REMOVE TO TAKE OFF GOVERNOR

MAINTAIN 3/8" ALL-AROUND

OIL WICK RETAINING SCREWS

OIL

RUBBER

T8-16, C8-17, C9-6, T9-9 & D9-19

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
11698	Board—Three-terminal phonograph terminal board		11322	Resistor—39,000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R10)—Package of 5	
4427	Bracket—Volume control or high-frequency tone control mounting bracket		5029	Resistor—56,000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R13)—Package of 5	
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3		3118	Resistor—100,000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R1, R3, R6)—Package of 5	
11350	Cap—Contact cap—Package of 5		11323	Resistor—270,000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R12)—Package of 5	
11223	Capacitor—Adjustable capacitor (C19)		11172	Resistor—470,000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R14)—Package of 5	
11256	Capacitor—Adjustable capacitor (C-47)		11151	Resistor—2.2 Megohms—Carbon type— $\frac{1}{4}$ Watt—(R9, R60, R67)—Package of 5	
11292	Capacitor—22 MMfd. (C7)		5249	Shield—Antenna, detector, or oscillator coil shield	
11321	Capacitor—33 MMfd. (C33)		5250	Shield—I.F. transformer shield	
11289	Capacitor—50 MMfd. (C11)		11273	Shield—Rectifier Radiotron shield	
11291	Capacitor—115 MMfd. (C21)		11222	Socket—Dial lamp socket	
5116	Capacitor—175 MMfd. (C35)		4794	Socket—Four-contact rectifier Radiotron socket	
11290	Capacitor—400 MMfd. (C48)		11313	Socket—Five-contact Radiotron socket	
11269	Capacitor—800 MMfd. (C46)		11198	Socket—Seven-contact Radiotron socket	
4409	Capacitor—1120 MMfd. (C38)		11236	Switch—Band switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11)	
11287	Capacitor—4500 MMfd. (C15)		11133	Switch—Power switch (S12)	
4868	Capacitor—.005 Mfd. (C34)		5238	Terminal—Antenna terminal clip assembly	
4838	Capacitor—.005 Mfd. (C44)		11238	Tone Control—High-frequency tone control (R20)	
4624	Capacitor—.01 Mfd. (C32)		11216	Transformer—First intermediate frequency transformer (L16, L17, C24 C25)	
4858	Capacitor—.01 Mfd. (C37, C49)		11239	Transformer—Second intermediate frequency transformer (L18, L19, C29, C30, C31, R7, R8)	
5196	Capacitor—.035 Mfd. (C43)		11242	Transformer—Power transformer—105-125 Volts—25-60 Cycles	
4886	Capacitor—.05 Mfd. (C50)		11243	Transformer—Power transformer—100-130, 140-160, 195-250 Volts—40-60 Cycles—(T1)	
4836	Capacitor—.05 Mfd. (C4, C13, C26)		11237	Volume control (R11)	
4885	Capacitor—.1 Mfd. (C6, C12, C27)		Model D9-19 (with metal rectifier)		
5170	Capacitor—0.25 Mfd. (C23, C28, C36)		5170	Capacitor—0.25 mfd. (C51)	
11248	Capacitor—4 Mfd. (C41)		11329	Resistor—Voltage divider resistor, comprising one 148-ohm, one 32-ohm, and one 85-ohm section (R15, R16, R17)	
11240	Capacitor—10 Mfd. (C39)		5033	Resistor—33,000 ohms—Carbon type—1 watt—(R51)—Package of 5	
5212	Capacitor—18 Mfd. (C40)		5029	Resistor—56,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R68)—Package of 5	
11272	Clamp—Antenna cable clamp—Located near antenna terminal		3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—(R50)—Package of 5	
4748	Clamp—Capacitor mounting clamp assembly—for Stock No. 11248		11195	Socket—Five-contact rectifier Radiotron socket	
5215	Coil—Antenna coil (A and C Bands)—(L1, L2, L5, L6, C1, C3)		5224	Switch—Low-frequency tone control and power switch (S12, S15)	
11325	Coil—Antenna coil (X Band)—(L3, L4, C2)		11804	Transformer—Power transformer—105-125 volts—25-60 cycles	
5216	Coil—Detector coil (A and C Bands)—(L7, L8, L11, L12, C8, C10)		11805	Transformer—Power transformer—100-130/140-160/195-250 volts—40-60 cycles—(T1)	
11326	Coil—Detector coil (X Band)—(L9, L10, C9)		11886	Washer—Spring washer used to hold field coil securely—Package of 5	
5217	Coil—Oscillator coil (A and C Bands)—(L13, L15, C16, C20)		13615	Bracket—Tuning tube mounting bracket and clamp assembly	
11327	Coil—Oscillator coil (X Band)—(L14, L23, C18)		Stock Nos. 4858 (C50*), 11248, 4748, 11245, 11273, 4794, 11133, 11242, 11243, 11230, 11191, and 11192 are not used in chassis having metal rectifier.		
11214	Condenser—Three-gang variable tuning condenser (C5, C14, C22)				
11697	Cover—Phonograph terminal board cover				
4340	Lamp—Dial lamp—Package of 5				
8041	Plate—R.F. or I.F. coil shield locking plate—Package of 2				
11244	Resistor—Voltage divider resistor, comprising one 7500-ohm and one 9200-ohm sections (R18, R19)				
11245	Resistor—Voltage divider resistor, comprising one 148-ohm, one 32-ohm, and one 110-ohm section (R15, R16, R17)				
5112	Resistor—1000 Ohm—Carbon type— $\frac{1}{4}$ Watt—(R2)—Package of 5				
5114	Resistor—15,000 Ohm—Carbon type—1 Watt—(R5)				
11300	Resistor—33,000 Ohm—Carbon type—1/10 Watt—(R4)—Package of 5				
11710	Lead - Shielded lead for antenna.				
11241	Transformer - Power Trans. - 105/125 volts - 50/60 cycles.				

Stock No. 4886 Capacitor (C60) and Resistors R60 and R67 not used in Models T8-16 and C8-17.

T8-16, C8-17, C9-6, T9-9 & D9-19

REPLACEMENT PARTS — Continued

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
DRIVE ASSEMBLIES					
4362	Arm—Band indicator operating arm		4573	Plug—Female section of two-contact plug —Used on power cable to motor	
10194	Ball—Steel ball—Package of 20		4577	Plug—Male section of two-contact plug —Used on motor leads	
4422	Clutch—Tuning condenser drive clutch assembly—comprising drive shaft, balls, ring, spring and washers—assembled		11382	Resistor—1 Megohm—Carbon type—1/10 Watt—Located in tuning tube socket—(R61)—Package of 5	
11262	Dial—Dial scale		11381	Socket—Radiotron tuning tube socket and cover	
11252	Drive—Variable tuning condenser drive assembly		PICKUP AND ARM ASSEMBLIES		
4520	Indicator—Station selector indicator pointer		11705	Arm—Pickup arm complete—less escutcheon and pickup unit	
11226	Indicator—Band indicator pointer assembly—comprising indicator pointer, arm, link and stud		11707	Armature—Pickup armature	
3993	Screw—No. 6-32-5/32" square head set-screw for band indicator operating arm—Package of 10		6346	Back—Pickup housing back	
4669	Screw—No. 8-32-5/32" set-screw for variable condenser drive assembly—Package of 10		11709	Coil—Pickup coil (L50)	
4377	Spring—Band indicator operating arm spring—Package of 5		3521	Cover—Pickup back cover	
4378	Stud—Band indicator operating arm stud and nut assembly—Package of 5		11708	Cover—Pickup front cover	
MOTOR ASSEMBLIES					
11703	Governor—Governor complete for phonograph motor—Stock No. 11701 or No. 11702		3737	Damper—Pickup damper—Package of 5	
11701	Motor—Phonograph turntable motor—110 Volts—50 to 60 Cycles—(M1)		3390	Escutcheon—Pickup arm escutcheon	
11702	Motor—Phonograph turntable motor—110 Volts—25 Cycles		11706	Pickup Unit—Complete (L50)	
MOTOR BOARD ASSEMBLIES					
4594	Box—Used needle box (cup)		3389	Rod—Eccentric automatic brake trip rod—Package of 5	
7084	Cover—Turntable cover		3387	Screw Assembly—Pickup mounting screw assembly—comprising one screw, one lockwasher and one nut—Package of 10	
11704	Damper—Turntable rubber damper and damper plate		11549	Screw—Pickup front cover screw—Package of 10	
4596	Escutcheon—Speed regulator escutcheon plate		11547	Screw—Pickup needle holding screw—Package of 10	
4597	Screw—Motor mounting screw assembly—comprising four screws, four lockwashers, four spacers, and four nuts		REPRODUCER ASSEMBLIES		
11696	Turntable—Complete		Table Model RL 63-4		
11695	Volume Control—Phonograph volume control (R65, S14)		11232	Board—Terminal board with two lead wire clips	
ECCENTRIC AUTOMATIC BRAKE SWITCH ASSEMBLIES					
3994	Cover—Eccentric automatic switch cover and screw		11231	Bolt—Yoke and core assembly bolt and nut.	
10174	Springs—Automatic brake springs—comprising one each of four springs—Package of 2		8060	Bracket—Output transformer mounting bracket	
6896	Switch—Eccentric automatic brake and switch assembly—less switch cover		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5..	
3322	Switch—Eccentric automatic switch only—less cover (S13)		11254	Coil—Field coil—(L20)	
CABLE ASSEMBLIES					
11700	Cable—Five-conductor shielded cable—approximately 24" long—Connects phonograph volume control to compensator pack and chassis terminal strip		11233	Coil—Neutralizing coil (L21)	
11699	Cable—Radiotron tuning tube cable complete with socket and cover—approximately 25" long		11235	Cone—Reproducer cone—(L22)—Package of 5	
REPRODUCER ASSEMBLIES					
76365-3					
			5119	Connector—3-contact female connector for reproducer cable	
			5118	Connector—3-contact male connector for reproducer	
			9618	Reproducer—Complete	
			11253	Transformer—Output transformer—(T2)	
			11230	Washer—"Binders board" "C" washer—used to hold field coil securely—Package of 5	
			11844	COIL—Field coil	
			11842	COIL—Hum neutralizing coil	
			11838	CONE—Reproducer cone	
			5118	CONNECTOR—3-contact male connector for reproducer	
			9635	REPRODUCER—Complete	
			11839	SPRING—Reproducer center support casting clamping spring—Package of 2.	
			11843	TRANSFORMER—Output transformer	
REPRODUCER ASSEMBLIES					
Console Model					
			11232	Board—Terminal board assembly with two lead wire clips	
			11231	Bolt—Yoke and core assembly bolt and nut.	

T8-16, C8-17, C9-6, T9-9 & D9-19

REPLACEMENT PARTS—Continued

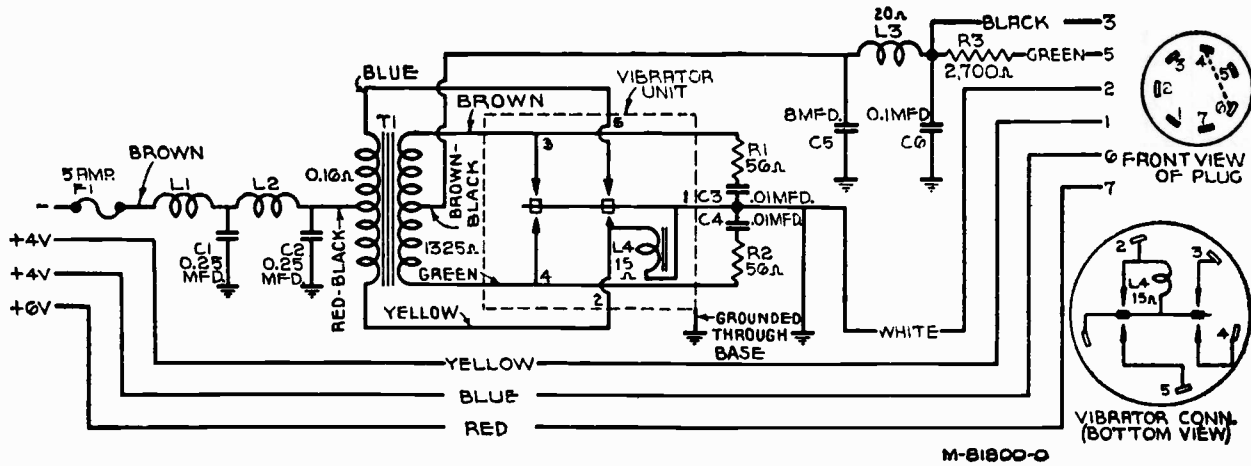
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
8060	Bracket—Output transformer mounting bracket		5210	Screw—Chassis mounting screw assembly—Package of 4 (console model)	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5..		11377	Screw—Chassis mounting screw assembly—Comprising one screw, one washer and one lockwasher—Package of 4 (table model)	
11254	Coil—Field coil—L20.....		11348	Screw—No. 8-32-7/16" Headless cupped point set screw for knob, Stock No. 11346—Package of 10	
11233	Coil—Hum neutralizing coil—L21.....		11381	Socket—Tuning tube socket and cover..	
11258	Cone—Reproducer cone—L22—Package of 5		11349	Spring—Retaining spring for knob—Stock No. 11347—Package of 5	
5118	Connector—3-contact male connector for reproducer			MODEL D9-19	
5119	Connector—3-contact female connector plug for reproducer cable.....			MISCELLANEOUS ASSEMBLIES	
9619	Reproducer—Complete		11191	Bracket—Tuning tube mounting bracket—less clamp	
11253	Transformer—Output transformer—T2....		11192	Clamp—Tuning tube mounting clamp—less bracket	
11230	Washer—"Binders board" "C" washer used to hold field coil assembly.....		11694	Compensator—Phonograph input compensator pack—comprising one 150-ohm, one 220-ohm, and one 1000-ohm resistor, one 0.1 Mfd. and one 2 Mfd. capacitor, and one 0.25 H reactor—(R62, R63, R64, C60, C61, L51)	
	MODELS T8-16 & C8-17		11337	Escutcheon—Station selector escutcheon	
	MISCELLANEOUS ASSEMBLIES		11276	Escutcheon—Radiotron tuning tube escutcheon	
11337	Escutcheon—Station selector escutcheon....		11246	Foot—Chassis mounting foot and bracket assembly—Package of 2	
6614	Glass—Station selector dial glass.....		6614	Glass—Station selector dial glass	
11346	Knob—Station selector knob—Package of 5.		11346	Knob—Station selector knob—Package of 5	
11347	Knob—Volume control, tone control, range switch or power switch knob—Package of 5.....		11347	Knob—Phonograph volume control, radio volume control, tone control, power switch or range switch knob—Package of 5	
11246	Foot—Chassis mounting foot and bracket assembly—Package of 2.....		4678	Ring—Retaining ring for station selector dial glass—Package of 5	
4678	Ring—Spring retaining ring for dial glass—Package of 5.....		11210	Screw—Chassis mounting screw assembly—Package of 4	
11210	Screw—Chassis mounting screw assembly—Package of 4.....		11348	Screw—No. 8-32-7/16" set-screw for knob—Stock No. 11346—Package of 10	
11348	Screw—No. 8-32-7/16" headless cupped point set screw for knob, stock #11346—Package of 10.....		3391	Spring—Motor board mounting spring assembly—comprising one bolt, one "C" washer, two cup washers, one bottom spring, one lockwasher, and one cap nut	
11349	Spring—Retaining spring for knob, stock #11347—Package of 5.....		11349	Spring—Retaining spring for knob—Stock No. 11347—Package of 5	
	MODELS C9-6 & T9-9				
	MISCELLANEOUS ASSEMBLIES				
11729	Bolt—Reproducer mounting bolt assembly—Comprising one bolt, one washer, one lockwasher and one nut—Package of 2 (table model)				
11191	Bracket—Tuning tube mounting bracket—less clamp				
11319	Cable—Tuning tube cable complete with socket (table model)				
11331	Cable—Tuning tube cable complete with socket (console model)				
11192	Clamp—Tuning tube mounting clamp—less bracket				
11276	Escutcheon—Radiotron tuning tube escutcheon				
11337	Escutcheon—Station selector escutcheon				
11246	Foot—Chassis mounting foot and bracket assembly—Package of 2				
6614	Glass—Station selector dial glass				
11347	Knob—Volume control, tone control, range switch or power switch knob—Package of 5				
11346	Knob—Station selector knob—Package of 5				
11382	Resistor—1 Megohm—Carbon type—1/10 Watt—(R61)—Package of 5				
4678	Ring—Retaining ring for station selector dial glass—Package of 5				
				Bracket Stock No. 13615 should be used for replacement instead of Stock Nos. 11191 and 11192 in all Models D9-19.	
				Washer Stock No. 11886 should be used for replacement instead of Stock No. 11230 in all Models D9-19.	

MODEL CV-8 PAK-O-POWER

The RCA Victor Model CV-8 Pak-O-Powr is a compact, self-contained, power-conversion unit which operates from a 6-volt storage battery and supplies all "A" and "B" power required to operate RCA Victor Receiver Models 85BK, 85BT, 86BK, or 86BT.

Battery Required: One 6-volt storage battery tapped at +4 volts (4 volts for CV-8 and 2 volts for receiver tubes).

Current Drain: 1.65 amperes to supply 4 ma. at 180 volts and 18 ma. at 135 volts.



Schematic Circuit Diagram

CV-8 PAK-O-PWR

Failure to Start:

Erratic action of the vibrator or its failure to function, after the unit has been standing idle for an extended period in the presence of moisture or high atmospheric humidity, may be due to a temporary oxidation of a small spot on one of the primary tungsten contacts. The condition can be readily and satisfactorily rectified by apply six volts (instead of normal four volts) from a fully charged battery to the vibrator input for approximately 30-60 seconds. To do this, connect the negative (— six volts) of six volt battery to the "Brown" lead, and the positive (plus six volts) to the "yellow" lead; disconnect seven-contact plug from receiver, and interconnect its terminals No. 1 and No. 2 (yellow and white) so as to close the circuit. Filament leads, Red and Blue, should not be attached to battery during application of higher voltage to vibrator. This procedure produces momentary overheating of the contacts, and thoroughly cleans their surfaces so that normal operation results.

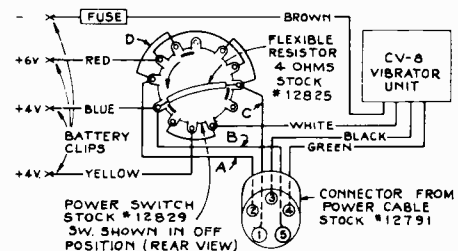
MODELS 6BT, 6BK, 8BT, 8BK

Operation With CV-8 Vibrator Unit:

It is possible to use the standard Model CV-8 vibrator unit in conjunction with the above 2-volt battery unit in conjunction with the above 2-volt battery unit by effecting the following changes, employing the cable connector and power switch which are part of the existing 2-volt receivers:

- Remove connector (Stock No. 12791) from battery cable of 2-volt set and install it in place of connector on CV-8 cable, connected as shown above.
- Remove all external connections from power switch (Stock No. 12829) and wire CV-8 cable to switch as shown. Jumpers on switch may be left intact, except add "D."
- Add 4-ohm resistor (Stock No. 12825) across 2-volt circuit at switch as shown.

Note that A, B and C are new leads which must be added to cable assembly.



Circuit for Using CV-8 Vibrator Unit with Models 6BT, 6BK, 8BT, 8BK.

REPLACEMENT PARTS

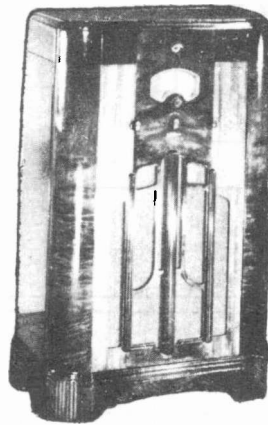
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
4289	Body - Fuse holder female body.	12179	Coil - Choke coil (L1, L2).
4286	Bushing - Fuse holder bushing and ferrule.	5140	Fuse - 5 ampere (F1).
14423	Cable - Battery cable complete, connects battery to vibrator to receiver.	4290	Insulator - Fuse holder insulating sleeve.
4288	Cap - Fuse holder male cap.	14419	Mounting - Rubber mounting for vibrator chassis.
11654	Capacitor - 0.01 mfd (C3, C4).	14409	Plug - 7-contact female plug for battery cable
4841	Capacitor - 0.1 mfd (C6).	13220	Resistor - 56 ohms, carbon type, 1/4 watt (R1, R2).
4840	Capacitor - 0.25 mfd (C1, C2).	14421	Resistor - 2700 ohms, insulated, 1 watt (R3)
13048	Capacitor - 8 mfd (C5).	4284	Spring - Fuse holder tension spring.
14289	Clip - Two battery clips, one marked + and one unmarked.	14420	Transformer - Vibrator transformer (T1).
12819	Coil - Choke coil and terminal board assembly (L3).	14422	Vibrator - Plug-in vibrator unit (L4).
		4285	Washer - Fuse holder insulating washer.

MODELS T8-18, C8-19, C8-20 and D8-28

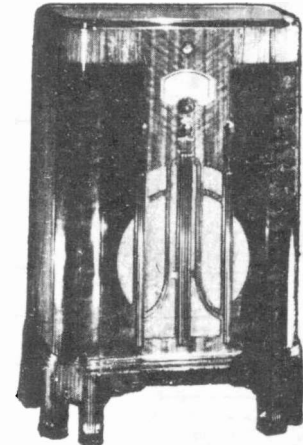
Eight-Tube, Three-Band, A-C, Superheterodyne Receivers and Radio-Phonograph



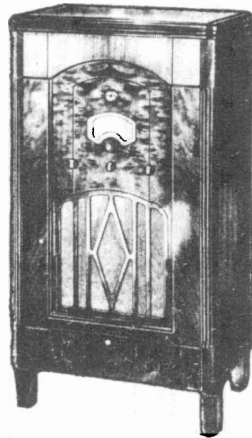
MODEL T 8-18



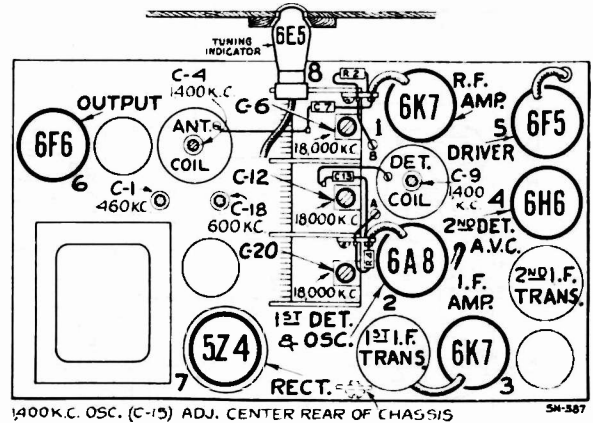
MODEL C 8-19



MODEL C 8-20



MODEL D 8-28



1400K.C. OSC. (C-15) ADJ. CENTER REAR OF CHASSIS

Electrical Specifications

Radiotron and Coil Locations

FREQUENCY RANGES

Band A.....	540- 1,625 kc.
Band B.....	1,625- 5,700 kc.
Band C.....	5,700-18,000 kc.

ALIGNMENT FREQUENCIES

Band A....	600 kc. (osc.), 1,400 kc. (osc., det., ant.)
Band B.....	None required
Band C.....	18,000 kc. (osc., det., ant.)

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- | | |
|---|---|
| (1) RCA-6K7.....Radio-Frequency Amplifier | (5) RCA-6F5.....Audio Voltage Amplifier |
| (2) RCA-6A8.....First Detector-Oscillator | (6) RCA-6F6.....Audio Power Amplifier |
| (3) RCA-6K7.....Intermediate Amplifier | (7) RCA-5Z4.....Full-Wave Rectifier |
| (4) RCA-6H6.....Second Detector-A.V.C. | (8) RCA-6E5.....Tuning Indicator |

POWER SUPPLY RATINGS

	D 8-28	RADIO ONLY
Rating A.....	105-125 Volts, 50-60 Cycles, 135 Watts	50-60 Cycles, 100 Watts
Rating B.....	105-125 Volts, 25 Cycles, 135 Watts	25-60 Cycles, 105 Watts
Rating C.....	105-130/140-160/200-250 Volts, 50-60 Cycles, 135 Watts	40-60 Cycles, 100 Watts

LOUDSPEAKER

Type Electrodynamic
 Voice Coil Impedance..... 2 1/4 Ohms at 400 Cycles

POWER OUTPUT RATINGS

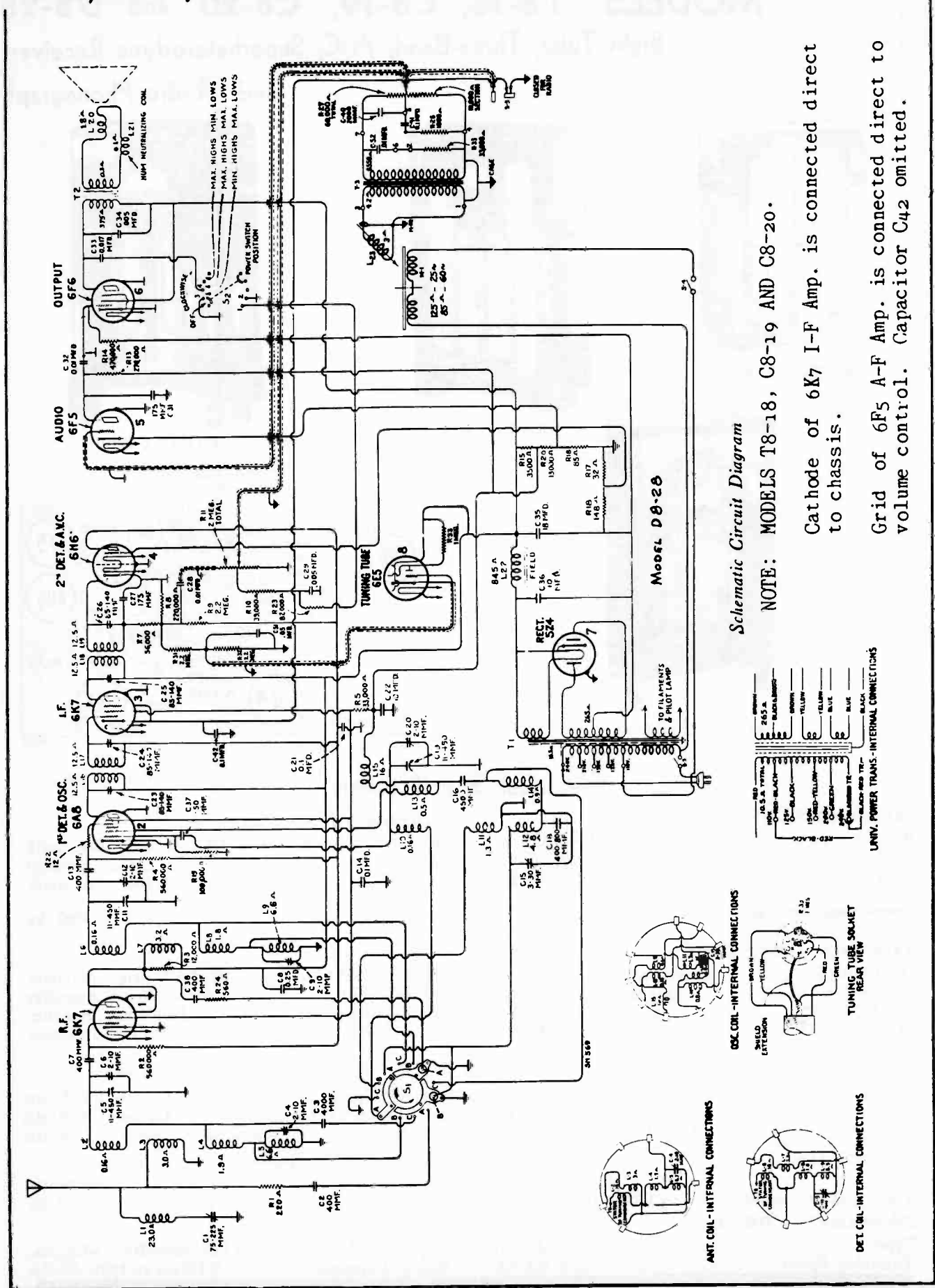
Undistorted 2 1/4 Watts
 Maximum 5 Watts

PHONOGRAPH D 8-28

Type Manual
 Turntable Speed 78 R.P.M.

Type of Pickup.. Improved Low-Impedance Magnetic
 Pickup Impedance..... 7 Ohms at 1,000 Cycles

T8-18, C8-19, C8-20 & D8-28



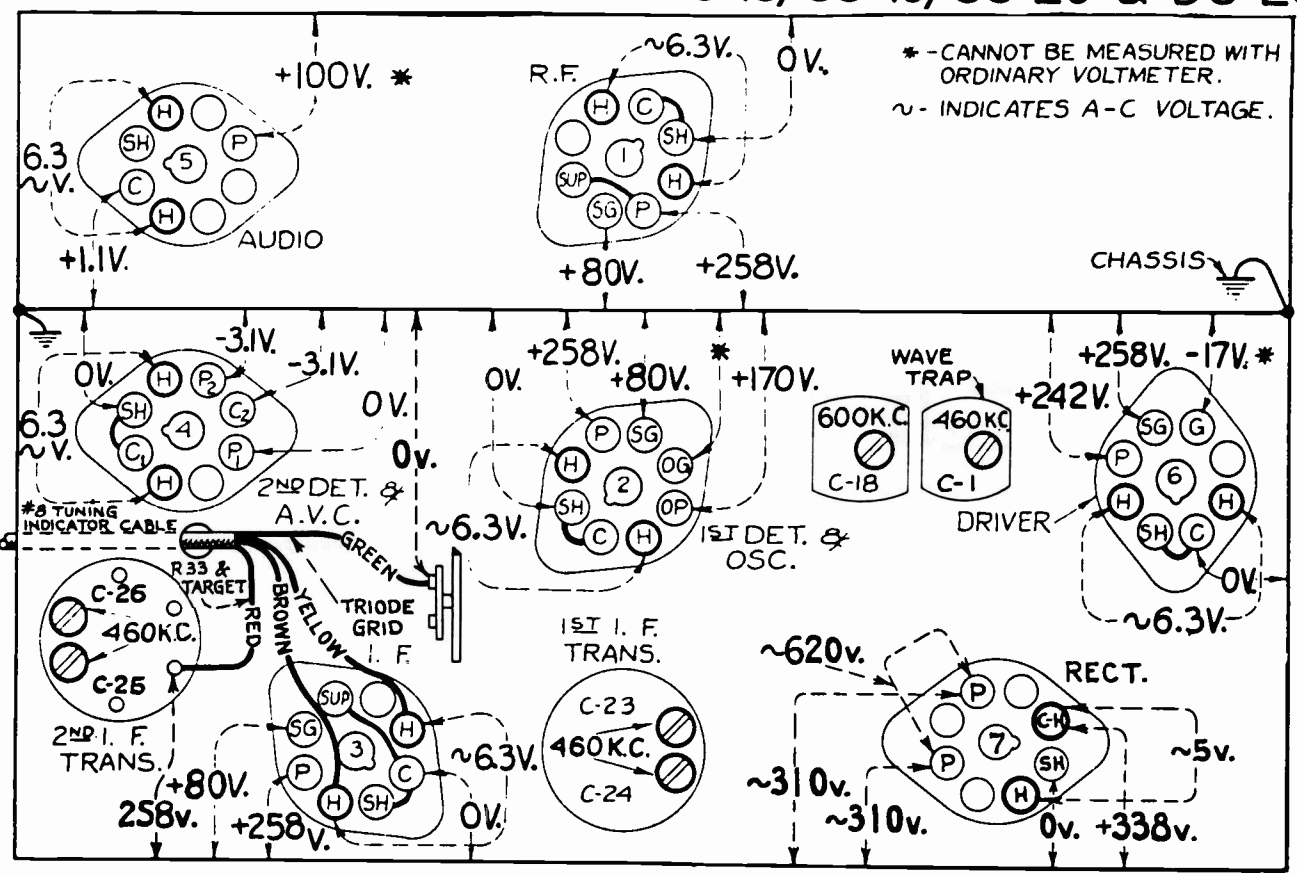
Schematic Circuit Diagram

NOTE: MODELS T8-18, C8-19 AND C8-20.

Cathode of 6K7 I-F Amp. is connected direct to chassis.

Grid of 6F5 A-F Amp. is connected direct to volume control. Capacitor C42 omitted.

T8-18, C8-19, C8-20 & D8-28

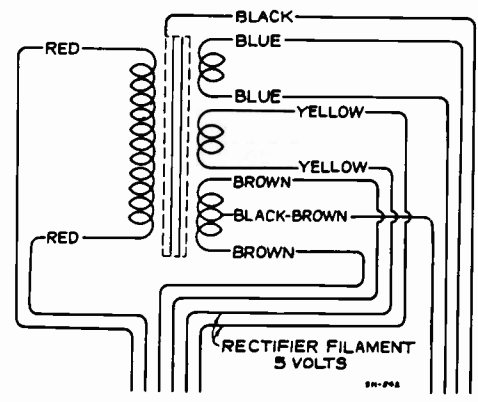


-Radiotron Socket Voltages

Measured at 115 volts, 60 cycles—No signal input

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with 530 calibration on A Band scale.



110 VOLT—60 CYCLE
Pri. Res. 5.34 ohms, total
Sec. Res. 330 ohms, total

110 VOLT—25 CYCLE
Pri. Res. 7.37 ohms, total
Sec. Res. 430 ohms, total

-Standard Power Transformer Connections

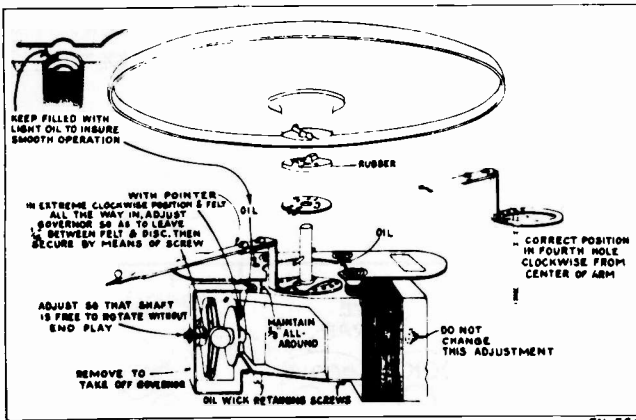
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	C25 C26 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			C23 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd			C1 Wave Trap Minimum Output
4	Antenna in series with 300 ohm	18000 Kc	18 Mc "C" Band	C20† C12▲ C8 Osc. R-F Ant.
5	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "A" Band	C15 C9 C4 Osc. R-F Ant.
6		800 Kc	600 Kc "A" Band	C18 L-F Osc. Rock Gang
7	Repeat Step 4			
8	Repeat Step 5			

Osc. tracks 480 Kc above signal on A Band and Below signal on C Band.

† Use maximum capacity peak.

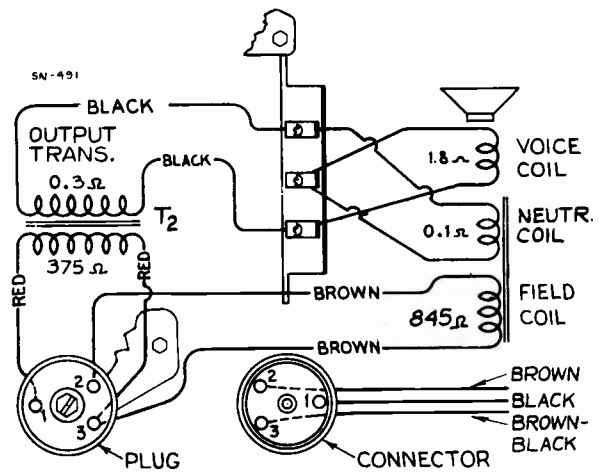
▲ Use minimum capacity peak - ROCK GANG.

T8-18, C8-19, C8-20 & D8-28

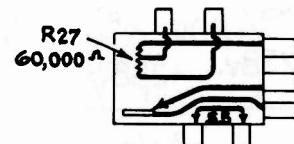
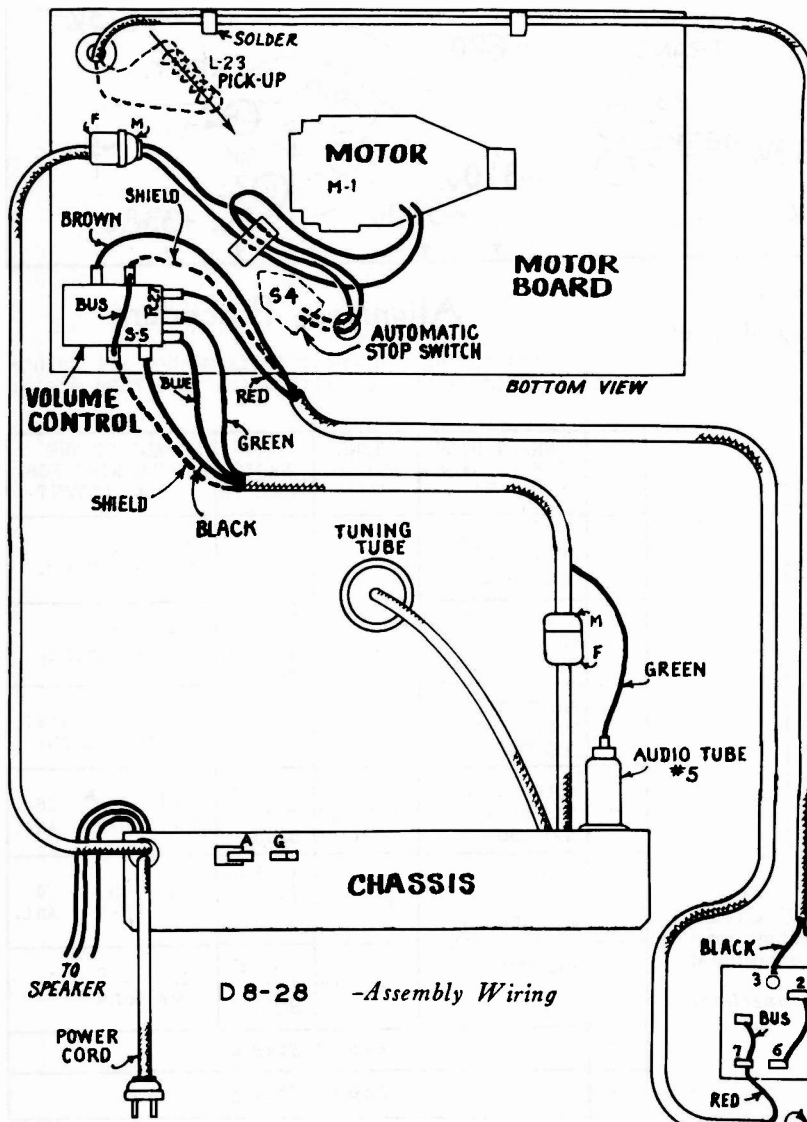


Motor Details

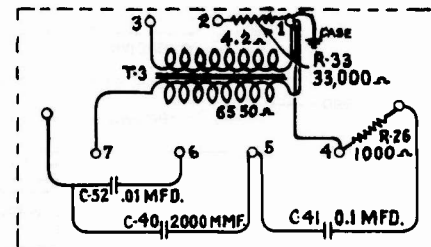
SN-566



-Loudspeaker Wiring



INTERNAL CONNECTIONS OF PHONOGRAPH VOLUME CONTROL



SN-573

T8-18, C8-19, C8-20 & D8-28

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3.....		11397	Resistor—560,000 ohms—Carbon type—1/10 watt—(R2, R4)—Package of 5...	
11625	Cable—Radiotron tuning tube cable complete with socket.....		11626	Resistor—2.2 megohms—Carbon type—1/4 watt—(R9, R31, R32)—Package of 5.....	
11759	Cable—Phonograph input cable complete with 4-contact female connector stock 4153—connects chassis to cable stock 11948.....		11603	Shield—Antenna or detector coil shield.	
11350	Cap—Contact cap—Package of 5.....		11604	Shield—Oscillator coil shield.....	
11465	Capacitor—Adjustable capacitor—(C18).		11390	Shield—Intermediate frequency transformer shield.....	
11289	Capacitor—50 MMfd.—(C37).....		11199	Socket—Dial lamp socket.....	
5116	Capacitor—175 MMfd.—(C31).....		11195	Socket—5-contact rectifier Radiotron socket.....	
11290	Capacitor—400 MMfd.—(C2, C7, C13, C38).....		11198	Socket—7-contact 6K7—6F5—or 6H6 Radiotron socket.....	
11401	Capacitor—4000 MMfd.—(C3).....		11196	Socket—8-contact 6AS or 6F6 Radiotron socket.....	
4868	Capacitor—.005 Mfd.—(C29, C34).....		11386	Switch—Range switch—(S1).....	
4906	Capacitor—.017 Mfd.—(C33).....		11392	Switch—Tone control and power switch assembly—(S2, S3).....	
11395	Capacitor—.01 Mfd.—(C28).....		11388	Transformer—First intermediate frequency transformer—(L16, L17, C23, C24).....	
4858	Capacitor—.01 Mfd.—(C32).....		11389	Transformer—Second intermediate frequency transformer—(L18, L19, C25, C26, C27, R7, R8).....	
4886	Capacitor—.05 Mfd.—(C51).....		11803	Transformer—Power transformer—105-125 volts—50-60 cycles.....	
4839	Capacitor—.1 Mfd.—(C14).....		11804	Transformer—Power transformer—105-125 volts—2.5-50 cycles.....	
4841	Capacitor—.1 Mfd.—(C21).....		11805	Transformer—Power transformer—105-130, 140-160, 195-250, volts—40-60 cycles—(T1).....	
11414	Capacitor—.1 Mfd.—(C42).....		11391	Trap—Wave trap—(L1, C1).....	
5170	Capacitor—0.25 Mfd.—(C8).....		11237	Volume control—(R11).....	
11240	Capacitor—10 Mfd.—(C36).....		MOTOR ASSEMBLIES		
11387	Capacitor—10 Mfd.—(C22).....		11703	Governor—Governor complete for phonograph motor—Stock No. 11701 or No. 11702.....	
5212	Capacitor—18 Mfd.—(C35).....		11701	Motor—Phonograph turntable motor—110 volts—50 to 60 cycles—(M1)...	
5238	Clip—Antenna terminal board with clip, insulating strip and rivets.....		11702	Motor—Phonograph turntable motor—110 volts—25 cycles.....	
11600	Coil—Antenna coil—(L2, L3, L4, L5, C4, R1).....		MOTOR BOARD ASSEMBLIES		
11601	Coil—Detector coil—(L6, L7, L8, L9, C9, R3).....		4594	Box—Used needle box (cup).....	
11602	Coil—Oscillator coil—(L10, L11, L12, L13, L14, L15, C15, C16).....		7084	Cover—Turntable cover.....	
11385	Condenser—Three-gang variable tuning condenser—(C5, C6, C11, C12, C19, C20).....		11704	Damper—Turntable rubber damper and damper plate.....	
4153	Connector—4-contact female connector for cable stock 11759.....		4596	Escutcheon—Speed regulator escutcheon plate.....	
11892	Dial—Station selector dial scale.....		4597	Screw—Motor mounting screw assembly—comprising four screws, four lock-washers, four spacers, and four nuts..	
11613	Drive—Variable tuning condenser drive		11696	Turntable—Complete.....	
11394	Foot—Chassis foot assembly—Package of 2.....		11695	Volume Control—Phonograph volume control—(R27, S5).....	
11893	Indicator—Station selector indicator pointer.....		ECCENTRIC AUTOMATIC BRAKE SWITCH ASSEMBLIES		
5226	Lamp—Dial lamp—Package of 5.....		3994	Cover—Eccentric automatic switch cover and screw.....	
11393	Resistor—Voltage divider resistor—comprising one 3,500 ohm and one 13,000 ohm sections—(R15, R20).....		10174	Springs—Automatic brake springs—comprising one each of four springs—Package of 2.....	
11329	Resistor—Voltage divider resistor—comprising one 148 ohm, one 32 ohm and one 85 ohm sections—(R16, R17, R18)		6896	Switch—Eccentric automatic brake and switch assembly—less switch cover....	
11369	Resistor—12 ohms—Flexible type complete with contact cap—(R22).....		3322	Switch—Eccentric automatic switch only—less cover—(S4).....	
11324	Resistor—560 ohms—Carbon type—1/4 watt—(R24)—Package of 5.....				
8073	Resistor—33,000 ohms—Carbon type—1/2 watt—(R5)—Package of 5.....				
11322	Resistor—39,000 ohms—Carbon type—1/4 watt—(R10)—Package of 5.....				
11365	Resistor—82,000 ohms—Carbon type—1/4 watt—(R23)—Package of 5.....				
3118	Resistor—100,000 ohms—Carbon type—1/4 watt—(R19)—Package of 5.....				
11323	Resistor—270,000 ohms—Carbon type—1/4 watt—(R13)—Package of 5.....				
11172	Resistor—470,000 ohms—Carbon type—1/4 watt—(R14)—Package of 5.....				
11623	Capacitor - 175 mmfd (C27).		Stock No. 11759 Cable, 11414 Capacitor (C42) and 4153 Connector used in Model D8-28 only.		

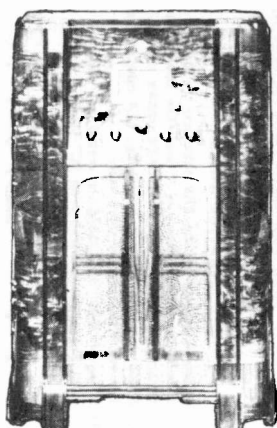
T8-18, C8-19, C8-20 & D8-28

REPLACEMENT PARTS—Continued

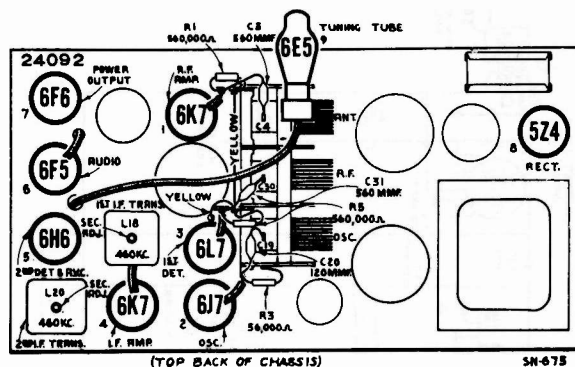
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
PICKUP AND ARM ASSEMBLIES					
11944	Arm—Pickup arm complete—less escutcheon and pickup unit.....		11381	Socket—Tuning tube socket and cover	
11724	Armature—Pickup armature.....		11349	Spring—Retaining spring for knobs. Stock No. 11347, No. 11582 and small knob in Stock No. 11610—Package of 5	
6346	Back—Pickup housing back.....		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10	
11946	Coil—Pickup coil—(L23).....		D8 - 28		
3521	Cover—Pickup back cover.....		MISCELLANEOUS ASSEMBLIES		
11708	Cover—Pickup front cover.....		12038	Band—Rubber band used with tuning tube—Package of 10.....	
3737	Damper—Pickup damper—Package of 5.		11996	Bracket—Tuning tube mounting bracket and clamp assembly.....	
3390	Escutcheon—Pickup arm escutcheon....		11947	Cable—Two-conductor shielded cable approx. 35-in. long—connects volume control to input transformer.....	
11945	Pickup Unit—Complete.....		11948	Cable—Three-conductor shielded cable approx. 24-in. long—complete with male connector stock 6123 and grid cap—connects volume control to chassis cable stock 11759.....	
3389	Rod—Eccentric automatic brake trip rod—Package of 5.....		6123	Connector—4-contact male connector for cable stock 11948.....	
3387	Screw Assembly—Pickup mounting screw assembly—comprising one screw, one lockwasher and one nut—Package of 10.....		11276	Escutcheon—Tuning tube escutcheon....	
11549	Screw—Pickup front cover screw—Package of 10.....		11376	Escutcheon—Station selector escutcheon and crystal.....	
11547	Screw—Pickup needle holding screw—Package of 10.....		11582	Knob—Range switch knob—Package of 5	
REPRODUCER ASSEMBLIES			11610	Knob—Station selector knob assembly—comprising one small and one large knob—Package of 5.....	
11232	Board—Terminal board assembly with two lead wire clips		11347	Knob—Volume control or tone control knob—Package of 5.....	
11231	Bolt—Yoke and core assembly bolt and nut		11382	Resistor—1 megohm—Carbon type—1/10 watt—(R33)—Package of 5.....	
8060	Bracket—Output transformer mounting bracket		11210	Screw—Chassis mounting screw assembly—Package of 4.....	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5		11381	Socket—Tuning tube socket and cover..	
11254	Coil—Field coil (L20)		11349	Spring—Retaining spring for knobs, Stock No. 11347, No. 11582 and small knob in Stock No. 11610—Package of 5	
11233	Coil—Neutralizing coil (L21)		4982	Spring—Retaining spring for large knob in Stock No. 11610—Package of 10...	
11235	Cone—Reproducer cone (L22)—Package of 5 (table model)		3391	Spring—Motor board mounting spring assembly—comprising one bolt, one "C" washer, two cup washers, one bottom spring, one lockwasher, and one cap nut.....	
11258	Cone—Reproducer cone (L22)—Package of 5 (console model)		11949	Transformer—Phonograph input transformer—(T3, R26, R33, C40, C41, C52)	
5119	Connector—Three-contact female connector plug for reproducer cable				
5118	Connector—Three-contact male connector for reproducer				
9618	Reproducer—Complete (table model)				
9619	Reproducer—Complete (console model)				
11253	Transformer—Output transformer—(T2)				
11886	Washer—Spring washer used to hold field coil securely—Package of 5.....				
T8-18 C8-19 C8-20					
MISCELLANEOUS ASSEMBLIES					
11996	Bracket—Tuning tube mounting bracket and clamp assembly				
11276	Escutcheon—Tuning tube escutcheon				
11376	Escutcheon—Station selector escutcheon and crystal				
11582	Knob—Range switch knob—Package of 5				
11610	Knob—Station selector knob assembly—comprising one small and one large knob—Package of 5				
11347	Knob—Volume control or tone control knob—Package of 5				
11382	Resistor—1 megohm—Carbon type—1 10 watt—(R33)—Package of 5				
11210	Screw—Chassis mounting screw assembly—Console Model—Package of 4				
11377	Screw—Chassis mounting screw assembly—Table Model—Package of 4				

MODEL 9K

Nine-Tube, Four-Band, A-C, Superheterodyne Receiver



MODEL 9K



-Radiotron and I-F Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

- "Long Wave" (X)..... 150-410 kc
- "Standard Broadcast" (A)..... 530-1,800 kc
- "Medium Wave" (B)..... 1,800-6,400 kc
- "Short Wave" (C)..... 6,400-23,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... R-F Amplifier
- (2) RCA-6J7..... Oscillator
- (3) RCA-6L7..... First Detector
- (4) RCA-6K7..... I-F Amplifier

Pilot Lamps (4).....

POWER SUPPLY RATINGS

- Rating A..... 105-125 volts, 50-60 cycles, 95 watts
- Rating B..... 105-125 volts, 25-60 cycles, 95 watts
- Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 95 watts

POWER OUTPUT

- Undistorted..... 2 watts
- Maximum..... 4.5 watts

ALIGNMENT FREQUENCIES

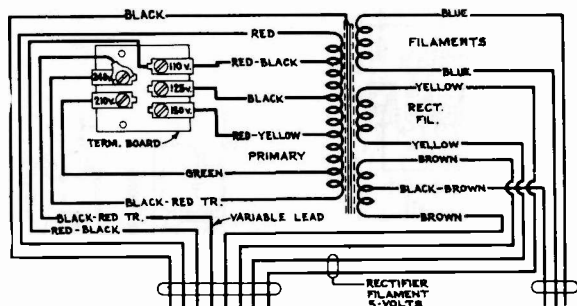
- "Long Wave" (X)..... 175 kc (osc.), 350 kc (osc., det., ant.)
- "Standard Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc., det., ant.)
- "Medium Wave" (B).... 6,000 kc (osc., det., ant.)
- "Short Wave" (C).... 20,000 kc (osc., det., ant.)

- (5) RCA-6H6..... Second Detector and A.V.C.
- (6) RCA-6F5..... Audio Voltage Amplifier
- (7) RCA-6F6..... Power Output
- (8) RCA-5Z4..... Full-Wave Rectifier
- (9) RCA-6E5..... Tuning Tube

Mazda No. 46, 6.3 volts, 0.25 ampere

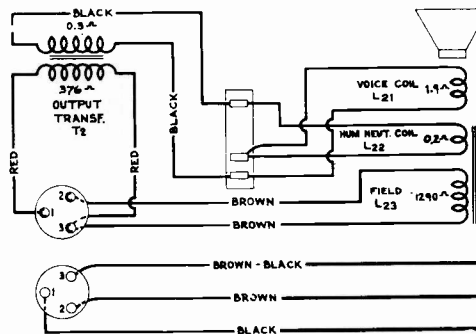
LOUDSPEAKER

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

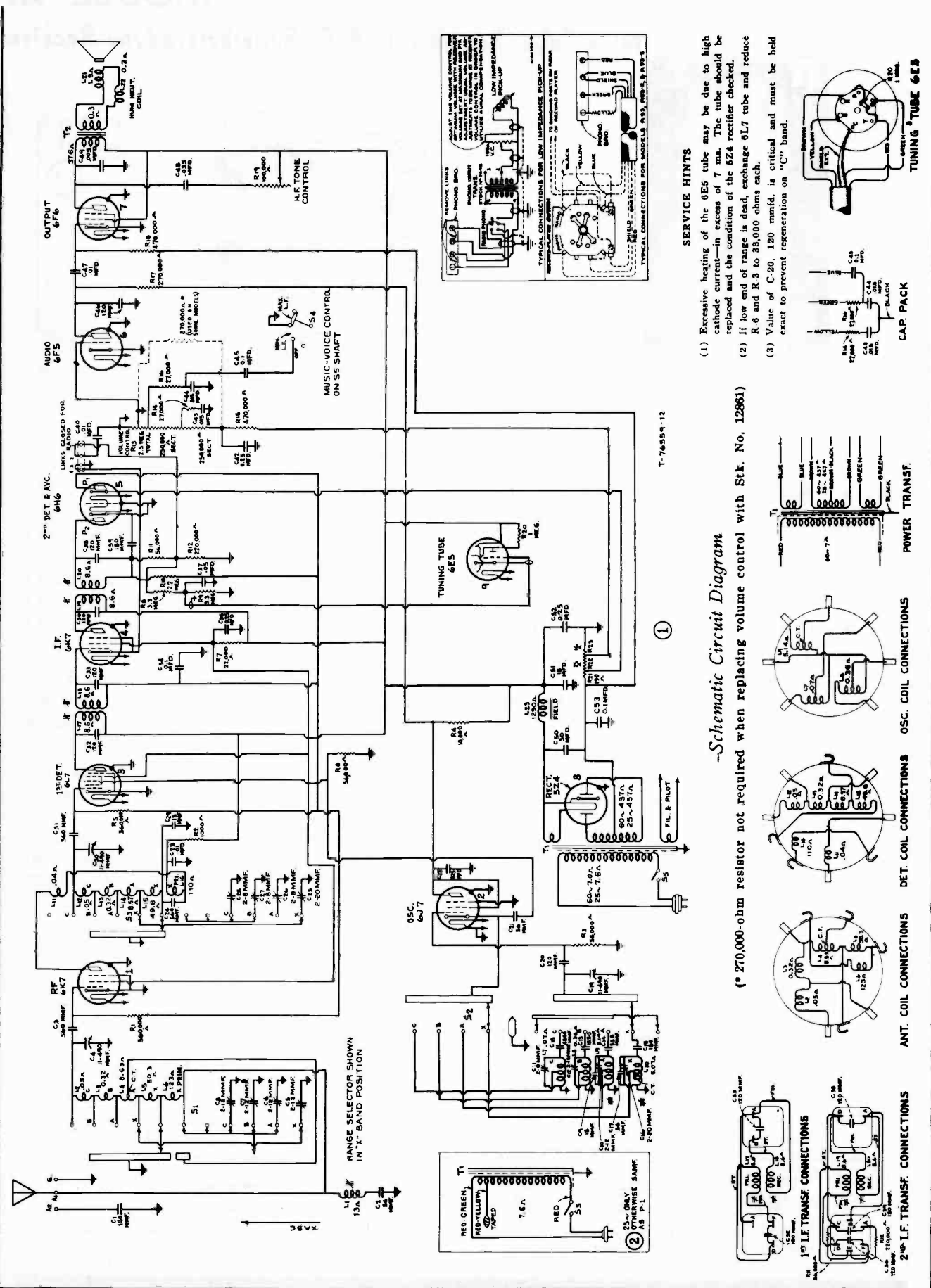


Primary resistance—13.5 ohms total
Secondary resistance—370 ohms total

-Universal Transformer

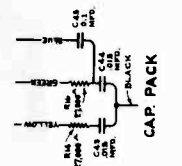
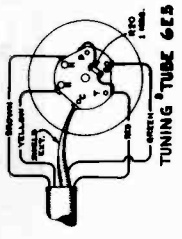


-Loudspeaker Wiring

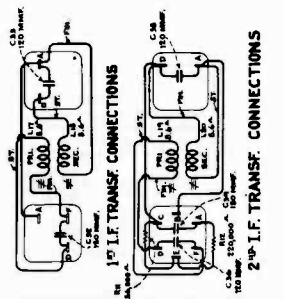
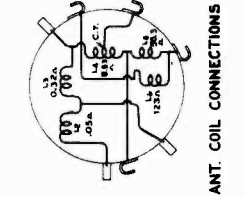
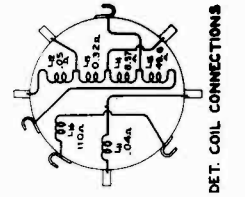
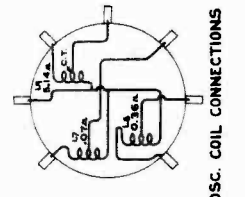
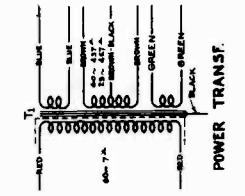


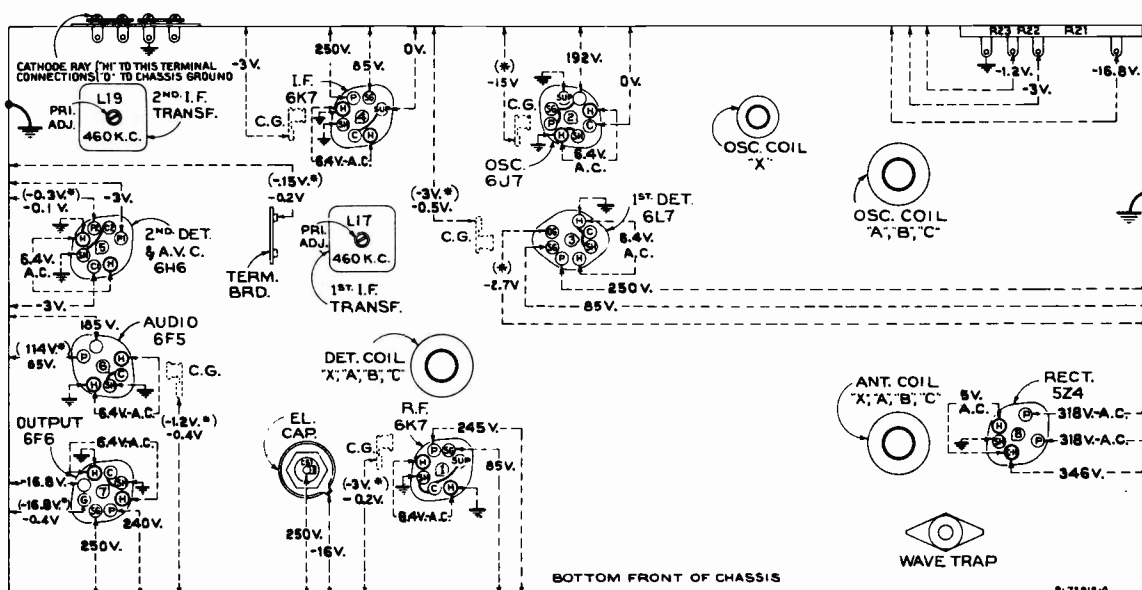
SERVICE HINTS

- (1) Excessive heating of the 6E5 tube may be due to high cathode current—in excess of 7 ma. The tube should be replaced and the condition of the 6Z4 rectifier checked.
- (2) If low end of range is dead, exchange 6L7 tube and reduce R-6 and R-3 to 33,000 ohms each.
- (3) Value of C-20, 120 mmfd. is critical and must be held exact to prevent regeneration on "C" band.



(# 270,000-ohm resistor not required when replacing volume control with S1k. No. 12861)





—Radiotron Socket Voltages, Coil, and I-F Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

(Refer to selector dial adjustments)

Precautionary Dressing of Leads Prior to Alignment

Band "X"

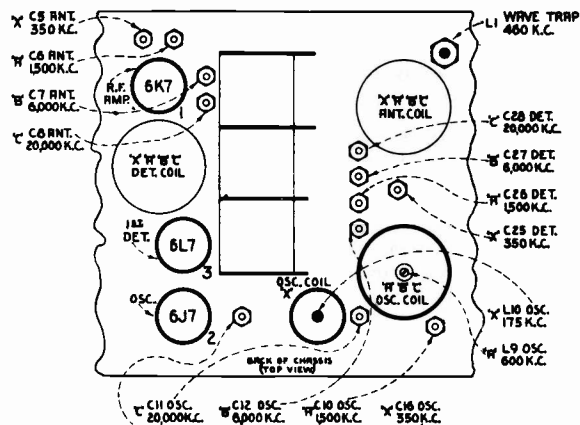
1. Keep blue lead X of S1 to antenna coil L4-5 dressed away from chassis, and from yellow lead of S1 to antenna coil L5-6.
2. Keep blue lead X of S3 to detector coil L14-15 clear of chassis, coil shield, coil, and other leads.
3. Keep bus lead C5 to X of S1 apart from bus lead C6 to A of S1, and from chassis.

Band "A"

1. Keep green lead, terminal of S1 to antenna coil tap L-4, away from chassis, coil shield, and coil.
2. Keep bus lead C6 to A of S1 apart from bus lead C5 to X of S1, and from chassis.

Band "C"

Lead from C18 to oscillator coil L7 should be maintained as short and straight as possible.



APPROX. DISTANCE IN INCHES—CHASSIS BASE TO TOP OF TRIMMER PLUNGER

BAND	OSC.	DET.	ANT.
X	1 1/2"	1 1/2"	1 1/2"
A	1 1/2"	1 1/2"	1 1/2"
B	1 1/2"	1 1/2"	1 1/2"
C	2 1/2"	1 1/2"	1 1/2"

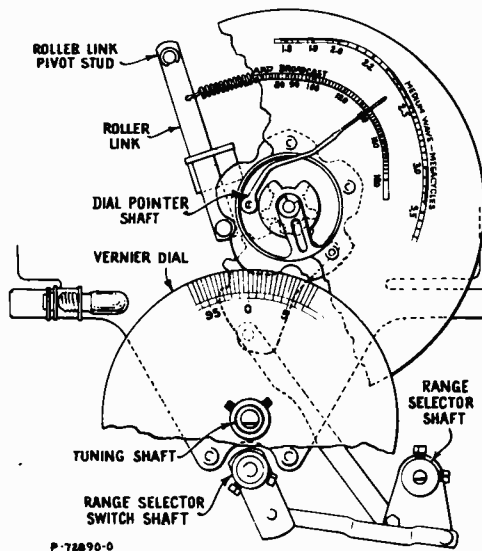
—R-F Trimmer Locations

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc #BC# Band	L20 L19 2nd I-F Trans.
2	1st Det. in series with 0.01 mfd			L18 L17 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	20000 Kc	20 Mc #SW# Band	C11† C28▲ C8 Osc. R-F Ant.
5		6000 Kc	6000 Kc #MED# Band	C12† C27▲ C7 Osc. R-F Ant.
6	Antenna in series with 200 mmfd	1500 Kc	1500 Kc #BC# Band	C10 C26 C6 Osc. R-F Ant.
7		600 Kc	600 Kc #BC# Band	L9 L-F Osc. Rock Gang
8	Antenna in series with 200 mmfd	Repeat Step 6		
9		350 Kc	350 Kc #LW# Band	C16 C25 C5 Osc. R-F Ant.
10		175 Kc	175 Kc #LW# Band	L10 L-F Osc. Rock Gang
11	Repeat Step 9			

Osc. tracks 460 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.



Selector Dial Change Mechanism

To adjust the dial mechanism, set the range switch to its "Standard broadcast" position. Place a straight-edge across the center of the dial so that its edge is even with the lower (end) marking at both the low-frequency and high-frequency ends of the dial. Under such conditions the straight-edge should be parallel with the top of the chassis base. If the straight-edge is not parallel with the top of the chassis base, loosen the nut on the rear of the roller link pivot stud and

move the stud up or down until the link roller moves the dial to the desired position so that the end calibration marks obtain the position mentioned above. Tighten the nut on the roller link pivot stud.

Set the gang tuning condenser to its maximum capacity position. Adjust the dial pointer to the low-frequency (end) mark on "Standard broadcast" scale. This is a friction adjustment.

With the gang tuning condenser plates still in full mesh, loosen the two set screws on the vernier-dial hub. Rotate the vernier dial until the "0" marking is in a vertical plane above the center of the shaft. Tighten set screws.

Radiotron Cathode Current Readings
Measured with Milliammeter Connected at Tube Socket Cathode Terminals under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6K7—R-F 7.5 ma.
 - (2) RCA-6J7—Osc. 5.4 ma.
 - (3) RCA-6L7—1st Det. 6.4 ma.
 - (4) RCA-6K7—I.F. 7.5 ma.
 - (5) RCA-6H6—2nd Det.—A.V.C. ... —
 - (6) RCA-6F5—A.F. 0.3 ma.
 - (7) RCA-6F6—Power 41 ma.
 - (8) RCA-5Z4—Rect. 72 ma.*
 - (9) RCA-6E5—Eye 3.0 ma.
- (*Cannot be measured at socket)

REPLACEMENT PARTS

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

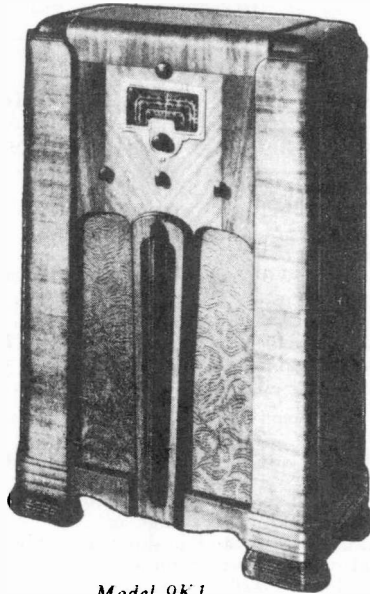
Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
12806	Board—3-contact antenna and ground terminal board.....		4841	Capacitor—0.1 Mfd. (C34, C53).....	
12863	Board—4-contact and 2-link phonograph terminal board.....		5170	Capacitor—0.25 Mfd. (C22, C52).....	
12929	Bracket—Mounting bracket for L.F. tone control or volume control.....		4840	Capacitor—0.25 Mfd. (C42, C35).....	
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....		5212	Capacitor—18 Mfd. (C51).....	
11625	Cable—Tuning lamp cable and socket...		12467	Capacitor—30 Mfd. (C50).....	
12511	Cap—Grid contact cap—Package of 5...		12923	Coil—Antenna coil and shield XABC bands (L2, L3, L4, L5, L6).....	
12884	Capacitor—Adjustable trimmer (C16, C25)		12924	Coil—Detector coil and shield XABC bands (L11, L12, L13, L14, L15, L16)	
12807	Capacitor—Adjustable trimmer (C11, C27, C28)		12709	Coil—Oscillator coil and shield ABC bands only (L7, L8, L9).....	
12714	Capacitor—Adjustable trimmer (C5, C6, C7, C8, C10, C12, C26).....		12881	Coil—Oscillator coil and shield X band only (L10).....	
12896	Capacitor—15 Mmfd. (C29).....		12859	Compensator Pack—Comprising two sections .015 Mfd. each, one section .1 Mfd. and two resistors 27,000 ohms each (C43, C44, C45, R14, R16).....	
12722	Capacitor—18 Mmfd. (C9).....		12922	Condenser—3-gang variable tuning condenser (C4, C19, C30).....	
12895	Capacitor—56 Mmfd. (C17).....		12664	Core—Adjustable core and stud for Stock No. 12654.....	
12723	Capacitor—56 Mmfd. (C2, C21).....		12800	Core—Adjustable core and stud for Stock No. 12709.....	
12724	Capacitor—120 Mmfd. (C20, C46).....		12882	Core—Adjustable core and stud for Stock No. 12881.....	
12404	Capacitor—120 Mmfd. (C32, C33, C36, C38).....		12006	Core—Adjustable core and stud for Stock Nos. 12652 and 12653.....	
12725	Capacitor—150 Mmfd. (C1).....		12870	Dial—Vernier dial and disc assembly....	
12894	Capacitor—180 Mmfd. (C15).....		5226	Lamp—Dial lamp—6.3 volt—Package of 5.....	
12406	Capacitor—180 Mmfd. (C39).....		12868	Link—Range switch and band indicator operating link, complete with set screws	
12727	Capacitor—555 Mmfd. (C14).....		5112	Resistor—1,000 ohm, carbon type, 1/4 watt—Package of 5 (R2).....	
12537	Capacitor—560 Mmfd. (C3, C24, C31)...				
12729	Capacitor—1,550 Mmfd. (C13).....				
12728	Capacitor—4,500 Mmfd. (C18).....				
4838	Capacitor—.005 Mfd. (C49).....				
4858	Capacitor—.01 Mfd. (C23, C40, C47)...				
5196	Capacitor—.035 Mfd. (C48).....				
4836	Capacitor—.05 Mfd. (C37).....				

REPLACEMENT PARTS—Continued

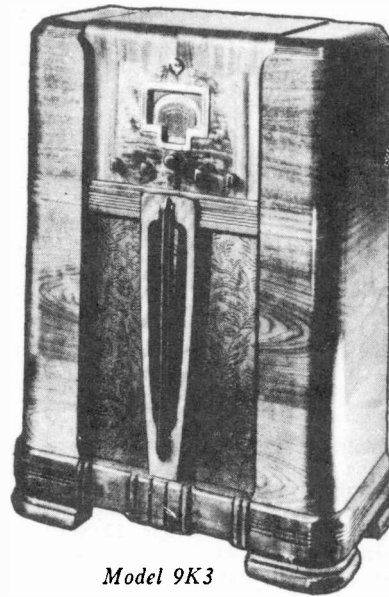
Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
11282	Resistor—56,000 ohm, carbon type, 1/10 watt—Package of 5 (R6, R11, R3)...			REPRODUCER ASSEMBLIES	
11398	Resistor—220,000 ohm, carbon type, 1/10 watt—Package of 5 (R12).....		12641	Board—3-contact reproducer terminal board	
11453	Resistor—270,000 ohm, carbon type, 1/10 watt—Package of 5 (R17).....		12640	Bracket—Output transformer mounting bracket and clamp.....	
11172	Resistor—470,000 ohm, carbon type, 1/4 watt—Package of 5 (R15).....		12012	Coil—Field coil (L23).....	
11452	Resistor—470,000 ohm, carbon type, 1/10 watt—Package of 5 (R18).....		11469	Coil—Neutralizing coil (L22).....	
11397	Resistor—560,000 ohm, carbon type, 1/10 watt—Package of 5 (R1, R5).....		12667	Cone—Reproducer cone and dust cap (L21)	
12013	Resistor—1 Meg., carbon type, 1/10 watt—Package of 5 (R20).....		5118	Connector—3-contact male speaker cable connector	
12679	Resistor—2.2 Meg., insulated, 1/4 watt—Package of 5 (R10).....		9696	Reproducer, complete.....	
12928	Resistor—3.3 Meg., insulated, 1/4 watt—Package of 5 (R8, R9).....		11253	Transformer—Output transformer (T2)..	
12927	Resistor—Voltage divider resistor, comprising one 16 ohm, one 25 ohm and one 190 ohm sections (R21, R22, R23)		11886	Washer—Spring washer to hold field coil securely—Package of 5.....	
12715	Resistor—Wire wound resistor, comprising one 10,000 ohm and one 22,000 ohm sections (R4, R7).....			DRIVE ASSEMBLIES	
4669	Screw—No. 8-32-5/32 set screw for link, Stock No. 12868—Package of 10.....		10705	Ball—5/32-inch dia. steel ball for planetary drive—Package of 20.....	
3903	Screw—No. 8-32-3/16 headless, cup point set screw for Stock No. 12870—Package of 20.....		10941	Ball—1/8-inch dia. steel ball for planetary drive bearing—Package of 20.....	
12925	Shaft—Range switch and band indicator operating shaft and hub assembly....		12904	Bushing—Plate and bushing assembly for planetary drive mounting.....	
12651	Shield—Coil shield for Stock Nos. 12923 and 12924.....		12905	Coupling—Flexible coupling and shaft assembly, complete.....	
12710	Shield—Coil shield for Stock No. 12709.		12909	Dial—Band indicating dial and cam assembly	
12883	Shield—Coil shield for Stock No. 12881.		12899	Drive—Variable tuning condenser drive, complete—including mounting bracket, drive, dial scale and indicator, less vernier dial, Stock No. 12870 and link, Stock No. 12868.....	
12926	Shield—Chassis end shield and rubber mounting foot assembly—Package of 2.		12906	Gear—Antilash drive gear, complete....	
12008	Shield—I. F. transformer shield for Stock Nos. 12652 and 12653.....		12910	Gear—Sector gear and link assembly for band selector.....	
12607	Shield—I. F. transformer shield top for Stock No. 12652.....		12908	Indicator—Station selector indicator pointer	
12581	Shield—I. F. transformer shield top for Stock No. 12653.....		8051	Link—Link and roller assembly, complete with spring	
5119	Socket—3-contact female connector for speaker leads.....		12911	Screen—Dial lamp screen and light diffuser	
11195	Socket—5-contact 5Z4 Radiotron socket.		4669	Screw—Set screw for flexible coupling or gear, Stock Nos. 12905 and 12906—Package of 10.....	
11198	Socket—7-contact 6F5, 6H6, 6K7 or 6L7 Radiotron socket.....		12901	Shaft—Direct drive shaft and pinion gear for planetary drive.....	
11196	Socket—8-contact 6F6 or 6J7 Radiotron socket		12900	Shaft—Vernier drive shaft for planetary drive	
11222	Socket—Upper right or lower left hand dial lamp socket.....		12903	Spring—Tension spring for planetary drive bearing—Package of 10.....	
13095	Socket—Upper left or lower right hand dial lamp socket.....		12907	Spring—Tension spring for gear, Stock No. 12906—Package of 10.....	
11381	Socket—Tuning lamp socket and cover..		8052	Spring—Tension spring for link, Stock No. 8051—Package of 5.....	
12007	Spring—Retaining spring for core, Stock Nos. 12006, 12664, 12800 and 12882—Package of 10.....			MISCELLANEOUS ASSEMBLIES	
12920	Switch—Range switch (S1, S2, S3).....		11996	Bracket—Tuning lamp mounting bracket and clamp.....	
12921	Tone Control—High frequency tone control (R19).....		12666	Cover—Reproducer cover assembly.....	
12860	Tone Control—Low frequency tone control and power switch (S4, S5).....		12915	Crystal—Station selector escutcheon and crystal	
12652	Transformer—First I. F. transformer, complete (L17, L18, C32, C33).....		12742	Escutcheon—Tuning lamp escutcheon...	
12918	Transformer—Power transformer, 105-125 volt, 50-60 cycle (T1).....		12699	Knob—Large station selector knob—Package of 5.....	
12857	Transformer—Power transformer, 105-125 volt, 25 cycle (T1).....		11347	Knob—Low frequency tone control and power switch, volume control, range switch or high frequency tone control knob—Package of 5.....	
12919	Transformer—Power transformer, 100-250 volt, 40-60 cycle (T1).....		12700	Knob—Small (vernier) station selector knob—Package of 5.....	
12653	Transformer—Second I. F. transformer, complete (L19, L20, C36, C38, C39, R11, R12).....		11210	Screw—Chassis mounting screw assembly—Package of 4.....	
12654	Trap—Wave trap, complete (L1).....		11349	Spring—Retaining spring for knob, Stock Nos. 11347 and 12700—Package of 5.	
12861	Volume Control (R13).....		4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10.....	

MODELS 9K1 and 9K3

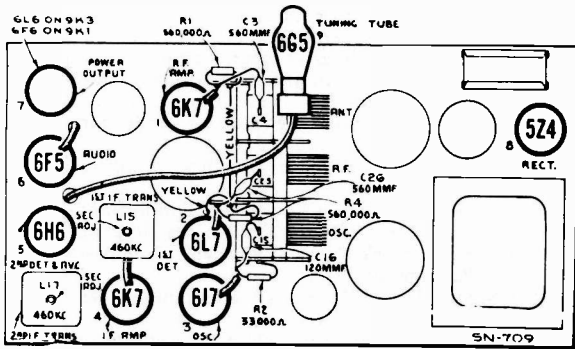
Nine-Tube, Three-Band, A-C, Superheterodyne Receivers



Model 9K1



Model 9K3



Radiotron and I-F Trimmer Locations

Radiotron Cathode Current Readings		
Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements		
	9K1	9K3
(1) RCA-6K7—R-F Amp.	7.5	7.5 ma.
(2) RCA-6L7—1st Det.	6.4	7.2 ma.
(3) RCA-6J7—Osc.	5.4	6.3 ma.
(4) RCA-6K7—I-F Amp.	7.5	7.5 ma.
(5) RCA-6H6—2nd Det. & A.V.C.	—	—
(6) RCA-6F5—1st Audio	0.3	0.2 ma.
(7) RCA-6F6—Output	41	— ma.
(7) RCA-6L6—Output	—	60 ma.
(8) RCA-5Z4—Rectifier	72*	118 ma.*
(9) RCA-6G5—Tuning Tube	2.0	2.0 ma.

(*Cannot be measured at socket.)

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A) 530-1,800 kc
- "Medium Wave" (B) 1,800-6,400 kc
- "Short Wave" (C) 6,400-23,000 kc

ALIGNMENT FREQUENCIES

- "Short Wave" (C) 20,000 kc (osc., det., ant.)
- "Medium Wave" (B) 6,000 kc (osc., det., ant.)
- "Standard Broadcast" (A) 600 kc (osc.), 1,500 kc (osc., det., ant.)

Intermediate Frequency 460 kc

RADIOTRON COMPLEMENT

- | | |
|--|---|
| (1) RCA-6K7 R-F Amplifier | (6) RCA-6F5 Audio Voltage Amplifier |
| (2) RCA-6L7 First Detector | (7) RCA-6F6 (9K1) Power Output |
| (3) RCA-6J7 Heterodyne Oscillator | (7) RCA-6L6 (9K3) Power Output |
| (4) RCA-6K7 Intermediate Amplifier | (8) RCA-5Z4 Full-Wave Rectifier |
| (5) RCA-6H6 Second Detector and A.V.C. | (9) RCA-6G5 "Magic Eye" Tuning Tube |

Pilot Lamps (3, Model 9K1) (4, Model 9K3) Mazda No. 46, 6.3 volts, 0.25 amp.

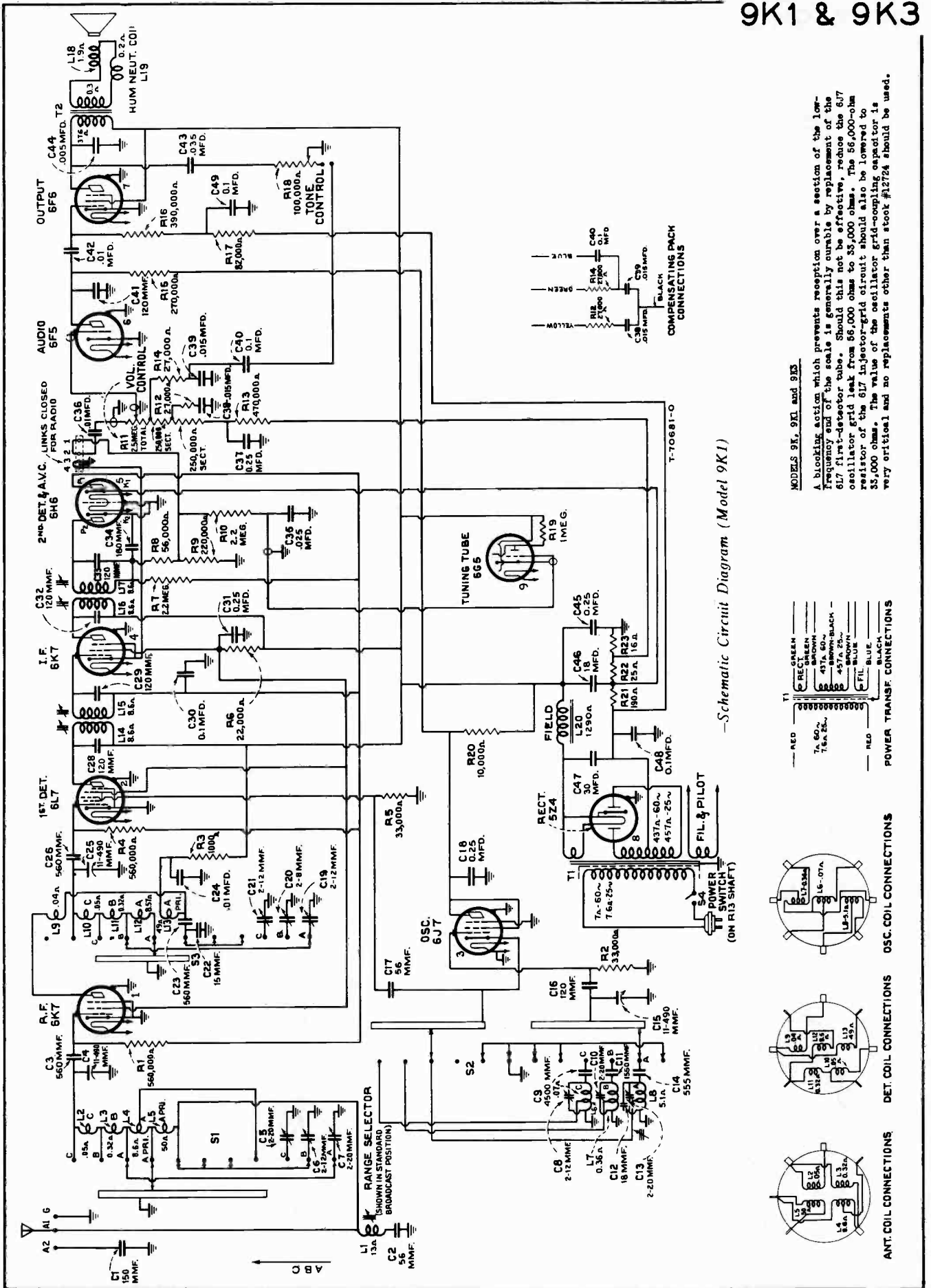
POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles	95 watts	135 watts
Rating B	105-125 volts, 25-60 cycles	95 watts	135 watts
Rating C	100-130/140-160/195-250 volts, 40-60 cycles	95 watts	135 watts

POWER OUTPUT

	9K1	9K3	LOUDSPEAKER
Undistorted	2.0 watts	7.0 watts	Type 12-inch Electrodynamic
Maximum	4.5 watts	12.5 watts	Impedance (v. c.) 2.2 ohms at 400 cycles

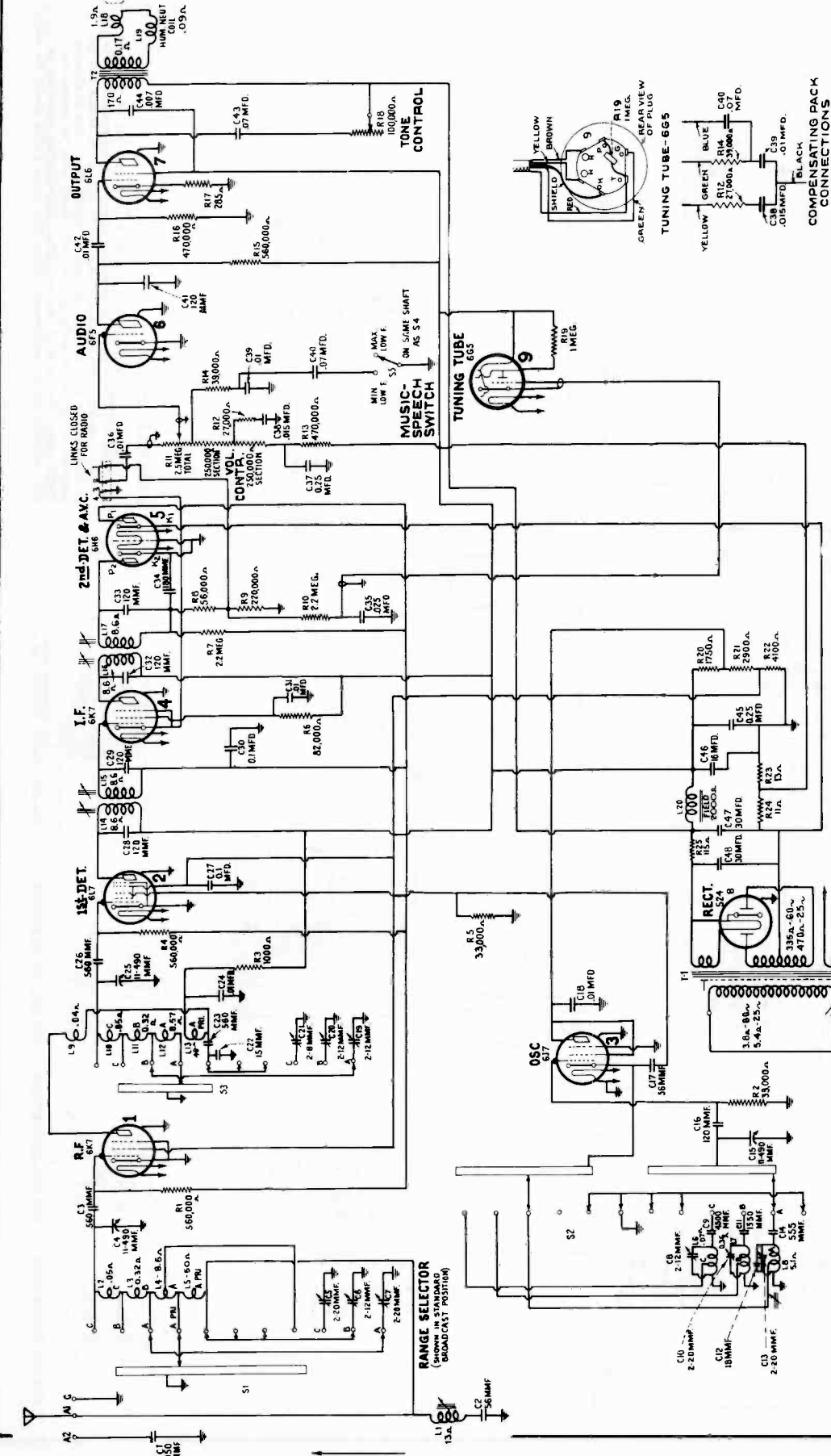
9K1 & 9K3



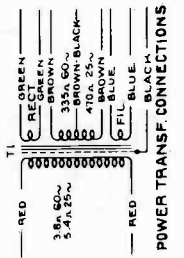
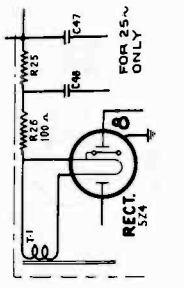
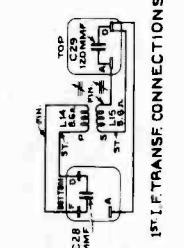
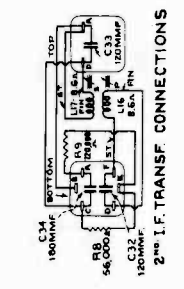
Schematic Circuit Diagram (Model 9K1)

MODELS 9K1, 9K2 and 9K3

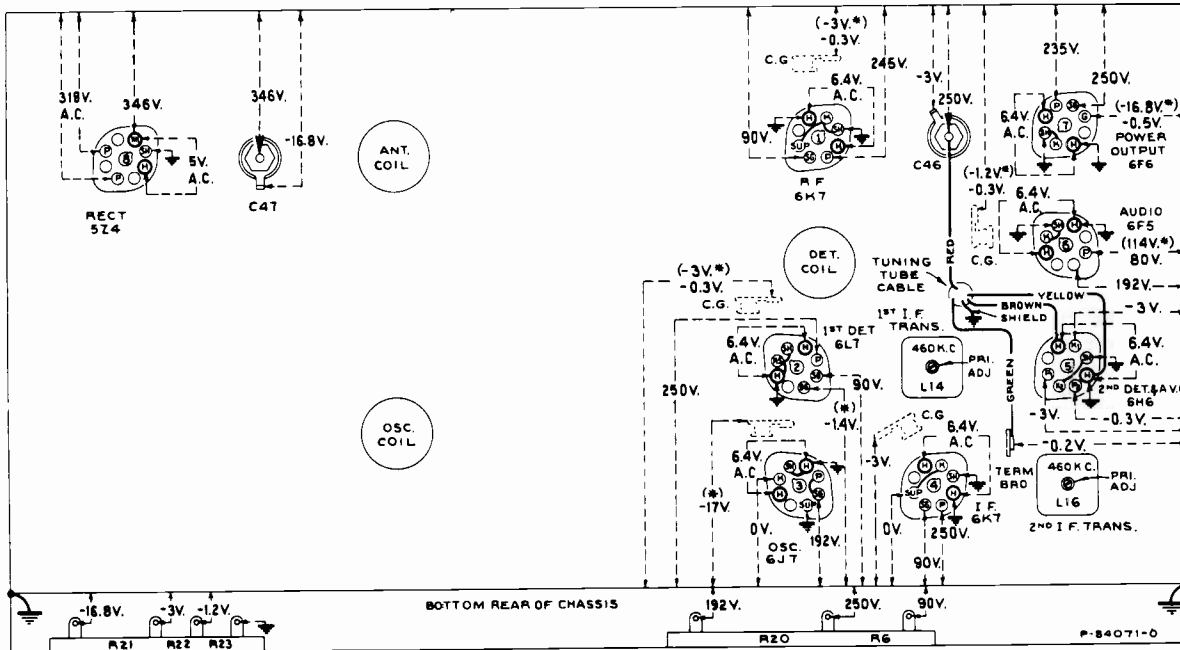
A blocking action which prevents reception over a section of the low-frequency end of the scale is generally curable by replacement of the 6L7 first-detector tube. Should this not be effective, reduce the 6J7 oscillator grid leak from 56,000 ohms to 35,000 ohms. The 56,000-ohm resistor of the 6J7 injector-grid circuit should also be lowered to 35,000 ohms. The value of the oscillator grid-coupling capacitor is very critical and no replacements other than stock #12724 should be used.



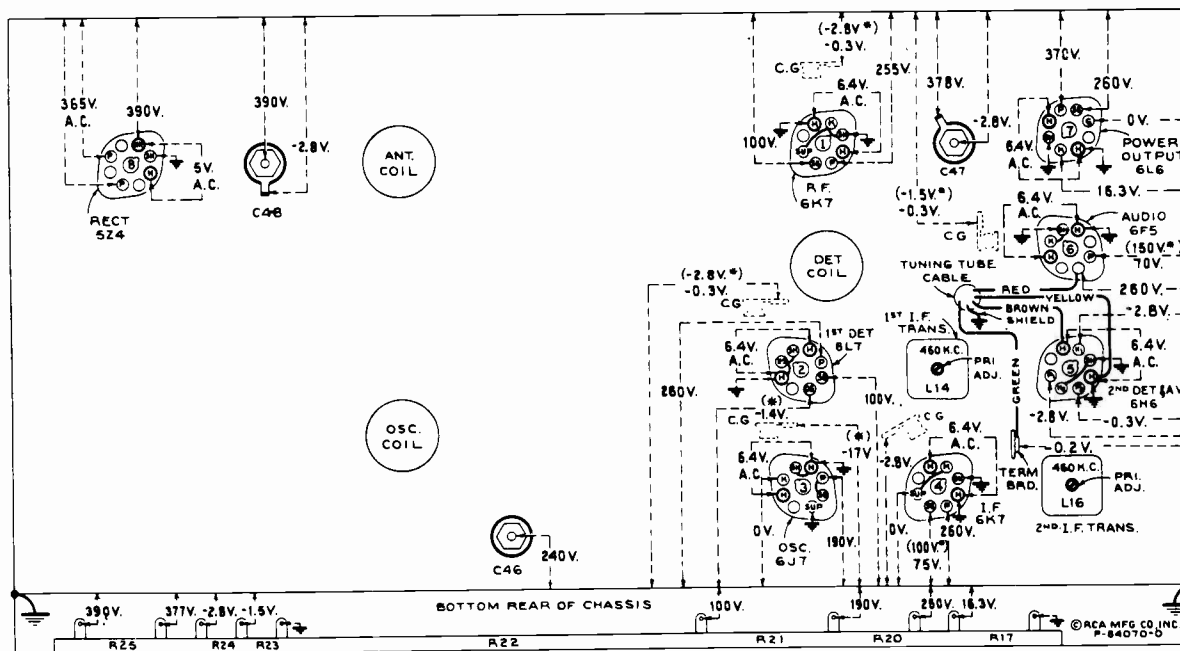
-Schematic Circuit Diagram (Model 9K3)



9K1 & 9K3



—Radiotron Socket Voltages and I-F Trimmer Locations (Model 9K1)



—Radiotron Socket Voltages and I-F Trimmer Locations (Model 9K3)

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard broadcast")—
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.*

9K1 & 9K3

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on "Standard broadcast" scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Cathode-ray alignment is preferable; the connections to the chassis are shown



Connect the "low" output terminal of the test oscillator to the receiver chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver 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, 550-750 kc" means that the receiver should be tuned to a point between 550 and 750 kc where no signal or interference is received from a station or local (heterodyne) oscillator.

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

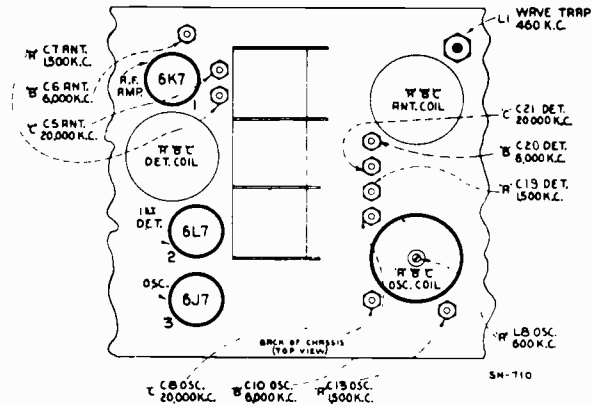


Figure 5—R-F Trimmer Locations

Note.—The locations of C20 and C21 are interchanged on some chassis of Model 9K1.

Order of Alignment	Test Oscillator			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	No Signal 550-750 kc	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L14 and L15	Max. (peak)
3	"A1" Ant. Term.	200 Mmfd.	460 kc	No Signal 550-750 kc	Wave Trap	L1	Minimum Output
4	"A1" Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Osc.	C8	Max. (peak)*
5	"A1" Ant. Term.	300 Ohms	20,000 kc	Rock thru 20,000 kc	"C" Det.	C21	Max. (peak)†
6	"A1" Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Ant.	C5	Max. (peak)‡
7	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Osc.	C10	Max. (peak)
8	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Det.	C20	Max. (peak)
9	"A1" Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Ant.	C6	Max. (peak)
10	"A1" Ant. Term.	200 Mmfd.	600 kc	600 kc	"A" L-F Osc.	L8	Max. (peak)
11	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C13	Max. (peak)
12	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" Det.	C19	Max. (peak)
13	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" Ant.	C7	Max. (peak)
14	"A1" Ant. Term.	200 Mmfd.	600 kc	Rock thru 600 kc	"A" L-F Osc.	L8	Max. (peak)
15	"A1" Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C13	Max. (peak)

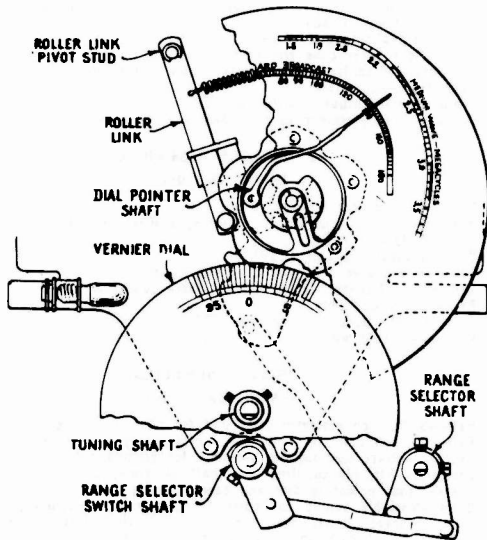
* Use minimum capacity peak if two peaks can be obtained.

† Use maximum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 19.080 kc.

9K1 & 9K3

Selector Dial (Model 9K3).—Figure 10 illustrates the relation of the various parts of the dial mechanism when in its "Standard broadcast" position with the range switch likewise turned to its "Standard broadcast" position. In re-assembling the dial after repairs, see that the gears are meshed in accordance with the diagram, at



Selector Dial Mechanism (Model 9K3)

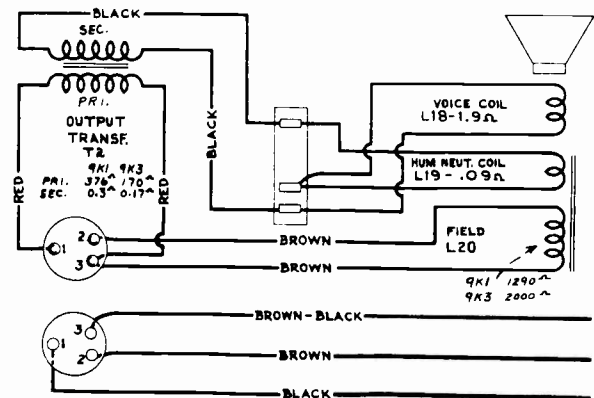
the same time noting that the range switch is in its "Standard broadcast" position and the lever attached to the range-switch shaft placed in the position shown.

To adjust the dial mechanism, set the range switch to its "Standard broadcast" position. Place a straight-edge across the center of the dial so that its edge is even with the lower (end) marking at both the low-frequency and high-frequency ends of the dial. Under such conditions the straight-edge should be parallel with the top of the

chassis base. If the straight-edge is not parallel with the top of the chassis base, loosen the nut on the rear of the roller link pivot stud and move the stud up or down until the link roller moves the dial to the desired position so that the end calibration marks obtain the position mentioned above. Tighten the nut on the roller link pivot stud.

Set the gang tuning condenser to its maximum capacity position. Adjust the dial pointer to the low-frequency (end) mark on "Standard broadcast" scale. This is a friction adjustment.

With the gang tuning condenser plates still in full mesh, loosen the two set screws on the vernier-dial hub. Rotate the vernier dial until the "0" marking is in a vertical plane above the center of the shaft. Tighten set screws.



—Loudspeaker Wiring

REPLACEMENT PARTS

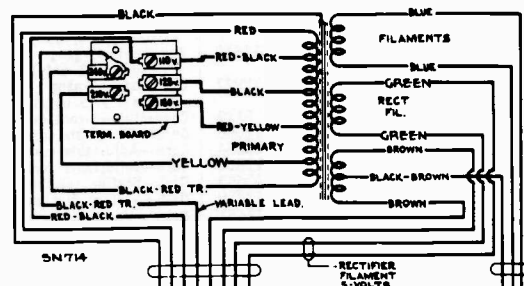
Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12706	Arm—Hub and arm assembly complete with set screws for operating shutter link (located on range-switch shaft) (Model 9K1 only)	4841	Capacitor—0.1 Mfd. (Model 9K1, C30, C48, C49) (Model 9K3, C27, C30)
12806	Board—3-contact antenna and ground terminal board	4840	Capacitor—0.25 Mfd. (Model 9K1, C31, C37 (Model 9K3, C37)
12863	Board—4-contact and 2-link phonograph terminal board	5170	Capacitor—0.25 Mfd. (Model 9K1, C18, C45) (Model 9K3, C45)
12929	Bracket—Mounting bracket for L. F. tone control or volume control (Model 9K3 only)	5212	Capacitor—16 Mfd. (C46)
5237	Bushing—Variable condenser mounting bushing assembly	12467	Capacitor—30 Mfd. (Model 9K1, C47) (Model 9K3, C47, C48)
13656	Button—Plug button for top of detector coil shield, Stock No. 12799	13655	Capacitor pack—Comprising two sections each .015 Mfd., one section 0.1 Mfd., and two 27,000-ohm resistors (C38, C39, C40, R12, R14) (Model 9K1 only)
11625	Cable—Tuning tube cable and socket	12708	Coil—Antenna coil and shield (L2, L3, L4, L5)
12511	Cap—Grid contact cap	13654	Coil—Detector coil and shield (L9, L10, L11, L12, L13)
12884	Capacitor—Adjustable trimmer (long) (C5, C7, C10, C13)	12709	Coil—Oscillator coil and shield (L6, L7, L8)
12714	Capacitor—Adjustable trimmer (medium) (C6, C8, C19, C21)	13657	Compensator pack—Comprising one .015 Mfd., one .01 Mfd., one .07 Mfd. capacitors and one 27,000-ohm and one 39,000-ohm resistors (C38, C39, C40, R12, R14) (Model 9K3 only)
12807	Capacitor—Adjustable trimmer (short) (C20)	13650	Condenser—3-gang variable tuning condenser (C4, C15, C25) (Model 9K1 only)
12896	Capacitor—15 Mfd. (C22)	12922	Condenser—3-gang variable tuning condenser (C4, C15, C25) (Model 9K3 only)
12722	Capacitor—18 Mfd. (C12)	5119	Connector—3-contact female connector for reproducer cable
12723	Capacitor—56 Mfd. (C2, C17)	12006	Core—Adjustable core and stud for Stock Nos. 12652 and 12653
12404	Capacitor—120 Mfd. (C28, C29, C32, C33)	12664	Core—Adjustable core and stud for Stock No. 12654
12724	Capacitor—120 Mfd. (C16, C41)	12800	Core—Adjustable core and stud for Stock No. 12709
12725	Capacitor—150 Mfd. (C1)	13653	Dial—Station selector dial scale (Model 9K1 only)
12406	Capacitor—180 Mfd. (C34)	12870	Dial—Vernier dial and disc assembly (Model 9K3 only)
12727	Capacitor—555 Mfd. (C14)	13651	Drive—Variable tuning condenser vernier drive with pinion gear (Model 9K1 only)
12537	Capacitor—560 Mfd. (C3, C23, C26)	12712	Indicator—Station selector indicator pointer (Model 9K1 only)
12729	Capacitor—1,550 Mfd. (C11)	5226	Lamp—Dial lamp, 6.3 volts
12728	Capacitor—4,500 Mfd. (C9)	12868	Link—Range switch and band indicator operating link, complete with set screws (Model 9K3 only)
4838	Capacitor—.005 Mfd. (C44) (Model 9K1 only)	13683	Mask—Dial scale mask, complete with colored screens (Model 9K1 only)
13033	Capacitor—.007 Mfd. (C44) (Model 9K3 only)		
4858	Capacitor—.01 Mfd. (Model 9K1, C24, C36, C42) (Model 9K3, C18, C24, C31, C36, C42)		
4870	Capacitor—.025 Mfd. (C35)		
12670	Capacitor—.035 Mfd. (C43 (Model 9K1 only)		
13841	Capacitor—.07 Mfd. (C43) (Model 9K3 only)		

9K1 & 9K3

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION	
13834	Resistor—100 ohms, wire wound, 4 watts, for 25-cycle model only (R26) (Model 9K3 only)		REPRODUCER ASSEMBLIES (Model 9K1 Only)	
5112	Resistor—1,000 ohms, carbon type, 1/4 watt (R3)	12641		Board—3-contact reproducer terminal board
11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R2, R5)	12640		Bracket—Output transformer mounting bracket and clamp
11282	Resistor—56,000 ohms, carbon type, 1/10 watt (R8)	12012		Coil—Field coil (L20)
11365	Resistor—82,000 ohms, carbon type, 1/4 watt (Model 9K1, R17) (Model 9K3, R6)	11469		Coil—Neutralizing coil (L19)
11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R9)	12667		Cone—Reproducer cone and dust cap (L18)
11453	Resistor—270,000 ohms, carbon type, 1/10 watt (R15) (Model 9K1 only)	5118		Connector—3-contact male speaker cable connector
13005	Resistor—390,000 ohms, carbon type, 1/10 watt (R16) (Model 9K1 only)	9696		Reproducer—Complete
11172	Resistor—470,000 ohms, carbon type, 1/4 watt (R13)	11253		Transformer—Output transformer (T2)
11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R16) (Model 9K3 only)	11886		Washer—Spring washer to hold field coil securely
11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R4)		REPRODUCER ASSEMBLIES (Model 9K3 Only)	
5035	Resistor—560,000 ohms, carbon type, 1/4 watt (R15) (Model 9K3 only)	12914		Board—Reproducer terminal board
12013	Resistor—1 megohm, carbon type, 1/10 watt (R19)	13842		Bracket—Output transformer mounting bracket and clamp
11626	Resistor—2.2 megohms, carbon type, 1/4 watt (Model 9K1, R10) (Model 9K3, R7, R10)	13660		Coil—Field coil (L20)
12679	Resistor—2.2 megohms, insulated, 1/4 watt (R7) (Model 9K1 only)	11469		Coil—Neutralizing coil (L19)
12927	Resistor—Voltage divider, comprising one 16-ohm, one 25-ohm, and one 190-ohm sections (R21, R22, R23) (Model 9K1 only)	12667		Cone—Reproducer cone and dust cap (L18)
12715	Resistor—Voltage divider, comprising one 10,000-ohm, and one 22,000-ohm sections (R6, R20) (Model 9K1 only)	5118		Connector—3-contact male speaker cable connector
13840	Resistor—Voltage divider, comprising one 115-ohm, one 11-ohm, one 13-ohm, one 4,100-ohm, one 2,900-ohm, one 1,750-ohm, and one 285-ohm sections (R17, R20, R21, R22, R23, R24, R25) (Model 9K3 only)	9778		Reproducer—Complete
4669	Screw—No. 8-32 x 5/32 set screw for link, Stock No. 12868 (Model 9K3 only)	12913		Transformer—Output transformer (T2)
3903	Screw—No. 8-32 x 3/16 headless, cup-point set screw for dial, Stock No. 12870 (Model 9K3 only)	11886		Washer—Spring washer to hold field coil securely
12925	Shaft—Range switch and band indicator operating shaft and hub assembly (Model 9K3 only)		DRIVE ASSEMBLIES (Model 9K3 Only)	
12710	Shield—Coil shield for Stock No. 12709	10705		Ball—5/32-inch diameter steel ball for planetary drive
12799	Shield—Coil shield for Stock Nos. 12708 and 13654	10941		Ball—1/4-inch diameter steel ball for planetary drive bearing
12926	Shield—Chassis end shield and mounting foot assembly	12904		Bushing—Plate and bushing assembly for planetary drive mounting
12735	Shield—Dial lamp shield (Model 9K1 only)	12905		Coupling—Flexible coupling and shaft assembly, complete
12006	Shield—I. F. transformer shield for Stock Nos. 12652 and 12653	12909		Dial—Band indicating dial and cam assembly
12607	Shield—Top shield for I. F. transformer, Stock No. 12652	12899		Drive—Variable tuning condenser drive, complete—including mounting bracket, drive, dial scale and indicator, less vernier dial, Stock No. 12870, and link, Stock No. 12868
12581	Shield—Top shield for I. F. transformer, Stock No. 12653	12906		Gear—Anti-lash drive gear, complete
13652	Shutter—Dial scale holder and shutter assembly complete with link (Model 9K1 only)	12910		Gear—Sector gear and link assembly for band selector
11195	Socket—5-contact 5Z4 Radiotron socket	12908		Indicator—Station selector indicator pointer
11196	Socket—7-contact 6F5, 6H6, 6K7, or 6L7 Radiotron socket	8051	Link—Link and roller assembly, complete with spring	
11196	Socket—8-contact 6F6, 6J7, or 6L6 Radiotron socket	12911	Screen—Dial lamp screen and light diffuser	
11222	Socket—Dial lamp socket (Model 9K1, all sockets) (Model 9K3, upper right or lower left socket)	4669	Screw—Set screw for flexible coupling or gear, Stock Nos. 12905 and 12906	
13095	Socket—Upper left or lower right dial lamp socket (Model 9K3 only)	12901	Shaft—Direct drive shaft and pinion gear for planetary drive	
11381	Socket—Tuning tube socket and cover	12900	Shaft—Vernier drive shaft for planetary drive	
12007	Spring—Retaining spring for core, Stock Nos. 12006, 12664, or 12800	12903	Spring—Tension spring for planetary drive bearing	
12849	Spring—Tension spring for dial shutter link (Model 9K1 only)	12907	Spring—Tension spring for gear, Stock No. 12906	
13648	Switch—Range switch (S1, S2, S3) (Model 9K1 only)	8052	Spring—Tension spring for link, Stock No. 8051	
13839	Switch—Range switch (S1, S2, S3) (Model 9K3 only)		MISCELLANEOUS ASSEMBLIES (Model 9K1 Only)	
13649	Tone control (R18) (Model 9K1 only)	11996		Bracket—Tuning tube mounting bracket and clamp
12921	Tone control—High-frequency tone control (R18) (Model 9K3 only)	12666		Cover—Reproducer field coil and yoke cover
12860	Tone control—Low-frequency tone control switch and power switch (S4, S5) (Model 9K3 only)	12698		Crystal—Station selector escutcheon and crystal
12652	Transformer—First I. F. transformer, complete (L14, L15, C28, C29)	12742		Escutcheon—Tuning tube escutcheon
12653	Transformer—Second I. F. transformer, complete (L16, L17, C32, C33, C34, R8, R9)	12699		Knob—Large station selector knob
12918	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1) (Model 9K1 only)	12700		Knob—Small (vernier) station selector knob
12857	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1) (Model 9K1 only)	11347		Knob—Range switch, tone control, or volume control knob
11211	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1) (Model 9K3 only)	11210		Screw—Chassis mounting screw, washer, and lockwasher assembly
11212	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1) (Model 9K3 only)	4982		Spring—Retaining spring for knob, Stock No. 12699
11213	Transformer—Power transformer, 100-250 volts, 40-60 cycles (T1) (Model 9K3 only)	11349	Spring—Retaining spring for knob, Stock Nos. 11347 or 12700	
12654	Trap—Wave trap, complete (L1)	4982		
13647	Volume control and power switch (R11, S4) (Model 9K1 only)		MISCELLANEOUS ASSEMBLIES (Model 9K3 Only)	
12861	Volume control (R11) (Model 9K3 only)	13615		Bracket—Tuning tube mounting bracket and clamp
		12915		Crystal—Station selector escutcheon and crystal
		12742		Escutcheon—Tuning tube escutcheon
		12699		Knob—Large station selector knob
		12700		Knob—Small (vernier) station selector knob
		11347		Knob—Low-frequency tone control and power switch, volume control, range switch or high-frequency tone control knob
		11210		Screw—Chassis mounting screw assembly
		11349		Spring—Retaining spring for knob, Stock Nos. 11347 or 12700
		4982		Spring—Retaining spring for knob, Stock No. 12699



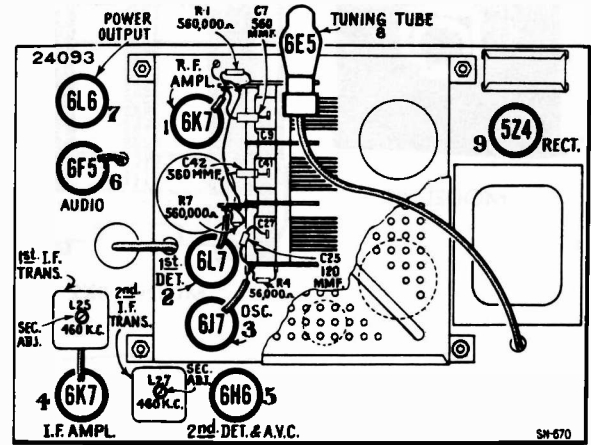
Primary Resistance—7.4 ohms total
 Secondary Resistance—284 ohms total
 Universal Transformer (Model 9K3)

MODELS 9T, 9K2, 9K10, 9U & 9U2

Nine-Tube, Five-Band, A-C Superheterodyne Receivers and Radio-Phonographs

SEE INDEX LISTING "MAGIC BRAIN" FOR ADDITIONAL DATA.

Radiotron Cathode Current Readings	
Measured with Milliammeter Connected at Tube Socket Cathode Terminal under Conditions Similar to Those of Voltage Measurements	
(1) RCA-6K7—R.F.	8.0 ma.
(2) RCA-6L7—1st Det.	4.4 ma.
(3) RCA-6J7—Osc.	6.7 ma.
(4) RCA-6K7—I.F.	8.0 ma.
(5) RCA-6H6—2nd Det.—A.V.C.	—
(6) RCA-6F5—A.F.	0.3 ma.
(7) RCA-6L6—Power	63 ma.
(8) RCA-6E5—Eye	3.0 ma.
(9) RCA-5Z4—Rect.	110 ma. *
(* Cannot be measured at socket contact)	



-Radiotron and I-F Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

- "Long Wave" (X)..... 150-410 kc
- "Standard Broadcast" (A)..... 530-1,800 kc
- "Medium Wave" (B)..... 1,800-6,400 kc
- "Short Wave" (C)..... 6,400-23,000 kc
- "Ultra Short Wave" (D)..... 23,000-60,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... R-F Amplifier
- (2) RCA-6L7..... First Detector
- (3) RCA-6J7..... Oscillator
- (4) RCA-6K7..... I-F Amplifier

PILOT LAMPS

- Model 9U { (1) Phono compartment..... Mazda No. 40, 6.3 volts, 0.15 ampere
- (4) Receiver..... Mazda No. 46, 6.3 volts, 0.25 ampere
- Model 9U2 { (3) Phono compartment, indicator, lower right-hand front of tuning dial, Mazda No. 40, 6.3 volts, 0.15 ampere
- (3) Upper left-, lower left-, upper right-hand front of tuning dial, Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

- Rating A.)..... 105-125 volts, 50-60 cycles, 120 watts
- Rating B.) **MODELS 9T, 9K2 & 9K10**..... 105-125 volts, 25-60 cycles, 120 watts
- Rating C.)..... 100-130/140-160/195-250 volts, 40-60 cycles, 120 watts
- Rating A-6 (Model 9U only)..... 105-125 volts, 60 cycles, 150 watts
- Rating A-5 (Model 9U only)..... 105-125 volts, 50 cycles, 155 watts
- Rating B-2)..... 105-125 volts, 25 cycles, 150 watts
- Rating C-6) **MODELS 9U & 9U2**..... 105-130/140-160/200-250 volts, 60 cycles, 150 watts
- Rating C-5)..... 105-130/140-160/200-250 volts, 50 cycles, 155 watts

PHONOGRAPH **MODELS 9U & 9U2**

- Type..... Automatic Record Ejector
- Record Capacity..... Seven 10-inch or Six 12-inch
- Turntable Speed..... 78 R.P.M.
- Type of Pickup..... Low-Impedance Magnetic
- Pickup Impedance..... 8.5 ohms at 1,000 cycles

ALIGNMENT FREQUENCIES

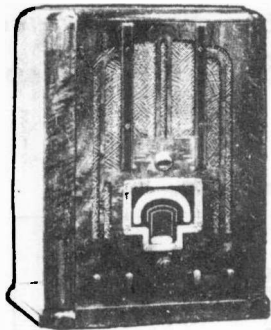
- "Long Wave" (X)..... 175 kc (osc.), 350 kc (osc., det., ant.)
- "Standard Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc., det., ant.)
- "Medium Wave" (B)..... 6,000 kc (osc., det., ant.)
- "Short Wave" (C)..... 20,000 kc (osc., det., ant.)
- "Ultra Short Wave" (D)..... 57,000 kc (osc., det., ant.)

- (5) RCA-6H6..... Second Detector and A.V.C.
- (6) RCA-6F5..... Audio Voltage Amplifier
- (7) RCA-6L6..... Power Output
- (8) RCA-6E5..... Tuning Tube
- (9) RCA-5Z4..... Full-Wave Rectifier

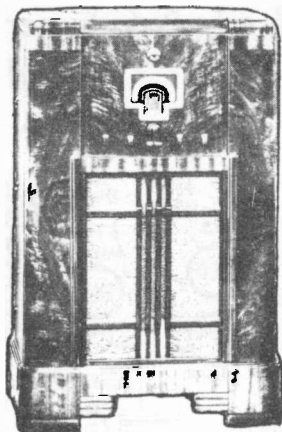
POWER OUTPUT RATINGS

- Undistorted..... 5 watts
- Maximum..... 9 watts
- LOUDSPEAKER
- Type..... Electrodynamic
- Impedance (V.C.)..... 2.2 ohms at 400 cycles

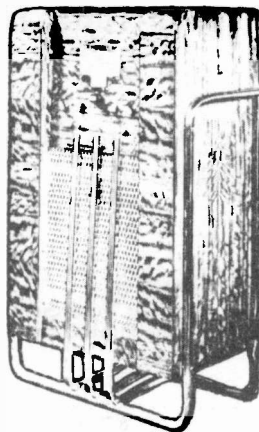
9T, 9K2, 9K10, 9U & 9U2



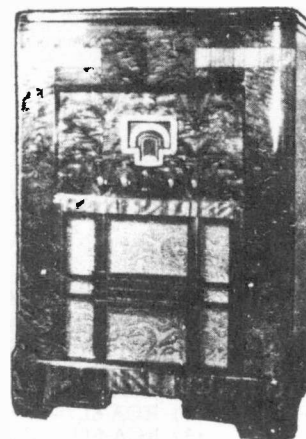
MODEL 9T



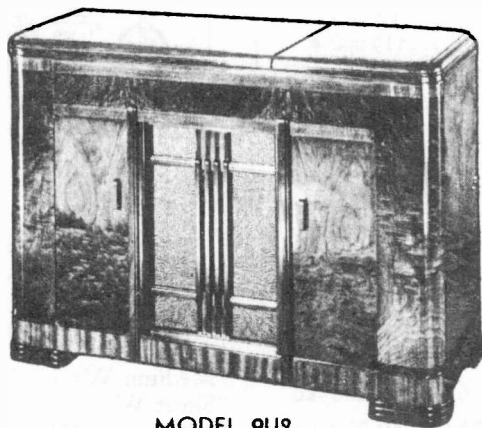
MODEL 9K2



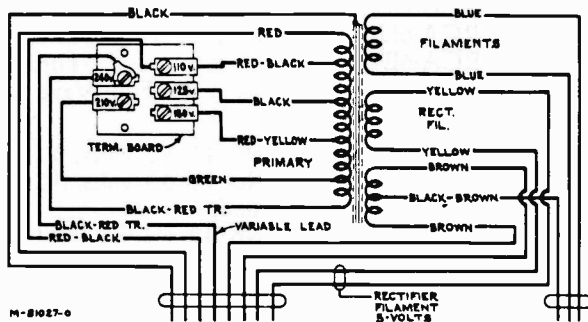
MODEL 9K10



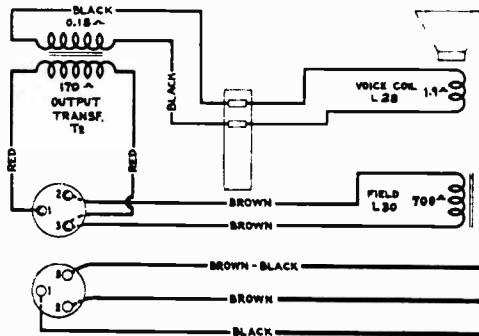
MODEL 9U



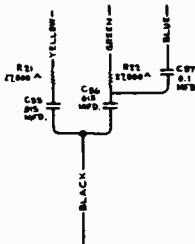
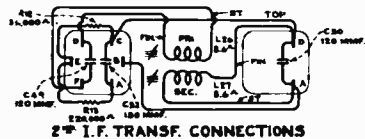
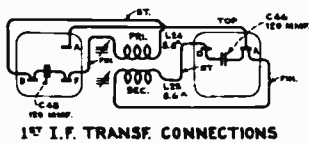
MODEL 9U2



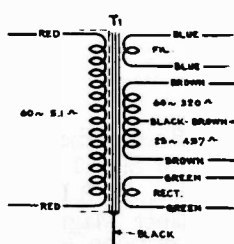
Primary resistance—10.1 ohms total
 Secondary resistance—226 ohms total
 -Universal Transformer



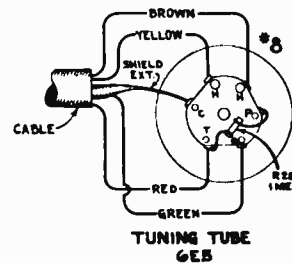
-Loudspeaker Wiring



CAPACITOR PACK

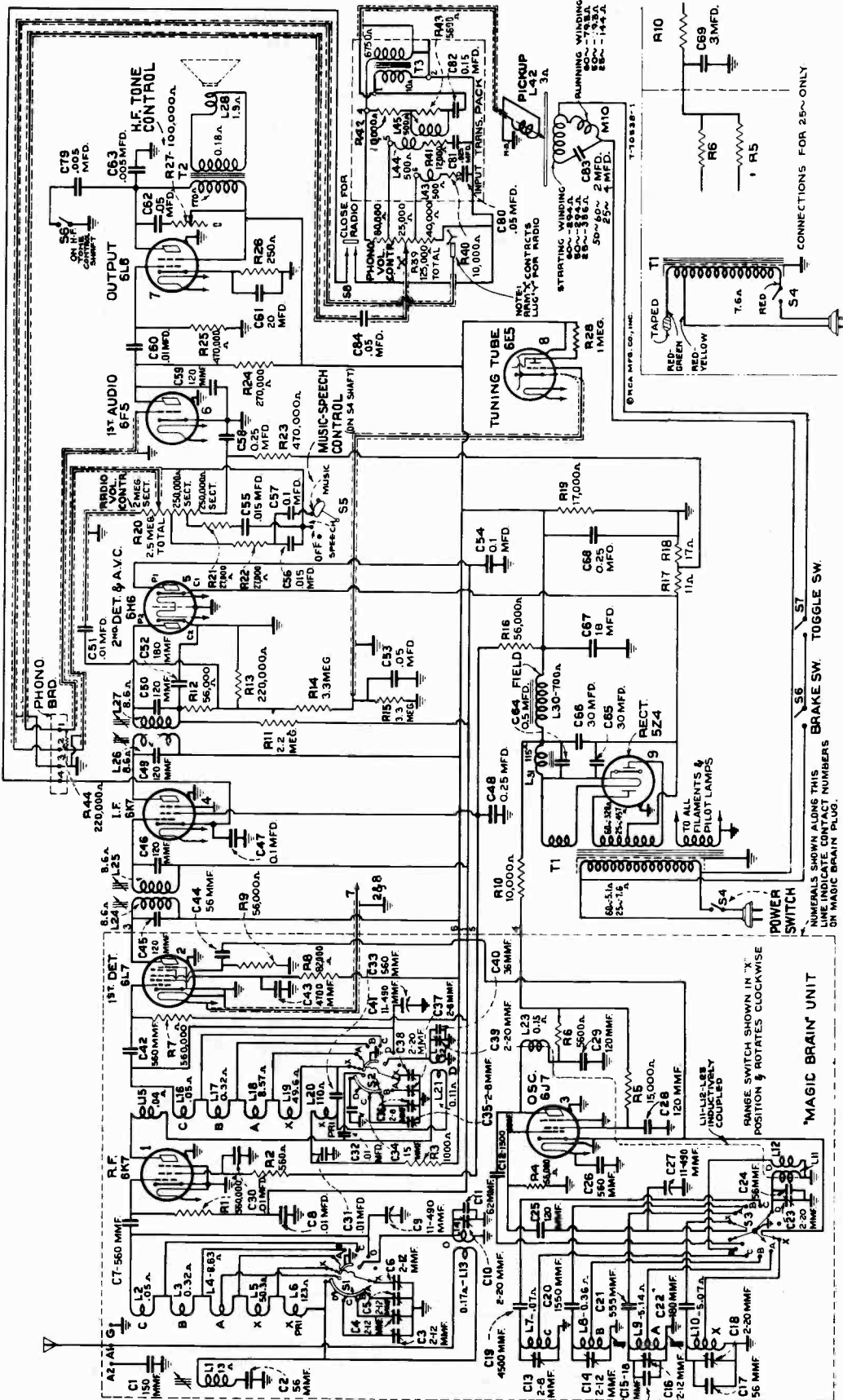


POWER TRANSFORMER



TUNING TUBE 6E5

9T, 9K2, 9K10, 9U & 9U2



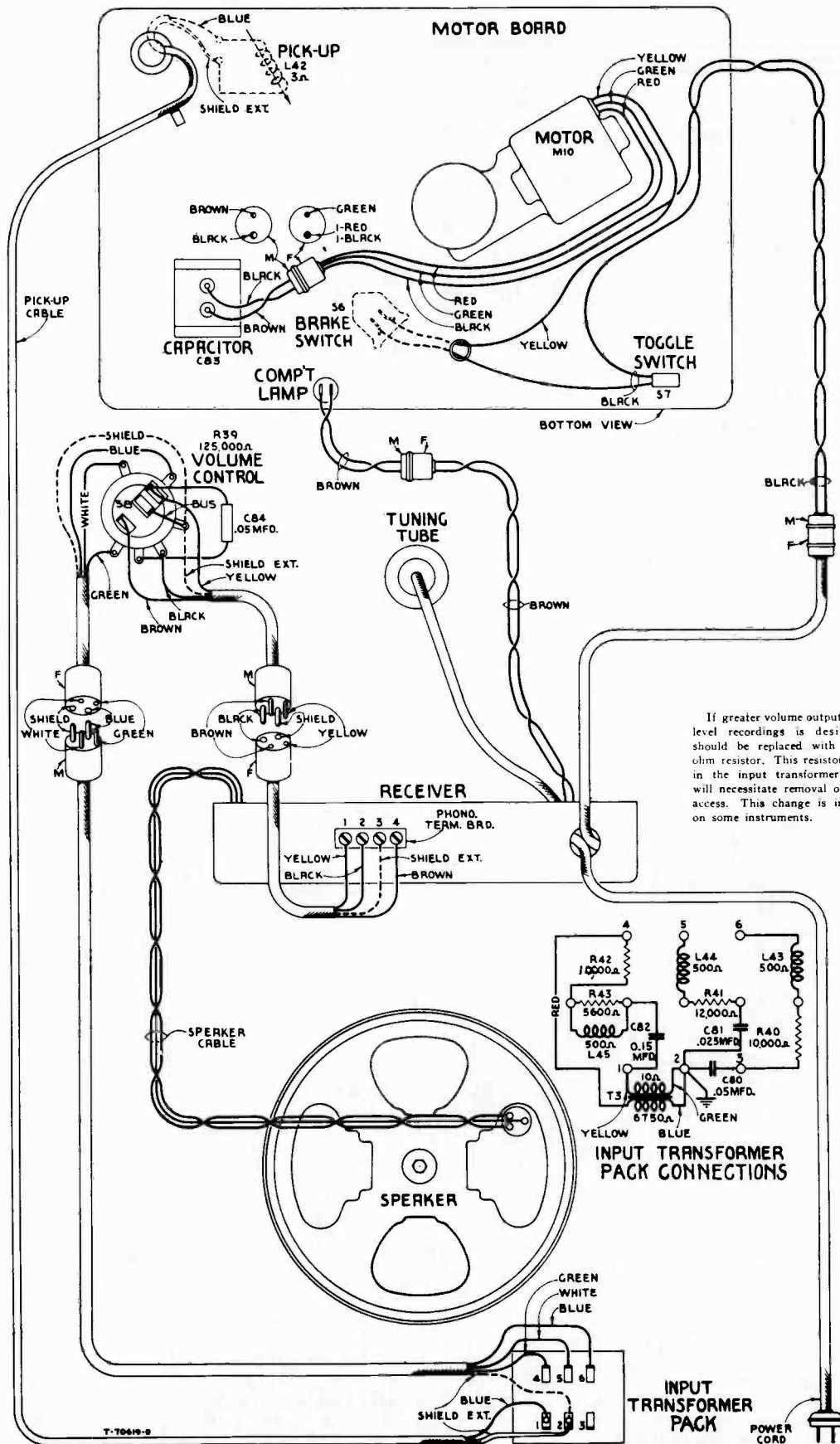
-Schematic Circuit Diagram

MODELS 9T, 9K2 AND 9K10.
C63 is 0.01 mfd, C79, R44 and S6 omitted

On some models a 270,000 ohm resistor is connected between arm and low end of volume control, not required when replacing volume control with Stock No. 12861.

- SERVICE HINTS**
- (1) Excessive heating of the 6E5 tube may be due to high cathode current—in excess of 7 ma. The tube should be replaced and the condition of the 5Z4 rectifier checked.
 - (2) Low sensitivity or intermittent operation may be caused by C-43 or C-33 developing low-resistance leakage. Check both capacitors and replace if found defective.
 - (3) Low sensitivity around 15—16 megacycles may be caused by dirty or poor contact of grounding contact finger on S-3.

9T, 9K2, 9K10, 9U & 9U2

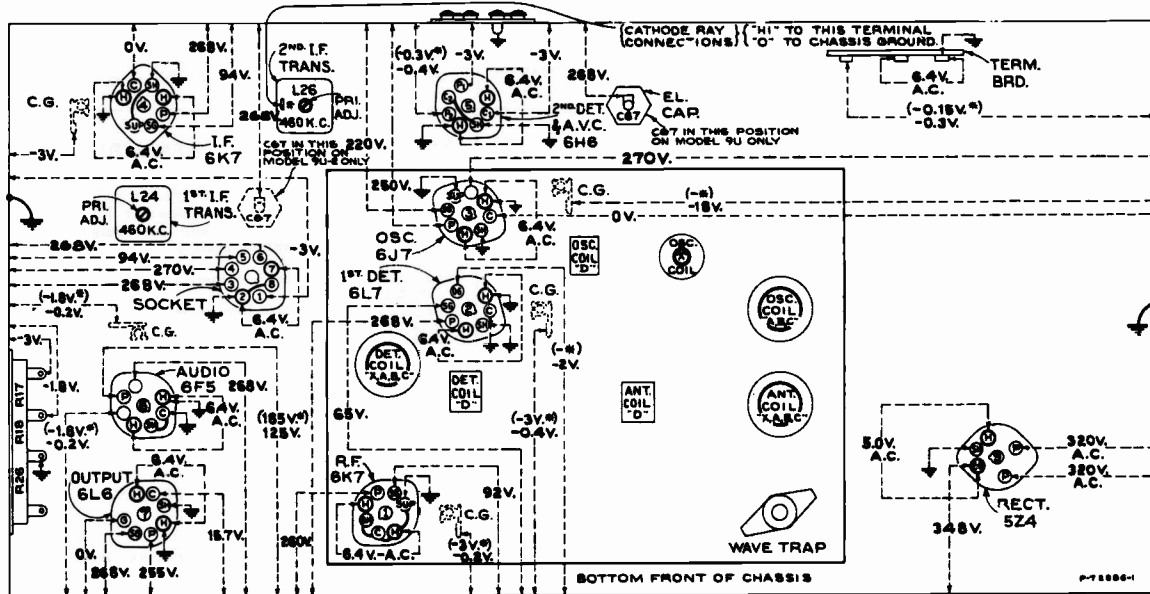


If greater volume output from low-level recordings is desired, R-42 should be replaced with a 10,000-ohm resistor. This resistor is located in the input transformer pack and will necessitate removal of cover for access. This change is incorporated on some instruments.

SEE INDEX FOR SERVICE DATA ON AUTOMATIC RECORD CHANGER

-Assembly Wiring MODELS 9U & 9U2

9T, 9K2, 9K10, 9U & 9U2



—Radiotron Socket Voltages, Coil, and I-F Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—
Radio volume control counter-clockwise—Phono volume control extreme counter-clockwise—
Other controls optional

Note: Two voltage values are shown for some readings. The value shown in parenthesis with asterisk () indicates operating conditions without voltmeter loading.*

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
12863	Board—4 contact and 2 link phonograph terminal board.....		12467	Capacitor—30 Mfd. (C65, C66).....	
4427	Bracket—Mounting bracket for H.F. tone control, L.F. tone control or volume control.....		5119	Connector—3-contact female connector for speaker leads.....	
12867	Cable—Tuning lamp cable and socket....		4573	Connector—2-contact female connector for motor cable (Chassis End).....	
13230	Cable—2 conductor compartment and pilot lamp cable (chassis end) approx. 34-in. long complete with two female connectors Stock No. 11488—Model 9U2 only.....		11488	Connector—2-contact female connector for phonograph compartment lamp cable (Chassis End).....	
12511	Cap—Grid contact cap—Package of 5....		12006	Core—Adjustable core and stud for Stock No. 12652 and 12653.....	
12859	Capacitor Pack—Comprising two sections .015 Mfd., one section .1 Mfd., and two resistors 27,000 ohms each (C55, C56, C57, R21, R22).....		12870	Dial—Vernier dial and disc assembly....	
12873	Capacitor Pack—Comprising one 3 Mfd. and one 20 Mfd. section used in 25 cycle Model only (C61, C69).....		4340	Lamp—Dial lamp 6.3 volt, lower R.H. socket Model 9U2 only—Package of 5	
12724	Capacitor—120 Mmfd. (C59).....		5226	Lamp—Dial lamp, 6.3 volt—Package of 5	
12404	Capacitor—120 Mmfd. (C45, C46, C49, C50).....		12868	Link—Range switch and band indicator operating link complete with set screw..	
12406	Capacitor—180 Mmfd. (C52).....		12871	Reactor—Filter reactor (L31).....	
4838	Capacitor—.005 Mfd. (C63, C79).....		12865	Resistor—Voltage divider resistor—Comprising one section 250 ohm, one section 17 ohm, and one section 11 ohm (R17, R18, R26).....	
4624	Capacitor—.01 Mfd. (C51).....		12876	Resistor—10,000 ohms—wire wound—10 watt (R10).....	
4858	Capacitor—.01 Mfd. (C60).....		12864	Resistor—17,000 ohms—wire wound (R19).....	
4836	Capacitor—.05 Mfd. (C53).....		11282	Resistor—56,000 ohms—carbon type—1/10 watt (R12)—Package of 5.....	
4886	Capacitor—.05 Mfd. (C62).....		12875	Resistor—56,000 ohms—carbon type—1 watt (R16)—Package of 5.....	
4841	Capacitor—0.1 Mfd. (C54).....		12264	Resistor—220,000 ohms—insulated—1/4 watt (R44)—Package of 5.....	
11414	Capacitor—0.1 Mfd. (C47).....		11398	Resistor—220,000 ohms—carbon type—1/10 watt (R13)—Package of 5.....	
4840	Capacitor—.25 Mfd. (C58).....		11453	Resistor—270,000 ohms—carbon type—1/10 watt (R24)—Package of 5.....	
5170	Capacitor—.25 Mfd. (C48, C68).....		11172	Resistor—470,000 ohms—carbon type—1/4 watt (R23)—Package of 5.....	
12741	Capacitor—0.5 Mfd. (C64).....				
5212	Capacitor—18 Mfd. (C67).....				
12872	Capacitor—20 Mfd. (C61).....				

9T, 9K2, 9K10, 9U & 9U2

REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION	
11452	Resistor—470,000 ohms—carbon type—1/10 watt (R25)—Package of 5.....		MAGIC BRAIN UNIT ASSEMBLIES	
12013	Resistor—1 Megohm—carbon type—1/10 watt (R28)—Package of 5.....	12806		Board—3-contact antenna and ground terminal board
11626	Resistor—2.2 Megohm—carbon type—1/4 watt (R11)—Package of 5.....	5237		Bushing—Variable condenser mounting bushing assembly
12874	Resistor—3.3 Megohm—carbon type—1/4 watt (R14, R15)—Package of 5.....	12888		Cable—Shielded power cable, approximately 4 inches long, complete with 3-contact male plug
4669	Screw—No. 8-32-5/32 set screw for link Stock No. 12868—Package of 10.....	12511		Cap—Grid contact cap
3903	Screw—No. 8-32-3/16 headless cup point set screw for Stock No. 12870—Package of 20.....	12714		Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16)
12869	Shaft—Range switch and band indicator operating shaft and hub—assembly....	12884		Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39)
12008	Shield—I.F. transformer shield for Stock No. 12652, 12653.....	12807		Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37)
12607	Shield—I.F. transformer shield top for Stock No. 12652.....	12896		Capacitor—15 Mmfd. (C34)
12581	Shield—I.F. transformer shield top for Stock No. 12653.....	12722		Capacitor—18 Mmfd. (C15)
12110	Shield—Shield cap for 6F5 Radiotron....	12891		Capacitor—36 Mmfd. (C40)
13095	Socket—Dial lamp socket, upper left or lower right hand.....	12629		Capacitor—56 Mmfd. (C24)
11222	Socket—Dial lamp socket, upper right or lower left hand.....	12895		Capacitor—56 Mmfd. (C17)
11381	Socket—Tuning lamp socket and cover..	12723		Capacitor—56 Mmfd. (C2, C44)
11195	Socket—5-contact 5Z4 Radiotron socket..	13307		Capacitor—62 Mmfd. (C11)
11198	Socket—7-contact 6H6, 6K7, 6L6, or 6F5 Radiotron socket.....	12724		Capacitor—120 Mmfd. (C25, C28, C29)
11196	Socket—8-contact socket for R.F. Unit power cable plug.....	12725		Capacitor—150 Mmfd. (C1)
12007	Spring—Retaining spring for Stock No. 12006.....	12894		Capacitor—180 Mmfd. (C22)
12860	Tone Control—Low frequency tone control and power switch (S4, S5).....	12727		Capacitor—555 Mmfd. (C21)
13468	Tone Control—High frequency tone control (R27, S6).....	12537		Capacitor—560 Mmfd. (C7, C26, C33, C42)
12652	Transformer—First I.F. transformer complete (L24, L25, C45, C46).....	12898		Capacitor—1,500 Mmfd. (C12)
12653	Transformer—Second I.F. transformer complete (L26, L27, C49, C50, C52, R12, R13).....	12729		Capacitor—1,550 Mmfd. (C20)
12856	Transformer—Power transformer, 105-125 volt, 50-60 cycle (T1).....	12728		Capacitor—4,500 Mmfd. (C19)
12857	Transformer—Power transformer, 105-125 volt, 25 cycle (T1).....	12897		Capacitor—4,700 Mmfd. (C43)
12858	Transformer—Power transformer, 100-250 volt, 50-60 cycle (T1).....	4858		Capacitor—.01 Mfd. (C8, C30, C31, C32)
12861	Volume Control—(R20).....	12879		Coil—Antenna coil and shield, XABC bands (L2, L3, L4, L5, L6)
		12888		Coil—Antenna coil, "D" band (L13, L14)
		12880		Coil—Detector coil and shield, XABC bands (L15, L16, L17, L18, L19, L20)
		12709		Coil—Oscillator coil and shield, ABC bands (L7, L8, L9)
		12881		Coil—Oscillator coil and shield, X band only (L10)
		12890		Coil—Oscillator coil, "D" band (L11, L12, L23)
		12889		Coil—R.F. coil, "D" band (L21, L22)
		12877		Condenser—3-gang variable tuning condenser (C9, C27, C41)
		12887		Connector—8-contact male connector and cover for power cable, Stock No. 12886
		12664		Core—Adjustable core and stud for Stock No. 12654
		12800	Core—Adjustable core and stud for Stock No. 12709	
		12882	Core—Adjustable core and stud for Stock No. 12881	
		11324	Resistor—560 ohms—carbon type, 1/2 watt (R2)	
		5112	Resistor—1,000 ohms—carbon type, 1/2 watt (R3)	
		11298	Resistor—5,800 ohms—carbon type, 1 watt (R6)	
		3998	Resistor—15,000 ohms—carbon type, 1/2 watt (R5)	
		11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R4, R9)	
		8064	Resistor—82,000 ohms—carbon type, 1/2 watt (R8)	
		11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R7)	
		12651	Shield—Coil shield for Stock Nos. 12879, 12880	
		12710	Shield—Coil shield for Stock No. 12709	
		12883	Shield—Coil shield for Stock No. 12881	
		11198	Socket—7-contact 6K7 Radiotron socket	
		11279	Socket—7-contact 6L7 Radiotron socket	
		12885	Socket—8-contact 6J7 Radiotron socket	
		12007	Spring—Retaining spring for core, Stock Nos. 12664, 12800, 12882	
		12878	Switch—Range switch and mounting nut (S1, S2, S3)	
		12654	Trap—Wave-trap, complete (L1)	

**ADDITIONAL PARTS
MODELS 9T, 9K2 AND 9K10.**

- 4937 Capacitor - 0.01 mfd (C63).
 - 12868 Foot - Chassis mounting bracket and foot assembly.
 - 12862 Tone control - H-F tone control (R27).
- Stock No's. 4838 Capacitor (C63, C79), 4573 Connector, 11488 Connector, 12264 Resistor (R44) and 13468 Tone control (R27, S6) used in models 9U and 9U2 only.

- REPRODUCER ASSEMBLIES**
- 12914 Board—3-contact reproducer terminal board.....
 - 12640 Bracket—Output transformer mounting bracket and clamp assembly.....
 - 12912 Coil—Field coil (L30).....
 - 12642 Cone—Reproducer cone and dust cap (L28) (Model 9T).....
 - 12667 Cone—Reproducer cone and dust cap (L28) (Model 9K2).....
 - 5118 Plug—3-contact male reproducer plug...
 - 9714 Reproducer Complete—(Model 9T)....
 - 9716 Reproducer Complete—(Model 9K2)....
 - 12913 Transformer—Output transformer (T2)..
 - 11886 Washer—Spring washer to hold field coil securely—Package of 5.....

**REPRODUCERS OF MODELS 9K2
9K10, 9U AND 9U2 ARE IDENTICAL.**

9T, 9K2, 9K10, 9U & 9U2

REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
DRIVE ASSEMBLIES		MISCELLANEOUS ASSEMBLIES	
10705	Ball—5/32-inch diameter steel ball for planetary drive—Package of 20.....	11377	Screw—Chassis mounting screw assembly for table model only—Package of 4...
10941	Ball—1/8-inch diameter steel ball for planetary drive bearing—Package of 20	11210	Screw—Chassis mounting screw assembly for console model only—Package of 4
12904	Bushing—Plate and bushing assembly for planetary drive mounting.....	MISCELLANEOUS ASSEMBLIES 9K10	
12905	Coupling—Flexible coupling and shaft assembly, complete.....	13274	CRYSTAL - Station selector escutcheon and crystal.
12909	Dial—Band indicating dial and cam assembly	13275	ESCUTCHEON - Tuning tube escutcheon.
12899	Drive—Variable tuning condenser drive, complete, including mounting bracket, drive, dial scale and indicator, less vernier dial, Stock No. 12870, and link, Stock No. 12868.....	13278	KNOB - Low-frequency tone control and power switch, volume control, range switch or high-frequency tone control knob.
12906	Gear—Anti-lash drive gear, complete....	13276	KNOB - Large station selector knob.
12910	Gear—Sector gear and link assembly for band selector.....	13277	KNOB - Small (vernier) station selector knob.
12908	Indicator—Station selector indicator pointer	11210	SCREW - Chassis mounting screw assembly.
8051	Link—Link and roller assembly, complete with spring.....	MISCELLANEOUS ASSEMBLIES 9U & 9U2	
12911	Screen—Dial lamp and light diffuser....	Stock No's. followed by * also used with 9T & 9K2	
4669	Screw—Set screw for flexible coupling or gear, Stock Nos. 12905 and 12906—Package of 10.....	4391	Box—Used needle box.....
12901	Shaft—Direct drive shaft and pinion gear for planetary drive.....	11996*	Bracket—Tuning lamp mounting bracket and clamp.....
12900	Shaft—Vernier drive shaft for planetary drive	13103	Cap—Pilot lamp cap—Package of 5—Model 9U2 only.....
12903	Spring—Tension spring for planetary drive bearing—Package of 10.....	4836	Capacitor—.05 Mfd. (for phonograph volume control) (C84).....
12907	Spring—Tension spring for gear, Stock No. 12906—Package of 10.....	12915*	Crystal—Station selector escutcheon and crystal
8052	Spring—Tension spring for link, Stock No. 8051—Package of 5.....	11580	Cover—Pilot lamp cover—Model 9U2 only
MISCELLANEOUS CABLE ASSEMBLIES		12742*	Escutcheon—Tuning lamp escutcheon...
13226	Cable—3-conductor shielded compensator cable (volume control end), approximately 18 inches long, complete with one 4-contact female connector, Stock No. 12494.....	4340	Lamp—Pilot lamp—6.3 volts—Package of 5—Model 9U2 only.....
13227	Cable—3-conductor shielded compensator cable (transformer end), approximately 8 inches long, complete with one 4-contact male connector, Stock No. 12565 and three pin type terminals— for Model 9U2 only.....	12699*	Knob—Large station selector knob—Package of 5.....
13232	Cable—3-conductor shielded compensator cable (transformer end), approximately 27 inches long, complete with one 4-contact male connector, Stock No. 12565 and three pin type terminals— for Model 9U only.....	11347*	Knob—Low frequency tone control and power switch phonograph or radio volume control, range switch, or high frequency tone control knob—Package of 5.....
13225	Cable—3-conductor shielded volume control cable (chassis end), approximately 13 inches long, complete with one 4-contact female connector, Stock No. 12494—for Model 9U2 only.....	12700*	Knob—Small (vernier) station selector knob—Package of 5.....
13228	Cable—3-conductor shielded volume control cable (control end), approximately 9 1/2 inches long, complete with one 4-contact male connector, Stock No. 12565	11607	Receptacle—Needle card holder.....
13231	Cable—3-conductor shielded volume control cable (chassis end), approximately 24 inches long, complete with one 4-contact female connector, Stock No. 12494—for Model 9U only.....	11210	Screw—Chassis mounting screw assembly for Model 9U only—Package of 4....
12494	Connector—4-contact female for cable, Stock Nos. 13225, 13226 or 13231....	4560	Screw—Chassis mounting screw assembly (front)—Comprising one screw, one washer and one lockwasher—Package of 10—Model 9U2 only.....
12565	Connector—4-contact male for cable, Stock Nos. 13227, 13228 or 13232....	13102	Screw—Chassis mounting screw assembly (bottom)—Comprising one screw, two cushions, one spacer, one washer and one lockwasher—Package of 2—for Model 9U2 only.....
		12916*	Shield—Complete R.F. unit shield.....
		11573	Socket—Pilot lamp socket—Model 9U2 only
		11349*	Spring—Retaining spring for knob, Stock Nos. 11347 and 12700—Package of 5.
		4982*	Spring—Retaining spring for knob, Stock No. 12699—Package of 10.....
		13415	Tube—Magic voice tube—7 inches long.
		13416	Tube—Magic voice tube—8 inches long.
		13417	Tube—Magic voice tube—9 inches long.
		13127	Transformer—Phonograph input transformer—Comprising one transformer, three choke coils, three capacitors and four resistors (T3, L43, L44, L45, C80, C81, C82, R40, R41, R42, R43).....
		13126	Volume Control—Phonograph volume control and switch (R39, S8).....

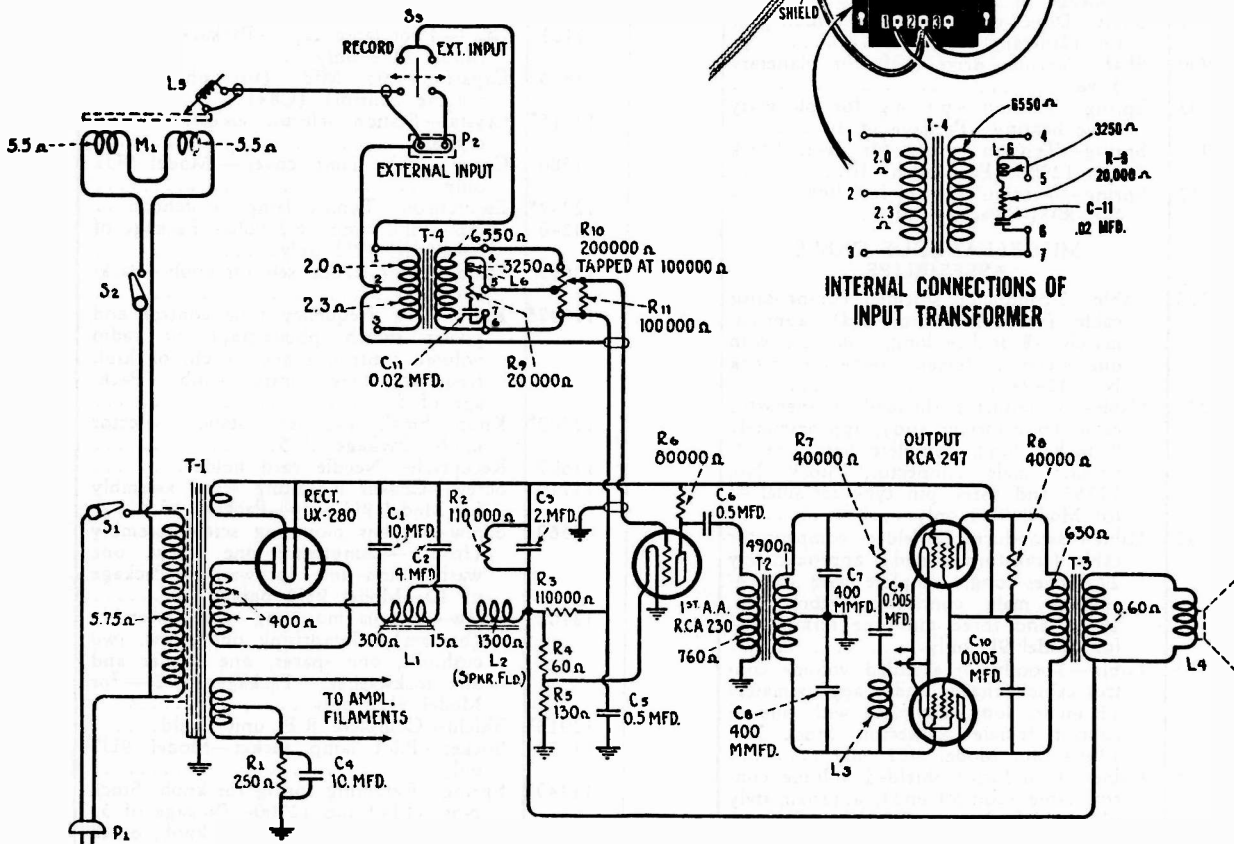
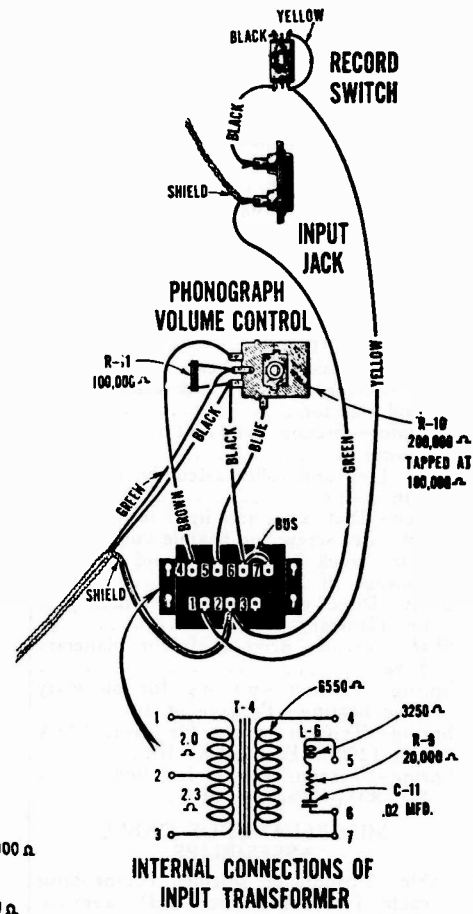
MODEL CRD-9 (A. C. Operated)

RECORD DEMONSTRATOR

INTRODUCTION

This electric phonograph model provides high quality reproduction of phonograph records for store demonstration purposes. It is arranged for manual operation from behind the counter. Jacks are provided for connecting to an external source of audio input, such as an automatic record changer. A transfer switch permits quick change-over from the demonstrator pickup to the external source.

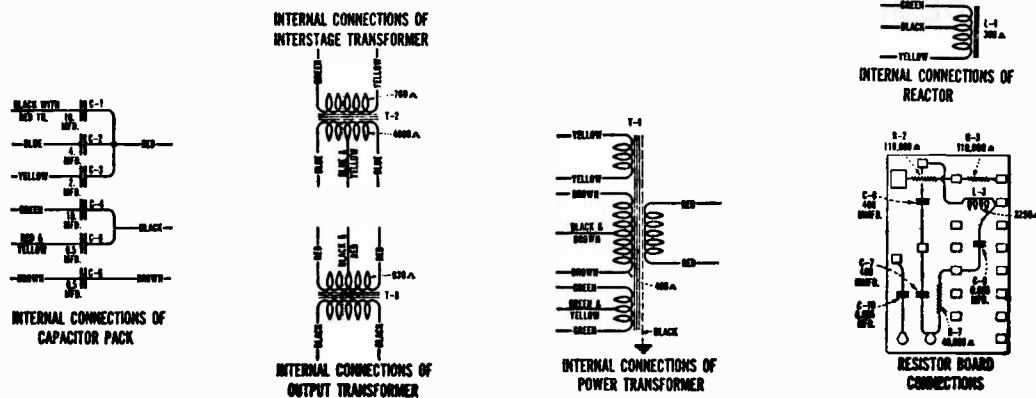
The volume control is equipped with a locking device for limiting the loudspeaker output to the desired maximum. This adjustment is set at the factory in accordance with the customer's specifications. The locking device can be re-adjusted by the customer to meet special conditions.



-Schematic Circuit

Radiotron No.	Filament to Control Grid	Filament to Screen Grid	Filament to Plate	Plate Current M. A.	Filament Volts
RCA-230-A. F.	4.5	—	260	2.0	2.0
RCA-247-Pwr.	17.0	260	250	30.0	2.5
RCA-247-Pwr.	17	260	250	30.0	2.5
UX-280-Rect.					

375 volts each plate—80 M. A. total current



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	PICKUP, ARM AND TURNTABLE ASSEMBLIES				
3385	Coil—Pickup coil.....		3476	Cable—Shielded two conductor cable—Approximately 13½ inches long.....	
3386	Cover—Pickup cover.....		3479	Capacitor — 0.005 mfd. — Located nearest choke coil on resistor board.....	
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut, and one washer—Package of 10.....		3481	Coil—Choke coil—Located on resistor board	
3388	Screw—Pickup needle holding screw—Package of 10.....		7270	Reactor—Filter reactor.....	
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....		7458	Resistor—Flat type—440 ohms—Tapped at 60, 130 and 250 ohms—Complete with mounting rivets.....	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....		7568	Transformer assembly—Comprising interstage and output transformer in metal container.....	
3417	Armature—Pickup armature.....		7569	Capacitor pack—Comprising two 10.0 mfd., one 4.0 mfd., one 2.0 mfd. and two 0.5 mfd.....	
3418	Cushions—Pickup rubber cushions—Comprising one damper, two spacer cushions and one damper bushing—Package of 5 sets.....		8900	Transformer—Power transformer.....	
3419	Screw—Pickup cover mounting screw—Package of 10.....			MOTOR ASSEMBLIES	
6335	Pickup—Pickup unit complete.....		3398	Motor mounting assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer—One set.....	
6346	Back—Pickup housing back.....		7389	Rotor and shaft for 105–125 volts—60 cycle motor.....	
7084	Cover—Suede cover for turntable.....		8966	Motor—Motor complete—105–125 volts—60 cycles.....	
7530	Arm—Pickup arm complete—Leas escutcheon, pickup, pickup mounting screw, nut and washer.....		8967	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....	
8968	Turntable complete.....			MISCELLANEOUS PARTS	
	AMPLIFIER ASSEMBLIES		2761	Jack—Twin jack with mounting screws.....	
2882	Socket—5 contact Radiotron socket complete with insulator.....		3101	Switch—Phonograph switch—Double pole, single throw—Toggle type—Located on upper left side of cabinet.....	
2968	Socket—4 contact Radiotron socket complete with insulator—For Radiotron UX-280.....		3118	Resistor—100,000 ohms—Carbon type—¼ watt—Package of 5.....	
3032	Socket—4 contact Radiotron socket complete with insulator—For Radiotron RCA-230.....		6288	Knob—Volume control knob—Package of 5	
3045	Resistor—40,000 ohms—Carbon type—1 watt—Package of 5.....		6292	Switch—Motor switch—Single pole, single throw—Toggle type.....	
3085	Capacitor—400 mmfd.—Located on resistor board.....		6384	Volume control—Complete with mounting washer and nut.....	
3099	Capacitor—0.005 mfd.—Located on resistor board.....		7054	Cord—Power cord.....	
3295	Resistor—110,000 ohms—Carbon type—½ watt—Package of 5.....			REPRODUCER ASSEMBLIES	
3297	Resistor—80,000 ohms—Carbon type—1 watt—Package of 5.....		3483	Bolt—Reproducer mounting bolt assembly—Comprising 2 hook bolts, 2 washers, 2 lock washers and 2 nuts.....	
3475	Switch—Phonograph and amplifier switch—Single pole, single throw—Toggle type.....		6382	Transformer—Input transformer.....	
			8916	Cone—Reproducer cone—Package of 5.....	
			9423	Coil assembly—Comprising field coil, magnet and cone support.....	

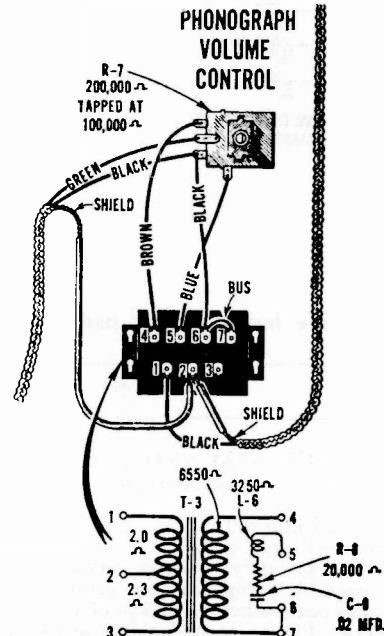
MODEL CRD-9 (DC) (Direct Current Model)

RECORD DEMONSTRATOR

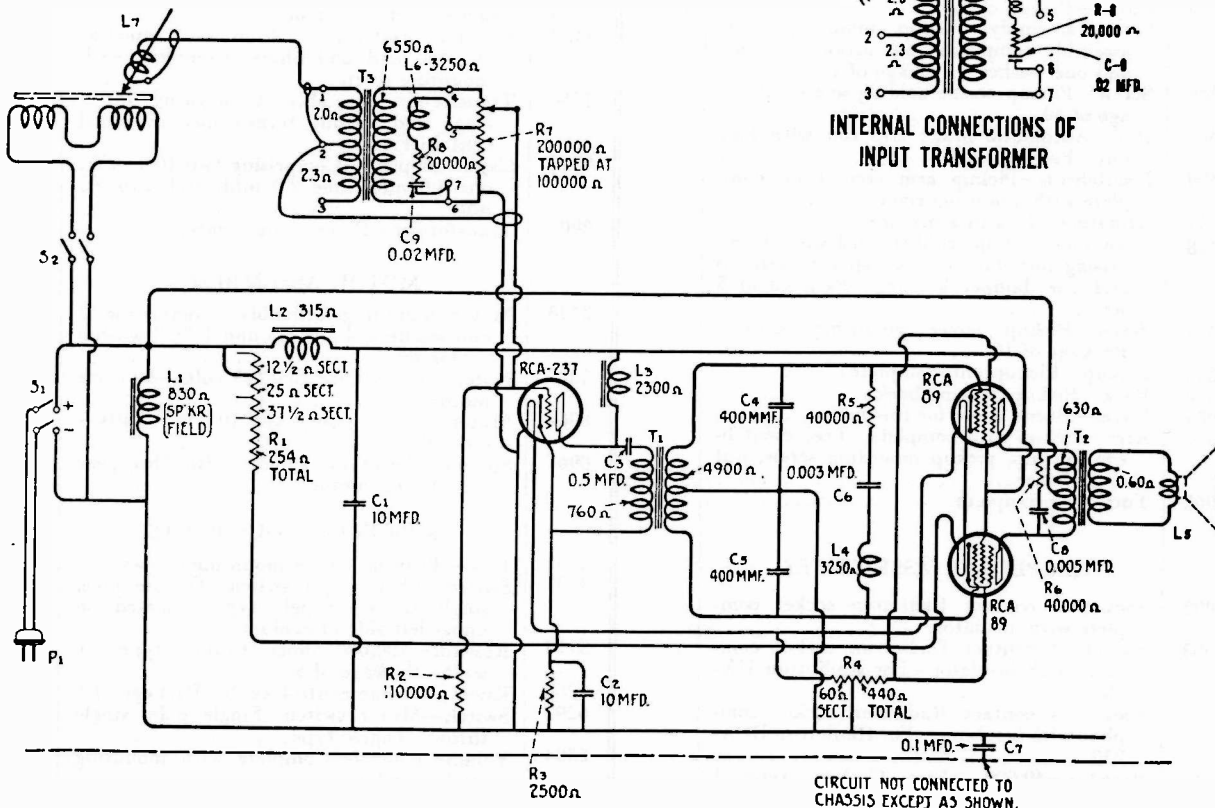
INTRODUCTION

This electric phonograph model provides high quality reproduction of phonograph records for store demonstration purposes. It is arranged for manual operation from behind the counter.

The volume control is equipped with a locking device for limiting the loudspeaker output to the desired maximum. This adjustment is set at the factory in accordance with the customer's specifications. The locking device can be re-adjusted by the customer to meet special conditions.

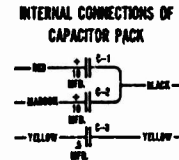
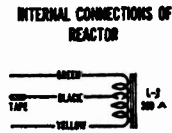
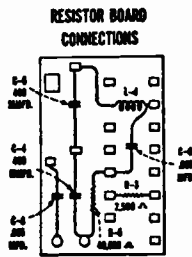


INTERNAL CONNECTIONS OF INPUT TRANSFORMER

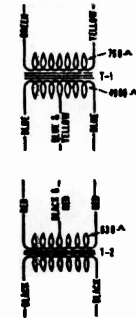


Schematic Circuit Diagram

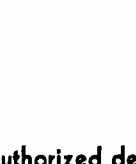
Radiotron No.	Filament to Control Grid, Volts	Filament to Screen Grid, Volts	Filament to Plate, Volts	Plate Current, M. A.	Filament Volts
RCA-237 A. F.	6.0	—	100	2.4	6.3
RCA-89 Pwr.	17.0	93	87	17.0	6.3
RCA-89 Pwr.	17.0	93	87	17.0	6.3



INTERNAL CONNECTIONS OF INTERSTAGE TRANSFORMER



INTERNAL CONNECTIONS OF OUTPUT TRANSFORMER



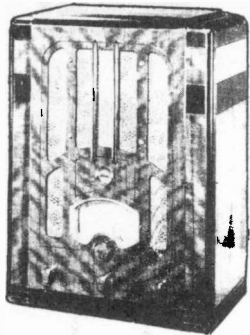
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	PICKUP, ARM AND TURNTABLE ASSEMBLIES				
3385	Coil—Pickup coil.....		7270	Reactor—Filter reactor.....	
3386	Cover—Pickup cover.....		7458	Resistor—Flat type—440 ohms—Tapped at 60, 130 and 250 ohms—Complete with mounting rivets.....	
3387	Screw assembly—Pickup mounting screw assembly—Comprising one screw, one nut, and one washer—Package of 10.....		7485	Socket—Radiotron 6 contact socket.....	
3388	Screw—Pickup needle holding screw—Package of 10.....		7512	Reactor—RCA-237 plate reactor.....	
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....		7568	Transformer—Audio transformer assembly—Comprising interstage and output transformer in metal container.....	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....		7573	Resistor—Filament regulating resistor.....	
3417	Armature—Pickup armature.....		7574	Shield—Filament resistor shield complete.....	
3418	Cushions—Pickup rubber cushions—Comprising one damper, two spacer cushions and one damper bushing—Pkg. of 5 sets.....			MOTOR ASSEMBLIES	
3419	Screw—Pickup cover mounting screw—Package of 10.....		3486	Motor mounting assembly—Comprising 1 washer, 4 spacers, 4 screws, 4 lock washers and 4 nuts.....	
6335	Pickup—Pickup unit complete.....		3487	Governor assembly—Comprising friction disc, two springs, two balls—Assembled and mounted.....	
6346	Back—Pickup housing back.....		3488	Pin—Governor (speed) regulating pin.....	
7084	Cover—Suede cover for turntable.....		3489	Indicator pointer—Speed indicator pointer complete with mounting screws and washers.....	
7530	Arm—Pickup arm complete—Leads escutcheon, pickup, pickup mounting screw, nut and washer.....		6387	Spindle—Turntable spindle with fibre gear.....	
8968	Turntable complete.....		6388	Rotor—Rotor and shaft.....	
	AMPLIFIER ASSEMBLIES		8970	Motor—D. C. 110 volt motor complete.....	
2882	Socket—Radiotron 5 contact socket.....			REPRODUCER ASSEMBLIES	
3045	Resistor—40,000 ohms—Carbon type—1 watt—Package of 5.....		3483	Bolt—Reproducer mounting bolt assembly—Comprising 2 hook bolts, 2 washers, 2 lock washers and 2 nuts.....	
3085	Capacitor—400 mmfd.—Located on resistor board.....		6382	Transformer—Input transformer.....	
3099	Capacitor—0.005 mfd.—Located on resistor board.....		8916	Cone—Reproducer cone—Package of 5.....	
3295	Resistor—110,000 ohms—Carbon type—½ watt—Package of 5.....		9424	Coil assembly—Comprising field coil, magnet and cone support.....	
3476	Cable—Shielded two conductor cable—Approximately 13½" long.....			MISCELLANEOUS PARTS	
3478	Resistor—254 ohms—Porcelain type—Tapped at 12.5, 12.5, 12.5 and 216.5 ohms.....		3118	Resistor—100,000 ohms—Carbon type—¼ watt—Package of 5.....	
3480	Capacitor—0.1 mfd.....		3484	Switch—Power or motor switch—Double pole, single throw—Toggle type.....	
3481	Coil—Choke coil—Located on resistor board.....		6288	Knob—Volume control knob—Package of 5.....	
3482	Capacitor—0.003 mfd.—Located on resistor board.....		6384	Volume control complete with mounting washer and nut.....	
6383	Capacitor pack—Comprising two 10.0 mfd. and one 0.5 mfd. capacitors in metal container.....		7054	Cord—Power cord.....	

MODELS T9-7 and T9-8

Nine-Tube, Three-Band, A-C, D-C, Superheterodyne Receiver



MODELS T 9-7 & T 9-8

NOTE: (Power Supply Rating) As shipped from the factory, all instruments are connected for operation on a 200-250-volt supply line. They may be converted for operation at 140-160 volts by connecting a jumper between points shown by dotted line on resistor R-19

NOTE: On a-c and d-c circuits of 160 volts or less, the action of the "Magic Eye" will be limited.

Electrical Specifications

FREQUENCY RANGES Model T9-7

Band A	540- 1,600 kc.
Band B	1,600- 5,500 kc.
Band C	5,500-18,000 kc.

ALIGNMENT FREQUENCIES

Band A.....	600 kc. (osc.), 1,400 kc. (osc., det., ant.)
Band B.....	None required
Band C.....	18,000 kc. (osc., det., ant.)

Intermediate Frequency460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7.....Radio-Frequency Amplifier
- (2) RCA-6A8.....First Detector-Oscillator
- (3) RCA-6K7.....Intermediate Amplifier
- (4) RCA-6H6.....Second Detector-A.V.C.

POWER SUPPLY RATINGS

Rating (As shipped from Factory)	200-250 Volts, 40-100 Cycles, also D-C, 110 Watts
Rating (See note in text)	140-160 Volts, 40-100 Cycles, also D-C, 50 Watts

POWER OUTPUT (250-Volt Line)

Undistorted	2.25 Watts A-C, 1.75 Watts D-C
Maximum	3.00 Watts A-C, 2.30 Watts D-C

LOUDSPEAKER

TypeElectrodynamic

FREQUENCY RANGES Model T9-8

Band X	155- 320 kc
Band A	530- 1,500 kc
Band C	5,400-18,000 kc.

ALIGNMENT FREQUENCIES

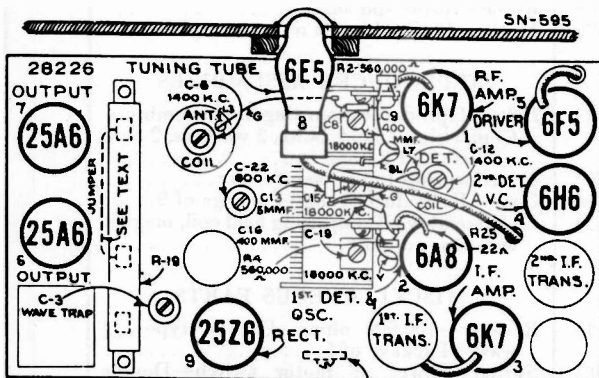
Band X....	180 kc. (osc.), 300 kc. (osc., det., ant.)
Band A....	600 kc. (osc.), 1,400 kc. (osc., det., ant.)
Band C.....	18,000 kc. (osc., det., ant.)

- (5) RCA-6F5.....Audio Voltage Amplifier
- (6) RCA-25A6.....Audio Power Amplifier
- (7) RCA-25A6.....Audio Power Amplifier
- (8) RCA-6E5.....Tuning Indicator
- (9) RCA-25Z6.....Half-Wave Rectifier

POWER OUTPUT (160-Volt Line)

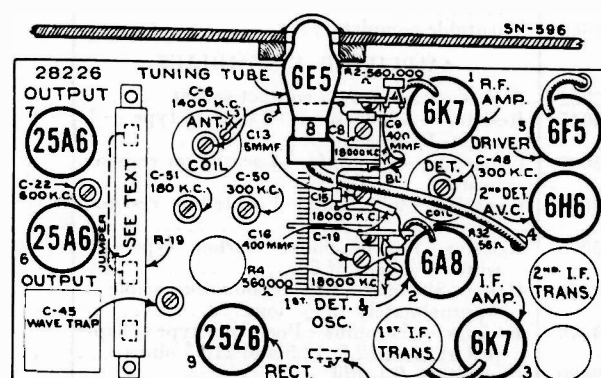
Undistorted	0.90 Watts A-C, 0.75 Watts D-C
Maximum	1.25 Watts A-C, 0.95 Watts D-C

Voice Coil Impedance.....2.25 Ohms at 400 Cycles



1400 K.C. OSC. (C-20) ADJ. CENTER REAR OF CHASSIS.
MODEL T9-7

Radiotron, Coil and Trimmer Locations



1400 K.C. OSC. (C-20) ADJ. CENTER REAR OF CHASSIS
MODEL T9-8

Radiotron, Coil and Trimmer Locations

T9-7 & T9-8

Alignment Procedure T9-7

With tuning condenser fully meshed set pointer to coincide with the 530 calibration of Band A scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	C28 C27 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C26 C24 1st I-F Trans.
3	Antenna in series with 200 mmfd			C45 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	18000 Kc	18 Mc "C" Band	C19 [†] C15 [▲] C8 Osc. R-F Ant.
5	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "A" Band	C20 C49 C6 Osc. R-F Ant.
6		600 Kc	600 Kc "A" Band	C22 L-F Osc. Rock Gang
7		300 Kc	300 Kc "X" Band	C50 C48 C55 Osc. R-F Ant.
8		180 Kc	180 Kc "X" Band	C51 L-F Osc. Rock Gang
9	Repeat Step 4, 5 & 7			

Osc. tracks 460 Kc above signal on Bands A & X.

Osc. tracks 460 Kc below signal on Band C.

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG.

Replacement Parts MODEL T9-7

Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES	
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3
12066	Board—Terminal board assembly and link
12068	Cable—Tuning tube cable and socket
11465	Capacitor—Adjustable capacitor—(C22)
12077	Capacitor—5 Mmfd.—(C13)
11291	Capacitor—115 Mmfd.—(C17)
11623	Capacitor—175 Mmfd.—(C35)
11290	Capacitor—400 Mmfd.—(C5, C9, C16)
12076	Capacitor—3.450 Mmfd.—(C10)
4868	Capacitor—.005 Mfd.—(C37)
5148	Capacitor—.07 Mfd.—(C33)
4858	Capacitor—.01 Mfd.—(C1, C2)
11395	Capacitor—.01 Mfd.—(C32)
5196	Capacitor—.035 Mfd.—(C38)
4836	Capacitor—.05 Mfd.—(C30)
12078	Capacitor—.05 Mfd.—(C34, C42)
12480	Capacitor—.05 Mfd.—(C43)
5170	Capacitor—0.25 Mfd.—(C4, C25)
4885	Capacitor—0.1 Mfd.—(C21)
4841	Capacitor—0.1 Mfd.—(C31)

STOCK No.	DESCRIPTION
12055	Capacitor Pack—Comprising 2 sections of 16 Mfd.—(C39, C40)
12056	Capacitor Pack—Comprising 1 section of 16 Mfd. and one section of 10 Mfd.—(C36, C41)
11600	Coil—Antenna coil—(L2, L3, L4, L5, C6, R1)
12059	Coil—Detector coil—(L6, L7, L8, L9, C11, C12)
11602	Coil—Oscillator coil—(L10, L11, L12, L13, L14, L15, C20, C23)
11385	Condenser—3-gang variable tuning condenser—(C7, C8, C14, C15, C18, C19)
12057	Dial—Station selector dial
11394	Foot—Chassis foot and bracket assembly—Package of 2
11893	Indicator—Station selector indicator pointer
4340	Lamp—Dial lamp—Package of 5
12053	Resistor—Line resistor—Comprising one 265-ohm and one 105-ohm sections—(R19)
12058	Resistor—Comprising 2 sections of 100 ohms and one section of 490 ohms—(R17, R23, R24)
11624	Resistor—22 ohms—flexible type—complete with contact cap—(R25)
11956	Resistor—39 ohms—carbon type—1/2 watt—(R22)—Package of 5
12074	Resistor—40 ohms—flexible type—(R20)
11296	Resistor—330 ohms—carbon type—1/4 watt—(R14)—Package of 5
11324	Resistor—560 ohms—carbon type—1/4 watt—(R3)—Package of 5
3047	Resistor—1,500 ohms—carbon type—1/2 watt—(R21)—Package of 5
3219	Resistor—18,000 ohms—carbon type—1/2 watt—(R6)—Package of 5
11400	Resistor—27,000 ohms—carbon type—1/4 watt—(R12)—Package of 5
12073	Resistor—47,000 ohms—carbon type—1 watt—(R15)—Package of 5
11281	Resistor—100,000 ohms—carbon type—1/10 watt—(R5)—Package of 5
12355	Resistor—120,000 ohms—carbon type—1/10 watt—(R16)—Package of 5
11397	Resistor—560,000 ohms—carbon type—1/10 watt—(R2, R4)—Package of 5
11626	Resistor—2.2 megohms—carbon type—1/4 watt—(R9, R10)—Package of 5
12072	Resistor—2.7 megohms—carbon type—1/4 watt—(R11)—Package of 5
11603	Shield—Antenna or detector coil shield for Stock Nos. 11600 and 12059
11390	Shield—Intermediate frequency transformer shield
11604	Shield—Oscillator coil shield for Stock No. 11602
3529	Socket—Dial lamp socket
11198	Socket—7-contact Radiotron socket
11196	Socket—8-contact 6A8 Radiotron socket
12054	Switch—Range switch (S1)
11392	Switch—Tone control and power switch assembly (S2, S3)
5238	Terminal—Antenna terminal board with clip insulating strip and rivets
11976	Terminal—Ground terminal clip assembly
11388	Transformer—First intermediate frequency transformer—(L16, L17, C24, C26)
11389	Transformer—Second intermediate frequency transformer—(L18, L19, C27, C28, C29, R7, R8)
12081	Transformer—Interstage transformer—(T1)
11391	Trap—Wave trap (L1, C3)
11237	Volume Control—(R13)
	Reproducer & Misc. as for T9-8.

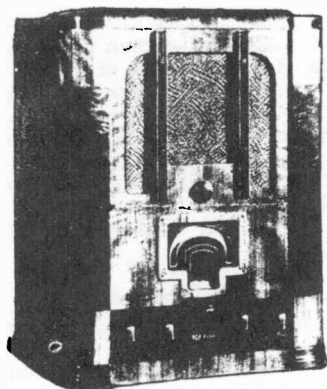
T9-7 & T9-8

Replacement Parts MODEL T9-8

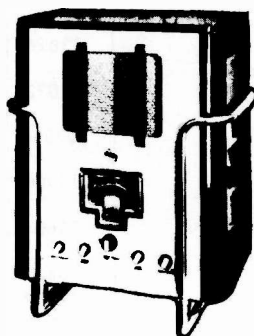
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
5237	Bushing—Variable tuning condenser mounting bushing assembly—Package of 3		11626	Resistor—2.2 megohms—carbon type— $\frac{1}{4}$ watt—(R9, R10)—Package of 5	
12066	Board—Terminal board assembly and link		12072	Resistor—2.7 megohms—carbon type— $\frac{1}{4}$ watt—(R11)—Package of 5	
12068	Cable—Tuning tube cable and socket		12064	Shield—Antenna or detector coil shield—for stock Nos. 12061 and 12062	
11256	Capacitor—Adjustable capacitor—(C50)		11390	Shield—Intermediate frequency transformer shield	
11465	Capacitor—Adjustable capacitor—(C22)		11604	Shield—Oscillator coil shield for Stock No. 12063	
12065	Capacitor—Adjustable capacitor—(C51)		3529	Socket—Dial lamp socket	
12077	Capacitor—5 Mmfd.—(C13)		11198	Socket—7-contact Radiotron socket	
11291	Capacitor—115 Mmfd.—(C17)		11196	Socket—8-contact 6A8 Radiotron socket	
11623	Capacitor—175 Mmfd.—(C35, C47)		12060	Switch—Range switch	
11290	Capacitor—400 Mmfd.—(C9, C16)		11392	Switch—Tone control and power switch assembly (S2, S3)	
11621	Capacitor—3,600 Mmfd.—(C10)		5238	Terminal—Antenna terminal board with clip insulation strip and rivets	
4868	Capacitor—.005 Mfd.—(C46, C52)		11976	Terminal—Ground terminal clip assembly	
5148	Capacitor—.007 Mfd.—(C33)		11388	Transformer—First intermediate frequency transformer—(L16, L17, C24, C26)	
4858	Capacitor—.01 Mfd. (C1, C2, C53, C54)		11389	Transformer—Second intermediate frequency transformer—(L18, L19, C27, C28, C29, R7, R8)	
11395	Capacitor—.01 Mfd.—(C32)		12081	Transformer—Interstage transformer—(T1)	
5196	Capacitor—.035 Mfd.—(C38)		11667	Trap—Wave trap—(L1, C45)	
4836	Capacitor—.05 Mfd.—(C30)		11237	Volume Control—(R13)	
12078	Capacitor—.05 Mfd.—(C34, C42)			REPRODUCER ASSEMBLIES	
12480	Capacitor—.05 Mfd.—(C56)		11232	Board—Terminal board with two lead wire clips	
5170	Capacitor—0.25 Mfd.—(C4, C25, C57)...		11231	Bolt—Yoke and core assembly bolt and nut	
4835	Capacitor—0.1 Mfd.—(C21)		8060	Bracket—Output transformer mounting bracket	
4841	Capacitor—0.1 Mfd.—(C31)		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
12055	Capacitor Pack—Comprising 2 sections of 16 Mfd.—(C39, C40)		12079	Coil—Field coil—(L22)	
12056	Capacitor Pack—Comprising 1 section of 16 Mfd. and one section of 10 Mfd.—(C36, C41)		11233	Coil—Neutralizing coil—(L20)	
12061	Coil—Antenna coil—(L2, L3, L4, L5, L23, C6, C55)		11235	Cone—Reproducer cone—(L21)—Package of 5	
12062	Coil—Detector coil—(L6, L7, L8, L9, L15, C48, C49)		5040	Connector—4-contact female connector for reproducer cable	
12063	Coil—Oscillator coil (L10, L11, L12, L13, L14, C20)		5039	Connector—4-contact male connector for reproducer	
12067	Condenser—3-gang variable tuning condenser—(C7, C8, C14, C15, C18, C19)		9643	Reproducer—Complete	
12131	Dial—Station selector dial scale		12080	Transformer—Output transformer—(T2)	
11394	Foot—Chassis foot and bracket assembly—Package of 2		11886	Washer—Spring washer—used to hold field coil assembly—Package of 5	
11893	Indicator—Station selector indicator pointer			MISCELLANEOUS ASSEMBLIES	
4340	Lamp—Dial lamp—Package of 5		11996	Clamp—Tuning tube mounting bracket and clamp assembly	
12053	Resistor—Line resistor—Comprising one 265-ohm and one 105-ohm sections—(R19)		11276	Escutcheon—Tuning tube escutcheon	
12058	Resistor—Comprising 2 sections of 100 ohms and one section of 490 ohms—(R17, R23, R24)		11376	Escutcheon—Station selector escutcheon and crystal	
11956	Resistor—39 ohms—carbon type— $\frac{1}{2}$ watt—(R22)—Package of 5		11582	Knob—Range switch knob—Package of 5	
12074	Resistor—40 ohms—flexible type—(R20)		11610	Knob—Station selector knob assembly—Comprising 1 large and 1 small knob—Package of 5	
12075	Resistor—56 ohms—flexible type, complete with contact cap—(R32)		11347	Knob—Volume control or power switch knob—Package of 5	
12071	Resistor—120 ohms—carbon type— $\frac{1}{4}$ watt—(R33)—Package of 5		11382	Resistor—1 megohm—carbon type— $\frac{1}{10}$ watt—(R18)—Package of 5	
11296	Resistor—330 ohms—carbon type— $\frac{1}{4}$ watt—(R14)—Package of 5		11377	Screw—Chassis mounting screw assembly—Package of 4	
3047	Resistor—1,500 ohms—carbon type— $\frac{1}{2}$ watt—(R21)—Package of 5		11381	Socket—Tuning tube socket and cover	
3219	Resistor—18,000 ohms—carbon type— $\frac{1}{2}$ watt—(R6)—Package of 5		11349	Spring—Retaining spring for knob Stock Nos. 11347 and 11582 and small knob in No. 11610—Package of 5	
12070	Resistor—18,000 ohms—carbon type— $\frac{1}{10}$ watt—(R30, R31)—Package of 5		4982	Spring—Retaining spring for large knobs—for Stock No. 11610—Package of 10	
11400	Resistor—27,000 ohms—carbon type— $\frac{1}{4}$ watt—(R12)—Package of 5				
12073	Resistor—47,000 ohms—carbon type—1 watt—(R15)—Package of 5				
11281	Resistor—100,000 ohms—carbon type— $\frac{1}{10}$ watt—(R5)—Package of 5				
12355	Resistor—120,000 ohms—carbon type— $\frac{1}{10}$ watt—(R16)—Package of 5				
11397	Resistor—560,000 ohms—carbon type— $\frac{1}{10}$ watt—(R2, R4)—Package of 5				

MODELS 10T, 10K, 10T11 & 10K11

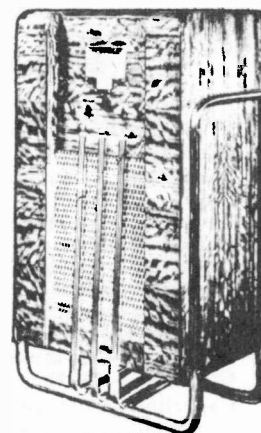
Ten-Tube, Five-Band, A-C, Superheterodyne Receivers



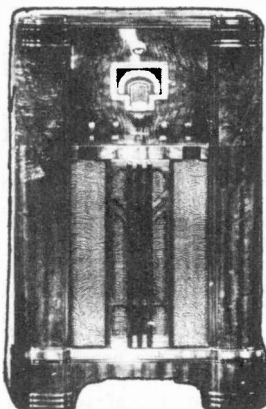
MODEL 10T



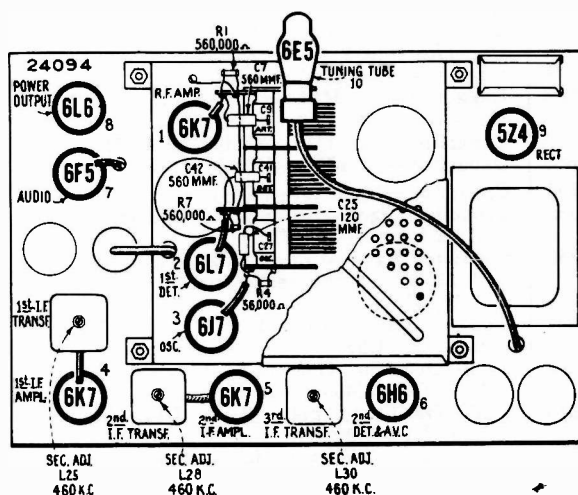
MODEL 10T11



MODEL 10K11



MODEL 10K



-Radiotron and I-F Trimmer Locations

SEE INDEX LISTING "MAGIC BRAIN"
FOR ADDITIONAL DATA.

Electrical Specifications

FREQUENCY RANGES

- "Long Wave" (X)..... 150-410 kc
- "Standard Broadcast" (A)..... 530-1,800 kc
- "Medium Wave" (B)..... 1,800-6,400 kc
- "Short Wave" (C)..... 6,400-23,000 kc
- "Ultra Short Wave" (D)..... 23,000-60,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... R-F Amplifier
- (2) RCA-6L7..... First Detector
- (3) RCA-6J7..... Oscillator
- (4) RCA-6K7..... First I-F Amplifier
- (5) RCA-6K7..... Second I-F Amplifier

Pilot Lamps (4)..... Mazda No. 46, 6 3 volts, 0.25 ampere

POWER SUPPLY RATINGS

- Rating A..... 105-125 volts, 50-60 cycles, 120 watts
- Rating B..... 105-125 volts, 25-60 cycles, 120 watts
- Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 120 watts

POWER OUTPUT

- Undistorted..... 5 watts
- Maximum..... 9 watts

ALIGNMENT FREQUENCIES

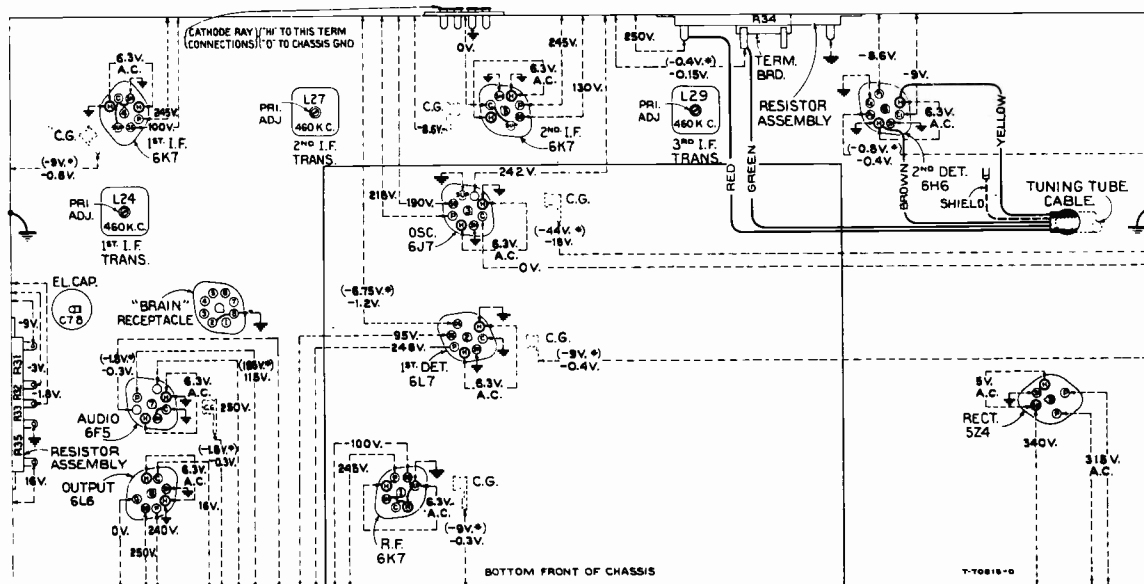
- "Long Wave" (X)..... 175 kc (osc.), 350 kc (osc., det., ant.)
- "Standard Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc., det., ant.)
- "Medium Wave" (B)..... 6,000 kc (osc., det., ant.)
- "Short Wave" (C)..... 20,000 kc (osc., det., ant.)
- "Ultra Short Wave" (D)..... 57,000 kc (osc., det., ant.)

- (6) RCA-6H6..... Second Detector and A.V.C.
- (7) RCA-6F5..... Audio Voltage Amplifier
- (8) RCA-6L6..... Power Output
- (9) RCA-5Z4..... Full-Wave Rectifier
- (10) RCA-6E5..... Tuning Tube

LOUDSPEAKER

- Type..... Electrodynamic
- Impedance (v.c.)..... 3.4 ohms at 400 cycles

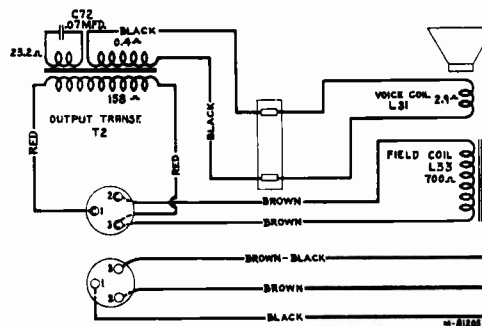
10T, 10K, 10T11 & 10K11



—Radiotron Socket Voltages, Coil, and I-F Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to a approximately 1,000 kc—No signal being received—Volume control minimum—Fidelity control counter-clockwise

Note: Two voltage values are shown for some readings. The value shown in parenthesis 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 parenthesis because of the additional loading of the voltmeter through the high series circuit resistance.*



Loudspeaker Wiring

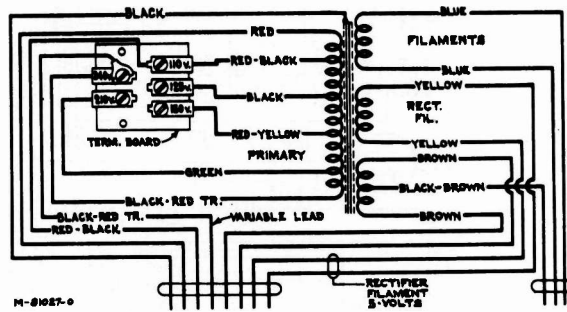
Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6K7—R-F 4.6 ma.
 - (2) RCA-6L7—1st Det. 3.0 ma.
 - (3) RCA-6J7—Osc. 6.0 ma.
 - (4) RCA-6K7—1st I.F. 5.0 ma.
 - (5) RCA-6K7—2nd I.F. 7.0 ma.
 - (6) RCA-6H6—2nd Det.—A.V.C. —
 - (7) RCA-6F5—A.F. 0.3 ma.
 - (8) RCA-6L6—Power 65 ma.
 - (9) RCA-5Z4—Rect. 110 ma.*
 - (10) RCA-6E5—Eye 3.0 ma.
- (* Cannot be measured at socket)

SERVICE HINTS

- (1) Excessive heating of the 6E5 tube may be due to high cathode current—in excess of 7 ma. The tube should be replaced and the condition of the 5Z4 rectifier checked.
- (2) Low sensitivity or intermittent operation may be caused by C-48 or C-88 developing low-resistance leakage. Check both capacitors and replace if found defective.
- (3) Low sensitivity around 15—16 megacycles may be caused by dirty or poor contact of grounding finger on S-8.



Primary resistance—10.1 ohms total
Secondary resistance—266 ohms total

—Universal Transformer

10T, 10K, 10T11 & 10K11

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
12863	Board—Phonograph input terminal board.		11323	Resistor—270,000 ohms—carbon type, 1/4 watt (R27)—Package of 5.....	
4427	Bracket—Volume control mounting bracket.		11172	Resistor—470,000 ohms—carbon type, 1/4 watt (R25, R28)—Package of 5.....	
12987	Bracket—Band changeover switch bracket.		12013	Resistor—1.0 megohm—carbon type, 1/10 watt—Located in tuning tube socket (R11)—Package of 5.....	
12985	Cable—Tuning lamp cable and socket...		11626	Resistor—2.2 megohm—carbon type, 1/4 watt (R18)—Package of 5.....	
12991	Cable—3-conductor shielded fidelity control cable, approximately 7 1/4 inches long.....		12874	Resistor—3.3 megohm—carbon type, 1/4 watt (R20, R21)—Package of 5.....	
12511	Cap—Grid contact cap—Package of 5...		12870	Scale—Vernier dial scale.....	
12948	Capacitor—33 Mmfd. (C62).....		12008	Shield—Intermediate frequency transformer shield.....	
12629	Capacitor—56 Mmfd. (C60).....		12607	Shield—1st or 2nd I.F. transformer shield top.....	
12404	Capacitor—120 Mmfd. (C56, C57).....		12581	Shield—3rd I.F. transformer shield top...	
12724	Capacitor—120 Mmfd. (C67).....		11195	Socket—5-contact 5Z4 Radiotron socket.	
13022	Capacitor—390 Mmfd. (C45, C47, C51, C53).....		11198	Socket—7-contact 6K7, 6L6 or 6H6 Radiotron socket.....	
5148	Capacitor—.007 Mfd. (C69).....		13095	Socket—Upper left or lower right hand dial lamp socket.....	
4858	Capacitor—.01 Mfd. (C46, C48, C50, C54, C55, C58, C68).....		11222	Socket—Upper right or lower left hand dial lamp socket.....	
4624	Capacitor—.01 Mfd. (C59).....		11381	Socket—Tuning tube socket and cover...	
11315	Capacitor—.015 Mfd. (C71).....		11196	Socket—Voltage supply or 6F5 Radiotron socket.....	
4886	Capacitor—.05 Mfd. (C70).....		12007	Spring—Retaining spring for core in I.F. transformer—Package of 10.....	
4836	Capacitor—.05 Mfd. (C61).....		12986	Stud—Band indicator operating arm stud—Package of 5.....	
4841	Capacitor—.01 Mfd. (C52).....		12860	Switch—Low frequency tone and power switch (S4, S6).....	
5170	Capacitor—.025 Mfd. (C49).....		12988	Switch—Bias switch (S7).....	
4840	Capacitor—.025 Mfd. (C63).....		12979	Tone Control—High frequency tone and fidelity control (R29, S5).....	
12741	Capacitor—.05 Mfd. (C74).....		12981	Transformer—First intermediate frequency transformer (L24, L25, L26, C45, C47)	
5212	Capacitor—18 Mfd. (C78).....		12990	Transformer—Second intermediate frequency transformer (L27, L28, C51, C53).....	
12872	Capacitor—20 Mfd.—Used in 60-cycle model only (C76).....		12982	Transformer—Third intermediate frequency transformer (L29, L30, C56, C57, C60, R17, R19).....	
12467	Capacitor—30 Mfd. (C73, C75).....		12856	Transformer—Power transformer, 105-125 volts, 50/60 cycles (T1).....	
12873	Capacitor Pack—Comprising one 20-Mfd. and one 3-Mfd. capacitor, 25-cycle model only (C76, C77).....		12857	Transformer—Power transformer, 105-125 volts, 25/60 cycles.....	
12978	Compensator Pack—Comprising one .015-Mfd., one .035-Mfd., and one 0.1-Mfd. capacitor and one 3,900-ohm, one 8,200-ohm and one 27,000-ohm resistor (C64, C65, C66, R23, R24, R26).....		12858	Transformer—Power transformer, 110-125-150-210-240 volts, 40/60 cycles.....	
12006	Core—Core and stud assembly for intermediate frequency transformer.....		12861	Volume Control (R22).....	
12866	Foot—Chassis foot assembly—Package of 2.....		MAGIC BRAIN UNIT ASSEMBLIES		
5226	Lamp—Pilot lamp—Package of 5.....		12806	Board—3-contact antenna and ground terminal board.....	
12868	Link—Link mechanism on band indicator operating arm.....		5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....	
12871	Reactor—Filter reactor (L32).....		12886	Cable—Shielded power cable, approximately 4 inches long, complete with 8-contact male plug.....	
12980	Resistor—Voltage divider resistor—Comprising one 250-ohm, one 17-ohm, one 11-ohm and one 38-ohm sections (R31, R32, R33, R35).....		12511	Cap—Grid contact cap—Package of 5...	
12311	Resistor—1,000 ohms—insulated, 1/4 watt (R11, R16)—Package of 5.....		12714	Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16).....	
11935	Resistor—1,000 ohms—carbon type, 1/10 watt (R14)—Package of 5.....		12884	Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39).....	
13097	Resistor—10,000 ohms—insulated, 1 watt (R30).....		12807	Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37).....	
12876	Resistor—10,000 ohms—wire wound (R10).....		12896	Capacitor—15 Mmfd. (C34).....	
12864	Resistor—17,000 ohms—wire wound resistor (R34).....		12722	Capacitor—18 Mmfd. (C15).....	
11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R17)—Package of 5.....		12891	Capacitor—36 Mmfd. (C40).....	
12875	Resistor—56,000 ohms—carbon type, 1 watt (R13)—Package of 5.....		12629	Capacitor—56 Mmfd. (C24).....	
11365	Resistor—82,000 ohms—carbon type, 1/4 watt (R15)—Package of 5.....				
8064	Resistor—82,000 ohms—carbon type, 1/2 watt (R37)—Package of 5.....				
11281	Resistor—100,000 ohms—carbon type, 1/10 watt (R12)—Package of 5.....				
11398	Resistor—220,000 ohms—carbon type, 1/10 watt (R19)—Package of 5.....				

10T, 10K, 10T11 & 10K11

REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST		
12885	Capacitor—56 Mmfd. (C17)			Models 10T & 10K			
12723	Capacitor—56 Mmfd. (C2, C44)				MISCELLANEOUS ASSEMBLIES		
13307	Capacitor—62 Mmfd. (C11)					11996	Bracket—Tuning lamp bracket and clamp
12724	Capacitor—120 Mmfd. (C25, C28, C29)					12915	Escutcheon—Station selector escutcheon and crystal.....
12725	Capacitor—150 Mmfd. (C1)					12742	Escutcheon—Tuning lamp escutcheon...
12894	Capacitor—180 Mmfd. (C22)					12699	Knob—Large station selector knob—Package of 5.....
12727	Capacitor—555 Mmfd. (C21)					12700	Knob—Small (vernier) station selector knob—Package of 5.....
12537	Capacitor—560 Mmfd. (C7, C26, C33, C42)					11347	Knob—Music-speech and power switch—volume control—range selector or fidelity control knob—Package of 5.....
12898	Capacitor—1,500 Mmfd. (C12)					11377	Screw—Chassis mounting screw assembly—Package of 4 (Model 10T).....
12729	Capacitor—1,550 Mmfd. (C20)					11210	Screw—Chassis mounting screw assembly—Package of 4 (Model 10K).....
12728	Capacitor—4,500 Mmfd. (C19)					12916	Shield—Complete r-f unit top shield....
12897	Capacitor—4,700 Mmfd. (C43)					4982	Spring—Holding spring for station selector or volume control knob, Stock No. 12699—Package of 10.....
4858	Capacitor—.01 Mfd. (C8, C30, C31, C32)					11349	Spring—Retaining spring for knob, Stock Nos. 12700 and 11347—Package of 5.
12879	Coil—Antenna coil and shield, XABC bands (L2, L3, L4, L5, L6)						
12888	Coil—Antenna coil, "D" band (L13, L14)						
12880	Coil—Detector coil and shield, XABC bands (L15, L16, L17, L18, L19, L20)						
12709	Coil—Oscillator coil and shield, ABC bands (L7, L8, L9)						
12881	Coil—Oscillator coil and shield, X band only (L10)						
12890	Coil—Oscillator coil, "D" band (L11, L12, L23)						
12883	Coil—R.F. coil, "D" band (L21, L22)						
12877	Condenser—3-gang variable tuning condenser (C9, C27, C41)						
12887	Connector—8-contact male connector and cover for power cable, Stock No. 12886						
12664	Core—Adjustable core and stud for Stock No. 12654						
12800	Core—Adjustable core and stud for Stock No. 12709						
12882	Core—Adjustable core and stud for Stock No. 12881						
11324	Resistor—560 ohms—carbon type, 1/2 watt (R2)						
5112	Resistor—1,000 ohms—carbon type, 1/2 watt (R3)						
11298	Resistor—5,600 ohms—carbon type, 1 watt (R6)						
3998	Resistor—15,000 ohms—carbon type, 1/2 watt (R5)						
11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R4, R9)						
8064	Resistor—82,000 ohms—carbon type, 1/2 watt (R8)						
11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R7)						
12651	Shield—Coil shield for Stock Nos. 12879, 12880						
12710	Shield—Coil shield for Stock No. 12709					11996	BRACKET - Tuning tube mounting bracket and clamp.
12883	Shield—Coil shield for Stock No. 12881					13274	CRYSTAL - Station selector escutcheon and crystal.
11198	Socket—7-contact 6K7 Radiotron socket					13275	ESCUTCHEON - Tuning tube escutcheon.
11279	Socket—7-contact 6L7 Radiotron socket					13315	KNOB - Large station selector knob for Model 10T11.
12885	Socket—8-contact 6J7 Radiotron socket					13276	KNOB - Large station selector knob for Model 10K11.
12007	Spring—Retaining spring for core, Stock Nos. 12664, 12800, 12882					13277	KNOB - Small (vernier) station selector knob for Model 10K11.
12878	Switch—Range switch and mounting nut (S1, S2, S3)					13316	KNOB - Small (vernier) station selector knob for Model 10T11.
12654	Trap—Wave-trap, complete (L1)					13317	KNOB - Volume control, range switch, H-F tone control or L-F tone control and power switch knob - for Model 10T11.
	DRIVE ASSEMBLIES					13278	KNOB - Volume control, range switch, H-F tone control or L-F tone control and power switch knob - for Model 10K11.
10705	Ball—5/32-inch diameter steel ball for planetary drive					11210	SCREW - Chassis mounting screw assembly for Model 10K11.
10941	Ball—1/4-inch diameter steel ball for planetary drive bearing					11377	SCREW - Chassis mounting screw assembly for Model 10T11.
12904	Bushing—Plate and bushing assembly for planetary drive mounting					12916	SHIELD - Magic brain shield.
12905	Coupling—Flexible coupling and shaft assembly, complete					11349	SPRING - Retaining spring for knob stock 13277, 13278, 13316, 13317.
12909	Dial—Band indicating dial and cam assembly					4982	SPRING - Retaining spring for knob stock 13276, 13315.
12899	Drive—Variable tuning condenser drive, complete, including mounting bracket drive, dial scale and indicator, less vernier dial, Stock No. 12870 and link, Stock No. 12868						
12906	Gear—Anti-lash drive gear, complete						
12910	Gear—Sector gear and link assembly for band selector						
12908	Indicator—Station selector indicator pointer						
8051	Link—Link and roller assembly, complete with spring						
12911	Screen—Dial lamp screen and light diffuser						
4669	Screw—Set screw for flexible coupling or gear, Stock Nos. 12905 and 12906						
12901	Shaft—Direct drive shaft and pinion gear for planetary drive						
12900	Shaft—Vernier drive shaft for planetary drive						
12903	Spring—Tension spring for planetary drive bearing						
12907	Spring—Tension spring for gear, Stock No. 12906						
8052	Spring—Tension spring for link, Stock No. 8051						
	REPRODUCER ASSEMBLIES						
12914	Board—Reproducer terminal board.....						
12640	Bracket—Output transformer mounting bracket and clamp.....						
12912	Coil—Reproducer field coil (L33).....						
13290	Cone—Reproducer cone and dust cap (L31) (Model 10T).....						
13291	Cone—Reproducer cone and dust cap (L31) (Model 10K).....						
5118	Connector—3-contact male connector for speaker leads.....						
9757	Reproducer, complete (Model 10T).....						
9758	Reproducer, complete (Model 10K).....						
13289	Transformer—Output transformer (T2).....						
11886	Washer—Spring washer to hold field coil securely—Package of 5.....						

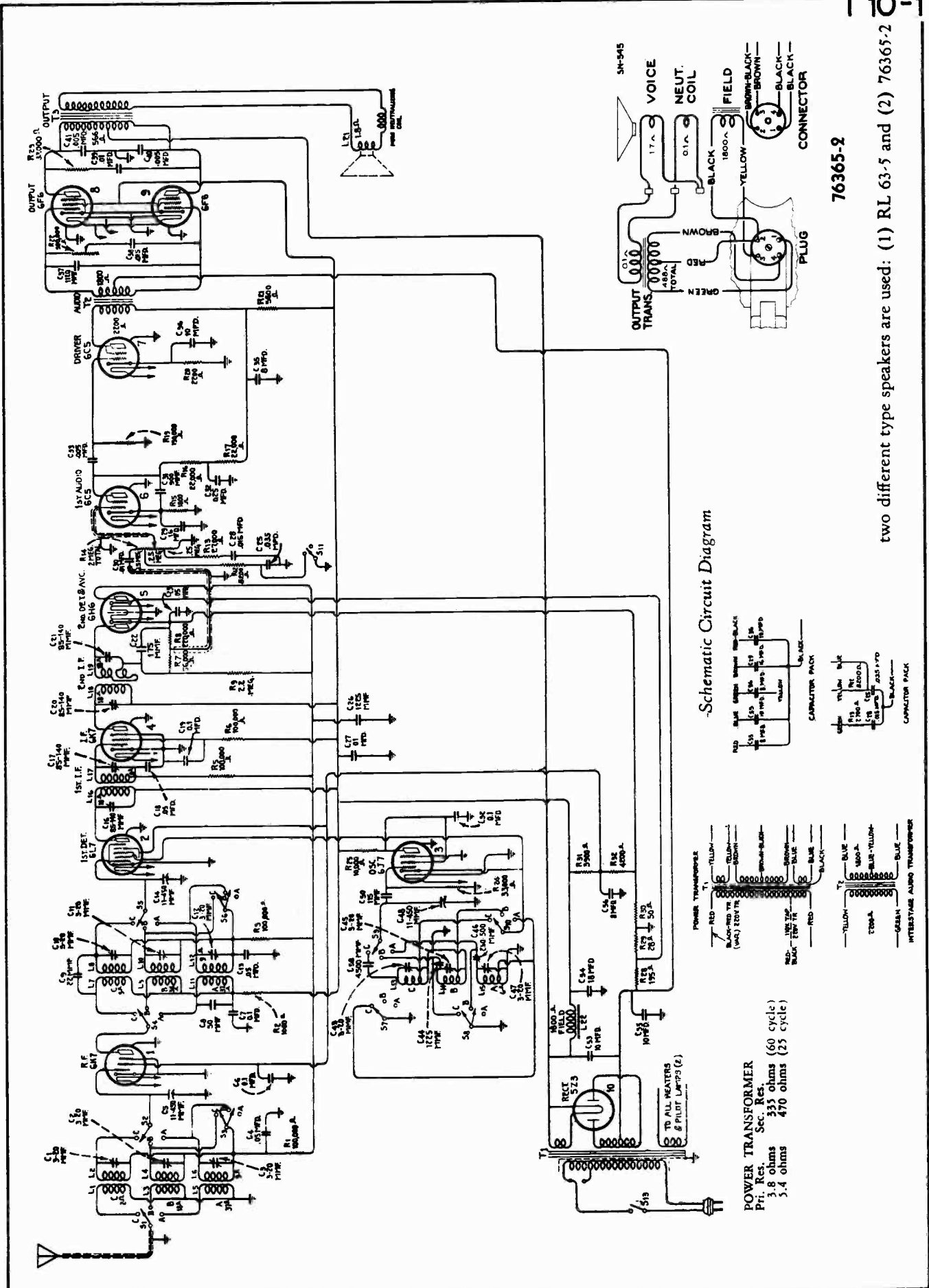
Replacement parts for Models 10K11 and 10T11 identical to Models 10K and 10T except miscellaneous assemblies listed above.

REPLACEMENT PARTS

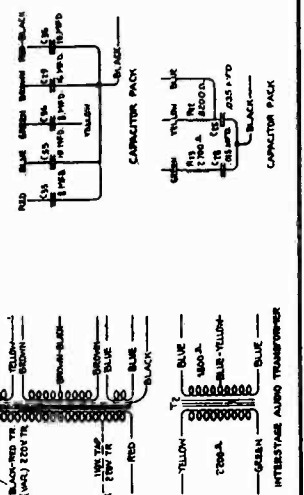
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12863	Board—Phonograph input terminal board	12511	Cap—Grid contact cap
4427	Bracket—Volume control mounting bracket	12714	Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16)
12987	Bracket—Band changeover switch bracket	12884	Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39)
12985	Cable—Tuning lamp cable and socket	12807	Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37)
12991	Cable—3-conductor shielded fidelity control cable, approximately 7 1/4 inches long	12898	Capacitor—15 Mmfd. (C34)
12511	Cap—Grid contact cap	12722	Capacitor—18 Mmfd. (C15)
12948	Capacitor—33 Mmfd. (C82)	12891	Capacitor—36 Mmfd. (C40)
12629	Capacitor—56 Mmfd. (C80)	12629	Capacitor—56 Mmfd. (C24)
12404	Capacitor—120 Mmfd. (C56, C57)	12885	Capacitor—56 Mmfd. (C17)
12724	Capacitor—120 Mmfd. (C87)	12723	Capacitor—56 Mmfd. (C2, C44)
13022	Capacitor—390 Mmfd. (C45, C47, C51, C53)	13307	Capacitor—62 Mmfd. (C11)
13033	Capacitor—.007 Mfd. (C69)	12724	Capacitor—120 Mmfd. (C25, C28, C29)
4858	Capacitor—.01 Mfd. (C46, C48, C50, C52, C54, C55, C58, C68)	12725	Capacitor—150 Mmfd. (C1)
4624	Capacitor—.01 Mfd. (C59)	12894	Capacitor—180 Mmfd. (C22)
11315	Capacitor—.015 Mfd. (C71)	12727	Capacitor—555 Mmfd. (C21)
4886	Capacitor—.05 Mfd. (C70)	12537	Capacitor—560 Mmfd. (C7, C26, C33, C42)
4870	Capacitor—.025 Mfd. (C81)	12898	Capacitor—1,500 Mmfd. (C12)
4840	Capacitor—.025 Mfd. (C49, C63, C79)	12729	Capacitor—1,550 Mmfd. (C20)
12741	Capacitor—.05 Mfd. (C74)	12728	Capacitor—4,500 Mmfd. (C19)
5212	Capacitor—.18 Mfd. (C78)	12897	Capacitor—4,700 Mmfd. (C43)
12467	Capacitor—30 Mfd. (C73, C75)	4858	Capacitor—.01 Mfd. (C8, C30, C31, C32)
13657	Compensator Pack—Comprising one .015-Mfd., one .01-Mfd., one .07-Mfd. capacitors, one 27,000-ohm and one 39,000-ohm resistors (C64, C65, C66, R23, R24)	12879	Coil—Antenna coil and shield, XABC bands (L2, L3, L4, L5, L6)
12006	Core—Core and stud assembly for intermediate frequency transformer	12888	Coil—Antenna coil, "D" band (L13, L14)
12866	Foot—Chassis foot assembly	12880	Coil—Detector coil and shield, XABC bands (L15, L16, L17, L18, L19, L20)
5226	Lamp—Pilot lamp	12709	Coil—Oscillator coil and shield, ABC bands (L7, L8, L9)
12868	Link—Link mechanism on band indicator operating arm	12881	Coil—Oscillator coil and shield, X band only (L10)
12871	Reactor—Filter reactor (L32)	12890	Coil—Oscillator coil, "D" band (L11, L12, L23)
13658	Resistor—Voltage divider—Comprising one 4,700-ohm and one 4,100-ohm sections (R38, R39)	12889	Coil—R.F. coil, "D" band (L21, L22)
13659	Resistor—Voltage divider—Comprising one 285-ohm, one 13-ohm, one 11-ohm and one 35-ohm sections (R31, R32, R33, R35)	12877	Condenser—3-gang variable tuning condenser (C9, C27, C41)
13634	Resistor—100 ohms—wire wound, 4 watt—For 25-cycle model only (R42)	12887	Connector—8-contact male connector and cover for power cable, Stock No. 12886
12311	Resistor—1,000 ohms—insulated, 1/2 watt (R11, R16)	12864	Core—Adjustable core and stud for Stock No. 12664
13030	Resistor—1,000 ohms—carbon type, 1/10 watt (R14)	12800	Core—Adjustable core and stud for Stock No. 12709
13097	Resistor—10,000 ohms—insulated, 1 watt (R30)	12882	Core—Adjustable core and stud for Stock No. 12881
11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R17)	11324	Resistor—560 ohms—carbon type, 1/2 watt (R2)
11365	Resistor—82,000 ohms—carbon type, 1/2 watt (R15)	5112	Resistor—1,000 ohms—carbon type, 1/2 watt (R3)
11281	Resistor—100,000 ohms—carbon type, 1/10 watt (R12)	11298	Resistor—5,600 ohms—carbon type, 1 watt (R6)
11398	Resistor—220,000 ohms—carbon type, 1/10 watt (R19)	3998	Resistor—15,000 ohms—carbon type, 1 watt (R5)
5108	Resistor—330,000 ohms—carbon type, 1/2 watt (R40)	11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R4, R9)
11172	Resistor—470,000 ohms—carbon type, 1/2 watt (R25, R28)	8064	Resistor—82,000 ohms—carbon type, 1/2 watt (R6)
5035	Resistor—560,000 ohms—carbon type, 1/2 watt (R27)	11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R7)
12013	Resistor—1.0 megohm—carbon type, 1/10 watt—Located in tuning tube socket (R36)	12651	Shield—Coil shield for Stock Nos. 12879, 12880
11626	Resistor—2.2 megohm—carbon type, 1/2 watt (R18)	12710	Shield—Coil shield for Stock No. 12709
12974	Resistor—3.3 megohm—carbon type, 1/2 watt (R20)	12883	Shield—Coil shield for Stock No. 12881
13167	Resistor—3.9 megohm—carbon type, 1/2 watt (R41)	11198	Socket—7-contact 6K7 Radiotron socket
12870	Scale—Vernier dial scale	11279	Socket—7-contact 6L7 Radiotron socket
12008	Shield—Intermediate frequency transformer shield	12885	Socket—8-contact 6J7 Radiotron socket
12607	Shield—1st or 2nd I.F. transformer shield top	12007	Spring—Retaining spring for core, Stock Nos. 12664, 12600, 12882
12581	Shield—3rd I.F. transformer shield top	12878	Switch—Range switch and mounting nut (S1, S2, S3)
11195	Socket—5-contact 5Z4 Radiotron socket	12654	Trap—Wave-trap, complete (L1)
11198	Socket—7-contact 6K7 or 6H6 Radiotron socket	REPRODUCER ASSEMBLIES	
11196	Socket—8-contact 6F5, 6L6 Radiotron or Magic Brain power supply socket	12914	Board—Reproducer terminal board
13095	Socket—Upper left or lower right hand dial lamp socket	12640	Bracket—Output transformer mounting bracket and clamp (Model 10T, 2nd Production)
11222	Socket—Upper right or lower left hand dial lamp socket	13842	Bracket—Output transformer mounting bracket and clamp (Model 10K1)
11381	Socket—Tuning tube socket and cover	13660	Coil—Reproducer field coil (L33)
12007	Spring—Retaining spring for core in I.F. transformer	12642	Cone—Reproducer cone and dust cap (L31) (Model 10T, 2nd Production)
12986	Stud—Band indicator operating arm stud	12667	Cone—Reproducer cone and dust cap (L31) (Model 10K1)
12860	Switch—Low frequency tone and power switch (S4, S6)	5118	Connector—3-contact male connector for speaker leads
12988	Switch—Bias switch (S7)	9768	Reproducer, complete (Model 10T, 2nd Production)
12979	Tone Control—High frequency tone and fidelity control (R39, S5)	9780	Reproducer, complete (Model 10K1)
12981	Transformer—First intermediate frequency transformer (L24, L25, L26, C45, C47)	13661	Transformer—Output transformer (T2, C72)
12990	Transformer—Second intermediate frequency transformer (L27, L28, C51, C53)	11886	Washer—Spring washer to hold field coil securely
12982	Transformer—Third intermediate frequency transformer (L29, L30, C56, C57, C60, R17, R19)	MISCELLANEOUS ASSEMBLIES	
11211	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)	12038	Band—Rubber band for tuning tube
11212	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)	11996	Bracket—Tuning lamp bracket and clamp
11213	Transformer—Power transformer, 110-125-150-210-240 volts, 40-60 cycles (T1)	12915	Escutcheon—Station selector escutcheon and crystal
12861	Volume Control (R22)	12742	Escutcheon—Tuning lamp escutcheon
MAGIC BRAIN UNIT ASSEMBLIES			
12806	Board—3-contact antenna and ground terminal board	12699	Knob—Large station selector knob
5237	Bushing—Variable condenser mounting bushing assembly	12700	Knob—Small (vernier) station selector knob
12886	Cable—Shielded power cable, approximately 4 inches long, complete with 8-contact male plug	11347	Knob—Music-speech and power switch—volume control—range selector or fidelity control knob
		11377	Screw—Chassis mounting screw assembly (Model 10T)
		11210	Screw—Chassis mounting screw assembly (Model 10K1)
		12916	Shield—Complete r-f unit top shield
		4982	Spring—Holding spring for station selector or volume control knob, Stock No. 12899
		11349	Spring—Retaining spring for knob, Stock Nos. 12700 and 11347

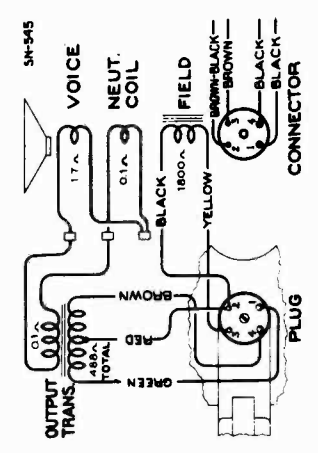
Refer to Models 10K and 10T (1st Prod.) For Dial Drive Replacement Parts.



Schematic Circuit Diagram



POWER TRANSFORMER
Pri. Res. 3.8 ohms
Sec. Res. 335 ohms (60 cycle)
5.4 ohms 470 ohms (25 cycle)



76365-2

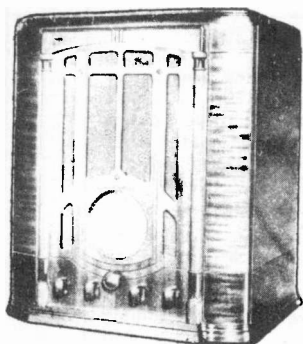
two different type speakers are used: (1) RL 63-5 and (2) 76365-2

REPLACEMENT PARTS (Continued)

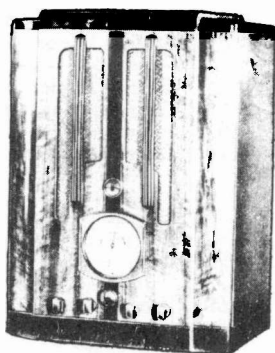
STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
				DRIVE ASSEMBLIES	
5215	Coil—Antenna coil—A and C Bands—(L1, L2, L5, L6, C1, C3).....		4362	Arm—Band indicator operating arm.....	
5245	Coil—Antenna coil—B band—(L3, L4, C2).....		10194	Ball—Steel ball—Package of 20.....	
5216	Coil—Detector coil—A and C bands—(L7, L8, L11, L12, C10, C12).....		4422	Clutch—Tuning condenser drive clutch assembly—comprising drive shaft, balls, ring, spring and washers assembled....	
5246	Coil—Detector coil—B band—(L9, L10, C11).....		11375	Dial—Station selector dial scale.....	
5217	Coil—Oscillator coil—A and C bands—(L13, L15, C43, C47).....		11227	Drive—Variable tuning condenser drive complete—less dial scale.....	
5247	Coil—Oscillator coil—B band—(L14, C45).....		11228	Gear—Vernier pointer drive gear.....	
11277	Compensating Pack—Comprising one 0.015 Mfd., one 0.035 Mfd. capacitor, one 27,000 ohm and one 8200 ohm resistor—(C25, C28, R12, R13).....		4827	Gear—Spring gear assembly.....	
11214	Condenser—Three gang variable tuning condenser—(C5, C14, C48).....		11303	Indicator.....	
11205	Volume Control—(R14).....		11226	Indicator—Band indicator pointer assembly—comprising indicator, arm, link and stud.....	
11219	Tone Control—High frequency tone control—(R22).....		4475	Indicator—Station selector indicator.....	
11710	Lead—Shielded lead for antenna.....		4340	Lamp—Dial lamp—Package of 5.....	
8041	Plate—I. F. or R. F. coil shield locking plate with screw—Package of 2.....		3993	Screw—No. 6-32-5/32" set screw—for band indicator operating arm—Package of 10..	
11220	Resistor—Voltage divider resistor—comprising one 3900 ohm and one 4200 ohm section—(R31, R32).....		4669	Screw—No. 8-32-5/32" Square head set screw—for tuning condenser shaft—Package of 10.....	
11221	Resistor—Voltage divider resistor—comprising one 50 ohm, one 28 ohm and one 195 ohm section—(R28, R29, R30)....		4377	Spring—Band indicator operating arm spring—Package of 5.....	
5112	Resistor—1000 Ohm—Carbon type—1/4 Watt—(R2)—Package of 5.....		4378	Stud—Band indicator operating arm stud assembly—Package of 5.....	
3706	Resistor—1800 Ohm—Carbon type—1/4 Watt—(R15)—Package of 5.....			MISCELLANEOUS ASSEMBLIES	
5159	Resistor—2200 Ohm—Carbon type—1/4 Watt—(R20)—Package of 5.....		11337	Escutcheon—Station selector escutcheon....	
5175	Resistor—5600 Ohm—Carbon type—1/2 Watt—(R21)—Package of 5.....		6614	Glass—Station selector dial glass.....	
2731	Resistor—10,000 Ohm—Carbon type—1 Watt—(R25)—Package of 5.....		11346	Knob—Station selector knob—Package of 5	
11305	Resistor—22,000 Ohm—Carbon type—1/4 Watt—(R16, R17)—Package of 5....		11347	Knob—Volume control, range switch, tone control or power switch knob—Package of 5.....	
11300	Resistor—33,000 Ohm—Carbon type—1/10 Watt—(R24)—Package of 5.....		4678	Ring—Spring retaining ring for station selector dial glass—Package of 5.....	
5033	Resistor—33,000 Ohm—Carbon type—1 Watt—(R23)—Package of 5.....		11210	Screw—Chassis mounting screw assembly—Package of 4.....	
3118	Resistor—100,000 Ohm—Carbon type—1/4 Watt—(R1, R3, R5, R6)—Package of 5.		11348	Screw—No. 8-32-7/16" Headless, cupped point, set screw for knob, Stock #11346—Package of 10.....	
5027	Resistor—150,000 Ohm—Carbon type—1/4 Watt—(R19)—Package of 5.....		11349	Spring—Retaining spring for knob, stock #11347—Package of 5.....	
11151	Resistor—2.2 Megohms—Carbon type—1/4 Watt—(R9)—Package of 5.....			R.L. 63-5 REPRODUCER ASSEMBLIES	
5249	Shield—R. F. coil shield.....		11232	Board—Terminal board with two lead wire clips.....	
11273	Shield—Radiotron shield.....		11231	Bolt—Yoke and core assembly bolt and nut.....	
5250	Shield—I. F. Transformer shield.....		8060	Bracket—Mounting bracket for output transformer and connector.....	
11222	Socket—Dial lamp socket.....		11304	Cable—Reproducer cable—complete with female connector.....	
4794	Socket—4-contact Radiotron socket.....		11234	Coil—Field Coil—(L22).....	
11197	Socket—6-contact Radiotron socket.....		11233	Coil—Neutralizing coil.....	
11198	Socket—7-contact Radiotron socket.....		11235	Cone—Reproducer cone (L21)—Package of 5.....	
5224	Switch—Low frequency tone control switch and power switch—(S11, S13).....		5040	Connector—4-prong female connector socket for reproducer cable.....	
11236	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10).....		5039	Connector—4-prong male connector plug for reproducer.....	
5238	Terminal—Antenna terminal assembly....		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5..	
12218	Transformer—Audio driver transformer—(T2).....		9617	Reproducer—Complete.....	
11216	Transformer—First intermediate frequency transformer—(L16, L17, C16, C17)....		11229	Transformer—Output transformer—(T3)..	
11217	Transformer—Second intermediate frequency transformer—(L18, L19, C20, C21, C22, R7, R8).....		11230	Washer—Binders board "C" washer—used to hold field coil securely—Package of 5.	
11213	Transformer—Power transformer—105-125-150-210-250 volts—40-60 cycles.....			76365-2	
11212	Transformer—Power transformer—105-125 volts—25-60 cycles.....		11841	COIL—Field coil.....	
11211	Transformer—Power transformer—105-125 volts—50-60 cycles.....		11842	COIL—Hum neutralizing coil.....	
			11838	CONE—Reproducer cone.....	
			5039	CONNECTOR—4-contact male connector for reproducer.....	
			9636	REPRODUCER—Complete.....	
			11839	SPRING—Reproducer center support casting clamping spring—Package of 2.	
			11840	TRANSFORMER—Output transformer..	

MODELS T 10-3 and T 11-8

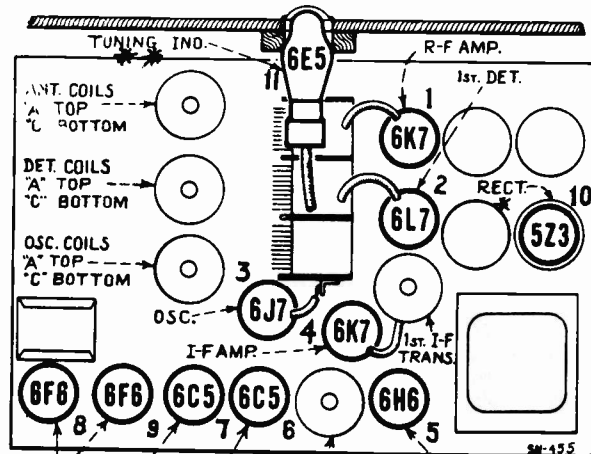
Ten- and Eleven-Tube, Three-Band, A-C, Superheterodyne Receivers



MODEL T 10-3



MODEL T 11-8



Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Band X.....	140 kc.—	410 kc.
Band A.....	540 kc.—	1,800 kc.
Band C.....	5,700 kc.—	18,000 kc.

ALIGNMENT FREQUENCIES

Band X.....	150 kc. (osc.),	400 kc. (osc., ant., det.)
Band A.....	600 kc. (osc.),	1,720 kc. (osc., ant., det.)
Band C.....	18,000 kc. (osc., ant., det.)	

Intermediate Frequency

460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... Radio-Frequency Amplifier
- (2) RCA-6L7..... First Detector
- (3) RCA-6J7..... Heterodyne Oscillator
- (4) RCA-6K7..... Intermediate Amplifier
- (5) RCA-6H6..... Second Detector and A.V.C.

- (6) RCA-6C5..... First Audio Amplifier
- (7) RCA-6C5..... Audio Driver Amplifier
- (8) RCA-6F6..... Power Output Amplifier
- (9) RCA-6F6..... Power Output Amplifier
- (10) RCA-5Z3*..... Full-Wave Rectifier
- (11) RCA-6E5**..... Tuning Indicator

POWER SUPPLY RATINGS

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

POWER OUTPUT RATINGS

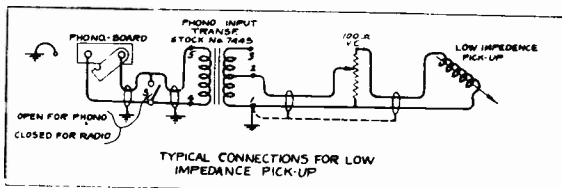
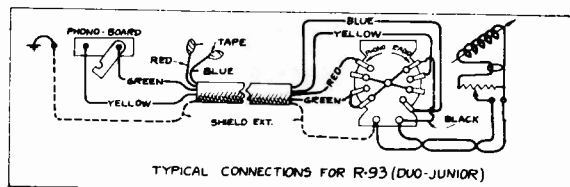
Undistorted Output.....	8.5 watts
Maximum Output.....	11.5 watts

LOUDSPEAKER

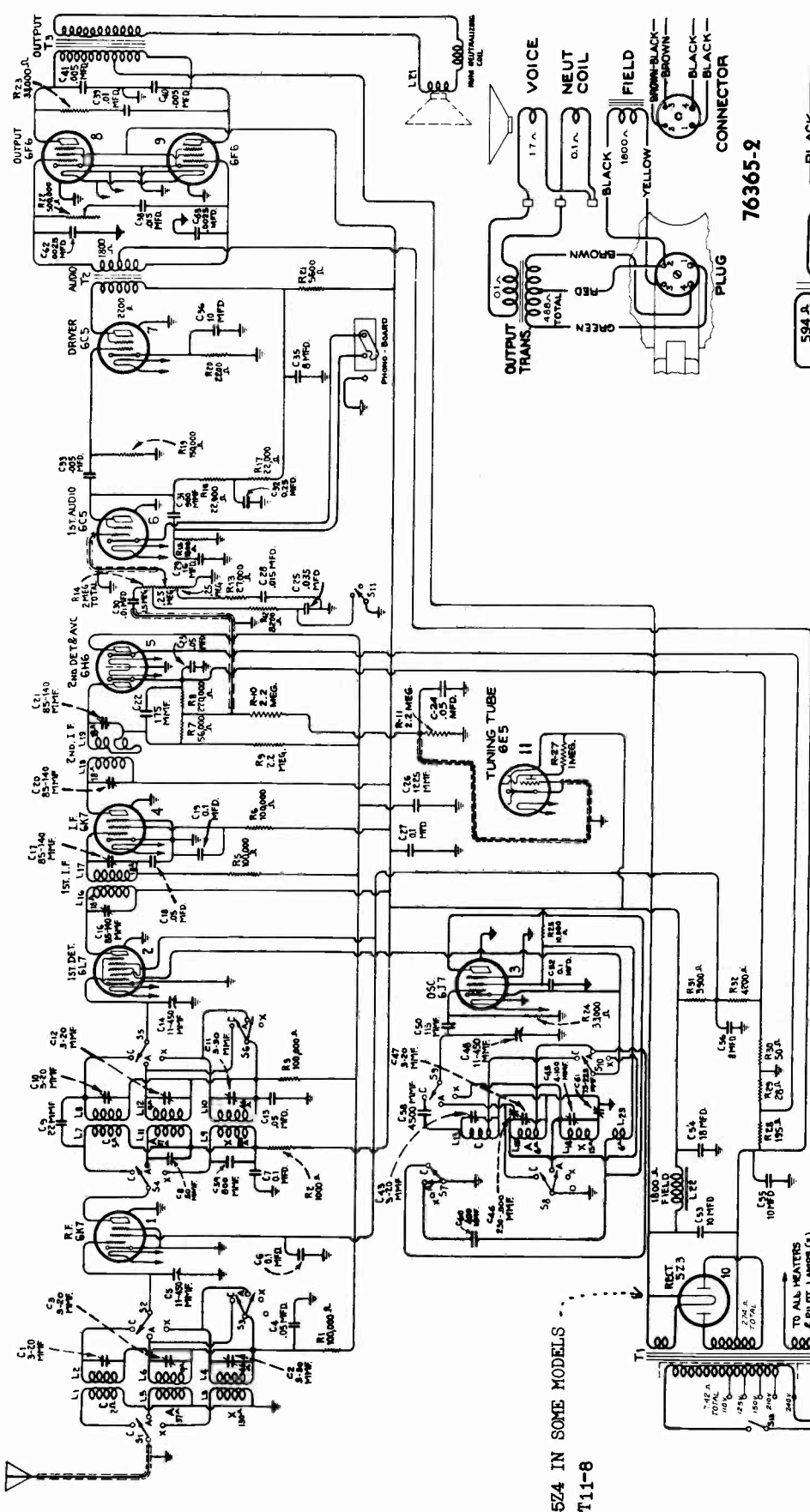
Type..... 8-inch Electrodynamic
Voice Coil Impedance..... 2 1/4 ohms at 400 cycles

* 5Z4 in some Models of T11-8.

** 6E5 used in Model T11-8 only.



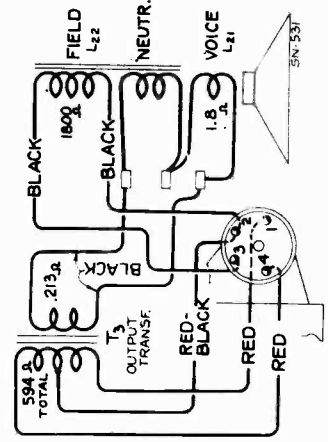
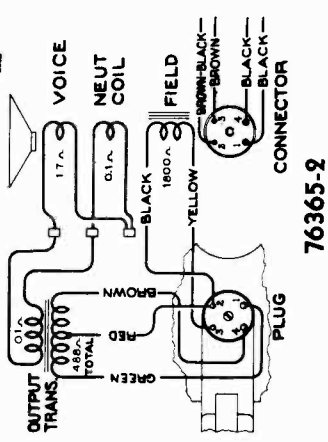
RECORD PLAYER CONNECTIONS



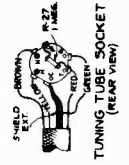
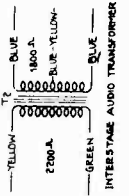
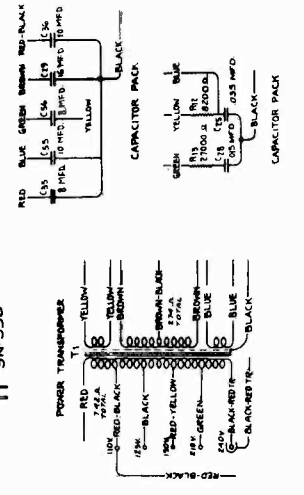
524 IN SOME MODELS
T11-8

-Schematic Circuit Diagram

NOTE: R10, R11, R27, C24 AND TUNING TUBE 6E5
USED IN MODEL T11-8 ONLY.

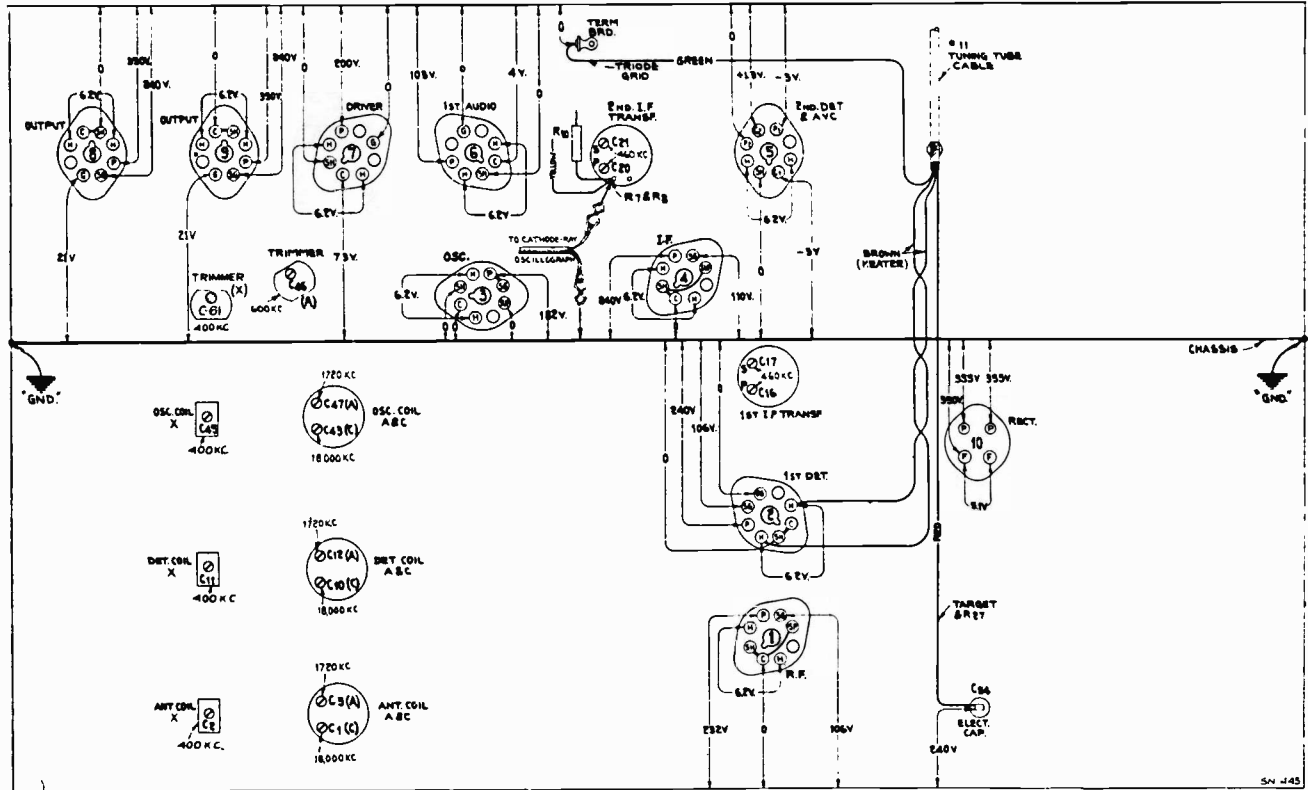


RL 63-5
-Loudspeaker Wiring



TUNING TUBE SOCKET
(NEAR VIEW)

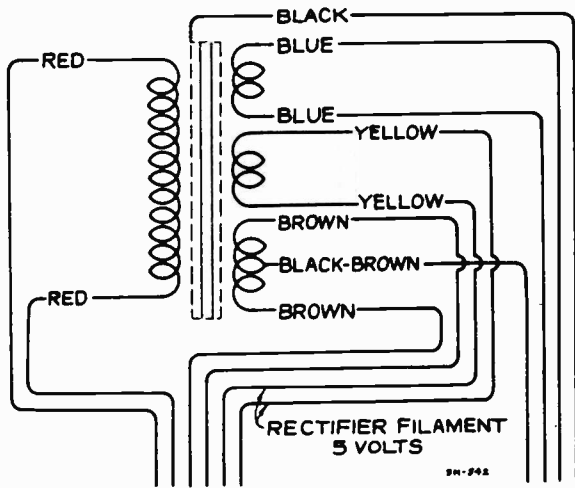
T10-3 & T11-8



-Trimmer Locations and Radiotron Socket Voltages
Measured at 115 volts, 60 cycles—No signal input

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of Band A scale.



Pri. Res.—5.12 ohms, total
Sec. Res.—470 ohms, total
Standard Power Transformer Connections

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT	
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	C21 C20 2nd I-F Trans.	
2	1st Det. Grid in series with 0.01 mfd			C17 C16 1st I-F Trans.	
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	C47 C12 C3 Osc. R-F Ant	
4		600 Kc	600 Kc "A" Band	C46 L-F Osc. Rock Gang	
5		Repeat Step 3			
6		400 Kc	400 Kc "X" Band	C45 C11 C2 Osc. R-F Ant	
7		150 Kc	150 Kc "X" Band	C61 L-F Osc. Rock Gang	
8		Repeat Step 6			
9		Antenna in series with 300 ohms	18000 Kc	18 Mc "C" Band	C43† C10 C1 Osc. R-F Ant

Osc. tracks 460 Kc above signal on all bands.
† Use minimum capacity peak.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
4632	Board—Terminal board assembly—two terminals		3706	Resistor—1800 ohm—Carbon type—1/4 watt (R15)—Package of 5	
4427	Bracket—Volume control mounting bracket		5159	Resistor—2200 ohm—Carbon type—1/4 watt (R20)—Package of 5	
5237	Bushing—Variable tuning condenser mounting bushing assembly—comprising one bushing, one washer, one lock washer and one nut—Package of 3		5175	Resistor—5600 ohm—Carbon type—1/2 watt (R21)—Package of 5	
11223	Capacitor—Adjustable capacitor (C46)		2731	Resistor—10,000 ohm—Carbon type—1 watt (R25)—Package of 5	
5241	Capacitor—Adjustable capacitor (C61)		11305	Resistor—22,000 ohm—Carbon type—1/4 watt (R16, R17)—Package of 5	
11292	Capacitor—22 MMfd. (C9)		5033	Resistor—33,000 ohm—Carbon type—1 watt (R23)—Package of 5	
11289	Capacitor—50 MMfd. (C8)		11300	Resistor—33,000 ohm—Carbon type—1/10 watt (R24)—Package of 5	
11291	Capacitor—115 MMfd. (C50)		3118	Resistor—100,000 ohm—Carbon type—1/4 watt (R1, R3, R5, R6)—Package of 5	
11290	Capacitor—400 MMfd. (C60)		5027	Resistor—150,000 ohm—Carbon type—1/4 watt (R19)—Package of 5	
11269	Capacitor—800 MMfd. (C59)		11626	Resistor—2.2 megohms—Carbon type—1/4 watt (R9, R10, R11)—Package of 5	
3784	Capacitor—900 MMfd. (C31)		5249	Shield—Antenna, detector, or oscillator coil shield	
11316	Capacitor—1225 MMfd. (C26)		5250	Shield—Intermediate frequency transformer shield	
11287	Capacitor—4500 MMfd. (C58)		11273	Shield—Radiotron shield	
5107	Capacitor—.0025 Mfd. (C62, C63)		11222	Socket—Dial lamp socket	
4838	Capacitor—.005 Mfd. (C40, C41)		4794	Socket—4-contact rectifier Radiotron socket	
4868	Capacitor—.005 Mfd. (C33)		11197	Socket—6-contact Radiotron socket	
4624	Capacitor—.01 Mfd. (C30)		11198	Socket—7-contact Radiotron socket	
4937	Capacitor—.01 Mfd. (C39)		11236	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10)	
11315	Capacitor—.015 Mfd. (C38)		5224	Switch—Low frequency tone control and power switch (S11, S13)	
4836	Capacitor—.05 Mfd. (C4, C13, C18, C23)		5238	Terminal—Antenna terminal board with clip, insulating strip and rivets	
4886	Capacitor—.05 Mfd. (C24)		11219	Tone Control—High frequency tone control (R22)	
4839	Capacitor—0.1 Mfd. (C7, C19, C27, C52)		11218	Transformer—Audio driver transformer (T2)	
4841	Capacitor—0.1 Mfd. (C6)		11216	Transformer—First intermediate frequency transformer (L16, L17, C16, C17)	
5170	Capacitor—0.25 Mfd. (C32)		11217	Transformer—Second intermediate frequency transformer (L18, L19, C20, C21, C22, R7, R8)	
11203	Capacitor—10 Mfd. (C53)		11212	Transformer—Power transformer—105-125 volts—25-50 cycles	
5212	Capacitor—18 Mfd. (C54)		11213	Transformer—Power transformer—250-210-150-125-105 volts—40-60 cycles (T1)	
11215	Capacitor pack—Comprising one 16 Mfd., two 10 Mfd., and two 8 Mfd. capacitors (C29, C35, C36, C55, C56)		11205	Volume Control—(R14)	
11201	Clamp—Cable clamp—located near variable tuning condenser—Package of 5		MODEL T10-3		
11272	Clamp—Cable clamp—located above antenna terminal		<i>Change</i>		
4693	Clamp—Electrolytic condenser mounting clamp—for stock No. 11215		From	To	
11325	Coil—Antenna coil—X band (L3, L4, C2)		4838	4907	Capacitor (0.005 mfd.)
11326	Coil—Detector coil—X band (L9, L10, C11)		4839	4885	Capacitor (0.1 mfd.)
11327	Coil—Oscillator coil—X band (L14, L23, C45)		Capacitor (C24), Resistors R10 and R11 used T11-8 only.		
5215	Coil—Antenna coil—A and C bands (L1, L2, L5, L6, C1, C3)		Model T11-8 (with metal rectifier)		
5216	Coil—Detector coil—A and C bands (L7, L8, L11, L12, C10, C12)		11195	Socket—Five-contact rectifier Radiotron socket	
5217	Coil—Oscillator coil—A and C bands (L13, L15, C43, C47)		Stock No. 4794 is not used in chassis having metal rectifier.		
11277	Compensating Pack—Comprising one 8200 ohm and one 27,000 ohm resistors, one .015 Mfd., one .035 Mfd. capacitors (C25, C28, R12, R13)				
11214	Condenser—Three-gang variable tuning condenser (C5, C14, C48)				
11697	Cover—Terminal board cover				
11202	Foot—Chassis foot and bracket assembly—Package of 2				
11710	Lead—Shielded lead—connects antenna terminal to range switch				
8041	Plate—I. F. or R. F. coil shield locking plate—Package of 2				
11220	Resistor—Voltage divider resistor—Comprising one 3900 ohm and one 4200 ohm sections (R31, R32)				
11221	Resistor—Voltage divider resistor—Comprising one 50 ohm, one 28 ohm and one 195 ohm sections (R28, R29, R30)				
5112	Resistor—1000 ohm—Carbon type—1/4 watt (R2)—Package of 5				

REPLACEMENT PARTS—Continued

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	DRIVE ASSEMBLIES			T 10 - 3	
4362	Arm—Band indicator operating arm.....			MISCELLANEOUS ASSEMBLIES	
10194	Ball—Steel ball—Package of 20.....		11337	Escutcheon—Station selector escutcheon....	
4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shaft, balls, ring, spring and washers, assembled...		6614	Glass—Station selector dial glass.....	
11333	Dial—Station selector dial scale.....		11346	Knob—Station selector knob—Package of 5	
11227	Drive—Variable tuning condenser drive complete—less dial scale.....		11347	Knob—Volume control, range switch, tone control or power switch knob—Package of 5.....	
11228	Gear—Vernier pointer drive gear.....		4678	Ring—Spring retaining ring for station selector dial glass—Package of 5.....	
4827	Gear—Spring gear assembly—complete—comprising stud, spring, cover, gears, mounting arm with screws and washers.		11210	Screw—Chassis mounting screw assembly—Package of 4.....	
11303	Indicator—Station selector vernier indicator pointer.....		11348	Screw—No. 8-32-7/16" Headless, cupped point, set screw for knob, Stock #11346—Package of 10.....	
11226	Indicator—Band indicator pointer assembly—comprising indicator, arm, link and stud.....		11349	Spring—Retaining spring for knob, stock #11347—Package of 5.....	
4475	Indicator—Station selector indicator.....			T 11 - 8	
4340	Lamp—Dial lamp—Package of 5.....			MISCELLANEOUS ASSEMBLIES	
3993	Screw—No. 6-32-5/32-in. set screw for band indicator operating arm—Package of 10.....		11729	Bolt—Reproducer mounting bolt assembly—Comprising one bolt, one washer, one lockwasher and one nut—Package of 2.	
4669	Screw—No. 8-32-5/32-in. square head screw— for tuning condenser shaft—Package of 10.....		11191	Bracket—Tuning lamp mounting bracket—less clamp.....	
4377	Spring—Band indicator operating arm spring—Package of 5.....		11319	Cable—Tuning tube cable—complete with socket.....	
4378	Stud—Band indicator operating arm stud assembly—Package of 5.....		11192	Clamp—Tuning lamp mounting clamp—less bracket.....	
	RL-63-5 REPRODUCER ASSEMBLIES		11276	Escutcheon—Tuning lamp escutcheon...	
11232	Board—Terminal board with two lead wire clips.....		11337	Escutcheon—Station selector escutcheon...	
11231	Bolt—Yoke and core assembly bolt and nut.....		6614	Glass—Station selector dial glass.....	
8060	Bracket—Mounting bracket for output transformer and connector.....		11347	Knob—Volume control, tone control, range switch or power switch knob—Package of 5.....	
11304	Cable—Reproducer cable—Complete with female connector.....		11346	Knob—Station selector knob—Package of 5.....	
11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5.		11382	Resistor—1 megohm—Carbon type—1/10 watt (R27)—Package of 5.....	
11234	Coil—Field coil (L22).....		4678	Ring—Spring retaining ring for station selector dial glass—Package of 5.....	
11233	Coil—Neutralizing coil.....		11377	Screw—Chassis mounting screw assembly—Comprising one screw, one washer and one lockwasher—Package of 4....	
11235	Cone—Reproducer cone (L21)—Package of 5.....		11348	Screw—No. 8-32-7/16-in. headless cupped point set screw for knob (Stock No. 11346)—Package of 10.....	
5040	Connector—4 contact female connector socket for reproducer cable.....		11381	Socket—Tuning tube socket and cover...	
5039	Connector—4 prong male connector plug for reproducer.....		11349	Spring—Retaining spring for knob (Stock No. 11347)—Package of 5.....	
9617	Reproducer—Complete.....				
11229	Transformer—Output transformer (T3)...				
11230	Washer—Binders board "C" washer—used to hold field coil securely—Package of 5				
	76365-2				
11841	COIL—Field coil.....				
11842	COIL—Hum neutralizing coil.....				
11838	CONE—Reproducer cone.....				
5039	CONNECTOR—4-contact male connector for reproducer.....				
9636	REPRODUCER—Complete.....				
11839	SPRING—Reproducer center support casting clamping spring—Package of 2.				
11840	TRANSFORMER—Output transformer..				

D. C. Inverter, TH-10

INTRODUCTION

The RCA Victor D. C. Inverter Model TH-10 is a device for converting direct current to alternating current of substantially the same voltage. The Inverter uses two of the new RCA-91 Radiotrons, which when used in a suitable circuit, function as low frequency oscillators and provide an output of variable frequency and voltage suitable for power supply to modern radio receivers.

Features of the Inverter are:

1. Having no moving parts, the operation of the Inverter is quiet, both mechanically and electrically. It may be mounted inside the cabinet of a radio receiver and the receiver operated at maximum sensitivity without any noise other than that obtained from the antenna system.
2. The frequency is adjustable so that a synchronous phonograph motor may be operated successfully, a feature not possible with a converter or motor generator.
3. Supplies sufficient output to operate all RCA Victor receivers and combination instruments. Its maximum output is 250 watts.
4. Use of the new RCA-91 Radiotrons provide a life in excess of 1000 hours which represents a very low maintenance cost.

RADIOTRONS

The RCA-91 Radiotrons consist of a heater operating at 110 volts, an insulated cathode, a grid and a plate. A globule of mercury which vaporizes during operation is contained in the glass envelope.

Two switches are provided, one for turning on the power to all circuits and one in series with the plate return lead.

The reason for the use of two switches is that it takes the heaters about five minutes to assume operating temperature before operation can be secured. At locations where such waiting would be undesirable, the heaters may be left on continuously and the set turned "on" by means of the plate supply switch, a procedure that gives immediate operation. With the plate supply not on, the heater life of these tubes is greatly in excess of the estimated operating life.

INSTALLATION

1. Remove the cover and insert the Radiotrons in their sockets. Place the filter inductor (R. F. choke) over the plate contact located on top of each Radiotron.

2. With a D. C. voltmeter, determine the D. C. line voltage. Also check the rating on the radio set or combination instrument and determine its wattage. With this information, check the following table and make any changes that may be indicated:

D. C. Line Volts	Load Watts	Tap
90-95	0-250	1-5
95-105	0-250	1-4
105-120	0-250	2-5
120-130	0-250	2-4
Over 130	0-250	3-4

NOTE—If Line Voltage is over 130 volts, a resistor should be placed in series with filament to reduce voltage to about 115 volts. (To connect to tap one, it is necessary to add a jumper wire from brown plate connection to the A. C. output. This is only necessary in case of Line Voltage below 105 volts.)

3. After making any changes that are necessary and before replacing the cover, insert the A. C. plug of the radio receiver into A. C. receptacle of the Inverter. Insert the D. C. input plug of the Inverter into a D. C. outlet and turn the line switch "on." Be sure that the plate switch is "off." (Toggle away from end to which leads are attached.) Hold or fasten the interlock switch so that it closes. The heaters will glow a dull red.

4. After fifteen minutes, closing the plate switch will place the Inverter in operation and the receiver will obtain its power. The Radiotrons in the Inverter will have a blue glow. If this does not occur, check the following points in the order given:

- (a) Check the plate supply switch. The toggle should be toward the terminal end of the switch.
- (b) Reverse the D. C. input plug.
- (c) Turn the bias control (Figure 2) clockwise until a blue glow appears in the tubes. The correct setting of the bias control is slightly beyond (further clockwise) from the point where the tubes break into a blue glow.

5. After the Inverter is operating, check the output voltage with an A. C. voltmeter and make any changes in the receiver that may be necessary if the A. C. voltage is below 115. If the instrument does not use a synchronous phonograph motor the A. C. voltage from the Inverter may be raised by means of the frequency control.

6. If the instrument being powered from the Inverter is a combination radio-phonograph, using a synchronous phonograph motor, adjust the frequency control on the Inverter until the phonograph motor turns at 78 R.P.M. (Determine this by placing a piece of paper under a record and count the revolutions for one minute while playing.)

7. After all adjustments are made, release the interlock, replace the cover and mount the Inverter in the receiver cabinet or other place convenient. Remove the power switch to the radio receiver, short and tape the leads thereto and mount the plate supply switch in the same location. Then mount the D. C. switch to the Inverter in any place convenient such as a bracket on the rear of the receiver. It is desirable that the user of this apparatus be instructed in the use of these two switches. After the initial warming up, the Radiotrons will assume operating temperature in about five minutes.

SERVICE DATA

1. Blown Fuse—

Blowing of the fuse during initial operation or later may be caused by any of the following:

- (a) Improper adjustment of bias. If the bias adjustment is turned considerably beyond the point where the Inverter will just start, the next time the Radiotrons are cold and the two switches thrown together, the Inverter will try to start before the cathodes are up to their proper temperature. Make sure that this adjustment is but slightly beyond the point at which the Inverter will start.

- (b) Mercury shorting between grid and cathode of Radiotrons. A simple method of clearing this trouble is to allow the Radiotron to heat for about fifteen minutes and then tap it gently until the excess mercury shakes off.

In extreme cases, where tapping will not remove the mercury, a 50 ohm, 200 watt resistor should be substituted for the fuse. Start the Inverter, the resistor limiting the current to 2 amperes which will not damage the Radiotrons, and if it starts, the difficulty was mercury between the grid and cathode. If it will not start, the Radiotron that does not glow is inoperative and should be replaced. After installing a cold Radiotron with a hot one, it will be necessary to heat the cold one fifteen minutes with the plate switch "off."

- (c) Any other cause of the fuse blowing will probably be due to some circuit failure. Checking by means of the diagram shown in Figures 1 and 2 will disclose this trouble.

2. Voltage Readings—

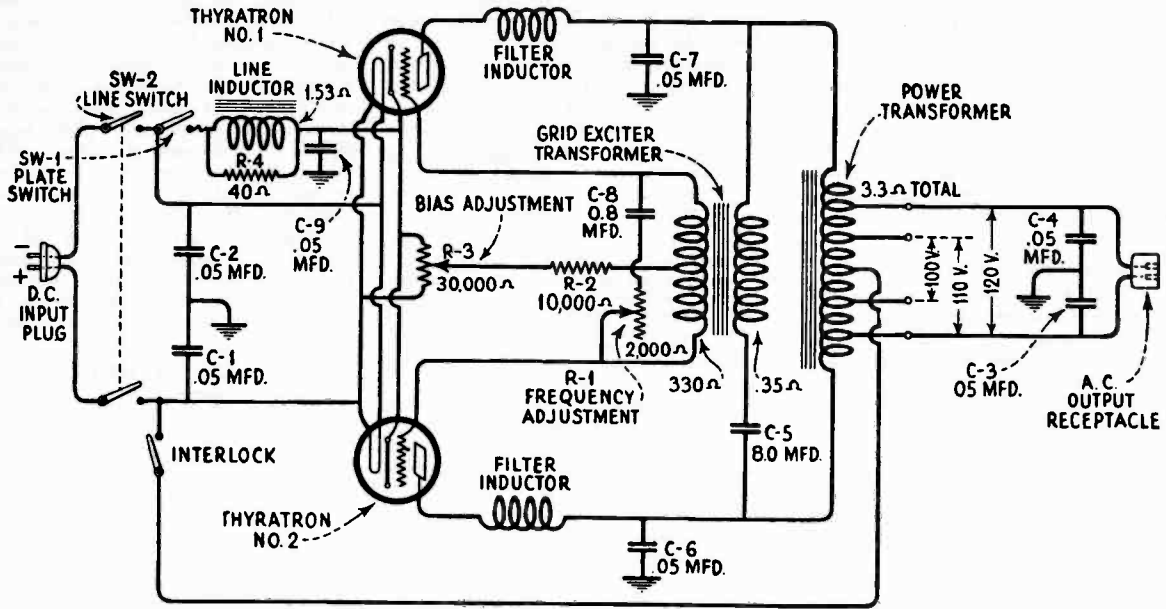
Due to the high currents involved in the Inverter circuits, it is not recommended that a set analyzer be used for reading socket voltages. The following voltages may be obtained at the Radiotron sockets:

Heater volts	110
Cathode to Grid	0 to 110
Cathode to Plate	110
Cathode to Heater	About 50 A. C.

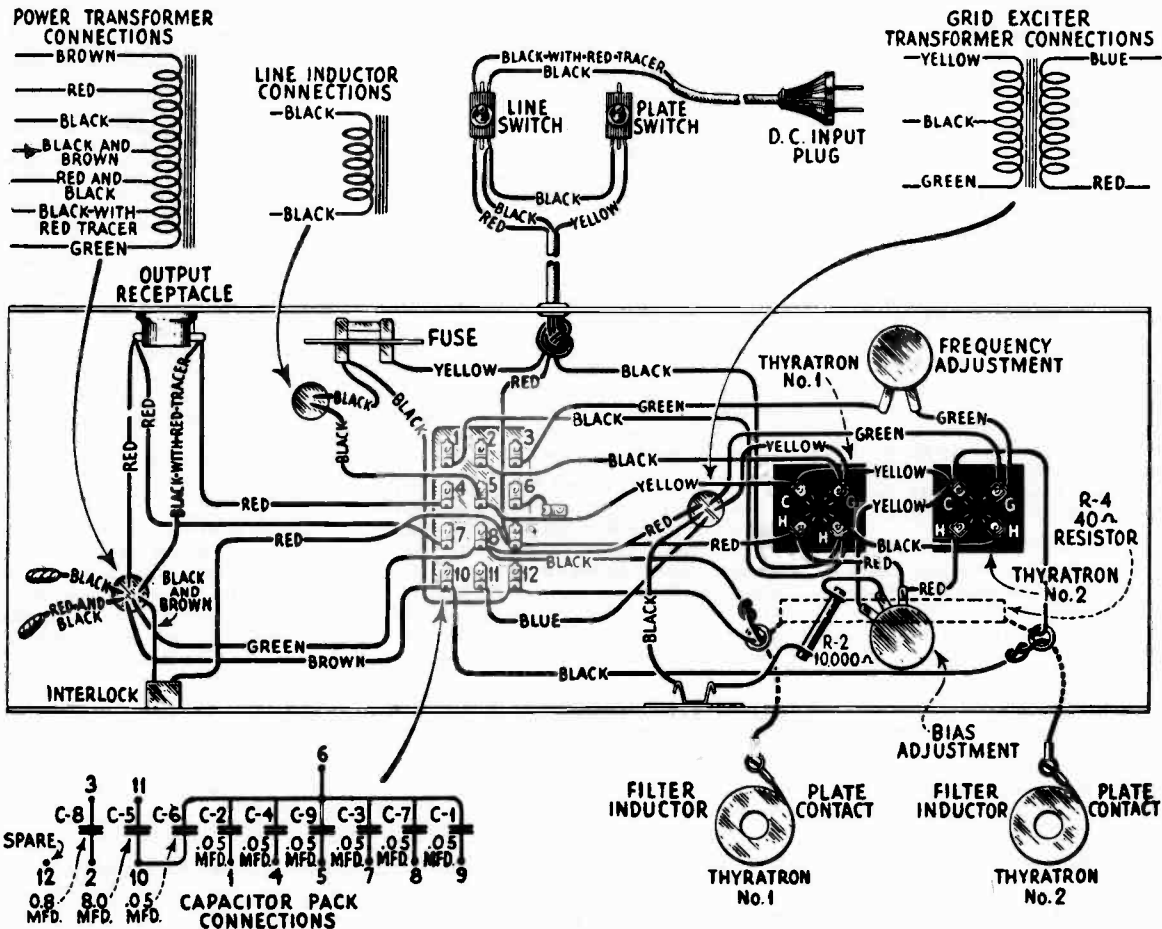
A short such as mercury between the cathode and grid will cause the full line voltage to be obtained across the 10,000 ohm resistor. The Radiotron having the short will not glow at any setting of the bias control.

REPLACEMENT PARTS

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
2731	Resistor—10,000 ohms—Carbon type—Package of 5	3074	Switch—Interlock switch—Complete with screws, washers and insulating bushing
3009	Strip—Fuse mounting strip—Complete with fuse clips and bracket—Package of 2	3075	Resistance—Variable resistance—30,000 ohms—Bias adjustment—Complete with washers and nuts
3010	Cover—Fuse cover	7054	Cord—Power Cord
3011	Resistance—Variable resistance—2,000 ohms—Frequency control—Complete with washers and nuts	7122	Socket—Radiotron socket—Complete with insulating shield
3012	Choke—R. F. choke coil—Used on plate contact of each Radiotron	7243	Inductor—Line inductor assembly
3013	Fuse—Package of 5	7244	Transformer—Power transformer
3015	Switch—Line switch—With mounting nuts and escutcheon	7245	Transformer—Grid exciter transformer
3016	Switch—Plate supply switch	7246	Capacitor—Capacitor pack—Comprising one 8 mfd., one 0.7 mfd., and seven 0.05 mfd. capacitors
3028	Receptacle—A. C. output receptacle	7277	Resistor—Porcelain type—40 ohms
		8674	Cord—Three conductor switch cord
		9341	Cover—Inverter cover



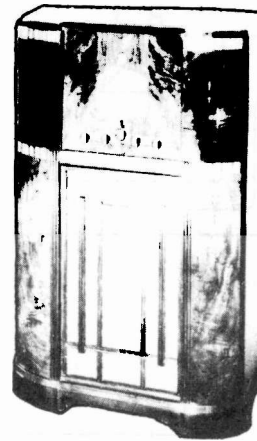
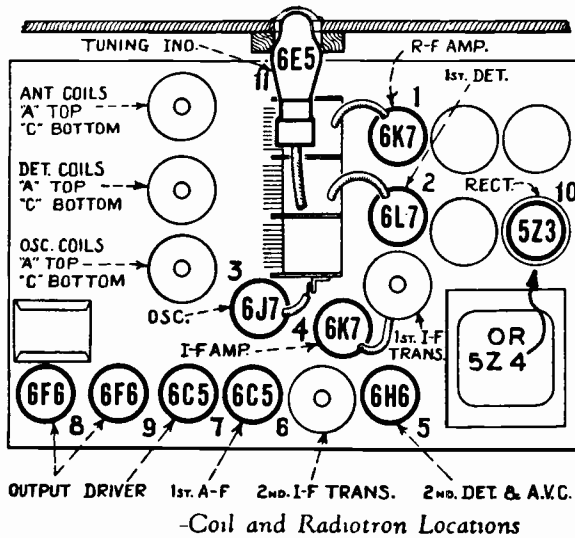
-Schematic diagram of Model TH-10



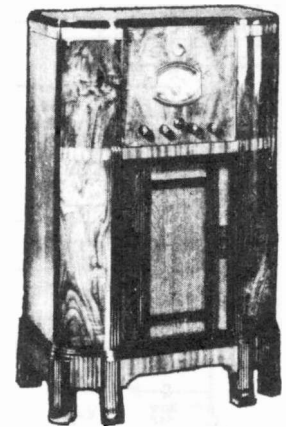
-Wiring diagram of Model TH-10

MODELS C11-1 & C11-3

Eleven-Tube, Three-Band, A-C, Superheterodyne Receivers



MODEL C 11-1



MODEL C 11-3

ELECTRICAL SPECIFICATIONS

FREQUENCY RANGES

Band A..... 540 kc.—1800 kc.
 Band B..... 1800 kc.—6000 kc.
 Band C..... 6000 kc.—18000 kc.

Intermediate Frequency.....

ALIGNMENT FREQUENCIES

Band A.....600 kc. (osc.), 1720 kc. (osc., ant., det.)
 Band B.....6132 kc. (osc., ant., det.)
 Band C.....18000 kc. (osc., ant., det.)
460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7.....Radio-Frequency Amplifier
- (2) RCA-6L7.....First Detector
- (3) RCA-6J7.....Heterodyne Oscillator
- (4) RCA-6K7.....Intermediate Amplifier
- (5) RCA-6H6.....Second Detector and A.V.C.

- (6) RCA-6C5.....First Audio Amplifier
- (7) RCA-6C5.....Audio Driver Amplifier
- (8) RCA-6F6.....Power Output Amplifier
- (9) RCA-6F6.....Power Output Amplifier
- (10) RCA-5Z3 or 5Z4.....Full Wave Rectifier
- (11) RCA-6E5.....Tuning Indicator

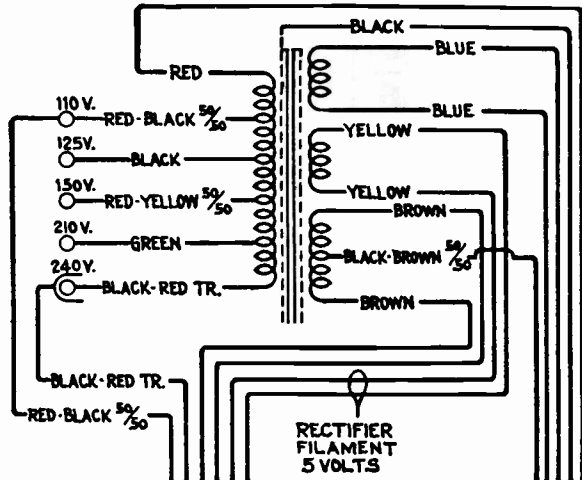
POWER RATINGS

Rating A.....105—125 volts, 50—60 cycles
 Rating B.....105—125 volts, 25—60 cycles
 Rating C.....100—130/140—160/195—250 volts, 40—60 cycles
 Power Consumption.....135 watts

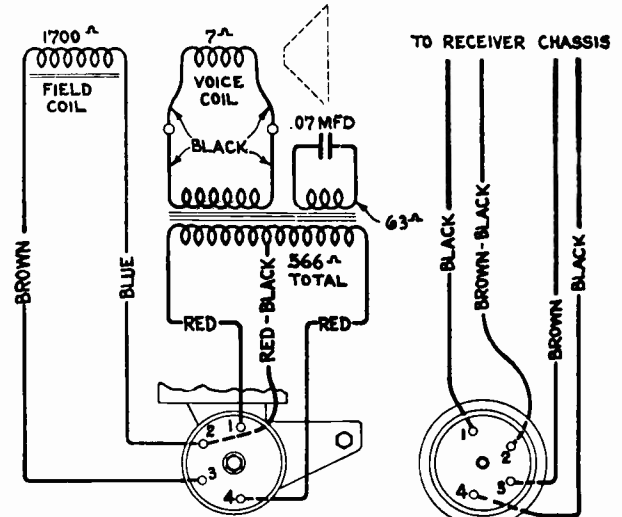
MISCELLANEOUS

Undistorted Output.....8.5 watts
 Maximum Output.....11.5 watts

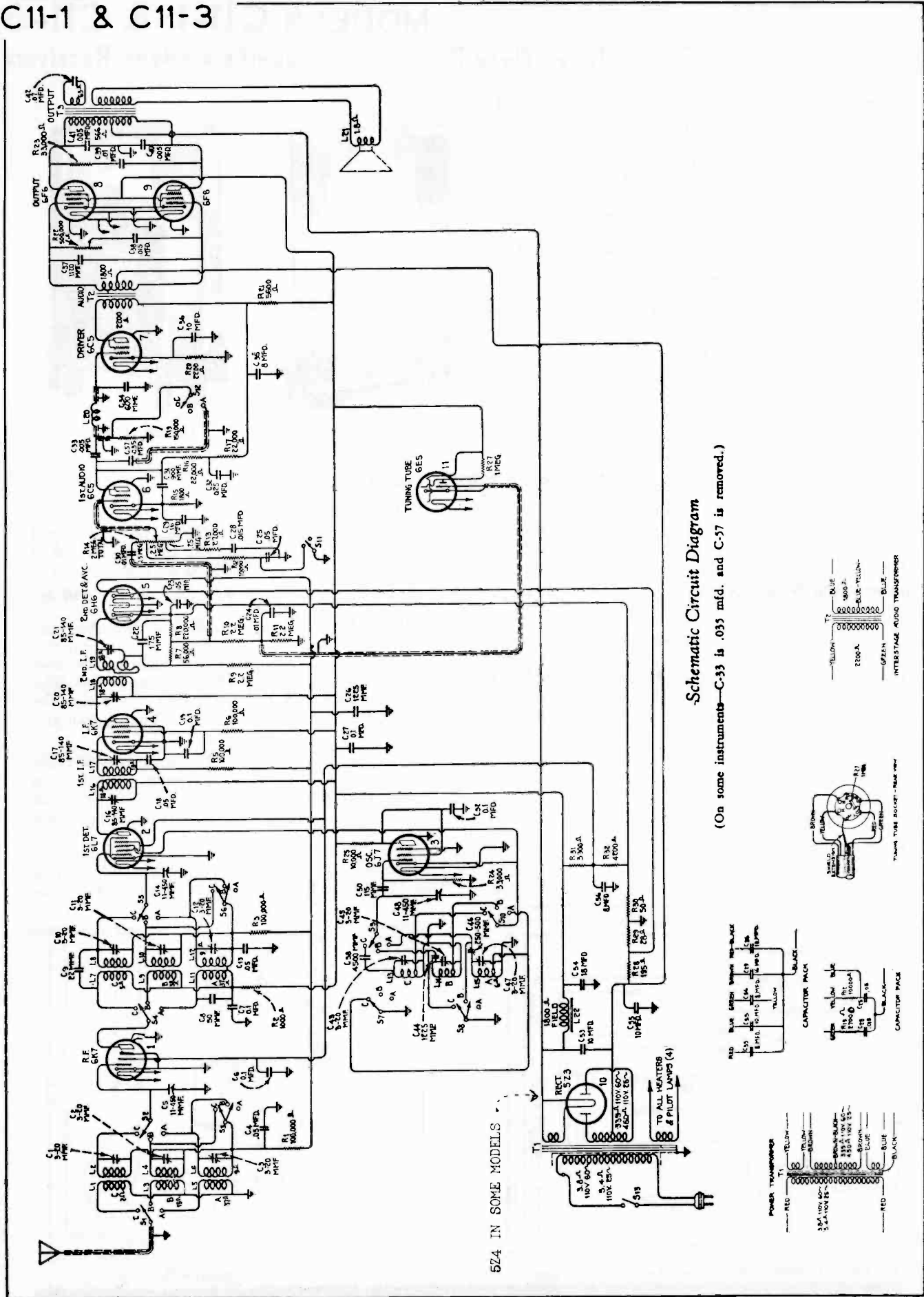
Loudspeaker.....Electrodynamic—12 inch
 Voice Coil Impedance.....7.5 ohms at 400 cycles



Pri. Res.—7.42 ohms, total Sec. Res.—274 ohms, total



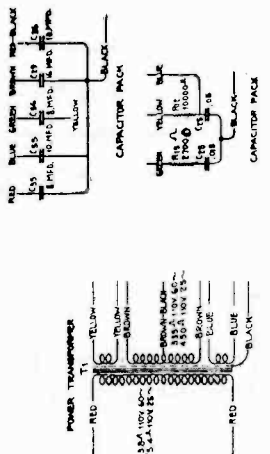
C11-1 & C11-3

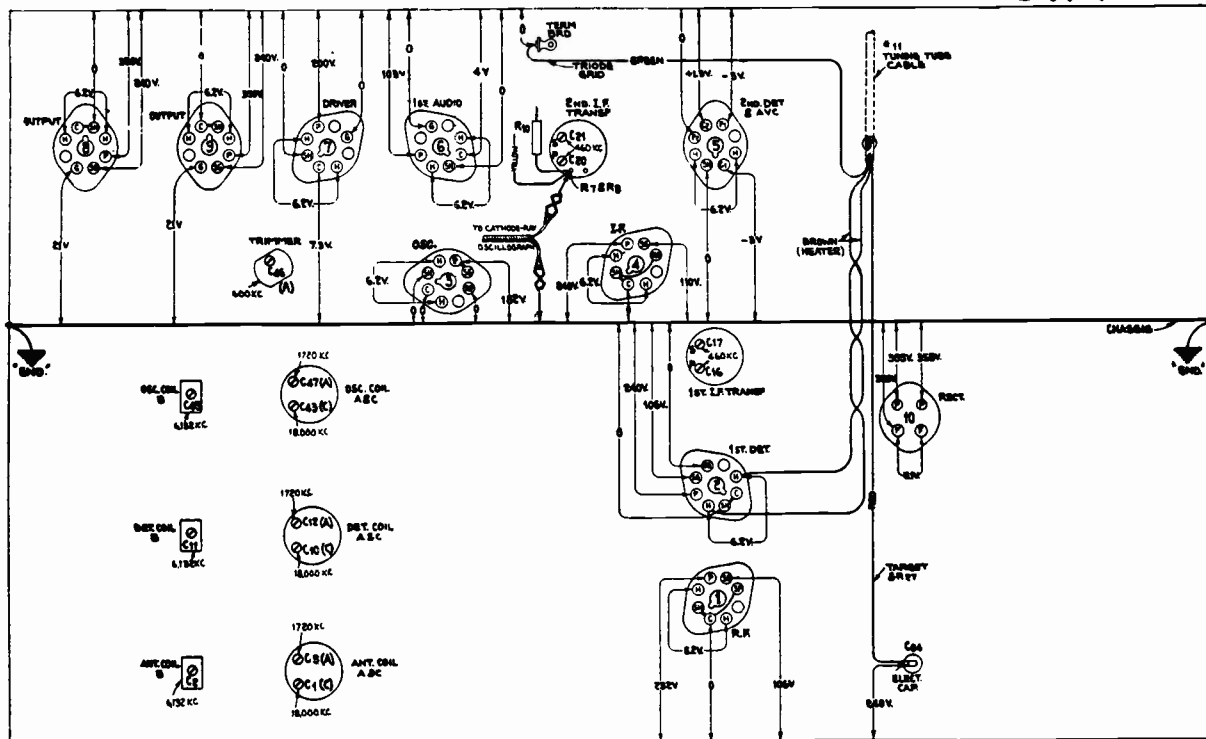


Schematic Circuit Diagram

(On some instruments—C-33 is .035 mfd. and C-37 is removed.)

5Z4 IN SOME MODELS





-Trimmer Locations and Radiotron Socket Voltages
Measured at 115 Volts A.C.-

-No Signal—Volume Control Maximum

Alignment Procedure

with tuning condenser fully meshed set pointer to horizontal line at low frequency end of Band A scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	C20 C21 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C16 C17 1st I-F Trans.
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	C47 C12 C3 Osc. R-F Ant.
4		600 Kc	600 Kc "A" Band	C46 L-F Osc. Rock Gang
5		<i>Repeat Step 3</i>		
6	Antenna in series with 300 ohm	6132 Kc	6132 Kc "B" Band	C45† C11 C2 Osc. R-F Ant.
7		18000 Kc	18 Mc "C" Band	C43† C10 C1 Osc. R-F Ant.

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

REPLACEMENT PARTS

STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES		
4427	Bracket—High or low frequency tone control or volume control mounting bracket.	
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.	
11223	Capacitor—Adjustable capacitor (C46)	
11292	Capacitor—22 MMfd. (C9)	
11289	Capacitor—50 MMfd. (C8)	
11291	Capacitor—115 MMfd. (C50)	
11317	Capacitor—600 MMfd. (C34)	
3784	Capacitor—900 MMfd. (C31)	
4409	Capacitor—1120 MMfd. (C37)	
11288	Capacitor—1225 MMfd. (C44)	
11316	Capacitor—1225 MMfd. (C26)	
11287	Capacitor—4500 MMfd. (C58)	
4907	Capacitor—0.005 Mfd. (C40, C41)	
4868	Capacitor—0.005 Mfd. (C33)	
4624	Capacitor—0.01 Mfd. (C30)	
4937	Capacitor—0.01 Mfd. (C39)	
11315	Capacitor—0.015 Mfd. (C38)	
5196	Capacitor—0.035 Mfd. (C57)	
4836	Capacitor—0.05 Mfd. (C4, C13, C18, C23)	
4886	Capacitor—.05 Mfd. (C24)	
4885	Capacitor—0.1 Mfd. (C7, C19, C27, C52)	
4841	Capacitor—0.1 Mfd. (C6)	
5170	Capacitor—0.25 Mfd. (C32)	
11203	Capacitor—10 Mfd. (C53)	
5212	Capacitor—18 Mfd. (C54)	
11215	Capacitor pack—Comprising one 16 Mfd., two 10 Mfd., and two 8 Mfd. capacitors (C29, C35, C36, C55, C56)	
11318	Capacitor pack—Comprising one .015 Mfd., one .05 Mfd., one 10,000 Ohm resistor and one 27,000 Ohm resistor (C25, C28, R12, R13)	
11201	Clamp—Cable clamp—located near variable tuning condenser—Package of 5	
11272	Clamp—Cable clamp—located above antenna terminal.	
4693	Clamp—Electrolytic capacitor clamp—for stock #11215	
5215	Coil—Antenna coil—A and C bands (L1, L2, L5, L6, C1, C3)	

C11-1 & C11-3

REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
5245	Coil—Antenna coil—B band (L3, L4, C2)		8054	Cam—Five position cam for station selector drive assembly.....	
11320	Coil—Choke coil (L20).....		4422	Clutch—Tuning condenser drive clutch assembly—comprising shaft, balls, ring, spring and washers assembled.....	
5216	Coil—Detector coil—A and C bands (L7, L8, L11, L12, C10, C12).....		8048	Coupling—Flexible coupling for variable capacitor—(includes indicator shaft)....	
5246	Coil—Detector coil—B band (L9, L10, C11)		11334	Dial—Dial scale with mounting rivets....	
5217	Coil—Oscillator coil—A and C bands (L13, L15, C43, C47).....		8045	Disc—Drive disc and gear assembly.....	
5247	Coil—Oscillator coil—B band (L14, C45)		11631	Drive—Tuning condenser drive assembly complete.....	
5214	Condenser—Three gang variable tuning condenser—(C5, C14, C48).....		8044	Escutcheon—Dial escutcheon with vernier scale.....	
11205	Volume control (R14).....		8046	Gear—Indicator shaft drive gear and vernier idler with one spring.....	
11219	Tone Control—High frequency tone control (R22).....		8050	Gear—Gear sector and band indicator operating link—(link connects to arm on band switch).....	
5226	Lamp—Pilot lamp—Package of 5.....		8053	Indicator—Station selector vernier indicator pointer.....	
11710	Lead—Shielded lead for antenna.....		11793	Indicator—Station selector indicator pointer	
8041	Plate—I.F. or R.F. coil shield locking plate with screw—Package of 2.....		8051	Link—Complete with roller and spring....	
11220	Resistor—Voltage divider resistor—comprising one 3900 Ohm and one 4200 Ohm section (R31, R32).....		8049	Pinion—Vernier pointer drive pinion and shaft.....	
11221	Resistor—Voltage divider resistor—comprising one 50 Ohm, one 28 Ohm and one 195 Ohm section (R28, R29, R30)....		4669	Screw—No. 8-32 9/32" square head set screw—for variable condenser drive assembly—Package of 10.....	
5112	Resistor—1000 Ohm—Carbon type—1/4 watt—(R2)—Package of 5.....		8047	Spring—Coil spring for indicator shaft drive gear and vernier idler (Stock #8046)....	
3706	Resistor—1800 Ohm—Carbon type—1/4 watt—(R15)—Package of 5.....		8052	Spring—Coil spring for link—Package of 5	
5159	Resistor—2200 Ohm—Carbon type—1/4 watt—(R20)—Package of 5.....		8042	Stud—Band indicator operating arm stud—	
5175	Resistor—5600 Ohm—Carbon type—1/2 watt—(R21)—Package of 5.....		REPRODUCER ASSEMBLIES		
2731	Resistor—10,000 Ohm—Carbon type—1 watt—(R25)—Package of 5.....		8059	Board—Reproducer terminal board—(2 terminals).....	
11305	Resistor—22,000 Ohm—Carbon type—1/4 watt—(R16, R17)—Package of 5.....		8060	Bracket—Output transformer mounting bracket.....	
11300	Resistor—33,000 Ohm—Carbon type—1/10 watt—(R24)—Package of 5.....		11304	Cable—Reproducer cable—complete with connector.....	
5033	Resistor—33,000 Ohm—Carbon type—1 watt—(R23)—Package of 5.....		8058	Clamp—Cone rim clamp—Package of 4....	
3118	Resistor—100,000 Ohm—Carbon type—1/4 watt—(R1, R3, R5, R6)—Package of 5		11189	Coil—Field coil, magnet and cone housing (L22).....	
5027	Resistor—150,000 Ohm—Carbon type—1/4 watt—(R19)—Package of 5.....		8056	Cone—Reproducer cone (L21).....	
11151	Resistor—2.2 Megohm—Carbon type—1/4 watt—R9, R10, R11)—Package of 5....		5039	Connector—4-prong male connector plug for reproducer.....	
11250	Shield—Choke coil shield.....		5040	Connector—4-contact female connector socket for reproducer cable.....	
5249	Shield—R.F. coil shield.....		9620	Reproducer—Complete.....	
11273	Shield—Radiotron shield.....		8057	Transformer—Output transformer—(T3, C42).....	
5250	Shield—I.F. Transformer shield.....		MISCELLANEOUS ASSEMBLIES		
11222	Socket—Dial lamp socket.....		5211	Bolt—Speaker mounting bolt assembly—Package of 2.....	
4794	Socket—4-contact Radiotron socket.....		11191	Bracket—Radiotron tuning lamp mounting bracket—less clamp (Stock #11192)....	
11195	Socket—5-contact rectifier Radiotron socket..		11319	Cable—Radiotron tuning lamp cable and plug—approximately 25" long.....	
11197	Socket—6-contact Radiotron socket.....		11192	Clamp—Radiotron tuning lamp mounting clamp—less bracket (Stock #11191)....	
11198	Socket—7-contact Radiotron socket.....		11276	Escutcheon—Radiotron tuning lamp escutcheon.....	
5224	Switch—Low frequency tone control with power switch—(S11, S13).....		11379	Escutcheon—Station selector escutcheon and crystal.....	
11236	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S12).....		11346	Knob—Station selector knob—Package of 5	
5238	Terminal—Antenna terminal assembly.....		11347	Knob—Volume control, tone control, power switch or range switch knob—Package of 5.....	
11218	Transformer—Audio driver transformer (T2).....		11382	Resistor—1 Megohm—Carbon type—1/10 watt (R27)—Package of 5.....	
11216	Transformer—First intermediate frequency transformer (L16, L17, C16, C17).....		5210	Screw—Chassis mounting screw assembly—Package of 4.....	
11217	Transformer—Second intermediate frequency transformer (L18, L19, C20, C21, C22, R7, R8).....		11348	Screw—No. 8-32 7/16" Headless cupped point set screw for knob (Stock #11346)—Package of 10.....	
11213	Transformer—Power Transformer—105/125/150/210/250 volts—40-60 cycles..		11193	Shield—Reproducer cover (shield).....	
11212	Transformer—Power transformer—105-125 volts—25-50 cycles.....		11381	Socket—Tuning lamp socket and cover...	
11211	Transformer—Power transformer (T1)—105-125 volts—50-60 cycles.....		11349	Spring—Retaining spring for knob (Stock #11347)—Package of 5.....	

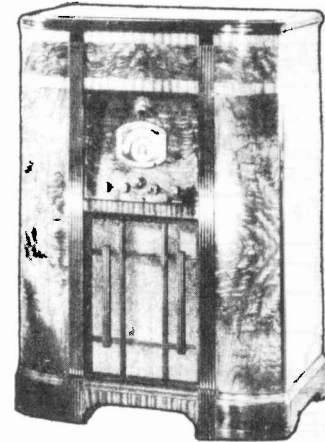
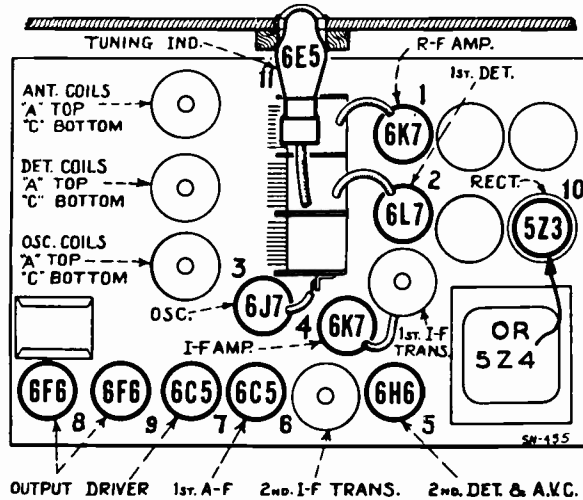
Stock Nos. 4858, 11273, and 4794 are not used in chassis having metal rectifier.

DRIVE ASSEMBLIES

- 5243 Arm—Band indicator operating arm.....
- 10194 Ball—Steel ball for drive assembly—Package of 20.....

MODEL D 11-2

Eleven-Tube, Three-Band, A-C, Automatic Radio-Phonograph



MODEL D 11-2

-Radiotron and Coil Locations

Electrical Specifications

FREQUENCY RANGES

Band X.....	140 kc.— 410 kc.
Band A.....	540 kc.— 1,800 kc.
Band C.....	5,700 kc.—18,000 kc.

ALIGNMENT FREQUENCIES

Band X.....	150 kc. (osc.), 400 kc. (osc., ant., det.)
Band A...	600 kc. (osc.), 1,720 kc. (osc., ant., det.)
Band C.....	18,000 kc. (osc., ant., det.)

Intermediate Frequency 460 kc.

RADIOTRON COMPLEMENT

- | | | | |
|------------------|----------------------------|--------------------------|------------------------|
| (1) RCA-6K7..... | Radio-Frequency Amplifier | (6) RCA-6C5..... | First Audio Amplifier |
| (2) RCA-6L7..... | First Detector | (7) RCA-6C5..... | Audio Driver Amplifier |
| (3) RCA-6J7..... | Heterodyne Oscillator | (8) RCA-6F6..... | Power Output Amplifier |
| (4) RCA-6K7..... | Intermediate Amplifier | (9) RCA-6F6..... | Power Output Amplifier |
| (5) RCA-6H6..... | Second Detector and A.V.C. | (10) RCA-5Z3 or 5Z4..... | Full-Wave Rectifier |
| | | (11) RCA-6E5..... | Tuning Indicator |

POWER SUPPLY RATINGS

Rating A-6.....	105-125 Volts, 60 Cycles, 170 Watts
Rating A-5.....	105-125 Volts, 50 Cycles, 165 Watts
Rating B-4.....	105-125 Volts, 40 Cycles, 170 Watts
Rating B-3.....	105-125 Volts, 30 Cycles, 160 Watts
Rating B-2.....	105-125 Volts, 25 Cycles, 165 Watts
Rating C-6.....	105-130/140-160/200-250 Volts, 60 Cycles, 175 Watts
Rating C-5.....	105-130/140-160/200-250 Volts, 50 Cycles, 170 Watts

PHONOGRAPH

Type.....Automatic Record Ejector
 Record Capacity.....Seven 10-inch or Six 12-inch
 Turntable Speed.....78 R.P.M.
 Type of Pickup..Improved Low-Impedance Magnetic
 Pickup Impedance.....12 Ohms at 1,000 Cycles

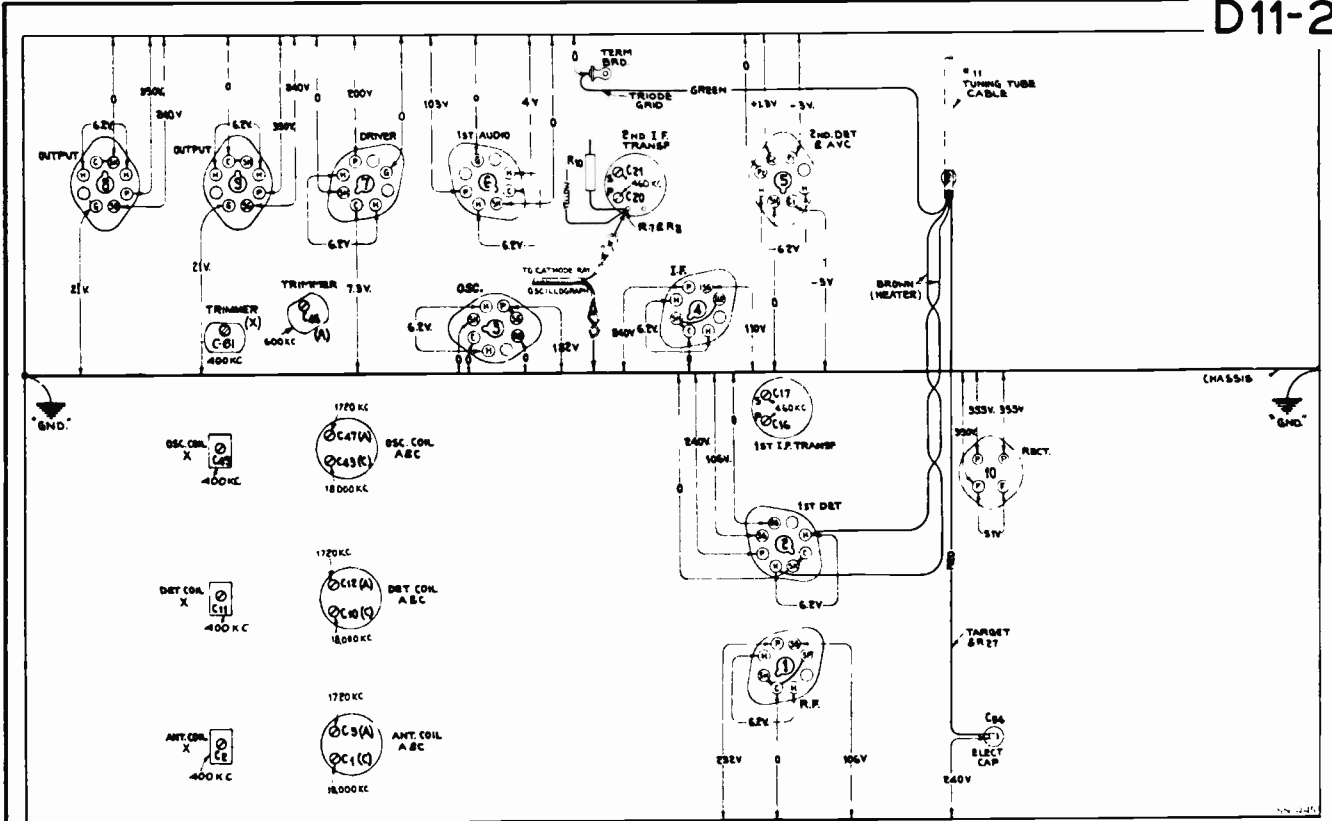
POWER OUTPUT RATINGS

Undistorted..... 8.5 Watts
 Maximum.....11.5 Watts

LOUDSPEAKER

Type.....12-inch Electrodynamic
 Voice Coil Impedance.....7.5 Ohms at 400 Cycles
 Field Coil Rating.....1,700 Ohms—72 M.A.

REFER TO INDEX FOR DATA ON AUTOMATIC RECORD CHANGER



-Radiotron Socket Voltages

Measured at 115 volts, 60 cycle supply-
-No signal being received

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of Band A scale.

Model D11-2 (with metal rectifier and capacitor phonograph motor)

The phonograph motor is of the capacitor type. Light machine oil should be used to lubricate the motor bearings. The motor is wired in this instrument as follows: One power-supply lead connects to one terminal of switch S-14. The other terminal of S-14 connects to one terminal of the brake switch S-15. The other terminal of S-15 connects to the yellow motor lead. The green motor lead connects to one lead of the motor capacitor. The red motor lead connects to the other capacitor lead and also to the remaining power-supply lead.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT	
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near "A" Band	C21 C20 2nd I-F Trans.	
2	1st Det. Grid in series with 0.01mfd			C17 C16 1st I-F Trans.	
3	Antenna in series with 200 mmfd.	1720 Kc	1720 Kc "A" Band	C47 C12 C3 Osc. R-F Ant.	
4		600 Kc	600 Kc "A" Band	C46 L-F Osc. Rock Gang	
5		Repeat Step 3			
6		400 Kc	400 Kc "X" Band	C45 C11 C2 Osc. R-F Ant.	
7		150 Kc	150 Kc "X" Band	C81 L-F Osc. Rock Gang	
8		Repeat Step 6			
9		Antenna in series with 300 ohms	18000 Kc	18 Mc "C" Band	C43† C10 C1 Osc. R-F Ant.

Osc. tracks 460 Kc above signal on all bands.

† Use minimum capacity peak.

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
	RECEIVER ASSEMBLIES				
4427	Bracket—High or low frequency tone control or volume control mounting bracket		11710	Lead—Shielded antenna lead.....	
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....		8041	Plate—I. F. or R. F. coil shield locking plate with screw—Package of 2.....	
11524	Cable—Two conductor cable with two prong male sections of connector plug.		11220	Resistor—Voltage divider resistor—Comprising one 3900 ohm and one 4200 ohm section (R31, R32).....	
11712	Cable—Shielded three conductor cable from volume control (R14) to "C" of No. 4 socket, "G" of No. 6 socket and input transformer.....		11221	Resistor—Voltage divider resistor—Comprising one 50 ohm, one 28 ohm and one 195 ohm section (R28, R29, R30)	
11713	Cable—Shielded two conductor volume control cable.....		5112	Resistor—1000 ohm—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....	
11223	Capacitor—Adjustable capacitor (C46)...		3706	Resistor—1800 ohm—Carbon type— $\frac{1}{4}$ watt (R15)—Package of 5.....	
5241	Capacitor—Adjustable capacitor (C61)...		5159	Resistor—2200 ohm—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....	
11292	Capacitor—22 MMfd. (C9).....		5175	Resistor—5600 ohm—Carbon type— $\frac{1}{2}$ watt (R21)—Package of 5.....	
11289	Capacitor—50 MMfd. (C8).....		2731	Resistor—10,000 ohm—Carbon type—1 watt (R25)—Package of 5.....	
11291	Capacitor—115 MMfd. (C50).....		11305	Resistor—22,000 ohm—Carbon type— $\frac{1}{4}$ watt (R16, R17)—Package of 5.....	
11290	Capacitor—400 MMfd. (C60).....		11300	Resistor—33,000 ohm—Carbon type— $\frac{1}{10}$ watt (R24)—Package of 5.....	
11317	Capacitor—600 MMfd. (C34).....		5033	Resistor—33,000 ohm—Carbon type—1 watt (R23)—Package of 5.....	
11269	Capacitor—800 MMfd. (C59).....		3118	Resistor—100,000 ohm—Carbon type— $\frac{1}{4}$ watt (R1, R3, R5, R6)—Package of 5.	
3784	Capacitor—900 MMfd. (C31).....		5027	Resistor—150,000 ohm—Carbon type— $\frac{1}{4}$ watt (R19)—Package of 5.....	
11316	Capacitor—1225 MMfd. (C26).....		11151	Resistor—2.2 megohms—Carbon type— $\frac{1}{4}$ watt (R9, R10, R11)—Package of 5...	
11287	Capacitor—4500 MMfd. (C58).....		5249	Shield—R. F. coil shield.....	
5107	Capacitor—.0025 Mfd. (C62, C63).....		11273	Shield—Radiotron shield.....	
4838	Capacitor—.005 Mfd. (C40, C41).....		5250	Shield—I. F. transformer shield.....	
4868	Capacitor—.005 Mfd. (C33).....		11199	Socket—Dial lamp socket.....	
4624	Capacitor—.01 Mfd. (C30).....		4794	Socket—4-contact Radiotron socket.....	
4937	Capacitor—.01 Mfd. (C39).....		11195*	Socket—Five-contact rectifier Radiotron socket.....	
4858	Capacitor—.01 Mfd. (C24*).....		11197	Socket—6-contact Radiotron socket.....	
11315	Capacitor—.015 Mfd. (C38).....		11198	Socket—7-contact Radiotron socket.....	
5196	Capacitor—.035 Mfd. (C57).....		5224	Switch—Low frequency tone control switch and power switch (S11, S13).....	
4886	Capacitor—.05 Mfd. (C24*).....		11236	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S12).....	
4836	Capacitor—.05 Mfd. (C4, C13, C18, C23)		5238	Terminal—Antenna terminal assembly....	
4835	Capacitor—.1 Mfd. (C64).....		11218	Transformer—Audio driver transformer (T2).....	
4885	Capacitor—.1 Mfd. (C7, C19, C27, C52)		11216	Transformer—First intermediate frequency transformer (L16, L17, C16, C17)....	
4841	Capacitor—.1 Mfd. (C6).....		11217	Transformer—Second intermediate frequency transformer (L18, L19, C20, C21, C22, R7, R8).....	
5170	Capacitor—.25 Mfd. (C32).....		11213	Transformer—Power transformer—105-125-150-210-250 volts—40-60 cycles (T1).....	
11203	Capacitor—10 Mfd. (C53).....		11212	Transformer—Power transformer—105-125 volts—25-60 cycles.....	
5212	Capacitor—18 Mfd. (C54).....			DRIVE ASSEMBLIES	
11215	Capacitor pack—Comprising one 16 Mfd., two 10 Mfd., and two 8 Mfd. capacitors (C29, C35, C36, C55, C56).....		5243	Arm—Band indicator operating arm.....	
11201	Clamp—Cable clamp—located near variable tuning condenser—Package of 5..		10194	Ball—Steel ball for drive assembly—Package of 20.....	
11272	Clamp—Cable clamp—located above antenna terminal.....		8054	Cam—Five position cam for station selector drive assembly.....	
4693	Clamp—Electrolytic capacitor clamp—for stock No. 11215.....		4422	Clutch—Tuning condenser drive clutch assembly—Comprising shaft, balls, ring, spring and washers, assembled.....	
5215	Coil—Antenna coil—A and C bands (L1, L2, L5, L6, C1, C3).....		8048	Coupling—Flexible coupling for variable capacitor (includes indicator shaft)....	
11325	Coil—Antenna coil—X band (L3, L4, C2)		11693	Dial—Station selector dial and cam assembly.....	
5216	Coil—Detector coil—A and C bands (L7, L8, L11, L12, C10, C12).....				
11326	Coil—Detector coil—X band (L9, L10, C11).....				
5217	Coil—Oscillator coil—A and C bands (L13, L15, C43, C47).....				
11327	Coil—Oscillator coil—X band (L14, L23, C45).....				
11320	Coil—Choke coil (L20).....				
11318	Capacitor Pack—Comprising one 0.015 Mfd., one .05 Mfd. capacitor, one 27,000 ohm and one 10,000 ohm resistor—(C25, C28, R12, R13).....				
5214	Condenser—Three gang variable tuning condenser (C5, C14, C48).....				
11205	Volume Control (R14).....				
11219	Tone Control—High frequency tone control (R22).....				
4153	Connector—Four contact female connector for cables, stock Nos. 11712 and 11713				

* Refer to Schematic Diagram.

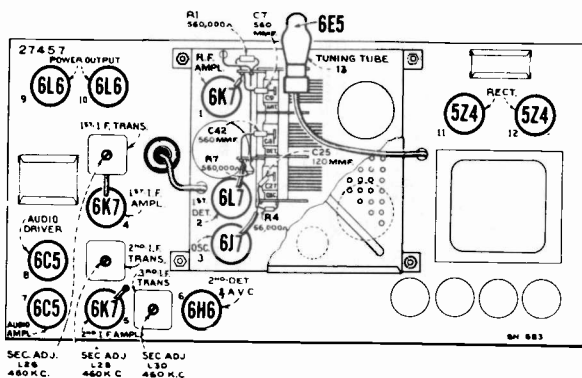
D11-2

REPLACEMENT PARTS—Continued

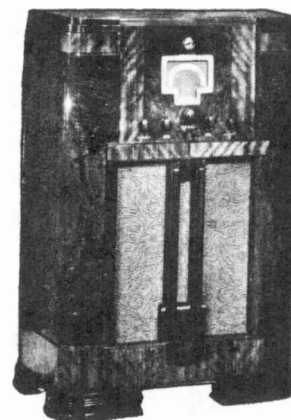
Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
8045	Disc—Drive disc and gear assembly.....		12037	Filter—Filter pack for phonograph (used in some models).....	
11692	Drive—Tuning condenser drive assembly, complete		11346	Knob—Station selector knob—Package of 5.....	
8044	Escutcheon—Dial escutcheon with vernier scale		11347	Knob—Volume control, tone control, power switch or range switch knob—Package of 5.....	
8046	Gear—Indicator shaft drive gear and vernier idler with one spring.....		11382	Resistor—1 megohm—Carbon type— $\frac{1}{10}$ watt (R27)—Package of 5.....	
8050	Gear—Gear sector and band indicator operating link (link connects to arm on band switch).....		11711	Shade—Phonograph compartment lamp shade	
8053	Indicator—Station selector vernier indicator pointer		11348	Screw—No. 8-32— $\frac{7}{16}$ -in. headless cupped point set screw for knob (Stock No. 11346)—Package of 10.....	
11793	Indicator—Station selector indicator pointer		11381	Socket—Tuning lamp socket and cover..	
8051	Link—Complete with roller and spring...		11349	Spring—Retaining spring for knob (Stock No. 11347)—Package of 5.....	
8049	Pinion—Vernier pointer drive pinion and shaft		11714	Transformer—Phonograph input transformer—Comprising 1 transformer, 1 choke coil, 3 resistors and 3 capacitors (T4, L25, C65, C66, C67, R33, R34, R36)	
4669	Screw—Square head No. 8-32x5/32 set screw—Package of 10.....		11715	Volume Control—Phonograph volume control (S16, S17, R35).....	
8047	Spring—Coil spring for indicator shaft drive gear and vernier idler (stock No. 8046)				
8052	Spring—Coil spring for link—Package of 5				
8042	Stud—Band indicator operating arm stud—Package of 5.....				
	MISCELLANEOUS ASSEMBLIES			REPRODUCER ASSEMBLIES	
11881	Base—Phonograph compartment lamp base		8059	Board—Reproducer terminal board (2 terminals)	
4391	Box—Needle box.....		8060	Bracket—Output transformer mounting bracket	
11191	Bracket—Radiotron tuning lamp mounting bracket—less clamp (Stock No. 11192)		11304	Cable—Reproducer cable—Complete with female connector.....	
11319	Cable—Radiotron tuning lamp cable and plug—approximately 25-in. long.....		8058	Clamp—Cone rim clamp—Package of 4..	
11716	Cable—Two conductor shielded cable—Volume control "HJ and F" to chassis cable (Stock No. 11712).....		11189	Coil—Field coil, magnet and cone housing (L22).....	
11717	Cable—Five conductor shielded cable from volume control "A-B-C-D-G-K" to input transformer terminals No. 4 and No. 7.		8056	Cone—Reproducer cone (L21).....	
11192	Clamp—Radiotron tuning lamp mounting clamp—less bracket (Stock No. 11191)		5039	Connector—4 prong male connector plug for reproducer.....	
6123	Connector—Four contact male connector plug for cable (Stock No. 11717).....		5040	Connector—4 contact female connector socket for reproducer cable.....	
11570	Connector—Four contact male connector for cable (Stock No. 11716).....		9620	Reproducer, complete.....	
11276	Escutcheon—Radiotron tuning lamp escutcheon		9652	Reproducer complete (with cloth screen).	
11379	Escutcheon—Station selector escutcheon and crystal.....		8057	Transformer—Output transformer (T3, C42)	

MODEL 13K

Thirteen-Tube, Five-Band, A-C, Superheterodyne Receiver



-Radiotron and I-F Trimmer Locations



MODEL 13K

Electrical Specifications

FREQUENCY RANGES

- "Long Wave" (X) 150-410 kc
- "Standard Broadcast" (A) 530-1,800 kc
- "Medium Wave" (B) 1,800-6,400 kc
- "Short Wave" (C) 6,400-23,000 kc
- "Ultra Short Wave" (D) 23,000-60,000 kc
- Intermediate Frequency 460 kc

ALIGNMENT FREQUENCIES

- "Long Wave" (X) 175 kc (osc.), 350 kc (osc., det., ant.)
- "Standard Broadcast" (A) 600 kc (osc.), 1,500 kc (osc., det., ant.)
- "Medium Wave" (B) ... 6,000 kc (osc., det., ant.)
- "Short Wave" (C) 20,000 kc (osc., det., ant.)
- "Ultra Short Wave" (D) 57,000 kc (osc., det., ant.)

RADIOTRON COMPLEMENT

- | | |
|--|--|
| (1) RCA-6K7 R-F Amplifier | (8) RCA-6C5 Audio Driver Amplifier |
| (2) RCA-6L7 First Detector | (9) RCA-6L6 Power Output |
| (3) RCA-6J7 Oscillator | (10) RCA-6L6 Power Output |
| (4) RCA-6K7 First I-F Amplifier | (11) RCA-5Z4 Rectifier |
| (5) RCA-6K7 Second I-F Amplifier | (12) RCA-5Z4 Rectifier |
| (6) RCA-6H6 Second Detector and A.V.C. | (13) RCA-6E5 Tuning Tube |
| (7) RCA-6C5 Audio Voltage Amplifier | |
- Pilot Lamps (4) Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

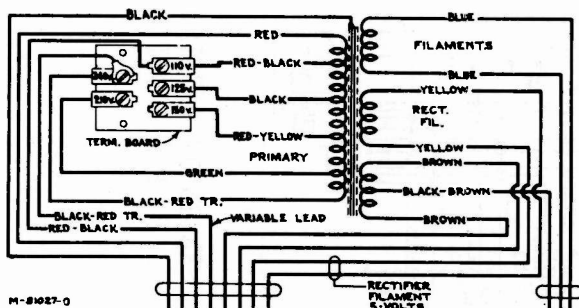
- Rating A 105-125 volts, 50-60 cycles, 165 watts
- Rating B 105-125 volts, 25-60 cycles, 165 watts
- Rating C 100-130/140-160/195-250 volts, 40-60 cycles, 165 watts

POWER OUTPUT

- Undistorted 20 watts
- Maximum 30 watts

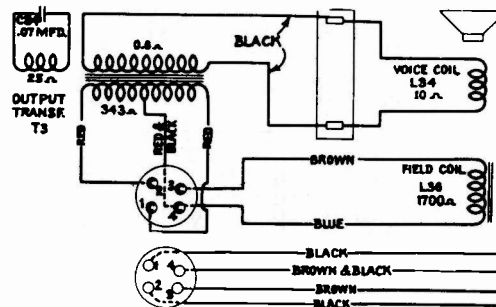
LOUDSPEAKER

- Type Electrodynamic
- Impedance (v.c.) 11¼ ohms at 400 cycles

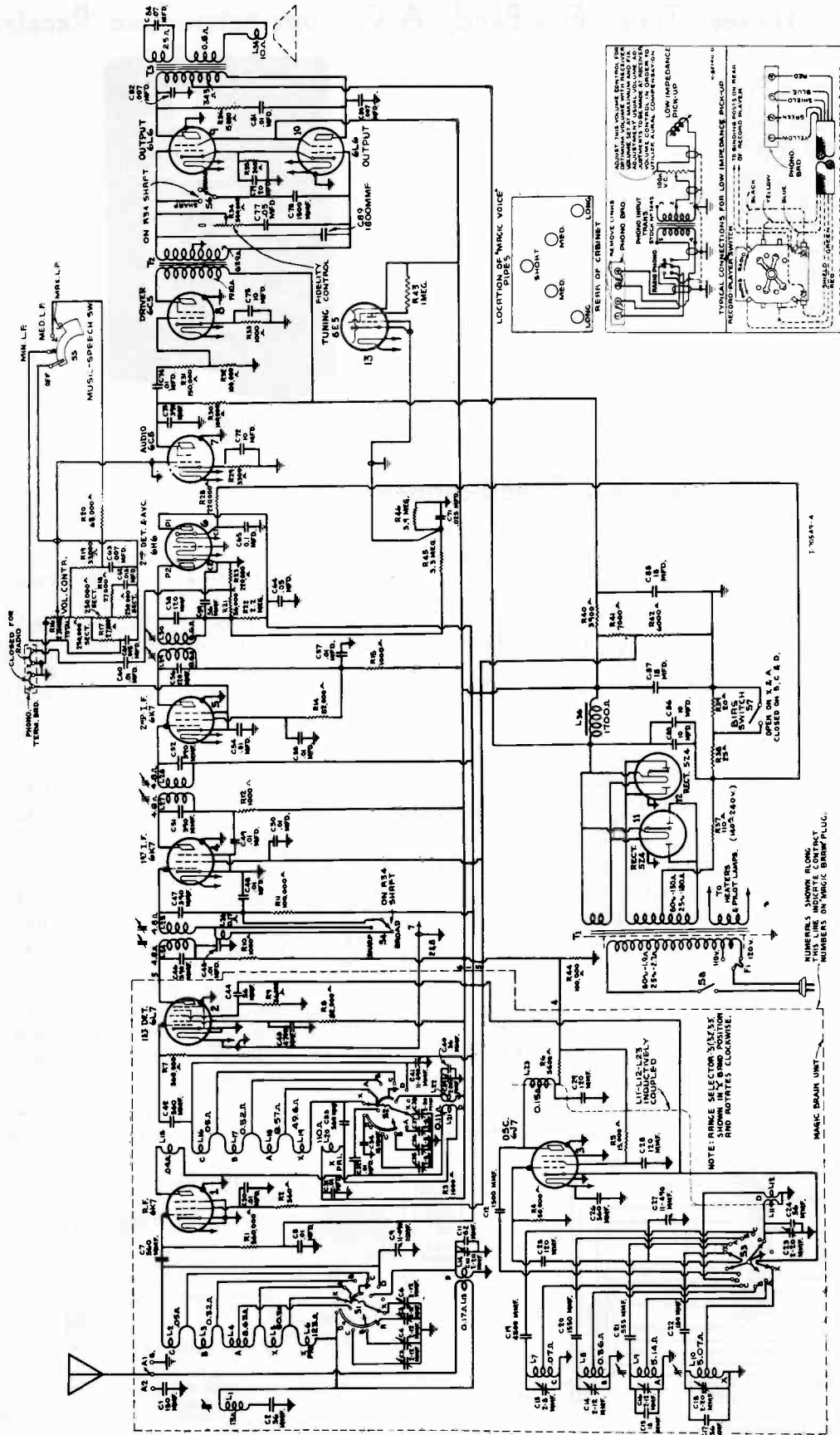


Universal Transformer

Primary resistance—3.6 ohms total Secondary resistance—112 ohms total



Loudspeaker Wiring



SERVICE HINTS

- (1) Excessive heating of the 6E5 tube may be due to high cathode current — in excess of 7 ma. The tube should be replaced and the condition of the 5Z4 rectifier checked.
- (2) Low sensitivity or intermittent operation may be caused by C-43 or C-33 developing low resistance leakage. Check both capacitors and replace if found defective.
- (3) Low sensitivity around 15—16 megacycles may be caused by dirty or poor contact of grounding contact finger on S-3.
- (4) Motorboating may be due to intermittent capacitor Stock No. 18025.

SEE INDEX LISTING "MAGIC BRAIN"
FOR ADDITIONAL DATA.

-Schematic Circuit Diagram

13K

REPLACEMENT PARTS

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

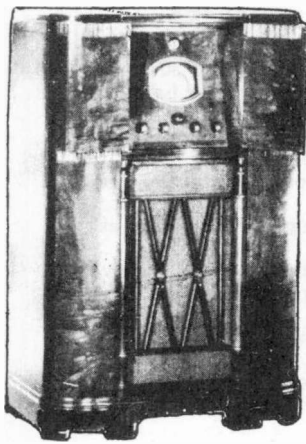
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
12863	Board—Phonograph terminal board . . .		12478	Resistor—150,000 ohms—Carbon type— 1/10 watt—Package of 5 (R31)	
12987	Bracket—Mounting bracket for bias switch		12264	Resistor—220,000 ohms—Insulated— 1/4 watt—Package of 5 (R28)	
4427	Bracket—Volume control and L. F. tone control mounting bracket		11398	Resistor—220,000 ohms—Carbon type— 1/10 watt—Package of 5 (R23)	
13024	Cable—Tuning lamp cable and socket . .		12013	Resistor—1 meg—Carbon type—1/10 watt—Package of 5 (R43)	
12511	Cap—Grid contact cap—Package of 5 . .		12679	Resistor—2.2 meg—Insulated—1/4 watt —Package of 5 (R22)	
12629	Capacitor—56 Mmfd. (C59)		12874	Resistor—3.3 meg—Carbon type—1/4 watt—Package of 5 (R45)	
12404	Capacitor—120 Mmfd. (C56, C58)		13167	Resistor—3.9 meg—Carbon type—1/4 watt—Package of 5 (R46)	
13034	Capacitor—390 Mmfd. (C73)		13017	Resistor—Voltage divider comprising one 7,000-ohm and one 6,000-ohm sec- tions (R41, R42)	
13301	Capacitor—390 Mmfd. (C46, C47, C51, C52)		13018	Resistor—Voltage divider comprising one 240-ohm, one 20-ohm and one 25- ohm sections (R35, R38, R39)	
12898	Capacitor—1,500 Mmfd. (C78)		4669	Screw—No. 8-32 x 5/32 set screw for link assembly—Stock No. 12868—Package of 10	
13580	Capacitor—1,800 Mmfd. (C89)		12008	Shield—I. F. transformer shield for Stock Nos. 12981, 12990, 12982	
13033	Capacitor—.007 Mfd. (C82, C83)		12607	Shield—Transformer shield top for first or second I. F. transformer	
4870	Capacitor—.025 Mfd. (C71)		12581	Shield—Transformer shield top for third I. F. transformer	
4858	Capacitor—.01 Mfd. (C45, C48, C49, C50, C54, C55, C57, C60, C74)		11195	Socket—5-contact 5Z4 Radiotron socket	
4937	Capacitor—.01 Mfd. (C81)		11198	Socket—7-contact 6K7 or 6L6 Radiotron socket	
4836	Capacitor—.05 Mfd. (C64, C77)		11196	Socket—8-contact 6C5 or 6H6 Radiotron and Magic Brain power supply socket	
4841	Capacitor—.01 Mfd. (C65)		11381	Socket—Tuning lamp socket and cover.	
11203	Capacitor—10 Mfd. (C85, C86)		13095	Socket—Upper left or lower right hand dial lamp socket	
5212	Capacitor—18 Mfd. (C87, C88)		11222	Socket—Upper right or lower left hand dial lamp socket	
12470	Capacitor—20 Mfd. (C79)		12007	Spring—Retaining spring for core, Stock No. 12006—Package of 10	
13011	Capacitor—Compensating pack compris- ing two .015 Mfd., one .007 Mfd. capaci- tors and two 27,000-ohm, one 33,000- ohm, and one 68,000-ohm resistors (C61, C62, C63, R17, R18, R19, R20)		12986	Stud—Stud, nut and washer for connect- ing link assembly, Stock No. 12868, to sector gear and link, Stock No. 12910 —Package of 5	
13025	Capacitor—Pack comprising two 10 Mfd. sections (C72, C75)		12988	Switch—Bias switch (S7)	
5040	Connector—4-contact female connector for speaker cable		13015	Tone control—Fidelity control (R34, S4, S6)	
12006	Core—Adjustable core and stud for Stk. Nos. 12981, 12990, 12982		13013	Tone control—Music-speech and power switch (S5, S8)	
5240	Cover—Fuse mounting cover		12981	Transformer—First I. F. transformer complete (L24, L25, L26, C46, C47)	
12870	Dial—Vernier dial scale		12990	Transformer—Second I. F. transformer complete (L27, L28, C51, C52)	
10907	Fuse—3 Amp.—Package of 5—(F1)		12982	Transformer—Third I. F. transformer complete (L29, L30, C56, C58, C59, R21, R23)	
5226	Lamp—Dial lamp—6.3 volts—Package of 5		13023	Transformer—Driver transformer (T2).	
12868	Link—Range switch and band indicator operating link complete with set screws		13008	Transformer—Power transformer, 100- 120 volts, 50-60 cycles (T1)	
13012	Mounting—Fuse mounting, 100-120-volt models only		13009	Transformer—Power transformer, 100- 120 volts, 25-50 cycles (T1)	
13026	Mounting—Fuse mounting, 220-volt models only		13010	Transformer—Power transformer, 100- 250 volts, 50-60 cycles (T1)	
13027	Resistor—110 ohms, wire wound—used in 110-volt models only (R37)		13014	Volume control—(R16)	
13029	Resistor—140 ohms, wire wound—used in 220-volt models only (R37)				
13030	Resistor—1,000 ohms—Carbon type— 1/10 watt—Package of 5 (R12)				
5112	Resistor—1,000 ohms—Carbon type—1/4 watt—Package of 5 (R10, R15)				
13031	Resistor—3,300 ohms—Carbon type— 1/10 watt—Package of 5 (R29)				
13032	Resistor—3,900 ohms—Carbon type—1 watt—Package of 5 (R40)				
5114	Resistor—15,000 ohms—Carbon type—1 watt (R36)				
11282	Resistor—56,000 ohms—Carbon type— 1/10 watt—Package of 5 (R21)				
11365	Resistor—82,000 ohms—Carbon type—1/4 watt—Package of 5 (R14)				
11281	Resistor—100,000 ohms—Carbon type— 1/10 watt—Package of 5 (R11)				
12263	Resistor—100,000 ohms—Insulated—1/4 watt—Package of 5 (R30)				
3058	Resistor—100,000 ohms—Carbon type— 1 watt—Package of 5 (R44)				
				MAGIC BRAIN	
				UNIT ASSEMBLIES	
			12806	Board—3-contact antenna and ground terminal board	
			5237	Bushing—Variable condenser mounting bushing assembly—Package of 3	

REPLACEMENT PARTS (Continued)

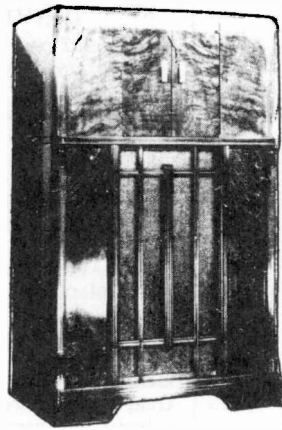
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
12886	Cable—Shielded power cable, approx. 4 inches long, complete with 8-contact male plug				
12511	Cap—Grid contact cap—Package of 5		10705	DRIVE ASSEMBLIES	
12714	Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16)		10941	Ball—5/32 in. diameter steel ball for planetary drive—Package of 20	
12807	Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37)		12904	Ball—1/8 in. diameter steel ball for planetary drive bearing—Package of 20	
12884	Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39)		12904	Bushing—Plate arfd bushing assembly for planetary drive mounting	
12896	Capacitor—15 Mmfd. (C34)		12905	Coupling—Flexible coupling and shaft assembly complete	
12722	Capacitor—18 Mmfd. (C15)		12909	Dial—Band indicating dial and cam assembly	
12891	Capacitor—36 Mmfd. (C40)		12899	Drive—Variable tuning condenser drive complete including mounting bracket, drive, dial scale, and indicator less vernier dial Stk. No. 12870 and link Stk. No. 12868	
12629	Capacitor—56 Mmfd. (C24)		12906	Gear—Anti-lash drive gear complete	
12895	Capacitor—56 Mmfd. (C17)		12910	Gear—Sector gear and link assembly for band selector	
12723	Capacitor—56 Mmfd. (C2, C44)		12908	Indicator—Station selector indicator pointer	
13307	Capacitor—62 Mmfd. (C11)		8051	Link—Link and roller assembly complete with springs	
12724	Capacitor—120 Mmfd. (C25, C28, C29)		12911	Screen—Dial lamp screen and light diffuser	
12725	Capacitor—150 Mmfd. (C1)		4669	Screw—Set screw for flexible coupling or gear stock Nos. 12905 and 12906—Package of 10	
12894	Capacitor—180 Mmfd. (C22)		12901	Shaft—Direct drive shaft and pinion gear for planetary drive	
12727	Capacitor—555 Mmfd. (C21)		12900	Shaft—Vernier drive shaft for planetary drive	
12537	Capacitor—560 Mmfd. (C7, C26, C33, C42)		12903	Spring—Tension spring for planetary drive bearing—Package of 10	
12898	Capacitor—1500 Mmfd. (C12)		12907	Spring—Tension spring for gear stock No. 12906—Package of 10	
12729	Capacitor—1550 Mmfd. (C20)		8052	Spring—Tension spring for link stock No. 8051—Package of 5	
12728	Capacitor—4500 Mmfd. (C19)			REPRODUCER ASSEMBLIES	
12897	Capacitor—4700 Mmfd. (C43)		8059	Board—Reproducer terminal board	
4858	Capacitor—.01 Mfd. (C8, C30, C31, C32)		12640	Bracket—Output transformer mounting bracket	
12879	Coil—Antenna coil and shield XABC bands (L2, L3, L4, L5, L6)		12474	Cone—Reproducer cone and dust cap (L34)	
12888	Coil—Antenna coil "D" band (L13, L14)		11577	Coil—Field coil, magnet and cone support (L36)	
12880	Coil—Detector coil and shield XABC bands (L15, L16, L17, L18, L19, L20)		5039	Connector—4 contact male connector for reproducer leads	
12709	Coil—Oscillator coil and shield ABC bands (L7, L8, L9)		9719	Reproducer Complete	
12881	Coil—Oscillator coil and shield X band only (L10)		13007	Transformer—Output transformer (T3, C84)	
12890	Coil—Oscillator coil "D" band (L11, L12, L23)			MISCELLANEOUS ASSEMBLIES	
12889	Coil—R. F. Coil "D" band (L21, L22)		11996	Bracket—Tuning tube mounting bracket and clamp	
12877	Condenser—3 gang variable tuning condenser (C9, C27, C41)		12915	Crystal—Station selector escutcheon and crystal	
12887	Connector—8 contact male connector and cover for power cable Stk. No. 12886		12742	Escutcheon—Tuning tube escutcheon	
12664	Core—Adjustable core and stud for Stk. No. 12654		12699	Knob—Large station selector knob—Package of 5	
12800	Core—Adjustable core and stud for Stk. 12709		12700	Knob—Small (vernier) station selector knob—Package of 5	
12882	Core—Adjustable core and stud for Stk. No. 12881		11347	Knob—Volume control, Fidelity control, music-speech and power switch, and range selector knob—Package of 5	
11324	Resistor—560 ohms—Carbon type—1/4 watt (R2)—Package of 5		11210	Screw—Chassis mounting screw and washer assembly—Package of 4	
5112	Resistor—1,000 ohms—Carbon type—1/4 watt (R3)—Package of 5		12916	Shield—Magic brain shield	
11298	Resistor—5,600 ohms—Carbon type—1 watt (R6)		4982	Spring—Retaining spring for knob stock No. 12699—Package of 10	
3998	Resistor—15,000 ohms—Carbon type—1/4 watt (R5)—Package of 5		11349	Spring—Retaining spring for knob stock Nos. 11347, 12700—Package of 5	
11282	Resistor—56,000 ohms—Carbon type—1/10 watt (R4, R9)—Package of 5				
8064	Resistor—82,000 ohms—Carbon type—1/2 watt (R8)—Package of 5				
11397	Resistor—560,000 ohms—Carbon type—1/10 watt (R1, R7)—Package of 5				
12651	Shield—Coil shield for Stk. Nos. 12879 and 12880				
12710	Shield—Coil shield for Stk. No. 12709				
12883	Shield—Coil shield for Stk. No. 12881				
11198	Socket—7 contact 6K7 Radiotron socket				
11279	Socket—7 contact 6L7 Radiotron socket				
12885	Socket—8 contact 6J7 Radiotron socket				
12007	Spring—Retaining spring for core Stk. Nos. 12664, 12800 and 12882				
12878	Switch—Range switch and mounting nut (S1, S2, S3)				
12654	Trap—Wave trap complete (L1)				

MODELS C13-2 & C13-3

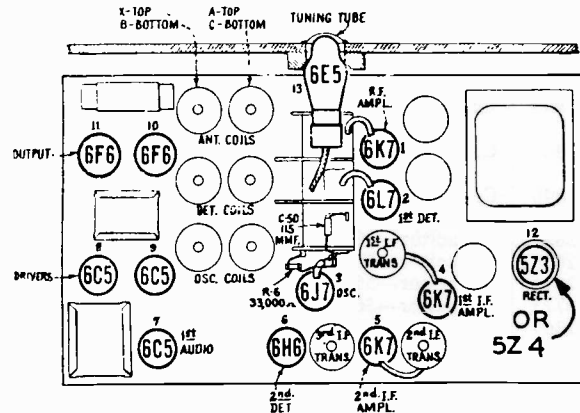
Thirteen-Tube, Five-Band, A-C, Superheterodyne Receivers



MODEL C 13-2



MODEL C 13-3



-Radiotron and Coil Locations

ELECTRICAL SPECIFICATIONS

FREQUENCY RANGES

Band X.....	140— 410 kc.
Band A.....	540— 1,800 kc.
Band B.....	1,800— 6,000 kc.
Band C.....	6,000—18,000 kc.
Band D.....	18,000—60,000 kc.

ALIGNMENT FREQUENCIES

Band X.....	150 kc. (osc.), 400 kc. (osc., det., ant.)
Band A.....	600 kc. (osc.), 1,720 kc. (osc., det., ant.)
Band B.....	6,132 kc. (osc., det., ant.)
Band C.....	18,000 kc. (osc., det., ant.)
Band D.....	No adjustments required

VOLTAGE AND FREQUENCY

Rating A.....	105—125 volts, 50—60 cycles
Rating B.....	105—125 volts, 25—60 cycles
Rating C.....	100—130/140—160/195—250 volts, 40—60 cycles

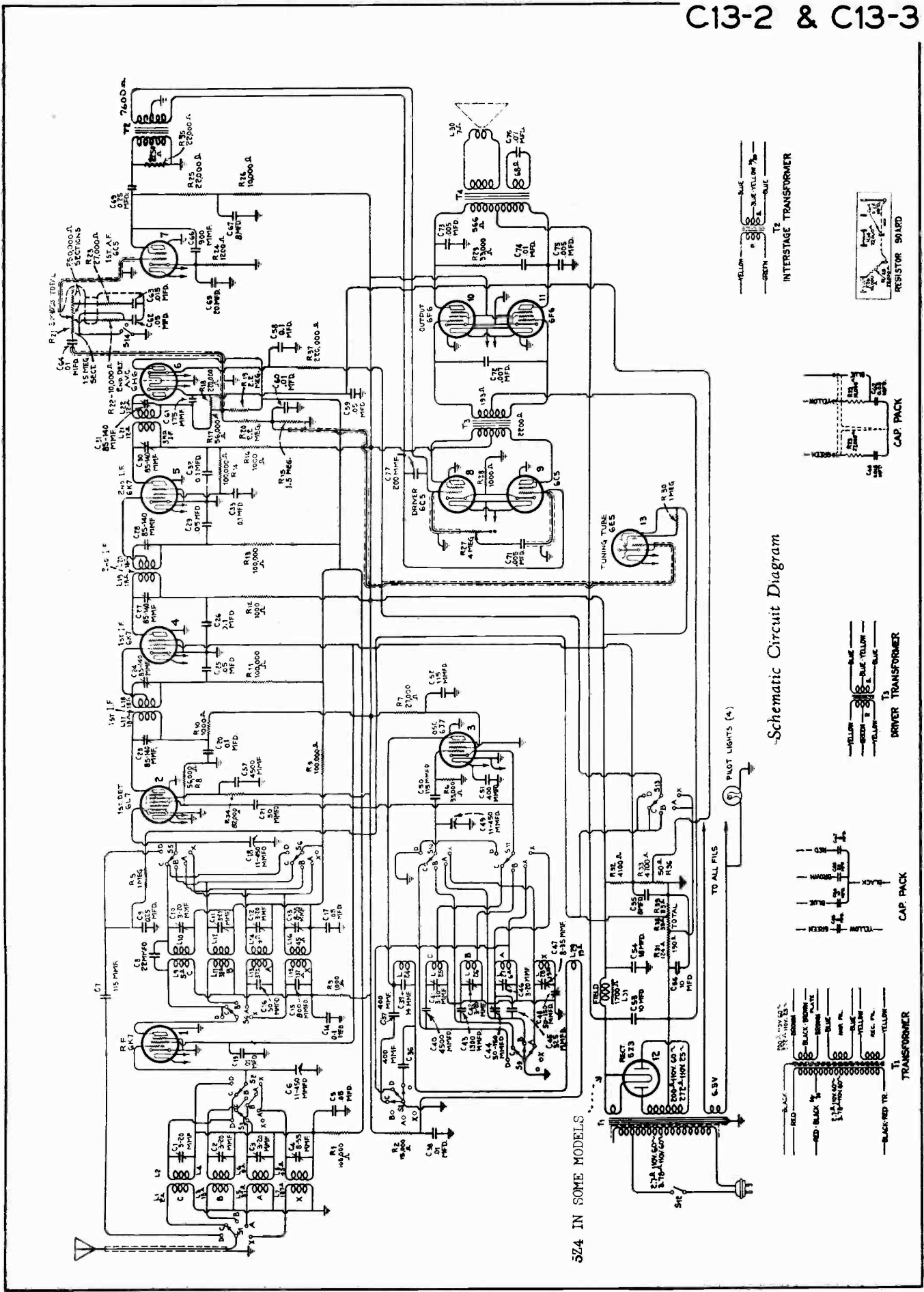
RADIOTRON COMPLEMENT

(1) RCA-6K7	Radio-Frequency Amplifier
(2) RCA-6L7	First Detector
(3) RCA-6J7	Heterodyne Oscillator
(4) RCA-6K7	First Intermediate Amplifier
(5) RCA-6K7	Second Intermediate Amplifier
(6) RCA-6H6	Second Detector and A.V.C.
(7) RCA-6C5	First Audio Amplifier
(8) RCA-6C5	Audio Driver Amplifier
(9) RCA-6C5	Audio Driver Amplifier
(10) RCA-6F6	Power Output Amplifier
(11) RCA-6F6	Power Output Amplifier
(12) RCA-5Z3 or 5Z4	Full Wave Rectifier
(13) RCA-6E5	Tuning Indicator

MISCELLANEOUS

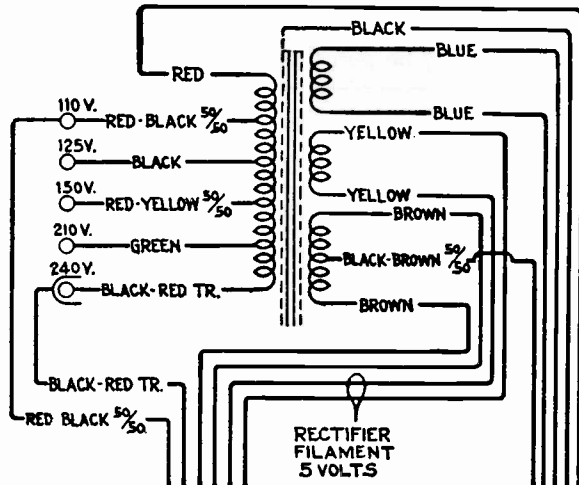
Power Consumption.....	140 watts	Loudspeaker.....	12 inch, Electrodynamic
Undistorted Output.....	10 watts	Voice Coil Impedance.....	7.5 ohms at 400 cycles
Maximum Output.....	15 watts	Intermediate Frequency.....	460 kc.

C13-2 & C13-3



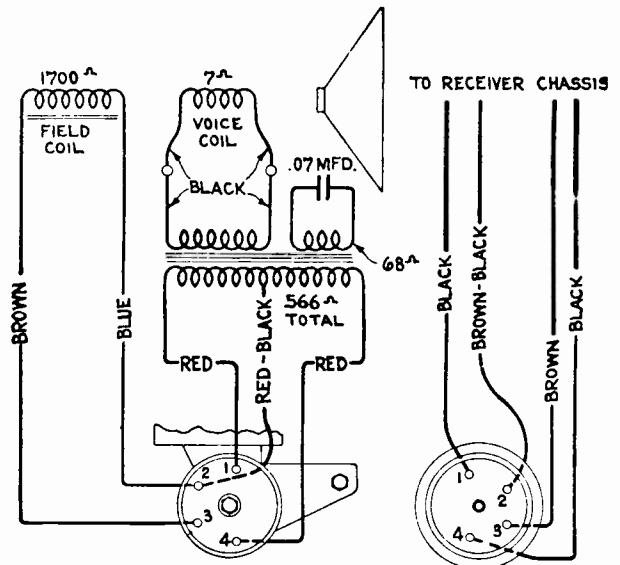
Schematic Circuit Diagram

C13-2 & C13-3

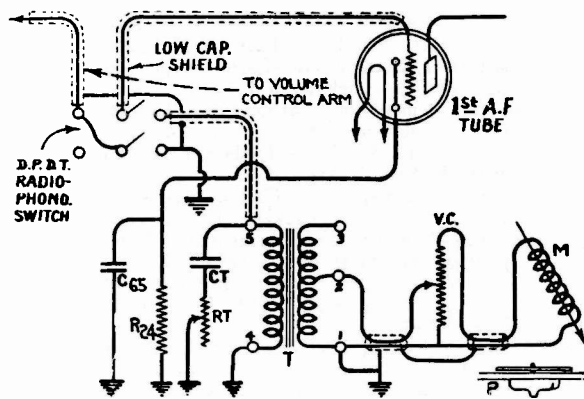


Universal Transformer Schematic and Wiring

Pri. Res.—4.89 Ohms, Total
Sec. Res.—165 Ohms, Total



Loudspeaker Schematic and Wiring



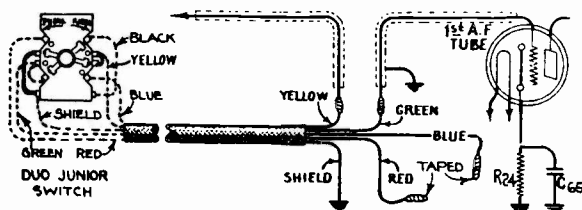
General Phonograph Connections

INSTALLATION

Change the receiver circuits and add phonograph connections to conform with the above schematic. Thoroughly shield leads where indicated, keeping them clear of a-c circuits and transformers. Place transformer T so as to obtain minimum lengths of secondary leads and mount it in the position which does not cause hum.

PARTS REQUIRED

- M—Magnetic Pickup
- Low Impedance
- VC—Volume Control
- 100 ohms
- T—Phono Input Transformer—Stock No. 7445
- P—Phono Turntable Mechanism
- CT—Condenser—.05 mfd.
- RT—Variable Resistor—0 to 10,000 ohms



Duo Junior Connections

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with the horizontal line at low frequency end of A Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd			C31 C30 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "A" Band	C28 C27 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			C24 C23 1st I-F Trans.
4		1720 Kc	1720 Kc "A" Band	C48 C12 C3 Osc. R-F Ant.
5		600 Kc	600 Kc "A" Band	C44 L-F Osc. Rock Gang
6	Antenna in series with 200 mmfd	Repeat Step 4		
7		400 Kc	400 Kc "X" Band	C47 C13 C4 Osc. R-F Ant.
8		150 Kc	150 Kc "X" Band	C48 L-F Osc. Rock Gang
9	Repeat Step 7			
10	Antenna in series with 300 ohms	6132 Kc	6132 Kc "B" Band	C42† C11 C2 Osc. R-F Ant.
11		18000 Kc	18 Mc "C" Band	C41† C10 C1 Osc. R-F Ant.

Osc. tracks 460 Kc above signal on all bands.

† Use minimum capacity peak.

C13-2 & C13-3

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
4427	Bracket—Low frequency tone control switch, volume control or high frequency tone control mounting bracket.....		11283	Resistor—1200 ohms—Carbon type—1/4 watt—(R24)—Package of 5.....	
5237	Bushing—Variable capacitor mounting assembly—Package of 3.....		3381	Resistor—10,000 ohms—Carbon type—1/4 watt (R26)—Package of 5.....	
11255	Cable—Radiotron tuning lamp cable complete with socket.....		5114	Resistor—15,000 ohms—Carbon type—1 watt (R2).....	
5241	Capacitor—Adjustable capacitor—(C44, C48).....		8070	Resistor—22,000 ohms—Carbon type—1/2 watt (R25)—Package of 5.....	
11286	Capacitor—14 Mmfd. (C39).....		11305	Resistor—22,000 ohms—Carbon type—1/4 watt (R35)—Package of 5.....	
11292	Capacitor—22 Mmfd. (C8).....		8065	Resistor—27,000 ohms—Carbon type—1/2 watt (R7)—Package of 5.....	
11289	Capacitor—50 Mmfd. (C16, C21).....		5033	Resistor—33,000 ohms—Carbon type—1 watt (R29)—Package of 5.....	
11291	Capacitor—115 Mmfd. (C7, C50, C52).....		11300	Resistor—33,000 ohms—Carbon type—1/10 watt (R6)—Package of 5.....	
11295	Capacitor—200 Mmfd. (C77).....		11282	Resistor—56,000 ohms—Carbon type—1/10 watt (R8)—Package of 5.....	
11294	Capacitor—325 Mmfd. (C45).....		8064	Resistor—82,000 ohms—Carbon type—1/2 watt (R34)—Package of 5.....	
11290	Capacitor—400 Mmfd. (C36, C37, C51).....		3118	Resistor—100,000 ohms—Carbon type—1/4 watt (R11, R13, R14)—Package of 5.....	
11269	Capacitor—800 Mmfd. (C15).....		11281	Resistor—100,000 ohms—Carbon type—1/10 watt (R1, R9)—Package of 5.....	
11293	Capacitor—900 Mmfd. (C66).....		5158	Resistor—220,000 ohms—Carbon type—1/4 watt (R37)—Package of 5.....	
11335	Capacitor—1300 Mmfd. (C43).....		3033	Resistor—1 megohm—Carbon type—1/4 watt (R5)—Package of 5.....	
11287	Capacitor—4500 Mmfd. (C40, C57).....		4241	Resistor—1.5 Megohms—Carbon type—1/4 watt (R15)—Package of 5.....	
4838	Capacitor—.005 Mfd. (C73, C75).....		11151	Resistor—2.2 megohm—Carbon type—1/4 watt (R19, R20)—Package of 5.....	
5242	Capacitor—.005 Mfd. High frequency tone control capacitor (C71).....		11209	Resistor—Voltage divider resistor—Comprising one 4100 ohm, one 4700 ohm, one 50 ohm, two 33 ohm and one 124 ohm sections—(R31, R32, R33, R36, R38, R39).....	
5148	Capacitor—.007 Mfd. (C72).....		5249	Shield—Antenna, Detector or Oscillator coil shield.....	
4624	Capacitor—.01 Mfd. (C64).....		5250	Shield—Intermediate frequency transformer shield.....	
4883	Capacitor—.01 Mfd. (C38).....		11273	Shield—Rectifier Radiotron shield.....	
4937	Capacitor—.01 Mfd. (C74).....		4794	Socket—4 contact rectifier Radiotron socket	
4836	Capacitor—.05 Mfd. (C5, C17, C25, C29, C59).....		11197	Socket—6 contact Radiotron socket—For first audio or driver radiotrons—(6C5).....	
4886	Capacitor—.05 Mfd. (C60).....		11198	Socket—7 contact Radiotron socket—For 6K7, 6H6, or 6F6 radiotrons.....	
4841	Capacitor—.1 Mfd. (C19, C58).....		11278	Socket—7 contact oscillator Radiotron (6J7) socket.....	
4885	Capacitor—.1 Mfd. (C14, C20, C26, C32, C33).....		11279	Socket—7 contact First Detector Radiotron (6L7) socket.....	
4840	Capacitor—.25 Mfd. (C9).....		11199	Socket—Dial lamp socket.....	
3597	Capacitor—.25 Mfd. (C69).....		5224	Switch—Low frequency tone control switch and power switch (S12, S14).....	
11203	Capacitor—10 Mfd. (C53).....		5225	Switch—Range switch—(S1, S2, S3, S4, S5, S6, S8, S9, S10, S11, S13).....	
5212	Capacitor—18 Mfd. (C54).....		5238	Terminal—Antenna terminal board and clip with insulating strip and rivets.....	
11204	Capacitor Pack—Comprising one 10 Mfd., one 20 Mfd., and two 8 Mfd. capacitors C55, C56, C65, C67).....		5222	Tone Control—High frequency tone control—(R27).....	
11208	Capacitor Pack—Comprising one .015 Mfd. and one .05 Mfd. capacitor and one 27,000 ohm and one 10,000 ohm resistors C62, C63, R22, R23).....		5232	Transformer—Audio driver transformer—(T3).....	
11272	Clamp—Cable clamp—Located on top surface of chassis near variable tuning condenser.....		5228	Transformer—First Intermediate frequency transformer—(L17, L18, C23, C24).....	
4693	Clamp—Electrolytic capacitor mounting clamp—for Stock No. 11204.....		5234	Transformer—Interstage Audio transformer—(T2).....	
5215	Coil—Antenna coil—A and C Bands—(L1, L2, L5, L6, C1, C3).....		8061	Transformer—Power transformer—105-125 volts 50/60 cycles—(T1).....	
5218	Coil—Antenna coil—X and B Bands—(L3, L4, L7, L8, C2, C4).....		8062	Transformer—Power transformer—105/125 volts 25/50 cycles.....	
5216	Coil—Detector coil—A and C Bands—L9, L10, L13, L14, C10, C12).....		11194	Transformer—Power transformer—105/125/150/210/250 volts 40/60 cycles....	
5219	Coil—Detector coil—X and B Bands—(L11, L12, L15, L16, C11, C13).....				
5217	Coil—Oscillator coil—A and C Bands—(L25, L27, C41, C46).....				
5220	Coil—Oscillator coil—X and B Bands—(L26, L28, L29, C42, C47).....				
5221	Coil—Oscillator coil—D Band—(L24).....				
5214	Condenser—3 gang variable tuning condenser—(C6, C18, C49).....				
5226	Lamp—Pilot lamp—Package of 5.....				
11710	Lead—Shielded lead for antenna.....				
8041	Plate—I.F. or R.F. coil shield locking plate—Package of 2.....				
5112	Resistor—1000 ohms—Carbon type—1/4 watt (R3, R10, R28)—Package of 5.....				
11285	Resistor—1000 ohms—Flexible type—(R12, R16)—Package of 5.....				

REPLACEMENT PARTS (Continued)

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

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
11206	Transformer—Second Intermediate frequency transformer—(L19, L20, C27, C28)....		11191	Bracket—Radiotron tuning lamp mounting bracket—Less clamp.....	
5230	Transformer—Third Intermediate frequency transformer—(L21, L22, C30, C31, C61, R17, R18).....		11192	Clamp—Radotron tuning lamp mounting clamp—Less bracket.....	
11205	Volume Control—Complete (R21).....		11193	Cover—Reproducer cover.....	
	DRIVE ASSEMBLIES		11276	Escutcheon—Radiotron tuning lamp escutcheon.....	
5243	Arm—Band indicator operating arm.....		11379	Escutcheon—Station selector escutcheon and crystal.....	
10194	Ball—Steel ball for drive assembly—Package of 20.....		11346	Knob—Station selector knob—Package of 5.....	
8054	Cam—Five position cam—For station selector drive assembly.....		11347	Knob—Volume control, tone control range switch or power switch knob—Package of 5.....	
4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shaft, balls, ring, spring and washers assembled.....		11382	Resistor—1 megohm—Carbon type—1/10 watt—Used in tuning tube socket—Package of 5 (R30).....	
8048	Coupling—Flexible coupling for variable capacitors—Includes indicator shaft.....		5210	Screw—Chassis mounting screw assembly—Package of 4.....	
11336	Dial—Dial scale with mounting rivets.....		11348	Screw—8-32x7/16" Headless cupped point set screw for knob No. 11346—Package of 10.....	
8045	Disc—Drive disc and gear assembly.....		11381	Socket—Radiotron tuning tube socket and cover.....	
11380	Drive—Tuning condenser drive assembly complete.....		11349	Spring—Retaining spring for knob (Stock No. 11347)—Package of 5.....	
8044	Escutcheon—Dial escutcheon and vernier label.....			REPRODUCER ASSEMBLIES	
8050	Gear—Gear sector and band indicator operating link—(Link connects to arm on band switch).....		8059	Board—Terminal board (2 terminals)....	
8046	Gear—Indicator shaft drive gear and vernier idler with one spring.....		8060	Bracket—Output transformer mounting bracket.....	
8053	Indicator—Station selector vernier pointer.....		11200	Cable—Reproducer cable.....	
11793	Indicator—Station selector indicator pointer.....		8058	Clamp—Cone rim clamp—Package of 4....	
8051	Link—Complete with roller and spring....		11189	Coil—Field coil—magnet and cone housing (L31).....	
8049	Pinion—Vernier pointer drive pinion and shaft.....		8056	Cone—Reproducer cone (L30).....	
4669	Screw—8-32x5/32" Square head set screw for drive assembly—Package of 10.....		5039	Connector—4 contact male connector for reproducer.....	
8047	Spring—Coil spring for indicator shaft drive gear and vernier idler (Stock No. 8046).....		5040	Connector—4 contact female connector for reproducer cable.....	
8052	Spring—Coil spring for link—Package of 5.....		9620	Reproducer—Complete.....	
8042	Stud—Band indicator operating arm stud—Package of 5.....		8057	Transformer—Output transformer (T4, C76).....	
	MISCELLANEOUS ASSEMBLIES				
5211	Bolt—Reproducer mounting bolt assembly—Package of 2.....				

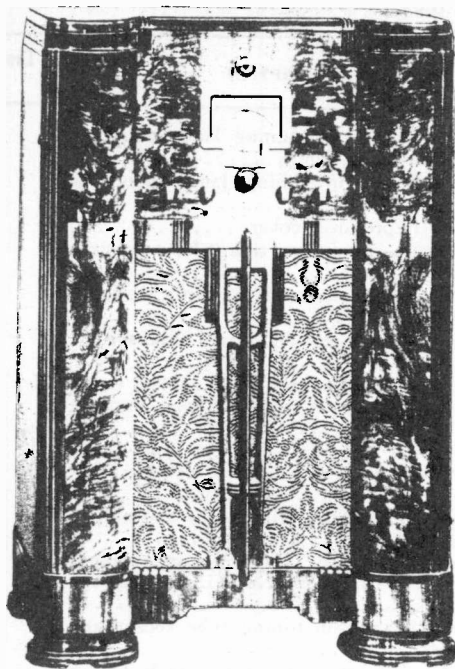
Models C13-2 and C13-3 (with metal rectifier).

Service Data for Model C13-2 are directly applicable to these instruments, except the parts listed below as Substitute and Additional Replacement Parts. Replacement Part changes applying to all Models C13-2 and C13-3 are:

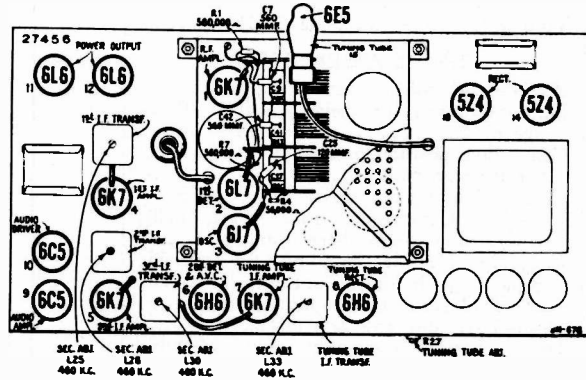
Stock No.	DESCRIPTION	LIST
11195	Socket—5-contact rectifier Radiotron socket.....	
11880	Transformer—Power transformer—105-125 volts 50-60 cycles (T1)....	
11887	Transformer—Power transformer—105-125 volts 25-50 cycles.....	
11251	Transformer—Power transformer—105/125/150/210/250 volts 40-60 cycles.....	
11793	Indicator—Station selector indicator pointer.....	
	Stock Nos. 11273, 4794, 8061, 8062, and 11194 are not used in chassis having metal rectifier.	

MODEL 15K

Fifteen-Tube, Five-Band, A-C, Superheterodyne Receiver



Model 15-K



-Radiotron and I-F Trimmer Locations

SEE INDEX LISTING "MAGIC BRAIN"
FOR ADDITIONAL DATA.

Electrical Specifications

FREQUENCY RANGES

"Long Wave" (X)	150-410 kc
"Standard Broadcast" (A)	530-1,800 kc
"Medium Wave" (B)	1,800-6,400 kc
"Short Wave" (C)	6,400-23,000 kc
"Ultra Short Wave" (D)	23,000-60,000 kc
Intermediate Frequency	460 kc

ALIGNMENT FREQUENCIES

"Long Wave" (X)	175 kc (osc.), 350 kc (osc., det., ant.)
"Standard Broadcast" (A)	600 kc (osc.), 1,500 kc (osc., det., ant.)
"Medium Wave" (B)	6,000 kc (osc., det., ant.)
"Short Wave" (C)	20,000 kc (osc., det., ant.)
"Ultra Short Wave" (D)	57,000 kc (osc., det., ant.)

RADIOTRON COMPLEMENT

(1) RCA-6K7	R-F Amplifier	(9) RCA-6C5	Audio Voltage Amplifier
(2) RCA-6L7	First Detector	(10) RCA-6C5	Audio Driver Amplifier
(3) RCA-6J7	Oscillator	(11) RCA-6L6	Power Output
(4) RCA-6K7	First I-F Amplifier	(12) RCA-6L6	Power Output
(5) RCA-6K7	Second I-F Amplifier	(13) RCA-5Z4	Rectifier
(6) RCA-6H6	Second Detector and A.V.C.	(14) RCA-5Z4	Rectifier
(7) RCA-6K7	Tuning Tube I-F Amplifier	(15) RCA-6E5	Tuning Tube
(8) RCA-6H6	Tuning Tube Rectifier		
Pilot Lamps (4)			Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

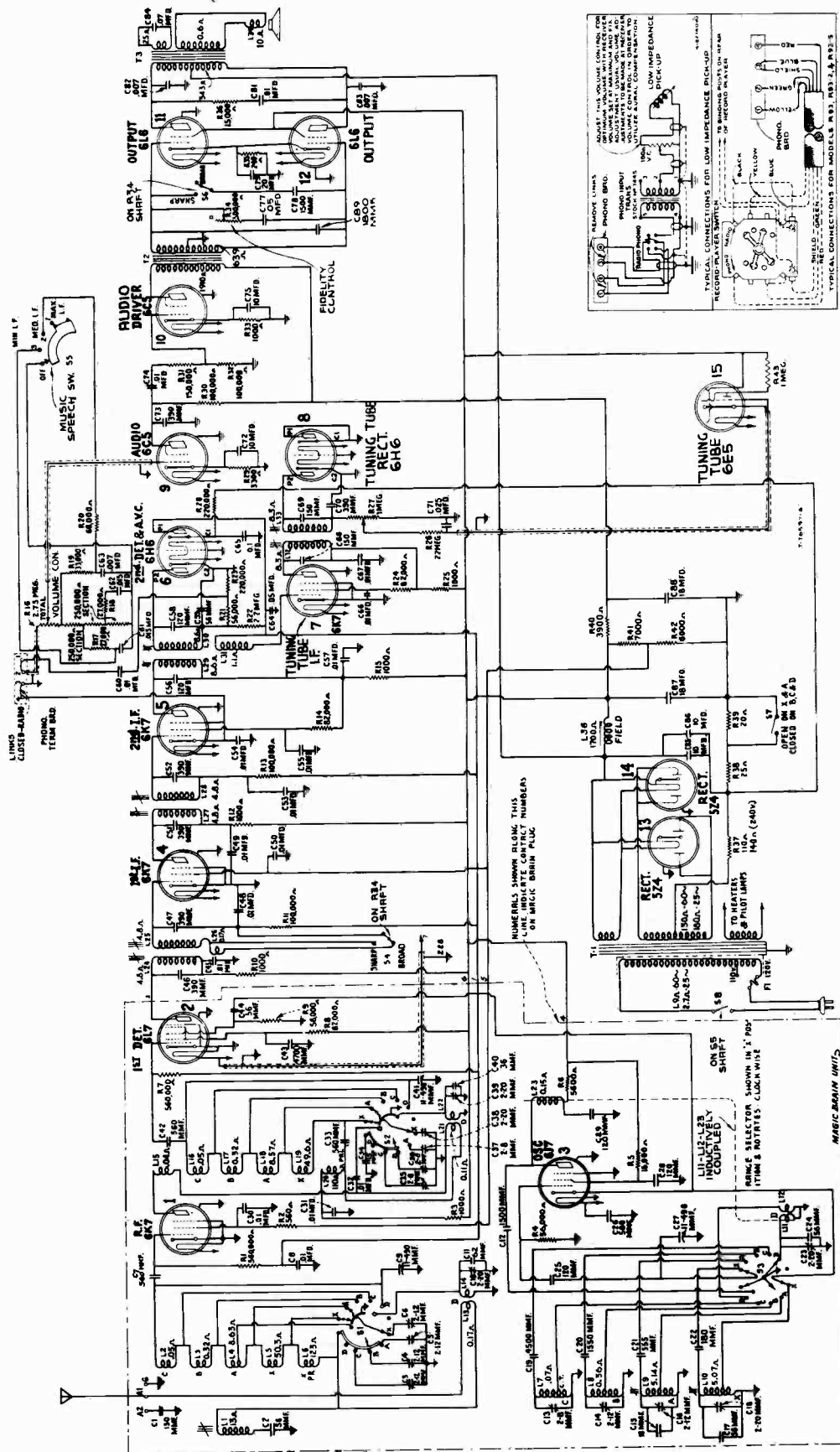
Rating A	105-125 volts, 50-60 cycles, 165 watts
Rating B	105-125 volts, 25-60 cycles, 165 watts
Rating C	100-130/140-160/195-250 volts, 40-60 cycles, 165 watts

POWER OUTPUT

Undistorted	20 watts
Maximum	30 watts

LOUDSPEAKER

Type	Electrodynamic
Impedance (v.c.)	11¼ ohms at 400 cycles

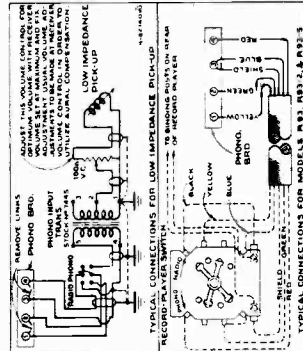


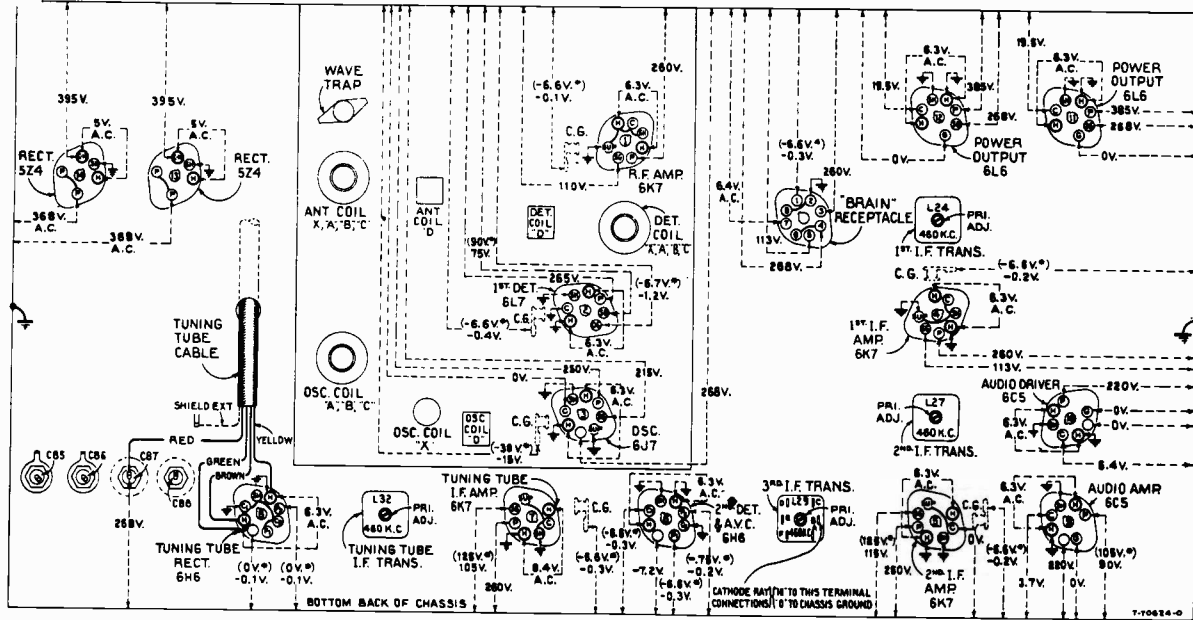
Schematic Circuit Diagram

An adjustment, R27, is provided on the rear apron of chassis for regulating the sensitivity of the tuning tube ("Magic Eye")

SERVICE HINTS

- (1) Excessive heating of the 6BE5 tube may be due to high cathode current — in excess of 7 ma. The tube should be replaced and the condition of the 6Z4 rectifier checked.
- (2) Low sensitivity or intermittent operation may be caused by C-43 or C-39 developing low-resistance leakage. Check both capacitors and replace if found defective.
- (3) Low sensitivity around 15—16 megacycles may be caused by dirty or poor contact of grounding contact finger on S-3.
- (4) No. 10026.





—Radiotron Socket Voltages, Coil, and I-F Trimmer Locations

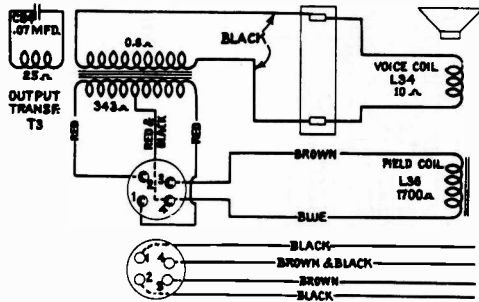
Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—Volume control minimum—Fidelity control optional

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.

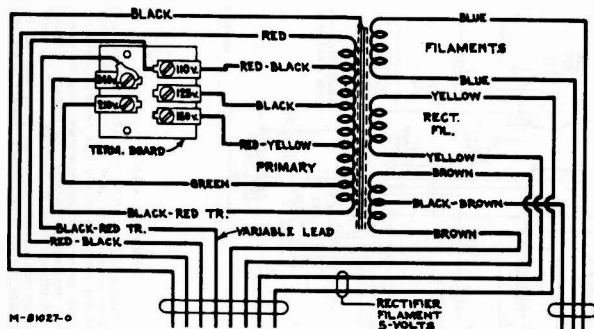
Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6K7—R-F Amp. 6.2 ma.
 - (2) RCA-6L7—1st Det. 4.0 ma.
 - (3) RCA-6J7—Osc. 6.6 ma.
 - (4) RCA-6K7—1st I-F Amp. 6.2 ma.
 - (5) RCA-6K7—2nd I-F Amp. 7.5 ma.
 - (6) RCA-6H6—2nd Det.—A.V.C.
 - (7) RCA-6K7—Tuning Tube I-F Amp. ... 7.5 ma.
 - (8) RCA-6H6—Tuning Tube Rect.
 - (9) RCA-6C5—Audio Voltage Amp. 1.25 ma.
 - (10) RCA-6C5—Audio Driver Amp. 6.4 ma.
 - (11) RCA-6L6—Power Output 43.0 ma.
 - (12) RCA-6L6—Power Output 43.0 ma.
 - (13) RCA-5Z4—Rectifier 80 ma.*
 - (14) RCA-5Z4—Rectifier 80 ma.*
 - (15) RCA-6E5—Tuning Tube 3.0 ma.
- (*Cannot be measured at socket)

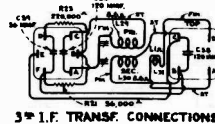
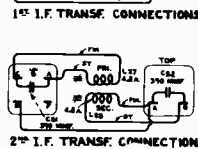
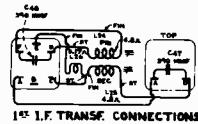


—Loudspeaker Wiring

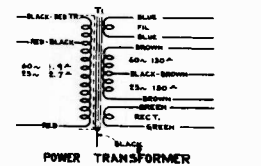


Primary resistance—3.6 ohms total
Secondary resistance—112 ohms total

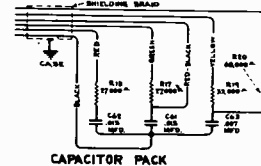
—Universal Transformer



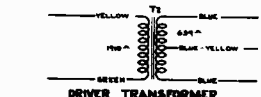
TUNING TUBE I.F. TRANSF. CONNECTIONS



POWER TRANSFORMER



CAPACITOR PACK



DRIVER TRANSFORMER

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
12863	Board—Phonograph terminal board		12264	Resistor—220,000 ohm Insulated ¼ watt—Package of 5 (R28)	
12987	Bracket—Mounting bracket for bias switch		11398	Resistor—220,000 ohm Carbon type 1/10 watt—Package of 5 (R23)	
4427	Bracket—Volume control and L. F. tone control mounting bracket		12013	Resistor—1 Meg Carbon type 1/10 watt—Package of 5 (R43)	
13024	Cable—Tuning lamp cable and socket		5131	Resistor—2.2 Meg Carbon type 1/10 watt—Package of 5 (R26)	
12511	Cap—Grid contact cap—Package of 5		12679	Resistor—2.2 Meg Insulated ¼ watt—Package of 5 (R22)	
12629	Capacitor—56 Mmfd. (C59)		13017	Resistor—Voltage divider comprising one 7000 ohm and one 6000 ohm sections (R41, R42)	
12404	Capacitor—120 Mmfd. (C56, C58)		13018	Resistor—Voltage divider comprising one 240 ohm, one 20 ohm and one 25 ohm sections (R35, R38, R39)	
13021	Capacitor—150 Mmfd. (C68, C69)		4669	Screw—No. 8-32-x5/32 set screw for link assembly Stk. No. 12868—Package of 10	
13022	Capacitor—390 Mmfd. (C70)		12008	Shield—I. F. transformer shield for Stk. No. 12981, 12990, 13019 and 13020	
13034	Capacitor—390 Mmfd. (C73)		12581	Shield—Transformer shield top for Magic Eye I. F. transformer	
13301	Capacitor—390 Mmfd. (C46, C47, C51, C52)		12607	Shield—Transformer shield top for first or second I. F. transformer	
12898	Capacitor—1500 Mmfd. (C78)		13028	Shield—Transformer shield top for third I. F. transformer	
13580	Capacitor—1800 Mmfd. (C89)		11195	Socket—5 contact 5Z4 Radiotron socket	
13033	Capacitor—.007 Mfd. (C82, C83)		11198	Socket—7 contact 6K7 or 6L6 Radiotron socket	
4870	Capacitor—.025 Mfd. (C71)		11196	Socket—8 contact 6C5 or 6H6 Radiotron and Magic Brain power supply socket	
4858	Capacitor—.01 Mfd. (C53, C45, C48, C49, C50, C54, C55, C57, C60, C66, C67, C74)		11381	Socket—Tuning lamp socket and cover	
4937	Capacitor—.01 Mfd. (C81)		13095	Socket—Upper left or lower right hand dial lamp socket	
4836	Capacitor—.05 Mfd. (C64, C77)		11222	Socket—Upper right or lower left hand dial lamp socket	
4841	Capacitor—.01 Mfd. (C65)		12007	Spring—Retaining spring for core Stk. No. 12006—Package of 10	
11203	Capacitor—10 Mfd. (C85, C86)		12986	Stud—Stud, nut and washer for connecting link assembly Stk. No. 12868 to sector gear and link Stk. No. 12910—Package of 5	
5212	Capacitor—18 Mfd. (C87, C88)		12988	Switch—Bias switch (S7)	
12470	Capacitor—20 Mfd. (C79)		13015	Tone Control—Fidelity control (R34, S4, S6)	
13011	Capacitor—Compensating pack comprising two .015 Mfd., one .007 Mfd. capacitors and two 27,000 ohm, one 33,000 ohm, and one 68,000 ohm resistors (C61, C62, C63, R17, R18, R19, R20)		13013	Tone Control—Music-speech and power switch (S5, S8)	
13025	Capacitor—Pack comprising two 10 Mfd. sections (C72, C75)		12981	Transformer—First I. F. transformer complete (L24, L25, L26, C46, C47)	
5040	Connector—4 contact female connector for speaker cable		12990	Transformer—Second I. F. transformer complete (L27, L28, C51, C52)	
13016	Control—Magic Eye control (R27)		13019	Transformer—Third I. F. transformer complete (L29, L30, L31, C56, C58, C59, R21, R23)	
12006	Core—Adjustable core and stud for Stk. Nos. 12981, 12990, 13019 and 13020		13023	Transformer—Driver transformer (T2)	
5240	Cover—Fuse mounting cover		13020	Transformer—Magic Eye I. F. transformer complete (L32, L33, C68, C69, C70)	
12870	Dial—Vernier dial scale		13008	Transformer—Power transformer 100-120 volts 50-60 cycles (T1)	
10907	Fuse—3 Amp.—Package of 5—(F1)		13009	Transformer—Power transformer 100-120 volts 25-50 cycles (T1)	
5226	Lamp—Dial lamp—6.3 volts—Package of 5		13010	Transformer—Power transformer 100-250 volts 50-60 cycles (T1)	
12868	Link—Range switch and band indicator operating link complete with set screws		13014	Volume Control—(R16)	
13012	Mounting—Fuse mounting 100-120 volt models only		MAGIC BRAIN UNIT ASSEMBLIES		
13026	Mounting—Fuse mounting 220 volt models only		12806	Board—3 contact antenna and ground terminal board	
13027	Resistor—110 ohm wire wound—used in 110 volt models only (R37)		5237	Bushing—Variable condenser mounting bushing assembly—Package of 3	
13029	Resistor—140 ohm wire wound—used in 220 volt models only (R37)		12886	Cable—Shielded power cable approx. 4 in. long complete with 8 contact male plug	
13030	Resistor—1,000 ohm Carbon type 1/10 watt—Package of 5 (R12, R25, R33)				
5112	Resistor—1000 ohm Carbon type ¼ watt—Package of 5 (R10, R15)				
13031	Resistor—3300 ohm Carbon type 1/10 watt—Package of 5 (R29)				
13032	Resistor—3900 ohm Carbon type 1 watt—Package of 5 (R40)				
5114	Resistor—15,000 ohm Carbon type 1 watt—(R36)				
11282	Resistor—56,000 ohms Carbon type 1/10 watt—Package of 5 (R21)				
11365	Resistor—82,000 ohm Carbon type ¼ watt—Package of 5 (R14, R24)				
11281	Resistor—100,000 ohm Carbon type 1/10 watt—Package of 5 (R11, R13, R32)				
12263	Resistor—100,000 ohm Insulated ¼ watt—Package of 5 (R30)				
12478	Resistor—150,000 ohm Carbon type 1/10 watt—Package of 5 (R31)				

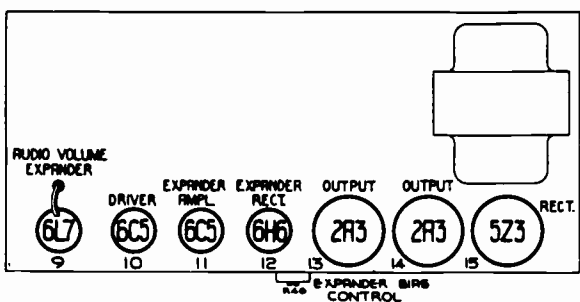
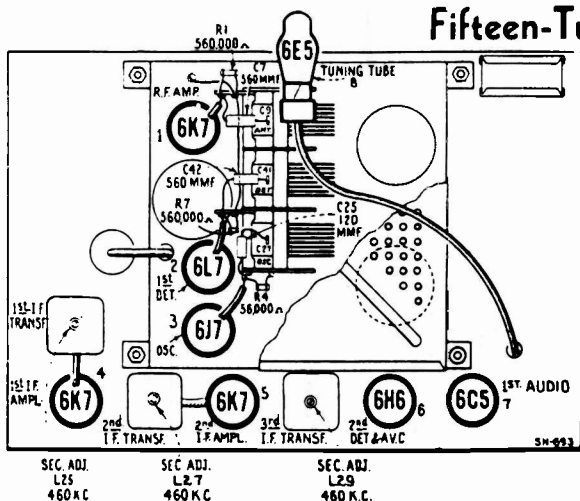
15K

REPLACEMENT PARTS (Continued)

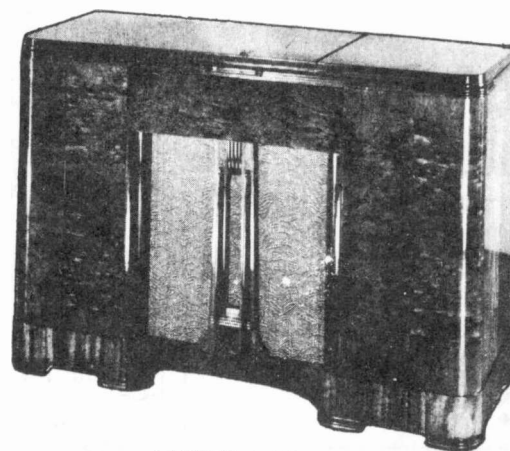
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	Price
12511	Cap—Grid contact cap—Package of 5 ..				
12714	Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16) ..		10705	DRIVE ASSEMBLIES	
12807	Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37) ..		10941	Ball—5/32 in. diameter steel ball for planetary drive—Package of 20 ..	
12884	Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39) ..		12904	Ball—1/8 in. diameter steel ball for planetary drive bearing—Package of 20 ..	
12896	Capacitor—15 Mmfd. (C34) ..		12905	Bushing—Plate and bushing assembly for planetary drive mounting ..	
12722	Capacitor—18 Mmfd. (C15) ..		12909	Coupling—Flexible coupling and shaft assembly complete ..	
12891	Capacitor—36 Mmfd. (C40) ..		12909	Dial—Band indicating dial and cam assembly ..	
12629	Capacitor—56 Mmfd. (C24) ..		12899	Drive—Variable tuning condenser drive complete including mounting bracket, drive, dial scale, and indicator less vernier dial Stk. No. 12870 and link Stk. No. 12868 ..	
12895	Capacitor—56 Mmfd. (C17) ..		12906	Gear—Anti-lash drive gear complete ..	
12723	Capacitor—56 Mmfd. (C2, C44) ..		12910	Gear—Sector gear and link assembly for band selector ..	
13307	Capacitor—62 Mmfd. (C11) ..		12908	Indicator—Station selector indicator pointer ..	
12724	Capacitor—120 Mmfd. (C25, C28, C29) ..		8051	Link—Link and roller assembly complete with springs ..	
12725	Capacitor—150 Mmfd. (C1) ..		12911	Screen—Dial lamp screen and light diffuser ..	
12894	Capacitor—180 Mmfd. (C22) ..		4669	Screw—Set screw for flexible coupling or gear stock Nos. 12905 and 12906—Package of 10 ..	
12727	Capacitor—555 Mmfd. (C21) ..		12901	Shaft—Direct drive shaft and pinion gear for planetary drive ..	
12537	Capacitor—560 Mmfd. (C7, C26, C33, C42) ..		12900	Shaft—Vernier drive shaft for planetary drive ..	
12898	Capacitor—1500 Mmfd. (C12) ..		12903	Spring—Tension spring for planetary drive bearing—Package of 10 ..	
12729	Capacitor—1550 Mmfd. (C20) ..		12907	Spring—Tension spring for gear stock No. 12906—Package of 10 ..	
12728	Capacitor—4500 Mmfd. (C19) ..		8052	Spring—Tension spring for link stock No. 8051—Package of 5 ..	
12897	Capacitor—4700 Mmfd. (C43) ..			REPRODUCER ASSEMBLIES	
4858	Capacitor—.01 Mfd. (C8, C30, C31, C32) ..		8059	Board—Reproducer terminal board ..	
12879	Coil—Antenna coil and shield XABC bands (L2, L3, L4, L5, L6) ..		12640	Bracket—Output transformer mounting bracket ..	
12888	Coil—Antenna coil "D" band (L13, L14) ..		12474	Cone—Reproducer cone and dust cap (L34) ..	
12880	Coil—Detector coil and shield XABC bands (L15, L16, L17, L18, L19, L20) ..		11577	Coil—Field coil, magnet and cone support (L36) ..	
12709	Coil—Oscillator coil and shield ABC bands (L7, L8, L9) ..		5039	Connector—4 contact male connector for reproducer leads ..	
12881	Coil—Oscillator coil and shield X band only (L10) ..		9719	Reproducer Complete ..	
12890	Coil—Oscillator coil "D" band (L11, L12, L23) ..		13007	Transformer—Output transformer (T3, C84) ..	
12889	Coil—R. F. Coil "D" band (L21, L22) ..			MISCELLANEOUS ASSEMBLIES	
12877	Condenser—3 gang variable tuning condenser (C9, C27, C41) ..		11996	Bracket—Tuning tube mounting bracket and clamp ..	
12887	Connector—8 contact male connector and cover for power cable Stk. No. 12886 ..		12915	Crystal—Station selector escutcheon and crystal ..	
12664	Core—Adjustable core and stud for Stk. No. 12654 ..		12742	Escutcheon—Tuning tube escutcheon ..	
12800	Core—Adjustable core and stud for Stk. 12709 ..		12699	Knob—Large station selector knob—Package of 5 ..	
12882	Core—Adjustable core and stud for Stk. No. 12881 ..		12700	Knob—Small (vernier) station selector knob—Package of 5 ..	
11324	Resistor—560 ohms—Carbon type—1/4 watt (R2)—Package of 5 ..		11347	Knob—Volume control, Fidelity control, music-speech and power switch, and range selector knob—Package of 5 ..	
5112	Resistor—1,000 ohms—Carbon type—1/4 watt (R3)—Package of 5 ..		11210	Screw—Chassis mounting screw and washer assembly—Package of 4 ..	
11298	Resistor—5,600 ohms—Carbon type—1 watt (R6) ..		12916	Shield—Magic brain shield ..	
3998	Resistor—15,000 ohms—Carbon type—1/4 watt (R5)—Package of 5 ..		4982	Spring—Retaining spring for knob stock No. 12699—Package of 10 ..	
11282	Resistor—56,000 ohms—Carbon type—1/10 watt (R4, R9)—Package of 5 ..		11349	Spring—Retaining spring for knob stock Nos. 11347, 12700—Package of 5 ..	
8064	Resistor—82,000 ohms—Carbon type—1/2 watt (R8)—Package of 5 ..				
11397	Resistor—560,000 ohms—Carbon type—1/10 watt (R1, R7)—Package of 5 ..				
12651	Shield—Coil shield for Stk. Nos. 12879 and 12880 ..				
12710	Shield—Coil shield for Stk. No. 12709 ..				
12883	Shield—Coil shield for Stk. No. 12881 ..				
11198	Socket—7 contact 6K7 Radiotron socket ..				
11279	Socket—7 contact 6L7 Radiotron socket ..				
12885	Socket—8 contact 6J7 Radiotron socket ..				
12007	Spring—Retaining spring for core Stk. Nos. 12664, 12800 and 12882—Package of 10 ..				
12878	Switch—Range switch and mounting nut (S1, S2, S3) ..				
12654	Trap—Wave trap complete (L1) ..				

MODEL 15U

Fifteen-Tube, Five-Band, A-C Radio-Phonograph



-Radiotron and I-F Trimmer Locations



MODEL 15U

REFER TO INDEX
FOR SERVICE DATA
ON AUTOMATIC RECORD CHANGER

Electrical Specifications

FREQUENCY RANGES

"Long Wave" (X).....	150-410 kc
"Standard Broadcast" (A).....	530-1,800 kc
"Medium Wave" (B).....	1,800-6,400 kc
"Short Wave" (C).....	6,400-23,000 kc
"Ultra Short Wave" (D).....	23,000-60,000 kc
Intermediate Frequency.....	460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... R-F Amplifier
- (2) RCA-6L7..... First Detector
- (3) RCA-6J7..... Heterodyne Oscillator
- (4) RCA-6K7..... First I-F Amplifier
- (5) RCA-6K7..... Second I-F Amplifier
- (6) RCA-6H6..... Second Detector and A.V.C.
- (7) RCA-6C5..... Audio Voltage Amplifier

Pilot Lamps (6)..... Mazda No. 40, 6.3 volts, 0.15 ampere

POWER-SUPPLY RATINGS

		RADIO ONLY	TOTAL
Rating A-6.....	105-125 volts, 60 cycles.....	180 watts.....	205 watts
Rating A-5.....	105-125 volts, 50 cycles.....	180 watts.....	210 watts

For 220-volt operation, a step-down transformer (Stock No. 7217) must be used.

Fuse Rating..... 3 amperes

PHONOGRAPH

Type..... Automatic Record Ejector
 Record Capacity..... Seven 10-inch or Six 12-inch
 Turntable Speed..... 78 R.P.M.
 Type of Pickup..... Low-Impedance Magnetic
 Pickup Impedance..... 100 ohms at 1,000 cycles

ALIGNMENT FREQUENCIES

"Long Wave" (X).....	175 kc (osc.), 350 kc (osc., det., ant.)
"Standard Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc., det., ant.)
"Medium Wave" (B).....	6,000 kc (osc., det., ant.)
"Short Wave" (C).....	20,000 kc (osc., det., ant.)
"Ultra Short Wave" (D).....	57,000 kc (osc., det., ant.)

- (8) RCA-6E5..... "Magic Eye" Tuning Indicator
- (9) RCA-6L7..... Audio Volume Expander
- (10) RCA-6C5..... Audio Driver Amplifier
- (11) RCA-6C5..... Expander Amplifier
- (12) RCA-6H6..... Expander Rectifier
- (13) RCA-2A3..... Power Output
- (14) RCA-2A3..... Power Output
- (15) RCA-5Z3..... Full-Wave Rectifier

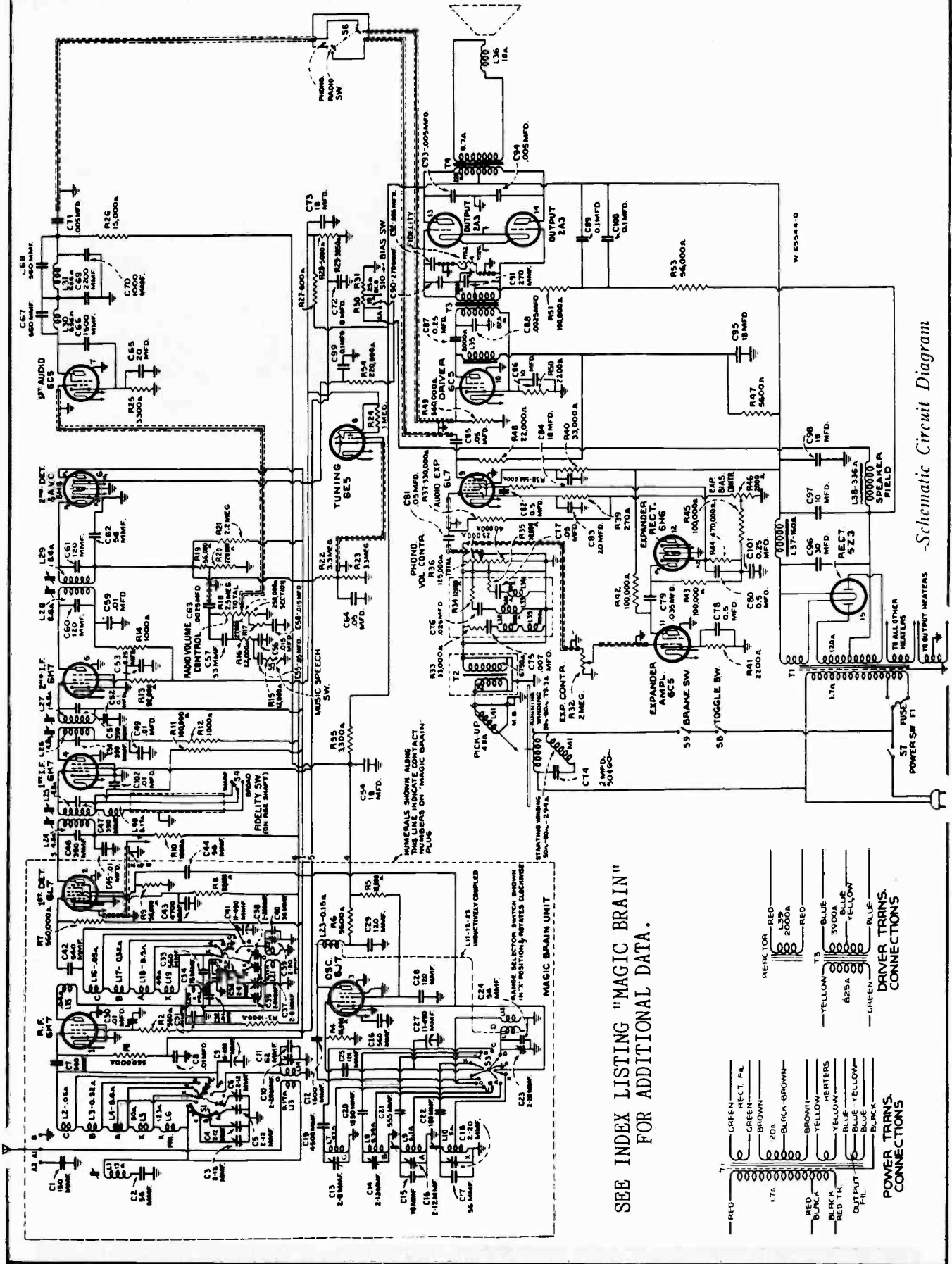
Mazda No. 40, 6.3 volts, 0.15 ampere

POWER-OUTPUT RATINGS

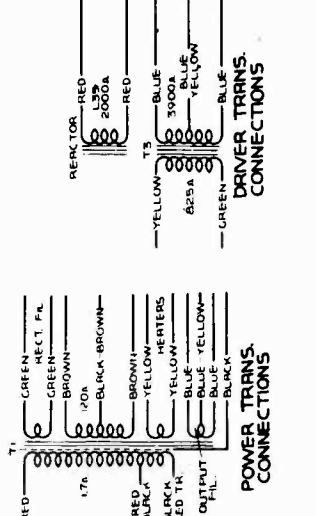
Undistorted.....	12 watts
Maximum.....	15 watts

LOUDSPEAKER

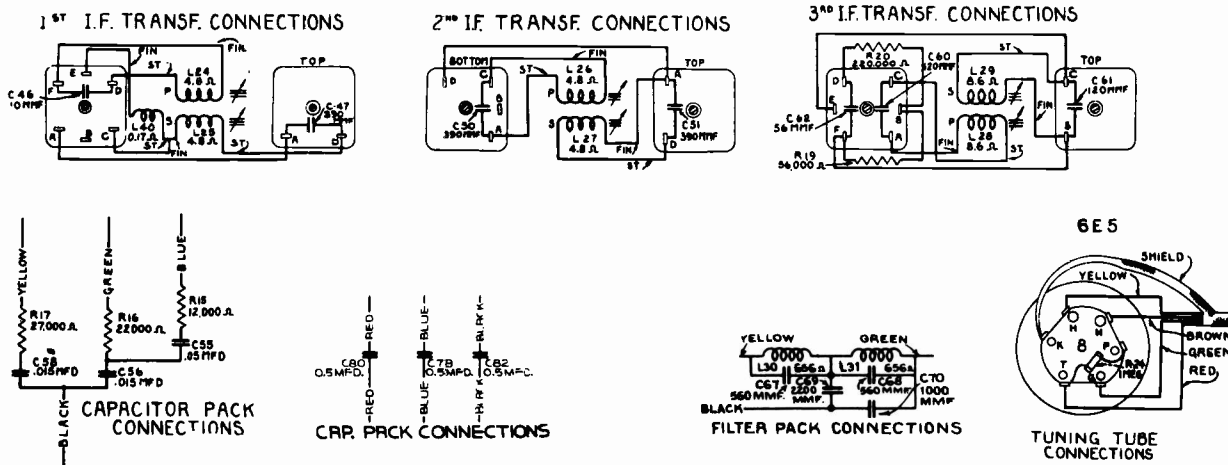
Type..... Super 12-inch Electrodynamic
 Impedance (V.C.)..... 11¼ ohms at 400 cycles



SEE INDEX LISTING "MAGIC BRAIN" FOR ADDITIONAL DATA.



Schematic Circuit Diagram



Dynamic Amplifier Adjustments

It is essential that correct voltages and currents exist at the RCA-6L7 audio expander stage in order that the expanding function may take place in the proper manner. A screw-driver adjustment is accordingly provided to regulate the RCA-6L7 control grid No. 3 bias to the correct operating value. Two methods of adjustment are applicable. Either method requires a normal voltage of 300 volts across the filter output. The one to be preferred (a) requires the use of an RCA Stock No. 9633 **Beat-Frequency Oscillator** or the equivalent, a 100-ohm resistor, a 200-ohm resistor, and a 1,000-ohm-per-volt a-c voltmeter (rectifier-type) having a "low" range of 1.0 volt and a "high" range of 250 volts or greater. The less accurate method (b) requires the use of an RCA Stock No. 12353 **Split-Plate Adapter**, and a suitable d-c milliammeter. Both of these procedures are outlined below. **CAUTION:** Before using either method, be sure that power-supply fuse is in proper position for the line voltage.

(a) Preferred Method

Turn power switch off. Connect the 200-ohm and the 100-ohm resistors in series between the beat-frequency oscillator terminals (upper "250" and "CT") with the 100-ohm resistor connected to "CT." Calibrate the beat-frequency oscillator, adjust it to 1,000 cycles, and reduce its output. Connect the 1,000-ohm-per-volt a-c voltmeter (1-volt range) to the beat-frequency oscillator terminals (upper "250" and "CT"). Remove the male plug from the receptacle on the shielded cable running between the input transformer T2 and the compensator pack (see figure). Connect beat-frequency oscillator terminal "CT" to the large pin on the male plug. Connect the junction of the 200-ohm and the 100-ohm resistors to the small pin on the male plug.

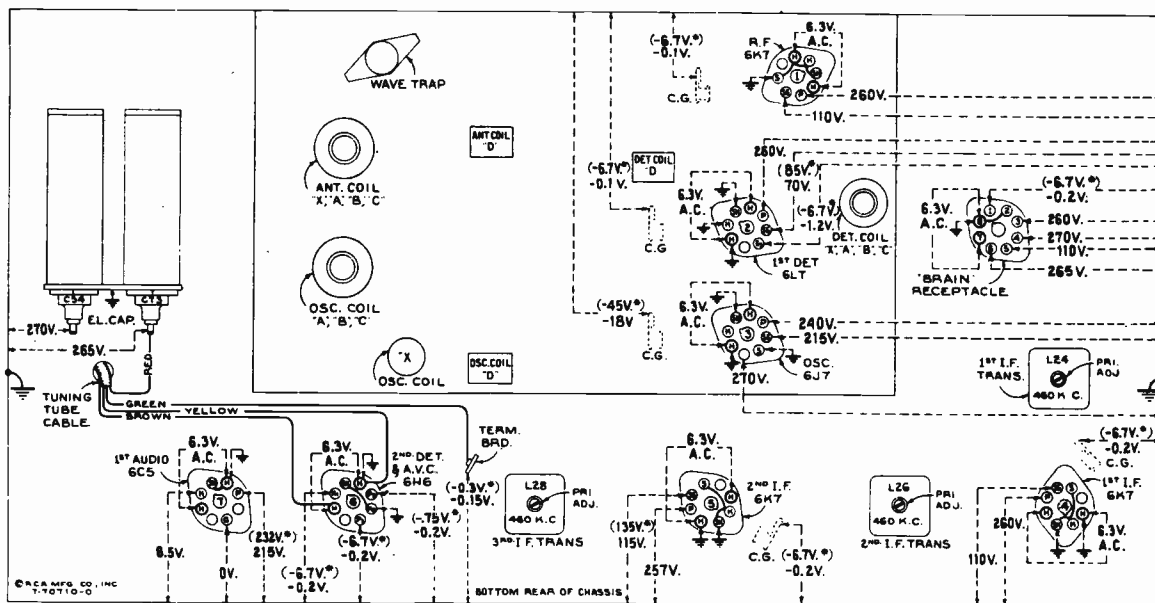
Adjust beat-frequency oscillator output until the voltmeter reads exactly 1.0 volt. Remove the voltmeter leads from beat-frequency oscillator terminals without disturbing any of the oscillator adjustments. Place the voltmeter to its 250-volt or greater range and connect it be-

tween the plate prongs of the two RCA-2A3 power-output tubes. Connections to the tube prongs may be made by stripping approximately $\frac{1}{2}$ inch of insulation from the ends of two short leads of rubber-covered wire, wrapping one bare end around each plate prong (being careful not to allow the bare ends to short on the chassis when the tubes are placed in their sockets), and connecting the voltmeter to these leads.

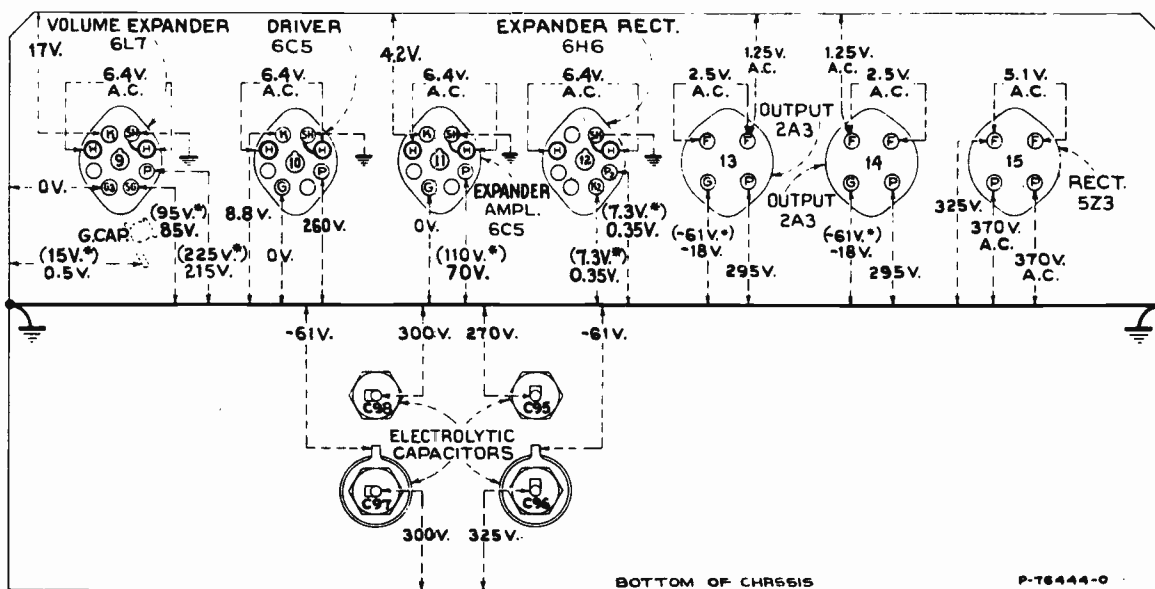
Set the "Dynamic amplifier" and "Fidelity control" to their extreme counter-clockwise positions. Set the "Phonograph volume" control to its extreme clockwise position. Turn on power switch and allow a few minutes for the instrument to become stabilized. Adjust the expander-bias control R46, on rear apron of amplifier (see figure), until the voltmeter reads 195 volts. Turn "Phonograph volume" control to extreme counter-clockwise position. Transfer lead from the junction of the 200-ohm and the 100-ohm resistors to the beat-frequency oscillator (upper "250") terminal without disturbing any of the oscillator adjustments. Adjust "Phonograph volume" control until the voltmeter reads 50 volts. Turn the "Dynamic amplifier" control to its extreme clockwise position allowing maximum expansion to take place. The voltmeter should now read not less than 150 volts if the expander circuit is operating correctly. Failure to do so indicates a defect in the system and the usual service procedure should be followed.

Alternate Method

Turn power switch off. Place RCA Stock No. 12353 **Split-Plate Adapter** under the RCA-6L7 audio-volume expander. Connect a suitable d-c milliammeter to the adapter. Turn both the "Phonograph volume" and the "Dynamic amplifier" controls to their extreme counter-clockwise positions. Turn on power switch and allow a few minutes for the instrument to become stabilized. Adjust expander bias control R46, on rear apron of amplifier (see figure), to give 1.0 milliamperes of plate current with no signal input to the dynamic amplifier.



Receiver

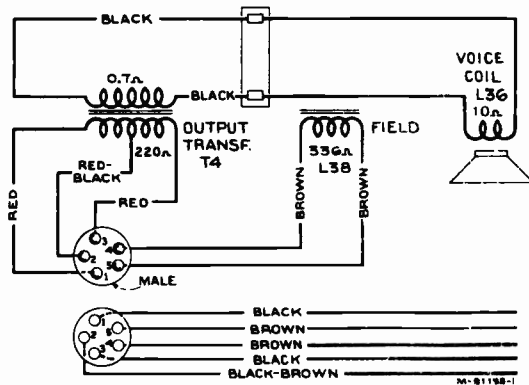


Power Amplifier

—Radiotron Socket Voltages, Coil, and I-F Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc—No signal being received—
Both volume controls minimum—Radio-Phono switch either position

Note: Two voltage values are shown for some readings. The value shown in parenthesis with asterisk () indicates operating conditions without voltmeter loading.*



-Loudspeaker Wiring

Radiotron Cathode Current Readings
 Measured with Milliammeter Connected at Tube Socket
 Cathode Terminal under Conditions Similar to
 Those of Voltage Measurements

- (1) RCA-6K7—R-F Amp..... 5.0 ma.
- (2) RCA-6L7—1st Det..... 3.7 ma.
- (3) RCA-6J7—Osc. 7.0 ma.
- (4) RCA-6K7—1st I-F Amp..... 5.0 ma.
- (5) RCA-6K7—2nd I-F Amp..... 7.5 ma.
- (6) RCA-6H6—2nd Det.—A.V.C... —
- (7) RCA-6C5—Audio Voltage Amp. 2.5 ma.
- (8) RCA-6E5—Tuning Tube..... 1.2 ma.
- (9) RCA-6L7—Audio Volume Exp. 7.5 ma.
- (10) RCA-6C5—Audio Driver..... 4.0 ma.
- (11) RCA-6C5—Expander Amplifier. 1.9 ma.
- (12) RCA-6H6—Expander Rectifier.. —
- (13) RCA-2A3—Power Output..... 41.8 ma.
- (14) RCA-2A3—Power Output..... 41.8 ma.
- (15) RCA-5Z3—Rectifier 165 ma.*

(*Cannot be measured at socket)

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
4427	Bracket—Volume control mounting bracket		5147	Resistor—3,300 ohms—carbon type, 1 watt (R55)	
12987	Bracket—Band changeover switch bracket.		12312	Resistor—3,300 ohms—insulated, 1/4 watt (R25)—Package of 5	
12511	Cap—Grid contact cap—Package of 5		5114	Resistor—15,000 ohms—carbon type, 1 watt (R26)	
12948	Capacitor—33 Mmfd. (C57)		11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R19)—Package of 5	
12629	Capacitor—56 Mmfd. (C62)		11365	Resistor—82,000 ohms—carbon type, 1/4 watt (R13)—Package of 5	
12404	Capacitor—120 Mmfd. (C60, C61)		11281	Resistor—100,000 ohms—carbon type, 1/10 watt (R11)—Package of 5	
13022	Capacitor—390 Mmfd. (C46, C47, C50, C51)		5158	Resistor—220,000 ohms—carbon type, 1/4 watt (R54)—Package of 5	
12898	Capacitor—1500 Mmfd. (C66)		11398	Resistor—220,000 ohms—carbon type, 1/10 watt (R20)—Package of 5	
13608	Capacitor—0.025 Mfd. (C63)		12013	Resistor—1.0 megohm—carbon type, 1/10 watt—located in tuning tube socket (R24)—Package of 5	
4868	Capacitor—.005 Mfd. (C71)		12679	Resistor—2.2 megohm—insulated, 1/4 watt (R21)—Package of 5	
13138	Capacitor—.01 Mfd. (C45, C49, C59, C102)		12874	Resistor—3.3 megohm—carbon type, 1/4 watt (R22, R23)—Package of 5	
4836	Capacitor—.05 Mfd. (C64)		12870	Scale—Vernier dial scale	
4841	Capacitor—.01 Mfd. (C52, C99)		12008	Shield—Intermediate frequency transformer shield	
4840	Capacitor—.025 Mfd. (C53)		12607	Shield—1st or 2nd I.F. transformer shield top	
13610	Capacitor—8 Mfd. (C72)		12581	Shield—3rd I.F. transformer shield top	
5212	Capacitor—18 Mfd. (C54, C73)		11197	Socket—6-contact 6C5 Radiotron socket	
13611	Capacitor—20 Mfd. (C65)		11198	Socket—7-contact 6K7 or 6H6 Radiotron socket	
13613	Compensator Pack—Comprising two .015 Mfd., one .05 Mfd. capacitors and one 27,000 ohms, one 22,000 ohms, one 12,000 ohms resistors (C55, C56, C58, R15, R16, R17)		13095	Socket—Upper left or lower right-hand dial lamp socket	
12006	Core—Core and stud assembly for intermediate frequency transformers		11222	Socket—Upper right or lower left-hand dial lamp socket	
13612	Filter Pack—Comprising two .453 Henry Chokes, two 560 Mmfd., one 1,000 Mmfd. and one 2,200 Mmfd. capacitors (L30, L31, C67, C68, C69, C70)		11381	Socket—Tuning tube socket and cover	
12866	Foot—Chassis foot assembly—Package of 2		11196	Socket—8-contact R.F. unit voltage supply socket	
4340	Lamp—Pilot lamp—Package of 5		12007	Spring—Retaining spring for core in I.F. transformer—Package of 10	
12868	Link—Link mechanism on band indicator operating arm		12986	Stud—Band indicator operating arm stud—Package of 5	
13609	Resistor—Voltage divider—Comprising one 600 ohms, one 5,000 ohms, one 3,950 ohms, one 25 ohms and one 19 ohms sections (R27, R28, R29, R30, R31)				
12311	Resistor—1,000 ohms—insulated, 1/4 watt (R12)—Package of 5				
5112	Resistor—1,000 ohms—carbon type, 1/4 watt (R10, R14)—Package of 5				

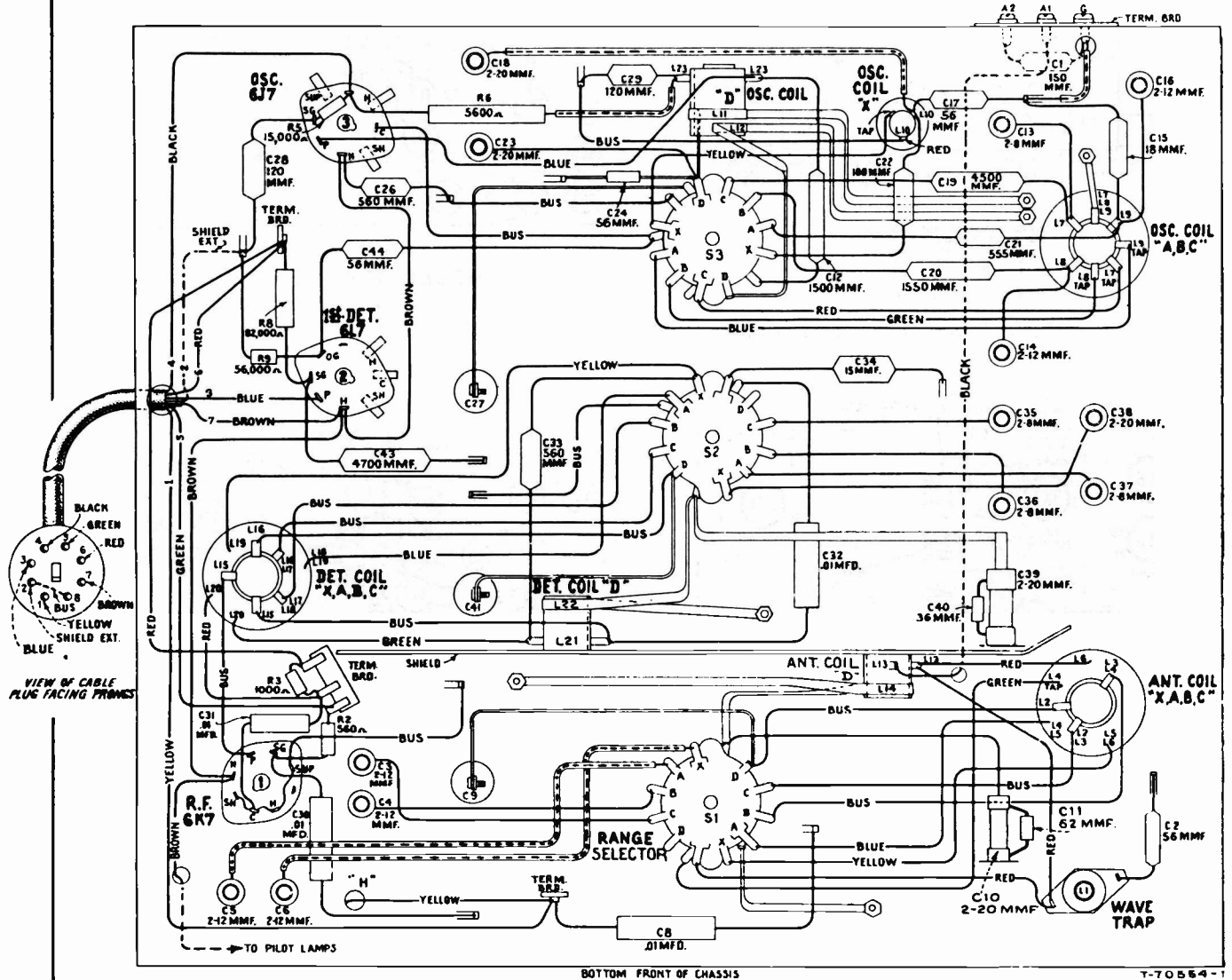
REPLACEMENT PARTS—Continued

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
12860	Switch—Low frequency tone and power switch (S5, S7).....		12883	Shield—Coil shield for Stock No. 12881.	
12988	Switch—Bias switch (S10).....		11198	Socket—7-contact 6K7 Radiotron socket..	
13616	Tone control—High frequency tone and fidelity control (R52, S4).....		11279	Socket—7-contact 6L7 Radiotron socket...	
12981	Transformer—First intermediate frequency transformer (L24, L25, L40, C46, C47).....		12885	Socket—8-contact 6J7 Radiotron socket...	
12990	Transformer—Second intermediate frequency transformer (L26, L27, C50, C51).....		12007	Spring—Retaining spring for core, Stock Nos. 12664, 12800, 12882—Package of 10.....	
12982	Transformer—Third intermediate frequency transformer (L28, L29, C60, C61, C62, R19, R20).....		12878	Switch—Range switch and mounting nut (S1, S2, S3).....	
12861	Volume Control (R18).....		12654	Trap—Wave-trap, complete (L1).....	
MAGIC BRAIN UNIT ASSEMBLIES					
12806	Board—3-contact antenna and ground terminal board.....		DRIVE ASSEMBLIES		
5237	Bushing—Variable condenser mounting bushing assembly—Package of 3.....		10705	Ball—5/32-inch diameter steel ball for planetary drive—Package of 20.....	
12886	Cable—Shielded power cable, approximately 4 inches long, complete with 8-contact male plug.....		10941	Ball—1/8-inch diameter steel ball for planetary drive bearing—Package of 20.....	
12511	Cap—Grid contact cap—Package of 5...		12904	Bushing—Plate and bushing assembly for planetary drive mounting.....	
12714	Capacitor—Adjustable trimmer capacitor (C3, C4, C5, C6, C14, C16).....		12905	Coupling—Flexible coupling and shaft assembly, complete.....	
12884	Capacitor—Adjustable trimmer capacitor (C10, C18, C23, C38, C39).....		12909	Dial—Band indicating dial and cam assembly.....	
12807	Capacitor—Adjustable trimmer capacitor (C13, C35, C36, C37).....		12899	Drive—Variable tuning condenser drive, complete, including mounting bracket drive, dial scale and indicator, less vernier dial, Stock No. 12870 and link, Stock No. 12868.....	
12896	Capacitor—15 Mmfd. (C34).....		12906	Gear—Anti-lash drive gear, complete....	
12722	Capacitor—18 Mmfd. (C15).....		12910	Gear—Sector gear and link assembly for band selector.....	
12891	Capacitor—36 Mmfd. (C40).....		12908	Indicator—Station selector indicator pointer	
12629	Capacitor—56 Mmfd. (C24).....		8051	Link—Link and roller assembly, complete with spring.....	
12895	Capacitor—56 Mmfd. (C17).....		12911	Screen—Dial lamp screen and light diffuser.....	
12723	Capacitor—56 Mmfd. (C2, C44).....		4669	Screw—Set screw for flexible coupling or gear, Stock Nos. 12905 and 12906—Package of 10.....	
13307	Capacitor—62 Mmfd. (C11).....		12901	Shaft—Direct drive shaft and pinion gear for planetary drive.....	
12724	Capacitor—120 Mmfd. (C25, C28, C29).....		12900	Shaft—Vernier drive shaft for planetary drive.....	
12725	Capacitor—150 Mmfd. (C1).....		12903	Spring—Tension spring for planetary drive bearing—Package of 10.....	
12894	Capacitor—180 Mmfd. (C22).....		12907	Spring—Tension spring for gear, Stock No. 12906—Package of 10.....	
12727	Capacitor—355 Mmfd. (C21).....		8052	Spring—Tension spring for link, Stock No. 8051—Package of 5.....	
12537	Capacitor—560 Mmfd. (C7, C26, C33, C42).....		AMPLIFIER ASSEMBLIES		
12898	Capacitor—1,500 Mmfd. (C12).....		12511	Cap—Grid contact cap—Package of 5....	
12729	Capacitor—1,550 Mmfd. (C20).....		12110	Cap—Top shield cap for 6L7 Radiotron..	
12728	Capacitor—4,500 Mmfd. (C19).....		12488	Capacitor—270 Mmfd. (C90, C91).....	
12897	Capacitor—4,700 Mmfd. (C43).....		5107	Capacitor—.0025 Mfd. (C88).....	
4858	Capacitor—.01 Mfd. (C8, C30, C31, C32).....		4838	Capacitor—.005 Mfd. (C93, C94).....	
12879	Coil—Antenna coil and shield, XABC bands (L2, L3, L4, L5, L6).....		4868	Capacitor—.005 Mfd. (C92).....	
12888	Coil—Antenna coil, "D" band (L13, L14).....		5196	Capacitor—.035 Mfd. (C79).....	
12880	Coil—Detector coil and shield, XABC bands (L15, L16, L17, L18, L19, L20).....		4886	Capacitor—.05 Mfd. (C85).....	
12709	Coil—Oscillator coil and shield, ABC bands (L7, L8, L9).....		4518	Capacitor—.05 Mfd. (C81).....	
12881	Coil—Oscillator coil and shield, X band only (L10).....		4839	Capacitor—0.1 Mfd. (C89, C100).....	
12890	Coil—Oscillator coil, "D" band (L11, L12, L23).....		5170	Capacitor—.25 Mfd. (C87).....	
12889	Coil—R.F. coil, "D" band (L21, L22)...		4840	Capacitor—.25 Mfd. (C101).....	
12877	Condenser—3-gang variable tuning condenser (C9, C27, C41).....		11240	Capacitor—10 Mfd. (C97).....	
12887	Connector—8-contact male connector and cover for power cable, Stock No. 12886		12472	Capacitor—10 Mfd. (C86).....	
12664	Core—Adjustable core and stud for Stock No. 12654.....		5212	Capacitor—18 Mfd. (C84, C95).....	
12800	Core—Adjustable core and stud for Stock No. 12709.....		11496	Capacitor—18 Mfd. (C98).....	
12882	Core—Adjustable core and stud for Stock No. 12881.....		12470	Capacitor—20 Mfd. (C83).....	
11324	Resistor—560 ohms—carbon type, 1/4 watt (R2)—Package of 5.....		12467	Capacitor—30 Mfd. (C96).....	
5112	Resistor—1,000 ohms—carbon type, 1/4 watt (R3)—Package of 5.....		12465	Capacitor—Capacitor pack, comprising 3 sections, each 0.5 Mfd. (C78, C80, C82)	
11298	Resistor—5,600 ohms—carbon type, 1 watt (R6).....		11272	Clamp—Volume control or speaker cable clamp.....	
3998	Resistor—15,000 ohms—carbon type, 1/4 watt (R5)—Package of 5.....		5240	Cover—Fuse cover.....	
11282	Resistor—56,000 ohms—carbon type, 1/10 watt (R4, R9)—Package of 5.....		12468	Expander—Control (R46).....	
8064	Resistor—82,000 ohms—carbon type, 1/2 watt (R8)—Package of 5.....		10907	Fuse—3-ampere fuse (F1)—Package of 5.	
11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R7)—Package of 5....		5239	Mounting—Fuse mounting.....	
12651	Shield—Coil shield for Stock Nos. 12879, 12880.....		12471	Plate—6L7 socket mounting plate assembly, less socket.....	
12710	Shield—Coil shield for Stock No. 12709.		12466	Reactor—Filter reactor (L37).....	
			13454	Resistor—270 ohms—insulated, 1/4 watt (R39)—Package of 5.....	
			12195	Resistor—2,200 ohms—insulated, 1/4 watt (R41, R50)—Package of 5.....	
			11298	Resistor—5,600 ohms—carbon type, 1 watt (R47).....	
			11332	Resistor—22,000 ohms—carbon type, 1 watt (R48)—Package of 5.....	
			12487	Resistor—33,000 ohms—carbon type, 2 watt (R40).....	

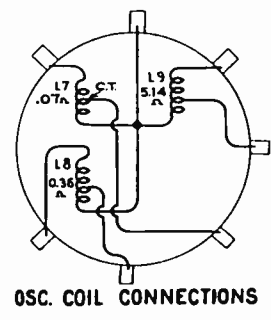
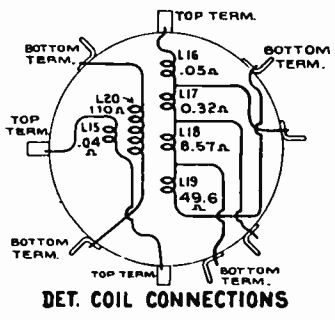
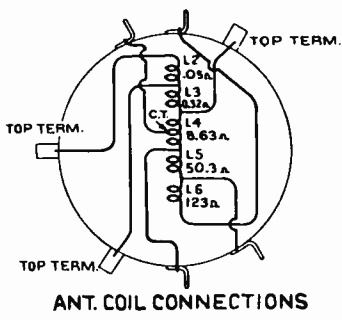
REPLACEMENT PARTS—Continued

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
12286	Resistor—56,000 ohms—insulated, 1/4 watt (R53)—Package of 5		12491	Cable—2-conductor shielded volume control cable, approximately 7 1/2" long, complete with 2 female connectors—connects amplifier to phonograph volume control and expander control	
12263	Resistor—100,000 ohms—insulated, 1/4 watt (R42, R43, R45, R51)—Package of 5		13643	Cable—2-conductor shielded volume control cable, approximately 37 1/2" long, complete with two 2-contact male connectors—connects phonograph volume control and expander control to amplifier	
12452	Resistor—330,000 ohms—insulated, 1/4 watt (R37)—Package of 5		4674	Connector—2-contact male connector for cable stock Nos. 13619, 13641, 13643, pilot lamp socket leads, compensator pack or input transformer cables	
12285	Resistor—470,000 ohms—insulated, 1/4 watt (R44)—Package of 5		11488	Connector—2-contact female connector for cable stock Nos. 12491, 13621, 13623, 13626 or input transformer cable	
12486	Resistor—560,000 ohms—insulated, 1/4 watt (R38, R49)—Package of 5		4577	Connector—2-contact male connector for cable stock No. 13642	
4794	Socket—4-contact 5Z3 or 2A3 Radiotron socket		12565	Connector—4-contact male connector for cable stock Nos. 13622, 13625 or 13644	
11197	Socket—6-contact 6C5 Radiotron socket		4573	Connector—2-contact female connector with oblong openings for cable stock Nos. 13626 or 13642	
11198	Socket—7-contact 6H6 or 6L7 Radiotron socket		12493	Connector—Speaker cable 5-contact female connector	
12464	Transformer—Interstage transformer (T3, L35)		12494	Connector—4-contact female connector for cable stock Nos. 12490, 13645 or compensator pack cable	
12463	Transformer—Power transformer, 105-125 volt, 50-60 cycle (T1)		11570	Connector—4-contact male connector for cable stock No. 13620	
	REPRODUCER ASSEMBLIES		11971	Connector—4-contact female connector for cable stock No. 13624	
13614	Coil—Field coil and magnet assembly (L38)			MISCELLANEOUS ASSEMBLIES	
12474	Cone—Reproducer cone (L36)		5211	Bolt—Speaker mounting bolt assembly—Package of 2	
12567	Plug—5-contact male reproducer plug		4391	Box—Used needle box	
9767	Reproducer—Complete		13615	Bracket—Tuning lamp mounting bracket and clamp	
12568	Transformer—Output transformer (T4)		13103	Cap—Pilot lamp cap and bull's-eye—Package of 5	
	MISCELLANEOUS CABLES AND PLUGS		12560	Compensator Pack—Phonograph compensator pack complete with two shielded cables and connectors (L32, L33, L34, L39, C75, C76, C77, R33, R34, R35)	
13644	Cable—3-conductor shielded compensation cable, approximately 33" long, complete with 4-contact male connector—connects compensator pack to phonograph volume control		12915	Crystal—Station selector escutcheon and crystal	
12991	Cable—3-conductor shielded fidelity control cable, approximately 7 1/4" long—connects fidelity control to receiver		11580	Cover—Pilot lamp cover	
13645	Cable—2-conductor shielded grid switching cable, approximately 18" long, complete with 4-contact female connector—connects radio-record switch to amplifier		12742	Escutcheon—Tuning lamp escutcheon	
13625	Cable—Shielded input cable, approximately 14" long, complete with 4-contact male connector—connects amplifier to radio-record switch		12552	Expander Control (R32)	
13621	Cable—2-conductor pilot and compartment lamp cable, approximately 13" long, complete with two 2-contact female connectors		4340	Lamp—Pilot lamp—6.3 volts—Package of 5	
13626	Cable—3-conductor motor and power switch cable, approximately 7 1/2" long, complete with two female connectors—connects amplifier to phonograph motor and receiver power switch		12699	Knob—Large station selector knob—Package of 5	
13642	Cable—2-conductor motor power cable, approximately 35" long, complete with one 2-contact male and one 2-contact female connectors—connects cable stock No. 13626 to motor leads		12700	Knob—Small vernier station selector knob—Package of 5	
13623	Cable—Single conductor shielded output cable, approximately 5" long, complete with 2-contact female connector—connects receiver to radio-record switch		11347	Knob—Low frequency tone control and power switch, radio-record switch, radio volume control, range switch, or high frequency tone control knob—Package of 5	
13641	Cable—Single conductor shielded output cable, approximately 10 1/2" long, complete with 2-contact male connector—connects radio-record switch to radio receiver		11582	Knob—Phonograph volume control or expander control knob—Package of 5	
13620	Cable—4-conductor plate and filament supply cable, approximately 9" long, complete with 4-contact male connector—connects receiver to amplifier power supply		11607	Receptacle—Needle card holder	
13619	Cable—2-conductor power cable, approximately 27" long, complete with 2-contact male connector—connects power switch to amplifier		11829	Roller—Record pocket slide roller—Package of 2	
13624	Cable—4-conductor plate and filament supply cable, approximately 6" long, complete with 4-contact female connector—connects amplifier power supply to receiver		4560	Screw—Chassis mounting screw assembly (front)—Comprising one screw, one washer and one lock washer—Package of 10	
13622	Cable—2-conductor shielded tone control cable, approximately 28" long, complete with 4-contact male connector—connects receiver tone control to amplifier		13102	Screw—Chassis mounting screw assembly (bottom)—Comprising one screw, two cushions, one spacer, one washer and one lock washer—Package of 2	
12490	Cable—2-conductor shielded tone control cable, approximately 10" long, complete with female connector—connects amplifier to receiver tone control		11573	Socket—Pilot lamp socket	
12985	Cable—Tuning lamp cable and socket		11349	Spring—Retaining spring for knob, Stock Nos. 11347, 11582 and 12700—Package of 5	
			4982	Spring—Retaining spring for knob, Stock No. 12699—Package of 10	
			12824	Switch—Radio-record switch (S6)	
			12555	Transformer—Phonograph input transformer (T2)	
			7217	Transformer—Step-down transformer for 220 volts, 50-60 cycle operation	
			12554	Volume Control—Phonograph volume control (R36)	

MAGIC BRAIN USED IN MODELS 9K2, 9K10, 9T, 9U, 9U2, 10K, 10K1, 10K11, 10T, 10T11, 13K, 15K & 15U



"Magic Brain" Wiring Diagram



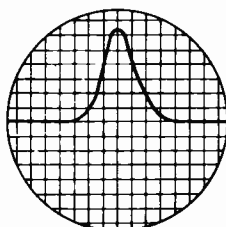
I-F ALIGNMENT

9K2, 9K10, 9T, 9U and 9U2

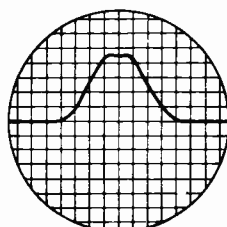
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L27 L28 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			L25 L24 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output

I-F ALIGNMENT 15U

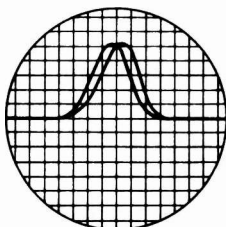
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "A" Band	L29 L28 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd			L27 L26 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			L25 L24 1st I-F Trans.
4	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output



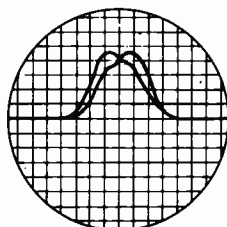
A



C



B



D

MF-81373
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I-F Alignment Oscillograph Curves

- A—Correct curve showing proper i-f alignment as obtained with fidelity control counter-clockwise.
- B—Incorrect curve similar to A showing improper alignment of i-f system caused by one or more circuits being slightly detuned.
- C—Correct showing broadening of curve A obtained when fidelity control is rotated fully clockwise.
- D—Incorrect curve showing broadening of curve B obtained when fidelity control is rotated fully counter-clockwise.

NOTE: R-F Alignment of all Models is Identical.

ALIGNMENT PROCEDURE

Models 10T, 10K, 10K1, 10T11, 10K11, 13K & 15K.

DIAL CALIBRATION:

(Refer to selector dial instructions)

CATHODE RAY OSCILLOGRAPH CONNECTIONS:

Connect vertical "H" to #1 term of phono. board. Connect vertical "O" to chassis.

Set Fidelity control in counter clockwise position.

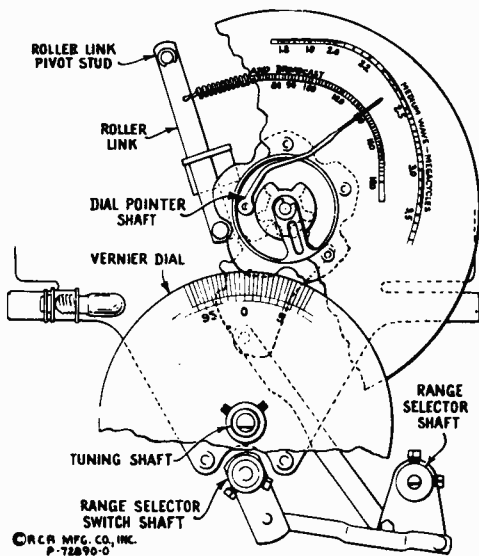
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "A" Band	L30 L29 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd			L28 L27 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			L25 L24 1st I-F Trans.
4	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output
5		57000 Kc	57 Mc "D" Band	C23† C39▲ C10▲ Osc. R-F Ant.
6	Antenna in series with 300 ohms	20000 Kc	20 Mc "C" Band	C13† C35▲ C3▲ Osc. R-F Ant.
7		6000 Kc	6 Mc "B" Band	C14† C36▲ C4▲ Osc. R-F Ant.
8		1500 Kc	1500 Kc "A" Band	C16 C37 C5 Osc. R-F Ant.
9		600 Kc	600 Kc "A" Band	L9 L-F Osc. Rock Gang
10	Antenna in series with 200 mmfd	Repeat Step 8		
11		350 Kc	350 Kc "X" Band	C18 C38 C6 Osc. R-F Ant.
12		175 Kc	350 Kc "X" Band	L10 L-F Osc. Rock Gang
13		Repeat Step 11		

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG

MAGIC BRAIN



-Selector Dial Change Mechanism

Precautionary Dressing of Leads for "Magic Brain" Alignment (Refer to Figure 4)

Band "X"

1. Keep blue lead A of S1 to antenna coil L4-5 dressed away from chassis, and from yellow lead X of S1 to antenna coil L5-6.
2. Bus lead from C10 to S1 should be as short as possible.
3. Keep blue lead A of S2 to detector coil L18-19 clear of chassis, coil shield, coil, and other leads.
4. Keep spaghetti lead C6 to X of S1 apart from spaghetti lead C5 to A of S1, and from chassis.

Band "A"

1. Keep green lead terminal S1 to antenna coil tap L4 away from chassis, coil shield, and coil.
2. Keep spaghetti lead C5 to A of S1 apart from spaghetti lead C6 to X of S1 and from chassis.

Band "C"

1. Lead from C19 to oscillator coil L7 should be maintained as short and straight as possible.

Selector Dial

To adjust the dial mechanism, set the range switch to its "Standard broadcast" position. Place a straight-edge across the center of the dial so that its edge is even with the lower (end) marking at both the low-frequency and high-frequency ends of the dial. Under such conditions the straight-edge should be parallel with the top of the chassis base. If the straight-edge is not parallel with the top of the chassis base, loosen the nut on the rear of the roller link pivot stud and move the stud up or down until the link roller moves the dial to the desired position so that the end calibration marks obtain the position mentioned above. Tighten the nut on the roller link pivot stud.

Set the gang tuning condenser to its maximum capacity position. Adjust the dial pointer to the low-frequency (end) mark on "Standard broadcast" scale. This is a friction adjustment.

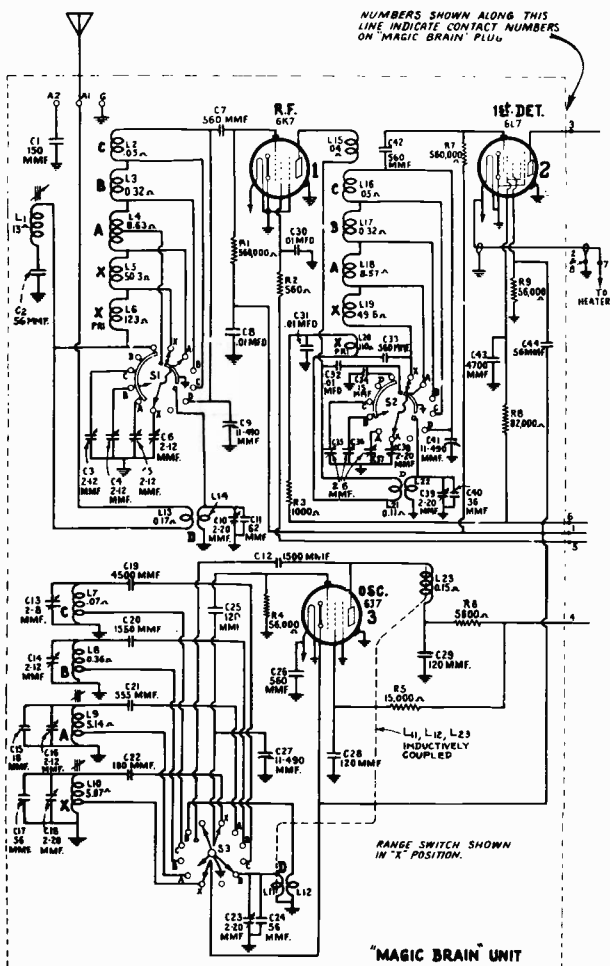
With the gang tuning condenser plates still in full mesh, loosen the two set screws on the vernier-dial hub. Rotate the vernier dial until the "0" marking is in a vertical plane above the center of the shaft. Tighten set screws.

MICROPHONICS IN MAGIC BRAIN RECEIVERS

- 1) Install a Stock No. 14617 RCA Flexible Socket Adaptor for the RCA-6J7 oscillator tube.
- 2) Replace the RCA-6J7, choosing one with low microphonics.

IF SATISFACTORY PERFORMANCE IS NOT OBTAINED BY OPERATIONS (1) AND (2), THEN

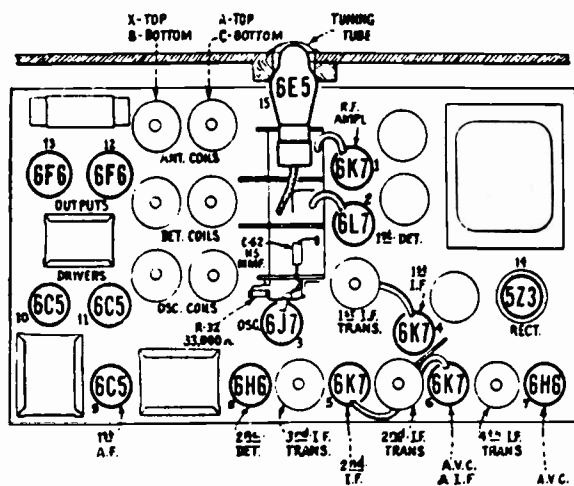
- 3) Remove chassis from cabinet and loosen Magic Brain under-shield to gain access to the Oscillator Coil ("A, B, C"). Using a small brush, apply Household Cement, Ambroid, or similar adhesive to the enameled leads on the inside of the oscillator coil form, so as to make them mechanically stable. The leads referred to connect to the terminal lugs. Allow about six hours for cement to dry before operating the receiver.
- 4) If dial calibration or sensitivity is affected by the above operations, re-align the radio-frequency and oscillator circuits.



-Schematic Circuit Diagram

MODELS C15-3 & C15-4

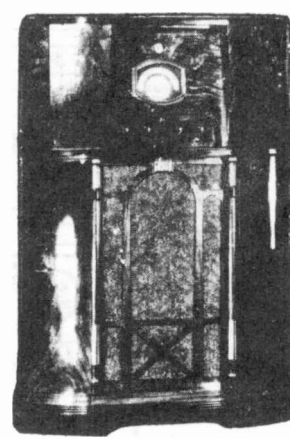
Fifteen-Tube, Five-Band, A-C, Superheterodyne Receiver



Radiotron and Coil Locations



MODEL C 15-3



MODEL C 15-4

ELECTRICAL SPECIFICATIONS

FREQUENCY RANGES

Band X.....	140— 410 kc.
Band A.....	540— 1,800 kc.
Band B.....	1,800— 6,000 kc.
Band C.....	6,000—18,000 kc.
Band D.....	18,000—60,000 kc.

ALIGNMENT FREQUENCIES

Band X.....	150 kc. and 400 kc.
Band A.....	600 kc. and 1720 kc.
Band B.....	6132 kc.
Band C.....	18000 kc.
Band D.....	none required

VOLTAGE AND FREQUENCY

Rating A.....	105—125 volts, 50—60 cycles
Rating B.....	105—125 volts, 25—60 cycles
Rating C.....	100—130/140—160/195—250 volts, 40—60 cycles

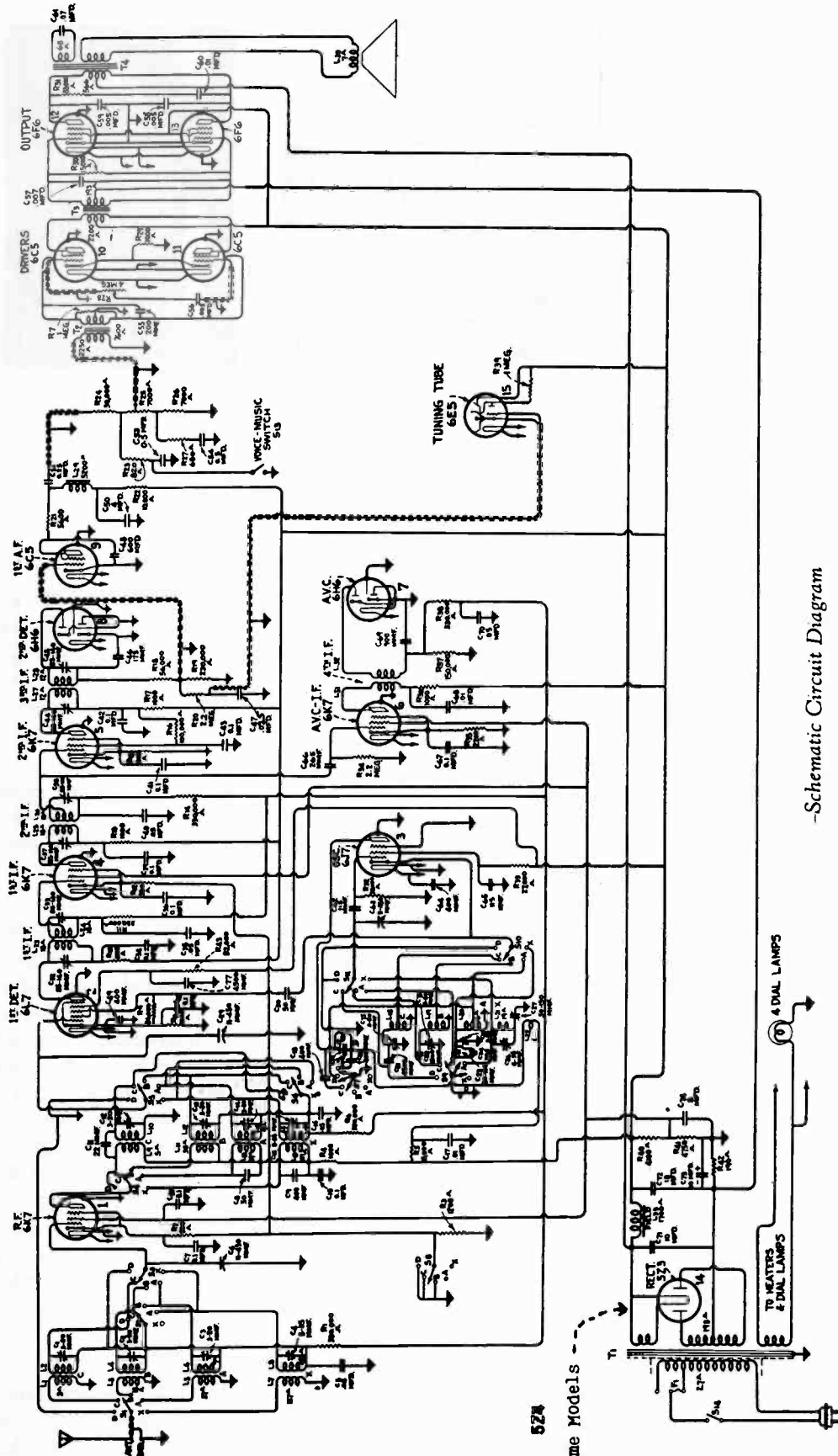
RADIOTRON COMPLEMENT

(1) RCA-6K7	Radio-Frequency Amplifier
(2) RCA-6L7	First Detector
(3) RCA-6J7	Heterodyne Oscillator
(4) RCA-6K7	First Intermediate Amplifier
(5) RCA-6K7	Second Intermediate Amplifier
(6) RCA-6K7	Automatic Volume Control Amplifier
(7) RCA-6H6	Automatic Volume Control
(8) RCA-6H6	Second Detector
(9) RCA-6C5	First Audio Amplifier
(10) RCA-6C5	Audio Driver Amplifier
(11) RCA-6C5	Audio Driver Amplifier
(12) RCA-6F6	Power Output Amplifier
(13) RCA-6F6	Power Output Amplifier
(14) RCA-5Z3 or RCA-5Z4	Full Wave Rectifier
(15) RCA-6E5	Tuning Indicator

MISCELLANEOUS

Power Consumption.....	145 watts	Loudspeaker.....	12 inch, Electrodynamic
Undistorted Output.....	10 watts	Voice Coil Impedance.....	7.5 ohms at 400 cycles
Maximum Output.....	15 watts	Intermediate Frequency.....	460 kc.

C15-3 & C15-4



-Schematic Circuit Diagram

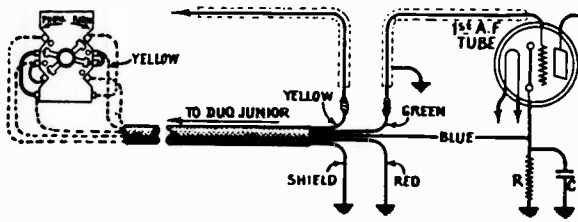
524

Some Models -

TO HEATERS & DIAL LAMPS

TO HEATERS & DIAL LAMPS

C15-3 & C15-4



-Duo Junior Connections

Alignment Procedure

DIAL CALIBRATION:

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of Band A scale.

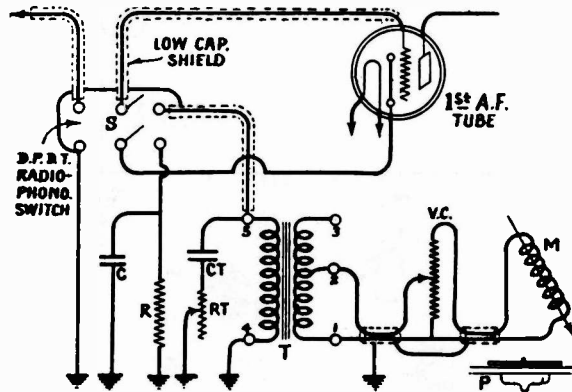
CATHODE RAY OSCILLOGRAPH CONNECTIONS:

Connect vertical "H" to grid 1st AF (6C5). Connect vertical "0" to chassis.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd	480 Kc	Quiet point near 800 Kc "A" Band	C45 C44 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd			C38 C37 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			C33 C32 1st I-F Trans.
4	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	C25 C14 C3 Osc. R-F Ant.
5		600 Kc	600 Kc "A" Band	C23 L-F Osc. Rock Gang
6		Repeat Step 4		
7		400 Kc	400 Kc "X" Band	C28 C15 C4 Osc. R-F Ant.
8		150 Kc	150 Kc "X" Band	C27 L-F Osc. Rock Gang
9	Repeat Step 7			
10	Antenna in series with 300 ohms	6132 Kc	6132 Kc "B" Band	C76† C13 C2 Osc. R-F Ant.
11		18000 Kc	18 Mc "C" Band	C75† C12 C1 Osc. R-F Ant.

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.



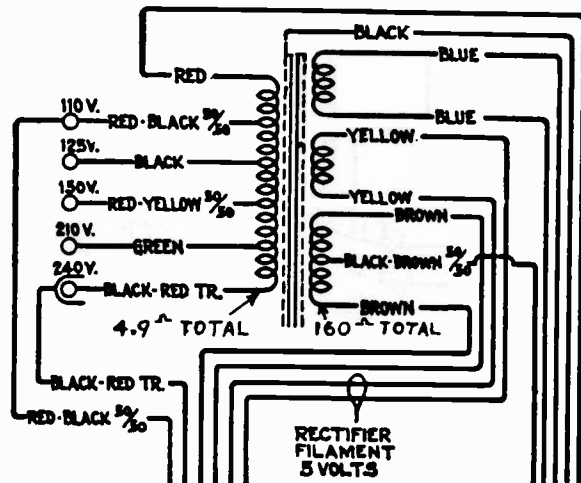
-General Phonograph Connections

INSTALLATION

Change the receiver circuits and add phonograph connections to conform with the above schematic. Resistor R and capacitor C must be used to provide the proper bias. Thoroughly shield leads where indicated, keeping them clear of a-c circuits and transformers. Place transformer T so as to obtain minimum lengths of secondary leads and mount it in the position which does not cause hum.

PARTS REQUIRED

- M—Magnetic Pickup —Low Impedance
- T—Phono Input Transformer—Stock No. 7445
- VC—Volume Control —100 ohms
- P—Phono Turntable Mechanism
- R—Biasing Resistor—2500 ohms
- C—By-pass Condenser —10 mfd.
- C1—Condenser—.05 mfd.
- R1—Variable Resistor —0 to 10,000 ohms



-Universal Transformer Schematic and Wiring

REPLACEMENT PARTS C15-3 & C15-4

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

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES					
4427	Bracket—Low frequency tone control switch, volume control or high frequency tone control mounting bracket.....		5240	Cover—Fuse cover plate.....	
5237	Bushing—Variable capacitor mounting bushing assembly—Package of 3.....		11202	Foot—Chassis mounting foot and bracket assembly—Package of 2.....	
11255	Cable—Radiotron tuning lamp cable complete with socket.....		10907	Fuse—3 ampere fuse—F1—Package of 5..	
5241	Capacitor—Adjustable capacitor—C23, C27		5226	Lamp—Dial lamp—Package of 5.....	
11286	Capacitor—14 Mmfd. capacitor—C19.....		11710	Lead—Shielded lead for antenna.....	
11292	Capacitor—22 Mmfd. capacitor—C11.....		5239	Mounting—Fuse mounting for 110 volt instrument	
11289	Capacitor—50 Mmfd. capacitor—C8, C30		5244	Mounting—Fuse mounting for 220 volt instrument	
11291	Capacitor—115 Mmfd. capacitor—C62, C65		8041	Plate—I.F. or R.F. coil shield locking plate—Package of 2.....	
11295	Capacitor—200 Mmfd. capacitor—C55.....		5233	Reactor—Coupling reactor—L29.....	
11294	Capacitor—325 Mmfd. capacitor—C24.....		11296	Resistor—330 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R12)—Package of 5.....	
11290	Capacitor—400 Mmfd. capacitor—C9, C18, C20, C49, C64.....		11285	Resistor—1000 ohms—Flexible type resistor (R13, R17, R36)—Package of 5....	
11299	Capacitor—600 Mmfd. capacitor—C48.....		5112	Resistor—1000 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R10, R15, R29)—Package of 5	
3784	Capacitor—900 Mmfd. capacitor—C69.....		11283	Resistor—1200 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5.....	
11335	Capacitor—1300 Mmfd. capacitor—C22..		4408	Resistor—1500 ohms—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 10.....	
11287	Capacitor—4500 Mmfd. capacitor—C21, C77		5159	Resistor—2200 ohms—Carbon type— $\frac{1}{4}$ watt (R35)—Package of 5.....	
4838	Capacitor—.005 Mfd. capacitor—C58, C59		11298	Resistor—5600 ohms—Carbon type—1 watt (R21)	
5242	Capacitor—.005 Mfd. High frequency tone control capacitor—C56.....		8043	Resistor—10,000 ohms—Carbon type—2 watts (R22).....	
5148	Capacitor—.007 Mfd. capacitor—C57.....		3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt (R30)—Package of 5.....	
4937	Capacitor—.01 Mfd. capacitor—C60.....		5114	Resistor—15,000 ohms—Carbon type—1 watt (R5).....	
4858	Capacitor—.01 Mfd. capacitor—C17, C68		8065	Resistor—27,000 ohms—Carbon type— $\frac{1}{2}$ watt (R33)—Package of 5.....	
4870	Capacitor—.025 Mfd.—C47.....		11300	Resistor—33,000 ohms—Carbon type— $\frac{1}{10}$ watt (R32)—Package of 5.....	
4836	Capacitor—.05 Mfd. capacitor—C5, C16, C35, C40, C70		5033	Resistor—33,000 ohms—Carbon type—1 watt (R31)—Package of 5.....	
4835	Capacitor—.1 Mfd. capacitor—C31.....		11282	Resistor—56,000 ohms—Carbon type— $\frac{1}{10}$ watt (R9)—Package of 5.....	
4841	Capacitor—.1 Mfd. capacitor—C7, C28, C36, C41, C67.....		8064	Resistor—82,000 ohms—Carbon type— $\frac{1}{2}$ watt (R43)—Package of 5.....	
4885	Capacitor—.1 Mfd. capacitor—C10, C34, C39, C42, C43.....		5145	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16)—Package of 5.....	
3597	Capacitor—.25 Mfd. capacitor—C51.....		5027	Resistor—150,000 ohms—Carbon type— $\frac{1}{4}$ watt (R37)—Package of 5.....	
11203	Capacitor—10 Mfd. capacitor—C71.....		11297	Resistor—330,000 ohms—Carbon type— $\frac{1}{10}$ watt (R1, R6)—Package of 5....	
5212	Capacitor—18 Mfd. capacitor—C72.....		5108	Resistor—330,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11, R14, R38)—Package of 5..	
5213	Capacitor Pack—Comprising one 4. Mfd., one 10 Mfd. and one 8. Mfd. capacitors—C50, C73, C74.....		3033	Resistor—1 Megohm—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 5.....	
5236	Capacitor Pack—Comprising two .5 Mfd., capacitors, one 680 ohm resistor and one 820 ohm resistor—C53, C54, R23, R27.		11151	Resistor—2.2 Megohm—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....	
4693	Clamp—Electrolytic capacitor mounting clamp (For stock No. 5213).....		5235	Resistor—Voltage divider resistor—3 sections—4100 ohms, 4750 ohms and 190 ohms (R40, R41, R42).....	
5215	Coil—Antenna coil—A and C Bands—L1, L2, L5, L6, C1, C3.....		5249	Shield—Antenna, detector or oscillator coil shield	
5218	Coil—Antenna coil—X and B Bands—L3, L4, L7, L8, C2, C4.....		5250	Shield—Intermediate frequency transformer shield	
5216	Coil—Detector coil—A and C Bands—L9, L10, L13, L14, C12, C14.....		11273	Shield—Radiotron shield.....	
5219	Coil—Detector coil—X and B Bands—L11, L12, L15, L16, C13, C15.....		4794	Socket—4 contact Radiotron socket—For Radiotron 5Z3	
5217	Coil—Oscillator coil—A and C Bands—L18, L20, C25, C75.....				
5220	Coil—Oscillator coil—X and B Bands—L19, L22, C26, C76.....				
5221	Coil—Oscillator coil—D Band—L17.....				
5214	Condenser—3 gang variable tuning condenser—C6, C29, C63.....				

C15-3 & C15-4

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	LIST	STOCK No.	DESCRIPTION	LIST
11197	Socket—6 contact Radiotron socket—For Radiotron 6C5		8050	Gear—Gear sector and band indicator operating link (link connects to arm on band switch)	
11198	Socket—7 contact Radiotron socket—For Radiotron 6K7, 6H6 or 6F6		8053	Indicator—Station selector vernier indicator pointer	
11278	Socket—7 contact Radiotron socket—For Radiotron 6J7 (oscillator).....		11793	Indicator—Station selector indicator pointer	
11280	Socket—7 contact Radiotron socket—For Radiotron 6L7 (First detector).....		8051	Link—Complete with roller and spring...	
11199	Socket—Dial lamp socket.....		8049	Pinion—Vernier pointer drive pinion and shaft	
5224	Switch—Low frequency tone control and power switch—S13, S14.....		4669	Screw—Square head No. 8-32x5/32 set screw—Package of 10.....	
5225	Switch—Range switch—S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11.....		8047	Spring—Coil spring for indicator shaft drive gear and vernier idler (Stock No. 8046)	
5238	Terminal—Antenna terminal board with clip, insulating strip and rivets.....		8052	Spring—Coil spring for link—Package of 5	
5222	Tone Control—High frequency tone control (R28).....		8042	Stud—Band indicator operating arm stud—Package of 5	
5232	Transformer—Audio driver transformer—(T3)		LOUDSPEAKER ASSEMBLY		
5228	Transformer—First intermediate frequency transformer (L23, L24, C32, C33).....		8059	Board—Reproducer terminal board (2 terminals)	
5231	Transformer—Fourth intermediate frequency transformer (L31, L32).....		8060	Bracket—Output transformer mounting bracket	
5234	Transformer—Interstage transformer (T2)		11200	Cable—Reproducer cable—Complete with connector	
8061	Transformer—Power transformer 105-125 volts 50/60 cycles (T1)		8058	Clamp—Cone rim clamp—Package of 4...	
8062	Transformer—Power transformer 105-125 volts 25-50 cycles.....		11189	Coil—Field coil, magnet and cone housing (L33)	
11194	Transformer—Power transformer 105/125/150/210/250 volts—40-60 cycles.....		8056	Cone—Reproducer cone (L30).....	
5229	Transformer—Second intermediate frequency transformer (L25, L26, C37, C38, C66, R34)		5039	Connector—4 prong male connector plug for reproducer	
5230	Transformer—Third intermediate frequency transformer (L27, L28, C44, C45, C46, R18, R19).....		5040	Connector—4 contact female connector socket for reproducer cable.....	
5223	Volume Control—(R24, R25, R26).....		9620	Reproducer—Complete	
DRIVE ASSEMBLIES			8057	Transformer—Output transformer (T4, C61)	
5243	Arm—Band indicator operating arm.....		MISCELLANEOUS ASSEMBLY		
10194	Ball—Steel ball for drive assembly—Package of 20.....		5211	Bolt—Speaker mounting bolt assembly—Package of 2.....	
8054	Cam—Five position cam for station selector drive assembly.....		11191	Bracket—Radiotron tuning lamp mounting bracket—less clamp (Stock No. 11192).	
4422	Clutch—Tuning condenser drive clutch assembly comprising shaft, balls, ring, spring and washers assembled.....		11192	Clamp—Radiotron tuning lamp mounting clamp—less bracket (Stock No. 11191).	
8048	Coupling—Flexible coupling for variable capacitor (includes indicator shaft).....		11193	Cover—Reproducer cover.....	
11336	Dial—Dial scale with mounting rivets....		11276	Escutcheon—Tuning lamp escutcheon.....	
8045	Disc—Drive disc and micarta gear assembly		11379	Escutcheon—Station selector escutcheon and crystal	
11380	Drive—Tuning condenser drive assembly complete		11346	Knob—Station selector knob—Package of 5	
8044	Escutcheon—Dial escutcheon with vernier scale		11347	Knob—Volume control, tone control, power switch or range switch knob—Package of 5	
8046	Gear—Indicator shaft micarta drive gear and vernier idler brass gear with one spring		11382	Resistor—1 Megohm—Carbon type—1/10 watt (R39)—Package of 5.....	
			11348	Screw—8-32-7/16" headless set screw for knob (Stock No. 11346)—Package of 10	
			5210	Screw—Chassis mounting screw assembly—Package of 4.....	
			11381	Socket—Tuning tube socket and cover....	
			11349	Spring—Retaining spring for knob (Stock No. 11347)—Package of 5.....	

SUBSTITUTE AND ADDITIONAL REPLACEMENT PARTS

MODELS	STOCK No.	DESCRIPTION
C15-3	11195	Socket—5-contact rectifier Radiotron socket.....
C15-4	11880	Transformer—Power transformer—105-125 volts 50-60 cycles (T1)....
(with metal rectifier)	11887	Transformer—Power transformer—105-125 volts 25-50 cycles.....
	11251	Transformer—Power transformer—105/125/150/210/250 volts 40-60 cycles.....
		Stock Nos. 11273, 4794, 8061, 8062, and 11194 are not used in chassis having metal rectifier.

MODELS R17, R17-M, R17-W & R27

115 Volt AC/DC Universal Receiver

Electrical Specifications

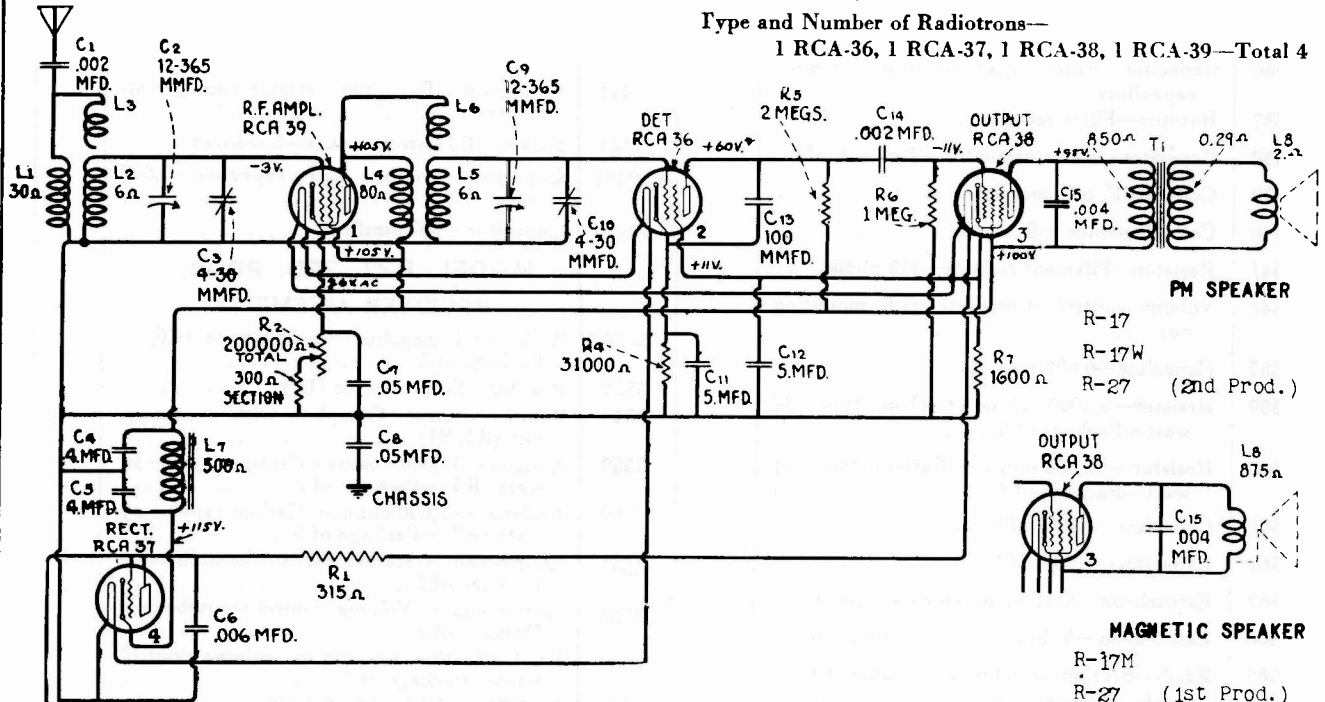
Voltage Rating . . . 100-125 Volts, 25-133 Cycles A. C. or D. C.

Power Consumption 40 Watts

Frequency Range 540 K. C.-1710 K. C.

Type and Number of Radiotrons—

1 RCA-36, 1 RCA-37, 1 RCA-38, 1 RCA-39—Total 4



Schematic Circuit

NOTE: R-27 (3rd Prod.)
Resistor R1 is in line cord., C1 and C14 are
2400 mmfd.

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION	
MODELS R-17, M&W RECEIVER ASSEMBLIES				
3076	Resistor—1 megohm—Carbon type	3567	Escutcheon—Station selector escutcheon	
3456	Capacitor—.05 mfd.	3568	Escutcheon—Volume control escutcheon	
3536	Capacitor—Filter capacitor—Two 5.0 mfd. capacitors	3569	Knob—Station selector or volume control knob	
3537	Reactor—Filter reactor	3635	Resistor—Filament resistor—315 ohms	
3538	Capacitor—Filter capacitor—Two 4.0 mfd.	6188	Resistor—2 megohm—Carbon type—½ watt	
3539	Coil—R. F. coil complete	6451	Condenser—Two gang variable tuning condenser	
3540	Coil—Detector coil	7484	Socket—Radiotron socket—5 contact	
3542	Volume control—Complete with mounting nut	10405	Capacitor—Antenna series capacitor—.002 mfd.	
3557	Capacitor—0.002 mfd.	10820	Capacitor—100 mmfd.	
3559	Resistor—31,000 ohms—Carbon type—½ watt	MODEL R-17M		
3560	Resistor—1,600 ohms—Carbon type—½ watt	<i>Change Stock No's.</i>		
3561	Capacitor—0.004 mfd.	From	To	
3562	Capacitor—0.006 mfd.	3539	3715	Coil - R-F Coil.
		3540	3714	Coil - Det. Coll.
		3567	3709	Escutcheon.
		3568	3688	Escutcheon.
		3569	3687	Knob.

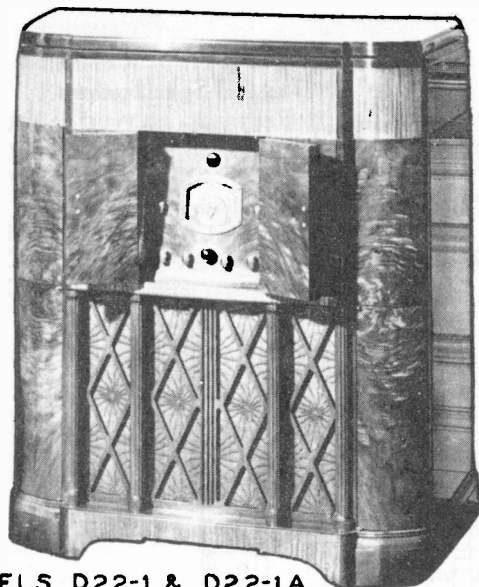
R17, R17-M, R17-W & R27

Replacement Parts (Continued)

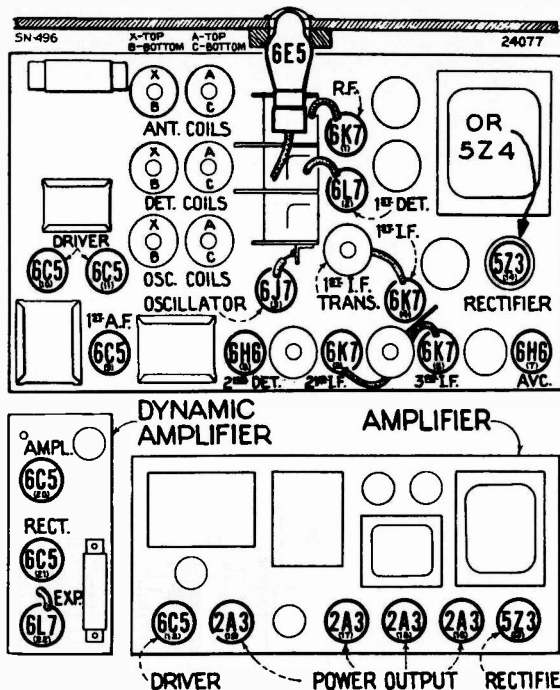
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	MODEL R27 1ST. PROD.		3635	Resistor—Filament resistor—315 ohms.....	
	RECEIVER ASSEMBLIES		3713	Capacitor—0.05 mfd.....	
3076	Resistor—1 megohm—Carbon type—Pack- age of 5.....		3714	Coil—Detector coil.....	
3456	Capacitor—.05 mfd.....		3715	Coil—R. F. coil complete.....	
3536	Capacitor—Filter capacitor—Two 5.0 mfd. capacitors.....		6188	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt —Package of 5.....	
3537	Reactor—Filter reactor.....		6451	Condenser—Two-gang variable tuning con- denser.....	
3538	Capacitor—Filter capacitor—Two 4.0 mfd....		7484	Socket—Radiotron socket—5-contact.....	
3539	Coil—R. F. coil complete.....		10405	Capacitor—Antenna series capacitor—0.002 mfd.....	
3540	Coil—Detector coil.....		10820	Capacitor—100 mmfd.....	
3541	Resistor—Filament resistor—315 ohms.....			MODEL R27 3RD. PROD.	
3542	Volume control—Complete with mounting nut.....			RECEIVER ASSEMBLIES	
3557	Capacitor—0.002 mfd.....		3076	Resistor—1 megohm—Carbon type (R6)— Package of 5.....	
3559	Resistor—31,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		3537	Reactor—Filter reactor (L7).....	
3560	Resistor—1,600 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		3542	Volume control—Complete with mounting nut (R2, S1).....	
3561	Capacitor—0.004 mfd.....		3559	Resistor—31,000 ohms—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5.....	
3562	Capacitor—0.006 mfd.....		3560	Resistor—1,600 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Package of 5.....	
3567	Escutcheon—Station selector escutcheon.....		3567	Escutcheon—Station selector escutcheon— Package of 2.....	
3568	Escutcheon—Volume control escutcheon.....		3568	Escutcheon—Volume control escutcheon— Package of 2.....	
3569	Knob—Station selector or volume control knob—Package of 5.....		3569	Knob—Station selector or volume control knob—Package of 5.....	
6188	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt —Package of 5.....		3713	Capacitor—0.05 mfd. (C7, C8).....	
6451	Condenser—Two gang variable tuning con- denser.....		3714	Coil—Detector coil (L4, L5, L6).....	
7484	Socket—Radiotron socket—5 contact.....		3715	Coil—R. F. coil complete (L1, L2, L3).....	
10405	Capacitor—Antenna series capacitor—.002 mfd.....		4007	Capacitor—2,400 mmfd. (C1, C14).....	
10820	Capacitor—100 mmfd.....		4070	Capacitor—0.004 mfd. (C15).....	
	MODEL R27 2ND. PROD.		4071	Capacitor—0.006 mfd. (C6).....	
	RECEIVER ASSEMBLIES		4073	Resistor—350,000 ohms—Carbon type— $\frac{1}{2}$ watt—(R8)—Package of 5.....	
3076	Resistor—1 megohm—Carbon type—Pack- age of 5.....		6188	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5.....	
3536	Capacitor—Filter capacitor—Two 5.0 mfd. capacitors.....		6451	Condenser—2-gang variable tuning con- denser (C2, C3, C9, C10).....	
3537	Reactor—Filter reactor.....		6819	Resistor—Filament resistor—Power cord— 315 ohms (R1).....	
3538	Capacitor—Filter capacitor—Two 4.0 mfd....		6844	Capacitor—Filter capacitor—Two 5.0 mfd. capacitors (C11, C12).....	
3542	Volume control—Complete with mounting nut.....		6845	Capacitor—Filter capacitor—Two 4.0 mfd. (C4, C5).....	
3557	Capacitor—0.002 mfd.....		7484	Socket—Radiotron socket—5-contact.....	
3559	Resistor—31,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		10820	Capacitor—100 mmfd. (C13).....	
3560	Resistor—1,600 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....			LOUDSPEAKER ASSEMBLIES— MAGNETIC TYPE	
3561	Capacitor—0.004 mfd.....		7594	Cone—Speaker cone—Package of 5.....	
3562	Capacitor—0.006 mfd.....		7595	Support—Cone support.....	
3567	Escutcheon—Station selector escutcheon— Package of 2.....		7596	Mechanism—Speaker mechanism complete with magnet (L8).....	
3568	Escutcheon—Volume control escutcheon— Package of 2.....		9426	Loudspeaker complete.....	
3569	Knob—Station selector or volume control knob—Package of 5.....			REPRODUCER ASSEMBLIES DYNAMIC TYPE	
			3610	Magnet.....	
			6477	Transformer—Output transformer.....	
			7598	Cone—Reproducer cone complete.....	
			7599	Housing—Cone housing and core assembly.	
			9429	Reproducer—Complete.....	

MODELS D22-1 & D22-1A

Twenty-Two Tube, Five-Band, A-C, Automatic Radio-Phonograph



MODELS D22-1 & D22-1A



Electrical Specifications

-Radiotron and Coil Locations

FREQUENCY RANGES

Band X	140 kc.— 410 kc.
Band A	540 kc.— 1,800 kc.
Band B	1,800 kc.— 6,000 kc.
Band C	6,000 kc.—18,000 kc.
Band D	18,000 kc.—60,000 kc.

ALIGNMENT FREQUENCIES

Band X	150 kc. (osc.), 400 kc. (osc., det., ant.)
Band A	600 kc. (osc.), 1,720 kc. (osc., det., ant.)
Band B	6,132 kc. (osc., det., ant.)
Band C	18,000 kc. (osc., det., ant.)
Band D	No adjustments necessary

Intermediate Frequency..... 460 kc.

RADIOTRON COMPLEMENT

- (1) RCA-6K7.....Radio-Frequency Amplifier
- (2) RCA-6L7.....Hexode First Detector
- (3) RCA-6J7.....Heterodyne Oscillator
- (4) RCA-6K7.....First Intermediate Amplifier
- (5) RCA-6K7.....Second Intermediate Amplifier
- (6) RCA-6K7.....AVC Intermediate Amplifier
- (7) RCA-6H6.....Automatic Volume Control
- (8) RCA-6H6.....Diode Second Detector
- (9) RCA-6C5.....Audio Voltage Amplifier
- (10) RCA-6C5.....Audio Driver Amplifier
- (11) RCA-6C5.....Audio Driver Amplifier

- (12) RCA-6C5.... Audio Driver Amplifier (Phono)
- (13) RCA-5Z3 - OR 5Z4... Rectifier (Amplifier)
- (14) RCA-5Z3 - OR 5Z4... Rectifier (Radio)
- (15) RCA-6E5..... "Magic Eye" Tuning Indicator
- (16) RCA-2A3..... Power Output Amplifier
- (17) RCA-2A3..... Power Output Amplifier
- (18) RCA-2A3..... Power Output Amplifier
- (19) RCA-2A3..... Power Output Amplifier
- (20) RCA-6C5..... Audio Amplifier (Phono)
- (21) RCA-6C5..... Audio Rectifier (Phono)
- (22) RCA-6L7..... Audio Volume Expander

POWER SUPPLY RATINGS

Rating A-6...	105-125 Volts, 60 Cycles, 400 Watts
Rating A-5...	105-125 Volts, 50 Cycles, 405 Watts
Rating B-4...	105-125 Volts, 40 Cycles, 410 Watts
Rating B-3...	105-125 Volts, 30 Cycles, 405 Watts
Rating B-2...	105-125 Volts, 25 Cycles, 410 Watts

LOUDSPEAKERS (2)

Type	12-inch Electrodynamic
Voice Coil Impedance.....	7.5 Ohms at 400 Cycles
Field Coil Rating.....	1,700 Ohms—90 M.A.

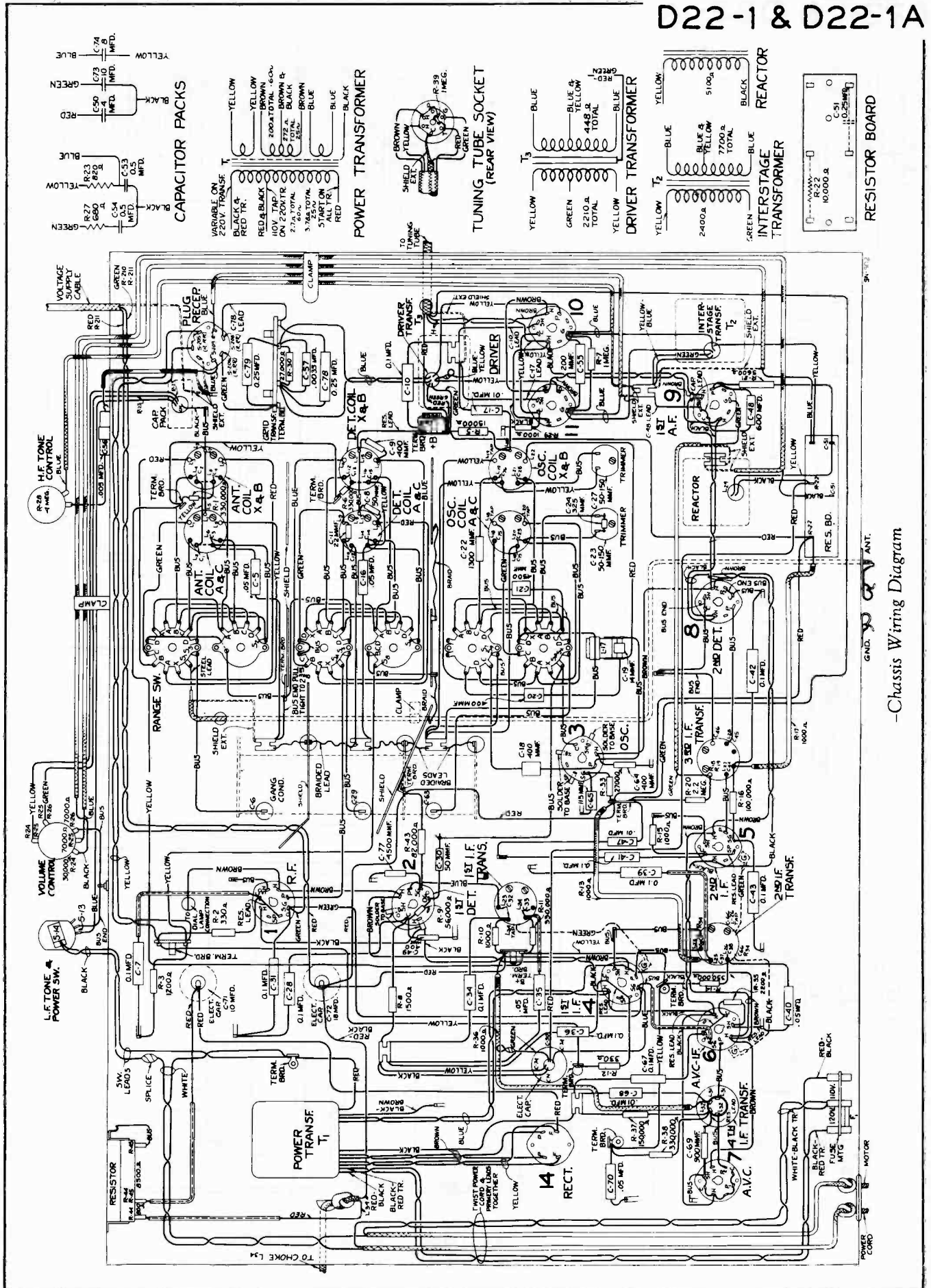
PHONOGRAPH

Type.....	Automatic Record Ejector
Record Capacity.....	Eight 10-inch or Seven 12-inch
Turntable Speed.....	78 R.P.M.
Type of Pickup.....	Improved Low-Impedance Magnetic
Pickup Impedance.....	18 Ohms at 1,000 Cycles

POWER OUTPUT RATINGS

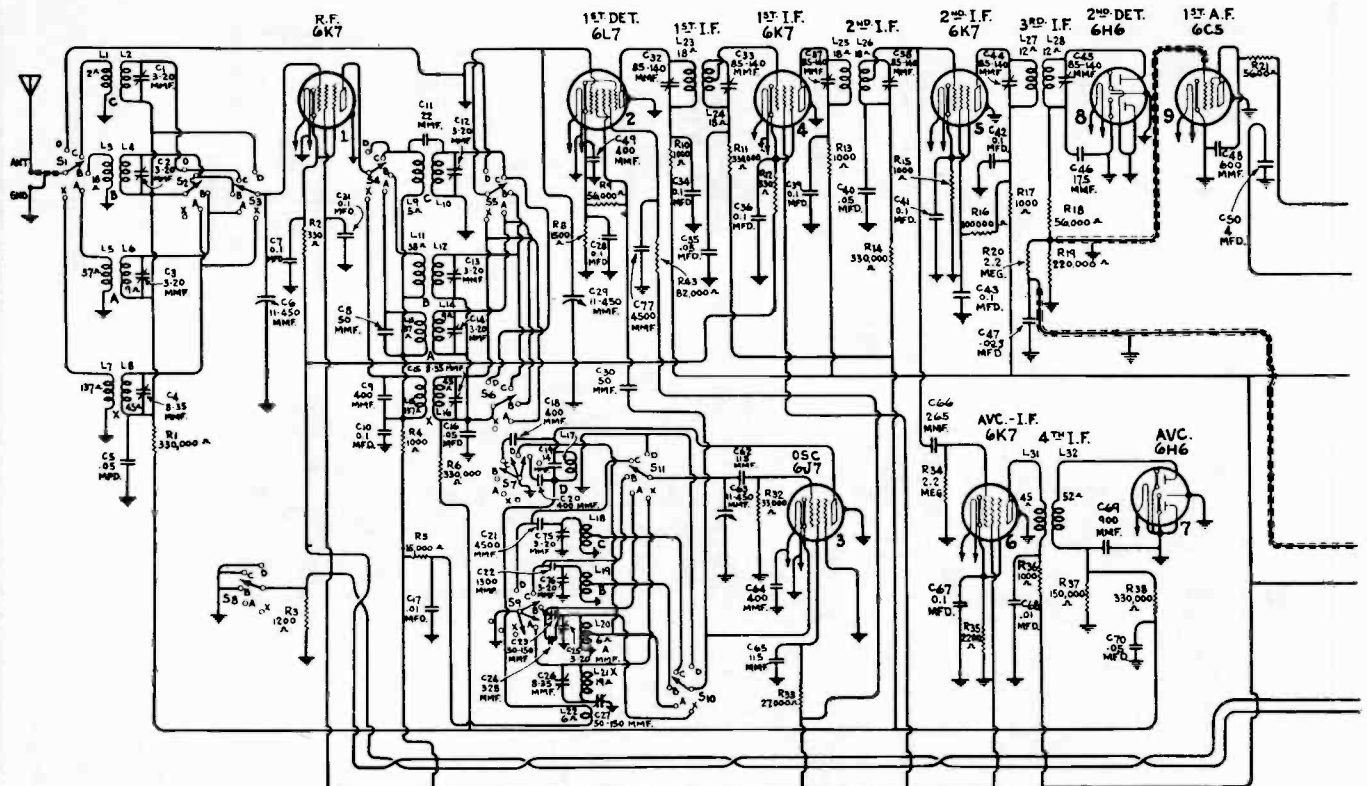
Undistorted	20 Watts
Maximum	25 Watts

D22-1 & D22-1A

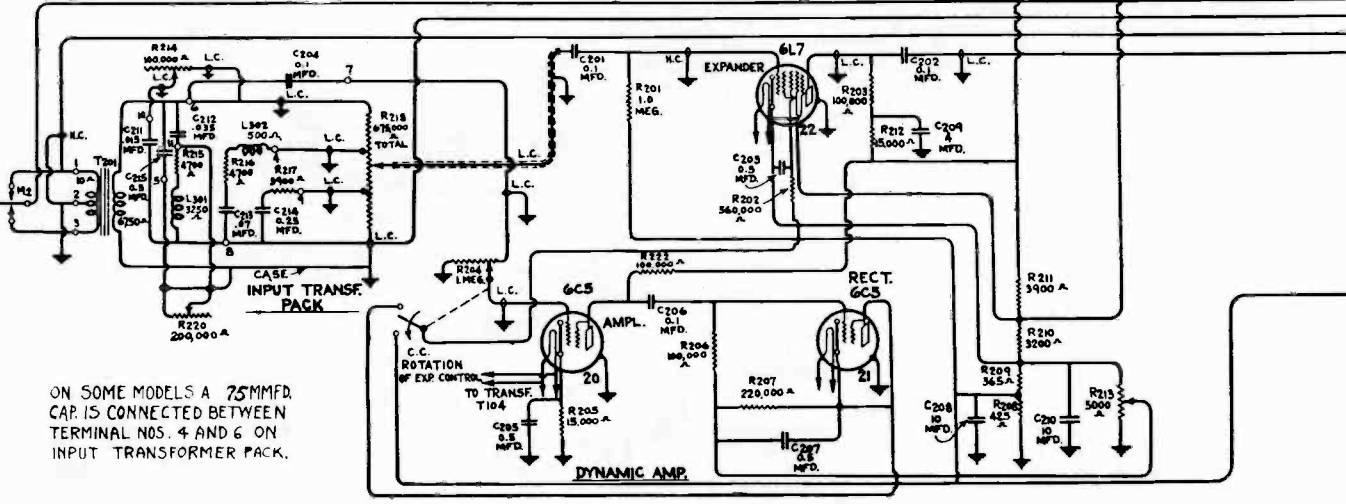
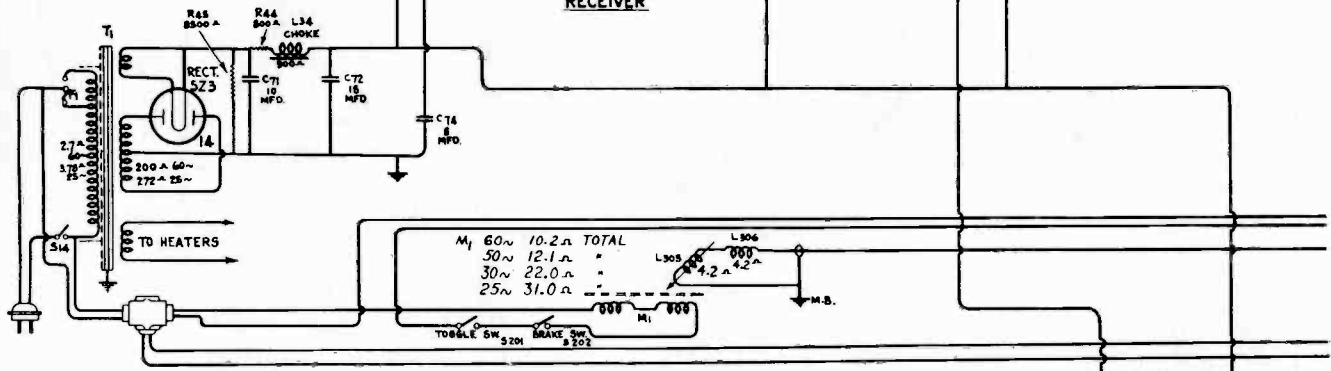


-Chassis Wiring Diagram

D22-1 & D22-1A



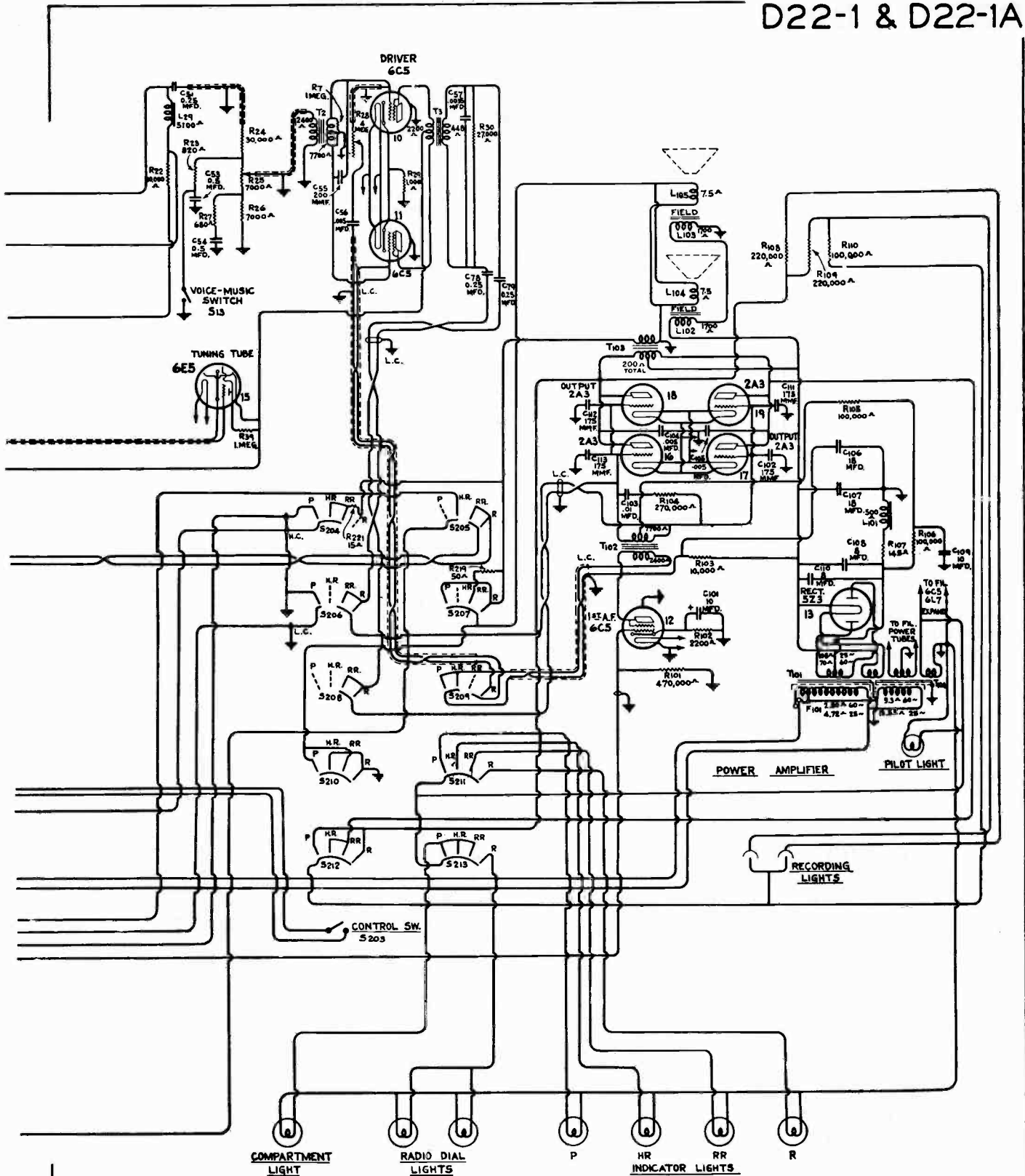
RECEIVER



ON SOME MODELS A 75MMFD. CAP. IS CONNECTED BETWEEN TERMINAL NOS. 4 AND 6 ON INPUT TRANSFORMER PACK.

SEE INDEX FOR SERVICE DATA ON AUTOMATIC RECORD CHANGER

D22-1 & D22-1A



-Schematic Circuit Diagram

MODEL D22-1 ONLY

NOTE: In Model D22-1A the receiver rectifier tube No. 14 is changed to type 5Z4. The phono. motor is changed to a capacitor type. The input transformer pack has a filter added.

The power transformer resistance differs slightly.

SEE NEXT PAGE FOR DETAILS

D22-1 & D22-1A

Band D Tuning

Special notice should be taken of the manner of tuning the ultra-high-frequency band of this receiver. The r-f stage is unused when the range switch is turned to its Band D position and the signal is fed directly from the antenna to the first-detector grid circuit. The inductance of the circuit consists of a short length of bus wire to which the antenna lead is attached at a definite predetermined point. The total length of this inductive wire, from the stator of the tuning capacitor to ground, represents the secondary of a high-frequency autotransformer, while the inductive section included between the antenna lead-tap and ground forms the primary. Alteration of the dimensions and position of this wiring will change the tuning and alignment of the circuit, resulting in poor operation or complete failure of operation. It is therefore necessary when servicing to avoid any changes in the wiring which includes Band D detector and oscillator r-f circuits. If unavoidable, the arrangement must be restored to its exact original condition. Similar caution should be observed when exchanging by-pass condensers in these same circuits, since their values, physical position, length of leads, quality of dielectric, etc., are critical, and variation will definitely affect operation of the receiver. The small heater by-pass condensers and ground terminals at the tube socket are very important in this respect.

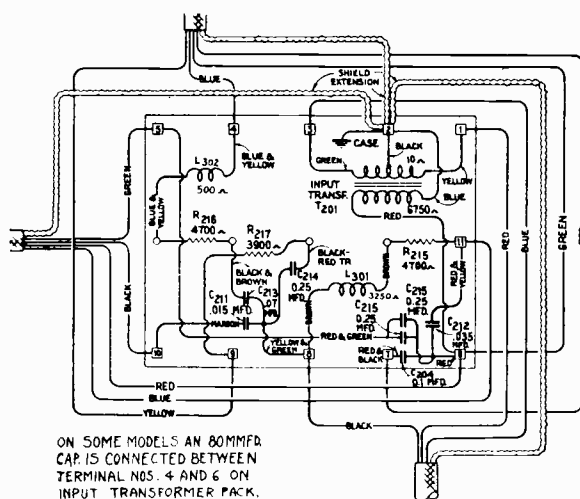
Dynamic Amplifier

It is essential that the correct voltages and currents exist at the RCA-6L7 audio expander stage in order that the expanding function may take place in the proper manner. A screw-driver adjustment (see Figure 14) is accordingly provided for regulating the fixed bias of the RCA-6L7 auxiliary grid so that the plate current may be adjusted to the correct value under a no-signal condition. This current should be adjusted to a value of 0.10—0.13 ma. with no signal input to the dynamic amplifier and with a normal voltage of 275 volts appearing across the resistance-divider system (R-211, R-210, R-209, and R-208).

A substitute method for adjusting the RCA-6L7 no-signal characteristic is by means of a voltmeter having an internal resistance of 600,000 ohms (600 volt range, 1,000-ohms-per-volt). This voltmeter should be used to set the plate (of the RCA-6L7) to chassis voltage. The plate voltage as indicated by the specified meter should be adjusted to exactly 195 volts, with a power line supply-voltage of 115 volts.

Variations of the Radiotron (RCA-6L7) in the audio expander stage may affect operation of the circuit. Several tubes of such type should therefore be tried when correct performance is not obtainable from a single tube. The various voltages of the dynamic amplifier under a no-signal condition are indicated in Figure 4. It is very important that these voltages be as near to the specified values as possible.

If excessive hum is encountered, it is recommended that a different RCA-6L7 be tried in the expander unit. If this does not reduce the hum to a low enough value try reversing the power-line supply cord plug and/or the power amplifier supply plug to obtain a condition of minimum hum. The continuity of ground connections between chassis, expander unit, and power amplifier should be of very low resistance to maintain minimum hum.



-Input Transformer Wiring

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band scale.

CATHODE RAY OSCILLOGRAPH CONNECTIONS:

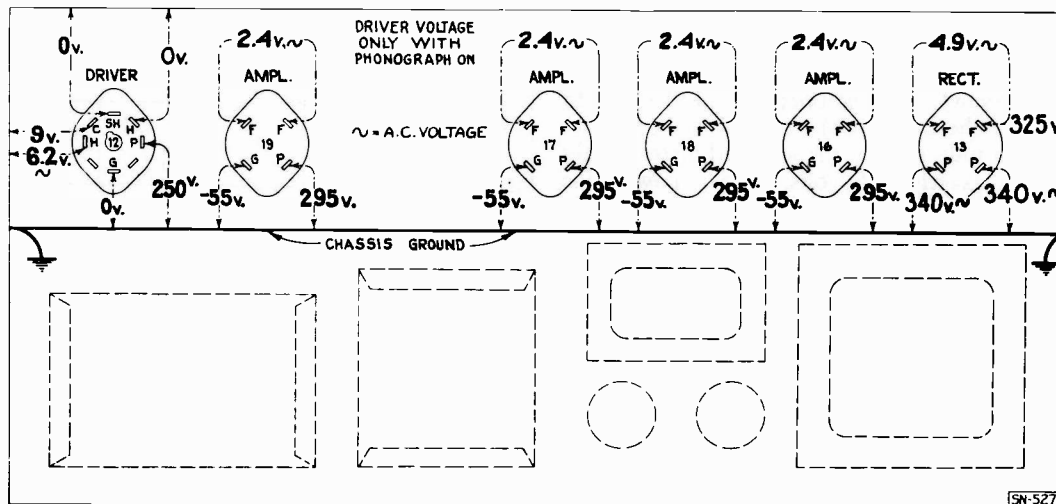
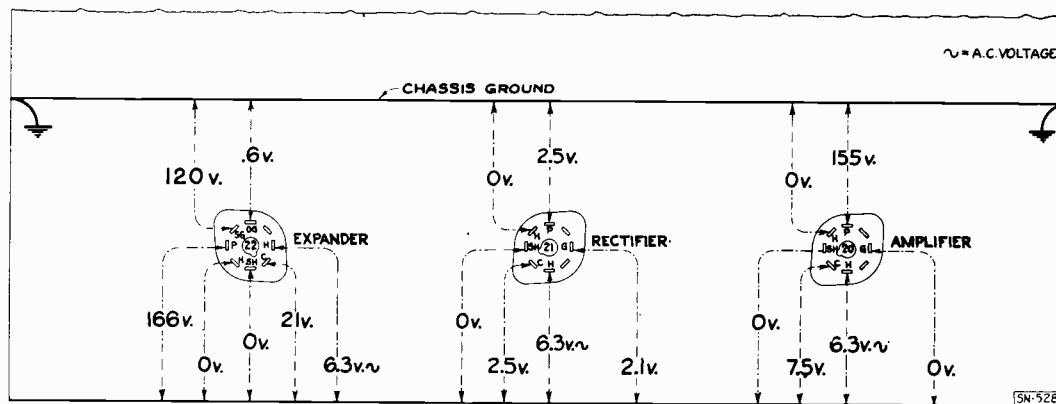
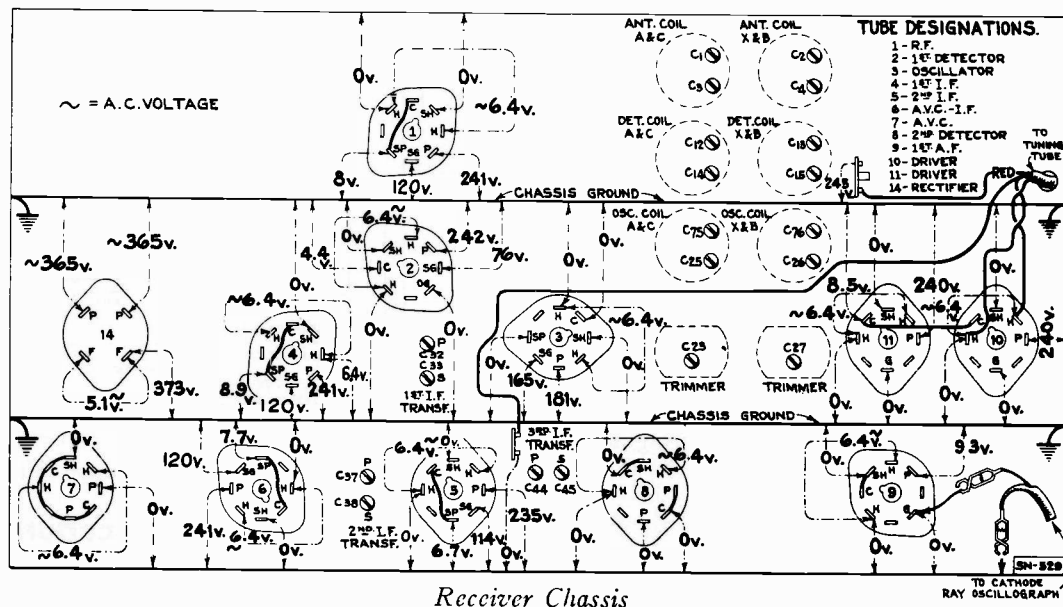
Connect vertical "H" to grid 1st A-F (6C5) Connect vertical "0" to chassis.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	2nd I-F Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "A" Band	C45 C44 3rd I-F Trans.
2	1st I-F Grid in series with 0.01mfd			C38 C37 2nd I-F Trans.
3	1st Det. Grid in series with 0.01mfd			C33 C32 1st I-F Trans.
4	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	C25 C14 C3 Osc R-F Ant.
5		600 Kc	600 Kc "A" Band	C23 L-F Osc. Rock Gang
6		Repeat Step 4		
7		400 Kc	400 Kc "X" Band	C26 C15 C4 Osc. R-F Ant.
8		150 Kc	150 Kc "X" Band	C27 L-F Osc. Rock Gang
9	Repeat Step 7			
10	Antenna in series with 300 ohms	6132 Kc	6132 Kc "B" Band	C76† C13 C2 Osc R-F Ant.
11		18000 Kc	18 Mc "C" Band	C75† C12 C1 Osc. R-F Ant.

Osc. tracks 460 Kc above signal on all bands.

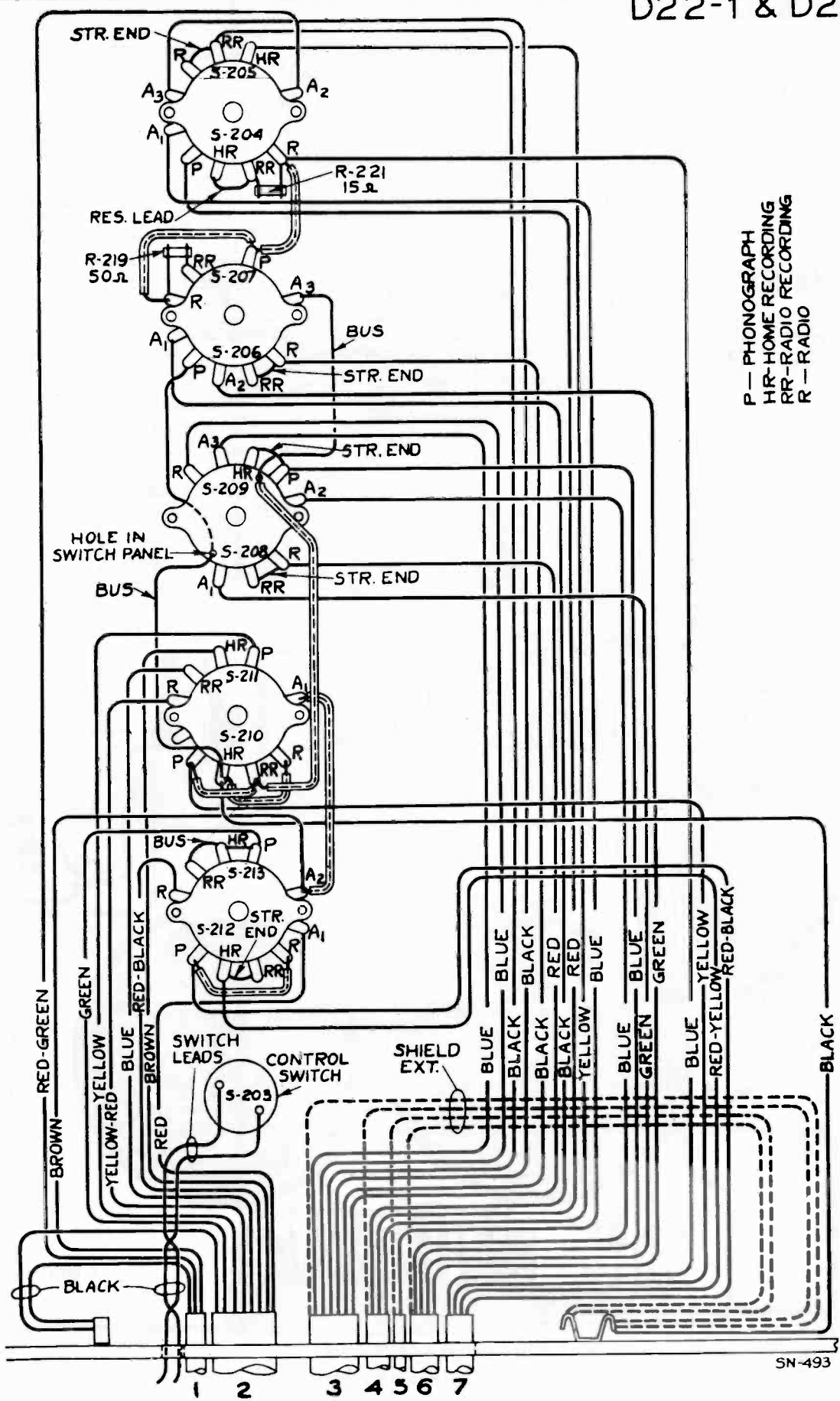
† Use minimum capacity peak.

D22-1 & D22-1A



-Radiotron Socket Voltages (D22-1 and D22-1A)
 Measured at 115 volts, 60-cycle supply—No signal being received

D22-1 & D22-1A

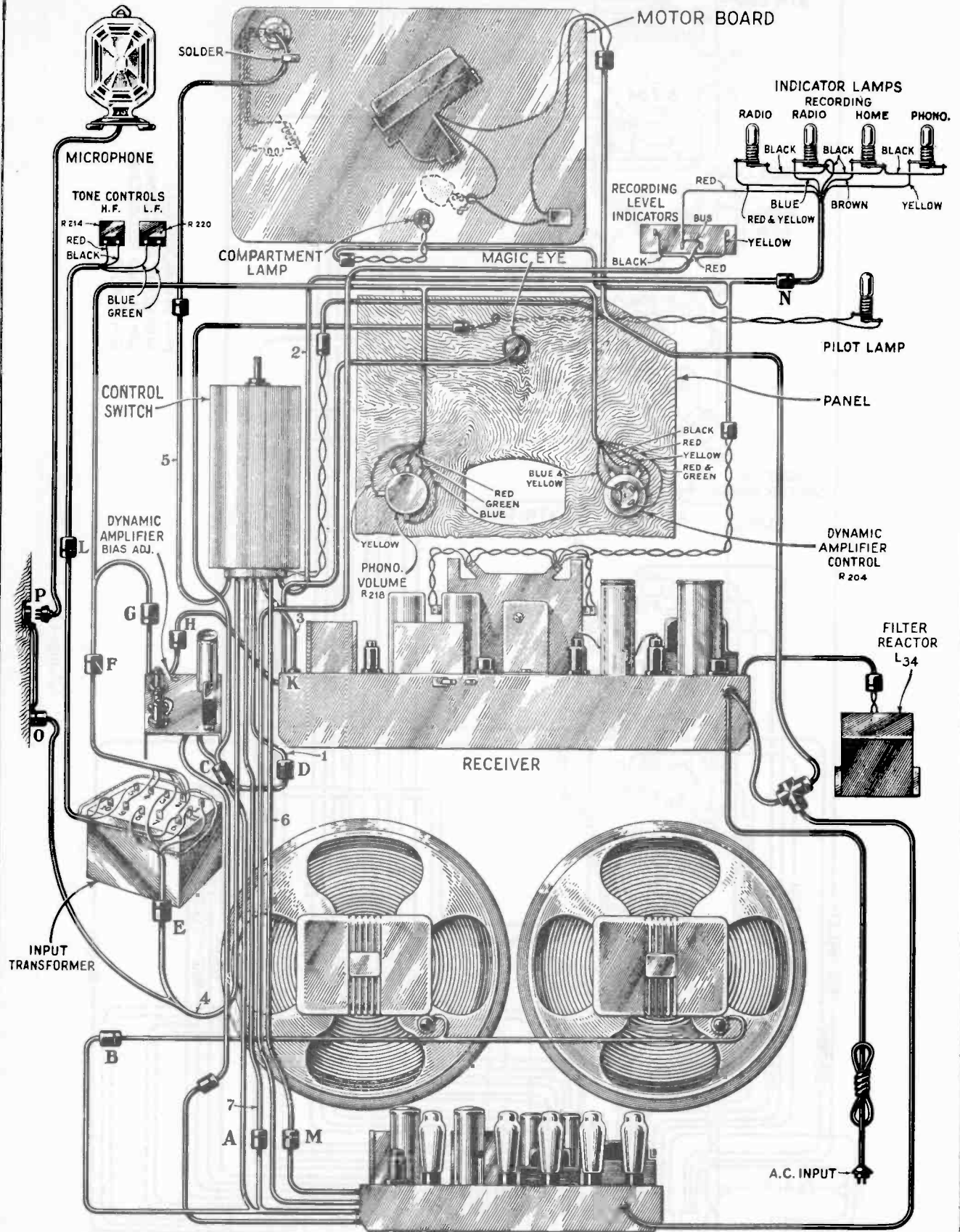


P — PHONOGRAPH
 HR — HOME RECORDING
 RR — RADIO RECORDING
 R — RADIO

Change-Over Switch Wiring

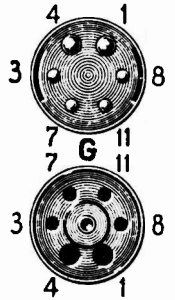
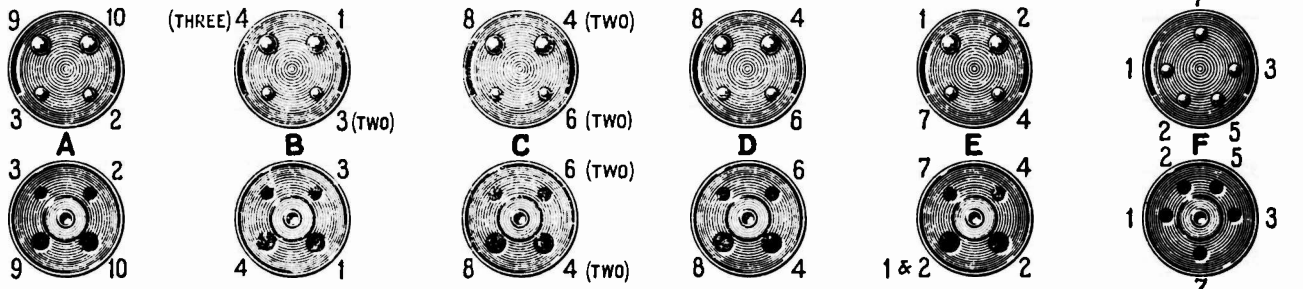
Cable numbers - refer to assembly wiring.

D22-1 & D22-1A



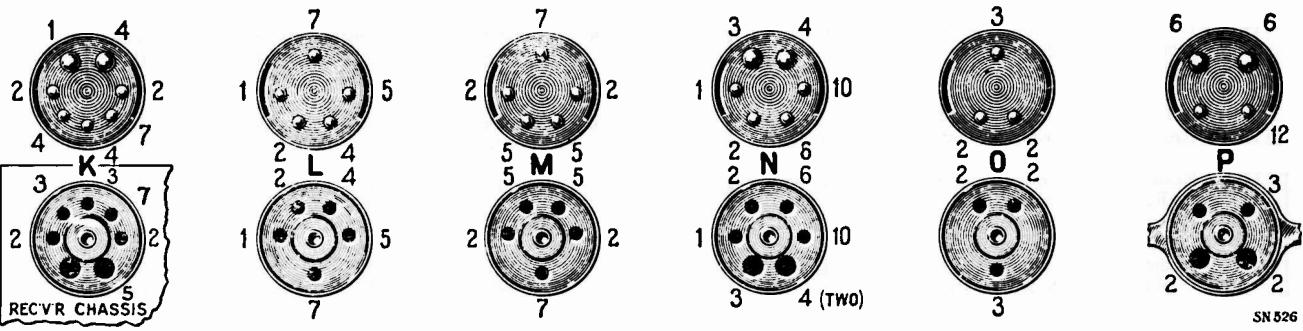
POWER AMPLIFIER
-Assembly Wiring

D22-1 & D22-1A



COLOR CODING OF CABLE CONNECTORS

- 1 RED
- 2 BLUE
- 3 YELLOW
- 4 BLACK
- 5 GREEN
- 6 BROWN
- 7 SHIELD
- 8 RED & GREEN
- 9 RED & BLACK
- 10 RED & YELLOW
- 11 YELLOW & BLUE
- 12 BROWN WITH RED TR.



-Socket and Plug Details of Assembly Wiring

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
5243	Arm—Band indicator operating arm with stud, set screws, nut, and washer.....		11290	Capacitor—400 MMfd.—(C9, C18, C20, C49, C64)	
4427	Bracket—High frequency tone control, low frequency tone or power switch or volume control mounting bracket.....		11299	Capacitor—600 MMfd.—(C48)	
11591	Button—Plug button.....		3784	Capacitor—900 MMfd.—(C69)	
11489	Cable—Two conductor cable with three way connector plug—Stock No. 11490.....		11335	Capacitor—1300 MMfd.—(C22)	
11487	Cable—Two conductor shielded cable with female section of two contact connector plug—Stock No. 11488—To choke—(L34).....		11287	Capacitor—4500 MMfd.—(C21, C77)	
11486	Cable—Two conductor shielded voltage supply cable with female section of four contact connector plug—Stock No. 4153—To (1) Terminal board and R19, (1) Terminal board, R3 and S8 shield to S205—Expander unit.....		5005	Capacitor—0.0035 Mfd.—(C57)	
11255	Cable—Four conductor tuning tube cable with connector socket—Stock No. 11381.....		4858	Capacitor—0.01 Mfd.—(C17, C68)	
5241	Capacitor—Adjustable capacitor—(C23, C27).....		4870	Capacitor—.025 Mfd.—(C47)	
5242	Capacitor—High frequency tone capacitor—.005 Mfd.—(C56).....		4836	Capacitor—0.05 Mfd.—(C5, C16, C35, C40, C70)	
11286	Capacitor—14 MMfd.—(C19).....		11414	Capacitor—0.1 Mfd.—(C31)	
11292	Capacitor—22 MMfd.—(C11).....		4885	Capacitor—0.1 Mfd.—(C10, C34, C39, C42, C43)	
11289	Capacitor—50 MMfd.—(C8, C30).....		4841	Capacitor—0.1 Mfd.—(C7, C28, C36, C41, C67)	
11291	Capacitor—115 MMfd.—(C62, C65).....		5170	Capacitor—0.25 Mfd.—(C78, C79)	
11295	Capacitor—200 MMfd.—(C55).....		3597	Capacitor—0.25 Mfd.—(C51)	
11294	Capacitor—325 MMfd.—(C24).....		11203	Capacitor—10 Mfd.—(C71)	
			5212	Capacitor—18 Mfd.—(C72)	
			5213	Capacitor Pack—Comprising one 4. Mfd., one 8. Mfd., and one 10. Mfd. capacitors—(C50, C73, C74).....	
			5236	Capacitor Pack—Comprising two 0.5 Mfd. capacitors, one 680 ohm resistor and one 820 ohm resistor—(C53, C54, R23, R27).....	
			5215	Coil—Antenna coil for "A" and "C" band—(L1, L2, L5, L6, C1, C3).....	
			5218	Coil—Antenna coil for "X" and "B" band—(L3, L4, L7, L8, C2, C4).....	
			5216	Coil—Detector coil for "A" and "C" band—(L9, L10, L13, L14, C12, C14).....	

SN 526

D22-1 & D22-1A REPLACEMENT PARTS—Continued

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
RECEIVER ASSEMBLIES—Continued					
5219	Coil—Detector coil for "X" and "B" band—(L11, L12, L15, L16, C13, C15)		11598	Socket—Dial lamp socket	
5217	Coil—Oscillator coil for "A" and "C" band—(L18, L20, C25, C75)		4794	Socket—Four-contact socket for 5Z3 Radiotron—(No. 14)	
5221	Coil—Oscillator coil—"D" band—Located on Range Switch		11197	Socket—Six-contact socket for 6C5 Radiotrons—(Nos. 9, 10, 11)	
5220	Coil—Oscillator coil for "X" and "B" band—(L19, L21, L22, C26, C76)		11278	Socket—Seven-contact socket for 6J7 Radiotron—(No. 3)	
5214	Condenser—Three gang variable tuning condenser—(C6, C29, C63)		4787	Socket—Seven-contact socket for Cable Stock—(No. 11568)	
5222	Control—Tone control—High frequency tone control—(R28)		11198	Socket—Seven-contact socket for 6K7, 6H6, Radiotrons—(Nos. 2, 4, 5, 6 and 8)	
5223	Control—Volume control—(R24, R25, R26)		11280	Socket—Seven-contact socket for 6L7 Radiotron—(No. 2)	
5240	Cover—Fuse cover		5225	Switch—Range switch—(S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11)	
11202	Foot—Chassis mounting (bracket) foot—Package of 2		11507	Switch—Low frequency tone or power switch—(S13, S14)	
10907	Fuse—Three ampere fuse—(F1)—Package of 5		11508	Transformer—Driver transformer—T3	
5226	Lamp—Dial lamp—Package of 5		5234	Transformer—Interstage transformer—T2	
5239	Mounting—Fuse mounting		5228	Transformer—First intermediate frequency transformer—(L23, L24, C32, C33)	
4153	Plug—Female section four-contact connector plug—used on cables—Stock Nos. 11486, 11503, 11569		5229	Transformer—Second intermediate frequency transformer—(L25, L26, C37, C38, C66, R34)	
11490	Plug—Three-way plug for cable—Stock No. 11489		5230	Transformer—Third intermediate frequency transformer—(L27, L28, C44, C45, C46, R18, R19)	
5233	Reactor—Coupling reactor—(L29)		5231	Transformer—Fourth intermediate frequency transformer—(L31, L32)	
11488	Receptacle—Two-contact female section of connector—used with cables—Stock Nos. 11487, 11502, 11513, 11567, 11571		8062	Transformer—Power transformer—105-125 volts—25-50 cycles	
11718	Resistor—Wire wound resistor—800-8500 Ohms—(R44, R45)		8061	Transformer—Power transformer—105-125 volts—50-60 cycles—(T1)	
11296	Resistor—330 Ohms—Carbon type— $\frac{1}{4}$ watt—(R2, R12)—Package of 5		MODEL D22-1A ONLY		
11285	Resistor—1000 ohms—Flexible type resistor—(R13, R17, R36)—Package of 5		11195	Socket—Five-contact Rectifier Radiotron socket for tube No. 14	
5112	Resistor—1000 ohms—Carbon type— $\frac{1}{4}$ watt—(R4, R10, R15, R29)—Package of 5		11887	Transformer—Power transformer—105-125 volts—25-50 cycles	
11283	Resistor—1200 Ohms—Carbon type— $\frac{1}{4}$ watt—(R3, R31)—Package of 5		11880	Transformer—Power transformer—105-125 volts—50-60 cycles—(T1)	
4408	Resistor—1500 Ohms—Carbon type— $\frac{1}{4}$ watt—(R8)—Package of 10		CONDENSER DRIVE ASSEMBLIES		
5159	Resistor—2200 Ohms—Carbon type— $\frac{1}{4}$ watt—(R35)—Package of 5		5243	Arm—Band indicator operating arm	
11298	Resistor—5600 Ohms—Carbon type—1 watt—(R21)		10194	Ball—Steel ball for drive assembly—Package of 20	
8043	Resistor—10,000 Ohms—Carbon type—2 watts—(R22)		8054	Cam—Five-position cam for station selector drive assembly	
5114	Resistor—15,000 Ohms—Carbon type—1 watt—(R5)		4422	Clutch—Tuning condenser drive clutch assembly—comprising shaft, balls, ring, spring and washers assembled	
11400	Resistor—27,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R30)—Package of 5		8048	Coupling—Flexible coupling for variable capacitor—includes indicator shaft	
8065	Resistor—27,000 Ohms—Carbon type— $\frac{1}{2}$ watt—(R33)—Package of 5		11336	Dial—Dial scale with mounting rivets	
11300	Resistor—33,000 Ohms—Carbon type— $\frac{1}{10}$ watt—(R32)—Package of 5		8045	Disc—Drive disc and Micarta gear assembly	
11282	Resistor—56,000 Ohms—Carbon type— $\frac{1}{10}$ watt—(R9)—Package of 5		11380	Drive—Tuning condenser drive assembly—complete	
8064	Resistor—82,000 Ohms—Carbon type— $\frac{1}{2}$ watt—(R43)—Package of 5		8044	Escutcheon—Dial escutcheon with vernier scale	
3118	Resistor—100,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R16)—Package of 5		8046	Gear—Indicator shaft, Micarta drive gear and Brass vernier idler with one spring	
5027	Resistor—150,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R37)—Package of 5		8050	Gear—Gear sector and band indicator operating link—(link connects to arm on band switch)	
5108	Resistor—330,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R11, R14, R38)—Package of 5		8053	Indicator—Station selector vernier indicator pointer	
11297	Resistor—330,000 Ohms—Carbon type— $\frac{1}{10}$ watt—(R1, R6)—Package of 5		11793	Indicator—Station selector indicator pointer	
3033	Resistor—1 Megohm—Carbon type— $\frac{1}{4}$ watt—(R7)—Package of 5		8051	Link—Complete—with roller and spring	
11382	Resistor—1 Megohm—Carbon type— $\frac{1}{10}$ watt—(R39)—Located in tuning tube cable—Package of 5		8049	Pinion—Vernier pointer drive pinion and shaft	
11626	Resistor—2.2 Megohm—Carbon type— $\frac{1}{4}$ watt—(R20)—Package of 5		4669	Screw—No. 8—32— $\frac{3}{8}$ " Square head set screw—Package of 10	
4669	Screw—No. 8—32— $\frac{3}{8}$ " Set screw for indicator operating arm—Package of 10		8047	Spring—Coil spring for indicator shaft drive gear and vernier idler—(Stock No. 8046)	
5249	Shield—Metal shield case for antenna, detector, or oscillator coils		8052	Spring—Coil spring for link—Package of 5	
11273	Shield—Radiotron shield		8042	Stud—Band indicator operating arm stud—Package of 5	
11381	Socket—Tuning tube cable connector socket		AMPLIFIER ASSEMBLIES		
			11502	Cable—Single conductor shielded cable with female section of connector—Stock No. 11488)—Connects to Grid of first audio socket in amplifier—to expander unit—(C202)	
			11501	Cable—Three conductor cable—Connects from R108, R109 and R110 in amplifier—to Neon indicator lamp	

REPLACEMENT PARTS—Continued

D22-1 & D22-1A

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
11504	Cable—Four conductor shielded cable with five contact female connector plug—Stock No. 11506—connects to Amplifier "G," sockets No. 18 and No. 19—(T102, C106)—Terminals.	11608	Capacitor Pack—Comprising two 10 Mfd. and one 4 Mfd. capacitors—(C208, C209, C210)....
11503	Cable—Eight conductor cable with four female sections of connectors—(Stock No. 4153)—From (C107)—Amplifier Plate—(C111)—and "H" of first "AF" in Amplifier—to expander, control switch and reproducers.	4358	Clamp—Capacitor clamp.
11500	Capacitor—175 MMfd.—(C102, C111, C112, C113).....	11488	Connector—Two contact female section of connectors—used with cables—Stock Nos. 11513, 11502, 11567, 11487, 11571.
4838	Capacitor—0.005 Mfd.—(C104, C105).....	11512	Control—Expander bias control—(R213).....
4858	Capacitor—0.01 Mfd.—(C103).....	11511	Foot—Chassis mounting (bracket) foot.
11497	Capacitor—8 Mfd.—(C108, C110).....	4674	Plug—Male section two prong connector—used with cables—Stock Nos. 11514, 11524.
11496	Capacitor—18 Mfd.—(C106, C107).....	6123	Plug—Male section four prong plug—used with cables—Stock Nos. 11513, 11516, 11526, 11525, 11572.
11498	Capacitor Pack—Comprising two 10 Mfd. capacitors—(C101, C109).....	4574	Plug—Six prong male section of connector plug—used with cables—Stock Nos. 11515, 11522.
4358	Clamp—Capacitor clamp for capacitor—(Stock No. 11498).....	5158	Resistor—220,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R207)—Package of 5.
11488	Connector—Female section—two contact connector—used on cables—(Stock Nos. 11502, 11513, 11487, 11567 and 11571).....	3998	Resistor—15,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R205, R212)—Package of 5.
4153	Connector—Female section—four contact connector—used on cables—Stock Nos. 11503, 11486, 11560	3118	Resistor—100,000 Ohms— $\frac{1}{4}$ watt—Carbon type—(R203, R206)—Package of 5.
5240	Cover—Fuse cover.	3252	Resistor—100,000 Ohms—Carbon type— $\frac{1}{2}$ watt—(R213)—Package of 5.
10907	Fuse—Three ampere fuse—Package of 5—(F1)....	5035	Resistor—560,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R202)—Package of 5.
5239	Mounting—Fuse mounting.	3033	Resistor—1 Megohm—Carbon type— $\frac{1}{4}$ watt—(R201)—Package of 5.
11493	Reactor—Power filter reactor—(L101).....	11510	Resistor—Wire wound—425, 365, 3200 and 3900 Ohms—(R208, R209, R210, R211).....
11506	Receptacle—Female section—five prong plug—used on cable—Stock Nos. 11504, 11517, 11518.	11197	Socket—Six-contact socket for 6C5 Radiotron.
11499	Resistor—Wire wound—145 ohms—(R107).....	11198	Socket—Seven-contact socket for 6L7 Radiotron.
5159	Resistor—2200 Ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5—(R102).....		MISCELLANEOUS CABLE AND PLUGS
3078	Resistor—10,000 Ohms—Carbon type— $\frac{1}{2}$ watt—(R103)—Package of 5.	11524	Cable—Two-conductor cable with two-prong male section of connector plug—Stock No. 4674—From pilot lamp to cable—Stock 11567.
3118	Resistor—100,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R106, R105, R110)—Package of 5.	11526	Cable—Three-conductor shielded cable with four-prong male section of connector plug Stock No. 6123 and three terminals—connects from input transformer terminals Nos. 1, 3 and 8 to cable—Stock No. 11527.
5158	Resistor—220,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R108, R109)—Package of 5.	11527	Cable—Three-conductor cable with one four-contact microphone socket and one three-prong male section of connector plugs—Stock Nos. 4592, 5118.
11323	Resistor—270,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R104)—Package of 5.	11523	Cable—Three-conductor cable with two female two-contact and one male section of connector plugs—Stock Nos. 2308, 4573—From power cable, Stock No. 11489 to motor leads, and leads from control switch S203.
11172	Resistor—470,000 Ohms—Carbon type— $\frac{1}{4}$ watt—(R101)—Package of 5.	11517	Cable—Four-conductor shielded cable with female section of connector plug—Stock No. 11506—Connects from tone controls, R214 and R220, to input transformer cable—Stock No. 11521.
4794	Socket—Four contact socket—for 2A3 and 5Z3 Radiotrons.	11518	Cable—Four-conductor shielded cable with female section of connector plug—Stock No. 11506—From input transformer terminals, Nos. 2, 5, 6 and 10, to cable—Stock No. 11519.
11198	Socket—Seven contact socket—for 6C5 Radiotron.	11521	Cable—Four-conductor shielded cable with five-prong male section of connector—Stock No. 11520—From input transformer terminals Nos. 4, 5, 7 and 9 to cable—Stock No. 11517.
11492	Transformer—Filament transformer—105-125 volts—50-60 cycle—(T104).....	11522	Cable—Six-conductor cable, with Connector Stock No. 4574, from Radio-Phonograph, Home and Radio Recording indicator lamps, to cable—Stock No. 11567 from control switch.
11879	Transformer—Filament transformer—105-125 volts—25-50 cycle—(T104).....	11525	Cable—Seven-conductor cable with one four-contact male and two four-contact female sections of connectors—Stock Nos. 5040, 6123—connects from Reproducers to cable—Stock No. 11503 amplifier
11878	Transformer—Plate transformer—105-125 volts—25-50 cycle—(T101).....	11519	Cable—Nine-conductor shielded cable with one six-contact female and one five-prong male section of connector plugs—Stock Nos. 4151, 11520—From expander control (R204) and phonograph volume control (R218) to expander and input transformer cable—Stock No. 11518.
11495	Transformer—Interstage transformer—(T102).....	4577	Plug—Two-prong male section of motor connection plug—Connects to cable—Stock No. 11523.
11494	Transformer—Output transformer—(T103).....	4674	Plug—Two-contact male section of connector plug for cable—Stock Nos. 11524, 11514.
11491	Transformer—Plate transformer—105-125 volts—50-60 cycle—(T101).....		
	DYNAMIC (EXPANDER) AMPLIFIER ASSEMBLIES		
11514	Cable—Single conductor shielded cable—with male section of two-prong plug—Stock No. 4674—From (C202) and ground terminal.		
11516	Cable—Two conductor shielded cable—with male section of four-prong plug—Stock No. 6123—To (R211) and capacitor pack—(C208, C209 and C210).....		
11513	Cable—Three conductor cable—with one male section of connector and one female section of connector—Stock Nos. 6123, 11488—To (R208) and "H-H"—Socket No. 22.		
11515	Cable—Five conductor shielded cable—with male section six-prong connector—Stock No. 4574—To (R202), (R207), "G Amplifier 20," (C201), (R206) and ground terminal.		
11350	Cap—Grid control contact cap—Package of 5.		
11414	Capacitor—0.1 Mfd.—(C202, C206).....		
4841	Capacitor—0.1 Mfd.—(C201).....		
11509	Capacitor Pack—Comprising three 0.5 Mfd. capacitors—(C203, C205, C207).....		

D22-1 & D22-1A REPLACEMENT PARTS—Continued

Stock No.	DESCRIPTION	LIST	Stock No.	DESCRIPTION	LIST
	MISCELLANEOUS CABLE AND PLUGS— Continued		4602	Plug—Seven-prong male section of connector plug—used with cable—Stock No. 11568	
2308	Plug—Two-contact male section of connector plug for cable—Stock No. 11523		11488	Receptacle—Two-contact female section of connector plug—used with cables—Stock Nos. 11567, 11571, 11487, 11502, 11513	
5118	Plug—Three-prong male section of connector plug for cable—Stock No. 11527		5119	Receptacle—Female section—three-contact plug receptacle for cable—Stock No. 11569	
6123	Plug—Four-prong male section of connector for cable—Stock No. 11525 and Stock Nos. 11526, 11516, 11513, 11572		4153	Receptacle—Female section—four-contact plug receptacle for cable—Stock No. 11569	
11520	Plug—Five-prong male section of connector plug for cable—Stock No. 11519 and Stock Nos. 11521, 11630		4151	Receptacle—Six-contact female section of connector plug used with cables—Stock Nos. 11519, 11567	
4574	Plug—Six-contact male section of connector for cable—Stock Nos. 11522, 11515		11564	Resistor—47 Ohms—Carbon type— $\frac{1}{10}$ watt—Package of 5—(R219)	
4573	Receptacle—Two-contact female section of connector plug for cable—Stock No. 11523		11565	Resistor—15 Ohms—Carbon type— $\frac{1}{4}$ watt—(R221)—Package of 5	
5040	Receptacle—Four-contact female section of connector for cable—Stock No. 11525		11563	Switch—Phonograph, Radio, Home Recording and Phonograph recording switch—complete—(S203, S204, S205, S206, S207, S208, S209, S210, S211, S212, S213)	
11506	Receptacle—Five-contact female section of connector for cable—Stock No. 11517 and Stock Nos. 11518, 11504			INDICATOR ASSEMBLIES	
4151	Receptacle—Six-contact female section of connector for cable—Stock Nos. 11519, 11567		11522	Cable—Six-conductor indicator assembly cable with male section of six-prong connector plug—Stock No. 4574	
4593	Socket—Four-contact microphone socket for cable—Stock No. 11527		4340	Lamp—Indicator lamp—Package of 5	
	MICROPHONE ASSEMBLIES		4574	Plug—Six-prong male section of connector plug— for use with cables—Stock Nos. 11515, 11522	
7534	Cable—Microphone cable		11719	Screen—Indicator lamp screen—Package of 5	
11561	Cover—Microphone cover—Package of 2		11573	Socket—Indicator lamp socket	
11560	Frame—Microphone frame			RECORDING INDICATOR ASSEMBLIES	
7533	Mechanism—Microphone mechanism		11574	Escutcheon—Recording indicator escutcheon	
11480	Microphone—Complete—(M2)		4161	Lamp—Neon lamp	
11562	Plug—Microphone plug		4164	Screen—Indicator lamp screen	
4158	Socket—Microphone socket		11575	Screw—Screen escutcheon and terminal board mounting screw assembly—comprising two screws, two spacers, two nuts and two lock-washers	
	RECORDING SWITCH ASSEMBLIES			REPRODUCER ASSEMBLIES	
11571	Cable—Single conductor shielded cable with one female section of connector—Stock No. 11488—To S204, shield grounded to terminal lug—To cable from pickup arm assembly—Stock No. 11482		11577	Coil—Field coil magnet and cone support—(L102, L103)	
11566	Cable—Three-conductor cable with male section of four-prong plug—Stock No. 11570—To S213, S205 and terminal lug—and cable—Stock No. 11503		8056	Cone—Reproducer cone—(L104, L105)	
11572	Cable—Four-conductor cable with male section of four-prong plug—Stock No. 6123—To (1) S204, (1) S210, (2) S212 and cable—Stock No. 11503		5039	Plug—Male section of four-prong plug	
11569	Cable—Four-conductor shielded cable with one female section of four-contact plug—Stock No. 4153—and one female section of three-contact plug—Stock No. 5119—To (1) S204, (1) S205, (1) S206, (2) three-contact receptacle, shield grounded to terminal lug—and cable—Stock Nos. 11526 and 11527		9629	Reproducer—Complete	
11630	Cable—Four-conductor shielded cable with one five-prong male section of plug—Stock No. 11520—To (1) S206, (1) S208, (2) S209—shield grounded to terminal and cable—Stock No. 11504			MISCELLANEOUS ASSEMBLIES	
11568	Cable—Six-conductor shielded cable—with male section of seven-prong connector plug—Stock No. 4602—To (2) S205, (1) S206, (1) S208, (2) S209 and shield grounded to terminal—Receptacle—Stock No. 4787 on receiver chassis		11881	Base—Phonograph compartment lamp base	
11567	Cable—Ten-conductor cable with two-contact female section of plug—Stock No. 11488—and one female section of six-contact plug—Stock No. 4151—To (1) S212, (2) S213, (4) S211 and (1) to terminal lug and cable—Stock No. 11522		4391	Box—Needle box	
11347	Knob—Control switch knob—Package of 5		11606	Cap—Pilot lamp cap—Package of 5	
4577	Plug—Two-prong male section of connector plug—Part of connector cord from S203		11997	Capacitor—75 MMfd.—(C216)	
6123	Plug—Four-contact male section of connector plug—used with cables—Stock Nos. 11572, 11516, 11513, 11526, 11525		11884	Control—Expander control—(R204)	
11570	Plug—Male section of four-prong connector plug for cable—Stock No. 11566		11580	Cover—Pilot lamp cover	
11520	Plug—Five-prong male section of connector plug for cable—Stock Nos. 11519, 11521, 11630		11379	Escutcheon—Station selector escutcheon and crystal filter—Microphone and pickup input filter pack—(L307, C218, R223)	
			12352		
				MODEL D22-1A ONLY	
			11347	Knob—Phonograph or Radio high or low frequency tone control, Radio volume control, Range switch, Selector switch knob—Package of 5	
			11582	Knob—Expander control or Phonograph volume control knob—Package of 5	
			11346	Knob—Station selector knob—Package of 5	
			11605	Pad—Home recording pad	
			11578	Reactor—Filter reactor—(L34)	
			11607	Receptacle—Receptacle for new needles	
			11711	Shade—Phonograph compartment lamp shade	
			11579	Tone Control—Phonograph low frequency tone control	
			11581	Tone Control—Phonograph high frequency tone control	
			11883	Transformer—Microphone and pickup input transformer pack—(R215, R216, R217, C204, C211, C212, C213, C214, C215, L301, L302, T201)	
			11877	Volume Control—Phonograph volume control—(R28)	

AUTOMATIC RECORD CHANGER

USED WITH MODELS 9U, 9U2, D11-2, 15U, D22-1 & D22-1A

TO ADJUST RISE AND SWING OF TONE ARM.—WITH MANUAL INDEX LEVER IN 12" POSITION AND ROLLER ON MAIN LEVER A ENGAGED IN CAM AT HALF CYCLE POSITION AS SHOWN, AND SWITCH LEVER B AGAINST STOP SCREW C, ADJUST EYEBOLT D SO NEEDLE POINT (ORANGE SHANK) IS $1/16" + 1/32"$ — .000 ABOVE TURNABLE FELT. AT THE SAME TIME ADJUST SCREW C SO THAT NEEDLE LANDS AT A RADIUS OF $5.13/16" + 1/16" - .000$ FROM CENTER OF TURNABLE SPINDLE. THIS ADJUSTMENT CAN BE FACILITATED BY USING 7 TWELVE-INCH RECORDS (NOT WARPED) WHICH MEASURES $11/16"$ TOTAL, AND ADJUSTING RISE TO $3/8"$ TO $13/32"$ ABOVE RIM OF TOP RECORD. LANDING RADIUS $5.13/16" + 1/16" - .000$.

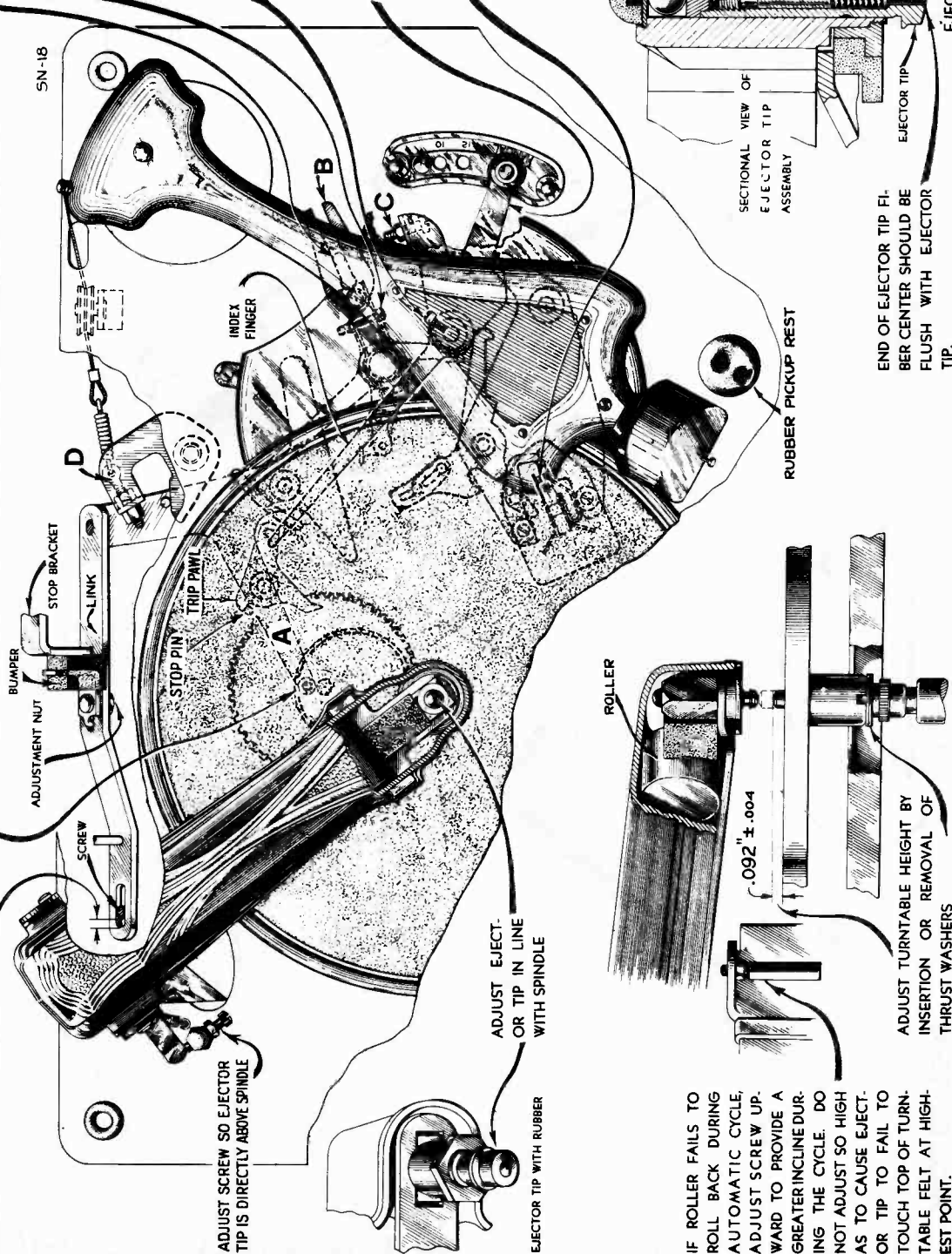
ADJUST AND TIGHTEN NUT SO AS TO PROVIDE APPROXIMATELY $1/32"$ BETWEEN SLOT IN LINK AND SCREW WHEN BUMPER IS IN CONTACT WITH STOP BRACKET.

ADJUST NEEDLE HEIGHT BY MEANS OF TRIP ROD UNTIL NEEDLE POINT OF AN "ORANGE SHANK" NEEDLE IS $1/16" + .010$ BELOW TOP SURFACE OF THE RUBBER PICKUP REST.

ADJUST SCREW UNTIL FRICTION WILL JUST FORCE FINGER TO MOVE TRIP PAWL (WITH COVER REMOVED)

TO ADJUST MANUAL INDEX FINGER - PLACE MANUAL INDEX LEVER IN THE POSITION SHOWN - SET MANUAL INDEX FINGER TO FORCE TRIP PAWL AGAINST STOP PIN - TIGHTEN SET SCREW.

ADJUST AUTOMATIC SWITCH AS FOLLOWS - PLACE MANUAL INDEX LEVER IN POSITION SHOWN AND WITH SWITCH IN TRIPPED POSITION, ADJUST IT UNTIL THE CONTACT POINTS ARE OPENED $.020" + .010$ AS INDICATED (TURNABLE REMOVED)



END OF EJECTOR TIP FIBER CENTER SHOULD BE FLUSH WITH EJECTOR TIP.

IF ROLLER FAILS TO ROLL BACK DURING AUTOMATIC CYCLE, ADJUST SCREW UPWARD TO PROVIDE A GREATER INCLINE DURING THE CYCLE. DO NOT ADJUST SO HIGH AS TO CAUSE EJECTOR TIP TO FAIL TO TOUCH TOP OF TURNABLE FELT AT HIGHEST POINT.

Automatic Record Changer Adjustments

MODELS 9U, 9U2, D11-2, D22-1 & D22-1A

AUTOMATIC RECORD CHANGER

Automatic Record Changer Adjustments

MODEL 15-U

TO ADJUST RISE AND SWING OF TONE ARM.—WITH MANUAL INDEX LEVER IN 12" POSITION AND ROLLER ON MAIN LEVER ENGAGED IN CAM AT HALF CYCLE POSITION AS SHOWN, AND SWITCH LEVER B AGAINST STOP SCREW C, ADJUST EYEBOLT D UNTIL LIFT STOP 'E' CONTACTS SLIDE AT THE SAME TIME AS SWITCH LEVER B AGAINST STOP SCREW C. ADJUST SCREW C SO THAT NEEDLE LANDS AT A RADIUS OF $5.13/16"$ + $1/16"$ - $.000$ FROM CENTER OF TURNTABLE SPINDLE.

WITH MOTOR BOARD LEVEL, BRING POINTER ON SPACER IN LINE WITH SCREW AS SHOWN. IF NEEDLE SLIDES OVER SEVERAL GROOVES, ROTATE SPACER COUNTER-CLOCKWISE BUT NOT FAR ENOUGH TO PREVENT NEEDLE FROM FEEDING INTO FIRST GROOVE AUTOMATICALLY.

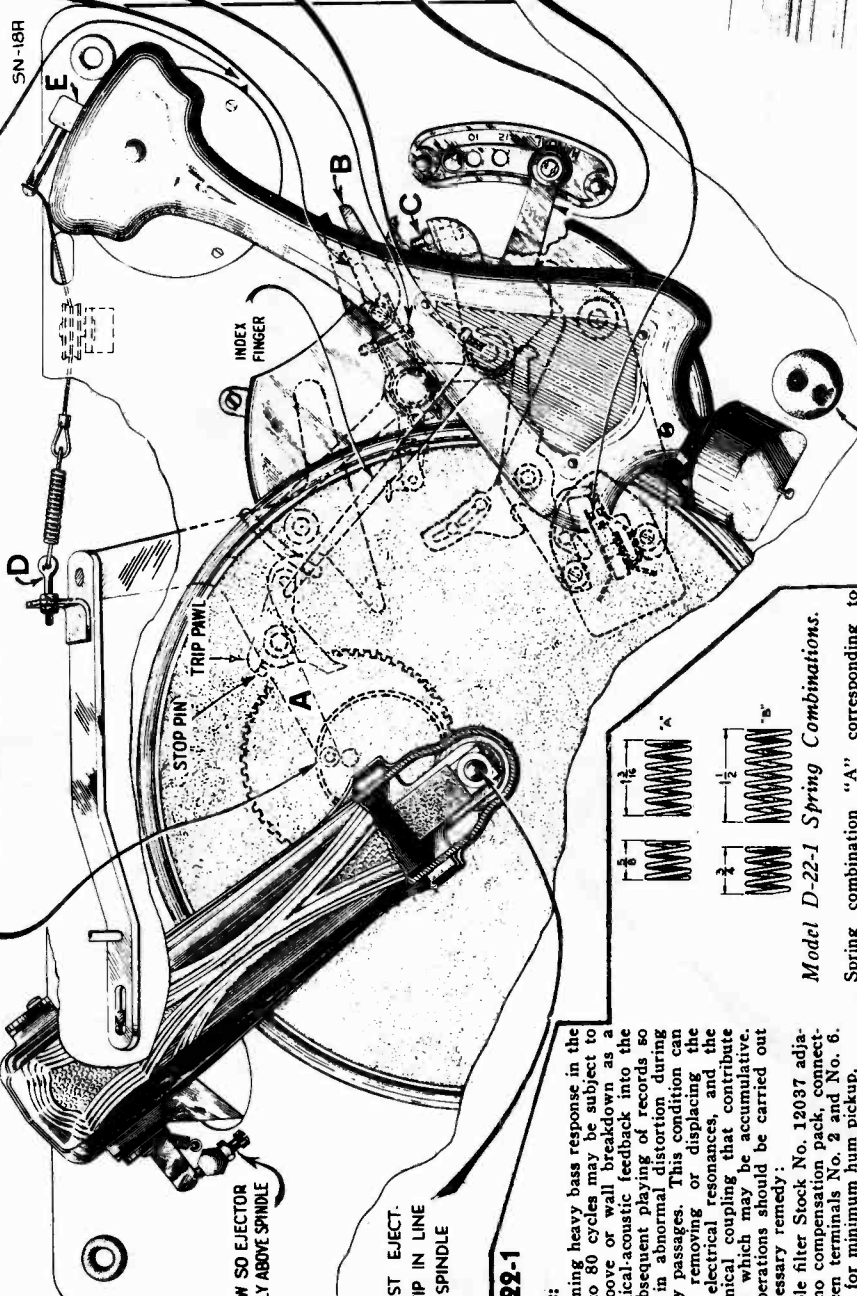
ADJUST TRIP ROD TO OBTAIN $1/16"$ CLEARANCE FROM MOTOR BOARD.

ADJUST SCREW UNTIL FRICTION WILL JUST FORCE FINGER TO MOVE TRIP PAWL (WITH COVER REMOVED)

TO ADJUST MANUAL INDEX FINGER: PLACE MANUAL INDEX LEVER IN THE POSITION SHOWN. SET MANUAL INDEX FINGER TO FORCE TRIP PAWL AGAINST STOP PIN. TIGHTEN SET SCREW.

ADJUST AUTOMATIC SWITCH AS FOLLOWS - PLACE MANUAL INDEX LEVER IN POSITION SHOWN AND WITH SWITCH IN TRIPPED POSITION, ADJUST IT UNTIL THE CONTACT POINTS ARE OPENED $.020 \pm .010$ AS INDICATED (TURNABLE REMOVED)

ADJUST SCREW UNDER FRONT END OF TONE-ARM BRACKET SO THAT FORCE REQUIRED TO JUST LIFT THE NEEDLE FROM RECORD IS 72 ± 5 GRAMS (2.5 OUNCES) WEIGHT MEASURED WITH SCALE HOOKED UNDER NEEDLE SCREW.



ADJUST SCREW SO EJECTOR TIP IS DIRECTLY ABOVE SPINDLE

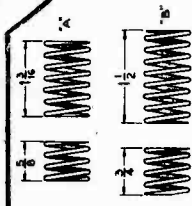
ADJUST EJECTOR TIP IN LINE WITH SPINDLE

MODEL D-22-1

Record Damage:

Records containing heavy bass response in the region from 50 to 80 cycles may be subject to damage from groove or wall breakdown as a result of mechanical-acoustic feedback into the pickup unit. Subsequent playing of records so damaged results in abnormal distortion during the low frequency passages. This condition can be rectified by removing or displacing the mechanical and electrical resonances, and the undesired mechanical coupling that contribute either singly, or which may be accumulative. The following operations should be carried out to effect the necessary remedy:

- Install rumble filter Stock No. 12037 adjusting it between terminals No. 2 and No. 6.
- Check lateral movement of tone arm and adjust its associated parts to prevent any tendency to bind. The tone arm rear lateral bearing, the twist of the pickup cable where it passes through this bearing, and the adjustment of the friction finger should be especially noted.
- The pickup unit should be examined and adjusted to assure that it is correctly centered, that the attachment of centering spring to the armature is secure, and that the clamping of the spring to the magnet assembly is solid.
- The motor mounting springs should have the proper flexibility. To be certain that these are correct, use Stock No. 4562 which includes the following:

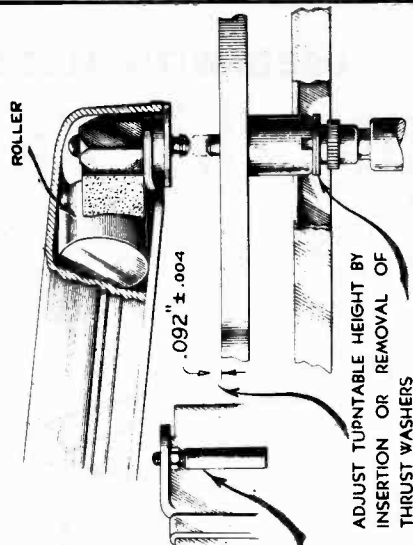


Model D-22-1 Spring Combinations.

Spring combination "A" corresponding to dimensions shown should be installed on each of two motor mounting studs supporting field coil assembly of motor (nearest rear of cabinet) with $3/8$ -inch spring above motor board and $1/4$ -inch spring below. "B" corresponding to dimensions shown should be installed on motor stud at end of gear case (nearest front of cabinet) with $3/8$ -inch spring above motor board and $1/4$ -inch spring below.

(c) The motor board mounting springs should have the proper flexibility and be assembled correctly. The specified springs are Stock No. 3768. The $3/8$ -inch (length) springs should be installed below the motor board, and the others installed above.

IF ROLLER FAILS TO ROLL BACK DURING AUTOMATIC CYCLE, ADJUST SCREW UPWARD TO PROVIDE A GREATER INCLINE DURING THE CYCLE. DO NOT ADJUST SO HIGH AS TO CAUSE EJECTOR TIP TO FAIL TO TOUCH TOP OF TURNTABLE FLEET POINT.



RUBBER PICKUP REST

AUTOMATIC RECORD CHANGER REPLACEMENT PARTS

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

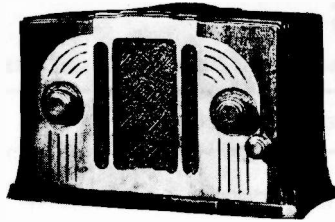
Stock No.	DESCRIPTION		Stock No.	DESCRIPTION
MODELS 9U 9U2 D11-2 D22-1 & D22-1A			MODEL 15U ONLY	
OPERATING MECHANISM			OPERATING MECHANISM	
6502	Cam—Cam and gear assembly.....		13632	Cam—Cam and gear assembly.....
6808	Clutch—Trip lever friction clutch.....		6808	Clutch—Trip lever friction clutch.....
11558	Cover—Metal cover for trip lever and friction finger assembly.....		11558	Cover—Metal cover for trip lever and friction finger assembly.....
6809	Finger—Manual index lever finger assembly.....		6809	Finger—Manual index lever finger assembly.....
3670	Finger—Friction finger assembly.....		3670	Finger—Friction finger assembly.....
11554	Lever—Manual index lever—less pin....		11554	Lever—Manual index lever—less pin....
11556	Lever—Main lever and link assembly....		11556	Lever—Main lever and link assembly....
11557	Lever—Main spring lever.....		11557	Lever—Main spring lever.....
3677	Lever—Pickup arm cable lever assembly—Comprising lever with cable screw, spring and nut.....		11555	Lever—Trip lever and friction clutch assembly.....
11555	Lever—Trip lever and friction clutch assembly.....		6503	Pawl—Trip pawl assembly.....
6503	Pawl—Trip pawl assembly.....		3672	Pin—Manual index lever pin.....
4124	Plate—Eject arm actuating plate assembly.....		13635	Plate—Eject arm actuating plate assembly.....
4563	Screw—Cable lever screw and nut—Package of 10.....		4564	Screw—Manual index lever finger set screw—Package of 10.....
4564	Screw—Manual index lever finger set screw—Package of 10.....		4059	Screw—Trip lever clutch tension adjustment screw—Package of 10.....
4059	Screw—Trip lever clutch tension adjustment screw—Package of 10.....		4566	Screw—Special screw used to fasten main lever and link assembly bushing—Package of 10.....
4566	Screw—Special screw used to fasten main lever and link assembly bushing—Package of 10.....		13637	Spacer—Pickup arm mounting spacer.....
11559	Spacer—Pickup arm mounting spacer.....		13638	Spring—Actuating spring—Package of 10.....
4127	Spring—Actuating spring—Package of 10.....		4565	Spring—Manual index lever finger tension spring—Package of 10.....
3666	Spring—Cable lever tension spring—Package of 10.....		4061	Spring—Main spring lever tension spring—Package of 10.....
4565	Spring—Manual index lever finger tension spring—Package of 10.....		2893	Spring—Trip lever latch plate tension—Package of 10.....
4061	Spring—Main spring lever tension spring—Package of 10.....		13634	Spring—Pickup arm cable tension spring—Package of 10.....
2893	Spring—Trip lever latch plate tension—Package of 10.....		3676	Spring—Cam and gear pawl tension spring—Package of 10.....
2917	Washer—Spring washer—"U" type—Package of 10.....		13639	Spring—Cam and gear arm tension spring—Package of 10.....
MOTOR BOARD ASSEMBLIES			EJECT ARM ASSEMBLIES	
11881	Base—Phonograph compartment lamp socket and base.....		11541	Arm—Eject arm—complete.....
4674	Connector—2-contact male connector for Stock Nos. 12051, 13101 or phono compartment lamp leads.....		11533	Ball— $\frac{1}{8}$ " diameter steel ball—Package of 10.....
4577	Connector—2-contact male connector motor cable.....		10129	Ball— $\frac{1}{8}$ " diameter steel ball—Package of 20.....
11488	Connector—2-contact female connector for motor leads.....		11529	Bearing—Ejector tip bearing and nut.....
11542	Cover—Turntable cover.....		11538	Bracket—Eject arm bracket.....
11553	Escutcheon—Index escutcheon engraved "Manual—12—10".....		11537	Collar—Eject arm shaft collar and set screw.....
4340	Lamp—Phonograph compartment lamp—6.3 volts—Package of 5.....		11540	Cover—Eject arm cover.....
3764	Nut—Cap nut for motor board suspension assembly—Package of 4.....		11536	Cushion—Counter balance roller cushion—Located inside of eject arm.....
3672	Pin—Manual index pin.....		4055	Post—Vertical adjustment post—Located on eject arm bracket.....
11551	Rest—Pickup rest.....		3729	Roller—Eject arm counter balance roller—Located inside of eject arm.....
3654	Roller—Pickup arm cable guide roller—Comprising bracket, roller and guide pin.....		4580	Screw—No. 6—32— $\frac{1}{8}$ " Square head set screw for eject arm collar—Package of 10.....
11711	Shade—Phonograph compartment lamp shade.....		11534	Screw—No. 8—36— $\frac{1}{32}$ " Special screw for eject arm tip center adjustment—Package of 10.....
3763	Suspension Spring—Suspension spring, washer and bolt assembly for motor board—Comprising one bolt, two cup washers, two springs, two "C" washers and one cap nut.....		11535	Shaft and Collar—Eject arm vertical action shaft and collar assembly.....
4671	Switch—Operating switch—toggle type (S7).....		11528	Silencer—Ejector tip silencer.....
11599	Turntable—Complete.....		4067	Spring—Eject arm bracket spring—Package of 10.....
			11531	Spring—Ejector tip spring—Package of 10.....
			11530	Tip—Ejector tip with tip center, adjusting screw and cap.....
			11539	Yoke—Eject arm yoke assembly.....
			AUTOMATIC SWITCH ASSEMBLIES	
			3994	Cover—Motor switch cover.....
			10184	Plate—Automatic brake latch plate—Package of 5.....
			10174	Springs—Automatic brake springs—Package of 2 sets.....
			6805	Switch Assembly—Automatic switch, complete.....
			3322	Switch—Motor switch (S6).....

AUTOMATIC RECORD CHANGER REPLACEMENT PARTS—Continued

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
MODELS 9U & 9U2		MODEL 15U	
PICKUP AND ARM ASSEMBLIES		PICKUP AND ARM ASSEMBLIES	
13469	Arm—Pickup arm, complete less pickup unit	13627	Arm—Pickup arm, complete less pickup unit
11724	Armature—Pickup armature.....	11548	Back—Pickup back
11548	Back—Pickup back.....	10941	Ball—Pickup arm pivot shaft ball bearing—Package of 20.....
4064	Cable—Pickup arm operating cable—Package of 5.....	12543	Bracket—Pickup arm spring, adjusting bracket and screw.....
11722	Coil—Pickup coil (L24).....	13629	Cable—Pickup arm operating cable—Package of 5.....
13470	Connector—Shielded pickup cable and connector assembly—approximately 59 inches long.....	12541	Coil—Pickup coil (L41).....
11545	Cover—Pickup front cover.....	13630	Connector—Shielded pickup cable and connector assembly—approximately 43 inches long—less female connector.....
11546	Cover—Pickup back cover with mounting screws	11545	Cover—Pickup front cover.....
3737	Damper—Pickup damper—Package of 5.	11546	Cover—Pickup back cover with mounting screws
3516	Damper—Damper assembly for pickup arm base—Comprising one upper and one lower damper, one upper bushing and one lower bearing.....	12850	Damper—Damper assembly for pickup arm base—comprising one upper damper and bushing, one lower bushing and one lower bearing
11723	Escutcheon—Pickup arm escutcheon....	11723	Escutcheon—Pickup arm escutcheon.....
11721	Pickup—Pickup unit, complete.....	14115	Mechanism—Comprising one armature and spring assembly, one armature clamp and one damper
11549	Screw—Pickup front cover screw—Package of 10.....	13628	Pickup—Pickup unit, complete.....
3387	Screw—Nut and washer for mounting pickup to arm—Package of 10.....	12546	Plug—Pivot shaft bearing plug—Package of 2
11547	Screw—Pickup needle screw—Package of 10	13631	Rod—Pickup arm trip rod and nut—Package of 5.....
MODEL D11-2		11549	Screw—Pickup front cover screw—Package of 10
PICKUP AND ARM ASSEMBLIES		3387	Screw—Nut and washer for mounting pickup to arm—Package of 10.....
11720	Arm—Pickup arm, complete—less escutcheon and pickup unit.....	12539	Screw—Pickup needle screw—Package of 10
11724	Armature—Pickup armature.....	12544	Spring—Pickup arm adjusting spring—Package of 10.....
11548	Back—Pickup back.....	MODELS 9U 9U2 15U & D11-2 METAL RECTIFIERS & D22-1A	
11722	Coil—Pickup coil (L24).....	MOTOR ASSEMBLIES	
11545	Cover—Pickup front cover.....	9735	Motor—105-125 volts—25 cycles (M1)..
11546	Cover—Pickup back cover with mounting screws	9651	Motor—105-125 volts—50 cycles (M1)..
3737	Damper—Pickup damper—Package of 5.	9650	Motor—105-125 volts—60 cycles (M1)..
3516	Damper—Damper assembly for pickup arm base—Comprising one upper and one lower damper—one upper bushing and one lower bearing	12050	Suspension Spring—Motor mounting spring, washer, and stud assembly—Comprising six springs, six cup washers, three spring washers and three studs...
11723	Escutcheon—Pickup arm escutcheon....	12051	Capacitor—2 Mfd., complete with 2-contact male connector for use with motor, Stock No. 9650 or No. 9651 only (C74)
11721	Pickup—Pickup unit, complete.....	13101	Capacitor—4 Mfd., complete with 2-contact male connector for use with motor, Stock No. 9735 only (C74).....
11549	Screw—Pickup front cover screw—Package of 10.....	4674	Connector—2-contact male connector for Stock Nos. 12051, 13101
3387	Screw, nut and washer for mounting pickup to arm—Package of 10.....	MODEL D11-2	
11547	Screw—Pickup needle screw—Package of 10	MOTOR ASSEMBLIES	
MODELS D22-1 & D22-1A		9012	Motor—105-125 volts—25 cycles (M1)..
PICKUP AND ARM ASSEMBLIES		9014	Motor—105-125 volts—50 cycles (M1)..
11482	Arm—Pickup arm complete—less pickup mounting screw, escutcheon and pickup unit.....	9011	Motor—105-125 volts—60 cycles (M1)..
11543	Armature—Pickup armature. D22-1	4562	Suspension Spring—Motor mounting spring, washer, and stud assembly—Comprising six springs, six cup washers, three spring washers and three studs...
13405	Armature—Pickup armature. D22-1A ...	MODEL D22-1	
11548	Back—Pickup back.....	MOTOR ASSEMBLIES	
4064	Cable—Pickup arm operating cable—Package of 5	8055	Gear—Pinion gear for motor spindle.....
11544	Coil—Pickup coil—(L305).....	9479	Motor—105-125 volts—25 cycles—(M1).....
11532	Coil—Pickup hum bucking coil—(L306).....	9478	Motor—105-125 volts—50 cycles—(M1)
4674	Connector—Two-prong male section of pickup cable connector plug—Stock Nos. 11514, 11524.....	9477	Motor—105-125 volts—60 cycles—(M1).....
11545	Cover—Pickup front cover.....	4562	Suspension Spring—Motor mounting spring, washer, and stud assembly—comprising six springs, six cup washers, three spring washers and three studs...
11546	Cover—Pickup back cover with mounting screws..	MISCELLANEOUS	
3737	Damper—Pickup damper—Package of 5.....	11995	Washer—Turntable spindle shim washer assembly—comprising one thin and one thick washer—Package of 3.....
11723	Escutcheon—Pickup arm escutcheon.....		
11481	Pickup—Pickup unit complete		
11549	Screw—Pickup front cover screw—Package of 10		
3387	Screw, nut and washer for mounting pickup to arm—Package of 10		
11547	Screw—Pickup needle screw—Package of 10.....		
11550	Weight—Home recording weight.....		

MODELS R 22 & 114

115 Volt AC/DC Superheterodyne Receivers

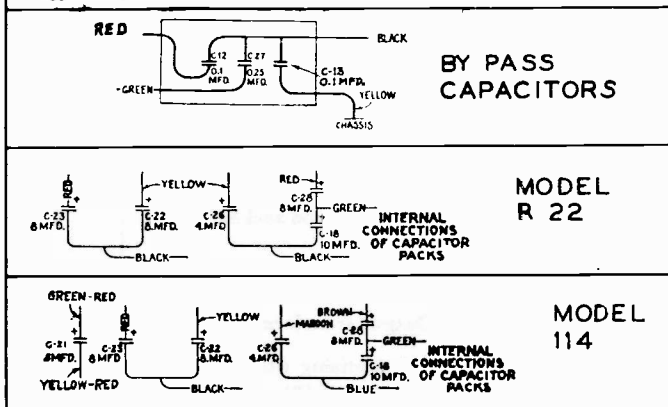
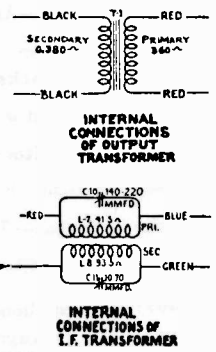
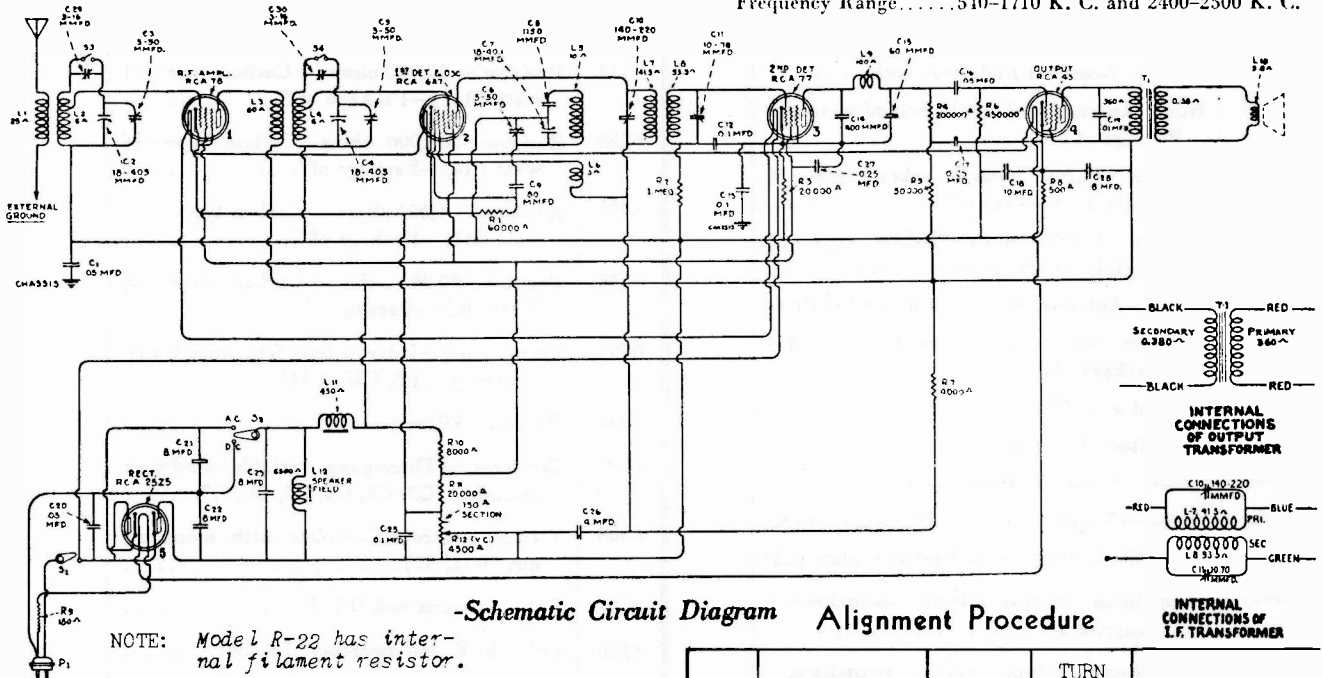


Model 114, A. C. - D. C.

With tuning condenser set at minimum capacity set dial so that pointer coincides with 8.

ELECTRICAL SPECIFICATIONS

Voltage Rating	100-125 A. C. or D. C.
Frequency Rating (A. C.)	25-133 Cycles
Power Consumption:	A. C. 60 Cycles, 115 Volts—60 Watts
	D. C. 115 Volts—40 Watts
Number and Types of Radiotrons	1 RCA-78, 1 RCA-6A7, 1 RCA-77, 1 RCA-43, 1 RCA-25Z5—Total, 5
Undistorted Output (A. C.)	1.5 Watts
Undistorted Output (D. C.)	0.5 Watts
Frequency Range	540-1710 K. C. and 2400-2500 K. C.



STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with .01 mfd	175 kc	Quiet Point near 80 BC Band	S & P of I-F Trans.
2	Antenna in series	1720 kc	8 BC Band	Osc., Det. and R-F Trimmers (on TOP of tuning cond.)
3	with 200 mmfd	1400 kc	18 BC Band	
4		2440 kc	Receive Signal H-F Band	H-F Trimmers (on BOTTOM of tuning cond.)

RADIOTRON SOCKET VOLTAGES—115 Volts D. C. or 60 Cycle A. C.

Divide all A. C. Values (Except Heater) by 1.3 for 25 Cycles

Radiotron No.	Cathode to Control Grid, Volts D. C.		Cathode to Screen Grid, Volts D. C.		Cathode to Plate, Volts D. C.		Plate Current, M. A.		Heater Volts
	A. C.	D. C.	A. C.	D. C.	A. C.	D. C.	A. C.	D. C.	
RCA-78 R. F.	2.6	1.5	90	50	157	88.5	5.5	3.0	6.0
RCA-6A7 Oscillator 1st Detector	2.6	1.5	90	50	157	88.5	1.7	1.0	6.0
RCA-77 2nd Detector	Plate and Bias Supply 160 Volts						---	---	6.0
RCA-43 Power	21.0	12.0	135	80	125	72.0	35.0	20.0	25.0
RCA-25Z5 Rectifier	115 R. M. S.				89.0 Total	35.0 Total			25.0

Voltage Across Loudspeaker Field (115 Volts, 60 Cycles—185)
 (115 Volts, 25 Cycles—140)
 (115 Volts, D. C.—105)

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Contact cap—Package of 5.....		3901	Capacitor—.05 mfd. (C16).....	
2963	Resistor — 8,000 ohms — Carbon type — 1 watt (R10)—Package of 5.....		3917	Capacitor—.25 mfd. (C17).....	
3033	Resistor — 1 megohm — Carbon type — ¼ watt (R2)—Package of 5.....		4014	Cord—Power cord—180 ohms (R9).....	
3572	Socket—7-contact Radiotron socket.....		4015	Knob—Station selector or volume control knob	
3584	Ring—Antenna coil shield retaining ring—Package of 5.....		4016	Foot—Cabinet foot—Package of 4.....	
3594	Resistor—50,000 ohms—Carbon type—½ watt (R5)—Package of 5.....		6114	Resistor — 20,000 ohms— Carbon type — 1 watt (R11)—Package of 5.....	
3602	Resistor—60,000 ohms—Carbon type—¼ watt (R1)—Package of 5.....		6228	Resistor—200,000 ohms—Carbon type—½ watt (R4)—Package of 5.....	
3623	Shield—Antenna, R. F. or oscillator coil shield		6250	Resistor — 4,000 ohms — Carbon type — ½ watt (R7)—Package of 5.....	
3632	Resistor—500 ohms—Carbon type—1 watt —Package of 5.....		6303	Resistor—20,000 ohms—Carbon type—½ Watt (R3)—Package of 5.....	
3640	Capacitor—0.05 mfd.....		6464	Transformer—Intermediate frequency transformer (L7, L8, C10, C11).....	
3641	Capacitor—0.1 mfd.....		6505	Reactor—Filter reactor.....	
3682	Shield—Radiotron shield body.....		6506	Condenser—Three-gang variable condenser assembly (C2, C3, C4, C5, C6, C7).....	
3684	Switch—Toggle type—AC-DC operation (S2)		6508	Volume control—Complete with mounting nut (R12, S1).....	
3685	Coil—Choke coil—Second detector plate (L9)		6519	Coil—Antenna coil (L1, L2).....	
3697	Escutcheon—Station selector escutcheon—Package of 2.....		6520	Coil—R. F. coil assembly (L3, L4).....	
3698	Escutcheon—Volume control escutcheon—Package of 2.....		6521	Coil—Oscillator coil assembly (L5, L6).....	
3700	Resistor—450,000 ohms—Carbon type—½ watt (R6)—Package of 5.....		6621	Capacitor—Comprising one .05 and one .1 mfd. capacitors (C1, C25).....	
3701	Capacitor—0.01 mfd. (C19).....		6783	Capacitor—Comprising four 8. mfd., one 4. mfd. and one 10. mfd. capacitors (C18, C21, C22, C23, C26, C28).....	
3710	Capacitor—60 mmfd. (C15).....		7485	Socket—6-contact Radiotron socket.....	
3711	Capacitor—80 mmfd. (C9).....		REPRODUCER ASSEMBLIES		
3712	Capacitor—400 mmfd. (C14).....		6509	Transformer—Output transformer (T1).....	
3713	Capacitor—0.05 mfd. (C20).....		7606	Coil assembly—Comprising field coil, magnet and cone support (L12).....	
3752	Shaft—Range switch shaft.....		8987	Cone—Reproducer cone complete with voice coil (L10)—Package of 5.....	
3753	Contact—Ranges witch contact—Pkg. of 2...		9462	Reproducer complete.....	
3754	Capacitor—1,150 mmfd. (C8).....				
3755	Capacitor—Comprising two .1 mfd. and one .25 mfd. capacitors (C12, C13, C27).....				

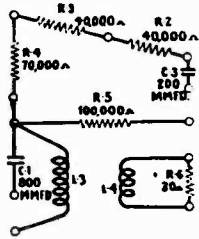
MODEL R.22 SUBSTITUTE AND ADDITIONAL REPLACEMENT PARTS

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
3555	Capacitor - 0.1 mfd - Connected across loud-speaker field.	6511	Capacitor - Comprising one 8 mfd, one 10 mfd and one 4 mfd.
3589	Knob - Station selector or volume control knob.	6518	Capacitor - Comprising two 8 mfd capacitors.
3683	Shield - Radiotron shield cap.	Stock No.'s. 3754 Capacitor (C8) 3901 Capacitor (C16), 3702 Capacitor (C17), 4014 Cord (R9), 4015 Knob, 3725 Capacitor - 1130 mmfd (C8), 4016 Foot and 6783 Capacitor pack used in Model 114	
6507	Resistor - 180 ohms - porcelain type (R9).		only.
6510	Capacitor - 8 mfd.		

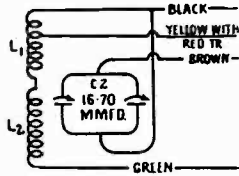
PHONOGRAPH OSCILLATOR MODEL RK 24

ELECTRICAL SPECIFICATIONS

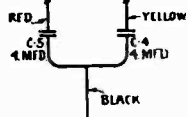
Type of Oscillator Circuit Modified Hartley
 Type of Modulation Pentode Control Grid
 Type of Radiotrons RCA-2A7 or RCA-6A7
 Heater Current 0.3 or 1.0 (Depending on Tube Used)
 Heater Voltage 2.5 or 6.3 Volts (Depending on Tube Used)
 Plate Voltage 150 Volts to 400 Volts
 Plate Current 2.0 M. A. at 250 Volts
 Input Pickup Impedance 2450 Ohms at 1000 Cycles
 Output Impedance 30 Ohms
 Tuning Frequency Range 1400 K. C. to 1700 K. C.



RESISTOR BOARD CONNECTIONS



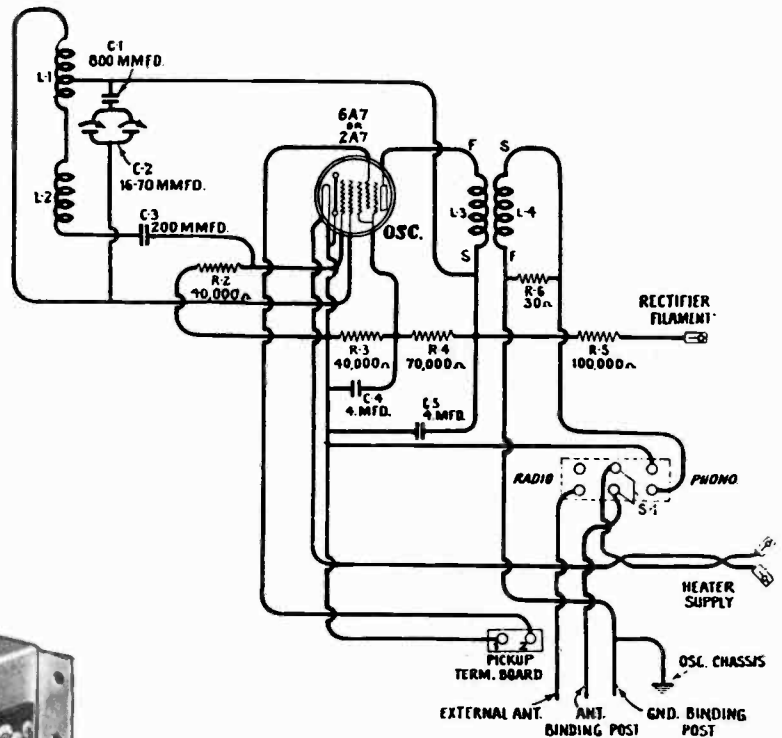
INTERNAL CONNECTIONS OF OSCILLATOR COIL UNIT



INTERNAL CONNECTIONS OF CAPACITOR PACK



RK-24



-Schematic Circuit Diagram

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
4749	Board—Terminal board assembly.....		3400	Resistor—30 ohms—Carbon type— $\frac{1}{4}$ watt (R6)—Package of 5.....	
4013	Capacitor—200 mmfd. (C3).....		6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{2}$ watt (R2, R3)—Package of 5.....	
4027	Capacitor—800 mmfd. (C1).....		3464	Resistor—70,000 ohms—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5.....	
4745	Capacitor pack—Comprising two 4.0 mfd. capacitors (C4, C5).....		3058	Resistor—100,000 ohms—Carbon type (R5)—Package of 5.....	
4748	Clamp—Electrolytic capacitor clamp.....		6300	Socket—4-contact Radiotron socket.....	
4747	Coil—Oscillator coil and shield assembly (L1, L2, C2).....		4750	Switch—Operating switch.....	
9554	Oscillator—Complete.....		4746	Transformer—Output transformer (L3, L4).....	

MODELS R 28 SERIES, R 28P, RE 40 & RE 40P

Five-Tube, Single-Band, and Two-Band,

A-C, Superheterodyne Radio & Radio-Phonograph

Electrical Specifications

R-28 SERIES

- R-28
- R-28A
- R-28B
- R-28BW
- R-28BWC
- R-28C
- R-28D
- R-28E

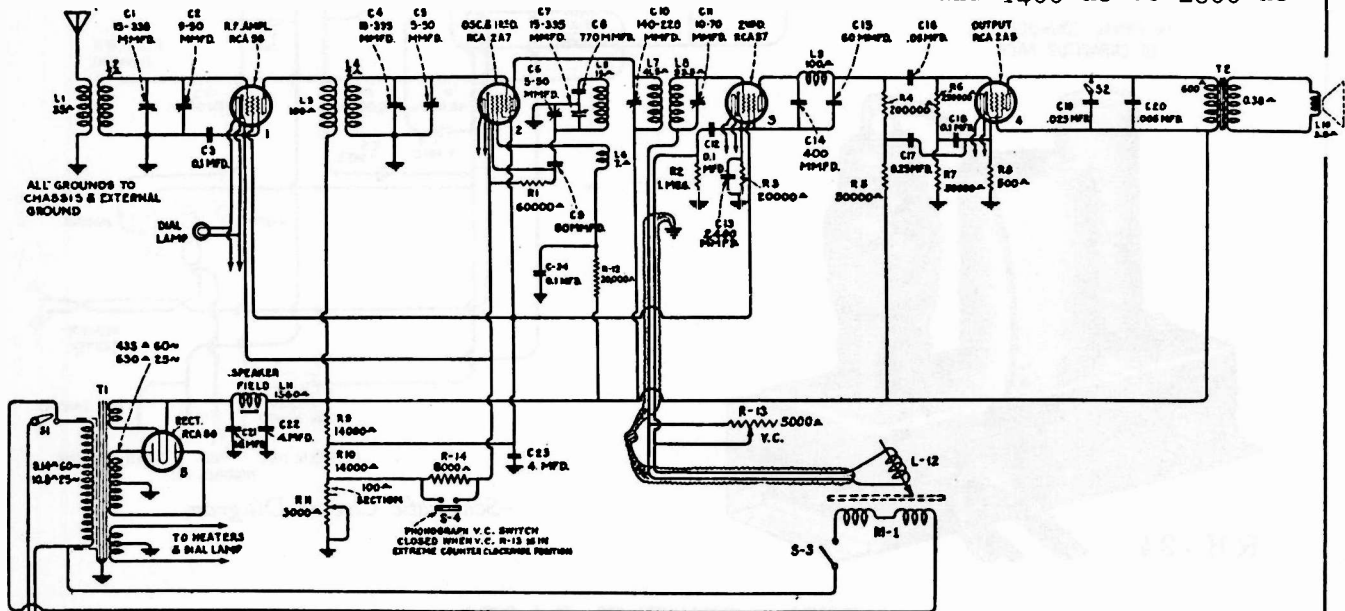
Voltage rating 105 - 125 volts
 Frequency rating (R-28 and R-28P) 25/40 and 50/60 cycles
 (RE-40 and RE-40P) 25, 40, 50 and 60 cycles
 Models R-28 and R-28P also made for 60 cycle - 200/250 volts
 Power consumption - radio only 70 watts
 radio and phono. - 60 cycle - 95 watts

Radiotron complement:

R-F Amplifier	Type 58
Osc. 1st Det.	Type 2A7
2nd Detector	Type 57
Output	Type 2A5
Rectifier	Type 80

Five Tube
Single Band

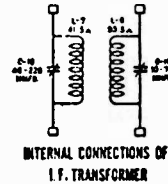
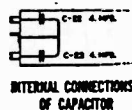
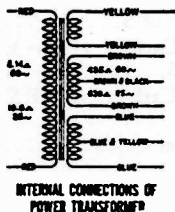
Undistorted output 1.75 watts
 Frequency range (R-28 and RE-40) 540 KC - 1500 KC
 (R28P and RE-40P) 540 KC - 1500 KC
 and 1400 KC to 2800 KC



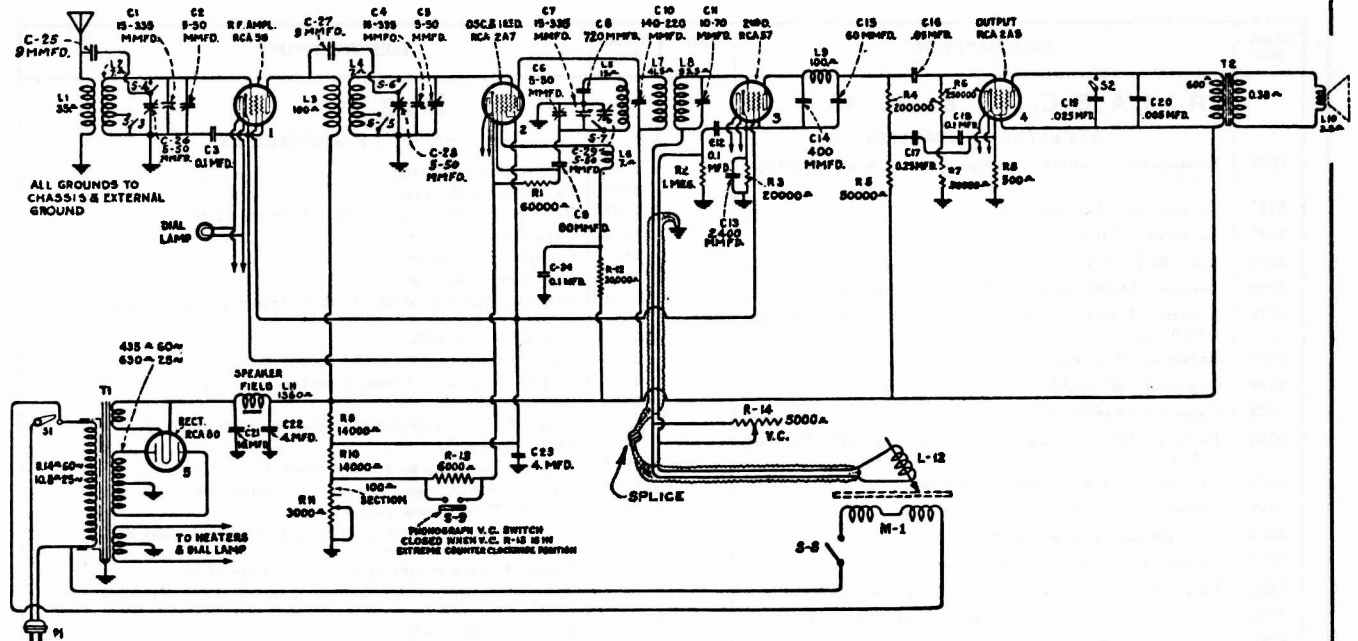
-Schematic Circuit RE-40

NOTE: R-28 series.

The low side of I-F Trans. secondary (L8) is connected direct to junction of R₂ and C₁₂. The 6000 ohm resistor (R₁₄) and the radio-phono. vol. control and switch (R₁₃-S₄) are omitted.



R28 SERIES, R28P, RE40 & RE 40P



MODEL RE 40 P Schematic Circuit

NOTE: R-28P

The low side of I-F Trans. secondary (L8) is connected direct to junction of R₂ and C₁₂. The 6000 ohm resistor R₁₃ and the radio-phono. vol. control and switch (R₁₄-S₉) are omitted.

RADIOTRON SOCKET VOLTAGES

115 Volt A. C. Line

MAXIMUM-VOLUME CONTROL SETTING—NO SIGNAL

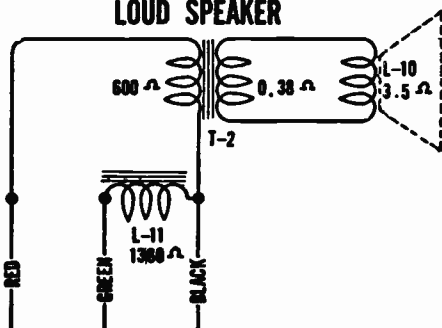
Radiotron No.	Cathode to Control Grid, Volts	Cathode to Screen Grid, Volts	Cathode to Plate, Volts	Plate Current, M. A.	Heater Volts
1. RCA-58 R. F. Amplifier	3.0	95	250	5.0	2.33
2. RCA-2A7 First Detector Oscillator	3.0	95	250	3.0	2.33
3. RCA-57 Second Detector	6.0	89	170	0.3	2.33
4. RCA-2A5 Power Amplifier	18.0	235	220	32.0	2.33
5. RCA-80 Rectifier	275 Volts PLATE TO PLATE—60 M. A. TOTAL				4.82

Alignment Procedure

NOTE: Step 3 applies to R-28P and RE-40P only

With tuning condenser fully meshed, set dial so that end calibration coincides with pointer.

INTERNAL CONNECTIONS OF LOUD SPEAKER



STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with .01 mfd	175 kc	Quiet Point near 60 BC Band	S & P of I-F Trans.
2	Antenna in series	1400 kc	140 BC Band	Osc., Det. and R-F Trimmers on gang cond.
3	with 200 mmfd	2440 kc	120 SW Band	Osc., Det. and R-F Trimmers on range switch

R28 SERIES, R28P, RE40 & RE40P

Replacement Parts

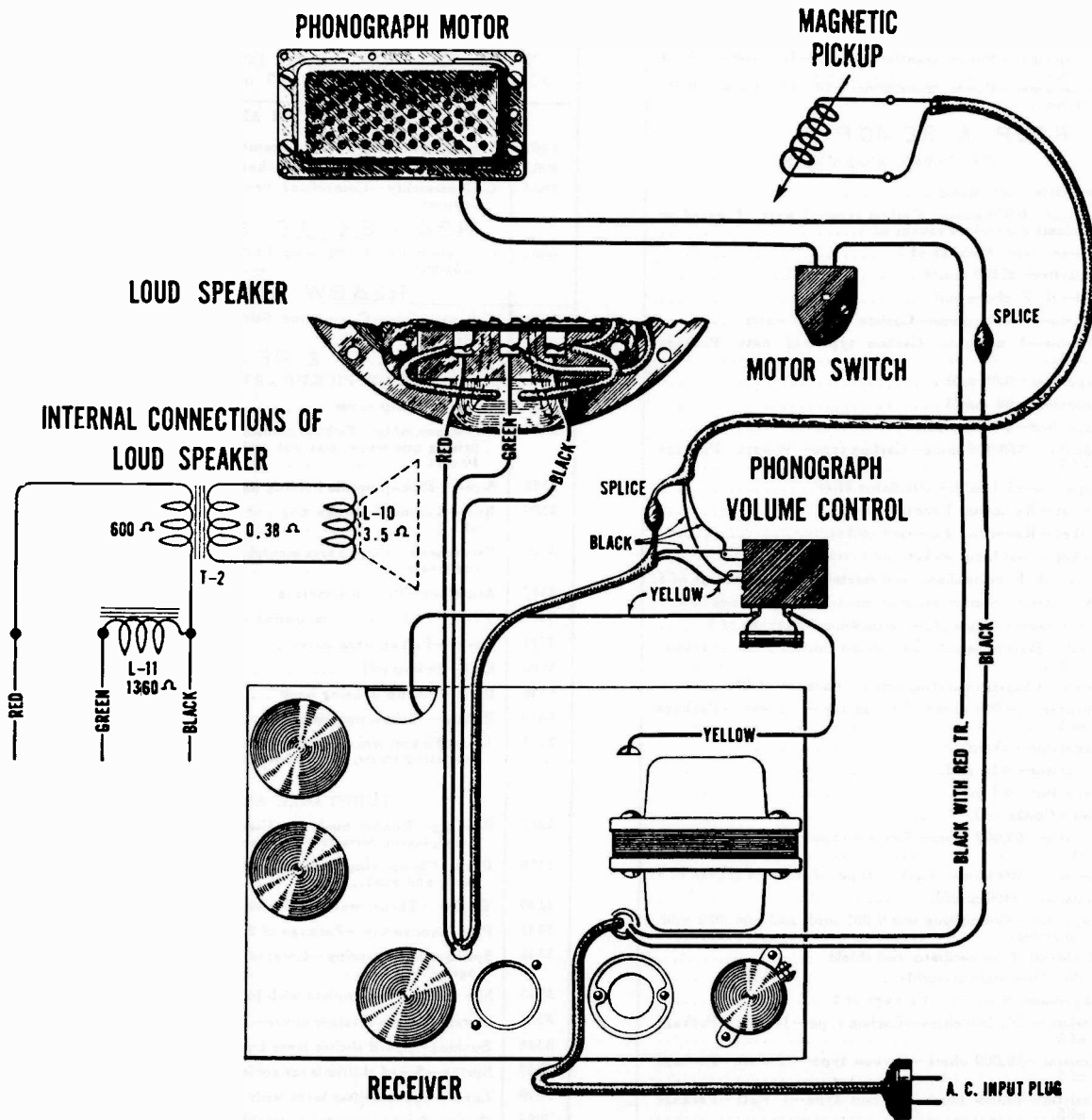
Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
R 28, A, B, C, D, E & RE 40			R 28 BW		
RECEIVER ASSEMBLIES			RECEIVER ASSEMBLIES		
2563	Resistor—6,000 ohms—Carbon type—1 watt—Package of 5.....		2747	Contact cap—Package of 5.....	
2747	Contact cap—Package of 5.....		2749	Capacitor—2,400 mmfd.....	
2749	Capacitor—2,400 mmfd.....		3050	Resistor—14,000 ohms—Carbon type—3 watts.....	
2994	Coil—R. F. choke coil.....		3456	Capacitor—0.05 mfd.....	
3050	Resistor—14,000 ohms—Carbon type—3 watts.....		3459	Capacitor—80 mmfd.....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		3472	Capacitor—0.0024 mfd.....	
3456	Capacitor—0.05 mfd.....		3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3459	Capacitor—80 mmfd.....		3555	Capacitor—0.1 mfd.....	
3472	Capacitor—0.0024 mfd.....		3572	Socket—Radiotron 7 contact socket.....	
3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		3573	Socket—Radiotron 4 contact socket.....	
3555	Capacitor—0.1 mfd.—Oscillator filter.....		3574	Coil—Choke coil.....	
3572	Socket—Radiotron 7 contact socket.....		3584	Ring—R. F. or oscillator coil retaining ring—Package of 5.....	
3573	Socket—Radiotron 4 contact socket.....		3586	Scale—Dial scale.....	
3575	Socket—Dial lamp socket and bracket.....		3587	Socket—Dial lamp socket and bracket.....	
3584	Ring—R. F. or oscillator coil retaining ring—Package of 5.....		3588	Volume control—Complete with mounting nut.....	
3590	Escutcheon—Station selector escutcheon—Package of 5.....		3589	Switch—Tone control switch.....	
3591	Escutcheon—Name plate escutcheon—Package of 5.....		3592	Knob—Station selector, operating switch or volume control knob—Package of 5.....	
3592	Knob—Station selector or volume control knob—Package of 5.....		3593	Screw—Chassis mounting screw—Package of 10.....	
3593	Screw—Chassis mounting screw—Package of 10.....		3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		3596	Capacitor—60 mmfd.....	
3596	Capacitor—60 mmfd.....		3597	Capacitor—0.25 mfd.....	
3597	Capacitor—0.25 mfd.....		3598	Capacitor—0.1 mfd.....	
3598	Capacitor—0.1 mfd.....		3601	Coil—Choke coil.....	
3601	Coil—Choke coil.....		3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		3603	Resistor—500 ohms—Carbon type—1 watt—Package of 5.....	
3603	Resistor—500 ohms—Carbon type—1 watt—Package of 5.....		3604	Capacitor—400 mmfd.....	
3604	Capacitor—400 mmfd.....		3605	Capacitor—770 mmfd.....	
3605	Capacitor—770 mmfd.....		3606	Capacitor—Comprising one 0.005 mfd. and one .025 mfd. capacitors.....	
3606	Capacitor—Comprising one 0.005 mfd. and one .025 mfd. capacitors.....		6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
6306	Resistor—14,000 ohms—Carbon type—1 watt—Package of 5.....		6306	Resistor—14,000 ohms—Carbon type—1 watt—Package of 5.....	
6464	Transformer—I. F. transformer.....		6443	Capacitor—10 mfd.....	
6465	Volume control—Complete with mounting nut.....		6464	Transformer—I. F. transformer.....	
6466	Switch—Tone control switch.....		6470	Coil—Antenna coil.....	
6470	Coil—Antenna coil.....		6471	Coil—Oscillator coil assembly.....	
6471	Coil—Oscillator coil assembly.....		6472	Coil—R. F. coil assembly.....	
6472	Coil—R. F. coil assembly.....		7485	Socket—Radiotron 6 contact socket.....	
6473	Scale—Dial scale assembly.....		7487	Shield—Radiotron tube shield.....	
7485	Socket—Radiotron 6 contact socket.....		7589	Capacitor—Filter capacitor—Two 4.0 mfd. in container.....	
7487	Shield—Radiotron tube shield.....		7592	Condenser—3 gang variable tuning condenser.....	
7588	Condenser—3 gang variable tuning condenser.....		8985	Transformer—Power transformer—105-125 volts—50-60 cycles.....	
7589	Capacitor—Filter capacitor—Two 4.0 mfd. in container.....		8986	Transformer—Power transformer—200-250 volts—60 cycles.....	
7590	Capacitor—10 mfd.....		9002	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
8985	Transformer—Power transformer—105-125 volts—50-60 cycles.....				
9002	Transformer—Power transformer—105-125 volts—25-50 cycles.....				
9034	Transformer—Power transformer step-down—250-125 volts—50-60 cycles.....				
ADDITIONAL PARTS			R 28 BWC		
MODELS R-28, A, B, C, D, E			RECEIVER ASSEMBLIES		
Add Stock No.			2269	Capacitor—720 mmfd.....	
3574	Coil - Choke Coil.		2747	Contact cap—Package of 5.....	
8986	Transformer - Power trans. 200/250 volts 60 cycle.		3050	Resistor—14,000 ohms—Carbon type—3 watts.....	
Stock No. 2994	Coil, 2563 Resistor (6000 ohms) and 9034 Transformer not used with Model R-28.		3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
			3456	Capacitor—0.05 mfd.....	
			3459	Capacitor—80 mmfd.....	
			3472	Capacitor—0.0024 mfd.....	
			3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
			3555	Capacitor—0.1 mfd.....	
			3572	Socket—Radiotron 7 contact socket.....	
			3573	Socket—Radiotron 4 contact socket.....	
			3574	Coil—Choke coil.....	
			3575	Socket—Dial lamp socket and bracket.....	
			3584	Ring—R. F. or oscillator coil retaining ring—Package of 5.....	
			3588	Volume control—Complete with mounting nut.....	
			3589	Switch—Tone control switch.....	
			3593	Screw—Chassis mounting screw—Package of 10.....	
			3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
			3596	Capacitor—60 mmfd.....	
			3597	Capacitor—0.25 mfd.....	
			3598	Capacitor—0.1 mfd.....	
			3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	

R28 SERIES, R28P, RE40 & RE40P

Replacement Parts (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR ASSEMBLIES			8997	Rotor and shaft for 105-125 volts—40 cycle motor.....	
3599	Motor mounting washer assembly—Comprising one screw, one washer and one lockwasher—Package of 3 sets.....		8998	Spindle—Turntable spindle with fibre gear for 40 cycle motor.....	
RE 40P ONLY			8999	Rotor and shaft for 105-125 volts, 25 cycle motor.....	
3731	Motor mounting assembly—Comprising three felt washers, three cushions, six metal washers and three studs.....		9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....	
RE 40 ONLY			RE 40 & RE 40P		
MISCELLANEOUS PARTS					
8989	Motor—Motor complete 105-125 volts—60 cycle.....		2947	Lesther—Friction leather—Package of 20.....	
8990	Motor—Motor complete 105-125 volts—50 cycle.....		3322	Switch—Automatic brake switch with mounting screws.....	
8991	Motor—105-125 volts—40 cycles.....		3430	Box—Needle box with lid—Package of 2.....	
8992	Motor—Motor complete 105-125 volts—25 cycle.....		3615	Knob—Tone control or operating switch knob—Package of 5.....	
8993	Rotor and shaft for 105-125 volts, 60 cycle motor.....		6475	Volume control—Phonograph volume control.....	
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....		10174	Springs—Automatic brake springs—One set of 4 springs—Package of 2 sets.....	
8995	Rotor and shaft for 105-125 volts 50 cycle motor.....		10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....	
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....				



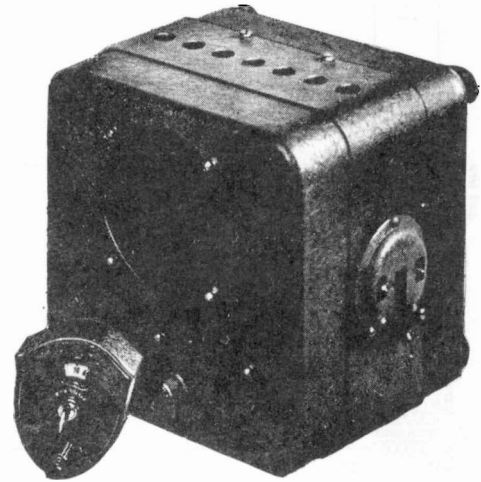
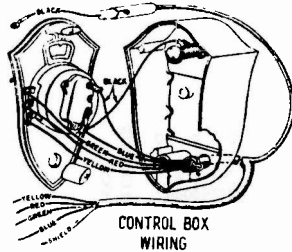
RE 40 & RE 40P -Assembly Wiring

MODEL M 34

Automobile Receiver

Electrical Specifications

Type and Number of Radiotrons Used.....1 RCA-89,
1 RCA-78, 1 RCA-6A7, 1 RCA-6B7—Total, 4
Total Battery Current.....5.5 Amperes
Undistorted Output.....2.0 Watts
Loudspeaker Field Current.....1.35 Amperes
Maximum Output D. C. Voltage from Rectifier....250 Volts
Total Plate Current.....53 M. A.



MODEL M 34

RADIOTRON SOCKET VOLTAGES

6.3 Volt Battery

Radiotron No.	Cathode to Ground	Cathode to Screen Grid Volts	Cathode to Plate Volts	Plate Current M. A.	Heater Volts
RCA-78 R. F.	3.7	92	253	7.0	6.06
RCA-6A7	First Detector	92	253	12.0	6.06
	Oscillator	—	253	Total	
RCA-6B7 Second Detector	3.2	92	236	6.0	6.06
RCA-89 Power	26.5	230	217	27.5	6.06

Receiver Unit—It is necessary first to determine the electrical polarity of the storage battery supply. This may be done most conveniently by making an examination of the battery connections and ascertaining which terminal is grounded (that is, connected to the frame of the car). The positive terminal is usually marked (+) and tends to form corrosion far more rapidly than the negative (—). If the positive terminal is grounded, no change in the electrical connections of the receiver unit will be required. However, if the opposite is true, the cover of the receiver unit case (held in place by six screws) must be removed and the two leads (equipped with spade terminals) located beneath the radio chassis must be reversed.

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	175 Kc	Quiet point near 600 Kc	Tuning cond. of 2nd I-F Trans. Tuning cond. of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers on gang condenser
3	With auto antenna connected to receiver adjust R-F Trimmer for max. volume on weak station near 1400 Kc.			

REPLACEMENT PARTS

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

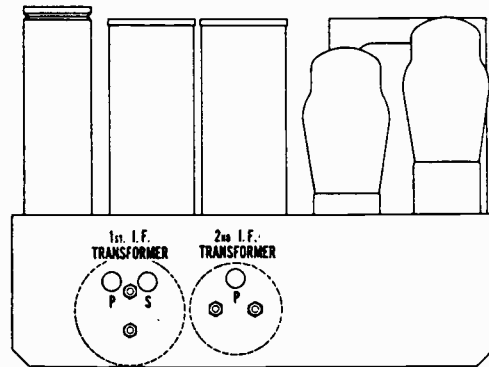
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).....		3758	Connector—For control box end of flexible drive shaft— Package of 5.....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R7)—Pack- age of 5.....		6161	Knob—Station selector knob—Package of 5.....	
3572	Socket—Radiotron 7-contact socket.....		6496	Shaft—Flexible drive shaft complete with connectors— Approximately 24 $\frac{1}{4}$ " long.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R4, R10)—Package of 5.....		6497	Shaft—Flexible drive shaft complete with connectors— Standard length—Approximately 33 $\frac{1}{4}$ " long.....	
3616	Capacitor—300 mmfd. (C15, C18).....		6499	Volume control—Combination volume control and switch (R8).....	
3617	Capacitor—0.005 mfd. (C21).....		6500	Nut—Volume control and switch lock nut.....	
3618	Capacitor—0.02 mfd. (C16).....		6501	Scale—Dial scale.....	
3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R9)— Package of 5.....		6531	Shaft—Flexible drive shaft complete with connectors— Approximately 12 $\frac{1}{4}$ " long.....	
3621	Coil—Choke coil—Located on resistor board (L17).....		6532	Shaft—Flexible drive shaft—Complete with connectors— Approximately 18 $\frac{1}{4}$ " long.....	
3636	Transformer—First intermediate frequency transformer (L7, L8, C14).....		7602	Box—Control box complete.....	
3637	Transformer—Second intermediate frequency transformer (L9, L10, C19).....		7603	Cover—Control box cover.....	
3641	Capacitor—0.1 mfd. (C8).....		MISCELLANEOUS PARTS		
3644	Bracket—Condenser drive bracket and roller.....		3466	Connector—Antenna lead-in connector.....	
3645	Knob—Tone control knob—Package of 5.....		3646	Fuse—20 amperes—Package of 5.....	
3695	Capacitor—375 mmfd. (C24, C31).....		3647	Nut—Cap nut and lock washer—Package of 10.....	
3696	Capacitor—40 mmfd. (C9).....		3648	Screw—No. 10-32-A" cap screw and lockwasher—Pack- age of 10.....	
8738	Resistor—1,000 ohms—Carbon type—1 watt (R11)— Package of 5.....		3689	Bracket—Receiver mounting bracket, bolt and nut as- sembly—One set.....	
3745	Capacitor—745 mmfd.....		3791	Bushing and plate assembly—Flexible drive shaft bushing with plate, mounting screws, rubber bushings, and washers—Located on main case.....	
3746	Capacitor—800 mmfd.....		3827	Cable—From fuse connector to ammeter.....	
3769	Resistor—750 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Pack- age of 5.....		3843	Cement—4-oz. bottle—For fastening stock No. 3801.....	
3790	Mounting screws, washer, and bushing assembly—For 3- gang variable tuning condenser—Comprising three spacers, three screws, three washers, and three lockwashers.		3856	Clip—Spring clip—Grounds receiver chassis to metal housing—Package of 10.....	
3851	Capacitor—790 mmfd. (C12).....		3884	Clamp—Cable clamp—Package of 10.....	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Pack- age of 5.....		6151	Suppressor—Spark plug suppressor.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6)— Package of 5.....		6152	Suppressor—Distributor suppressor.....	
6192	Spring—Tuning condenser drive cord tension spring— Package of 10.....		6175	Suppressor—Distributor splice-in suppressor.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R2)— Package of 5.....		6494	Capacitor—Ammeter capacitor—0.5 mfd.....	
6298	Cord—Tuning condenser drive cord—Package of 5.....		6495	Capacitor—Generator capacitor—0.5 mfd.....	
6471	Coil—Oscillator coil assembly (L5, L6).....		6617	Lacquer—Touch-up lacquer (one pint of lacquer and one pint of thinner).....	
6488	Transformer—Interstage audio transformer (T2).....		6670	Suppressor—Spark plug suppressor—"Elbow type".....	
6489	Coil—Antenna coil (L1, L2).....		7621	Antenna—Roof antenna—Paper type (Brown).....	
6490	Tune control switch.....		7622	Antenna—Roof antenna—Paper type (Gray).....	
6492	Capacitor—Comprising one 3.6 mfd. and one 1.0 mfd. capacitors (C4, C13).....		7645	Housing—Rear section of housing complete with mounting screws.....	
6493	Drum—Tuning condenser drive drum.....		7646	Housing—Front section of housing complete with mounting screws.....	
6513	Capacitor—Comprising two 5.0 mfd. capacitors (C17, C22).....		VIBRATOR ASSEMBLIES		
6514	Capacitor—Comprising two 0.05 mfd. capacitors (C1, C5).....		8611	Spring—Busser spring and contact point—Package of 5.....	
6515	Cable—Shielded cable with antenna connector.....		8612	Screw—Busser adjustment screw and nut—Package of 10.....	
6516	Connector—Fuse connector.....		8613	Spring—Main contact spring and contact point—Package of 4.....	
6517	Cable—Main cable complete with fuse connector.....		8614	Resistor—50 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Pack- age of 5.....	
6540	Coil—R. F. coil assembly (L3, L4).....		3801	Cushion—Rubber damper cushion for vibrator base— Package of 2.....	
7485	Socket—Radiotron 6-contact socket.....		6478	Armature assembly—Comprising armature, contacts and springs—Assembled.....	
7600	Filter pack—Comprising one reactor, one choke coil, one 0.5 mfd., two 4.0 mfd. and one 375 mmfd. capacitors (L13, L16, C25, C26, C29, C30).....		6479	Coil—Vibrator coil assembly (L15).....	
7601	Condenser—3-gang variable tuning condenser.....		6481	Shield—Outer shield for vibrator assembly.....	
9430	Transformer—Power transformer (T1).....		6482	Shield—Inner shield for vibrator assembly.....	
CONTROL BOX ASSEMBLIES					
3649	Key—Volume control and switch key.....		6577	Capacitor and base assembly—Comprising vibrator base and two 0.04 mfd. capacitors (C27, C28).....	
3650	Screw—Self locking No. 10-32-A" full-dog point set screw —Package of 10.....		6765	Support—Bakelite support.....	
3651	Screw—Self locking No. 10-32-A" cupped point set screw —Package of 10.....		7604	Vibrator—Vibrator assembly complete.....	
3652	Screw—Self locking No. 10-32-A" cupped point set screw —For flexible drive shaft—Package of 10.....		REPRODUCER ASSEMBLIES		
3690	Strap and bracket assembly—Comprising one bracket, two screws, one lockwasher and one strap.....		3688	Transformer—Output transformer (T3).....	
3718	Bracket—Control box dash mounting bracket.....		7607	Screen—Metal screen.....	
3757	Coupling—Slotted coupling for end of flexible drive shaft— Package of 5.....		7608	Coil assembly—Comprising field coil, magnet and cone support (L14).....	
			9023	Cone—Reproducer cone complete (L11)—Package of 5.....	

MODELS R37 & R38

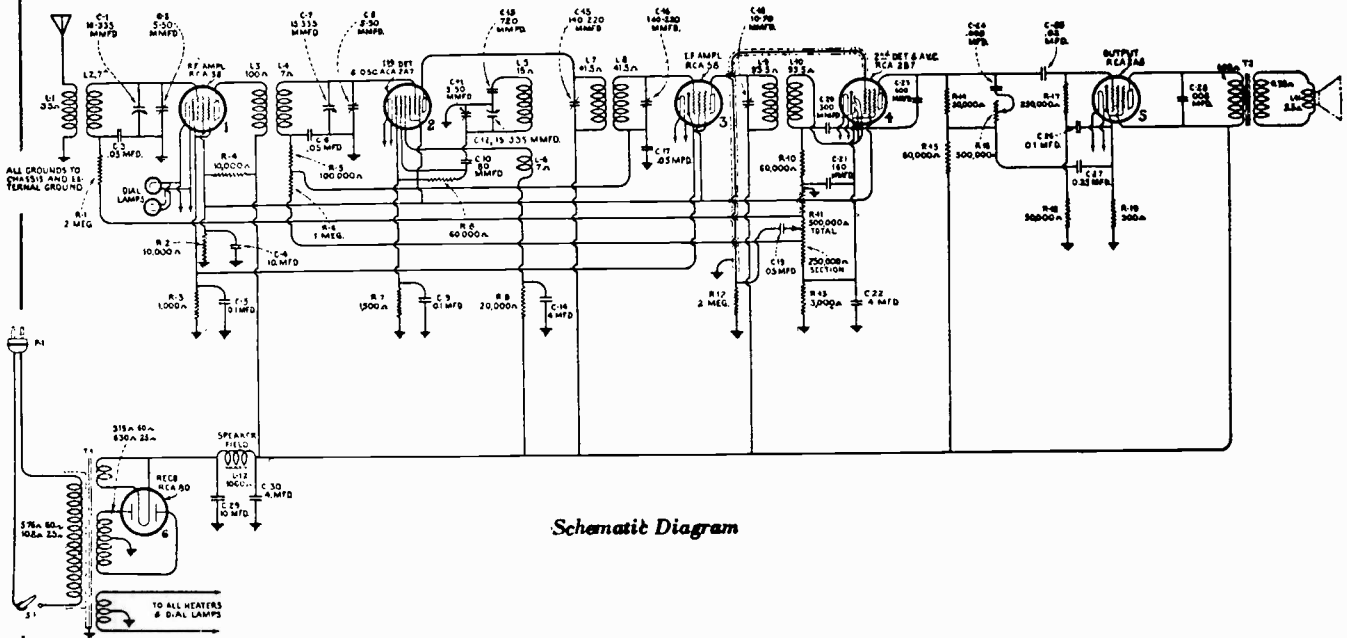
Six-Tube Superheterodyne Receivers

Electrical Specifications

Voltage Rating.....115 Volts
 Frequency Rating.....25-60 and 50-60 Cycles
 Power Consumption...60 Cycle 75 Watts, 25 Cycle 80 Watts
 Number and Types of Radiotrons..2 RCA-58, 1 RCA-2A7,
 1 RCA-2B7, 1 RCA-2A5, 1 RCA-80—Total 6
 Undistorted Output.....1.75 Watts
 Frequency Range.....540 K. C. to 1500 K. C.



-Location of I. F. Line-up Adjustment Screws



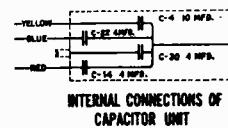
Schematic Diagram

Alignment Procedure

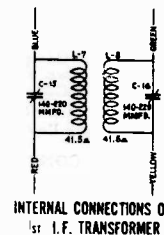
DIAL CALIBRATION:

With tuning condenser fully meshed set dial so that end calibration coincides with pointer.

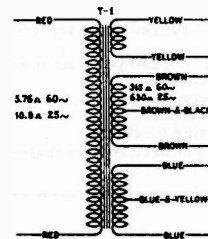
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 60	P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	140	Osc., Det. & R-F Trimmers on gang condenser



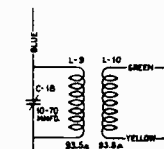
INTERNAL CONNECTIONS OF CAPACITOR UNIT



INTERNAL CONNECTIONS OF 1st I.F. TRANSFORMER



INTERNAL CONNECTIONS OF POWER TRANSFORMER



INTERNAL CONNECTIONS OF 2nd I.F. TRANSFORMER

RADIOTRON SOCKET VOLTAGES 115 Volts, A. C. -No Signal

R 37 & R38

Radiotron No.	Cathode to Control Grid, Volts	Cathode to Screen Grid, Volts	Cathode to Plate, Volts	Plate Current, M. A.	Heater Volts
1. RCA-58 R. F.	3.0	95	255	5.0	2.31
2. RCA-2A7 1st Det. Osc.	3.0*	95*	255*	3.0*	2.31
3. RCA-58 I. F.	3.0	95	255	5.0	2.31
4. RCA-2B7 2nd Det. A. V. C.	7.5	92	60	2.0	2.31
5. RCA-2A5 Power	20.0	250	235	33.0	2.31
6. RCA-80 Rectifier	700/350 Volts—75 M. A. Total Current				4.82

*The Voltages and current refer to the detector part of the tube. The total cathode current is 10 M. A.

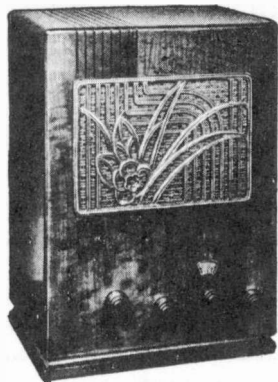
REPLACEMENT PARTS

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

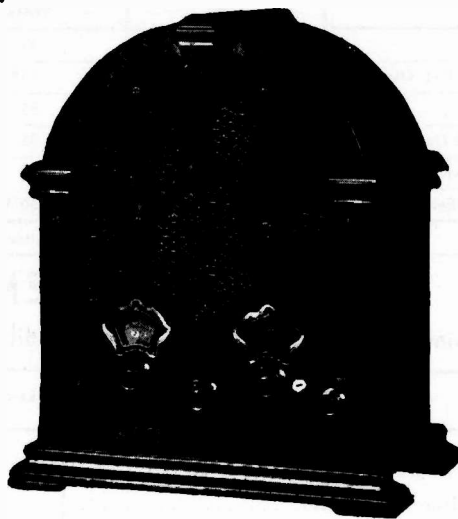
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2269	Capacitor—720 mmfd.....		3640	Capacitor—0.05 mfd.....	
2816	Resistor — 1,000 ohms — Carbon type — ½ watt—Package of 5.....		3641	Capacitor—0.1 mfd.....	
3076	Resistor—1 megohm—Carbon type—½ watt —Package of 5.....		3642	Capacitor—0.008 mfd.....	
3252	Resistor—100,000 ohms—Carbon type—½ watt—Package of 5.....		3643	Capacitor—0.005 mfd.....	
3358	Resistor — 3,000 ohms — Carbon type — ½ watt—Package of 5.....		6188	Resistor—2 megohm—Carbon type—½ watt —Package of 5.....	
3459	Capacitor—80 mmfd.....		6282	Resistor—60,000 ohms—Carbon type—½ watt—Package of 5.....	
3514	Resistor—250,000 ohms—Carbon type—½ watt—Package of 5.....		6303	Resistor—20,000 ohms—Carbon type—½ watt—Package of 5.....	
3572	Socket—Radiotron 7 contact socket.....		6470	Coil—Antenna coil.....	
3573	Socket—Radiotron 4 contact socket.....		6471	Coil—Oscillator coil.....	
3584	Ring—R. F. or oscillator coil retaining ring —Package of 5.....		6472	Coil—R. F. coil.....	
3594	Resistor—50,000 ohms—Carbon type—½ watt—Package of 5.....		6473	Scale—Dial scale assembly.....	
3597	Capacitor—0.25 mfd.....		6483	Transformer—1st intermediate frequency transformer.....	
3615	Knob—Tone control knob—Package of 5....		6484	Transformer—2nd intermediate frequency transformer.....	
3616	Capacitor—300 mmfd.....		6485	Volume control—With mounting nut.....	
3622	Shield—Radiotron shield—1 used.....		6486	Tone control with mounting nut.....	
3623	Shield—Antenna or R. F. coil shield.....		6487	Capacitor assembly—Comprising three 4.0 mfd. and one 10.0 mfd. capacitors.....	
3624	Socket—Dial lamp socket and bracket.....		7485	Socket—Radiotron 6 contact socket.....	
3625	Indicator—Volume control indicator.....		7487	Shield—Radiotron shield—3 used.....	
3626	Shield—Oscillator coil shield.....		7590	Capacitor—10.0 mfd.....	
3627	Knob—Station selector or volume control knob—Package of 5.....		7597	Condenser—3 gang variable tuning condenser.	
3630	Resistor — 10,000 ohms — Carbon type — 3 watts.....		9005	Transformer—Power transformer—105-125 volts, 50-60 cycles.....	
3632	Resistor — 500 ohms — Carbon type — 1 watt—Package of 5.....		9006	Transformer—Power transformer—200-250 volts, 50-60 cycles.....	
3633	Capacitor—400 mmfd.....		9024	Transformer—Power transformer—105-125 volts, 25-50 cycles.....	
3634	Capacitor—160 mmfd.....		REPRODUCER ASSEMBLIES		
3639	Capacitor—0.02 mfd.....		6476	Transformer—Output transformer.....	
			9032	Coil assembly—Comprising coil, magnet and cone support.....	
			9428	Cone—Reproducer cone—Package of 5.....	

MODELS R37P, R38P, 120 & 124

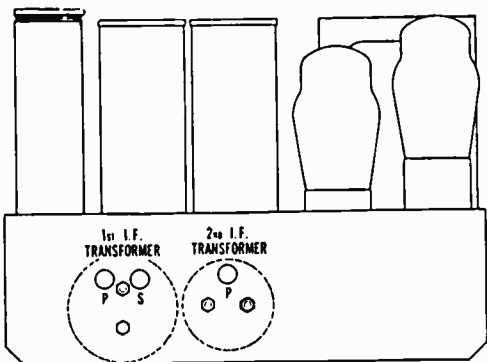
Six-Tube, Two-Band, A-C, Superheterodyne Receivers



MODEL 124



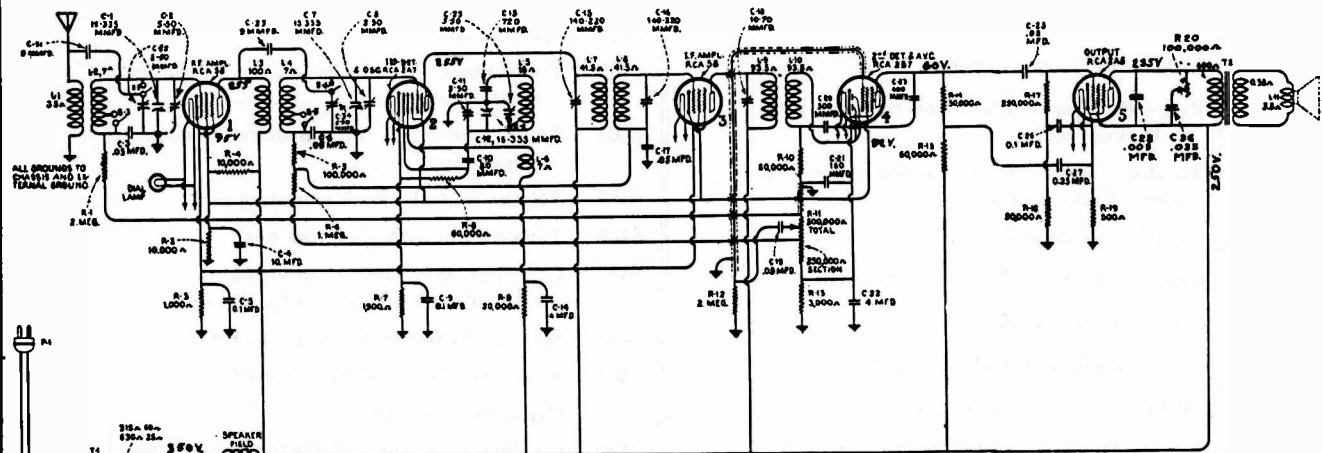
MODEL 120



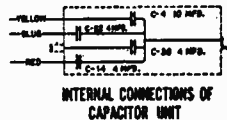
-Location of I. F. Line-up Adjustment Screws

ELECTRICAL SPECIFICATIONS

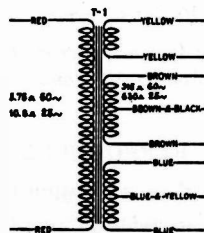
Voltage Rating	105-125 Volts
Frequency Rating	25-60 and 50-60 Cycles
Power Consumption	60 Cycle 75 Watts, 25 Cycle 80 Watts
Number and Types of Radiotrons	2 RCA-58, 1 RCA-2A7, 1 RCA-2B7, 1 RCA-2A5, 1 RCA-80—Total 6
Undistorted Output	1.75 Watts
Frequency Range	540 K. C. to 1500 K. C. and 1400 to 2800 K. C.



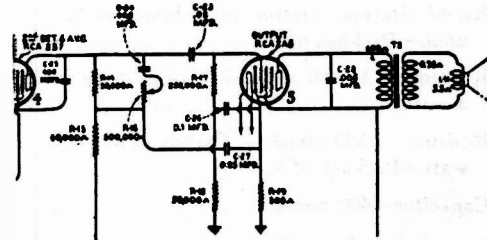
Schematic Circuit Diagram MODELS 120 & 124



INTERNAL CONNECTIONS OF CAPACITOR UNIT

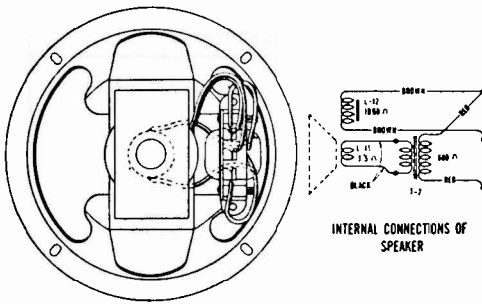


INTERNAL CONNECTIONS OF POWER TRANSFORMER



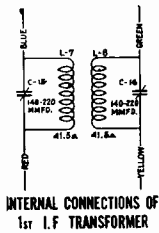
Tone Control Wiring R-37P & R-38P

R37P, R38P, 120 & 124

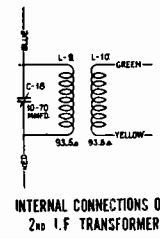


INTERNAL CONNECTIONS OF SPEAKER

Loudspeaker Wiring



INTERNAL CONNECTIONS OF 1st I.F. TRANSFORMER



INTERNAL CONNECTIONS OF 2nd I.F. TRANSFORMER

With tuning condenser fully meshed, set dial so that end calibration coincides with pointer.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with .01 mfd	175 kc	Quiet Point near 60 BC Band	P of 2nd I-F Trans.
2	1st Det. Grid in series with .01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 kc	140 BC Band	Osc., Det. & R-F Trimmers on gang condenser
4		2400 kc	120 SW Band	Osc., Det. & R-F Trimmer on range switch

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	R37P & R38P RECEIVER ASSEMBLIES		3624	Socket—Dial lamp socket and bracket	
2269	Capacitor—720 mmfd.		3625	Indicator—Volume control indicator	
2747	Cap—Contact Cap—Package of 5		3626	Shield—Oscillator coil shield	
3024	Capacitor—9.0 mmfd.—Package of 2		3627	Knob—Station selector or volume control knob—Package of 5	
3047	Resistor—1500 ohms—carbon type—½ Watt Package of 5		3628	Escutcheon—Volume control escutcheon	
3076	Resistor—1 megohm—Carbon type—½ watt—Package of 5		3629	Escutcheon—Station selector escutcheon	
3252	Resistor—100,000 ohms—Carbon type—½ watt—Package of 5		3630	Resistor — 10,000 ohms — Carbon type — 3 watts	
3358	Resistor — 3,000 ohms — Carbon type — ½ watt—Package of 5		3632	Resistor — 500 ohms — Carbon type — 1 watt—Package of 5	
3459	Capacitor—80 mmfd.		3633	Capacitor—400 mmfd.	
3514	Resistor—250,000 ohms—Carbon type—½ watt—Package of 5		3634	Capacitor—160 mmfd.	
3572	Socket—Radiotron 7 contact socket		3639	Capacitor—0.02 mfd.	
3573	Socket—Radiotron 4 contact socket		3640	Capacitor—0.05 mfd.	
3584	Ring—R. F. or oscillator coil retaining ring—Package of 5		3641	Capacitor—0.1 mfd.	
3594	Resistor—50,000 ohms—Carbon type—½ watt—Package of 5		3642	Capacitor—0.008 mfd.	
3597	Capacitor—0.25 mfd.		3643	Capacitor—0.005 mfd.	
3598	Capacitor—0.1 mfd—R. F. and I. F. by-pass		3705	Scale—Dial scale assembly	
3615	Knob—Tone control or range switch knob—Package of 5		3721	Resistor — 1,000 ohms — Carbon type — ½ watt—Package of 5	
3616	Capacitor—300 mmfd.		6188	Resistor—2 megohm—Carbon type—½ watt—Package of 5	
3622	Shield—Radiotron shield—1 used		6282	Resistor—60,000 ohms—Carbon type—½ watt—Package of 5	
3623	Shield—Antenna or R. F. coil shield		6303	Resistor—20,000 ohms—Carbon type—½ watt—Package of 5	
			6471	Coil—Oscillator coil	

R37P, R38P, 120 & 124

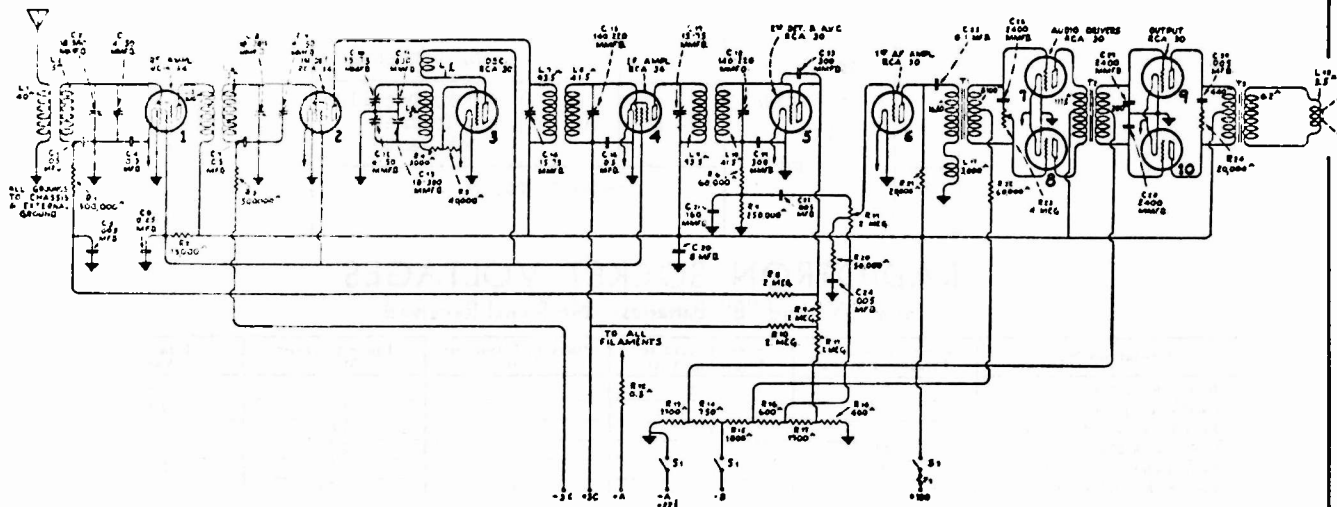
REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
6483	Transformer—1st intermediate frequency transformer.....	3610	Capacitor—0.05 mfd. (C3, C6, C17, C19)....
6484	Transformer—2nd intermediate frequency transformer.....	3611	Capacitor—0.1 mfd. (C9, C26).....
6485	Volume control—With mounting nut.....	3721	Resistor — 1,000 ohms — Carbon type — ½ watt (R3)—Package of 5.....
6486	Tone control with mounting nut.....	3783	Capacitor—9 mmfd. (C31, C33)—Package of 2.....
6487	Capacitor assembly—Comprising three 4.0 mfd. and one 10.0 mfd. capacitors.....	4103	Shield—Radiotron shield—I. F. or R. F.....
6527	Coil—Antenna coil.....	4133	Knob—Station selector, volume control, tone control or range switch knob—Package of 5.....
6528	Coil—R. F. coil.....	4135	Socket—Dial lamp socket and bracket.....
6534	Switch—Range switch.....	4140	Shield—Radiotron shield—1st detector.....
7485	Socket—Radiotron 6 contact socket.....	4141	Shield—Radiotron shield—2nd detector.....
7487	Shield—Radiotron shield—3 used.....	6188	Resistor — 2 megohm — Carbon type — ½ watt (R1, R12)—Package of 5.....
7590	Capacitor—10.0 mfd.....	6282	Resistor—60,000 ohms—Carbon type—½ watt (R8, R10, R15)—Package of 5.....
7597	Condenser—3 gang variable tuning condenser.....	6300	Socket—Radiotron 4-contact socket.....
9005	Transformer—Power transformer—105-125 volts, 50-60 cycles.....	6303	Resistor—20,000 ohms—Carbon type—½ watt (R9)—Package of 5.....
9006	Transformer—Power transformer—200-250 volts, 50-60 cycles.....	6471	Coil—Oscillator coil (L5, L6).....
9024	Transformer—Power transformer—105-125 volts, 25-50 cycles.....	6483	Transformer—1st intermediate frequency transformer (L7, L8, C15, C16).....
MODELS 120 & 124		6484	Transformer—2nd intermediate frequency transformer (L9, L10, C18).....
RECEIVER ASSEMBLIES		6485	Volume control—With mounting nut (R11).....
2269	Capacitor—720 mmfd. (C13).....	6487	Capacitor assembly—Comprising three 4.0 mfd. and one 10.0 mfd. capacitors (C4, C14, C22, C30).....
2747	Cap—Contact cap—Package of 5.....	6527	Coil—Antenna coil (L1, L2).....
3017	Resistor — 1500 ohms — Carbon type — ½ watt (R7)—Package of 5.....	6528	Coil—R. F. coil (L3, L4).....
3076	Resistor — 1 megohm — Carbon type — ½ watt (R6)—Package of 5.....	6534	Switch—Range switch (S2, S3, S4, S5, S6, C32, C34, C35).....
3252	Resistor—100,000 ohms—Carbon type—½ watt (R5)—Package of 5.....	6598	Condenser—3-gang variable tuning condenser (C1, C2, C7, C8, C11, C12).....
3358	Resistor — 3,000 ohms — Carbon type — ½ watt (R13)—Package of 5.....	6619	Tone control with mounting nut (R20).....
3459	Capacitor—80 mmfd. (C10).....	6620	Capacitor—Comprising one .005 and one .035 mfd. (C28, C36).....
3514	Resistor—250,000 ohms—Carbon type—½ watt (R17)—Package of 5.....	6851	Scale—Dial scale and drive assembly.....
3572	Socket—Radiotron 7-contact socket.....	6853	Escutcheon—Station selector escutcheon.....
3584	Ring—R. F. or oscillator coil retaining ring—Package of 5.....	7485	Socket—Radiotron 6-contact socket.....
3594	Resistor—50,000 ohms—Carbon type—½ watt (R14, R18)—Package of 5.....	7590	Capacitor—10.0 mfd. (C29).....
3597	Capacitor—0.25 mfd. (C27).....	9005	Transformer—Power transformer—105-125 volts, 50-60 cycles (T1).....
3598	Capacitor—0.1 mfd.—R. F. and I. F. by-pass (C5).....	9006	Transformer—Power transformer—200-250 volts, 50-60 cycles.....
3616	Capacitor—300 mmfd. (C20).....	9024	Transformer—Power transformer—105-125 volts, 25-50 cycles.....
3623	Shield—Antenna or R. F. coil shield.....	REPRODUCER ASSEMBLIES	
3626	Shield—Oscillator coil shield.....	6476	Transformer—Output transformer (T2).....
3630	Resistor — 10,000 ohms — Carbon type — 3 watt (R2, R4).....	6852	Cable—3-conductor reproducer cable.....
3632	Resistor — 500 ohms — Carbon type — 1 watt (R19)—Package of 5.....	9032	Coil assembly—Comprising coil, magnet and cone support (L12).....
3633	Capacitor—400 mmfd. (C23).....	9428	Cone—Reproducer cone (L11)—Package of 5.....
3634	Capacitor—160 mmfd. (C21).....	9440	Reproducer complete.....
3639	Capacitor—0.02 mfd. (C25).....		

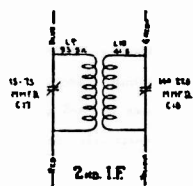
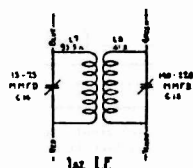
MODELS R51B & R53B

10-Tube Battery-Operated Superheterodyne Receivers

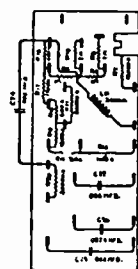
Total "A" Battery Current.....0.6 Ampere
 Average "B" Battery Current.....18 M. A.
 Type and Number of Radiotrons.....7 RCA-230, 3 RCA-234—Total, 10
 Undistorted Output.....1.6 Watts



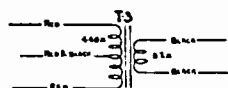
-Schematic Circuit



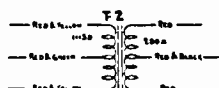
INTERNAL CONNECTIONS
 OF 1st & 2nd I.F.
 TRANSFORMERS



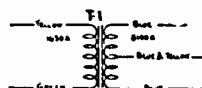
RESISTOR BOARD CONN.



INTERNAL CONNECTIONS
 OF OUTPUT TRANSFORMER



INTERNAL CONNECTIONS
 OF DRIVER TRANSFORMER



INTERNAL CONNECTIONS
 OF INTERSTAGE TRANSFORMER

R51B & R53B

Alignment Procedure

With tuning condenser fully meshed, set dial so that end calibration coincides with pointer.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with .01 mfd	175 kc	Quiet Point near 600 kc	S & P of 2nd I-F Trans.
2	1st Det. Grid in series with .01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 kc	1400 kc	Osc., Det. and R-F Trimmers and gang condenser
4		600 kc	600 kc	600 kc Oscillator Trimmer (Rock Gang)
5		Repeat Step 3		

RADIOTRON SOCKET VOLTAGES

New "A" and "B" Batteries—No Signal Received

Radiotron No.	Control Grid to Filament Volts	Screen Grid to Filament Volts	Plate to Filament Volts	Plate Current M. A.	Filament Volts
R. F.—RCA-234	2.0	65.0	157.5	3.0	2.15
Oscillator—RCA-230	—	—	65.0	4.0	2.15
First Detector—RCA-234	5.0	65.0	157.5	1.0	2.15
I. F.—RCA-234	2.0	65.0	157.5	3.0	2.15
Second Detector—RCA-230	0	—	-2.0	0	2.15
First A. F.—RCA-230	10.5	—	130.0	1.25	2.15
Driver A. F.—RCA-230	13.5	—	150.0	1.5	2.15
Driver A. F.—RCA-230	13.5	—	150.0	1.5	2.15
Power—RCA-230	13.5	—	150.0	1.5	2.15
Power—RCA-230	13.5	—	150.0	1.5	2.15

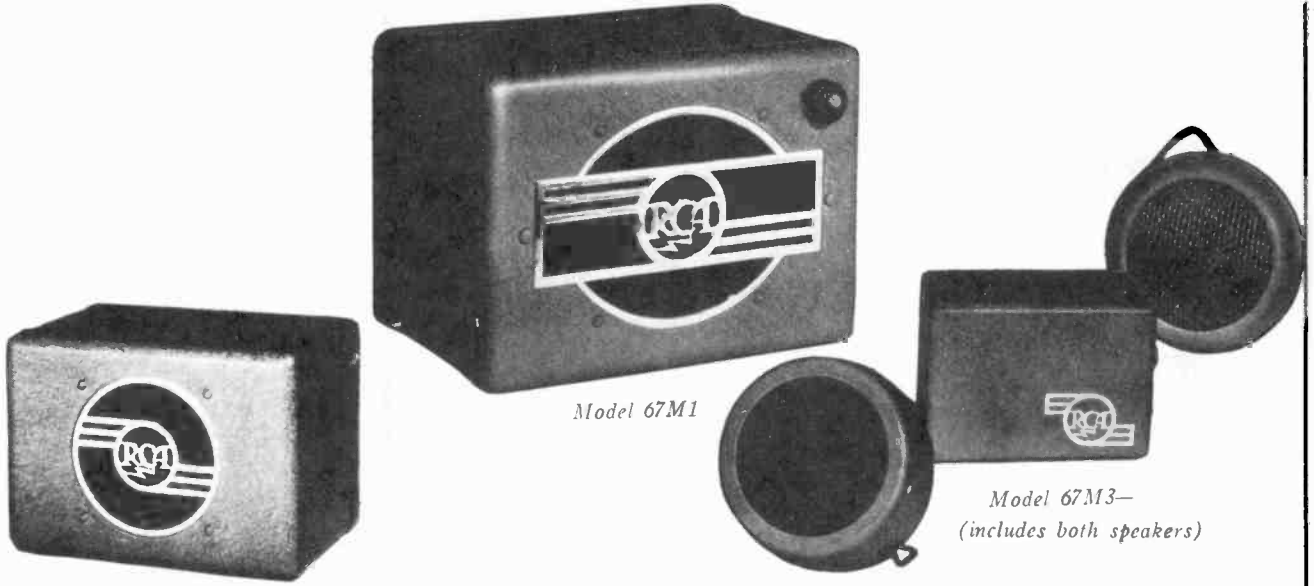
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.....		6176	Escutcheon—Operating switch escutcheon—Package of 5.....	
3003	Cushion—Sponge rubber chassis support cushion—Package of 4.....		6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6192	Spring—3 gang tuning condenser drive cord tension spring—Package of 10.....	
3088	Knob—Operating switch knob—Package of 5.....		6242	Resistor—2 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6279	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3238	Screw—Set screw for switch knob No. 3088—Package of 10.....		6281	Resistor—1,100 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	
3358	Resistor—3,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6288	Knob—Station selector, tone control or volume control knob—Package of 5.....	
3382	Resistor—250 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6298	Cord—3 gang tuning condenser drive cord—Package of 5.....	
3449	Coil—Choke coil located on resistor board.....		6300	Socket—UX Radiotron socket.....	
3472	Capacitor—0.0024 mfd.....		6320	Capacitor—670 mfd.—Located on detector oscillator coil—Package of 5.....	
3556	Capacitor—0.05 mfd.—Located on antenna coil.....		6323	Shaft—Tuning condenser drive shaft with one flat washer and two "C" washers—Package of 2.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6332	Switch—Operating switch.....	
3616	Capacitor—300 mfd.....		6449	Tone control complete with mounting nut.....	
3634	Capacitor—160 mfd.....		6512	Capacitor—0.005 mfd.....	
3640	Capacitor—0.05 mfd.....		6516	Connector—Fuse connector.....	
3643	Capacitor—0.005 mfd.....		6522	Shield—Radiotron shield.....	
3702	Capacitor—0.25 mfd.....		6523	Transformer—Audio transformer assembly comprising driver transformer and interstage transformer.....	
3703	Resistor—1,700 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6524	Transformer—First intermediate frequency transformer.....	
3704	Resistor—400 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6525	Transformer—Second intermediate frequency transformer.....	
3706	Resistor—1,800 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6526	Transformer—Output transformer.....	
3797	Volume control—Complete with mounting nut.....		6533	Condenser—3 gang variable tuning condenser.....	
3708	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6544	Coil—Antenna coil assembly.....	
3743	Resistor—0.5 ohm—Flexible type—Package of 5.....		6545	Coil—Detector oscillator coil.....	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		6546	Scale—Dial and dial scale.....	
3748	Fuse— $\frac{1}{4}$ ampere—Package of 5.....		6548	Capacitor—8.0 mfd. capacitor.....	
3749	Capacitor—0.1 mfd.....		6549	Cable—Battery connecting cable.....	
6114	Resistor—20,000 ohms—Carbon type—1 watt—Package of 5.....		6604	Capacitor—0.5 mfd.....	
6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5.....		7062	Capacitor—Adjustable trimming capacitor 15 to 70 mmfd.....	
			7439	Drum—Dial drum with set screws and 3 dial mounting nuts.....	
			7523	Escutcheon—Station selector escutcheon.....	
REPRODUCER ASSEMBLIES					
			8920	Ring—Cone retaining ring.....	
			9431	Bracket—Cone bracket and magnet assembly.....	
			9432	Cone—Reproducer cone complete with voice coil.....	

MODELS 67M, 67M1, 67M2 & 67M3

Six-Tube, Superheterodyne Automobile Receivers

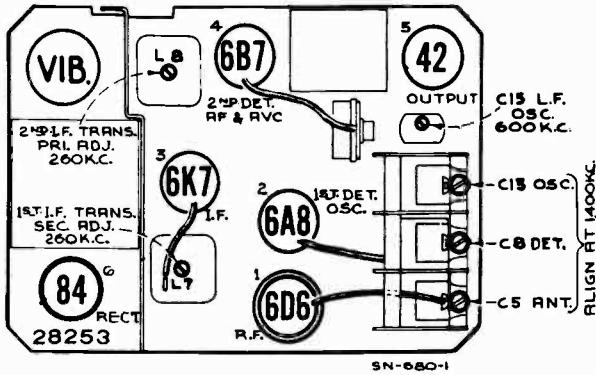


Model 67M

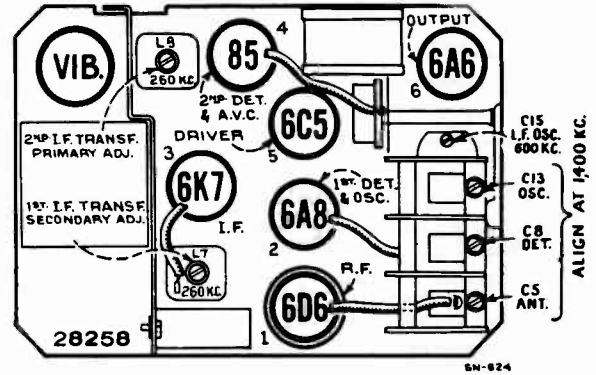
Model 67M1

Model 67M3—
(includes both speakers)

Model 67M2— (includes dash [right] speaker only)



Radiotron and Trimmer Locations (Model 67M)



Radiotron and Trimmer Locations
(Models 67M1, 67M2, and 67M3)

Electrical Specifications

MODEL 67M

RADIOTRON COMPLEMENT

- (1) RCA-6D6 R-F Amplifier
- (2) RCA-6A8 First Detector—Oscillator
- (3) RCA-6K7 I-F Amplifier
- (4) RCA-6B7 Second Det., A-F Amp., and A.V.C.
- (5) RCA-42 Power Output
- (6) RCA-84 Full-Wave Rectifier

MODELS 67M1, 67M2 and 67M3

- (1) RCA-6D6 R-F Amplifier
- (2) RCA-6A8 First Detector—Oscillator
- (3) RCA-6K7 I-F Amplifier
- (4) RCA-85 Second Det., A-F Amp., and A.V.C.
- (5) RCA-6C5 Audib Driver
- (6) RCA-6A6 Push-Pull Power Output

Tuning Range (all models) 540 to 1,600 kc

POWER-OUTPUT RATINGS

Maximum 3½ Watts 9 Watts
Undistorted 2¼ Watts 6 Watts

LOUDSPEAKER

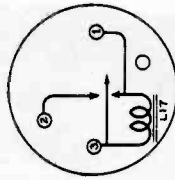
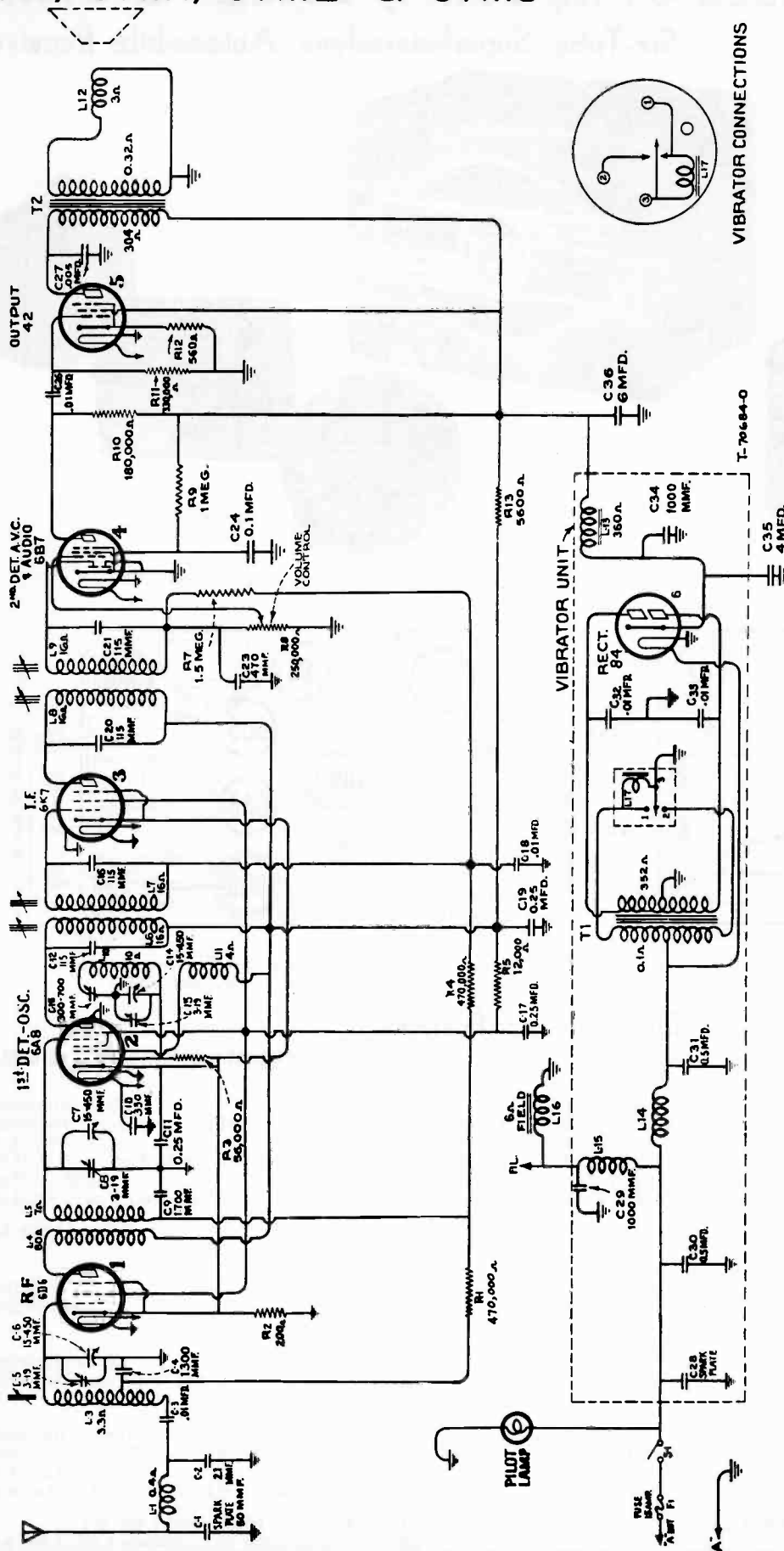
Type (all models) Electrodynamic
Voice-Coil Impedance (all models) ¾ Ohms at 400 Cycles

POWER-SUPPLY RATINGS

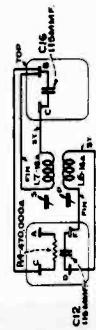
Supply Voltage (all models) 6.3 Volts (Storage Battery)
Current Drain 67M, 7.1 Amperes; 67M1, 7.5 Amperes; 67M2, 7.5 Amperes; 67M3, 9 Amperes
Fuse Protection (all models) 15 Amperes
Pilot Lamp (all models) Mazda No. 44, 6.3 Volts, 0.25 Ampere

Alignment Frequencies (all models) I. F., 260 kc; Oscillator Coil, 600 kc and 1,400 kc;
Detector Coil, 1,400 kc; Antenna Coil, 1,400 kc

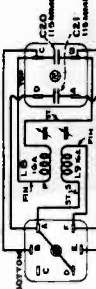
67M, 67M1, 67M2 & 67M3



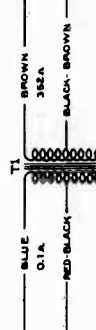
VIBRATOR CONNECTIONS



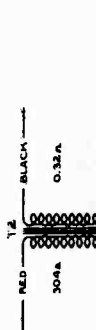
1st I.F. TRANS. CONNECTIONS



2nd I.F. TRANS. CONNECTIONS



VIBRATOR TRANSFORMER



OUTPUT TRANSFORMER

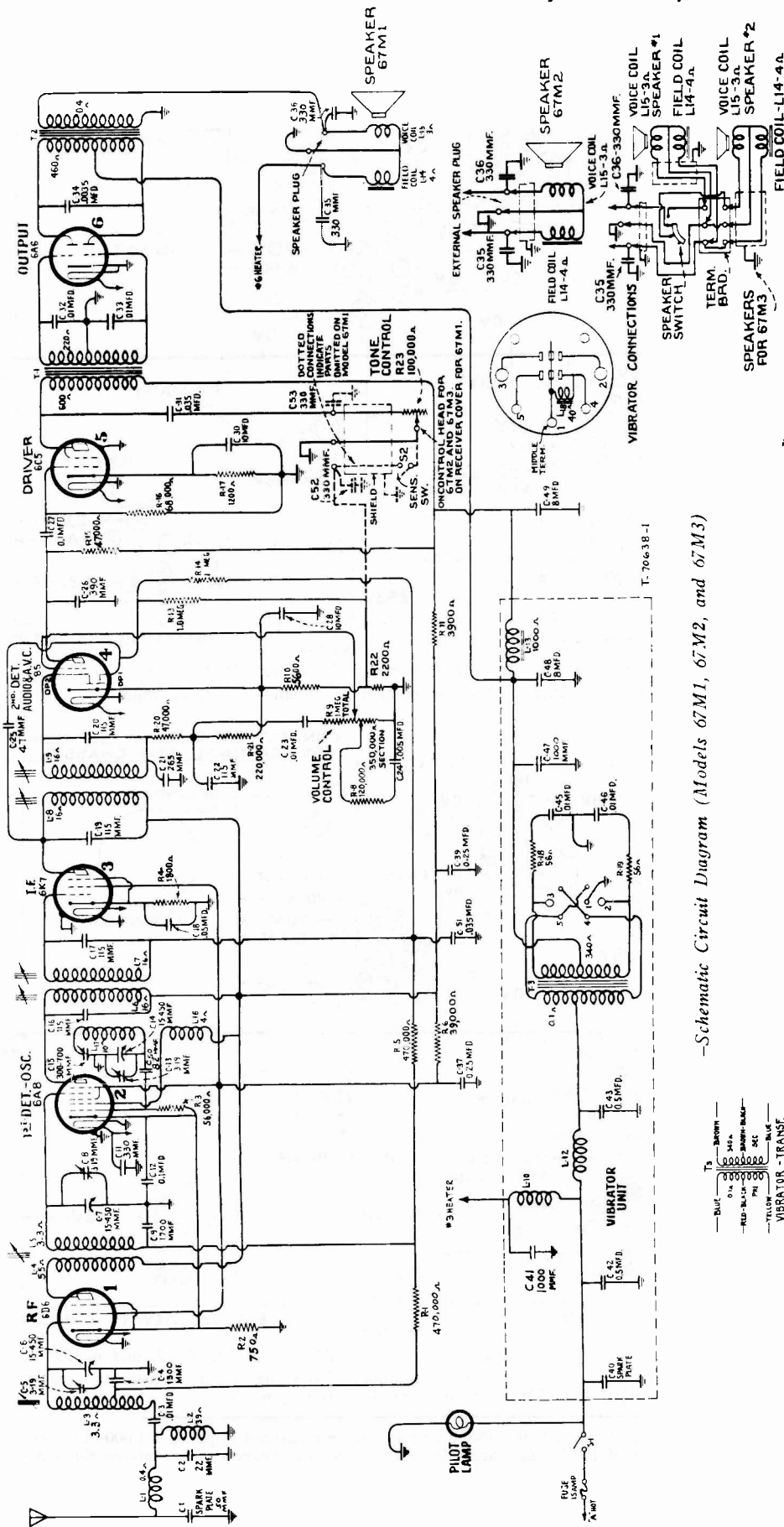


CAP. PACK CONNECTIONS

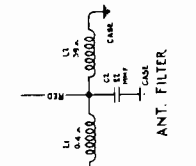
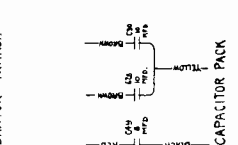
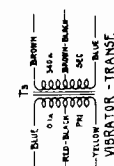
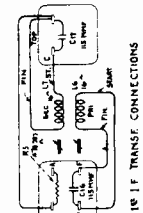
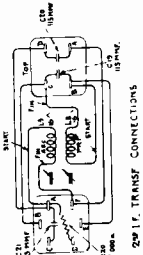
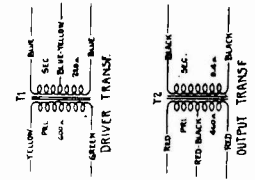
Schematic Circuit Diagram (Model 67M)

Noise pickup or mushy reception on demonstration or test antennas in the vicinity of a-c circuits may be eliminated by connecting a 5 millihenry r-f choke (Stock No. 12177) between the antenna connector and receiver case. This may be either inside or outside the receiver case.

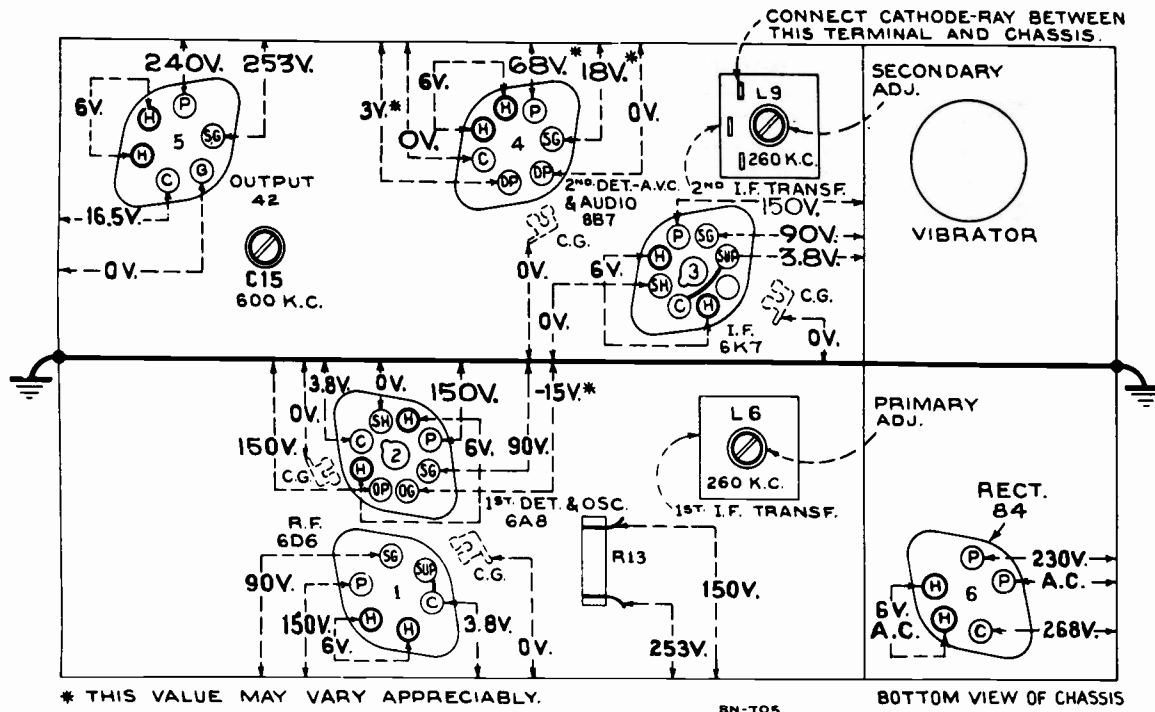
67M, 67M1, 67M2 & 67M3



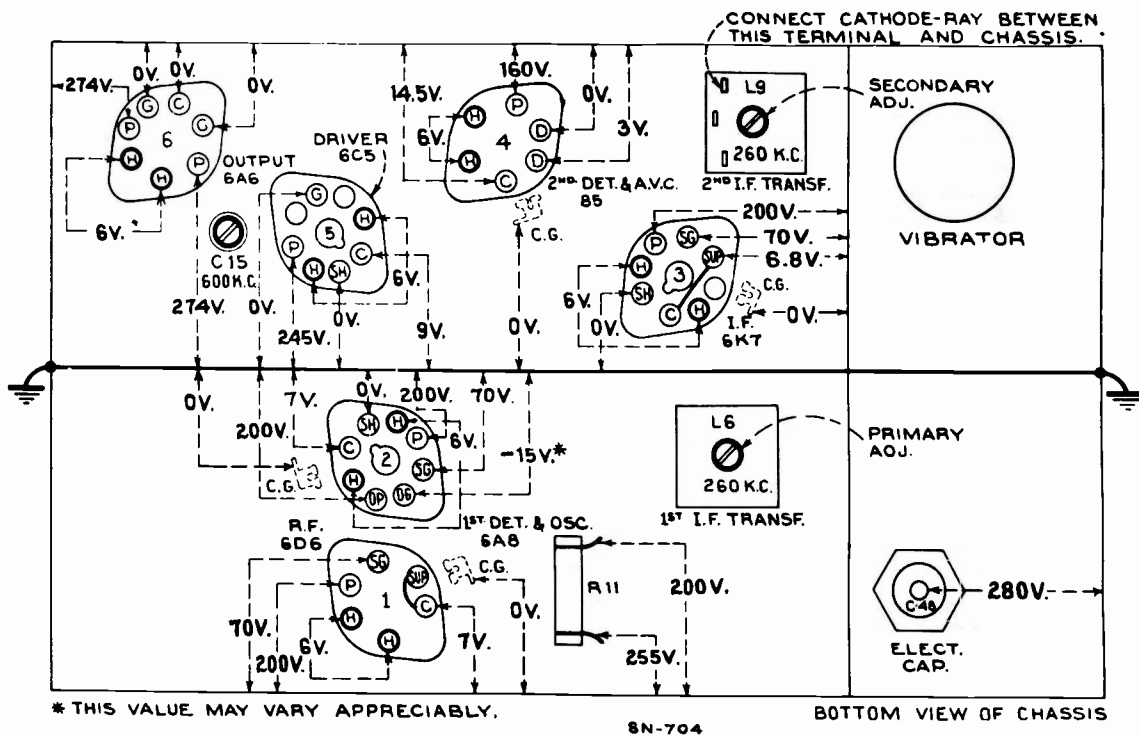
-Schematic Circuit Diagram (Models 67M1, 67M2, and 67M3)



67M, 67M1, 67M2 & 67M3



-Radiotron Socket Voltages and Trimmer Locations (Model 67M)
(Measured at 6.3 volts battery supply—Volume control minimum—No signal input.)

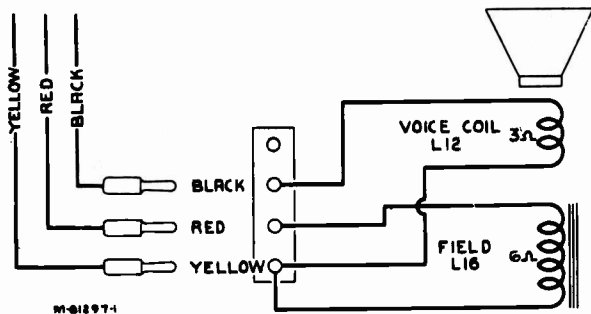


-Radiotron Socket Voltages and Trimmer Locations (Models 67M1, 67M2, and 67M3)
(Measured at 6.3 volts battery supply—Volume control minimum—No signal input—Sensitivity control (Models 67M2 and 67M3) at minimum sensitivity position.)

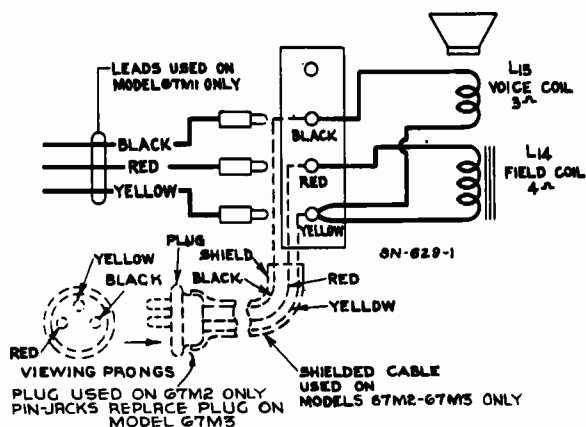
To duplicate the conditions under which the above voltages were measured requires a 1,000-ohm-per-volt a-c/d-c meter having ranges of 10, 50, 250, and 500 volts. Use the nearest range above the indicated voltage value. Each value should hold within $\pm 20\%$ when the receiver is normally operative at rated battery voltage.

67M, 67M1, 67M2 & 67M3

NOTE: When installing these receivers in automobiles having high-capacity (400 mmfd. or greater) antennas, the .01 mfd. antenna-coupling capacitor C-3 should be replaced by a 470 mmfd. capacitor, Stock No. 14082. The 1936 models of Chrysler, DeSoto, and Dodge are examples of cars with such antennas.



Loudspeaker Schematic and Wiring (Model 67M)



Loudspeaker Schematic and Wiring (Models 67M1, 67M2, and 67M3)

ALIGNMENT PROCEDURE

With tuning condenser fully meshed turn pointer adjusting screw so that pointer coincides with end calibration (below 55) on dial scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	260 kc	Quiet point near 800 kc	L9 L8 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L7 L6 1st L-F Trans.
3	Antenna in series with 175 mmfd. (See Note)	1400 kc	1400 kc	C13 C8 C5 Osc. Det. Ant.
4		800 kc	800 kc	C15 L-F Osc. Rock Gang
5	Repeat Step 3			

NOTE :

If capacitor C-3, in the receiver, has been changed to 470 mmfd., use a "dummy antenna" of .001 mfd. instead of 175 mmfd. for r-f alignment.

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES MODEL 67M ONLY			
13543	Bracket—Chassis mounting bracket and stud assembly	12006	Core—Adjustable core and stud for Stock Nos. 13419 and 13693
12118	Cap—grid contact cap for glass tubes—Package of 5	12168	Coupling—Station selector flexible shaft coupling
12511	Cap—Grid contact cap for metal tubes—Package of 5	13691	Filter—Antenna filter (L1)
13689	Capacitor—Adjustable capacitor (C15)	13372	Gear—Large gear located on tuning condenser shaft
13700	Capacitor—22 mfd. (C2)	13373	Gear—Worm gear for tuning condenser
11998	Capacitor—115 Mmfd. (C15, C16, C20, C21)	13694	Guide—Volume control shaft guide
13432	Capacitor—330 Mmfd. (C10)	12455	Pin—Contact pin for speaker leads—Package of 5
13699	Capacitor—470 Mmfd. (C23)	13696	Reactor—Filter reactor, iron core (L13)
12762	Capacitor—1,000 Mmfd. (C29, C34)	13697	Resistor—200 ohms, insulated, ¼ watt—Package of 5 (R2)
13701	Capacitor—1,300 Mmfd. (C4)	11845	Resistor—560 ohms, carbon type, 1 watt—Package of 5 (R12)
13702	Capacitor—1,700 Mmfd. (C9)	8097	Resistor—5,600 ohms, carbon type, 2 watts (R13)
4838	Capacitor—.005 Mfd. (C27)	3066	Resistor—12,000 ohms, carbon type, 1 watt—Package of 5 (R5)
4858	Capacitor—.01 Mfd. (C3, C18, C26)	12286	Resistor—56,000 ohms, insulated, ¼ watt—Package of 5 (R3)
4839	Capacitor—.01 Mfd. (C24)	13698	Resistor—180,000 ohms, insulated, ¼ watt—Package of 5 (R10)
5019	Capacitor—.05 Mfd. (C31)	12452	Resistor—330,000 ohms, insulated, ¼ watt—Package of 5 (R11)
4840	Capacitor—.05 Mfd. (C11, C17)	12285	Resistor—470,000 ohms, insulated, ¼ watt—Package of 5 (R1)
12484	Capacitor—.05 Mfd. (C19)	11452	Resistor—470,000 ohms, carbon type, 1/10 watt—Package of 5 (R4)
13687	Capacitor—Pack, comprising one 4 Mfd. and one 6 Mfd. sections (C35, C36)	12300	Resistor—1 megohm, insulated, ¼ watt—Package of 5 (R9)
13695	Capacitor—Pack, comprising 2 sections each .01 Mfd. (C32, C33)		
13685	Coll—Antenna coil and shield (L3)		
12235	Coll—Choke coil (L14)		
12225	Coll—Oscillator coil lens shield (L10, L11)		
13684	Coll—R. F. coil lens shield (L4, L5)		
13371	Condenser—3-gang variable tuning condenser (C5, C6, C7, C8, C13, C14)		

67M, 67M1, 67M2 & 67M3

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
12287	Resistor—1.5 megohms, insulated, ¼ watt—Package of 5 (R7)	13714	Resistor—5,600 ohms, insulated, ¼ watt—Package of 5 (R10)
5129	Ring—Radiotron shield ring—Package of 5	5178	Resistor—39,000 ohms, carbon type, 1 watt (R6)
3584	Ring—Retaining ring for R. F. or oscillator coil—Package of 5	5182	Resistor—47,000 ohms, carbon type, 1/10 watt—Package of 5 (R20)
3623	Shield—R. F. or oscillator coil shield	12412	Resistor—47,000 ohms, insulated, ¼ watt—Package of 5 (R15)
12218	Shield—Radiotron shield	12286	Resistor—56,000 ohms, insulated, ¼ watt—Package of 5 (R3)
12008	Shield—Transformer shield for Stock Nos. 13419 and 13493	13715	Resistor—68,000 ohms, insulated, ¼ watt—Package of 5 (R16)
4814	Socket—5-contact 84 Radiotron socket	12355	Resistor—120,000 ohms, carbon type, 1/10 watt—Package of 5 (R8)
4786	Socket—6-contact 6D6 or 42 Radiotron socket	12264	Resistor—220,000 ohms, insulated, ¼ watt—Package of 5 (R21)
4787	Socket—7-contact 6B7 Radiotron socket	11452	Resistor—470,000 ohms, carbon type, 1/10 watt—Package of 5 (R5)
12227	Socket—8-contact 6A8 or 6K7 Radiotron socket	12285	Resistor—470,000 ohms, insulated, ¼ watt—Package of 5 (R1)
13686	Socket—Vibrator socket	12200	Resistor—1 megohm, insulated, ¼ watt—Package of 5 (R13, R14)
12007	Spring—Retaining spring for core, Stock No. 12006—Package of 10	5129	Ring—Radiotron shield ring—Package of 5
13419	Transformer—First I. F. transformer (L6, L7, C15, C16, R4)	3584	Ring—Retaining ring for oscillator coil—Package of 5
13693	Transformer—Second I. F. transformer (L8, L9, C20, C21)	12008	Shield—I. F. transformer shield for Stock Nos. 12229 and 13419
13692	Transformer—Output transformer (T2)	3623	Shield—Oscillator coil shield
13690	Transformer—Vibrator transformer (T1)	12218	Shield—Radiotron shield
13688	Vibrator—Complete (L17)	4786	Socket—6-contact 6D6 or 85 Radiotron socket
13420	Volume control (R8)	12241	Socket—6-contact vibrator socket
	RECEIVER ASSEMBLIES	12243	Socket—7-contact 6A6 Radiotron socket
	MODELS 67M1, 67M2, AND 67M3 ONLY	12227	Socket—8-contact 6A8, 6C5, or 6K7 Radiotron socket
13789	Bracket—Chassis mounting bracket and stud assembly (67M2, 67M3 only)	12007	Spring—Retaining spring for core, Stock No. 12006—Package of 10
13543	Bracket—Chassis mounting bracket and stud assembly (67M1 only)	12230	Transformer—Audio transformer pack comprising driver and output transformers (T1, T2)
12118	Cap—Grid contact cap for glass tubes—Package of 5	13419	Transformer—First I. F. transformer (L6, L7, C16, C17, R5)
12511	Cap—Grid contact cap for metal tubes—Package of 5	12229	Transformer—Second I. F. transformer (L8, L9, C19, C20, C21, R20)
13689	Capacitor—Adjustable capacitor (C15)	12231	Transformer—Vibrator transformer (T3)
13141	Capacitor—47 Mmfd. (C25)	12236	Vibrator—Complete (L18)
12813	Capacitor—82 Mmfd. (C50)	13711	Volume control (R9)
13433	Capacitor—115 Mmfd. (C22)		REPRODUCER ASSEMBLIES
11998	Capacitor—115 Mmfd. (C16, C17, C19, C20)		MODEL 67M ONLY
12761	Capacitor—265 Mmfd. (C21)	13703	Cone—Reproducer cone and dust cap (L12)....
13432	Capacitor—330 Mmfd. (C11, C88, C86, C52, C53) (C52, C53 used in 67M2 and 67M3 only)	9772	Reproducer complete Note No. 1—Field coil (L16) cannot be replaced separately.
12764	Capacitor—390 Mmfd. (C26)		REPRODUCER ASSEMBLIES
12762	Capacitor—1,000 Mmfd. (C41, C47)		MODEL 67M1 ONLY
13701	Capacitor—1,300 Mmfd. (C4)	12482	Board—Reproducer terminal board
13717	Capacitor—1,700 Mmfd. (C9)	12450	Coil—Field coil (L14)
5005	Capacitor—.0035 Mfd. (C34)	12451	Cone—Reproducer cone complete (L15)
4848	Capacitor—.005 Mfd. (C24)	9687	Reproducer—Reproducer complete
5196	Capacitor—.035 Mfd. (C31, C51)		REPRODUCER ASSEMBLIES
4858	Capacitor—.01 Mfd. (C3, C23, C32, C33)		DASH SPEAKER
4836	Capacitor—.05 Mfd. (C18)		MODELS 67M2 AND 67M3 ONLY
11414	Capacitor—.01 Mfd. (C27)	13704	Cable—3-conductor shielded reproducer cable, approximately 18 inches long, complete with 3-contact male connector (67M2 only)
4841	Capacitor—.01 Mfd. (C12)	13708	Cable—3-conductor shielded reproducer cable, approximately 24 inches long, complete with 3-contact pins (67M3 only)
5019	Capacitor—.05 Mfd. (C43)	13795	Coil—Reproducer field coil (L14)
12937	Capacitor—.25 Mfd. (C39)	13796	Cone—Reproducer cone and dust cap (L15)
12484	Capacitor—.25 Mfd. (C37)	11984	Connector—3-contact male connector for reproducer cable (67M2 only)
12324	Capacitor—.8 Mfd. (C48)	13793	Housing—Reproducer housing complete, less speaker unit and cable
12238	Capacitor pack—Comprising one .8 Mfd. and two .10 Mfd. sections (C28, C30, C49)	9774	Reproducer—Speaker unit only, less case, cable and mounting parts
13695	Capacitor pack—Comprising two sections each .01 Mfd. (C45, C46)	13797	Screw—Reproducer housing screw—Package of 5
13685	Coil—Antenna coil and shield (L3)		REPRODUCER ASSEMBLIES
12235	Coil—Choke coil (L12)		HEADER SPEAKER
12225	Coil—Oscillator coil less shield (L16, L17)		MODEL 67M3 ONLY
13712	Coil—R. F. coil and shield (L4, L5)	9705	Clip—Spring clip used to hold speaker unit in baffle pan—Package of 3
13371	Condenser—3-gang variable tuning condenser (C5, C6, C7, C8, C13, C14)	9708	Cone—Reproducer cone and dust cap (L15)
13006	Core—Adjustable core and stud for Stock Nos. 12229 and 13419	9775	Reproducer—Speaker unit only, less trimmer ring, baffle pan and grille cloth, and cable
12168	Coupling—Tuning control flexible shaft coupling	9701	Ring—Trimmer ring with baffle pan and grille cloth
12239	Filter—Antenna filter (L1, L2, C2)	9706	Screw—Mounting screw used to fasten speaker unit in car—Package of 2
13372	Gear—Large drive gear for tuning condenser shaft	9709	Screen—Wire screen for speaker unit
13373	Gear—Worm gear and mounting bracket for tuning condenser	9707	Nut—Wing nut used to fasten speaker unit in car—Package of 2
13694	Guide—Volume control flexible shaft guide		
12483	Pin—Contact pin for speaker leads—Package of 5 (67M1 only)		
12485	Pin—Contact pin for tone control lead—Package of 5 (67M1 only)		
13111	Reactor—Filter reactor (L13)		
5034	Resistor—56 ohms, carbon type, ¼ watt—Package of 5 (R18, R19)		
13713	Resistor—750 ohms, insulated, ¼ watt—Package of 5 (R2)		
12267	Resistor—1,200 ohms, insulated, ¼ watt—Package of 5 (R17)		
12194	Resistor—1,800 ohms, insulated, ¼ watt—Package of 5 (R4)		
13716	Resistor—2,200 ohms, insulated, ¼ watt—Package of 5 (R22)		
13229	Resistor—3,900 ohms, carbon type, 2 watts (R11)		

67M, 67M1, 67M2 & 67M3

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
	CONTROL BOX AND FLEXIBLE SHAFT ASSEMBLIES		
	MODELS 67M AND 67M1 ONLY		
13719	Box—Control box, tuning section only, less knob, flexible shaft and dial scale	4291	Clip—"A" lead ammeter clip—Package of 10 ..
13720	Box—Control box, volume control shaft and switch section only, less knob and flexible shaft	13710	Connector—Antenna lead connector assembly located on receiver housing
13718	Dial—Station selector dial	13705	Cover—Receiver housing top cover, less speaker grille (67M only)
11765	Lamp—Control box dial lamp—Package of 5 ..	13723	Cover—Receiver housing top cover, less speaker grille (67M1 only)
13925	Shaft—Tuning control flexible shaft, approximately 24½ inches long	13802	Cover—Receiver housing top cover (67M2 and 67M3 only)
13926	Shaft—Volume control flexible shaft, approximately 24¾ inches long	13706	Cover—Receiver housing bottom cover (67M and 67M1 only)
	Note No. 1—Knobs, escutcheon, and mounting parts are included in kits to be supplied by dealer for particular car in which installation is to be made.	13803	Cover—Receiver housing bottom cover (67M2 and 67M3 only)
	Note No. 2—If complete control box only is required, order one each of Stock No. 13719 and Stock No. 13720.	13808	Escutcheon—Speaker switch escutcheon for Model 67M3 only
	CONTROL BOX AND FLEXIBLE SHAFT ASSEMBLIES	13707	Fastener—Receiver housing top cover fastener—Package of 10
	MODELS 67M2 AND 67M3 ONLY	4286	Ferrule—Ferrule and bushing for "A" lead connector—Package of 10
13790	Box—Control box, tuning and sensitivity switch section only, less tuning control knob and dial scale	5023	Fuse—"A" lead fuse, 15 amp.—Package of 5 ..
13791	Box—Control box, volume control, tone control and operating switch section, less volume control knob	13709	Grille—Speaker grille assembly (67M only)
13792	Cable—3-conductor shielded sensitivity and tone control cable, approximately 26 inches long, complete with 4-contact male connector	13725	Grille—Speaker grille less screen (67M1 only) ..
13718	Dial—Station selector dial scale	13704	Housing—Receiver housing complete less speaker grille (67M only)
11765	Lamp—Dial lamp—Package of 5	13722	Housing—Receiver housing complete less speaker grille (67M1 only)
13925	Shaft—Tuning control flexible shaft, approximately 24½ inches long	13801	Housing—Receiver housing complete (67M2 and 67M3 only)
13926	Shaft—Volume control flexible shaft, approximately 24¾ inches long	4290	Insulator—Fuse connector insulating sleeve—Package of 10
	Note No. 1—Knobs, escutcheons, and mounting parts are included in kits to be supplied by dealer for particular car in which installation is to be made.	13727	Knob—Tone control knob—Package of 5 (67M1 only)
	Note No. 2—If complete control box only is required, order one each of Stock Nos. 13790 and 13791.	4325	Knob—Speaker switch knob for Model 67M3 only—Package of 5
	MISCELLANEOUS ASSEMBLIES	12445	Lead—"A" lead (set end), approximately 8 inches long, complete with section of connector
	ALL MODELS	7766	Lead—"A" lead (ammeter end) complete with female section of fuse connector and ammeter clip
4280	Body—"A" lead fuse connector female body—Package of 10	13721	Plate—Receiver nameplate and mounting screws (67M1 only)
13724	Button—Plug button to cover external speaker socket in receiver housing (67M1 only)	13805	Plate—RCA monogram for receiver housing (67M2 and 67M3 only)
13708	Cable—Shielded antenna lead-in, approximately 36 inches long, complete with 2 male connectors	13806	Ring—Rubber ring for dash speaker mounting (67M2 and 67M3 only)
13809	Cable—3-conductor shielded speaker switch cable, approximately 22 inches long, complete with 3-contact male connector (for Model 67M3 only)	13726	Screen—Speaker grille cloth and screen (67M1 only)
13810	Cable—3-conductor shielded reproducer cable, approximately 90 inches long, complete with contact pins, for header speaker in Model 67M3 only	12252	Screw—No. 8 self-tapping, hex head screw, used on receiver housing—Package of 10
4288	Cap—Male connector cap for "A" lead—Package of 10	12447	Screw—Speaker mounting screw assembly, comprising one screw, one lockwasher, and one nut—Package of 4 (67M only)
4293	Capacitor—Ammeter capacitor	12248	Socket—3-contact socket and bracket assembly for external speaker (67M1 only)
5025	Capacitor—Generator capacitor	12502	Socket—Pin-type socket and bracket for tone control lead (67M1 only)
13109	Capacitor—0.5 Mfd. (C42 for 67M1, 67M2, 67M3 only) (C30 for 67M only)	13804	Socket—Socket and bracket assembly, comprising one 3-contact socket for reproducer cable and one 4-contact socket for tone and sensitivity cable, both mounted on supporting bracket (67M2 and 67M3 only)
		4284	Spring—Tension spring for "A" lead connector—Package of 10
		12448	Stud—Receiver mounting stud assembly, comprising one stud, one washer, one lockwasher, one nut
		12254	Stud—Dash speaker mounting stud assembly, comprising one stud, one spacer, two lockwashers and one nut (67M2 and 67M3 only) ..
		5024	Suppressor—Distributor suppressor
		13807	Switch—Dash mounting speaker switch and bracket assembly, less knob and cable (67M3 only)
		12249	Tone control (R23) (67M1 only)
		4285	Washer—Insulating washer for "A" lead connector—Package of 10

ADDITIONAL REPLACEMENT PARTS - MODELS 67M, 67M1, 67M2, and 67M3

14619 Knob—Metal wing knob (Models 67M2 and 67M3 only)
 14763 Pointer—Dial pointer disc (all models)

MODELS R71 & R72

Eight-Tube, A-C, Superheterodyne Receivers

ELECTRICAL SPECIFICATIONS

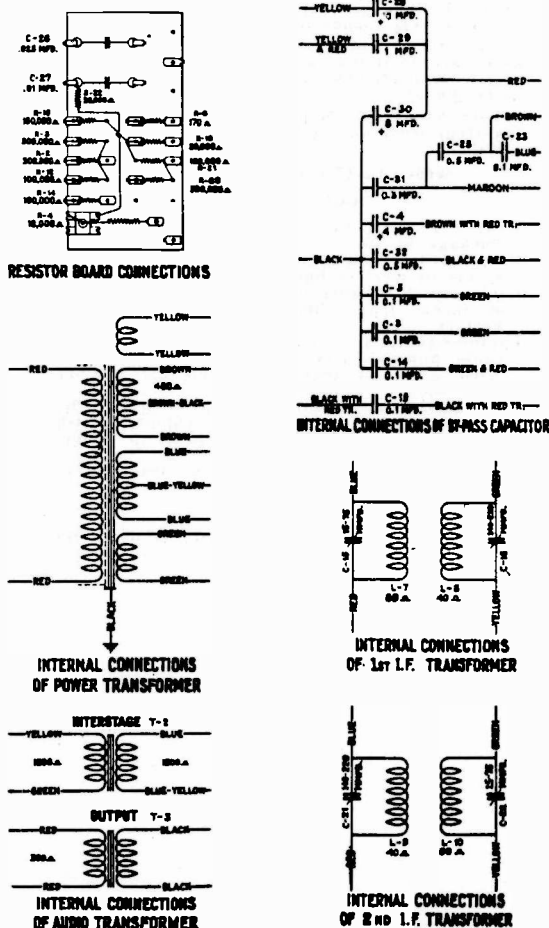
Voltage Rating.....	105-125 Volts
Power Consumption.....	25-40 Cycles, 90 Watts; 50-60 Cycles, 80 Watts
Type of Circuit.....	Super-Heterodyne
Type and Number of Radiotrons.....	3 RCA-58, 3 RCA-56, 1 RCA-247, and 1 UX-280—Total 8
Number of R. F. Stages.....	One
Number of I. F. Stages.....	One
Type of Second Detector.....	Power Self Biasing
Type of Tone Control.....	Variable resistance
Type of Automatic Volume Control.....	in series with condenser that tunes secondary of interstage transformer at "low" position RCA-56
Number of Audio Stages.....	controlling R. F. and I. F. stages by means of drop across resistor in plate circuit constituting bias on R. F. and I. F. stages. Manual volume control varies grid bias on A. V. C. tube One—Single Pentode
Type of Rectifier.....	Full Wave, UX-280
Undistorted Output.....	2.25 Watts

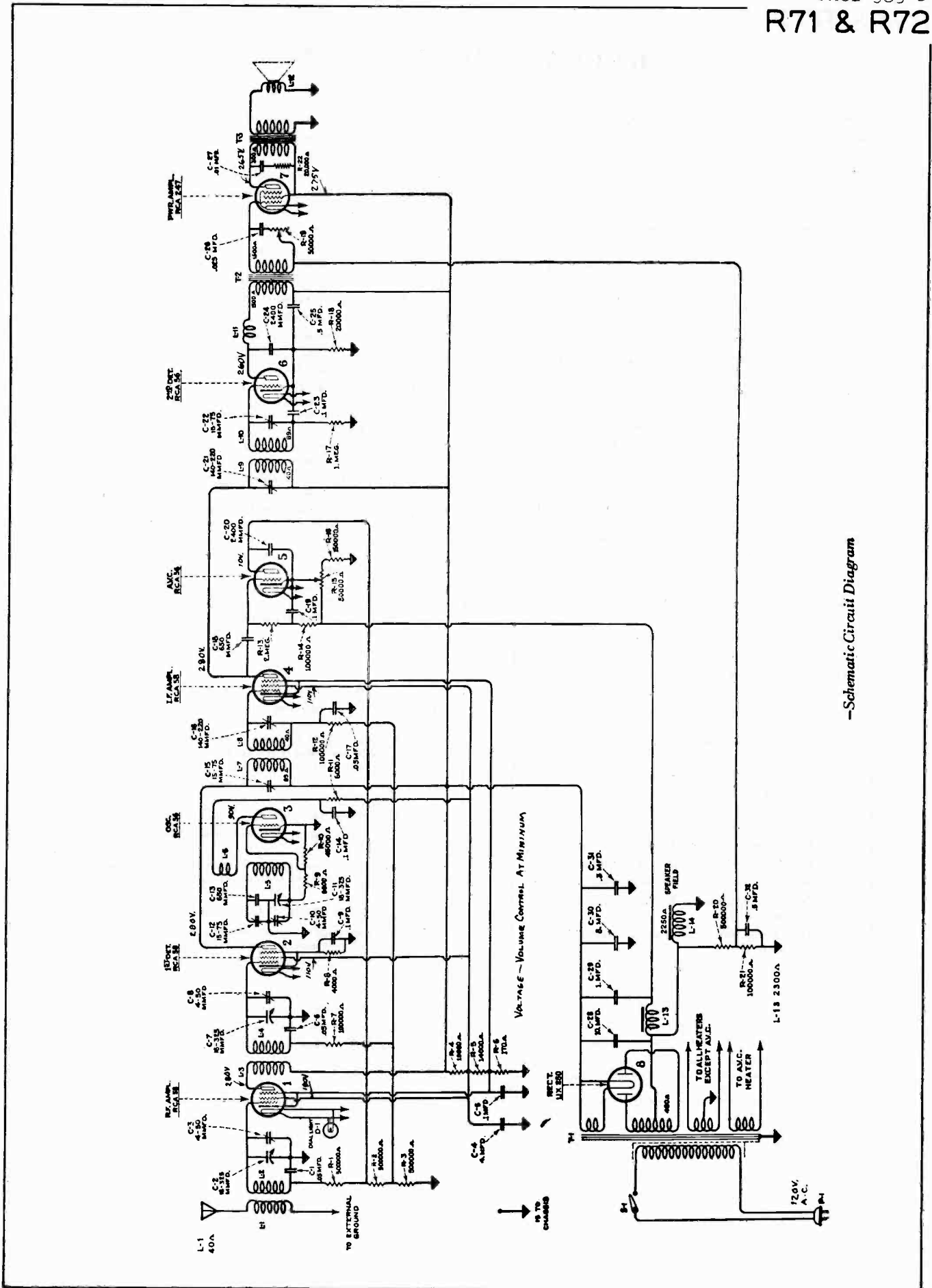
Model R-71 is a table type receiver and the R-72 is of the Console type. Except for the loud-speaker, both models are identical. The R-71 uses a six inch speaker while the R-72 uses an eight inch unit.

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 600 Kc	S & P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers
4		600 Kc	600 Kc	600 Kc Osc. Trimmer Rock Gang
5		Repeat Step 3		

NOTE: I-F Trimmers located on rear apron of chassis Osc., Det. & R-F Trimmers located on gang condenser reached from bottom of chassis; R-F—front Det.—Middle, Osc.—Rear. 600 Kc Trimmer reached from top front of chassis.





-Schematic Circuit Diagram

REPLACEMENT PARTS

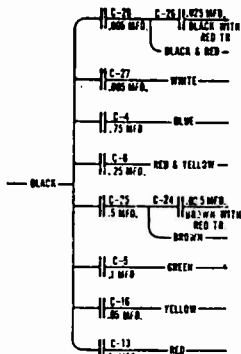
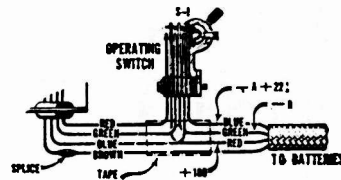
Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
2563	Resistor—6,000 ohms—Carbon type—1 watt— Package of 5	7054	Cord—Power cord
2746	Socket—Dial lamp socket	7062	Capacitor—Adjustable capacitor—15 to 70 mmfd.
2747	Cap—Grid connector cap—Package of 5	7362	Capacitor—0.025 mfd.—Located on resistor board
2749	Capacitor—2,400 mmfd.	7439	Drum—Dial drum with set screws
3003	Cushion—Sponge rubber cushion for mounting re- ceiver chassis—Package of 4	7440	Scale—Tuning dial scale
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	7441	Escutcheon—Station selector escutcheon with mounting screws
3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt— Package of 5	7484	Socket—5-contact radiotron socket—4 used
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	7485	Socket—6-prong radiotron socket—3 used
3360	Resistor—150,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	7487	Shield—Radiotron shield—6 used—Plain finish
6113	Foot—Cabinet felt foot—Package of 15	7488	Shield—Radiotron shield top—1 used—Plain finish
6142	Resistor—6,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	7501	Capacitor—3-gang variable tuning capacitor—Less drive shaft and drum
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	7502	Capacitor pack—Comprising one 10. mfd., one 1 mfd., two 0.5 mfd., one 8. mfd., five 0.1 mfd., one 0.3 mfd. and one 4. mfd. capacitors in metal con- tainer
6188	Resistor—2 megohm—Carbon type— $\frac{1}{4}$ watt— Package of 5	7504	Coil—1st detector and oscillator coil complete with mounting bracket
6192	Spring—Condenser drive cord tension spring— Package of 10	8837	Support—Receiver chassis metal mounting support —Package of 4
6250	Resistor—4,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	8917	Transformer—Audio transformer assembly compris- ing interstage and output transformer in metal container
6288	Knob—Station selector—Volume control or tone control knob—Package of 5	8918	Transformer—Power transformer—110-120 volts— 50-60 cycles
6298	Cord—Tuning condenser drive cord—Package of 5	8922	Transformer—Power transformer—110-120 volts— 25-50 cycles
6300	Socket—4-prong radiotron socket—1 used	8923	Transformer—Power transformer—220-240 volts— 50-60 cycles
6301	Reactor—Filter reactor	R-71 REPRODUCER ASSEMBLIES	
6302	Bracket—Dial lamp bracket assembly	2975	Rivet—Cone retaining ring mounting rivet—Pack- age of 100
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	3237	Screw assembly—Reproducer mounting screw assem- bly—Comprising 4 screws, 8 nuts, 4 washers and 4 eyelets—Package of 1 set
6304	Resistor—170 ohms—Carbon type— $\frac{1}{4}$ watt—Pack- age of 5	6182	Board—Terminal board with three terminals—Pack- age of 5
6306	Resistor—14,000 ohms—Carbon type—1 watt— Package of 5	8702	Ring—Cone retaining ring
6307	Tone control complete with mounting nut	8921	Cone—Reproducer cone with voice coil—Package of 5
6308	Coil—R. F. coil	9417	Coil—Reproducer field coil assembly—Comprising coil, cone housing and magnet
6309	Transformer—1st intermediate transformer	R-72 REPRODUCER ASSEMBLIES	
6310	Transformer—2nd intermediate transformer	3237	Screw assembly—Reproducer mounting screw assem- bly—Comprising 4 screws, 8 nuts, 4 washers and 4 eyelets—Package of 1 set
6311	Board—Resistor board less resistors and capacitors	6184	Board—Terminal board—3 terminals
6312	Capacitor—650 mmfd.—Oscillator series capacitor— Package of 5	8919	Cone—Reproducer cone complete with voice coil— Package of 5
6315	Resistor—45,000 ohms—Carbon type— $\frac{1}{4}$ watt— Package of 5	8920	Ring—Cone retaining ring
6317	Capacitor—0.05 mfd. capacitor	9416	Coil—Reproducer field coil—Comprising coil, cone housing and magnet
6318	Resistor—10,000 ohms—20 watt		
6319	Capacitor—0.01 mfd.—Located on resistor board		
6321	Coil—2nd detector plate choke coil		
6322	Volume control complete with mounting nut		
6323	Shaft—Tuning condenser drive shaft complete with one flat washer and two "C" washers—Package of 2		

MODEL R71B

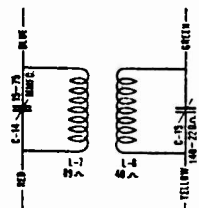
Eight-Tube, Battery-Operated, Superheterodyne Receiver

ELECTRICAL SPECIFICATIONS

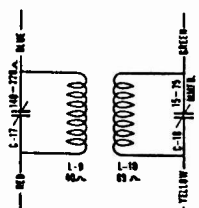
- "A" Batteries Required.....Eveready Aircell "A" Battery
- "B" Batteries Required.....Four 45 Volt Blocks, Preferably of Heavy Duty Type
- "A" Battery Current.....0.48 Amperes
- Average "B" Battery Current.....18 M. A.
- Type of Circuit.....Super-Heterodyne with A. V. C., Class "B" Output Stage and Compensated Volume Control
- Type and Number of Radiotrons.....3 RCA-234, 1 RCA-232, 4 RCA-230—Total 8
- Number of R. F. Stages.....One
- Number of I. F. Stages.....One
- Type of Second Detector.....Pentode, Combining Detector, A. V. C. and Audio Amplification
- Number of Audio Stages.....Two
- Undistorted Output.....1.00 Watt



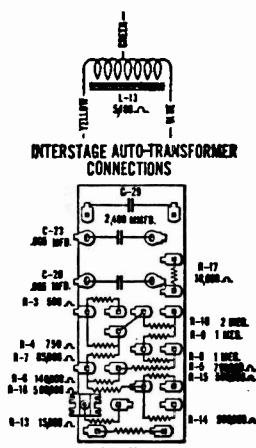
INTERNAL CONNECTIONS OF BY-PASS CAPACITOR



INTERNAL CONNECTIONS OF 1st I.F. TRANSFORMER

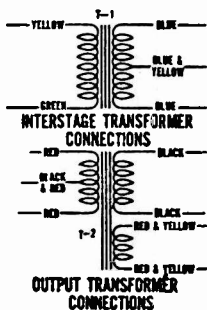


INTERNAL CONNECTIONS OF 2nd I.F. TRANSFORMER



INTERSTAGE AUTO-TRANSFORMER CONNECTIONS

RESISTOR BOARD CONNECTIONS



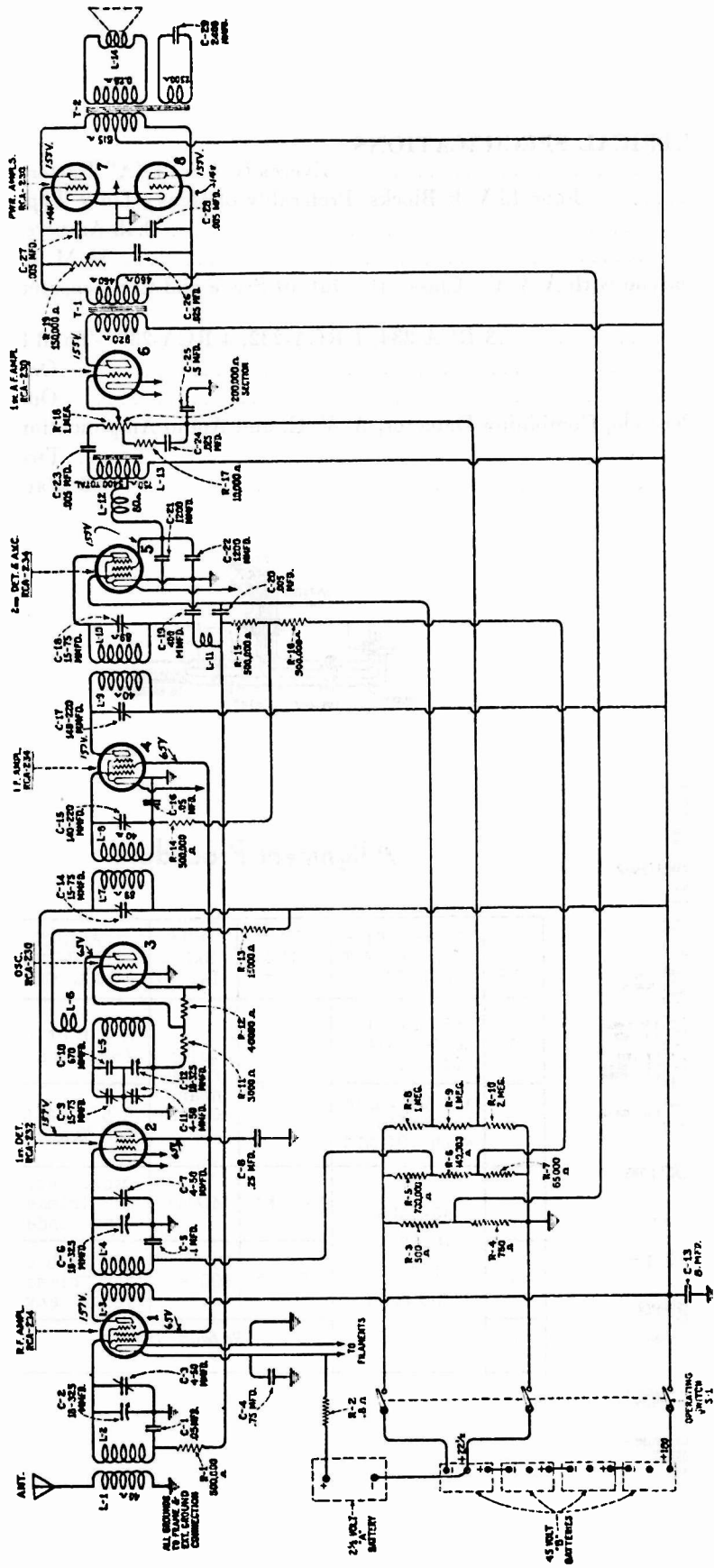
INTERSTAGE TRANSFORMER CONNECTIONS

OUTPUT TRANSFORMER CONNECTIONS

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with .01 mfd	175 kc	Quiet Point near 600 kc	S & P of 2nd I-F Trans.
2	1st Det. Grid in series with .01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 kc	1400 kc	Osc., Det. and R-F Trimmers on Gang Condenser
4		600 kc	600 kc	600 kc Oscillator Trimmer (Rock Gang)
5		Repeat Step 3		

R71B



-Schematic Wiring Diagram of R-71-B

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2012	Capacitor—1200 mmfd. capacitor		6312	Capacitor — 650 mmfd. capacitor -- Package of 5	
2747	Contact cap—Package of 5		6317	Capacitor—0.05 mfd. capacitor	
2749	Capacitor—2400 mmfd.		6323	Shaft—Tuning condenser drive shaft with one flat washer and two "C" washers—Package of 2	
2962	Capacitor—0.005 mfd. capacitor		6326	Transformer — 1st intermediate fre- quency transformer	
3003	Cushion—Sponge rubber chassis sup- port cushions—Package of 4		6327	Transformer — 2nd intermediate fre- quency transformer	
3033	Resistor—1 megohm— $\frac{1}{4}$ watt—Car- bon type—Package of 5		6328	Volume control —Complete with mount- ing nut	
3043	Resistor—0.8 ohm—Wire wound		6329	Tone control—Complete with mount- ing nut	
3085	Capacitor—400 mmfd. capacitor		6330	Scale—Tuning dial scale	
3088	Knob—Operating switch knob—Pack- age of 5		6331	Shield—Radiotron shield	
3238	Screw—Set screw for switch knob No. 3088—Package of 10		6332	Switch—Operating switch	
3252	Resistor — 100,000 ohms — $\frac{1}{2}$ watt — Carbon type—Package of 5		6333	Cable—Battery connecting cable	
3358	Resistor—3,000 ohms— $\frac{1}{2}$ watt—Car- bon type—Package of 5		7062	Capacitor—Adjustable trimming capac- itor—15 to 70 mmfd.	
3381	Resistor—10,000 ohms— $\frac{1}{4}$ watt—Car- bon type—Package of 5		7439	Drum—Dial drum with set screws	
3382	Resistor—750 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5		7501	Capacitor—3 gang variable capacitor, less drive shaft and drum	
3383	Resistor—500 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5		7524	Coil—Detector and oscillator coil com- plete with mounting bracket	
6176	Escutcheon—Operating switch escutch- eon—Engraved "OFF—ON"—Pack- age of 5		7525	Capacitor pack—Comprising one 8.0 mfd., one 0.05 mfd., one 0.1 mfd., one 0.5 mfd., one 0.25 mfd., one 0.75 mfd., two 0.005 mfd. and one 0.025 mfd. capacitors in metal container	
6186	Resistor — 500,000 ohms — $\frac{1}{4}$ watt — Carbon type—Package of 5		7526	Transformer—Audio input transformer	
6192	Spring—Condenser drive cord tension spring—Package of 10		7527	Transformer—Audio transformer pack comprising interstage and output transformers in metal container	
6241	Resistor — 140,000 ohms — $\frac{1}{4}$ watt — Carbon type—Package of 5		CABINET ASSEMBLIES		
6242	Resistor—2 megohm— $\frac{1}{4}$ watt—Car- bon type—Package of 5		(Prices furnished upon request)		
6244	Resistor — 700,000 ohms — $\frac{1}{4}$ watt — Carbon type—Package of 5		6113	Felt—Cabinet felt foot—Package of 15	
6245	Resistor — 65,000 ohms — $\frac{1}{4}$ watt — Carbon type—Package of 5		7523	Escutcheon—Station selector escutch- eon	
6279	Resistor — 15,000 ohms — $\frac{1}{2}$ watt — Carbon type—Package of 5		REPRODUCER ASSEMBLIES		
6285	Choke coil—2nd detector plate choke coil		2975	Rivet—Eyelet rivet for mounting cone —Package of 100	
6288	Knob—Station selector, volume control or tone control knob—Package of 5		6166	Board—Terminal board with two ter- minals—Package of 5	
6298	Cord—Tuning condenser drive cord— Package of 5		8702	Ring—Cone retaining ring	
6300	Socket—4 prong Radiotron socket		8828	Bracket—Cone bracket and magnet assembly	
6308	Coil—R. F. coil complete with mount- ing bracket		8921	Cone—Reproducer cone complete with voice coil—Package of 5	

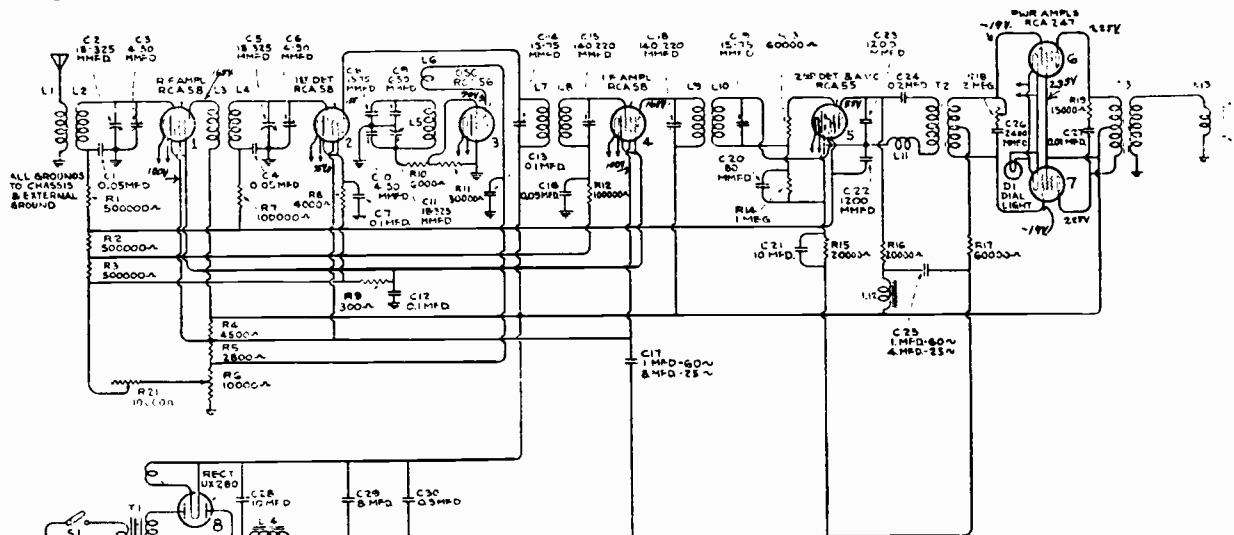
MODELS R73, R75 & RE 80

Eight-Tube, A-C, Superheterodyne Receivers and Radio-Phonograph

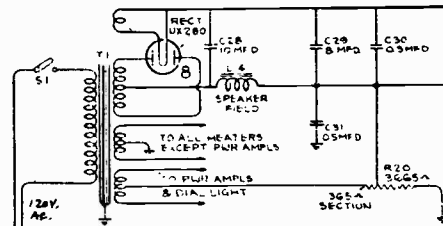
Electrical Specifications

Voltage Rating 105-125 Volts
 Power Consumption 120 Watts
 Type and Number of Radiotrons 3 RCA-58, 1 RCA-56,
 1 RCA-55, 2 RCA-247, 1 UX-280—Total, 8
 Type of Circuit Super-Heterodyne
 with A. V. C., tone control and push-pull Pentode Output
 Undistorted Output 3 Watts
 R. F. and Oscillator Alignment Frequency
 600 K. C. and 1400 K. C.
 Intermediate Frequency 175 K. C.
 Type of Magnetic Pickup
 Low Impedance with Inertia Type Tone Arm
 Type of Turntable Two Speed with Ball Race Reducer

Power consumption
 - Radio only - 100 Watts



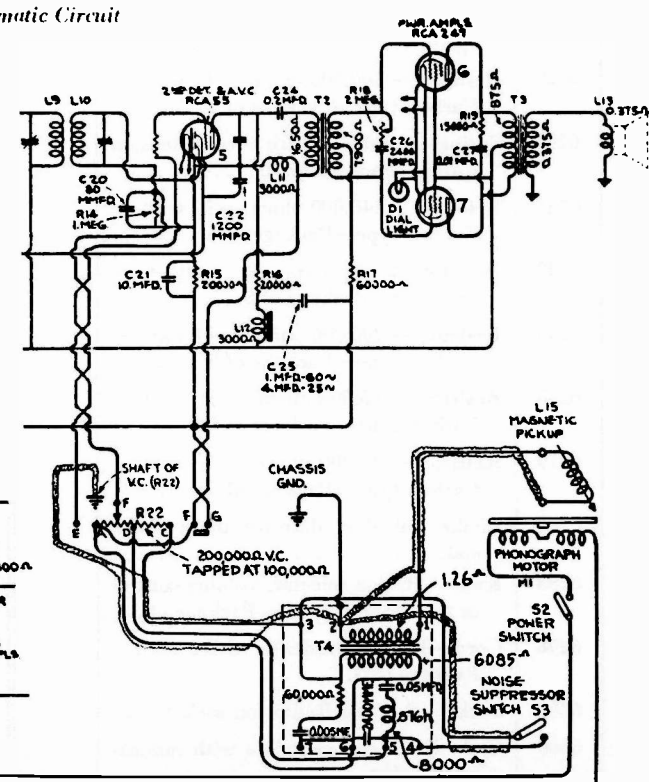
-Schematic Circuit



Note: R-73
 Noise suppressor control (R21)
 omitted.

RESISTANCE AND CAPACITOR VALUES

- C-17—25 Cycles, 8.0 Mfd.
- C-17—60 Cycles, 1.0 Mfd.
- C-25—25 Cycles, 4.0 Mfd.
- C-25—60 Cycles, 1.0 Mfd.
- L-11—3,000 Ohms
- L-12—3,000 Ohms
- Interstage Primary—1,650 Ohms
- Interstage Secondary—7,900 Ohms
- Output Primary—875 Ohms
- Output Secondary—0.375 Ohm
- Power High Voltage—
- 60 Cycles, 375 Ohms
- 25 Cycles, 590 Ohms
- Field—1,300 Ohms



Phono Wiring RE-80

R73, R75 & RE80

REPLACEMENT PARTS

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

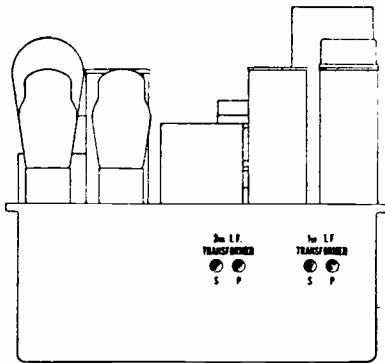
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2746	Socket—Dial lamp socket.....		3430	Box—Needle box with lid—Package of 2.....	
2747	Cap—Contact cap—Package of 5.....		10174	Springs—Automatic brake springs—One set of 4 springs— Package of 2 sets.....	
2749	Capacitor—2,400 mmfd. capacitor.....		10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....	
3003	Cushion—Sponge rubber chassis support cushions—Pack- age of 4.....		10635	Switch—Scratch filter switch—Toggle type.....	
3018	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pack- age of 5.....		PICKUP, PICKUP ARM ASSEMBLIES		
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		3385	Coil—Pickup coil.....	
3077	Resistor—30,000 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....		3386	Cover—Pickup cover.....	
3252	Resistor—100,000 ohms— $\frac{1}{2}$ watt—Carbon type—Pack- age of 5.....		3387	Screw assembly—Pickup mounting screw assembly com- prising one screw, one nut and one washer—Package of 10 sets.....	
3369	Resistor—4,500 ohms—Porcelain type—20 watt.....		3388	Screw—Pickup needle holding screw—Package of 10.....	
3449	Coil—Choke coil mounted on resistor board.....		3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....	
3450	Capacitor—0.2 mfd. mounted on resistor board.....		3390	Escutcheon—Pickup arm escutcheon complete with mount- ing rivets.....	
3451	Bracket—Dial lamp bracket and indicator—Package of 2.....		3417	Armature—Pickup armature.....	
3455	Capacitor—0.01 mfd.....		3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bush- ing—Package of 5 sets.....	
3456	Capacitor—0.05 mfd.....		3419	Screw—Pickup cover mounting screw—Package of 10.....	
3457	Resistor—Porcelain type—3,665 ohms—Tapped at 365 ohms.....		3485	Tool—Pickup spacing tool.....	
3458	Resistor—2,800 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		3516	Damper and hushing assembly—Located in bottom of pickup arm base.....	
3459	Capacitor—80 mmfd. capacitor.....		3521	Cover—Magnetic pickup back cover.....	
3460	Capacitor—1,200 mmfd. capacitor.....		6335	Pickup—Pickup unit complete.....	
3468	Resistor—300 ohms—Flexible type—Package of 5.....		6346	Back—Pickup housing back.....	
6142	Resistor—6,000 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....		7579	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut and washer.....	
6192	Spring—3-gang tuning capacitor drive cord tension spring —Package of 10.....		TURNTABLE ASSEMBLIES		
6279	Resistor—15,000 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....		3261	Bushing—Rubber bushing used on turntable spindle for long-playing Records—Package of 5.....	
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....		3338	Ring—Clamp ring assembly—Comprising spring, latch lever and stud.....	
6288	Knob—Station selector, tone control or volume control knob—Package of 5.....		3340	Washer—Thrust washer—Package of 2.....	
6298	Cord—3-gang variable tuning capacitor drive cord—Pack- age of 5.....		3341	Pin—Groove-Pin—Package of 2.....	
6300	Socket—4-contact Radiotron socket.....		3342	Spring—Latch spring—Located on clamping ring—Pack- age of 2.....	
6301	Reactor—Filter reactor.....		3343	Sleeve—Sleeve complete with ball race.....	
6303	Resistor—20,000 ohms— $\frac{1}{2}$ watt—Carbon type—Package of 5.....		3344	Cover—Grease retainer cover—Package of 2.....	
6308	Coil—R. F. coil complete with mounting bracket.....		3346	Bushing—Speed shifter lever bushing—Package of 4.....	
6323	Shaft—Tuning condenser drive shaft with one flat washer and two "C" washers—Package of 2.....		3347	Spring—Speed shifter lever spring—Package of 2.....	
6367	Transformer—First intermediate frequency transformer.....		3399	Lever—Speed shifter lever with mounting screws.....	
6368	Transformer—Second intermediate frequency transformer.....		8948	Turntable—Complete.....	
6369	Volume control or silent tuning control—Complete with mounting nut.....		MOTOR ASSEMBLIES		
6370	Tone control—Complete with mounting nut.....		3398	Motor mounting washer assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer.....	
7054	Cord—Power Cord.....		8939	Motor—Motor complete 105-125 volts—60 cycle.....	
7062	Capacitor—Adjustable trimming capacitor—Capacity 15 to 70 mmfd.....		8940	Motor—Motor complete 105-125 volts—50 cycle.....	
7065	Screw driver—Micarta screw driver for I. F., R. F. and oscillator condensers.....		8941	Motor—Motor complete 105-125 volts—25 cycle.....	
7439	Drum—Dial drum with three dial mounting nuts.....		8942	Rotor and shaft for 105-125 volts, 60 cycle motor.....	
7440	Scale—Dial and dial scale.....		8943	Rotor and shaft for 105-125 volts, 50 cycle motor.....	
7481	Coil—Detector and oscillator coil complete with mounting bracket.....		8944	Rotor and shaft for 105-125 volts, 25 cycle motor.....	
7484	Socket—UY type Radiotron socket.....		8945	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....	
7485	Socket—6-contact Radiotron socket.....		8946	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....	
7552	Capacitor—3 gang variable tuning capacitor complete with mounting screws and washers R73 ONLY		8947	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....	
7501	Capacitor—3-gang variable tuning capacitor complete with mounting screws and washers.....		REPRODUCER ASSEMBLIES		
7510	Shield—Radiotron tube shield—Maroon finish.....		3237	Screw assembly—Comprising 4 screws, 8 nuts, 4 washers, and 4 eyelets—1 set.....	
7511	Shield—Radiotron tube shield top—Maroon finish.....		6184	Board—Terminal board complete with 3 terminals—Pack- age of 5.....	
7549	Transformer—Interstage audio transformer.....		6371	Transformer—Output transformer.....	
7550	Capacitor pack—Comprising two 10.0 mfd., one 8.0 mfd., one 0.3 mfd., two 1.0 mfd., one 0.5 mfd., and three 0.1 mfd. capacitors in metal container—For 60 cycle opera- tion.....		8920	Ring—Cone retaining ring.....	
7551	Transformer—Power transformer—105-125 volts—50-60 cycles.....		8969	Cone—Reproducer cone complete with voice coil—Pack- age of 5.....	
7556	Transformer—Power transformer—105-125 volts—25-50 cycles.....		9421	Coil assembly—Comprising field coil, magnet and cone support.....	
7564	Capacitor pack—Comprising two 10.0 mfd., two 8.0 mfd., one 0.3 mfd., one 4.0 mfd., one 0.5 mfd. and three 0.1 mfd. capacitors in metal container—For 25 cycle opera- tion.....		MISCELLANEOUS PARTS		
7577	Transformer—Power transformer—220 volts —50-60 cycles R73 & R75		3437	Knob—Selector switch and volume control knob.....	
MOTOR BOARD ASSEMBLIES					
2947	Leather—Friction leather—Package of 20.....		3437	Knob—Noise suppressor rheostat knob.....	
3322	Switch—Automatic brake switch with mounting screws.....		6385	Volume control—Phonograph volume control and selector switch.....	
3391	Suspension spring and washer assembly for motor board— Comprising 1 bolt, 1 top spring, 1 bottom spring, 1 "C" washer, 2 cup washers and 1 nut—1 set.....		6386	Cable—3 conductor shielded cable—From phonograph to volume control and input transformer pack.....	
3396	Receptacle—Needle receptacle with mounting screws.....		7572	Transformer pack—Comprising input transformer, reactor, capacitors and resistor in metal container.....	
			6113	Foot—Cabinet felt foot—Package of 15.....	
			7523	Escutcheon—Station selector escutcheon.....	

MODELS R73 A & R75A

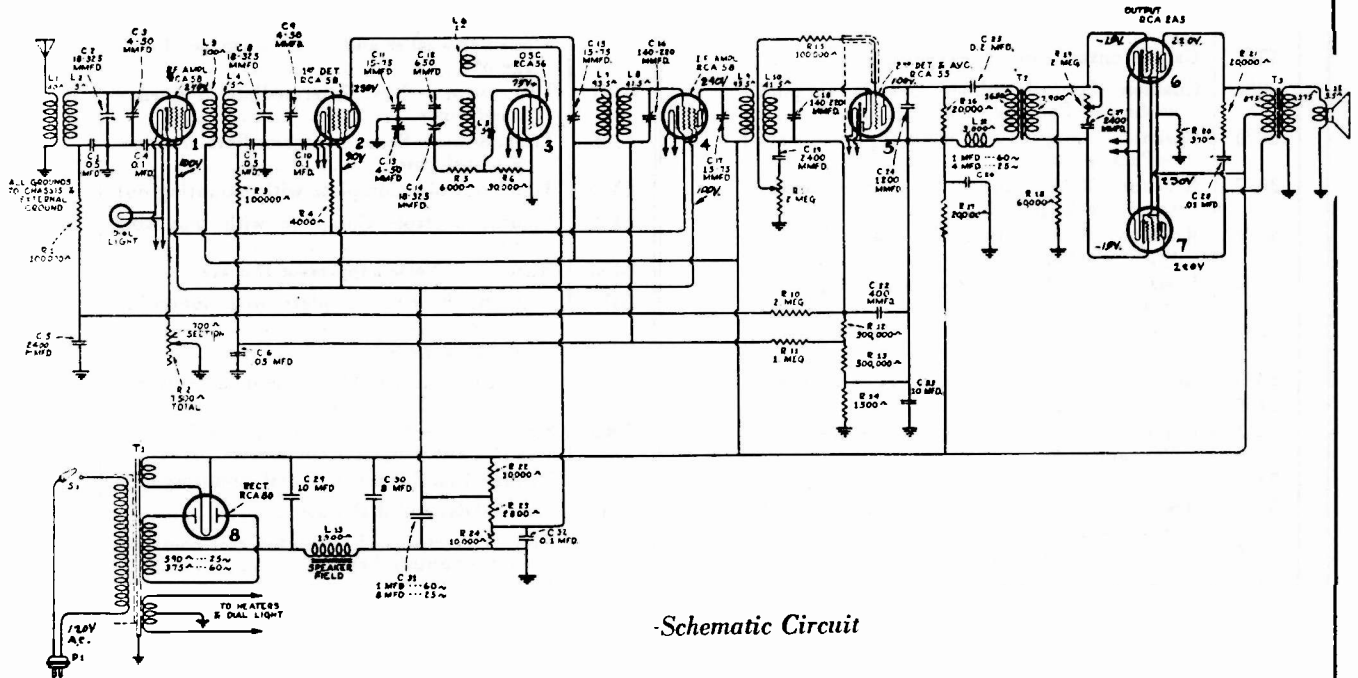
Eight-Tube, A-C, Superheterodyne Receivers

Electrical Specifications

Voltage Rating 105-125 Volts
 Power Consumption 100 Watts
 Type and Number of Radiotrons . . . 3 RCA-58, 1 RCA-56,
 1 RCA-55, 2 RCA-2A5, 1 UX-280—Total, 8
 Type of Circuit . . Super-Heterodyne with A.V.C., tone
 control and push-pull Universal Output Tubes
 Undistorted Output 3 Watts
 R. F. and Oscillator Alignment Frequency
 600 K. C., and 1400 K. C.
 Intermediate Frequency 175 K. C.



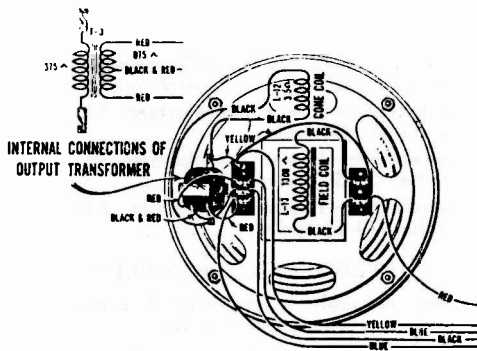
-I. F. Alignment Location



-Schematic Circuit

Alignment Procedure

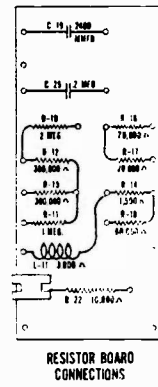
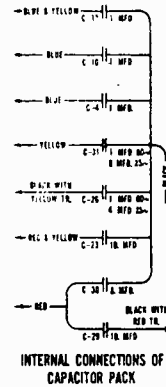
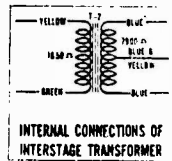
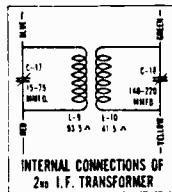
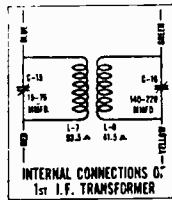
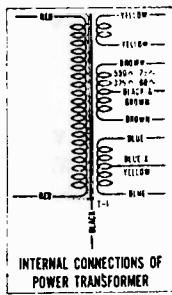
With tuning condensers fully meshed, set dial so that short line on dial coincides with pointer.



-Loudspeaker Wiring

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with .01 mfd	175 kc	Quiet Point near 600 kc	S & P of 2nd I-F Trans.
2	1st Det. Grid in series with .01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 kc	1400 kc	Osc., Det. and R-F Trimmers on Gang Condenser
4		600 kc	600 kc	600 kc Oscillator Trimmer (Rock Gang)
5		Repeat Step 3		

R73A & R75A



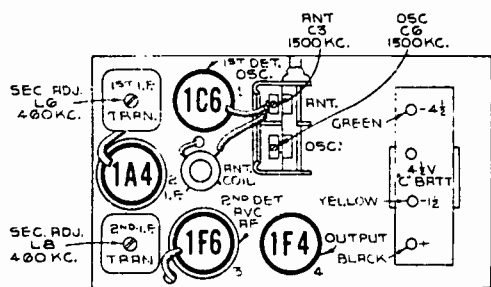
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.....		6323	Shaft—Tuning condenser drive shaft with one flat washer and 2 "C" washers—Package of 2.....	
3003	Cushion—Sponge rubber chassis support cushions—Package of 4.....		6367	Transformer—First intermediate frequency transformer.....	
3076	Resistor—1 megohm—Carbon type—½ watt—Package of 5.....		6368	Transformer—Second intermediate frequency transformer.....	
3077	Resistor—30,000 ohms—½ watt—Carbon type—Package of 5.....		6370	Tone control—Complete with mounting nut.....	
3078	Resistor—10,000 ohms—½ watt—Carbon type—Package of 5.....		6452	Volume control—Complete with mounting nut.....	
3241	Resistor—300,000 ohms—Carbon type—½ watt—Package of 5.....		6453	Rheostat—Noise suppressor rheostat.....	
3252	Resistor—100,000 ohms—½ watt—Carbon type—Package of 5.....		6454	Coil—R. F. coil complete with mounting bracket.....	
3449	Coil—Choke coil mounted on resistor board.....		7054	Cord—Power cord.....	
3450	Capacitor—0.2 mfd.....		7062	Capacitor—Adjustable trimming capacitor—Capacity 15 to 70 mmfd.....	
3451	Bracket—Dial lamp bracket and indicator—Package of 2.....		7065	Screw driver—Micarta screw driver for I. F., R. F., and oscillator condensers.....	
3455	Capacitor—0.01 mfd.....		7439	Drum—Dial drum with 3 dial mounting nuts.....	
3458	Resistor—2,800 ohms—Carbon type—½ watt—Package of 5.....		7440	Scale—Dial and dial scale.....	
3460	Capacitor—1200 mmfd.....		7481	Coil—Detector and oscillator coil complete with mounting bracket.....	
3472	Capacitor—0.0024 mfd.....		7484	Socket—UY type Radiotron socket.....	
3548	Knob—Noise suppressor knob.....		7485	Socket—6 contact Radiotron socket.....	
3549	Capacitor—400 mmfd.....		7501	Capacitor—3 gang variable tuning capacitor complete with mounting screws and washers.....	
3550	Resistor—370 ohms—Flexible type—Package of 5.....		7549	Transformer—Interstage audio transformer.....	
3556	Capacitor—0.05 mfd.....		7582	Capacitor pack—Comprising two 10.0 mfd., one 8.0 mfd., two 1.0 mfd., and three 0.1 mfd. capacitors in metal container—For 60 cycle operation.....	
3565	Socket—Dial lamp socket.....		7583	Capacitor pack—Comprising two 10.0 mfd., two 8.0 mfd., one 4.0 mfd., capacitors in metal container—For 25 cycle operation.....	
6142	Resistor—6,000 ohms—½ watt—Carbon type—Package of 5.....		7584	Transformer—Power transformer 105–125 volts—50–60 cycles.....	
6188	Resistor—2 megohm—Carbon type—½ watt—Package of 5.....		7585	Transformer—Power transformer—105–125 volts—25–50 cycles.....	
6192	Spring—3 gang tuning capacitor drive cord tension spring—Package of 10.....		7586	Transformer—Power transformer 200–250 volts—50–60 cycles.....	
6250	Resistor—4,000 ohms—Carbon type—½ watt—Package of 5.....		REPRODUCER ASSEMBLIES		
6279	Resistor—15,000 ohms—½ watt—Carbon type—Package of 5.....		3237	Screw assembly—Comprising 4 screws, 8 nuts, 4 washers, and 4 eyelets.....	
6282	Resistor—60,000 ohms—Carbon type—½ watt—Package of 5.....		6184	Board—Terminal board complete with 3 terminals.....	
6288	Knob—Station selector, tone control or volume control knob—Package of 5.....		6455	Transformer—Output transformer.....	
6298	Cord—3 gang variable tuning capacitor drive cord—Package of 5.....		8920	Ring—Cone retaining ring.....	
6300	Socket—4 contact Radiotron socket.....		8969	Cone—Reproducer cone complete with voice coil.....	
6303	Resistor—20,000 ohms—½ watt—Carbon type—Package of 5.....		9421	Coil assembly—Comprising field coil, magnet, and cone support.....	
6312	Capacitor—650 mmfd.—Located on detector oscillator coil—Package of 5.....				
6318	Resistor—10,000 ohms—Porcelain type—20 watt.....				

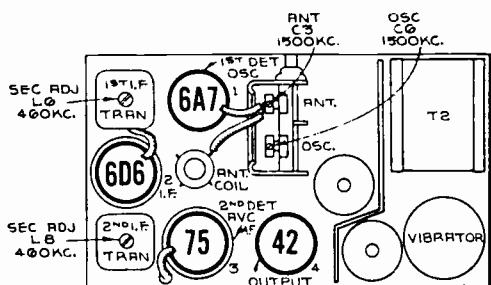
MODELS 84BT & 84BT6

Four-Tube, Single-Band, Battery Operated, Superheterodyne Receivers



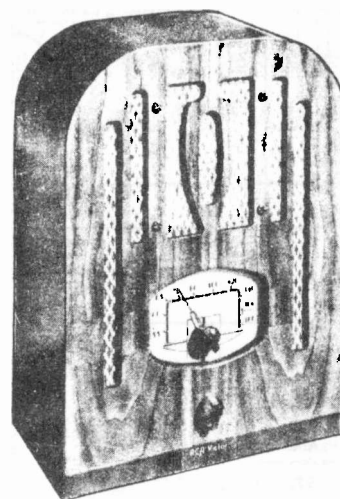
5N-715

Radioron and Trimmer Locations (Model 84BT)



5N-716

Radioron and Trimmer Locations (Model 84BT6)



Model 84BT or 84BT6

MODEL 84BT

Conversion to 1-1/2 v. operation. Refer to page 624B.

Electrical Specifications

Frequency Range.....	530—1,720 kc	Alignment Frequency.....	1,500 kc (osc., ant.)
Intermediate Frequency.....			460 kc
RADIOTRON COMPLEMENT (MODEL 84BT)		(MODEL 84BT6)	
(1) RCA-1C6.....	First Detector—Oscillator	(1) RCA-6A7.....	First Detector—Oscillator
(2) RCA-1A4.....	Intermediate Amplifier	(2) RCA-6D6.....	Intermediate Amplifier
(3) RCA-1F6.....	Second Det., A-F Amp., and A.V.C.	(3) RCA-75.....	Second Det., A-F Amp., and A.V.C.
(4) RCA-1F4.....	Power Output	(4) RCA-42.....	Power Output
Pilot Lamp.....	84BT, (1) Mazda 2.0 volts, .06 amp.; 84BT6, (1) Mazda No. 40, 6.3 volts, 0.15 amp.		

BATTERIES REQUIRED

84BT... "A", one plug-in, 2½-volt Air Cell, or one 2-volt storage battery; "B", three 45-volt, heavy-duty, plug-in type B batteries; "C", one 4½-volt C battery tapped at 1½ volts.

84BT6... "A", one 6-volt storage battery; "B", none required; "C", three bias cells (Stock No. 12681).

CURRENT CONSUMPTION

	MODEL 84BT	MODEL 84BT6
"A" at 2 volts.....	0.42 ampere.....	
"A" at 6 volts.....		2.95 amperes
"B" at 135 volts.....	25 ma.....	(Supplied from vibrator)
Fuse Rating.....	½ amp.....	5 amps.

POWER OUTPUT

Undistorted.....	0.3 watt.....	0.5 watt
Maximum.....	0.5 watt.....	0.8 watt

LOUDSPEAKER

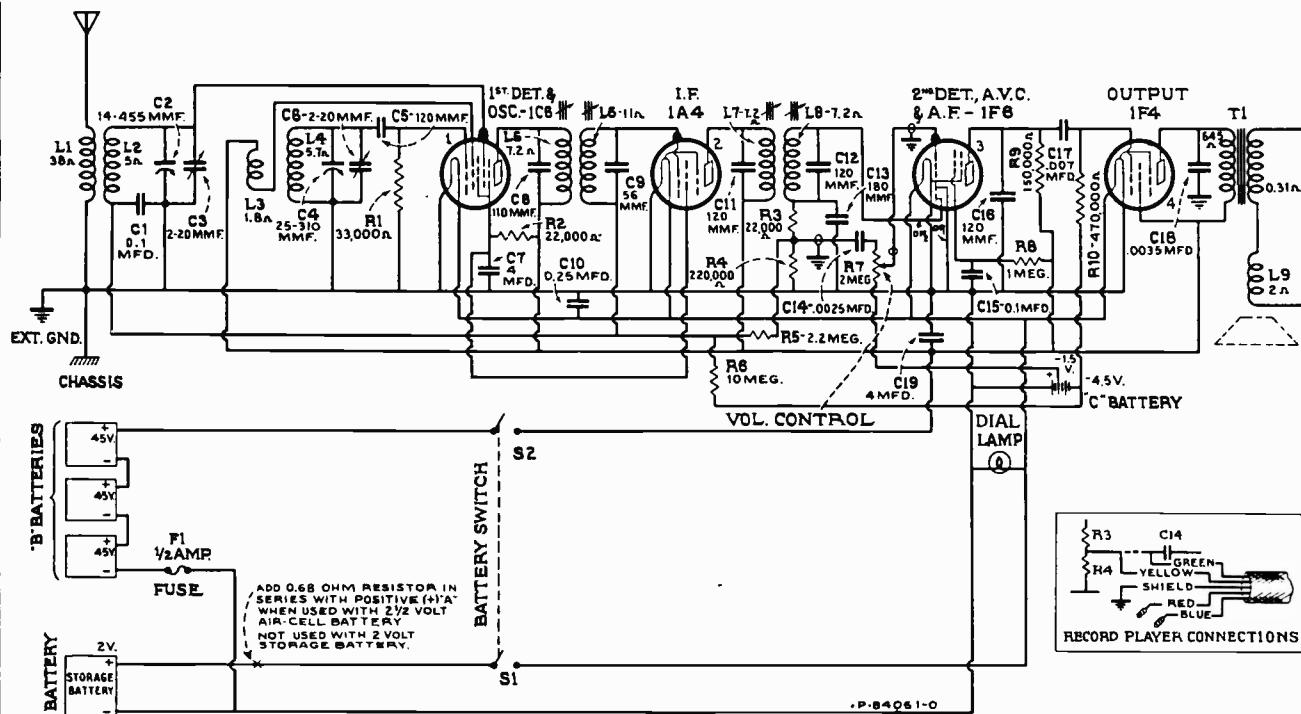
Type: permanent-magnet dynamic Diameter: 6 inches Voice coil impedance: 2¼ ohms at 400 cycles.

Bias Cells (Model 84BT6 only).—The bias cells are used only for the purpose of supplying bias potential and should never be measured with an ordinary voltmeter or other device which draws any current. A simple check on the cells may be made by connecting a milliammeter in the plate circuit of the tubes biased by these cells (6A7 or 6D6, 2 cells; 75, 1 cell). Measure the plate current with the cells in the circuit, then carefully remove the cells and substitute a voltage equivalent to the rated cell voltage. If the first reading obtained (with bias cells) is more than 40% from the latter reading (with known voltage), the bias cells should

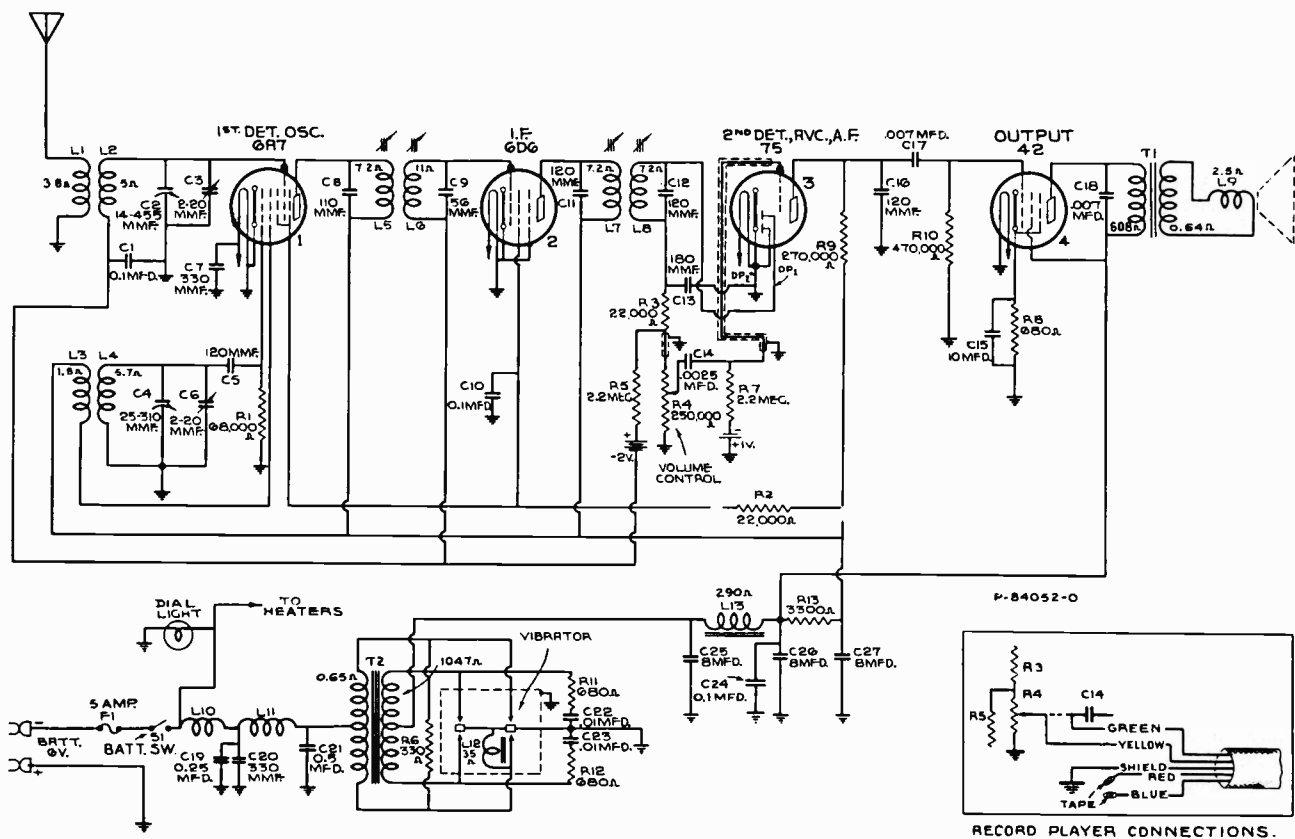
be replaced. This 40% difference is equivalent to a change of approximately 25% battery voltage.

Precautionary Lead Dress (Model 84BT6 only).—(1) Green lead from antenna coil to antenna section of tuning condenser should be dressed as far as possible from tube No. 1 (6A7). (2) Dress brown and green twisted leads (vibrator transformer T2 to vibrator socket) under capacitor C21. (3) Dress brown-black lead (T2 to C25) away from red lead which connects terminal in vibrator compartment to "SG" of tube No. 4 (42). (4) Keep all other leads in vibrator compartment as close to chassis base as possible.

84BT & 84BT6



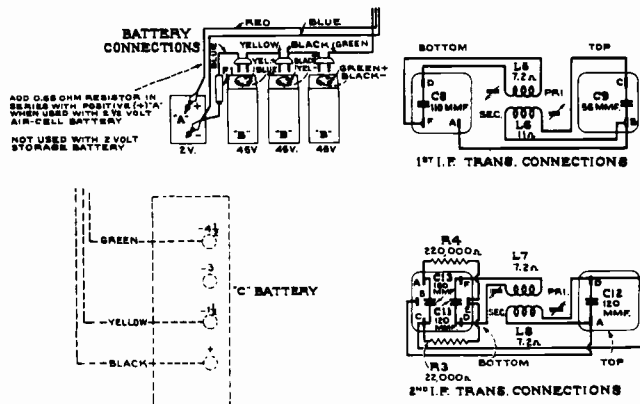
-Schematic Circuit Diagram (Model 84BT)



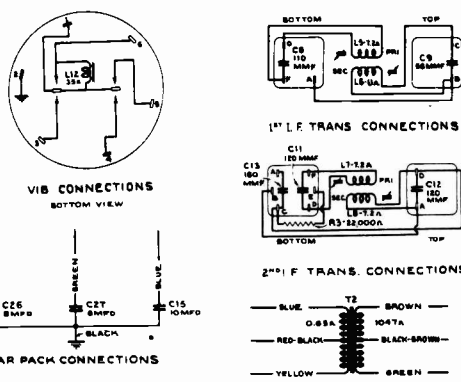
-Schematic Circuit Diagram (Model 84BT6)

NOTE: On later production Model 84BT6, an RCA-41 output tube is used in place of the RCA-42. All circuit and specification data remain the same except the "A" current consumption at 6 volts which is 2.65 amperes.

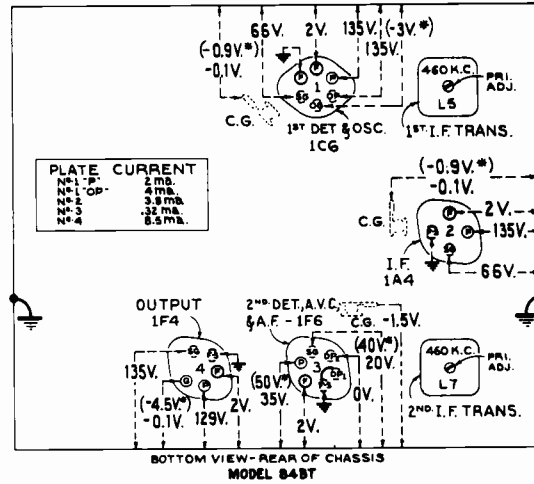
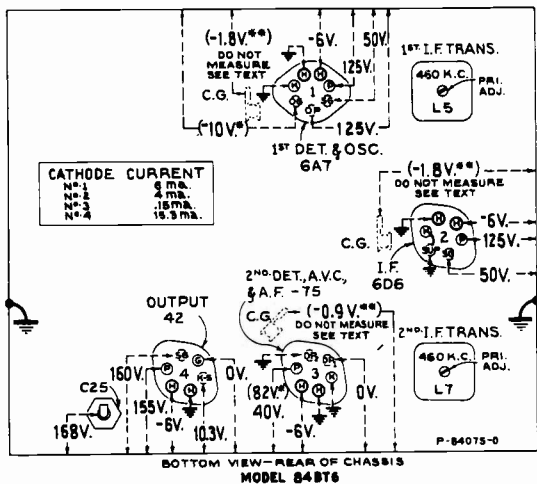
84BT & 84BT6



(Model 84BT)



(Model 84BT6)



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc—
No signal being received—Volume control optional

****CAUTION:** Do not attempt to measure voltages on control grids of the 6A7, 6D6, or 75, with any conventional voltmeter due to presence of bias cells.

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on dial scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	I-F Amp. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L7 and L8	Max. (peak)
2	1st Det. -Osc. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L5 and L6	Max. (peak)
3	Ant. Lead	200 Mmfd.	1,500 kc	1,500 kc	"A" Osc.	C6*	Max. (peak)
4	Ant. Lead	200 Mmfd.	1,500 kc	1,500 kc	"A" Ant.	C3	Max. (peak)

* C6 is in two sections. Tighten section on bottom of gang (under chassis) for maximum capacity before adjusting top section.

84BT & 84BT6

BLOCKING OF MODEL 84BT

Should any blocking tendencies be noted on this receiver, the 1P4 tube should be exchanged. Blocking which is produced by the 1P4 tube is particularly noticeable when the battery switch is turned off and immediately turned on again. Wear on the contact of the battery switch may bring this action about when the receiver is first turned on. In such cases, it is advisable to replace the switch, and at the same time, investigate the condition of the 1P4 tube as well as the "B" batteries.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
4289	Body—Fuse connector body (Model 84BT6 only)	5027	Resistor—150,000 ohms, carbon type, $\frac{1}{2}$ watt (R9) (Model 84BT only)
14286	Bracket—Dial lamp bracket	11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R4) (Model 84BT only)
14288	Cable—3-conductor battery cable approximately 60 inches long, complete with fuse and battery clips (Model 84BT only)	11323	Resistor—270,000 ohms, carbon type, $\frac{1}{2}$ watt (R9)
12607	Cap—First I-F transformer shield cap	11172	Resistor—470,000 ohms, carbon type, $\frac{1}{2}$ watt (R10)
12581	Cap—Second I-F transformer shield cap	3033	Resistor—1 megohm, carbon type, $\frac{1}{2}$ watt (R8) (Model 84BT only)
12118	Cap—Grid contact cap	11826	Resistor—2.2 megohms, carbon type, $\frac{1}{2}$ watt (Model 84BT, R5) (Model 84BT6, R5, R7)
4288	Cap—Fuse connector male cap (Model 84BT6 only)	13673	Resistor—10 megohms, carbon type, $\frac{1}{2}$ watt (R6) (Model 84BT only)
4629	Cap—Radiotron shield cap	14315	Shield—Chassis end shield complete with bias cell holder —For end opposite vibrator (Model 84BT8 only)
12629	Capacitor—56 Mmfd. (C9)	14318	Shield—Chassis end and bottom shield for vibrator end of chassis (Model 84BT6 only)
14262	Capacitor—110 Mmfd. (C8)	12008	Shield—First or second I-F transformer shield can
12404	Capacitor—120 Mmfd. (C11, C12)	14317	Shield—Vibrator shield can (Model 84BT8 only)
12724	Capacitor—120 Mmfd. (C5, C16)	3682	Shield—1A4, 1F6, 6D6, or 75 Radiotron shield
12406	Capacitor—180 Mmfd. (C13)	14114	Socket—Dial lamp socket
14320	Capacitor—330 Mmfd. (C7, C20) (Model 84BT6 only)	4794	Socket—4-contact 1A4 Radiotron socket (Model 84BT only)
5107	Capacitor—.0025 Mfd. (C14)	4814	Socket—5-contact 1F4 Radiotron socket (Model 84BT only)
5005	Capacitor—.0035 Mfd. (C18) (Model 84BT only)	4786	Socket—6-contact 1C6, 1F6, 6D6, 42, or 75 Radiotron socket
5148	Capacitor—.007 Mfd. (C17) (Model 84BT only)	14312	Socket—6-contact vibrator socket, less rubber mounting (Model 84BT6 only)
5196	Capacitor—.007 Mfd. (C17, C18) (Model 84BT6 only)	4787	Socket—7-contact 6A7 Radiotron socket (Model 84BT6 only)
11654	Capacitor—.01 Mfd. (C22, C23) (Model 84BT6 only)	4284	Spring—Fuse connector spring (Model 84BT6 only)
4841	Capacitor—.01 Mfd. (Model 84BT, C1, C15) (Model 84BT6, C1, C10, C24)	12007	Spring—Retaining spring for core Stock No. 12006
4840	Capacitor—.025 Mfd. (Model 84BT, C10) (Model 84BT6, C19)	14261	Transformer—First I-F transformer (L5, L6, C8, C9)
12741	Capacitor—.05 Mfd. (C21) (Model 84BT6 only)	14283	Transformer—Second I-F transformer (L7, L8, C11, C12, C13, R3, R4) (Model 84BT only)
14287	Capacitor—Pack comprising two sections each 4 Mfd. (C7, C19) (Model 84BT only)	14308	Transformer—Second I-F transformer (L7, L8, C11, C12, C13, R4) (Model 84BT6 only)
13046	Capacitor—8 Mfd. (C25) (Model 84BT6 only)	14311	Transformer—Vibrator transformer (T2) (Model 84BT6 only)
14310	Capacitor Pack—Comprising one 10 Mfd. and two 8 Mfd. sections (C15, C26, C27) (Model 84BT6 only)	14309	Vibrator complete (L12) (Model 84BT6 only)
12681	Cell—Bias cell (Model 84BT6 only)	14282	Volume control and power switch (R7, S1) (Model 84BT only)
14289	Clip—2 battery clips, one marked "+" and one unmarked	14307	Volume control and power switch (R4, S1) (Model 84BT6 only)
14285	Coil—Antenna coil (L1, L2)	4285	Washer—Fuse connector insulating washer (Model 84BT6 only)
14257	Coil—Oscillator coil (L3, L4)	REPRODUCER ASSEMBLIES (76474-3) (Model 84BT only)	
12179	Coil—Vibrator choke coil (L10, L11) (Model 84BT6 only)	14303	Cone—Reproducer cone centered in metal housing complete with dust cap, less output transformer and plug (L9)
14256	Condenser—2-gang variable tuning condenser (C2, C3, C4, C6)	5118	Plug—3-contact male plug for reproducer
5119	Connector—3-contact female connector for speaker cable	9802	Reproducer complete
14314	Cord—Power cord complete with fuse and clips (Model 84BT6 only)	14304	Transformer—Output transformer (T1)
12006	Core—Adjustable core and stud for first or second I-F transformers	REPRODUCER ASSEMBLIES (76494-2) (Model 84BT6 only)	
14284	Dial—Station selector dial and holder assembly	14305	Cone—Reproducer cone complete with dust cap (L9)
4286	Ferrule—Fuse connector ferrule and bushing (Model 84BT6 only)	5118	Plug—3-contact male plug for reproducer
3748	Fuse— $\frac{1}{2}$ ampere (F1) (Model 84BT only)	9803	Reproducer complete
5140	Fuse—5 ampere (F1) (Model 84BT6 only)	14306	Transformer—Output transformer (T1)
14316	Holder—Bias cell holder (2 cells) (Model 84BT6 only)	MISCELLANEOUS ASSEMBLIES	
14319	Holder—Bias cell holder (1 cell) (Model 84BT6 only)	14268	Crystal—Station selector crystal
14263	Indicator—Station selector indicator pointer	14269	Knob—Station selector or volume control knob
4290	Insulator—Fuse connector body insulator (Model 84BT6 only)	14299	Resistor—0.68 ohm flexible wire wound ballast resistor (Model 84BT only)
4348	Lamp—Dial lamp (Model 84BT only)	14298	Screw—Chassis mounting screw and washer assembly
4340	Lamp—Dial lamp (Model 84BT6 only)	14270	Spring—Retaining spring for knob Stock No. 14269
14313	Mounting—Vibrator socket mounting comprising 2 rubber washers, 2 screws, 2 eyelets, 2 washers, 2 lock-washers, and 2 nuts (Model 84BT6 only)		
12818	Reactor—Filter reactor (L13) (Model 84BT6 only)		
8063	Resistor—330 ohms, carbon type, $\frac{1}{2}$ watt (R6) (Model 84BT6 only)		
5031	Resistor—680 ohms, carbon type, $\frac{1}{2}$ watt (R8, R11, R12) (Model 84BT6 only)		
12330	Resistor—3,300 ohms, carbon type, $\frac{1}{2}$ watt (R13) (Model 84BT6 only)		
11305	Resistor—22,000 ohms, carbon type, $\frac{1}{2}$ watt (R2)		
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R3)		
11364	Resistor—33,000 ohms, carbon type, $\frac{1}{2}$ watt (R1) (Model 84BT only)		
12333	Resistor—68,000 ohms, carbon type, $\frac{1}{2}$ watt (R1) (Model 84BT6 only)		

ADDITIONAL REPLACEMENT PARTS - MODEL 84BT

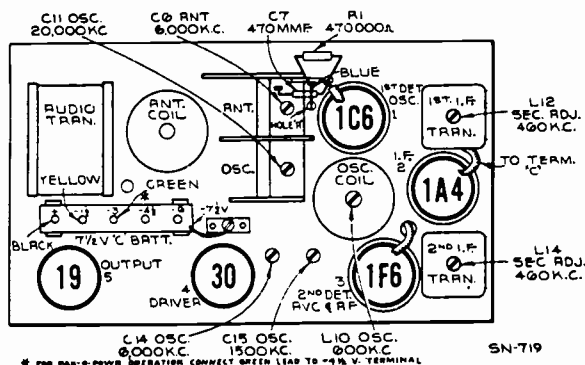
14827 Drive - Vernier Drive

On some instruments, speaker marked 76474-1 is employed. The following Replacement Parts apply to this unit:

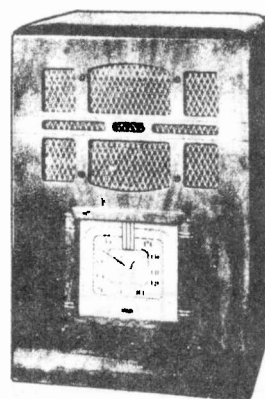
30236 Cone - Cone and dust cap (L9)
5118 Plug - 3-contact male plug
30287 Transformer - Output transformer (T1)

MODELS 85BK & 85BT

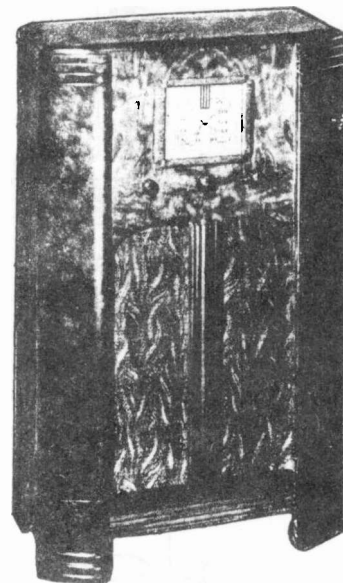
Five-Tube, Three-Band, Battery Operated, Superheterodyne Receivers



-Radiotron, Coil, and Trimmer Locations



Model 85BT



Model 85BK

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A)..... 530—1,720 kc
- "Medium Wave" (B)..... 2,100—6,800 kc
- "Short Wave" (C)..... 6,800—22,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-1C6..... First Detector—Oscillator
- (2) RCA-1A4..... Intermediate Amplifier

Pilot Lamps (2)..... Mazda 2.0 volts, .06 ampere

BATTERIES REQUIRED

"A," one plug-in, 2 1/2-volt Air Cell, or one 2-volt storage battery; "B," three 45-volt, heavy-duty, plug-in type B batteries; "C," one 7 1/2-volt C battery tapped at -1 1/2, -3, and -4 1/2 volts, and three bias cells (Stock No. 12681).

CURRENT CONSUMPTION

- "A" at 2 volts (pilot lamps off)..... 0.56 ampere
- "A" at 2 volts (pilot lamps on)..... 0.68 ampere
- "B" at 135 volts..... 19 milliamperes
- Fuse Rating..... 1/2 ampere

POWER OUTPUT

- Undistorted..... 1.2 watts
- Maximum..... 2.2 watts

R-F ALIGNMENT FREQUENCIES

- "Short Wave" (C)..... 20,000 kc (osc.)
- "Medium Wave" (B)..... 6,000 kc (osc., ant.)
- "Standard Broadcast" (A).... 600 kc (osc.), 1,500 kc (osc.)

- (3) RCA-1F6..... Second Det., A-F Amp., and A.V.C.
- (4) RCA-30..... Audio Driver
- (5) RCA-19..... Push-Pull Power Output

LOUDSPEAKER

- Type..... Permanent-Magnet Dynamic
- Voice Coil Impedance..... 2.2 ohms at 400 cycles

Bias Cells.—Three bias cells are used only for the purpose of supplying bias potential to the 1C6 first-detector—oscillator tube. These cells should never be measured with an ordinary voltmeter or other device which draws any current. A simple check on these cells may be made by connecting a milliammeter in the plate circuit of the 1C6 tube and noting the plate current reading. Then carefully remove the cells and substitute a battery potential of 2.7 volts in their place and note the new reading on the milliammeter. If the first reading obtained (with bias cells) is more than 40% from the latter reading (with 2.7-volt battery), the bias cells should be replaced. This 40% difference is equivalent to a change of approximately 25% battery voltage.

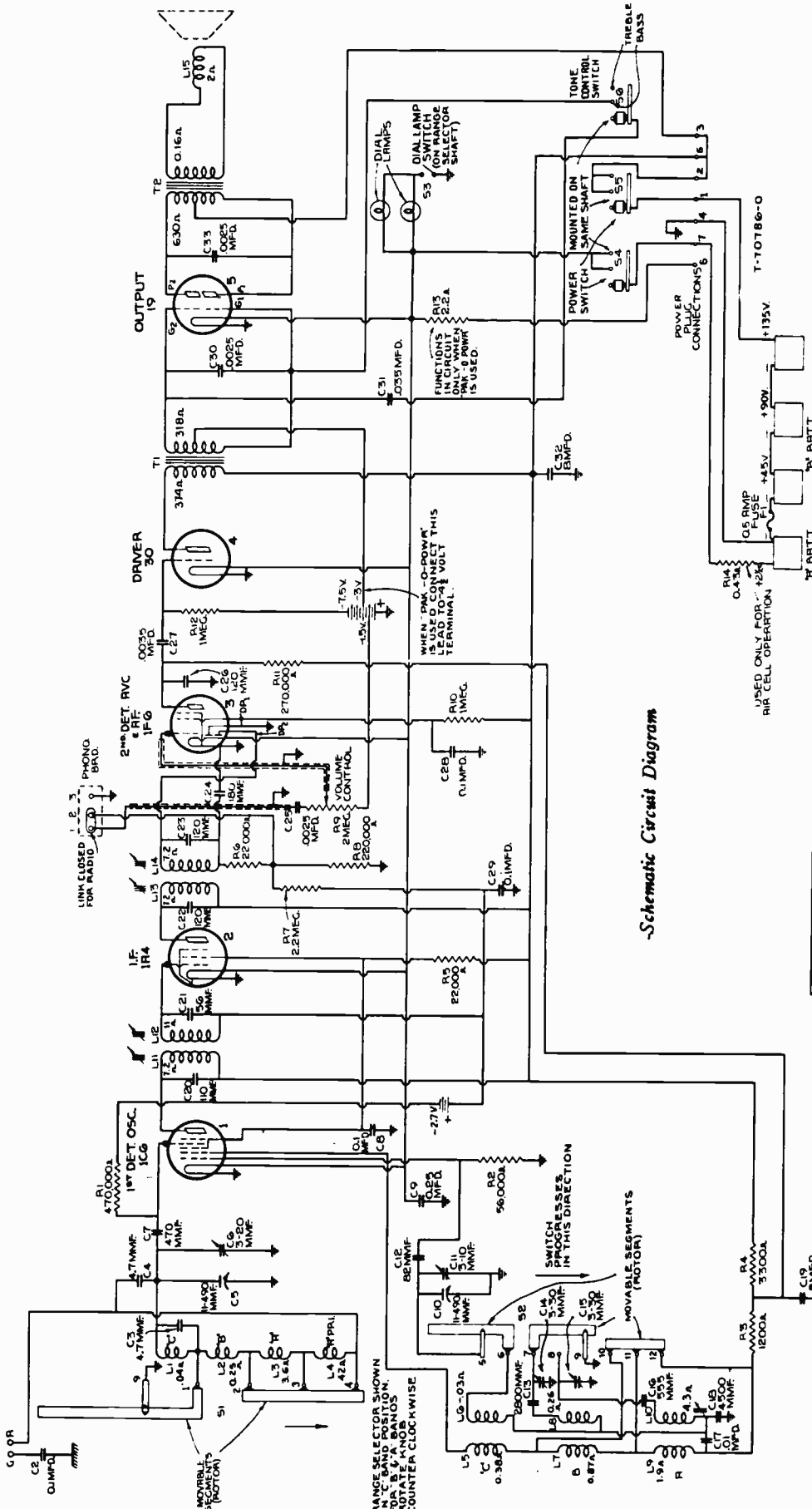
Operation With CV-8 Pak-O-Powr.—These receivers may readily be operated from an RCA CV-8 Pak-O-Powr, in which case, a six-volt storage battery replaces the "A" and "B" batteries listed under "Batteries required." When using the CV-8, one cell (2 volts) of the storage battery supplies filament voltage to the tubes, while the other two cells (4 volts) supplies power for the CV-8. When installing, the seven prong CV-8 receptacle plugs into the seven prong

plug on the rear apron of the receiver chassis and the four battery leads clip on terminals of the storage battery as follows: Red to +6 V.; Blue to +4 V.; Yellow to +4 V.; and brown (fused lead) to -V. The two four-volt leads (Blue and Yellow) should make separate connections to the same battery strap to avoid vibrator buzz which might otherwise result if these two leads are joined together or touch each other. Observe extreme care that proper connections are made to the battery, as a wrong connection will burn out the tubes. The green lead (originally connected to -3 v. on the "C" battery) should be shifted to the -4.5 volt tap. The other "C" battery connections remain unchanged.

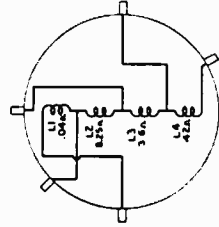
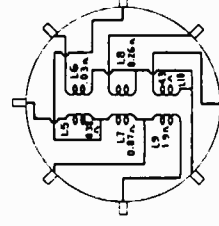
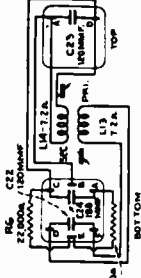
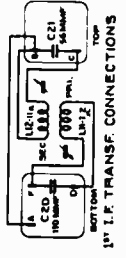
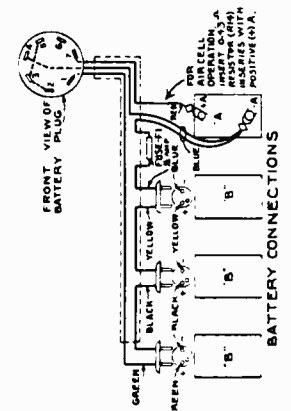
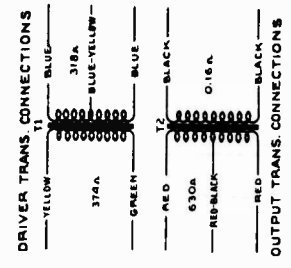
The following changes under "Electrical specifications" become effective when employing the CV-8; "A" battery current drain at 6 volts, 1.65 amperes. Fuse rating, 5 amperes. Undistorted output, 1.3 watts. Maximum output, 1.8 watts. Under "Service data," the following voltages apply to the RCA-19 power-output tube. Either plate to chassis, 180 volts. Either grid to chassis, -4 1/2 volts. Plate current (either plate), 1.6 ma.

When servicing, the CV-8 chassis should be insulated from the receiver chassis to avoid vibrator buzz.

85BK & 85BT



Schematic Circuit Diagram

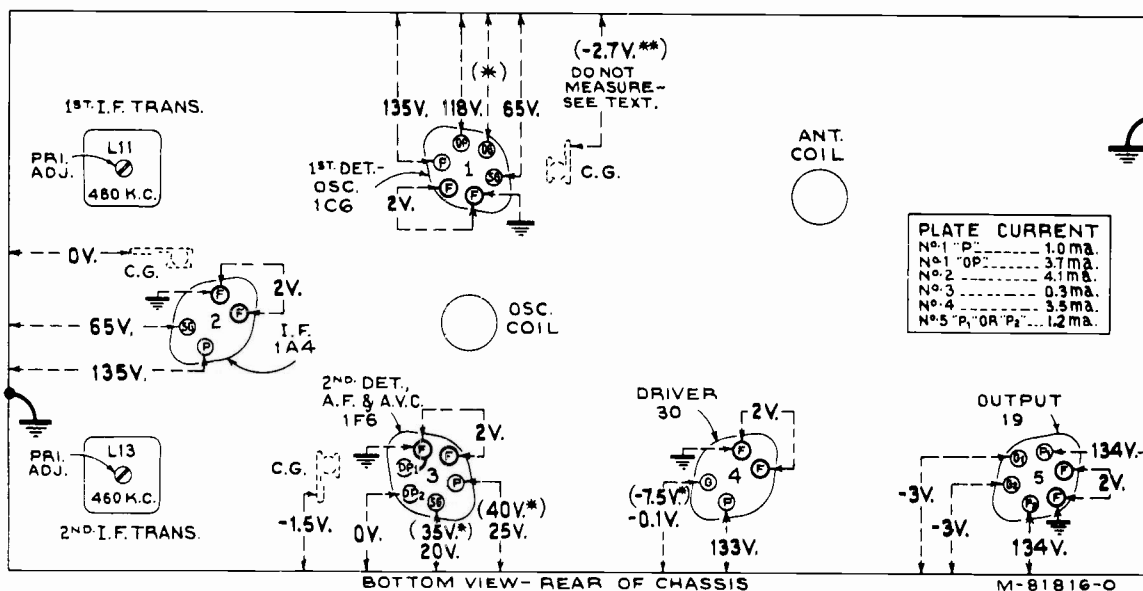


1st I.F. TRANSF. CONNECTIONS

2nd I.F. TRANSF. CONNECTIONS

OSC. COIL CONNECTIONS

ANT. COIL CONNECTIONS



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc—
No signal being received—Volume control minimum

****CAUTION:** Do not attempt to measure voltage on control grid of the 1C6 with any conventional voltmeter due to presence of bias cells.

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

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 "O." These are friction adjustments.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	1A4 I-F Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L13 & L14	Max. (peak)
2	1C6 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L11 & L12	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Osc.	C11	Max. (peak)*‡
4	Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Osc.	C14	Max. (peak)*
5	Ant. Term.	300 Ohms	6,000 kc	6,000 kc	"B" Ant.	C6	Max. (peak)
6	Ant. Term.	200 Mmfd.	600 kc	600 kc	"A" L-F Osc.	L10	Max. (peak)
7	Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C15	Max. (peak)
8	Ant. Term.	200 Mmfd.	600 kc	Rock thru 600 kc	"A" L-F Osc.	L10	Max. (peak)
9	Ant. Term.	200 Mmfd.	1,500 kc	Rock thru 1,500 kc	"A" H-F Osc.	C15	Max. (peak)

* Use minimum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 19,080 kc.

85BK & 85BT

Precautionary Lead Dress.—(1) Twisted leads from filament switch to power plug must be dressed against bottom of end shield and fastened with tape. (2) Keep leads of C18 as short as possible. (3) Lead from L1 to C5-C6 should be 3/4 inches long. (4) Lead from L1-L2 to range switch should be 1 1/8 inches long. (5) Keep lead from range switch to C10-C11 as short as possible. (6) Keep lead from range switch to L6 as short as possible. (7) Yellow lead from 2nd i-f transformer to phonograph terminal board must be dressed away from other wiring.

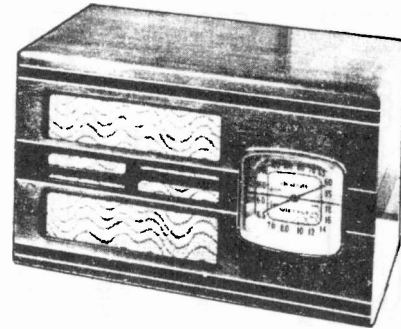
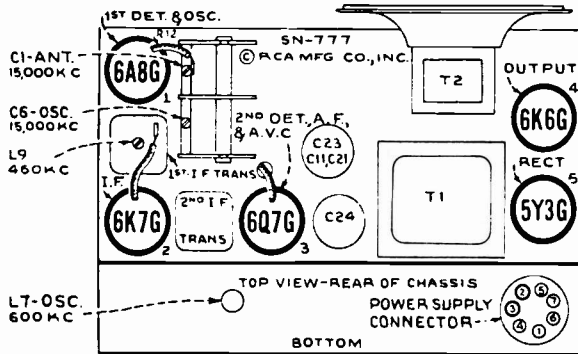
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14388	Belt—Variable condenser drive belt	5029	Resistor—56,000 ohms, carbon type, 1/2 watt (R2)
13216	Board—Antenna and ground terminal board	11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R8)
12717	Board—Phonograph terminal board	11453	Resistor—270,000 ohms, carbon type, 1/10 watt (R11)
14338	Bushing—Variable condenser mounting bushing and screw assembly	11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R1)
12807	Cap—First I.F. transformer shield top	12200	Resistor—1 megohm, insulated, 1/2 watt (R12)
12581	Cap—Second I.F. transformer shield top	13730	Resistor—1 megohm, carbon type, 1/2 watt (R10)
12118	Cap—Grid contact cap	12879	Resistor—2.2 megohm, insulated, 1/2 watt (R7)
14383	Capacitor—Adjustable dual trimmer (C14, C15)	14406	Resistor—2.2 ohms, flexible type, 3 watts (R13)
14392	Capacitor—4.7 Mmfd. (C3, C4)	14350	Screw—No. 8-32x3/16 square head set screw for gear Stock No. 30085 and drum Stock No. 14345
12829	Capacitor—56 Mmfd. (C21)	14374	Shield—Antenna coil shield
12813	Capacitor—82 Mmfd. (C12)	13311	Shield—Chassis end shield and rubber mounting foot assembly
14262	Capacitor—110 Mmfd. (C20)	12008	Shield—I.F. transformer shield
12404	Capacitor—120 Mmfd. (C22, C23)	14375	Shield—Oscillator coil shield
12724	Capacitor—120 Mmfd. (C28)	3682	Shield—Radiotron shield
12406	Capacitor—180 Mmfd. (C24)	14171	Socket—Dial lamp socket
13052	Capacitor—470 Mmfd. (C7)	4794	Socket—4-contact 1A4 or 30 Radiotron socket
12727	Capacitor—555 Mmfd. (C8)	4786	Socket—6-contact 1C6, 1F6 or 19 Radiotron socket
14407	Capacitor—2,800 Mmfd. (C13)	12007	Spring—Retaining spring for core Stock No. 12006
12728	Capacitor—4,500 Mmfd. (C18)	12907	Spring—Retaining spring for indicator drive gear Stock No. 30085
5107	Capacitor—.0025 Mfd. (C25, C30, C33)	14342	Spring—Tension spring for idler Stock No. 14341
5005	Capacitor—.0035 Mfd. (C27)	14402	Switch—Range switch (S1, S2)
13138	Capacitor—.01 Mfd. (C17)	14401	Switch—Tone control switch and power switch (S3, S4, S5, S6)
5196	Capacitor—.035 Mfd. (C31)	12803	Transformer—Audio transformer pack (T1, T2)
4841	Capacitor—0.1 Mfd. (C2, C8, C28, C29)	14261	Transformer—First I.F. transformer (L11, L12, C20, C21)
4840	Capacitor—0.25 Mfd. (C9)	14283	Transformer—Second I.F. transformer (L13, L14, C22, C23, C24, R6, R8)
5170	Capacitor—0.25 Mfd. (C25, C30, C33)	14400	Volume Control (R9)
14403	Capacitor Pack—Comprising two sections each 8 Mfd. (C19, C32)	14379	Washer—Felt washer for indicator pointer
12681	Cell—Bias cell	REPRODUCER ASSEMBLIES (RL-73-1)	
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	12642	Cone—Reproducer cone and dust cap (L15)
14373	Coil—Oscillator coil and shield (L5, L6, L7, L8, L9, L10)	5118	Plug—3-contact male connector for reproducer
14397	Condenser—2-gang variable condenser (C5, C6, C10, C11)	9712	Reproducer complete
5119	Connector—3-contact female connector for reproducer cable	MISCELLANEOUS ASSEMBLIES	
12800	Core—Adjustable core and stud assembly for coil Stock No. 14373	4289	Body—Fuse holder female body
12006	Core—Adjustable core and stud for I.F. transformer	4286	Bushing—Fuse holder bushing and ferrule
14399	Dial—Station selector dial scale	14408	Cable—Battery cable complete with fuse, fuse holder, one 7-contact female connector, three 2-contact male connectors and two battery clips
14398	Drive—Variable condenser vernier drive pinion gear and shaft	4288	Cap—Fuse holder male cap
14345	Drum—Variable condenser drive belt drum complete with set screws	14289	Clip—Battery clips, one marked "+" and one unmarked
30085	Gear—Indicator drive gear and hub assembly and pointer stem and gear assembly	12827	Connector—2-contact male connector for battery cable
14405	Holder—Bias cell holder	14409	Connector—7-contact connector for battery cable
14341	Idler—Station selector drive belt idler	14396	Escutcheon—Station selector escutcheon and crystal
14344	Indicator—Station selector indicator pointer	3748	Fuse—1/2 ampere (F1)
14382	Indicator—Vernier indicator pointer	4290	Insulator—Fuse holder insulating sleeve
4348	Lamp—Dial lamp	14359	Knob—Station selector knob
14404	Plug—7-contact male plug located on rear apron of chassis for battery cable	14289	Knob—Volume control, tone control or range switch knob
14340	Pulley—Station selector drive belt pulley and knob shaft	14410	Resistor—0.48 ohms, flexible resistor, 1/2 watt complete with clip (R14)
14361	Reflector—Dial reflector and lamp bracket assembly	11210	Screw—Chassis mounting screw and washer assembly— for Model 85BK
14343	Retainer—Drive shaft and pulley retainer—holds tuning knob shaft and pulley on range switch shaft	11377	Screw—Chassis mounting screw and washer assembly— for Model 85BT
11283	Resistor—1,200 ohms, carbon type, 1/2 watt (R3)	4284	Spring—Fuse holder tension spring
13737	Resistor—3,300 ohms, carbon type, 1/2 watt (R4)	4982	Spring—Retaining spring for knob Stock No. 14359
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R6)	14270	Spring—Retaining spring for knob Stock No. 14289
11305	Resistor—22,000 ohms, insulated, 1/2 watt (R5)	4285	Washer—Fuse holder insulating washer

MODEL 85BT6

Five-Tube, Two-Band, A-C/Battery-Operated, Superheterodyne Receiver



Model 85BT6

-Radiotron and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

- "Broadcast" (A)..... 540-1,720 kc
- "Short Wave" (C)..... 5,800-18,000 kc
- Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8-G..... First Detector—Oscillator
- (2) RCA-6K7-G..... Intermediate Amplifier

R-F ALIGNMENT FREQUENCIES

- "Short Wave" (C)..... 15,000 kc (osc., ant.)
- "Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc.)

- (3) RCA-6Q7-G..... Second Det., A-F Amp. and A.V.C.
- (4) RCA-6K6-G..... Audio Power Amplifier
- (5) RCA-5Y3-G..... Full-Wave Rectifier

Pilot Lamp (1)..... Mazda No. 40, 6.3 volts, 0.15 ampere

POWER SUPPLY RATINGS

- Rating A..... 105-125 volts, 50-60 cycles, 45 watts
- Storage Battery..... 6 volts, 2.95 amperes
- Fuse Rating (Vibrator)..... 5 amperes

POWER OUTPUT

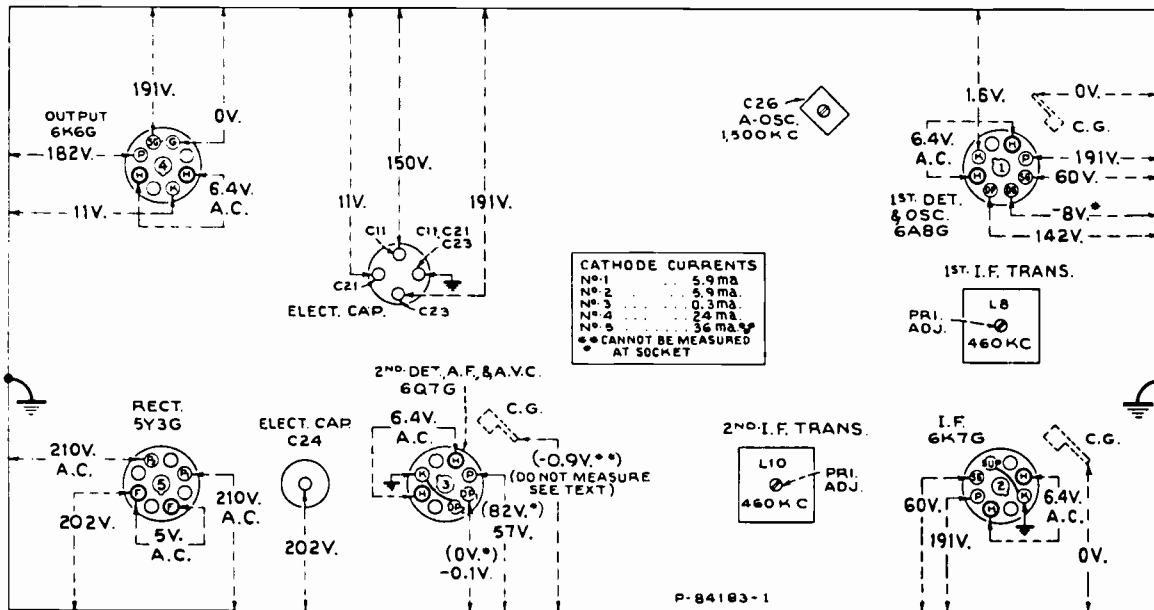
- Undistorted..... 0.85 watt
- Maximum..... 1.5 watts

BATTERY POWER

A-C POWER

LOUDSPEAKER

- Type..... 6-inch Permanent-magnet Dynamic
- Voice coil impedance..... 2.6 ohms at 400 cycles



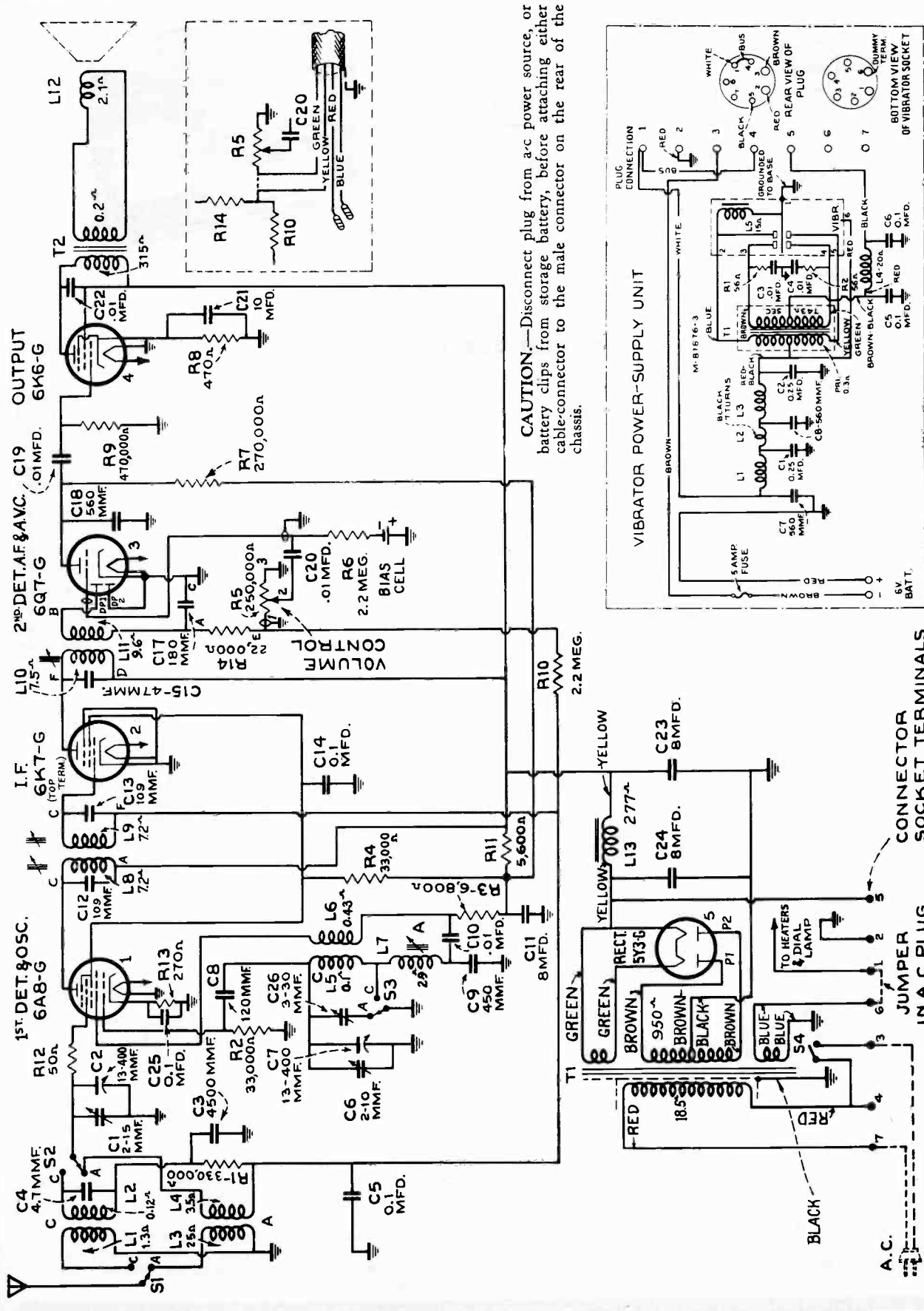
—Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Values approximately 5% lower when vibrator power-supply unit is used—Tuned to approximately 1,000 kc ("Broadcast")—No signal being received—Volume control minimum

**** CAUTION:** Do not attempt to measure voltage on control grid of the 6Q7-G with any conventional voltmeter due to presence of bias cell.

Note: Two voltage values are shown for some readings. The higher value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

85 BT 6



CAUTION.—Disconnect plug from a-c power source, or battery clips from storage battery, before attaching either cable-connector to the male connector on the rear of the chassis.

Schematic Circuit Diagram

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

Precautionary Lead Dress.—(1) Dress brown twisted leads to power switch away from bias cell and a-f leads to volume control. (2) Dress light-blue lead, connected from 6A8-G socket to oscillator coil, away from all other leads and chassis. (3) Dress 6A8-G grid-cap lead (R12) to prevent shorts and keep flexible. (4) Dress all leads to antenna coil away from trimming capacitor C26 and from bus lead, connected from oscillator coil to gang condenser. (5) Dress blue antenna lead through the loop of C4 which is mounted on end of antenna coil. Do not change length of the following leads: (6) C9 to chassis; (7) Blue lead from L3 to range selector; (8) Bus lead from oscillator coil to gang condenser. Keep the following as short as possible: (9) Leads to C26; (10) Bus lead from oscillator coil to range selector. In the vibrator power-supply unit: (11) Dress small leads from transformer to vibrator socket terminals 3 and 4 close to base and twist twice. (12) Twist large leads from transformer to vibrator socket terminals 2 and 5. (13) Dress C2 as near to bottom cover as possible.

Bias Cell.—The bias cell is used only for the purpose of supplying bias potential to the triode section of the 6Q7-G tube. This cell should never be measured with an ordinary voltmeter, or other device, which draws any current. A simple check on this cell may be made by temporarily shunting the 270,000-ohm plate resistor R7 (mounted on 6Q7-G socket) with a 20,000-ohm resistor, connecting a milliammeter in the plate circuit of the 6Q7-G tube, and noting the plate current reading. Then carefully remove the bias cell and substitute a battery potential of 0.9-volt in its place and note the new reading of the milliammeter. If the first reading obtained (with bias cell) differs from the latter reading (with 0.9-volt battery supply) by more than 20% of the latter reading, the bias cell should be replaced. This 20% is equivalent to a change of approximately 25% battery voltage.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L10 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L9 L8 1st I-F Trans.
3	Antenna in series with 300 ohms	15000 Kc	15000 Kc "C" Band	C6† C1▲ Osc. Ant.
4	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "A" Band	C26 H-F Osc.
5		600 Kc	600 Kc "A" Band	L7 L-F Osc. ROCK GANG
6		Repeat Step 4		

Osc. tracks 460 Kc below signal on "C" Band and 480 Kc above on "A" Band.

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG.

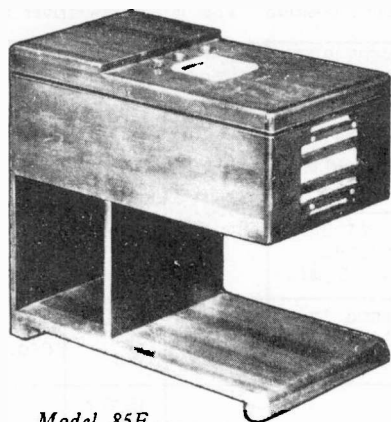
REPLACEMENT PARTS

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

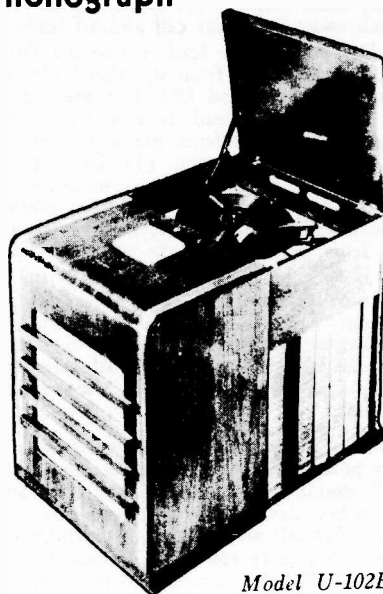
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14634	Belt—Variable condenser drive belt	12679	Resistor—2.2 megohms, insulated, ½ watt (R6, R10)
14632	Bracket—Dial mounting bracket	5129	Ring—Radiotron shield ring
5237	Bushing—Variable condenser rubber mounting bushing	4389	Screw—No. 8-32 x 3/16-inch headless set-screw for drive pulley, Stock No. 14639
11350	Cap—Grid contact cap	14638	Shaft—Station selector knob shaft and pulley
30661	Capacitor—Adjustable trimmer (3-30 Mmfd.) (C26)	5037	Shield—Radiotron shield
14392	Capacitor—4.7 Mmfd. (C4)	14658	Socket—Dial lamp socket
12405	Capacitor—47 Mmfd. (C15)	11198	Socket—Radiotron socket
14262	Capacitor—110 Mmfd. (C12, C13)	14637	Spring—Idler pulley tension spring
12724	Capacitor—120 Mmfd. (C8)	30655	Switch—Range switch (S1, S2, S3)
12812	Capacitor—450 Mmfd. (C9)	14378	Transformer—First I.F. transformer (L8, L9, C12, C13)
13699	Capacitor—470 Mmfd. (C17)	14642	Transformer—Second I.F. transformer (L10, L11, C16, C17)
12537	Capacitor—560 Mmfd. (C18)	30656	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)
12728	Capacitor—4,500 Mmfd. (C3)	30658	Volume control and power switch (R25, S4)
14393	Capacitor—.01 Mfd. (C10, C19, C20, C22)	REPRODUCER ASSEMBLIES	
4839	Capacitor—0.1 Mfd. (C5, C14, C25)	(84140-1)	
11203	Capacitor—8 Mfd. (C11)	30664	Cone—Reproducer cone and voice coil mounted and centered in metal housing (L12)
30657	Capacitor Pack—Comprising two sections each 8 Mfd. and one section 10 Mfd. (C21, C23, C24)	30662	Reproducer, complete
12681	Cell—Bias cell	30663	Transformer—Output transformer (T2)
4358	Clamp—Capacitor pack mounting clamp for Stock No. 30657	VIBRATOR POWER UNIT ASSEMBLIES	
30659	Coil—Antenna coil (L1, L2, L3, L4)	14724	Capacitor—560 Mmfd. (C7, C8)
14647	Coil—Oscillator coil (L5, L6, L7)	11654	Capacitor—.01 Mfd. (C3, C4)
14633	Condenser—2-gang variable tuning condenser (C1, C2, C6, C7)	4839	Capacitor—0.1 Mfd. (C5, C8)
14631	Dial—Station selector dial and holder	12484	Capacitor—0.25 Mfd. (C1, C2)
14651	Drive—Variable condenser vernier drive and pinion gear	14289	Clip—Battery clips for vibrator battery cable
30660	Holder—Bias cell holder	12179	Coil—Choke coil (L1, L3)
14635	Indicator—Station selector indicator pointer	12819	Coil—Choke coil and terminal board assembly (L4)
4340	Lamp—Dial lamp	5140	Fuse—5-amp. (F1)
14404	Plug—7-contact male plug for rear apron of chassis	13220	Resistor—56 ohms, carbon type, ½ watt (R1, R2)
14636	Pulley—Idler pulley—less spring	30667	Socket—7-contact female socket for vibrator to chassis power cable
14639	Pulley—Variable condenser drive pulley—located on condenser shaft	30665	Transformer—Vibrator power transformer (T1)
12818	Reactor—Filter reactor (L13)	30666	Vibrator (L5)
14653	Resistor—50 ohms, flexible type (R12)	MISCELLANEOUS ASSEMBLIES	
13454	Resistor—270 ohms, carbon type, ½ watt (R13)	14654	Escutcheon—Station selector escutcheon and crystal
30499	Resistor—470 ohms, insulated, ½ watt (R8)	30668	Cord—A.C. power cord and plug for 110-volt operation
5175	Resistor—5,600 ohms, carbon type, ½ watt (R11)	12673	Knob—Station selector, range switch, or volume control knob
12265	Resistor—6,800 ohms, insulated, ½ watt (R3)	4119	Screw—No. 8-32 x ¼-inch headless cup-pointed set-screw for knob, Stock No. 12673
13998	Resistor—22,000 ohms, insulated, ½ watt (R14)		
8072	Resistor—33,000 ohms, carbon type, ½ watt (R4)		
12454	Resistor—33,000 ohms, insulated, ½ watt (R2)		
12199	Resistor—270,000 ohms, insulated, ½ watt (R7)		
13733	Resistor—330,000 ohms, carbon type, ½ watt (R1)		
12285	Resistor—470,000 ohms, insulated, ½ watt (R9)		

MODELS 85E & U102E

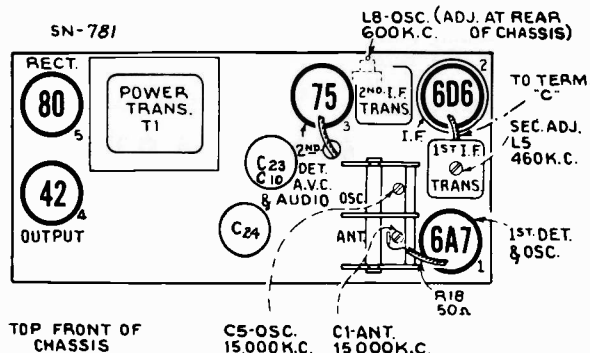
Five-Tube, Two-Band, A-C, Radio and Radio-Phonograph



Model 85E



Model U-102E



-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES
 "Broadcast" (A)..... 540-1,720 kc
 "Short Wave" (C)..... 5,800-18,000 kc

R-F ALIGNMENT FREQUENCIES
 "Broadcast" (A)..... 600 kc (osc.)
 "Short Wave" (C)..... 15,000 kc (osc., ant.)

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A7..... First Detector—Oscillator
- (2) RCA-6D6..... Intermediate Amplifier
- Pilot Lamp (1)..... Mazda No. 46, 6.3 volts, 0.25 ampere

- (3) RCA-75..... Second Det., A-F Amp. and A.V.C.
- (4) RCA-42..... Audio Power Amplifier
- (5) RCA-80..... Full-Wave Rectifier

POWER SUPPLY RATINGS

	Radio only	Total
Model U-102E		
A-6. 105-125 volts, 60 cycles.....	75 watts..	100 watts
A... 105-125 volts, 50-60 cycles.....	75 watts..	105 watts
B-2. 105-125 volts, 25 cycles.....	75 watts..	105 watts
C-6. 105-125/200-250 volts, 60 cycles.	75 watts..	100 watts
C.. 105-125/200-250 volts, 50-60 cycles	75 watts..	105 watts

Model 85E

A.....	105-125 volts, 50-60 cycles, 75 watts
B.....	105-125 volts, 25-60 cycles, 75 watts
C.....	105-125/200-250 volts, 50-60 cycles, 75 watts

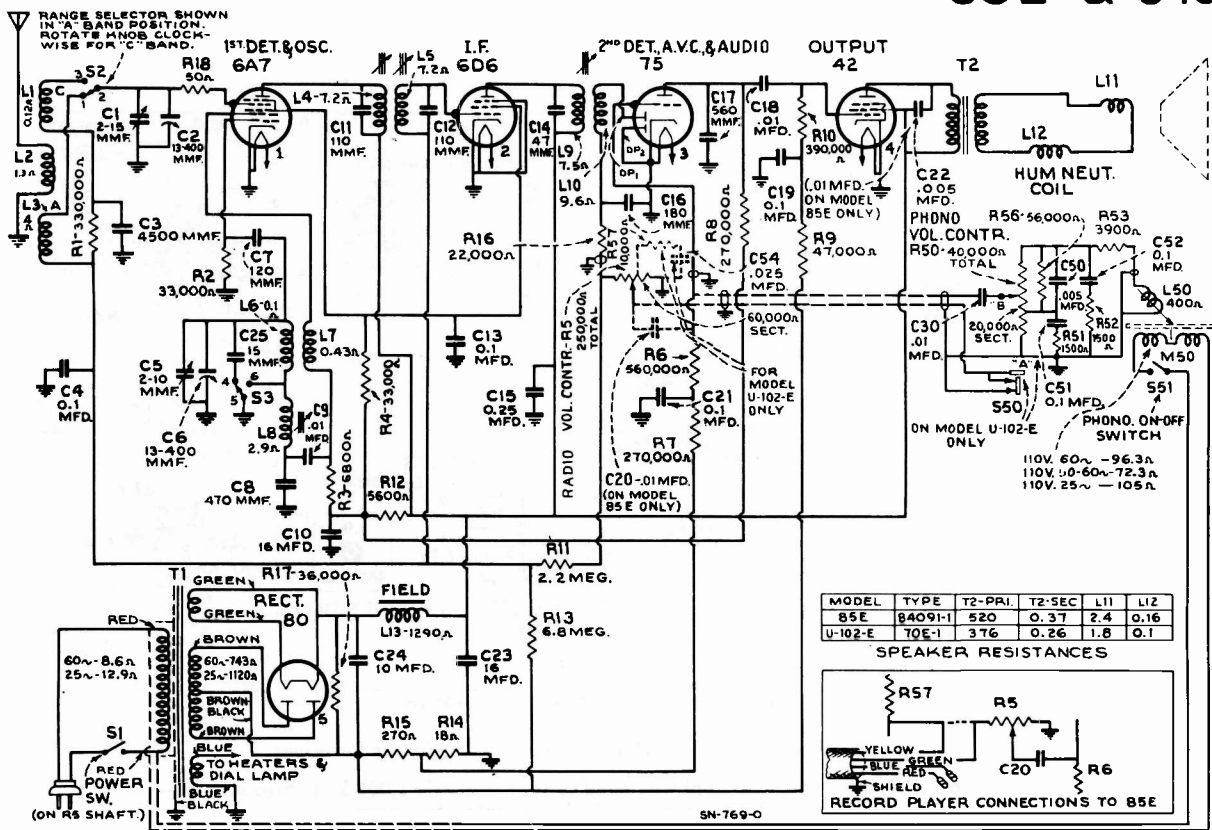
	85E	U-102E
POWER OUTPUT		
Undistorted.....	2.0 watts.....	2.5 watts
Maximum.....	4.0 watts.....	4.5 watts

	85E	U-102E
LOUDSPEAKER		
Type, Electrodynamic.....	6-inch.....	12-inch
Impedance (v.c.) at 400 cycles.....	2.6 ohms..	2.2 ohms

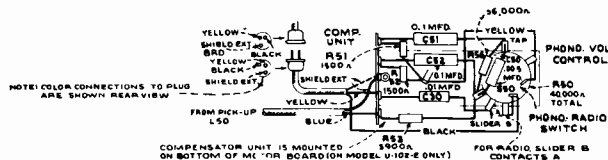
PHONOGRAPH (Model U-102E only)

Type..... Manual
 Turntable Speed (Adjustable)..... 78 r.p.m.

Type of Pickup..... High-impedance magnetic
 Pickup Impedance..... 1,400 ohms at 1,000 cycles

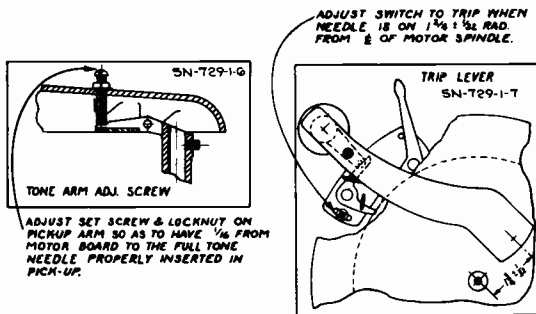
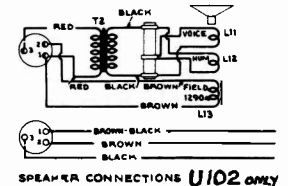
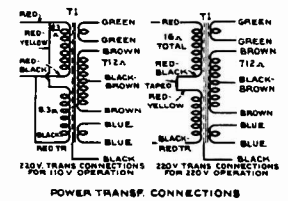
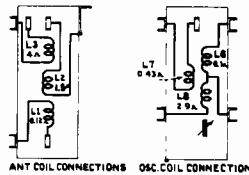
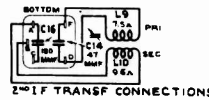
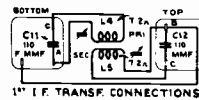


-Schematic Circuit Diagram

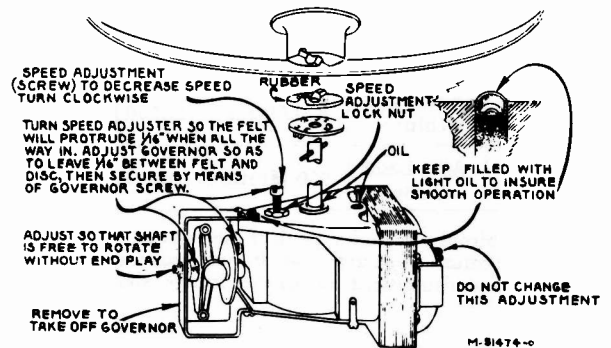


Compensator unit wiring

Precautionary Lead Dress—(1) Dress power line leads to the on-off switch away from grid connection terminal on volume control to reduce hum pickup. (2) Keep leads of capacitor C3 as short as possible. (3) Bus leads from range selector (ter. 6) to oscillator-coil tap L6-L8 should be maintained 3½-inches long for proper alignment. (4) Capacitor C25 should be dressed free of adjacent parts to maintain correct alignment at high-frequency end of "A" band. (5) Bus lead from range selector (ter. 3) to antenna coil L1 should be maintained 2¼-inches long for proper alignment. (6) The RCA-6A7 grid-cap lead (50-ohm resistor R18) to top of tuning capacitor C2 should be dressed properly to prevent shorts and should be maintained flexible to prevent acoustic howl.

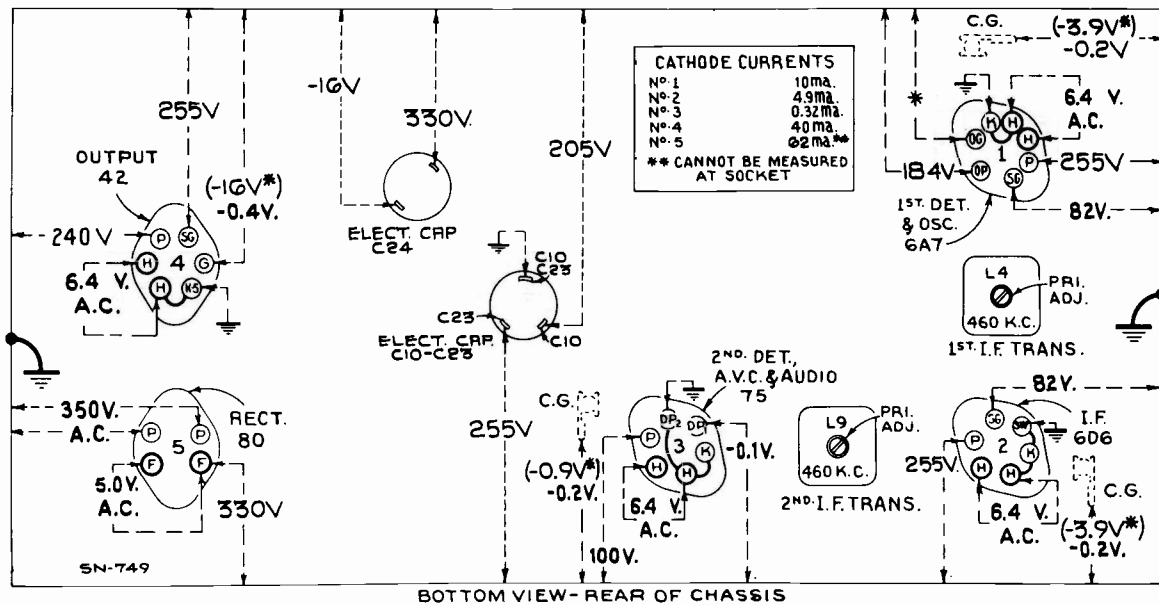


-Tone Arm and Motor Switch Adjustments



-Details of Motor

85E & U102E



BOTTOM VIEW - REAR OF CHASSIS

—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—
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.*

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

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	6D6 I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L9	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	1st I-F Trans.	L4 and L5	Max. (peak)
3	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	15,000 kc	"C" Osc.	C5	Max. (peak)†
4	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	Rock Through 15,000 kc	"C" Ant.	C1	Max. (peak)*‡
5	Ant. Lead (blue)	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L8	Max. (peak)

† Use maximum capacity peak if two peaks can be obtained.

* Use minimum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 15,920 kc.

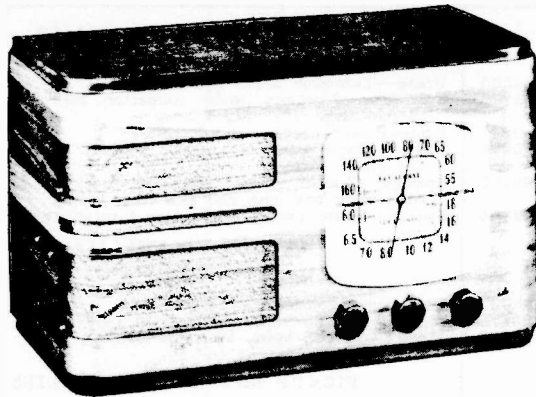
REPLACEMENT PARTS

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

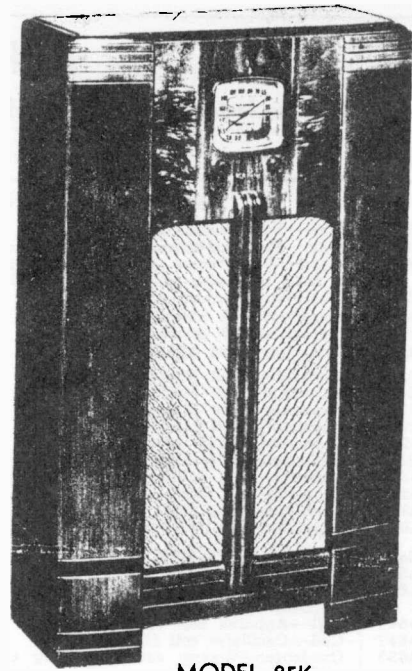
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES		MOTORBOARD ASSEMBLIES (Model U-102E only)	
30461	Belt—Flat, endless drive belt	14803	Brake—Turntable brake and switch
30460	Belt—Phosphor-bronze belt for indicator-pointer drive	14805	Connector—2-contact male connector for motor and switch leads
30473	Cable—3-conductor shielded compensation cable with female connector and grid clip (Model U-102E only)	3261	Rest—Pickup needle rest
12118	Cap—Grid contact cap	30248	Screw—Motor mounting screw, washer, rubber washer and clamp plate
12896	Capacitor—15 Mmfd. (C25)	30100	Springs—Tension springs for brake Stock No. 14803—comprising one long and one short spring
12405	Capacitor—47 Mmfd. (C14)	14804	Switch—Motor switch—located on turntable brake (S51)
14262	Capacitor—110 Mmfd. (C11, C12)	MOTOR ASSEMBLIES (Model U-102E only)	
12724	Capacitor—120 Mmfd. (C7)	11703	Governor—Motor governor complete
12406	Capacitor—180 Mmfd. (C16)	30475	Motor—105-125 volts, 50-60 cycle (M50)
30396	Capacitor—470 Mmfd. (C8)	14800	Motor—105-125 volts, 60 cycle (M50)
14724	Capacitor—560 Mmfd. (C17)	PICKUP AND ARM ASSEMBLIES (Model U-102E only)	
30245	Capacitor—.0045 Mfd. (C3)	14291	Armature—Pickup armature
4838	Capacitor—.005 Mfd. (C22) (Model U-102E only)	11732	Coil—Pickup coil (L50)
4858	Capacitor—.01 Mfd. (C20, C22) (Model 85E only)	14292	Damper—Pickup damper block complete with clamp and screw
14393	Capacitor—.01 Mfd. (C9, C18)	30476	Pickup and Arm complete
4870	Capacitor—.025 Mfd. (C54) (Model U-102E only)	3811	Screw—Pickup needle screw
4839	Capacitor—.01 Mfd. (C4, C13, C19, C21)	REPRODUCER ASSEMBLIES (Model 85E only) (Speaker No. 84091-1)	
12484	Capacitor—0.25 Mfd. (C15)	14616	Coil—Reproducer field coil (L12, L13)
14814	Capacitor—10 Mfd. (C24)	14614	Cone—Reproducer cone and voice coil (L11)
14813	Capacitor Pack—Comprising 2 sections each 16 Mfd. (C10, C23)	5118	Plug—3-contact male plug
14646	Coil—Antenna coil (L1, L2, L3)	14613	Reproducer—Complete
14647	Coil—Oscillator coil (L6, L7, L8)	14615	Transformer—Output transformer (T2)
14633	Condenser—2-gang variable tuning condenser (C1, C2, C5, C6)	REPRODUCER ASSEMBLIES (Model U-102E only) (Speaker No. RL-70E-1)	
14783	Connector—2-contact female connector for motor power cable (Model U-102E only)	13866	Cap—Dust cap for cone center
5119	Connector—3-contact female connector for speaker cable	14354	Coil—Reproducer field coil (L13)
30474	Connector—3-contact female connector for cable Stock No. 30473 (Model U-102E only)	11469	Coil—Hum neutralizing coil (L12)
12006	Core—Adjustable core and stud assembly for I.F. transformers	12667	Cone—Reproducer cone and voice coil (L11)
14631	Dial—Station-selector dial scale and holder	5118	Plug—3-contact male plug
14651	Drive—Vernier drive and pinion gear for tuning condenser	14395	Reproducer—Complete
14635	Indicator—Station selector indicator pointer	14358	Screw—Screw and lockwasher to hold core in yoke
5226	Lamp—Dial lamp	14355	Transformer—Output transformer (T2)
30465	Pulley—Drive-belt intermediate pulley—located on side of belt opposite idler pulley	14357	Washer—Spring washer to hold field coil
14639	Pulley—Drive-belt pulley—fastens on vernier drive of tuning condenser	MISCELLANEOUS ASSEMBLIES (Model 85E only)	
14636	Pulley—Idler pulley—less spring	14654	Escutcheon—Station-selector escutcheon and crystal
30464	Pulley—Indicator-belt pulley—fastens on rotor shaft of tuning condenser	12673	Knob—Tuning, volume control, or range switch knob
30459	Pulley—Indicator-pointer pulley and shaft—less screw to hold belt	4119	Screw—No. 8-32, headless set screw for knob Stock No. 12673
14660	Resistor—18 ohms, insulated, 1/2 watt (R14)	30466	Screw—Chassis mounting screw and washer assembly
14653	Resistor—50 ohms, flexible type, 1/10 watt (R18)	MISCELLANEOUS ASSEMBLIES (Model U-102E only)	
13819	Resistor—270 ohms, insulated, wire wound, 1.1 watt (R15)	11762	Box—Used-needle box
5175	Resistor—5,600 ohms, carbon type, 1/2 watt (R12)	30478	Cable—2-conductor shielded compensator cable complete with 3-contact male connector
14659	Resistor—6,800 ohms, carbon type, 1/2 watt (R3)	14393	Capacitor—.01 Mfd. (C30)
14559	Resistor—10,000 ohms, insulated, 1/2 watt (R57) (Model U-102E only)	4839	Capacitor—.01 Mfd. (C50, C51)
11305	Resistor—22,000 ohms, carbon type, 1/2 watt (R16)	14782	Connector—3-contact male connector for cable Stock No. 30478
13735	Resistor—33,000 ohms, carbon type, 1/2 watt (R2)	11704	Damper—Turntable rubber damper and damper plate
5033	Resistor—33,000 ohms, carbon type, 1 watt (R4)	14654	Escutcheon—Station-selector escutcheon and crystal
5206	Resistor—36,000 ohms, wire wound, 20 watt (R17)	12673	Knob—Tuning, radio-volume control, range switch or phonograph-volume control knob
11646	Resistor—47,000 ohms, carbon type, 1/2 watt (R9)	4119	Screw—No. 8-32, headless set screw for knob Stock No. 12673
11323	Resistor—270,000 ohms, carbon type, 1/2 watt (R7, R8)	30477	Screw—Chassis mounting screw, washer, lockwasher and nut—for rear of chassis
13733	Resistor—330,000 ohms, carbon type, 1/2 watt (R1)	30535	Screw—Chassis mounting screw and washer—for front of chassis
13479	Resistor—390,000 ohms, carbon type, 1/2 watt (R10)	30249	Screw—Motorboard mounting screw, spring, spacer, washer, lockwasher and rubber washer assembly
5035	Resistor—560,000 ohms, carbon type, 1/2 watt (R6)	14499	Resistor—1,500 ohms, insulated, 1/2 watt (R52)
12679	Resistor—2.2 Megohms, insulated, 1/2 watt (R11)	12955	Resistor—3,900 ohms, insulated, 1/2 watt (R53)
14661	Resistor—6.8 Megohms, insulated, 1/2 watt (R13)	12286	Resistor—56,000 ohms, insulated, 1/2 watt (R56)
30340	Retainer—Indicator pulley or drive-belt intermediate-pulley retainer	14801	Turntable
5129	Ring—Retaining ring for Radiotron shield	14815	Volume Control—Phonograph volume control and switch (R50, S50)
30463	Screw—No. 4-40 x 3/16-in. binder-head screw to fasten indicator drive belt	MISCELLANEOUS ASSEMBLIES (Model U-102E only)	
4389	Screw—No. 6-32 x 3/16-in. headless set screw for pulley Stock No. 14639	11762	Box—Used-needle box
5042	Screw—No. 8-32 x 1/8-in. headless set screw for pulley Stock No. 30464	30478	Cable—2-conductor shielded compensator cable complete with 3-contact male connector
14638	Shaft—Knob shaft and pulley	14393	Capacitor—.01 Mfd. (C30)
12008	Shield—First I.F. transformer shield can	4839	Capacitor—.01 Mfd. (C50, C51)
12408	Shield—Second I.F. transformer shield can	14782	Connector—3-contact male connector for cable Stock No. 30478
11265	Shield—Radiotron shield complete	11704	Damper—Turntable rubber damper and damper plate
4794	Socket—4-contact 80 Radiotron socket	14654	Escutcheon—Station-selector escutcheon and crystal
4786	Socket—8-contact 6D6, 75, or 42 Radiotron socket	12673	Knob—Tuning, radio-volume control, range switch or phonograph-volume control knob
4787	Socket—7-contact 6A7 Radiotron socket	4119	Screw—No. 8-32, headless set screw for knob Stock No. 12673
14658	Socket—Dial-lamp socket	30477	Screw—Chassis mounting screw, washer, lockwasher and nut—for rear of chassis
30462	Spring—Idler-pulley tension spring	30535	Screw—Chassis mounting screw and washer—for front of chassis
12007	Spring—Retaining spring for core Stock No. 12006	30249	Screw—Motorboard mounting screw, spring, spacer, washer, lockwasher and rubber washer assembly
14640	Switch—Range switch (S2, S3)	14499	Resistor—1,500 ohms, insulated, 1/2 watt (R52)
14376	Transformer—First I.F. transformer (L4, L5, C11, C12)	12955	Resistor—3,900 ohms, insulated, 1/2 watt (R53)
14642	Transformer—Second I.F. transformer (L9, L10, C14, C16)	12286	Resistor—56,000 ohms, insulated, 1/2 watt (R56)
30607	Transformer—105-125/200-250 volts, 50-60 cycles (T1)	14801	Turntable
14826	Volume control and power switch (R5, S1) (Model U-102E only)	14815	Volume Control—Phonograph volume control and switch (R50, S50)
14645	Volume control and power switch (R5, S1) (Model 85E only)		

MODELS 85K and 85T1

Five-Tube, Two-Band, A-C, Superheterodyne



Model 85T1



MODEL 85K

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A) 540-1,720 kc
 "Short Wave" (C) 5,800-18,000 kc
 Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6A7 First Detector—Oscillator
 (2) RCA-6D6 Intermediate Amplifier
 Pilot Lamp (1)..... Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

Rating A 105-125 volts, 50-60 cycles, 75 watts
 Rating B 105-125 volts, 25-60 cycles, 75 watts
 Rating C 100-125/200-250 volts, 50-60 cycles, 75 watts

POWER OUTPUT RATING

Undistorted 2.0 watts
 Maximum 4.0 watts

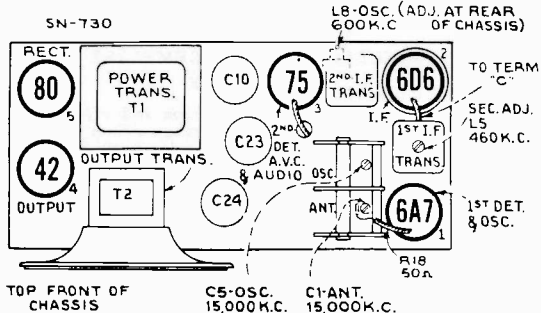
R-F ALIGNMENT FREQUENCIES

"Broadcast" (A) 600 kc (osc.)
 "Short Wave" (C) 15,000 kc (osc., ant.)
 460 kc

(3) RCA-75 Second Det., A-F Amp. and A.V.C.
 (4) RCA-42 Audio Power Amplifier
 (5) RCA-80 Full-Wave Rectifier

LOUDSPEAKER

Type Electrodynamic
 V.C. Impedance..... { (84010-1) 3.6- } ohms at 400 cycles
 { (84010-3) 3.1- }
 (84091-1) 2.6- }



—Radiotron, Coil, and Trimmer Locations

Precautionary Lead Dress—(1) Dress power line leads to the on-off switch away from grid connection terminal on volume control to reduce hum pickup. (2) Keep leads of capacitor C3 as short as possible. (3) Bus lead from range selector (ter. 6) to oscillator coil tap L6L8 should be maintained 3½ inches long for proper alignment. (4) Capacitor C25 should be dressed free of adjacent parts to maintain correct alignment at high-frequency end of "A" band. (5) Bus lead from range selector (ter. 3) to antenna coil L1 should be maintained 2¼ inches long for proper alignment. (6) The RCA-6A7 grid-cap lead (50-ohm resistor R18) to top of tuning capacitor C2 should be dressed properly to prevent shorts and should be maintained flexible to prevent acoustic howl.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

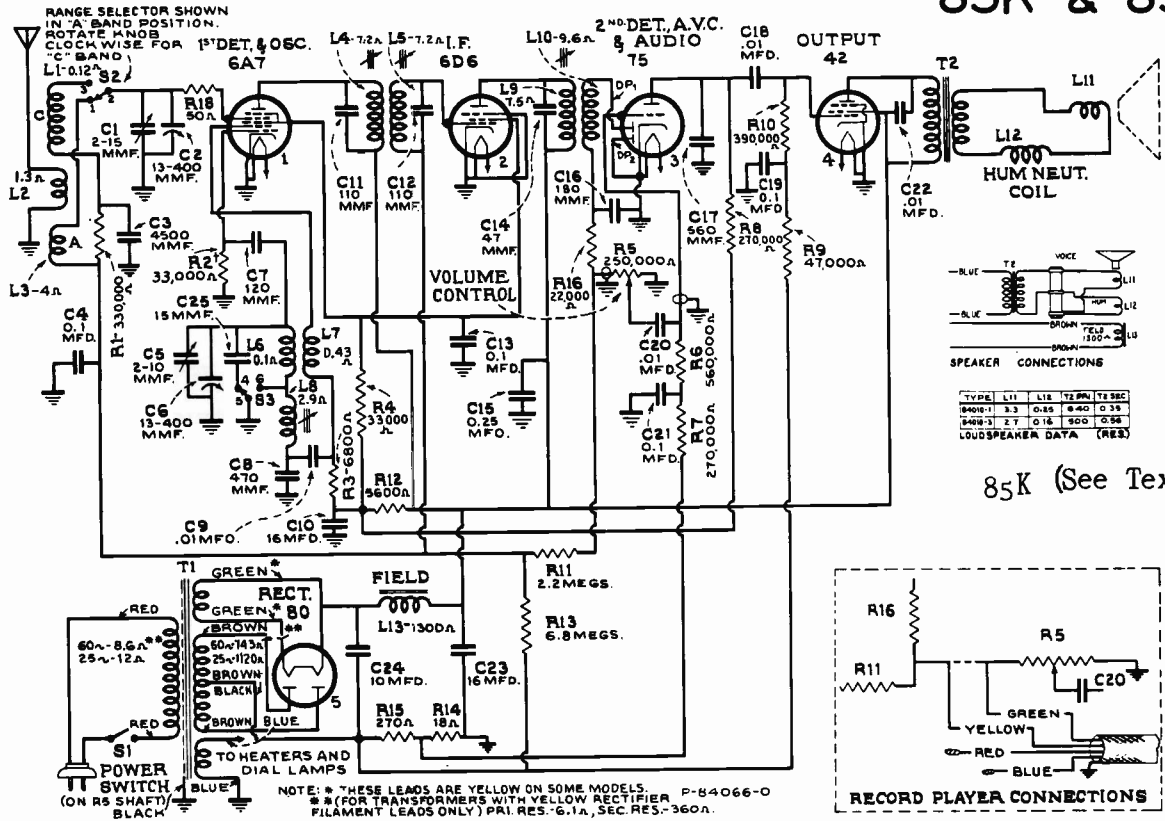
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC. TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L9 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			L5 L4 1st I-F Trans.
3	Antenna in series with 300 ohms	15000 Kc	15000 Kc "C" Band	C5† C1▲ Osc. Ant.
4	Antenna in series with 200 mmfd	600 Kc	600 Kc "A" Band	L8 L-F Osc. Rock Gang

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG.

Osc. tracks 460 Kc below signal on Band "C" and 460 Kc above on Band "A".

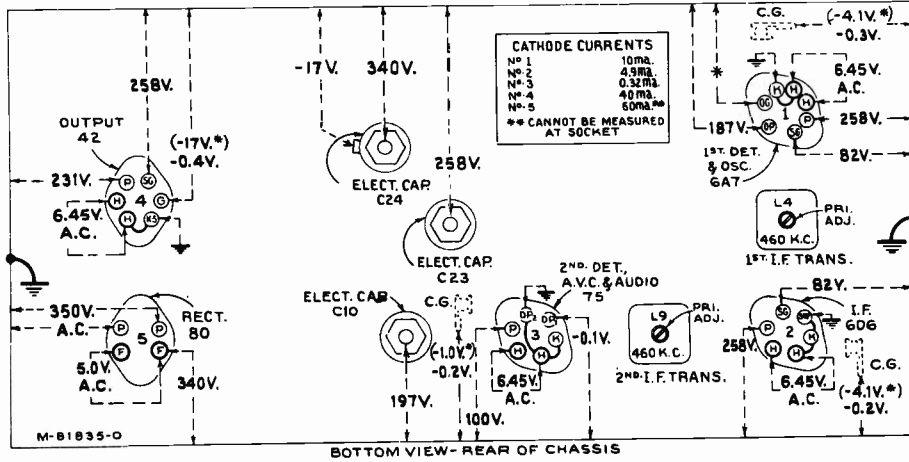
85K & 85T1



85K (See Text)

—Schematic Circuit Diagram

† Resistor R2 is 56,000 ohms in some instruments. Replace with Stock No. 13735.



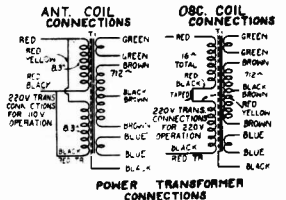
—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—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.

MODEL 85K

Speaker marked 84091-1 is used, and its cable connects to the chassis as follows: Brown lead (L13) to positive (center) terminal of capacitor C24. Brown-black lead (L13-T2) to "SG" terminal of tube No. 4, RCA-42. Black lead (T2) to "P" terminal of tube No. 4, RCA-42. Resistance values for speaker 84091-1 are: Field coil (L13), 1,300 ohms; Voice coil (L11), 2.4 ohms; Hum neut. coil (L12), 0.16 ohm; Output transformer (T2) primary, 520 ohms--secondary, 0.37 ohm. The voice-coil impedance is 2.6 ohms at 400 cycles.



85K & 85T1

Resistor R-13, which forms part of the divider system supplying residual bias to the first detector and I-F stages, must be of the correct value. In receivers where sensitivity is poor, variation of value of this part should be checked as a likely cause. If measurement apparatus available does not extend to 6.8 megohms, the resistor should be replaced with a standard Stook #14661 unit. Removing R-13 from the circuit entirely will be permissible where a slight excess of sensitivity can be tolerated.

Unstable performance at the high frequency end of the "C" band may be due to super-regenerative action in the oscillator-detector circuits. Careful re-alignment of the "C" band circuits will correct most cases of this trouble, however, it may be necessary to replace the oscillator resistor R-2. This resistor should have 35,000 ohms resistance. The "C" band circuits must be aligned at 15,000 Kc, with the heterodyne oscillator stage tracking 460 Kc below the signal frequency.

MODEL 85K

A limited number of instruments have the loudspeaker mounted in such a manner that one of the mounting studs is directly in line with the output transformer. In some cases, this stud may protrude to the extent of striking the transformer winding and the circuit will be shorted, resulting in low over-all sensitivity or weak output. The condition should be corrected, where necessary, by removing the speaker and revolving it approximately 45 degrees to a new mounting position, so that the transformer does not fall opposite a stud.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14634	Belt—Variable condenser drive belt	12679	Resistor—2.2 Megohm—Insulated, $\frac{1}{2}$ watt (R11)
14632	Bracket—Dial mounting bracket	14661	Resistor—6.8 Megohm—Insulated, $\frac{1}{2}$ watt (R13)
5237	Bushing—Variable condenser rubber mounting bushing	5129	Ring—Radiotron shield ring
12118	Cap—Grid contact cap	4389	Screw—No. 6—32 x 3/16 headless set screw for pulley, Stock No. 14639
12896	Capacitor—15 Mmfd. (C25)	14638	Shaft—Station selector knob shaft and pulley
12405	Capacitor—47 Mmfd. (C14)	12008	Shield—First I. F. transformer shield
14262	Capacitor—110 Mmfd. (C11, C12)	12408	Shield—Second I. F. transformer shield
12724	Capacitor—120 Mmfd. (C7)	11265	Shield—Radiotron shield
12406	Capacitor—180 Mmfd. (C16)	14658	Socket—Dial lamp socket
30396	Capacitor—470 Mmfd. (C8)	4794	Socket—4-contact 80 Radiotron socket
14724	Capacitor—560 Mmfd. (C17)	4786	Socket—6-contact 6D6, 42 or 75 Radiotron socket
30245	Capacitor—.0045 Mfd. (C3)	4787	Socket—7-contact 6A7 Radiotron socket
4858	Capacitor—.01 Mfd. (C20, C22)	14637	Spring—Idler pulley tension spring
13138	Capacitor—.01 Mfd. (C9, C18)	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 14648
4839	Capacitor—0.1 Mfd. (C4, C13, C19, C21)	14640	Switch—Range switch (S2, S3)
12484	Capacitor—0.25 Mfd. (C15)	14376	Transformer—First I. F. transformer (L4, L5, C11, C12)
11203	Capacitor—10 Mfd. (C24)	14642	Transformer—Second I. F. transformer (L9, L10, C14, C16)
5212	Capacitor—16 Mfd. (C23)	14655	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T1)
14377	Capacitor—16 Mfd. (C10)	14656	Transformer—Power transformer, 105-125 volts, 25-60 cycle (T1)
14646	Coil—Antenna coil (L1, L2, L3)	14657	Transformer—Power Transformer, 100-125/200-250 volts, 50-60 cycle (T1)
14647	Coil—Oscillator coil (L6, L7, L8)	14645	Volume Control and power switch (R5, S1)
14633	Condenser—2-gang variable tuning condenser (C1, C2, C5, C6)	REPRODUCER ASSEMBLIES	
14648	Core—Adjustable core and stud for oscillator coil	14679	Cone—Reproducer cone (L11) for speaker marked 84010-3
12006	Core—Adjustable core and stud for I. F. transformer	14941	Cone—Reproducer cone (L11) for speaker marked 84010-1
14631	Dial—Station selector dial	14678	Reproducer complete marked 84010-3
14651	Drive—Variable condenser vernier drive and pinion gear	14680	Transformer—Output transformer (T2) for speaker marked 84010-3
14635	Indicator—Station selector indicator pointer	14942	Transformer—Output transformer (T2) for speaker marked 84010-1
5226	Lamp—Dial lamp	MISCELLANEOUS ASSEMBLIES	
14636	Pulley—Idler pulley—less spring	14654	Escutcheon—Station selector escutcheon and crystal
14639	Pulley—Variable condenser drive pulley—located on condenser shaft	12673	Knob—Station selector, volume control or range switch knob
14660	Resistor—18 Ohms—Insulated, $\frac{1}{2}$ watt (R14)	14267	Screw—Chassis mounting screw and washer
14653	Resistor—50 Ohms—Flexible type, 1/10 watt (R18)	4119	Screw—No. 8—32 x $\frac{1}{2}$ headless set screw for knob, Stock No. 12673
13819	Resistor—270 Ohms—Wire wound, 1.1 watt (R15)		
5175	Resistor—5,600 Ohms—Carbon type, $\frac{1}{2}$ watt (R12)		
14659	Resistor—6,800 Ohms—Carbon type, $\frac{1}{2}$ watt (R3)		
11305	Resistor—22,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R16)		
5033	Resistor—33,000 Ohms—Carbon type, 1 watt (R4)		
13735	Resistor—33,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R2)		
11646	Resistor—47,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R9)		
11323	Resistor—270,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R7, R8)		
13733	Resistor—330,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R1)		
13479	Resistor—390,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R10)		
5035	Resistor—560,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R6)		

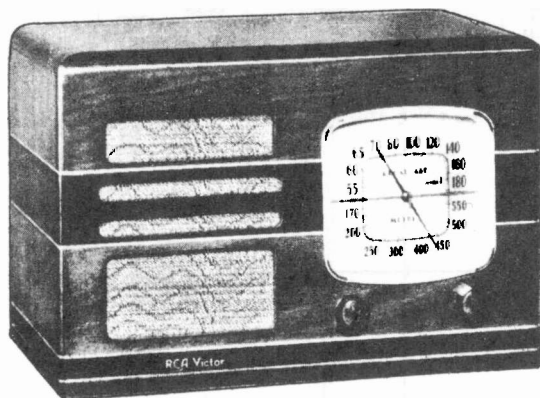
SUBSTITUTE PARTS - MODEL 85K

Stock No.	Description
14393	Capacitor—.01 mfd. (C9, C18)
5119	Connector--3-contact female connector for speaker cable
30467	Screw--Chassis-mounting screw and washer assembly
30607	Transformer--Power transformer, 105-125/200-250 volts, 50-60 cycles (T1)
30571	Transformer--Power transformer, 105-125 volts, 25-60 cycles (T1)
14616	Coil--Reproducer field coil (L12, L13) (for Spkr. 84091-1)
14614	Cone--Reproducer cone and voice coil (L11) (for Spkr. 84091-1)
5118	Plug--3-contact male plug (for Spkr. 84091-1)
14613	Reproducer--Complete (marked 84091-1)
14615	Transformer--Output transformer (T2) (for Spkr. 84091-1)

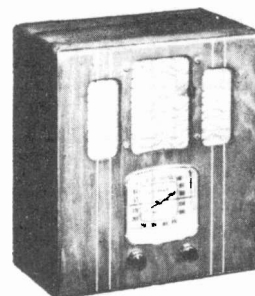
Stock Nos. 14632, 5237, 13138, 14655, 14656, 14657, 14679, 14941, 14678, 14680, 14942, and 14267 are not used in Model 85K.

MODELS 85T & 85T2

Five-Tube, Single-Band, A-C, Superheterodyne Receiver



Model 85T

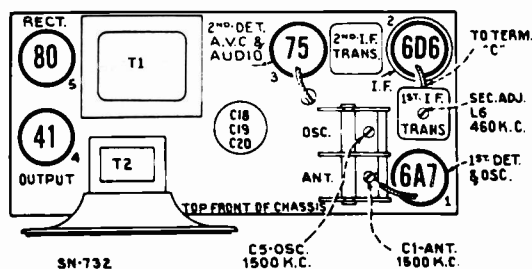


MODEL 85T2

Electrical Specifications

Frequency Range 530—1,720 kc
 Intermediate Frequency 460 kc
 R-F Alignment Frequency 1,500 kc (osc., ant.)
RADIOTRON COMPLEMENT
 (1) RCA-6A7 First Detector—Oscillator
 (2) RCA-6D6 Intermediate Amplifier
 (3) RCA-75 Second Det., A-F Amp. and A.V.C.
 (4) RCA-41 Audio Power Amplifier
 (5) RCA-80 Full-Wave Rectifier
 Pilot Lamp (1) Mazda No. 46, 6.3 volts, 0.25 ampere
POWER SUPPLY RATINGS
 Rating A 105-125 volts, 50-60 cycles, 55 watts
 Rating B 105-125 volts, 25-60 cycles, 60 watts
 Rating C 100-125/200-250 volts, 50-60 cycles, 55 watts
POWER OUTPUT RATING
 Undistorted 1.0 watts
 Maximum 2.5 watts

LOUDSPEAKER
 Type Electrodynamic
 Voice Coil Impedance { (84011-3) 3.1- ohms at 400 cycles
 (84011-6) 2.7- }
 (84128-1) 2.6 -
 (84128-2) 5 -



-Radiotron, Coil, and Trimmer Locations

Precautionary Lead Dress—(1) The green RCA-75 grid cap lead should be twisted with the yellow lead to the volume control to maintain proper position for prevention of hum pickup. (2) The green lead from oscillator coil L3 to tuning condenser C4 should be kept free from chassis. (3) Keep power cord and red primary leads of power transformer away from the green RCA-41 grid lead to prevent hum pickup. (4) Red lead from electrolytic capacitor C19 to RCA-80 socket should be dressed between power transformer and chassis apron to prevent hum pickup.

Alignment Procedure

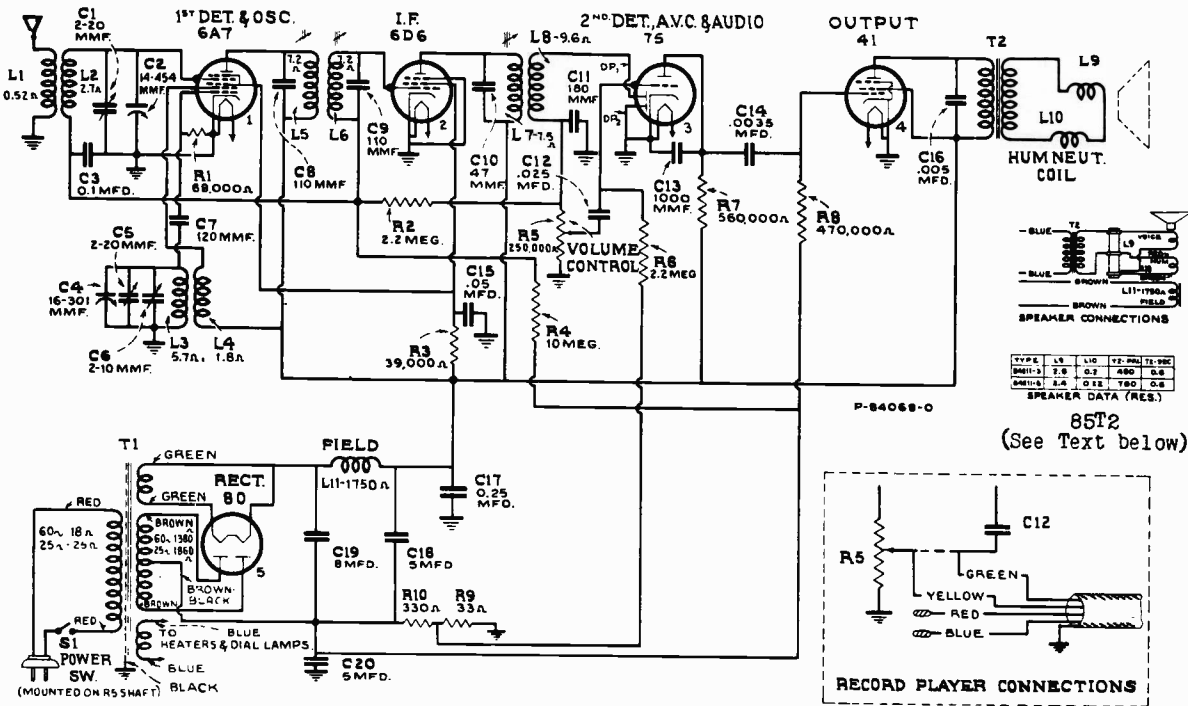
Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc	L7 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			L6 L5 1st I-F Trans.
3	Antenna in series with 200 mmfd	1500 Kc	1500 Kc	C5 C1 Osc. Ant.

▲ Use maximum capacity peak.

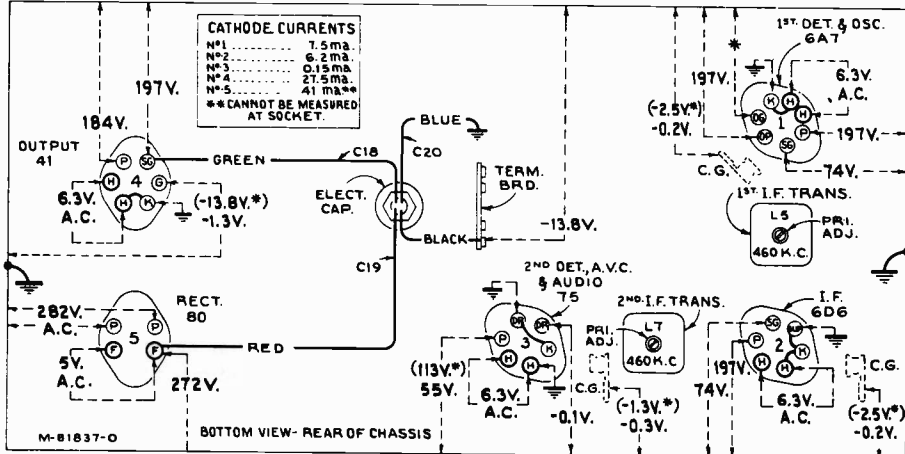
Tighten capacitor C6 on bottom of gang (under chassis) for maximum capacity before adjusting C5.

85T & 85T2



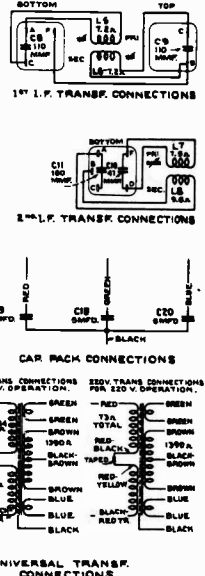
-Schematic Circuit Diagram

On some chassis, where it is necessary to replace the stock #14669 capacitor pack, several thicknesses of fish paper or its equivalent is required between the mounting clamp and the capacitor unit in order to obtain a secure assembly. When replacing this pack, it is advisable to install a 56,000-ohm, 1-watt resistor (Stock #12876) from the oscillator coil terminal L-4 (plus B) to the chassis. This resistor will improve surge conditions in any localities where they are abnormal.



85T2 VOLTAGES 5% HIGHER
 -Radiotron Socket Voltages, Coil, and Trimmer Locations
 Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—
 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.*



MODEL 85T2

Model 85T2 is an upright table model employing a chassis similar to Model 85T. Either of two loudspeakers may be employed and are readily identified by the numbers stamped on them--84128-1 or 84128-2. The speaker cable connects to the chassis as follows: Brown lead (L11) to "F" terminal of tube No. 5, RCA-80, to which the red lead from the capacitor pack connects. Black-brown lead (L11-T2) to "SG" terminal of tube No. 4, RCA-41. Black lead (T2) to "P" terminal of tube No. 4, RCA-41.

85T & 85T2

Resistance values for speaker 84128-1 are: Field coil (L11), 1,300 ohms; Voice coil (L9), 2.3 ohms; Hum neut. coil (L10), 0.15 ohm; Output transformer (T2) primary, 470 ohms--secondary, 0.35 ohm; Voice-coil impedance, 2.6 ohms at 400 cycles.

Resistance values for speaker 84128-2 are: Field coil (L11), 1,300 ohms; Voice coil (L9), 4.2 ohms; Hum neut. coil (L10), 0.23 ohm; Output transformer (T2) primary, 610 ohms--secondary, 0.5 ohm; Voice-coil impedance, 5 ohms at 400 cycles.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14663	Belt--Variable condenser drive belt	14638	Shaft--Station selector knob shaft and pulley
14632	Bracket--Dial mounting bracket	12008	Shield--First I. F. transformer shield
12118	Cap--Grid contact cap	12408	Shield--Second I. F. transformer shield
12405	Capacitor--47 Mmfd. (C10)	11265	Shield--Radiotron shield
14262	Capacitor--110 Mmfd. (C8, C9)	14658	Socket--Dial lamp socket
12724	Capacitor--120 Mmfd. (C7)	4794	Socket--4-contact 80 Radiotron socket
12406	Capacitor--180 Mmfd. (C11)	4786	Socket--6-contact 6D8, 41 or 75 Radiotron socket
12635	Capacitor--1,000 Mmfd. (C13)	4787	Socket--7-contact 8A7 Radiotron socket
5005	Capacitor--.0035 Mfd. (C14)	14637	Spring--Idler pulley tension spring
4838	Capacitor--.005 Mfd. (C16)	12007	Spring--Retaining spring for core, Stock No. 12008
4870	Capacitor--.025 Mfd. (C12)	14376	Transformer--First I. F. transformer (L5, L6, C8, C9)
4886	Capacitor--.05 Mfd. (C15)	14642	Transformer--Second I. F. transformer (L7, L8, C10, C11)
4841	Capacitor--0.1 Mfd. (C3)	14666	Transformer--Power transformer, 105-125 volts, 50-60 cycle (T1)
12484	Capacitor--0.25 Mfd. (C17)	14667	Transformer--Power transformer, 105-125 volts, 25-60 cycle (T1)
14669	Capacitor Pack--Comprising one 8-Mfd. and two 5-Mfd. sections (C18, C19, C20)	14668	Transformer--Power transformer, 100-125/200-250 volts, 50-60 cycle (T1)
14670	Coil--Antenna coil (L1, L2)	14645	Volume Control and power switch (R5, S1)
14257	Coil--Oscillator coil (L3, L4)	REPRODUCER ASSEMBLIES	
14662	Condenser--2-gang variable condenser (C1, C2, C4, C5, C6)	14676	Cone--Reproducer cone (L9) for speaker marked 84011-3
12006	Core--Adjustable core and stud for I. F. transformer	14939	Cone--Reproducer cone (L9) for speaker marked 84011-6
14665	Dial--Station selector dial	14675	Reproducer complete (84011-3)
14635	Indicator--Station selector indicator pointer	14677	Transformer--Output transformer (T2) for speaker marked 84011-3
5226	Lamp--Dial lamp	14940	Transformer--Output transformer (T2) for speaker marked 84011-6
14636	Pulley--Idler pulley--less spring	35350	Field coil for speaker marked 84011-3
14664	Pulley--Variable condenser drive pulley--located on condenser shaft	MISCELLANEOUS ASSEMBLIES	
14671	Resistor--33 Ohms--Carbon type, 1/2 watt (R9)	14654	Escutcheon--Station selector escutcheon and crystal knob
11670	Resistor--330 Ohms--Carbon type, 1 watt (R10)	12673	Knob--Station selector or volume control knob
8067	Resistor--39,000 Ohms--Carbon type, 1/2 watt (R3)	14267	Screw--Chassis mounting screw and washer
12333	Resistor--68,000 Ohms--Carbon type, 1/2 watt (R1)	4119	Screw--No. 8-32 x 1/4 headless set screw for knob, Stock No. 12673
11172	Resistor--470,000 Ohms--Carbon type, 1/2 watt (R8)		
5035	Resistor--580,000 Ohms--Carbon type, 1/2 watt (R7)		
11626	Resistor--2.2 Megohm--Carbon type, 1/2 watt (R2, R6)		
13732	Resistor--10 Megohm--Carbon type, 1/2 watt (R4)		
5129	Ring--Radiotron shield ring		
4389	Screw--No. 6-32x3/16 headless set screw for pulley, Stock No. 14639		

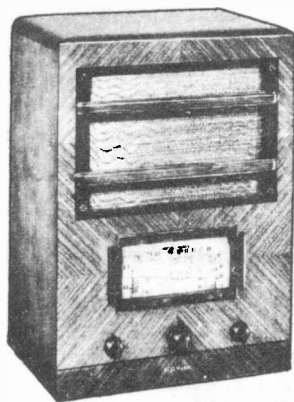
SUBSTITUTE PARTS - MODEL 85T2

Stock No.	Description
30460	Belt--Flat, phosphor-bronze drive belt for indicator pointer
30469	Belt--Flat, endless drive belt for tuning condenser
5119	Connector--3-contact female connector for speaker cable
30459	Pulley--Indicator-pointer pulley and shaft
30465	Pulley--Drive-belt intermediate pulley--located on side of drive opposite idler pulley
30468	Pulley--Variable-condenser drive pulley--located on condenser shaft
30340	Retainer--Indicator-pulley or drive-belt intermediate pulley retainer
30463	Screw--No. 4-40 x 3/16 in. binder-head screw to fasten indicator drive belt
30471	Cone--Reproducer cone (L9) (for Spkr. 84128-2)
30687	Cone--Reproducer cone (L9) (for Spkr. 84128-1)
5118	Connector--3-contact male connector (for Spkr. 84128-2)
30470	Reproducer complete (Marked 84128-2)
30472	Transformer--Output transformer (T2) (for Spkr. 84128-2)
30686	Transformer--Output transformer (T2) (for Spkr. 84128-1)

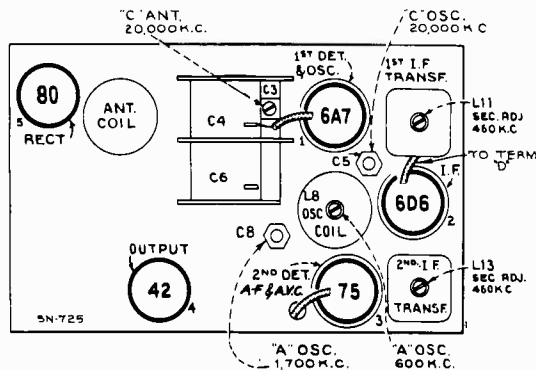
Stock Nos. 14663, 14664, 14676, 14939, 14675, 14677, and 14940 are not used in Model 85T2.

MODEL 85T5

Five-Tube, Two-Band, A-C, Superheterodyne Receiver



Model 85T5



-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 530-1,900 kc
 "Short Wave" (C)..... 5,800-21,600 kc

Intermediate Frequency

RADIOTRON COMPLEMENT

(1) RCA-6A7 First Detector—Oscillator
 (2) RCA-6D6 Intermediate Amplifier
 Pilot Lamps (2)

R-F ALIGNMENT FREQUENCIES

"Broadcast" (A)..... 600 kc (osc.), 1,700 kc (osc.)
 "Short Wave" (C)..... 20,000 kc (osc., ant.)

..... 460 kc

(3) RCA-75 Second Det., A-F Amp. and A.V.C.

(4) RCA-42 Audio Power Amplifier

(5) RCA-80 Full-Wave Rectifier

Pilot Lamps (2) Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

Rating A 105-125 volts, 50-60 cycles, 75 watts

Rating B 105-125 volts, 25-60 cycles, 75 watts

Rating C 100-125/200-250 volts, 50-60 cycles, 75 watts

POWER OUTPUT RATING

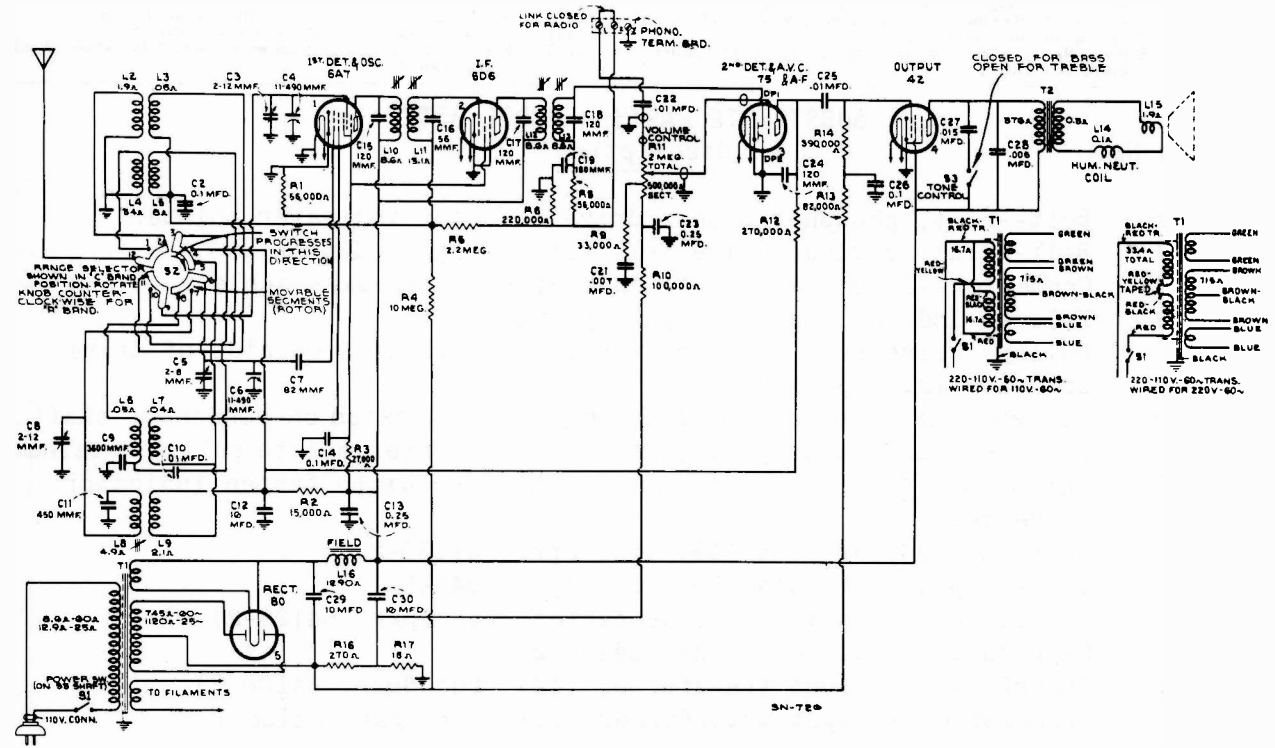
Undistorted 2.0 watts

Maximum 4.5 watts

LOUDSPEAKER

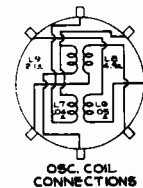
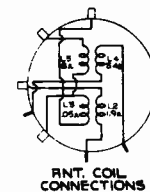
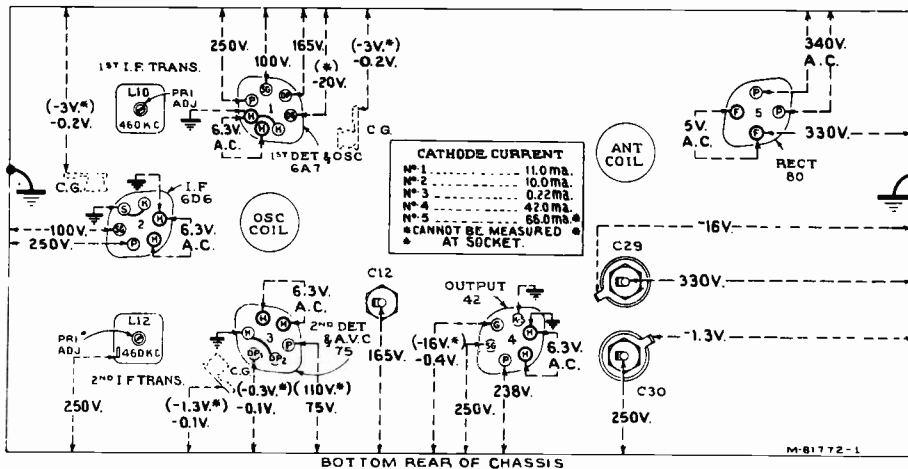
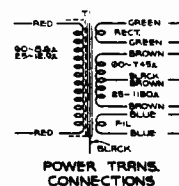
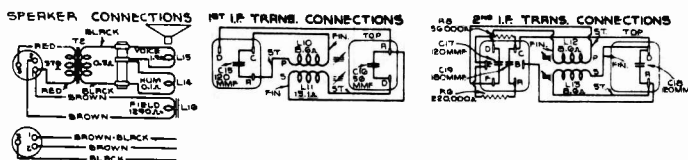
Type Electrodynamic

Voice Coil Impedance 2 1/4 ohms at 400 cycles



-Schematic Circuit Diagram

Precautionary Lead Dress.—(1) Keep leads of C2 and C9 as short as possible. (2) Dress leads from power transformer and a-c switch away from antenna coil and associated wiring. (3) Red lead from range selector "ter 4" to oscillator coil L9 should have two tight turns around trimming capacitor C8.



—Radiotron Socket Voltages, Coil, and Trimmer Locations
 Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—
 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.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on "Broadcast" scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	6D6 I-F Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L12 and L13	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L10 and L11	Max. (peak)
3	Ant. Post	300 Ohms	20,000 kc	20,000 kc	"C" Osc.	C5	Max. (peak)*
4	Ant. Post	300 Ohms	20,000 kc	Rock Thru 20,000 kc	"C" Ant.	C3	Max. (peak)†
5	Ant. Post	200 Mmfd.	600 kc	600 kc	"A" L-F Osc.	L8	Max. (peak)
6	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	"A" H-F Osc.	C8	Max. (peak)
7	Ant. Post	200 Mmfd.	600 kc	Rock Thru 600 kc	"A" L-F Osc.	L8	Max. (peak)
8	Ant. Post	200 Mmfd.	1,700 kc	1,700 kc	"A" H-F Osc.	C8	Max. (peak)

* Use minimum capacity peak.
 † Use maximum capacity peak.

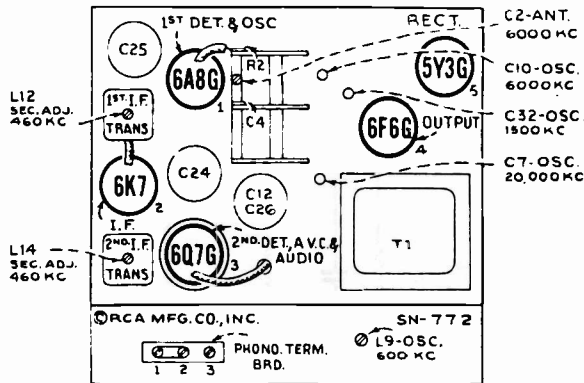
REPLACEMENT PARTS

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

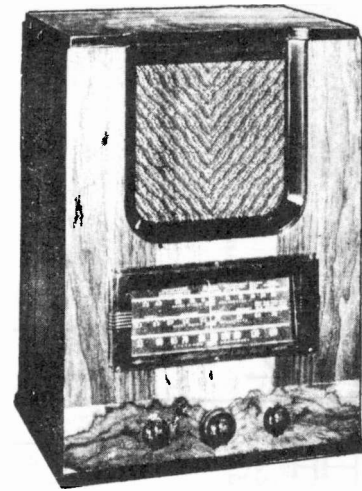
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14352	Belt—Variable condenser drive belt	11365	Resistor—82,000 Ohms, Carbon type, 1/2 watt (R13)
12717	Board—Phonograph terminal board	5145	Resistor—100,000 Ohms, Carbon type, 1/2 watt (R10)
14338	Bushing—Variable condenser mounting bushing assembly	11398	Resistor—220,000 Ohms, Carbon type, 1/10 watt (R6)
12607	Cap—First I.F. transformer shield top	11323	Resistor—270,000 Ohms, Carbon type, 1/2 watt (R12)
12581	Cap—Second I.F. transformer shield top	13479	Resistor—390,000 Ohms, Carbon type, 1/2 watt (R14)
12118	Cap—Grid contact cap	11628	Resistor—2.2 Megohm, Carbon type, 1/2 watt (R5)
12714	Capacitor—Adjustable trimmer (Medium) (C8)	13732	Resistor—10 Megohm, Carbon type, 1/2 watt (R4)
12807	Capacitor—Adjustable trimmer (Short) (C5)	14350	Screw—No. 8-32 x 3/16 Square head set screw for gear Stock No. 14349 and drum Stock No. 14345
12629	Capacitor—56 Mmfd. (C16)	12799	Shield—Antenna or oscillator coil shield
13394	Capacitor—82 Mmfd. (C7)	13311	Shield—Chassis end shield and mounting bracket assembly
12404	Capacitor—120 Mmfd. (C15, C17, C18)	12008	Shield—I. F. transformer shield for Stock No. 12801 and No. 12653
12724	Capacitor—120 Mmfd. (C24)	3682	Shield—Shield for 75 Radiotron
12406	Capacitor—180 Mmfd. (C19)	3950	Shield—Shield for 6D6 Radiotron
12812	Capacitor—450 Mmfd. (C11)	14114	Socket—Dial lamp socket
12811	Capacitor—3,600 Mmfd. (C9)	4794	Socket—4 contact 80 Radiotron socket
5148	Capacitor—.007 Mfd. (C21)	4786	Socket—6 contact 6D6, 42 or 75 Radiotron socket
4868	Capacitor—.005 Mfd. (C28)	4787	Socket—7 contact 6A7 Radiotron socket
11315	Capacitor—.015 Mfd. (C27)	12007	Spring—Retaining spring for core Stock No. 12008
4858	Capacitor—.01 Mfd. (C10, C22, C25)	14342	Spring—Tension spring for idler Stock No. 14341
4841	Capacitor—0.1 Mfd. (C2, C14, C26)	12907	Spring—Tension spring for indicator gear Stock No. 14351
4840	Capacitor—0.25 Mfd. (C23)	14336	Switch—Range switch (S2)
5170	Capacitor—0.25 Mfd. (C13)	14337	Switch—Tone control switch and power switch (S1, S3)
11240	Capacitor—10 Mfd. (C29)	12801	Transformer—First I. F. transformer (L10, L11, C15, C16)
5212	Capacitor—16 Mfd. (C30)	12653	Transformer—Second I. F. transformer (L12, L13, C17, C18, R6, R8)
14377	Capacitor—16 Mfd. (C12)	13392	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T1)
12797	Coil—Antenna coil and shield (L2, L3, L4, L5)	13568	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
12798	Coil—Oscillator coil and shield (L6, L7, L8, L9)	13393	Transformer—Power transformer, 105-125, 210-250 volts, 50-60 cycle (T1)
14348	Condenser—2-gang variable tuning condenser (C3, C4, C8)	14335	Volume Control—(R11)
5119	Connector—3-contact female connector for speaker cable	13192	Washer—Felt washer for indicator pointer
12800	Core—Adjustable core and stud assembly for coil Stock No. 12798	REPRODUCER ASSEMBLIES (RL-63F-1)	
12006	Core—Adjustable core and stud for transformer Stock No. 12801 and No. 12653	14356	Board—3 contact reproducer terminal board
14339	Dial—Station dial and mounting bracket assembly	13868	Cap—Cone center dust cap
14353	Drive—Variable condenser vernier drive pinion gear and shaft	12012	Coil—Field coil (L16)
14345	Drum—Variable condenser drive belt drum complete with set screws	11469	Coil—Hum neutralizing coil (L14)
14349	Gear—Indicator drive gear and hub complete with set screws	12642	Cone—Reproducer cone and dust cap (L15)
14351	Gear—Indicator pointer stem and gear complete with tension spring	5118	Plug—3 contact male plug for reproducer
14341	Idler—Station selector drive belt idler	14380	Reproducer—Reproducer complete
14344	Indicator—Station selector indicator pointer	14358	Screw—Screw, washer and lockwasher to hold core in yoke
5226	Lamp—Dial lamp	14355	Transformer—Output transformer (T2)
14028	Nut—Jamb nut for trimmer capacitors	14357	Washer—Spring washer to hold field coil
14340	Pulley—Station selector drive belt pulley and knob shaft	MISCELLANEOUS ASSEMBLIES	
14347	Reflector—Dial reflector and lamp bracket assembly	14479	Escutcheon—Station selector escutcheon and crystal
14343	Retainer—Drive shaft and pulley retainer—holds tuning knob shaft and pulley on range switch shaft	14269	Knob—Volume control, tone control or range switch knob
13674	Resistor—18 Ohms, Carbon type, 1/2 watt (R17)	14359	Knob—Station selector knob
13819	Resistor—270 Ohms, Insulated wire wound, 1.1 watt (R16)	11377	Screw—Chassis mounting screw and washer assembly
12759	Resistor—15,000 Ohms, Carbon type, 1/2 watt (R2)	4982	Spring—Retaining spring for knob Stock No. 14359
13477	Resistor—27,000 Ohms, Carbon type, 1 watt (R3)	14270	Spring—Retaining spring for knob Stock No. 14269
13735	Resistor—33,000 Ohms, Carbon type, 1/2 watt (R9)		
5029	Resistor—58,000 Ohms, Carbon type, 1/2 watt (R1)		
11282	Resistor—58,000 Ohms, Carbon type, 1/10 watt (R8)		

MODEL 85T8

Five-Tube, Three-Band, A-C, Superheterodyne Receiver



Radiotron, Coil and Trimmer Locations



Model 85T8

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A)..... 540-1,500 kc
- "Short Wave—1" (B)..... 2,300-7,000 kc
- "Short Wave—2" (C)..... 7,000-22,000 kc

R-F ALIGNMENT FREQUENCIES

- "Short Wave—1" (B)..... 6,000 kc (osc., ant.)
- "Short Wave—2" (C)..... 20,000 kc (osc.)
- "Standard Broadcast" (A).. 600 kc (osc.), 1,500 kc (osc.)

INTERMEDIATE FREQUENCY..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8-G..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6Q7-G.. Second Detector, A.V.C., and A-F Amp.
- (4) RCA-6F6-G..... Power Output
- (5) RCA-5Y3-G..... Full-Wave Rectifier

POWER SUPPLY RATINGS

- Rating A..... 105-125 volts, 50-60 cycles, 75 watts
- Rating B..... 105-125 volts, 25-60 cycles, 75 watts
- Rating C.... 105-125/200-250 volts, 50-60 cycles, 75 watts

PILOT LAMPS (2)..... 6.3 volts, 0.25 amp.

POWER OUTPUT RATING

- Undistorted..... 2.5 watts
- Maximum..... 4.5 watts

LOUDSPEAKER

- Type..... 8-inch Electrodynamic
- V.C. Impedance..... 2.2 ohms at 400 cycles

Alignment Procedure

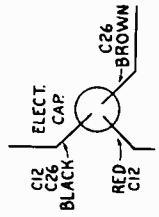
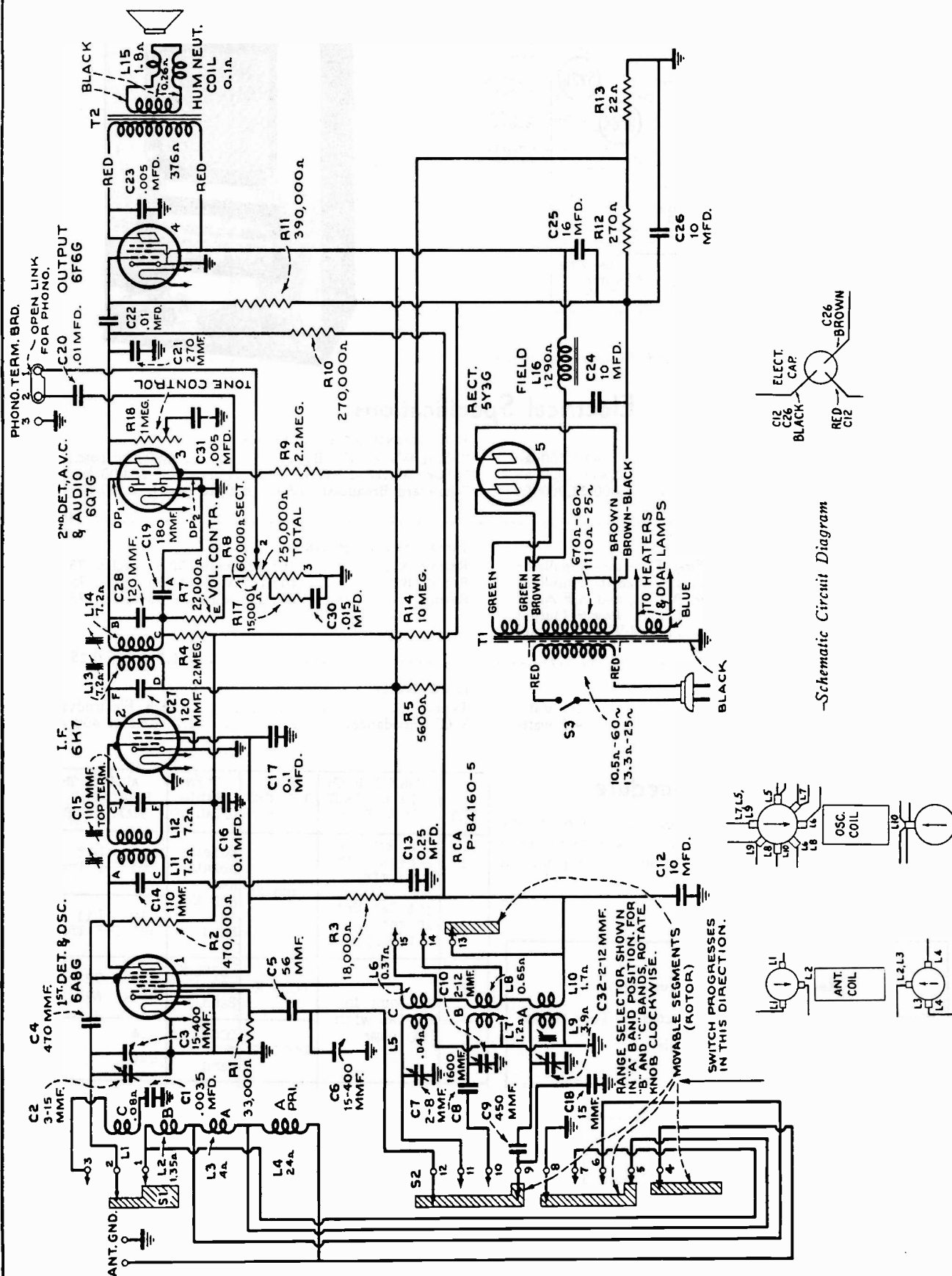
Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position. The pointer is soldered in place on the drive cable.

Radiotron Cathode Currents	
Measured with Milliammeter Connected at Tube Socket Cathode Terminals	
(1) RCA-6A8-G.....	12.7 ma.
(2) RCA-6K7.....	8.2 ma.
(3) RCA-6Q7-G	0.35 ma.
(4) RCA-6F6-G.....	38 ma.
(5) RCA-5Y3-G.....	59.5 ma.

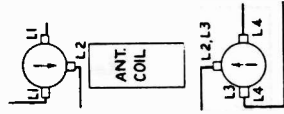
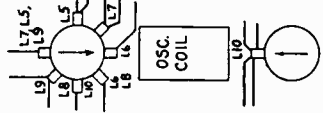
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L14 L13 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L12 L11 1st I-F Trans.
3	Antenna in series with 300 ohms	6000 Kc	6000 Kc "B" Band	C10 C2 Osc. Ant.
4		20000 Kc	20000 Kc "C" Band	C7▲ Osc.
5	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "A" Band	C32 Osc.
6		600 Kc	600 Kc "A" Band	L9 L-F Osc. Rock Gang
7	Repeat Step 5			

▲ Use maximum capacity peak.

Osc. tracks 480 Kc below signal on "C" Band.

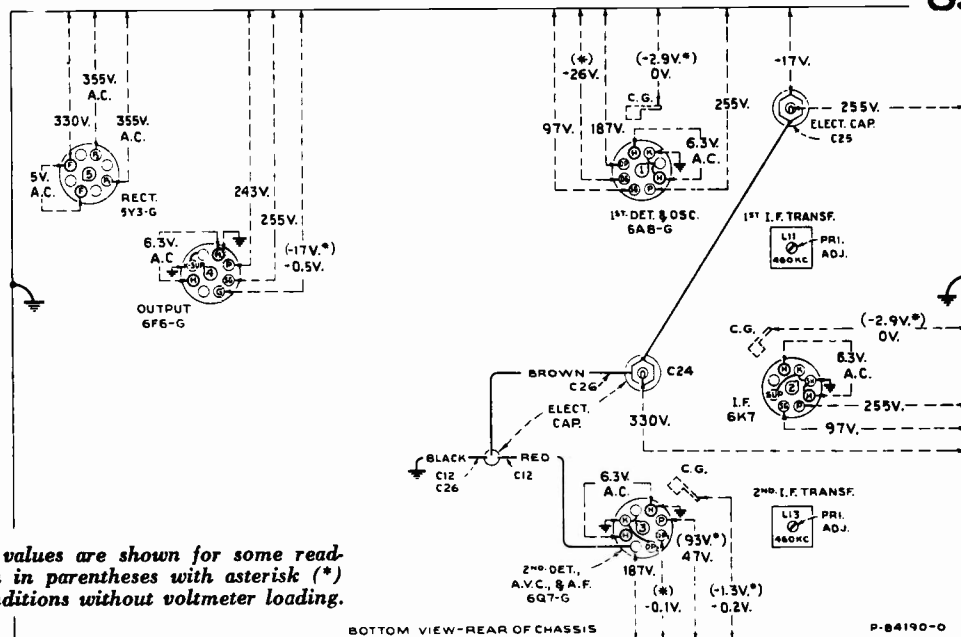


-Schematic Circuit Diagram



MOVABLE SEGMENTS (ROTOR) SWITCH PROGRESSES IN THIS DIRECTION.

RANGE SELECTOR SHOWN IN "A" BANDS ROTATE KNOB CLOCKWISE.



Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

• Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—
No signal being received—Volume control minimum—Tone control optional

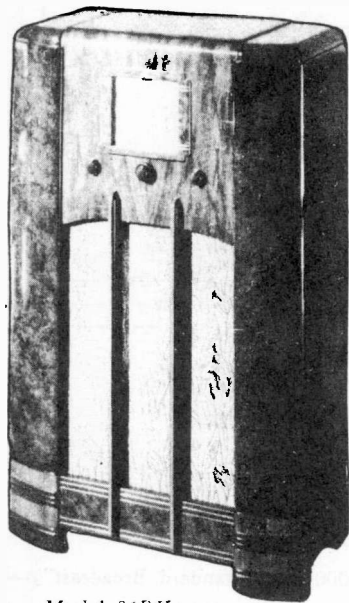
REPLACEMENT PARTS

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

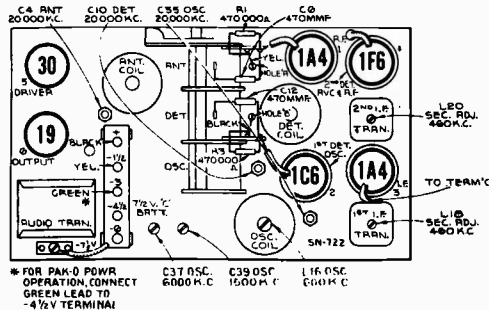
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14380	Arm—Hub and arm for operating band indicator shutter —fastens on range switch shaft	30151	Resistor—18,000 ohms, insulated, 1 watt (R3)
14352	Belt—Station selector drive belt	14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R7)
13216	Board—Antenna and ground terminal board	12454	Resistor—33,000 ohms, insulated, 1/2 watt (R1)
12717	Board—Phonograph terminal board	12199	Resistor—270,000 ohms, insulated, 1/2 watt (R10)
12807	Cap—Top shield cap for first i-f transformer	13005	Resistor—390,000 ohms, carbon type, 1/10 watt (R11)
12581	Cap—Top shield cap for second i-f transformer	11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R2)
11350	Cap—Grid contact cap	11828	Resistor—2.2 meg., carbon type, 1/2 watt (R4, R9)
12807	Capacitor—Adjustable trimmer (short) (C7)	13601	Resistor—10 meg., insulated, 1/2 watt (R14)
12714	Capacitor—Adjustable trimmer (medium) (C32)	30582	Retainer—Band indicator disc retainer
12896	Capacitor—15 mmfd. (C18)	14343	Ring—Retaining ring for range switch shaft
12723	Capacitor—56 mmfd. (C5)	14350	Screw—No. 8-32 x 3/16-inch square-head set screw for drum, Stock No. 30584; arm, Stock No. 14380, and pulley, Stock No. 30587
14262	Capacitor—110 mmfd. (C14, C15)	14340	Shaft—Drive pulley and knob shaft—fastens on range-switch shaft
12404	Capacitor—120 mmfd. (C27, C28)	3682	Shield—Radiotron shield
12406	Capacitor—180 mmfd. (C19)	12008	Shield—I-f transformer shield can
12488	Capacitor—270 mmfd. (C21)	5119	Socket—3-contact speaker cable socket
12812	Capacitor—450 mmfd. (C9)	11196	Socket—8-contact Radiotron socket
30433	Capacitor—470 mmfd. (C4)	14114	Socket—Dial lamp socket
30592	Capacitor—1,600 mmfd. (C8)	12007	Spring—Retaining spring for core, Stock No. 12006
30303	Capacitor—.0035 mfd. (C1)	30585	Spring—Tension spring for pointer cord
4838	Capacitor—.005 mfd. (C23, C31)	30588	Spring—Tension spring for idler pulley
14393	Capacitor—.01 mfd. (C20, C22)	30620	Switch—Range switch (S1, S2)
11315	Capacitor—.015 mfd. (C30)	30574	Tone control and power switch (R18, S3)
4839	Capacitor—.01 mfd. (C16, C17)	14376	Transformer—First i-f transformer (L11, L12, C14, C15)
12484	Capacitor—.025 mfd. (C13)	14308	Transformer—Second i-f transformer (L13, L14, C19, C27, C28, R7)
11203	Capacitor—10 mfd. (C24)	30571	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
30577	Capacitor Pack—Comprising two sections, each 10 mfd. (C12, C26)	30617	Transformer—Power transformer, 105-125 and 200-250 volts, 50-60 cycles (T1)
5212	Capacitor—16 mfd. (C25)	30575	Volume Control (R8)
4358	Clamp—Mounting clamp for capacitor pack, Stock No. 30577	REPRODUCER ASSEMBLIES (RL-63F-1)	
30821	Coil—Antenna coil (L1, L2, L3, L4)	14356	Board—3-contact reproducer terminal board
30579	Coil—Oscillator coil (L5, L6, L7, L8, L9, L10)	13866	Cap—Cone center dust cap
30573	Condenser—2-gang variable tuning condenser (C2, C3, C6)	12012	Coil—Field coil (L16)
30586	Cord—Station selector indicator pointer cord	11469	Coil—Hum neutralizing coil (L17)
12800	Core—Adjustable core and stud for oscillator coil	12642	Cone—Reproducer cone and dust cap (L15)
12006	Core—Adjustable core and stud for i-f transformers	5118	Plug—3-contact male plug for reproducer
30822	Dial—Station selector dial scale	14360	Reproducer—Complete
30581	Disc—Band indicator disc with celluloid window	14358	Screw—Screw, washer, and lockwasher to hold core in yoke
30572	Drive—Vernier drive shaft and pinion gear for variable condenser	14355	Transformer—Output transformer (T2)
30584	Drum—Station-selector drive-cord drum with set screw	14357	Washer—Spring washer to hold field coil
30583	Indicator—Station-selector indicator pointer and holder assembly	MISCELLANEOUS ASSEMBLIES	
5226	Lamp—Dial lamp	30593	Escutcheon—Dial escutcheon and crystal
14028	Nut—Jamb nut for adjustable capacitor, Stock Nos. 12807 and 12714	14359	Knob—Station selector knob
30587	Pulley—Drive-belt pulley for condenser shaft	14269	Knob—Tone control, volume control, or range-switch knob
14636	Pulley—Drive-belt idler pulley	14267	Screw—Chassis mounting screw and washer assembly
14595	Resistor—22 ohms, carbon type, 1/2 watt (R13)	14270	Spring—Retaining spring for knob, Stock No. 14269
13819	Resistor—270 ohms, insulated, wire-wound, 1.1 watt (R12)	4982	Spring—Retaining spring for knob, Stock No. 14359
11298	Resistor—5,600 ohms, carbon type, 1 watt (R5)		
12695	Resistor—15,000 ohms, insulated, 1/2 watt (R17)		

MODELS 86BK and 86BT

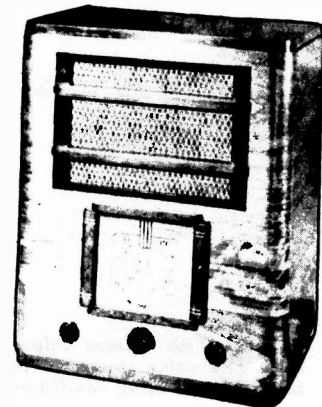
Six-Tube, Three-Band, Battery Operated, Superheterodyne Receivers



Model 86BK



Radiotron, Coil, and Trimmer Locations



Model 86BT

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A)..... 530—1,720 kc
- "Medium Wave" (B)..... 2,100—6,800 kc
- "Short Wave" (C)..... 6,800—22,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- | | |
|--|--|
| (1) RCA-1A4..... R-F Amplifier | (4) RCA-1F6..... Second Det., A-F Amp., and A.V.C. |
| (2) RCA-1C6..... First Detector—Oscillator | (5) RCA-30..... Audio Driver |
| (3) RCA-1A4..... Intermediate Amplifier | (6) RCA-19..... Push-Pull Power Output |
- Pilot Lamps (2)..... Mazda 2.0 volts, .06 ampere

BATTERIES REQUIRED

"A," one plug-in, 2½-volt Air Cell, or one 2-volt storage battery; "B," three 45-volt, heavy-duty, plug-in type B batteries; "C," one 7½-volt C battery tapped at —1½, —3, and —4½ volts, and three bias cells (Stock No. 12681).

CURRENT CONSUMPTION

- "A" at 2 volts (pilot lamps off)..... 0.62 ampere
- "A" at 2 volts (pilot lamps on)..... 0.74 ampere
- "B" at 135 volts..... 21 milliamperes
- Fuse Rating..... ½ ampere

POWER OUTPUT

- Undistorted 1.2 watts
- Maximum 2.2 watts

LOUDSPEAKER

- Type..... Permanent-Magnet Dynamic
- Voice Coil Impedance..... 2.2 ohms at 400 cycles

Operation With CV-8 Pak-O-Powr.—These receivers may readily be operated from an RCA CV-8 Pak-O-Powr, in which case, a six-volt storage battery replaces the "A" and "B" batteries listed under "Batteries required." When using the CV-8, one cell (2 volts) of the storage battery supplies filament voltage to the tubes, while the other two cells (4 volts) supplies power for the CV-8. When installing, the seven prong CV-8 receptacle plugs into the seven prong plug on the rear apron of the receiver chassis and the four battery leads clip on terminals of the storage battery as follows: Red to + 6 V.; Blue to + 4 V.; Yellow to + 4 V.; and brown (fused lead) to —V. The two four-volt leads (Blue and Yellow) should make separate connections to the same battery strap to avoid vibrator buzz which might otherwise result if these two leads are joined together or touch each other. Observe extreme care that proper connections are made to the battery, as a wrong connection will burn out the tubes. The green lead (originally connected to —3 v. on the "C" battery) should be shifted to the —4.5 volt tap. The other "C" battery connections remain unchanged.

The following changes under "Electrical specifications" become effective when employing the CV-8; "A" battery current drain at 6 volts, 1.65 amperes. Fuse rating, 5 amperes. Undistorted output, 1.3 watts. Maximum output, 1.8 watts. Under "Service data," the following voltages apply to the RCA-19 power-output tube. Either plate to chassis, 180 volts. Either grid to chassis, —4½ volts. Plate current (either plate), 1.6 ma.

When servicing, the CV-8 chassis should be insulated from the receiver chassis to avoid vibrator buzz.

Precautionary Lead Dress.—(1) Twisted leads from filament switch to power plug must be dressed against bottom of end shield and fastened with tape. (2) Lead from term. No. 6 of S3 to chassis must be as short as possible and to same chassis lance as C15-C34. (3) Keep lead from term. No. 9 of S3 to L7-L8 as short as possible. (4) Keep lead from L7 to C11 as short as possible. (5) Keep lead from C10 to C11 as short as possible. (6) Keep leads of C41 as short as possible. (7) Keep lead from term. No. 20 of S2 to C13 as short as possible.

86BK & 86BT

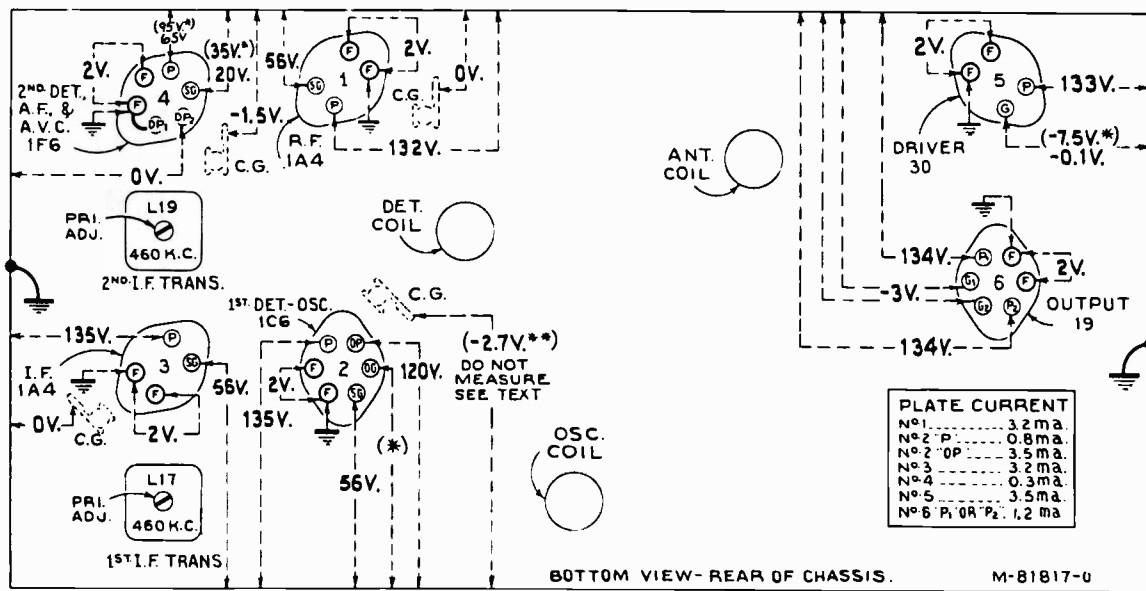


Figure 4—Radiotron Socket Voltages, Coil, and Trimmer Locations
 Measured with all batteries at normal voltage—Tuned to approximately 1,000 kc—
 No signal being received—Volume control minimum

****CAUTION:** Do not attempt to measure voltage on control grid of the 1C6 with any conventional voltmeter due to presence of bias cells.

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk (*) indicates operating conditions without voltmeter loading.

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 "O." These are friction adjustments.

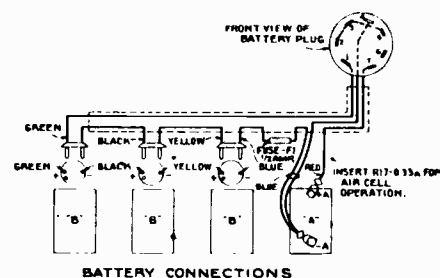
Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	1A4 I-F Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L19 and L20	Max. (peak)
2	1C6 Det. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L17 and L18	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Osc.	C35	Max. (peak) *
4	Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Det.	C10	Max. (peak) †
5	Ant. Term.	300 Ohms	20,000 kc	20,000 kc	"C" Ant.	C4	Max. (peak) ‡
6	Ant. Term.	300 Ohms	6,000 kc	Rock Thru 6,000 kc	"B" Osc.	C37	Max. (peak) *
7	Ant. Term.	200 Mmfd.	600 kc	600 kc	"A" L-F Osc.	L16	Max. (peak)
8	Ant. Term.	200 Mmfd.	1,500 kc	1,500 kc	"A" H-F Osc.	C39	Max. (peak)
9	Ant. Term.	200 Mmfd.	600 kc	Rock Thru 600 kc	"A" L-F Osc.	L16	Max. (peak)
10	Ant. Term.	200 Mmfd.	1,500 kc	Rock Thru 1,500 kc	"A" H-F Osc.	C39	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 kc.

Bias Cells.—Three bias cells are used only for the purpose of supplying bias potential to the 1C6 first-detector-oscillator tube. These cells should never be measured with an ordinary voltmeter or other device which draws any current. A simple check on these cells may be made by connecting a milliammeter in the plate circuit of the 1C6 tube and noting the plate current reading. Then carefully remove the cells and substitute a battery potential of 2.7 volts in their place and note the new reading on the milliammeter. If the first reading obtained (with bias cells) is more than 40% from the latter reading (with 2.7-volt battery), the bias cells should be replaced. This 40% difference is equivalent to a change of approximately 25% battery voltage.



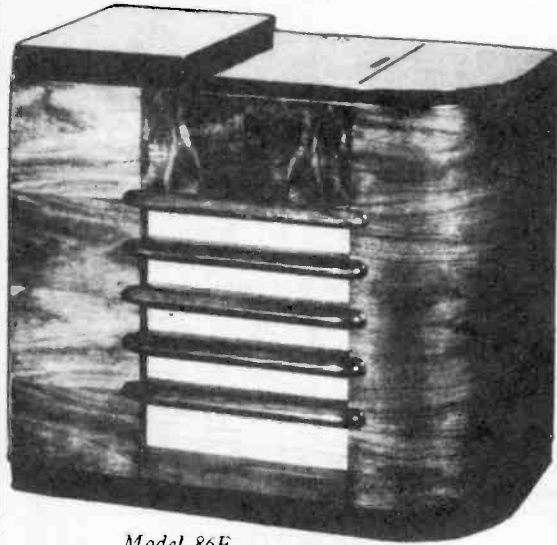
REPLACEMENT PARTS

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

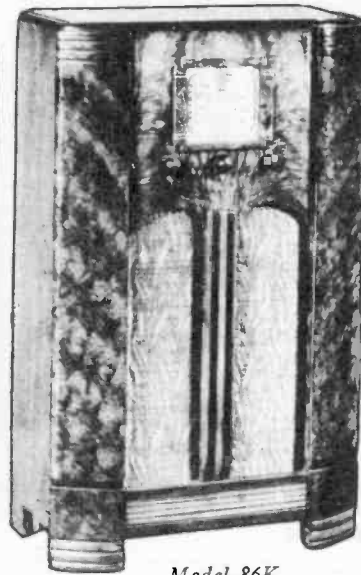
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14388	Belt—Variable condenser drive belt	14390	Resistor—27,000 ohms, carbon type, 1/10 watt (R9)
12717	Board—Phonograph terminal board	12286	Resistor—66,000 ohms, insulated, 1/2 watt (R4)
13216	Board—Antenna and ground terminal board	13734	Resistor—120,000 ohms, carbon type, 1/2 watt (R12)
14338	Bushing—Variable condenser mounting bushing and screw assembly	11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R8)
12807	Cap—First I.F. transformer shield top	11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R1, R3)
12581	Cap—Second I.F. transformer shield top	13730	Resistor—1 megohm, carbon type, 1/2 watt (R11, R13)
12118	Cap—Grid contact cap	11626	Resistor—2.2 megohm, carbon type, 1/2 watt (R6)
14392	Capacitor—4.7 Mmfd. (C3, C9)	14343	Retainer—Drive shaft and pulley retainer
12629	Capacitor—56 Mmfd. (C17)	14350	Screw—No. 8-32x3/16 square head set screw for gear Stock No. 30085 and drum Stock No. 14345
12723	Capacitor—56 Mmfd. (C24)	12008	Shield I.F. transformer shield can
12813	Capacitor—82 Mmfd. (C14)	14374	Shield—R.F. or antenna coil shield
14262	Capacitor—110 Mmfd. (C16)	14376	Shield—Oscillator coil shield
12724	Capacitor—120 Mmfd. (C28)	3682	Shield—Radiotron shield
12404	Capacitor—120 Mmfd. (C20, C21)	4794	Socket—4-contact 1A4 or 30 Radiotron socket
12406	Capacitor—180 Mmfd. (C25)	4786	Socket—6-contact 1C6, 1F6 or 19 Radiotron socket
13052	Capacitor—470 Mmfd. (C8, C12)	14171	Socket—Dial lamp socket
12727	Capacitor—555 Mmfd. (C38)	12907	Spring—Tension spring for indicator drive gear Stock No. 30085
14417	Capacitor—680 Mmfd. (C8)	14342	Spring—Tension spring for idler Stock No. 14341
14407	Capacitor—2,800 Mmfd. (C36)	12007	Spring—Retaining spring for core Stock No. 12006
12728	Capacitor—4,500 Mmfd. (C41)	14413	Switch—Range switch (S1, S2)
5005	Capacitor—.0035 Mfd. (C29)	14401	Switch—Tone control switch and power switch (S4, S5, S6, S7)
5107	Capacitor—.0025 Mfd. (C26, C30, C32)	14261	Transformer—First I.F. transformer (L17, L18, C16, C17)
5196	Capacitor—.035 Mfd. (C31)	14283	Transformer—Second I.F. transformer (L19, L20, C20, C21, C25, R7, R8)
13138	Capacitor—.01 Mfd. (C7, C23, C40)	12803	Transformer—Audio transformer pack (T1, T2)
4841	Capacitor—.01 Mfd. (C1, C19, C22, C27)	14379	Washer—Felt washer for indicator pointer
4840	Capacitor—.025 Mfd. (C18, C33)	14336	Volume Control (R10)
14383	Capacitor—Adjustable dual trimmer (C37, C39)	REPRODUCER ASSEMBLIES	
12884	Capacitor—Adjustable trimmer (long) (C4)	CONSOLE MODEL (Speaker No. RL71-1)	
12714	Capacitor—Adjustable trimmer (medium) (C10)	12667	Cone—Reproducer cone and dust cap (L21)
12807	Capacitor—Adjustable trimmer (short) (C35)	5118	Plug—3-contact male connector for reproducer
14403	Capacitor—Pack comprising two sections each 8 Mfd. (C15, C34)	9713	Reproducer—Complete
12681	Cell—Bias cell	TABLE MODEL (Speaker No. RL73-1)	
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	12642	Cone—Reproducer cone and dust cap (L21)
14373	Coil—Oscillator coil and shield (L11, L12, L13, L14, L15, L16)	5118	Plug—3-contact male connector for reproducer
14414	Coil—R.F. coil and shield (L5, L6, L7, L8, L9, L10)	9712	Reproducer—Complete
14411	Condenser—3-gang variable tuning condenser (C5, C11, C13)	MISCELLANEOUS ASSEMBLIES	
5119	Connector—3-contact female connector for reproducer cable	4289	Body—Fuse holder female body
12006	Core—Adjustable core and stud for I.F. transformers	4286	Bushing—Fuse holder bushing and ferrule
12800	Core—Adjustable core and stud assembly for oscillator coil	14408	Cable—Battery cable complete with fuse, fuse holder, one 7-contact female connector, three 2-contact male connectors and two battery clips
14416	Dial—Station selector dial scale	4288	Cap—Fuse holder male cap
14412	Drive—Variable condenser vernier drive shaft and pinion gear	14289	Clip—Battery clips, one marked "+" and one unmarked
14345	Drum—Variable condenser drive belt drum complete with set screws	12827	Connector—2-contact male connector for battery cable
14415	Foot—Chassis mounting foot and bracket assembly	14409	Connector—7-contact female connector for battery cable
30085	Gear—Indicator drive gear and hub assembly and pointer stem and gear assembly	14396	Escutcheon—Station selector escutcheon and crystal
14405	Holder—Bias cell holder	3748	Fuse—1/2 ampere (F1)
14341	Idler—Station selector drive belt idler	14269	Knob—Volume control, tone control or range switch knob
14344	Indicator—Station selector indicator pointer	14359	Knob—Station selector knob
14382	Indicator—Vernier indicator pointer	4290	Insulator—Fuse holder insulating sleeve
4348	Lamp—Dial lamp	14418	Resistor—0.33 ohms flexible resistor—1/2 watt, complete with clip (R17)
14028	Nut—Jamb nut for air trimmer capacitors	11210	Screw—Chassis mounting screw and washer for Model 86BK
14404	Plug—7-contact male plug located on rear apron of chassis for battery cable	11377	Screw—Chassis mounting screw and washer for Model 86BT
14340	Pulley—Station selector drive belt pulley and knob shaft	4284	Spring—Fuse holder tension spring
14361	Reflector—Dial reflector and lamp bracket assembly	4982	Spring—Retaining spring for knob Stock No. 14359
14406	Resistor—2.2 ohms, flexible type, 3 watt (R15)	14270	Spring—Retaining spring for knob Stock No. 14269
5112	Resistor—1,000 ohms, carbon type, 1/2 watt (R2)	4285	Washer—Fuse holder insulating washer
11283	Resistor—1,200 ohms, carbon type, 1/2 watt (R16)		
5144	Resistor—2,700 ohms, carbon type, 1/2 watt (R14)		
11305	Resistor—22,000 ohms, carbon type, 1/2 watt (R5)		
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R7)		

MODELS 86E, 86K, 86K7, 86T, 86T1, 87K, and 87T

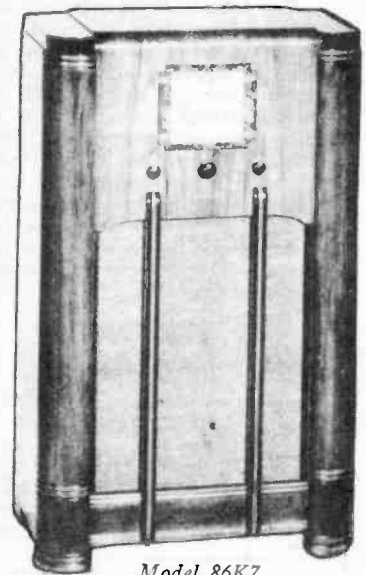
Six- and Seven-Tube, Three-Band, A-C, Superheterodyne Receivers



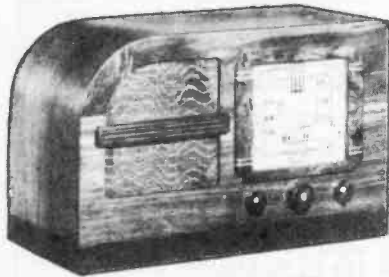
Model 86E



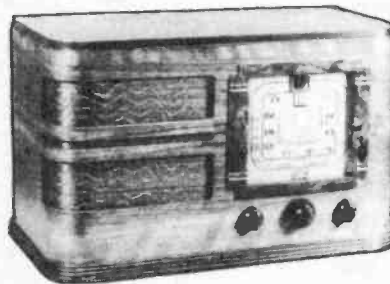
Model 86K



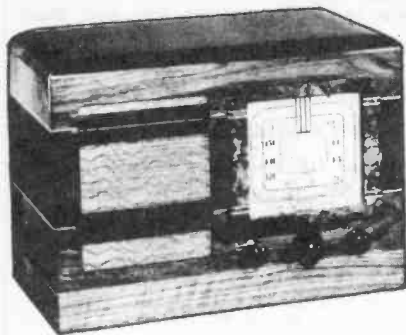
Model 86K7



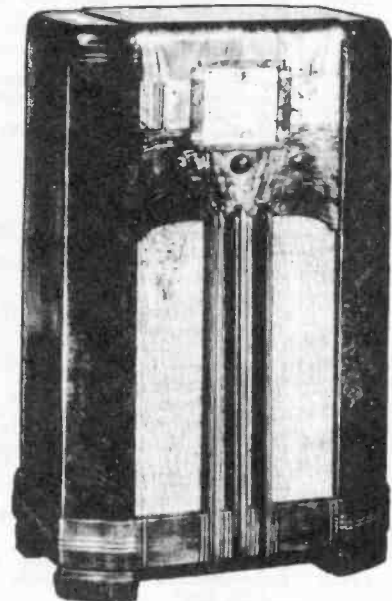
Model 86T



Model 87T



Model 86T1



Model 87K

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A).....	530- 1,720 kc
"Medium Wave" (B).....	2,100- 6,800 kc
"Short Wave" (C).....	6,800-22,000 kc
Intermediate Frequency.....	460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6H6..... Second Detector and A.V.C.

Pilot Lamps (2)..... Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

Rating A.....	105-125 volts, 50-60 cycles, 80 watts
Rating B.....	105-125 volts, 25-60 cycles, 80 watts
Rating C.....	100-130/140-160/195-250 volts, 40-60 cycles, 80 watts

POWER OUTPUT

Undistorted.....	2.5 watts
Maximum.....	4.5 watts

R-F ALIGNMENT FREQUENCIES

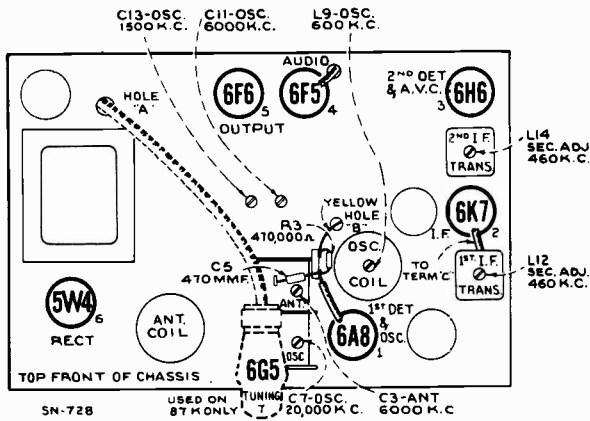
"Short Wave" (C).....	20,000 kc (osc.)
"Medium Wave" (B).....	6,000 kc (osc., ant.)
"Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc.)

- (4) RCA-6F5..... Audio Voltage Amplifier
- (5) RCA-6F6..... Audio Power Amplifier
- (6) RCA-5W4..... Full-Wave Rectifier
- (7) RCA-6G5 (Models 87K and 87T only).. Tuning Tube

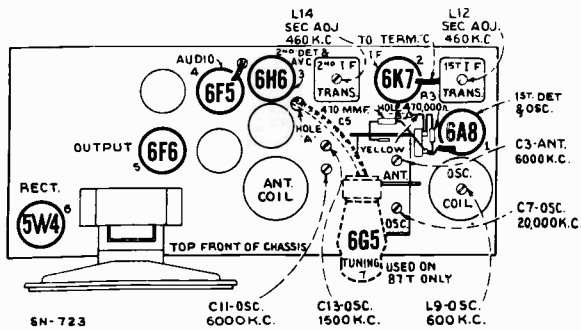
LOUDSPEAKER

Type.....	Electrodynamical
Impedance (v.c.)..	{ (RL-70E-1) 2.2 ohms (84001-3) 2.6 ohms (84001-6) 4.7 ohms } at 400 cycles

86E, 86K, 86K7, 86T, 86T1, 87K & 87T



—Radiotron, Coil, and Trimmer Locations (Models 86E, 86K, 86K7, and 87K)



—Radiotron, Coil, and Trimmer Locations (Models 86T, 86T1, and 87T)

Alignment Procedure

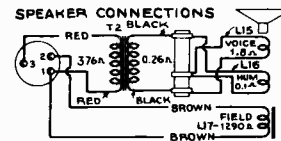
Calibrate the tuning dial by adjusting main dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position; then adjust the small (vernier) pointer to "O." These are friction adjustments.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	L14 L13 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			L12 L11 1st I-F Trans.
3	Antenna in series with 300 ohms	20000 Kc	20000 Kc "C" Band	C7 ▲ Osc.
4		6000 Kc	6000 Kc "B" Band	C11 ▲ C3 Osc. Ant.
5	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "A" Band	C13 Osc.
6		600 Kc	600 Kc "A" Band	L9 L-F Osc. Rock Gang
7	Repeat Step 5			

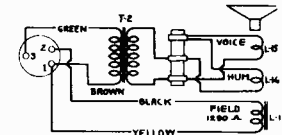
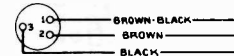
▲ Use minimum capacity peak.

TYPE	L15	L16	T2-PRI.	T2-SEC.
RL-70E-1	1.8	0.1	376	0.26
84001-3	2.4	0.16	520	0.37
84001-6	4.5	0.22	700	0.50

SPEAKER RESISTANCE VALUES



(Models 86K, 86K7, and 87K)



(Models 86T, 86T1, and 87T)

Precautionary Lead Dress (Models 86E, 86K, 86K7, 87K).—(1) Keep bus lead from term. 9 of S1-S2 to ground lance as short as possible. (2) Bus lead from term. 6 of S1-S2 to L5 should be 4 inches long. (3) Bus lead from term. 5 of S1-S2 to C7-C8 should be 2 1/8 inches long. (4) Keep bus lead from term. 1 of S1-S2 to L1-L2 as short as possible. (5) Bus lead from L1 to C3-C4 should be 3 1/4 inches long. (6) Keep C6, C9, C10, and C12 so that broad side is perpendicular to chassis and keep their leads as short as possible. (7) Keep blue lead from "OP" of tube 1 to L6 dressed away from chassis and other leads. (8) Yellow and green leads from terms. 11 and 12 of S1-S2 to oscillator coil must be twisted and dressed under all range switch bus leads. (9) Keep green lead from term. E of 2nd i-f trans. to term. 2 of phono. board as short as possible.

Precautionary Lead Dress (Models 86T, 86T1, 87T).—(1) Keep bus lead from term. 9 of S1-S2 to ground lance as short as possible. (2) Bus lead from term. 6 of S1-S2 to L5 should be 3 1/4 inches long. (3) Bus lead from term. 5 of S1-S2 to C7-C8 should be 2 1/4 inches long. (4) Keep bus lead from term. 1 of S1-S2 to L1-L2 as short as possible. (5) Bus lead from L1 to C3-C4 should be 3 1/4 inches long and dressed above bus lead from antenna coil to range switch. (6) Keep C6, C9, C10, and C12 so that broad side is perpendicular to chassis and keep their leads as short as possible. (7) Power cord should be dressed over C27 and under bus from C32 to "SG" of tube 5. (8) C26 from dummy term. of tube 4 must be grounded to end lug of R-17. (9) Keep green lead from term. E of 2nd i-f trans. to term. 2 of phono. board as short as possible. (10) Keep bus lead from term. 10 of S1-S2 to L6-L8 as short as possible. When necessary to replace bus leads, use only wire having same diameter as original.

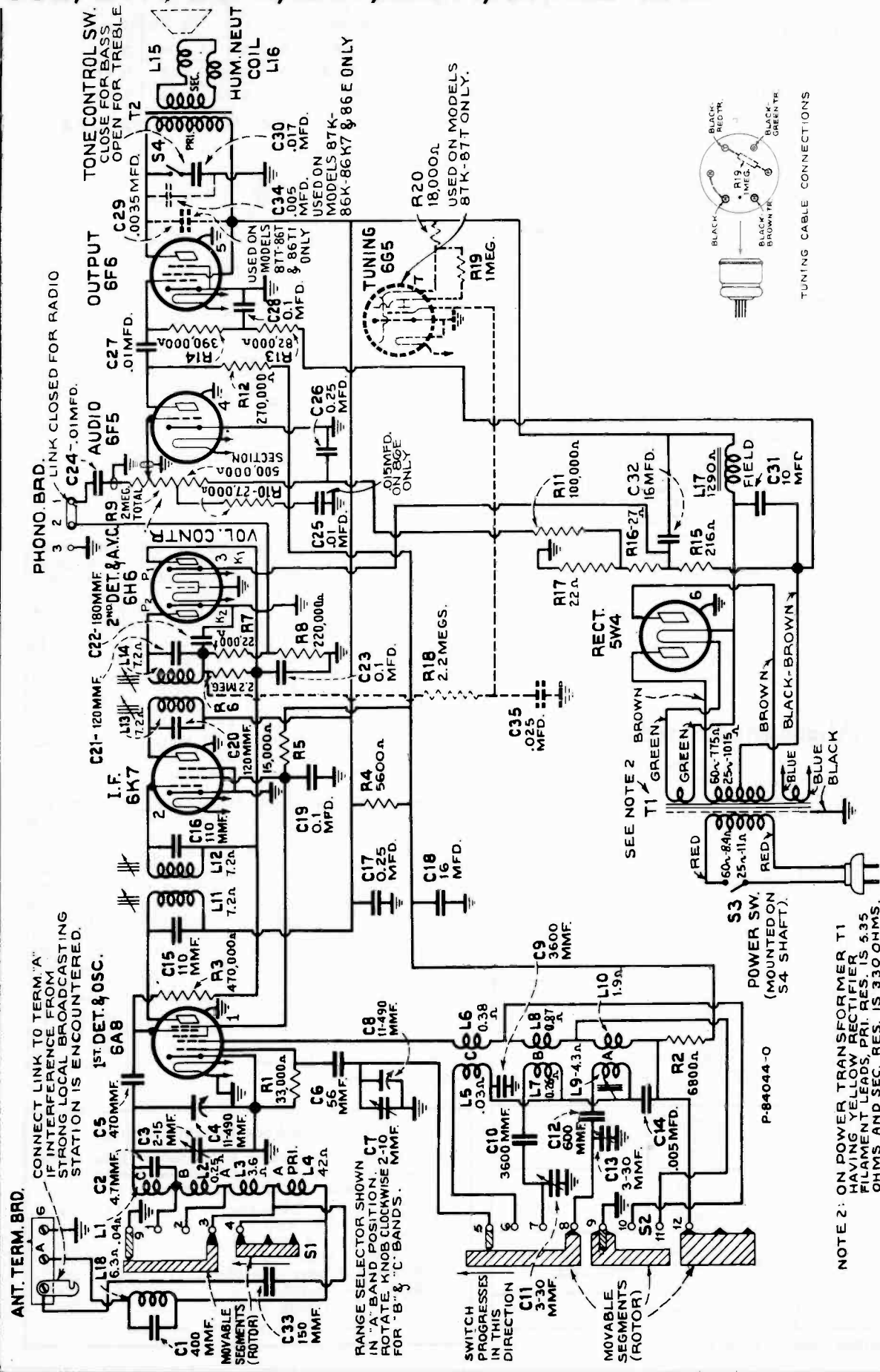
Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6A8—1st Det.—Osc. 14. ma.
- (2) RCA-6K7—I-F Amp. 8.5 ma.
- (3) RCA-6H6—2nd Det. and A.V.C. 37. ma.
- (4) RCA-6F5—Audio Driver. 0.26 ma.
- (5) RCA-6F6—Power Amplifier. 63. ma.**
- (6) RCA-5W4—Rectifier. 1.2 ma.
- (7) RCA-6G5—Tuning Tube. 1.2 ma.

** Cannot be measured at socket.

86E, 86K, 86K7, 86T, 86T1, 87K & 87T

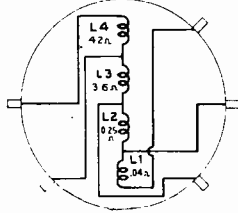


Schematic Circuit Diagram

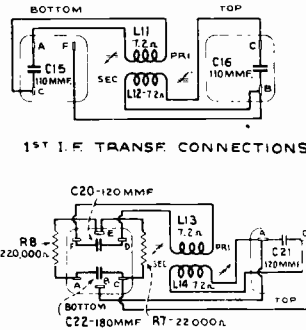
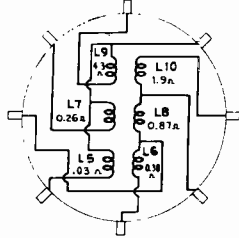
(On some instruments, R3 is connected to the junction of R18 and C35)

86E, 86K, 86K7, 86T, 86T1, 87K & 87T

ANT. COIL CONNECTIONS



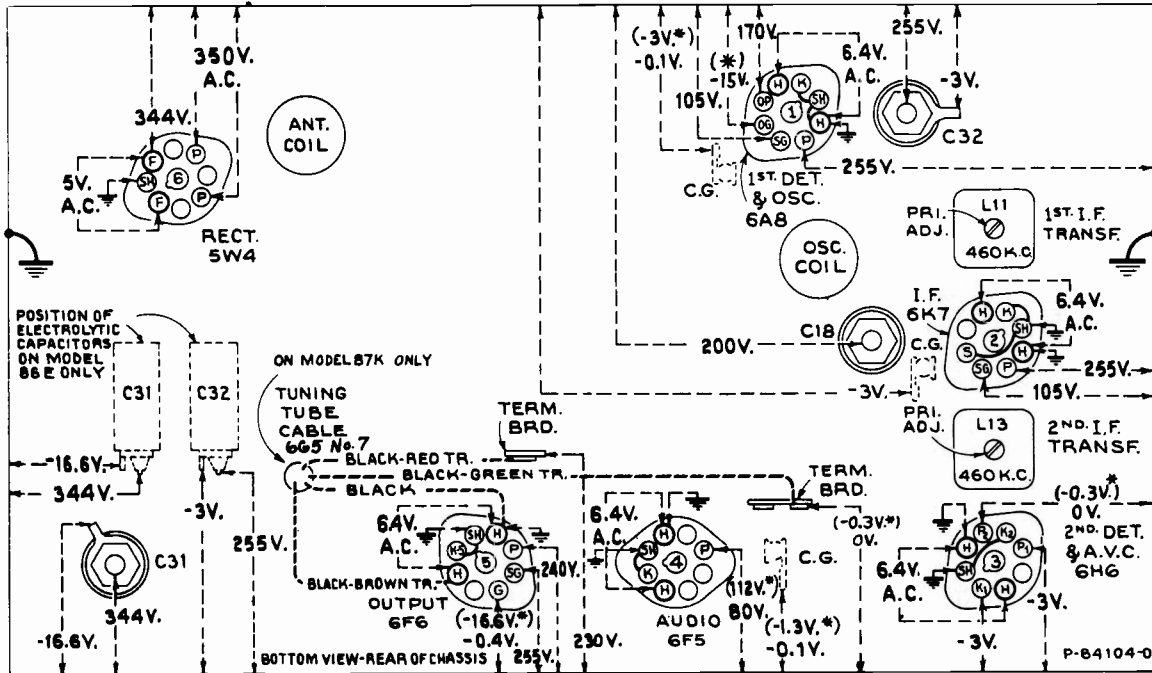
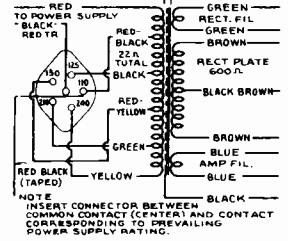
OSC. COIL CONNECTIONS



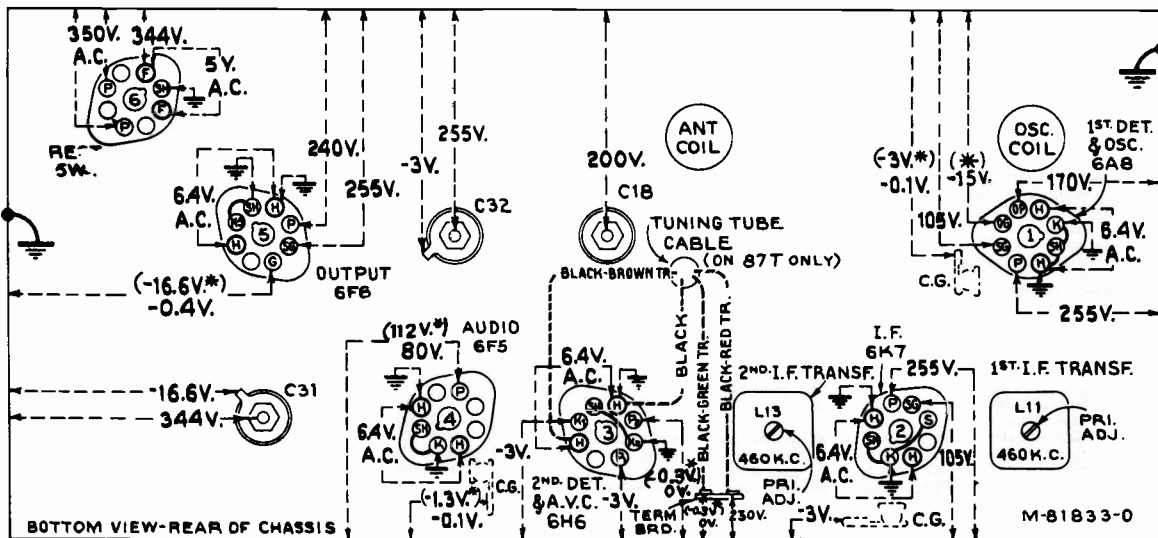
1ST I.F. TRANSF CONNECTIONS

2ND I.F. TRANSF CONNECTIONS

UNIVERSAL TRANSFORMER CONNECTIONS



—Radiotron Socket Voltages, Coil, and Trimmer Locations (Models 86E, 86K, 86K7, and 87K)



—Radiotron Socket Voltages, Coil, and Trimmer Locations (Models 86T, 86T1, and 87T)

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

Measured at 115 volts, 60-cycle supply—
—Tuned to approximately 1,000 kc ("Standard Broadcast")—
No signal being received—Volume control minimum

86E, 86K, 86K7, 86T, 86T1, 87K & 87T

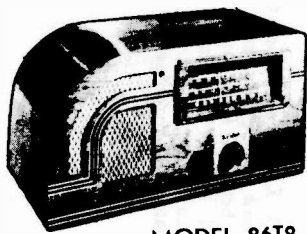
REPLACEMENT PARTS

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

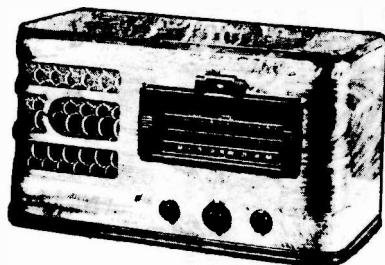
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14380	Arm—Band indicator operating arm and hub—less set screw, Stock No. 14350	14284	Resistor—22,000 Ohms, Carbon type, 1/10 watt (R7)
12038	Band—Rubber band for tuning tube	11400	Resistor—27,000 Ohms, Carbon type, 1/2 Watt (R10), for Models 86E, 86K, 86K7, and 87K only
14384	Belt—Variable condenser drive belt for Models 86E, 86K, 86K7, and 87K only	14390	Resistor—27,000 Ohms, Carbon type, 1/10 Watt (R10), for Models 86T, 86T1, and 87T only
14388	Belt—Variable condenser drive belt for Models 86T, 86T1, and 87T only	13735	Resistor—33,000 Ohms, Carbon type, 1/2 Watt (R1)
14378	Board—Antenna and ground terminal board	11365	Resistor—82,000 Ohms, Carbon type, 1/2 Watt (R13)
12717	Board—Phonograph terminal board	5145	Resistor—100,000 Ohms, Carbon type, 1/2 Watt (R11)
14338	Bushing—Variable condenser mounting bushing and screw assembly	11398	Resistor—220,000 Ohms, Carbon type, 1/10 Watt (R8)
14394	Cable—Tuning tube cable and socket, complete, for Models 87T and 87K only	11453	Resistor—270,000 Ohms, Carbon type, 1/10 Watt (R12)
12607	Cap—First I.F. transformer shield top	13005	Resistor—390,000 Ohms, Carbon type, 1/10 Watt (R14)
12581	Cap—Second I.F. transformer shield top	11452	Resistor—470,000 Ohms, Carbon type, 1/10 Watt (R3)
11350	Cap—Grid contact cap	12013	Resistor—1 Megohm, Carbon type, 1/10 Watt (R19), for Models 87K and 87T only
14383	Capacitor—Adjustable dual trimmer (C11, C13)	11626	Resistor—2.2 Megohm, Carbon type, 1/2 Watt (R6, R18) (R18 used in Models 87K and 87T only)
14392	Capacitor—4.7 Mmfd. (C2)	12004	Resistor—Voltage divider resistor—comprising one 216-ohm, one 27-ohm, and one 22-ohm sections (R15, R16, R17)
12723	Capacitor—56 Mmfd. (C6)	14350	Screw—No. 8-32 x 3/16 square-head set-screw for gear, Stock No. 30085, and drum, Stock No. 14346, and arm, Stock No. 14380
14262	Capacitor—110 Mmfd. (C15, C16)	14374	Shield—Antenna coil shield
12404	Capacitor—120 Mmfd. (C20, C21)	12008	Shield—First or Second I-F transformer shield
12725	Capacitor—150 Mmfd. (C33)	14375	Shield—Oscillator coil shield
12406	Capacitor—180 Mmfd. (C22)	14114	Socket—Dial lamp socket
13052	Capacitor—470 Mmfd. (C5)	11195	Socket—5-contact 5W4 Radiotron socket
14391	Capacitor—600 Mmfd. (C12)	11196	Socket—8-contact 6A8, 6K7, 6H6, 6F5, or 6F6 Radiotron socket
12811	Capacitor—3,600 Mmfd. (C9, C10)	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12800
5005	Capacitor—.0035 Mfd. (C29) (Used in Models 86T, 86T1, and 87T only)	12907	Spring—Tension spring for indicator drive gear, Stock No. 30085
4838	Capacitor—.005 Mfd. (C34) (Used in Models 86E, 86K, 86K7 and 87K only)	14342	Spring—Tension spring for idler, Stock No. 14341
4868	Capacitor—.005 Mfd. (C14)	14370	Switch—Range switch (S1, S2)
13138	Capacitor—.01 Mfd. (C27)	14371	Switch—Tone control switch and power switch (S3, S4)
14393	Capacitor—.01 Mfd. (C24, C25) (C25, .01 Mfd. used in Models 86K, 86K7, 86T, 86T1, 87K, and 87T only)	14376	Transformer—First I-F transformer (L11, L12, C15, C16)
11315	Capacitor—.015 Mfd. (C25) (for Model 86E only)	14283	Transformer—Second I-F transformer (L13, L14, C20, C21, C22, R7, R8)
11451	Capacitor—.017 Mfd. (C30)	14367	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)
4870	Capacitor—.025 Mfd. (C35) (Used in Models 87K and 87T only)	14368	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
4841	Capacitor—.01 Mfd. (C19, C23, C28)	14369	Transformer—Power transformer, 105-125/210-250 volts, 50-60 cycles (T1)
4840	Capacitor—.025 Mfd. (C26)	13838	Trap—Wave trap, complete (L18, C1)
5170	Capacitor—.025 Mfd. (C17)	14335	Volume Control (R9)
11240	Capacitor—.10 Mfd. (C31)	14379	Washer—Felt washer for indicator pointer
5212	Capacitor—.16 Mfd. (C32)	REPRODUCER ASSEMBLIES Models 86T, 86T1, and 87T	
14377	Capacitor—.16 Mfd. (C18) (Models 86K, 86K7, 86T, 86T1, 87K, and 87T only)	14816	Coil—Field coil (L17) (for speaker marked 84001-3)
30105	Capacitor—.16 Mfd. (C18) (Model 86E only)	14614	Cone—Reproducer cone (L15) (for speaker marked 84001-3)
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	14934	Cone—Reproducer cone (L15) (for speaker marked 84001-6)
14373	Coil—Oscillator coil and shield (L5, L6, L7, L8, L9, L10)	5118	Plug—3-contact male plug for reproducer
14363	Condenser—2-gang variable tuning condenser (C3, C4, C7, C8)	14613	Reproducer—Complete
5119	Connector—3-contact female connector for reproducer cable	14615	Transformer—Output transformer (T2) (for speaker marked 84001-3)
12800	Core—Adjustable core and stud assembly for coil, Stock No. 14373	14935	Transformer—Output transformer (T2) (for speaker marked 84001-6)
12006	Core—Adjustable core and stud for Stock Nos. 14376 and 14283	REPRODUCER ASSEMBLIES Models 86E, 86K, 86K7, and 87K (RL-70E-1)	
14385	Dial—Band indicator dial and mounting bracket assembly for Models 86K, 86K7, and 87K only	13866	Cap—Dust cap for cone center
30106	Dial—Band indicator dial and mounting bracket assembly for Model 86E only	14354	Coil—Field coil (L17)
14389	Dial—Band indicator dial and mounting bracket assembly for Models 86T, 86T1, and 87T only	11469	Coil—Hum neutralizing coil (L16)
14381	Dial—Station selector dial scale for Models 86E, 86K, 86K7, 86T, and 86T1 only	12667	Cone—Reproducer cone and dust cap (L15)
14386	Dial—Station selector dial, complete, with tuning tube escutcheon assembly for Models 87K and 87T only	5118	Plug—3-contact male plug for reproducer
14364	Drive—Variable condenser vernier drive pinion gear and shaft	14395	Reproducer—Reproducer complete
14345	Drum—Variable condenser drive belt drum, complete, with set screws	14358	Screw—Screw, washer, and lockwasher to hold core in yoke
14387	Escutcheon—Tuning tube escutcheon for Models 87K and 87T only	14355	Transformer—Output transformer (T2)
11982	Fastener—Station selector dial scale fastener	14357	Washer—Spring washer to hold field coil
30085	Gear—Indicator drive gear and hub assembly and indicator pointer stem and gear	MISCELLANEOUS ASSEMBLIES	
14341	Idler—Station selector drive belt idler	14396	Escutcheon—Station selector escutcheon and crystal
14344	Indicator—Station selector indicator pointer	14359	Knob—Station selector knob
14382	Indicator—Vernier indicator pointer	14269	Knob—Volume control, tone control or range switch knob
5226	Lamp—Dial lamp	4560	Screw—Chassis mounting screw and washer assembly—(Model 86E only)
14340	Pulley—Station selector drive belt pulley and knob shaft	11210	Screw—Chassis mounting screw and washer assembly—(Models 86K, 86K7 and 87K only)
14361	Reflector—Dial reflector and lamp bracket assembly for Models 86E, 86K, 86K7, 86T, and 86T1 only	11377	Screw—Chassis mounting screw and washer assembly—(Models 86T, 86T1 or 87T only)
14362	Reflector—Dial reflector, lamp bracket and tuning tube bracket assembly for Models 87K and 87T only	4982	Spring—Retaining spring for knob—Stock No. 14359
14343	Retainer—Drive shaft and pulley retainer—holds tuning-knob shaft and pulley on range-switch shaft	14270	Spring—Retaining spring for knob—Stock No. 14269
11298	Resistor—5,600 Ohms, Carbon type, 1 Watt (R4)		
11726	Resistor—6,800 Ohms, Carbon type, 1/2 Watt (R2)		
5114	Resistor—15,000 Ohms, Carbon type, 1 Watt (R5)		
14078	Resistor—18,000 Ohms, Carbon type, 1 Watt (R20), for Models 87K and 87T only		

MODELS 86T2, 86T3 & 87T1

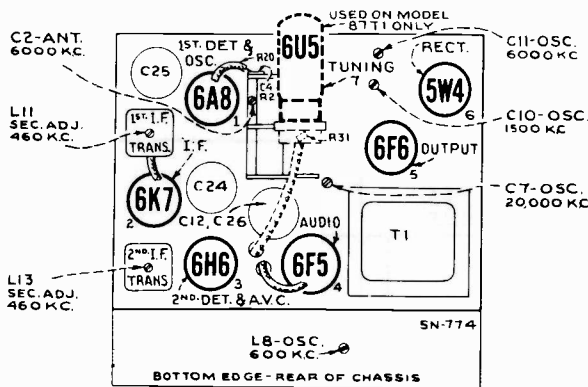
Six- and Seven-Tube, Three-Band, A-C, Superheterodyne Receivers



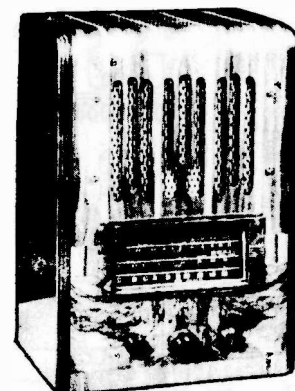
MODEL 86T2



Model 87T1



-Radiotron, Component Part, and Trimmer Locations



Model 86T3

Electrical Specifications

FREQUENCY RANGES

- "Standard Broadcast" (A)..... 540- 1,740 kc
- "Medium Wave" (B)..... 2,300- 7,000 kc
- "Short Wave" (C)..... 7,000-22,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6H6..... Second Detector and A.V.C.

Pilot Lamps (2)..... Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

- Rating A.. 105-125 volts, 50-60 cycles, 75 watts
- Rating B.. 105-125 volts, 25-60 cycles, 75 watts
- Rating C. 105-125/200-250 volts, 50-60 cycles, 75 watts

POWER OUTPUT

- Undistorted..... 2.2 watts
- Maximum..... 4.5 watts

R-F ALIGNMENT FREQUENCIES

- "Medium Wave" (B)..... 6,000 kc (osc., ant.)
- "Short Wave" (C)..... 20,000 kc (osc.)
- "Standard Broadcast" (A).. 600 kc (osc.), 1,500 kc (osc.)

- (4) RCA-6F5..... Audio Voltage Amplifier
- (5) RCA-6F6..... Audio Power Amplifier
- (6) RCA-5W4..... Full-Wave Rectifier
- (7) RCA-6U5 (Model 87T1 only)..... Tuning Tube

LOUDSPEAKER

- Type..... 6-inch Electrodynamic
- V.C. Impedance..... { 84091-1 } 2.6 ohms at 400 cycles
 { 84001-3 }
 { 84091-2 } 4.7 ohms at 400 cycles
 { 84001-6 }

Alignment Procedure

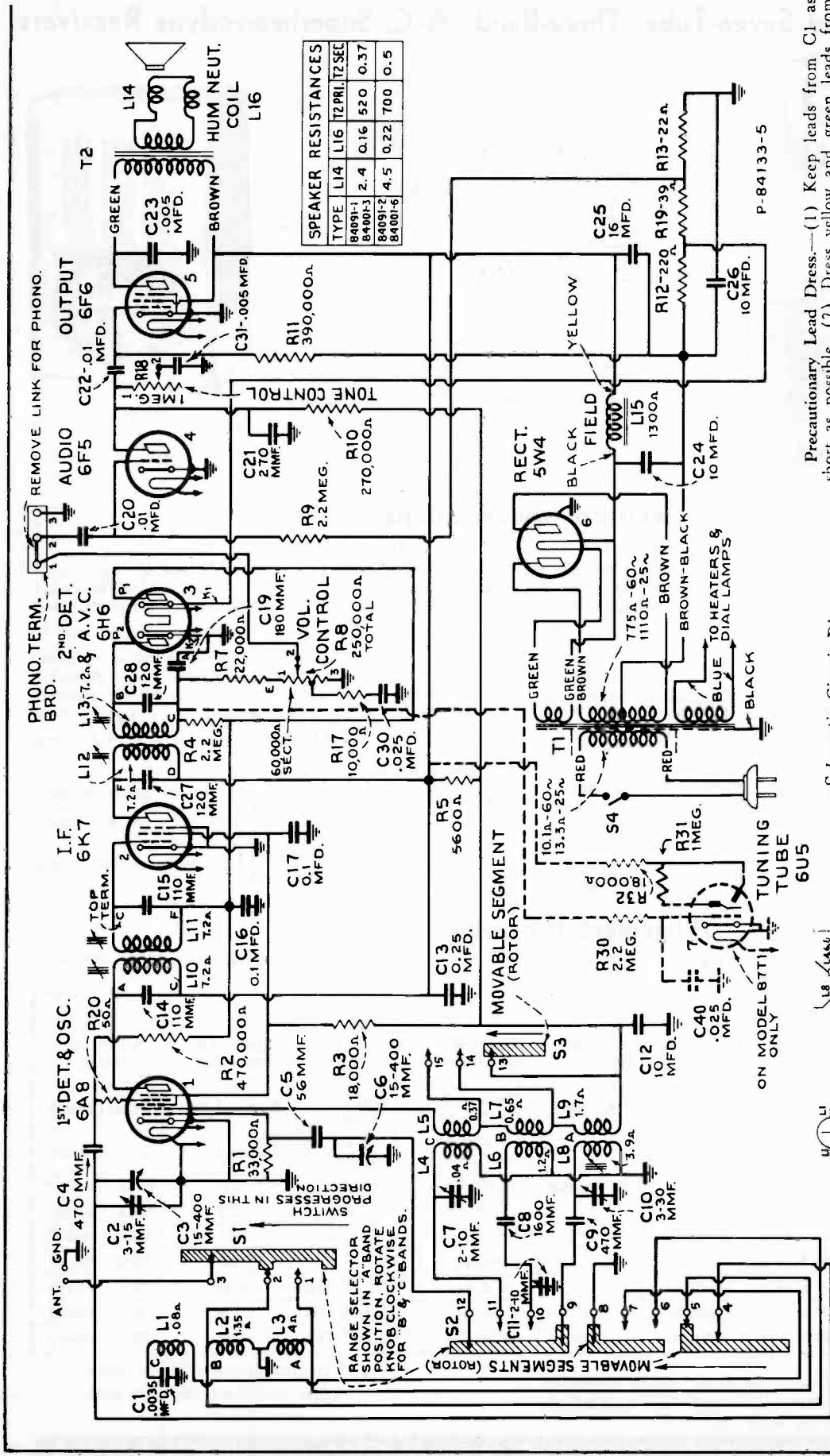
With the gang tuning-condenser plates in full-mesh position, adjust the pointer to the low-frequency (end) calibration mark on the dial scale. The pointer is soldered in place on the drive cable.

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	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L12 and L13	Max. (peak)
2	6A8 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L10 and L11	Max. (peak)
3	Ant. Term.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C11	Max. (peak)*
4	Ant. Term.	300 Ohms	6,000 kc	"B"	6,000 kc	"B" Ant.	C2	Max. (peak)
5	Ant. Term.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C7	Max. (peak)‡
6	Ant. Term.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" L-F Osc.	L8	Max. (peak)
7	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C10	Max. (peak)
8	Ant. Term.	200 Mmfd.	600 kc	"A"	600 kc	"A" L-F Osc.	L8	Max. (peak)
9	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C10	Max. (peak)

Note that the heterodyne oscillator tracks above the signal frequency on bands "A" and "B," and below the signal frequency on band "C."

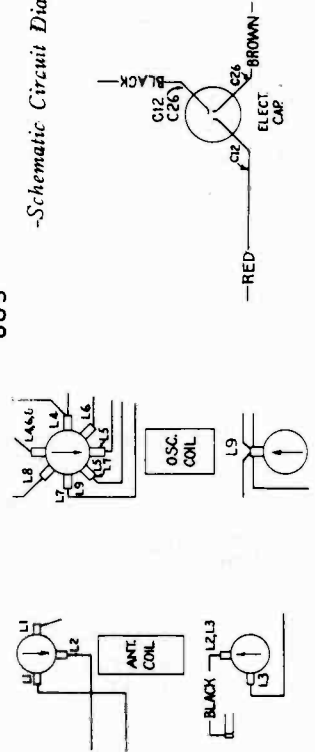
* Use minimum capacity peak
‡ Use maximum capacity peak

86T2, 86T3 & 87T1

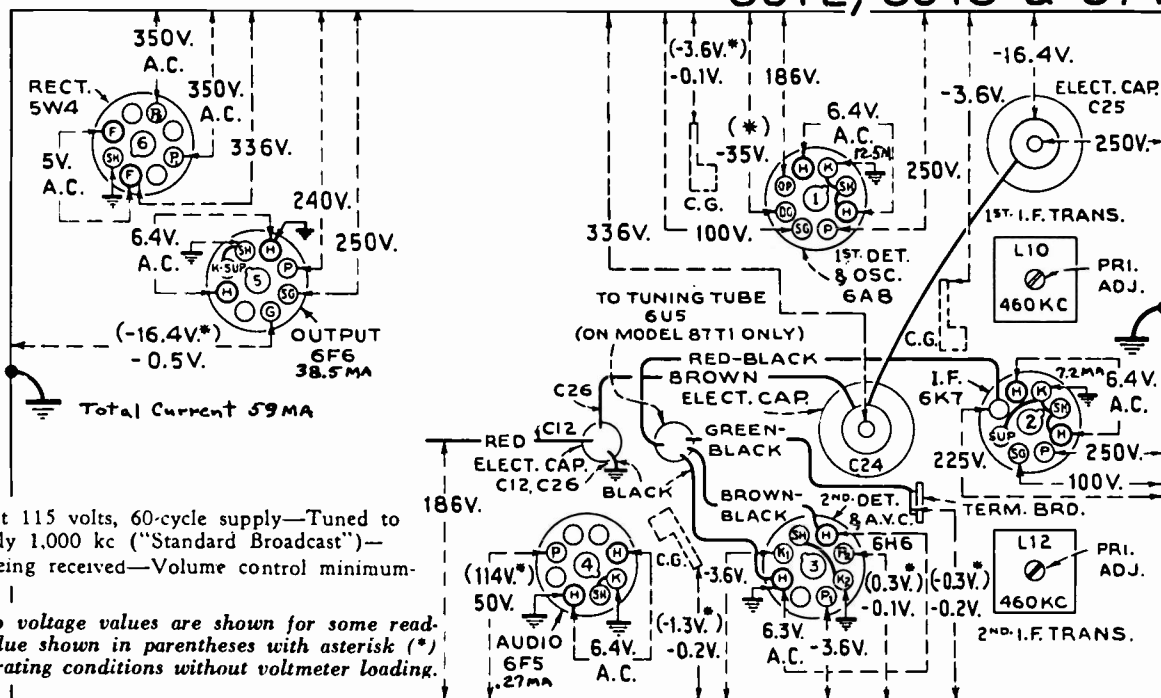


Precautionary Lead Dress—(1) Keep leads from C1 as short as possible. (2) Dress yellow and green leads from range selector to oscillator coil between front apron and range selector. Maintain original length and size of the following: (3) bus lead from antenna coil L1 to range selector and (4) lead from oscillator coil to chassis.

Schematic Circuit Diagram



86T2, 86T3 & 87T1



Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—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.

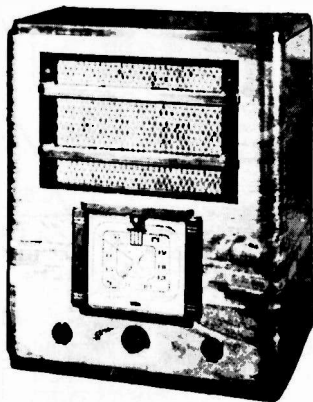
Radiotron Socket Voltages and Trimmer Locations BOTTOM VIEW-REAR OF CHASSIS

REPLACEMENT PARTS-

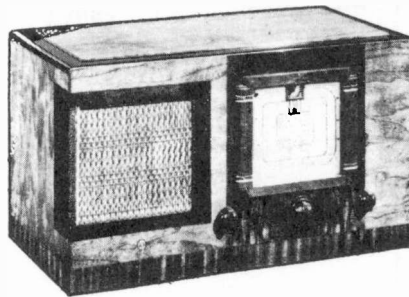
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14380	Arm—Hub and arm for operating band indicator shutter—fastens on range switch shaft	13005	Resistor—390,000 ohms, carbon type, 1/10 watt (R11)
14352	Belt—Station selector drive belt	11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R2)
13216	Board—Antenna and ground terminal board	12013	Resistor—1 meg., carbon type, 1/10 watt (R31) (Model 87T1 only)
12717	Board—Phonograph terminal board	12679	Resistor—2.2 meg., insulated, 1/2 watt (R4, R9)
12607	Cap—Top shield cap for first I.F. transformer	11628	Resistor—2.2 meg., carbon type, 1/2 watt (R30) (Model 87T1 only)
12581	Cap—Top shield cap for second I.F. transformer	30582	Retainer—Band-indicator disc retainer
11360	Cap—Grid contact cap	14343	Ring—Retaining ring for range switch shaft
12723	Capacitor—56 Mmfd. (C5)	14350	Screw—No. 8-32 x 3/16 in. square-head set screw for drum, Stock No. 30584, arm, Stock No. 14380, and pulley, Stock No. 30587
14282	Capacitor—110 Mmfd. (C14, C15)	14340	Shaft—Drive pulley and knob shaft—fastens on range switch shaft
12404	Capacitor—120 Mmfd. (C27, C28)	12008	Shield—I.F. transformer shield can
12408	Capacitor—180 Mmfd. (C19)	11198	Socket—8-contact Radiotron socket
12488	Capacitor—270 Mmfd. (C21)	14114	Socket—Dial-lamp socket
30433	Capacitor—470 Mmfd. (C4, C9)	13871	Socket—Tuning-tube socket complete—less cable (Model 87T1 only)
30592	Capacitor—1,800 Mmfd. (C8)	12007	Spring—Retaining spring for core, Stock No. 12008
30303	Capacitor—.0035 Mfd. (C1)	30585	Spring—Tension spring for pointer cord
4838	Capacitor—.005 Mfd. (C23, C31)	30588	Spring—Tension spring for idler pulley
14393	Capacitor—.01 Mfd. (C20, C22)	30576	Switch—Range switch (S1, S2)
4870	Capacitor—.025 Mfd. (C30, C40) (C40 — Model 87T1 only)	30574	Tone control and power switch (R18, S4)
4839	Capacitor—0.1 Mfd. (C16, C17)	14376	Transformer—First I.F. transformer (L10, L11, C14, C15)
12484	Capacitor—0.25 Mfd. (C13)	14308	Transformer—Second I.F. transformer (L12, L13, C19, C27, C28, R7)
11203	Capacitor—10 Mfd. (C12)	30571	Transformer—Power transformer, 105-125 volts, 25-80 cycle (T1)
30577	Capacitor Pack—Comprising two sections each 10 Mfd. (C24, C28)	30617	Transformer—Power transformer, 105-125 and 200-250 volts, 50-60 cycle (T1)
5212	Capacitor—16 Mfd. (C25)	30575	Volume Control (R8)
4358	Clamp—Mounting clamp for capacitor pack, Stock No. 30577	REPRODUCER ASSEMBLIES	
30578	Coil—Antenna coil (L1, L2, L3)	14616	Coil—Reproducer field coil
30579	Coil—Oscillator coil (L4, L5, L6, L7, L8, L9)	14614	Cone—Reproducer cone and dust cap (for speaker marked 84091-1 or 84001-3) (L14)
30573	Condenser—2-gang variable tuning condenser (C2, C3, C6)	14934	Cone—Reproducer cone and dust cap (for speaker marked 84091-2 or 84001-6) (L14)
30580	Condenser—3-gang mica trimmer—two sections each 2-10 Mmfd., one section 3-30 Mmfd. (C7, C10, C11)	14613	Reproducer complete (marked 84001-3 or 6 but interchangeable with speaker marked 84091-1 or 2)
30586	Cord—Station-selector indicator pointer cord	14615	Transformer—Output transformer (for speaker marked 84091-1 or 84001-3) (T2)
12800	Core—Adjustable core and stud for oscillator coil	14935	Transformer—Output transformer (for speaker marked 84091-2 or 84001-6) (T2)
12006	Core—Adjustable core and stud for I.F. transformer	MISCELLANEOUS ASSEMBLIES	
30589	Dial—Station-selector dial scale	30595	Bracket—Tuning-tube mounting bracket and clip (Model 87T1 only)
30581	Disc—Band indicator disc with celluloid window	30593	Escutcheon—Dial escutcheon and crystal (Model 86T3 only)
30572	Drive—Vernier drive shaft and pinion gear for variable condenser	30594	Escutcheon—Dial and tuning-tube escutcheon and crystal (Model 87T1 only)
30584	Drum—Station-selector drive-cord drum with set screws	14359	Knob—Station selector knob
30583	Indicator—Station-selector indicator pointer and holder assembly	14269	Knob—Tone control, volume control, or range switch knob
5228	Lamp—Dial lamp	14267	Screw—Chassis-mounting screw and washer assembly
30587	Pulley—Drive-belt pulley for condenser shaft	14270	Spring—Retaining spring for knob, Stock No. 14269
14638	Pulley—Drive-belt idler pulley	4982	Spring—Retaining spring for knob, Stock No. 14359
14525	Resistor—22 ohms, carbon type, 1/2 watt (R13)		
30590	Resistor—39 ohms, carbon type, 1/2 watt (R19)		
14653	Resistor—50 ohms, flexible type, 1/10 watt (R20)		
30591	Resistor—220 ohms, insulated wire wound, 1.1 watt (R12)		
11298	Resistor—5,600 ohms, carbon type, 1 watt (R5)		
14559	Resistor—10,000 ohms, insulated, 1/2 watt (R17)		
30151	Resistor—18,000 ohms, insulated, 1 watt (R3, R32) (R32 — Model 87T1 only)		
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R7)		
12464	Resistor—33,000 ohms, insulated, 1/2 watt (R1)		
11323	Resistor—270,000 ohms, carbon type, 1/2 watt (R10)		

MODELS 86T4 and 86T44

Six-Tube, Three-Band, A-C, Superheterodyne Receivers



Model 86T4



Model 86T44

Electrical Specifications

FREQUENCY OR WAVE-LENGTH RANGES

- "Long Wave" (X). 145-350 kc (approx. 2,068-857 meters)
- "Medium Wave" (A). 525-1,550 kc (approx. 571-193 meters)
- "Short Wave" (C)..... 5.8-22 megacycles

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A7..... First Detector—Oscillator
- (2) RCA-6D6..... Intermediate Amplifier
- (3) RCA-75..... Second Detector, A-F Amp. and A.V.C.
- Pilot Lamps (2).....

R-F ALIGNMENT FREQUENCIES

- "Short Wave" (C)..... 20,000 kc (osc., det.)
- "Medium Wave" (A)..600 kc (osc.), 1,500 kc (osc., det., ant.)
- "Long Wave" (X).... 175 kc (osc.), 350 kc (osc., det., ant.)

..... 460 kc

POWER SUPPLY RATINGS

- Rating A..... 105-125 volts, 50-60 cycles, 75 watts
- Rating B..... 105-125 volts, 25-60 cycles, 75 watts
- Rating C..... 100-130/140-160/195-250 volts, 40-60 cycles, 75 watts

POWER OUTPUT RATING

- Undistorted..... 2.5 watts
- Maximum..... 4.5 watts

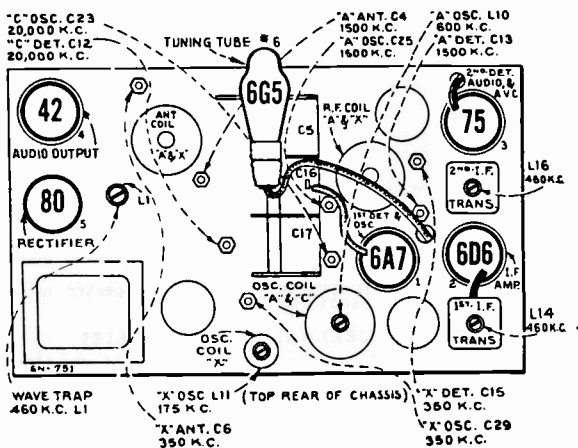
- (4) RCA-42..... Audio Power Amplifier
- (5) RCA-80..... Full-Wave Rectifier
- (6) RCA-6G5..... "Magic Eye" Tuning Tube

Pilot Lamps (2)..... Mazda No. 46, 6.3 volts, 0.25 ampere

LOUDSPEAKER

Type..... Electrodynamic

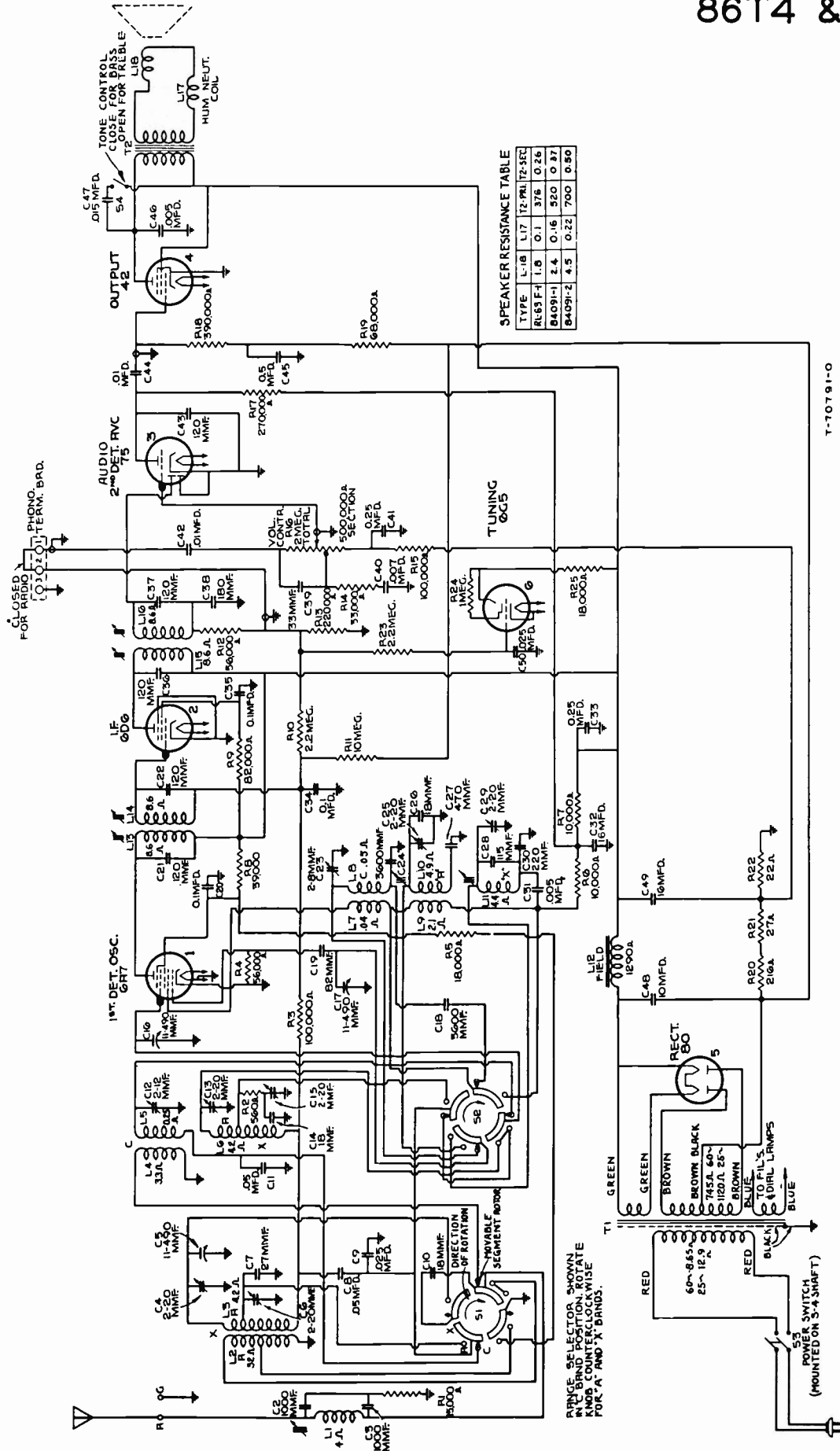
V.C. Impedance.... { (RL-63F-1) 2.2— } ohms at 400 cycles
 { (84091-1) 2.6— }
 { (84091-2) 4.7— }



-Radiotron, Coil, and Trimmer Locations

Precautionary Lead Dress.—Keep the following leads as short as possible: (1) Bus lead from C16 to S2, (2) bus lead from L8 to S2, (3) leads from C24 to L8 and to chassis. (4) Bus lead from L5 to S2 should be 2½ inches long between lugs and dressed away from S2, (5) bus lead from C17 to S2 should be dressed away from adjacent parts, (6) leads should be dressed away from grid lug of 42 tube, (7) C11 lead to L5 should be 1 inch long and dressed between L5 and C4, C11 lead to ground should be short, (8) green lead between opposite lugs on S2 should be dressed away from S2, (9) excess antenna lead should be dressed above chassis, (10) blue lead from L7 to 6A7 oscillator plate lug should be dressed down and away from L8 lug and away from oscillator grid of 6A7, (11) green lead from L6 to S2 should be dressed away from bus connected between C17 and S2, (12) red lead from L6 tap to S2 should be dressed away from bus connected between C17 and S2. When necessary to replace bus leads, use only wire having same diameter as original.

86T4 & 86T44



-Schematic Circuit Diagram

86T4 & 86T44

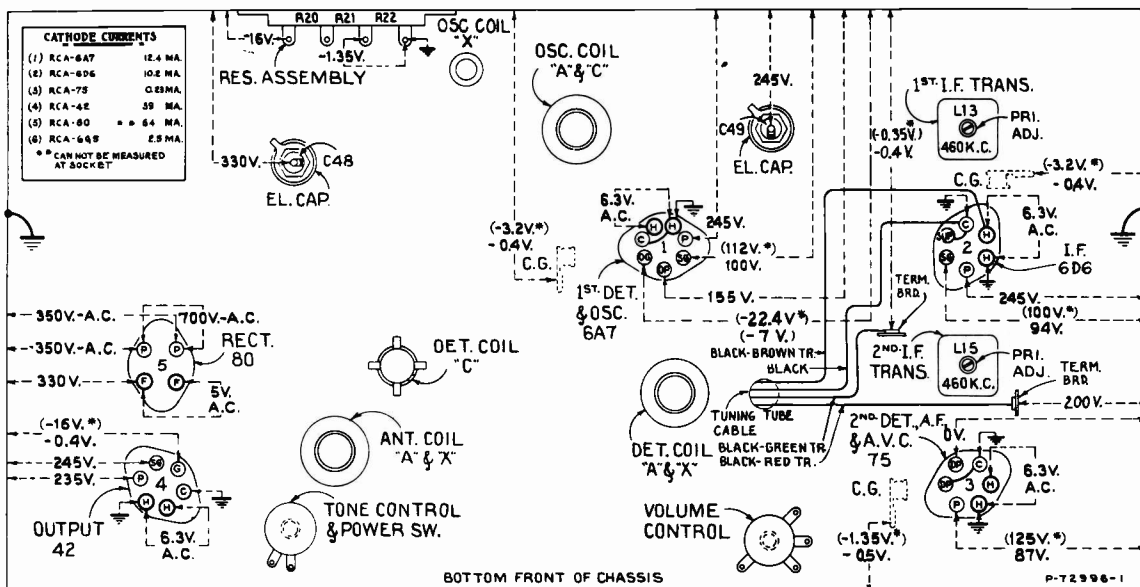
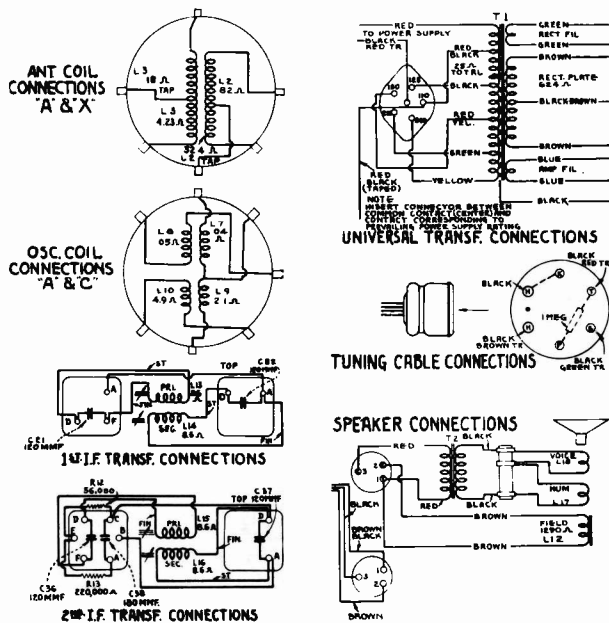


Figure 2—Radiotron Socket Voltages, Coil, and Trimmer Locations
 Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc or 300 meters, "A" band—
 No signal being received—Volume control minimum

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

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 figure 0. These are friction adjustments.



STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L16 L15 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			L14 L13 1st I-F Trans.
3	Antenna in series with 200 mmfd			L1 Wave Trap Minimum Output
4	Antenna in series with 300 ohms	20 Kc	20 Mc "C" Band	C23 [▲] C12 [†] Osc. Det.
5	Antenna in series with 200 mmfd	1500 Kc	"A" Band	C25 C13 C4 Osc. Det. Ant.
6		600 Kc	"A" Band	L10 L-F Osc. Rock Gang
7		Repeat Step 5		
8	Antenna in series with 200 mmfd	350 Kc	"X" Band	C29 C15 C6 Osc. Det. Ant.
9		175 Kc	"X" Band	L11 L-F Osc. Rock Gang
10		Repeat Step 8		

▲ Use minimum capacity peak.

† Use maximum capacity peak - ROCK GANG

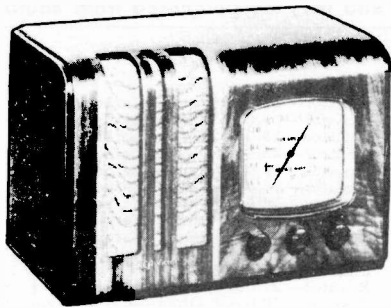
REPLACEMENT PARTS

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

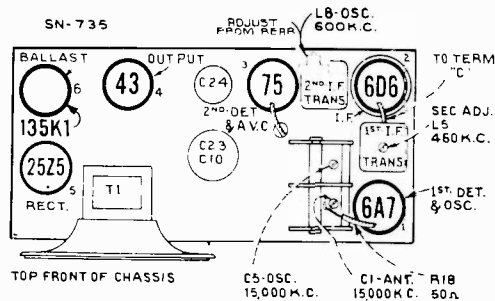
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14542	Arm—Band indicator operating arm and hub—less set screw, Stock No. 14350	13594	Resistor—15,000 Ohms—Carbon type, 1/10 watt (R1)
12038	Band—Rubber band for tuning tube	3219	Resistor—18,000 Ohms—Carbon type, 1/2 watt (R5)
14388	Belt—Variable condenser drive belt	14078	Resistor—18,000 Ohms—Carbon type, 1 watt (R25)
13216	Board—Antenna and ground terminal board	13735	Resistor—33,000 Ohms—Carbon type, 1/2 watt (R14)
12717	Board—Phonograph terminal board	13206	Resistor—39,000 Ohms—Carbon type, 2 watt (R8)
14338	Bushing—Variable condenser mounting bushing and screw assembly	5029	Resistor—58,000 Ohms—Carbon type, 1/2 watt (R4)
14394	Cable—Tuning tube cable and socket	11282	Resistor—56,000 Ohms—Carbon type, 1/10 watt (R12)
12607	Cap—First I.F. transformer shield top	12333	Resistor—68,000 Ohms—Carbon type, 1/2 watt (R19)
12581	Cap—Second I.F. transformer shield top	8064	Resistor—82,000 Ohms—Carbon type, 1/2 watt (R9)
12118	Cap—Grid contact cap	5145	Resistor—100,000 Ohms—Carbon type, 1/2 watt (R3, R15)
12884	Capacitor—Adjustable trimmer (long) (C4, C6, C13, C15, C25, C29)	11398	Resistor—220,000 Ohms—Carbon type, 1/10 watt (R13)
12714	Capacitor—Adjustable trimmer (medium) (C12)	12199	Resistor—270,000 Ohms—Insulated, 1/2 watt (R17)
12807	Capacitor—Adjustable trimmer (short) (C23)	13479	Resistor—390,000 Ohms—Carbon type, 1/2 watt (R18)
12722	Capacitor—18 Mmfd. (C10, C14, C26)	12013	Resistor—1 Megohm—Carbon type, 1/10 watt (R24)
13605	Capacitor—27 Mmfd. (C7)	12679	Resistor—2.2 Megohm—Insulated, 1/2 watt (R10, R23)
12948	Capacitor—33 Mmfd. (C30)	13601	Resistor—10 Megohm—Insulated, 1/2 watt (R11)
12813	Capacitor—82 Mmfd. (C19)	12004	Resistor—Voltage divider—Comprising one 216 ohm, one 27 ohm and one 22 ohm sections (R20, R21, R22)
13604	Capacitor—115 Mmfd. (C28)	14350	Screw—No. 8-32 x 3/16 square head set screw for gear, Stock No. 14365, and drum, Stock No. 14345, and arm, Stock No. 14542
12404	Capacitor—120 Mmfd. (C21, C22, C36, C37)	12710	Shield—Coil shield for Stock Nos. 13587 and 13588
12724	Capacitor—120 Mmfd. (C43)	12799	Shield—Coil shield for Stock No. 12798
12406	Capacitor—180 Mmfd. (C38)	12883	Shield—Coil shield for Stock No. 13590
13602	Capacitor—220 Mmfd. (C30)	12008	Shield—I.F. transformer shield
13603	Capacitor—470 Mmfd. (C27)	12798	Shield—Oscillator coil and shield—"A" and "C" bands (L7, L8, L9, L10)
13593	Capacitor—1,000 Mmfd. (C2, C3)	3682	Shield—6A7, or 75 Radiotron shield
12811	Capacitor—3,600 Mmfd. (C18, C24)	4233	Shield—6D6 Radiotron shield
4838	Capacitor—.005 Mfd. (C31, C46)	11383	Shield—42 Radiotron shield
5148	Capacitor—.007 Mfd. (C40)	14114	Socket—Dial lamp socket
13138	Capacitor—.01 Mfd. (C42, C44)	4794	Socket—4-contact 80 Radiotron socket
11315	Capacitor—.015 Mfd. (C47)	4786	Socket—6-contact 42, 75 or 6D6 Radiotron socket
13606	Capacitor—.025 Mfd. (C9)	4787	Socket—7-contact 6A7 Radiotron socket
4870	Capacitor—.025 Mfd. (C50)	12007	Spring—Retaining spring for core, Stock Nos. 12006, 12864 and 12882
4886	Capacitor—.05 Mfd. (C11)	12907	Spring—Tension spring for indicator drive gear, Stock No. 14365
13607	Capacitor—.05 Mfd. (C8)	14342	Spring—Tension spring for idler, Stock No. 14341
4839	Capacitor—.1 Mfd. (C20, C34, C35)	14537	Switch—Range switch (S1, S2)
12484	Capacitor—.025 Mfd. (C33, C41)	14538	Switch—Tone and power switch (S3, S4)
12741	Capacitor—.5 Mfd. (C45)	12652	Transformer—First I.F. transformer (L13, L14, C21, C22)
11203	Capacitor—10 Mfd. (C48)	12653	Transformer—Second I.F. transformer (L15, L16, C36, C37, C38, R12, R13)
5212	Capacitor—16 Mfd. (C49)	13392	Transformer—Power transformer—105-125 volts, 50-60 cycles (T1)
14377	Capacitor—16 Mfd. (C32)	13566	Transformer—Power transformer—105-125 volts, 25-60 cycles (T1)
13587	Coil—Antenna coil and shield—"X" and "A" bands (L2, L3)	12646	Transformer—Power transformer—100-130/140-160/195-250 volts, 50-60 cycles (T1)
13589	Coil—Antenna coil—"C" band only (L4, L5)	13592	Trap—Wave trap (L1)
13590	Coil—Oscillator coil and shield—"X" band only (L11)	14335	Volume Control (R18)
12798	Coil—Oscillator coil and shield—"A" and "C" bands (L7, L8, L9, L10)	14379	Washer—Felt washer for indicator pointer
13588	Coil—R.F. coil and shield—"X" and "A" bands (L6)	REPRODUCER ASSEMBLIES	
14539	Condenser—3-gang variable tuning condenser (C5, C16, C17)	Model 86T4 (Speaker No. RL-63F-1)	
5119	Connector—3-contact female connector for reproducer cable	14356	Board—3-contact reproducer terminal board
12800	Core—Adjustable core and stud assembly for Stock No. 12798	13866	Cap—Cone center dust cap
12882	Core—Adjustable core and stud for Stock No. 13590	12012	Coil—Field coil (L12)
12006	Core—Adjustable core and stud for Stock Nos. 12652 and 12653	11469	Coil—Hum neutralizing coil (L17)
12664	Core—Adjustable core and stud for Stock No. 13592	12642	Cone—Reproducer cone and dust cap (L18)
14541	Dial—Station selector dial scale, complete with tuning tube escutcheon (for European use only)	5118	Plug—3-contact male plug for reproducer
14543	Dial—Band indicator dial and mounting bracket	14360	Reproducer—Reproducer complete
14544	Dial—Station selector dial scale, complete with tuning tube escutcheon (for other than European use)	14358	Screw—Screw, washer and lockwasher to hold core in yoke
14540	Drive—Variable condenser vernier drive pinion gear and shaft	14355	Transformer—Output transformer (T2)
14345	Drum—Variable condenser drive belt drum, complete with set screws	14357	Washer—Spring washer to hold field coil
14387	Escutcheon—Tuning tube escutcheon	Model 86T44 (Speaker No. 84091-1)	
11982	Fastener—Dial scale fastener	14616	Coil—Reproducer field coil (L12, L17)
30085	Gear—Indicator drive gear and hub assembly and indicator pointer stem and gear assembly	14614	Cone—Reproducer cone and voice coil (L18)
14341	Idler—Station selector drive belt idler	5118	Plug—3-contact male plug
14344	Indicator—Station selector indicator pointer	14613	Reproducer—Complete
14382	Indicator—Vernier indicator pointer	14615	Transformer—Output transformer (T2)
5226	Lamp—Dial lamp	MISCELLANEOUS ASSEMBLIES	
14028	Nut—Jamb nut for Stock Nos. 12884, 12807 and 12714	14396	Escutcheon—Station selector escutcheon and crystal
14340	Pulley—Station selector drive belt pulley and knob shaft	14269	Knob—Volume control, tone control or range switch knob
14362	Reflector—Dial reflector, lamp bracket and tuning tube mounting bracket and clamp	14359	Knob—Station selector knob
14343	Retainer—Drive shaft and pulley retainer—holds tuning knob shaft and pulley on range switch shaft	11377	Screw—Chassis mounting screw assembly
11324	Resistor—560 Ohms—Carbon type, 1/2 watt (R2)	4982	Spring—Retaining spring for knob, Stock No. 14359
3078	Resistor—10,000 Ohms—Carbon type, 1/2 watt (R6, R7)	14270	Spring—Retaining spring for knob, Stock No. 14269

MODEL 86X

Six-Tube, Two-Band, AC-DC, Superheterodyne Receiver



Model 86X



-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 540-1,720 kc
 "Short Wave" (C)..... 5,800-18,000 kc
 Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6A7..... First Detector—Oscillator
 (2) RCA-6D6..... Intermediate Amplifier
 (3) RCA-75..... Second Det., A-F Amp. and A.V.C.
 Pilot Lamp (1)..... Mazda No. 40, 6.3 volts, 0.15 ampere

POWER SUPPLY RATINGS

A-C Rating..... 105-125 volts, 50-100 cycles, 58 watts
 POWER OUTPUT—(125 volt, A-C supply)
 Undistorted..... 0.5 watt
 Maximum..... 1.2 watts
LOUDSPEAKER
 Type..... 6-inch Electrodynamic

R-F ALIGNMENT FREQUENCIES

"Broadcast" (A)..... 600 kc (osc.)
 "Short Wave" (C)..... 15,000 kc (osc., ant.)
 Intermediate Frequency..... 460 kc

(4) RCA-43..... Audio Power Amplifier
 (5) RCA-25Z5..... Half-Wave Rectifier
 (6) RCA-135K1..... Ballast

D-C Rating..... 105-125 volts, 58 watts
 POWER OUTPUT—(125 volt, D-C supply)
 Undistorted..... 0.4 watt
 Maximum..... 1.0 watt
 Impedance (V.C.)..... $\left. \begin{matrix} (84003-3) & 2.6 \text{ ohms} \\ (84003-4) & 3.4 \text{ ohms} \end{matrix} \right\}$ at 400 cycles

Alignment Procedure

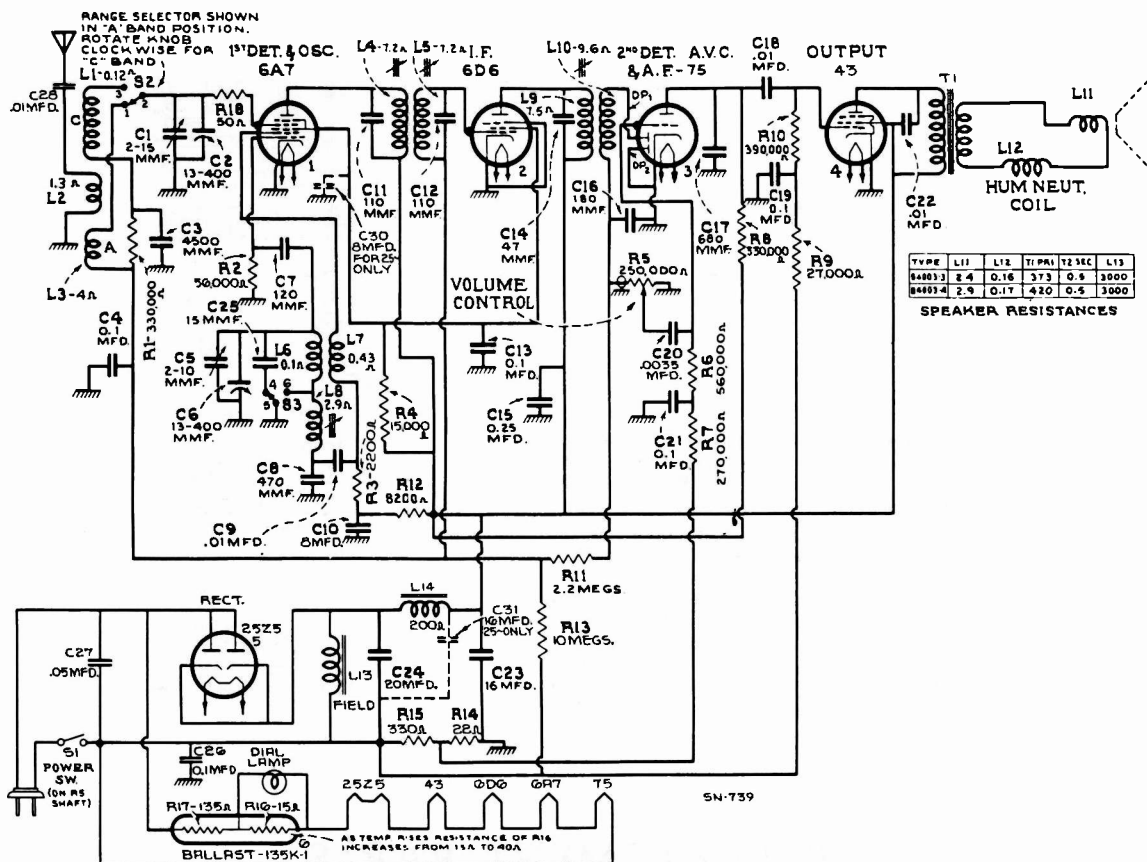
Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

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	6D6 I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L9	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	1st I-F Trans.	L4 and L5	Max. (peak)
3	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	15,000 kc	"C" Osc.	C5	Max. (peak)†
4	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	Rock Through 15,000 kc	"C" Ant.	C1	Max. (peak)*‡
5	Ant. Lead (blue)	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L8	Max. (peak)

† Use maximum capacity peak if two peaks can be obtained.

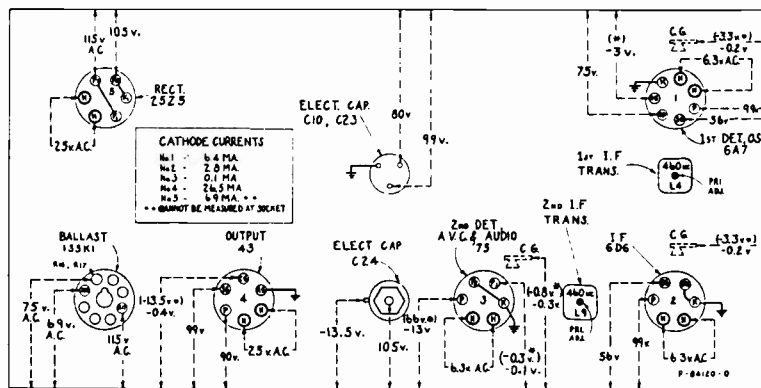
* Use minimum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 15,920 kc.



-Schematic Circuit Diagram

(On some instruments, C17 is 150 Mmfd. Replace with Stock No. 14408.)

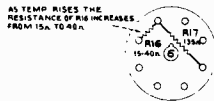


BOTTOM REAR OF CHASSIS

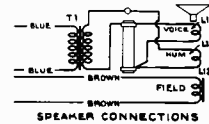
-Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—For 115-volt d-c supply approximately 10% lower, except heater voltage which remains the same—Tuned to approximately 1,000 kc ("Standard Broadcast")—No signal being received—Volume control minimum.

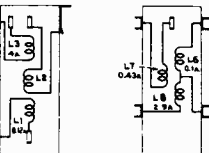
Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.



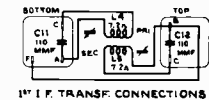
BALLAST TUBE CONNECTIONS



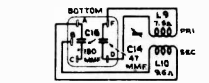
TYPE	L11	L12	L13	L14	L15	L16	L17
84003-3	2.4	0.18	273	0.3	1000		
84003-4	2.2	0.17	252	0.2	1000		



ANT. COIL CONN. OSC. COIL CONN.



1ST I.F. TRANSF. CONNECTIONS



2ND I.F. TRANSF. CONNECTIONS

Precautionary Lead Dress—(1) Dress power line leads to the on-off switch away from grid connection terminal on volume control to reduce hum pick-up. (2) Keep leads of capacitor C3 as short as possible. (3) Bus lead from range selector (ter. 6) to oscillator coil tap L6L8 should be maintained 3½ inches long for proper alignment. (4) Capacitor C25 should be dressed free of adjacent parts to maintain correct alignment at high-frequency end of "A" band. (5) Bus lead from range selector (ter. 3) to antenna coil L1 should be maintained 2¼ inches long for proper alignment. (6) The RCA-6A7 grid-cap lead (50-ohm resistor R18) to top of tuning capacitor C2 should be dressed properly to prevent shorts and should be maintained flexible to prevent acoustic howl.

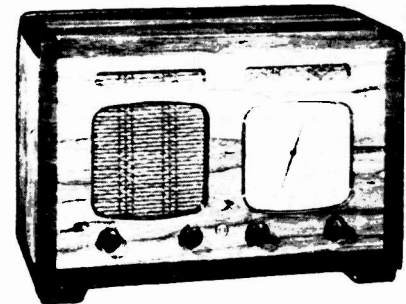
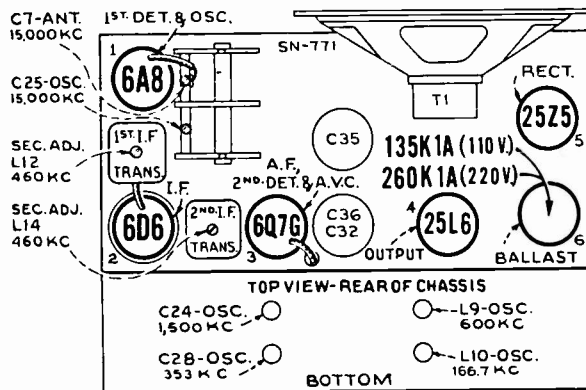
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14634	Belt—Variable condenser drive belt	11400	Resistor—27,000 Ohms—Carbon type, ¼ watt (R9)
14632	Bracket—Dial mounting bracket	5029	Resistor—56,000 Ohms—Carbon type, ¼ watt (R2)
5237	Bushing—Variable condenser rubber mounting bushing	11323	Resistor—270,000 Ohms—Carbon type, ¼ watt (R7)
12118	Cap—Grid contact cap	13733	Resistor—330,000 Ohms—Carbon type, ¼ watt (R1, R8)
12896	Capacitor—15 Mmfd. (C25)	13479	Resistor—390,000 Ohms—Carbon type, ¼ watt (R10)
12405	Capacitor—47 Mmfd. (C14)	5035	Resistor—580,000 Ohms—Carbon type, ¼ watt (R6)
14262	Capacitor—110 Mmfd. (C11, C12)	12879	Resistor—2.2 Megohm—Insulated, ¼ watt (R11)
12724	Capacitor—120 Mmfd. (C7)	13601	Resistor—10 Megohm—Insulated, ¼ watt (R13)
12406	Capacitor—180 Mmfd. (C16)	14649	Resistor—Ballast resistor tube type No. 135K1 (R16, R17)
30396	Capacitor—470 Mmfd. (C8)	5129	Ring—Radiotron shield ring
14498	Capacitor—680 Mmfd. (C17)	4389	Screw—No. 6—32x3/16 headless set screw for pulley No. 14639
30245	Capacitor—.0045 Mfd. (C3)	14638	Shaft—Station selector knob shaft and pulley
5005	Capacitor—.0035 Mfd. (C20)	12008	Shield—First I.F. transformer shield
4858	Capacitor—.01 Mfd. (C28)	12408	Shield—Second I.F. transformer shield
13138	Capacitor—.01 Mfd. (C9, C18, C22)	11285	Shield—Radiotron shield
4836	Capacitor—.05 Mfd. (C27)	14650	Socket—Dial lamp socket
4839	Capacitor—.01 Mfd. (C26)	4786	Socket—8-contact 6D6, 25Z5, 43 or 75 Radiotron socket
4841	Capacitor—.01 Mfd. (C4, C13, C19, C21)	4787	Socket—7-contact 6A7 Radiotron socket
4840	Capacitor—.025 Mfd. (C15)	11196	Socket—8-contact ballast resistor socket
14643	Capacitor—20 Mfd. (C24)	14637	Spring—Idler pulley tension spring
14644	Capacitor Pack—Comprising one 16 Mfd. and one 8 Mfd. section (C10, C23)	12007	Spring—Retaining spring for core Stock Nos. 12006 and 14648
14767	Capacitor Pack—Comprising one 16 Mfd. and one 8 Mfd. section and one clamp (for 25 cycle operation only) (C30, C31)	14640	Switch—Range switch (S2, S3)
14646	Coil—Antenna coil (L1, L2, L3)	14376	Transformer—First I.F. transformer (L4, L5, C11, C12)
14847	Coil—Oscillator coil (L6, L7, L8)	14642	Transformer—Second I.F. transformer (L9, L10, C14, C16)
14633	Condenser—2 gang variable tuning condenser (C1, C2, C5, C6)	14645	Volume Control and power switch (R5, S1)
14648	Core—Adjustable core and stud for Oscillator coil	REPRODUCER ASSEMBLIES	
12006	Core—Adjustable core and stud for I.F. transformer	14682	Cone—Reproducer cone (L11) for speaker marked 84003-3
14631	Dial—Station selector dial	14936	Cone—Reproducer cone (L11) for speaker marked 84003-4
14651	Drive—Variable condenser vernier drive and pinion gear	14681	Reproducer Complete
14635	Indicator—Station selector indicator pointer	14683	Transformer—Output transformer (T1) for speaker marked 84003-3
4340	Lamp—Dial lamp	14937	Transformer—Output transformer (T1) for speaker marked 84003-4
14636	Pulley—Idler pulley—less spring	MISCELLANEOUS ASSEMBLIES	
14639	Pulley—Variable condenser drive pulley—located on condenser shaft	14654	Escutcheon—Station selector escutcheon and crystal knob
14641	Reactor—Filter reactor (L14)	12673	Knob—Station selector, volume control or range switch knob
14525	Resistor—22 Ohms—Carbon type, ¼ watt (R14)	14267	Screw—Chassis mounting screw and washer
14653	Resistor—50 Ohms—Flexible type, 1/10 watt (R18)	4119	Screw—No. 8—32x1/4 headless set screw for knob Stock No. 12673
14652	Resistor—330 Ohms—Wire wound, 1 watt (R15)		
5159	Resistor—2,200 Ohms—Carbon type, ¼ watt (R3)		
14296	Resistor—8,200 Ohms—Carbon type, ¼ watt (R12)		
12759	Resistor—15,000 Ohms—Carbon type, ¼ watt (R4)		

MODEL 86X4

Six-Tube, Three-Band, AC-DC, Superheterodyne Receiver



Model 86X4

-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY OR WAVE-LENGTH RANGES

- "Long Wave" (X).....140-400 kc (2,140-750 meters)
- "Medium Wave" (A)..... 540-1,600 kc (555-188 meters)
- "Short Wave" (C)..... 5,800-18,000 kc (5.8-18 mc)

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6D6..... Intermediate Amplifier
- (3) RCA-6Q7G.. Second Detector, A-F Amp., and A.V.C.
- Pilot Lamp (1)..... Mazda No. 40, 6.3 volts, 0.15 amp.

POWER SUPPLY RATINGS

- A-C Rating..... 105-125 volts, 25-100 cycles, 55 watts
- 200-250 volts, 25-100 cycles, 100 watts
- D-C Rating..... 105-125 volts, 50 watts
- 200-250 volts. 95 watts

R-F ALIGNMENT FREQUENCIES

- "Short Wave" (C)..... 15,000 kc (osc., ant.)
- "Medium Wave" (A)..... 600 kc (osc.), 1,500 kc (osc.)
- "Long Wave" (X)..... 166.7 kc (osc.), 353 kc (osc.)

- (4) RCA-25L6..... Power Output
- (5) RCA-25Z5..... Half-Wave Rectifier
- (6) RCA-260K1A..... Ballast for 220 volts or RCA-135K1A..... Ballast for 110 volts

POWER OUTPUT

- Undistorted..... 1.6 watts
- Maximum..... 2.75 watts

LOUDSPEAKER

- Type..... 6-inch Permanent-Magnet Dynamic
- Impedance (V.C.)..... 2.4 ohms at 400 cycles

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	L14 L13 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd		L12 L11 1st I-F Trans.	
3	Antenna in series with 300 ohms		15 Mc "C" Band	C25† C7▲ Osc. Ant.
4	Antenna in series with 200 mmfd	1500 Kc	1500 Kc "A" Band	C24† Osc.
5		600 Kc	600 Kc "A" Band	L9 L-F Osc.
6		Repeat Step 4		
7		375 Kc	375 Kc "X" Band	C28 Osc.
8		150 Kc	150 Kc "X" Band	L10 L-F Osc.
9	Repeat Step 7			

Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

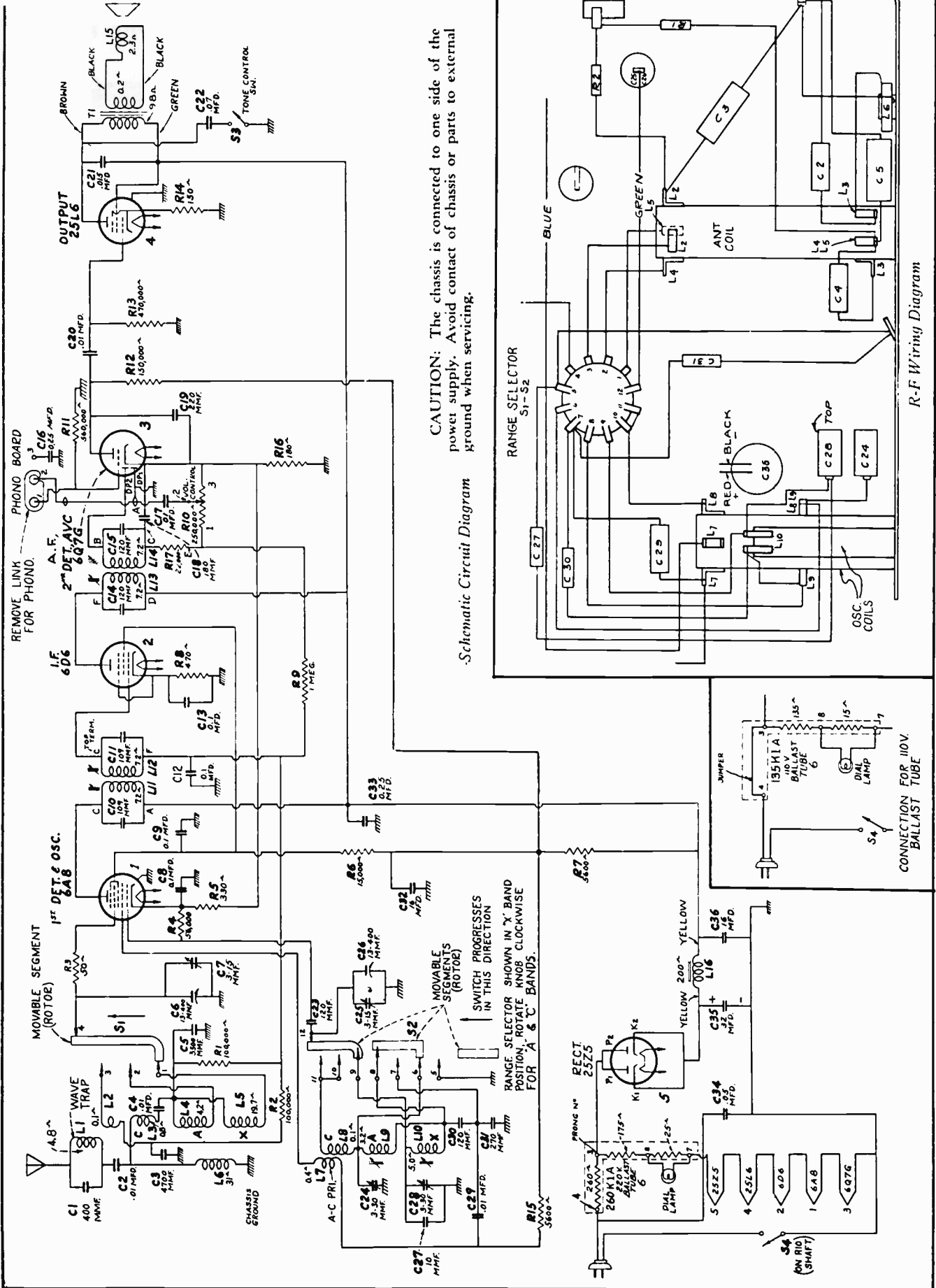
CAUTION: Disconnect receiver power cord before making phonograph connections. Tape shield extension on Radio-Record cable so it cannot make metallic connection with receiver chassis ground.

Precautionary Lead Dress.—(1) All bus leads in r-f assembly should be kept as short as possible. When necessary to replace bus leads, use only wire having same diameter. (2) Dress capacitor, connected from tone-control switch to terminal board, away from capacitor, connected to center terminal of volume control, and away from exposed green shielded lead running to phono. term. board. (3) Dress green lead, connected from volume control to 2nd i-f transformer, as close to chassis as possible. (4) Dress capacitor, connected from 25L6 socket to red lug on electrolytic-capacitor, away from phono. term. board. (5) Brown and green leads from speaker must be twisted, dressed along chassis and away from exposed green shielded lead and lug running to phono. term. board. (6) Dress green lead, connected between 6A8 and 6D6 sockets, away from pin No. 5 of 6A8 socket.

† Use maximum capacity peak.

▲ Use minimum capacity peak - ROCK GANG.

‡ C28 ("X" Band - H-F Osc.) must be at least three turns out during this adjustment.



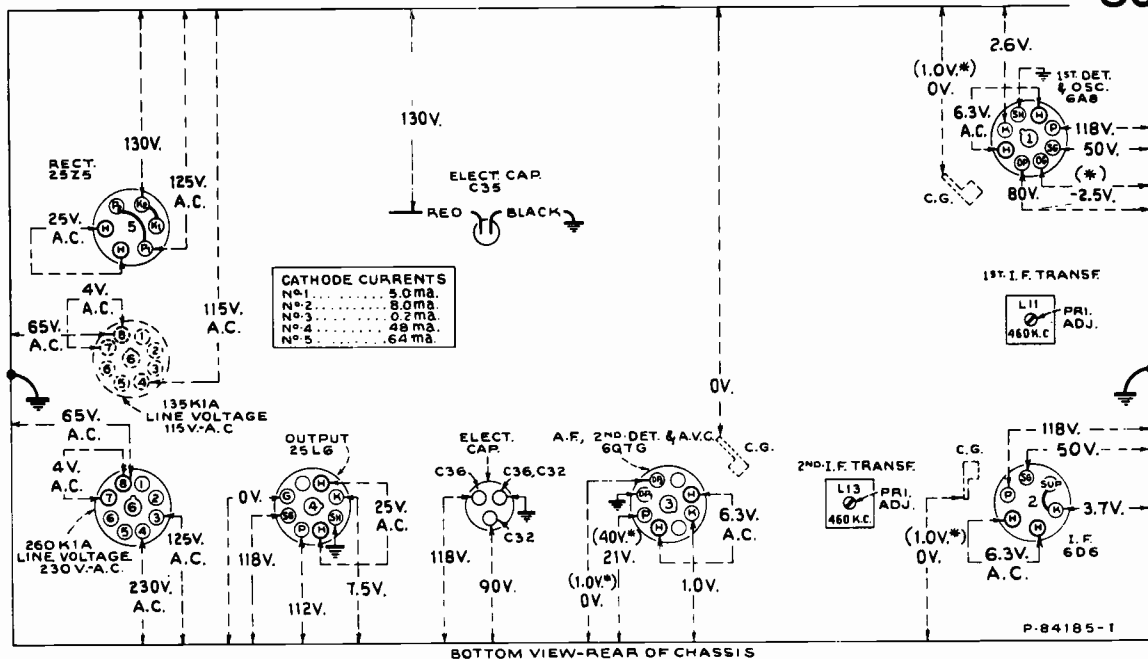


Figure 2—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 230 volts, 60 cycle supply; or 115 volts, 60 cycle supply—For 230 volts d-c, voltages are same—For 115 volts d-c, all voltages except line and heaters about 20% lower—Tuned to approximately 1,000 kc (300 meters) "Medium Wave"—No signal being received—Volume control minimum

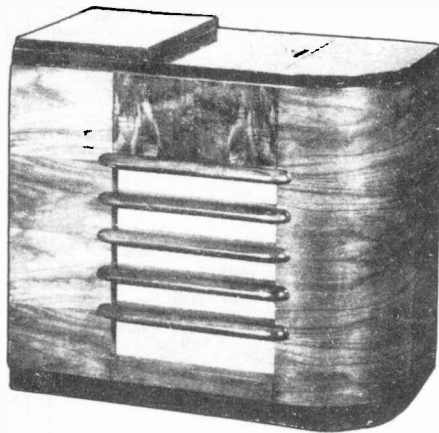
Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

REPLACEMENT PARTS

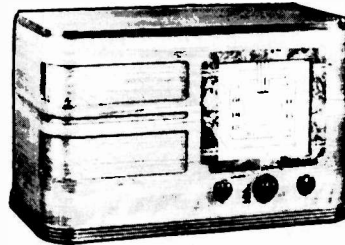
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14634	Belt—Variable condenser drive belt	14653	Resistor—50 ohms, flexible type, 1/10 watt (R3)
14632	Bracket—Dial mounting bracket	30301	Resistor—150 ohms, carbon type, 1/2 watt (R14)
5237	Bushing—Variable condenser rubber mounting	30545	Resistor—180 ohms, insulated, 1/2 watt (R16)
11350	Cap—Small grid-contact cap	13250	Resistor—330 ohms, carbon type, 1/2 watt (R5)
30295	Capacitor—Adjustable dual trimmer (C24, C28)	30546	Resistor—470 ohms, insulated, 1/2 watt (R8)
13200	Capacitor—10 Mmfd. (C27)	13714	Resistor—5,600 ohms, insulated, 1/2 watt (R7, R15)
14262	Capacitor—109 Mmfd. (C10, C11)	3998	Resistor—15,000 ohms, carbon type, 1/2 watt (R6)
12404	Capacitor—120 Mmfd. (C14, C15)	14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R17)
12724	Capacitor—120 Mmfd. (C23, C30)	12286	Resistor—56,000 ohms, insulated, 1/2 watt (R4)
12406	Capacitor—180 Mmfd. (C18)	5145	Resistor—100,000 ohms, carbon type, 1/2 watt (R1, R2)
12694	Capacitor—220 Mmfd. (C19)	5027	Resistor—150,000 ohms, carbon type, 1/2 watt (R12)
30302	Capacitor—270 Mmfd. (C31)	12285	Resistor—470,000 ohms, insulated, 1/2 watt (R13)
30303	Capacitor—.0035 Mfd. (C5)	5035	Resistor—560,000 ohms, carbon type, 1/2 watt (R11)
30304	Capacitor—.0047 Mfd. (C3)	13730	Resistor—1 megohm, carbon type, 1/2 watt (R9)
4858	Capacitor—.01 Mfd. (C2)	4389	Screw—No. 6-32 x 3/16-inch headless set-screw for drive pulley, Stock No. 14639
14393	Capacitor—.01 Mfd. (C4, C17, C20, C29)	14638	Shaft—Station selector knob shaft and pulley
11315	Capacitor—.015 Mfd. (C21)	12008	Shield—I-F transformer shield can
4886	Capacitor—.05 Mfd. (C34)	12581	Shield—I-F transformer shield cap
14626	Capacitor—.07 Mfd. (C22)	11265	Shield—Radiotron shield
4839	Capacitor—.1 Mfd. (C8, C9, C12, C13)	4786	Socket—8-contact 6D6 or 25Z5 Radiotron socket
12484	Capacitor—.25 Mfd. (C16)	11196	Socket—8-contact 6A8, 6Q7G, 25L6 Radiotron or ballast resistor tube socket
4840	Capacitor—.25 Mfd. (C33)	14650	Socket—Dial lamp socket
30298	Capacitor Pack—Comprising 2 sections each 16 Mfd. (C32, C36)	14637	Spring—Idler pulley tension spring
30297	Capacitor—32 Mfd. (C35)	12007	Spring—Retaining spring for core, Stock Nos. 14648, 12664 and 12006
30292	Coil—Antenna coil—X, A, and C bands (L2, L3, L4, L5)	30291	Switch—Range switch (S1, S2)
30293	Coil—Oscillator coil—A and C Bands only (L7, L8, L9)	30299	Switch—Tone control switch (S3)
30294	Coil—Oscillator coil—X band only (L10)	14376	Transformer—First I-F transformer (L11, L12, C10, C11)
30296	Coil—Choke coil (L6)	14308	Transformer—Second I-F transformer (L13, L14, C14, C15, C18, R17)
14633	Condenser—2-gang variable tuning condenser (C6, C7, C25, C26)	13838	Trap—Wave trap (L1, C1)
14648	Core—Adjustable core and stud for coil, Stock No. 30293	14645	Volume control and power switch (R10, S4)
12664	Core—Adjustable core and stud for coil, Stock No. 30294	REPRODUCER ASSEMBLIES (Speaker No. 84106-1)	
12006	Core—Adjustable core and stud for i-f transformers	30306	Cone—Reproducer cone, complete, centered in metal cone housing—less transformer (L15)
30289	Dial—Station selector dial scale and holder (for European use only)	30305	Reproducer, complete
30397	Dial—Station selector dial scale and holder (for other than European use)	30307	Transformer—Output transformer (T1)
14651	Drive—Variable condenser vernier drive and pinion gear	MISCELLANEOUS ASSEMBLIES	
30290	Indicator—Station selector indicator pointer	14654	Escutcheon—Station selector escutcheon and crystal
4340	Lamp—Dial lamp	30373	Knob—Range switch knob
14636	Pulley—Drive belt idler pulley—less spring	12673	Knob—Station selector, volume control or tone control knob
14639	Pulley—Variable condenser drive pulley—located on condenser shaft	30308	Screw—Chassis mounting screw and washer assembly
14641	Reactor—Filter reactor (L16)	4119	Screw—No. 8-32 x 1/4-inch headless cup-point set-screw for knob, Stock Nos. 12673 and 30373
30300	Resistor—Ballast resistor tube, type 260K-1A, for 220-volt operation		
MI-8115	Resistor—Ballast resistor tube, type 135K-1A, for 110-volt operation		

MODELS 87EY, 87X, and 87Y

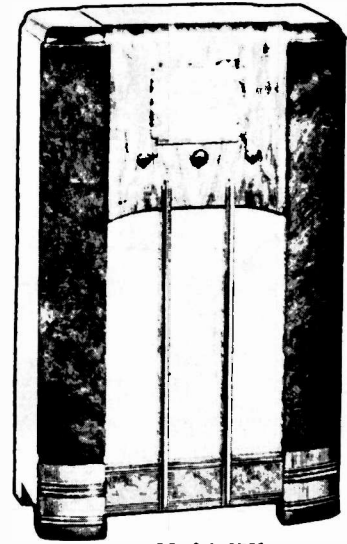
Seven-Tube, Three-Band, AC-DC, Superheterodyne Receivers



Model 87EY



Model 87X



Model 87Y

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 530-1,720 kc
 "Medium Wave" (B)..... 2,100-6,800 kc
 "Short Wave" (C)..... 6,800-22,000 kc
 Intermediate Frequency

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C)..... 20,000 kc (osc.)
 "Medium Wave" (B)..... 6,000 kc (osc., ant.)
 "Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc.)

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6H6..... Second Detector and A.V.C.
- (4) RCA-6J7..... Audio Voltage Amplifier
- Pilot Lamps (2)..... Mazda No. 40, 6.3 volts, 0.15 amp.

- (5) RCA-25L6..... Audio Power Output
- (6) RCA-25Z5..... Half-Wave Rectifier
- (7) RCA-95K2..... Ballast

POWER SUPPLY RATINGS

A-C Rating..... 105-125 volts, 25-100 cycles, 55 watts
 D-C Rating..... 105-125 volts, 50 watts

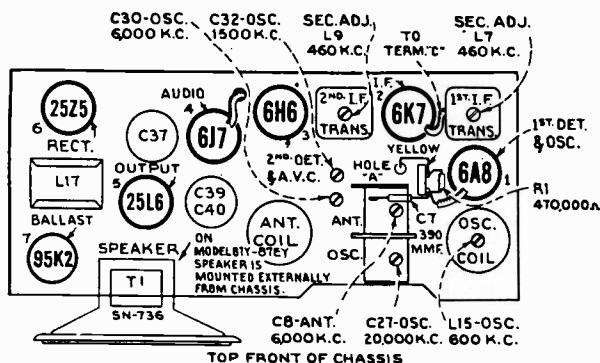
POWER OUTPUT (125-volt, a-c supply)

Undistorted 87EY, 87Y 1.9 watts 87X 1.7 watts
 Maximum 3.0 watts 2.8 watts

POWER OUTPUT (125-volt, d-c supply)

Undistorted 87EY, 87Y 1.3 watts 87X 1.2 watts
 Maximum 2.1 watts 1.9 watts

Loudspeaker (Permanent-Magnet Dynamic)..... Impedance (v.c.) 2.2 ohms at 400 cycles

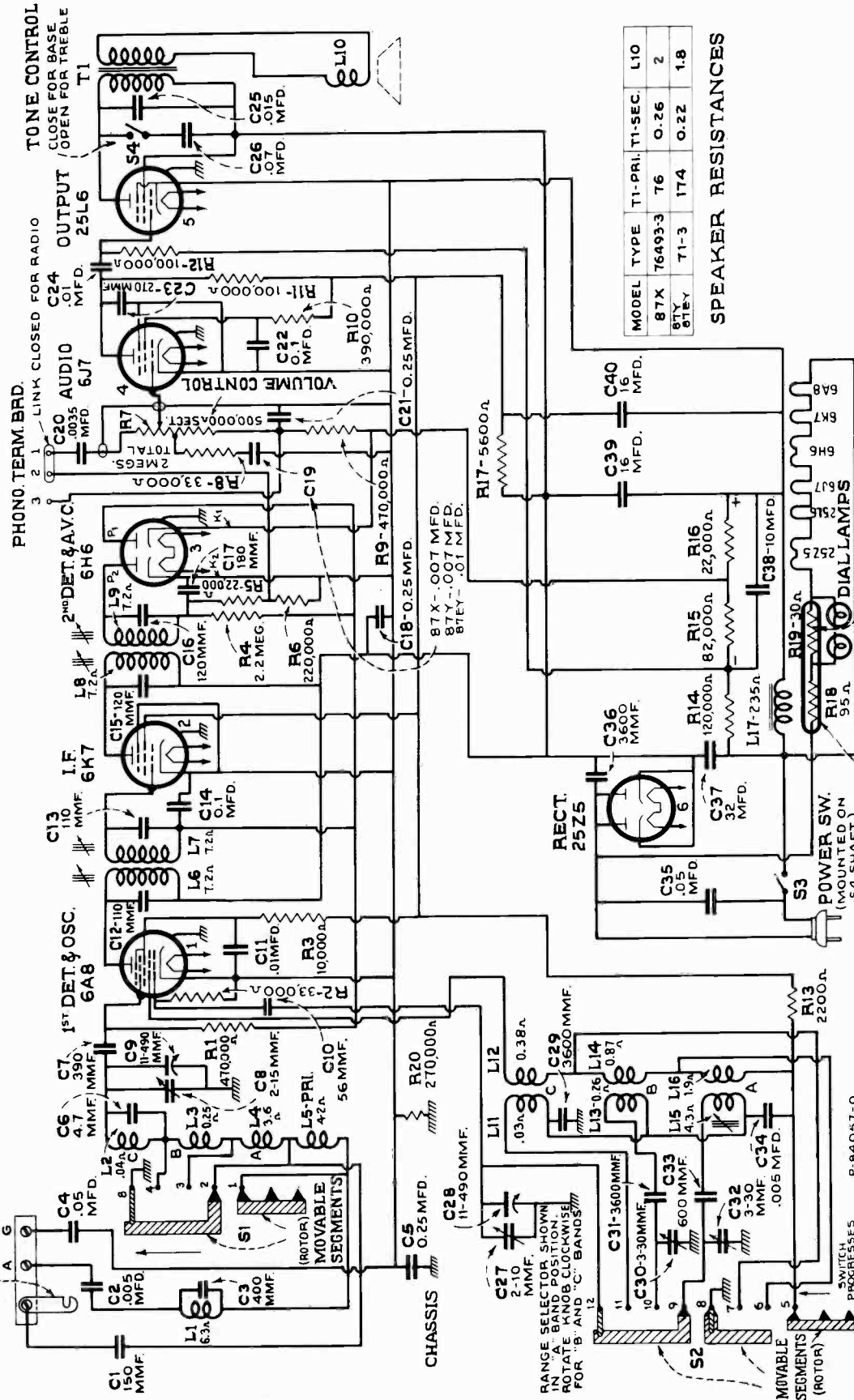


Precautionary Lead Dress.—(1) Dress power cord away from audio circuits. (2) Keep filament leads away from C24. (3) Keep bus lead from term. 8 of S1-S2 to ground lance as short as possible. (4) Bus lead from term. 12 of S1-S2 to C27-C28 thence to C10 should be 4 7/8 inches long. (5) Bus lead from term. 4 of S1-S2 to L2-L3 should be 2 1/2 inches long. (6) Bus lead from L2 to C8-C9 should be 3 7/8 inches long and dressed over bus lead from antenna coil to range switch. (7) Bus lead from term. 7 of S1-S2 to L12-L14 should be 2 1/4 inches long. (8) Keep bus lead from term. E of 2nd i.f. trans. to term. 2 on phono. board as short as possible. (9) Keep leads of C10, C29, and C34 as short as possible. When replacing bus leads, use only wire having same diameter as original.

-Radiotron, Coil, and Trimmer Locations

87EY, 87X & 87Y

CONNECT LINK TO TERM. "A" WHEN INTERFERENCE FROM STRONG LOCAL BROADCASTING STATION IS ENCOUNTERED.



MODEL	TYPE	T1-PRI.	T1-SEC.	L10
87X	76493-3	76	0.26	2
87EY	71-3	174	0.22	1.8

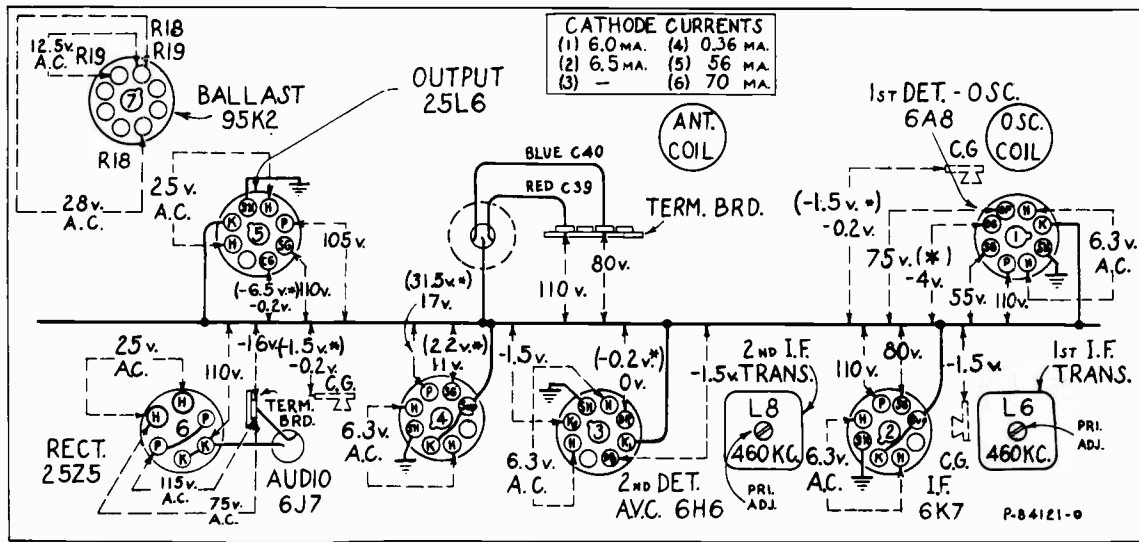
SPEAKER RESISTANCES

95K2 BALLAST TUBE - 7 AS TEMP RISES RESISTANCE INCREASES FROM 30Ω TO 80Ω

Schematic Circuit Diagram

On some instruments, R15 is 68,000 ohms and R16 is 33,000 ohms.

87EY, 87X & 87Y



BOTTOM VIEW - REAR OF CHASSIS

-Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—For 115-volt d-c supply approximately 10% lower, except heater voltage which remains the same—Tuned to approximately 1,000 kc ("Standard Broadcast")—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.*

Increased Sensitivity:

The I-F circuits of these instruments are aligned in the factory to produce a good balance between sensitivity and tone quality. In localities where sensitivity is of greater importance than tone, an increase can be obtained by realigning the I-F stages, using the output meter method. A battery operated test oscillator should be used as the source of signal, with its output connected thru a capacitor to the 6A8 grid, and its ground lead attached to the "G" terminal of the receiver input. The usual output meter or indicator must be connected either across the speaker voice coil or output transformer primary. It is preferable, if convenient, to use a 1/1 isolation transformer in the AC power circuit. Each I-F trimmer should then be adjusted to produce maximum "peak" output.

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 "O." These are friction adjustments.

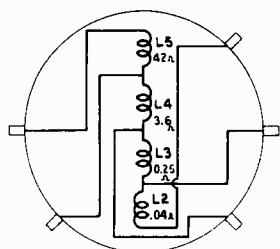
Connect the "low" output terminal of the test oscillator to the positive (+) side of C38 (same point as "low" vertical input to cathode-ray oscillograph) for all alignment operations.

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	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L8 and L9	Max. (peak)
2	6A8 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L6 and L7	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C27	Max. (peak) ‡
4	Ant. Term.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C30	Max. (peak)*
5	Ant. Term.	300 Ohms	6,000 kc	"B"	6,000 kc	"B" Ant.	C8	Max. (peak)
6	Ant. Term.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" L-F Osc.	L15	Max. (peak)
7	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C32	Max. (peak)
8	Ant. Term.	200 Mmfd.	600 kc	"A"	600 kc	"A" L-F Osc.	L15	Max. (peak)
9	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C32	Max. (peak)

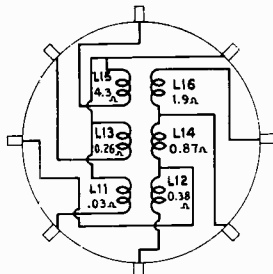
*Use minimum capacity peak if two peaks can be obtained.

‡After this adjustment, check for image signal by shifting receiver dial to 19,080 kc.

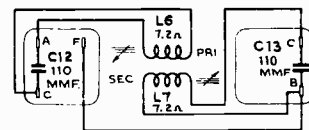
87EY, 87X & 87Y



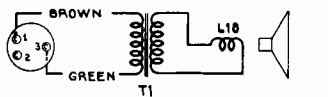
ANT. COIL CONNECTIONS



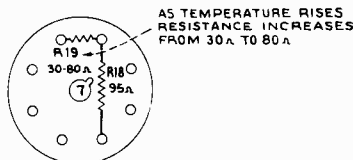
OSC. COIL CONNECTIONS



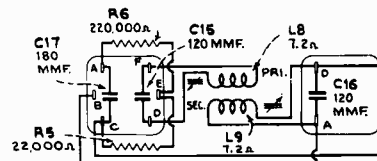
1ST I.F. TRANS. CONNECTIONS



SPEAKER CONNECTIONS



BALLAST TUBE CONNECTIONS



2ND I.F. TRANS. CONNECTIONS

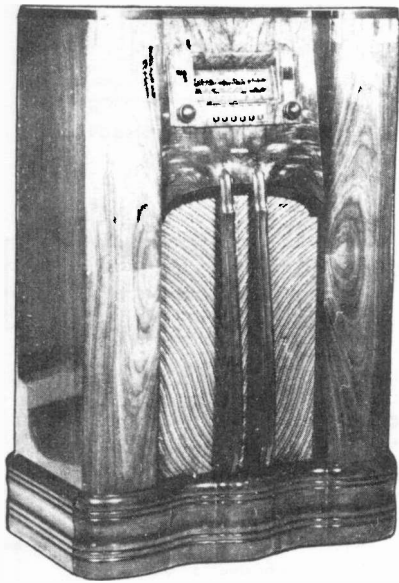
REPLACEMENT PARTS

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

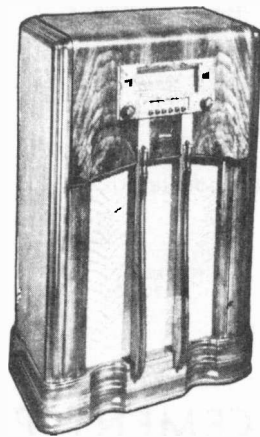
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14380	Arm—Band indicator operating arm and hub—less set screw Stock No. 14350	13716	Resistor—2,200 Ohms—Insulated, 1/4 watt (R13)
14388	Belt—Variable condenser drive belt	11647	Resistor—5,600 Ohms—Carbon type, 1/4 watt (R17)
14623	Board—Antenna and ground terminal board	13736	Resistor—10,000 Ohms—Carbon type, 1/4 watt (R3)
12717	Board—Phonograph terminal board	14284	Resistor—22,000 Ohms—Carbon type, 1/10 watt (R5)
14338	Bushing—Variable condenser mounting bushing and screw assembly	11305	Resistor—22,000 Ohms—Carbon type, 1/4 watt (R16)
12607	Cap—First I-F transformer shield top	12454	Resistor—33,000 Ohms—Insulated, 1/4 watt (R2)
12581	Cap—Second I-F transformer shield top	11300	Resistor—33,000 Ohms—Carbon type, 1/10 watt (R8)
11350	Cap—Grid contact cap	14023	Resistor—82,000 Ohms—Insulated, 1/4 watt (R15)
12110	Cap—Radiotron shield cap	11281	Resistor—100,000 Ohms—Carbon type, 1/10 watt (R12)
14383	Capacitor—Adjustable dual trimmer (C30, C32)	14560	Resistor—100,000 Ohms—Insulated, 1/4 watt (R11)
14392	Capacitor—4.7 Mmfd. (C8)	13734	Resistor—120,000 Ohms—Carbon type, 1/4 watt (R14)
12723	Capacitor—56 Mmfd. (C10)	11398	Resistor—220,000 Ohms—Carbon type, 1/10 watt (R6)
14262	Capacitor—110 Mmfd. (C12, C13)	11323	Resistor—270,000 Ohms—Carbon type, 1/4 watt (R20)
12404	Capacitor—120 Mmfd. (C15, C16)	13479	Resistor—390,000 Ohms—Carbon type, 1/4 watt (R10)
12725	Capacitor—150 Mmfd. (C1)	11452	Resistor—470,000 Ohms—Carbon type, 1/10 watt (R1)
12406	Capacitor—180 Mmfd. (C17)	12285	Resistor—470,000 Ohms—Insulated, 1/4 watt (R9)
14625	Capacitor—270 Mmfd. (C23)	12679	Resistor—2.2 Megohm—Insulated, 1/4 watt (R4)
13894	Capacitor—390 Mmfd. (C7)	30284	Resistor—Ballast resistor tube type No. 95K2 (R18, R19)
14391	Capacitor—600 Mmfd. (C33)	14350	Screw—No. 8-32x3/16 square head set screw for gear Stock No. 30085 and drum Stock No. 14345 and arm Stock No. 14380
12811	Capacitor—3,600 Mmfd. (C29, C31, C36)	14374	Shield—Antenna coil shield
5005	Capacitor—0.035 Mfd. (C20)	12008	Shield—First or Second I.F. transformer shield
4838	Capacitor—.005 Mfd. (C2, C34)	14375	Shield—Oscillator coil shield
5148	Capacitor—.007 Mfd. (C19) (Models 87X and 87Y only)	14171	Socket—Dial lamp socket
13138	Capacitor—.01 Mfd. (C11)	4786	Socket—8-contact 2525 Radiotron socket
14393	Capacitor—.01 Mfd. (C19, C24) (C19, .01 Mfd. used in Model 87EY only)	11196	Socket—8-contact 6A8, 6K7, 6J7, 6H6, or 25L6 Radiotron socket
11315	Capacitor—.015 Mfd. (C25)	12007	Spring—Retaining spring for core Stock No. 12006 and Stock No. 12800
4886	Capacitor—.05 Mfd. (C4, C35)	12907	Spring—Tension spring for indicator drive gear Stock No. 30085
14626	Capacitor—.07 Mfd. (C26)	14342	Spring—Tension spring for idler Stock No. 14341
4839	Capacitor—.1 Mfd. (C14, C22)	14370	Switch—Range switch (S1, S2)
12484	Capacitor—.25 Mfd. (C5, C18, C21)	14371	Switch—Tone control switch and power switch (S3, S4)
14624	Capacitor—.10 Mfd. (C38)	14376	Transformer—First I.F. transformer (L8, L7, C12, C13)
14621	Capacitor—.32 Mfd. (C37)	14283	Transformer—Second I.F. transformer (L8, L9, C15, C16, C17, R5, R6)
14622	Capacitor Pack—2 sections each 16 Mfd. (C39, C40)	13838	Trap—Wave trap complete (L1, C3)
14372	Coil—Antenna coil and shield (L2, L3, L4, L5)	14335	Volume Control (R7)
14373	Coil—Oscillator coil and shield (L11, L12, L13, L14, L15, L16)	14379	Washer—Felt washer for indicator pointer
14363	Condenser—2 gang variable tuning condenser (C8, C9, C27, C28)	REPRODUCER ASSEMBLIES	
5119	Connector—3-contact female connector for reproducer cable	MODEL 87X (76493-3)	
12800	Core—Adjustable core and stud assembly for coil Stock No. 14373	14685	Cone—Reproducer cone (L10)
12006	Core—Adjustable core and stud for Stock No. 14376 and Stock No. 14283	5118	Plug—3-contact male plug for reproducer
14381	Dial—Station selector dial scale	14684	Reproducer—Complete
14389	Dial—Band indicator dial and mounting bracket assembly (Models 87X and 87Y only)	14686	Transformer—Output transformer (T1)
30127	Dial—Band indicator dial and mounting bracket assembly (Model 87EY only)	REPRODUCER ASSEMBLIES (RL-71-3)	
14384	Drive—Variable condenser vernier pinion gear and shaft	MODEL 87Y and 87EY	
14345	Drum—Variable condenser drive belt drum complete with set screws	12667	Cone—Reproducer cone and dust cap
11982	Fastener—Station selector dial scale fastener	5118	Plug—3-contact male plug for reproducer
30085	Gear—Indicator drive gear and hub assembly and indicator pointer stem and gear assembly complete	14627	Reproducer—Complete
14341	Idler—Station selector drive belt idler	14628	Transformer—Output transformer (T1)
14344	Indicator—Station selector indicator pointer	MISCELLANEOUS ASSEMBLIES	
14382	Indicator—Vernier indicator pointer	14396	Escutcheon—Station selector escutcheon and crystal
4340	Lamp—Dial lamp	14359	Knob—Station selector knob
14340	Pulley—Station selector drive belt pulley and knob shaft	14269	Knob—Volume control, tone control or range switch knob
14620	Reflector—Filter reactor (L17)	4560	Screw—Chassis mounting screw and washer assembly (Model 87EY only)
14361	Reflector—Dial reflector and lamp bracket assembly	11210	Screw—Chassis mounting screw and washer assembly (Model 87Y only)
14343	Retainer—Drive shaft and pulley retainer—holds tuning knob shaft and pulley on range switch shaft	11377	Screw—Chassis mounting screw and washer assembly (Model 87X only)
		4982	Spring—Retaining spring for knob Stock No. 14359
		14270	Spring—Retaining spring for knob Stock No. 14269

MODELS 87K1, 87K2 & 87T2

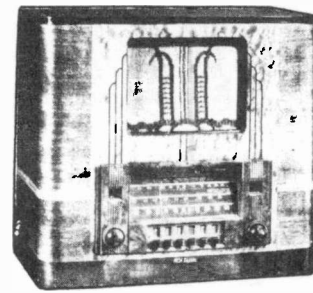
Seven-Tube, Three-Band, A-C, Superheterodyne Receiver



Model 87K1



MODEL 87K2



MODEL 87T2

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A)..... 540-1,720 kc
 "Medium Wave" (B)..... 2,300-7,500 kc
 "Short Wave" (C)..... 7,500-22,000 kc

R-F ALIGNMENT FREQUENCIES

"Medium Wave" (B)..... 6,000 kc (osc., ant.)
 "Short Wave" (C)..... 20,000 kc (osc.)
 "Standard Broadcast" (A)... 600 kc (osc.), 1,500 kc (osc.)

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector—Oscillator
- (2) RCA-6K7..... Intermediate Amplifier
- (3) RCA-6H6..... Second Detector and A.V.C.

- (4) RCA-6F5..... Audio Voltage Amplifier
- (5) RCA-6F6..... Audio Power Amplifier
- (6) RCA-5W4..... Full-Wave Rectifier
- (7) RCA-6U5..... Tuning Tube

Pilot Lamps (3)... Mazda No. 46, 6.3 volts, 0.25 ampere

LOUDSPEAKER

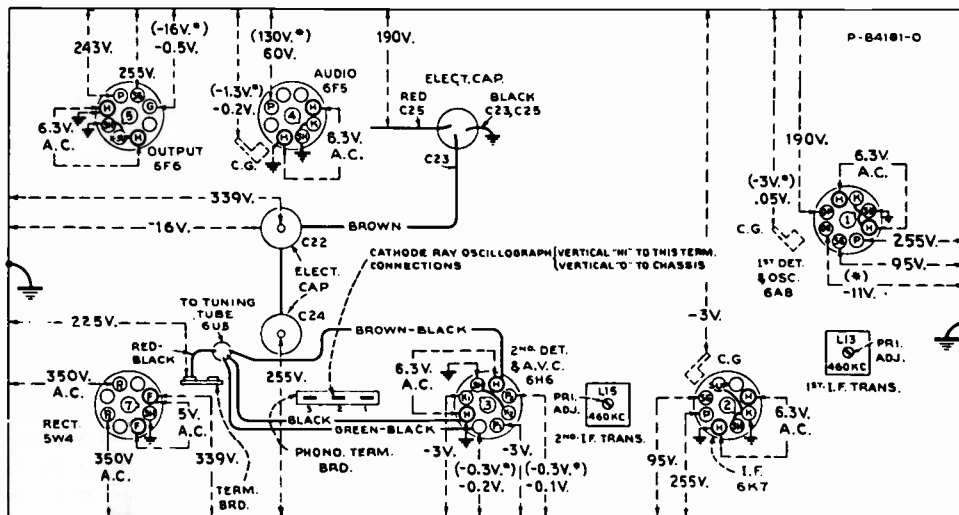
Type..... Electrodynamic
 Impedance (v.c.)..... 2.2 ohms at 400 cycles

POWER SUPPLY RATINGS

Rating A..... 105-125 volts, 50-60 cycles, 80 watts
 Rating B..... 105-125 volts, 25-60 cycles, 80 watts
 Rating C... 105-125/200-250 volts, 50-60 cycles, 80 watts

POWER OUTPUT

Undistorted..... 2.5 watts
 Maximum..... 4.5 watts



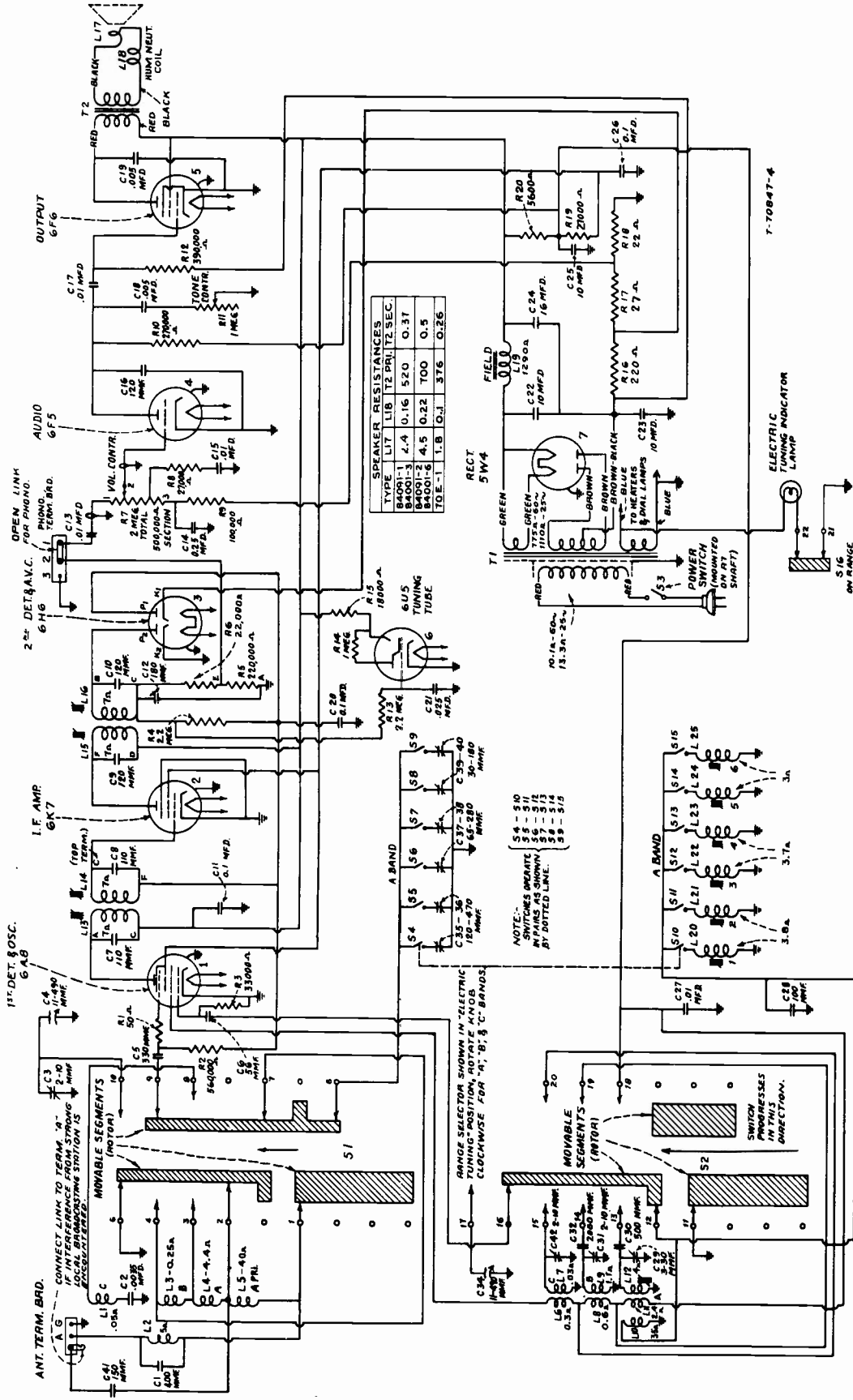
—Radiotron Socket Voltages and Trimmer Locations

Measured at 115 volts, 60-cycle supply—
 No signal being received—

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

—Tuned to approximately 1,000 kc ("Standard Broadcast")—
 —Volume control minimum—Tone control optional

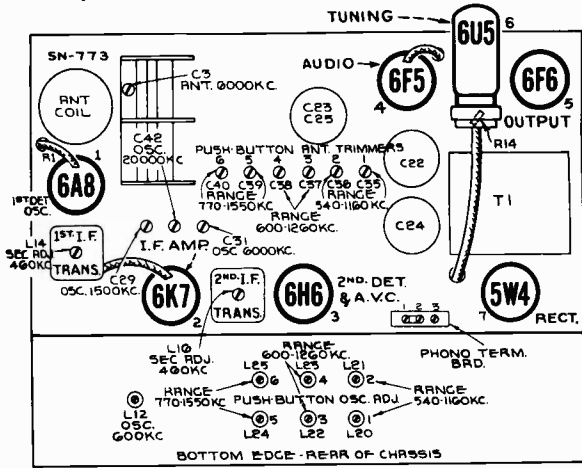
87K1, 87K2 & 87T2



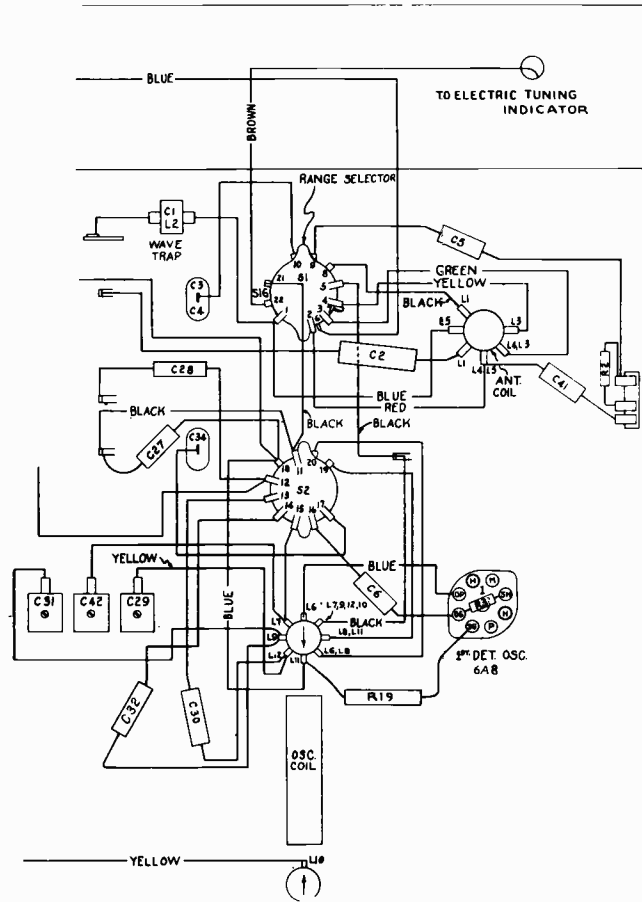
Schematic Circuit Diagram
R19 was 18,000 ohms on some instruments. Replace with Stock No. 13477, 27,000 ohms.

Precautionary Lead Dress.—Maintain original length and size of the following: (1) all leads from range selector to antenna and oscillator coils; (2) lead from oscillator coil to ground; (3) leads from gang condenser to range selector. (4) Keep filament leads twisted and dressed away from 6F5 grid lead. (5) Keep leads from C2 as short as possible.

87K1, 87K2 & 87T2



-Radiotron, Component Part, and Trimmer Locations



R-F Wiring Diagram

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6A8—1st Det.—Osc. 12 ma.
- (2) RCA-6K7—I-F Amp. 8 ma.
- (3) RCA-6H6—2nd Det.—A.V.C. — ma.
- (4) RCA-6F5—A-F Amp. 0.2 ma.
- (5) RCA-6F6—Output 41 ma.
- (6) RCA-5W4—Rectifier 63 ma.*
- (7) RCA-6U5—Tuning Tube 1.6 ma.

(*Cannot be measured at socket)

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position. The pointer is soldered in place on the drive cable.

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.	480 kc	"Standard Broadcast"	No Signal 550-750 kc	2nd I-F Trans.	L15 and L16	Max. (peak)
2	6A8 Det. Grid Cap	.001 Mfd.	480 kc	"Standard Broadcast"	No Signal 550-750 kc	1st I-F Trans.	L13 and L14	Max. (peak)
3	Ant. Term. A	300 Ohms	6,000 kc	"Medium Wave"	6 mc	"B" Osc.	C31	Max. (peak)
4	Ant. Term. A	300 Ohms	6,000 kc	"Medium Wave"	6 mc	"B" Ant.	C3	Max. (peak)
5	Ant. Term. A	300 Ohms	20,000 kc	"Short Wave"	20 mc	"C" Osc.	C42	Max. (peak)*
6	Ant. Term. A	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L12	Max. (peak)
7	Ant. Term. A	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C29	Max. (peak)
8	Ant. Term. A	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L12	Max. (peak)
9	Ant. Term. A	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C29	Max. (peak)

* Use maximum capacity peak if two peaks can be obtained.

87K1, 87K2 & 87T2

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLY			
30755	Arm—Band indicator operating arm—fastens on range switch shaft	16293	Resistor—220 ohms, carbon type, 1 watt (R16)
14384	Belt—Drive belt	11298	Resistor—5,600 ohms, carbon type, 1 watt (R20)
14623	Board—Antenna and ground terminal board	30151	Resistor—18,000 ohms, insulated, 1 watt (R15)
12717	Board—Phonograph terminal board	14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R6)
30752	Bracket—Tuning tube mounting bracket and clip	11400	Resistor—27,000 ohms, carbon type, 1/2 watt (R8)
30754	Cable—Band indicator operating cable	12454	Resistor—33,000 ohms, insulated, 1/2 watt (R3)
11350	Cap—Grid contact cap	14580	Resistor—100,000 ohms, insulated, 1/2 watt (R9)
30766	Cap—Rubber cap for tuning tube	11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R5)
30751	Capacitor—Trimmer—Comprising two sections each 2-10 Mmfd. and one section 3-30 Mmfd. (C29, C31, C42)	12199	Resistor—270,000 ohms, insulated, 1/2 watt (R10)
30750	Capacitor—Dual trimmer, 30-180 Mmfd. each section (C39, C40)	13005	Resistor—390,000 ohms, carbon type, 1/10 watt (R12)
12723	Capacitor—56 Mmfd. (C6)	11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R2)
30764	Capacitor—Dual trimmer, 65-280 Mmfd. each section (C37, C38)	12013	Resistor—1 Megohm, carbon type, 1/10 watt (R14)
30769	Capacitor—100 Mmfd. (C28)	12879	Resistor—2.2 Megohm, insulated, 1/2 watt (R4, R13)
14262	Capacitor—110 Mmfd. (C7, C8)	30760	Shaft—Tuning knob shaft and pulley
12404	Capacitor—120 Mmfd. (C9, C10)	5119	Socket—3-contact socket for speaker cable
12724	Capacitor—120 Mmfd. (C18)	13871	Socket—6-contact tuning tube socket
30765	Capacitor—Dual trimmer, 120-470 Mmfd. each section (C35, C36)	11196	Socket—8-contact Radiotron socket
12725	Capacitor—150 Mmfd. (C41)	14114	Socket—Dial lamp socket—open type
12406	Capacitor—180 Mmfd. (C12)	14171	Socket—Dial lamp socket—shell type
12952	Capacitor—330 Mmfd. (C5)	30756	Spring—Band indicator tension spring
30768	Capacitor—500 Mmfd. (C30)	14342	Spring—Idler pulley tension spring
30767	Capacitor—2,000 Mmfd. (C32)	30585	Spring—Indicator cord tension spring
30303	Capacitor—.0035 Mfd. (C2)	30742	Switch—Range switch (S1, S2, S16)
4838	Capacitor—.005 Mfd. (C18, C19)	30744	Switch—Tuning push button switch (S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15)
14393	Capacitor—.01 Mfd. (C13, C15, C17, C27)	14376	Transformer—First I.F. transformer (L13, L14, C7, C8)
4870	Capacitor—.025 Mfd. (C21)	14283	Transformer—Second I.F. transformer (L15, L16, C9, C10, C12, R5, R6)
4839	Capacitor—.1 Mfd. (C11, C20, C26)	30607	Transformer—Power transformer 105-125 volts and 200-240 volts, 50-60 cycle (T1)
12484	Capacitor—.25 Mfd. (C14)	30571	Transformer—Power transformer 105-125 volts, 25-80 cycle (T1)
11203	Capacitor—10 Mfd. (C25)	13838	Trap—Wave trap (L2, C1)
30577	Capacitor—Comprising two sections each 10 Mfd. (C22, C23)	MODELS 87K1 & 87K2 REPRODUCER ASSEMBLIES	
5212	Capacitor—16 Mfd. (C24)	13866	Cap—Dust cap for cone center
30745	Coil—Antenna coil and shield A, B, and C bands (L1, L3, L4, L5)	14354	Coil—Field coil (L19)
30747	Coil—Oscillator coil A band (L20 or L21)	11469	Coil—Hum neutralizing coil (L16)
30748	Coil—Oscillator coil A band (L22 or L23)	12667	Cone—Reproducer cone and dust cap (L17)
30749	Coil—Oscillator coil A band (L24 or L25)	5118	Plug—3-contact male plug for reproducer
30746	Coil—Oscillator coil A, B, C bands (L6, L7, L8, L9, L10, L11, L12)	14395	Reproducer—complete
30740	Condenser—2-gang variable tuning condenser (C3, C4, C34)	14358	Screw—Screw, washer and lockwasher to hold core in yoke
30743	Control—Volume control, tone control, and power switch in one unit (R7, R11, S3)	14355	Transformer—Output transformer (T2)
30763	Cord—Indicator drive cord	14357	Washer—Spring washer to hold field coil
30759	Dial—Station selector dial scale	MISCELLANEOUS ASSEMBLIES	
30753	Disc—Band indicator disc with colored segment	30778	Button—Automatic station selector push button
30741	Drive—Variable condenser vernier drive shaft and pinion gear	30780	Cushion—Rubber cushion for automatic station selector button
30587	Drum—Drive belt drum—fastens on variable condenser vernier drive shaft	30774	Escutcheon—Station selector escutcheon complete with side panels and buttons
30761	Drum—Indicator cord drum—fastens on variable condenser rotor shaft	30775	Escutcheon—Station selector escutcheon center section only—less side panels and buttons
14341	Idler—Drive idler pulley, bracket and spring	30776	Escutcheon—Station selector escutcheon right and left hand sections only
30762	Indicator—Indicator pointer and slider	30773	Knob—Volume control knob
5226	Lamp—Dial lamp	14269	Knob—Range switch knob
30757	Pulley—Large size pulley for indicator cord—located at top left corner of dial bracket	14359	Knob—Station selector knob
30758	Pulley—Medium size pulley for indicator cord—located at top right side of dial bracket	30772	Knob—Tone control and power switch knob
14697	Pulley—Small size pulley for indicator cord—located at top right hand corner of dial bracket	11210	Screw—Chassis mounting screw and washer assembly
14525	Resistor—22 ohms, carbon type, 1/2 watt (R18)	30779	Shield—Celluloid shield for call letter cards
11955	Resistor—27 ohms, carbon type, 1/2 watt (R17)	30777	Shield—Finished metal shield and screws for automatic station selector button panel
30771	Resistor—50 ohms, flexible type, 2 1/2 watts (R1)	30330	Spring—Retaining spring for knob Stock No. 30772
		14270	Spring—Retaining spring for knobs Stock Nos. 30773 and 14269
		4982	Spring—Retaining spring for knob Stock No. 14359

ADDITIONAL REPLACEMENT PARTS

30695	Card -- Station call letter card
30646	Core -- Adjustable core and stud for "A" band oscillator coils
13477	Resistor -- 27,000 ohm, carbon type, 1 watt (R19)
12007	Spring -- Retaining spring for core Stock #30646

Stock No.

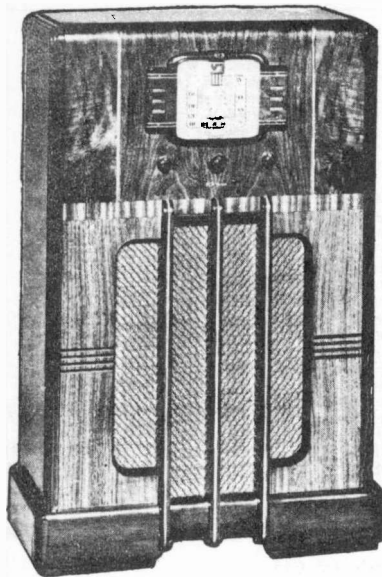
MODEL 87T2

REPRODUCER ASSEMBLIES

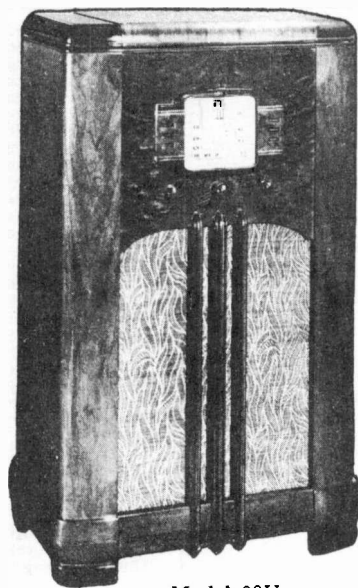
14614	Cone--Reproducer cone and dust cap (L17) (for speaker marked 84091-1 or 84001-3)
14934	Cone--Reproducer cone and dust cap (L17) (for speaker marked 84091-2 or 84001-6)
5118	Plug--3-contact male plug for reproducer
14613	Reproducer complete (marked 84001-3 or 84001-6 but interchangeable with speaker marked 84091-1 or 84091-2 respectively)
14615	Transformer--Output transformer (T2) (for speaker marked 84091-1 or 84001-3)
14935	Transformer--Output transformer (T2) (for speaker marked 84091-2 or 84001-6)

MODELS 88K, 88U & 88U2

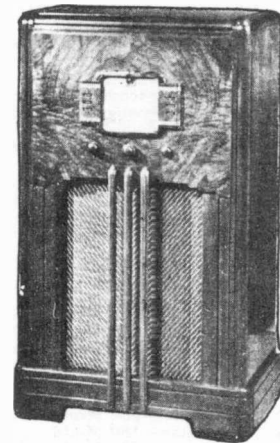
Eight-Tube, Three-Band, A-C, Superheterodyne Receiver and Radio-Phonographs



Model 88K



Model 88U



MODEL 88U2

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 530-1,720 kc
 "Medium Wave" (B)..... 2,100-6,800 kc
 "Short Wave" (C)..... 6,800-22,000 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6K7..... R-F Amplifier
 (2) RCA-6J7..... Heterodyne Oscillator
 (3) RCA-6L7..... First Detector
 (4) RCA-6K7..... Intermediate Amplifier

Pilot Lamps (4)..... Mazda No. 46, 6.3 volts, 0.25 amp

POWER SUPPLY RATINGS

Rating A..... 105-125 volts, 50-60 cycles, 90 watts
 Rating B (88K)..... 105-125 volts, 25-60 cycles, 90 watts
 Rating C..... 105-125/200-250 volts, 50-60 cycles, 90 watts
 Radio Only..... 105-125/200-250 volts, 50-60 cycles, 90 watts
 Total (88U & 88U2)..... 105-125/200-250 volts, 50-60 cycles, 120 watts

POWER OUTPUT

Undistorted..... 2.5 watts
 Maximum..... 4.5 watts

R-F ALIGNMENT FREQUENCIES

"Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc.)
 "Medium Wave" (B)..... 6,000 kc (osc.)
 "Short Wave" (C)..... 20,000 kc (osc., det., ant.)

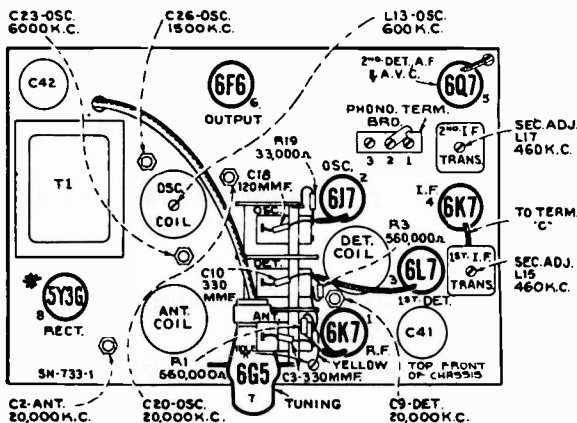
(5) RCA-6Q7..... Second Det., A-F Amp., and A.V.C.
 (6) RCA-6F6..... Power Output
 (7) RCA-6G5..... "Magic Eye" Tuning Tube
 (8) RCA-5Y3G 88U & 88U2..... Full-Wave Rectifier
 (8) RCA-5W4 88K..... Full-Wave Rectifier

LOUDSPEAKER

Type..... 12-inch Electrodynamic
 Impedance (v.c.) - 88K..... 2.2 ohms at 400 cycles
 Impedance (v.c.) - 88U & 88U2 - 11.5 ohms at 400 cycles

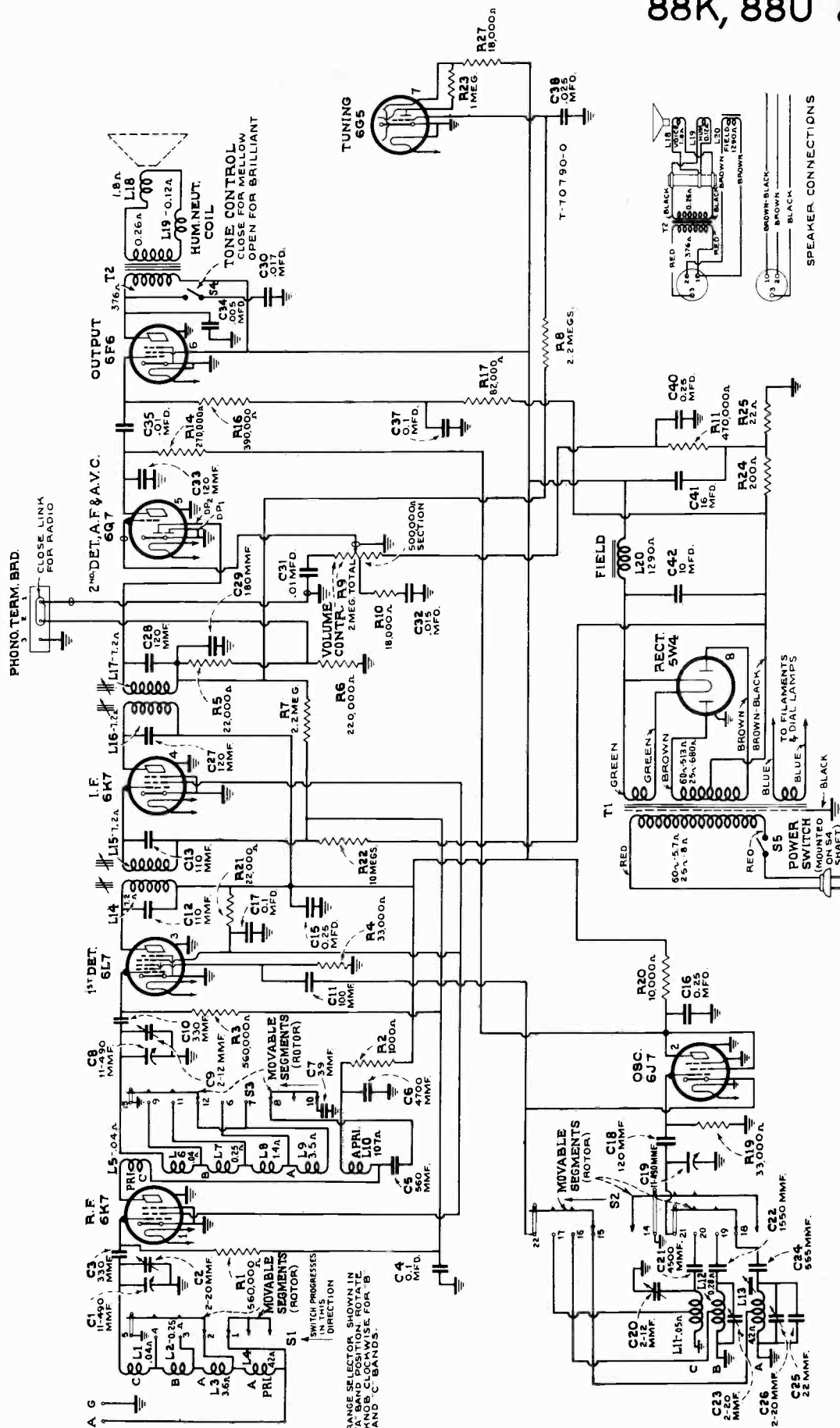
PHONOGRAPH

Type..... Manual
 Turntable Speed..... 78 r.p.m. (adjustable)
 Type of Pickup..... Magnetic
 Pickup Impedance..... 96 ohms at 1,000 cycles



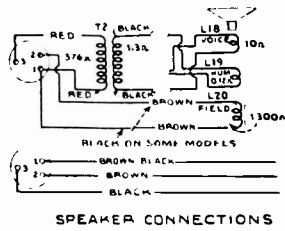
-Radiotron, Coil, and Trimmer Locations

88K, 88U & 88U2

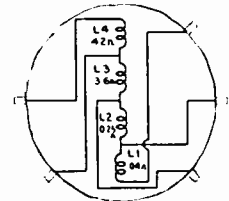
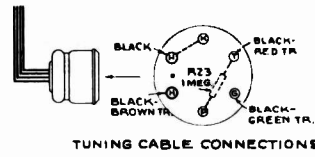


88 K Schematic Circuit Diagram

88K, 88U & 88U2

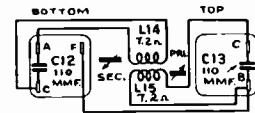


88U & 88U2

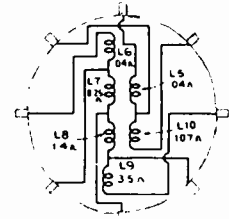


ANT. COIL CONNECTIONS

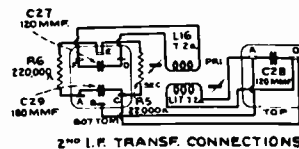
Precautionary Lead Dress.—(1) Keep leads to a-c switch dressed away from antenna coil and trimmer C2. (2) Keep all filament leads twisted. (3) Keep leads of C31 as short as possible. (4) Keep leads of C21 as short as possible. (5) Dress shielded lead from volume control to phono. term. board against side of chassis away from 6L7 socket. (6) Yellow lead from 6J7 oscillator cathode to dummy terminal on 6L7 socket must be dressed away from chassis base and from brown filament lead. (7) All molded capacitors should be dressed so that flat side is perpendicular to chassis base. (8) Yellow lead from cathode of 6J7 socket to term. 22 of S2 must be dressed under spaghetti on 6J7 socket jumper and pulled tight away from chassis. The following bus leads should be kept as short as possible and, when necessary, replaced only with wire having same diameter as original: (9) Lead from L11-L12-L13 to ground lance; (10) Lead from term. 13 of S3 to ground lance; (11) Lead from term. 9 of S3 to L6-L7; (12) Lead from L6 to C8; (13) Lead from C9 to C8; (14) Lead from term. 5 of S1 to ground lance; (15) Lead from L1-L2 to term. 4 of S1; (16) Lead from L1 to C1; (17) Lead from term. 21 of S2 to C19.



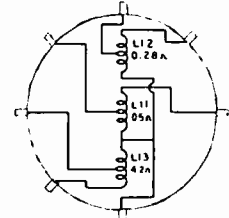
1ST. I.F. TRANSF. CONNECTIONS



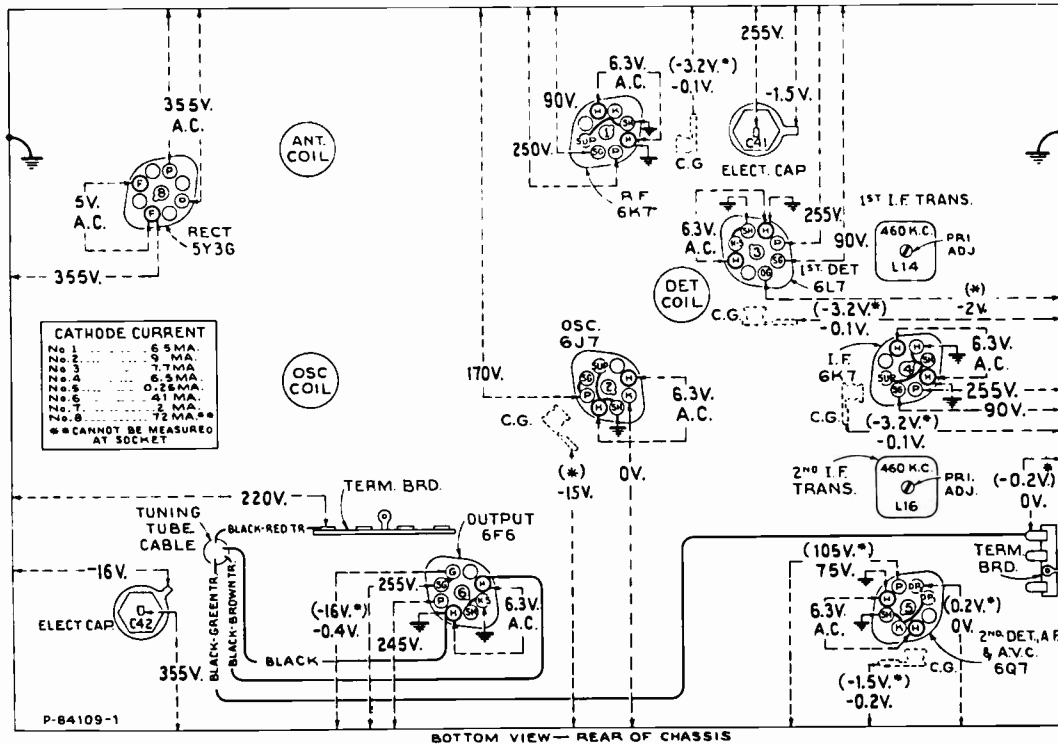
DET. COIL CONNECTIONS



2ND I.F. TRANSF. CONNECTIONS



OSC. COIL CONNECTIONS



BOTTOM VIEW—REAR OF CHASSIS

-Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 230 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—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.

Alignment Procedure

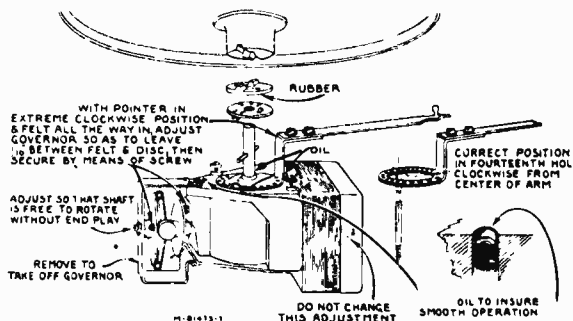
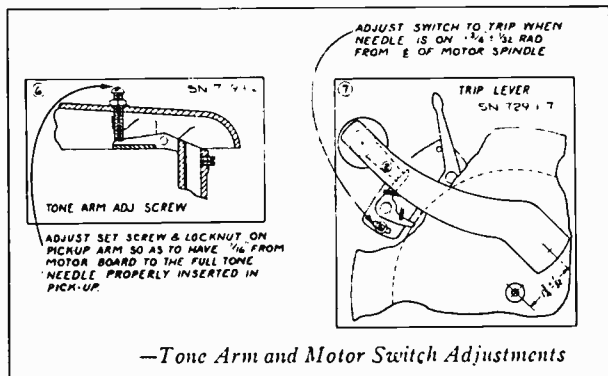
Calibrate the tuning dial by adjusting main dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position; then adjust the small (vernier) pointer to "0." These are friction adjustments.

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	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L14 and L15	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C20	Max. (peak)*
4	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Det.	C9	Max. (peak)†
5	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak)‡
6	Ant. Term.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C23	Max. (peak)*
7	Ant. Term.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" L-F Osc.	L13	Max. (peak)
8	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	Max. (peak)
9	Ant. Term.	200 Mmfd.	600 kc	"A"	600 kc	"A" L-F Osc.	L13	Max. (peak)
10	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	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 kc.



REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12038	Band—Rubber band for tuning tube	12406	Capacitor—180 Mmfd. (C29)
14384	Belt—Variable condenser drive belt	12952	Capacitor—330 Mmfd. (C3, C10)
14517	Board—Antenna and ground terminal board	12727	Capacitor—555 Mmfd. (C24)
12717	Board—Phonograph terminal board	12537	Capacitor—560 Mmfd. (C5)
14338	Bushing—Variable condenser mounting bushing assembly	12729	Capacitor—1,550 Mmfd. (C22)
14524	Cable—Band indicator cable approx. 6½-in. long	12728	Capacitor—4,500 Mmfd. (C21)
14523	Cable—Tone control indicator cable approx. 3-in. long	12897	Capacitor—4,700 Mmfd. (C6)
14394	Cable—Tuning tube cable and socket	4838	Capacitor—.005 Mfd. (C34)
12607	Cap—First I-F transformer shield top	13138	Capacitor—.01 Mfd. (C31, C35)
12581	Cap—Second I-F transformer shield top	11315	Capacitor—.015 Mfd. (C32)
11350	Cap—Grid contact cap	4752	Capacitor—.017 Mfd. (C30)
12884	Capacitor—Adjustable trimmer (long) (C2, C23, C26)	4870	Capacitor—.025 Mfd. (C38)
12714	Capacitor—Adjustable trimmer (medium) (C9, C20)	4841	Capacitor—.01 Mfd. (C4, C17, C37)
14021	Capacitor—22 Mmfd. (C25)	5170	Capacitor—.025 Mfd. (C15)
13545	Capacitor—39 Mmfd. (C7)	4840	Capacitor—.025 Mfd. (C16, C40)
12720	Capacitor—100 Mmfd. (C11)	11240	Capacitor—10 Mfd. (C42)
14262	Capacitor—110 Mmfd. (C12, C13)	5212	Capacitor—18 Mfd. (C41)
12404	Capacitor—120 Mmfd. (C27, C28)	14372	Coil—Antenna coil and shield (L1, L2, L3, L4)
12724	Capacitor—120 Mmfd. (C18, C33)	14516	Coil—Oscillator coil and shield (L11, L12, L13)

88K, 88U & 88U2

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION			
14414	Coil—R.F. coil and shield (L5, L6, L7, L8, L9, L10)		REPRODUCER ASSEMBLIES (RL-70E-1)			
14513	Condenser—3-gang variable tuning condenser (C1, C8, C19)					
14783	Connector—2-contact female connector for motor power cable	13866		Cap—Dust cap for cone center		
5119	Connector—3-contact female connector for speaker cable	12012		Coil—Field coil (L20)		
12008	Core—Adjustable core and stud for Stock Nos. 14376 and 14283	11469		Coil—Hum neutralizing coil (L19)		
12800	Core—Adjustable core and stud for coil Stock No. 14516	12667		Cone—Reproducer cone and dust cap (L18)		
30288	Dial—Station selector dial scale complete with tuning tube escutcheon	5118		Connector—3-contact male plug for reproducer		
14514	Drive—Variable condenser vernier drive pinion gear and shaft	14395		Reproducer—Reproducer complete		
14345	Drum—Variable condenser drive belt drum complete with set screws	14358		Screw—Screw, washer and lockwasher to hold core in yoke		
14367	Escutcheon—Tuning tube escutcheon	14355		Transformer—Output transformer (T2)		
11982	Fastener—Dial scale fastener	14357		Washer—Spring washer to hold field coil		
30085	Gear—Indicator drive gear and hub assembly and indicator pointer stem and gear assembly			88K MISCELLANEOUS ASSEMBLIES		
14341	Idler—Station selector drive belt idler	14527			Escutcheon—Station selector escutcheon and crystal complete with tone and band indicating strips	
14519	Indicator—Station selector indicator pointer	14529			Index—Band indicating strip—mounts in station selector escutcheon	
14520	Indicator—Vernier indicator pointer	14528			Index—Tone indicating strip—mounts in station selector escutcheon	
5226	Lamp—Dial lamp	14269			Knob—Volume control, tone control, or range switch knob	
14028	Nut—Jamb nut for adjustable trimmer capacitor Stock Nos. 12714 and 12884	14359			Knob—Station selector knob	
12471	Plate—6J7 Radiotron socket mounting plate and rubber cushions—less socket—Stock No. 11196	11210			Screw—Chassis mounting screw and washer assembly	
14340	Pulley—Station selector drive belt pulley and knob shaft	14270			Spring—Retaining spring for knob Stock No. 14269	
14522	Reflector—Dial reflector and bracket, complete with dial lamp brackets, tuning lamp bracket, and tone and band indicators	4982			Spring—Retaining spring for knob Stock No. 14359	
14525	Resistor—22 Ohms, Carbon type, 1/2 watt (R25)				MOTORBOARD ASSEMBLIES	
14526	Resistor—200 Ohms, Wire wound, 2 1/2 watt (R24)	14803		Brake—Turntable brake and motor switch		
5112	Resistor—1,000 Ohms, Carbon type, 1/2 watt (R2)	14805		Connector—2-contact male connector for motor and switch leads		
8043	Resistor—10,000 Ohms, Carbon type, 2 watt (R20)	13575		Escutcheon—Motor speed regulator escutcheon		
11175	Resistor—18,000 Ohms, Carbon type, 1/2 watt (R10)	14328		Governor—Motor governor complete		
14078	Resistor—18,000 Ohms, Carbon type, 1-watt (R27)	14912		Motor—105-125 volts, 50-60 cycle (M1)		
14284	Resistor—22,000 Ohms, Carbon type, 1/10 watt (R5)	13583		Regulator—Motor speed regulator arm and pointer		
13669	Resistor—22,000 Ohms, Carbon type, 2 watt (R21)	3261		Rest—Pickup rubber rest		
11300	Resistor—33,000 Ohms, Carbon type, 1/10 watt (R19)	14799		Screw—Motor mounting screw, lockwasher, washer, and spacer		
13735	Resistor—33,000 Ohms, Carbon type, 1/2 watt (R4)	30100		Springs—Tension springs for brake Stock No. 14803—comprising one long and one short spring		
11365	Resistor—82,000 Ohms, Carbon type, 1/2 watt (R17)	14804		Switch—Motor switch—located on brake Stock No. 14803 (S10)		
11398	Resistor—220,000 Ohms, Carbon type, 1/10 watt (R6)			PICKUP AND ARM ASSEMBLIES		
11323	Resistor—270,000 Ohms, Carbon type, 1/2 watt (R14)	14291			Armature—Pickup armature assembly	
13005	Resistor—390,000 Ohms, Carbon type, 1/10 watt (R16)	14930			Coil—Pickup coil (L50)	
11172	Resistor—470,000 Ohms, Carbon type, 1/2 watt (R11)	14292			Damper—Pickup damper assembly—comprising one damper, one damper clamp, and one screw	
11397	Resistor—560,000 Ohms, Carbon type, 1/10 watt (R1, R3)	14929			Pickup and Arm complete	
11284	Resistor—820,000 Ohms, Carbon type, 1/2 watt (R50)	3811			Screw—Needle holding screw	
12013	Resistor—1 Megohm, Carbon type, 1/10 watt (R23)				REPRODUCER ASSEMBLIES	
11626	Resistor—2.2 Megohm, Carbon type, 1/2 watt (R7, R8)					88U (Speaker RL76A1) 88U2
13732	Resistor—10 Megohm, Carbon type, 1/2 watt (R22)	14608				
14343	Retainer—Station selector knob shaft and pulley retainer	14922	Coil—Field coil (L20)			
14350	Screw—No. 8—32x3/16 square head set screw for hub and arm on tone or band indicator cable, drum Stock No. 14345, Gear Stock No. 30085	14604	Coil—Hum neutralizing coil (L19)			
14374	Shield—Antenna or R-F coil shield	14602	Cone—Reproducer cone and dust cap (L18)			
14375	Shield—Oscillator coil shield	5118	Plug—3-contact male plug for reproducer			
12008	Shield—First or second I-F transformer shield	14995	Reproducer—Reproducer complete			
11195	Socket—5-contact 5Y3G Radiotron socket	14358	Screw—Screw, washer, and lockwasher to hold core in yoke			
11196	Socket—8-contact 6F6, 6K7, 6J7, or 6Q7 Radiotron socket	14996	Transformer—Output transformer (T2)			
14114	Socket—Dial lamp socket	14357	Washer—Spring washer to hold field coil			
12007	Spring—Retaining spring for core Stock Nos. 12008 and 12800		88U MISCELLANEOUS ASSEMBLIES 88U2			
12907	Spring—Tension spring for indicator drive gear Stock No. 30085	30428		Capacitor—1,200 Mmfd. (C50)		
14342	Spring—Tension spring for idler Stock No. 14341	13138		Capacitor—.01 Mfd. (C51, C52)		
14371	Switch—Low frequency tone and power switch (S4, S5)	11762		Cup—Used needle cup		
14515	Switch—Range switch (S1, S2, S3)	11764		Damper—Turntable rubber damper and damper plate		
14376	Transformer—First I-F transformer (L14, L15, C12, C13)	14527		Escutcheon—Station selector escutcheon and crystal		
14283	Transformer—Second I-F transformer (L16, L17, C27, C28, C29, R5, R6)	14528		Index—Tone control indicating strip—mounts in station selector escutcheon		
14994	Transformer—Power transformer, 105-250 volts, 50-60 cycles (T1)	14529		Index—Band change indicating strip—mounts in station selector escutcheon		
14511	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)	14359		Knob—Station selector knob		
14512	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)	14269		Knob—Radio or phonograph volume control, tone control or range switch knob		
14335	Volume Control (R9)	30128	Resistor—12,000 Ohms, insulated, 1/2 watt (R52)			
14597	Volume Control—Radio volume control and radio-record switch (R9, S11)	12454	Resistor—33,000 Ohms, insulated, 1/2 watt (R54)			
14379	Washer—Felt washer for indicator pointer	14023	Resistor—82,000 Ohms, insulated, 1/2 watt (R53)			
		11210	Screw—Chassis mounting screw and washer assembly			
		30249	Screw—Motorboard mounting screw, spring, spacer, and washer assembly			
		14609	Transformer—Phonograph input transformer (T10)			
		14801	Turntable—Turntable complete			
		30129	Volume Control—Phonograph volume control (R51)			

* USED ON 88K ONLY
 ° USED ON 88U & 88U2 ONLY

MODEL 88K

Change Stock No.

From 4841	To 4839	Capacitor	(0.1 mfd)
4840	12484	Capacitor	(0.25 mfd)
11240	11203	Capacitor	(10. mfd)
30288	14518	Dial	

MODELS R90, R90P, 260 & 261

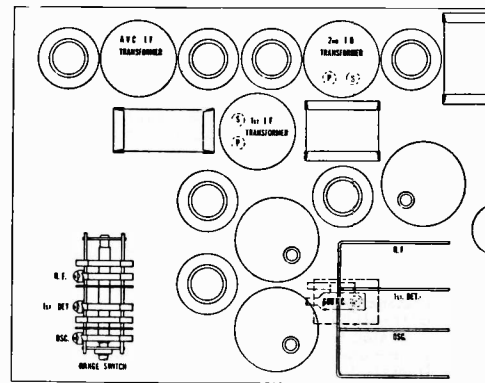
Ten-Tube AC, Superheterodyne Receivers

Electrical Specifications

Voltage Rating.....105-125 Volts
 Power Consumption.....120 Watts
 Type and Number of Radiotrons.....3 RCA-56,
 4 RCA-58, 1 RCA-80, 2 RCA-2A5—Total, 10
 Frequency Range.....540 K. C.—1500 K. C.
 1400 K. C.—2800 K. C.
 Undistorted Output.....4.0 Watts

Model R-90 is Single Range only 540 Kc to 1500 Kc.

Models R-90, R90P and 260 have illuminated colored volume and tone indicators.



-Location of Adjustable Capacitors



MODEL 260

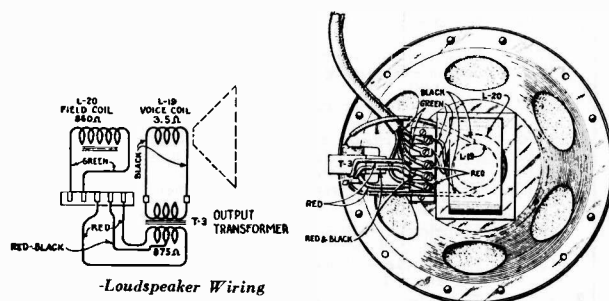


MODEL 261

Alignment Procedure

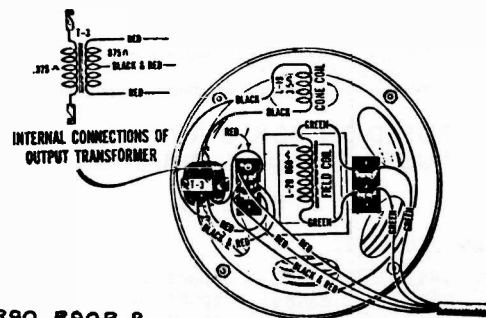
Turn silent tuning control to maximum sensitivity.
 Step 4 omitted for Model R-90.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 600 Kc "BC" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "BC" Band	Osc. Det. & R-F Trimmers on gang condenser
4		2440 Kc	1200 Kc "SW" Band	Osc. Det. & R-F Trimmers on range condenser
5		600 Kc	600 Kc "BC" Band	600 Kc Osc. Trimmer Rock Gang
6		Repeat Step 3		



-Loudspeaker Wiring

MODEL 261



R90, R90P & 260

Loudspeaker Wiring

R90, R90P, 260 & 261

REPLACEMENT PARTS MODELS R90 R90P & 260

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MODELS R90P & 260 RECEIVER ASSEMBLIES					
3024	Capacitor—9 mmfd—Package of 2		6434	Reactor—Second detector plate coupling reactor	
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6435	Transformer—First intermediate frequency transformer	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt—Package of 5		6436	Reactor—High frequency tone control compensating reactor	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6437	Coil—Oscillator coil assembly	
3358	Resistor—3,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6439	Reactor—High frequency tone control reactor	
3435	Resistor—250 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6440	Transformer—Second intermediate frequency transformer	
3440	Resistor—4,500 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6441	Transformer—Third intermediate frequency transformer	
3455	Capacitor—0.01 mfd. capacitor		6442	Reactor—Volume control series reactor	
3460	Capacitor—1,200 mmfd.		6443	Capacitor—10 mfd.	
3513	Capacitor—700 mmfd.		6444	Socket—Five contact Radiotron socket	
3526	Resistor—2,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6445	Socket—Six contact Radiotron socket	
3527	Resistor—800 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6446	Socket—Four contact Radiotron socket	
3528	Bracket—Volume control or noise suppressor indicator lamp bracket		6447	Volume control—Complete with mounting nut	
3529	Socket—Noise suppressor or volume indicator lamp socket		6448	Tone control—Low frequency tone control complete with mounting nut	
3530	Coil—Second detector plate choke coil		6449	Tone control—High frequency tone control complete with mounting nut	
3531	Shutter—Volume control shutter		6450	Rheostat—Noise suppressor rheostat	
3532	Shutter—Noise suppressor shutter		6456	Escutcheon—Volume control escutcheon and color screen	
3533	Shutter—High frequency tone control shutter		6457	Escutcheon—Noise suppressor escutcheon and color screen	
3534	Shutter—Low frequency tone control shutter		6458	Escutcheon—High and low frequency escutcheon and color screen	
3535	Socket—High or low frequency indicator lamp socket		6459	Cable—Braid covered—Five conductor reproducer cable	
3546	Capacitor—150 mmfd.		6461	Meter—Tuning meter	
3548	Knob—High or low frequency tone control knob		6537	Switch—Range switch	
3551	Screw assembly—Chassis mounting washer and screw assembly—Comprising 4 screws, 4 lock washers, 4 washers, 8 cushions and 4 spacers—One set		6538	Coil—Antenna coil assembly	
3552	Resistor—200 ohms—Porcelain type—20 watts		6539	Coil—Detector Coil	
3553	Resistor—8,000 ohms—Porcelain type—20 watts		6541	Scale—Dial and dial scale	
3554	Resistor—1,200 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6547	Bezel—Tuning Meter bezel	
3555	Capacitor—0.1 mfd. capacitor—Tuning meter		6786	Condenser—3 gang variable tuning condenser assembly	
3556	Capacitor—0.05 mfd. capacitor		7062	Capacitor—Adjustable trimming capacitor—15 to 70 mmfd.	
3557	Capacitor—0.002 mfd. capacitor		7065	Screw driver—Non-metallic screw driver for oscillator and I. F. adjustments	
3558	Capacitor—50 mmfd. capacitor		7439	Drum—Dial drum with set screws and three dial mounting nuts	
3563	Socket—Tuning meter lamp socket and bracket		7487	Shield—Radiotron tube shield	
3564	Bracket—Station selector dial lamp mounting bracket		7488	Shield—Tube shield top	
3565	Socket—Dial lamp socket		8978	Transformer—Power transformer—105-120 volts—50-60 cycles	
3598	Capacitor—0.1 mfd.		8979	Transformer—Power transformer—105-120 volts—25-40 cycles	
3615	Knob—Range switch knob—Package of 5		8980	Transformer—Power transformer—210-240 volts—50-60 cycles	
3638	Scale—Tuning Meter scale—Package of 5		8982	Capacitor pack—Comprising two 1.0 mfd. capacitors in metal container	
3726	Arm—Range switch operating arm assembly—Comprising arm, link, studs and set screws		RECEIVER ASSEMBLIES - R-90 Refer to Model R-90P		
3727	Shaft—Shaft and bushing assembly for range switch operating arm—Comprising two washers, shaft bushing and nut		<i>Change the following Stock No's.</i>		
3747	Capacitor—15 mmfd.		From	To	
3900	Resistor—2,600 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		3252	6185	Resistor - 100,000 Ohms - 1/2 watt.
6114	Resistor—20,000 ohms—Carbon type—1 watt—Package of 5		6444	7484	Socket - 5 contact Radiotron socket.
6142	Resistor—6,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6445	7485	Socket - 6 contact Radiotron socket.
6192	Spring—Three gang tuning condenser drive cord tension spring—Package of 10		6446	6300	Socket - 4 contact Radiotron socket.
6279	Resistor—15,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6538	6433	Coil - Antenna coil.
6280	Resistor—400,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6539	6438	Coil - Detector coil.
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		6541	3638	Scale - Dial and dial scale.
6288	Knob—Volume control or noise suppressor knob—Package of 5		6547	6462	Bezel - Tuning meter bezel.
6298	Cord—Three gang tuning condenser drive cord—Package of 5		6786	7581	Condenser - 3 gang tuning condenser.
6314	Capacitor—160 mmfd.—Package of 5		Stock No's 3024 Capacitor, 3546 Capacitor, 3615 Knob, 3726 Arm, 3727 Shaft, 3747 Capacitor, 6316 Resistor and 6537 Switch not used with Model R-90.		
6316	Resistor—2,500 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		REPRODUCER ASSEMBLIES		
6323	Shaft—Three gang variable tuning condenser drive shaft—Comprising 1 shaft, 2 "C" washers and 2 flat washers—Package of 2		6184	Board—Terminal board complete with three terminals—Package of 5	
6429	Capacitor pack—Comprising one 0.11 mfd. and one 0.7 mfd. capacitor in metal container		6455	Transformer—Output transformer	
6430	Capacitor pack—Comprising two 4.0 mfd., one 0.25 mfd., one 0.025 mfd., one 0.1 mfd. and one 0.5 mfd. capacitors in metal container		8920	Ring—Cone retaining ring	
6431	Reactor—Filter reactor		8969	Cone—Reproducer cone—Package of 5	
6432	Transformer—Interstage audio transformer		9425	Coil assembly—Comprising field coil, magnet and cone support	

R90, R90P, 260 & 261

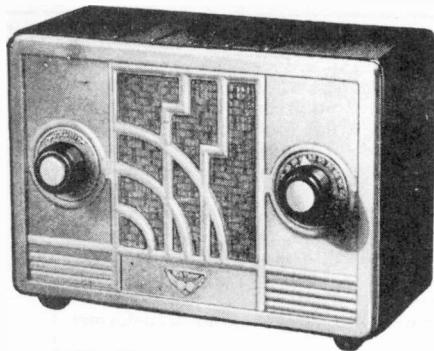
REPLACEMENT PARTS MODEL 261

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
3024	Capacitor—9 mmfd. (C40)—Package of 2...		6323	Shaft—Three gang variable tuning condenser drive shaft—Comprising 1 shaft, 2 "C" washers and 2 flat washers—Package of 2	
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt (R8, R10)—Package of 5.....		6429	Capacitor pack—Comprising one 0.11 mfd. and one 0.7 mfd. capacitor in metal container (C30, C31).....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R14)—Package of 5.....		6430	Capacitor pack—Comprising two 4.0 mmfd., one 0.25, one 0.025, one 0.1, and one 0.5 mfd. capacitors in metal container (C23, C26, C27, C28, C29, C35).....	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5, R6, R7)—Package of 5.....		6431	Reactor—Filter reactor (L21).....	
3435	Resistor—250 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5.....		6432	Transformer—Interstage audio transformer (T2).....	
3455	Capacitor—0.01 mfd. capacitor (C32).....		6434	Reactor—Second detector plate coupling reactor (L15).....	
3460	Capacitor—1,200 mmfd. (C24).....		6435	Transformer—First intermediate frequency transformer (L8, L9, C14, C15, C16, R9)	
3513	Capacitor—700 mmfd. (C10).....		6436	Reactor—High frequency tone control compensating reactor (L17).....	
3526	Resistor—2,000 ohms—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5.....		6437	Coil—Oscillator coil assembly (L5, L6, L7)...	
3527	Resistor—800 ohms—Carbon type— $\frac{1}{2}$ watt (R18)—Package of 5.....		6439	Reactor—High frequency tone control reactor (L16).....	
3530	Coil—Second detector plate choke coil (L14).....		6440	Transformer—Second intermediate frequency transformer (L2, L3, C21, C22).....	
3551	Screw assembly—Chassis mounting washer and screw assembly—Comprising 4 screws, 4 lock washers, 4 washers, 8 cushions and 4 spacers.....		6441	Transformer—Third intermediate frequency transformer (L10, L11).....	
3552	Resistor—200 ohms—Porcelain type—20 watts (R22).....		6442	Reactor—Volume control series reactor (L18).....	
3553	Resistor—8,000 ohms—Porcelain type—20 watts (R24).....		6443	Capacitor—10 mmfd. (C34).....	
3554	Resistor—1,200 ohms—Carbon type— $\frac{1}{2}$ watt (R27)—Package of 5.....		6447	Volume control—Complete with mounting nut (R19).....	
3556	Capacitor—0.05 mfd. capacitor (C1, C5, C17, C20).....		6448	Tone control—Low frequency tone control complete with mounting nut (R17).....	
3557	Capacitor—0.002 mfd. capacitor (C33).....		6449	Tone control—High frequency tone control complete with mounting nut (R23).....	
3558	Capacitor—50 mmfd. capacitor (C13).....		6450	Rheostat—Noise suppressor rheostat (R3)...	
3564	Bracket—Station selector dial lamp mounting bracket.....		6537	Switch—Range switch (S2, S3, S4, S5, S6, C41, C43, C44).....	
3565	Socket—Dial lamp socket.....		6538	Coil—Antenna coil (L1, L2, R1, C1).....	
3598	Capacitor—0.1 mmfd. (C4, C8, C18, C19, C38).....		6539	Coil—Detector coil (L3, L4).....	
3726	Arm—Range switch operating arm assembly—Comprising arm, link, studs and set screws.....		6541	Scale—Dial and dial scale.....	
3747	Capacitor—15 mmfd. (C42).....		6785	Cable—Braid covered—Five conductor reproducer cable.....	
3900	Resistor—2,600 ohms—Carbon type— $\frac{1}{2}$ watt (R26)—Package of 5.....		6786	Condenser—3-gang variable tuning condenser assembly (C2, C3, C6, C7, C11, C12).....	
4022	Shaft—Shaft and bushing assembly for range switch operating arm—Comprising two washers, shaft, bushing and nut.....		7062	Capacitor—Adjustable trimming capacitor—15 to 70 mmfd. (C9).....	
4023	Escutcheon—Station selector escutcheon.....		7439	Drum—Dial drum with set screws and three dial mounting nuts.....	
4080	Knob—Range switch knob—Package of 5.....		7484	Socket—Five contact Radiotron socket.....	
4081	Knob—Volume control or noise suppressor knob—Package of 5.....		7485	Socket—Six contact Radiotron socket.....	
4082	Knob—High or low frequency tone control knob—Package of 5.....		7487	Shield—Radiotron tube shield.....	
4160	Trimmer adjustment wrench and screw-driver.....		7488	Shield—Tube shield top.....	
6114	Resistor—20,000 ohms—Carbon type—1 watt (R21, R25)—Package of 5.....		8978	Transformer—Power transformer—105-120 volts—50-60 cycles (T1).....	
6142	Resistor—6,000 ohms—Carbon type— $\frac{1}{2}$ watt (R16)—Package of 5.....		8979	Transformer—Power transformer—105-120 volts—25-40 cycles.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1)—Package of 5.....		8980	Transformer—Power transformer—210-240 volts—50-60 cycles.....	
6192	Spring—Three gang tuning condenser drive cord tension spring—Package of 10.....		8982	Capacitor pack—Comprising two 1.0 mfd. capacitors in metal container.....	
6242	Resistor—2 megohm—Carbon type— $\frac{1}{4}$ watt (R9)—Package of 5.....		9050	Oscillator—Test oscillator—150-25,000 K. C.	
6279	Resistor—15,000 ohms—Carbon type— $\frac{1}{2}$ watt (R15)—Package of 5.....				
6280	Resistor—400,000 ohms—Carbon type— $\frac{1}{2}$ watt (R11, R12, R13)—Package of 5.....				
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R20)—Package of 5.....				
6298	Cord—Three gang tuning condenser drive cord—Package of 5.....				
6300	Socket—Four contact Radiotron socket.....				
6314	Capacitor—160 mmfd. (C25)—Package of 5.....				
				REPRODUCER ASSEMBLIES	
			6184	Board—Terminal board complete with three terminals—Package of 5.....	
			6455	Transformer—Output transformer (T3).....	
			8920	Ring—Cone retaining ring.....	
			8969	Cone—Reproducer cone (L19)—Package of 5.....	
			9425	Coil assembly—Comprising field coil, magnet and cone support (L20).....	
			9463	Reproducer complete.....	

MODEL 91B

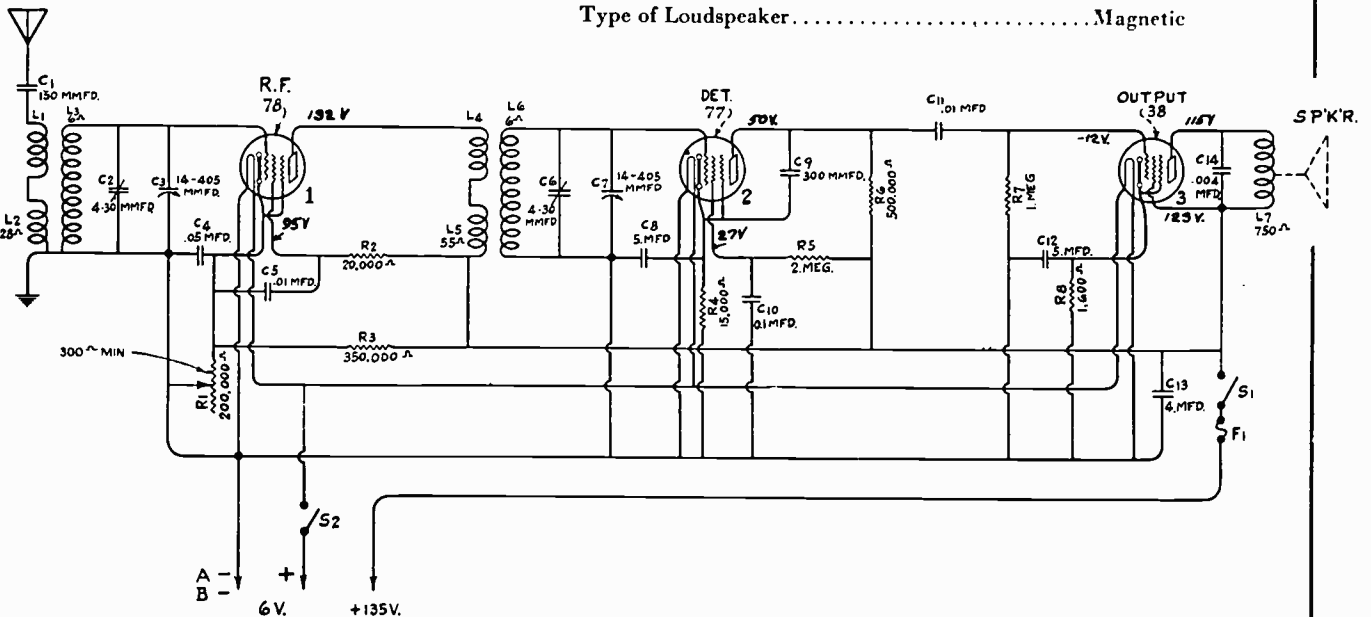
Battery Operated Receiver



MODEL 91 B

MODEL 91-B—A compact, portable three-tube battery set with good sensitivity, selectivity and tone. Five-inch magnetic speaker and volume control. Comes with 7-foot cable for storage battery connection and fuse in "B" battery lead as tube protector. Cabinet of metal, of midnight blue top and sides, silver front and back.

- "A" Battery Required.....Six-Volt Storage Battery
- "B" Battery Required.....Three 45-Volt Blocks
- "A" Current.....0.9 Ampere
- "B" Current.....(Maximum Volume) 18 M. A.
(Minimum Volume) 9 M. A.
- Type and Number of Radiotrons
1 RCA-78, 1 RCA-77, 1 RCA-38, Total 3
- Undistorted Output.....0.2 Watts
- Tuning Range.....540-1712 K. C.
- Type of Loudspeaker.....Magnetic



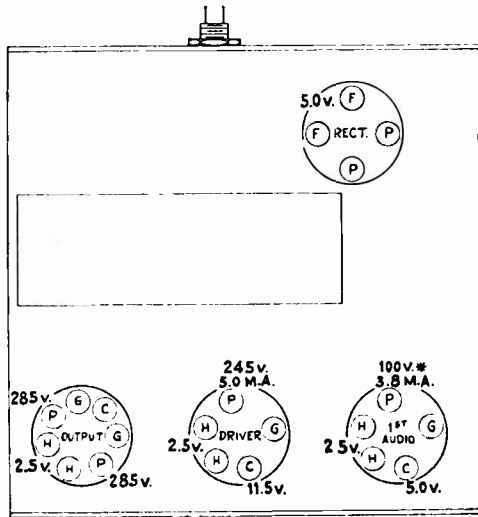
-Schematic Circuit Diagram

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
3546	Capacitor—150 mmfd. (C1)		6114	Resistor—20,000 ohms—Carbon type—1 watt (R2)—Package of 5.	
3560	Resistor—1,600 ohms—Carbon type—½ watt (R8)—Package of 5.		6186	Resistor—500,000 ohms—Carbon type—¼ watt (R6)—Package of 5.	
3602	Resistor—60,000 ohms—Carbon type—¼ watt (R7)—Package of 5.		6242	Resistor—2 megohms—Carbon type—¼ watt (R5)—Package of 5.	
3640	Capacitor—0.05 mfd. (C4)		6516	Connector—Fuse connector.	
3701	Capacitor—0.01 mfd. (C5, C11)		6820	Coil—Antenna coil (L1, L2, L3)	
3748	Fuse—0.5 ampere (F1)—Package of 5.		6821	Coil—Detector coil (L4, L5, L6)	
3848	Capacitor—300 mmfd. (C9)		6822	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7)	
3860	Socket—5-contact Radiotron socket.		6829	Volume control (R1)	
3877	Capacitor—0.1 mfd. (C10)		6830	Cable—Battery cable.	
3998	Resistor—15,000 ohms—Carbon type—¼ watt (R4)—Package of 5.		6844	Capacitor—Two 5.0 mfd. (C8, C12)	
4070	Capacitor—0.004 mfd. (C14)		6832	Capacitor—4.0 mfd. (C13)	
4073	Resistor—350,000 ohms—Carbon type—¼ watt (R3)—Package of 5.		7485	Socket—6-contact Radiotron socket.	
4076	Escutcheon—Volume control escutcheon—Package of 2.		REPRODUCER ASSEMBLIES		
4077	Escutcheon—Station selector escutcheon—Package of 2.		7712	Support—Cone support.	
4078	Knob—Station selector knob—Package of 5.		7713	Mechanism—Speaker mechanism complete (17)	
4079	Foot—Rubber foot—Package of 4.		9470	Reproducer—Complete.	
4096	Knob—Volume control knob—Package of 5.		9471	Cone—Speaker cone—Package of 5.	
4097	Switch—Operating switch—Double pole—Single throw (S1, S2)				

MODEL R-92 STORE RECORDER

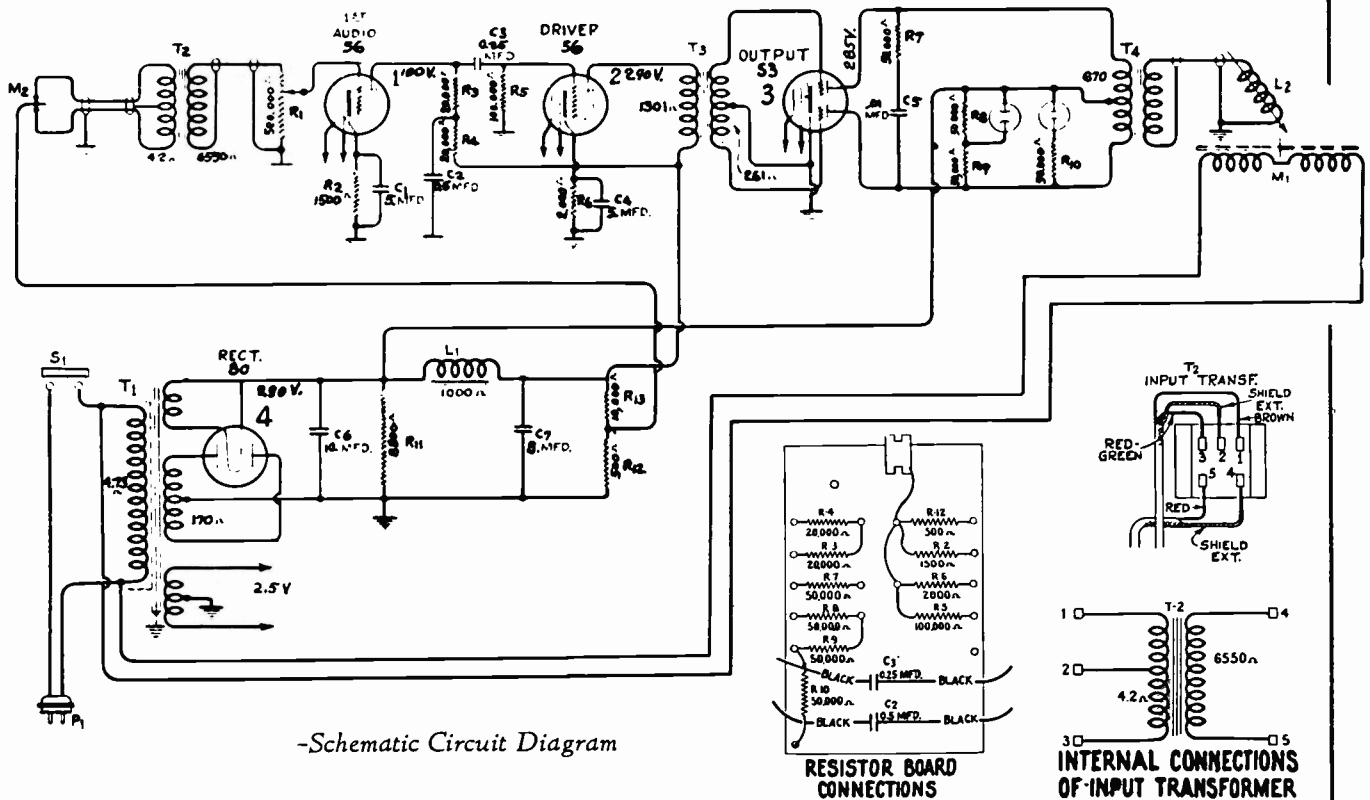


Voltage Readings at Radiotron Sockets

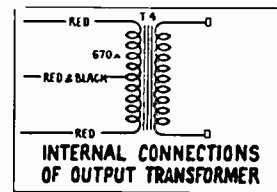
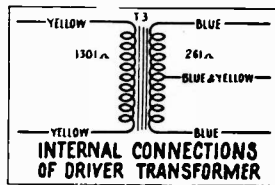
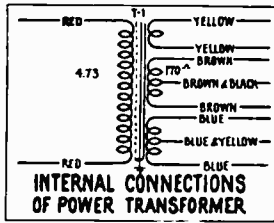


ELECTRICAL SPECIFICATIONS

Voltage Rating	115 Volts
Frequency Rating	60 Cycles
Power Consumption	95 Watts
Type and Number of Radiotrons	2 RCA-56, 1 RCA-53, 1 RCA-80—Total 4
Type of Microphone	Two-Button, Carbon Type
Microphone Impedance	200 Ohms Each Button (Average)
Pickup Impedance	7 Ohms at 1000 Cycles
Turntable Speed	33 $\frac{1}{3}$ R.P.M. and 78 R.P.M.



-Schematic Circuit Diagram



REPLACEMENT PARTS

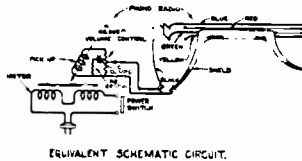
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
AMPLIFIER ASSEMBLIES					
3787	Capacitor—0.01 mfd. (C5)		3385	Coil—Pickup coil	
6648	Capacitor—0.25 mfd. (C3)		4383	Cover—Pickup cover	
3772	Capacitor—0.5 mfd. (C2)		3836	Cover—Pickup back cover	
4498	Capacitor—8.0 mfd. (C7)		4497	Pickup—Magnetic pickup unit complete (L2)	
7590	Capacitor—10.0 mfd. (C6)		4384	Plate—Pickup lifter adjustment plate, spring and screw—Located in arm	
6824	Capacitor pack—Comprising two 5.0 mfd. (C1, C4)		3387	Screw—Pickup mounting screw assembly—Comprising one screw, one nut and one washer—Package of 10	
6552	Reactor—Filter reactor (L1)		3388	Screw—Pickup needle holding screw—Package of 10	
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt (R8, R9, R10)—Package of 5		3419	Screw—Pickup cover holding screw—Package of 10	
4396	Resistor—500 ohms—Carbon type— $\frac{1}{2}$ watt (R12)—Package of 10		TURNTABLE ASSEMBLIES		
3047	Resistor—1500 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5		3346	Bushing—Speed shifter lever bushing—Package of 4	
3526	Resistor—2000 ohms—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5		3344	Cover—Grease retainer cover—Package of 2	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R3, R4)—Package of 5		4394	Lever—Speed shifter lever	
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Package of 5		3341	Pin—Groov-pin—Package of 2	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5		3338	Ring—Clamp ring assembly—Comprising spring, latch lever and stud	
4398	Resistor—10,000 ohms—6.5 watts (R13)		3343	Sleeve—Sleeve complete with ball race	
4400	Resistor—8800 ohms—10.5 watts (R11)		3347	Spring—Speed shifter lever spring—Package of 2	
4399	Socket—4-contact socket		7668	Turntable—Complete less shift lever	
6300	Socket—4-contact Radiotron socket		3340	Washer—Thrust washer—Package of 2	
7484	Socket—5-contact Radiotron socket		MOTOR ASSEMBLIES		
3719	Socket—7-contact Radiotron socket		4395	Mounting assembly—Motor mounting assembly—Comprising 3 studs, 9 washers, 3 cushions	
6551	Transformer—Driver transformer (T3)		9510	Motor—105-120 volt 60-cycle motor complete	
6556	Transformer—Output transformer (T4)		8942	Rotor and shaft for motor	
9026	Transformer—Power transformer (T1)		8945	Spindle—Turntable spindle and fibre gear for motor	
4401	Volume control (R1)		MISCELLANEOUS ASSEMBLIES		
MICROPHONE ASSEMBLIES					
4403	Cord—Microphone cord		4391	Box—Needle box	
3216	Cushions—Microphone rubber cushions—Package of 6		3261	Bushing—Record drive bushing—Package of 5	
4500	Housing—Microphone housing		4392	Knob—Volume control knob—Package of 5	
4499	Mechanism—Microphone mechanism		4385	Lifter—Pickup lifter mechanism complete	
4501	Microphone complete		4387	Screw—No. 6-32- $\frac{1}{4}$ " headless set screw for pickup lifter cam—Package of 10	
4402	Plug—Microphone cord plug		4388	Screw—No. 6-32- $\frac{3}{16}$ " headless set screw for pickup lifter cam—Package of 10	
RECORDING INDICATOR ASSEMBLIES					
4381	Escutcheon—Recorder indicator escutcheon		4389	Screw—No. 6-32- $\frac{3}{16}$ " headless set screw for pickup lifter cam—Package of 10	
4161	Lamp—Neon lamp		4390	Screw—No. 6-32- $\frac{1}{8}$ " headless set screw for pickup lifter cam—Package of 10	
4164	Screen—Recording indicator lamp screen		4393	Screw—No. 8-32- $\frac{3}{16}$ " headless set screw for volume control knob—Package of 10	
4382	Screw—Screen escutcheon and terminal board mounting screw assembly—Comprising two screws, two spacers, two nuts and two lockwashers		4386	Spring—Pickup lifter spring—Package of 10	
PICKUP AND ARM ASSEMBLIES					
4496	Arm—Pickup arm complete		6226	Transformer—Input transformer (T2)	
3417	Armature—Pickup armature				
3733	Back—Pickup housing back				

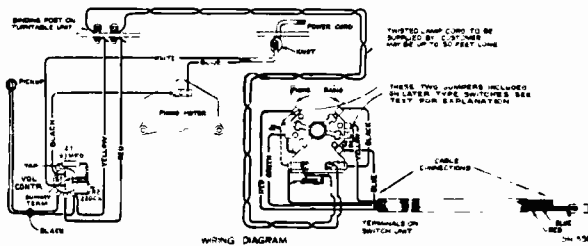
MODELS R-93, R-93-A, R-93-2, R-93-S, and R-94 RECORD PLAYERS



MODEL R-93



EQUIVALENT SCHEMATIC CIRCUIT.



WIRING DIAGRAM

Figure 3—Wiring Diagram and Equivalent Schematic Circuit
[Models R-93-A (1st and 2nd prod.) and R-94 Deluxe (1st prod.)]

MODELS R-93, R-93-A, and R-94 - VOLUME AND FIDELITY INCREASE

The pickup unit of these Duo Junior instruments is designed to be adaptable to a great variety of receiver inputs, and to provide the best average of output and fidelity that may be obtained over such a wide range of applications. On some installations, where the ultimate in output and fidelity is desired, it is possible to gain considerable improvement in performance by installation of a Stook #9632 transformer between the Radio-Phono changeover switch and the Duo output. This transformer gives a decided stepup in voltage, and enables the Duo volume control to be operated at a lower point so that

the full benefit is derived from the tone compensation. The #9632 transformer should be connected as shown in the diagram above, and its placement should be such that it is not in an interfering magnetic field from a power transformer, reactor, wiring or motor. All other connections are to be made per standard instructions. Shielding should be placed over the primary and secondary leads if such is found necessary. If the bias of the receiver audio input stage is affected by the transformer winding, a .06 mfd. in series with the "blue" lead will correct the conditions. The "green" and "red" leads of the transformer should be taped up separately and not used.

MECHANICAL VIBRATION AND HUM - Models R-93-A

Hum produced by the drive motor of the R-93-A may occasionally be amplified by mechanical resonance of the table or radio cabinet used for supporting the instrument. Where this condition causes interference to proper reproduction, the motor should be carefully lubricated and adjusted in accordance with Service Note instructions. A felt or sponge-rubber pad beneath the instrument will also effectively reduce the hum. Whenever the hum is of abnormal intensity due to the combination or accumulation of causes, such as high line voltage, resonant support, excessive amplifier gain, and unusual low-frequency response; the addition of a 300-ohm, 5-watt resistor in series with the motor coils is recommended for the 105-125 volt, 60 cycle motors. A 500-ohm, 5-watt resistor in series with the motor coils is recommended for the 105-125 volt, 25 cycle motors.

MODEL R-93

(Third Production)

(Walnut, Red, White, Black)

The Model R-93 (third production) in colors of Walnut, Red, White, or Black are similar electrically to the original R-93 (first and second production) but may be identified mechanically by the curved tone arm. The original Model R-93 had a straight tone arm

MODEL R-93-A

(First and Second Production)

(Walnut)

The cabinet of the Model R-93-A is similar to that of the Model R-93 Walnut finish. This model incorporates an acoustic compensated volume control, see figure 3. Model R-93-A (first production) and Model R-93-A (second production) differ only in the pickup construction, the essential difference being in the armature centering spring and spring clamps.

The motor differs slightly in construction and mounting details from that used in the Model R-93 (second production).

MODEL R-93-2 DE LUXE

(Walnut)

Model R-93-2 Deluxe is finished in walnut and is electrically identical to Model R-93 (third production), however, the cabinet is larger in size and has a hinged lid which may be closed while playing the records. The turntable is 10 inches in diameter. The motor differs slightly in construction from that used in the Model R-93 (second production).

MODEL R-93-S

(Walnut)

Model R-93-S has a spring wound motor and is primarily intended for use with battery receivers. The pickup and tonearm are identical to those described in "Model R-93 (third production)."

MODEL R-94 DE LUXE

(Walnut)

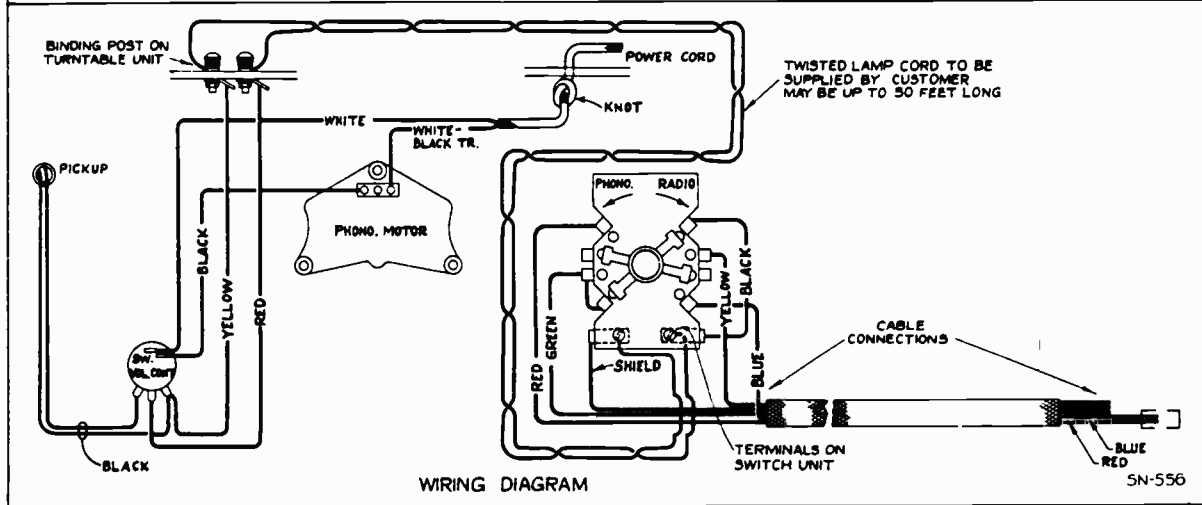
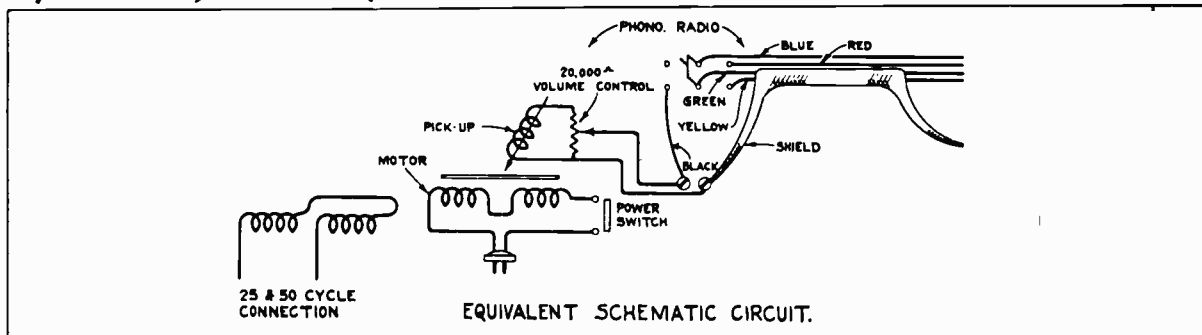
The Model R-94 Deluxe cabinet is finished in walnut and has a hinged lid which may be closed while playing the records.

Note

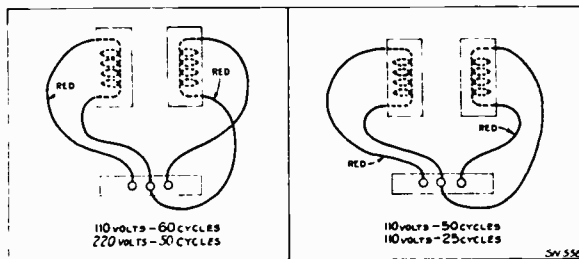
1. (Applies to Model R-93-S only). It is necessary to short the 0.1 mfd. blocking capacitor C1 in Model R-93-S (see figure 6) for cases in which the control grid d-c bias, or cathode current flow, would be removed or prevented by this capacitor when the record player switch is thrown to "Phono" position. C1 is provided to permit operation on battery receivers without shorting bias batteries, etc.

2. (Record Player Switch Jumpers) — Some record player switches do not have jumpers J1 and J2 (see figure 3) attached. When the switch is so connected and turned to phonograph position, the voltage developed by the pickup is fed into the radio receiver through the green wire and shield, and at the same time the yellow wire is connected to shield. The jumpers J1 and J2 permit the yellow lead to kill radio by connection to shield. The jumpers should be removed where the yellow lead connects in such a position as to short bias batteries, etc.

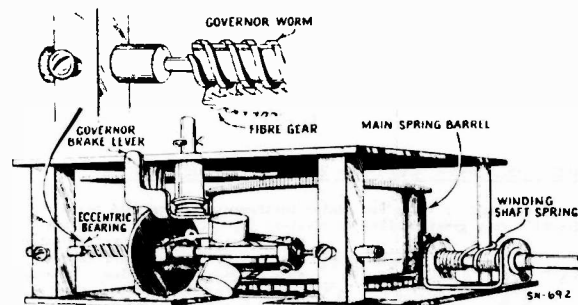
R93, R93A, R93-2, R93S & R94



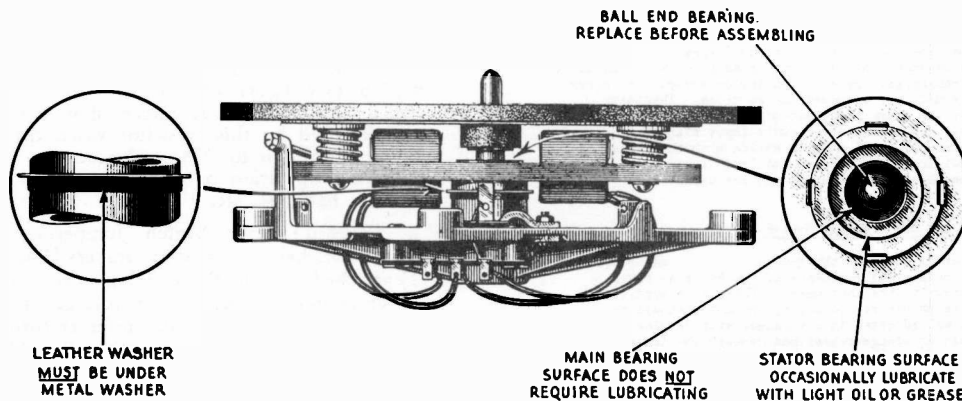
-Wiring Diagram and Equivalent Schematic Circuit



-Motor Wiring Connections

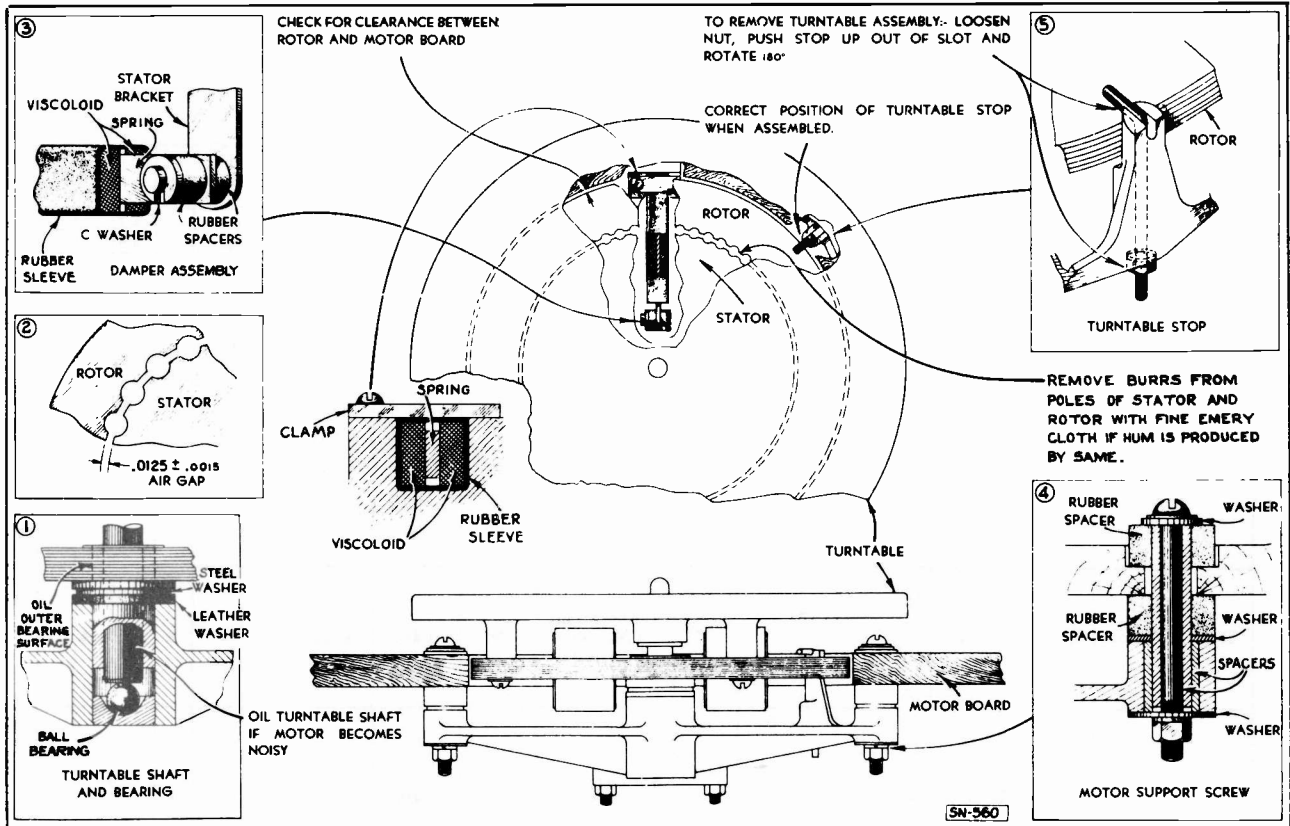


-Details of Motor
[Model R-93-S (1st prod.)]

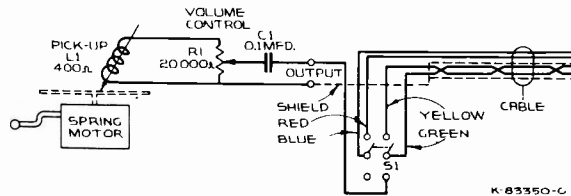


-Details of Motor (First Production) MODEL R93

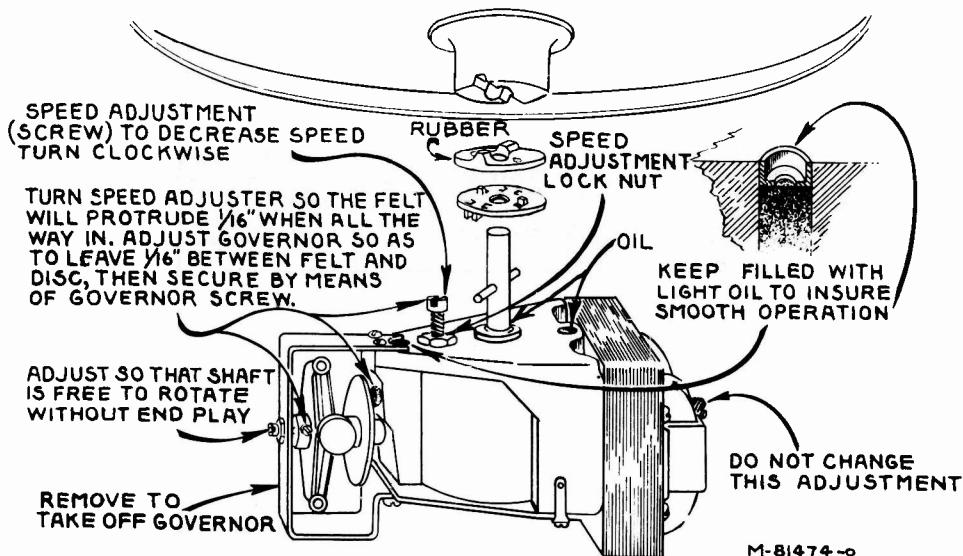
R93, R93A, R93-2, R93S & R94



MODEL R 93 Details of Motor (Second Production)



Schematic Circuit Diagram
[Model R-93-S (1st prod.)]



—Details of Motor
[Model R-94 Deluxe (1st prod.)]

R93, R93A, R93-2, R93S & R94 REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
	MOTOR ASSEMBLIES R93 FIRST PRODUCTION		MOTOR ASSEMBLIES [Model R-93 (third production) Walnut]
10194	Ball—Steel ball bearing—Package of 20..	10194	Ball—Steel ball bearing
7657	Base—Motor base and bearing assembly—50-60 cycle—105-125/200-250 volt operation	11740	Base—Motor base and bearing assembly
		11733	Coil—Stator assembly—comprising coil and laminations—105-125 volt, 60 cycle operation
9523	Base—Motor base and bearing assembly—25 cycle operation.....	11734	Coil—Stator assembly—comprising coil and laminations—105-125 volt, 50 cycle operation
9519	Coil—Stator assembly—Comprising coil and laminations—105-125 volt, 60 cycle operation	11748	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers, and one "C" washer
9521	Coil—Stator assembly—Comprising coil and laminations—105-125 volt, 50 cycle operation	11873	Motor—105-125 volts—60 cycle motor (M1)
9524	Coil—Stator assembly—Comprising coil and laminations—105-125 volt, 25 cycle operation	11874	Motor—105-125 volts—50 cycle motor (M1)
9529	Coil—Stator coil assembly—Comprising coil and laminations—50 cycle, 200-250 volt operation.....	4456	Motor Accessories—comprising three nuts, one shield and one screw
9515	Motor—105-125 volts—60 cycle motor..	11876	Turntable—Turntable assembly complete— with rotor laminations—60 cycle operation
9516	Motor—105-125 volts—50 cycle motor..	11875	Turntable—Turntable assembly complete— with rotor laminations—50-cycle operation
9517	Motor—105-125 volts—25 cycle motor..	4083	Washer—Leather washer
9528	Motor—200-250 volts—50 cycle motor..	4084	Washer—Metal washer
4456	Motor accessories—Comprising 3 nuts, 1 shield and 1 screw.....		MOTOR ASSEMBLIES [Model R-93 (third production) Red-White-Black]
3813	Motor suspension assembly—Comprising one screw, one metal bushing, two rubber bushings, one flat washer, one lockwasher and one nut—Package of 3	10194	Ball—Steel ball bearing
4457	Spring, screw and washer assembly—Used to mount rotor laminations to turntable—Comprising 3 springs, 3 screws and 9 washers.....	11740	Base—Motor base and bearing assembly
9520	Turntable—Turntable assembly complete with rotor laminations—60 cycle operation	11733	Coil—Stator assembly—comprising coil and lamination—110 volts, 60 cycle
9525	Turntable—Turntable assembly complete with rotor laminations—25 cycle operation	11734	Coil—Stator assembly—comprising coil and lamination—110 volts, 50 cycle
9522	Turntable—Turntable assembly complete with rotor laminations—105-125/200-250 volt—50 cycle operation.....	11735	Coil—Stator assembly—comprising coil and lamination—110 volts, 25 cycle
4083	Washer—Leather washer—Package of 10..	13081	Coil—Stator assembly—comprising coil and lamination—220 volts, 50 cycle
4084	Washer—Metal washer—Package of 10..	11748	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer
	MOTOR ASSEMBLIES R93 SECOND PRODUCTION	9721	Motor—110 volts, 60 cycle motor with red turntable (M1)
10194	Ball—Steel ball bearing—Package of 20..	9725	Motor—110 volts, 60 cycle motor with white turntable (M1)
11740	Base—Motor base and bearing assembly..	9729	Motor—110 volts, 60 cycle motor with black turntable (M1)
11733	Coil—Stator assembly—Comprising coil and laminations—105-125 volt, 60 cycle operation	9722	Motor—110 volts, 50 cycle motor with red turntable (M1)
11734	Coil—Stator assembly—Comprising coil and laminations—105-125 volt, 50 cycle operation	9726	Motor—110 volts, 50 cycle motor with white turntable (M1)
11748	Damper—Motor damper assembly—Comprising one damper, one damper plate, one screw, two rubber washers, and one "C" washer.....	9730	Motor—110 volts, 50 cycle motor with black turntable (M1)
11873	Motor—105-125 volts—60 cycle motor..	9723	Motor—110 volts, 25 cycle motor with red turntable (M1)
11874	Motor—105-125 volts—50 cycle motor..	9727	Motor—110 volts, 25 cycle motor with white turntable (M1)
4456	Motor accessories—Comprising 3 nuts, 1 shield and 1 screw.....	9731	Motor—110 volts, 25 cycle motor with black turntable (M1)
11876	Turntable—Turntable assembly complete with rotor laminations—60 cycle operation	9724	Motor—220 volts, 50 cycle motor with red turntable (M1)
11875	Turntable—Turntable assembly complete with rotor laminations—50 cycle operation	9728	Motor—220 volts, 50 cycle motor with white turntable (M1)
4083	Washer—Leather washer—Package of 10..	9732	Motor—220 volts, 50 cycle motor with black turntable (M1)
4084	Washer—Metal washer—Package of 10..	13072	Turntable—Red turntable—complete with rotor lamination—60 cycle operation
		13075	Turntable—White turntable—complete with rotor lamination—60 cycle operation
		13078	Turntable—Black turntable—complete with rotor lamination—60 cycle operation
		13073	Turntable—Red turntable—complete with rotor lamination—50 cycle operation
		13076	Turntable—White turntable—complete with rotor lamination—50 cycle operation
		13079	Turntable—Black turntable assembly— complete with rotor lamination—50 cycle operation
		13074	Turntable—Red turntable assembly—complete with rotor lamination—25 cycle operation
		13077	Turntable—White turntable assembly— complete with rotor lamination—25 cycle operation
		13080	Turntable—Black turntable assembly— complete with rotor lamination—25 cycle operation
		4083	Washer—Leather spacing washer
		4084	Washer—Metal spacing washer
			MOTOR ASSEMBLIES [Model R-93-A (first and second production) Walnut]
		10194	Ball—Steel ball bearing
		14233	Base—Motor base and bearing assembly
		14232	Cap—Turntable spindle cap
		14223	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 60 cycle
		14224	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 50 cycle

R93, R93A, R93-2, R93S & R94

REPLACEMENT PARTS—(Continued)

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
14225	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 25 cycle		PICKUP AND ARM ASSEMBLIES [Model R-93 (third production) Walnut] 3812 Armature—Pickup armature 4462 Cable—Pickup cable 11732 Coil—Pickup coil and support (L1) 5091 Cushion—Pickup armature cushion 4543 Damper—Pickup damper block complete—with damper plate, washer and screw 12329 Pickup and arm assembly complete 4387 Screw—Pickup arm set screw—used to fasten arm to pivot shaft 11951 Screw—Pickup needle holding screw PICKUP AND ARM ASSEMBLIES [Model R-93 (third production) Red-White-Black] 3812 Armature—Pickup armature 4462 Cable—Pickup cable 11732 Coil—Pickup coil and support (L1) 5091 Cushion—Pickup armature cushion 4543 Damper—Pickup damper block—complete with damper plate, washer and screw 12329 Pickup and arm assembly—complete 4387 Screw—Pickup arm set screw—used to fasten arm to pivot shaft 11951 Screw—Pickup needle holding screw PICKUP AND ARM ASSEMBLIES [Model R-93-A (first and second production) Walnut] 3812 Armature—Pickup armature (first production) 14294 Armature—Pickup armature (second production) 4462 Cable—Pickup cable 11732 Coil—Pickup coil and support (L1) 5091 Cushions—Pickup armature cushion 4543 Damper—Pickup damper block—complete with damper plate and washer 14928 Pickup and Arm—Complete 4387 Screw—Pickup arm set screw—used to fasten arm to pivot shaft 11951 Screw—Pickup needle holding screw PICKUP AND ARM ASSEMBLIES [Model R-93-2 Deluxe (first production) Walnut] 11731 Armature—Pickup armature—complete with spacer cushions 11732 Coil—Pickup coil (L1) 4543 Damper—Pickup damper block—complete with damper plate and screw 11950 Pickup and Arm Assembly—Complete 5091 Spacer Cushions—Pickup armature spacer cushions 11951 Screw—Needle holding screw PICKUP AND ARM ASSEMBLIES [Model R-93-S (first production) Walnut] 3812 Armature—Pickup armature 4462 Cable—Pickup cable 11732 Coil—Pickup coil and support (L1) 5091 Cushion—Pickup armature cushion 4543 Damper—Pickup damper block—complete with damper plate, washer and screw 12329 Pickup and Arm Assembly—Complete 4387 Screw—Pickup arm set screw—used to fasten arm to pivot shaft 11951 Screw—Pickup needle holding screw PICKUP AND ARM ASSEMBLIES [Model R-94 Deluxe (first production) Walnut] 14291 Armature—Pickup armature assembly 11732 Coil—Pickup coil (L1) 14292 Damper—Pickup damper block—complete with clamp and screw 14329 Pickup and Arm—Complete 4387 Screw—No. 6-32x $\frac{1}{2}$ -in. headless set screw for pickup arm pivot shaft 3811 Screw—Needle holding screw 14213 Washer—Pickup arm stop washer
14226	Coil—Stator assembly—comprising coils and laminations—220 volts, 50 cycle		
14228	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw and one "C" washer		
14216	Motor—105-125 volts—60 cycle (MI)		
14217	Motor—105-125 volts—50 cycle (MI)		
14218	Motor—105-125 volts—25 cycle (MI)		
14219	Motor—220 volt—50 cycle (MI)		
14227	Shield—Terminal board shield and nuts		
14229	Stop—Turntable stop, lockwasher and nut—prevents removal of turntable		
14220	Turntable—Turntable assembly—complete with rotor laminations—60 cycle operation		
14221	Turntable—Turntable assembly—complete with rotor laminations—50 cycle operation		
14222	Turntable—Turntable assembly—complete with rotor laminations—25 cycle operation		
4083	Washer—Leather washer for turntable bearing		
14230	Washer—Metal washer for turntable bearing		
14231	Washer—Metal shim washer for turntable bearing		
	MOTOR ASSEMBLIES		
	[Model R-93-2 Deluxe (first production) Walnut]		
10194	Ball—Steel ball bearing		
11740	Base—Motor base and bearing assembly		
11735	Coil—Stator assembly—Comprising coils and laminations—110 volts, 25 cycles		
11734	Coil—Stator assembly—comprising coils and laminations—110 volts, 50 cycles		
11733	Coil—Stator assembly—comprising coils and laminations—110 volts, 60 cycles		
13081	Coil—Stator assembly—comprising coils and laminations—220 volts, 50 cycles		
11748	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer		
9733	Motor—110 volts—25 cycles (MI)		
12083	Motor—110 volts—50 cycles (MI)		
12082	Motor—110 volts—60 cycles (MI)		
9734	Motor—220 volts—50 cycles (MI)		
13084	Turntable—Turntable assembly—complete with rotor laminations—25 cycle operation		
12049	Turntable—Turntable assembly—complete with rotor laminations—50 cycle operation		
12048	Turntable—Turntable assembly—complete with rotor laminations—60 cycle operation		
4083	Washer—Leather spacing washer		
4084	Washer—Metal spacing washer		
	MOTOR ASSEMBLIES		
	[Model R-93-S (first production) Walnut]		
7937	Ball and Spring—Governor ball and spring assembly		
7943	Barrel—Spring barrel—complete with winding gear and drive gear		
7945	Gear—Intermediate gear, pinion and shaft		
7938	Gear—Winding gear, sleeve and shaft		
7940	Governor Assembly—Comprising governor, spindle, disc, collar, governor balls and springs assembled		
7228	Grease—Motor grease—1 pint can		
7228	Lubricant—Spring lubricant—1 pint can		
7931	Motor—Motor complete with spindle cap		
7227	Oil—Motor oil—1 pint can		
7941	Plate—Motor top plate assembly		
7944	Shaft—Regulator shaft—complete with friction lever and pad with cotter pin		
7939	Spindle—Turntable spindle—complete with two gears		
7957	Spring—Main spring for motor		
7942	Spring—Winding shaft spring		
	MOTOR ASSEMBLIES		
	[Model R-94 Deluxe (first production) Walnut]		
14328	Governor—Complete motor governor assembly		
14325	Motor—105-125 volts—60 cycle (MI)		
14326	Motor—105-125 volts—50-60 cycle (MI)		
14327	Motor—200-250 volts—50-60 cycle (MI)		
	PICKUP AND ARM ASSEMBLIES		
	1ST. & 2ND. PRODUCTION R93		
3812	Armature—Pickup armature.....		
4462	Cable—Pickup cable.....		
3810	Coil—Pickup coil.....		
5091	Cushion—Pickup armature spacer cushion—Package of 10.....		
4543	Damper—Damper block complete with damper clamp, washer.....		
4503	Pickup and arm assembly complete.....		
3811	Screw—Needle holding screw—Package of 10.....		

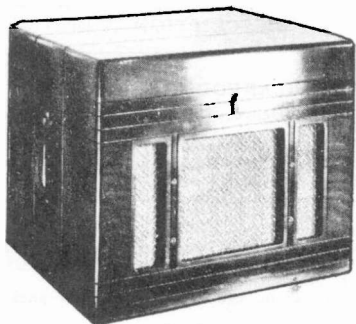
R93, R93A, R93-2, R93S & R94

REPLACEMENT PARTS—Continued

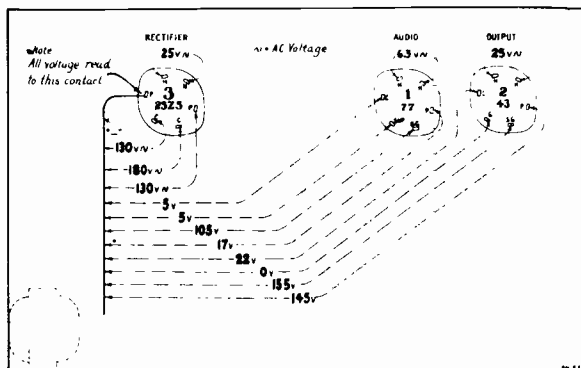
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
1ST. & 2ND. PRODUCTION R93		MISCELLANEOUS ASSEMBLIES	
MISCELLANEOUS ASSEMBLIES		MISCELLANEOUS ASSEMBLIES	
[Model R-93-2 Deluxe (first production) Walnut]		[Model R-93-2 Deluxe (first production) Walnut]	
4611	Adaptor—Five-prong split cathode adaptor	4459	Bracket—Volume control mounting bracket
4612	Adaptor—Six-prong split cathode adaptor	4461	Cable—5-conductor Radio-Record switch cable
11957	Adaptor—Eight-prong "octal" split cathode adaptor with ground lug.....	3829	Knob—Radio-Record switch knob
4461	Cable—5-conductor—Radio-Record switch cable	3961	Knob—Volume control knob
4459	Bracket—Volume control mounting bracket	4458	Post—Binding post
4463	Foot—Felt foot for bottom cover—Package of 10.....	3261	Rest—Pickup rest
3829	Knob—Radio-Record switch knob—Package of 5.....	11869	Screw—Motor mounting screw assembly—comprising one screw, three metal washers, two rubber washers, one lockwasher, one nut and two spacers
3961	Knob—Volume control knob—Package of 5.....	4119	Screw—No. 8-32x $\frac{1}{4}$ -in. headless set screw for knob Stock No. 3829
4458	Post—Binding post—Package of 10.....	4460	Switch—Radio-Record switch (S2)
4507	Rest—Pickup rest—Package of 5.....	4502	Volume Control and switch (R1, S1)
4119	Screw—No. 8-32 $\frac{1}{4}$ -inch headless set screw for knob—Package of 20.....	MISCELLANEOUS ASSEMBLIES	
4460	Switch—Radio-Record switch.....	[Model R-93-S (first production) Walnut]	
4502	Volume control (R1).....	MISCELLANEOUS ASSEMBLIES	
MISCELLANEOUS ASSEMBLIES		[Model R-93 (third production) Walnut]	
4459	Bracket—Volume control mounting bracket	4458	Post—Binding post
4461	Cable—5-conductor Radio-Record switch cable	13089	Brake—Turntable brake assembly
3829	Knob—Radio-Record switch knob	4461	Cable—5-conductor Radio-Record switch cable
3961	Knob—Volume control knob	13087	Cap—Turntable spindle cap
4458	Post—Binding post	4841	Capacitor—0.1 Mfd. (C1)
3261	Rest—Pickup rest	13093	Escutcheon—Winding key escutcheon and bushing
11869	Screw—Motor mounting screw assembly—comprising one screw, three metal washers, two rubber washers, one lockwasher, one nut and two spacers	13091	Key—Motor winding key
4119	Screw—No. 8-32 x $\frac{1}{4}$ -in. headless set screw for knob, Stock No. 3829	3829	Knob—Radio-Record switch knob
4460	Switch—Radio-Record switch (S2)	3961	Knob—Volume control knob
4502	Volume Control and switch (R1, S1)	7935	Leather—Friction leather for turntable brake
MISCELLANEOUS ASSEMBLIES		7936	Nut—Motor mounting nut assembly—comprising one nut, two washers, one lockwasher, one rubber cushion
[Model R-93 (third production) Red-White-Black]		4458	Post—Binding post
4459	Bracket—Volume control mounting bracket	13090	Regulator—Motor speed regulator and plate
4461	Cable—5-conductor Radio-Record switch cable	3261	Rest—Pickup rest
3829	Knob—Radio-Record switch knob	4119	Screw—No. 8-32x $\frac{1}{4}$ -in. headless set screw for knob Stock No. 3829
4323	Knob—Volume control knob—for red finish models	7934	Spring—Coil spring for turntable brake
13083	Knob—Volume control knob—for red finish models	4460	Switch—Radio-Record switch (S1)
13082	Knob—Volume control knob—for white finish models	13088	Turntable—Complete
4458	Post—Binding post	13092	Volume Control (R1)
3261	Rest—Pickup rest	MISCELLANEOUS ASSEMBLIES	
11869	Screw—Motor mounting screw assembly—comprising one screw, one upper spacer, one lower spacer, two rubber washers, three metal washers, one lockwasher and one nut	[Model R-94 Deluxe (first production) Walnut]	
4119	Screw—No. 8-32 x $\frac{1}{4}$ -inch headless set screw for knob, Stock No. 3829	4461	5-conductor switch cable
4460	Switch—Radio-Record switch (S2)	4841	Capacitor—0.1 Mfd. (C1)
4502	Volume Control and switch (R1, S1)	11704	Damper—Turntable damper and damper plate
MISCELLANEOUS ASSEMBLIES		3961	Knob—Volume control and switch knob
[Model R-93-A (first and second production) Walnut]		3829	Knob—Radio-Record switch knob
4461	Cable—5-conductor Radio-Record switch cable	4458	Post—Binding post
4841	Capacitor—0.1 Mfd. (C1)	3261	Rest—Pickup rest
3829	Knob—Radio-Record switch knob	13716	Resistor—2,200 Ohms, insulated, $\frac{1}{4}$ watt (R2)
3961	Knob—Volume control knob	13573	Screw—Motor mounting screw assembly—comprising one screw, one spacer, one washer and one lockwasher
4458	Post—Binding post	4119	Screw—No. 8-32x $\frac{1}{4}$ -in. headless set screw for knob Stock No. 3829
3261	Rest—Pickup rest	4460	Switch—Radio-Record switch (S2)
12195	Resistor—2,200 Ohms, insulated, $\frac{1}{4}$ watt (R2)	14204	Turntable—Complete
14235	Screw—Motor mounting screw assembly—comprising one screw, one metal washer and two rubber washers	14234	Volume Control and Power Switch (R1, S1)
4119	Screw—No. 8-32x $\frac{1}{4}$ -in. headless screw for knob Stock No. 3829	MODEL R-93A	
4460	Switch—Radio-Record switch (S2)	Revised Motor Components:	
14234	Volume Control and Switch (R1, S1)	The various parts of the turntable and rotor assembly have been assigned separate stock numbers and are now available for service purposes as follows:	
MISCELLANEOUS ASSEMBLIES		Obsoleted Parts	
[Model R-93-A (first and second production) Walnut]		Stock No.	
4461	Cable—5-conductor Radio-Record switch cable	30240	Rotor—Laminations and Turntable complete for 60 cycle operation
4841	Capacitor—0.1 Mfd. (C1)	30376	Rotor—Laminations and Turntable complete for 50 cycle operation
3829	Knob—Radio-Record switch knob	30241	Rotor—Laminations and Turntable complete for 25 cycle operation
3961	Knob—Volume control knob	Superseded By	
4458	Post—Binding post	33003	Lamination—Rotor laminations, frame and shaft assembled, for 60 cycle operation
3261	Rest—Pickup rest	33004	Lamination—Rotor laminations, frame and shaft assembled, for 50 cycle operation.
12195	Resistor—2,200 Ohms, insulated, $\frac{1}{4}$ watt (R2)	33005	Lamination—Rotor laminations, frame and shaft assembled, for 25 cycle operation
14235	Screw—Motor mounting screw assembly—comprising one screw, one metal washer and two rubber washers	30242	Turntable—Finished turntable plate
4119	Screw—No. 8-32x $\frac{1}{4}$ -in. headless screw for knob Stock No. 3829	30243	Cap—Turntable spindle cap
4460	Switch—Radio-Record switch (S2)	30392	Mounting—3 rubber spacers and 1 rubber bushing for mounting turntable plate
14234	Volume Control and Switch (R1, S1)		

MODEL R-95

Portable Table Electrola



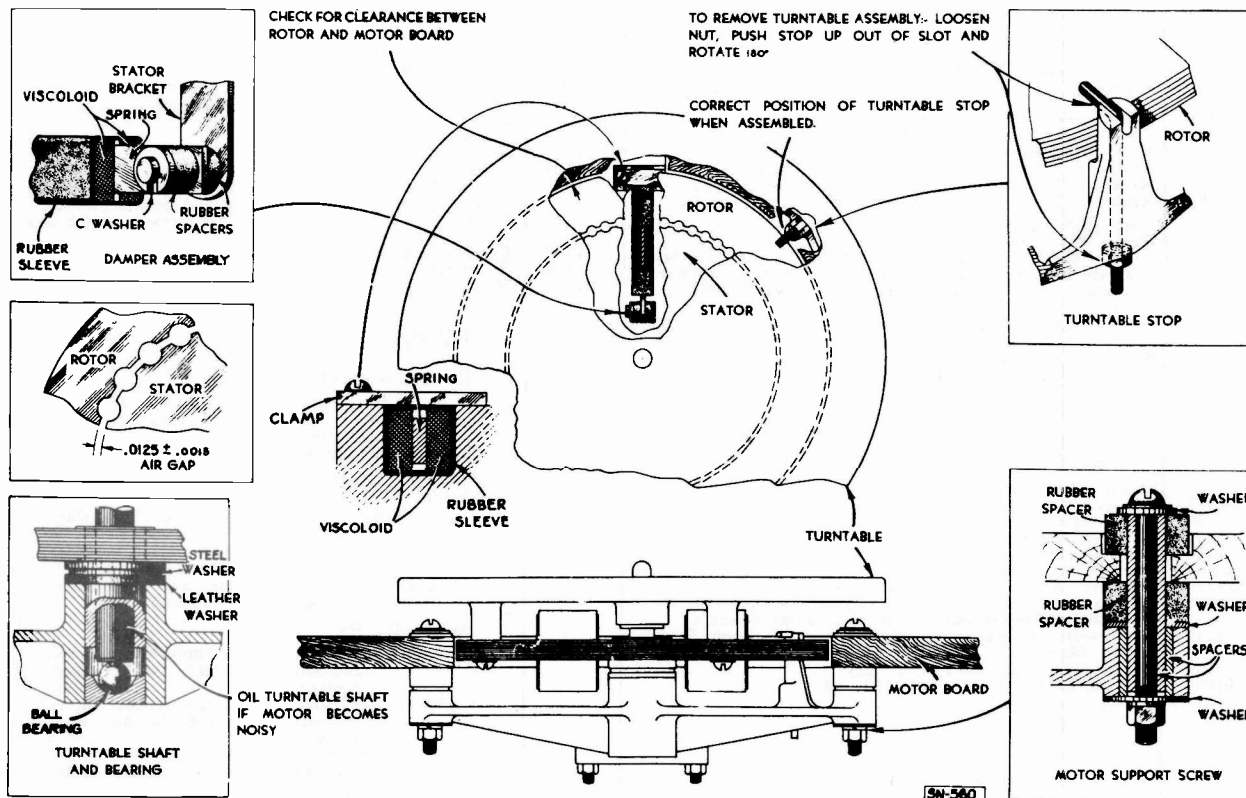
MODEL R-95



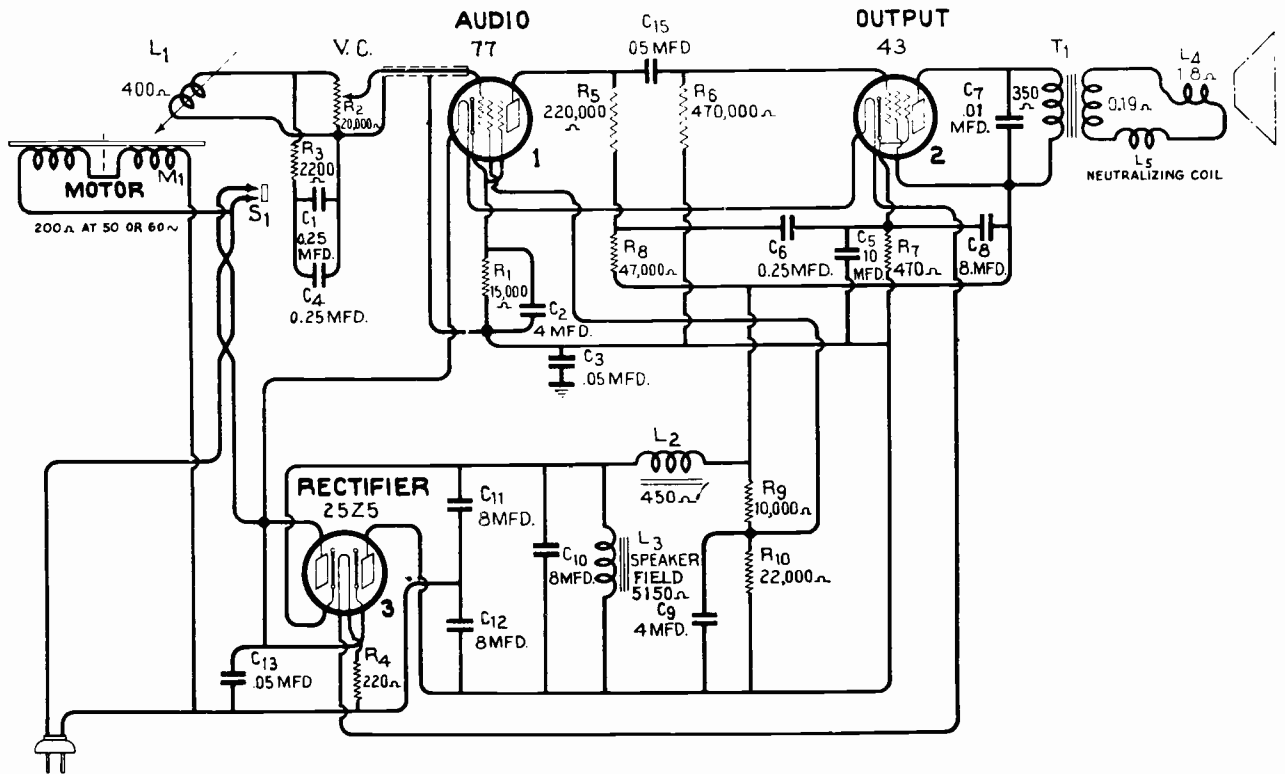
Radiotron Socket Voltages

Electrical Specifications

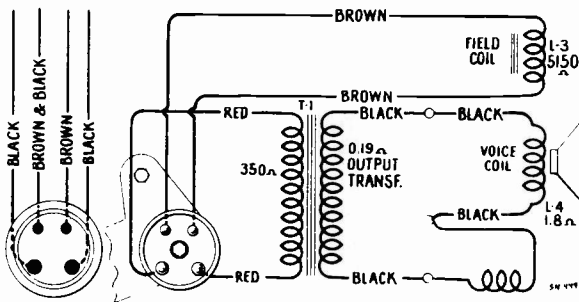
Voltage Rating	105-125 Volts A.C.
Frequency Rating (two types)	50 and 60 Cycles
Power Consumption75 Watts
Number and Type of Radiotrons	1 RCA-77, 1 RCA-43, 1 RCA-25Z5
Type of Loudspeaker	8-inch Electrodynamic
Voice Coil Impedance	2 1/4 Ohms at 400 Cycles
Type of Pickup	High Impedance Magnetic
Pickup Impedance	1,400 Ohms at 1,000 Cycles
Type of Motor	Synchronous (Manual Starting)
Turntable Speed78 R.P.M.
Power Output	Maximum 2 Watts



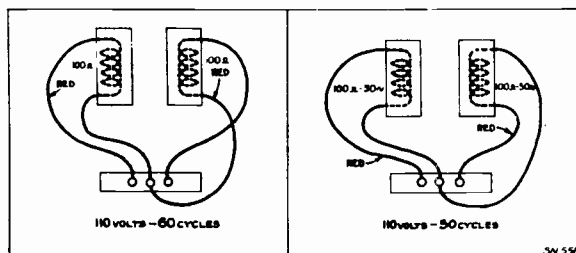
-Motor Board Adjustments



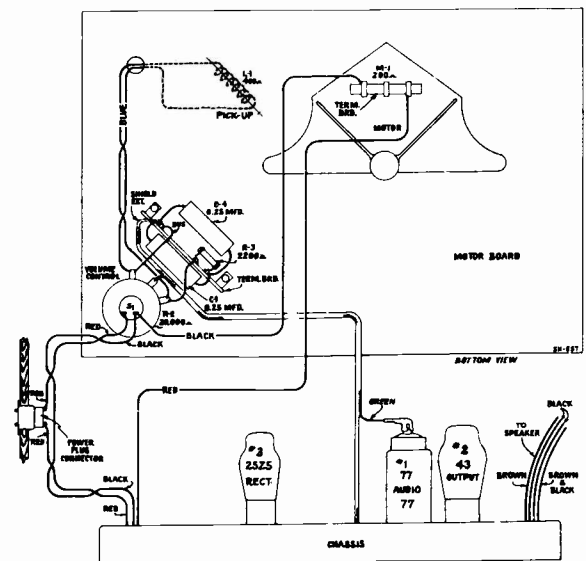
Schematic Circuit Diagram



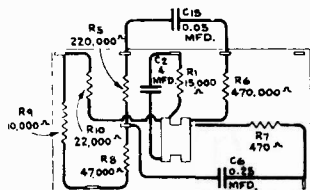
-Loudspeaker Wiring



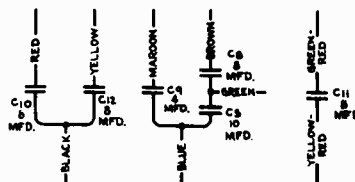
-Motor Wiring



-Assembly Wiring



RES. BOARD



COND. PACK

REPLACEMENT PARTS

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

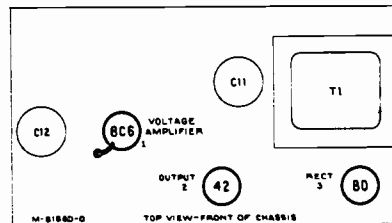
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR BOARD ASSEMBLIES					
4840	Capacitor—0.25 Mfd. (C1, C4)		11231	Bolt—Yoke and core assembly bolt and nut	
11865	Holder—Needle holder		8060	Bracket—Output transformer mounting bracket	
3961	Knob—Volume control knob—Package of 5		11257	Clamp—Cone center suspension clamping nut and screw assembly—Package of 5	
11863	Resistor—2200 ohms—carbon type—1/10 watt—(R3)—Package of 5		11983	Coil—Field coil (L3)	
11866	Rest—Pickup rubber rest		11233	Coil—Neutralizing coil (L5)	
11869	Screw—Motor mounting screw assembly—comprising one screw, three metal washers, two rubber washers, one lock-washer, one nut, and two spacers—Package of 3		11235	Cone—Reproducer cone—(L4)—Package of 5	
11864	Screw—Motor board mounting screw and finishing washer—Package of 10		5040	Connector—4-contact female connector for reproducer cable	
11862	Socket—Power cord socket		5039	Connector—4-contact male connector for reproducer	
11861	Volume control—R2, S1		9637	Reproducer—Complete	
			11828	Transformer—Output transformer (T1)	
			11886	Washer—Spring washer—used to hold field coil securely—Package of 5	
AMPLIFIER ASSEMBLIES					
4244	Cap—Grid contact cap—Package of 5		PICKUP ASSEMBLIES		
4858	Capacitor—.01 Mfd. (C7)		11731	Armature—Pickup armature—complete with spacer cushions	
4836	Capacitor—.05 Mfd. (C3, C13, C15)		11732	Coil—Pickup coil (L1)	
5170	Capacitor—0.25 Mfd. (C6)		4543	Damper—Pickup damper block complete with damper plate and screw	
3796	Capacitor—4 Mfd. (C2)		11872	Pickup and arm assembly—Complete	
11867	Capacitor pack—Comprising four sections of 8 Mfd., one section of 4 Mfd., and one section of 10 Mfd. (C5, C8, C9, C10, C11, C12)		5091	Spacer cushions—Pickup armature spacer cushions—Package of 10	
11871	Lead—Shielded lead—less grid contact cap—connects volume control to chassis		3811	Screw—Needle holding screw—Package of 10	
6505	Reactor—Filter reactor (L2)		MOTOR ASSEMBLIES		
11870	Resistor—220 ohms—line resistor (R4)		10194	Ball—Steel ball bearing—Package of 20	
11868	Resistor—470 ohms—carbon type—1 watt (R7)		11740	Base—Motor base and bearing assembly	
2731	Resistor—10,000 ohms—carbon type—1 watt—(R9)—Package of 5		11734	Coil—Stator assembly—comprising coil and laminations—105-125 volts—50-cycle operation	
11332	Resistor—22,000 ohms—carbon type—1 watt—(R10)—Package of 5		11733	Coil—Stator assembly—comprising coil and laminations—105-125 volts—60-cycle operation	
3998	Resistor—15,000 ohms—carbon type—1/4 watt—(R1)—Package of 5		11748	Damper—Motor damper assembly—comprising one damper, one damper plate, one screw, two rubber washers and one "C" washer	
11646	Resistor—47,000 ohms—carbon type—1/4 watt—(R8)—Package of 5		12083	Motor—Complete—110 volts—50 cycles	
5158	Resistor—220,000 ohms—carbon type—1/4 watt—(R5)—Package of 5		12082	Motor—Complete—110 volts—60 cycles, M1	
11172	Resistor—470,000 ohms—carbon type—1/4 watt—(R6)—Package of 5		12048	Turntable—Turntable assembly complete with rotor laminations—60-cycle operation	
3682	Shield—First audio Radiotron shield		12049	Turntable—Turntable assembly complete with rotor laminations—50-cycle operation	
4785	Socket—6-contact Radiotron socket		4083	Washer—Leather washer—Package of 10	
			4084	Washer—Metal washer—Package of 10	
SPEAKER ASSEMBLIES					
11232	Board—Terminal board assembly—complete with lead wire clips				

MODELS R-96 and R-97

Three-Tube, A-C, Electric Phonographs



Model R-96



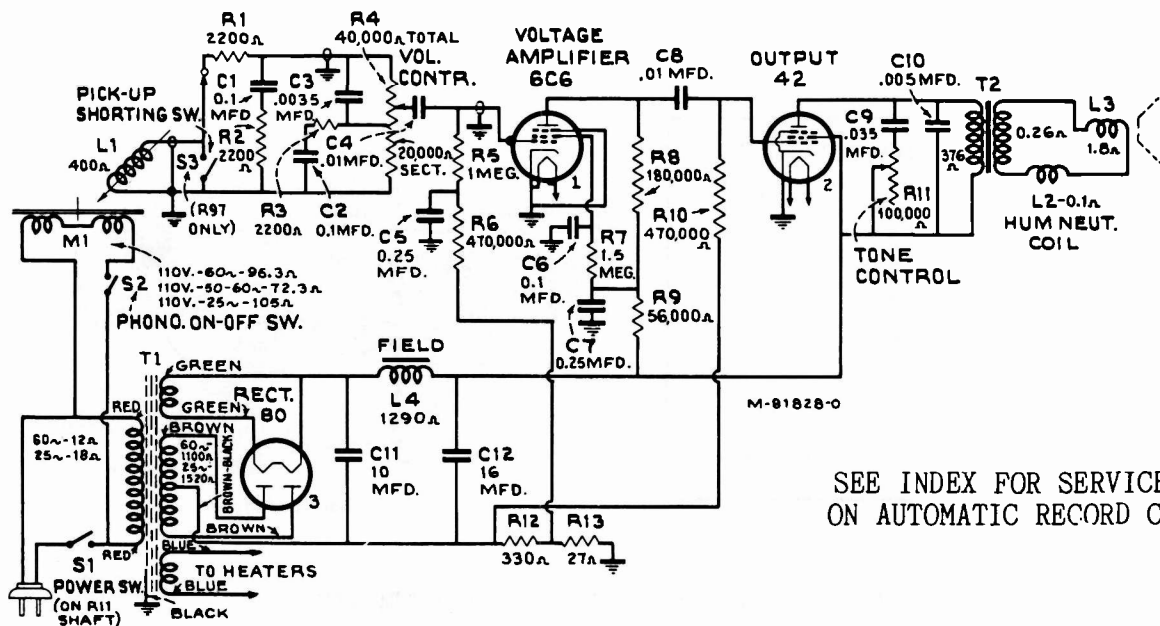
-Radiotron Locations



Model R-97

Electrical Specifications

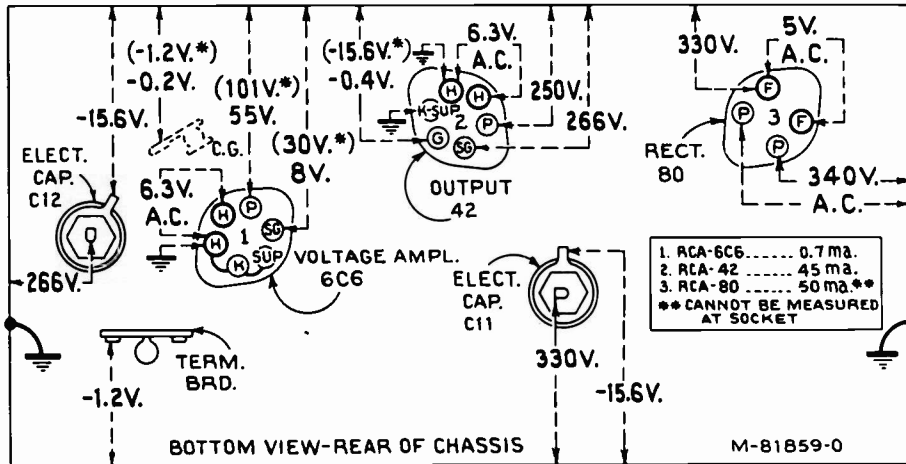
RADIOTRON COMPLEMENT		(2) RCA-42..... Power Output
(1) RCA-6C6..... Audio Voltage Amplifier	(3) RCA-80..... Rectifier	
POWER SUPPLY RATINGS		
Rating A-6	105-125 volts, 60 cycles, 90 watts	
Rating A	105-125 volts, 50-60 cycles, 90 watts	
Rating B-2	105-125 volts, 25 cycles, 90 watts	
Rating C-6	105-125/200-250 volts, 60 cycles, 90 watts	
Rating C-5	105-125/200-250 volts, 50-60 cycles, 90 watts	
POWER OUTPUT		LOUDSPEAKER
Undistorted.....	2.5 watts	Type..... 8-inch Electrodynamic
Maximum.....	4.5 watts	Impedance (V.C.)..... 2.2 ohms at 400 cycles
MOTOR-BOARD		R-96 R-97
Type	Manual	Automatic-Manual
Turntable Speed (adjustable).....	78 r.p.m.....	78 r.p.m.
Pickup	High-impedance Magnetic	
Pickup Impedance	1,400 ohms at 1,000 cycles	



SEE INDEX FOR SERVICE DATA
ON AUTOMATIC RECORD CHANGER

-Schematic Circuit Diagram

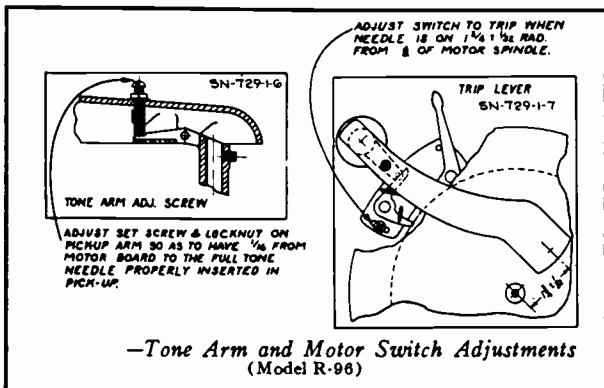
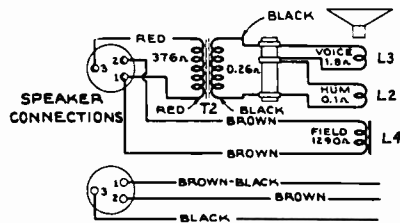
R96 & R97



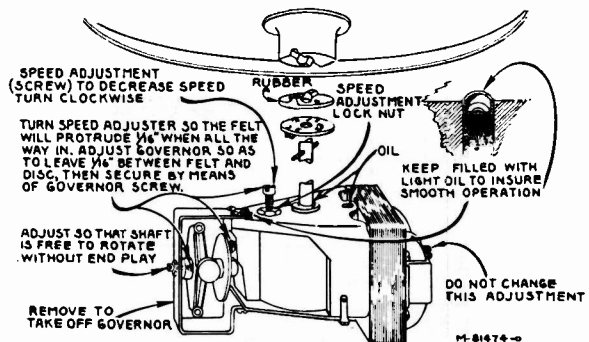
-Radiotron Socket Voltages

Measured at 115 volts, 60-cycle supply—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.*



-Tone Arm and Motor Switch Adjustments (Model R-96)



-Details of Motor

REFER TO INDEX FOR RECORD CHANGER ADJUSTMENTS

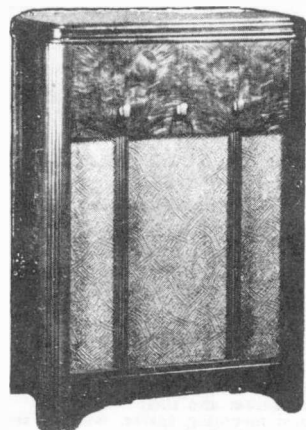
REPLACEMENT PARTS

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

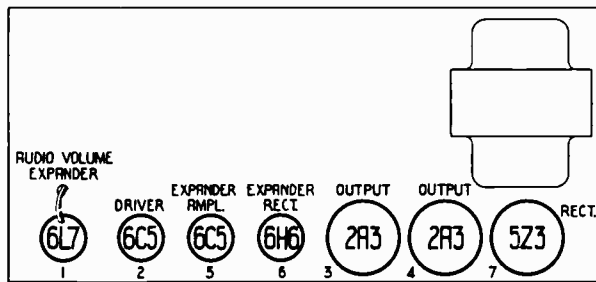
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
AMPLIFIER ASSEMBLIES		MOTORBOARD ASSEMBLIES (Model R-97)	
12118	Cap—Grid contact cap	14208	Bracket—Bumper bracket and bumper complete
5005	Capacitor—.0035 Mfd. (C3)	14209	Bumper—Rubber bumper
4838	Capacitor—.005 Mfd. (C10)	14830	Cable—Shielded cable 13" long complete with single contact male connector—connects pickup shorting switch to input transformer or compensator
13138	Capacitor—.01 Mfd. (C4, C8)	14212	Escutcheon—Manual index lever and switch escutcheon
12670	Capacitor—.035 Mfd. (C9)	14203	Post—Record post—located on front left hand corner of motorboard
4839	Capacitor—0.1 Mfd. (C1, C2, C6)	14210	Rest—Pickup arm rest
5170	Capacitor—0.25 Mfd. (C7)	14207	Roller—Pickup lift cable roller and bracket
12484	Capacitor—0.25 Mfd. (C5)	14211	Socket—Motorboard socket and shell
11203	Capacitor—10 Mfd. (C11)	14205	Support—Pickup arm mounting spacer, washers and nut
5212	Capacitor—16 Mfd. (C12)	14206	Switch—Motor toggle switch (S2)
14783	Connector—2-contact female connector for motor power cable	14829	Switch—Pickup shorting switch (S3)
5119	Connector—3-contact female connector for reproducer cable	14204	Turntable—Complete
11955	Resistor—27 Ohms—Carbon type, $\frac{1}{2}$ watt (R13)	14213	Washer—Pickup arm stop washer and spacing washer
11670	Resistor—330 Ohms—Carbon type, $\frac{1}{2}$ watt (R12)	MOTOR ASSEMBLIES (Model R-97)	
5159	Resistor—2,200 Ohms—Carbon type, $\frac{1}{2}$ watt (R1, R2, R3)	14215	Governor—Governor complete with motor Stock Nos. 9799, 14465 and 14466
5029	Resistor—56,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R9)	14466	Motor—105-125 volts, 25 cycle (M1)
14943	Resistor—180,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R8)	14465	Motor—105-125 volts, 50-60 cycle (M1)
11172	Resistor—470,000 Ohms—Carbon type, $\frac{1}{2}$ watt (R6, R10)	9799	Motor—105-125 volts, 60 cycle (M1)
13730	Resistor—1 Meg.—Carbon type, $\frac{1}{2}$ watt (R5)	14214	Screw—Motor mounting screw and spacer assembly
4241	Resistor—1.5 Meg.—Carbon type, $\frac{1}{2}$ watt (R7)	PICKUP AND ARM ASSEMBLIES (For Model R-96 only)	
4233	Shield—6C6 Radiotron shield	14291	Armature—Pickup armature
14278	Socket—Single contact female pickup cable socket	11732	Coil—Pickup coil (L1)
4794	Socket—4-contact 80 Radiotron socket	14292	Damper—Pickup damper assembly—comprising one damper, one clamp and one screw
4786	Socket—6-contact 6C6 or 42 Radiotron socket	14931	Pickup and Arm Complete
14797	Tone Control and power switch (R11, S1)	3811	Screw—Needle holding screw
14796	Transformer—Power transformer—105-125 volts, 50-60 cycles (T1)	PICKUP AND ARM ASSEMBLIES (For Model R-97 only)	
14843	Transformer—Power transformer—105-125 volts, 25-60 cycles (T1) (Model R97 only)	14291	Armature—Pickup armature assembly
14798	Volume Control (R4)	4084	Cable—Pickup lift cable
MOTORBOARD ASSEMBLIES (Model R-96)		11732	Coil—Pickup coil (L1)
14803	Brake—Turntable brake and motor switch	14292	Damper—Pickup damper block complete with clamp and screw
3261	Rest—Pickup rest	14290	Pickup and Arm Complete
30248	Screw—Motor mounting screw, washer, rubber washers, clamp plate and spacer assembly	3811	Screw—Needle holding screw
30100	Springs—Tension springs for brake Stock No. 14803 comprising 1 long and 1 short spring	4387	Screw—No. 8-32 $\frac{1}{2}$ " headless set screw for pickup arm pivot shaft
14804	Switch—Motor switch (S2)—located on turntable brake Stock No. 14803	REPRODUCER ASSEMBLIES (RL-63-F1)	
MOTOR ASSEMBLIES (Model R-96)		14356	Board—3-contact reproducer terminal board
11703	Governor—Complete motor governor, governor shaft and gear assembly	13866	Cap—Cone center dust cap
14800	Motor—105-125 volts, 60 cycle (M1)	12012	Coil—Field coil (L4)
OPERATING MECHANISM ASSEMBLIES (Model R-97)		11489	Coil—Hum coil (L2)
14199	Bushing—Record separator rotating shaft bushing	12842	Cone—Reproducer cone and dust cap (L3)
14183	Cam—Cam and gear assembly	5118	Plug—3-contact male plug for reproducer
6808	Clutch—Trip lever friction clutch	14380	Reproducer—Reproducer complete
14197	Finger—Friction finger assembly	14358	Screw—Screw, washer and lockwasher to hold core in yoke
14186	Hub—Rotating hub and record separator complete with set screw	14355	Transformer—Output transformer (T2)
14189	Lever—Locating lever assembly	14357	Washer—Spring washer to hold field coil
14201	Lever—Manual index lever assembly	MISCELLANEOUS ASSEMBLIES	
14184	Lever—Main lever and link assembly	4391	Box—Needle box for Model R-97 only
14194	Lever—Pickup arm lever complete with set screws	11762	Box—Needle box for Model R-96 only
14193	Lever—Pickup lift cable lever	11704	Damper—Turntable damper and damper plate
14198	Lever—Reject lever assembly	12873	Knob—Volume control or tone control and power switch knob
14185	Lever—Trip lever and friction clutch assembly	14287	Screw—Amplifier chassis mounting screw and washer
14196	Pawl—Trip pawl assembly	30249	Screw—Motorboard mounting screw, spring, spacer, washer, lockwasher, and rubber washer assembly for Model R-96 only
4563	Screw—Cable lever screw and two locknuts	30250	Screw—Motorboard mounting screw, spring, washers and rubber washer assembly for Model R-97 only
4059	Screw—Trip lever clutch tension adjustment screw	4119	Screw—No. 8-32 headless set screw for knob Stock No. 12873
14200	Screw—No. 8-32 special hex head screw and lockwasher for record separator shaft mounting	14801	Turntable—Complete for Model R-96 only
14188	Screw—No. 10-32x $\frac{1}{8}$ fillister-head cone-pointed set screw for rotating hub		
14195	Screw—No. 10-32x $\frac{1}{8}$ fillister-head cone-pointed set screw for pickup arm lever		
14187	Shaft—Rotating shaft for record separator		
3676	Spring—Cam pawl tension spring		
3668	Spring—Lift cable tension spring		
14190	Spring—Locating lever pawl tension spring		
14191	Spring—Locating lever or reject lever tension spring		
14192	Spring—Main lever tension spring		

MODEL R-99

High-Fidelity Electrola



MODEL R-99



-Radiotron Locations

Electrical Specifications

RADIOTRON COMPLEMENT

- (1) RCA-6L7.....Audio Volume Expander
- (2) RCA-6C5.....Audio Driver
- (3) RCA-2A3.....Power Output

- (4) RCA-2A3.....Power Output
- (5) RCA-6C5.....Expander Amplifier
- (6) RCA-6H6.....Expander Rectifier
- (7) RCA-5Z3.....Full-Wave Rectifier

Audio Frequency Range.....Approximately 30 to 8,000 cycles

POWER OUTPUT

Undistorted.....12 watts
Maximum.....15 watts

LOUDSPEAKER

Type.....Super 12-inch Electrodynamic
Impedance (V.C.).....11¼ ohms at 400 cycles

PICKUP

Type.....Low Impedance Magnetic
Impedance.....100 ohms at 1,000 cycles

PHONOGRAPH (MANUAL OPERATED)

Motor.....Synchronous Type
Speed (at rated frequency).....78 r.p.m.

POWER-SUPPLY RATINGS

Voltage.....105-125 volts
Frequency (two types).....50 or 60 cycles
Power Consumption.....180 watts

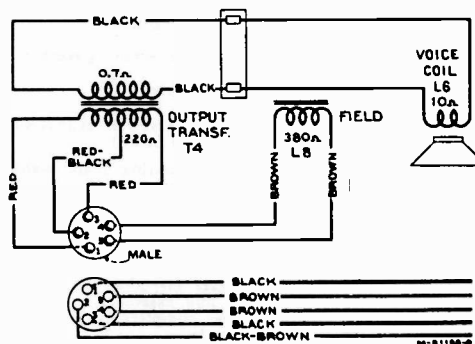
MODEL R-99 (Second Production)

The RCA Victor Model R-99 (second production) is identical to the original model except for slight modifications. These modifications are as follows: new design of input transformer T2, compensation pack, and volume control R4; RCA-6L7 audio volume expander tube grid resistor R5 changed in value from 330,000-ohm to 1 meg.; a 56,000-ohm resistor R24 is used in place of the former plate reactor L5; new design of interstage transformer T3; capacitors C12 and C13 have changed in value from 270 mmfd. to 100 mmfd.; change in power cable; and a slight re-arrangement of parts. Model R-99 (second production) may be identified by reference to the assembly wiring diagram figure where it may be seen that the input transformer T2 and the compensation pack are built in one unit ("input pack") with cable connections to the pickup and to the volume control. In the original model the input transformer and the compensation pack were constructed as separate units with a cable connection between them. Model R-99 (second production) amplifier chassis may be identified by the 56,000-ohm resistor R24 which is connected between the RCA-6C5 audio-driver tube plate terminal and an adjacent terminal board.

Service data for Model R-99 (first production) is directly applicable to the instrument except for the data contained herein.

Cathode Current Reading—RCA-6C5 driver tube—2.8 ma.

Voltage Measurements (Referring to figure Service Data for Model R-99 first production)—Voltage values from diode plate "P₂" and the diode cathode "C₂" of the RCA-6H6 Diode tube to chassis should be (7.3V.*), 0.35V; from plate "P" and from cathode "C" of the RCA-6C5 driver tube to chassis should be 145V. and 4.8V. respectively.



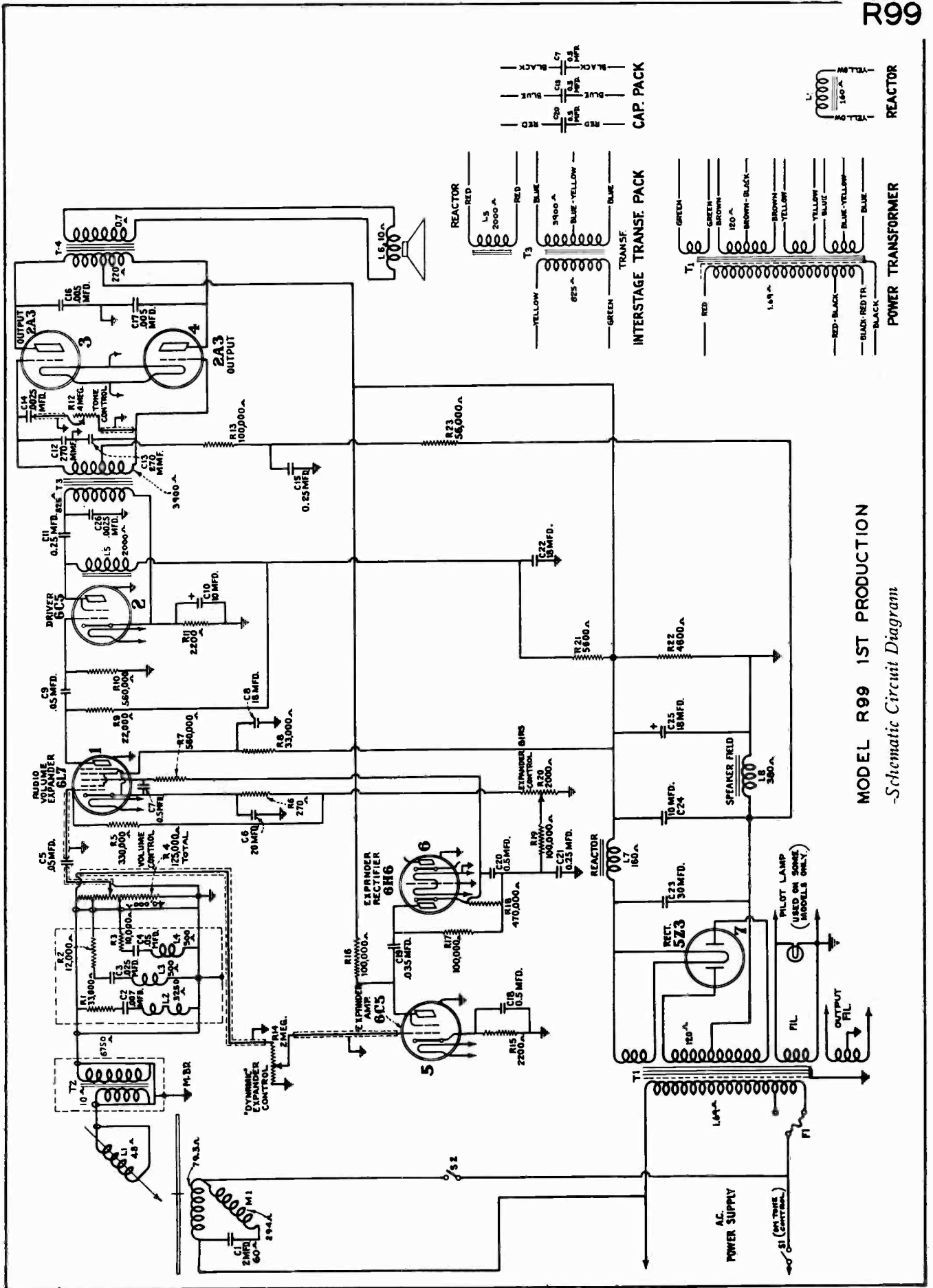
-Loudspeaker Wiring

Radiotron Cathode Current Readings

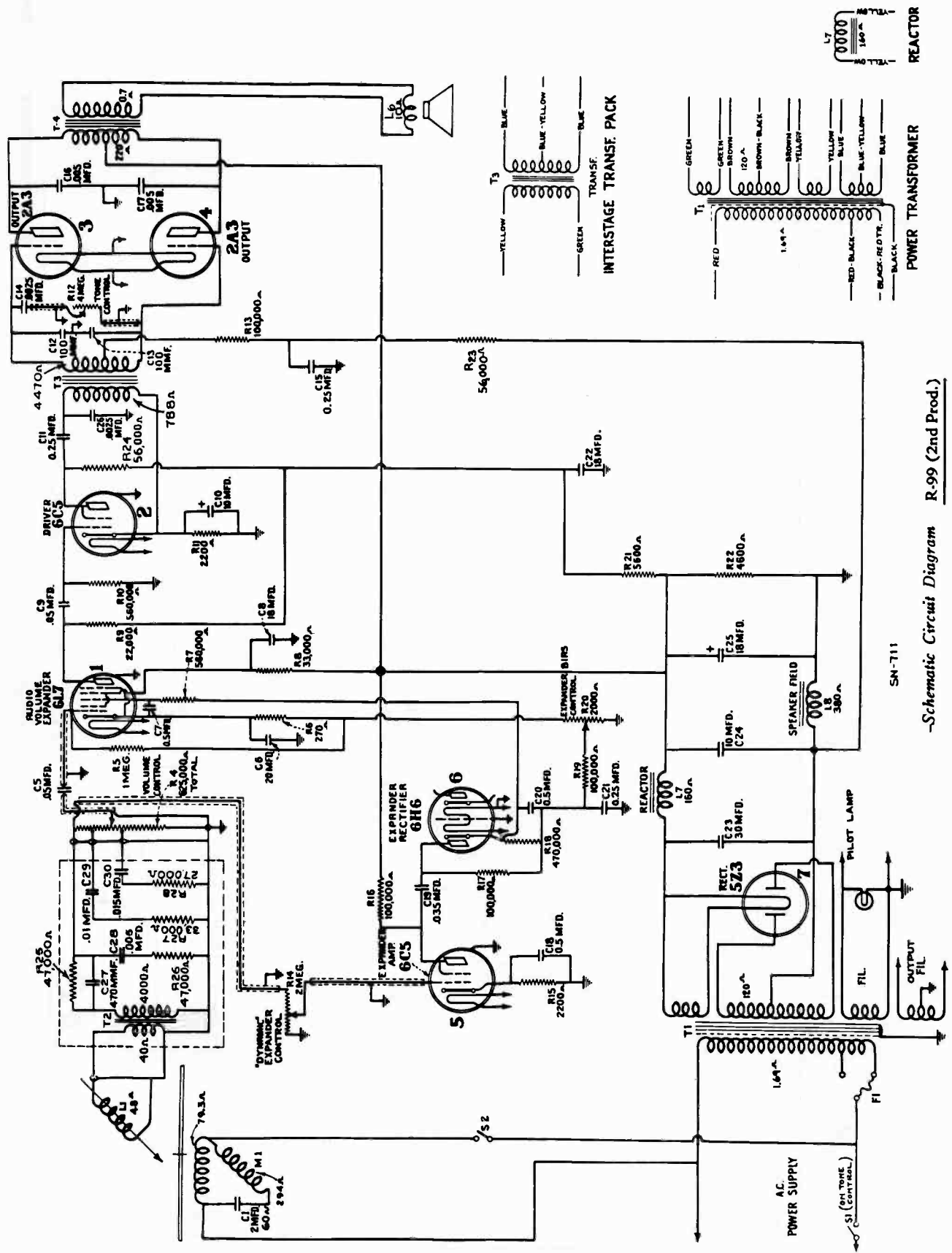
Measured with Milliammeter Connected at Tube Socket Cathode Terminal under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6L7—Expander..... 7.6 ma.
- (2) RCA-6C5—Audio Driver..... 4.4 ma.
- (3) RCA-2A3—Power Output..... 41 ma.
- (4) RCA-2A3—Power Output..... 41 ma.
- (5) RCA-6C5—Expander Amplifier.. 1.9 ma.
- (6) RCA-6H6—Expander Rectifier... 0 ma.
- (7) RCA-5Z3—Rectifier..... 165 ma.*

(* Cannot be measured at socket)

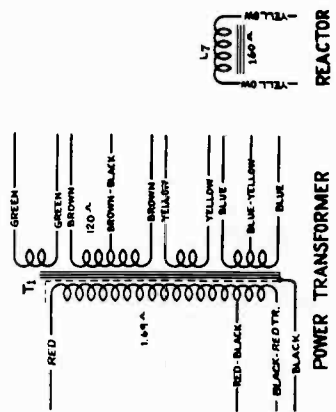
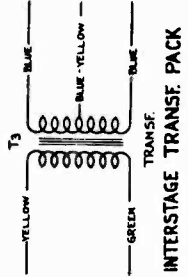


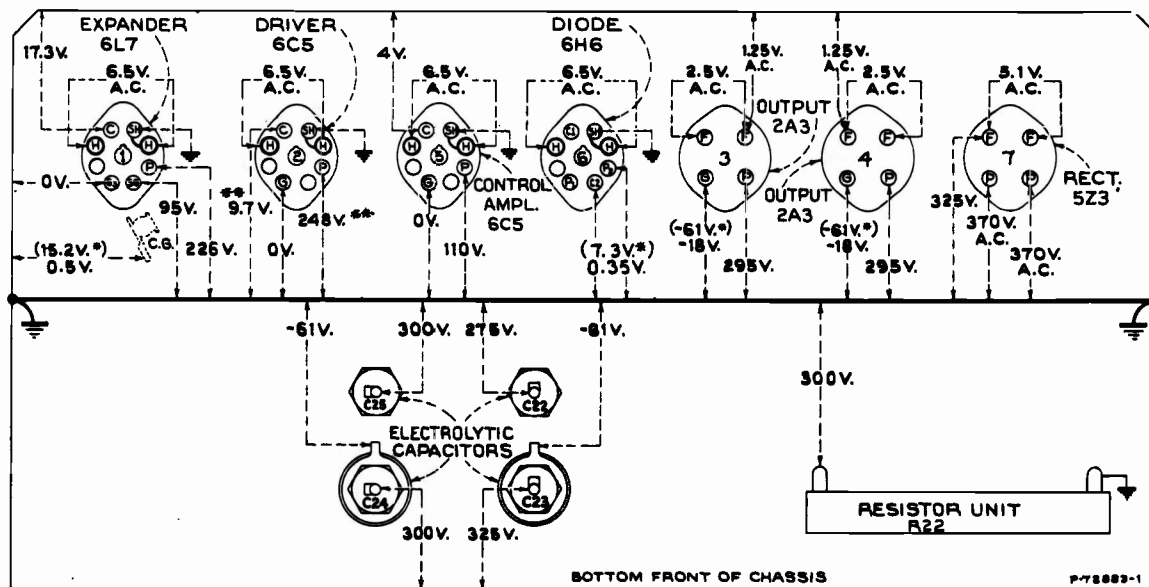
MODEL R99 1ST PRODUCTION
-Schematic Circuit Diagram



-Schematic Circuit Diagram R-99 (2nd Prod.)

SN-111





R99 1ST PRODUCTION

—Radiotron Socket Voltages

Measured at 120 volts on 120-volt tap, rated frequency—Volume control minimum—
Expander "Dynamic" control minimum—Dynamic amplifier adjusted as per text—No signal

Note: Two voltage values are shown for some readings. The higher value shown in parenthesis with asterisk () indicates operating conditions without voltmeter loading.*

R-99 (2nd Prod.)

Voltage	Plate to chassis.**	145 volts
6C5 Driver	Cathode to chassis.**	4.8 volts

Dynamic Amplifier Adjustments

It is essential that the correct voltages and currents exist at the RCA-6L7 audio expander in order that the expanding function may take place in the proper manner. A screw driver adjustment is accordingly provided to regulate the RCA-6L7 control grid No. 3 to the correct operating value. Two methods of adjustment are applicable. Either method requires a normal voltage of 300-volts across the filter output (resistor R22). The one to be preferred (a) requires the use of the RCA Stock No. 9633 Beat Frequency Oscillator or the equivalent, a 100-ohm resistor, a 200-ohm resistor, and a 1,000-ohm-per-volt a-c voltmeter (rectifier-type) having a "low" range of 1.0 volt and a "high" range of 250 volts or greater. The less accurate method (b) requires the use of a RCA Stock No. 12353 Split Plate Adapter, and a suitable d-c milliammeter. **CAUTION: Before using either method, be sure that power-supply fuse is in proper position for the line voltage.**

(a) Preferred Method.—Turn power switch (left front) off. Connect the 200-ohm and the 100-ohm resistors in series between the beat-frequency oscillator terminals (upper "250" and "CT") with the 100-ohm resistor connected to "CT". Calibrate the beat-frequency oscillator, adjust it to 1,000 cycles and reduce its output. Connect the 1,000-ohm-per-volt a-c voltmeter (1-volt range) to the beat-frequency oscillator terminals (upper "250" and "CT"). Remove the "M" plug from the "F" receptacle on the shielded cable running between the "input pack" and the "volume control" (see figure 1). Connect beat-frequency oscillator terminal "CT" to the shield on the "M" plug. Connect the junction of the 200-ohm and the 100-ohm resistors to the small pin (marked blue on diagram) on the "M" plug.

Adjust beat-frequency oscillator output until the voltmeter reads exactly 1.0 volt. Remove the voltmeter leads from the beat-frequency oscillator terminals without disturbing any of the oscillator adjustments. Place the voltmeter to its 250-volt or greater range and connect it between the plate prongs of the two RCA-2A3 power-output tubes. Connections to the tube prongs may be made by stripping

approximately $\frac{1}{2}$ inch of insulation from the ends of two short leads of rubber-covered wire, wrapping one bare end around each plate prong (being careful not to allow the bare ends to short on the chassis when the tubes are placed in their sockets), and connecting the voltmeter to these leads. **CAUTION: Do not touch these plate connections after the power is turned on since the potential at these points is rather high and carelessness might result in a serious shock.**

Set the expander "Dynamic" control (center front) to its extreme counter-clockwise position. Set the phonograph volume control (right front) to its extreme clockwise position. Turn on power switch (left front) and rotate this control to its extreme clockwise position, allowing it to remain in this position for all adjustments. Allow a few minutes for the instrument to become stabilized. Adjust the expander bias control R20, on rear apron of amplifier (see figure 1), until the voltmeter reads 195 volts. Turn phonograph volume control to extreme counter-clockwise position. Transfer lead from the junction of the 200-ohm and the 100-ohm resistors to the beat-frequency oscillator (upper "250") terminal without disturbing any of the oscillator adjustments. Adjust phonograph volume control (right front) until the voltmeter reads 50 volts. Turn the expander "Dynamic" control (center front) to its extreme clockwise position allowing maximum expansion to take place. The voltmeter should now read not less than 150 volts if the expander circuit is operating correctly. Failure to do so indicates a defect in the system and the usual service procedure should be followed.

(b) Alternate Method.—Turn power switch (left front) off. Place RCA Stock No. 12353 Split Plate Adapter under the RCA-6L7. Connect a suitable d-c milliammeter to the adapter. Turn both the phonograph volume control (right front) and the expander "Dynamic" control (center front) to their extreme counter-clockwise positions. Turn on power switch (left front) and allow a few minutes for the instrument to become stabilized. Adjust expander bias control R20, on rear apron of amplifier (see figure 1), to give 1.0 milliamperes of plate current with no signal input to the dynamic amplifier.

REPLACEMENT PARTS—(Continued)

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

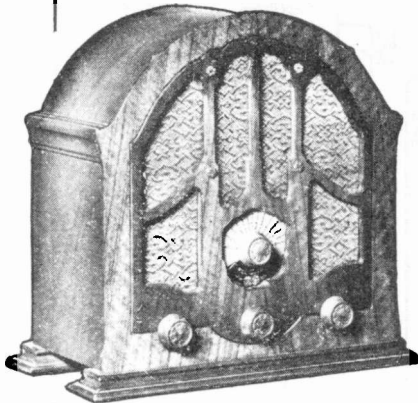
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
5212	Capacitor—18 Mfd. (C8, C22)		
11496	Capacitor—18 Mfd. (C25)		
12470	Capacitor—20 Mfd. (C8)		
12467	Capacitor—30 Mfd. (C23)		
12720	Capacitor—100 Mmfd. (C12, C13)		
11272	Clamp—Volume control or speaker cable clamp		
5240	Cover—Fuse cover		
12468	Expander—Control (R20)		
10907	Fuse—3-ampere fuse (F1)		
5239	Mounting—Fuse mounting		
12471	Plate—6L7 socket mounting plate assembly, less socket		
12466	Reactor—Filter reactor (L7)		
13454	Resistor—270 ohms, insulated, ½ watt (R6)		
13716	Resistor—2,200 ohms, insulated, ½ watt (R11, R15)		
12469	Resistor—4,600 ohms, wire wound (R22)		
11298	Resistor—5,600 ohms, carbon type, 1 watt (R21)		
11332	Resistor—22,000 ohms, carbon type, 1 watt (R9)		
12487	Resistor—33,000 ohms, carbon type, 2 watt (R8)		
12286	Resistor—56,000 ohms, insulated, ½ watt (R23)		
12875	Resistor—56,000 ohms, carbon type, 1 watt (R24)		
14560	Resistor—100,000 ohms, insulated, ½ watt (R13, R16, R17, R19)		
12285	Resistor—470,000 ohms, insulated, ½ watt (R18)		
12486	Resistor—560,000 ohms, insulated, ½ watt (R7, R10)		
12200	Resistor—1 Meg., insulated, ½ watt (R5)		
4794	Socket—4-contact 5Z3 or 2A3 Radiotron socket		
11197	Socket—6-contact 6C5 Radiotron socket		
11198	Socket—7-contact 6H6 or 6L7 Radiotron socket		
13964	Transformer—Interstage transformer (T3)		
12463	Transformer—Power transformer, 110-120 volt, 50-60 cycle (T1)		
MISCELLANEOUS CABLES AND PLUGS			
12547	Cable—2-conductor shielded pickup cable, 25 inches long, complete less female connector, Stock No. 11488		
13992	Cable—Power cable, approximately 23½ inches long, complete with two female connectors		
12489	Cable—Power cable, approximately 30 inches long, complete with two female connectors		
12563	Cable—Shielded input cable, approximately 9 inches long, complete with 4-contact male connector		
12564	Cable—Shielded tone control cable, approximately 20½ inches long, with 4-contact male connector		
12490	Cable—Shielded tone control cable, approximately 14 inches long, complete with female connector		
12562	Cable—Shielded volume control cable, approximately 28 inches long, complete with 2 male connectors		
12491	Cable—Shielded volume control cable, approximately 17 inches long, complete with 2 female connectors		
12492	Cable—Speaker cable, approximately 40 inches long, complete with female connectors		
4674	Connector—2-contact male connector for volume control cable, input transformer cable, compensator cable, motor leads, tone control switch leads and indicator lamp cable (socket end)		
11488	Connector—2-contact female connector for pickup cable, Stock No. 12547, power cable Stock No. 13992, or indicator lamp cable (chassis end)		
4577	Connector—2-contact male connector for motorboard power leads		
12565	Connector—4-contact male tone control and input cable connector		
12567	Connector—5-contact male connector plug for reproducer housing		
4573	Connector—2-contact female connector with oblong openings for power cable, Stock No. 13992		
12493	Connector—Speaker cable 5-contact female connector		
12494	Connector—Tone control or compensator cable 4-contact female connector		
PICKUP AND ARM ASSEMBLIES			
12542	Arm—Pickup arm, complete less pickup unit		
11548	Back—Pickup back		
10941	Ball—Pickup arm pivot shaft bearing		
12543	Bracket—Pickup arm spring adjusting bracket and screw		
12541	Coil—Pickup coil (L1)		
3521	Cover—Pickup back cover with mounting screws		
11708	Cover—Pickup front cover		
12850	Damper—Comprising one upper damper and bushing assembly, one lower bushing and one lower bearing		
3390	Escutcheon—Pickup arm escutcheon and rivets		
14115	Mechanism—Pickup mechanism comprising one armature and spring assembly, one armature clamp and one armature damper		
12538	Pickup—Pickup unit, complete		
12546	Plug—Pickup arm pivot shaft plug		
12545	Rod—Pickup arm trip rod and nut		
11549	Screw—Pickup front cover screw		
12539	Screw—Pickup needle screw		
3387	Screw—Screw, nut and washer for mounting pickup to arm		
12544	Spring—Pickup arm adjusting spring		
MOTORBOARD ASSEMBLIES			
12051	Capacitor—2 Mfd. motor capacitor, complete with cable and 2-contact male connector (C1)		
6122	Clamp—Brake switch cable clamp		
			MOTOR ASSEMBLIES
		9663	Motor—105-125 volts, 50 cycles (M1)
		9892	Motor—105-125 volts, 60 cycles (M1)
		12551	Suspension Spring—Motor mounting spring, washer and stud assembly—comprising 6 springs, 6 cup washers, 3 spring washers and 3 studs
		AUTOMATIC SWITCH ASSEMBLIES	
		3944	Cover—Automatic switch cover and screw
		10184	Plate—Automatic brake trip latch plate with mounting screws
		12550	Springs—Automatic brake springs
		12549	Switch—Automatic brake and switch, complete
		3322	Switch—Switch only for automatic brake (S2)
		REPRODUCER ASSEMBLIES	
		8059	Board—Reproducer terminal board
		8060	Bracket—Output transformer mounting bracket
		8058	Clamp—Cone rim clamp
		12566	Coil—Field coil, magnet and cone housing (L8)
		12474	Cone—Reproducer cone (L6)
		12569	Diffuser—Reproducer sound diffuser
		9694	Reproducer—Reproducer, complete
		12568	Transformer—Output transformer (T4)
		MISCELLANEOUS ASSEMBLIES	
		12353	Adapter
		12557	Bolt—Motorboard suspension bolt and spring assembly, consisting of 1 bolt, 1 C washer, 2 cup washers, 1 bottom spring, 1 top spring, 1 lockwasher and 1 cap nut
		5211	Bolt—Reproducer mounting bolt assembly—Package of 2
		4594	Box—Used needle box
		13103	Cap—Indicator lamp cap—Package of 5
		12561	Cap—Turntable spindle cap
		6122	Clamp—Volume control and pickup cables clamp—Package of 15
		4420	Clamp—Volume control cable clamp—Package of 10
		12560	Compensator Pack—with 2 shielded cables, 1 male and 1 female connector assembled (C2, C3, C4, L2, L3, L4, R1, R2, R3)
		11580	Cover—Indicator lamp cover
		11193	Cover—Reproducer cover
		12559	Cover—Turntable cover
		12552	Expander Control (R14)
		11347	Knob—Expander, tone and switch or volume control knob—Package of 5
		5226	Lamp—Indicator lamp—Package of 5
		3396	Receptacle—Needle receptacle
		11210	Screw—Amplifier mounting screw assembly—Package of 4
		11573	Socket—Indicator lamp socket
		11349	Spring—Retaining spring for knob, Stock No. 11347—Package of 5
		12553	Tone control and switch (R12, S1)
		12555	Transformer—Input transformer, complete with 2 shielded cables, 1 male and 1 female connector assembled (T2)
		12558	Turntable—Complete
		12554	Volume Control (R4)
		3430	Box—Used needle box
		14027	Transformer—Input transformer pack, complete (T2, C27, C28, C29, C30, R25, R26, R27, R28)
		13965	Turntable—Complete
		14028	Volume Control (R4)

Substitute parts - R-99 (2nd Prod.)

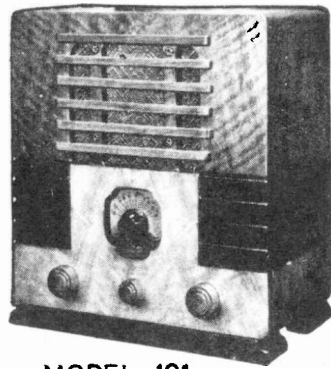
• USED WITH 1ST. PROD. ONLY

MODELS 100, 101, 103 & 301

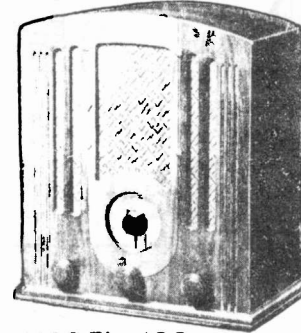
Four-Tube, Two-Band, A-C, Superheterodyne, Radio and Radio-Phonograph



MODEL 100



MODEL 101



MODEL 103



MODEL 301

ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts
Frequency Ratings.....	25-60 or 50-60 Cycles
Power Consumption.....	40 Watts at 115 Volts
Number and Type of Radiotrons.....	1 RCA-6A7, 1 RCA-6F7, 1 RCA-41, 1 RCA-1V—Total 4
Tuning Frequency Ranges.....	540-1500 K. C. and 1600-3500 K. C.
Intermediate Frequency.....	460 K. C.
Maximum Undistorted Output.....	1.9 Watts
Maximum Output.....	3 Watts
Line-up Frequencies.....	460 K. C., 600 K. C. and 1400 K. C.

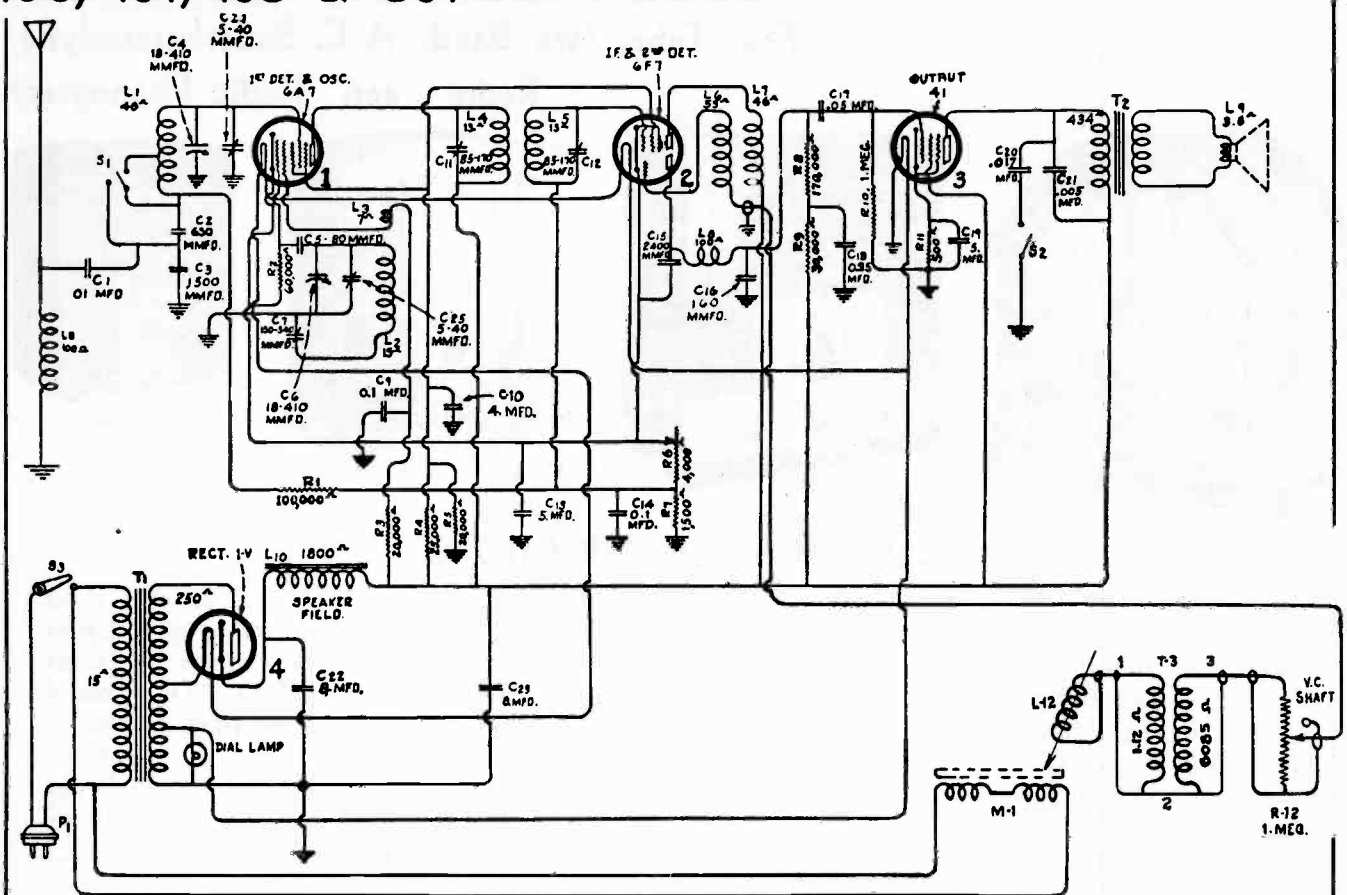
NOTE: Model 100 1st Production uses Radiotron Type 38 instead of type 41 in the output stage.
Model 301 Radio - Phonograph - power consumption 45 watts total.

REPLACEMENT PARTS MODEL 100 1ST. PROD.

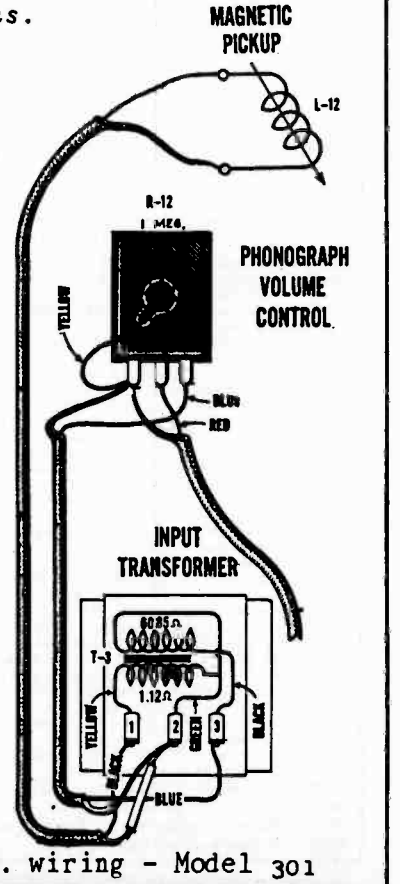
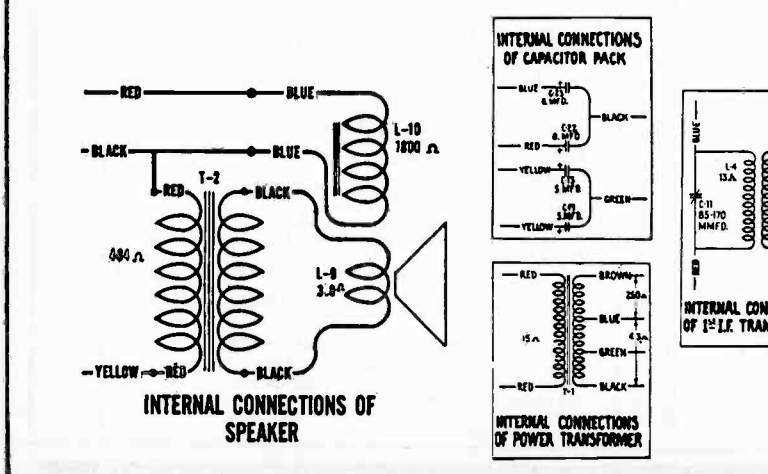
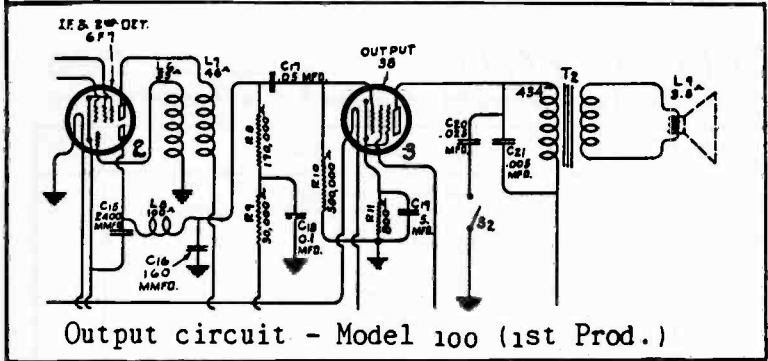
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

Stock No	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Contact cap—Package of 5.....		3887	Dial—Station selector dial—Package of 5.....	
3017	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt (R7)— Package of 5.....		3889	Resistor—25,000 ohms—Carbon type—3 watt (R4).....	
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt (R10)— Package of 5.....		3990	Capacitor—190 mmfd. (C8).....	
3077	Resistor—30,000 ohms—Carbon type— $\frac{1}{2}$ watt (R9)— Package of 5.....		3932	Capacitor—2,400 mmfd. (C15).....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R1)— Package of 5.....		3933	Capacitor—630 mmfd. (C2).....	
3459	Capacitor—80 mmfd. (C5).....		3942	Shield—Radiotron shield.....	
3572	Socket—7-contact Radiotron socket.....		4000	Capacitor—Adjustable capacitor (C7).....	
3584	Ring—Oscillator coil retaining ring—Package of 5.....		4018	Coil—Choke coil (L11).....	
3592	Knob—Tone control switch knob—Package of 5.....		4104	Shield—Radiotron shield—1st detector.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R2)— Package of 5.....		6114	Resistor—20,000 ohms—Carbon type—1 watt (R3, R5)— Package of 5.....	
3606	Capacitor—Comprising one 0.005 and one 0.025 mfd. capacitors (C20, C21).....		6660	Condenser—2-gang variable condenser.....	
3615	Knob—Volume control or range switch knob—Package of 5.....		6661	Capacitor pack—Comprising two 5.0 mfd. and two 8.0 mfd. capacitors (C13, C19, C22, C23).....	
3641	Capacitor—0.1 mfd. (C9).....		6662	Transformer—First intermediate frequency transformer (L4, L5, C11, C12).....	
3701	Capacitor—0.01 mfd. (C1).....		6663	Transformer—Second intermediate frequency transformer (L6, L7).....	
3702	Capacitor—0.25 mfd. (C10) (60 cycle).....		6664	Coil—Oscillator coil (L2, L3).....	
3713	Capacitor—0.05 mfd. (C17).....		6665	Shield—Oscillator coil shield and mounting bracket.....	
3749	Capacitor—0.1 mfd. (C18).....		6666	Coil—Antenna coil (I1, C1, R1).....	
3857	Coil—Detector choke coil (L8).....		6667	Volume control (R6, S3).....	
3858	Socket—Dial lamp socket and bracket.....		6668	Switch—Range switch (S1).....	
3859	Socket—4-contact Radiotron socket.....		6669	Switch—Tone control switch (S2).....	
3860	Socket—5-contact Radiotron socket.....		7487	Shield—Radiotron shield.....	
3862	Screw—Chassis mounting screw and washer—Package of 4.....		7641	Capacitor—4.0 mfd. (C10) (25 cycle).....	
3865	Capacitor—160 mmfd. (C16).....		9045	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
3868	Resistor—800 ohms—Carbon type— $\frac{1}{2}$ watt (R11)— Package of 5.....		9047	Transformer—Power transformer—105-125 volts—25-40 cycles.....	
3869	Resistor—170,000 ohms—Carbon type— $\frac{1}{2}$ watt (R8)— Package of 5.....		9048	Transformer—Power transformer—200-250 volts—50-60 cycles.....	
3873	Capacitor—1,500 mmfd. (C3).....		REPRODUCER ASSEMBLIES		
3877	Capacitor—0.1 mfd. (C14).....		6659	Transformer—Output transformer (T2).....	
3885	Knob—Station selector knob—Package of 5.....		8987	Cone—Reproducer cone (L9)—Package of 5.....	
3886	Reflector—Dial light reflector.....		9436	Reproducer complete.....	
			9437	Coil assembly—Comprising field coil, magnet and cone support (L10).....	

100, 101, 103 & 301



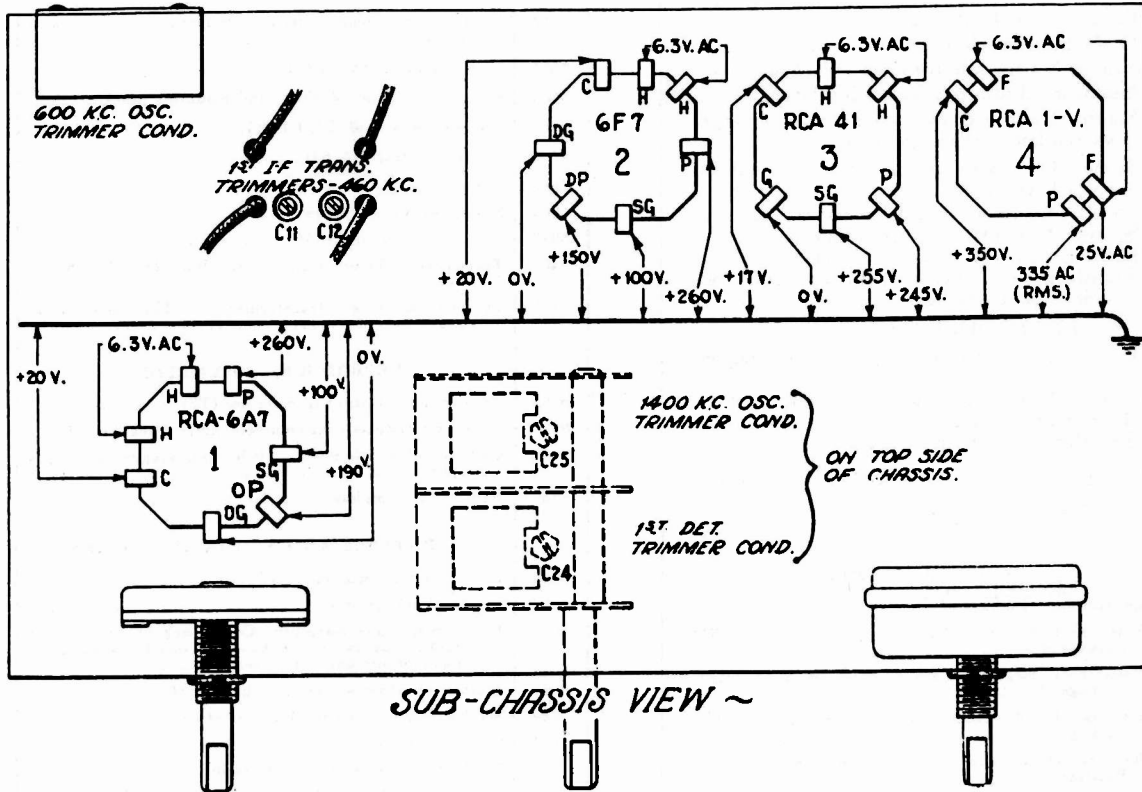
NOTE: Models without phonograph. -Schematic Circuit Diagram
 Low side of L6 (2nd I-F Trans.) connects direct to chassis.



Phono. wiring - Model 301



CHASSIS REAR VIEW



-Line-Up Capacitor Locations and Miscellaneous Voltages at Radiotron Sockets, 120-Volt, 60-Cycle Line—Volume Control at Maximum—No Signal

REPLACEMENT PARTS

MODEL 100 (2ND PROD.) AND 101 RECEIVER ASSEMBLIES

- 7641 Capacitor - 4 mfd (C10).
- 4104 Shield - Radiotron shield.
- 3862 Screw - Chassis mounting screw and washer - Package of 4.
- 9466 Transformer - Power trans. 200/250 volts 60/60 cycle.

REFER TO MODEL 301 RECEIVER ASSEMBLIES FOR ADDITIONAL PARTS.

MISCELLANEOUS PARTS

- 3592 Knob - Volume control or range switch knob. (Model 100)
- 3615 Knob - Tone control knob. (Model 100)
- 3885 Knob - Station selector knob. (Model 100)
- 4075 Knob - Station selector knob. (Model 101)
- 4085 Knob - Volume control or range switch knob. (Model 101)
- 4086 Knob - Tone control knob. (Model 101)

REPRODUCER ASSEMBLIES IDENTICAL TO MODEL 301

Alignment Procedure

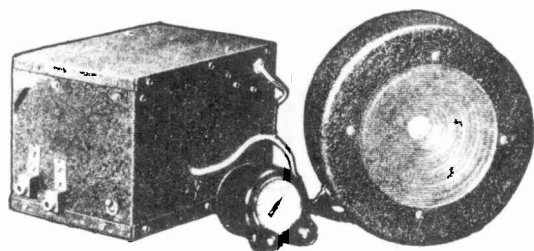
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "BC" Band	S&P of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "BC" Band	Osc. & Det. Trimmers on gang condenser
3		600 Kc	600 Kc "BC" Band	600 Kc Osc. Trimmer Rock Gang
4		Repeat Step 2		

REPLACEMENT PARTS—Continued

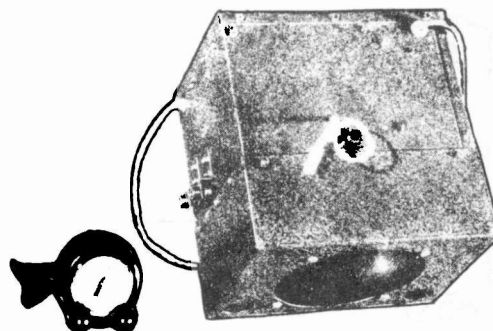
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES			RECEIVER ASSEMBLIES		
MODEL 103			6114	Resistor—20,000 ohms—Carbon type—1 watt (R3, R5)—	
4887	Capacitor—0.0025 mfd. (C15).....		6660	Condenser—2-gang variable condenser (C4, C6, C24, C25).....	
3701	Capacitor—0.01 mfd. (C1).....		6661	Capacitor pack—Comprising two 5.0 mfd. and two 8.0 mfd. capacitors (C13, C19, C22, C23).....	
4886	Capacitor—0.05 mfd. (C17).....		6662	Transformer—First intermediate frequency transformer (L4, L5, C11, C12).....	
4885	Capacitor—0.1 mfd. (C14).....		6663	Transformer—Second intermediate frequency transformer (L6, L7).....	
4835	Capacitor—0.1 mfd. (C9).....		6664	Coil—Oscillator coil (L2, L3).....	
4890	Dial—Station selector dial.....		6665	Shield—Oscillator coil shield and mounting bracket.....	
4085	Knob—Station selector knob—Package of 5.....		6666	Coil—Antenna coil (L1, C1, R1).....	
4884	Insulator—Radiotron Socket Insulator.....		6667	Volume control (R6, S3).....	
4132	Knob—Volume control, tone control or range switch knob—Package of 5.....		6668	Switch—Range switch (S1).....	
4087	Screw—Chassis mounting screw and washer—Package of 4.....		6669	Switch—Tone control switch (S2).....	
4784	Socket—4-contact Radiotron socket.....		6832	Capacitor—4.0 mfd. (C10).....	
4785	Socket—6-contact Radiotron socket.....		9464	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
4787	Socket—7-contact Radiotron socket.....		9465	Transformer—Power transformer—105-125 volts—25-40 cycles.....	
9466	Transformer—Power transformer—200-250 volts—50-60 cycles.....		REPRODUCER ASSEMBLIES		
REPRODUCER ASSEMBLIES			6788	Transformer—Output transformer (T2).....	
9548	Coil assembly—Comprising field coil, magnet and cone support (L10).....		8987	Cone—Reproducer cone complete (L9)—Package of 5.....	
9588	Cone—Reproducer cone (L9)—Package of 5.....		9437	Coil assembly—Comprising field coil, magnet and cone support (L10).....	
9547	Reproducer complete.....		9467	Reproducer complete.....	
4803	Transformer—Output transformer.....		TURNTABLE AND MOTOR ASSEMBLIES		
Refer to Model 301 receiver assemblies for additional parts.			3808	Board—Motor terminal board.....	
RECEIVER ASSEMBLIES			4052	Spring—Package of 5.....	
MODEL 301			3813	Motor suspension assembly—Comprising one screw, one metal bushing, two rubber bushings, one flat washer, one lockwasher and one nut—3 sets.....	
2747	Contact cap—Package of 5.....		4083	Washer—Leather washer—Package of 10.....	
3047	Resistor—1500 ohms—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 5.....		4084	Washer—Metal washer—Package of 10.....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....		7651	Coil—Stator coil—60 cycle operation.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1)—Package of 5.....		7652	Coil—Stator coil—50 cycle operation.....	
3077	Resistor—30,000 ohms—Carbon type— $\frac{1}{4}$ watt (R9)—Package of 5.....		7653	Lamination—Stator laminations—Assembled—60 cycle operation—110 or 220 volts.....	
3459	Capacitor—80 mmfd. (C5).....		7654	Lamination—Stator laminations—Assembled—50 cycle operation.....	
3597	Capacitor—0.25 mfd. (C18).....		7655	Lamination—Rotor lamination assembly—60 cycle operation.....	
3572	Socket—7-contact Radiotron socket.....		7656	Lamination—Rotor lamination assembly—50 cycle operation.....	
3584	Ring—Oscillator coil retaining ring—Package of 5.....		7657	Base—Motor base and bearing assembly.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		7714	Lamination—Rotor laminations—Assembled—60 cycles—220 volts.....	
3603	Resistor—500 ohms—Carbon type—1 watt (R11)—Package of 5.....		7715	Coil—Stator coil—60 cycles—220 volts.....	
3641	Capacitor—0.1 mfd. (C9).....		9038	Motor complete—105-125 volts—60 cycles.....	
3682	Shield—Radiotron shield.....		9039	Motor complete—105-125 volts—50 cycles.....	
3701	Capacitor—0.01 mfd. (C1).....		9040	Turntable complete—With spindle for 50 or 60 cycle operation.....	
3713	Capacitor—0.05 mfd. (C17).....		10194	Ball—Steel ball bearing—Package of 20.....	
3857	Coil—Detector choke coil (L8).....		PICKUP AND ARM ASSEMBLIES		
3858	Socket—Dial lamp socket and bracket.....		3811	Screw—Needle holding screw—Package of 10.....	
3859	Socket—4-contact Radiotron socket.....		3812	Armature.....	
3862	Screw—Chassis mounting screw and washer—Package of 4.....		6825	Pickup and arm assembly complete.....	
3865	Capacitor—160 mmfd. (C16).....		6826	Coil—Pickup coil (L12).....	
3869	Resistor—170,000 ohms—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 5.....		MISCELLANEOUS PARTS		
3873	Capacitor—1500 mmfd. (C3).....		3961	Knob—Phonograph volume control knob—Package of 5.....	
3877	Capacitor—0.1 mfd. (C14).....		4087	Screw and washer—Chassis mounting screw and washer assembly—Package of 4.....	
3886	Reflector—Dial light reflector.....		4199	Knob—Station selector knob—Package of 5.....	
3887	Scale—Dial scale—Package of 5.....		4200	Knob—Range switch, volume or tone control knob—Package of 5.....	
3889	Resistor—25,000 ohms—Carbon type—3 watt (R4).....		6827	Volume control—Phonograph volume control (R12).....	
3917	Capacitor—0.25 mfd. (C18).....		6828	Transformer—Phonograph input transformer (T3).....	
3932	Capacitor—2400 mmfd. (C15).....				
3933	Capacitor—630 mmfd. (C2).....				
4000	Capacitor—Adjustable capacitor (C7).....				
4018	Coil—Choke coil (L11).....				
6676	Socket—6-contact socket.....				
6787	Capacitor—Comprising one .005 mfd. and one .017 mfd. capacitors (C20, C21).....				

MODELS M 101, M 104 & M 108

Five-Tube, Superheterodyne Automobile Receivers



MODEL M 108



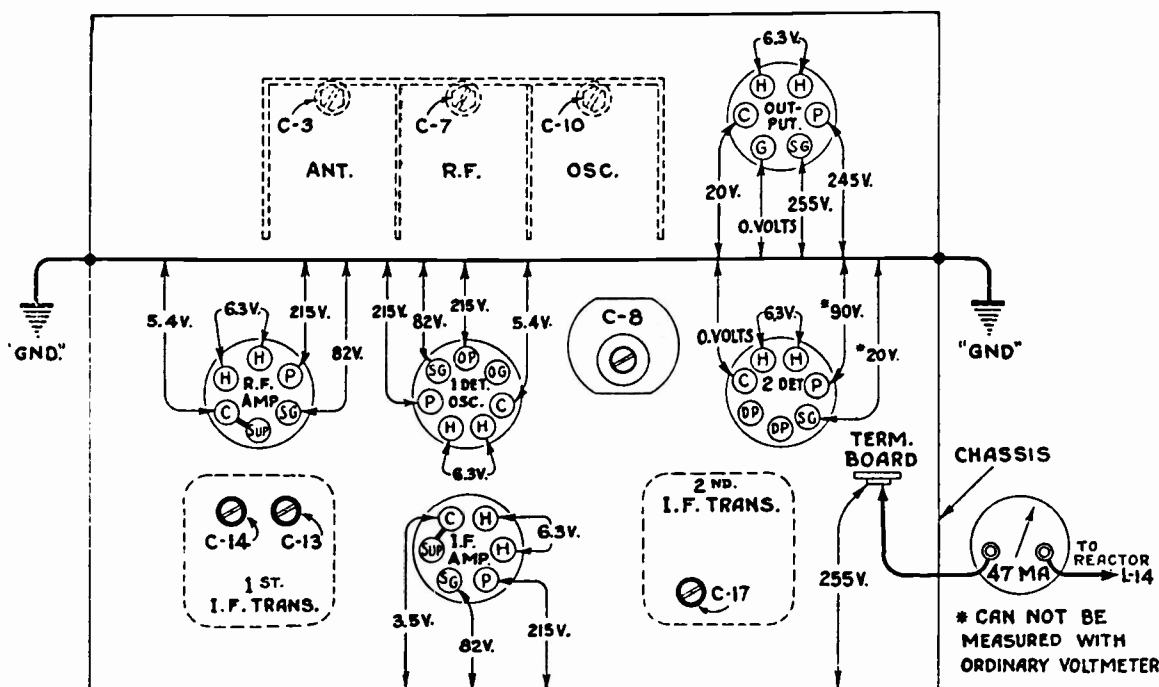
MODELS M 101 & M 104

ELECTRICAL SPECIFICATIONS

Power Supply.....	6.3 Volts (Storage Battery)
Current Consumption.....	5.8 Amperes
Tuning Range.....	540 KC. to 1600 KC.
Maximum Power Output.....	3.5 Watts (Audio)
Undistorted Power Output.....	1.75 Watts (Audio)
Loudspeaker Size and Type.....	6-Inch Electrodynamic
Pilot Lamp.....	Mazda No. 50, 6-8 Volts

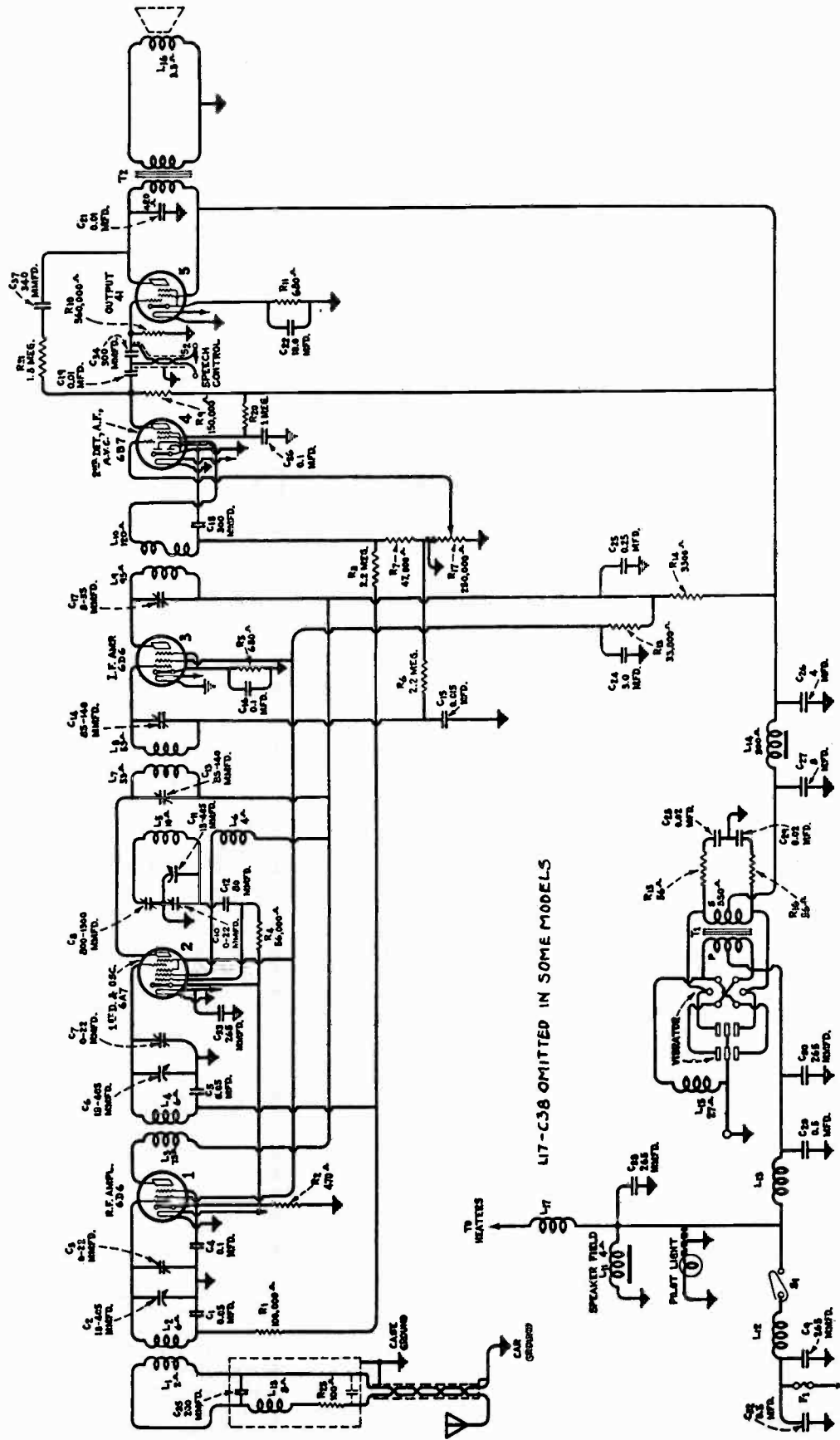
Radiotron Complement..... <ul style="list-style-type: none"> (1) RCA-6D6 R.F. Amplifier (2) RCA-6A7 Oscillator and First Detector (3) RCA-6D6 I.F. Amplifier (4) RCA-6B7 Second Detector, A.F. Amplifier and A.V.C. (5) RCA-41 Power Output
--

Alignment Frequencies..... 175 KC. (I.F.); 1400 KC. (R.F.); 600 KC. (R.F.)



—Trimmer Locations and Radiotron Socket Voltages to Ground
 (Measured at 6.6 volts battery supply—Volume Control Maximum—No Signal)

M101, M104 & M108



L17-C38 OMITTED IN SOME MODELS

MODELS M104 & M108 -Schematic Circuit Diagram

Refer to preceding page for internal connections of various units.

M101, M104 & M108

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 600 Kc	C17 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd	173 to 177 Kc		C14 C13 1st I-F Trans. FLAT TOP RESPONSE
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	C10 C7 C3 Osc. R-F Ant
4		600 Kc	600 Kc	C8 L-F Osc. Rock Gang
5		<i>Repeat Step 3</i>		
6	With auto antenna connected to receiver adjust C3 (ant.) for max. output on weak station near 1400 Kc.			

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	MODEL M101 RECEIVER ASSEMBLIES		4958	Capacitor pack—Comprising one 3. mfd., one 10. mfd. and one 4. mfd. capacitors (C22, C24, C26).....	
4858	Capacitor—.01 mfd. (C19).....		5020	Clamp—Metal clamp with screw—For antenna filter shielded cable—Package of 5.....	
4886	Capacitor—.05 mfd. (C15).....		4950	Coil—Antenna coil (L1, L2).....	
5074	Clamp—Radiotron shield clamp.....		4968	Coil—Choke coil (L12).....	
5175	Resistor — 5600 ohms — Carbon type — ½ watt (R3)—Package of 5.....		4969	Coil—Choke coil (15 turns—approximately 23 inches—length) (L17).....	
5176	Resistor — 39,000 ohms — Carbon type — 1 watt (R13).....		6967	Coil—Oscillator coil (L5, L6).....	
	Refer to Models M-104, M-108 For Additional parts		6966	Coil—r-f coil (L3, L4).....	
	MODELS M104 & M108 RECEIVER ASSEMBLIES		4948	Condenser—3-gang variable tuning condenser (C2, C3, C6, C7, C10, C11).....	
4993	Bumper—Rubber bumper—Used under variable condenser bracket assembly—Package of 5.....		4954	Filter—Antenna filter (L18, C35, R25).....	
4965	Cable—2-conductor shielded—Approximately 17 inches long—To speech control switch.....		4972	Lead—Power lead with male section of connector—Chassis end.....	
4244	Cap—Grid contact cap—Package of 5.....		7766	Lead—Power lead with clip and female section of fuse connector.....	
4955	Capacitor—Adjustable capacitor (C8).....		4966	Lead—Single connector dial lamp lead—With female section of connector—Chassis end.....	
5021	Capacitor—80 mmfd. (C12).....		4962	Reactor (L14).....	
5078	Capacitor—265 mmfd. (C9, C30, C33, C38).....		4963	Reactor (L13).....	
3981	Capacitor—300 mmfd. (C34).....		5034	Resistor—56 ohms—Carbon type—½ watt (R15, R16)—Package of 5.....	
4248	Capacitor—300 mmfd. (C18).....		5030	Resistor—470 ohms—Carbon type—¼ watt (R2)—Package of 5.....	
5022	Capacitor—340 mmfd. (C37).....		5031	Resistor—680 ohms—Carbon type—¼ watt (R5)—Package of 5.....	
4882	Capacitor—.01 mfd. (C21).....		5026	Resistor—680 ohms—Carbon type—1 watt (R11)—Package of 5.....	
4883	Capacitor—.01 mfd. (C19).....		5032	Resistor—3300 ohms—Carbon type—2 watts (R14).....	
4791	Capacitor—0.1 mfd. (C4, C16).....		5033	Resistor — 33,000 ohms — Carbon type — 1 watt (R13)—Package of 5.....	
4885	Capacitor—0.1 mfd. (C36).....		5132	Resistor — 47,000 ohms — Carbon type — 1/10 watt (R7)—Package of 5.....	
4792	Capacitor—.015 mfd. (C15).....		5029	Resistor — 56,000 ohms — Carbon type — ¼ watt (R4)—Package of 5.....	
4967	Capacitor—.25 mfd. (C25).....		3118	Resistor — 100,000 ohms — Carbon type — ¼ watt (R1)—Package of 5.....	
5019	Capacitor—.5 mfd. (C32).....		5027	Resistor — 150,000 ohms — Carbon type — ¼ watt (R9)—Package of 5.....	
4960	Capacitor—.5 mfd. (C20).....				
4961	Capacitor—8.0 mfd. (C27).....				
4964	Capacitor pack—Comprising two .02 mfd. capacitors (C28, C29).....				
5016	Capacitor pack—Comprising two .05 mfd. capacitors (C1, C5).....				

M101, M104 & M108 REPLACEMENT PARTS (Continued)

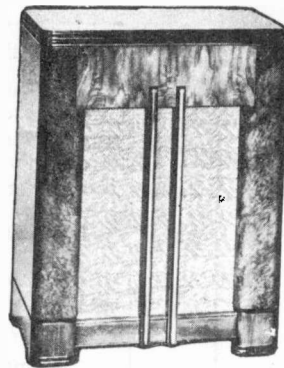
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
5035	Resistor—560,000 ohms—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....			FLEXIBLE SHAFT ASSEMBLIES	
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....		5000	Bracket—Volume or tuning condenser flexible shaft bracket—Bracket mounted on housing.	
5028	Resistor—1.8 megohm—Carbon type— $\frac{1}{4}$ watt (R21)—Package of 5.....		4994	Nut—Knurled locking nut for condenser drive or volume control flexible shafts.....	
5131	Resistor—2,200,000 ohms—Carbon type— $\frac{1}{10}$ watt (R3, R6)—Package of 5.....		7854	Shaft—Tuning condenser—Flexible (steering column) drive shaft— $31\frac{3}{8}$ inches long...	
5129	Ring—Radiotron shield ring—Package of 5..		7856	Shaft—Volume control or tuning condenser—Flexible (dash mounting) drive shaft— $9\frac{1}{8}$ inches long.....	
3584	Ring—Retaining ring for antenna, r-f, or oscillator coils—Package of 5.....		7855	Shaft—Volume control—Flexible (steering column) shaft— $28\frac{1}{8}$ inches long.....	
3623	Shield—Antenna, r-f, or oscillator coil shield..			REPRODUCER ASSEMBLIES	
4953	Shield—First intermediate frequency transformer shield.....		4970	Cable—3-conductor reproducer cable (M104),	
4956	Shield—Second intermediate frequency transformer shield.....		5079	Cable—2-conductor shielded—With pin tips—for M108.....	
5037	Shield—Radiotron shield.....		7965	Coil—Reproducer field coil (L11).....	
4946	Socket—6-contact Radiotron socket.....		9602	Cone—Reproducer cone (L16).....	
4959	Socket—6-contact vibrator socket.....		9576	Housing—Reproducer housing—Top cover of Receiver for M104.....	
4947	Socket—7-contact Radiotron socket.....		7873	Housing—Reproducer housing complete for M108.....	
5001	Switch—Speech control switch (S2).....		5133	Pin—Large and small contact pins for reproducer cable—Package of 10.....	
4951	Transformer—First intermediate frequency transformer (L7, L8, C13, C14).....		9577	Reproducer—Complete (L11, L16).....	
4952	Transformer—Second intermediate frequency transformer (L9, L10, C17).....		4995	Screw—Reproducer mounting screw—Package of 10.....	
4957	Transformer—Output transformer (T2).....		4977	Socket—Reproducer cable pin socket.....	
7859	Transformer—Vibrator transformer (T1)....		11345	Stud—Reproducer housing mounting stud assembly—For Model 108.....	
7857	Vibrator—Complete (L15).....			HOUSING ASSEMBLIES	
5018	Volume control (R17, S1).....		7868	Case—Receiver housing assembly—Complete (M104).....	
	CONTROL BOX ASSEMBLIES			7869	Cover—Bottom cover of receiver housing assembly (M104 and M108).....
4987	Bezel—Station selector dial bezel.....		7870	Cover—Top cover of receiver housing assembly (Model M108).....	
7865	Box—Control box—Complete.....		4999	Screw—No. 8— $\frac{1}{4}$ -inch slotted hex head self-tapping screw—Used to assemble housing—Package of 5.....	
7864	Bracket—Mounting bracket and rear section of control box housing.....			MISCELLANEOUS PARTS	
4988	Crystal—Station selector dial crystal.....		4287	Body—Antenna connector body—Package of 10.....	
4989	Dial—Station selector dial.....		4289	Body—Fuse connector body—Package of 10..	
4981	Gear—18-tooth intermediate drive gear.....		5188	Cable—Two-conductor shielded antenna cable—approx. $40\frac{3}{4}$ " long—with male section of connector.....	
4978	Gear—Indicator drive gear and shaft.....		4288	Cap—Antenna or fuse connector cap—Package of 10.....	
7862	Housing—Front section of control box housing.....		4293	Capacitor—0.5 mfd. ammeter capacitor.....	
7863	Housing—Center section of control box housing.....		5025	Capacitor—0.5 mfd. generator capacitor.....	
4990	Indicator—Station selector (pointer) indicator.		6516	Connector—Fuse connector complete.....	
4985	Knob—Station selector or volume control knob—Package of 5.....		4973	Coupling—Tuning condenser shaft coupling..	
4991	Lamp—Dial lamp—Package of 5.....		4974	Coupling—Volume control shaft coupling..	
7866	Plate—Bearing plate assembly—Comprising plate, gear and shaft, volume control shaft, station selector shaft, pinion and spring....		4286	Ferrule—Antenna or fuse connector ferrule and bushing—Package of 10.....	
4986	Screw—Oval fillister head machine screw—Fastens bracket and center section of control box housing.....		5023	Fuse—15-ampere—Package of 5.....	
5042	Screw—No. 8-32— $\frac{3}{8}$ -inch headless set-screw for station selector or volume control shaft—Package of 10.....		4290	Insulator—Fuse connector insulator—Package of 10.....	
4983	Shaft—Station selector drive shaft.....		4976	Lead—Antenna lead assembly.....	
4979	Shaft—Volume control drive shaft.....		4975	Lead—Dial lamp lead—Control box end....	
4984	Socket—Dial lamp socket.....		3903	Screw—No. 8-32- $\frac{3}{16}$ -inch headless set-screw for couplings—Package of 20.....	
4982	Spring—Holding spring for station selector or volume control knob—Package of 10....		4284	Spring—Antenna or fuse connector spring—Package of 10.....	
4980	Spring—Tension spring—Package of 5.....		4992	Stud—Receiver mounting stud and nuts—Package of 3.....	
5011	Strap—Control box mounting strap.....		5024	Suppressor—Distributor suppressor.....	

MODELS U-101 and U-103

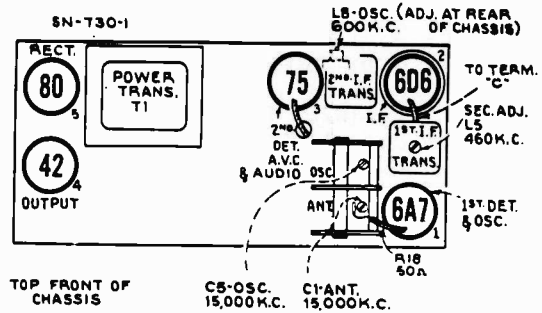
Five-Tube, Two-Band, A-C, Radio-Phonographs



Model U-101



Model U-103



TOP FRONT OF CHASSIS

-Radiotron, Coil, and Trimmer Locations

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 540-1,720 kc
 "Short Wave" (C)..... 5,800-18,000 kc
 Intermediate Frequency.....

R-F ALIGNMENT FREQUENCIES

"Broadcast" (A)..... 600 kc (osc.)
 "Short Wave" (C)..... 15,000 kc (osc., ant.)
 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6A7 First Detector—Oscillator
 (2) RCA-6D6 Intermediate Amplifier
 Pilot Lamp (1)

(3) RCA-75 Second Det., A-F Amp. and A.V.C.
 (4) RCA-42 Audio Power Amplifier
 (5) RCA-80 Full-Wave Rectifier
 Mazda No. 46, 6.3 volts, 0.25 ampere

POWER SUPPLY RATINGS

Model U-101	Radio Only	Total
A-6.. 105-125 volts, 60 cycles.....	75 watts..	80 watts
A-5.. 105-125 volts, 50 cycles.....	75 watts..	80 watts
B-2.. 105-125 volts, 25 cycles.....	80 watts..	85 watts
C-6.. 105-125/200-250 volts, 60 cycles..	75 watts..	80 watts
C-5.. 105-125/200-250 volts, 50 cycles..	75 watts..	80 watts

Model U-103	Radio Only	Total
A-6.. 105-125 volts, 60 cycles.....	75 watts..	100 watts
A .. 105-125 volts, 50-60 cycles.....	75 watts..	105 watts
B-2.. 105-125 volts, 25 cycles.....	80 watts..	105 watts
C-6.. 105-125/200-250 volts, 60 cycles..	75 watts..	100 watts
C .. 105-125/200-250 volts, 50-60 cycles	75 watts..	105 watts

POWER OUTPUT RATING

Undistorted 2.5 watts
 Maximum 4.5 watts

LOUDSPEAKER

Type Electrodynamic
 V.C. Impedance..... 2.2 ohms at 400 cycles

PHONOGRAPH

	Model U-101	Model U-103
Type.....	Manual.....	Automatic-Manual
Turntable Speed.....	78 r.p.m....	78 r.p.m.

Type of Pickup..... High-impedance magnetic
 Pickup Impedance..... 1,400 ohms at 1,000 cycles

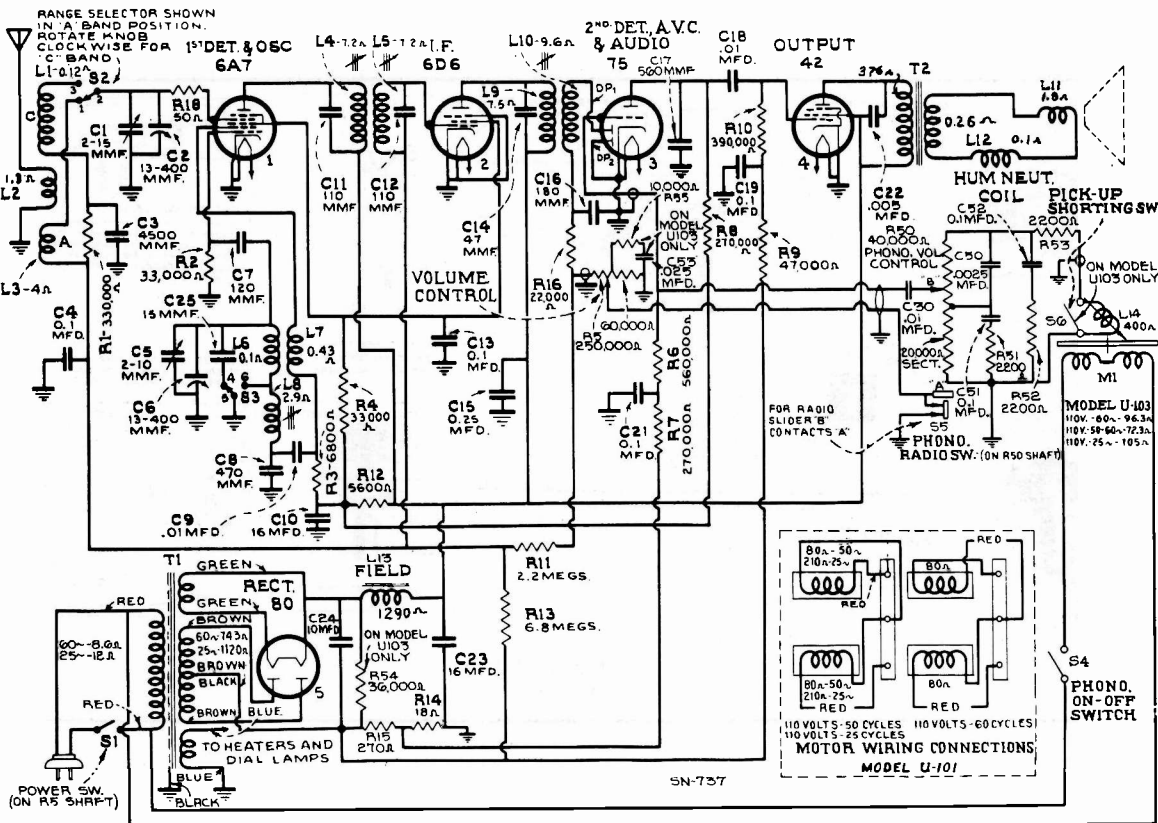
Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the center horizontal line with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

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	6D6 I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L9	Max. (peak)
2	6A7 Det. Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	1st I-F Trans.	L4 and L5	Max. (peak)
3	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	15,000 kc	"C" Osc.	C5	Max. (peak)†
4	Ant. Lead (blue)	300 Ohms	15,000 kc	"C" Right	Rock Through 15,000 kc	"C" Ant.	C1	Max. (peak)*
5	Ant. Lead (blue)	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L8	Max. (peak)

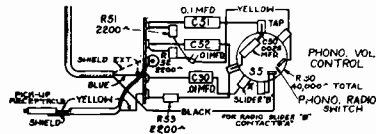
† Use maximum capacity peak

* Use minimum capacity peak

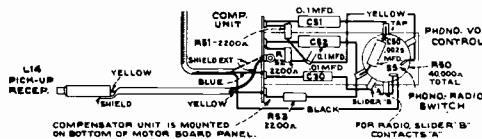


-Schematic Circuit Diagram

NOTE: MODEL U-101 (50 cycle)
C30 is 1500 mmfd
C51 is .07 mfd

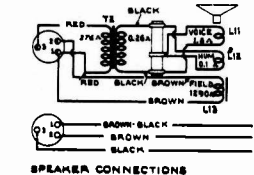
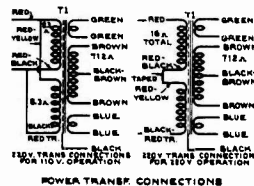
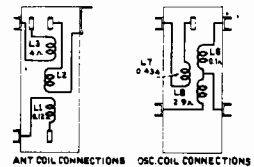
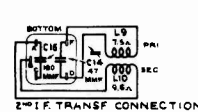
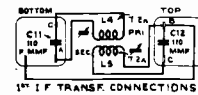


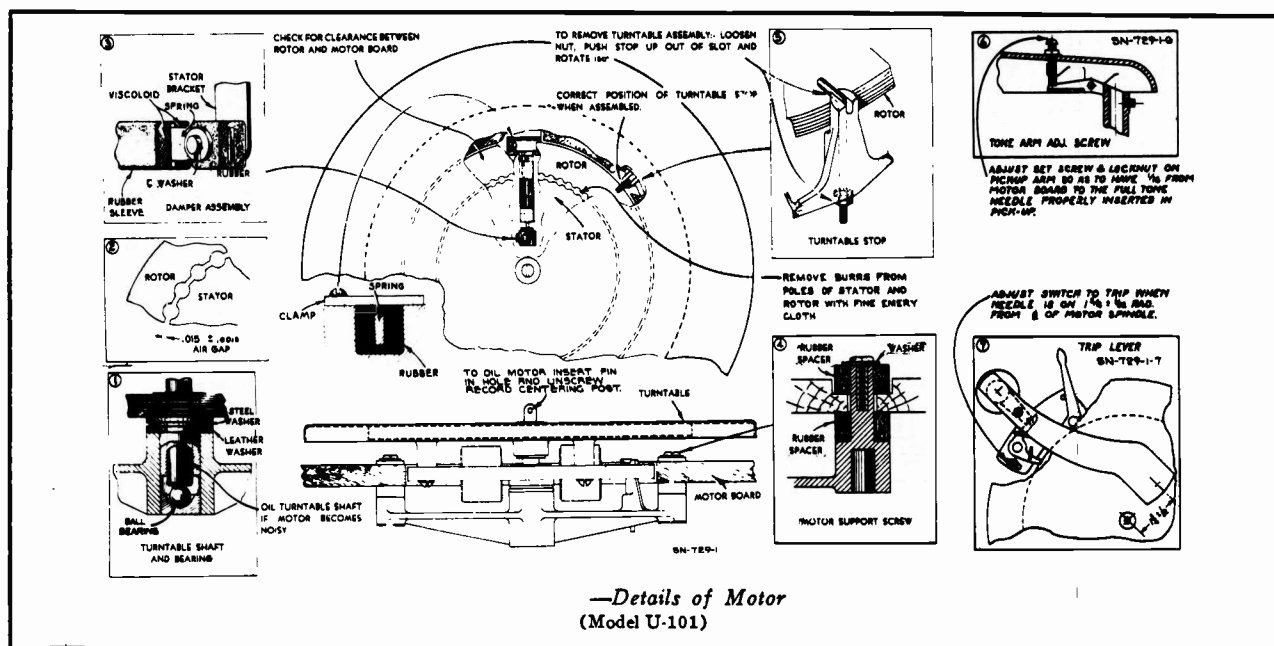
Compensator Unit Wiring
Model U-101



Compensator Unit Wiring
Model U-103

Precautionary Lead Dress—(1) Dress power line leads to the on-off switch away from grid connection terminal on volume control to reduce hum pickup. (2) Keep leads of capacitor C3 as short as possible. (3) Bus leads from range selector (ter. 6) to oscillator coil tap L6L8 should be maintained 3½ inches long for proper alignment. (4) Capacitor C25 should be dressed free of adjacent parts to maintain correct alignment at high-frequency end of "A" band. (5) Bus lead from range selector (ter. 3) to antenna coil L1 should be maintained 2¼ inches long for proper alignment. (6) The RCA-6A7 grid-cap lead (50-ohm resistor R18) to top of tuning capacitor C2 should be dressed properly to prevent shorts and should be maintained flexible to prevent acoustic howl.





Model U-103

Refer to index for Automatic Record Changer Adjustments.

REPLACEMENT PART CHANGES - MODEL U-101

12675 Base - Pickup arm base and pivot shaft.

On 50-cycle instruments, C30 is 1,500 mmfd. and C51 is .07 mfd. These capacitors are on the compensator unit. Stock No. 13138, .01 mfd. (C30) and Stock No. 4841, 0.1 mfd. (C51) are used in 60 and 25 cycle instruments only.

13762 Capacitor - 1,500 mmfd. (C30) (50-cycle only)

14626 Capacitor - .07 mfd. (C51) (50-cycle only)

MODEL U-101 - SECOND PRODUCTION

This model may be readily identified by the rubber mountings and metal spider used to support the motor turntable.

Replacement parts listed for Model U101 are directly applicable to this model except as listed below—

MOTOR ASSEMBLIES

Stock No.	Description
30385	Cap - Turntable spindle cap
30386	Motor - 110 volts - 60 cycles
30386	Motor - 110 volts - 50 cycle
30387	Motor - 110 volts - 25 cycle
30388	Rotor - Rotor assembly complete - comprising laminations, turntable, spindle and spindle cap - for 60 cycle operation.
30389	Rotor - Rotor assembly complete - comprising laminations, turntables, spindle and spindle cap - for 50 cycle operation.
30390	Rotor - Rotor assembly complete - comprising laminations, turntable, spindle and spindle cap - for 25 cycle operation.
30392	Spacer - Comprising one spindle and three rotor rubber spacers.
30391	Turntable - Turntable plate and cover only.

Stock Nos. 14232, 14806, 14807, 14808, 14809, 14810, 14811, and 14812 are not used on Model U-101 Second Production.

MODEL U-101

Revised Motor Components:

The various parts of the turntable and rotor assembly have been assigned separate stock numbers and are now available for service purposes as follows:

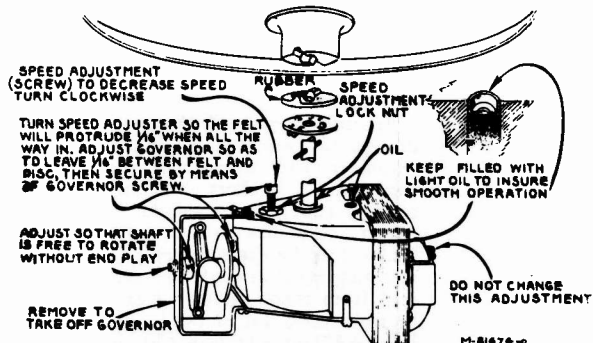
Obsoleted Parts

Stock No.

- 30388 Rotor—Laminations and Turntable complete for 60 cycle operation.
- 30389 Rotor—Laminations and Turntable complete for 50 cycle operation
- 30390 Rotor—Laminations and Turntable complete for 25 cycle operation

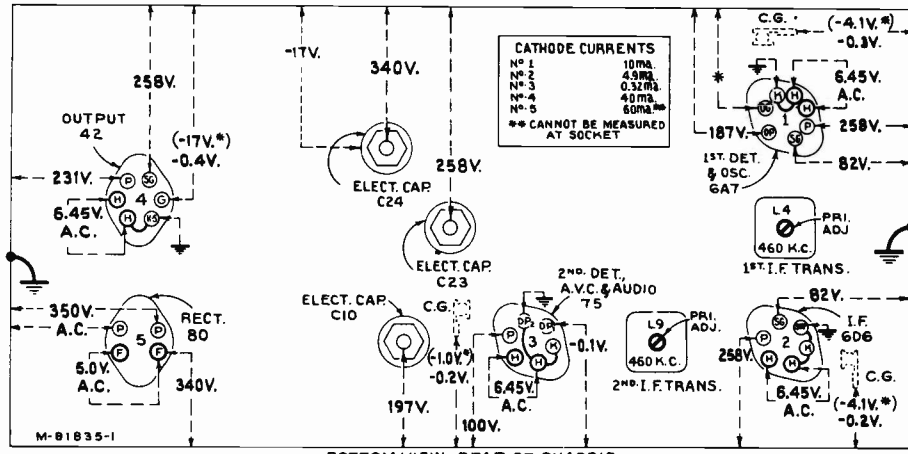
Superseded by

- 33003 Lamination—Rotor laminations, frame and shaft assembled, for 60 cycle operation
- 33004 Lamination—Rotor laminations, frame and shaft assembled, for 50 cycle operation
- 33005 Lamination—Rotor laminations, frame and shaft assembled, for 25 cycle operation
- 30391 Turntable—Finished turntable plate
- 30393 Cap—Turntable spindle cap
- 30392 Mounting—3 rubber spacers, and 1 rubber bushing for mounting turntable plate

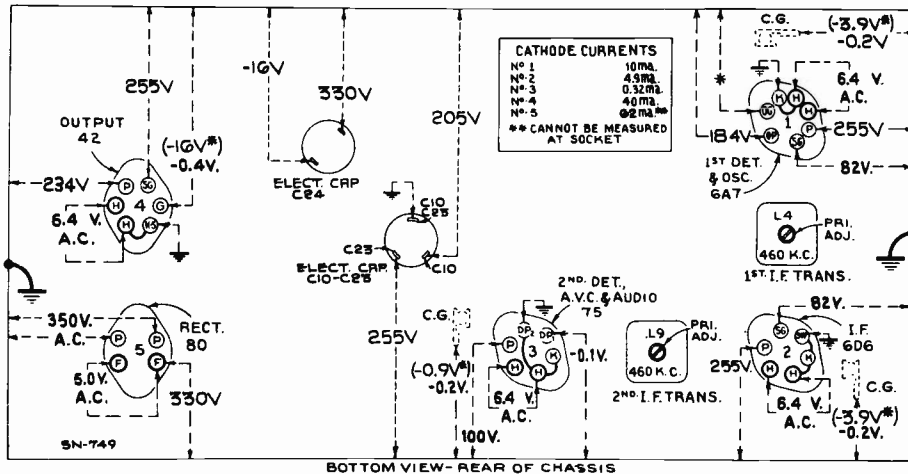


MODEL U-103 -Details of Motor

U101 & U103



—Radiotron Socket Voltages, Coil, and Trimmer Locations
(Model U-101)



—Radiotron Socket Voltages, Coil, and Trimmer Locations
(Model U-103)

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—
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.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14634	Belt—Variable condenser drive belt	14377	Capacitor—16 Mfd. (C10)—Model U101 only
14632	Bracket—Dial mounting bracket	14813	Capacitor Pack—Comprising two 16 Mfd. sections (C10, C23)—Model U103 only
5237	Bushing—Variable condenser rubber mounting bushing	14646	Coil—Antenna coil (L1, L2, L3)
14802	Cable—2-conductor shielded compensation cable complete with grid contact cap	14647	Coil—Oscillator coil (L6, L7, L8)
12118	Cap—Grid contact cap	14633	Condenser—2-gang variable tuning condenser (C1, C2, C5, C6)
12896	Capacitor—15 Mmfd. (C25)	14783	Connector—2-contact female for motor power cable
12405	Capacitor—47 Mmfd. (C14)	5119	Connector—3-contact female for speaker cable
14262	Capacitor—110 Mmfd. (C11, C12)	14648	Core—Adjustable core and stud for oscillator coil
12724	Capacitor—120 Mmfd. (C7)	12006	Core—Adjustable core and stud for I.F. transformer
12406	Capacitor—180 Mmfd. (C16)	14631	Dial—Station selector dial
30396	Capacitor—470 Mmfd. (C8)	14651	Drive—Variable condenser vernier drive and pinion gear
14724	Capacitor—560 Mmfd. (C17)	14635	Indicator—Station selector indicator pointer
12728	Capacitor—4,500 Mmfd. (C3)	5228	Lamp—Dial lamp
4868	Capacitor—.005 Mfd. (C22)	14636	Pulley—Idler pulley—less spring
13138	Capacitor—.01 Mfd. (C9, C18)	14639	Pulley—Variable condenser drive pulley—located on condenser shaft
4870	Capacitor—.025 Mfd. (C53)	14660	Resistor—18 ohms, insulated, 1/2 watt (R14)
4839	Capacitor—.01 Mfd. (C4, C13, C19, C21)	14653	Resistor—50 ohms, flexible type, 1/10 watt (R18)
12484	Capacitor—.025 Mfd. (C15)	13819	Resistor—270 ohms, wire wound, 1.1 watt (R15)
14814	Capacitor—10 Mfd. (C24)	5175	Resistor—5,600 ohms, carbon type, 1/2 watt (R12)
5212	Capacitor—16 Mfd. (C23)—Model U101 only		

U101 & U103

REPLACEMENT PARTS (Continued)

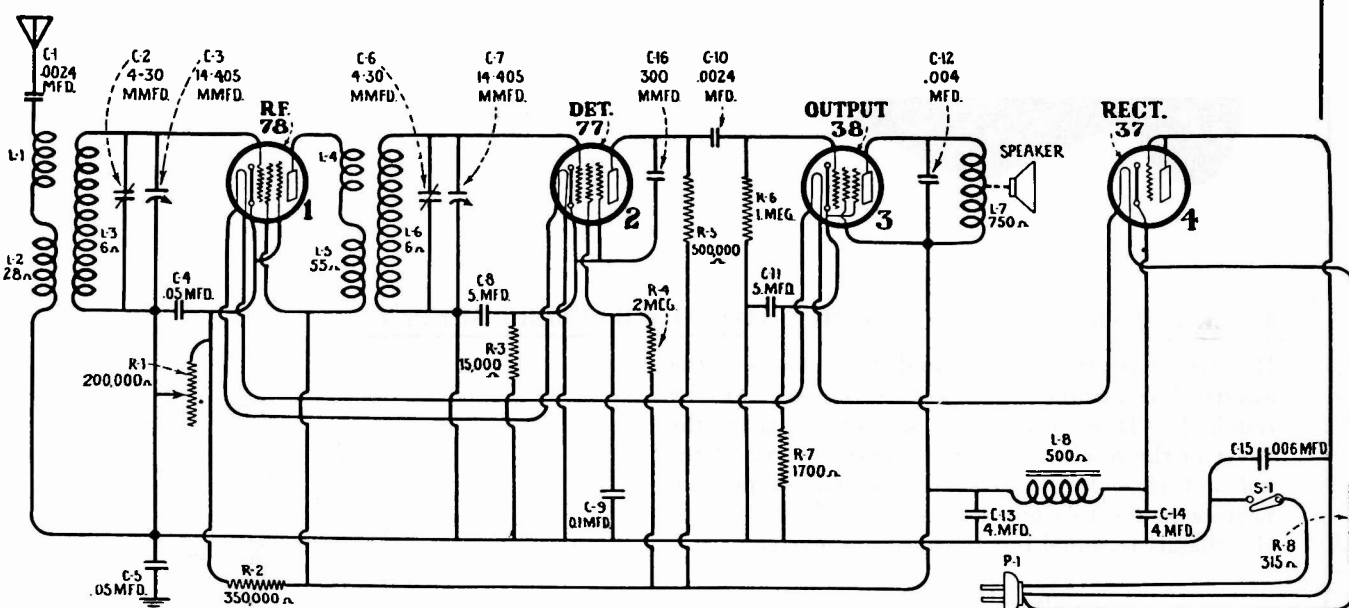
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
14659	Resistor—8,800 ohms, carbon type, $\frac{1}{2}$ watt (R3)	14232	Cap—Turntable spindle cap
14559	Resistor—10,000 ohms, insulated, $\frac{1}{2}$ watt (R55)—Model U103 only	14233	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 80 cycle
11305	Resistor—22,000 ohms, carbon type, $\frac{1}{2}$ watt (R16)	14224	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 50 cycle
13735	Resistor—33,000 ohms, carbon type, $\frac{1}{2}$ watt (R2)	14225	Coil—Stator assembly—comprising coils and laminations—105-125 volts, 25 cycle
5033	Resistor—33,000 ohms, carbon type, 1 watt (R4)	14228	Damper—Motor damper assembly comprising one damper, one damper plate, one screw and one "C" washer
5208	Resistor—36,000 ohms, wire wound, 20 watt (R54)—Model U103 only	14806	Motor—105-125 volts, 80 cycle (M1)
11646	Resistor—47,000 ohms, carbon type, $\frac{1}{2}$ watt (R9)	14807	Motor—105-125 volts, 50 cycle (M1)
11323	Resistor—270,000 ohms, carbon type, $\frac{1}{2}$ watt (R7, R8)	14808	Motor—105-125 volts, 25 cycle (M1)
53733	Resistor—330,000 ohms, carbon type, $\frac{1}{2}$ watt (R1)	14227	Shield—Terminal board shield and nuts
13479	Resistor—390,000 ohms, carbon type, $\frac{1}{2}$ watt (R10)	14229	Stop—Turntable stop, lockwasher and nut—prevents removal of turntable
5035	Resistor—560,000 ohms, carbon type, $\frac{1}{2}$ watt (R8)	14809	Turntable—Turntable assembly complete with rotor laminations—80 cycle operation
12679	Resistor—2.2 meg., insulated, $\frac{1}{2}$ watt (R11)	14810	Turntable—Turntable assembly complete with rotor laminations—50 cycle operation
14661	Resistor—6.8 meg., insulated, $\frac{1}{2}$ watt (R13)	14811	Turntable—Turntable assembly complete with rotor laminations—25 cycle operation
5129	Ring—Radiotron shield ring	14812	Turntable—10-in. turntable plate only
4389	Screw—No. 6-32x3/18 headless set screw for pulley No. 14639	4083	Washer—Leather washer for turntable bearing
14638	Shaft—Station selector knob shaft and pulley	14230	Washer—Metal washer for turntable bearing
12008	Shield—First I.F. transformer shield	14231	Washer—Metal shim washer for turntable bearing
12408	Shield—Second I.F. transformer shield		MOTOR ASSEMBLIES
11265	Shield—Radiotron shield		MODEL U-103
14658	Socket—Dial lamp socket	14215	Governor—Governor complete for motor Stock No. 9799, No. 14465 and No. 14466
4794	Socket—4-contact 80 Radiotron socket	14466	Motor—105-125 volts, 25 cycle (M1)
4786	Socket—6-contact 6D8, or 42 or 75 Radiotron socket	14465	Motor—105-125 volts, 50-60 cycle (M1)
4787	Socket—7-contact 6A7 Radiotron socket	9799	Motor—105-125 volts, 80 cycle (M1)
14637	Spring—Idler pulley tension spring	14214	Screw—Motor mounting screw and spacer assembly
12007	Spring—Retaining spring for core stock No. 12006 and No. 14648		PICKUP AND ARM ASSEMBLIES
14640	Switch—Range switch (S2, S3)		MODEL U-101
14378	Transformer—First I.F. transformer (L4, L5, C11, C12)	14291	Armature—Pickup armature
14642	Transformer—Second I.F. transformer (L9, L10, C14, C16)	11732	Coil—Pickup coil (L14)
14655	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T1)	14292	Damper—Pickup damper assembly—comprising one damper, one clamp and one screw
14656	Transformer—Power transformer, 105-125 volts, 25-60 cycle (T1)	14933	Pickup and Arm complete
14657	Transformer—Power transformer, 100-125/200-250 volts, 50-60 cycle (T1)	3811	Screw—Needle holding screw
14826	Volume Control—and power switch (R5, S1)		PICKUP AND ARM ASSEMBLIES
	OPERATING MECHANISM ASSEMBLIES		MODEL U-103
14199	Bushing—Record separator rotating shaft bushing	14291	Armature—Pickup armature assembly
14183	Cam—Cam and gear assembly	4064	Cable—Pickup lift cable
6808	Clutch—Trip lever friction clutch	11732	Coil—Pickup coil (L14)
14197	Finger—Friction finger assembly	14292	Damper—Pickup damper block complete with clamp and screw
14186	Hub—Rotating hub and record separator complete with set screw	14290	Pickup and Arm complete
14189	Lever—Locating lever assembly	3811	Screw—Needle holding screw
14184	Lever—Main lever and link assembly	4387	Screw—No. 6-32x $\frac{1}{2}$ -in. headless set screw for pickup arm pivot shaft
14201	Lever—Manual index lever assembly		REPRODUCER ASSEMBLIES (RL63F-1)
14193	Lever—Pickup lift cable lever		MODEL U-101
14194	Lever—Pickup arm lever complete with set screws	14358	Board—3-contact reproducer terminal board
14198	Lever—Reject lever assembly	13866	Cap—Cone center dust cap
14185	Lever—Trip lever and friction clutch assembly	12012	Coil—Field coil (L13)
14196	Pawl—Trip pawl assembly	11469	Coil—Hum neutralizing coil (L12)
4563	Screw—Cable lever screw and two locknuts	12642	Cone—Reproducer cone and dust cap (L11)
4053	Screw—Trip lever clutch tension adjustment screw	5118	Plug—3-contact male plug for reproducer
14200	Screw—No. 8-32 special hex head screw and lockwasher for record separator shaft mounting	14360	Reproducer—Complete
14195	Screw—No. 10-32x5/16 fillister-head, cone-pointed set screw for pickup arm lever	14358	Screw—Screw, washer and lockwasher to hold core in yoke
14188	Screw—No. 10-32x7/16 fillister-head, cone-pointed set screw for rotating hub	14355	Transformer—Output transformer (T2)
14187	Shaft—Rotating shaft for record separator	14357	Washer—Spring washer to hold field coil
3676	Spring—Cam pawl tension spring		REPRODUCER ASSEMBLIES (RL70E-1)
3666	Spring—Lift cable tension spring		MODEL U-103
14190	Spring—Locating lever pawl tension spring	13866	Cap—Dust cap for cone center
14191	Spring—Locating lever or reject lever tension spring	14354	Coil—Field coil (L13)
14192	Spring—Main lever tension spring	11489	Coil—Hum neutralizing coil (L12)
	MOTORBOARD ASSEMBLIES	12667	Cone—Reproducer cone and dust cap (L11)
	MODEL U-101	5118	Plug—3-contact male plug for reproducer
14803	Brake—Turntable brake and motor switch	14395	Reproducer—Complete
14805	Connector—2-contact male connector for motor and switch leads	14358	Screw—Screw, washer and lockwasher to hold core in yoke
3261	Rest—Pickup rest	14355	Transformer—Output transformer (T2)
14235	Screw—Motor mounting screw and washer	14357	Washer—Spring washer to hold field coil
30100	Springs—Tension springs for brake Stock No. 14803—comprising 1 long and 1 short spring		MISCELLANEOUS ASSEMBLIES
14804	Switch—Motor switch (S4)—located on turntable brake Stock No. 14803	11782	Box—Needle box—for Model U-101 only
	MOTORBOARD ASSEMBLIES	4391	Box—Needle box—for Model U-103 only
	MODEL U-103	14817	Cable—Shielded pickup cable complete with female connector—compensator end
14208	Bracket—Bumper bracket and bumper complete	5107	Capacitor—.0025 Mfd. (C50)
14209	Bumper—Rubber bumper	13138	Capacitor—.01 Mfd. (C30)
14830	Cable—Shielded cable 13-in. long complete with single contact male connector—connects pickup shorting switch to input transformer or compensator	4841	Capacitor—0.1 Mfd. (C51, C52)
11704	Damper—Turntable damper and damper plate	14654	Escutcheon—Station selector escutcheon and crystal
14212	Escutcheon—Manual index lever and switch escutcheon	12873	Knob—Station selector, range switch, radio volume control or phonograph volume control knob
14203	Post—Record post—located on front left hand corner of motorboard	13716	Resistor—2,200 ohms, insulated, $\frac{1}{2}$ watt (R51, R52, R53)
14210	Rest—Pickup arm rest	14267	Screw—Chassis mounting screw and washer—for Model U101 only
14207	Roller—Pickup lift cable roller and bracket	13573	Screw—Chassis mounting screw and washer—for Model U103 only
14211	Socket—Motorboard socket and shell	14816	Screw—Motorboard mounting screw and spacer—for Model U103 only
14205	Support—Pickup arm mounting spacer, washers and nut	4119	Screw—No. 8-32 headless set screw for knob Stock No. 12673
14206	Switch—Motor toggle switch (S4)	14815	Volume Control—Phonograph volume control and radio-record switch (R50, S5)
14629	Switch—Pickup shorting switch (S6)		
14204	Turntable Complete		
14213	Washer—Pickup arm stop washer and spacing washer		
	MOTOR ASSEMBLIES		
	MODEL U-101		
10194	Ball—Steel ball bearing		
14233	Base—Motor base and bearing assembly		

MODEL 102

Four-Tube, 115-Volt AC/DC (Universal) Receiver

Electrical Specifications

Voltage Rating . . . 105-120 Volts, 25-133 Cycles A. C. or D. C.
 Power Consumption 40 Watts
 Frequency Range 540 K. C.-1712 K. C.
 Type and Number of Radiotrons—
 1 RCA-77, 1 RCA-37, 1 RCA-38, 1 RCA-78—Total 4
 Undistorted Output 0.18 Watts



-Schematic Circuit Diagram

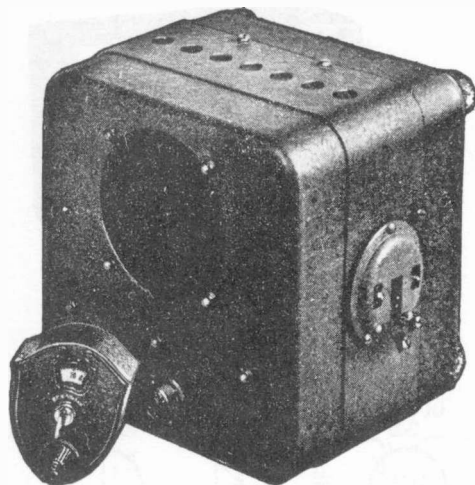
REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
CHASSIS ASSEMBLIES					
2747	Cap—Contact Cap—Package of 5		6819	Cord—Power cord—315 ohms (R8, P1)	
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5		6820	Coil—RF coil (L1, L2, L3)	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5		6821	Coil—Detector coil (L4, L5, L6)	
3537	Reactor—Filter reactor (L8)		6822	Condenser—2-gang variable tuning condenser (C2, C3, C6, C7)	
3542	Volume control (R1, S1)		6823	Capacitor—Two 4. mfd. capacitors (C13, C14)	
3713	Capacitor—0.05 mfd. (C4, C5)		6824	Capacitor—Two 5. mfd. capacitors (C8, C11)	
3860	Socket—5-contact Radiotron socket		7485	Socket—6-contact Radiotron socket	
3932	Capacitor—2400 mmfd. (C10)		REPRODUCER ASSEMBLIES		
3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5		7712	Support—Cone support	
4007	Capacitor—2400 mmfd. (C1)		7713	Mechanism—Speaker mechanism complete (L7)	
4046	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5		9470	Reproducer—Complete	
4068	Lead—Antenna lead		9471	Cone—Speaker cone—Package of 5	
4069	Capacitor—0.1 mfd. (C9)		MISCELLANEOUS PARTS		
4070	Capacitor—0.004 mfd. (C12)		4076	Escutcheon—Volume control escutcheon—Package of 2	
4071	Capacitor—0.006 mfd. (C15)		4077	Escutcheon—Station selector escutcheon—Package of 2	
4072	Capacitor—300 mmfd. (C16)		4078	Knob—Station selector knob—Package of 5	
4073	Resistor—350,000 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5		4079	Foot—Rubber foot—Package of 4	
4074	Resistor—1700 ohms—Carbon type—1 watt (R7)—Package of 5		4096	Knob—Volume control knob—Package of 5	

MODEL M105

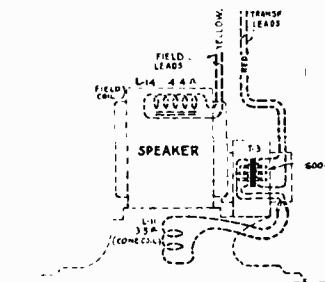
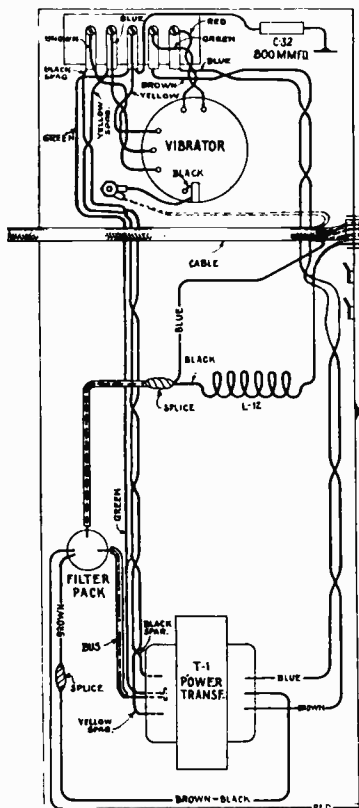
Four-Tube, Superheterodyne Automobile Receiver



Type and Number of Radiotrons Used.....1 RCA-41,
 1 RCA-78, 1 RCA-6A7, 1 RCA-6B7—Total, 4
 Total Battery Current (With 6.3 volts between chassis
 and A (hot) terminal) 5.35 Amperes
 Undistorted Output.....1.35 Watts
 Loudspeaker Field Current.....1.35 Amperes
 Filtered D. C. Voltage from Rectifier.....227 Volts
 Total Plate Current.....47.5 M. A.

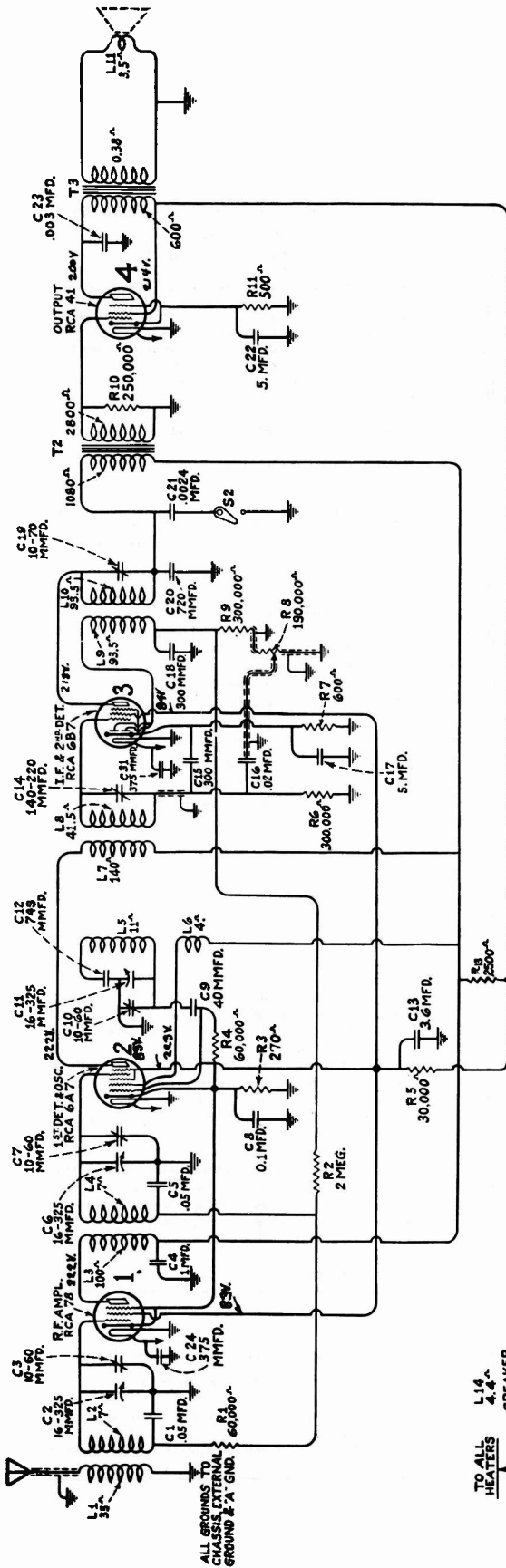
CHECK POLARITY OF AUTOMOBILE STORAGE BATTERY SUPPLY.

If the positive terminal is grounded, no change in the electrical connections of the receiver unit will be required. However, if the opposite is true, the cover of the receiver case must be removed and the red and green leads (attached by spade-type connectors to the two terminals nearest the bottom of the chassis terminal board) must be reversed.



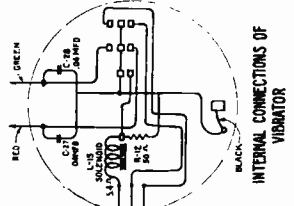
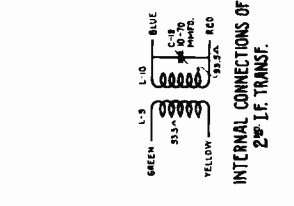
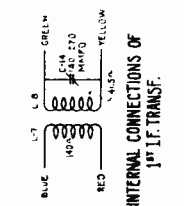
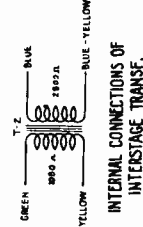
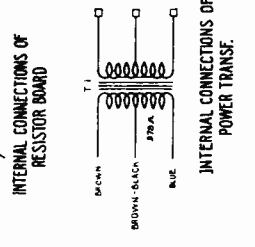
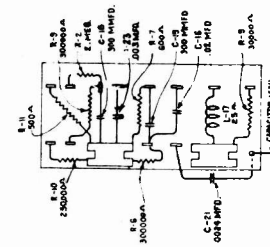
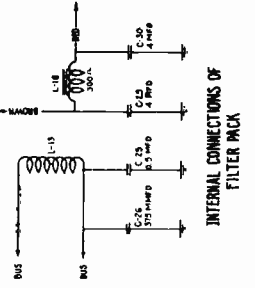
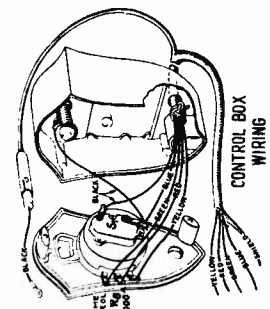
Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	175 Kc	Quiet point near 600 Kc	Tuning cond. of 2nd I-F Trans. Tuning cond. of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers on gang condenser
3	With auto antenna connected to receiver adjust R-F Trimmer for max. volume on weak station near 1400 Kc.			



NOTE: R3 is 80 ohms, C21 is 2400 mmfd in some models.

Schematic Diagram



REPLACEMENT PARTS

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

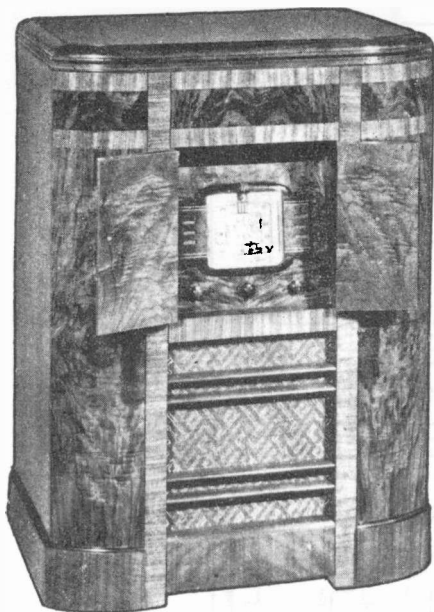
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES			CONTROL BOX ASSEMBLIES		
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).....		3649	Key—Volume control and switch key.....	
2747	Cap—Contact cap—Package of 5.....		3650	Screw—Self locking No. 10-32— $\frac{1}{4}$ " fulldog point set screw —Package of 10.....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Pack- age of 5.....		3651	Screw—Self locking No. 10-32— $\frac{1}{4}$ " cupped point set screw —Package of 10.....	
6844	Capacitor—Comprising two 5.0 mfd. capacitors (C17, C22).		3652	Screw—Self locking No. 10-32— $\frac{1}{4}$ " cupped point set screw —For flexible drive shaft—Package of 10.....	
3572	Socket—Radiotron 7-contact socket.....		3690	Strap and bracket assembly—Comprising one bracket, two screws, one lock washer and one strap.....	
3584	Ring—Antenna R. F. or oscillator coil retaining ring— Package of 5.....		3718	Bracket—Control box dash mounting bracket.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R1, R4)— Package of 5.....		3757	Coupling—Slotted coupling for end of flexible drive shaft— Package of 5.....	
3616	Capacitor—300 mmfd. (C15, C18).....		3758	Connector—For control box end of flexible drive shaft— Package of 5.....	
3617	Capacitor—0.005 mfd. (C21).....		6161	Knob—Station selector knob—Package of 5.....	
3618	Capacitor—0.02 mfd. (C16).....		6496	Shaft—Flexible drive shaft complete with connectors— Approximately 24 $\frac{1}{8}$ " long.....	
3621	Coil—Choke coil—Located on resistor board (L17).....		6497	Shaft—Flexible drive shaft complete with connectors— Standard length—Approximately 33 $\frac{1}{4}$ " long.....	
3623	Shield—Antenna R. F. or oscillator coil shield.....		6499	Volume control—Combination volume control and switch (R8).....	
3632	Resistor—500 ohms—Carbon type—1 watt (R11)—Pack- age of 5.....		6500	Nut—Volume control and switch lock nut.....	
3636	Transformer—First intermediate frequency transformer (L7, L8, C14).....		6531	Shaft—Flexible drive shaft complete with connectors— Approximately 12 $\frac{7}{8}$ " long.....	
3637	Transformer—Second intermediate frequency transformer (L9, L10, C19).....		6532	Shaft—Flexible drive shaft—Complete with connectors— Approximately 18 $\frac{3}{8}$ " long.....	
3641	Capacitor—0.1 mfd. (C8).....		6784	Scale—Dial scale.....	
3645	Knob—Tone control knob—Package of 5.....		7695	Box—Control box complete.....	
3695	Capacitor—375 mmfd. (C24, C31).....		7698	Cover—Control box cover.....	
3696	Capacitor—40 mmfd. (C9).....		MISCELLANEOUS PARTS		
3699	Capacitor—720 mmfd. (C20).....		3466	Connector—Antenna lead-in connector.....	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{2}$ watt (R10)— Package of 5.....		3646	Fuse—20 amperes—Package of 5.....	
3745	Capacitor—745 mmfd. (C12).....		3647	Nut—Cap nut and lock washer—Package of 10.....	
3746	Capacitor—800 mmfd. (C32).....		3648	Screw—No. 10-32— $\frac{1}{4}$ " cap screw and lockwasher—Pack- age of 10.....	
3920	Capacitor—.003 mfd. (C23).....		3689	Bracket—Receiver mounting bracket, bolt and nut as- sembly—One set.....	
3921	Mounting screws, washer and bushing assembly—For 3-gang variable tuning condenser—Comprising three spacers, three screws, three washers and three lock- washers.....		3791	Bushing and plate assembly—Flexible drive shaft bushing with plate, mounting screws, rubber bushings, and washers—Located on main case.....	
3922	Resistor—300,000 ohms—Carbon type— $\frac{1}{2}$ watt (R6, R9) —Package of 5.....		3827	Cable—From fuse connector to ammeter.....	
3932	Capacitor—2400 mmfd. (C21)*.....		3856	Clip—Spring clip—Grounds receiver chassis to metal housing—Package of 10.....	
4091	Resistor—80 ohms—Carbon type— $\frac{1}{2}$ watt (R3)*— Package of 5.....		3884	Clamp—Cable clamp—Package of 10.....	
4208	Resistor—2500 ohms—Flexible type (R13)—Package of 5.....		4051	Bumper—Rubber bumper used in mounting receiver chassis—Package of 4.....	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{2}$ watt (R3)—Pack- age of 5.....		4138	Screw—Housing and cable clamp cap screw No. 10-32— $\frac{1}{4}$ " —Package of 10.....	
6192	Spring—Tuning condenser drive cord tension spring— Package of 10.....		4139	Screw—Housing cap screw No. 10-32— $\frac{1}{4}$ "—Package of 10.....	
6242	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt (R2)— Package of 5.....		6151	Suppressor—Spark plug suppressor.....	
6298	Cord—Tuning condenser drive cord—Package of 5.....		6152	Suppressor—Distributor suppressor.....	
6471	Coil—Oscillator coil assembly (L5, L6).....		6175	Suppressor—Distributor splice-in suppressor.....	
6490	Tone control switch.....		6494	Capacitor—Ammeter capacitor—0.5 mfd.....	
6492	Capacitor—Comprising one 3.6 mfd. and one 1.0 mfd. capacitor (C4, C13).....		6495	Capacitor—Generator capacitor—0.5 mfd.....	
6493	Drum—Tuning condenser drive drum.....		6670	Suppressor—Spark plug suppressor—"Elbow type".....	
6514	Capacitor—Comprising two 0.05 mfd. capacitors (C1, C5).		7065	Screw-driver—For R. F. and I. F. adjustments.....	
6515	Cable—Shielded cable with antenna connector.....		7621	Antenna—Roof antenna—Paper type (Brown).....	
6516	Connector—Fuse connector.....		7622	Antenna—Roof antenna—Paper type (Gray).....	
6517	Cable—Main cable complete with fuse connector.....		7686	Housing—Front section of housing complete with mounting screws.....	
6540	Coil—R. F. coil assembly (L3, L4).....		7689	Vibrator Complete.....	
6731	Coil—Antenna coil (L1, L2).....		7699	Housing—Rear section of housing complete with mounting screws.....	
6732	Transformer—Interstage audio transformer (T2).....		REPRODUCER ASSEMBLIES		
7485	Socket—Radiotron 6-contact socket.....		3688	Transformer—Output transformer (T3).....	
7600	Filter pack—Comprising one reactor, one choke coil, one 0.5 mfd., two 4.0 mfd. and one 375 mmfd. capacitors (L13, L16, C25, C26, C29, C30).....		7607	Screen—Metal screen.....	
7601	Condenser—3-gang variable tuning condenser.....		7608	Coil assembly—Comprising field coil, magnet and cone support (L14).....	
9049	Transformer—Power transformer (T1).....		9023	Cone—Reproducer cone complete (L11)—Package of 5.....	

* C21—2400 mmfd. some models.

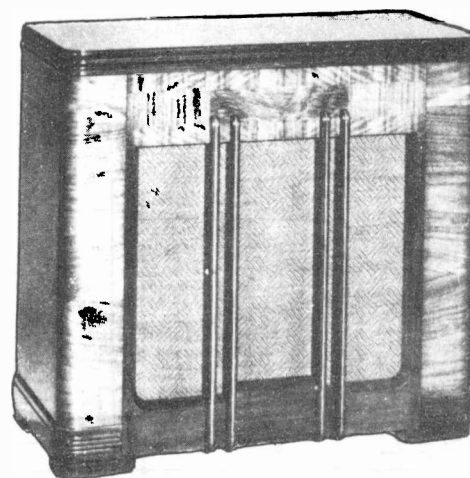
* R3—80 ohms some models.

MODELS U-105 and U-107

Ten-Tube, Three-Band, A-C, Radio-Phonographs



Model U-107



Model U-105

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A).....	530-1,720 kc
"Medium Wave" (B).....	2,100-6,800 kc
"Short Wave" (C).....	6,800-22,000 kc

Intermediate Frequency.....

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.

Pilot Lamps (4) Radio.....	
(1) Front Cabinet (U-105 only).....	
(1) Phono Compartment (U-107 only).....	

POWER SUPPLY RATINGS

Model U-105	
A-6...105-125 volts, 60 cycles.....	
A.....105-125 volts, 50-60 cycles.....	
B-2...105-125 volts, 25 cycles.....	
C-6...105-130/140-160/200-250 volts, 60 cycles.....	
C.....105-130/140-160/200-250 volts, 50-60 cycles.....	
Model U-107	
A-6...105-125 volts, 60 cycles.....	
A-5...105-125 volts, 50 cycles.....	
B-2...105-125 volts, 25 cycles.....	
C-6...105-130/140-160/200-250 volts, 60 cycles.....	
C-5...105-130/140-160/200-250 volts, 50 cycles.....	

POWER OUTPUT

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

PHONOGRAPH

Type.....	
Record Capacity.....	
Turntable Speed.....	
Type of Pickup.....	
Pickup Impedance.....	

Precautionary Lead Dress.—(1) Keep leads to a-c switch dressed away from antenna coil and trimmer C2. (2) Keep all filament leads twisted. (3) Dress shield lead from term. E of 2nd i-f transformer to term. board against side of chassis and away from 6L7 socket. (4) Dress shielded lead from 6N7 socket to volume control against side of chassis and away from 6L7 socket. (5) Shielded lead from phono. term. board to volume control must be dressed under bus connected between 6L7 and term. A of first i-f transformer. (6) Keep leads of C21 as short as possible. (7) Yellow lead from 6J7 oscillator cathode to dummy terminal on 6L7 socket must be dressed away from chassis base and from brown filament lead. (8) All molded capacitors should be dressed so that flat side is perpendicular to chassis base. (9) Yellow lead

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C).....	20,000 kc (osc., det., ant.)
"Medium Wave" (B).....	6,000 kc (osc.)
"Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc.)
.....	460 kc

(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-5T4.....	Full-Wave Rectifier

.....	Mazda No. 46, 6.3 volts, 0.25 amp.
.....	Mazda No. 40, 6.3 volts, 0.15 amp.
.....	Mazda No. 40, 6.3 volts, 0.15 amp.

	Radio only	Total
A-6...105-125 volts, 60 cycles.....	135 watts	165 watts
A.....105-125 volts, 50-60 cycles.....	135 watts	165 watts
B-2...105-125 volts, 25 cycles.....	135 watts	165 watts
C-6...105-130/140-160/200-250 volts, 60 cycles.....	135 watts	165 watts
C.....105-130/140-160/200-250 volts, 50-60 cycles.....	135 watts	165 watts

	Radio only	Total
A-6...105-125 volts, 60 cycles.....	135 watts	165 watts
A-5...105-125 volts, 50 cycles.....	135 watts	170 watts
B-2...105-125 volts, 25 cycles.....	135 watts	165 watts
C-6...105-130/140-160/200-250 volts, 60 cycles.....	135 watts	165 watts
C-5...105-130/140-160/200-250 volts, 50 cycles.....	135 watts	170 watts

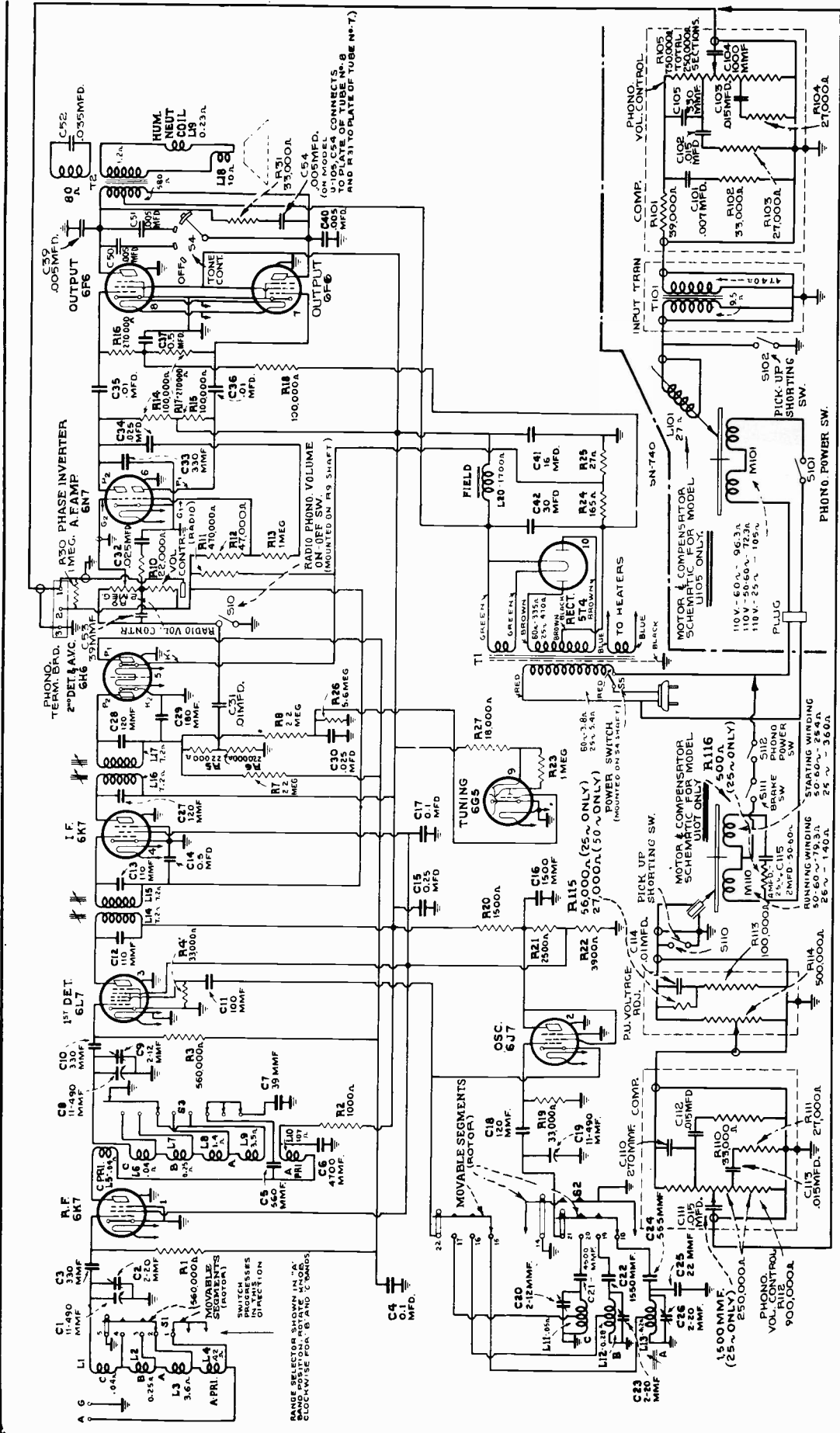
LOUDSPEAKER

Type.....	Electrodynamic
Impedance (v.c.).....	11.5 ohms at 400 cycles

	Model U-105	Model U-107
Automatic-Manual.....	Automatic-Manual	
Eight 10-inch.....	Eight 10-inch or Seven 12-inch	
.....	78 R.P.M.	
Low-impedance magnetic.....	Crystal	
96 ohms at 1,000 cycles.....	80,000 ohms at 1,000 cycles	

from cathode of 6J7 socket to term. 22 of S2 must be dressed under spaghetti on 6J7 socket jumper and pulled tight away from chassis. The following bus leads should be kept as short as possible and, when necessary, replaced only with wire having same diameter as original: (10) Lead from L11-L12-L13 to ground lance; (11) Lead from term. 13 of S3 to ground lance; (12) Lead from term. 9 of S3 to L6-L7; (13) Lead from L6 to C8; (14) Lead from C9 to C8; (15) Lead from term. 5 of S1 to ground lance; (16) Lead from L1-L2 to term. 4 of S1; (17) Lead from L1 to C1; (18) Lead from term. 21 of S2 to C19. (19) Keep filament leads dressed away from grid prongs of 6N7. (20) Keep blue and green leads from plate prongs of output tubes twisted their entire length.

U105 & U107



-Schematic Circuit Diagram

MODEL U-107, LOUDSPEAKER JUMPER CABLE:

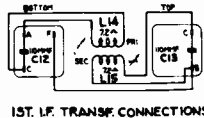
The jumper cable assembly used on later instruments is available complete as Stock No. 30678. The cable is 25 inches long

Pickup (Model U-107)

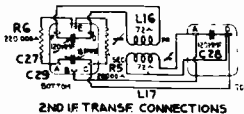
An adjustment is provided to compensate for possible reduced sensitivity of the crystal pickup with age. Adjustment requires the use of a 1,000-ohm-per-volt a-c voltmeter (rectifier type, 10-volt range), a 1-meg. resistor, and an RCA Victor Technical Purpose frequency record (Cat. No. 84519-A or 84505-B). Disconnect the green lead from terminal "1" (terminal board marked "1," "2," and "3" located on top right-hand side of chassis), connect the 1-meg. resistor between green lead and terminal "1," connect the voltmeter across loudspeaker voice coil, turn "Phonograph Volume" and "Power-Tone" controls extreme clockwise, turn "Phono-Volume" (radio) control extreme counter-clockwise, and adjust R114 ("Pickup Voltage Adjuster," mounted under right-hand end of motor-board) until either of the above-mentioned frequency records gives a voltage reading of 6.8 volts using 400-cycle section of record. R114 should also be adjusted if pickup is replaced.

PHONOGRAPH RUMBLE - Model U-107

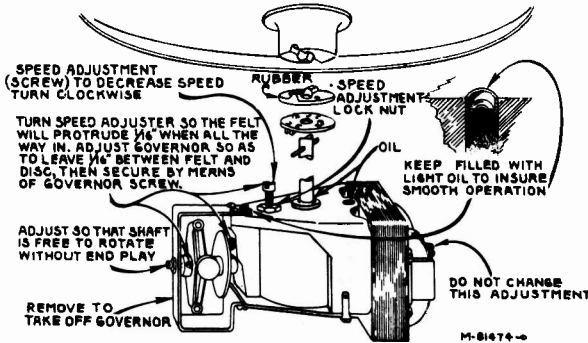
In any instances where a rumble or low-frequency vibration causes interference in the reproduction of records, the same can be satisfactorily minimized by spacing the loudspeaker baffle board 3/8 inch away from the cabinet. Small metal or wood spacers may be used for this purpose, employing one over each mounting screw.



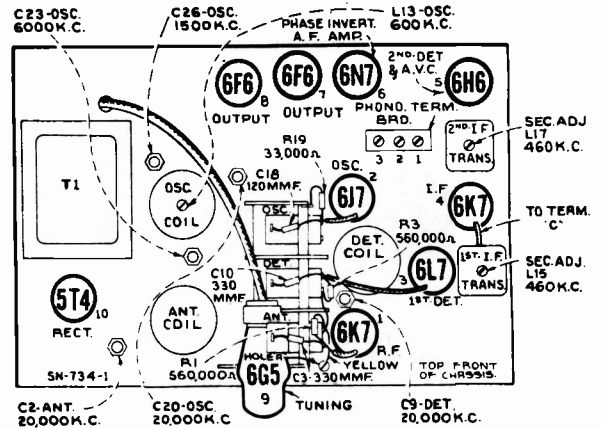
1ST. I.F. TRANSF. CONNECTIONS



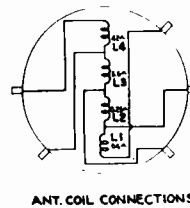
2ND I.F. TRANSF. CONNECTIONS



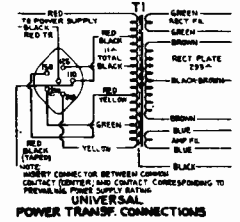
-Details of Motor (Model U-105)



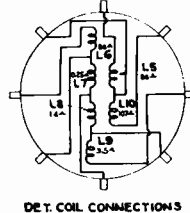
-Radiotron, Coil, and Trimmer Locations



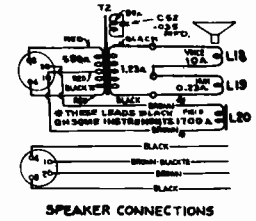
ANT. COIL CONNECTIONS



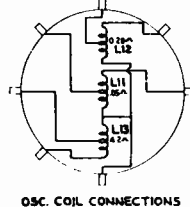
POWER TRANSF. CONNECTIONS



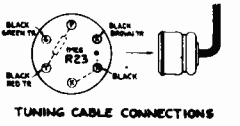
DET. COIL CONNECTIONS



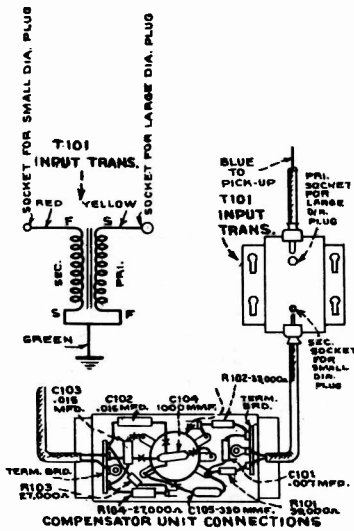
SPEAKER CONNECTIONS



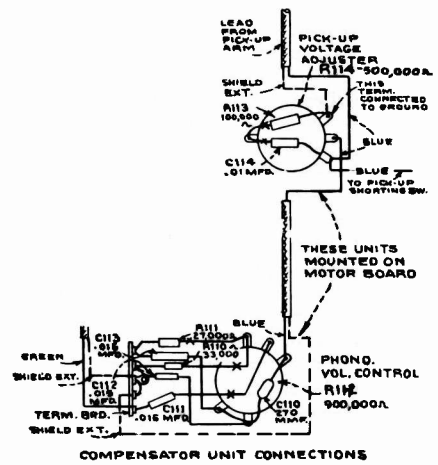
OSC. COIL CONNECTIONS



TUNING CABLE CONNECTIONS



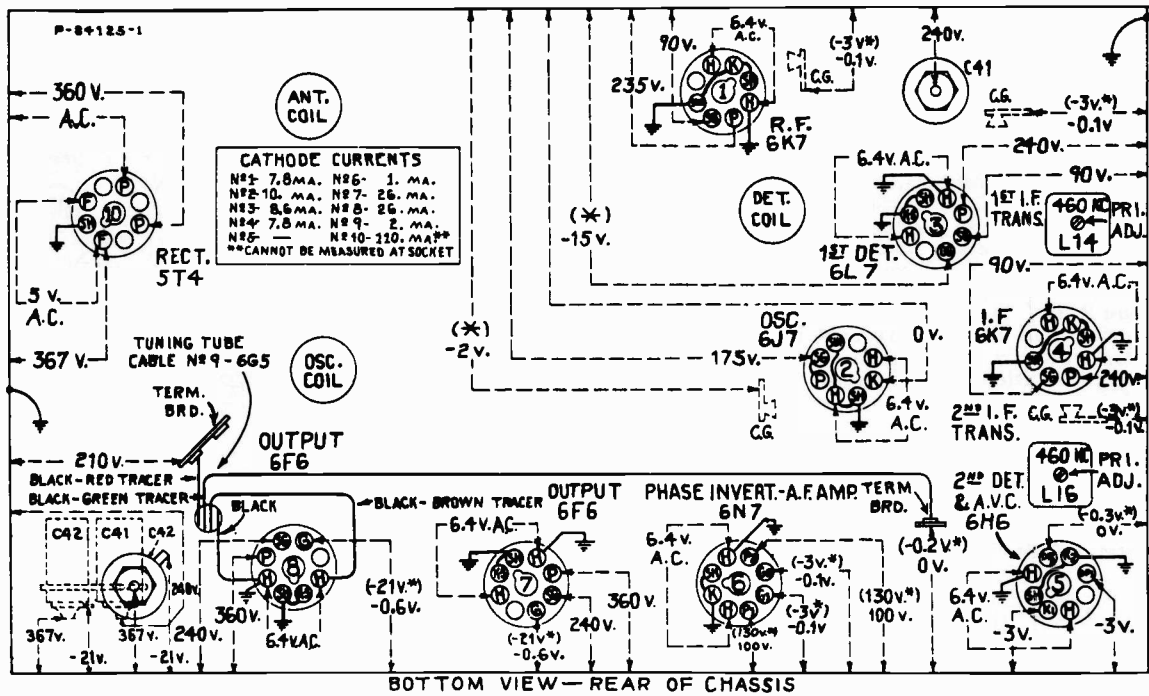
U-105



U-107

REFER TO INDEX FOR AUTOMATIC RECORD CHANGER ADJUSTMENTS

U105 & U107



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—
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.*

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.

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	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L14 and L15	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C20	Max. (peak) *
4	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Det.	C9	Max. (peak) †
5	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak) ‡
6	Ant. Term.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C23	Max. (peak) *
7	Ant. Term.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" L-F Osc.	L13	Max. (peak)
8	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	Max. (peak)
9	Ant. Term.	200 Mmfd.	600 kc	"A"	600 kc	"A" L-F Osc.	L13	Max. (peak)
10	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	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 18,080 kc.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12038	Band—Rubber band for tuning tube	14375	Shield—Oscillator coil shield
14384	Belt—Variable condenser drive belt	12008	Shield—First or second I.F. transformer shield
14618	Board—Antenna and ground terminal board (Model U-105 only)	14114	Socket—Dial lamp socket
14517	Board—Antenna and ground terminal board (Model U-107 only)	14171	Socket—Pilot lamp socket
12717	Board—Phonograph terminal board	11195	Socket—5-contact 5T4 Radiotron socket
14338	Bushing—Variable condenser mounting bushing assembly	11488	Socket—2-contact female for compartment lamp cable—Model U-107
14524	Cable—Band indicator cable, approximately 6½ in. long	11196	Socket—8-contact 6F6, 6H6, 6K7, 6L7, 6N7, or 6J7 Radiotron socket
14523	Cable—Tone control indicator cable, approximately 3 in. long	12907	Spring—Tension spring for indicator gear, Stock No. 30085
14394	Cable—Tuning tube cable and socket	14342	Spring—Tension spring for idler, Stock No. 14341
11350	Cap—Grid contact cap	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12800
12607	Cap—First I.F. transformer shield top	14599	Switch—High-frequency tone and power switch (S4, S5)
12581	Cap—Second I.F. transformer shield top	14515	Switch—Range switch (S1, S2, S3)
12884	Capacitor—Adjustable trimmer (long) (C2, C23, C26)	14376	Transformer—First I.F. transformer (L14, L15, C12, C13)
12714	Capacitor—Adjustable trimmer (medium) (C9, C20)	14283	Transformer—Second I.F. transformer (L16, L17, C27, C28, C29, R5, R6)
14021	Capacitor—22 Mmfd. (C25)	11211	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T1)
13545	Capacitor—39 Mmfd. (C7, C53)	11212	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
12720	Capacitor—100 Mmfd. (C11)	11213	Transformer—Power transformer, 105-250 volts, 50-60 cycles (T1)
14262	Capacitor—110 Mmfd. (C12, C13)	14597	Volume Control—Radio volume control and Radio-Record switch (R9, S10)
12404	Capacitor—120 Mmfd. (C27, C28)	14379	Washer—Felt washer for indicator pointer
12724	Capacitor—120 Mmfd. (C18)	REPRODUCER ASSEMBLIES (Speaker RL76-1)	
12406	Capacitor—180 Mmfd. (C29)	14608	Cap—Dust cap for cone center
12952	Capacitor—330 Mmfd. (C3, C10, C33)	14603	Coil—Field coil (L20)
12727	Capacitor—555 Mmfd. (C24)	14604	Coil—Hum neutralizing coil (L19)
12537	Capacitor—560 Mmfd. (C5)	14602	Cone—Reproducer cone and dust cap (L18)
12898	Capacitor—1,500 Mmfd. (C16)	5039	Plug—4-contact male plug for reproducer
12729	Capacitor—1,550 Mmfd. (C22)	14600	Reproducer—Reproducer, complete
12728	Capacitor—4,500 Mmfd. (C21)	14358	Screw—Screw, washer, and lockwasher to hold core in yoke
12897	Capacitor—4,700 Mmfd. (C6)	14601	Transformer—Output transformer (T2, C52)
4838	Capacitor—.005 Mfd. (C39, C40, C50, C51, C54)	14357	Washer—Spring washer to hold field coil
13138	Capacitor—.01 Mfd. (C31, C35, C36)	OPERATING MECHANISM ASSEMBLIES (Model U-105 only)	
4870	Capacitor—.025 Mfd. (C30, C32, C34)	14199	Bushing—Record separator rotating shaft bushing
4841	Capacitor—.01 Mfd. (C4, C17)	14183	Cam—Cam and gear assembly
5170	Capacitor—.025 Mfd. (C15)	6808	Clutch—Trip lever friction clutch
12741	Capacitor—.05 Mfd. (C14, C37)	14197	Finger—Friction finger assembly
5212	Capacitor—.16 Mfd. (C41)	14186	Hub—Rotating hub and record separator, complete with set screw
14531	Capacitor—.25 Mfd. (C42)	14189	Lever—Locating lever assembly
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	14184	Lever—Main lever and link assembly
14516	Coil—Oscillator coil and shield (L11, L12, L13)	14201	Lever—Manual index lever assembly
14414	Coil—R.F. coil and shield (L5, L6, L7, L8, L9, L10)	14193	Lever—Pickup lift cable lever
14513	Condenser—3-gang variable condenser (C1, C8, C19)	14194	Lever—Pickup arm lever, complete with set screws
14783	Connector—2-contact female connector for compartment lamp cable or motor power cable	14198	Lever—Reject lever assembly
5040	Connector—4-contact female connector for reproducer cable	14185	Lever—Trip lever and friction clutch assembly
12006	Core—Adjustable core and stud for transformer, Stock Nos. 14376 and 14283	14196	Pawl—Trip pawl assembly
12800	Core—Adjustable core and stud for coil, Stock No. 14516	4563	Screw—Cable lever screw and two locknuts
14596	Dial—Station selector dial scale, complete with tuning tube escutcheon (Model U-105 only)	14200	Screw—No. 8-32 special hex-head screw and lockwasher for record separator shaft mounting
14518	Dial—Station selector dial scale, complete with tuning tube escutcheon (Model U-107 only)	4059	Screw—Trip lever clutch tension adjustment screw
14514	Drive—Variable condenser vernier drive pinion gear and shaft	14188	Screw—No. 10-32 x 7/16 fillister-head, cone-pointed set screw for rotating hub
14345	Drum—Variable condenser drive belt drum, complete with set screws	14195	Screw—No. 10-32 x 5/16 fillister-head, cone-pointed set screw for pickup arm lever
14387	Escutcheon—Tuning tube escutcheon	14187	Shaft—Rotating shaft for record separator
11982	Fastener—Dial scale fastener	3676	Spring—Cam pawl tension spring
30085	Gear—Indicator drive gear and hub, and pointer stem and gear	3666	Spring—Lift cable tension spring
14341	Idler—Station selector drive belt idler	14190	Spring—Locating lever pawl tension spring
14519	Indicator—Station selector indicator pointer	14191	Spring—Locating lever or reject lever tension spring
14520	Indicator—Vernier indicator pointer	14192	Spring—Main lever tension spring
5226	Lamp—Dial or pilot lamp	OPERATING MECHANISM ASSEMBLIES (Model U-107 only)	
14028	Nut—Jamb nut for adjustable trimmer capacitor, Stock Nos. 12714 and 12884	14754	Cam—Cam and gear assembly
12471	Plate—6J7 Radiotron socket mounting plate and rubber cushions—less socket, Stock No. 11196	6808	Clutch—Trip lever friction clutch
14340	Pulley—Station selector drive belt pulley and knob shaft	14756	Cover—Metal cover for trip lever and friction finger assembly
14598	Reflector—Dial reflector and bracket, complete with dial lamp bracket, tuning tube bracket, and tone and band indicators	6809	Finger—Manual index lever finger assembly
5112	Resistor—1,000 ohms, carbon type, ½ watt (R2)	3670	Finger—Friction finger assembly
14078	Resistor—18,000 ohms, carbon type, ½ watt (R27)	11564	Lever—Manual index lever—less pin
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R5)	14755	Lever—Main lever and link assembly
11305	Resistor—22,000 ohms, carbon type, ½ watt (R10)	14914	Lever—Pickup lift cable lever
11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R19)	11555	Lever—Trip lever and friction clutch assembly
13735	Resistor—33,000 ohms, carbon type, ½ watt (R4)	30824	Pawl—Trip pawl assembly
5033	Resistor—33,000 ohms, carbon type, ½ watt (R31)	3672	Pin—Manual index lever pin
11646	Resistor—47,000 ohms, carbon type, ½ watt (R13)	13635	Plate—Eject arm actuating plate assembly
5145	Resistor—100,000 ohms, carbon type, ½ watt (R14, R15, R18)	4564	Screw—Manual index lever finger set screw
11398	Resistor—220,000 ohms, carbon type, 1/10 watt (R6)	4059	Screw—Trip lever clutch tension adjustment screw
11453	Resistor—270,000 ohms, carbon type, 1/10 watt (R16, R17)	4566	Screw—Special screw used to fasten main lever and link assembly bushing
11172	Resistor—470,000 ohms, carbon type, ½ watt (R11)	13637	Spacer—Pickup arm mounting spacer
11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R3)	13638	Spring—Actuating spring
12013	Resistor—1 megohm, carbon type, 1/10 watt (R23, R30)	4565	Spring—Manual index lever finger tension spring
13730	Resistor—1 megohm, carbon type, ½ watt (R13)	4061	Spring—Main spring lever tension spring or pickup arm cable tension spring
11626	Resistor—2.2 megohms, carbon type, ½ watt (R7, R8)	2893	Spring—Trip lever latch plate tension spring
11668	Resistor—5.6 megohms, carbon type, ½ watt (R26)	3678	Spring—Cam and gear pawl tension spring
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)	14916	Spring—Pickup lift lever spring
14343	Retainer—Station selector knob shaft and pulley retainer	4125	Spring—Eject arm horizontal action tension spring
14350	Screw—No. 8-32 x 3/16 square head set screw for drum, Stock No. 14345, and gear, Stock No. 30085	13636	Stud—Pickup arm lift cable stud and nut
14374	Shield—Antenna or R.F. coil shield	2917	Washer—Spring washer—"U" type

U105 & U107

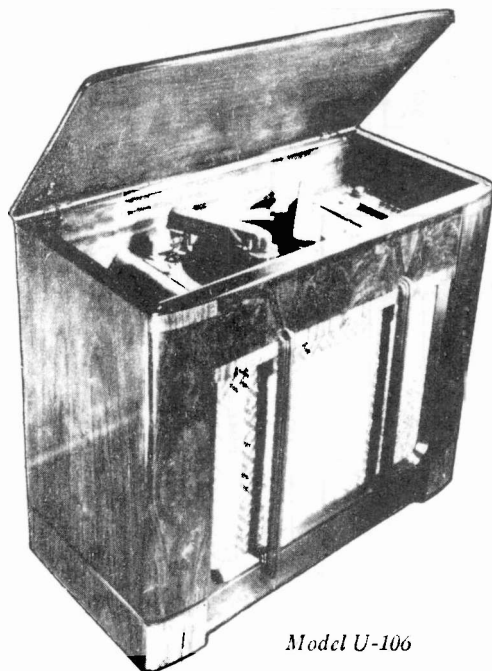
REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
EJECT ARM ASSEMBLIES (Model U-107 only)			
14753	Arm—Eject arm, complete	14205	Support—Pickup arm mounting spacer, washers, and nut
11533	Ball—1/16-in.-diameter steel ball	14206	Switch—Motor toggle switch (\$101)
10129	Ball—3/16-in.-diameter steel ball	14629	Switch—Pickup shorting switch (\$102)
11529	Bearing—Ejector tip bearing and nut	14204	Turntable, complete
11538	Bracket—Eject arm bracket	14213	Washer—Pickup arm stop washer and spacing washer
11537	Collar—Eject arm shaft collar and set screw	MOTOR BOARD ASSEMBLIES (Model U-107 only)	
11536	Cushion—Counter balance roller cushion—located inside of eject arm	11881	Base—Phonograph compartment lamp socket and base
4055	Post—Vertical adjustment post—located on eject arm bracket	14760	Cup—Used-needle cup
3729	Roller—Eject arm counter balance roller—located inside of eject arm	12051	Capacitor—2 Mfd., complete with 2-contact male connector for use with motor, Stock Nos. 9650 or 9651 only (C115)
4580	Screw—No. 6-32 x 3/16-in. square-head set screw for eject arm collar	13101	Capacitor—4 Mfd., complete with 2-contact male connector for use with motor, Stock No. 9735 only (C115)
11534	Screw—No. 8-36 x 7/32-in. special screw for eject arm tip center adjustment	4674	Connector—2-contact male connector for Stock Nos. 12051, 13101 or phono. compartment lamp leads
11535	Shaft and Collar—Eject arm vertical action shaft and collar assembly	14211	Connector—2-contact female connector for motor cable
11528	Silencer—Ejector tip silencer	11488	Connector—2-contact female connector for motor leads
4067	Spring—Ejector arm bracket spring	14762	Damper—Turntable damper
11531	Spring—Ejector tip spring	11553	Escutcheon—Index escutcheon engraved "Manual—12—10"
11530	Tip—Ejector tip with tip center, adjusting screw and cap	14688	Knob—Needle rest knob
11539	Yoke—Eject arm yoke assembly	4340	Lamp—Phonograph compartment lamp—6.3 volts
PICKUP AND ARM ASSEMBLIES (Model U-105 only)		3764	Nut—Cap nut for motor board suspension assembly
14291	Armature—Pickup armature assembly	30565	Resistor—500 ohms, 6 watts, for use with motor, Stock No. 9735 only (R116)
4064	Cable—Pickup lift cable	14761	Rest—Pickup rest
14672	Coil—Pickup coil (L101)	14825	Roller—Pickup arm cable guide roller—comprising bracket, roller, and guide pin
14292	Damper—Pickup damper block, complete with clamp and screw	11711	Shade—Phonograph compartment lamp shade
14293	Pickup and Arm, complete	14758	Spacer—Pickup arm mounting spacer
3811	Screw—Needle holding screw	14270	Spring—Retaining spring for knob, Stock No. 14758
4387	Screw—No. 6-32 x 1/2-in. headless set screw for pickup arm pivot shaft	4565	Spring—Tension spring for needle rest
11730	Cable—Pickup Cable and Connector	3763	Suspension Spring—Suspension spring, washer, and bolt assembly for motor board—comprising one bolt, two cup washers, two springs, two "C" washers, and one cap nut
PICKUP AND ARM ASSEMBLIES (Model U-107 only)		4671	Switch—Operating switch, toggle type (\$112)
10941	Ball—Steel ball for pivot shaft bearing	30157	Switch—Pickup shorting switch (\$110)
3204	Cable—Pickup lift cable	14759	Turntable, complete
30101	Cable—Shielded pickup cable—connects pickup unit to shorting switch	MISCELLANEOUS ASSEMBLIES (Model U-105 only)	
12850	Damper—Pickup arm pivot shaft damper—comprising one upper rubber damper and bearing, one lower rubber damper and one lower bearing	4391	Box—Used-needle box
14820	Mechanism—Pickup mechanism, complete with needle screw	14607	Cable—Shielded compensation cable, complete with male plug
14818	Pickup and Arm, complete	13103	Cap—Pilot lamp cap
12546	Plug—Pivot shaft bearing plug	12952	Capacitor—330 Mmfd. (C105)
14823	Rod—Pickup arm brake trip rod	12635	Capacitor—1,000 Mmfd. (C104)
14822	Screw—Needle screw	5148	Capacitor—.007 Mfd. (C101)
14824	Screw—Pickup mechanism terminal screw	11315	Capacitor—.015 Mfd. (C102, C103)
14913	Spring—Pickup arm tension spring	14610	Escutcheon—Station selector escutcheon and crystal, complete with tone and band indicating strips
14821	Support—Pickup mechanism support	14611	Index—Tone control indicating strip—mounts in station selector escutcheon
MOTOR ASSEMBLIES (Model U-105 only)		14529	Index—Band indicating strip—mounts in station selector escutcheon
14215	Governor—Governor, complete for motor, Stock Nos. 9799 and 14465	14359	Knob—Station selector knob
14465	Motor—105-125 volts, 50-60 cycles (M-101)	14269	Knob—Volume control, tone control, or range switch knob
9799	Motor—105-125 volts, 60 cycles (M-101)	11607	Receptacle—New-needle card holder
14214	Screw—Motor mounting screw and spacer assembly	11400	Resistor—27,000 ohms, carbon type, 1/2 watt (R103, R104)
MOTOR ASSEMBLIES (Model U-107 only)		13735	Resistor—33,000 ohms, carbon type, 1/2 watt (R102)
9735	Motor—105-125 volts, 25 cycles (M-110)	11322	Resistor—39,000 ohms, carbon type, 1/2 watt (R101)
9651	Motor—105-125 volts, 50 cycles (M-110)	4560	Screw—Chassis mounting screw and washer assembly
9650	Motor—105-125 volts, 60 cycles (M-110)	4982	Spring—Retaining spring for knob, Stock No. 14359
12050	Suspension Spring—Motor mounting spring, washer, and stud assembly—comprising six springs, six cup washers, three spring washers, and three studs	14270	Spring—Retaining spring for knob, Stock No. 14269
AUTOMATIC SWITCH ASSEMBLIES (Model U-107 only)		3763	Suspension Spring—Motor board suspension springs, stud, washer, and nut assembly
3994	Cover—Motor switch cover	14609	Transformer—Phonograph input transformer (T101)
10184	Plate—Automatic brake latch plate	14608	Volume Control—Phonograph volume control (R105)
10174	Springs—Automatic brake springs	MISCELLANEOUS ASSEMBLIES (Model U-107 only)	
6805	Switch Assembly—Automatic switch, complete	12488	Capacitor—270 Mmfd. (C110)
3322	Switch—Motor switch (\$111)	13762	Capacitor—1,500 Mmfd. (C111) in 25 cycle model only
MOTOR BOARD ASSEMBLIES (Model U-105 only)		14393	Capacitor—.01 Mfd. (C114)
14208	Bracket—Bumper bracket and bumper, complete	11315	Capacitor—.015 Mfd. (C111, C112, C113)—C111 .015 Mfd. in 50 and 60 cycle models only
14209	Bumper—Rubber bumper	30099	Control—Pickup control (R114)
14630	Cable—Shielded cable, 22 inches long, complete with single contact male connector—connects pickup shorting switch to input transformer or compensator	14610	Escutcheon—Station selector escutcheon and crystal
11704	Damper—Turntable damper and damper plate	14269	Knob—Radio or phonograph volume control, tone control, or range switch knob
14212	Escutcheon—Manual index lever and switch escutcheon	14359	Knob—Station selector knob
14203	Post—Record post—located on front left-hand corner of motor board	14529	Index—Band indicator card—mounts in station selector escutcheon
14210	Rest—Pickup arm rest	14611	Index—Tone indicator card—mounts in station selector escutcheon
14207	Roller—Pickup lift cable roller and bracket	11607	Receptacle—New-needle card holder
14211	Socket—Motor board socket and shell	12738	Resistor—27,000 ohms, insulated, 1/2 watt (R111, R115) —R115 27,000 ohms in 50 cycle model only
		12454	Resistor—33,000 ohms, insulated, 1/2 watt (R110)
		12286	Resistor—56,000 ohms—insulated 1/2 watt (R115) in 25 cycle model only
		14560	Resistor—100,000 ohms, insulated, 1/2 watt (R113)
		12210	Screw—Chassis mounting screw and washer assembly
		3763	Suspension Spring—Motor board suspension bolt spring washers and nut
		30098	Volume Control—Phonograph volume control (R112)

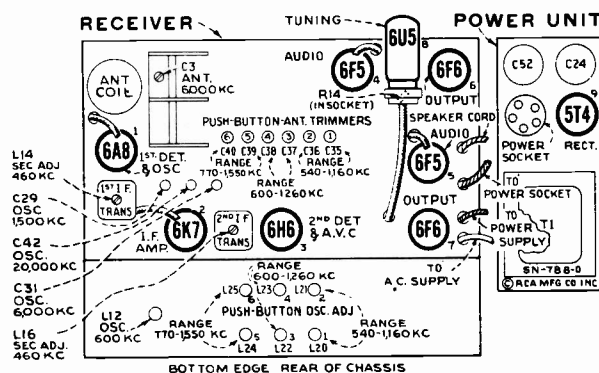
MODEL U-106

Nine-Tube, Three-Band, A-C, Radio-Phonograph

SEE INDEX FOR SERVICE DATA
ON AUTOMATIC RECORD CHANGER



Model U-106



-Radiotron and Trimmer Locations

Precautionary Lead Dress.—(1) Filament leads should be dressed away from audio grids. (2) Output plate leads should be dressed away from radio-phonograph switch. Maintain original size, length, and position of: (3) All leads from range switch to antenna and oscillator coils. They should be as short, rigid, and separated as far as possible from other leads and chassis. (4) Lead from oscillator coil to ground. (5) Leads from gang condenser to range selector. (6) Leads of "C"-band antenna series condenser, C2. If the r-f and i-f wiring is altered during servicing the receiver must be realigned.

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A).....	540-1,720 kc
"Medium Wave" (B).....	2,300-7,500 kc
"Short Wave" (C).....	7,500-22,000 kc
Six "Electric Tuning" Positions.....	540-1,550 kc

RADIOTRON COMPLEMENT

- (1) RCA-6A8..... First Detector and Oscillator
- (2) RCA-6K7..... I-F Amplifier
- (3) RCA-6H6..... Second Detector and A.V.C.
- (4) RCA-6F5..... Audio Amplifier

DIAL LAMPS

Radio Chassis (4).....	Mazda No. 46, 6.3 volts, 0.25 amp
Phonograph (1).....	Mazda No. 40, 6.3 volts, 0.15 amp

POWER SUPPLY RATINGS

	Radio Only	Total
A-6...105-125 volts, 60 cycles.....	120 watts	150 watts
A-5...105-125 volts, 50 cycles.....	125 watts	155 watts
B-2...105-125 volts, 25 cycles.....	120 watts	150 watts
C-6...105-125/200-250 volts, 60 cycles.....	120 watts	150 watts
C-5...105-125/200-250 volts, 50 cycles.....	125 watts	155 watts

LOUDSPEAKER

Type.....	Twelve-inch Electrodynamic
Voice Coil Impedance.....	2.2 ohms at 400 cycles

PHONOGRAPH

Type.....	Automatic or Manual
Record Capacity.....	Eight 10-inch or Seven 12-inch
Turntable Speed.....	78 R.P.M.
Type of Pickup.....	Crystal
Pickup Impedance.....	80,000 ohms at 1,000 cycles

Push Button Adjustment

Each push button connects a particular oscillator coil and antenna trimmer condenser. The tuning of this coil and this condenser selects a station.

The frequency ranges for various push-buttons are:

- (1) 540 to 1,160 kilocycles—Adjust L-20 and C-35
- (2) 540 to 1,160 kilocycles—Adjust L-21 and C-36
- (3) 600 to 1,260 kilocycles—Adjust L-22 and C-37
- (4) 600 to 1,260 kilocycles—Adjust L-23 and C-38
- (5) 770 to 1,550 kilocycles—Adjust L-24 and C-39
- (6) 770 to 1,550 kilocycles—Adjust L-25 and C-40

R-F ALIGNMENT FREQUENCIES

"Medium Wave" (B).....	6,000 kc (osc., ant.)
"Short Wave" (C).....	20,000 kc (osc.)
"Standard Broadcast" (A)....	600 kc (osc.), 1,500 kc (osc.)
Electric Tuning.....	Desired Station (osc., ant.)

- (5) RCA-6F5..... Inverter and Audio Amplifier
- (6) RCA-6F6..... Power Output
- (7) RCA-6F6..... Power Output
- (8) RCA-6U5..... "Magic Eye" Tuning Tube
- (9) RCA-5T4..... Full-Wave Rectifier

POWER OUTPUT

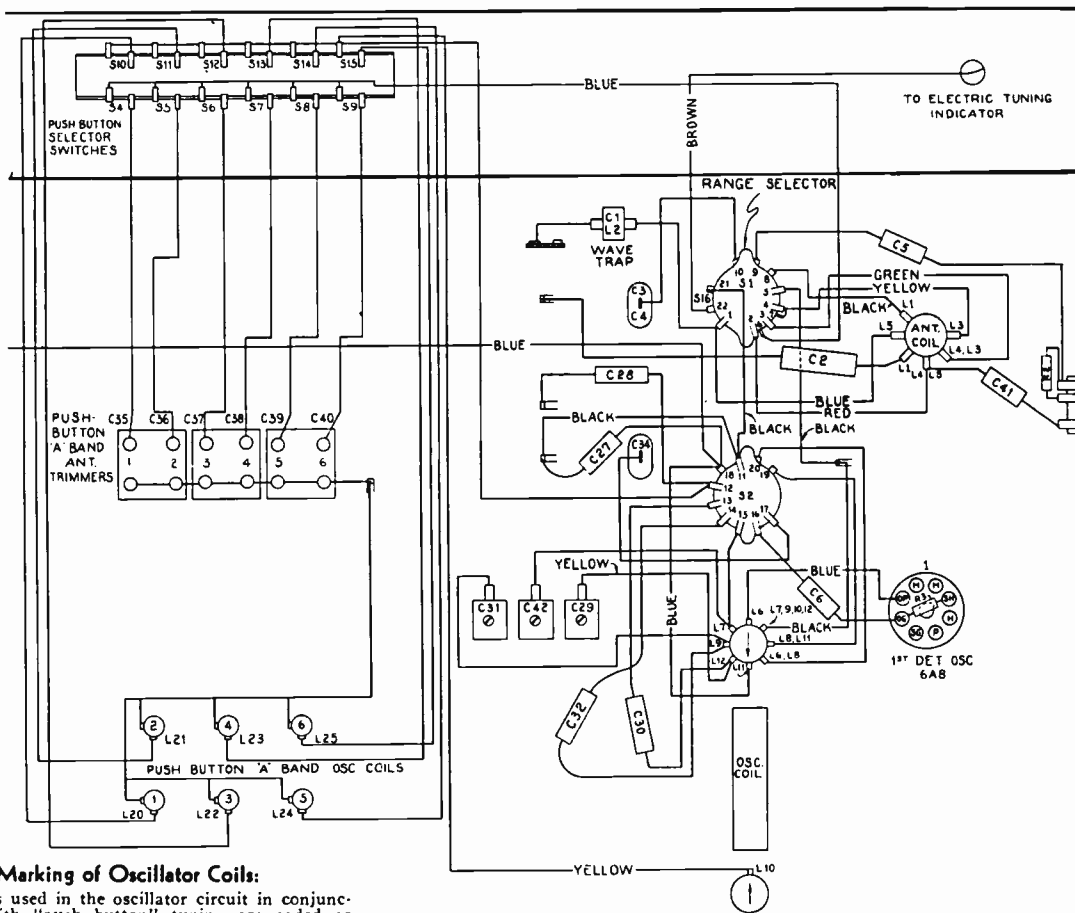
Undistorted.....	10 watts
Maximum.....	12 watts

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

(1) RCA-6A8—1st Det. and Osc.....	11 ma.
(2) RCA-6K7—I-F Amp.....	8 ma.
(3) RCA-6H6—2nd Det. and A.V.C.....	—
(4) RCA-6F5—Audio Amplifier.....	0.29 ma.
(5) RCA-6F5—Inverter.....	0.29 ma.
(6) RCA-6F6—Output.....	28.5 ma.
(7) RCA-6F6—Output.....	28.5 ma.
(8) RCA-6U5—Tuning.....	1.5 ma.
(9) RCA-5T4—Rectifier.....	110 ma.**

(** Cannot be measured at socket)



Code Marking of Oscillator Coils:

Coils used in the oscillator circuit in conjunction with "push button" tuning are coded as follows for identification purposes:

Stock No.	Range	Color Code or No.
30747	770-1,550 kc	Red 1
30748	600-1,260 kc	Orange 2
30749	540-1,160 kc	Black 3

R-F Wiring Diagram

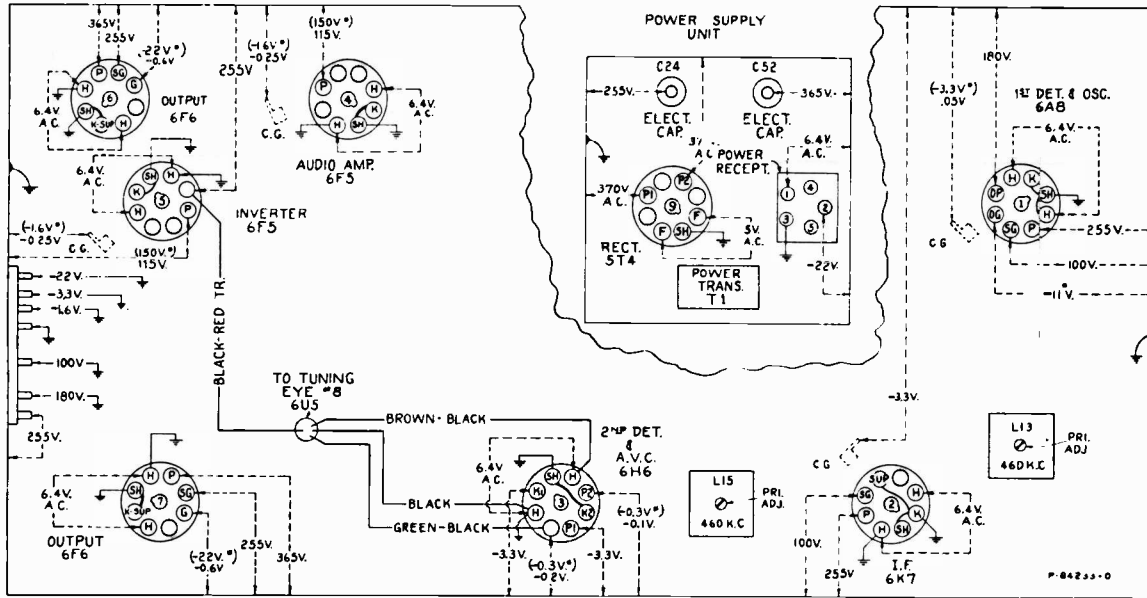
Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on dial with the gang tuning-condenser plates in full-mesh position. The pointer is soldered in place on the drive cable.

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	"Standard Broadcast"	No Signal 550-750 kc	2nd I-F Trans.	L15 and L16	Max. (peak)
2	6A8 Det. Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	1st I-F Trans.	L13 and L14	Max. (peak)
3	Ant. Term. A1	300 Ohms	6,000 kc	"Medium Wave"	6 mc	"B" Osc.	C31	Max. (peak)
4	Ant. Term. A1	300 Ohms	6,000 kc	"Medium Wave"	6 mc	"B" Ant.	C3	Max. (peak)
5	Ant. Term. A1	300 Ohms	20,000 kc	"Short Wave"	20 mc	"C" Osc.	C42	Max. (peak)*
6	Ant. Term. A1	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L12	Max. (peak)
7	Ant. Term. A1	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C29	Max. (peak)
8	Ant. Term. A1	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L12	Max. (peak)
9	Ant. Term. A1	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C29	Max. (peak)

* Use maximum capacity peak if two peaks can be obtained. Check for image signal by shifting receiver dial to 20.92 mc.

U106



BOTTOM VIEW-REAR OF CHASSIS

Radiotron Socket Voltages and Trimmer Locations

Measured at 117 volts, 60-cycle supply. Measurements made with set tuned to quiet point near 1,000 kc; volume control at minimum; Radio-Phonograph switch to "Radio"; using a 1,000-ohm-per-volt meter having ranges of 10, 50, 250, and 500 volts. (Use nearest range above the specified

measured voltage.) Measurements made to chassis unless otherwise indicated.

Note.—Values with star (*) are operating voltages. Values not starred are actual measured voltages.

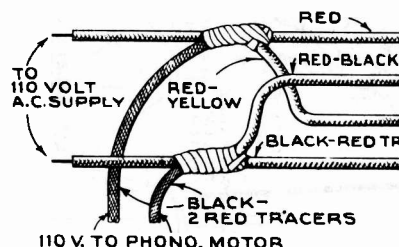
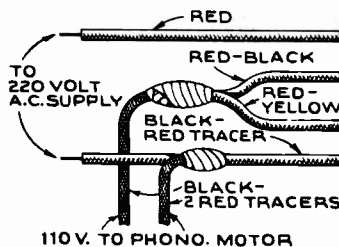
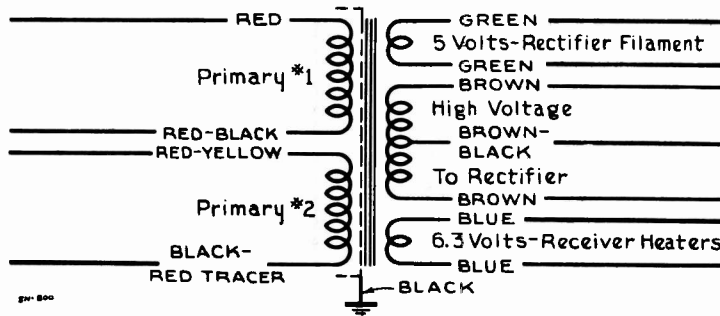
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
30755	Arm—Band indicator operating arm—fastens on range switch shaft.....	5040	Connector—4-contact female for speaker cable..
14384	Belt—Drive belt.....	14781	Connector—5-contact male for power cable....
30864	Board—Antenna and ground terminal board...	30868	Connector—2-contact female for A.C. switch cable
30752	Bracket—Tuning tube mounting bracket and clip	14783	Connector—2-contact female for compartment lamp cable.....
30754	Cable—Band indicator operating cable.....	30743	Control—Volume control, tone control and power switch in one unit (R11, R25, S3).....
30728	Cable—Pickup cable and connector.....	30763	Cord—Indicator drive cord.....
11350	Cap—Grid contact cap.....	30848	Core—Adjustable core for push button coils..
30766	Cap—Rubber cap for tuning tube.....	30861	Dial—Station selector dial scale.....
30751	Capacitor—Trimmer comprising two sections each 2-10 Mmfd. and one section 3-30 Mmfd. (C29, C31, C42)	30753	Disc—Band indicator disc with colored segment.
30750	Capacitor—Dual trimmer 30-180 Mmfd. each section (C39, C40)	30741	Drive—Variable condenser vernier drive shaft and pinion gear.....
30764	Capacitor—Dual trimmer 65-280 Mmfd. each section (C37, C38)	30587	Drum—Drive belt drum—fastens on variable condenser vernier drive shaft.....
30765	Capacitor—Dual trimmer 120-470 Mmfd. each section (C35, C36)	30761	Drum—Indicator cord drum—fastens on variable condenser rotor shaft.....
12723	Capacitor—56 Mmfd. (C6)	14341	Idler—Drive idler pulley, bracket and spring..
30769	Capacitor—100 Mmfd. (C28)	30762	Indicator—Indicator pointer and slider.....
14262	Capacitor—110 Mmfd. (C7, C8)	5226	Lamp—Dial lamp.....
12404	Capacitor—120 Mmfd. (C9, C10)	30757	Pulley—Large size pulley for indicator cord—located at top left corner of dial bracket....
12725	Capacitor—150 Mmfd. (C41)	30758	Pulley—Medium size pulley for indicator cord—located at top right side of dial bracket..
12406	Capacitor—180 Mmfd. (C12)	14697	Pulley—Small size pulley for indicator cord—located at top right hand corner of dial bracket.....
13003	Capacitor—180 Mmfd. (C16)	30771	Resistor—50 ohms, flexible type, 2 1/2 watts (R1)
12952	Capacitor—330 Mmfd. (C5)	30866	Resistor—12,000 ohms, 1 watt (R35).....
30433	Capacitor—470 Mmfd. (C45)	3998	Resistor—15,000 ohms, 1/2 watt (R8).....
30768	Capacitor—500 Mmfd. (C30)	11175	Resistor—18,000 ohms, 1/2 watt (R27).....
30767	Capacitor—2,000 Mmfd. (C32)	14281	Resistor—22,000 ohms, 1/10 watt (R6).....
12811	Capacitor—3,600 Mmfd. (C54)	12454	Resistor—33,000 ohms, 1/2 watt (R3).....
30303	Capacitor—.0035 Mfd. (C2)	14560	Resistor—100,000 ohms, 1/2 watt (R31, R36)...
4838	Capacitor—.005 Mfd. (C18, C19, C48, C51, C55)	11398	Resistor—220,000 ohms, 1/10 watt (R5).....
14393	Capacitor—.01 Mfd. (C13, C17, C27, C50)	12199	Resistor—270,000 ohms, 1/2 watt (R10, R12, R29, R30).....
11315	Capacitor—.015 Mfd. (C15)	11172	Resistor—470,000 ohms, 1/2 watt (R9).....
4870	Capacitor—.025 Mfd. (C21)	11397	Resistor—560,000 ohms, 1/10 watt (R2).....
4839	Capacitor—.01 Mfd. (C11, C20, C53)	12013	Resistor—1 Megohm, 1/10 watt (R14).....
30867	Capacitor—.05 Mfd. (C14, C49)	13730	Resistor—1.2 Megohm, 1/2 watt (R22, R28).....
30745	Coil—Antenna coil and shield A, B, C, bands (L1, L3, L4, L5)	30208	Resistor—1.2 Megohm, 1/2 watt (R24).....
30747	Coil—Oscillator coil A band (L20 or L21)...	12679	Resistor—2.2 Megohm, 1/2 watt (R4, R13).....
30748	Coil—Oscillator coil A band (L22 or L23)...	30865	Resistor—Voltage divider comprising one 1,500 ohm, one 2,100 ohm, one 2,900 ohm, two 15 ohm and one 165 ohm sections (R16, R17, R18, R20, R33, R34).....
30749	Coil—Oscillator coil A band (L24 or L25)...		
30746	Coil—Oscillator coil A, B, C bands (L6, L7, L8, L9, L10, L11, L12).....		
30740	Condenser—2-gang variable tuning condenser (C3, C4, C34).....		

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
30760	Shaft—Tuning knob shaft and pulley.....	14758	Spacer—Pickup arm mounting spacer.....
5119	Socket—3-contact socket for speaker cable.....	14270	Spring—Retaining spring for knob, Stock No. 14758.....
13871	Socket—8-contact tuning tube socket.....	4565	Spring—Tension spring for needle rest.....
11196	Socket—8-contact Radiotron socket.....	30157	Switch—Pickup shorting switch (S19).....
14114	Socket—Dial lamp socket—open type.....	4871	Switch—Operating switch—toggle switch (S17).....
14171	Socket—Dial lamp socket—shell type.....	14759	Turntable, complete.....
30756	Spring—Band indicator tension spring.....	REPRODUCER ASSEMBLIES	
14342	Spring—Idler pulley tension spring.....	Speaker RL-70E-2	
30585	Spring—Indicator cord tension spring.....	13868	Cap—Dust cap for cone center.....
12007	Spring—Retaining spring for core Stock No. 30846.....	11234	Coil—Field coil (L19).....
30742	Switch—Range switch (S1, S2, S16).....	11469	Coil—Hum neutralizing coil (L18).....
30862	Switch—Radio-record switch (S18).....	12687	Cone—Reproducer cone and dust cap (L17).....
30744	Switch—Tuning push button switch (S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15).....	5039	Plug—4-contact male plug for reproducer.....
14376	Transformer—First I.F. transformer (L13, L14, C7, C8).....	14535	Reproducer, complete.....
14283	Transformer—Second I.F. transformer (L16, L18, C9, C10, C12, R5, R6).....	14534	Transformer—Output transformer (T2).....
13838	Trap—Wave trap (L2, C1).....	14357	Washer—Spring washer to hold field coil.....
POWER UNIT ASSEMBLIES			
5212	Capacitor—18 Mfd. (C24).....	30778	Button—Automatic station selector push button.....
14531	Capacitor—25 Mfd. (C52).....	14747	Card—Station call letter cards.....
14783	Connector—2-contact female connector for motor power cable.....	30780	Cushion—Rubber cushion for automatic station selector button.....
30870	Connector—2-prong male connector of A.C. cable.....	11608	Cap—Pilot lamp cap.....
14279	Socket—5-contact socket for chassis power cable.....	30774	Escutcheon—Station selector escutcheon complete with side panels and buttons.....
11196	Socket—Rectifier tube socket.....	30775	Escutcheon—Station selector escutcheon center section only—less side panels and buttons.....
30869	Transformer—Power transformer 110 and 220 volts, 50 to 60 cycles (T1).....	30776	Escutcheon—Station selector escutcheon right and left hand sections only.....
MOTOR BOARD ASSEMBLIES			
11881	Base—Phonograph compartment lamp socket and base.....	11607	Holder—Needle card holder.....
14819	Cable—Shielded pickup cable—connects shorting switch to compensator pack.....	30773	Knob—Volume control knob.....
12051	Capacitor—2 Mfd., complete with 2-contact male connector for use with motor, Stock Nos. 9850 or 9851 only (C56).....	14269	Knob—Range switch and radio-record switch knob.....
14805	Connector—2-contact male connector for Stock Nos. 12051, 13101 or phono compartment lamp leads.....	14359	Knob—Station selector knob.....
4577	Connector—2-contact male connector for motor cable.....	30772	Knob—Tone control and power switch knob.....
14783	Connector—2-contact female connector for motor leads.....	5226	Lamp—Pilot lamp.....
14760	Cup—Used-needle cup.....	4580	Screw—Chassis mounting screw and washer assembly (upper).....
14782	Damper—Turntable damper.....	30872	Screw—Chassis mounting screw and cushion (lower) (sufficient for one chassis).....
11553	Escutcheon—Index escutcheon engraved "Manual—12—10".....	30779	Shield—Celluloid shield for call letter cards.....
14688	Knob—Needle rest knob.....	30777	Shield—Finished metal shield and screws for automatic station selector button panel.....
4340	Lamp—Phonograph compartment lamp—6.3 volts.....	30609	Socket—Pilot lamp socket.....
3764	Nut—Cap nut for motor board suspension.....	30330	Spring—Retaining spring for knob Stock No. 30772.....
14761	Rest—Pickup rest.....	14270	Spring—Retaining spring for knobs Stock No. 30773 and Stock No. 14269.....
14825	Roller—Pickup arm cable guide roller—comprising bracket, roller and guide pin.....	4982	Spring—Retaining spring for knob Stock No. 14359.....
11711	Shade—Phonograph compartment lamp shade.....	3763	Suspension—Motorboard suspension assembly comprising bolts, washers, spring and cap nuts.....



Additional Replacement Parts:

- Stock No.
- 31023 Replacement mounting stud for record changer cam and gear (for installation, refer to 1937 Bound Volume, page 370, section A)
 - 13101 Capacitor—4 mfd., complete with 2-contact male connector for use with 25 cycle motor, Stock No. 9785 (C56)
 - 9735 Motor—105-125 volts, 25 cycles (M1)
 - 11212 Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)

Low-Frequency Boom:

Some instruments are compensated to give an abundance of low frequencies. Later production, however, has a modified circuit which lessens the response below 100 cycles. Should there be customer reaction to the preponderant low frequency response, the following circuit components should be checked and revised to the latest specifications per the following:

- (a) Replace the 820,000 ohm resistor R-24 with one of 1.2 megohms.
- (b) Replace the .01 mfd. capacitor C-54 with a 3,600 mmfd.
- (c) Replace the 150 mmfd. capacitor C-45 with a 470 mmfd.

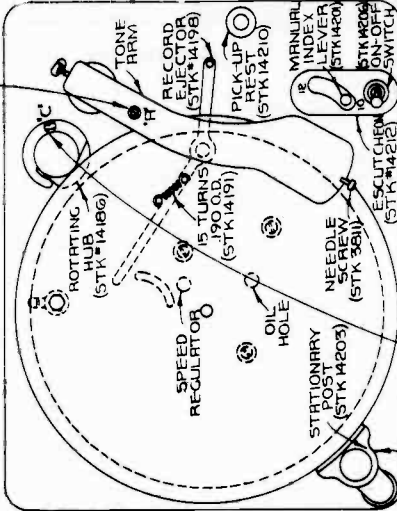
Stock Nos. 30208, 12811, and 30433 are the respective parts required.

**RECORD CHANGER REPLACEMENT PARTS AS LISTED FOR MODEL U-107
(NOT INCLUDING MOTORBOARD ASSEMBLIES)**

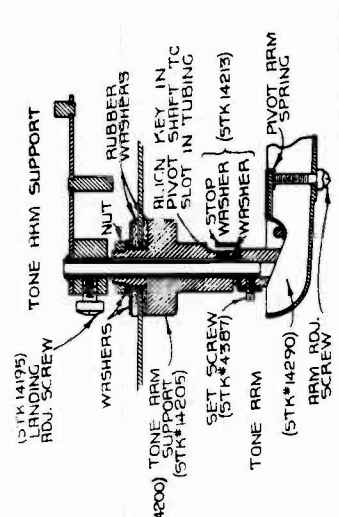
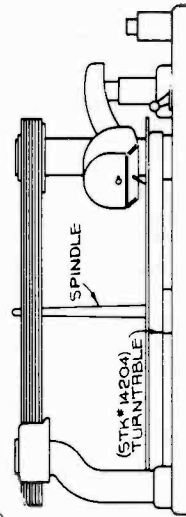
AUTOMATIC RECORD CHANGER

STOCK NO. 9800-JR. AUTOMATIC
 USED WITH
 MODELS R 97, U103 & U105

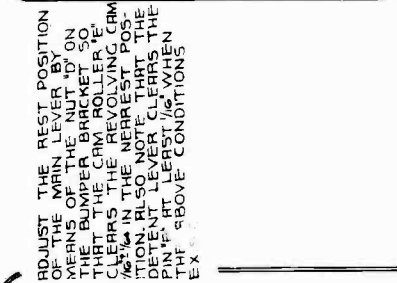
ADJUST THE LOWERMOST REST POSITION OF THE TONE ARM SO THAT THE NEEDLE POINT RESTS IN A PLANE $\frac{3}{16}$ " TO $\frac{1}{8}$ " BELOW THE PLANE OF THE TOP OF THE TURNTABLE BY MEANS OF THE SCREW 'H'.



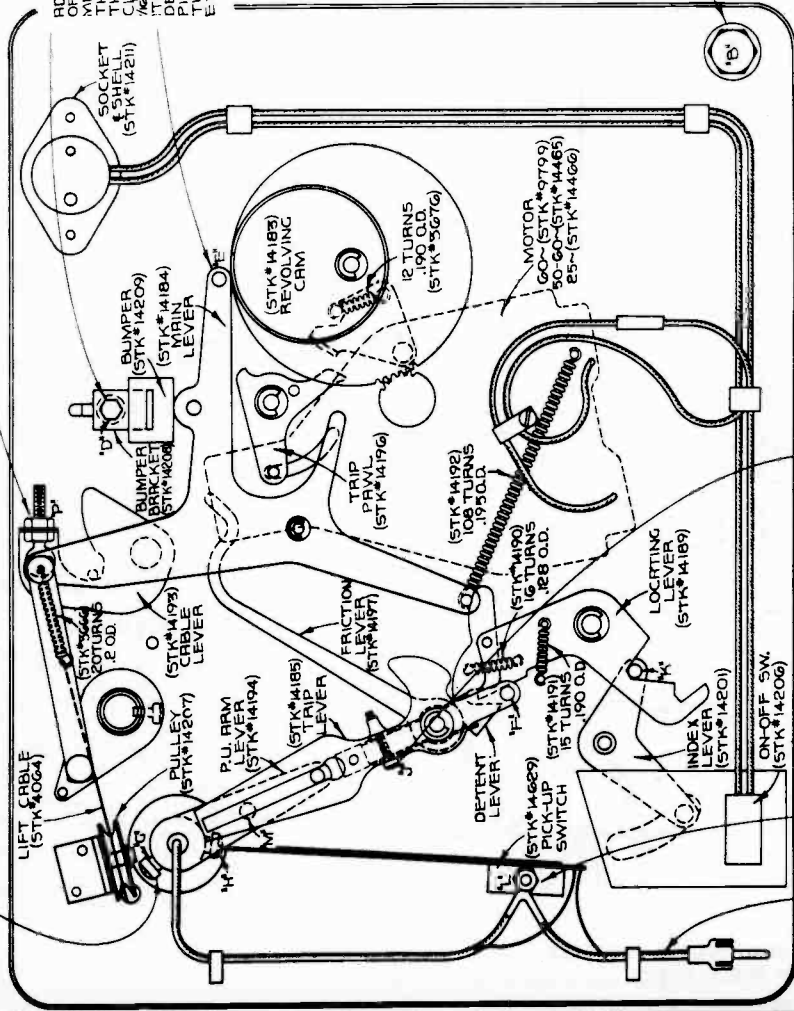
TO ADJUST RECORD POSTS: PLACE RECORD IN POSITION OVER SPINDLE SO THAT IT RESTS ON THE LOWER SHELF OF THE ROT. HUB. MOVE STATIONARY MOUNTED WITH THE TURN- TABLE AND THE BEVELED SHELF PROTRUDES UNDER THE RECORD. TIGHTEN HEAGON SCREW 'H' LOCATED UNDER MOTOR BOARD WITH RECORD STILL ON LOWER SHELF OF ROTATING HUB ADJUST SCREW 'C' (STK*14188) SO THAT THE BEVELED TONGUE ON THE SEPARATING ARM CLEARLY ENDS 1/8" FROM THE END OF THE RECORD. ADJUST SCREW 'G' SO THAT THE COMPLETE UNIT IS RESTING ON THE FOUR MOTOR BOARD BUSHINGS.



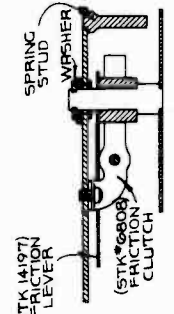
ADJUST THE REST POSITION OF THE MAIN LEVER BY MEANS OF THE NUT 'D' ON THE BUMPER BRACKET SO THAT THE CAM ROLLER LEVER CARRIES THE NEEDLES POSITION PL. SO NOTE THAT THE DETENT LEVER CLEARS THE PIN 'F' AT LEAST $\frac{1}{16}$ " WHEN THE ABOVE CONDITIONS EX-



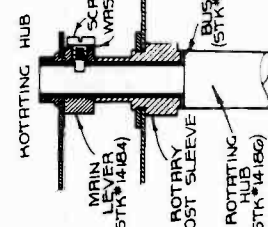
TO ADJUST THE LANDING POSITION OF THE NEEDLE FIRST LOCATE NEEDLE $\frac{1}{16}$ " FROM CENTER OF TURNTABLE. THE STOP PIN 'K' AND THE PIN 'L' ON LEVER TRIP SHOULD BE CONTACTING THE TRIP LEVER. TIGHTEN THE BLUNT SCREW 'G' ON TONE ARM SUPPORT AND RUN DEVICE THROUGH CYCLE AS A CHECK WHEN CORRECT ADJUSTMENT IS OBTAINED TIGHTEN CONE POINTED SCREW 'H' (STK*14195) ON TONE ARM SUPPORT.



ADJUST TRIP LEVER SCREW 'J' (STK*4059) UNTIL FRICTION WILL JUST FORCE FRICTION LEVER TO MOVE TRIP PAWL.



TO ADJUST PICK-UP NEEDLE 'G' FROM CENTER OF SPINDLE. ADJUST NUT 'L' SO THAT THE BLADE ON SWITCH IS JUST CONTACTING PIN 'M'.



AUTOMATIC RECORD CHANGER

USED WITH MODELS U106, U107, U108 & U109

STOCK NO. 9820 - DELUXE AUTOMATIC RECORD CHANGER

REPLACEMENT PARTS

(except motor assemblies)
Refer to Model U-107

The record changing mechanism is designed to be simple and fool-proof. Under normal operating conditions, service difficulties should be negligible. Occasionally, however, certain adjustments may be required. It is important to refrain from forcing the mechanism if there is a tendency to bind or jam, since bent levers and possibly broken parts may result.

Record Changer Adjustments

Mount motor-board on a level support. Remove turntable and cover at right of turntable. Adjustment locations are designated on figure 9 as A, B, etc. The adjustments are explained under corresponding symbols below. Perform adjustments in the following order:

A.—Trip rod "A" should be engaged in "Switch Lever" slot. Adjust trip rod "A" to obtain about $\frac{1}{8}$ of an inch clearance from motor-board.

B.—Adjust "B" to the position shown.

C.—With "Index Lever" in "Manual" position, "Pickup Arm" rotated to extreme left, and switch tripped to open contacts "C," adjust contact points "C" by bending the stiff contact arm until points are opened 10 to 30 thousandths of an inch.

D.—With "Index Lever" in "Manual" position, release set screw "D" and force "Manual Index Finger" as far as it will go towards "Trip Pawl Stop Pin." Tighten set screw.

E.—Adjust at "E" to provide approximately $\frac{1}{32}$ of an inch between outer end of "Link Slot" and screw when rubber "Bumper" is in contact with stop bracket.

F. and G.—Remove rubber silencer at "F" and adjust "F" and "G" so ejector tip "F" is in line with "Spindle." Longitudinal movement, with respect to "Ejector Arm," may be effected by loosening hex. head at "F." Lateral movement of "Ejector Arm" may be effected by adjustment "G."

H.—Adjust "H" so under side of pickup head can be raised $2\frac{1}{2}$ inches above motor-board.

J.—Adjust screw "J" until friction will just force "Trip Finger" to move "Trip Pawl" when "Index Lever" is in "12" inch position.

N.—Adjust needle pressure by turning screw under center of "Pickup Arm" so that a force of 72 grams (2.5 ounces) is required to lift needle from record. Hook scale under needle screw to measure force.

K.—Adjustment "N" must be performed prior to this adjustment. With a 12-inch record on turntable, turn on "Motor Switch," place "Index Lever" to "12" position and adjust "K" so that "Cable" tension will allow needle to lower slowly on start of record at completion of eject cycle. Turn "Motor Switch" off after eject cycle is completed and check to see that "Cable" is slightly loose when "Pickup Arm" is moved against "Spindle." Replace turntable and put a needle in "Pickup."

L.—Adjust "L" so needle will drop into center of smooth portion at the start of a 12-inch record when "Index Lever" is in "12" inch position and "Pickup Arm" is to extreme right.

M.—Loosen three screws "M" and rotate "Spacer" until pointer on "Spacer" is in line with screw to right of "Pickup Arm."

P.—Adjust turntable height by insertion or removal of thrust washers at "P" so ejector tip "F" will not eject bottom 12-inch record but will eject second from bottom record.

Q.—Adjust position of shorting switch at "Q" so switch closes when needle is just outside a 12-inch record.

R.—Adjust screw "R" upward just enough so that with one record on turntable and ejector tip "F" resting on record surface, there is $\frac{1}{32}$ of an inch clearance between screw "R" and "Ejector Arm."

PICKUP ADJUSTMENT

NOT used with U-10A, located on compensator unit with U-108 & U-109. See page 824B for installation of Stock No. 31023 Replacement stud (cam & gear mounting stud).

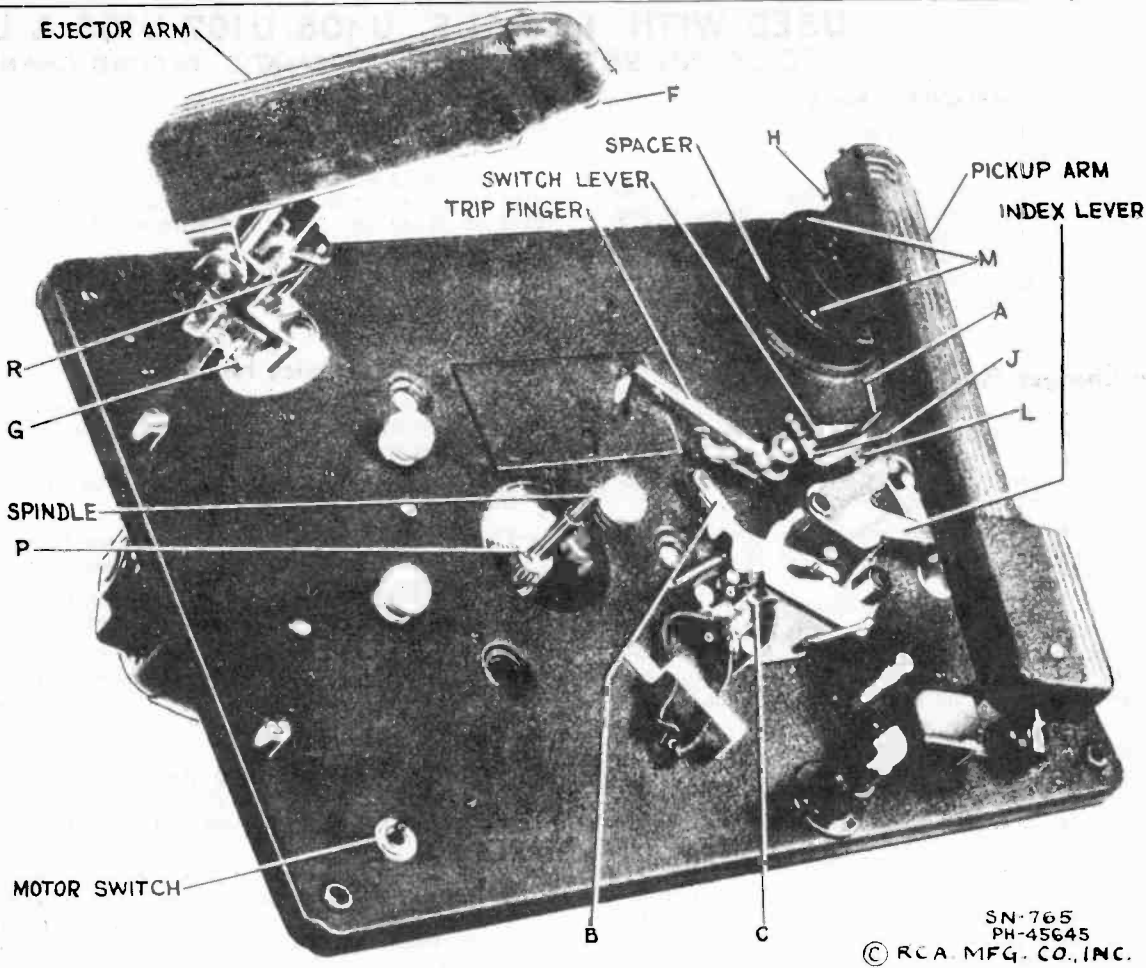
Record Changer Service Hints

- 1.—"Ejector Arm" goes through normal cycle but does not eject records. Adjust "F" and "G." See that "Spindle" slides freely.
- 2.—Ejects bottom record. Lower turntable by removing thrust washers at "P."
- 3.—Ejects records properly down to second from bottom of pile. Raise turntable by placing thrust washers at "P."
- 4.—Eject cycle does not start after needle reaches eccentric groove. Adjust "J" (turn screw clockwise).
- 5.—Eject cycle starts before eccentric record groove is reached. Adjust "J" (turn screw counter-clockwise). Set "Index Lever" to "12" inch or "10" inch position after starting to play record. Do not jar motor-board during automatic operation.
- 6.—Lateral movement of "Pickup Arm" has no control over starting and stopping. Adjust clearance of rod "A." See that rod "A" engages in slot of "Switch Lever."
- 7.—Fails to eject top record of a pile because "Ejector Arm" strikes record in returning to center at end of eject cycle. Adjust screw "R" upward to provide greater incline so that roller in "Ejector Arm" will roll back during cycle.
- 8.—Pickup strikes record during eject cycle. Adjust "K" and "H."
- 9.—Starts playing record several grooves in from beginning or needle misses record entirely. Adjust "L."
- 10.—Needle falls on smooth portion at start of record but does not move into playing groove. Adjust "M." Check to see that motor-board is level.
- 11.—Automatic stop does not operate after needle reaches eccentric groove. Adjust "B" and "C."
- 12.—Motor does not re-start when "Pickup" is returned to rest position. Adjust "C." See that switch mechanism parts move freely and springs are functioning.
- 13.—Starts eject cycle although set for "Manual" operation. Adjust "D."
- 14.—Noise in loudspeaker while changing needles. Clean "Shorting Contact" and adjust "Q."
- 15.—"Wow" in record reproduction.—Instrument should be warmed to about 65° F. Ejector tip should be centered and free to rotate (adjustments "F" and "G"). There should be no solid particles on gear teeth or in grease; no tendency to bind. Turntable plate should be in dynamic balance and "Spindle" should be straight. Proper lubrication is important.

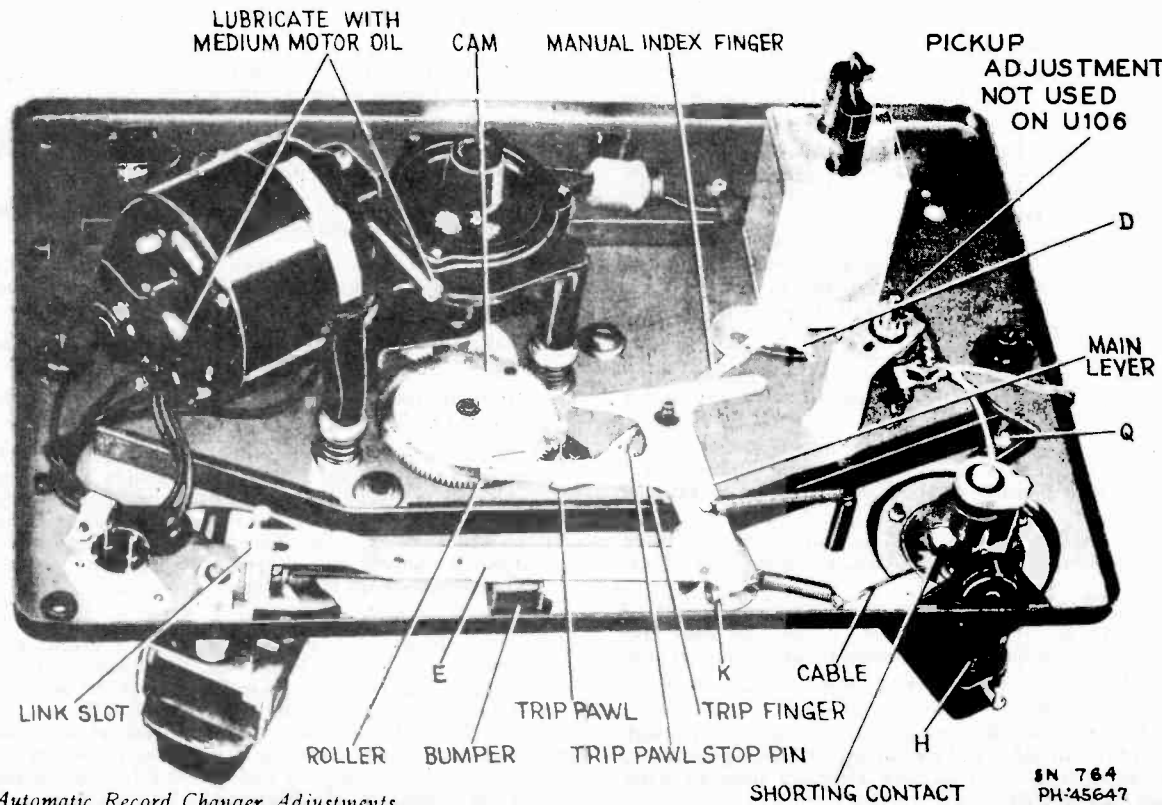
Lubrication.—Clean motor gear-box thoroughly before re-greasing. Apply less than a tablespoonful of a grease, such as "Cities Service No. 7035-A1" or "Koolmotor Universal Trojan No. 1," directly on gears taking care to get none in rotor bearings. Put medium motor oil (S.A.E. No. 30) in the oil holes. Cover main gear and cam of automatic mechanism with a light grease such as "Socony-Vacuum No. 2." Any good house-hold oil, such as "3-IN-ONE" is suitable for the ejector-tip "F" bearing.

AUTOMATIC RECORD CHANGER

U106, U107, U108 & U109



SN-765
PH-45645
© RCA MFG. CO., INC.

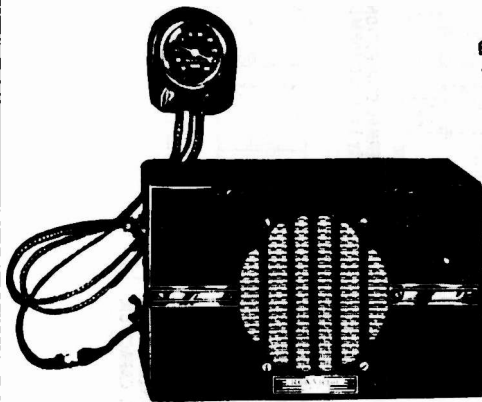


SN 764
PH-45647

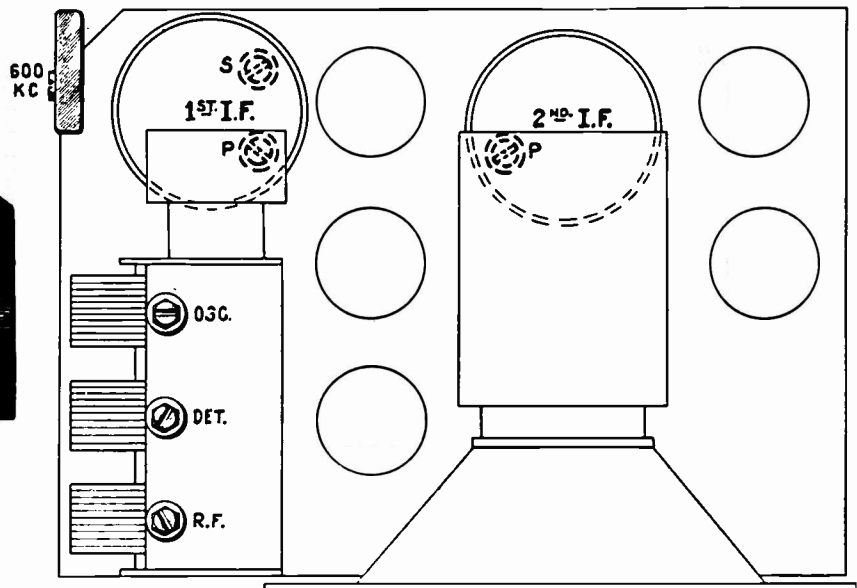
-Automatic Record Changer Adjustments
(Top and bottom views)

MODEL M-107

Six-Tube Automobile Receiver



MODEL M-107



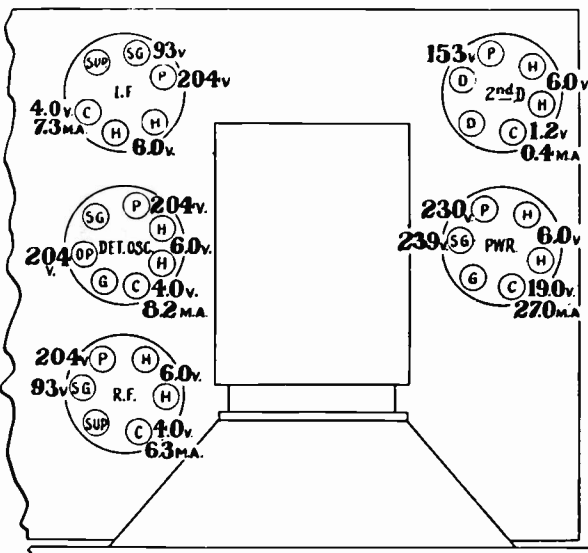
Location of Line-Up Capacitors Alignment Procedure

ELECTRICAL SPECIFICATIONS

Type and Number of Radiotrons Used—2 RCA-6D6

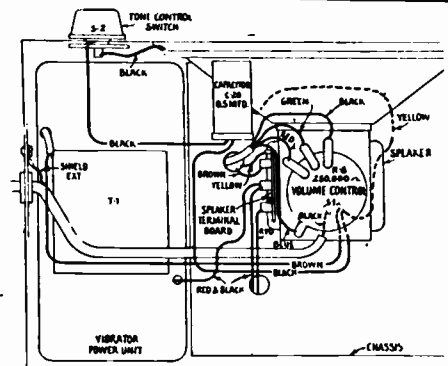
- 1 RCA-6A7, 1 RCA-75, 1 RCA-41, 1 RCA-84 —Total, 6
- Battery Current (6.3-Volt Battery):
- Speaker Field (Cold).....1.35 Amperes
- Tubes.....2.1 Amperes
- Dial Lamp.....0.15 Ampere
- Power Supply (No Signal).....3.15 Amperes
- Total (No Signal).....6.75 Amperes
- Tuning Frequency Range.... 540 K. C.—1600 K. C.
- Maximum Undistorted Output1.9 Watts
- Maximum Output.....3.35 Watts

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 800 Kc	P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			P&S of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers on gang condenser
4		600 Kc	600 Kc	600 Kc Osc. Trimmer Rock Gang
5		<i>Repeat Step 3</i>		
6	With auto antenna connected to receiver adjust R-F Trimmer for max. volume on weak station near 1400 Kc.			

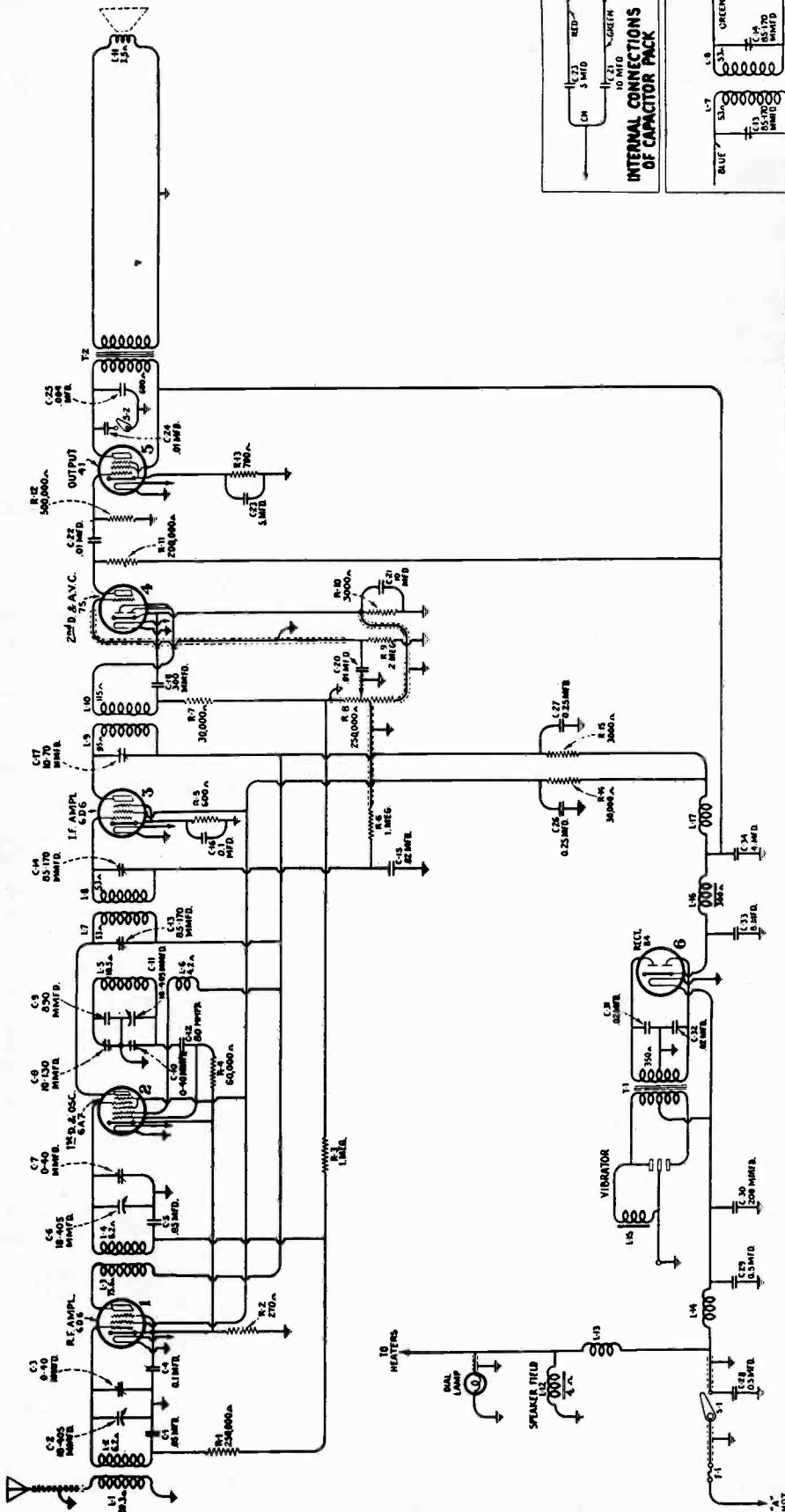


(ALL VOLTAGES EXCEPT HEATER ARE TO GROUND)

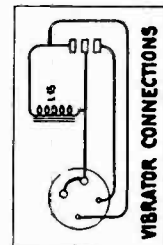
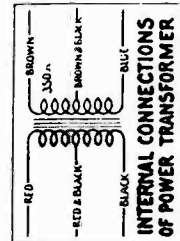
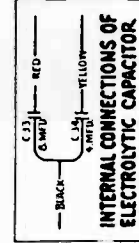
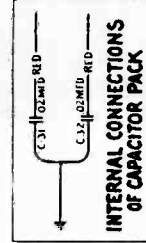
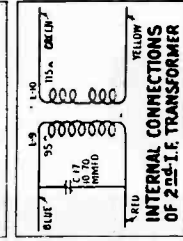
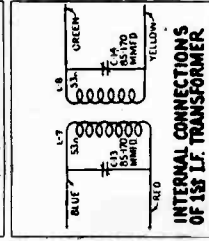
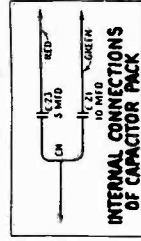
Voltages at Socket Contacts



-Assembly Wiring



-Schematic Circuit Diagram



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4305	Bracket—Tuning condenser drive bracket assembly.....		4302	Resistor—700 ohms—Carbon type—1 watt (R13)—Package of 10.....	
6981	Cable—4-conductor shielded volume control cable.....		2240	Resistor—30,000 ohms—Carbon type—1 watt (R14).....	
4300	Cable—Single-conductor—Power input cable.....		4239	Resistor—3,000 ohms—Carbon type—3 watt (R15).....	
4301	Cable—Single-conductor—Dial lamp cable.....		3623	Shield—Antenna, R. F. or oscillator coil shield.....	
3861	Capacitor—Adjustable trimmer capacitor (C8).....		4233	Shield—Detector oscillator or output Radiotron shield.....	
4246	Capacitor—80 mmfd. (C12).....		4236	Shield—I. F. or R. F. amplifier Radiotron shield.....	
4248	Capacitor—300 mmfd. (C18).....		4232	Socket—6-contact Radiotron socket.....	
4245	Capacitor—890 mmfd. (C9).....		3572	Socket—7-contact Radiotron socket.....	
3639	Capacitor—.02 mfd. (C15).....		6192	Spring—Tuning condenser drive cord tension spring—Package of 10.....	
3701	Capacitor—.01 mfd. (C20, C22).....		6960	Transformer—First intermediate frequency transformer (L7, L8, C13, C14).....	
3877	Capacitor—0.1 mfd. (C4, C16).....		6962	Transformer—Second intermediate frequency transformer (L9, L10, C17).....	
3597	Capacitor—.25 mfd. (C26, C27).....		6978	Volume control (R8).....	
4304	Capacitor—0.5 mfd. (C28).....		CONTROL BOX ASSEMBLIES		
6979	Capacitor pack—Comprising one .01 and one .004 mfd. (C24, C25).....		6976	Back—Control box back.....	
6963	Capacitor pack—Comprising one 5. mfd. and one 10 mfd. capacitor (C21, C23).....		7769	Box—Control box complete.....	
4243	Capacitor pack—Comprising two .05 mfd. capacitors (C1, C5).....		3690	Bracket and strap assembly—Comprising one bracket, two screws, one lockwasher and one strap.....	
6965	Coil—Antenna coil (L1, L2).....		7770	Cover—Control box front cover.....	
4299	Coil—Choke coil (L13).....		4259	Cover—Station selector dial cover—Transparent celluloid—Package of 5.....	
4298	Coil—Choke coil (L17).....		4261	Dial—Station selector dial.....	
6967	Coil—Oscillator coil (L5, L6).....		4258	Key—Volume control key.....	
6966	Coil—R. F. coil assembly (L3, L4).....		4340	Lamp—Dial lamp—Package of 5.....	
7768	Condenser—3-gang variable tuning condenser (C2, C3, C6, C7, C10, C11).....		4260	Pointer—Station selector indicator.....	
4306	Cord—Tuning condenser drive cord—Package of 10.....		4257	Ring—Station selector dial cover ring (escutcheon).....	
6493	Drum—Tuning condenser dial drum and hub with set screws.....		4262	Screen—Dial light screen—Package of 5.....	
3584	Ring—Antenna, R. F. or oscillator coil retaining ring—Package of 5.....		4255	Screw—No. 4-40- $\frac{1}{4}$ inch oval head machine screw for holding cover to control box back—Package of 10.....	
4307	Roller—Tuning condenser idler roller—Package of 5.....		4252	Screw—No. 10-32- $\frac{11}{16}$ inch fillister head set screw for holding condenser drive and pinion gear and volume coupling control shaft—Package of 10.....	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		3652	Screw—No. 10-32- $\frac{1}{4}$ inch cupped point set screw for holding station selector or volume control flexible drive shaft to control box—Package of 10.....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....		4254	Shaft—Volume control coupling shaft.....	
4242	Resistor—3,000 ohms—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....		4250	Shaft and gear—Station selector pointer shaft and gear.....	
3152	Resistor—30,000 ohms—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 5.....		4251	Shaft and gear—Station selector drive shaft and pinion gear.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R4)—Package of 5.....		4253	Spring—Volume control key holding spring—Package of 10.....	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11)—Package of 5.....				
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1)—Package of 5.....				
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 5.....				
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R3, R6)—Package of 5.....				
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R9)—Package of 5.....				

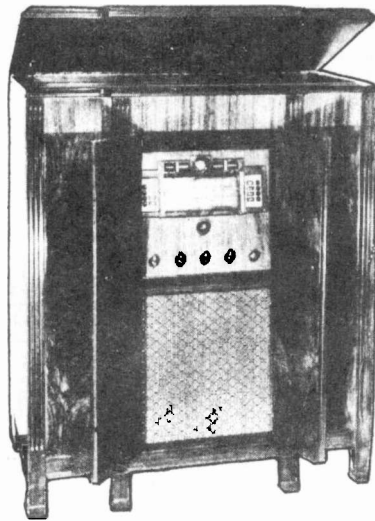
REPLACEMENT PARTS—Continued

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

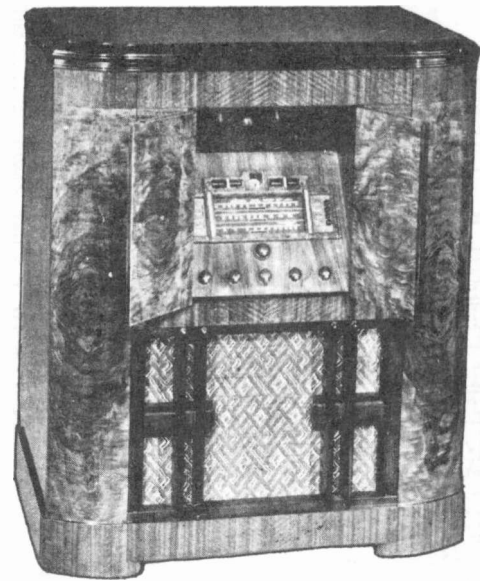
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	FLEXIBLE SHAFT AND CABLE ASSEMBLIES				
7762	Cable—Dial lamp cable with socket and section of connector.....		7782	Housing—Rear section of housing complete—Less hinge pin.....	
4264	Clamp—Metal clamp for holding flexible shafts—Package of 10.....		4320	Nut—Wing nut—Package of 10.....	
4295	Screw—No. 10-32- $\frac{1}{4}$ -inch cupped point set screw—Fastens flexible shaft housing to metal case—Package of 10.....		4266	Pin—Hinge pin—Package of 5.....	
7771	Shaft—Station selector flexible drive shaft approximately 28 inches long.....		4318	Screw—Wing screw—Package of 10.....	
7773	Shaft—Station selector flexible drive shaft approximately 23 inches long.....		4319	Screw—No. 6- $\frac{1}{4}$ -inch slotted hex head self tapping—Fastens case bottom to front section of housing—Package of 10.....	
7772	Shaft—Volume control flexible drive shaft approximately 32 inches long.....		4295	Screw—No. 10-32- $\frac{1}{4}$ -inch headless set screw—Used to fasten drive shafts to housing—Package of 10.....	
7774	Shaft—Volume control flexible drive shaft approximately 27 inches long.....			MISCELLANEOUS ASSEMBLIES	
4265	Sleeve—Coupling sleeve for volume control shaft—Package of 5.....		4287	Body—Antenna connector body—Package of 10.....	
4263	Socket—Dial lamp socket.....		4289	Body—Fuse connector body—Package of 10..	
	POWER SUPPLY UNIT		3689	Bracket—Receiver mounting bracket, bolt and nut assembly.....	
4013	Capacitor—200 mmfd. (C30).....		4283	Cable—Antenna lead-in cable—Approximately 35 inches long.....	
4293	Capacitor—0.5 mfd. (C29).....		4288	Cap—Antenna or fuse connector cap—Package of 10.....	
7779	Capacitor—Comprising two .02 mfd. capacitors (C31, C32).....		4293	Capacitor—Ammeter capacitor—.5 mfd....	
7776	Capacitor—Comprising one 8. mfd. and one 4 mfd. capacitors (C33, C34).....		6495	Capacitor—Generator capacitor—.5 mfd....	
3956	Clamp—Capacitor mounting clamp—Package of 5.....		4291	Clip—"A" supply clip—Package of 10.....	
7778	Coil—Filter reactor choke coil (L14).....		4286	Ferrule—Antenna or fuse connector ferrule and bushing—Package of 10.....	
7777	Reactor—Filter reactor (L16).....		3646	Fuse—20 ampere (F1)—Package of 5.....	
4308	Screw—Binder head No. 6-32- $\frac{1}{4}$ -inch screw for mounting capacitor pack—package of 10		4290	Insulator—Fuse connector insulator—Package of 10.....	
6980	Socket—4-contact vibrator socket.....		4323	Knob—Tone control switch knob—Package of 5.....	
7484	Socket—5-contact Rectifier socket.....		4282	Knob—Station selector knob—Package of 5.	
7775	Transformer—Vibrator transformer (T1)....		7766	Lead—Power lead with female section of fuse connector—From power cable to battery...	
7780	Vibrator complete (L15).....		4492	Plate—Ornamental plate located on housing front—Package of 2.....	
	REPRODUCER ASSEMBLIES		4494	Plate—RCA Victor name plate.....	
9496	Coil—Field coil, magnet and cone support (L12).....		4493	Screw—No. 4 self-tapping screw for mounting ornamental plates—Package of 10.....	
9492	Cone—Reproducer cone (L11)—Package of 5..		4495	Screw—No. 8 self-tapping screw for mounting station selector drive shaft and bushing—Package of 10.....	
6982	Transformer—Output transformer (T2).....		4294	Screw—No. 10-32- $\frac{5}{16}$ -inch hex head used to mount receiver chassis to housing—Package of 10.....	
9494	Reproducer complete.....		4303	Screw—No. 10-32- $\frac{1}{8}$ -inch hex head used to mount power unit to housing—Package of 10.....	
4277	Screw—No. 8-32- $\frac{3}{8}$ -inch binder head reproducer mounting screw—Package of 10.....		4284	Spring—Antenna or fuse connector spring—Package of 10.....	
	HOUSING ASSEMBLIES		6152	Suppressor—Distributor suppressor.....	
4322	Bracket assembly—Station selector drive shaft bracket and bushing.....		6151	Suppressor—Spark plug suppressor.....	
4321	Cloth—Grille cloth.....		6669	Switch—Tone control switch (S2).....	
7781	Housing—Front section of housing complete—Less hinge pin.....		4285	Washer—Antenna or fuse connector insulating washer—Package of 10.....	

MODELS U108 & U109

Sixteen-Tube, Three-Band, A-C, Radio-Phonographs



MODEL U-108



Model U-109

Electrical Specifications

FREQUENCY RANGES

'Broadcast' (A)..... 530-1,720 kc
 'Medium Wave' (B)..... 2,100-6,800 kc
 'Short Wave' (C)..... 6,800-23,500 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6K7..... R-F Amplifier
 (2) RCA-6L7..... First Detector
 (3) RCA-6J7..... Heterodyne Oscillator
 (4) RCA-6J7..... Oscillator Control
 (5) RCA-6K7..... First I-F Amplifier
 (6) RCA-6K7..... Second I-F Amplifier
 (7) RCA-6H6..... Second Detector, A.V.C., and A.F.C.
 (8) RCA-6C5..... First Audio Amplifier

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C)..... 20,000 kc (osc., det., ant.)
 "Medium Wave" (B)..... 6,000 kc (osc.)
 "Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc.)

Pilot Lamps..... { (7) Radio..... Mazda No. 46, 6.3 volts, 0.25 amp.
 { (1) Phono Compartment. Mazda No. 40, 6.3 volts, 0.15 amp.

POWER RATINGS

	Radio Only	Total
Rating A-6..... 105-125 volts, 60 cycles.....	190 watts.....	220 watts
Rating A-5..... 105-125 volts, 50 cycles.....	190 watts.....	220 watts
Rating B-2..... 105-125 volts, 25 cycles.....	190 watts.....	220 watts
Rating C-6..... 100-130/140-160/200-250 volts, 60 cycles.....	190 watts.....	220 watts
Rating C-5..... 100-130/140-160/200-250 volts, 50 cycles.....	190 watts.....	220 watts
Fuse Rating.....		3 amperes

PHONOGRAPH

Type..... Automatic Record Ejector
 Record Capacity..... Eight 10-inch or seven 12-inch
 Turntable Speed..... 78 r.p.m.
 Type of Pickup..... Crystal
 Pickup Impedance..... 80,000 ohms at 1,000 cycles

POWER OUTPUT

Undistorted..... 12 watts
 Maximum..... 15 watt:

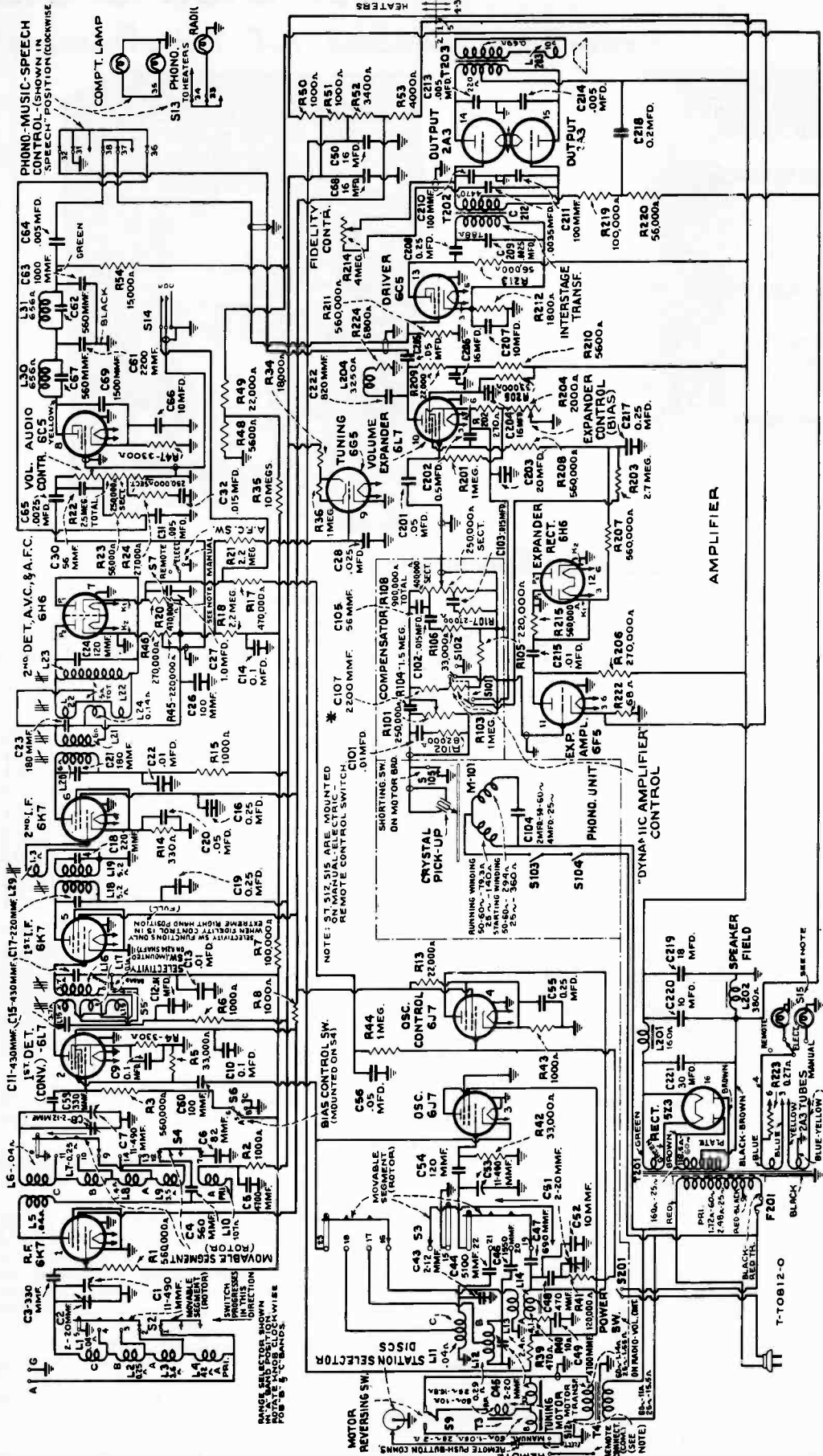
LOUDSPEAKER

Type..... 12-inch Electrodynamic
 Impedance (v.c.)..... 11½ ohms at 400 cycles

Precautionary Lead Dress.—(1) Bus lead from oscillator coil directly to ground must be as short as possible for correct alignment, (2) bus lead from range switch S3 to oscillator section C53 of variable condenser should be 1½ inches long for correct alignment, (3) bus lead from detector coil to range switch S4 must be as short as possible for correct alignment, (4) bus lead from detector coil to detector section C7 of variable condenser should be 2½ inches long for correct alignment, (5) detector trimming capacitor C8 lead should connect directly to variable condenser C7, (6) bus lead from antenna section of range switch S2 to chassis ground lance must be as short as possible, (7) bus lead from antenna coil to range switch S2 should be 2¼ inches for

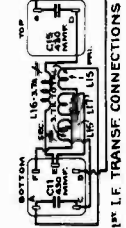
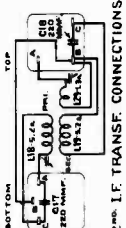
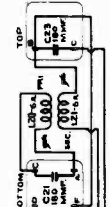
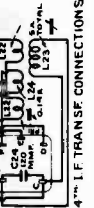
correct alignment, (8) bus lead from antenna coil to antenna section C1 of variable condenser must be 3¾ inches over-all with ½ inch bend at coil end for correct alignment, (9) resistors R13, R41, R43, and R44 in the oscillator control tube circuit must be kept free of other component parts for satisfactory operation of the a-f-c circuit, (10) filament leads should all be twisted to reduce hum pickup, (11) filament leads should be dressed away from the terminal board near the 4th i-f transformer, (12) lead from the range switch S3 to the oscillator cathode socket terminal should be dressed under bus wire on socket to hold this lead down close to chassis.

U108 & U109



Schematic Circuit Diagram

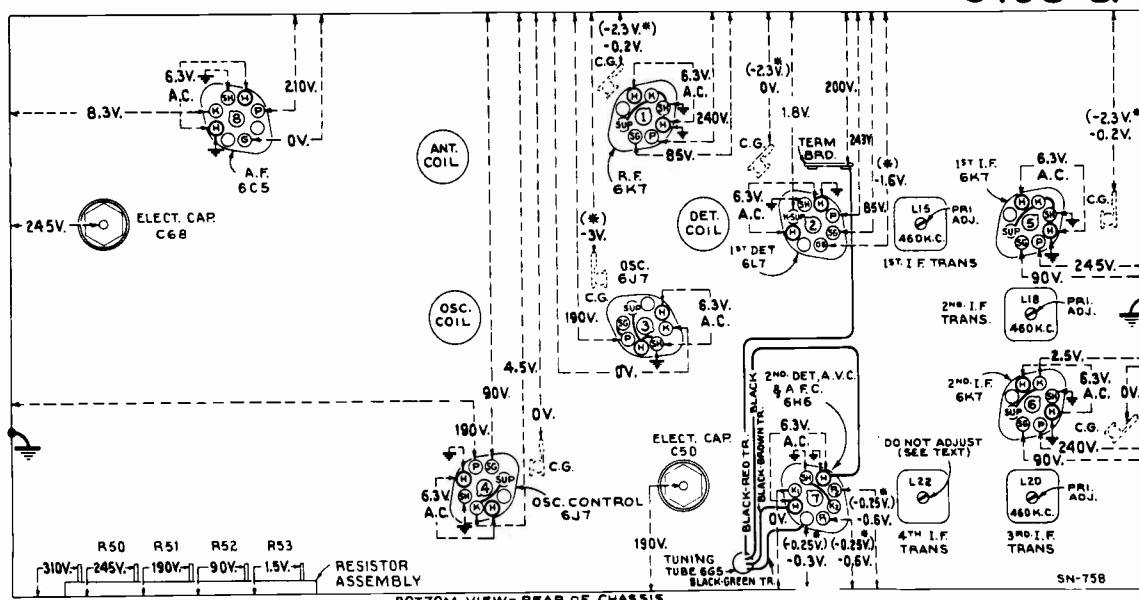
* Remove 2200 mfd. capacitor C-107 (Stock #12861, marked M-623) from compensator circuit and substitute in its place a 270 mfd., Stock #12488 capacitor.



TUNING CABLE CONNECTIONS

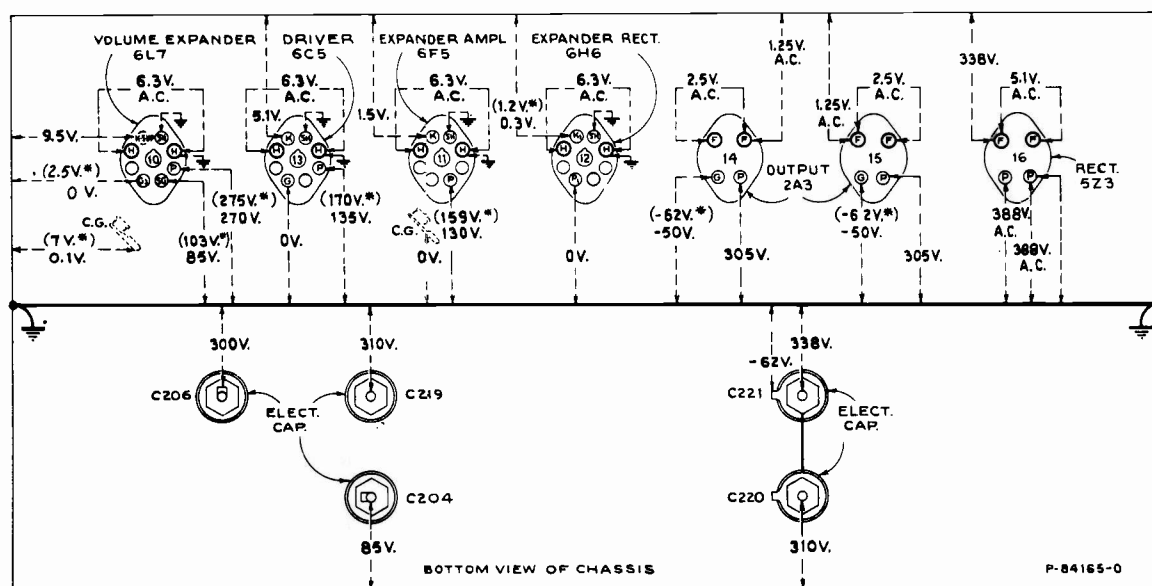
TUNING CABLE CONNECTIONS

TUNING CABLE CONNECTIONS



BOTTOM VIEW-REAR OF CHASSIS

Receiver



Power Amplifier

—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Broadcast")—"Manual" control—No signal being received—Both volume controls minimum—"Dynamic Amplifier" control "off"—Speech-Music—Phono. and Fidelity controls optional.

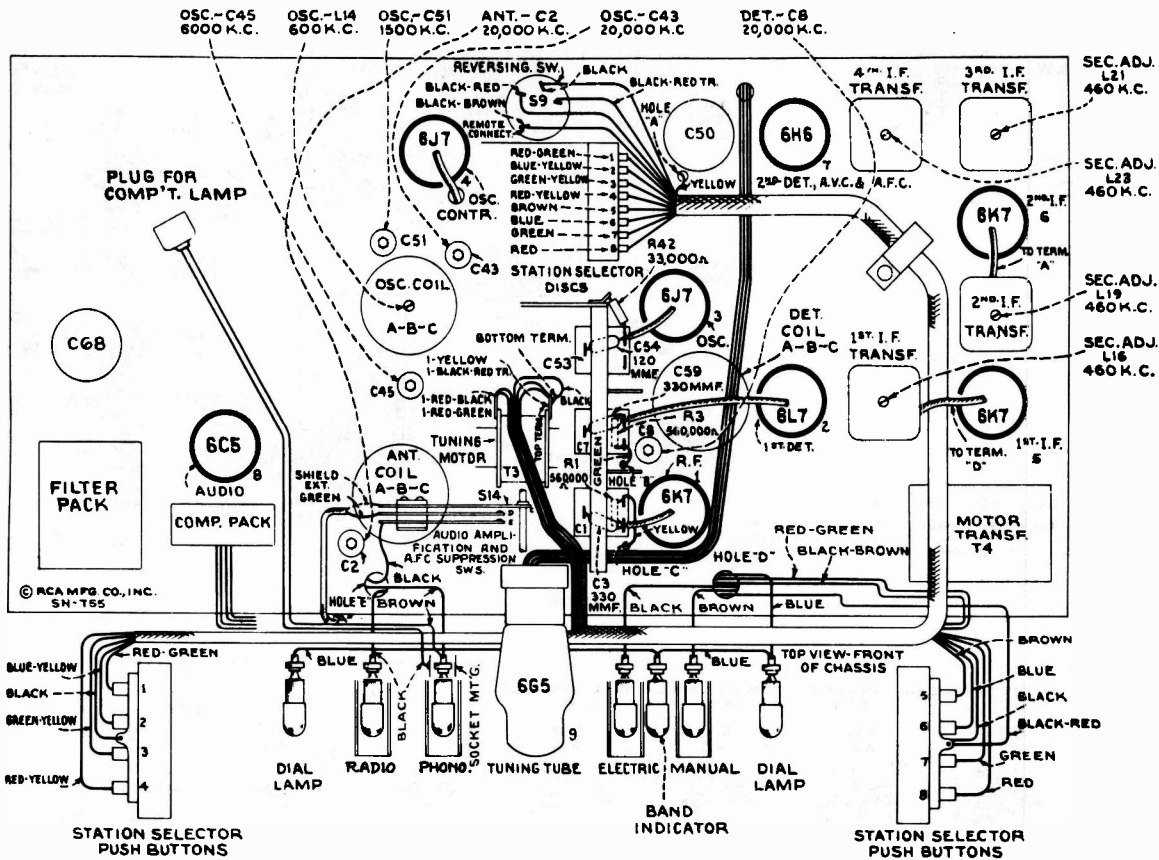
Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

(1) RCA-6K7—R-F Amp.	5.0 ma.	(7) RCA-6H6—2nd Det., A.V.C. and A.F.C.	ma.
(2) RCA-6L7—1st Det.	6.0 ma.	(8) RCA-6C5—1st A-F Amp.	2.5 ma.
(3) RCA-6J7—Osc.	8.5 ma.	(9) RCA-6G5—Tuning Tube.	2.5 ma.
(4) RCA-6J7—Osc. Control	1.2 ma.	(10) RCA-6L7—Volume Expander	9.5 ma.
(5) RCA-6K7—1st I-F Amp.	6.0 ma.	(11) RCA-6F5—Expander Amp.	0.6 ma.
(6) RCA-6K7—2nd I-F Amp.	7.5 ma.	(12) RCA-6H6—Expander Rectifier	ma.
		(13) RCA-6C5—A-F Driver.	2.9 ma.
		(14) RCA-2A3—Output	43 ma.
		(15) RCA-2A3—Output	43 ma.
		(16) RCA-5Z3—Rectifier	168 ma.**

(** Cannot be measured at socket)



Radiotron, Coil, and Trimmer Locations
(Receiver)

Dynamic Amplifier Adjustment

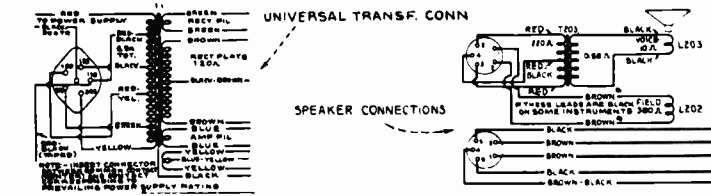
It is essential that correct voltages and currents exist at the RCA-6L7 volume expander stage in order that the expanding function may take place in the proper manner. A screw-driver adjustment is accordingly provided to regulate the RCA-6L7 control grid No. 3 bias to the correct operating value.

Turn power switch off. Place RCA Stock No. 12353 Split-Plate Adapter under the RCA-6L7 volume expander. Connect a suitable d-c milliammeter to the adapter. Turn both the "Phonograph Volume" and "Dynamic Amplifier" controls to their extreme counter-clockwise positions and remove "Exp. Off Switch Cable"—plug from apron of the dynamic amplifier. Turn on power switch and allow a few minutes for the instrument to become stabilized. Adjust "Expander Bias" control R204 to give one milliamperes of plate current with no signal input to the dynamic amplifier.

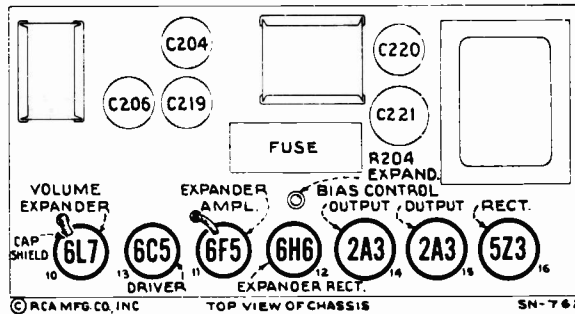
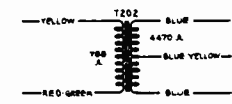
A-F-C Discriminator Adjustments.—These adjustments are rather critical and should be performed with extreme care. Improper adjustment may result in complete failure of the oscillator control tube to function or else may cause it to detune the oscillator instead of tuning it to the signal. It is assumed that the magnetite core adjusting screw L23 (top of 4th i-f transformer) has been turned all the way out (extreme counter-clockwise) during the preceding tabulated adjustments. Adjustments are as follows: Remove spring "N" on link and arm assembly which connects the "Manual-Electric-Remote" switch shaft to the throw-out gear bracket. Turn "Fidelity" control counter-clockwise. Connect antenna to receiver antenna terminal. With the "Manual-Electric-Remote" switch in "Manual" (right) position, tune in a strong local station near 600 kc or the low-frequency end of the "A" band as accurately as possible by means of the tuning tube "Magic Eye." The most accurate adjustment will be obtained by adjusting the "vernier" tuning knob mid-way between the two points where the eye just appears to start

to open. This will place the generated i-f carrier signal frequency exactly in the center of the i-f amplifier response curve (should be 460 kc if i-f amplifier was properly aligned) and is the frequency to which the a-f-c discriminator (4th i-f transformer) should be tuned to resonance. Without disturbing any of the receiver adjustments, place the "high" test-oscillator lead about 3/4 of an inch from the grid cap lead of the RCA-6K7, 1st i-f amplifier tube, adjust the test-oscillator output to maximum, turn test-oscillator "Modulation" off, and carefully zero-beat the test-oscillator frequency (approximately 460 kc) with the i-f carrier signal. Avoid placing the test-oscillator lead nearer to the grid cap lead than specified above, as doing so will tend to detune the i-f amplifier. It may be necessary to reduce the local station signal, during this operation, by shortening antenna lead or grounding antenna "A" terminal to chassis in order to increase the loudness of the beat note sufficiently for accurate zero-beat adjustment.

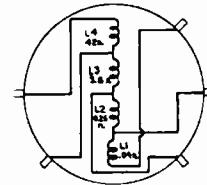
Throw "Manual-Electric-Remote" switch to "Electric" (center) position. A high whistle or beat note will now be heard. Turn the magnetite core screw L23 (top of 4th i-f transformer) slowly clockwise. As this screw is turned, the beat note will first increase to a high audio frequency and will then decrease to a zero-beat and then increase in frequency again. The point of exact zero-beat is the position for correct adjustment of the discriminator. Zero-beat should also still exist when the "Manual-Electric-Remote" switch is thrown back to "Manual" position. The adjustment is now complete and may be checked by slightly detuning the receiver above and below the local station frequency with the "Manual-Electric-Remote" in "Manual" position, switching to "Electric" position, and noting the oscillator pull-in. Replace spring "N."



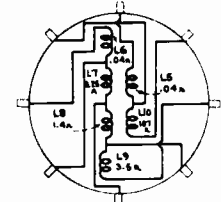
DRIVER TRANSFORMER CONNECTIONS



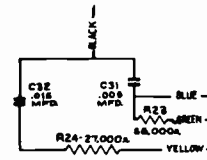
-Radiotron Locations
(Power Amplifier)



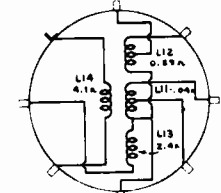
ANT. COIL CONNECTIONS



DET. COIL CONNECTIONS



COMPENSATOR PACK CONNECTIONS



OSC. COIL CONNECTIONS

ALIGNMENT PROCEDURE

Calibrate the tuning dial by adjusting dial pointer to the left ends of horizontal calibration lines with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

The "Manual-Electric-Remote" switch should be turned to "Manual" (clockwise) during alignment unless otherwise specified.

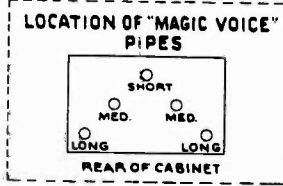
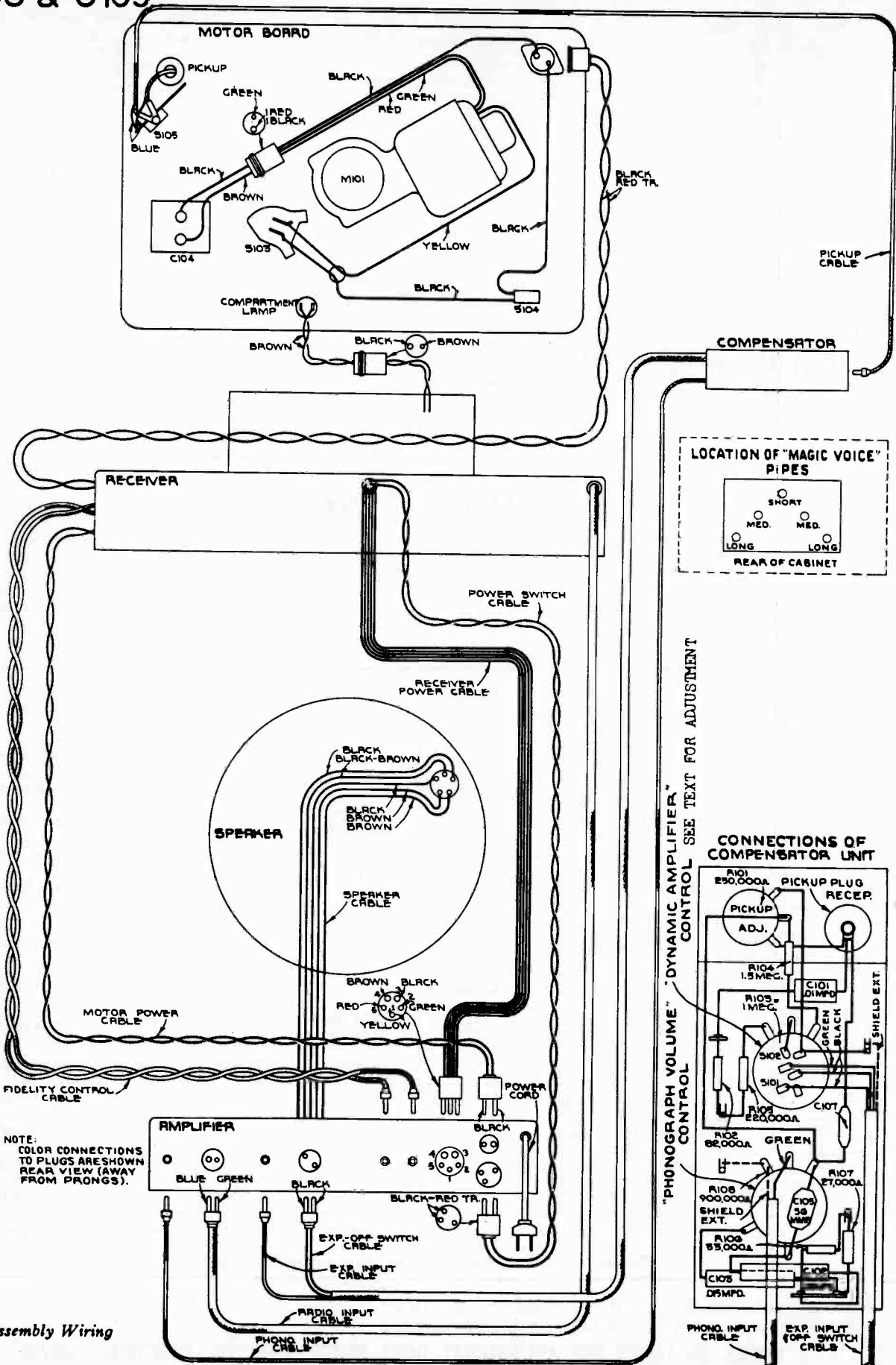
CAUTION.—The magnetite core screw L22 on the bottom of the 4th i-f transformer has been accurately adjusted, for an exact electrical balance of coil L22 to center tap, during manufacture and should not be disturbed. However, if for any reason the adjustment has been moved from its original position, it will be necessary to mechanically adjust this screw until the end of the stud protrudes exactly 1/8 of an inch (four threads exposed) above the brass bushing prior to any alignment operations.

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	—	—	—	—	—	4th I-F Trans.	L23	Turn Extreme Counter-clockwise
2	6K7 I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	3rd I-F Trans.	L20 and L21	Max. (peak)
3	6K7 I-F Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	2nd I-F Trans.	L18 and L19	Max. (peak)
4	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L15 and L16	Max. (peak)
5	Ant.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C43	Max. (peak)*
6	Ant.	300 Ohms	20,000 kc	"C"	Rock thru 20,000 kc	"C" Det.	C8	Max. (peak)†
7	Ant.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak)
8	Ant.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C45	Max. (peak)*
9	Ant.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L14	Max. (peak)
10	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
11	Ant.	200 Mmfd.	600 kc	"A"	600 kc	"A" Osc.	L14	Max. (peak)
12	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
13	Proceed to A-F-C Discriminator Adjustments Outlined							

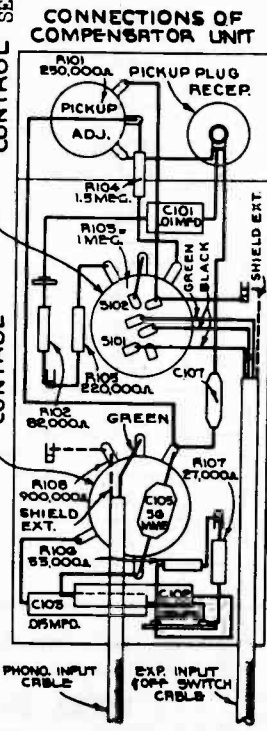
* Use minimum capacity peak if two peaks can be obtained.

† Use maximum capacity peak if two peaks can be obtained.

REFER TO INDEX FOR ADDITIONAL DATA PERTAINING TO ELECTRIC TUNING



"PHONOGRAPH VOLUME" CONTROL SEE TEXT FOR ADJUSTMENT



NOTE:
 COLOR CONNECTIONS
 TO PLUGS ARE SHOWN
 REAR VIEW (AWAY
 FROM PRONGS).

-Assembly Wiring

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14701	Arm—Hub and arm for operating band indicator shutter —located on range switch shaft	11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R42)
14728	Arm—Hub and arm, complete with set screws—connects station selector drum to rear of tuning condenser shaft	13735	Resistor—33,000 ohms, carbon type, 1/2 watt (R5)
14517	Board—Antenna and ground terminal board	5145	Resistor—100,000 ohms, carbon type, 1/2 watt (R7)
5237	Bushing—Variable condenser rubber mounting bushing	30552	Resistor—120,000 ohms, special, carbon type, 1/2 watt (R41)
13656	Button—Plug button for detector coil shield	5158	Resistor—220,000 ohms, carbon type, 1/2 watt (R45)
14725	Cable—Tuning tube cable and socket	11323	Resistor—270,000 ohms, carbon type, 1/2 watt (R46)
12607	Cap—Shield cap for first or second I.F. transformer	11172	Resistor—470,000 ohms, carbon type, 1/2 watt (R17, R20)
12581	Cap—Shield cap for third or fourth I.F. transformer	11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R3)
11350	Cap—Grid contact cap	12013	Resistor—1 megohm, carbon type, 1/10 watt (R36)
12884	Capacitor—Adjustable trimmer (long) (C2, C45, C51)	13730	Resistor—1 megohm, carbon type, 1/2 watt (R44)
12714	Capacitor—Adjustable trimmer (medium) (C8, C43)	18228	Resistor—2.2 megohms, carbon type, 1/2 watt (R18, R21)
13200	Capacitor—10 Mmfd. (C52)	13732	Resistor—10 megohms, carbon type, 1/2 watt (R35)
12723	Capacitor—56 Mmfd. (C30)	14845	Resistor—Voltage divider—comprising two 1,000 ohm, one 3,400 ohm and one 4,000 ohm sections (R50, R51, R52, R53)
12813	Capacitor—82 Mmfd. (C6)	14695	Rod—Tie rod for joining lockplate pawls on station selector push-button switches
12720	Capacitor—100 Mmfd. (C26, C60)	4669	Screw—No. 8-32 x 5/32 square head set screw for arm, Stock No. 14701, or link, Stock No. 14719, or drum, Stock No. 14693
12404	Capacitor—120 Mmfd. (C24)	12418	Screw—No. 8-32 x 3/16 milled head set screw for gear, Stock No. 14739
12724	Capacitor—120 Mmfd. (C54)	14848	Selector—Station selector drum mechanism—comprising station-selector contactor discs, spring contacts and motor reversing switch assembled in metal frame
14712	Capacitor—180 Mmfd. (C21, C23)	14374	Shield—Antenna or detector coil shield
14711	Capacitor—220 Mmfd. (C17, C18)	14375	Shield—Oscillator coil shield
12952	Capacitor—330 Mmfd. (C3, C59)	12008	Shield—I.F. transformer shield
14710	Capacitor—430 Mmfd. (C11, C15)	14718	Shutter—Band indicating shutter and arm assembly
13052	Capacitor—470 Mmfd. (C48)	14696	Slider—Indicator pointer holder and spring
14723	Capacitor—560 Mmfd. (C4)	11488	Socket—2-contact female socket for compartment lamp power cable
14723	Capacitor—690 Mmfd. (C47)	11198	Socket—8-contact 6K7, 6L7, 6J7, 6H6 or 6C5 Radiotron socket
14723	Capacitor—1,500 Mmfd. (C89)	14114	Socket—Dial or indicating lamp socket
13782	Capacitor—1,550 Mmfd. (C46)	12007	Spring—Retaining spring for core, Stock No. 12006
12729	Capacitor—1,550 Mmfd. (C46)	3676	Spring—Tension spring for link and lever, Stock No. 14719
12897	Capacitor—4,700 Mmfd. (C5, C49)	13638	Spring—Tension spring for cord, Stock No. 14699
14722	Capacitor—5,100 Mmfd. (C44)	14694	Spring—Tension spring for lockplate pawl on station selector push-button switches
13608	Capacitor—0025 Mfd. (C65)	14742	Stud—Mounting stud for gear and arm, Stock No. 14738
4838	Capacitor—005 Mfd. (C84)	14702	Switch—"Manual-Electric-Remote" switch (S7, S12, S15)
30103	Capacitor Pack—Comprising one .005 Mfd., one .015 Mfd. capacitors, one 27,000 ohm and one 56,000 ohm resistors (C31, C32, R23, R24)	14844	Switch—"Phono-Music-Speech" switch (S13)
13138	Capacitor—.01 Mfd. (C12, C13, C22)	14732	Switch—Motor reversing switch and mounting plate for station selector (S9)
4870	Capacitor—.025 Mfd. (C28)	14704	Switch—Range switch (S2, S3, S4, S6)
4886	Capacitor—.05 Mfd. (C20, C56)	14728	Switch—A-F-C and A-F amplification suppression switch (S14)
4839	Capacitor—.1 Mfd. (C9, C10, C14)	14693	Switch—Station selector button switch—comprising four contacts and corresponding lockplates, completely assembled on insulating strips
12484	Capacitor—.25 Mfd. (C16, C19, C55)	14836	Tone Control—"Fidelity" control (R214, S5)
12682	Capacitor—10 Mfd. (C66)	14706	Transformer—First I.F. transformer (L15, L18, L17, C11, C15)
14773	Capacitor—18 Mfd. (C50, C68)	14707	Transformer—Second I.F. transformer (L18, L19, L29, C17, C18)
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	14708	Transformer—Third I.F. transformer (L20, L21, C21, C23)
14414	Coil—Detector coil and shield (L5, L6, L7, L8, L9, L10)	14709	Transformer—Fourth I.F. transformer (L22, L23, L24, C24)
14713	Coil—Oscillator coil and shield (L11, L12, L13, L14)	14834	Transformer—Tuning motor transformer, 105-125 volts, 50-60 cycle (T4)
14727	Condenser—3-gang variable tuning condenser, complete with gear train (C1, C7, C53)	30102	Transformer—Tuning motor transformer, 105-125 volts, 25-60 cycle (T4)
14733	Contact—Spring contact for engaging discs in station selector drum ("type 1" contact assembly)	14835	Volume Control—Radio volume control and power switch (R22, S201)
30365	Contact—Comprising eight spring contacts assembled on insulating strip for engaging discs in station selector drum ("type 2" contact assembly)	AMPLIFIER ASSEMBLIES	
14699	Cord—Indicator pointer drive cord	14272	Bracket—Expander control mounting bracket
12006	Core—Adjustable core and stud for I.F. transformers	12511	Cap—Grid contact cap
12800	Cofc—Adjustable core and stud assembly for oscillator coil	12110	Cap—Top shield cap for 6L7 Radiotron
14717	Dial—Station selector dial scale	12720	Capacitor—100 Mmfd. (C210, C211)
14740	Drive—Tuning condenser vernier drive shaft and pinion gear	14831	Capacitor—820 Mmfd. (C222)
14698	Drum—Drum for indicator drive cord—fastens on tuning condenser shaft	5107	Capacitor—.0025 Mfd. (C209)
14731	Drum—Station selector drum rotor—comprising eight station-selector contactor discs assembled on shaft	5005	Capacitor—.0035 Mfd. (C212)
13612	Filter Pack—Comprising two 0.43 Henry chokes, two 560 Mmfd., one 2,200 Mmfd. and one 1,000 Mmfd. capacitors (L30, L31, C61, C62, C63, C67)	4838	Capacitor—.005 Mfd. (C213, C214)
14738	Gear—Drive pinion gear and arm	13138	Capacitor—.01 Mfd. (C215)
14739	Gear—Drive gear and set screws—located on tuning condenser knob shaft	4886	Capacitor—.05 Mfd. (C205)
14734	Gear—Intermediate gear assembly—comprising one .749" O.D.—34 tooth-gear and one .291" O.D.—12 tooth pinion assembled	4518	Capacitor—.05 Mfd. (C201)
14735	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth-gear and one .291" O.D.—12 tooth pinion assembled	4839	Capacitor—0.1 Mfd. (C218, two in parallel)
14736	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth-gear and one hub assembled	12484	Capacitor—0.25 Mfd. (C208, C217)
14737	Gear—Throw-out gear and bracket	12741	Capacitor—0.5 Mfd. (C202)
14716	Holder—Dial scale holder and reflector, complete with holding springs for band indicating shutter	11203	Capacitor—10 Mfd. (C220)
14715	Indicator—Station selector indicator pointer and support	5212	Capacitor—16 Mfd. (C204, C206)
5226	Lamp—Dial or indicating lamp	11498	Capacitor—18 Mfd. (C219)
14719	Link—Link and lever assembly	14273	Capacitor—Pack comprising one 20 mfd. and one 10 mfd. sections (C203, C207)
14730	Motor—Tuning drive motor for 25 cycle models only (M1)	14531	Capacitor—25 Mfd. (C221)
14729	Motor—Tuning drive motor for 80 cycle models only (M1)	11320	Coil—Choke coil (L204)
14028	Nut—Jamb nut for trimmers, Stock Nos. 12714 and 12884	5240	Cover—Fuse mounting cover
12471	Plate—Mounting plate for cushion socket—less socket	12468	Expander Control (R204)
14741	Plate—Tuning condenser front plate and studs assembled for mounting drive gears	10907	Fuse—3 amp. (F201)
14697	Pulley—Indicator pointer cable pulley	5239	Mounting—Fuse mounting—110 volt
13988	Resistor—10 ohms, carbon type, 1/2 watt (R40)	12471	Plate—6L7 socket mounting plate assembly—less socket, Stock No. 11198
11932	Resistor—330 ohms, carbon type, 1/10 watt (R4)	12486	Reactor—Filter reactor (L201)
13250	Resistor—330 ohms, carbon type, 1/2 watt (R14)	14795	Resistor—0.27 ohms, resistor-fuse, 1.2 ampere (R223)
5030	Resistor—470 ohms, carbon type, 1/2 watt (R39)	14281	Resistor—68 ohms, insulated, 1/2 watt (R222)
14837	Resistor—1,000 ohms, carbon type, 1/10 watt (R6, R15, R43)	13454	Resistor—270 ohms, insulated, 1/2 watt (R202)
14720	Resistor—1,000 ohms, carbon type, 1/2 watt (R2, R8)	12194	Resistor—1,800 ohms, insulated, 1/2 watt (R212)
18737	Resistor—3,300 ohms, carbon type, 1/2 watt (R47)	11298	Resistor—5,600 ohms, carbon type, 1 watt (R210)
11647	Resistor—5,600 ohms, carbon type, 1/2 watt (R48)	11728	Resistor—6,800 ohms, carbon type, 1 watt (R224)
5114	Resistor—15,000 ohms, carbon type, 1 watt (R54)	11332	Resistor—22,000 ohms, carbon type, 1 watt (R209)
14078	Resistor—18,000 ohms, carbon type, 1 watt (R34)	12487	Resistor—33,000 ohms, carbon type, 2 watt (R205)
14721	Resistor—22,000 ohms, carbon type, 1/2 watt (R13, R49)	12875	Resistor—56,000 ohms, carbon type, 1 watt (R213)

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
5029	Resistor—56,000 ohms, carbon type, 1/2 watt (R220)		
5145	Resistor—100,000 ohms, carbon type, 1/2 watt (R219)		
11323	Resistor—270,000 ohms, carbon type, 1/2 watt (R206)		
5035	Resistor—560,000 ohms, carbon type, 1/2 watt (R211)		
12486	Resistor—560,000 ohms, insulated, 1/2 watt (R207, R208, R215)		
12200	Resistor—1 megohm, insulated, 1/2 watt (R201)		
14752	Resistor—2.7 megohms, insulated, 1/2 watt (R203)		
14275	Socket—2-contact female socket for phonograph motor power supply		
14276	Socket—2-contact female socket for "expander-off" switch		
14280	Socket—2-contact female socket and clinching plate for radio input		
14277	Socket—3-contact female socket for power switch or tuning motor power supply		
4794	Socket—4-contact 2A3 or 5Z3 Radiotron socket		
14279	Socket—5-contact female socket for chassis power supply		
11197	Socket—6-contact 6C5 Radiotron socket		
11198	Socket—7-contact 6H6 Radiotron socket		
11196	Socket—8-contact 6L7 or 6F5 Radiotron socket		
14274	Socket—Single contact female socket and plate for phonograph or expander input		
14278	Socket—Single contact socket and plate for tone control		
13964	Transformer—Interstage driver transformer (T202)		
14271	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T201)		
14846	Transformer—Power transformer, 105-125 volts, 25-60 cycle (T201)		
30130	Transformer—Power transformer, 100-130/140-160/165-250 volts, 50-60 cycle (T201)		
MOTOR BOARD ASSEMBLIES			
11881	Base—Phonograph compartment lamp socket and base		
14819	Cable—Shielded pickup cable—connects shorting switch to compensator pack		
12051	Capacitor—2 Mfd., complete with 2-contact male connector for use with motor, Stock Nos. 9650 or 9651 only (C104)		
13101	Capacitor—4 Mfd., complete with 2-contact male connector for use with motor Stock No. 9735 only (C104)		
4674	Connector—2-contact male connector for Stock Nos. 12051, 13101 or phono compartment lamp leads		
14211	Connector—2-contact male connector for motor cable		
11488	Connector—2-contact female connector for motor leads		
14760	Cup—Used-needle cup		
14762	Damper—Turntable damper		
11553	Escutcheon—Index escutcheon engraved "Manual—12—10"		
14688	Knob—Needle rest knob		
4340	Lamp—Phonograph compartment lamp—6.3 volts		
3764	Nut—Cap nut for motor board suspension		
14781	Rest—Pickup rest		
14825	Roller—Pickup arm cable guide roller—comprising bracket, roller and guide pin		
11711	Shade—Phonograph compartment lamp shade		
14758	Spacer—Pickup arm mounting spacer		
14270	Spring—Retaining spring for needle rest		
4565	Spring—Tension spring for knob, Stock No. 14758		
3763	Suspension Spring—Suspension spring, washer and bolt assembly for motor board—comprising one bolt, two cup washers, two springs, two "C" washers, and one cap nut		
30157	Switch—Pickup shorting switch (S105)		
4671	Switch—Operating switch—toggle switch (S104)		
14759	Turntable, complete		
			REPRODUCER ASSEMBLIES
			Speaker RL76-4
14606	Cap—Dust cap for cone center		
14785	Coil—Field coil (L202)		
14602	Cone—Reproducer cone and dust cap (L203)		
14847	Diffuser—Reproducer diffuser		
14786	Plug—5-contact male plug for reproducer		
14784	Reproducer, complete		
14358	Screw—Screw, washer and lockwasher to hold core in yoke		
12568	Transformer—Output transformer (T203)		
14357	Washer—Spring washer to hold field coil		
MISCELLANEOUS ASSEMBLIES			
12038	Band—Rubber band for tuning tube		
14744	Bracket—Tuning tube mounting bracket and clamp		
14745	Button—Station selector push-button		
14789	Cable—Shielded phonograph volume control cable, complete with male plug—compensation unit to amplifier		
14790	Cable—Shielded expander control cable, complete with two male plugs—compensation unit to amplifier		
12723	Capacitor—56 Mmfd. (C105)		
14393	Capacitor—.01 Mfd. (C101)		
11315	Capacitor—.015 Mfd. (C102, C103)		
14747	Card—Call letter cards for station selector		
14840	Escutcheon—Station selector and tuning tube escutcheon, complete with crystal, indicating cards and buttons—less station indicating cards		
30570	Escutcheon—Right- and left-hand side panels for electric tuning buttons—less buttons, call letter cards, retainers, and metal front plates—for use with station selector dial escutcheon		
30569	Escutcheon—Station selector dial and tuning tube escutcheon and crystal, complete with "Radio-Phono" and "Electric-Manual" indicating screens—less right- and left-hand side panels for electric tuning buttons		
14787	Expander Control and Switch (R103, S101, S102)		
14749	Indicator—"Electric-Manual" indicator screen		
14841	Indicator—"Radio-Phono" indicator screen		
14751	Key—Key for use in setting "Electric Tuning" mechanism		
14269	Knob—Phono—Music-Speech, Volume—Power, Tuning (small), Manual-Electric-Remote, Fidelity, Phonograph Volume, and Dynamic Amplifier Control Knobs		
14688	Knob—Range selector knob		
14359	Knob—Tuning knob (large)		
14788	Pickup Control (R101)		
11607	Receptacle—Needle card holder		
12738	Resistor—27,000 ohms, insulated, 1/2 watt (R107)		
12454	Resistor—33,000 ohms, insulated, 1/2 watt (R108)		
14923	Resistor—82,000 ohms, insulated, 1/2 watt (R102)		
12264	Resistor—220,000 ohms, insulated, 1/2 watt (R105)		
12801	Resistor—1.5 megohms, insulated, 1/2 watt (R104)		
11829	Roller—Record pocket slide roller—comprising one rubber roller, one metal roller and two washers		
11377	Screw—Amplifier mounting screw and washer		
5210	Screw—Chassis mounting screw and washer		
14746	Shield—Celluloid shield for station call letter cards		
14274	Socket—Pickup cable socket and plate on compensation unit		
14270	Spring—Retaining spring for knobs, Stock Nos. 14688 and 14269		
4982	Spring—Retaining spring for knob, Stock No. 14359		
3763	Suspension Spring—Motor board suspension bolt, springs, cup washers and cap nut		
14833	Volume Control—Phonograph volume control (R108)		

MODEL U108 ONLY

(1) Stock #14830 Pickup Cable and Male Plug and Stock #14278 Pickup Cable Female Socket replace Stock #14819 and Stock #14274 respectively.

ADDITIONAL REPLACEMENT PARTS - MODELS U-108 and U-109

- 12488 Capacitor - 270 mfd. (C107)
- 30623 Capacitor - 1.0 mfd. (C27)
- 14781 Plug - 5-contact male for chassis power cable
- 14795 Plug - 2-contact male for motor power cable
- 14779 Plug - 2-contact male for radio input cable
- 14782 Plug - 2-contact and guide pin male for power switch cable
- 30693 Plug - 2-contact male for expander input cable
- 30841 Spring - Tilt compensating spring for tuning motor

C107 in the compensator unit has been changed from 2200 mfd. to 270 mfd. Replacements should be made with Stock No. 12488. All Models U-108 have this change incorporated.

REPRODUCER JUMPER CABLE:

Cable assembly complete with connectors is available as Stock No. 30678. The cable is 25 inches long.

SEE INDEX FOR SERVICE DATA ON AUTOMATIC RECORD CHANGER

See Model U-107 for replacement parts for Automatic Record Changer.

Adjustment of Pickup Voltage Control

Preferred Method #1.

- (a) Connect an a-c rectifier type voltmeter having either 5 or 10 volt range across voice-coil of loudspeaker.
- (b) Set phonograph volume control to position of the highest compensation tap (Junction C-106 & C-102) - using continuity meter to check this setting.
- (c) Turn tone control to position of maximum high frequency response.
- (d) Turn "Dynamic Expander" control to its minimum-off position (full counter-clockwise).
- (e) While playing RCA Victor Technical Purpose record #64506-B, on 400 cycle section, adjust pickup voltage control to give 1.6 volts amplifier output as indicated across speaker voice-coil.

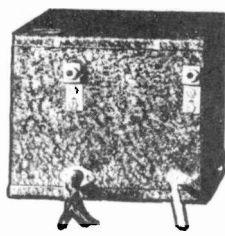
Pickup Voltage Control (R101) is located on the Compensator Unit.

Dynamic Amplifier Adjustment

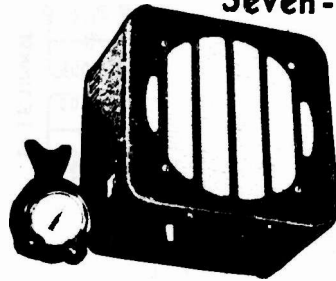
After performing the above adjustments, the dynamic amplifier "bias control" should be set as prescribed under "Dynamic Amplifier Adjustment" in the Service Notes on Model U-109. Record #4319-B should be played and the relative degree of expansion on its heavy passages observed. The "bias control" may be varied - on a out-and-try basis - until the desired or normal amount of expansion is indicated by listening. This method should always be avoided whenever the standard Service Note adjustment is possible.

MODEL M-109

Seven-Tube Superheterodyne Automobile Receiver



MODEL M-109



Alignment Procedure

With tuning condenser fully meshed set dial so that pointer coincides with end calibration at low frequency end of dial.

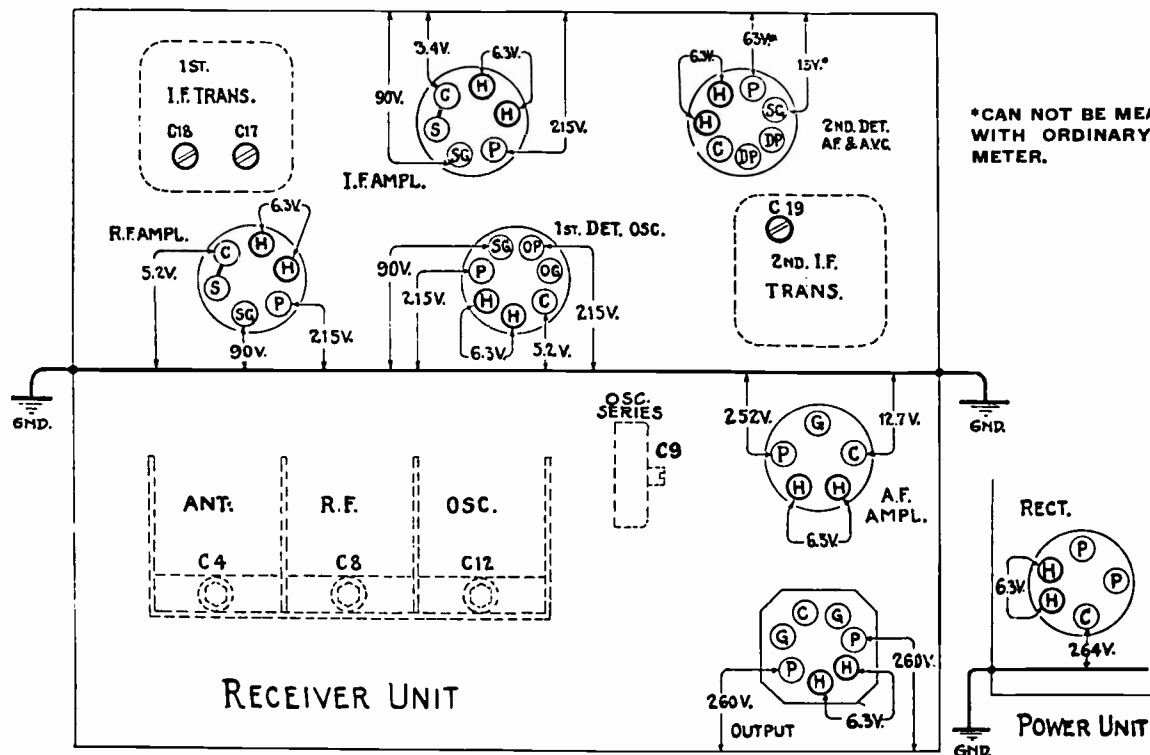
ELECTRICAL SPECIFICATIONS

- Power Supply.....6.3 Volts (Battery)
- Current Consumption.....7.2 Amperes
- Tuning Range.....540 KC. to 1600 KC.
- Maximum Power Output.....6.0 Watts (Audio)
- Undistorted Power Output.....3.5 Watts (Audio)
- Loudspeaker.....8 inch, Electrodynamic
- Pilot Lamp..... Mazda No. 50, 6-8 Volts

Radiotron Complement

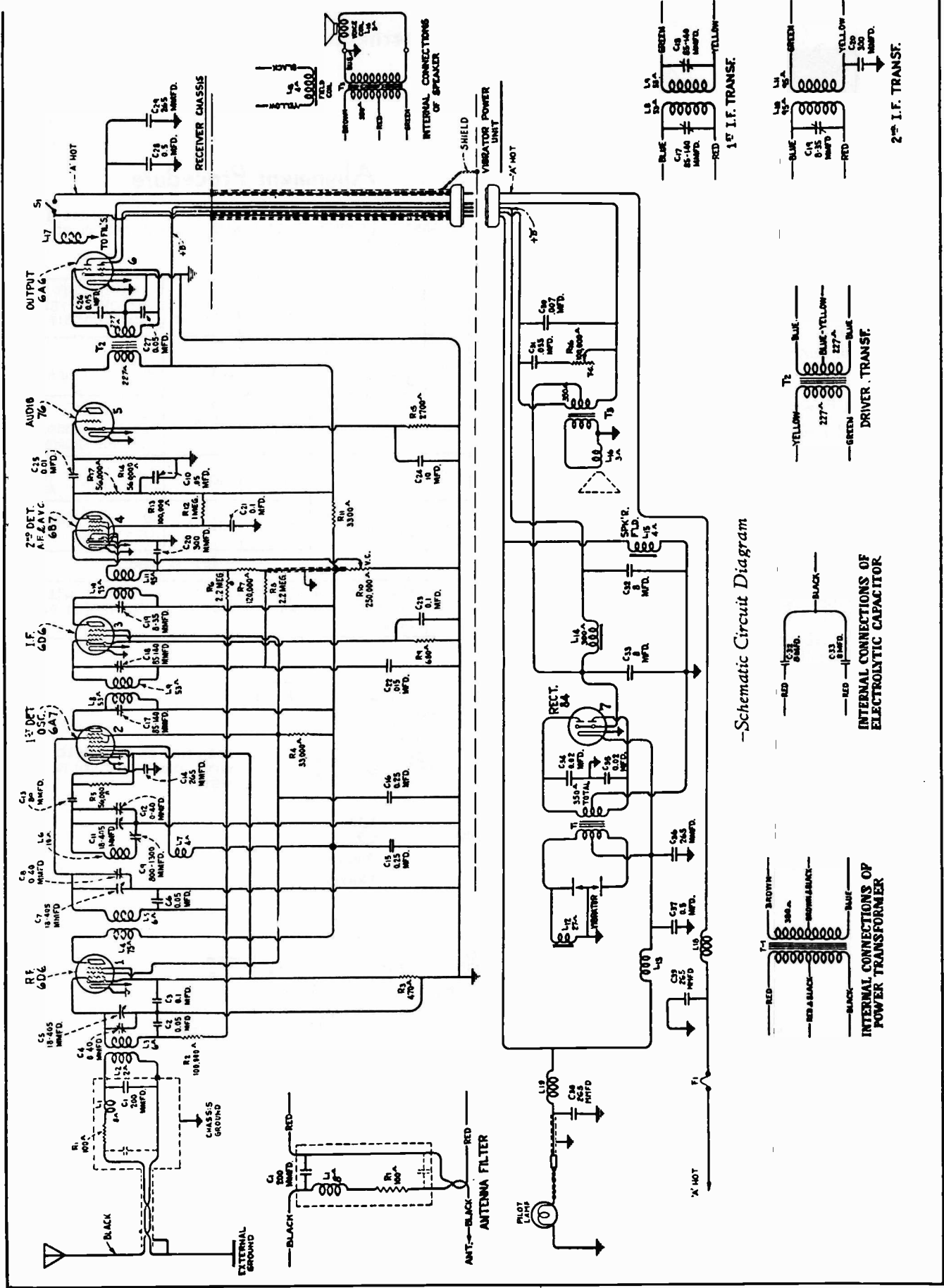
- (1) RCA-6D6 R.F. Amplifier
- (2) RCA-6A7 Oscillator and First Detector
- (3) RCA-6D6 I.F. Amplifier
- (4) RCA-6B7 Second Detector, A.F. Amplifier and A.V.C.
- (5) RCA-76 A.F. Amplifier
- (6) RCA-6A6 Power Output
- (7) RCA-84 Rectifier

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 800 Kc	C19 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd	173 to 177 Kc		C18 C17 1st I-F Trans. FLAT TOP RESPONSE
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	C12 C8 C4 Osc. R-F Ant.
4		600 Kc	600 Kc	C9 L-F Osc. Rock Gang
5		<i>Repeat Step 3</i>		
6	With auto antenna connected to receiver adjust C4 (ant.) for max. output on weak station near 1400 Kc.			

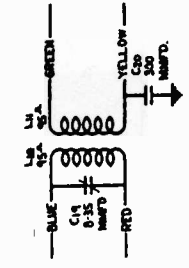
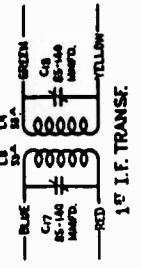
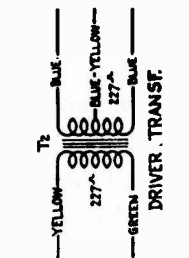
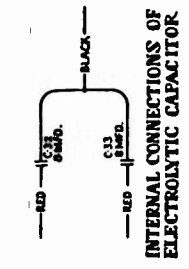
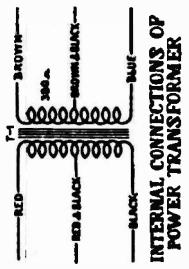


—Trimmer Locations and Radiotron Socket Voltages to Ground
(Measured at 6.6 volts battery—Volume Control Maximum—No Signal)

M109



-Schematic Circuit Diagram



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4993	Bumper — Rubber bumper for condenser mounting bracket—Package of 5.....		3584	Ring—Antenna, r-f, or oscillator coil retaining ring—Package of 5.....	
4955	Capacitor — Adjustable trimmer capacitor (C9).....		5129	Ring—Radiotron shield ring—Package of 5..	
4246	Capacitor—80 mmfd. (C13).....		4953	Shield—First intermediate frequency transformer shield.....	
5078	Capacitor—200 mmfd. (C14, C29).....		4956	Shield—Second intermediate frequency transformer shield.....	
4248	Capacitor—300 mmfd. (C20).....		5037	Shield—Radiotron shield.....	
4792	Capacitor—0.015 mfd. (C22).....		5058	Socket—5-contact Radiotron socket.....	
4882	Capacitor—0.01 mfd. (C25).....		4946	Socket—6-contact Radiotron socket.....	
4886	Capacitor—0.05 mfd. (C10).....		4947	Socket—7-contact Radiotron socket.....	
4885	Capacitor—0.1 mfd. (C21).....		5060	Socket—7-prong Radiotron output socket....	
4841	Capacitor—0.1 mfd. (C3, C23).....		5064	Stud—Variable condenser bracket mounting assembly—Comprising one stud, one bushing, one washer and one lockwasher.....	
4967	Capacitor—0.25 mfd. (C15, C16).....		5057	Transformer—Driver transformer (T2).....	
4011	Capacitor—0.5 mfd. generator capacitor.....		5055	Transformer—First intermediate frequency transformer (L8, L9, C17, C18).....	
5054	Capacitor—10 mfd. (C24).....		5056	Transformer—Second intermediate frequency transformer (L10, L11, C19).....	
4243	Capacitor pack—Comprising two 0.05 mfd. capacitors (C2, C6, C26, C27).....		5063	Worm—Condenser drive worm gear.....	
5074	Clamp—Radiotron shield clamp.....		POWER UNIT ASSEMBLIES		
4950	Coil—Antenna coil (L3, L4).....		5078	Capacitor—200 mmfd. (C36, C38, C39)....	
5142	Coil—Choke coil (L17).....		5148	Capacitor—0.007 mfd. (C30).....	
6967	Coil—Oscillator coil (L6, L7).....		5073	Capacitor—0.035 mfd. high-frequency tone control capacitor (C31).....	
6966	Coil—R.F. coil (L4, L5).....		4490	Capacitor—0.5 mfd. (C37).....	
5061	Condenser—3-gang variable tuning condenser (C4, C5, C7, C8, C11, C12).....		5070	Capacitor pack—Comprising two 0.02 mfd. capacitors (C34, C35).....	
5018	Volume control (R10).....		5069	Capacitor pack—Comprising two 8 mfd. capacitors (C32, C33).....	
5163	Filter—Antenna filter (R1, C1, L1).....		5075	Clamp—Mounting clamp for capacitor—Stock No. 4490.....	
5062	Gear—Condenser drive gear—Located on condenser drive shaft.....		5068	Cup—Grounding cup.....	
5030	Resistor—Carbon type— $\frac{1}{4}$ watt—470 ohms (R3)—Package of 5.....		4693	Clamp—Mounting clamp for capacitor—Stock No. 5069.....	
5031	Resistor—680 ohms—Carbon type— $\frac{1}{4}$ watt (R9)—Package of 5.....		5143	Coil—Choke coil (L18, L19).....	
5144	Resistor — 2700 ohms — Carbon type — $\frac{1}{4}$ watt (R15)—Package of 5.....		5072	Tone control (R16).....	
5147	Resistor — 3300 ohms — Carbon type — 1 watt (R11).....		4132	Knob—Tone control knob—Package of 5....	
5033	Resistor — 33,000 ohms — Carbon type — 1 watt (R4)—Package of 5.....		7778	Reactor—Filter reactor (L13).....	
5029	Resistor—56,000 ohms—Carbon type— $\frac{1}{4}$ watt (R5, R17)—Package of 5.....		5066	Reactor—Filter reactor (L14).....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R13)—Package of 5.....		5071	Receptacle—Power cable plug female receptacle—5-contact—Female section.....	
5035	Resistor—560,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		6980	Socket—4-contact vibrator socket.....	
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 5.....				

M109

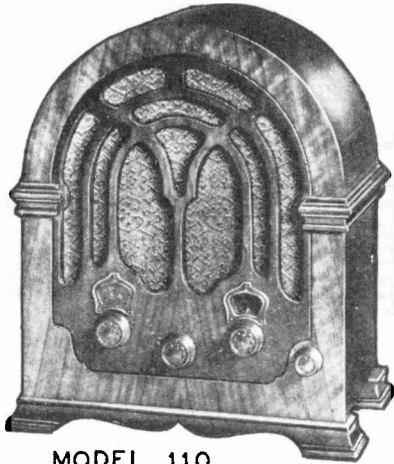
REPLACEMENT PARTS (Continued)

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

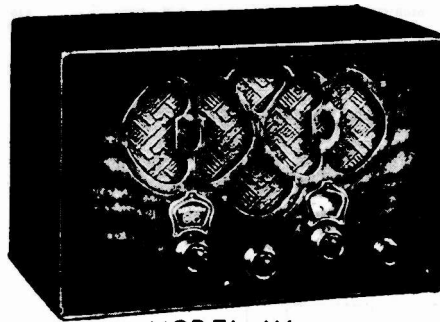
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
5058	Socket—5-contact Radiotron socket or reproducer plug receptacle		4991	Lamp—Dial lamp—Package of 5	
5065	Transformer—Power transformer (T1)		7866	Plate—Bearing plate assembly—Comprising plate, gear and shaft, volume control shaft, station selector shaft, pinion and spring	
5067	Vibrator—Complete (L12)		4986	Screw—Oval fillister head machine screw—Fastens bracket and center section of control box housing	
CABLE ASSEMBLIES					
4976	Cable—Antenna lead assembly—Single-conductor with male section of antenna connector		5042	Screw—No. 8-32- $\frac{3}{8}$ " headless set screw for station selector or volume control shaft—Package of 10	
7766	Cable—Power lead with clip and female section of fuse connector—To ammeter		4983	Shaft—Station selector drive shaft	
5059	Cable—Main power cable—Complete—With male section of connector plug, fuse connector and fuse, ammeter clip and female section of pilot light cable connector		4979	Shaft—Volume control drive shaft	
5150	Cap—Cap for power cable plug		4984	Socket—Dial lamp socket	
5149	Plug—Power cable plug—Less cap		4982	Spring—Holding spring for station selector or volume control knob—Package of 10	
FLEXIBLE SHAFT ASSEMBLIES					
5000	Bracket—Flexible drive shaft connection bracket—Mounted on housing		4980	Spring—Tension spring—Package of 5	
4973	Coupling—Tuning condenser flexible drive shaft coupling		5011	Strap—Control box mounting strap	
5141	Coupling—Volume control flexible drive shaft coupling		REPRODUCER ASSEMBLIES		
3903	Screw—No. 8-32- $\frac{3}{8}$ " headless set screw for flexible drive shaft coupling—Package of 20		9597	Coil—Field coil (L15)	
7855	Shaft—Tuning condenser or volume control flexible drive shaft—Approximately 28 $\frac{3}{4}$ " long		9598	Cone—Reproducer cone (L16)—Package of 5	
CONTROL BOX ASSEMBLIES					
4987	Bezel—Station selector dial bezel		9596	Reproducer—Complete	
7865	Box—Control box—Complete		4995	Screw—Reproducer mounting screw—Package of 10	
7864	Bracket—Mounting bracket and rear section of control box housing		5090	Transformer—Output transformer (T3)	
4988	Crystal—Station selector dial crystal		MISCELLANEOUS ASSEMBLIES		
4989	Dial—Station selector dial		4244	Cap—Grid contact cap—Package of 5	
4981	Gear—18-tooth intermediate drive gear		4293	Capacitor—0.5 mfd. ammeter capacitor	
4978	Gear—Indicator drive gear and shaft		5025	Capacitor—0.5 mfd. generator capacitor	
7862	Housing—Front section of control box housing		7871	Case—Complete—With top and bottom cover—Less screws	
7863	Housing—Center section of control box housing		7952	Cover—Bottom cover of receiver case—Less screws	
4990	Indicator—Station selector (pointer) indicator		7953	Cover—Top cover of receiving case—Less screws	
4985	Knob—Station selector or volume control knob—Package of 5		5023	Fuse—15-ampere—Package of 5	
			4985	Knob—Station selector or volume control knob—Package of 5	
			4999	Screw—No. 8- $\frac{1}{4}$ " slotted hex-head self-tapping screw—Package of 5	
			5037	Shield—Radiotron shield	
			4992	Stud—Receiver mounting stud, nut and washer—Package of 3	
			5024	Suppressor—Distributor suppressor	
			5067	Vibrator—Complete	

MODELS 110, 111, 115, 210 & 310

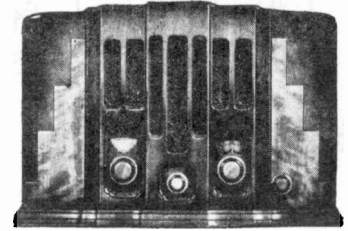
Five-Tube, Two-Band, A-C Superheterodyne Receivers and Radio-Phonograph



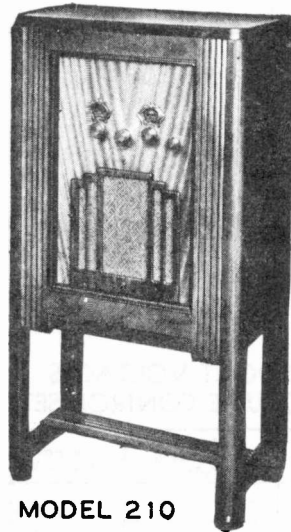
MODEL 110



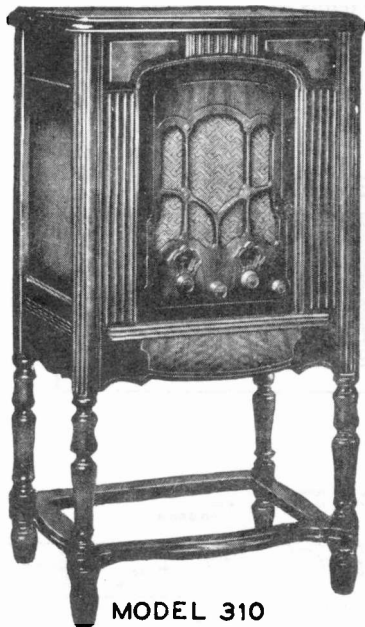
MODEL 111



MODEL 115



MODEL 210



MODEL 310

Voltage Rating 105-125 Volts
 Frequency Rating 25-60 Cycles and 50-60 Cycles
 Power Consumption 60 Cycles—70 Watts
 Number and Types of Radiotrons 1 UX-280,
 1 RCA-2A5, 1 RCA-58, 1 RCA-57, 1 RCA-2A7—Total, 5
 Undistorted Output 1.75 Watts
 Frequency Range 540 K. C. to 1500 K. C.
 and 1400 K. C. to 2800 K. C.

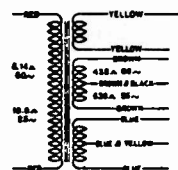
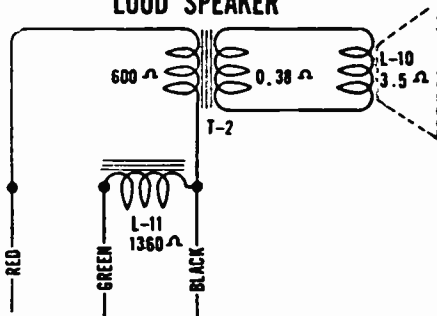
MODEL 310

Frequency Rating 25, 50 and 60 Cycles
 Power Consumption 60 Cycles, 95 Watts

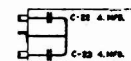
Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with .01 mfd	175 kc	Quiet Point near 60 BC Band	S & P of I-F Trans.
2	Antenna in series with 200 mmfd	1400 kc	140 BC Band	Osc., Det. and R-F Trimmers on gang condenser
3		600 kc	60 BC Band	600 kc Osc. Trimmer (Rock Gang)
4		Repeat Step 2		
5		2440 kc	120 SW Band	Osc., Det. and R-F Trimmers on band switch

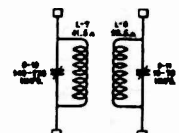
INTERNAL CONNECTIONS OF LOUD SPEAKER



INTERNAL CONNECTIONS OF POWER TRANSFORMER

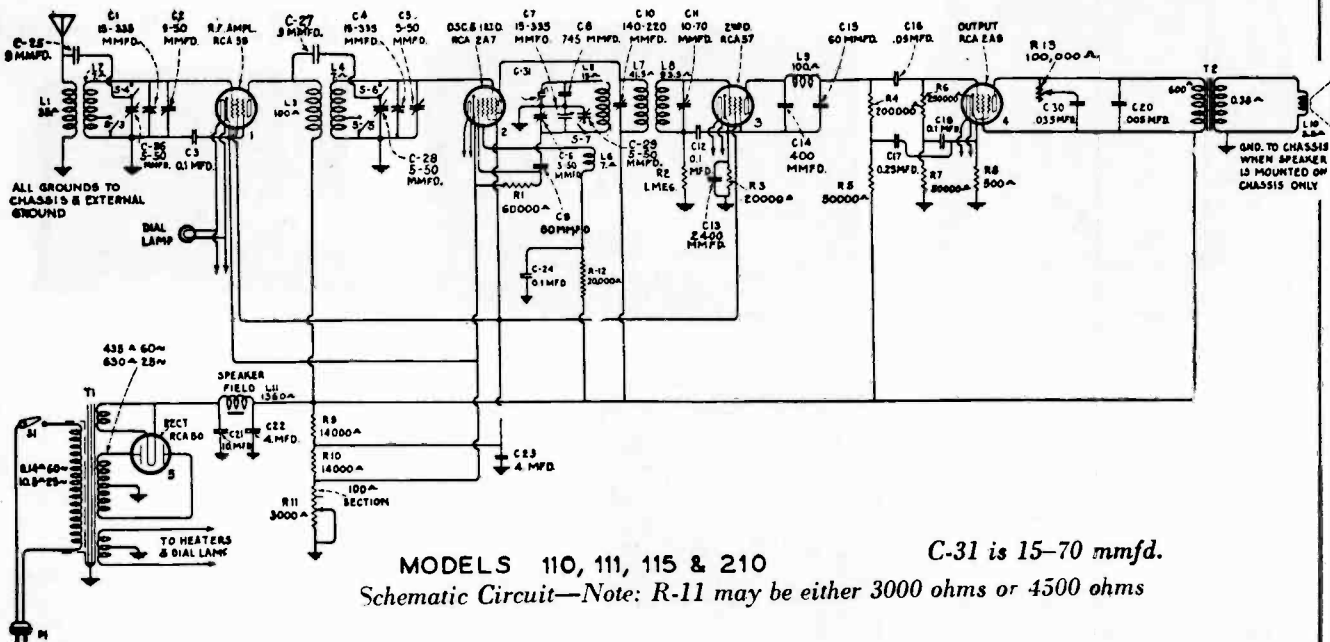


INTERNAL CONNECTIONS OF CAPACITOR



INTERNAL CONNECTIONS OF I.F. TRANSFORMER

110, 111, 115, 210 & 310

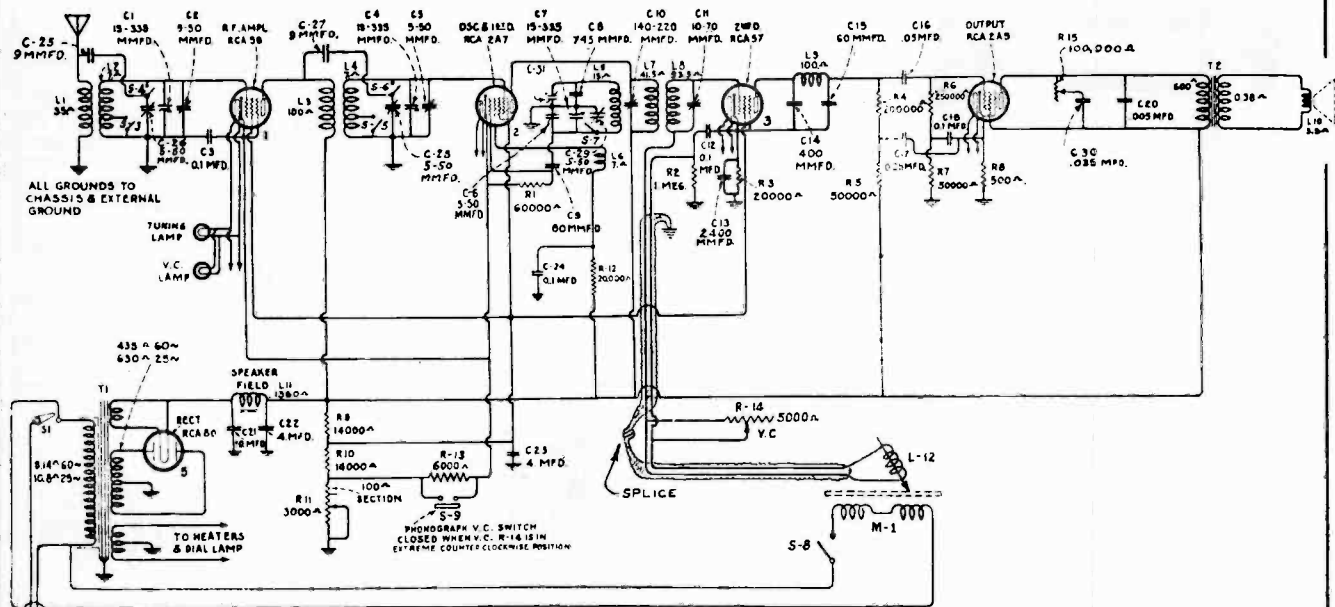


MODELS 110, 111, 115 & 210 C-31 is 15-70 mmfd.
 Schematic Circuit—Note: R-11 may be either 3000 ohms or 4500 ohms

RADIOTRON SOCKET VOLTAGES

115 Volt, A. C. Line. MAXIMUM VOLUME CONTROL SETTING—NO SIGNAL

Radiotron No.	Cathode to Control Grid, Volts	Cathode to Screen Grid, Volts	Cathode to Plate, Volts	Plate Current, M. A.	Heater, Volts
1. RCA-58 R. F. Amplifier	3.0	95	250	5.0	2.33
2. RCA-2A7 First Detector Oscillator	3.0	95	250	3.0	2.33
3. RCA-57 Second Detector	6.0	89	170	0.3	2.33
4. RCA-2A5 Power Amplifier	18.0	235	220	32.0	2.33
5. RCA-80 Rectifier					4.82
TOTAL CATHODE CURRENT—11 M. A.					



MODEL 310 C-31 is 15-70 mmfd.
 Schematic Circuit Diagram—Note: R-11 may be either 3000 ohms or 4500 ohms

Replacement Parts

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

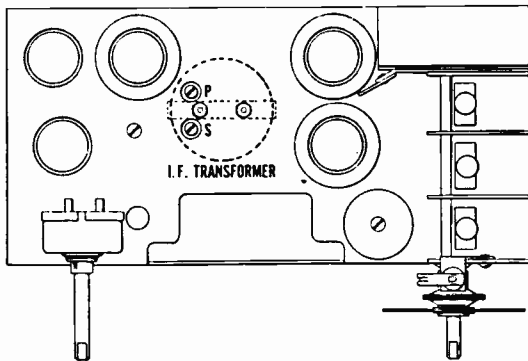
Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
MODÉLS 110, 111 & 115			
RECEIVER ASSEMBLIES			
2734	Capacitor—745 mmfd. (C8)—Package of 5	3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5, R7)—Package of 5
3050	Resistor—14,000 ohms—Carbon type—3 watts (R9)	3596	Capacitor—60 mmfd. (C15)
3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R2)—Pkg. of 5	3597	Capacitor—.25 mfd. (C17)
3459	Capacitor—80 mmfd. (C9)	3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1)—Package of 5
3472	Capacitor—0.0024 mfd. (C13)	3603	Resistor—500 ohms—Carbon type—1 watt (R8)—Package of 5
3555	Capacitor—0.1 mfd. (C24)	3604	Capacitor—400 mmfd. (C14)
3572	Socket—Seven contact Radiotron socket	3623	Shield—Antenna or R. F. coil shield
3573	Socket—Four contact Radiotron socket	3624	Socket—Dial lamp socket
3574	Coil—Choke coil (L9)	3625	Dial—Volume indicator dial assembly
3575	Dial lamp socket with bracket	3628	Escutcheon—Volume control escutcheon
3584	Ring—R. F. or oscillator coil retaining ring—Pkg. of 5	3629	Escutcheon—Station selector escutcheon
3590	Escutcheon—Station selector escutcheon—Pkg. of 5	3641	Capacitor—.1 mfd. (C3, C12, C18)
3591	Escutcheon—Name plate escutcheon—Pkg. of 5	3713	Capacitor—.05 mfd. (C16)
3592	Knob—Station selector, volume control or tone control knob—Pkg. of 5	3783	Capacitor—9 mmfd. (C25, C27)—Package of 2
3594	Resistor—50,000 ohms—carbon type— $\frac{1}{4}$ watt (R5, R7)—Pkg. of 5	3932	Capacitor—2,400 mmfd. (C13)
3596	Capacitor—60 mmfd. (C15)	6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5
3597	Capacitor—0.25 mfd. (C17)	6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R3, R12)—Package of 5
3602	Resistor—60,000 ohms—carbon type— $\frac{1}{4}$ watt (R1)—Pkg. of 5	6306	Resistor—14,000 ohms—Carbon type—1 watt (R10)—Package of 5
3604	Capacitor—400 mmfd. (C14)	6464	Transformer—I. F. transformer (C10, C11, L7, L8)
3615	Knob—Range switch knob—Pkg. of 5	6465	Volume control (R11)
3623	Shield—Antenna or R. F. coil shield	6471	Coil—Oscillator coil (L5, L6)
3632	Resistor—500 ohms—carbon type—1 watt (R8)—Pkg. of 5	6527	Coil—Antenna coil (L1, L2)
3641	Capacitor—.1 mfd. (C3, C12, C18)	6528	Coil—R. F. coil (L3, L4)
3713	Capacitor—.05 mfd. (C16)	6620	Capacitor—Comprising one .005 and one .035 mfd. (C20, C30)
3783	Capacitor—9 mmfd. (C25, C27)—Pkg. of 2	6622	Dial—Condenser dial and drive assembly
3842	Screw—Chassis mounting screw assembly—Package of 4	6623	Tone control (R13)
3942	Shield—Radiotron shield—oscillator	6624	Condenser—3-gang variable tuning condenser
6228	Resistor—200,000 ohms—carbon type— $\frac{1}{2}$ watt (R4)—Pkg. of 5	6625	Switch—Range switch
6303	Resistor—20,000 ohms—carbon type— $\frac{1}{2}$ watt (R12, R3)—Pkg. of 5	6676	Socket—6-contact Radiotron socket—Output tube
6306	Resistor—14,000 ohms—carbon type—1 watt (R10)—Pkg. of 5	6754	Knob—Tone control or range switch knob (Moderne)—Package of 5
6464	Transformer—I. F. transformer (C10, C11, L7, L8)	6771	Knob—Station selector or volume control knob (Moderne)—Package of 5
6465	Volume control (R11)	7062	Capacitor—Adjustable—15-70 mmfd.
6471	Coil—Oscillator coil (L5, L6)	7063	Capacitor—Adjustable—5 to 40 mmfd. (C31)
6527	Coil—Antenna coil (L1, L2)	7485	Shield—Radiotron shield—R. F. or 2nd Detector
6528	Coil—R. F. coil (L3, L4)	7589	Capacitor—Comprising two 4.0 mfd. capacitors (C22, C23)
6620	Capacitor—Comprising one .005 and one .035 mfd. (C20, C30)	7590	Capacitor—10 mfd. (C21)
6622	Dial—Condenser dial and drive assembly	8985	Transformer—Power transformer 105-125 volts, 50-60 cycles (T1)
6623	Tone control (R13)	8986	Transformer—Power transformer 200-250 volts, 50-60 cycles (T1)
6624	Condenser—3-gang variable tuning condenser	9002	Transformer—Power transformer 105-125 volts, 25-50 cycles (T1)
6625	Switch—Range switch		
6676	Socket—6-contact Radiotron socket—Output tube		
6754	Knob—Tone control or range switch knob (Moderne)—Package of 5		
6771	Knob—Station selector or volume control knob (Moderne)—Package of 5		
7062	Capacitor—Adjustable—15-70 mmfd.		
7063	Capacitor—Adjustable—5 to 40 mmfd. (C31)		
7485	Shield—Radiotron shield—R. F. or 2nd Detector		
7589	Capacitor—Comprising two 4.0 mfd. capacitors (C22, C23)		
7590	Capacitor—10 mfd. (C21)		
8985	Transformer—Power transformer 105-125 volts, 50-60 cycles (T1)		
8986	Transformer—Power transformer 200-250 volts, 50-60 cycles (T1)		
9002	Transformer—Power transformer 105-125 volts, 25-50 cycles (T1)		
REPRODUCER ASSEMBLIES			
6467	Transformer—Output transformer (T2)	6598	Condenser—3-gang variable tuning condenser (C1, C2, C4, C5, C6, C7)
8987	Cone—Reproducer cone (L10)—Pkg. of 5	6599	Volume control (R11, S1)
8988	Coil assembly—Comprising field coil, magnet and cone support (L11)	6620	Capacitor—Comprising .005 and one .035 mfd. capacitors (C20, C30)
9435	Reproducer complete	6622	Dial—Condenser dial and drive assembly
MODEL 210			
RECEIVER ASSEMBLIES			
2734	Capacitor—745 mmfd. (C8)—Package of 5	6645	Tone control (R13)
3050	Resistor—14,000 ohms—Carbon type—3 watt (R9)	6676	Socket—6-contact Radiotron socket—Output
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5	6754	Knob—Range switch knob—Package of 5
3459	Capacitor—80 mmfd. (C9)	6769	Socket—4-contact Radiotron socket
3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5	6771	Knob—Station selector, tone or volume control knob—Package of 5
3555	Capacitor—.1 mfd. (C24)	7062	Capacitor—Adjustable capacitor—15 to 70 mmfd. (C31)
3572	Socket—7-contact Radiotron socket	7065	Screwdriver—For R. F., fixed oscillator condenser
3574	Coil—Choke coil assembly (L9)	7485	Socket—6-contact Radiotron socket
3584	Ring—R. F., antenna or oscillator coil retaining ring—Package of 5		

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
7589	Capacitor—Comprising two 4. mfd. capacitors (C22, C23).....	7590	Capacitor—10 mfd. (C21).....
7590	Capacitor—10 mfd. (C21).....	8985	Transformer—Power transformer 105-125 volts 50-60 cycles (T1).....
8985	Transformer—Power transformer 105-125 volts 50-60 cycles (T1).....	8986	Transformer—Power transformer 200-250 volts 50-60 cycles.....
8986	Transformer—Power transformer 200-250 volts 50-60 cycles.....	9002	Transformer—Power transformer 105-125 volts 25-40 cycles.....
9002	Transformer—Power transformer 105-125 volts 25-40 cycles.....		
	REPRODUCER ASSEMBLIES		
6770	Transformer—Output transformer (T2)....	6467	Transformer—Output transformer (T2).....
8935	Cone—Reproducer cone (L10)—Package of 5	9041	Coil assembly—Comprising field coil, magnet and cone support (L11).....
9460	Coil—Field coil, magnet and cone support (L11).....	9043	Reproducer complete.....
9461	Reproducer complete.....	9428	Cone—Reproducer cone (L10)—Package of 5.....
	MODEL 310		
	RECEIVER ASSEMBLIES		
2563	Resistor—6,000 ohms—Carbon type—1 watt—Pkg. of 5 (R13).....		
2734	Capacitor—745 mmfd. (C8)—Package of 5.....		
2747	Contact cap—Package of 5.....		
2994	Coil—R. F. choke coil (L9).....		
3050	Resistor—14,000 ohms—Carbon type—3 watts (R9).....		
3076	Resistor—1 megohm—Carbon type—½ watt—Pkg. of 5 (R2).....		
3459	Capacitor—80 mmfd. (C9).....		
3472	Capacitor—0.0024 mfd. (C13).....		
3514	Resistor—250,000 ohms—Carbon type—¼ watt—Pkg. of 5 (R6).....		
3555	Capacitor—0.1 mfd. (C24).....		
3572	Socket—Radiotron 7 contact socket.....		
3573	Socket—Radiotron 4 contact socket.....		
3584	Ring—R. F. or oscillator coil retaining ring—Pkg. of 5.....		
3592	Knob—Station selector, volume or tone control knob—Package of 5.....		
3594	Resistor—50,000 ohms—Carbon type—¼ watt—Pkg. of 5 (R5, R7).....		
3596	Capacitor—60 mmfd. (C15).....		
3597	Capacitor—0.25 mfd. (C17).....		
3602	Resistor—60,000 ohms—Carbon type—¼ watt—Pkg. of 5 (R1).....		
3604	Capacitor—400 mmfd. (C14).....		
3623	Shield—R. F. or oscillator coil shield.....		
3624	Socket—Dial lamp socket and bracket.....		
3625	Indicator—Volume control indicator.....		
3632	Resistor—500 ohms—Carbon type—1 watt—Pkg. of 5 (R8).....		
3641	Capacitor—0.1 mfd. (C3, C12, C18).....		
3713	Capacitor—0.05 mfd. (C16).....		
3783	Capacitor—9 mmfd.—Package of 2 (C25, C27).....		
3785	Screw—Chassis mounting screw—Package of 10.....		
6228	Resistor—200,000 ohms—Carbon type—¼ watt—Pkg. of 5 (R4).....		
6303	Resistor—20,000 ohms—Carbon type—¼ watt—Pkg. of 5 (R3, R12).....		
6306	Resistor—14,000 ohms—Carbon type—1 watt—Pkg. of 5 (R10).....		
6464	Transformer—I. F. transformer (C10, C11, L7, L8).....		
6471	Coil—Oscillator coil assembly (L5, L6).....		
6527	Coil—Antenna coil (L1, L2).....		
6528	Coil—R. F. coil assembly (L3, L4).....		
6573	Switch—Range switch.....		
6598	Capacitor—Three gang variable tuning capacitor.....		
6599	Volume control—Complete with mounting nut (R11).....		
6620	Capacitor—Comprising one 0.005 and one 0.035 mfd. capacitors (C20, C30).....		
6622	Dial—Station selector dial assembly.....		
6645	Tone control (R15).....		
7062	Capacitor—Adjustable—15-70 mmfd.....		
7063	Capacitor—Adjustable—5-40 mmfd. (C31).....		
7485	Socket—Radiotron 6-contact socket.....		
7589	Capacitor—Filter capacitor—Two 4.0 mfd. in container (C22, C23).....		
		8999	Motor—Motor complete—105-125 volts—60 cycle.....
		8990	Motor—Motor complete—105-125 volts—50 cycle.....
		8991	Motor—105-125 volts—40 cycle.....
		8992	Motor—Motor complete—105-125 volts—25 cycle.....
		8993	Rotor and shaft for 105-125 volts, 60 cycle motor.....
		8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....
		8995	Rotor and shaft for 105-125 volts, 50 cycle motor.....
		8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....
		8997	Rotor and shaft for 105-125 volts, 40 cycle motor.....
		8998	Spindle—Turntable spindle with fibre gear for 40 cycle motor.....
		8999	Rotor and shaft for 105-125 volts, 25 cycle motor.....
		9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....
			MOTOR ASSEMBLIES
		3731	Motor mounting assembly—Comprising three felt washers, three cushions, six metal washers and three studs.....
		3386	Cover—Pickup cover.....
		3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—10 sets.....
		3388	Screw—Pickup needle holding screw—Package of 10.....
		3389	Rod—Automatic brake trip rod with lock nut—Pkg. of 5.....
		3417	Armature—Pickup armature.....
		3419	Screw—Pickup cover mounting screw—Package of 10.....
		3600	Coil—Pickup coil.....
		6346	Back—Pickup housing back.....
		6474	Pickup—Pickup unit complete.....
		7593	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut and washer.....
			PICKUP, PICKUP ARM ASSEMBLIES
			TURNTABLE ASSEMBLIES
		3261	Bushing—Rubber bushing—Used on turntable spindle for long playing records—Package of 5.....
		3338	Ring—Clamp ring assembly—Comprising spring, latch lever and stud.....
		3340	Washer—Thrust washer—Package of 2.....
		3341	Pin—Groov-Pin—Package of 2.....
		3342	Spring—Latch spring—Located on clamping ring—Pkg. of 2.....
		3343	Sleeve—Sleeve complete with ball race.....
		3344	Cover—Grease retainer cover—Package of 2.....
		3346	Bushing—Speed shifter lever bushing—Package of 4.....
		3347	Spring—Speed shifter lever spring—Package of 2.....
		3399	Lever—Speed shifter lever with mounting screws.....
		7084	Cover—Suede cover for turntable.....
		8948	Turntable—Complete.....
			MISCELLANEOUS PARTS
		2947	Leather—Friction leather—Package of 20.....
		3322	Switch—Automatic brake switch with mounting screws.....
		3430	Box—Needle box with lid—Package of 2.....
		3615	Knob—Phonograph volume control or range switch knob—Package of 5.....
		6475	Volume control—Phonograph volume control (R14).....
		10174	Springs—Automatic brake springs—One set of 4 springs.....
		10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....

Electrical Specifications

Voltage Rating.....	200-230 AC or DC
Frequency Rating (AC).....	50-60 Cycles
Power Consumption.....	AC 60 Cycles-105 Watts-DC-85 Watts
Number and Types of Radiotrons.....	1 RCA-78, 1 RCA-6A7, 1 RCA-77, 1 RCA-43, 1 RCA-12Z3-Total 5
Undistorted Output.....	1.5 Watts
Frequency Range.....	540 KC-1500 KC



Alignment Procedure

With tuning condenser fully meshed, set dial so that 530 calibration coincides with pointer.

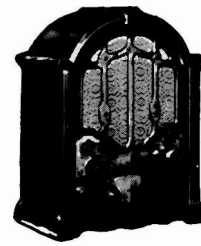
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO -	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with .01 mfd	175 kc	Quiet Point	S & P of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 kc	1400	Osc., Det. and R-F Trimmers on gang condenser

NOTE: Connect low side of test oscillator to ground wire of receiver during 1400 kc alignment.

MODELS 112 & 112A

220 Volt AC/DC Universal Receiver

Five-Tube Superheterodyne Table Model



REPLACEMENT PARTS MODEL 112

REFER TO MODEL 112A

Change Stock No.

From	To	
4700	3919	Socket - Dial lamp socket.
4701	6726	Dial - Dial and drive assembly.
4702	6724	Volume control.
4703	7822	Escutcheon - Station selector escutcheon
4449	2875	Knob - Volume control or station selector knob.

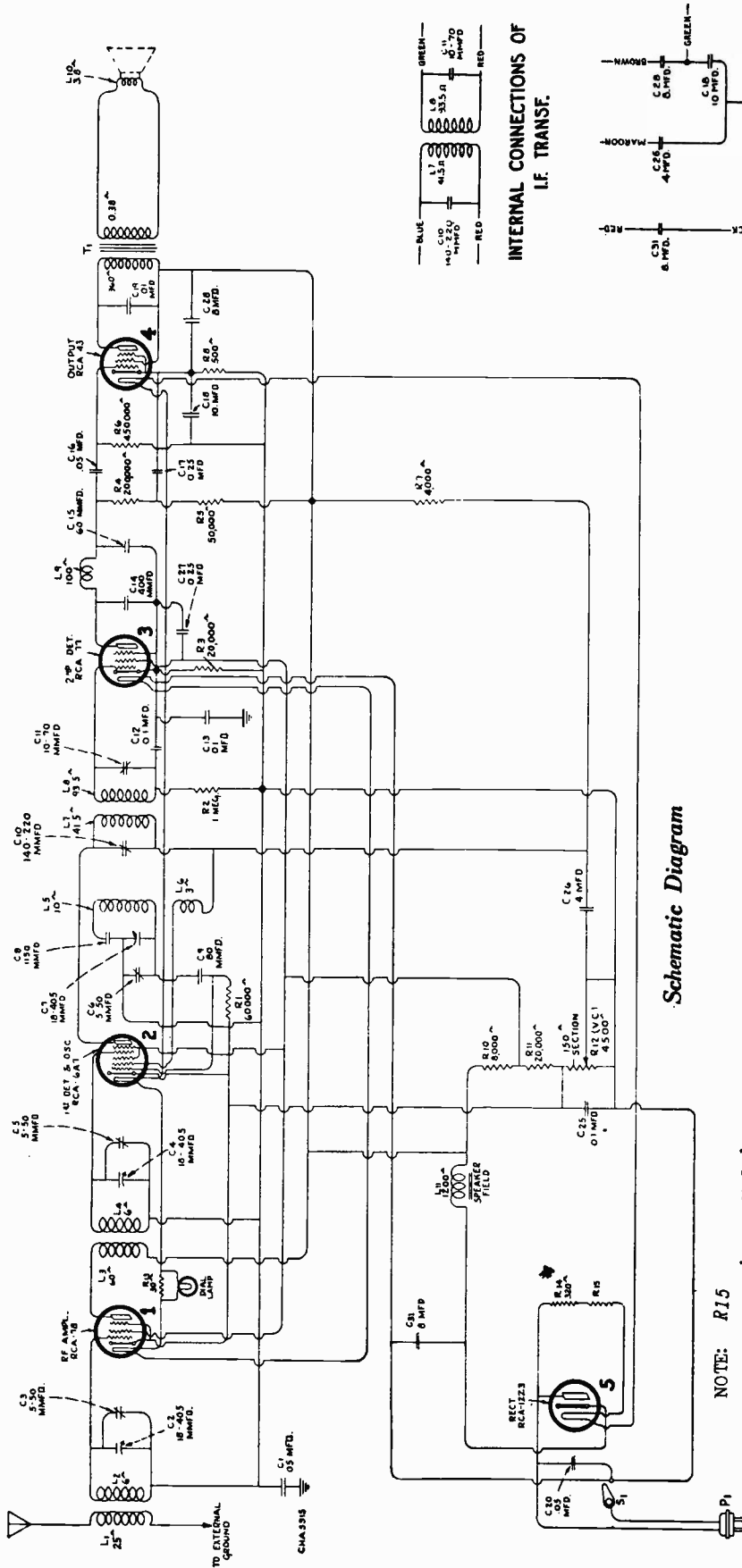
Add Stock No.

4005	Escutcheon - Volume control escutcheon.
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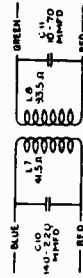
REPLACEMENT PARTS MODEL 112 A

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

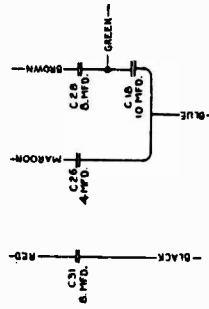
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.....		6228	Resistor—200,000 ohms—Carbon type—½ watt (R4)—Package of 5.....	
3710	Capacitor—60 mmfd. (C15).....		3700	Resistor—150,000 ohms—Carbon type—½ watt (R6)—Package of 5.....	
3711	Capacitor—80 mmfd. (C9).....		3632	Resistor—500 ohms—Carbon type—1 watt (R8)—Package of 5.....	
3712	Capacitor—400 mmfd. (C14).....		2963	Resistor—8,000 ohms—Carbon type—1 watt (R10)—Package of 5.....	
3754	Capacitor—1150 mmfd. (C8).....		6114	Resistor—20,000 ohms—Carbon type—1 watt (R11)—Package of 5.....	
3701	Capacitor—0.01 mfd. (C19).....		3911	Resistor—30 ohms—Flexible type (R13).....	
3888	Capacitor—0.05 mfd. (C16).....		4718	Resistor—205 ohms—Porcelain type—(R15).....	
3916	Capacitor—0.05 mfd. (C20).....		3915	Resistor—320 ohms—Porcelain type—(R14) *R 15	
3917	Capacitor—0.25 mfd. (C17).....		3584	Ring—Antenna R. F. or oscillator coil retaining ring—Package of 5.....	
3755	Capacitor—Comprising two 0.1 mfd. and one 0.25 mfd. (C12, C13, C27).....		3993	Screw—No. 6-32 square head set screw for condenser dial and drive assembly—Package of 10.....	
6621	Capacitor—Comprising one 0.05 and one 0.1 mfd. (C1, C25).....		7065	Screwdriver—Insulated screwdriver and socket wrench—For I. F., R. F. and oscillator condenser adjustment.....	
6728	Capacitor—Comprising one 1.0 mfd., one 10.0 mfd. and two 3.0 mfd. (C18, C26, C28, C31).....		3623	Shield—Antenna R. F. or oscillator coil shield.....	
6726	Coil—Choke coil (L9).....		3950	Shield—Radiotron shield.....	
6519	Coil—Antenna coil (L1, L2).....		4700	Socket—Dial lamp socket.....	
6521	Coil—Oscillator coil (L5, L6).....		3859	Socket—4-contact Radiotron socket.....	
6520	Coil—R. F. coil (L3, L4).....		6676	Socket—6-contact Radiotron socket.....	
6723	Condenser—3-gang variable tuning condenser (C2, C3, C4, C5, C6, C7).....		7485	Socket—6-contact Radiotron socket—Second detector.....	
4701	Dial—Tuning condenser dial and drive assembly.....		6727	Transformer—Intermediate frequency transformer (L7, L8, C10, C11).....	
4703	Escutcheon—Station selector escutcheon.....		4702	Volume control (R12, S1).....	
4419	Knob—Volume control or station selector knob—Package of 5.....		* REFER TO SCHEMATIC		
3602	Resistor—60,000 ohms—Carbon type—¼ watt (R1)—Package of 5.....		REPRODUCER ASSEMBLIES		
3033	Resistor—1 megohm—Carbon type—¼ watt (R2)—Package of 5.....		7845	Coil—Field coil magnet and cone support (L11).....	
6250	Resistor—4000 ohms—Carbon type—½ watt (R7)—Package of 5.....		9192	Cone—Reproducer cone (L10)—Package of 5.....	
6303	Resistor—20,000 ohms—Carbon type—½ watt (R3)—Package of 5.....		7847	Reproducer complete.....	
3594	Resistor—50,000 ohms—Carbon type—½ watt (R5)—Package of 5.....		7846	Transformer—Output transformer (T1).....	



NOTE: R15
 320 ohms - Model 112.
 205 ohms - Model 112A.



INTERNAL CONNECTIONS OF I.F. TRANS.



INTERNAL CONNECTIONS OF CAPACITOR PACK

RADIOTRON SOCKET VOLTAGES

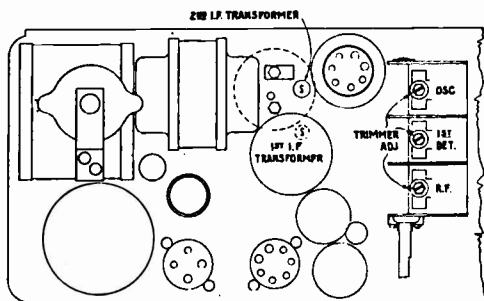
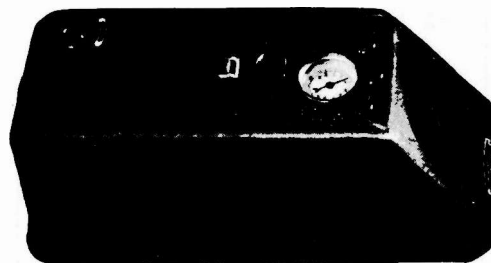
*Measured at 220 Volts A. C., 60 cycles (Maximum Volume Control)

Radiotron No.	Cathode to Control Grid, Volts DC	Cathode to Screen Grid, Volts DC	Cathode to Plate, Volts DC	Plate Current M. A.	Heater Volts
RCA-78 R. F.	3.0	100	165	5.5	6.0
RCA-6A7 Oscillator 1st Detector	—	—	145	1.7	6.0
RCA-77 2nd Detector	3.0	100	145	2.5	6.0
RCA-43 Power	21.0	Plate and Bias Supply 165 Volts	—	35.0	25.0
RCA-12Z3 Rectifier	—	220 RMS	130	—	12.0

*Voltages with 220 Volts D. C. supply will be approximately 10 per cent less than tabulated values

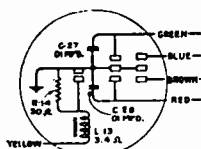
MODEL M116

Portable "Arm Rest" Automobile-and-Home Receiver

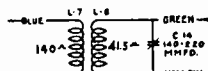


Location of Line-up Capacitors

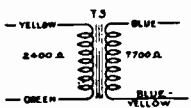
Power Requirements.....105-125 volt,
50-60 Cycle A. C. or 6-volt Storage Battery
Power Consumption...115 Volts, 60 Cycles A. C.—40 Watts,
Battery—5.7 Amperes at 6.3 Volts
Number and Types of Radiotrons.....1 RCA-78,
1 RCA-6A7, 1 RCA-6B7, 1 RCA-41, 1 RCA-1-V—Total 5
Maximum Undistorted Power Output.....1.8 Watts
Maximum Output.....3.6 Watts
Type of Rectifier.....A. C.—Radiotron RCA-1-V
Battery—Vibrator Inverter-Rectifier
Tuning Frequency Range.....540 K. C.—1500 K. C.



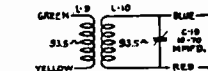
INTERNAL CONNECTIONS OF VIBRATOR



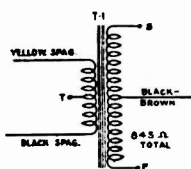
INTERNAL CONNECTIONS OF 1ST I.F. TRANSFORMER



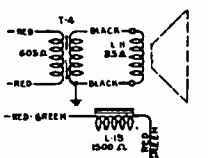
INTERNAL CONNECTIONS OF INTERSTAGE TRANSFORMER



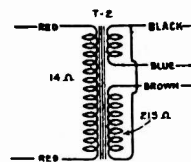
INTERNAL CONNECTIONS OF 2ND I.F. TRANSFORMER



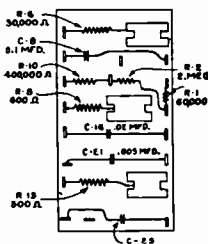
INTERNAL CONNECTIONS OF VIBRATOR TRANSFORMER



INTERNAL CONNECTIONS OF SPEAKER



INTERNAL CONNECTIONS OF POWER TRANSFORMER



INTERNAL CONNECTIONS OF RESISTOR BOARD

Alignment Procedure

DIAL CALIBRATION:

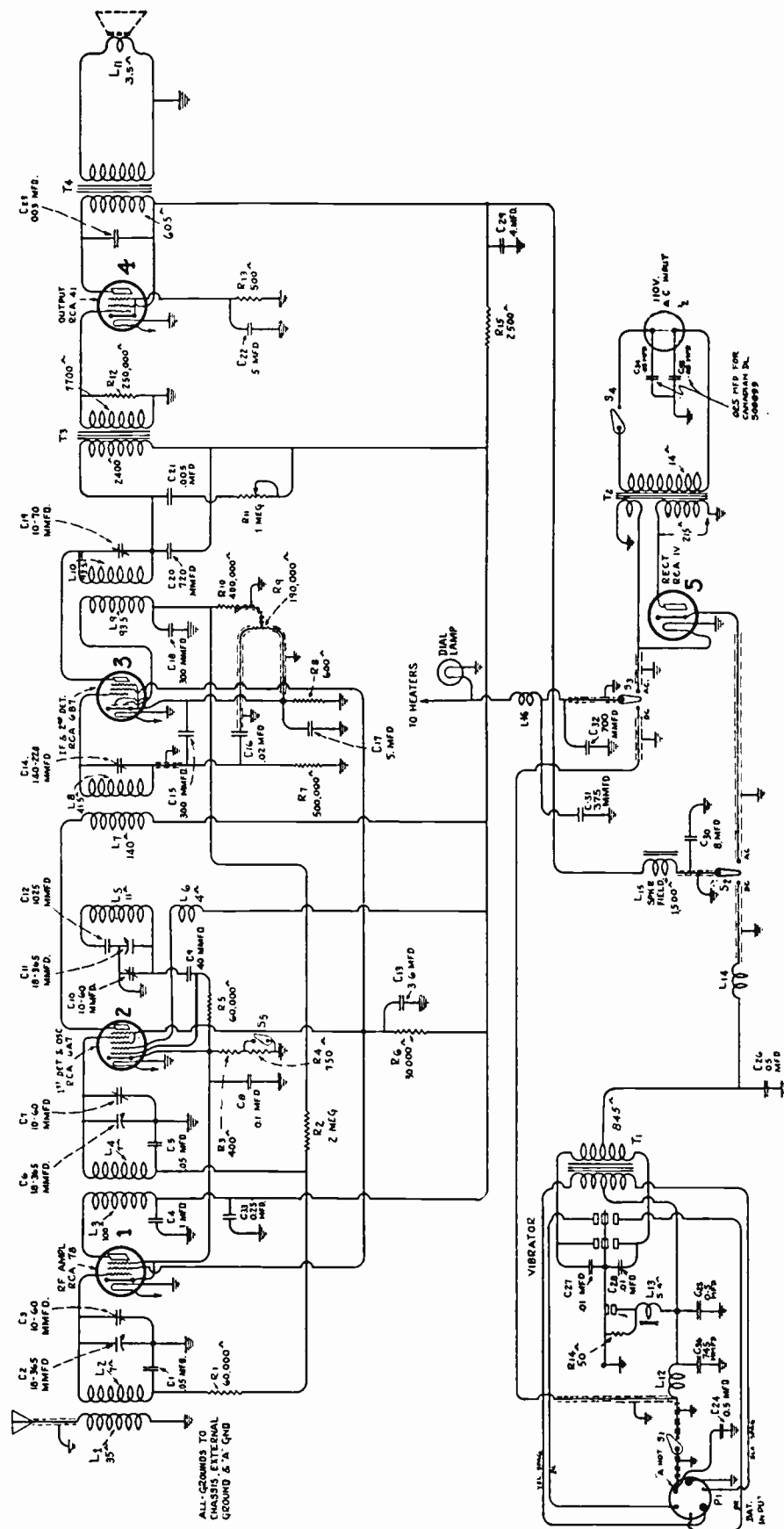
With tuning condenser fully meshed set dial so that end calibration coincides with pointer.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	175 Kc	Quiet point near 600 Kc	Tuning cond. of 2nd I-F Trans. Tuning cond. of 1st I-F Trans.
2	Antenna in series with 200 mufd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers on gang condenser
3	With auto antenna connected to receiver adjust R-F Trimmer for max. volume on weak station near 1400 Kc.			

RADIOTRON SOCKET VOLTAGES

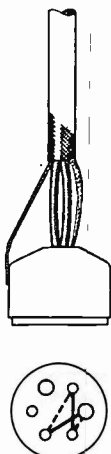
115 Volts A. C. or 6.3 Volt Battery—No Signal—Max. Sensitivity

Radiotron No.	Cathode to Ground	Cathode to Screen Grid Volts	Cathode to Plate Volts	Cathode Current M. A.	Heater Volts
RCA-78 R. F.	4.2	86	216	5.5	5.9
RCA-6A7 First Detector	4.2	86	216	10.0	5.9
6A7 Oscillator		—	216	Total	
RCA-6B7 Second Det.	2.7	87	207	4.5	5.9
RCA-41 Power	15.0	255	235	30.0	5.9
RCA-1-V	—	—	325 RMS	50.0	5.9



-Schematic Circuit Diagram

SOLID CONNECTIONS FOR +A GROUNDED. DOTTED CONNECTIONS FOR -A GROUNDED.



-Internal Connections of Cable

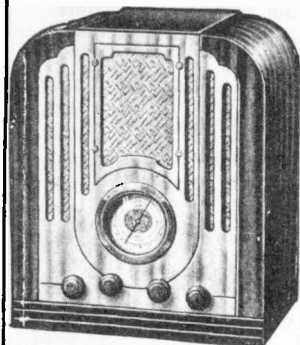
REPLACEMENT PARTS

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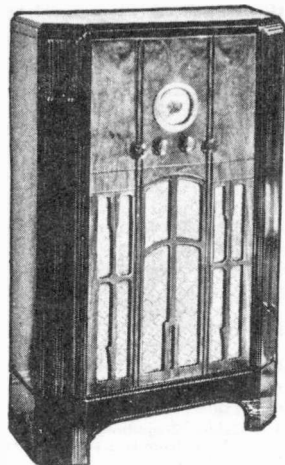
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
2240	Resistor—30,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6).....		9456	Transformer—Power transformer—105-125 volts, 50-60 cycles (T2).....	
2734	Capacitor—745 mfd. (C ₃₆)—Package of 5.....		9457	Transformer—Power transformer—9 volts (T1).....	
2747	Cap—Contact cap—Package of 5.....			CABLE ASSEMBLIES	
2917	Washer—"C" washer for condenser drum and shaft assembly—Package of 10.....		3466	Connector—Antenna lead-in connector.....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 5.....		3646	Fuse—20 amperes—Package of 5.....	
3469	Resistor—2,500 ohms—Carbon type—1 watt (R15)—Package of 5.....		4008	Shield—Metal shield for cable plug—Package of 5.....	
6844	Capacitor—Comprising two 5.0 mfd. (C17, C22).....		4009	Terminal—Metal terminal (plain) for battery connection—Package of 5.....	
3572	Socket—7-contact Radiotron socket.....		4010	Terminal—Metal terminal engraved "Batt-Ground"—For battery connection—Package of 5.....	
3584	Ring—Antenna, R. F. or oscillator coil retaining ring—Package of 5.....		6150	Plug—Battery cable plug.....	
3597	Capacitor—0.25 mfd. (C33).....		6516	Connector—Fuse connector.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R5)—Package of 5.....		6760	Cable—7-conductor shielded—Switch cable.....	
3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....		6761	Cable—2-conductor shielded—Approximately 10 $\frac{1}{4}$ inches long, from resistor board to volume control.....	
3621	Coil—Choke coil—Located on terminal board (L14).....		6762	Lead—Antenna lead-in—Approximately 15 $\frac{3}{4}$ inches long—With connector.....	
3623	Shield—Antenna, R. F. or oscillator coil shield.....		6773	Cable—Battery cable—Plus A grounded—Overall length approximately 61 inches—Complete with plug, fuse, fuse connector and terminal.....	
3632	Resistor—500 ohms—Carbon type (R13)—Package of 5.....		6774	Cable—Battery cable—Minus A grounded—Overall length approximately 61 inches—Complete with plug, fuse, fuse connector and terminal.....	
3639	Capacitor—0.02 mfd. (C16).....		6775	Cable—Battery cable—Plus A grounded—Overall length approximately 105 inches—Complete with plug, fuse, fuse connector and terminal.....	
3696	Capacitor—40 mmfd. (C9).....		6776	Cable—Battery cable—Minus A grounded—Overall length approximately 105 inches—Complete with plug, fuse, fuse connector and terminal.....	
3699	Capacitor—720 mmfd. (C20).....		6777	Cable—Antenna lead-in cable—Shielded—Approximately 98 inches long—With connector.....	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 5.....		6779	Cable—2-conductor shielded cable—Approximately 58 inches long—Battery cable, less fuse plug and connectors.....	
3751	Capacitor—0.5 mfd. (C25).....		6780	Cable—2-conductor shielded cable—Approximately 102 inches long—Battery cable, less fuse plug and connectors.....	
3877	Capacitor—0.1 mfd. (C8).....		6834	Cable—Battery cable—Minus "A" grounded—Overall length approximately 185 inches—Complete with plug, fuse, fuse connector and terminal.....	
3888	Capacitor—0.05 mfd. (C1, C5).....		6835	Cable—Battery cable—Plus "A" grounded—Overall length approximately 185 inches—Complete with plug, fuse, fuse connector and terminal.....	
3920	Capacitor—0.003 mfd. (C23).....		7008	Lacquer—Touch up lacquer (1 pint of lacquer and 1 pint of thinner).....	
3937	Capacitor—300 mmfd. (C15, C18).....			MISCELLANEOUS PARTS	
3950	Shield—Radiotron shield.....		3960	Handle—Carrying handle.....	
3954	Screw—Chassis mounting screw and washer assembly—Package of 10.....		3961	Knob—Tone control, volume control or suppressor switch knob—Package of 5.....	
3955	Coil—Choke coil—Located on terminal board (L12).....		3962	Knob—Station selector knob—Package of 5.....	
3956	Clamp—Capacitor mounting clamp—Package of 5.....		3963	Knob—"AC-DC" switch knob—Package of 5.....	
3957	Indicator—Station selector indicator pointer—Package of 5.....		3964	Bezel—Metal bezel for station selector dial glass.....	
3958	Plug—2-contact "AC" connection plug.....		3965	Class—Station selector dial glass.....	
3959	Plug—6-contact "DC" connection plug.....		3966	Spring—Contact spring—Grounds vibrator shield to case—Package of 10.....	
3968	Spring—Tuning condenser drive cord tension spring—Package of 10.....		4011	Capacitor—0.5 mfd. (C24).....	
3969	Cord—Tuning condenser drive cord—Package of 10.....		4017	Scale—Station selector dial scale—Package of 5.....	
3970	Drum and shaft assembly—Small—For tuning condenser drive.....		6151	Suppressor—Spark plug suppressor.....	
3971	Escutcheon—Switch escutcheon engraved "AC-DC".....		6152	Suppressor—Distributor suppressor.....	
3972	Drum and bushing assembly—Large—For tuning condenser drive.....		6175	Suppressor—Distributor suppressor—Splice in type.....	
3993	Screw—Set screw for tuning condenser drive drum—Package of 10.....		6494	Capacitor—0.5 mfd.—Ammeter capacitor.....	
4001	Capacitor—1.02 5mmfd. (C12).....		6495	Capacitor—0.5 mfd.—Generator capacitor.....	
4002	Capacitor—375 mmfd. (C31).....		6670	Suppressor—Spark plug suppressor—"Elbow" type.....	
4003	Capacitor—700 mmfd. (C32).....		6763	Cord—Power cord with connectors.....	
4020	Resistor—750 ohms—Carbon type— $\frac{1}{4}$ watt (R4)—Package of 5.....		7694	Vibrator—Complete (C27, C28, L13, R14).....	
4089	Capacitor—Two 0.05 mfd. (C34, C35).....		7696	Housing—Metal housing—Top section.....	
4508	Connector—Flat type, female section—Used with plug No. 3958.....		7697	Base—Housing base.....	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5.....			REPRODUCER ASSEMBLIES	
6165	Lamp—Station selector dial lamp—Package of 5.....		6750	Screen—Dust screen.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 5.....		6751	Screen—Metal screen.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		6764	Transformer—Output transformer (T4).....	
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....		6772	Ring—Felt ring—Used between speaker and metal housing—Package of 5.....	
6300	Socket—4-contact Radiotron socket.....		8987	Cone—Reproducer cone (L11)—Package of 5.....	
6512	Capacitor—0.005 mfd. (C21).....		9458	Reproducer complete.....	
6738	Capacitor—8.0 mfd. (C30).....		9459	Coil—Comprising field coil, magnet and cone support (L15).....	
6739	Condenser—3-gang variable tuning condenser assembly (C2, C3, C6, C7, C10, C11).....				
6740	Transformer—First intermediate frequency transformer (L7, L8, C14).....				
6741	Transformer—Second intermediate frequency transformer (L9, L10, C19).....				
6742	Coil—Antenna coil assembly (L1, L2).....				
6743	Coil—R. F. coil assembly (L3, L4).....				
6744	Capacitor—0.05 mfd. (C26).....				
6745	Coil—Oscillator coil assembly (L5, L6).....				
6746	Volume control (R9).....				
6747	Tone control (R11).....				
6748	Switch—Noise suppressor switch (S5).....				
6749	Switch—AC-DC switch (S1, S2, S3, S4).....				
6759	Transformer—Interstage transformer (T3).....				
6781	Capacitor—Comprising one 3.6 mfd. and one 1.0 mfd. (C4, C13).....				
6782	Capacitor—4.0 mfd. (C29).....				
7485	Socket—6-contact Radiotron socket.....				

MODELS 117 AND 214

Five-Tube, Two-Band, A. C. Superheterodyne Receivers



MODEL 117



MODEL 214

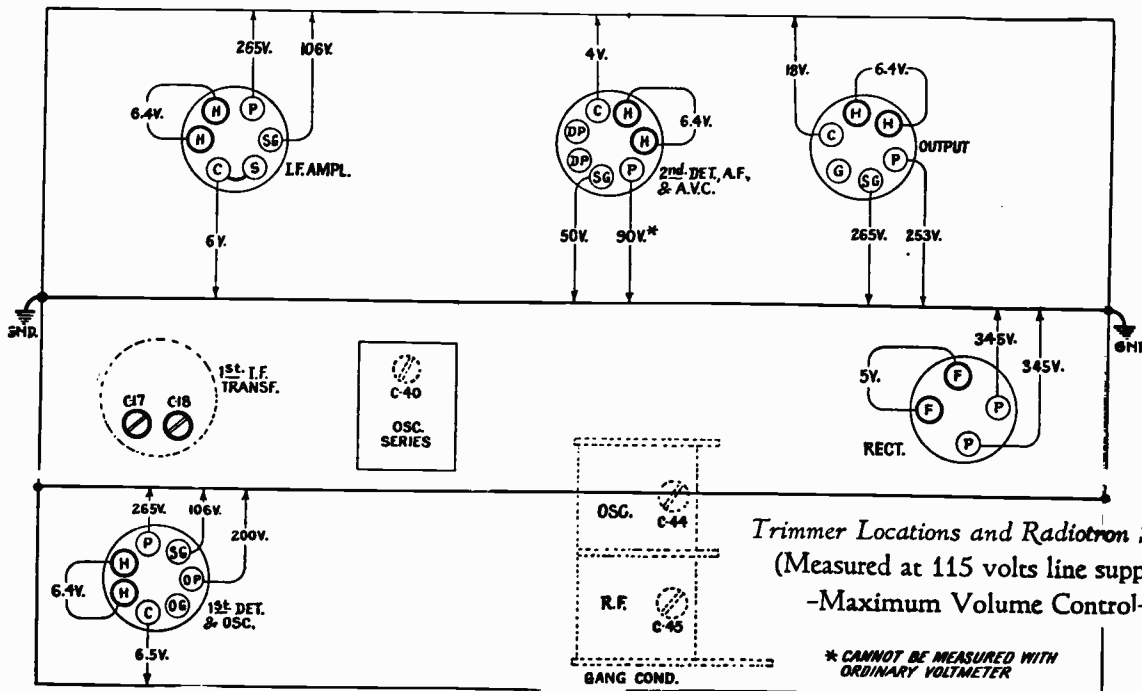
Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with 540 dial calibration.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	480 Kc	Quiet point near 600 Kc	C18 C17 1st I-F Trans.
2	Antenna in series with 200 mmfd	1720 Kc	1720 Kc	C44 C45 Osc. Ant.
3		800 Kc	800 Kc	C40 L-F Osc. Rock Gang
4		<i>Repeat Step 2</i>		

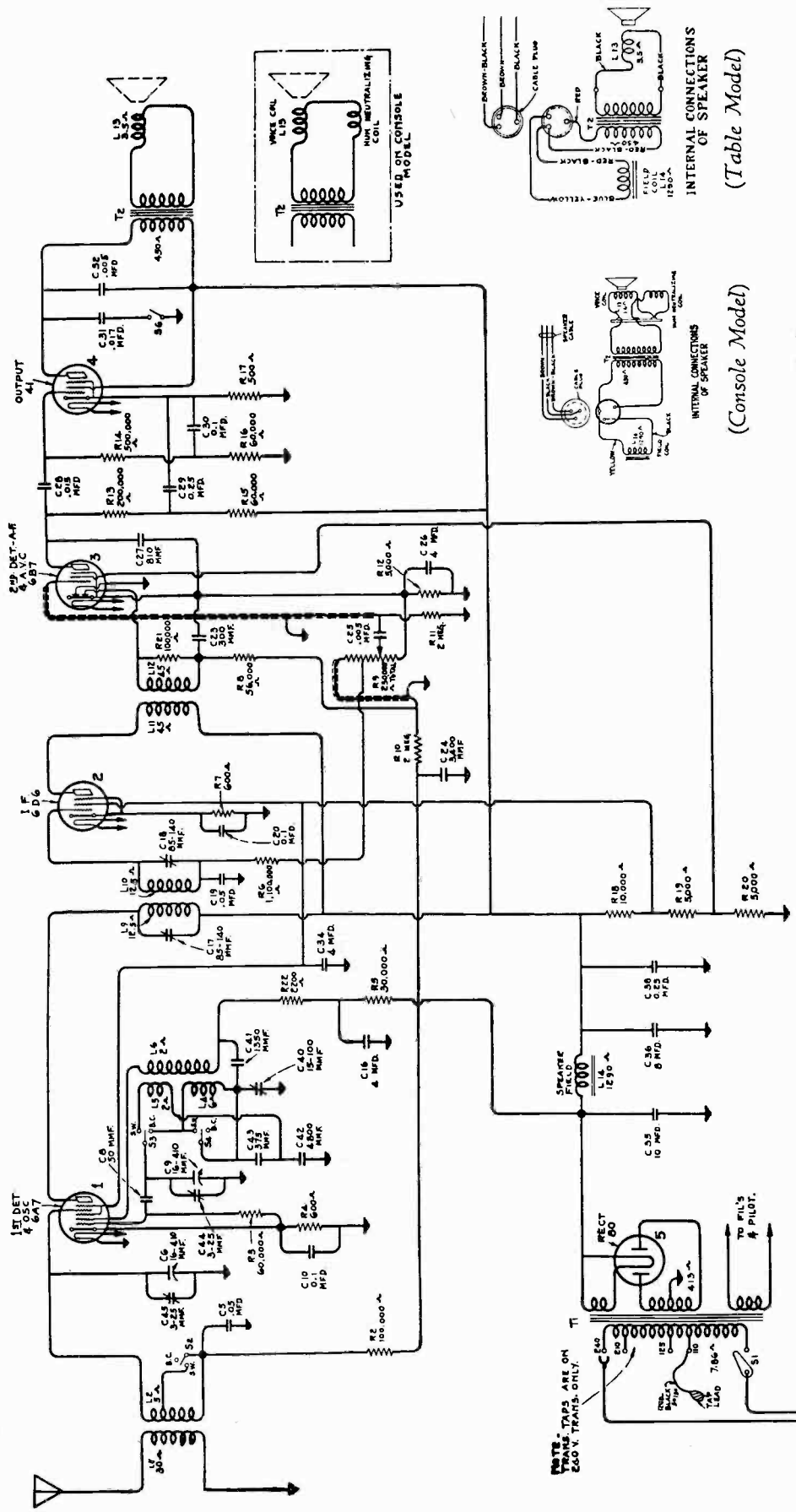
ELECTRICAL SPECIFICATIONS

- Voltage and Frequency Ratings..... $\left\{ \begin{array}{l} 105-125 \text{ Volts, } 50-60 \text{ Cycles} \\ 105-125 \text{ Volts, } 25-60 \text{ Cycles} \\ 105-125/195-250 \text{ Volts, } 50-60 \text{ Cycle.} \end{array} \right.$
- Power Consumption..... 80 Watts
- Radiotrons and Functions..... $\left\{ \begin{array}{l} (1) \text{ RCA-6A7 First Detector and Oscillator} \\ (2) \text{ RCA-6D6 I.F. Amplifier} \\ (3) \text{ RCA-6B7 Second Detector, Audio Amplifier, A.V.C.} \\ (4) \text{ RCA-41 Power Output} \\ (5) \text{ RCA-80 Rectifier} \end{array} \right.$
- Tuning Frequency Ranges..... 540 to 1720 KC. and 2250 to 6850 KC.
- Undistorted Output..... 1.75 Watts
- Maximum Output..... 3.5 Watts
- Loudspeaker..... Electrodynamic

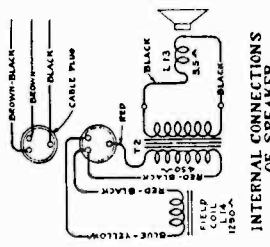
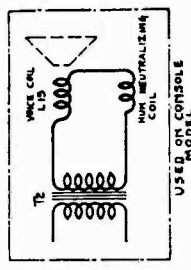


Trimmer Locations and Radiotron Socket Voltages
(Measured at 115 volts line supply—
Maximum Volume Control—No Signal)

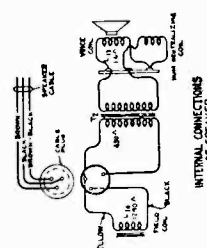
* CANNOT BE MEASURED WITH ORDINARY VOLTMETER



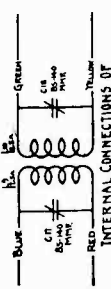
-Schematic Circuit Diagram



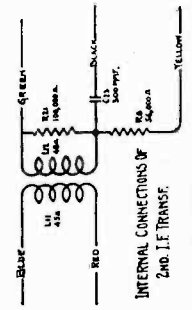
(Table Model)



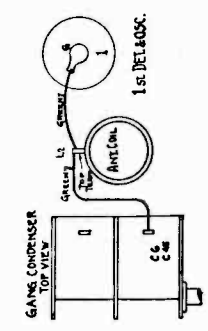
(Console Model)



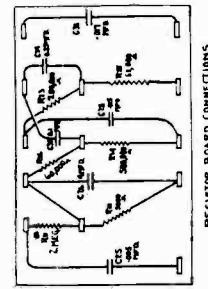
1st IF TRANSF.



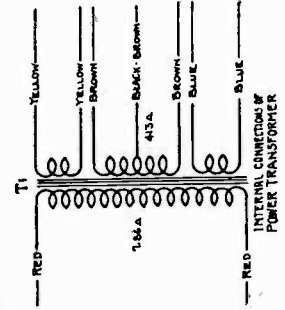
2nd IF TRANSF.



GANS CONDENSER TOP VIEW

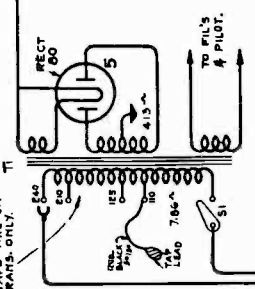


RESISTOR BOARD CONNECTIONS



INTERNAL CONNECTIONS OF POWER TRANSFORMER

NOTE: TRANS. TAPS ARE ON 250 V. TRANS. ONLY.



TO P.I.L.'S & PILOT.

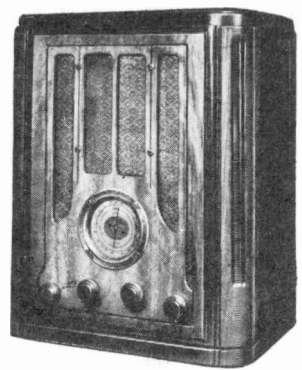
REPLACEMENT PARTS

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

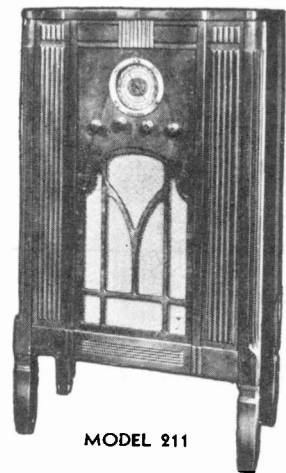
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4379	Board—Terminal board—Engraved "ANT-GND".....		7487	Shield—I.F. Radiotron shield.....	
5043	Bracket—First I.F. transformer mounting bracket.....		3858	Socket—Dial lamp socket assembly.....	
4880	Bracket—Tone control switch mounting bracket.....		4784	Socket—4-contact Radiotron socket.....	
4427	Bracket—Volume control mounting bracket..		4785	Socket—6-contact Radiotron socket.....	
4244	Cap—Grid contact cap—Package of 5.....		4786	Socket—6-contact Radiotron socket.....	
3861	Capacitor—Adjustable capacitor (C40).....		4787	Socket—7-contact Radiotron socket.....	
4442	Capacitor—50 mmfd. (C8).....		4904	Switch—Range switch (S2, S3, S4).....	
4913	Capacitor—375 mmfd. (C43).....		5052	Switch—Tone control switch (S6).....	
5044	Capacitor—810 mmfd. (C27).....		4900	Transformer—First intermediate frequency transformer (L9, L10, C17, C18).....	
4914	Capacitor—1350 mmfd. (C41).....		4901	Transformer—Second intermediate frequency transformer (L11, L12, R8, R21, C23)....	
4881	Capacitor—3400 mmfd. (C24).....		4898	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
4912	Capacitor—4800 mmfd. (C42).....		4897	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
4793	Capacitor—0.005 mfd. (C25).....		4899	Transformer—Power transformer—105-125 200-240 volts—40-60 cycles.....	
4868	Capacitor—0.005 mfd. (C32).....		CONDENSER DRIVE ASSEMBLIES		
4792	Capacitor—0.015 mfd. (C28).....		5048	Dial—Station selector dial.....	
4906	Capacitor—0.017 mfd. (C31).....		5046	Drive—Tuning condenser drive assembly—Complete.....	
4836	Capacitor—0.05 mfd. (C5, C19).....		4475	Indicator—Station selector (indicator) pointer.	
4791	Capacitor—0.1 mfd. (C10, C20).....		4340	Lamp—Station selector dial lamp—Package of 5.....	
4841	Capacitor—0.1 mfd. (C30).....		3943	Screen—Translucent screen for dial light—Package of 2.....	
3597	Capacitor—0.25 mfd. (C29, C38).....		5047	Shaft—Condenser drive shaft.....	
3796	Capacitor—4.0 mfd. (C26).....		3858	Socket—Station selector dial lamp socket....	
4428	Capacitor—8.0 mfd. (C36).....		REPRODUCER ASSEMBLIES (CONSOLE MODEL)		
7790	Capacitor—10.0 mfd. (C35).....		9579	Coil—Field coil (L14).....	
7589	Capacitor pack—Comprising two 4.0 mfd. capacitors (C16, C34).....		9533	Cone—Reproducer cone—Mounted and centered on metal housing (L13).....	
4358	Clamp—Capacitor mounting clamp for capacitors—Stock Nos. 7790 and 4428....		5118	Connector—3-contact male connector plug for reproducer.....	
4903	Coil—Antenna coil (L1, L2, R2, C5).....		5119	Connector—3-contact female connector plug for reproducer cable.....	
4902	Coil—Oscillator coil (L4, L5, L6).....		9578	Reproducer—Complete.....	
4896	Condenser—2-gang variable tuning condenser (C6, C9, C44, C45).....		4818	Transformer—Output transformer (T2).....	
4790	Volume control (R9, S1).....		REPRODUCER ASSEMBLIES (TABLE MODEL)		
5045	Lead—Single conductor—Shielded lead from volume control to resistor (R10).....		4915	Cable—3-conductor reproducer cable.....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R7)—Package of 5.....		9587	Coil—Field coil, magnet and cone support (L14).....	
5185	Resistor—2200 ohms—Carbon type— $\frac{1}{2}$ watt (R22)—Package of 5.....		9588	Cone—Reproducer cone (L13)—Package of 5.	
4436	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 10.....		5118	Connector—3-contact male connector plug for reproducer.....	
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).....		5119	Connector—3-contact female connector plug for reproducer cable.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R15, R16)—Package of 5.....		9586	Reproducer—Complete.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		4893	Transformer—Output transformer (T2).....	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		MISCELLANEOUS ASSEMBLIES		
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		6755	Bezel—Metal bezel for station selector dial glass.....	
4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6)—Package of 5.....		6707	Glass—Station selector dial glass.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R10, R11)—Package of 5.....		4449	Knob—Package of 5.....	
4721	Resistor—Tapped resistor—one 10,000 ohms, two 5,000 ohms and one 500 ohms sections (R17, R18, R19, R20).....		6708	Ring—Retaining ring for dial glass—Package of 5.....	
3584	Ring—Oscillator coil retaining ring—Package of 5.....		4917	Screw—Chassis mounting screw and washer (for table model)—Package of 4.....	
5049	Screw—First I.F. transformer clamp screw—No. 6-32- $\frac{3}{16}$ " set screw—Package of 5....		5178	Screw—Chassis mounting screw assembly (for console model)—Package of 4.....	
4908	Shield—Second I.F. transformer shield.....				
5186	Shield—First I.F. transformer shield.....				
3623	Shield—Oscillator coil shield.....				
3782	Shield—Second detector Radiotron shield....				
3942	Shield—First Detector and output Radiotron shield.....				

MODELS 118 & 211

Five-Tube, Two-Band, A-C, Superheterodyne Receivers



MODEL 118

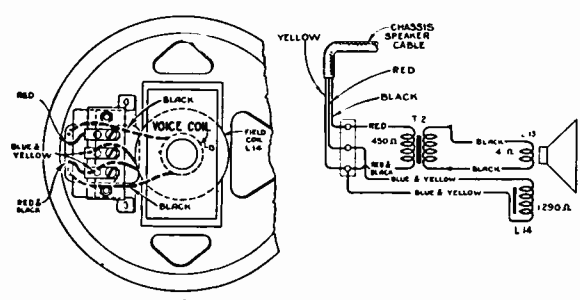


MODEL 211

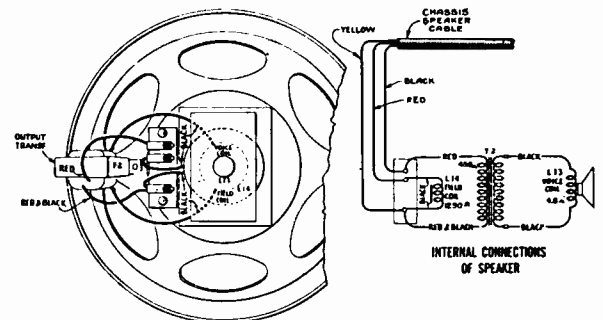
ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts and 100-130/195-250 Volts (double range transformer)
Frequency Rating.....	25-60 and 50-60 Cycles
Power Consumption (All Frequencies).....	.85 Watts
Number and Types of Radiotrons... ..	1 RCA-6A7, 1 RCA-6D6, 1 RCA-6B7, 1 RCA-41, 1 RCA 80—Total, 5
Undistorted Output.....	1.9 Watts
Maximum Output.....	3.5 Watts
Tuning Frequency Ranges.....	540 K. C.—1720 K. C.—5400 K. C.—18,000 K. C.

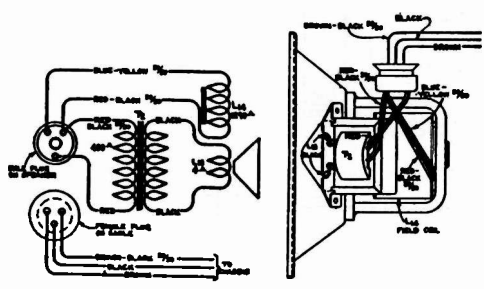
* NOTE: Type 42 Output tube used in 1935 Production.



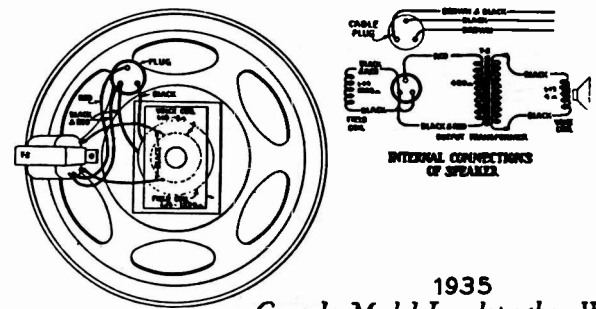
1934
-Table Model Loudspeaker Wiring



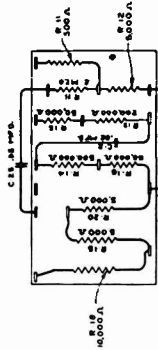
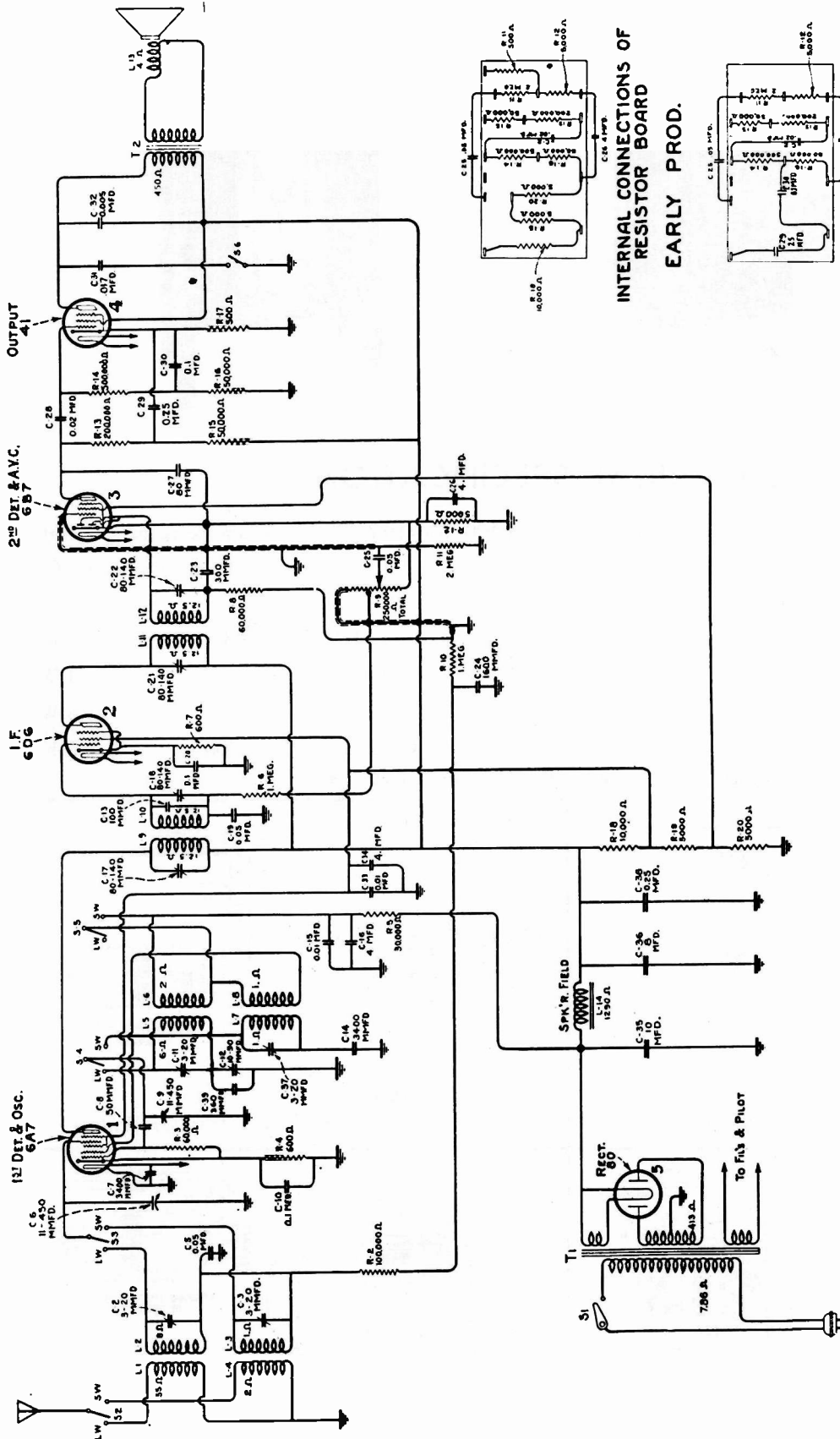
1934
Console Model Loudspeaker Wiring



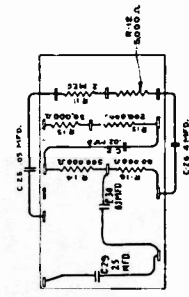
1935
Table Model Loudspeaker Wiring



1935
Console Model Loudspeaker Wiring

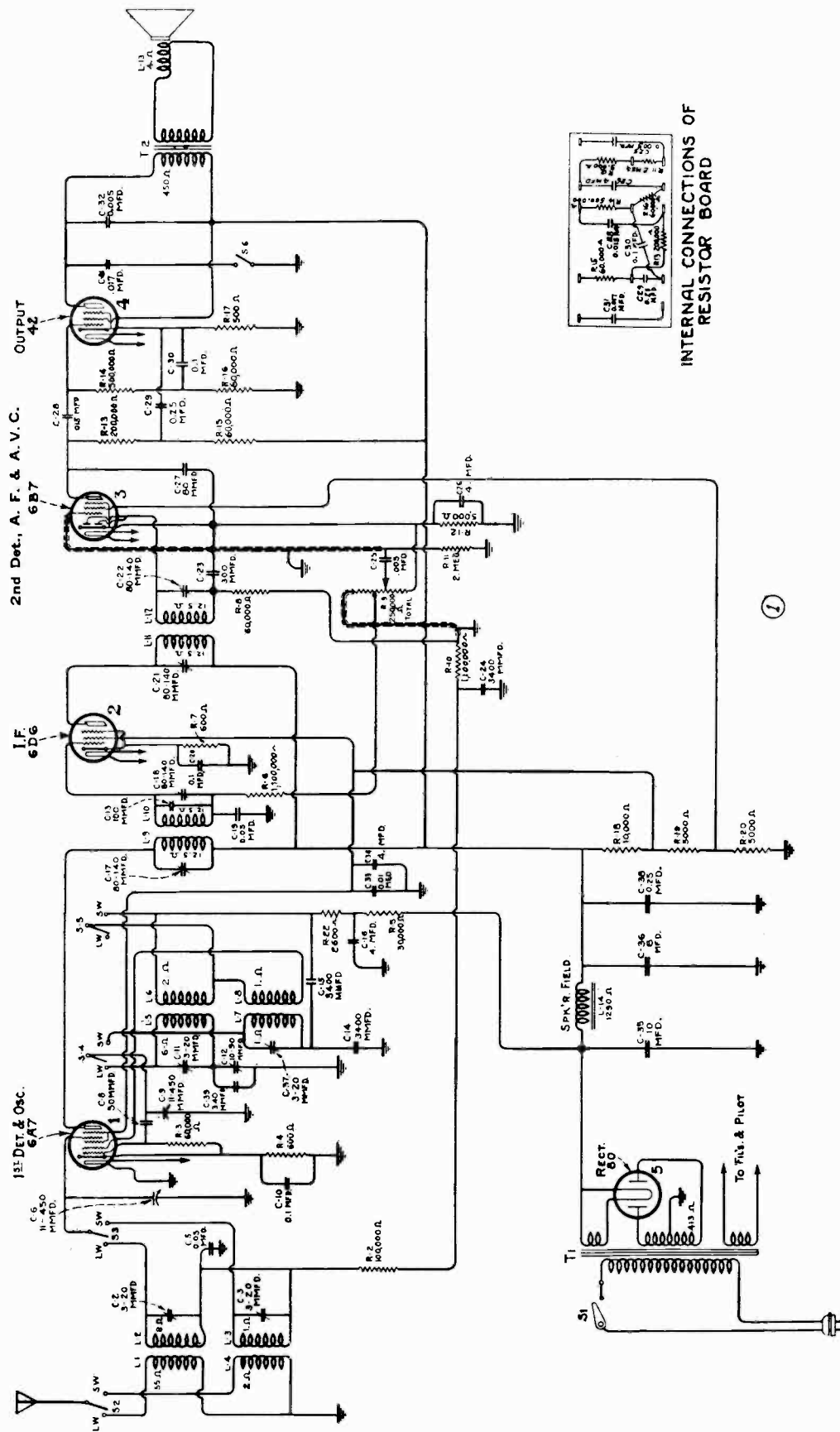


INTERNAL CONNECTIONS OF
RESISTOR BOARD
EARLY PROD.



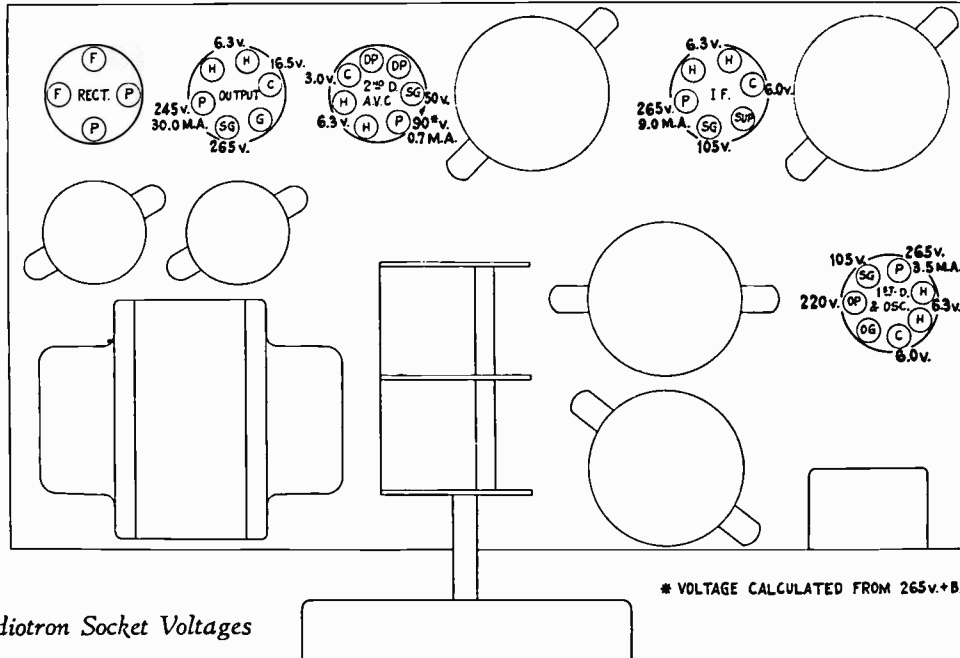
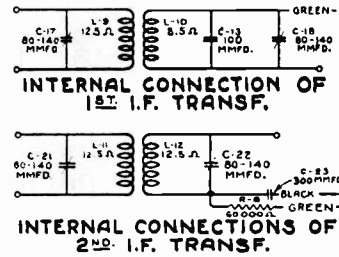
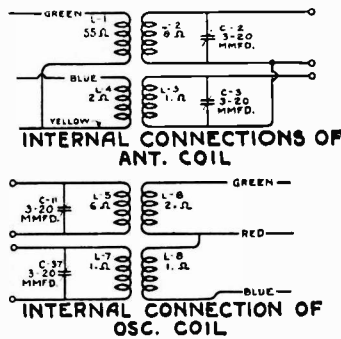
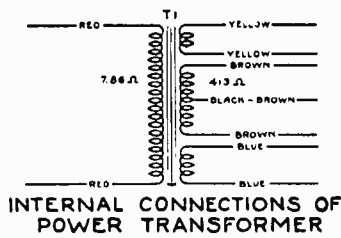
INTERNAL CONNECTIONS OF
RESISTOR BOARD
LATE PROD.

MODELS 118 & 211 (1934 PROD.) - Schematic Circuit Diagram



INTERNAL CONNECTIONS OF
RESISTOR BOARD

Schematic Circuit Diagram
Model 118 and Model 211 (1935 Production)



-Radiotron Socket Voltages

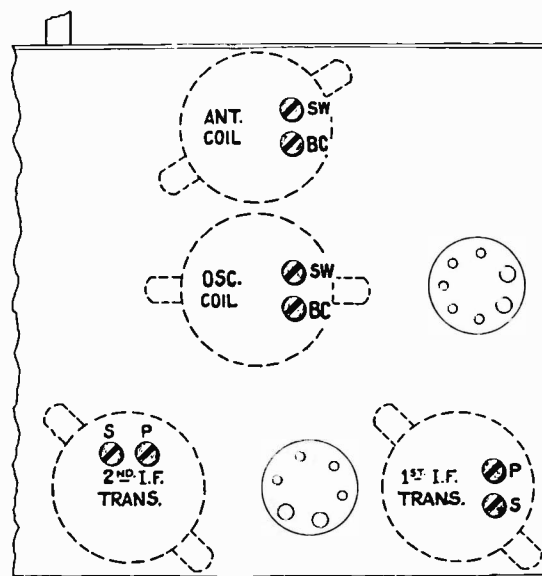
Alignment Procedure

With tuning condenser fully meshed set dial so that pointer coincides with 540 calibration at low frequency end of BC Band.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "BC" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd		600 Kc "BC" Band	S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "BC" Band	Osc. & Ant. Trimmers BC
4		600 Kc	600 Kc "BC" Band	600 Kc Trimmer Rock Gang
5		Repeat Step 3		
6	Antenna in series with 300 ohms	18000 Kc	18 Mc "SW" Band	Osc. † & Ant. ▲ Trimmers SW

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG



REPLACEMENT PARTS 1934 PRODUCTION

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
10194	Ball—Steel ball for condenser drive assembly—Package of 20.	3993	Screw—No. 6-32- $\frac{5}{32}$ " square head set screw for condenser drive—Package of 10.
4358	Bracket—Capacitor mounting bracket.	7800	Shield—Antenna, oscillator or I. F. transformer coil shield.
4427	Bracket—Volume control mounting bracket.	4145	Shield—First detector and oscillator Radiotron shield.
2747	Cap—Contact cap—Package of 5.	4103	Shield—I. F. Radiotron shield.
4428	Capacitor—8 mfd. (C36).	4438	Shield—Second detector—AVC Radiotron shield.
7790	Capacitor—10 mfd. (C35).	3529	Socket—Dial lamp socket.
4442	Capacitor—50 mmfd. (C8).	3859	Socket—4-contact Radiotron socket.
4509	Capacitor—80 mmfd. (C27).	7485	Socket—6-contact Radiotron socket.
4413	Capacitor—360 mmfd. (C39).	6676	Socket—6-contact output Radiotron socket.
4441	Capacitor—1600 mmfd. (C24).	3572	Socket—7-contact Radiotron socket.
4439	Capacitor—3400 mmfd. (C14).	4426	Switch—Tone control switch (S6).
4471	Capacitor—3400 mmfd. (C7).	4437	Switch—Range switch (SW-BC) (S2, S3, S4, S5).
6512	Capacitor—.005 mfd. (C32).	9511	Transformer—105-125 volts—50-60 cycles.
4443	Capacitor—0.01 mfd. (C15).	4431	Transformer—First intermediate frequency transformer (L9, L10, C13, C17, C18).
4444	Capacitor—0.01 mfd. (C33).	9512	Transformer—Power transformer—105-125 volts—25-40 cycles.
4752	Capacitor—.017 mfd. (C31).	9513	Transformer—Power transformer—105-250 volts—40-60 cycles (T1).
4435	Capacitor—0.02 mfd. (28).	4433	Transformer—Second intermediate frequency transformer (L11, L12, R8, C21, C22, C23).
3888	Capacitor—0.05 mfd. (C25).	4429	Volume control (R9).
4417	Capacitor—0.05 mfd. (C5).	REPRODUCER ASSEMBLIES (CONSOLE)	
3901	Capacitor—0.05 mfd. (C19).	4473	Board—Reproducer terminal board.
3877	Capacitor—0.1 mfd. (C20, C30).	4445	Cable—3-conductor-reproducer cable.
4415	Capacitor—0.1 mfd. (C10).	9460	Coil—Field coil—Magnet and cone support.
3597	Capacitor—0.25 mfd. (C29, C38).	8935	Cone—Reproducer cone—Package of 5.
3796	Capacitor—4.0 mfd. (C26).	9527	Reproducer complete.
3861	Capacitor—Adjustable trimmer capacitor (C12).	4472	Transformer—Output transformer.
7589	Capacitor pack—Comprising two 4.0 mfd. capacitors (C16, C34).	REPRODUCER ASSEMBLIES (TABLE)	
4422	Clutch—Condenser drive clutch assembly complete.	4448	Board—Reproducer terminal board.
4430	Coil—Antenna coil (L1, L2, L3, L4, C2, C3).	4445	Cable—3-conductor-reproducer cable.
4432	Coil—Oscillator coil (L5, L6, L7, L8, C11, C37).	9531	Coil—Field coil magnet and cone support.
4504	Condenser—2-gang variable tuning condenser (C6, C9).	9492	Cone—Reproducer cone (L13)—Package of 5.
4434	Drive—Tuning condenser drive assembly complete.	9514	Reproducer complete.
3632	Resistor—500 ohms—Carbon type— $\frac{1}{4}$ watt (R17)—Package of 5.	4447	Shield—Terminal board shield.
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R7)—Package of 5.	4505	Transformer—Output transformer (T2).
4436	Resistor—5,000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 10.	MISCELLANEOUS ASSEMBLIES	
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16)—Package of 5.	6706	Bezel—Station selector dial escutcheon bezel—Model 118.
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5.	4450	Dial—Station selector dial—Model 211.
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.	4474	Dial—Station selector dial—Model 118.
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.	6840	Escutcheon—Station selector escutcheon—Model 211.
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R6, R10)—Package of 5.	6707	Glass—Station selector dial glass—Model 118.
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R11)—Package of 5.	6614	Glass—Station selector dial glass—Model 211.
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R15)—Package of 5.	4449	Knob—Station selector, volume control, tone or range switch knob—Package of 5.
6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{2}$ watt (R13)—Package of 5.	4348	Lamp—Pilot lamp.
3891	Resistor—5,000 ohms—Carbon type—1 watt (R19, R20)—Package of 5.	4363	Pointer—Station selector indicator pointer—Model 211.
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).	4475	Pointer—Station selector indicator pointer—Model 118.
6318	Resistor—10,000 ohms—Porcelain type (R18).	6708	Ring—Spring retaining ring for dial glass—Package of 5—Model 118.
4721	Resistor—Tapped resistor—One 10,000 ohm, two 5,000 ohm and one 500 ohm section—(R17, R18, R19, R20).	6615	Ring—Spring retaining ring for dial glass—Package of 5—Model 211.
3943	Screen—Translucent screen for dial lamps—Package of 2.	4613	Screw—8-32- $\frac{1}{8}$ " headless set screw for knob—Package of 10.
4446	Screen—Chassis mounting screw assembly—Comprising 4 screws, 4 lockwashers, 4 washers, 4 spacers and 4 cushions.		

REPLACEMENT PARTS—Models 118 and 211 (1935 Production)

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4379	Board—Terminal board—Two terminals and link—Engraved "ANT-GND".....		4433	Transformer—Second intermediate frequency transformer (L11, L12, C21, C22, C23, R8).....	
4880	Bracket—Tone control mounting bracket....		9512	Transformer—Power transformer—105-125 volts—25-40 cycles.....	
4427	Bracket—Volume control mounting bracket....		9513	Transformer—Power transformer—105-250 volts—40-60 cycles.....	
4244	Cap—Grid contact cap.....		9511	Transformer—Power transformer—105-125 volts—50-60 cycles.....	
3861	Capacitor—Adjustable capacitor—10-100 mmfd. (C12).....		4429	Volume control (R9, S1).....	
4793	Capacitor—0.005 mfd. (C25).....		DRIVE ASSEMBLIES		
4868	Capacitor—0.005 mfd. (C32).....		10194	Ball—Steel ball for condenser drive assembly—Package of 20.....	
4883	Capacitor—0.01 mfd. (C33).....		4422	Clutch—Condenser drive clutch assembly complete.....	
4792	Capacitor—0.015 mfd. (C28).....		4474	Dial—Station selector dial (table model)....	
4752	Capacitor—0.017 mfd. (C31).....		4450	Dial—Station selector dial (console model)....	
4836	Capacitor—0.05 mfd. (C5, C19).....		4434	Drive—Tuning condenser drive assembly....	
4442	Capacitor—50 mmfd. (C8).....		4340	Lamp—Dial lamp—Package of 5.....	
4509	Capacitor—80 mmfd. (C27).....		4363	Pointer—Station selector pointer (console model).....	
4791	Capacitor—0.1 mfd. (C10, C20, C30).....		4475	Pointer—Station selector pointer (table model)....	
3597	Capacitor—0.25 mfd. (C29, C38).....		3943	Screen—Translucent screen for dial lamps—Package of 2.....	
4811	Capacitor—340 mmfd. (C39).....		3529	Socket—Dial lamp socket.....	
4439	Capacitor—3400 mmfd. (C14).....		REPRODUCER ASSEMBLIES (TABLE MODEL)		
4881	Capacitor—3400 mmfd. (C15, C24).....		4915	Cable—3-conductor reproducer cable—Complete with 3-contact female connector plug.....	
3796	Capacitor—4.0 mfd. (C26).....		9587	Coil—Field coil magnet and cone support (L14).....	
4428	Capacitor—8.0 mfd. (C36).....		9588	Cone—Reproducer cone (L13)—Package of 5.....	
7790	Capacitor—10.0 mfd. (C35).....		5118	Connector—3-contact male connector plug for reproducer.....	
7589	Capacitor pack—Comprising two 4.0 mfd. capacitors (C16, C34).....		5119	Connector—3-contact female connector plug for reproducer cable.....	
4358	Clamp—Electrolytic capacitor mounting clamp.....		9586	Reproducer—Complete.....	
5087	Coil—Antenna coil (L1, L2, L3, L4, C2, C3).....		4893	Transformer—Output transformer (T2).....	
5089	Coil—Oscillator coil (L5, L6, L7, L8, C11, C37).....		REPRODUCER ASSEMBLIES (CONSOLE MODEL)		
4504	Condenser—2-gang variable tuning condenser (C6, C9).....		9590	Coil—Field coil magnet and cone support (L14).....	
4788	Insulator—Radiotron socket insulator—Package of 5.....		8935	Cone—Reproducer cone (L13)—Package of 5.....	
3708	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R7)—Package of 5.....		9589	Reproducer—Complete.....	
4812	Resistor—2600 ohms—Carbon type— $\frac{1}{4}$ watt (R22)—Package of 5.....		4892	Transformer—Output transformer (T2).....	
4436	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 10.....		MISCELLANEOUS ASSEMBLIES		
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).....		6840	Escutcheon—Station selector escutcheon—Console model.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R3, R8, R15, R16)—Package of 5.....		6706	Escutcheon—Station selector escutcheon—Table model.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		6614	Glass—Station selector dial glass—Console model.....	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		6707	Glass—Station selector dial glass—Table model.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		4449	Knob—Station selector, range switch, tone control switch or volume control knob—Package of 5.....	
4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6, R10)—Package of 5.....		6615	Ring—Spring retaining ring for dial glass—Console model—Package of 5.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R11)—Package of 5.....		6708	Ring—Spring retaining ring for dial glass—Table model—Package of 5.....	
4721	Resistor—Tapped resistor—One 10,000 ohm, two 5,000 ohm and one 500 ohm section (R17, R18, R19, R20).....		4685	Screw—Chassis mounting screw assembly—Comprising four screws, four spacers, four lockwashers, four washers and eight cushions (for console model).....	
4521	Shield—Antenna, r-f or oscillator coil shield....		4446	Screw—Chassis mounting screw assembly—Comprising four screws, four spacers, four lockwashers, four washers and eight cushions (for table model).....	
3942	Shield—First detector-oscillator Radiotron shield.....				
7487	Shield—I.F. Radiotron shield.....				
3782	Shield—Second detector Radiotron shield....				
4784	Socket—4-contact Radiotron socket.....				
4785	Socket—6-contact output Radiotron socket....				
4786	Socket—6-contact i-f Radiotron socket.....				
4787	Socket—7-contact Radiotron socket.....				
5088	Switch—Range switch (S2, S3, S4, S5, SW, LW).....				
5052	Switch—Tone control switch (S6).....				
4431	Transformer—First intermediate frequency transformer (L9, L10, C13, C17, C18)....				

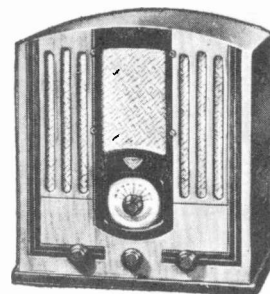
MODEL 119

Five-Tube, Two-Band, A. C. Superheterodyne Receiver

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with radial line adjacent to 540 on BC Band scale.

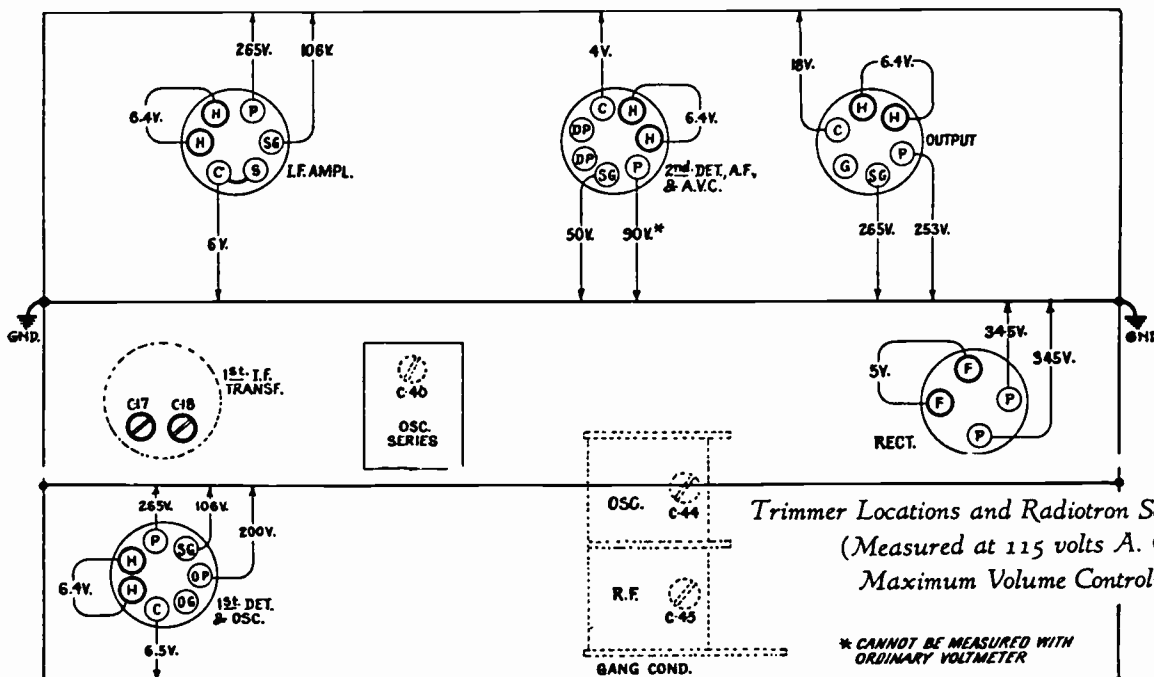
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "BC" Band	C18 C17 1st I-F Trans.
2	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "BC" Band	C44 C45 Osc. R-F
3		600 Kc	600 Kc "BC" Band	C40 L-F Osc. Rock Gang
4	Repeat Step 2			



MODEL 119

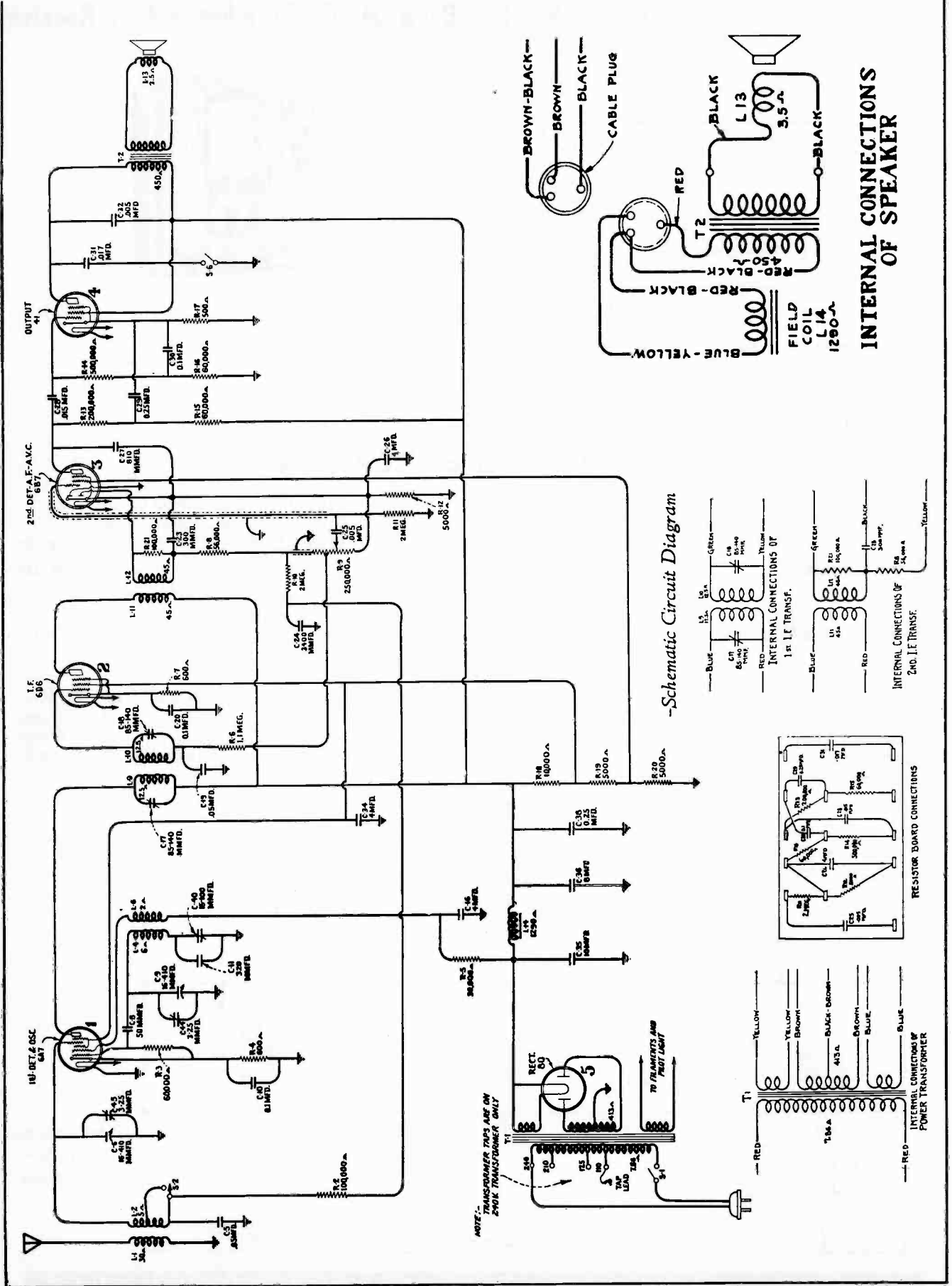
ELECTRICAL SPECIFICATIONS

- Voltage and Frequency Ratings..... { 105-125 Volts, 50-60 Cycles
105-125 Volts, 25-60 Cycles
105-125/195-250 Volts, 50-60 Cycles
- Power Consumption..... 80 Watts
- Radiotrons and Functions..... { (1) RCA-6A7, First Detector and Oscillator
(2) RCA-6D6, I.F. Amplifier
(3) RCA-6B7, Second Detector-Audio Amplifier-A.V.C.
(4) RCA-41, Power Output
(5) RCA-80, Rectifier
- Tuning Frequency Ranges..... 540 KC. to 1720 KC. and 1600 KC. to 3500 KC.
- Undistorted Output..... 1.75 Watts
- Maximum Output..... 3.5 Watts
- Loudspeaker..... 6-Inch, Electro-Dynamic



Trimmer Locations and Radiotron Socket Voltages
(Measured at 115 volts A. C. Supply—
Maximum Volume Control—No Signal)

* CANNOT BE MEASURED WITH
ORDINARY VOLTMETER



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4379	Board—Terminal board—Engraved "ANT-GND".....		3942	Shield—First Detector and output Radiotron shield.....	
4244	Cap—Contact cap.....		3782	Shield—Second Detector Radiotron shield....	
3861	Capacitor—Adjustable capacitor (C40).....		7487	Shield—I.F. Radiotron shield.....	
5094	Capacitor—50 mmfd. (C8).....		5186	Shield—First I.F. transformer shield.....	
5151	Capacitor—320 mmfd. (C11).....		4908	Shield—Second I.F. transformer shield.....	
5044	Capacitor—810 mmfd. (C27).....		3858	Socket—Dial lamp socket.....	
4881	Capacitor—3400 mmfd. (C24).....		4784	Socket—4-contact Radiotron socket.....	
4793	Capacitor—0.005 mfd. (C25).....		4785	Socket—6-contact Radiotron socket.....	
4868	Capacitor—0.005 mfd. (C32).....		4786	Socket—6-contact Radiotron socket.....	
4792	Capacitor—0.015 mfd. (C28).....		4787	Socket—7-contact Radiotron socket.....	
4906	Capacitor—0.017 mfd. (C31).....		5053	Switch—Range switch (S2).....	
4836	Capacitor—0.05 mfd. (C5, C19).....		4905	Switch—Tone control switch (S5).....	
4841	Capacitor—0.1 mfd. (C10, C20, C30).....		4900	Transformer—First intermediate frequency transformer (L9, L10, C17, C18).....	
3597	Capacitor—0.25 mfd. (C29, C38).....		4901	Transformer—Second intermediate frequency transformer (L11, L12, C23, R8, R21)....	
3796	Capacitor—4.0 mfd. (C26).....		4898	Transformer—Power transformer—105-125 volts—25-50 cycles.....	
4428	Capacitor—8.0 mfd. (C36).....		4897	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
7790	Capacitor—10.0 mfd. (C35).....		4899	Transformer—Power transformer—105-125/200-240 volts—40-60 cycles.....	
7589	Capacitor pack—Comprising two 4.0 mfd. capacitors (C16, C34).....		4429	Volume control (R9, S1).....	
4358	Clamp—Capacitor mounting clamp for Stock No. 4428 and No. 7790.....		REPRODUCER ASSEMBLIES		
5051	Coil—Antenna coil (L1, L2, C5, R2).....		4915	Cable—3 conductor reproducer cable—Complete with 3-contact female connector....	
5050	Coil—Oscillator coil (L4, L6).....		9587	Coil—Field coil, magnet and cone support (L14).....	
4896	Condenser—2-gang variable tuning condenser (C6, C9, C44, C45).....		9588	Cone—Reproducer cone (L13)—Package of 5.....	
3708	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R7)—Package of 5.....		5118	Connector—3-contact male connector for reproducer cable.....	
4436	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 10.....		5119	Connector—3-contact female connector for reproducer cable.....	
2240	Resistor—30,000 ohms—Carbon type—1 watt (R5).....		9586	Reproducer—Complete.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R15, R16)—Package of 5.....		4893	Transformer—Output transformer (T2).....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....		MISCELLANEOUS ASSEMBLY		
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		5111	Dial—Station selector dial scale.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		4132	Knob—Station selector knob—Package of 5.....	
4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6)—Package of 5.....		4449	Knob—Volume control, range switch, or tone control knob—Package of 5.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R10, R11)—Package of 5.....		4340	Lamp—Station selector dial lamp—Package of 5.....	
4721	Resistor—Tapped resistor—One 500 ohm, two 5,000 ohm, and one 10,000 ohm sections (R17, R18, R19, R20).....		4909	Pointer—Station selector pointer.....	
3584	Ring—Oscillator coil retaining ring.....		3886	Reflector—Station selector dial reflector.....	
3623	Shield—Oscillator coil shield.....		4917	Screw—Chassis mounting screw—Comprising one screw, and one washer—Package of 4.....	

MODELS 121, 122, 221, 320 & 321

Six-Tube, Two-Band, AC, Superheterodyne Receivers and Radio-Phonograph

MODELS 121 122 & 221

Electrical Specifications

Voltage Rating..... 100-125 Volts
Frequency Rating..... 25-60 and 50 60 Cycle
Power Consumption..... 60 Cycle, 75 Watts; 25 Cycle, 80 Watts
Number and Type of Tubes..... 2 RCA-58,
 1 RCA-2A7, 1 RCA-2B7, 1 RCA-2A5, 1 RCA-80—Total 6
Tuning Ranges..... 540 K. C.—1500 K. C.—5400 K. C.—15,350 K. C.
Undistorted Output..... 1.75 Watts

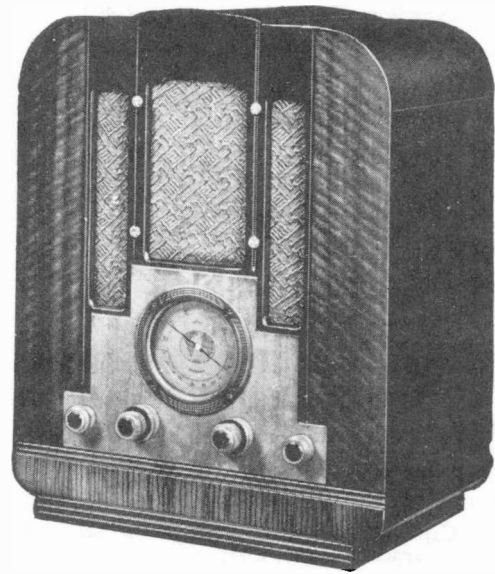
MODELS 320 & 321

Electrical Specifications

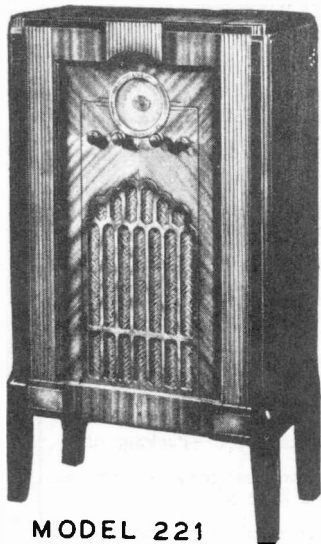
Voltage Rating..... 105-125 Volts
Frequency Rating..... 25, 30, 50 and 60 Cycles
Power Consumption..... 30, 50 and 70 Cycle, 105 Watts; 25 Cycle, 110 Watts
Number and Type of Radiotrons..... 2 RCA-58
 1 RCA-2A7, 1 RCA-2B7, 1 RCA-2A5, 1 RCA-80—Total 6
Tuning Ranges..... 540 K. C.—1500 K. C. and 5400 K. C.—15,350 K. C.
Undistorted Output..... 1.75 Watts



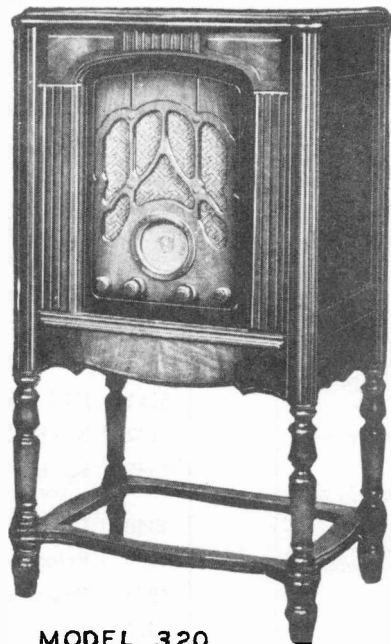
MODEL 121



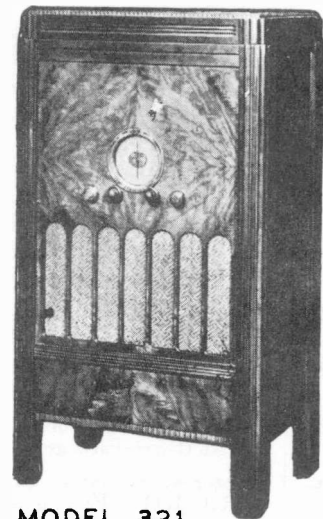
MODEL 122



MODEL 221

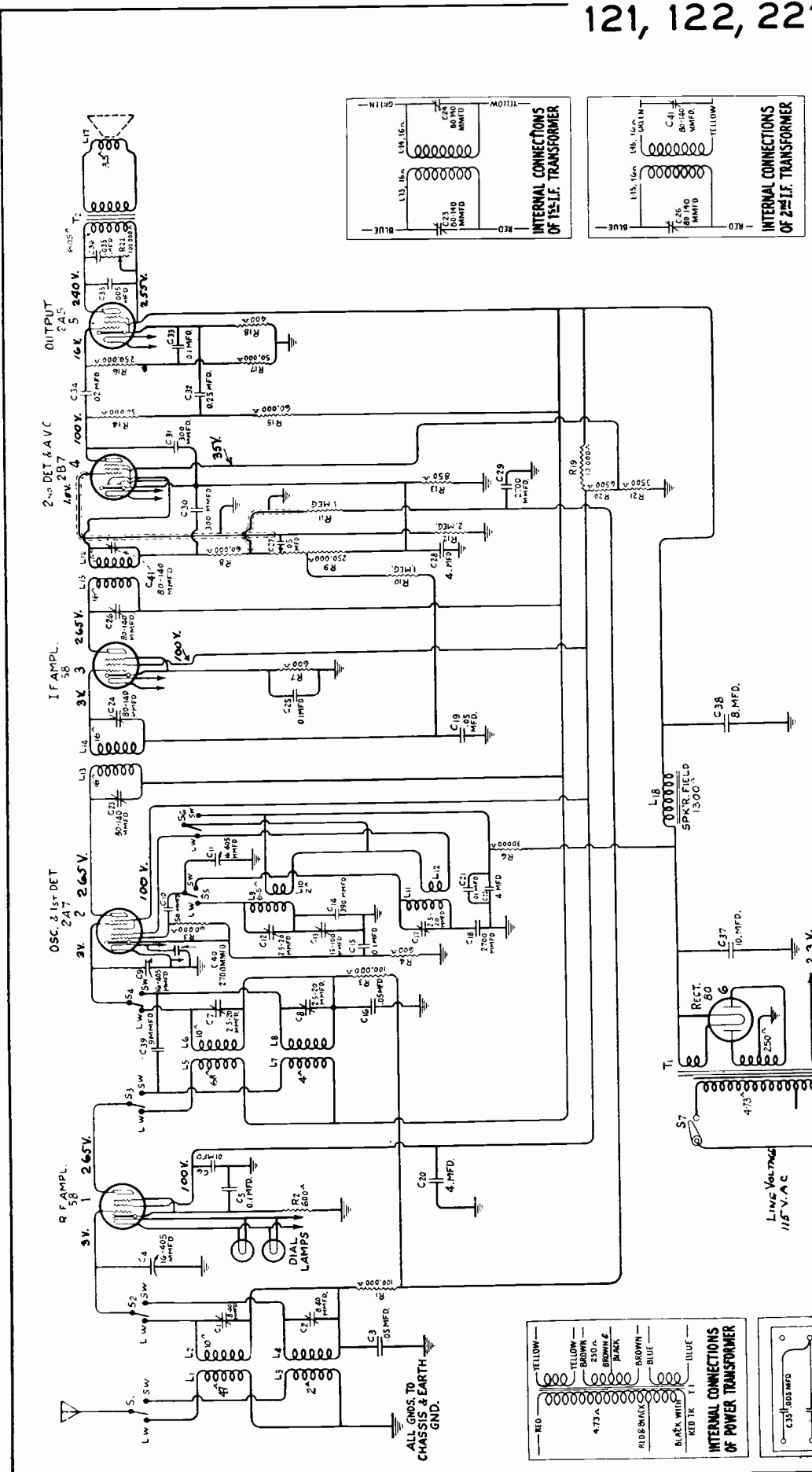


MODEL 320

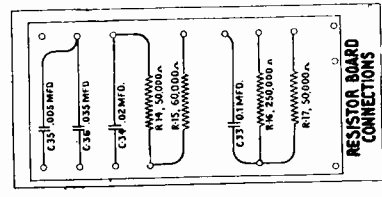
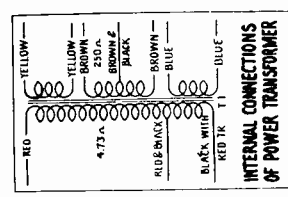
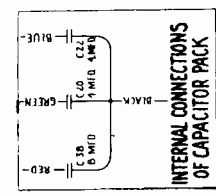
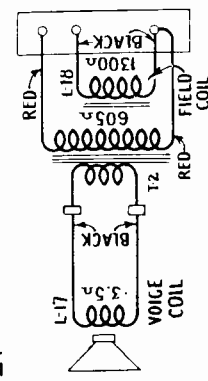
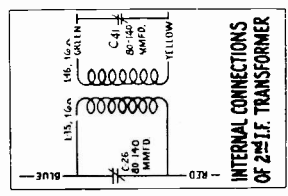
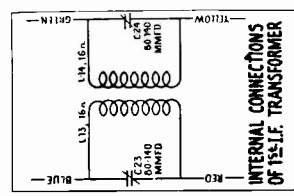


MODEL 321

121, 122, 221, 320 & 321

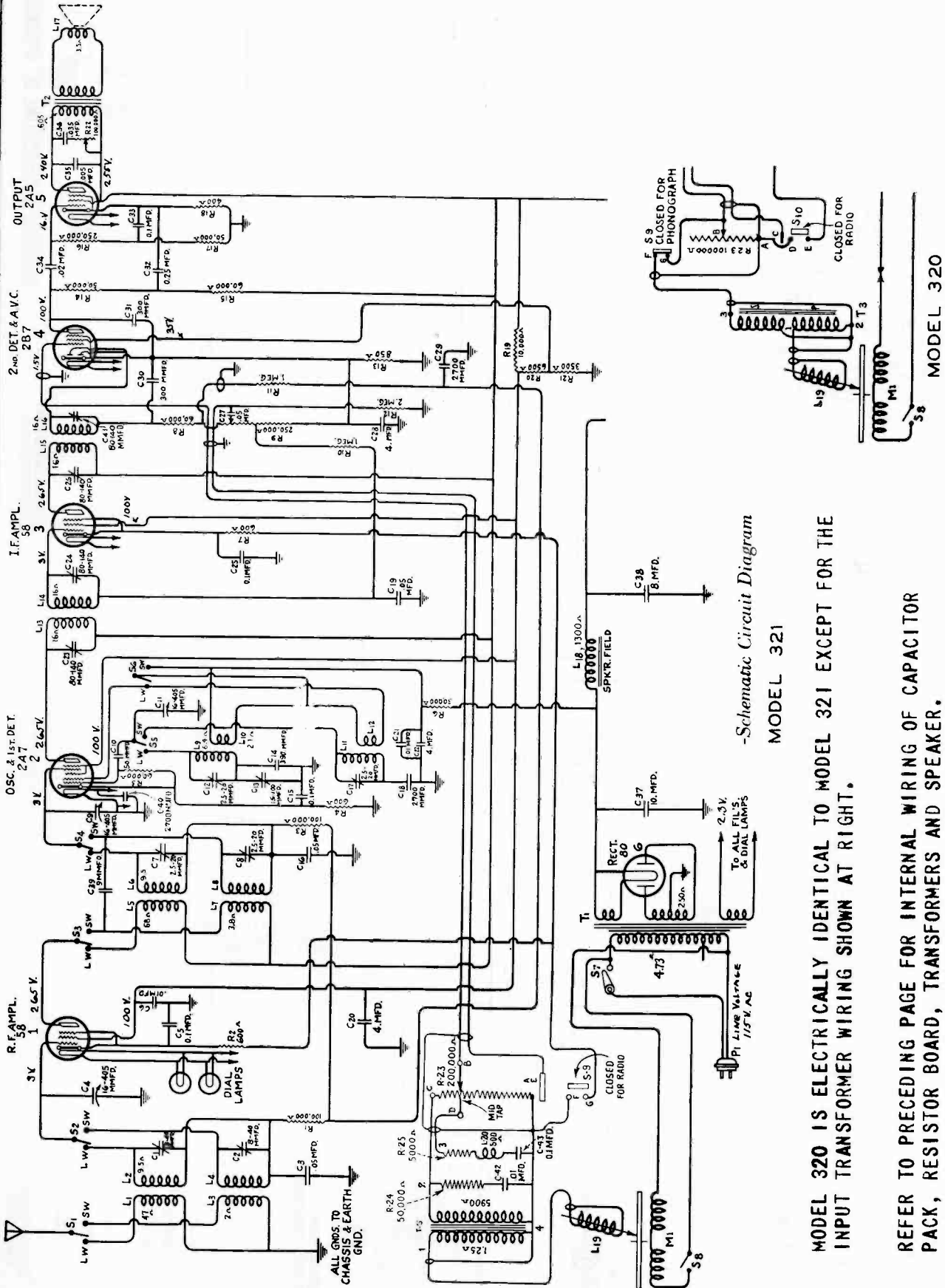


Schematic Circuit Diagram MODELS 121 122 & 221



ALL GNDs TO CHASSIS & EARTH GND.

121, 122, 221, 320 & 321

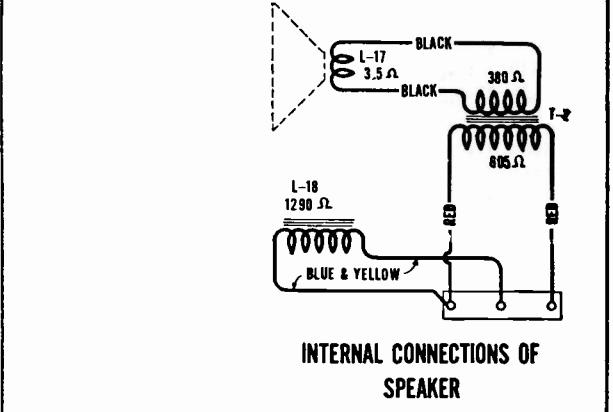
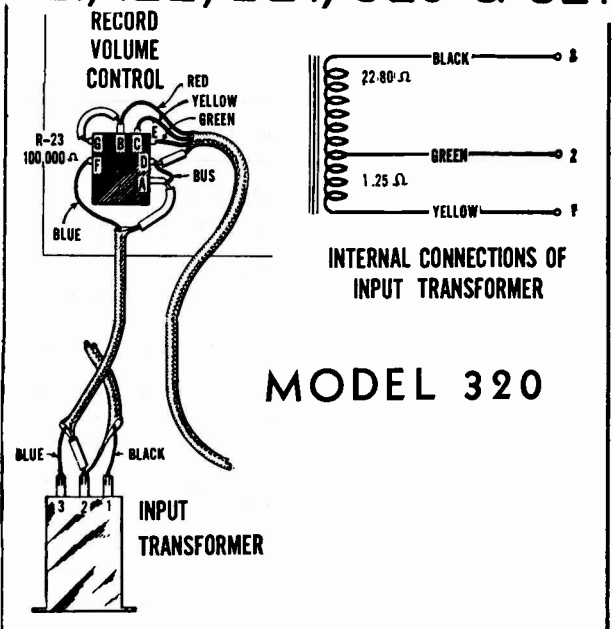
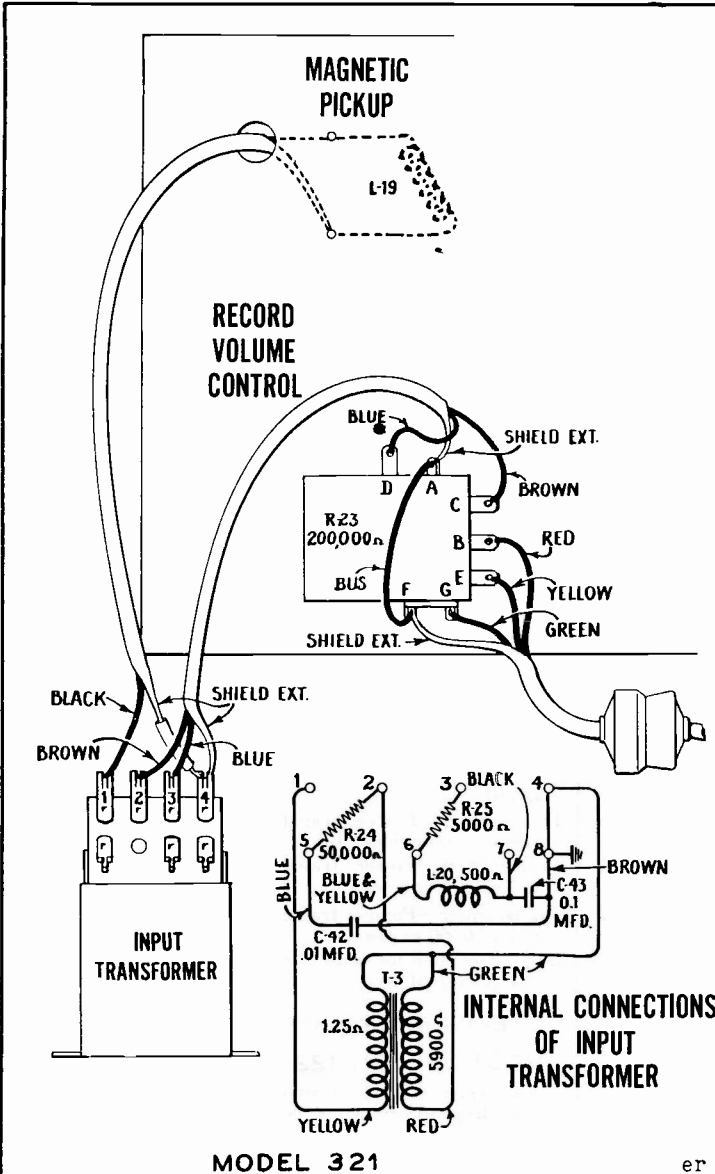


-Schematic Circuit Diagram
MODEL 321

MODEL 320 IS ELECTRICALLY IDENTICAL TO MODEL 321 EXCEPT FOR THE INPUT TRANSFORMER WIRING SHOWN AT RIGHT.

REFER TO PRECEDING PAGE FOR INTERNAL WIRING OF CAPACITOR PACK, RESISTOR BOARD, TRANSFORMERS AND SPEAKER.

121, 122, 221, 320 & 321



Alignment Procedure

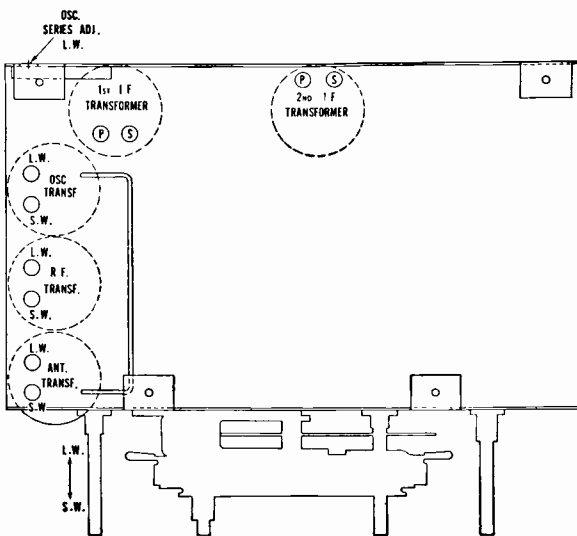
With tuning condenser fully meshed set pointer so that radial line adjacent to 540 coincides with pointer.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	370 Kc	Quiet point near 600 Kc "LW" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "LW" Band	Osc. R-F & Ant. Trimmers LW
4		600 Kc	600 Kc "LW" Band	600 Kc Trimmer Rock Gang
5		<i>Repeat Step 3</i>		
6	Antenna in series with 300 ohm	15000 Kc	15 Mc "SW" Band	Osc. † R-F ▲ & Ant. Trimmers SW

Osc. tracks 370 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak. ROCK GANG



-Location of Line-Up Capacitors

121, 122, 221, 320 & 321

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
RECEIVER ASSEMBLIES			
2240	Resistor—30,000 ohms—Carbon type—1 watt (R6)	6620	Capacitor—Comprising one .005 mfd. and one .035 mfd. (C35, C36)
2747	Cap—Contact cap—Package of 5	6676	Socket—6-contact Radiotron socket—Output
3056	Shield—2nd detector Radiotron shield—Package of 2	6694	Condenser—3-gang variable tuning condenser (C4, C9, C11)
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R10, R11)—Package of 5	6695	Volume control (R9)
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R3)—Package of 5	6696	Switch—Range switch (S1, S2, S3, S4)
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R1, R3)—Package of 5	6697	Transformer—First intermediate frequency transformer (L13, L14, C23, C24)
3470	Resistor—6,500 ohms—Carbon type—1 watt (R20)—Package of 5	6698	Transformer—Second intermediate frequency transformer (L15, L16, C26, C41)
3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{2}$ watt (R16)—Package of 5	6699	Coil—R. F. coil (L5, L6, L7, L8, C7, C8)
3529	Socket—Dial lamp socket	6700	Coil—Oscillator coil (L9, L10, L11, L12, C12, C17)
3572	Socket—7-contact Radiotron socket	6701	Coil—Antenna coil (L1, L2, L3, L4, C1, C2)
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R14, R17)—Package of 5	6702	Drive—Variable tuning condenser drive assembly complete
3631	Resistor—850 ohms—Carbon type— $\frac{1}{2}$ watt (R13)—Package of 5	6703	Capacitor pack—Comprising one 8. mfd. and two 4. mfd. capacitors (C20, C22, C38)
3639	Capacitor—.02 mfd. (C34)	6704	Shaft—Tuning condenser drive assembly shaft
3683	Shield—Radiotron shield top	6705	Tone control complete (R22)
3701	Capacitor—.01 mfd. (C6, C21)	7485	Socket—6-contact Radiotron socket
3702	Capacitor—.25 mfd. (C32)	7487	Shield—I. F. and R. F. amplifier Radiotron shield
3768	Screw—Square head No. 6-32- $\frac{1}{4}$ " set screw for condenser drive—Package of 10	9446	Transformer—Power transformer—105-125 volts 50-60 cycles (T1)
3796	Capacitor—4. mfd. (C28)	9451	Transformer—Power transformer—105-125 volts 25-40 cycles
3849	Capacitor—50 mmfd. (C10)	9452	Transformer—Power transformer—200-250 volts 50-60 cycles
3859	Socket—4-contact Radiotron socket	10194	Ball—Steel ball for condenser drive assembly—Package of 20
3861	Capacitor—Adjustable capacitor (C13)	REPRODUCER ASSEMBLIES	
3877	Capacitor—.1 mfd. (C5, C15, C25, C33)	MODELS 121, 122 & 320	
3878	Screw—No. 4-40- $\frac{1}{8}$ " screw for fastening station selector pointer—Package of 20	6476	Transformer—Output transformer (T2)
3888	Capacitor—.05 mfd. (C19, C27)	9428	Cone—Reproducer cone complete (L17)—Package of 5
3892	Resistor—600 ohms—Carbon type— $\frac{1}{2}$ watt (R2, R4, R7)—Package of 5	9449	Reproducer complete
3897	Resistor—400 ohms—Carbon type—1 watt (R18)—Package of 5	9450	Coil—Fieldcoil magnet and cone support (L18)
3901	Capacitor—.05 mfd. (C3, C16)	REPRODUCER ASSEMBLIES	
3905	Screw—Chassis mounting screw assembly comprising 4 screws, 4 washers, and 4 cushions	MODEL 221	
3906	Mounting assembly—Variable condenser mounting assembly comprising 3 bushings, 3 lockwashers, 3 nuts, and 3 washers	6770	Transformer—Output transformer (T2)
3937	Capacitor—300 mmfd. (C30, C31)	6843	Cable—3-conductor reproducer cable
3938	Capacitor—9 mmfd. (C39)	8935	Cone—Reproducer cone (L17)—Package of 5
3939	Resistor—3,500 ohms—Carbon type— $\frac{1}{2}$ watt (R21)—Package of 5	9460	Coil—Field coil, Magnet and cone support (L18)
3942	Shield—1st detector Radiotron shield	9461	Reproducer complete
3943	Screen—Translucent screen for dial light—Package of 2	REPRODUCER ASSEMBLIES	
3944	Shield—Antenna, R. F. or oscillator coil shield	MODEL 321	
3991	Resistor—10,000 ohms—Porcelain type (R19)	6770	Transformer—Output transformer (T2)
3935	Capacitor—340 mmfd. (C14)	8969	Cone—Reproducer cone (L17)—Package of 5
3936	Capacitor—3,900 mmfd. (C18, C29, C40)	9460	Coil assembly—Comprising field coil magnet and cone support (L18)
4031	Capacitor—2,700 mmfd. (C18, C29, C40)	9473	Reproducer complete
4032	Capacitor—390 mmfd. (C14)	TURNTABLE ASSEMBLIES	
6188	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt (R12)—Package of 5	3261	Bushing—Rubber bushing—Used on turntable spindle for long-playing records—Package of 5
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5, R8, R15)—Package of 5	3338	Ring—Clamp ring assembly—Comprising spring, latch lever and stud
6571	Capacitor—10 mfd. (C37)	3340	Washer—Thrust washer—Package of 2
		3341	Pin—Groov-Pin—Package of 2
		3342	Spring—Latch spring—Located on clamping ring—Package of 2
		3343	Sleeve—Sleeve complete with ball race
		3344	Cover—Grease retainer cover—Package of 2
		3346	Bushing—Speed shifter lever bushing—Package of 4
		3347	Spring—Speed shifter lever spring—Package of 2
		3399	Lever—Speed shifter lever with mounting screws
		7084	Cover—Suede cover for turntable
		8948	Turntable—Complete

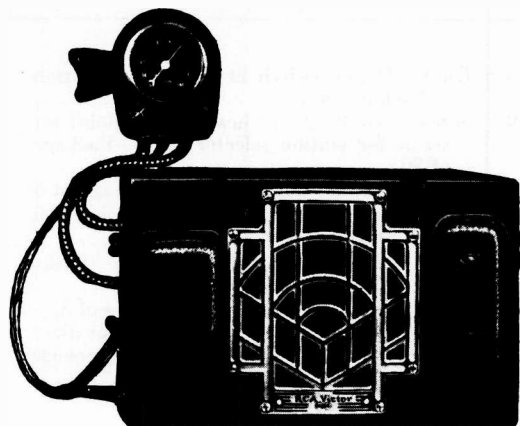
121, 122, 221, 320 & 321

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
MODEL 320		MODEL 320	
PICKUP, PICKUP ARM ASSEMBLIES		MISCELLANEOUS PARTS	
3385	Coil—Pickup coil.....	4075	Knob—Range switch or tone control knob—Package of 5.....
3386	Cover—Pickup cover.....	4119	Screw—No. 8-32- $\frac{1}{4}$ " headless cup point set screw for station selector knob—Package of 20.....
3387	Screw assembly—Pickup mounting screw assembly—Comprising one screw, one nut and one washer—10 sets.....	4120	Knob—Volume control knob—Package of 5.....
3388	Screw—Pickup needle holding screw—Pkg. of 10.....	4121	Knob—Station selector knob—Package of 5.....
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....	6614	Glass—Station selector dial glass.....
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....	6615	Ring—Retaining ring for dial glass—Package of 5.....
3417	Armature—Pickup armature.....	6841	Dial—Station selector dial—Package of 5.....
3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bushing—Package of 5 sets.....	6840	Bezel—Metal bezel for station selector dial.....
3419	Screw—Pickup cover mounting screw—Package of 10.....	6842	Pointer—Station selector pointer—Package of 5.....
6335	Pickup—Pickup unit complete.....	MODEL 320	
6346	Back—Pickup housing back.....	MISCELLANEOUS PARTS	
7693	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut and washer.....	2947	Leather—Friction leather—Package of 20.....
MODEL 321		3322	Switch—Automatic brake switch with mounting screws (S8).....
PICKUP AND PICKUP ARM ASSEMBLIES		3430	Box—Needle box with lid—Package of 2.....
3386	Cover—Pickup cover.....	3615	Knob—Tone control, range switch, or phonograph volume control knob—Package of 5.....
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—Package of 10.....	3881	Escutcheon—Volume control escutcheon.....
3388	Screw—Pickup needle holding screw—Package of 10.....	3899	Escutcheon—Station selector escutcheon.....
3389	Rod—Automatic brake trip rod—Package of 5.....	3902	Knob—Station selector knob complete.....
3417	Armature—Pickup armature.....	3903	Screw—No. 8-32- $\frac{1}{4}$ " headless cup point set screw for station selector knob—Package of 20.....
3419	Screw—Cover mounting screw—Package of 10.....	3904	Knob—Volume control knob—Package of 5.....
3516	Damper assembly—Comprising 1 upper and 1 lower damper 1 upper and 1 lower bearing—For pickup base.....	3940	Pointer—Station selector pointer—Package of 5.....
3521	Cover—Pickup back cover.....	3941	Dial—Station selector dial—Package of 5.....
3737	Damper—Viscoloid damping block—Package of 5.....	6707	Glass—Station selector dial glass.....
6346	Back—Pickup housing back.....	6708	Ring—Retaining ring for dial glass—Package of 5.....
6601	Pickup—Magnetic pickup complete.....	6755	Bezel—Metal bezel for station selector dial.....
3728	Coil—Pickup coil (L19).....	3994	Cover—Motor starting switch cover.....
7731	Arm—Pickup arm complete less pickup and escutcheon.....	6757	Volume control—Phonograph volume control (R23, S9, S10).....
MOTOR ASSEMBLIES		6758	Transformer—Phonograph input transformer (T3).....
3398	Motor mounting assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer.....	6888	Cable—3-conductor reproducer cable.....
3599	Motor mounting washer assembly—Comprising one screw, one washer and one lock washer—Package of 3 sets.....	9050	Oscillator—Test oscillator—150 to 25,000 K. C.....
3817	Stud—Motor mounting stud—Package of 3.....	10174	Springs—Automatic brake springs—One set of 4 springs.....
8989	Motor—Motor complete—105-125 volts—60 cycle.....	10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....
8990	Motor—Motor complete—105-125 volts—50 cycle.....	MODEL 321	
8991	Motor—105-125 volts—40 cycles.....	MISCELLANEOUS PARTS	
8992	Motor—Motor complete—105-125 volts—25 cycle.....	2917	Leather—Friction leather—Package of 20.....
8993	Rotor and shaft for 105-125 volts, 60 cycle motor.....	3322	Switch—Automatic brake switch with mounting screws (S8).....
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....	3391	Suspension spring and washer assembly for motor board—Comprising one bolt, one top spring, one bottom spring, 2 cup washers, one "C" washer, and one nut.....
8995	Rotor and shaft for 105-125 volts—50 cycle motor.....	3430	Box—Needle box with lid—Package of 2.....
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....	3991	Cover—Automatic switch brake cover.....
8997	Rotor and shaft for 105-125 volts—40 cycle motor.....	4075	Knob—Tone control or range switch knob—Package of 5.....
8998	Spindle—Turntable spindle with fibre gear for 40 cycle motor.....	4119	Screw—No. 8-32- $\frac{1}{4}$ " headless cup point set screw for station selector knob—Package of 20.....
8999	Rotor and shaft for 105-125 volts—25 cycle motor.....	4120	Knob—Volume control knob—Package of 5.....
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....	4121	Knob—Station selector knob—Package of 5.....
MISCELLANEOUS PARTS		4136	Screw—Chassis mounting screw assembly—Comprising four screws, four washers, eight cushions.....
MODELS 121 & 122		6614	Glass—Station selector dial glass.....
3615	Knob—Range switch or tone control knob (Model 121)—Package of 5.....	6615	Ring—Retaining ring for dial glass—Package of 5.....
3902	Knob—Station selector knob complete (Model 121).....	6288	Knob—Phonograph volume control knob—Package of 5.....
3903	Screw—No. 8-32- $\frac{1}{4}$ " headless cup point set screw for station selector knob—Package of 20.....	6766	Volume control—Phonograph volume control (R23, S9).....
3904	Knob—Volume control knob (Model 121)—Package of 5.....	6810	Bezel—Metal bezel for station selector dial.....
3940	Pointer—Station selector pointer—Package of 5.....	6841	Dial—Station selector dial—Package of 5.....
3941	Dial—Station selector dial—Package of 5.....	6842	Pointer—Station selector pointer—Package of 5.....
6796	Bezel—Metal bezel for station selector dial glass (Model 121).....	6855	Cable—3-conductor cable with spade terminals—Reproducer cable.....
6707	Glass—Station selector dial glass.....	6856	Cable—3-conductor shielded with male section of connection plug—Phonograph volume control.....
6708	Ring—Retaining ring for dial glass—Package of 5.....	6857	Cable—2-conductor motor cable.....
6752	Knob—Station selector knob (Model 122)—Package of 5.....	6858	Transformer—Phonograph input transformer—Comprising one transformer, one reactor, one .01 mfd. and 0.1 mfd. capacitors, one 5,000 and one 50,000 ohm resistor (T3, R24, R25, C42, C43, L20).....
6753	Knob—Volume control knob (Model 122)—Package of 5.....	10174	Spring—Automatic brake springs—One set of 4 springs—Package of 2 sets.....
6754	Knob—Range switch or tone control knob (Model 122)—Package of 5.....	10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....
6755	Bezel—Metal bezel for station selector dial glass (Model 122).....		

MODEL M123

Six-Tube, Superheterodyne Automobile Receiver

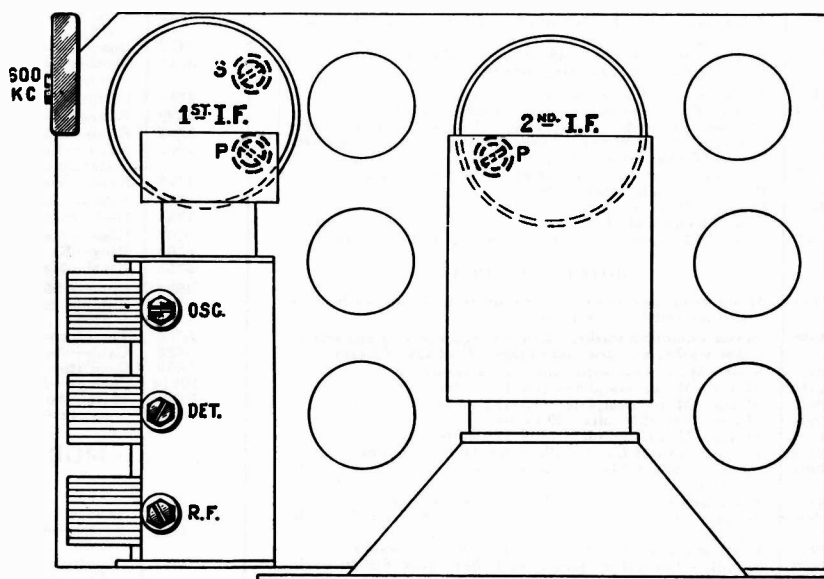


Electrical Specifications

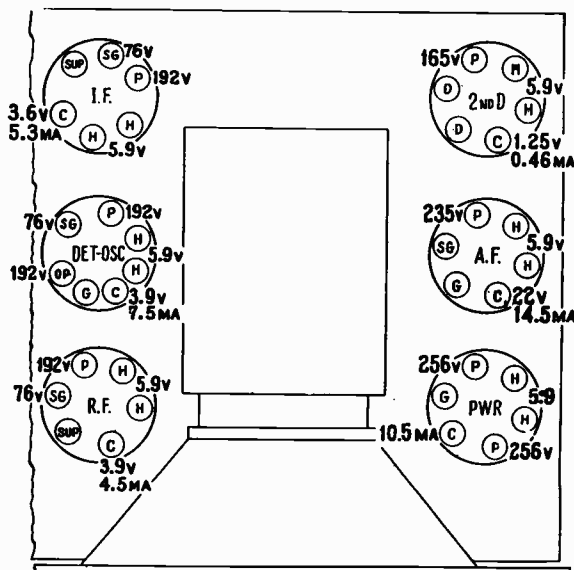
Type and Number of Radiotrons Used—2 RCA-6D6,
1 RCA-6A7, 1 RCA-75, 1 RCA-41, 1 RCA-79
—Total, 6

Battery Current (6.3 Volt Battery):
Speaker Field (Cold).....1.35 Amperes
Tubes.....2.2 Amperes
Dial Lamp0.15 Ampere
Power Supply (No Signal).....2.8 Amperes
Total (No Signal).....6.5 Amperes
Total (Maximum Output).....8.0 Amperes
(Average)

Tuning Frequency Range.....540 K. C.—1600 K. C.
Maximum Undistorted Output.....4.2 Watts
Maximum Output.....6.8 Watts



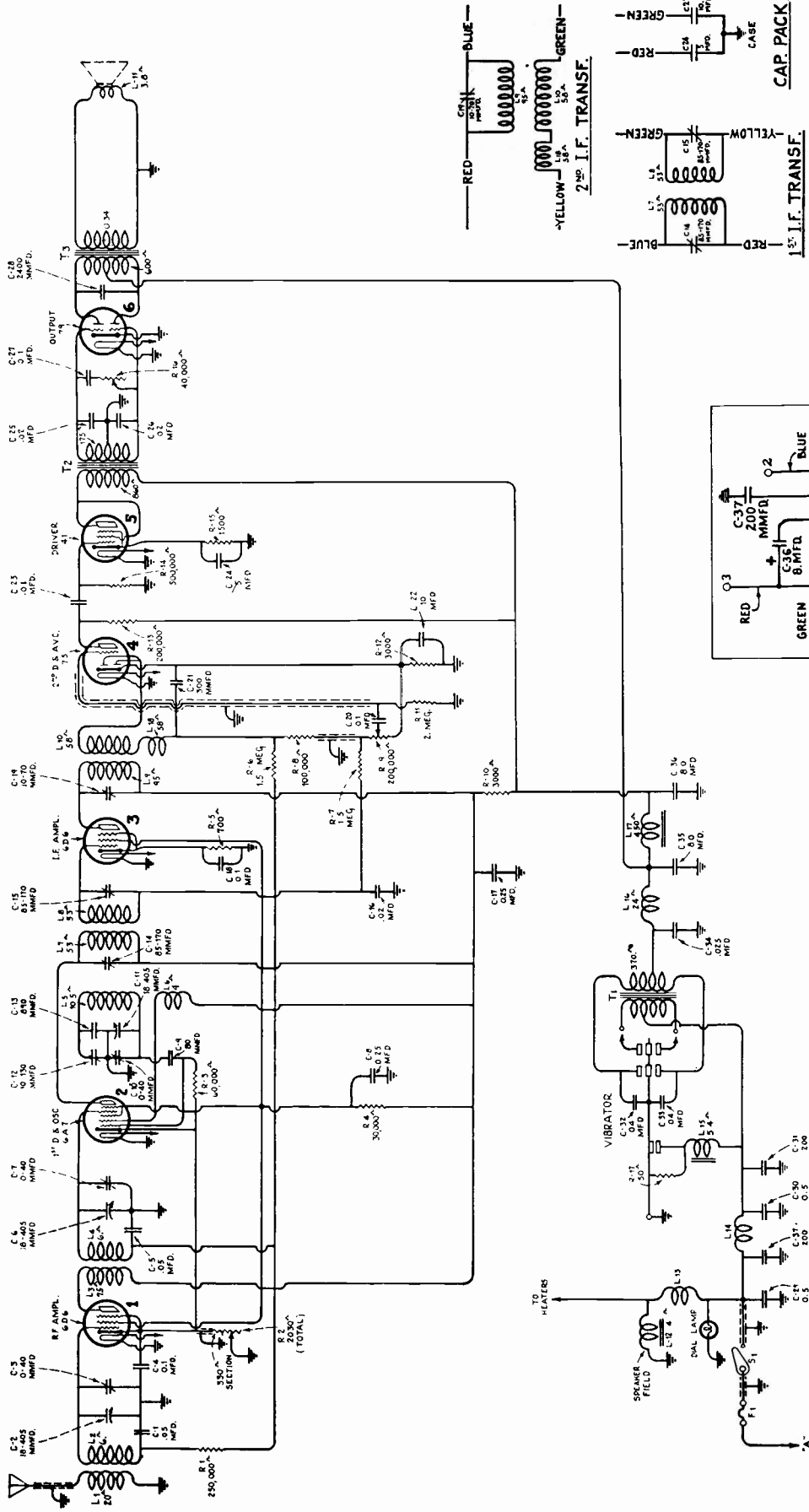
-Location of Line-up Capacitors



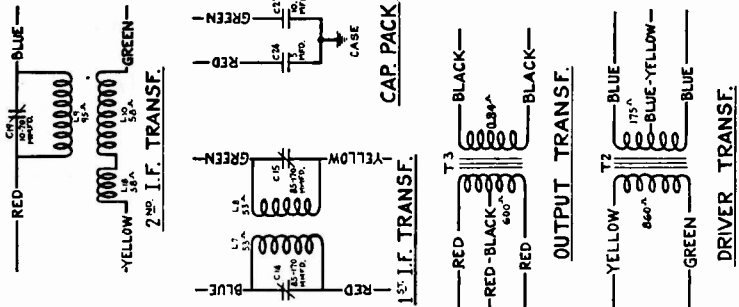
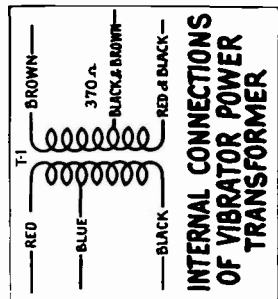
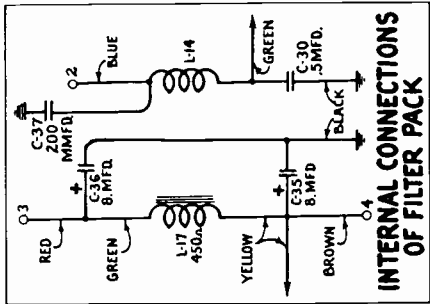
All voltages except heater are to ground.
Voltages at Individual Socket Contacts

Alignment Procedure

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd.	175 Kc	Quiet point near 600 Kc	P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			P&S of 1st I-F Trans.
3	Antenna in series with 200 mmfd.	1400 Kc	1400 Kc	Osc., Det., & R-F Trimmers on gang condenser
4		600 Kc	600 Kc	600 Kc Osc. Trimmers Rock Gang
5		<i>Repeat Step 3</i>		
6	With auto antenna connected to receiver adjust R-F Trimmer for max. volume on weak station near 1400 Kc.			



-Schematic Circuit Diagram



REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4237	Cable—Single-conductor shielded cable with female section of connector—From volume control switch to pilot lamp cable.....		4239	Resistor — 3,000 ohms — Carbon type — 3 watts (R10).....	
4238	Cable—Two-conductor power cable from S1 to power lead connector.....		6972	Rheostat—Noise suppressor rheostat (R2)....	
4244	Cap—Contact cap—Package of 5.....		3584	Ring—Retaining ring for antenna, radio frequency or oscillator coils—Package of 5....	
3861	Capacitor—Adjustable capacitor (C12).....		3993	Screw—No. 6-32- $\frac{3}{8}$ -inch square head set screw—For mounting condenser drive assembly to shaft—Package of 10.....	
4246	Capacitor—80 mmfd. (C9).....		3623	Shield—Antenna, radio frequency or oscillator coil shield.....	
4248	Capacitor—300 mmfd. (C21).....		4233	Shield—Oscillator or second detector Radiotron shield.....	
4245	Capacitor—890 mmfd. (C13).....		4235	Shield—Intermediate frequency Radiotron shield.....	
4247	Capacitor—2,400 mmfd. (C28).....		4236	Shield—Radio frequency Radiotron shield....	
3702	Capacitor—0.25 mfd. (C8).....		4232	Socket—6-contact Radiotron socket.....	
3639	Capacitor—.02 mfd. (C16, C25, C26).....		3572	Socket—7-contact Radiotron socket.....	
3701	Capacitor—.01 mfd. (C20, C23).....		6971	Tone control (R16).....	
3641	Capacitor—0.1 mfd. (C27).....		6969	Transformer—Audio driver transformer (T2).....	
3877	Capacitor—0.1 mfd. capacitor (C4, C18)....		6970	Transformer—Audio output transformer (T3).....	
3597	Capacitor—0.25 mfd. (C17).....		6960	Transformer—First intermediate frequency transformer (L7, L8, C14, C15).....	
4243	Capacitor pack—Comprising two 0.05 mfd. capacitors (C1, C5).....		6962	Transformer—Second intermediate frequency transformer (L9, L10, L18, C19).....	
6963	Capacitor pack—Comprising one 10. and one 5. mfd. capacitors (C22, C24).....		6964	Volume control (R9, S1).....	
6965	Coil—Antenna coil (L1, L2).....		CONTROL BOX ASSEMBLIES		
6967	Coil—Oscillator coil (L5, L6).....		6974	Box—Control box complete.....	
6966	Coil—R. F. coil (L3, L4).....		6976	Back—Control box back.....	
6961	Condenser—3-gang variable tuning condenser (C2, C3, C6, C7, C10, C11).....		6975	Cover—Control box front cover.....	
6973	Drive assembly—Variable tuning condenser drive assembly.....		4259	Cover—Station selector dial cover—Transparent celluloid—Package of 5.....	
4249	Drive bracket and worm assembly—For variable tuning condenser drive.....		4261	Dial—Station selector dial.....	
6968	Reactor (L13).....		4258	Key—Volume control key.....	
4240	Resistor—700 ohms—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....		4340	Lamp—Dial lamp—Package of 5.....	
4242	Resistor — 3,000 ohms — Carbon type — $\frac{1}{4}$ watt (R12)—Package of 5.....		4260	Pointer—Station selector indicator.....	
3602	Resistor — 60,000 ohms — Carbon type — $\frac{1}{4}$ watt (R3)—Package of 5.....		4257	Ring—Station selector dial cover ring.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 5.....		4262	Screen—Dial light screen—Package of 5....	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		4252	Screw—No. 10-32-11/32-inch fillister head set screw for holding condenser drive and pinion gear and volume coupling control shaft—Package of 10.....	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1)—Package of 5.....		3652	Screw—No. 10-32- $\frac{1}{4}$ -inch cupped point set screw for holding station selector or volume control flexible drive shaft to control box—Package of 10.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		4255	Screw—No. 4-40- $\frac{1}{4}$ -inch oval head machine screw for holding control box cover—Package of 10.....	
4241	Resistor—1.5 megohms—Carbon type— $\frac{1}{4}$ watt (R6, R7)—Package of 5.....		4254	Shaft—Volume control coupling shaft.....	
6242	Resistor — 2 megohms — Carbon type — $\frac{1}{4}$ watt (R11)—Package of 5.....		4250	Shaft and gear—Station selector pointer shaft and gear.....	
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt (R15)—Package of 5.....		4251	Shaft and gear—Station selector drive shaft and pinion gear.....	
2240	Resistor — 30,000 ohms — Carbon type — 1 watt (R4).....				

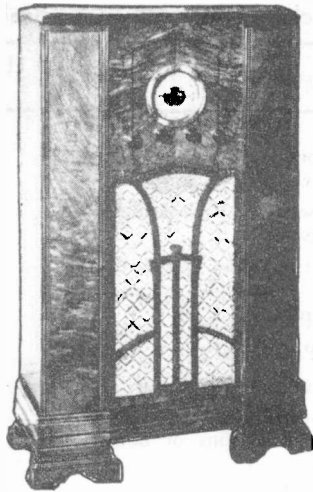
REPLACEMENT PARTS—(Continued)

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

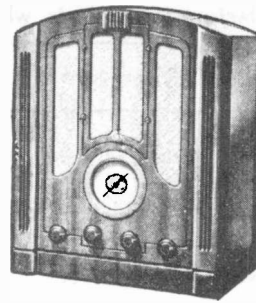
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
4253	Spring—Volume control key holding spring— Package of 10		4270	Cover—Tuning condenser drive bracket and worm assembly cover	
3690	Strap and bracket assembly—For mounting control box to steering column—Comprising one bracket, two screws, one lock- washer and one strap		7755	Housing—Front section of housing com- plete—Less hinge pin	
	FLEXIBLE SHAFT AND CABLE ASSEMBLIES		7756	Housing—Rear section of housing complete— Less hinge pin	
7762	Cable—Dial lamp cable with socket and sec- tion of connector		4267	Nut—Wing nut—Package of 10	
4264	Clamp—Metal clamp—Package of 10		4266	Pin—Hinge pin—Package of 5	
4295	Screw—No. 10-32- $\frac{1}{4}$ -inch cupped point set screw—Fastens flexible shaft housing to shaft bushing—Package of 10		4268	Screw—Wing screw—Package of 10	
7760	Shaft—Station selector flexible drive shaft— Approximately 29 inches long		4269	Screw—No. 6 self-tapping screw for fastening front and bottom sections of housing— Package of 10	
7764	Shaft—Station selector flexible drive shaft— Approximately 24 inches long		4271	Screw—Self-tapping No. 6 screw for fastening tuning condenser drive bracket and worm cover to housing—Package of 10	
7761	Shaft—Volume control flexible shaft—Ap- proximately 31 $\frac{1}{2}$ inches long		4295	Screw—No. 10-32- $\frac{1}{4}$ -inch headless set screw —Located in worm gear cover and bracket used to fasten drive shafts—Package of 10	
7763	Shaft—Volume control flexible drive shaft— Approximately 27 inches long			MISCELLANEOUS ASSEMBLIES	
4265	Sleeve—Coupling sleeve for volume control shaft—Package of 5		4287	Body—Antenna connector body—Package of 10	
4263	Socket—Dial lamp socket		4289	Body—Fuse connector body—Package of 10	
	REPRODUCER ASSEMBLIES		4283	Cable—Antenna lead-in cable—Approx- imately 35 inches long	
9493	Coil—Field coil magnet and cone support (L12)		4288	Cap—Antenna or fuse connector cap—Pack- age of 10	
9492	Cone—Reproducer cone (L11)—Package of 5		4293	Capacitor—Ammeter capacitor—0.5 mfd.	
9491	Reproducer complete		4292	Capacitor—Generator capacitor—0.5 mfd.	
	VIBRATOR ASSEMBLIES		4291	Clip—"A" supply clip—Package of 10	
4280	Board—Terminal board—Located on filter pack		7767	Escutcheon—Grille escutcheon and name plate	
4013	Capacitor—200 mmfd. (C31)		4286	Ferrule—Antenna or fuse connector ferrule and bushing—Package of 10	
4274	Capacitor—.025 mfd. (C34)		3646	Fuse—20 ampere—Package of 5	
4273	Capacitor—0.5 mfd. (C29)		7765	Grille—Baffle board and grille cloth	
4275	Coil—Choke coil (L16)		4290	Insulator—Fuse connector insulator—Package of 10	
7758	Filter pack—Comprising one reactor, one choke coil, two 8. mfd. capacitors, one 0.5 and one 200 mmfd. capacitors (C30, C35, C36, C37, L14, L17)		4132	Knob—Noise suppressor or tone control knob —Package of 5	
4276	Plug—2-prong plug		4282	Knob—Station selector knob—Package of 5	
4308	Screw—Binder head No. 6-32- $\frac{1}{4}$ -inch screw —Fastens shield to cover—Package of 10		4691	Lacquer—Touch-up lacquer (1 pint of lacquer and 1 pint of thinner)	
4278	Socket—Vibrator mounting socket		7766	Lead—Power lead with female section of fuse connector—From power cable to battery	
7759	Transformer—Vibrator transformer (T1)		4284	Spring—Antenna or fuse connector spring— Package of 10	
7757	Vibrator assembly complete (R17, C32, C33, L15)		6152	Suppressor—Distributor suppressor	
	HOUSING ASSEMBLIES		6151	Suppressor—Spark-plug suppressor	
4272	Bracket—Volume control shaft bracket— For left-hand mounting located on front of receiver housing		4277	Screw—No. 8-32- $\frac{3}{8}$ -inch binder head screw used to mount escutcheon—Package of 10	
			4294	Screw—No. 10-32- $\frac{5}{16}$ -inch hexagon head screw—Used to mount chassis to housing— Package of 10	
			4285	Washer—Antenna or fuse connector insulating washer—Package of 10	

MODELS 125 AND 225

Six-Tube, Two-Band, A. C. Superheterodyne Receivers



MODEL 225



MODEL 125

ELECTRICAL SPECIFICATIONS

Voltage and Frequency Ratings $\left\{ \begin{array}{l} 105-125 \text{ Volts, } 50-60 \text{ Cycles} \\ 105-125 \text{ Volts, } 25-60 \text{ Cycles} \\ 105-125/200-250 \text{ Volts, } 50-60 \text{ Cycles} \end{array} \right.$

Power Consumption..... .85 Watts

Radiotrons and Functions.

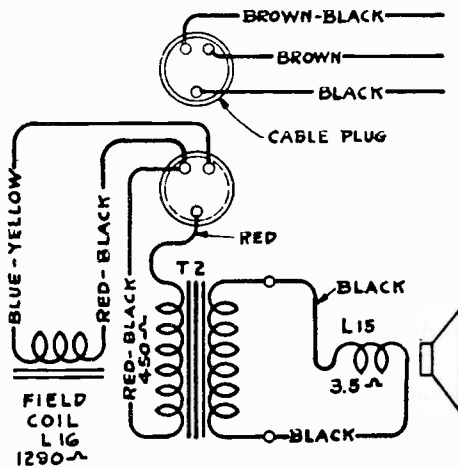
- (1) RCA-6A7 Oscillator and First Detector
- (2) RCA-6D6 I.F. Amplifier
- (3) RCA-6D6 I.F. Amplifier
- (4) RCA-6B7 Detector A.F. Amplifier and A.V.C.
- (5) RCA-41 Power Output
- (6) RCA-80 Rectifier

Tuning Frequency Ranges

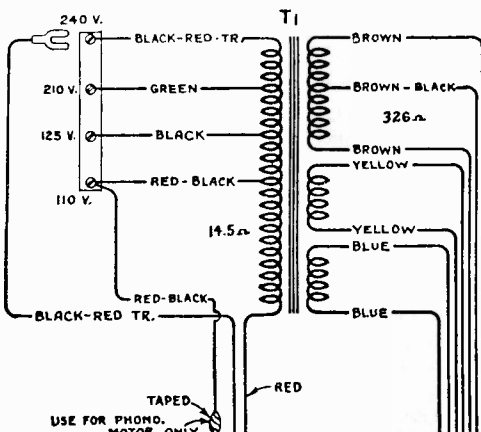
..540 KC.-1720 KC. and 5400 KC.-18,000 KC.

Undistorted Output1.75 Watts

Maximum Output.....3.5 Watts



INTERNAL CONNECTIONS OF SPEAKER



INTERNAL CONNECTIONS OF POWER TRANSF.

Universal Transformer Connections

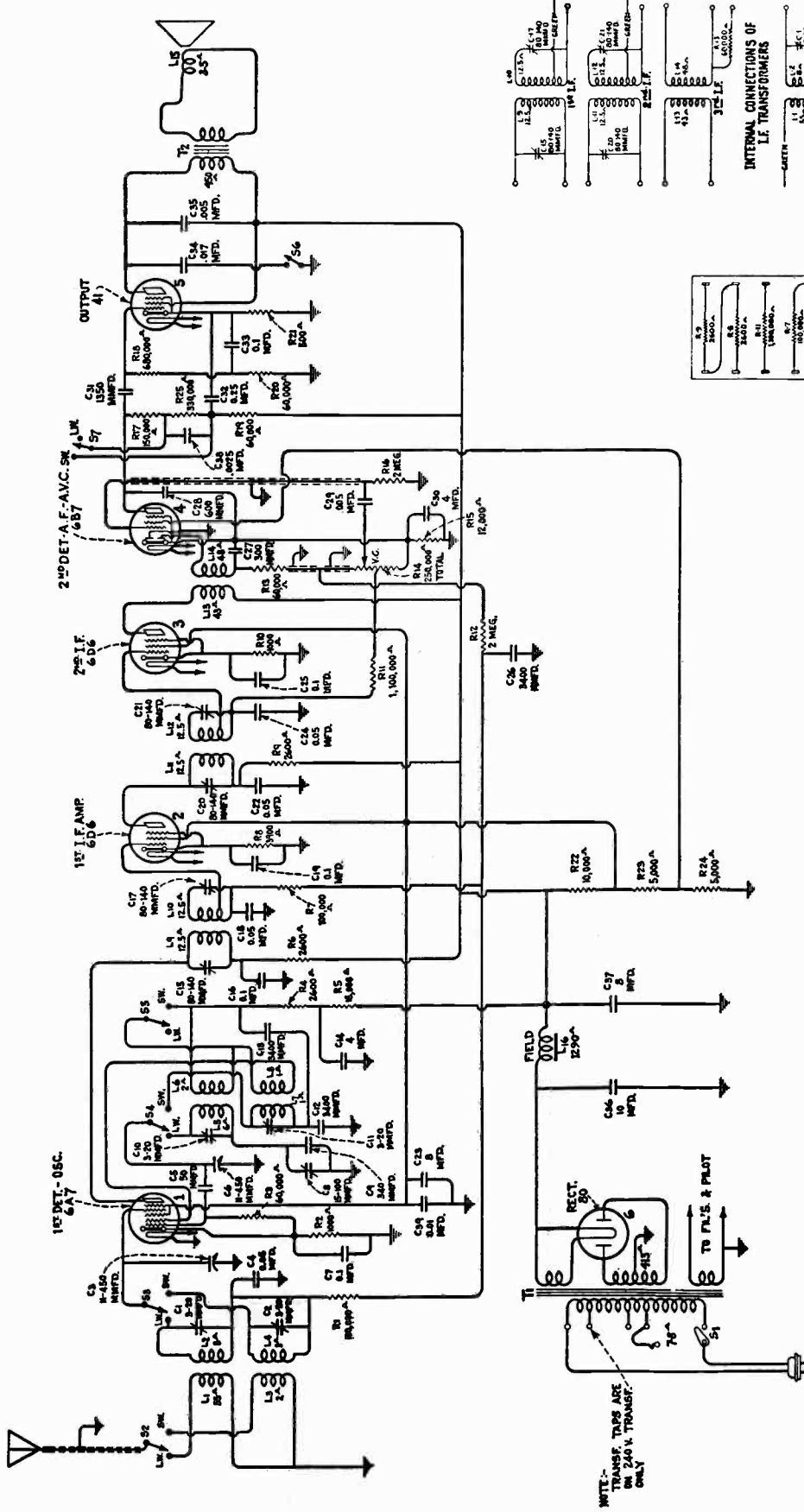
With tuning condenser fully meshed set pointer to coincide with 540 calibration at low frequency end of BC Band.

Alignment Procedure

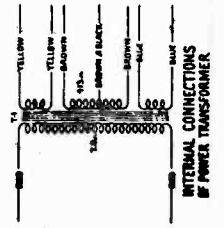
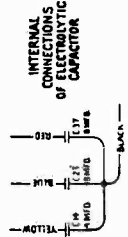
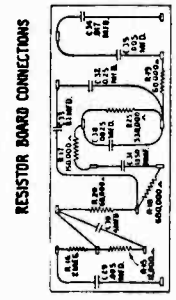
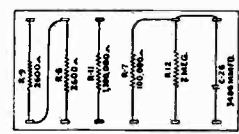
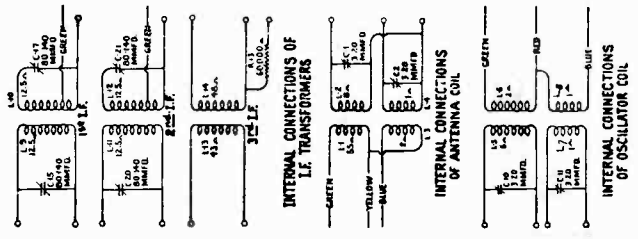
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "BC" Band	C21 C20 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			C17 C15 1st I-F Trans.
3		1720 Kc	"BC" Band	C10 C1 Osc. Ant.
4	Antenna in series with 200 mmfd	600 Kc	600 Kc "BC" Band	C8 L-F Osc. Rock Gang
5	<i>Repeat Step 3</i>			
6	Antenna in series with 300 ohms	18000 Kc	18 Mc "SW" Band	C11† C2▲ Osc. Ant.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG

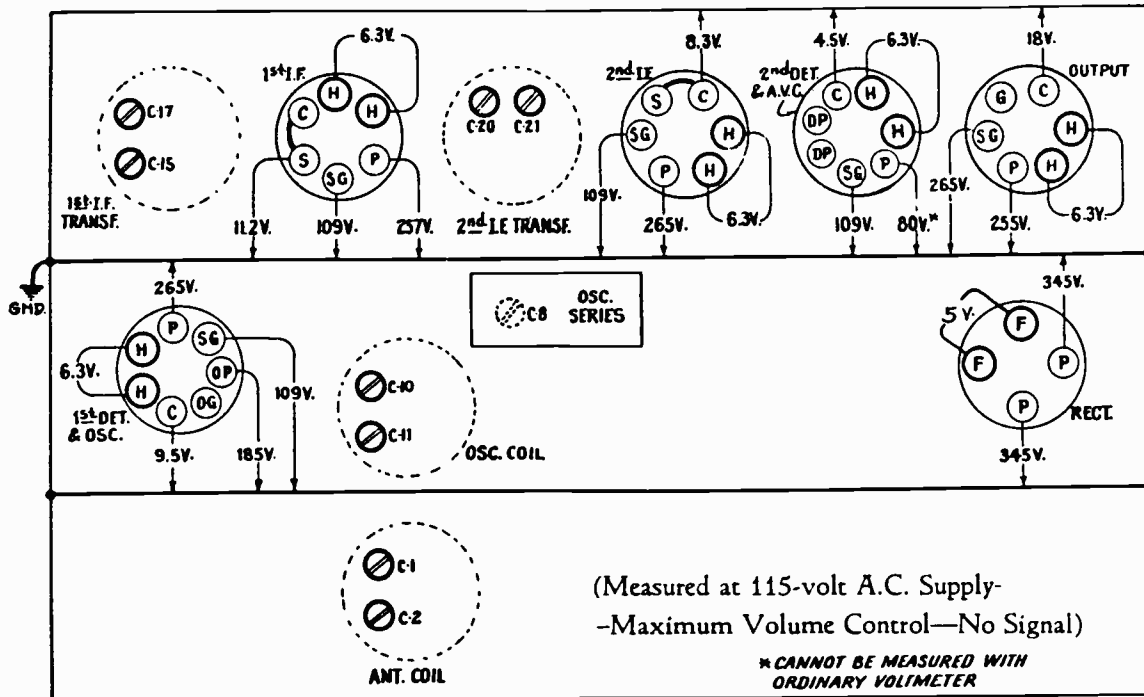


Schematic Circuit Diagram



NOTE - TRANSFORMER TAPS ARE ON 240 V. TRANSFORMER ONLY.

125 & 225



—Trimmer Locations and Radiotron Socket Voltages to Ground

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4880	Bracket—Tone control switch mounting bracket.....		4841	Capacitor—0.1 mfd. (C7, C19, C25, C33)..	
4427	Bracket—Volume control mounting bracket..		4885	Capacitor—0.1 mfd. (C16).....	
4358	Bracket—Electrolytic capacitor bracket for capacitor No. 7790.....		3597	Capacitor—0.25 mfd. (C32).....	
4693	Bracket—Electrolytic capacitor bracket for capacitor No. 5101.....		3796	Capacitor—4.0 mfd. (C30).....	
3861	Capacitor—Adjustable trimmer capacitor (C8).		7790	Capacitor—10.0 mfd. (C36).....	
5094	Capacitor—50 mmfd. (C5).....		5101	Capacitor pack—Comprising two 8. mfd. and one 4. mfd. sections (C14, C23, C37)....	
3981	Capacitor—300 mmfd. (C27).....		5087	Coil—Antenna coil (L1, L2, L3, L4, C1, C2)	
4811	Capacitor—340 mmfd. (C9).....		5089	Coil—Oscillator coil (L5, L6, L7, L8, C10, C11).....	
4210	Capacitor—600 mmfd. (C28).....		4504	Condenser—2-gang tuning condenser (C3, C6)	
5115	Capacitor—1350 mmfd. (C31).....		5104	Lead—Shielded—Single conductor—From range switch to antenna terminal board....	
4439	Capacitor—3400 mmfd. (C12).....		5106	Lead—Shielded—2-conductor—From volume control to third I.F. transformer and resistor board.....	
4881	Capacitor—3400 mmfd. (C13, C26).....		5112	Resistor—1000 ohms—Carbon type—¼ watt (R2, R10)—Package of 5.....	
5107	Capacitor—0.0025 mfd. (C38).....		4812	Resistor—2600 ohms—Carbon type—¼ watt (R4, R6, R9)—Package of 5.....	
4793	Capacitor—0.005 mfd. (C29).....		5113	Resistor—3900 ohms—Carbon type—¼ watt (R8)—Package of 5.....	
4868	Capacitor—0.005 mfd. (C35).....		5109	Resistor—12,000 ohms—Carbon type—¼ watt (R15)—Package of 5.....	
4906	Capacitor—0.017 mfd. (C34).....		5114	Resistor—15,000 ohms—Carbon type—1 watt (R5).....	
4883	Capacitor—0.01 mfd. (C39).....		3602	Resistor—60,000 ohms—Carbon type—¼ watt (R3, R19, R20)—Package of 5.....	
4836	Capacitor—0.05 mfd. (C4, C18, C24).....				
4886	Capacitor—0.05 mfd. (C22).....				

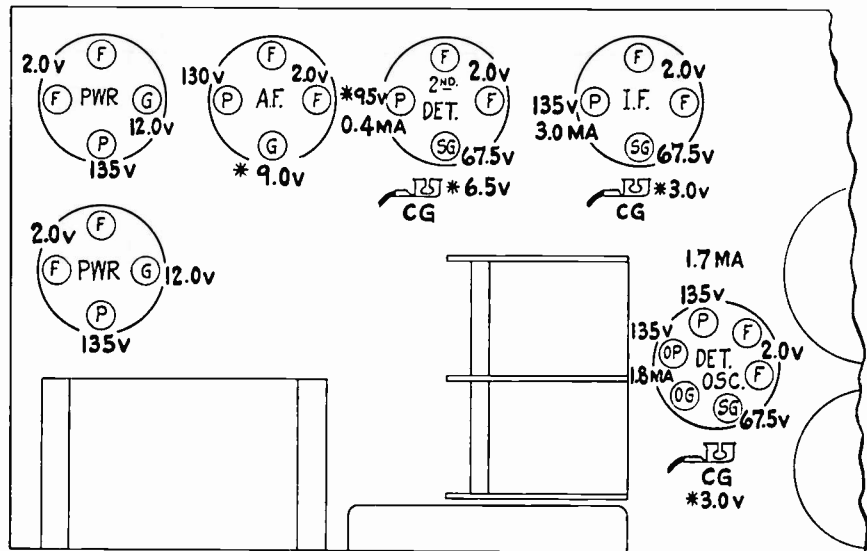
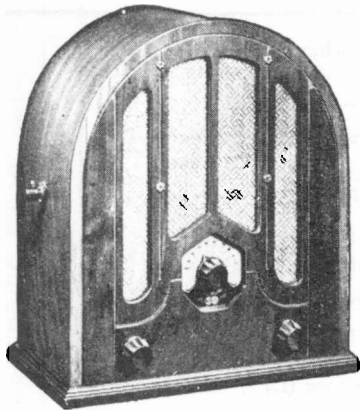
REPLACEMENT PARTS (Continued)

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R7)—Package of 5.....		4363	Indicator—Station selector (pointer) indicator Console model.....	
5027	Resistor—150,000 ohms—Carbon type— $\frac{1}{4}$ watt (R17)—Package of 5.....		4340	Lamp—Dial lamp—Package of 5.....	
5108	Resistor—330,000 ohms—Carbon type— $\frac{1}{4}$ watt (R25)—Package of 5.....		3943	Screen—Translucent screen for dial light—Package of 2.....	
5110	Resistor—680,000 ohms—Carbon type— $\frac{1}{4}$ watt (R18)—Package of 5.....		3529	Socket—Dial lamp socket.....	
4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11)—Package of 5.....		REPRODUCER ASSEMBLIES TABLE MODEL		
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R12, R16)—Package of 5.....		4915	Cable—3-conductor reproducer cable.....	
4721	Resistor—Tapped—One 500, one 10,000 and two 5000 ohm sections (R21, R22, R23, R24).....		9587	Coil—Field coil, magnet and cone support (L16).....	
4521	Shield—Antenna, I.F. or oscillator coil shield..		9588	Cone—Reproducer cone (L15)—Package of 5	
3942	Shield—First detector and output Radiotron shield.....		5118	Plug—3-contact plug—Male section for reproducer cable.....	
3782	Shield—Second detector Radiotron shield.....		5119	Plug—3-contact plug—Female section for reproducer	
7487	Shield—I.F. Radiotron shield.....		9586	Reproducer—Complete.....	
4784	Socket—4-contact Radiotron socket.....		4893	Transformer—Output transformer (T2)....	
4785	Socket—6-contact Radiotron socket.....		REPRODUCER ASSEMBLIES CONSOLE MODEL		
4786	Socket—6-contact Radiotron socket.....		4915	Cable—3-conductor reproducer cable.....	
4787	Socket—7-contact Radiotron socket.....		9590	Coil—Field coil, magnet and cone support (L16).....	
4379	Scrip — Terminal strip — Engraved "ANT-GND".....		8935	Cone—Reproducer cone (L15)—Package of 5	
5100	Switch—Range switch (S2, S3, S4, S5, S7)...		5118	Plug—3-contact plug—Male section for reproducer cable.....	
5052	Switch—Tone control switch (S6).....		5119	Plug—3-contact plug—Female section for reproducer cable.....	
9512	Transformer—Power transformer—105-125 volts—25-40 cycles.....		9589	Reproducer—Complete.....	
9513	Transformer—Power transformer—105-125/210-240 volts—40-60 cycles.....		4892	Transformer—Output transformer (T2)....	
9511	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....		MISCELLANEOUS ASSEMBLIES		
5102	Transformer—First intermediate frequency transformer (L9, L10, C15, C17).....		6755	Bezel—Station selector dial escutcheon bezel—Table model.....	
5103	Transformer—Second intermediate frequency transformer (L11, L12, C20, C21).....		6840	Bezel—Station selector dial escutcheon bezel—Console model.....	
5105	Transformer—Third intermediate frequency transformer (L13, L14, R13).....		6707	Glass—Station selector dial glass—Table model.....	
4429	Volume control (R14, S1).....		6614	Glass—Station selector dial glass—Console model.....	
CONDENSER DRIVE ASSEMBLIES			4449	Knob—Station selector, volume control, band switch or tone control knob—Package of 5.	
4450	Dial—Station selector dial—Console model..		6708	Ring—Spring retaining ring for dial glass—Table model—Package of 5.....	
4474	Dial—Station selector dial—Table model....		6615	Ring—Spring retaining ring for dial glass—Console model—Package of 5.....	
4434	Drive—Tuning condenser drive assembly—Complete.....		4446	Screw—Chassis mounting assembly—Comprising four screws, four spacers, eight cushions, four washers and four lockwashers—For table model.....	
4475	Indicator—Station selector (pointer) indicator—Table model.....		5184	Screw—Chassis mounting assembly—Comprising one screw, one spacer, two cushions, one washer and one lockwasher—Package of 4—For console model.....	

MODEL 126 B

Six-Tube, Single Band Super-Heterodyne Receiver



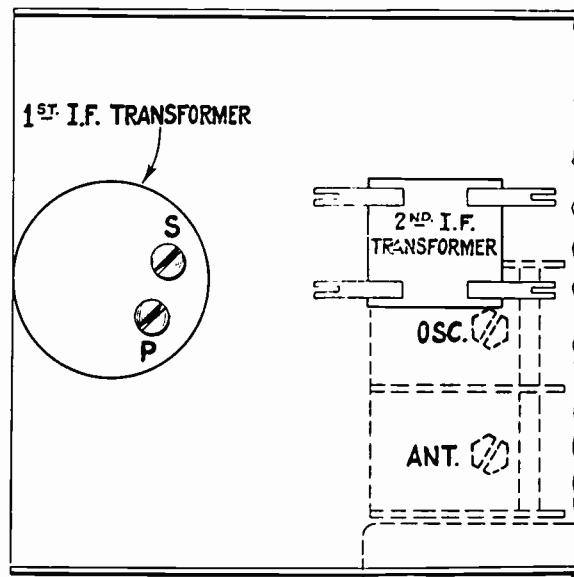
-Socket Voltage Readings

ELECTRICAL SPECIFICATIONS

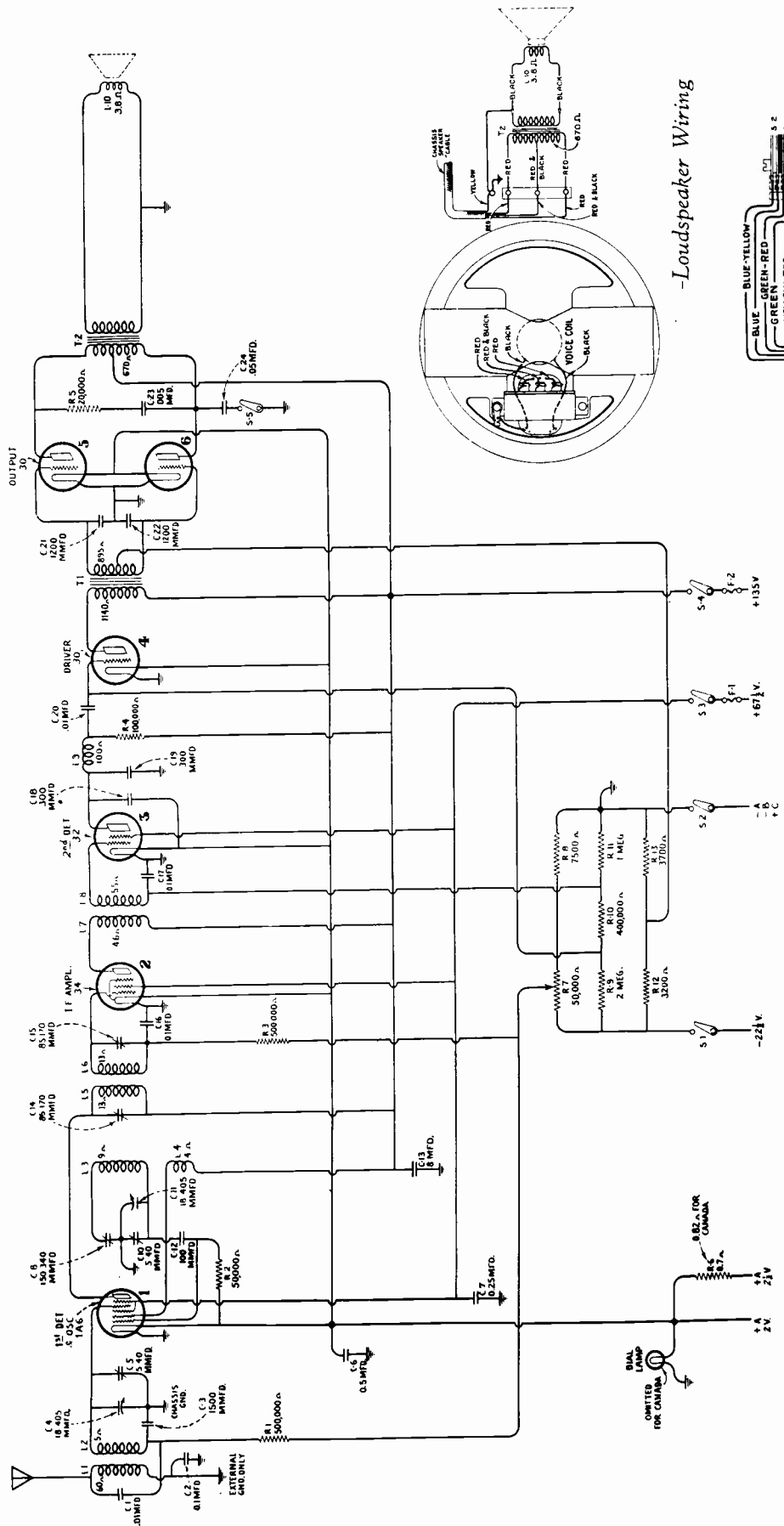
Type and Number of Radiotrons.....	1 RCA-1A6, 1 RCA-34, 1 RCA-32, 3 RCA-30—Total, 6
Total "A" Battery Current.....	0.45 Ampere
Total "B" Battery Current.....	15 M. A.
Batteries Required: "A".....	Eveready Air Cell A-600 or 2-volt storage cell
"B".....	Three 45-volt "B" batteries
"C".....	One 22½-volt "C" battery.
Tuning Frequency Range.....	540 K. C.—1600 K. C.
Maximum Undistorted Output.....	0.7 Watt

Alignment Procedure

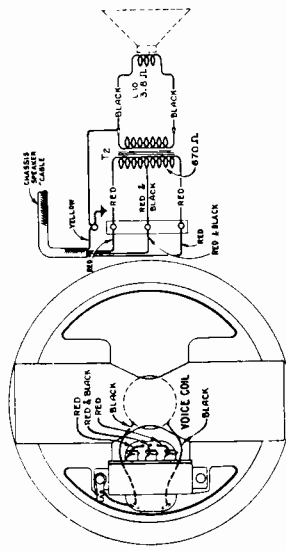
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	460 Kc	Quiet point	S&P Trimmers of 1st I-F Trans.
2	Antenna in series with 200 mmfd	1400 Kc	1400 Kc	Osc. & Det. Trimmers
3		600 Kc	600 Kc	600 Kc Trimmer Rock Gang
4		<i>Repeat Step 2</i>		



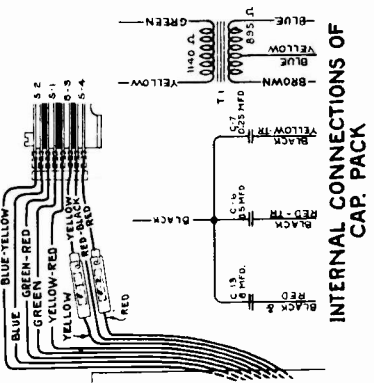
-Location of Line-up Capacitors



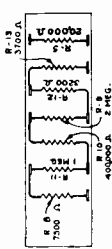
-Schematic Circuit Diagram



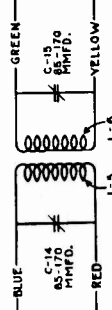
-Loudspeaker Wiring



INTERNAL CONNECTIONS OF CAP. PACK



INTERNAL CONNECTION OF RES. BD.



INTERNAL CONNECTION OF 1st I.F. TRANS.

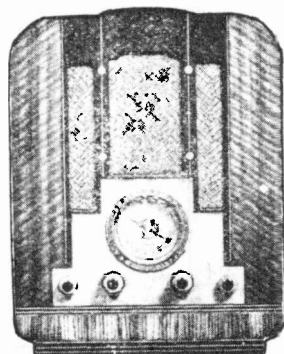
REPLACEMENT PARTS

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

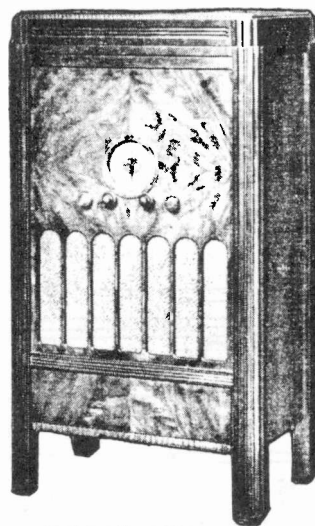
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.		6980	Socket—4-contact output (No. 5) Radiotron socket.	
4000	Capacitor—Adjustable trimmer capacitor (C8)		3859	Socket—4-contact output (No. 6) Radiotron socket.	
4353	Capacitor—100 mmfd. (C12).		4232	Socket—6-contact—1st detector and oscillator—Radiotron socket.	
4354	Capacitor—1500 mmfd. (C3).		6669	Switch—Tone control switch (S5).	
4352	Capacitor—300 mmfd. (C18, C19).		4347	Terminal strip—Engraved "ANT-GND".	
6512	Capacitor—0.005 mfd. (C23).		6993	Transformer—First intermediate frequency transformer (L5, L6, C14, C15).	
3888	Capacitor—0.05 mfd. (C24).		6994	Transformer—Second intermediate frequency transformer (L7, L8).	
3701	Capacitor—0.01 mfd. (C1, C20).		6995	Volume control (R7).	
3877	Capacitor—0.1 mfd. (C2, C16, C17).		REPRODUCER ASSEMBLIES		
4355	Capacitor pack—Comprising two 1200 mmfd. capacitors (C21, C22).		4350	Cable—4-conductor—Reproducer cable.	
4349	Capacitor and transformer pack—Comprising one 8.0 mfd., one 0.5, one 0.25 mfd. capacitor and driver transformer (C7, C6, C13, T1).		9428	Cone—Reproducer cone (L10)—Package of 5.	
6992	Coil—Antenna coil (L1, L2, R1, C1).		9503	Housing—Cone housing and core assembly.	
4343	Coil—Choke coil (L9).		3949	Magnet.	
6664	Coil—Oscillator coil (L3, L4).		9502	Reproducer assembly complete.	
6660	Condenser—2-gang variable tuning condenser (C4, C5, C10, C11).		6996	Transformer—Output transformer (T2).	
4356	Resistor—0.7 ohm—Flexible type (R6)—Package of 10.		MISCELLANEOUS ASSEMBLIES		
4345	Resistor—3200 ohms—Carbon type— $\frac{1}{4}$ watt (R12)—Package of 10.		4289	Body—Fuse connector body—Package of 10.	
4346	Resistor—3700 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 10.		4357	Cable—Battery cable—6-conductor.	
4344	Resistor—7500 ohms—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 10.		4288	Cap—Fuse connector cap—Package of 10.	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5.		6516	Connector—Fuse connector complete.	
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.		4468	Dial—Station selector dial.	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R4)—Package of 5.		6176	Escutcheon—Operating switch escutcheon—Package of 5.	
3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.		4286	Ferrule—Fuse connector ferrule and bushing—Package of 10.	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R3)—Package of 5.		3748	Fuse—0.5 ampere (F1, F2)—Package of 5.	
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R11)—Package of 5.		4290	Insulator—Fuse connector insulator—Package of 10.	
6242	Resistor—2 megohm—Carbon type— $\frac{1}{4}$ watt (R9)—Package of 5.		3088	Knob—Operating switch knob—Package of 5.	
3584	Ring—Oscillator coil retaining ring—Package of 5.		4085	Knob—Station selector knob and pointer—Package of 5.	
3682	Shield—First detector and oscillator—Radiotron shield.		4132	Knob—Volume control or tone control switch knob—Package of 5.	
4351	Shield—I. F. Radiotron socket shield.		4348	Lamp—Dial lamp.	
6665	Shield—Oscillator coil shield.		3886	Reflector—Dial light reflector.	
3056	Shield—Second detector—Radiotron shield—Package of 2.		3238	Screw—Set screw for operating switch knob—Package of 10.	
3858	Socket—Dial lamp socket.		4393	Screw—No. 8-32- $\frac{3}{16}$ -inch headless set screw for knobs—Package of 10.	
6300	Socket—4-contact second detector—Radiotron socket.		4160	Screw driver—Combination insulated screw driver and socket wrench for I. F. and R. F. adjustments.	
			4284	Spring—Fuse connector spring—Package of 10	
			4540	Switch—Operating switch (S1, S2, S3, S4).	
			4285	Washer—Fuse connector insulating washer—Package of 10.	

MODELS 127 and 327

6-Tube, 220-Volt D. C., Two-Band Radio and Radio-Phonograph



MODEL 127



MODEL 327

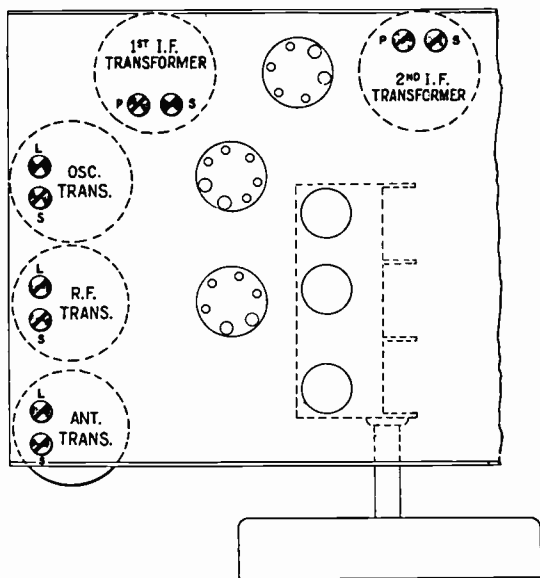
ELECTRICAL SPECIFICATIONS

Voltage Rating.....	200-250 Volts D. C.
Power Consumption	327 - 180 Watts Maximum 127 - 145 Watts Maximum
Number and Types of Radiotrons.....	2 RCA-6D6, 1 RCA-6A7, 1 RCA-75, 2 RCA-41—Total, 6
Tuning Ranges.....	540 K. C.—1500 K. C. and 5400 K. C.—15,350 K. C.
Maximum Undistorted Power Output.....	2.5 Watts

Alignment Procedure

With tuning condenser fully meshed set pointer so that radial line adjacent to dial reading of 54 coincides with pointer.

CAUTION: Do not connect external ground to chassis, connect low side of test osc. to ground lead during R-F Alignment.



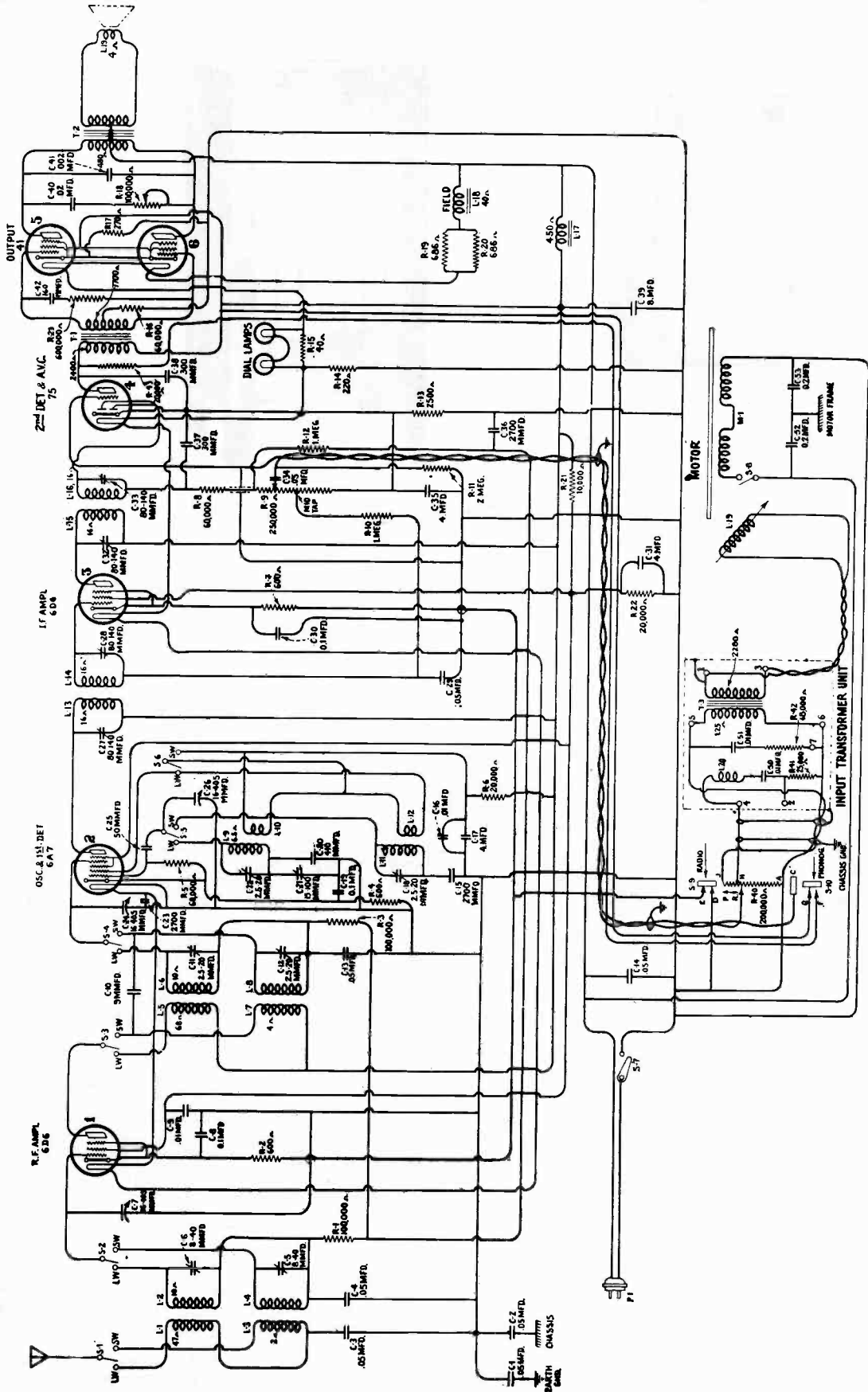
-Location of Line-Up Capacitors-

-Viewing bottom of chassis

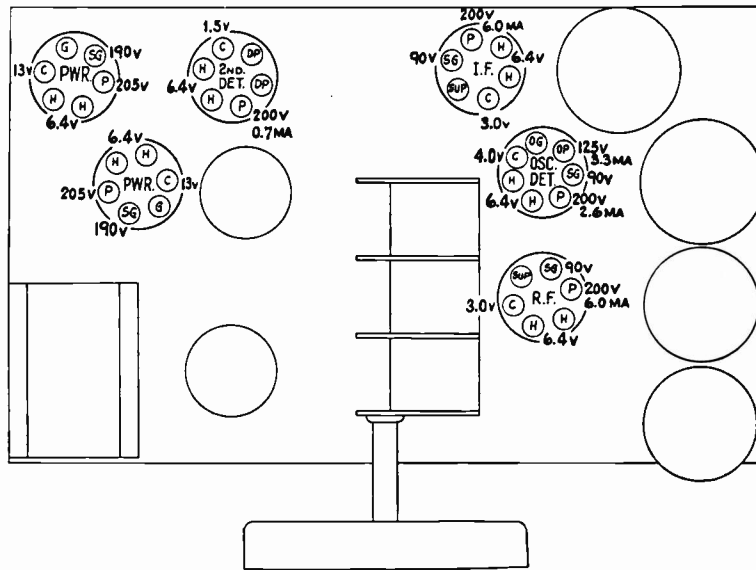
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	370 Kc	Quiet point near 600 Kc *LW* Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	140 Kc *LW* Band	Osc. R-F & Ant. Trimmers L
4		600 Kc	60 Kc *LW* Band	600 Kc Osc. Trimmer Rock Gang
5		Repeat Step 3		
6	Antenna in series with 300 ohm	15000 Kc	150 *SW* Band	Osc. R-F & Ant. Trimmers S Note

NOTE: Osc. tracks 370 Kc above signal on all bands, use minimum capacity peak if two peaks are obtained.

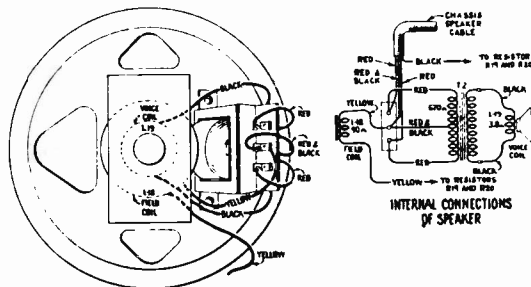
ROCK GANG on alignment of R-F trimmer, use maximum capacity peak if two peaks are obtained.



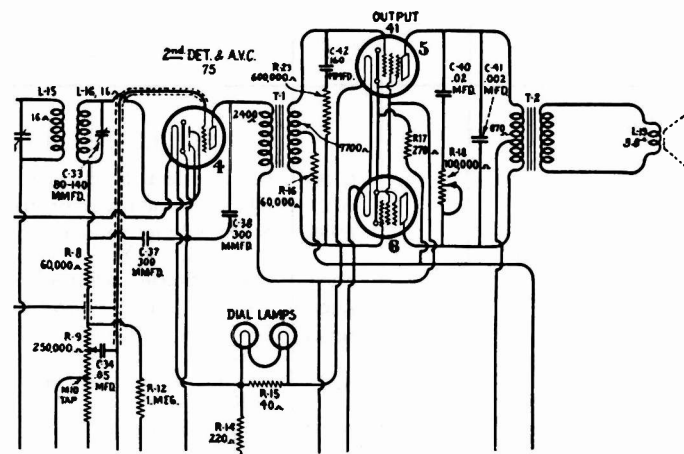
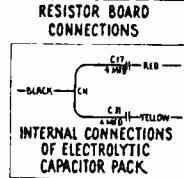
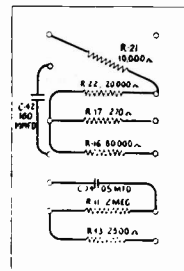
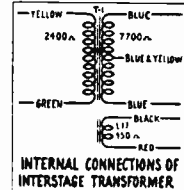
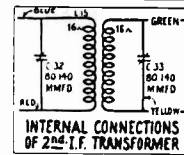
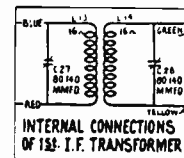
MODEL 327 - Schematic Circuit Diagram



ALL VOLTAGES ARE TO -B
 -Radiotron Socket Voltages



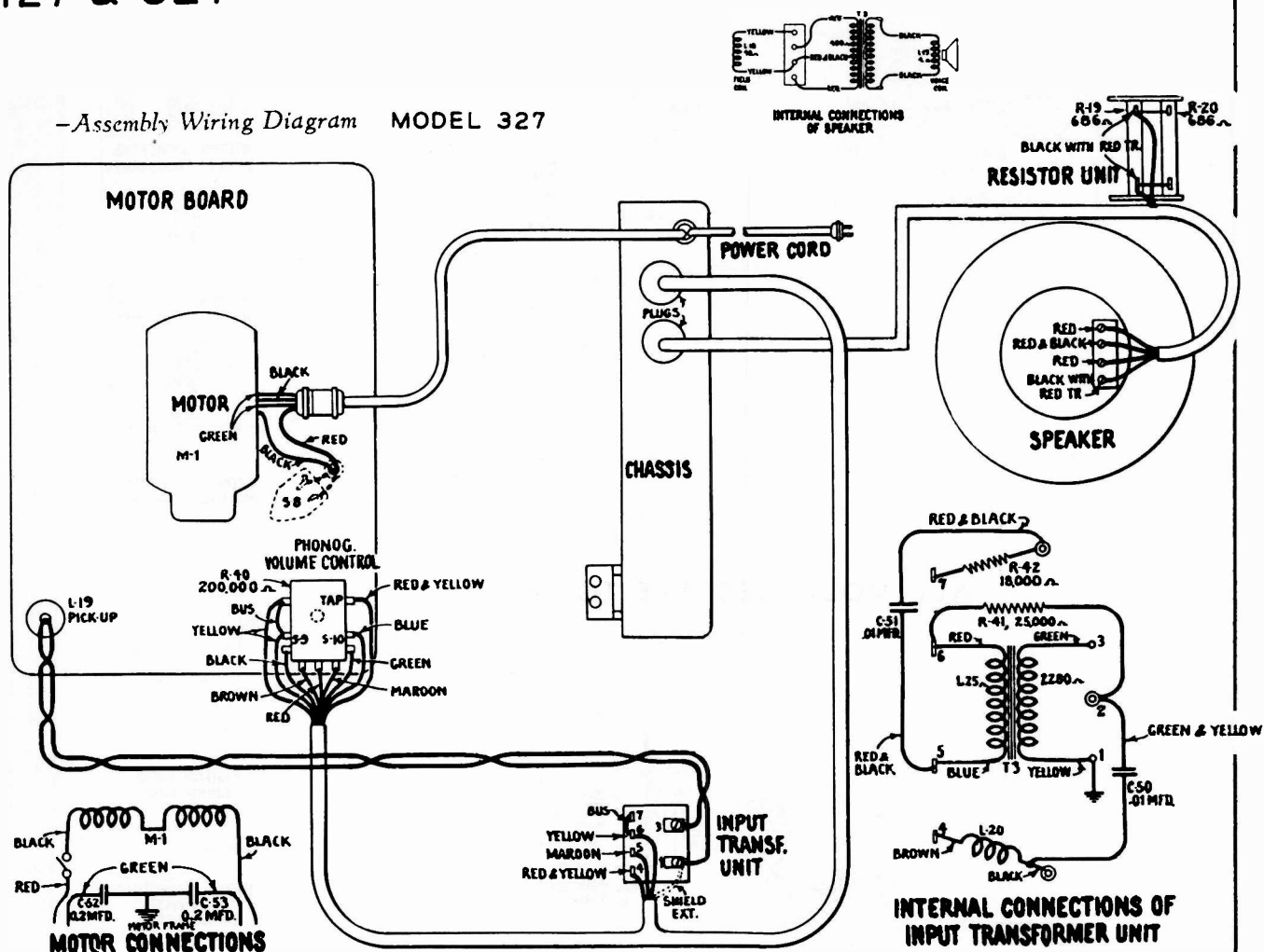
Loudspeaker Wiring



-Schematic Circuit MODEL 127

NOTE: Model 127 and 327 receiver assemblies are electrically identical with the exception of changes required for phonograph operation. In Model 127 resistors R2 and R7 (R-P and I-P cathode bias) are connected direct to "B" Negative, the grid of type 75 tube is connected direct to junction of C34 and R11. Resistor R43 is omitted.

-Assembly Wiring Diagram MODEL 327



REPLACEMENT PARTS MODEL 127

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
	RECEIVER ASSEMBLIES		MISCELLANEOUS ASSEMBLIES
	Refer to Model 327	6706	Bezel—Metal bezel for station selector dial.
	Add the following:	6707	Glass—Station selector dial glass.
3941	Dial—Station selector dial scale—Package of 5.	6989	Knob—Range switch or tone control knob—Package of 5.
6702	Drive—Variable tuning condenser drive assembly complete.	6991	Knob—Station selector knob—Package of 5.
	Stock No. 6841 Dial, 4487 Drive and 8303 Resistor (R43) not used with Model 127.	6990	Knob—Volume control knob—Package of 5.
	REPRODUCER ASSEMBLIES	9050	Oscillator—Test oscillator—90-25,000 K. C.
7811	Cable—Reproducer cable.	4341	Resistor—Porcelain type—686 ohms (R19, R20).
9498	Coil—Field coil, magnet and cone support (L18).	6708	Ring—Retaining ring for dial glass—Package of 5.
9499	Cone—Reproducer cone (L19)—Package of 5.	4342	Screw—Receiver mounting screw assembly—Comprising four bushings, four screws and four washers.
9497	Reproducer complete.	4160	Screwdriver—Combination insulated screwdriver and socket wrench for I. F. and R. F. adjustments.
6988	Transformer—Output transformer (T2).		

MODEL 327

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
10194	Ball—Steel ball for condenser drive assembly—Package of 20.....		6242	Resistor — 2 megohms — Carbon type — ¼ watt (R11)—Package of 5.....	
2747	Cap—Contact cap—Package of 5.....		6303	Resistor—20,000 ohms—Carbon type—½ watt (R43)—Package of 5.....	
3938	Capacitor—9 mmfd. (C10).....		4337	Resistor—270 ohms—Carbon type—1 watt (R17)—Package of 10.....	
3849	Capacitor—50 mmfd. (C25).....		6114	Resistor — 20,000 ohms — Carbon type — 1 watt (R6, R22)—Package of 5.....	
6314	Capacitor—160 mmfd. (C42)—Package of 5.....		4339	Resistor — 260 ohms — Porcelain type — Tapped at 220 ohms (R14, R15).....	
4352	Capacitor—300 mmfd. (C37, C38).....		3991	Resistor — 10,000 ohms — Porcelain type (R21).....	
4297	Capacitor—410 mmfd. (C20).....		3943	Screen—Translucent celluloid screen—For dial lamps—Package of 2.....	
4031	Capacitor—2700 mmfd. (C15, C23, C36)...		3878	Screw—No. 4-40-¾ headless cup point set screw for fastening station selector pointer—Package of 20.....	
3701	Capacitor—0.01 mfd. (C9, C16).....		3768	Screw—Square head No. 6-32-¼ set screw for condenser driver—Package of 10.....	
4211	Capacitor—0.05 mfd. (C1, C2, C3, C14, C34).....		6704	Shaft—Tuning condenser drive shaft assembly.	
3901	Capacitor—0.05 mfd. (C4, C13).....		4145	Shield—First detector and oscillator Radiotron shield.....	
3888	Capacitor—0.05 mfd. (C29).....		4103	Shield—I. F. amplifier Radiotron shield.....	
3877	Capacitor—0.1 mfd. (C8, C19, C30).....		3950	Shield—R. F. amplifier Radiotron shield.....	
3796	Capacitor—4.0 mmfd. (C35).....		4216	Shield—Radiotron shield top.....	
6986	Capacitor—8.0 mmfd. (C39).....		4215	Shield—Second detector Radiotron shield.....	
3861	Capacitor—Adjustable trimmer capacitor (C24)		3529	Socket—Dial lamp socket.....	
6985	Capacitor — Comprising two 4.0 mmfd. capacitors (C17, C31).....		6676	Socket—6-contact Radiotron socket.....	
4373	Capacitor pack—Comprising one 0.002 mfd. and one 0.02 mfd. capacitors (C40, C41)...		7485	Socket—6-contact second detector and AVC Radiotron socket.....	
6983	Coil—Antenna coil (L1, L2, L3, L4, C5, C6).		3572	Socket—7-contact Radiotron socket.....	
6700	Coil—Oscillator coil (L9, L10, L11, L12, C18, C22).....		6696	Switch—Range switch (S1, S2, S3, S4, S5, S6).....	
6699	Coil—R. F. coil (L5, L6, L7, L8, C11, C12).		6697	Transformer—First intermediate frequency transformer (L13, L14, C27, C28).....	
6694	Condenser—3-gang variable tuning condenser (C7, C24, C26).....		6698	Transformer—Second intermediate frequency transformer (L15, L16, C32, C33).....	
6841	Dial—Station selector dial scale—Package of 5.....		6987	Transformer pack—Audio transformer pack—Comprising one reactor and one inter-stage transformer (T1, L17).....	
4467	Drive—Variable tuning condenser drive assembly complete.....		6705	Tone control (R18, S7).....	
4340	Lamp—Dial lamp—Package of 5.....		6695	Volume control (R9).....	
3906	Mounting assembly — Variable condenser mounting assembly—Comprising 3 bushings, 3 lock-washers, 3 nuts and 3 washers—Package of 1 set.....		REPRODUCER ASSEMBLIES		
3940	Pointer—Station selector indicator—Package of 5.....		4600	Cable—Reproducer cable—4-conductor with male section of connector—From receiver to resistors and reproducer.....	
3218	Resistor—600 ohms—Carbon type—¼ watt (R2, R4, R7)—Package of 5.....		7825	Coil—Field coil, magnet and cone support (L18).....	
4338	Resistor — 2500 ohms — Carbon type — ¼ watt (R13)—Package of 10.....		8969	Cone—Reproducer cone (L19)—Package of 5.	
3602	Resistor—60,000 ohms—Carbon type—¼ watt (R5, R8, R16)—Package of 5.....		7824	Reproducer complete.....	
3118	Resistor—100,000 ohms—Carbon type—¼ watt (R1, R3)—Package of 5.....		4599	Transformer—Output transformer (T2).....	
3439	Resistor—600,000 ohms—Carbon type—¼ watt (R23)—Package of 5.....				
3033	Resistor—1 megohm—Carbon type—¼ watt (R10, R12)—Package of 5.....				

MODEL 327

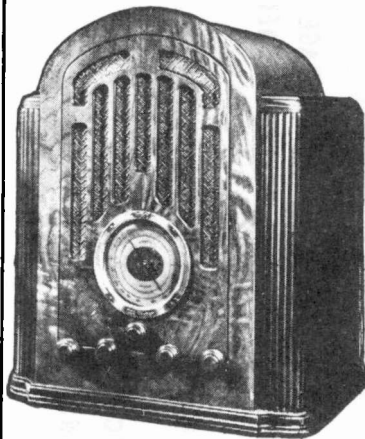
REPLACEMENT PARTS—Continued

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

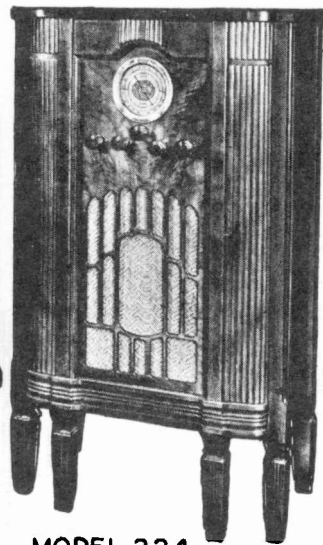
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR ASSEMBLIES			TURNTABLE ASSEMBLIES		
3524	Brush—Motor brush—Package of 2		7084	Cover—Turntable cover	
3525	Cap—Brush holder cap for motor brush— Package of 2		7838	Turntable complete	
4598	Capacitor—Motor capacitor—Two 2.0 mfd. capacitors (C52, C53)		MISCELLANEOUS ASSEMBLIES		
4596	Escutcheon—Speed regulator escutcheon		4677	Bezel—Metal bezel (escutcheon) for station selector dial glass	
3487	Governor assembly—Comprising friction disc, two springs and two balls—Assembled and mounted		4594	Box—Needle box	
3489	Indicator pointer—Speed indicator pointer complete, with mounting screws and washers		4592	Cable—Phonograph input cable—9-conductor —From chassis to input transformer and volume control	
7823	Motor—220—volt D. C. motor complete (M1)		6614	Glass—Station selector dial glass	
3488	Pin—Governor (speed) regulator pin		3829	Knob—Phonograph volume control knob— Package of 5	
4597	Screw—Motor mounting screw assembly— Comprising four screws, four spacers, four lockwashers and four nuts		6989	Knob—Range switch or tone control knob— Package of 5	
PICKUP AND ARM ASSEMBLIES			6991	Knob—Station selector knob—Package of 5	
7821	Arm—Pickup arm complete, less escutcheon and pickup		6990	Knob—Volume control knob—Package of 5	
3417	Armature—Pickup armature		3824	Nut—Cap nut for motor board suspension assembly—Package of 4	
6346	Back—Pickup housing back		4601	Plug—4-prong male section of connector plug for reproducer cable	
3385	Coil—Pickup coil (L30)		4602	Plug—7-prong male section of connector plug for reproducer cable	
3386	Cover—Pickup cover		4341	Resistor—Porcelain type—686 ohms (R19, R20)	
3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bushing—5 sets		4678	Ring—Retaining ring for dial glass—Package of 5	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets		4342	Screw—Receiver mounting screw assembly— Comprising four bushings, four screws and four washers	
6335	Pickup—Pickup unit complete		4591	Screw assembly—Receiver chassis mounting assembly—Comprising eight cushions, four screws, four washers and four spacers	
3389	Rod—Automatic brake trip rod with lock nut —Package of 5		4160	Screwdriver—Combination insulated screw- driver and socket wrench for I. F. and R. F. adjustments	
3387	Screw assembly—Pickup mounting screw as- sembly comprising one screw, one nut and one washer—10 sets		4593	Socket—4-contact socket for reproducer cable plug	
3388	Screw—Pickup needle holding screw—Pack- age of 10		4595	Socket—7-contact socket for phonograph in- put cable plug	
3419	Screw—Pickup cover mounting screw—Pack- age of 10		3391	Suspension spring and washer assembly—For motor board—Comprising one bolt, one top spring, one bottom spring, two cup washers, one "C" washer and one nut	
SWITCH ASSEMBLIES			4603	Transformer—Input transformer pack— Comprising one input transformer, one choke coil, one 18,000 ohm resistor, one 25,000 ohm resistor and two 0.01 mfd. capacitors (T3, L20, R41, R42, C50, C51)	
3994	Cover—Motor switch cover		4590	Volume control—Phonograph volume con- trol (R40, S9, S10)	
10184	Plate—Automatic brake latch plate—Package of 5				
10174	Springs—Automatic brake springs—Package of 4				
6896	Switch—Eccentric automatic switch complete				
3322	Switch—Motor switch (S8)				

MODELS 128, 224, 226 AND 322

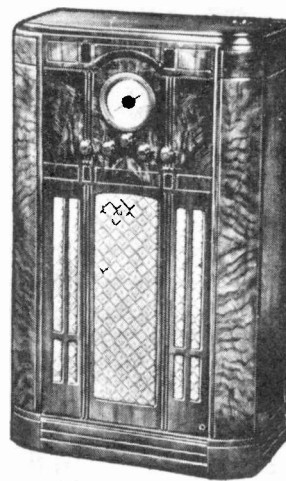
Six-Tube, Three-Band A. C. Receivers and Radio-Phonograph



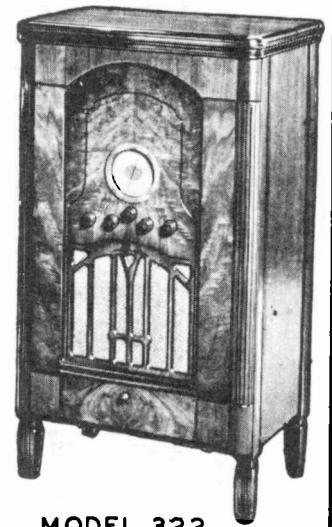
MODEL 128



MODEL 224



MODEL 226

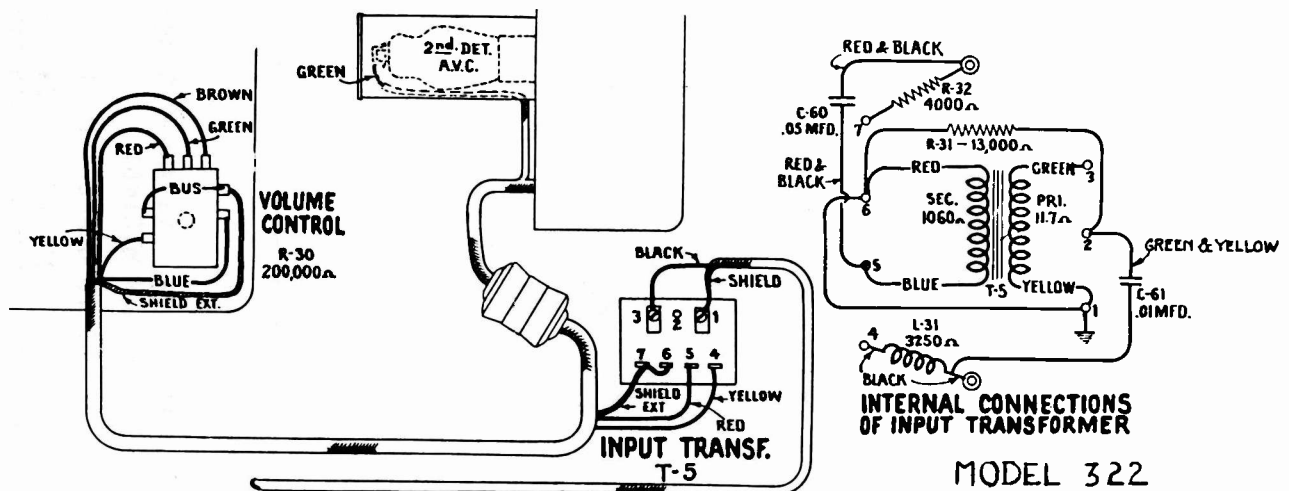


MODEL 322

ELECTRICAL SPECIFICATIONS

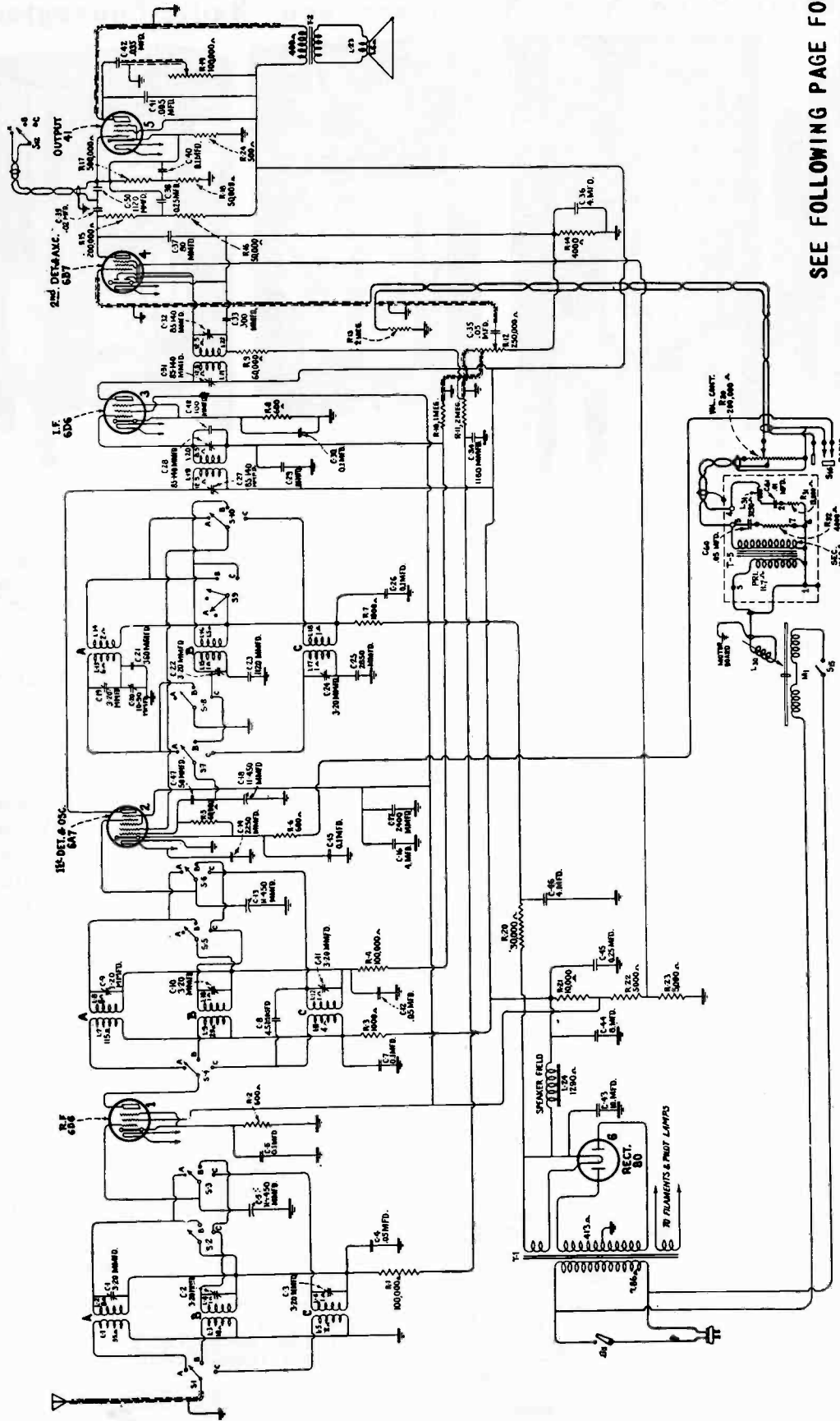
Voltage Rating.....	105-125 Volts and 100-130/195-250 Volts (Double Range Transformer)						
Frequency Rating..25-60 Cycles and 50-60 Cycles						
Power Consumption (RADIO ONLY).....85 Watts (All Frequencies)						
Frequency Rating..25, 30, 40, 50 and 60 Cycles						
Power Consumption (MODEL 322).....130 Watts (60 Cycles)						
Type and Number of Radiotrons.....2 RCA-6D6, 1 RCA-6A7, 1 RCA-6B7, 1 RCA-41, 1 RCA-80—Total, 6						
Tuning Frequency Range.....	<table border="0"> <tr> <td>{</td> <td>Band A— 540 K. C.— 1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—1720 K. C.— 5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—5400 K. C.—18000 K. C.</td> </tr> </table>	{	Band A— 540 K. C.— 1720 K. C.	{	Band B—1720 K. C.— 5400 K. C.	{	Band C—5400 K. C.—18000 K. C.
{	Band A— 540 K. C.— 1720 K. C.						
{	Band B—1720 K. C.— 5400 K. C.						
{	Band C—5400 K. C.—18000 K. C.						
Line-up Frequencies.....460 K. C., 600 K. C., 1720 K. C., 5160 K. C., 18000 K. C.						
Maximum Undistorted Output.....1.9 Watts						
Maximum Output.....3.5 Watts						
Pickup Impedance at 1000 Cycles.....7 Ohms						
Type of Tone Arm.....Inertia						
Turntable Speed.....78 R. P. M. Only						

* NOTE: Model 224, 322 and 1934 Model 128 use type 41 output tube.
 Model 226 and 1935 Model 128 use type 42 output tube.



MODEL 322

Assembly Wiring Diagram



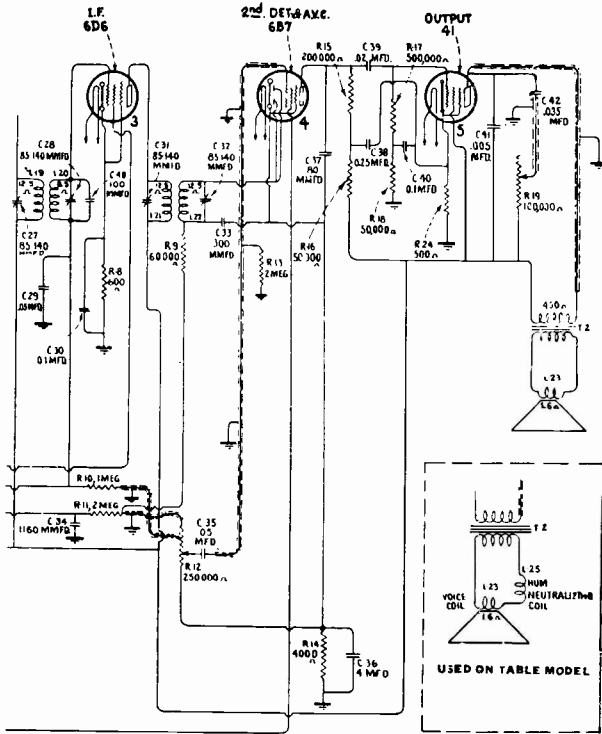
SEE FOLLOWING PAGE FOR VARIATIONS OF MODELS

MODEL 322 - Schematic Circuit Diagram

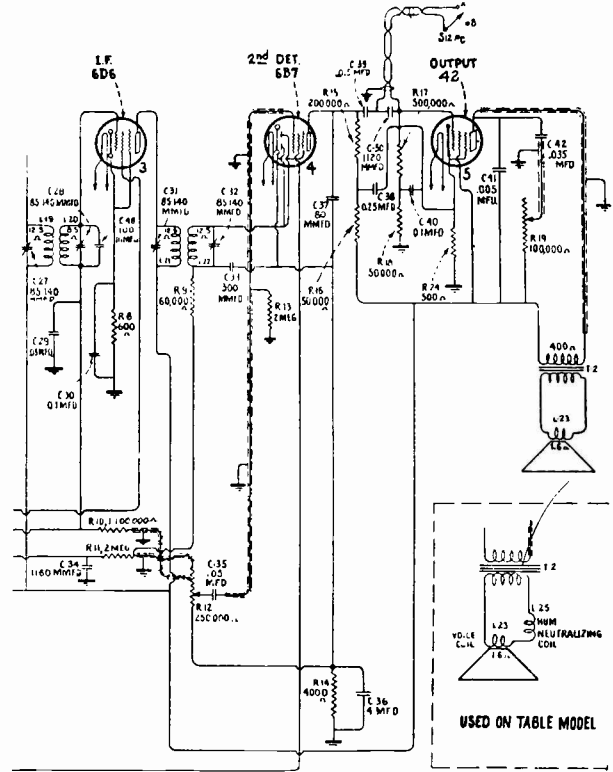
MODELS 128, 224 AND 226 ARE IDENTICAL TO MODEL 322 EXCEPT FOR THE OMISSION OF THE PHONOGRAPH WIRING:

R6 IS CONNECTED DIRECT TO CHASSIS INSTEAD OF THRU THE PHONO-RADIO SWITCH. THE GRID OF 6B7 2ND DET. AND AVC IS CONNECTED DIRECT TO R13 AND C35 INSTEAD OF THRU THE PHONO-RADIO SWITCH.

128, 224, 226 & 322



-Early Production Models

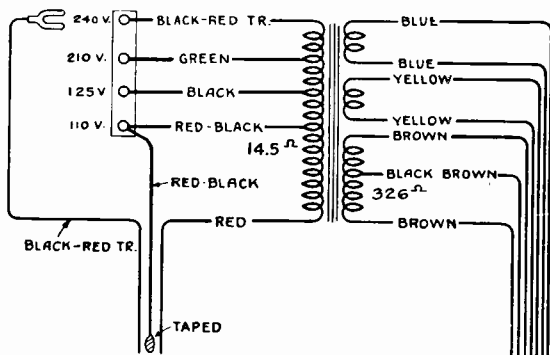


-Late Production Models

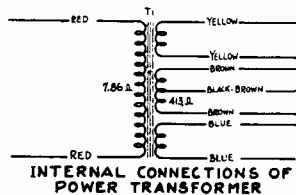
having fidelity change with band position

Variations in Models:

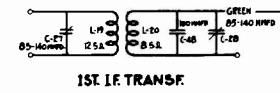
- 1st Models 128 and 224 Early Production - Type 41 output tube.
- 2nd Models 128, 224 and 322 - Type 41 output tube and fidelity change with band position.
- 3rd Models 128 and 226 - Type 42 output tube and fidelity change with band position. C21 is 340 mmfd, C39 is 0.015 mfd, R10 is 1.1 megohm.



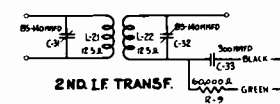
INTERNAL CONNECTIONS OF POWER TRANSF.



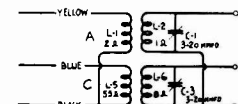
INTERNAL CONNECTIONS OF POWER TRANSF.



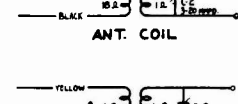
1ST I.F. TRANSF.



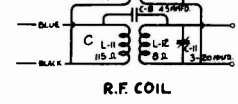
2ND I.F. TRANSF.



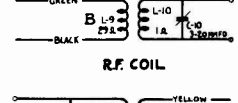
ANT. COIL



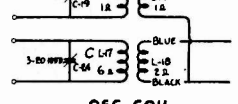
ANT. COIL



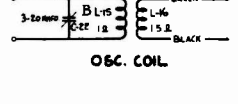
R.F. COIL



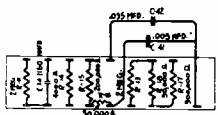
R.F. COIL



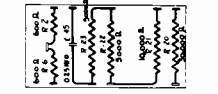
OSC. COIL



OSC. COIL

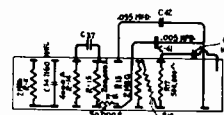


RESISTOR BOARD

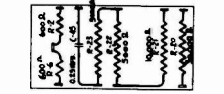


RESISTOR BOARD

EARLY PROD.

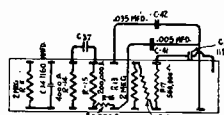


RESISTOR BOARD

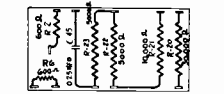


RESISTOR BOARD

LATE PROD.

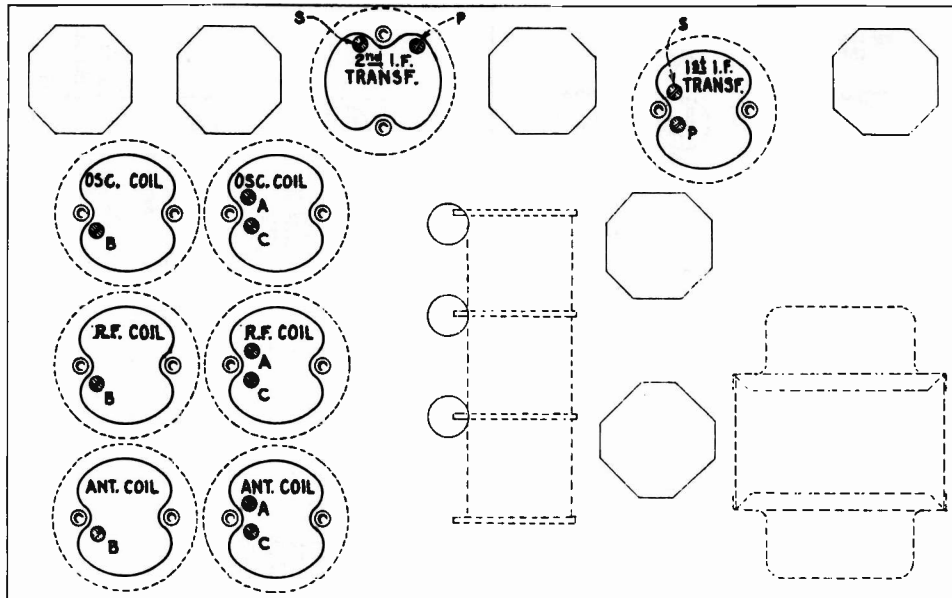


RESISTOR BOARD

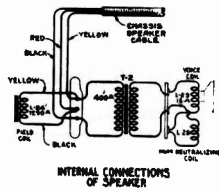
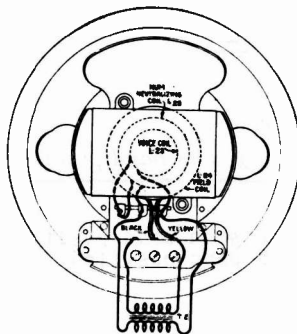


RESISTOR BOARD

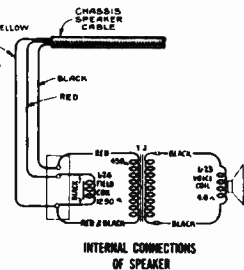
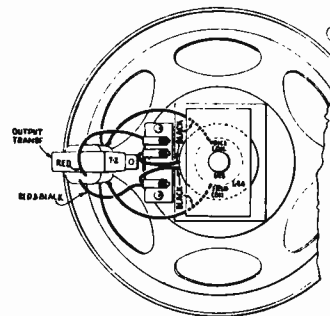
MODEL 322



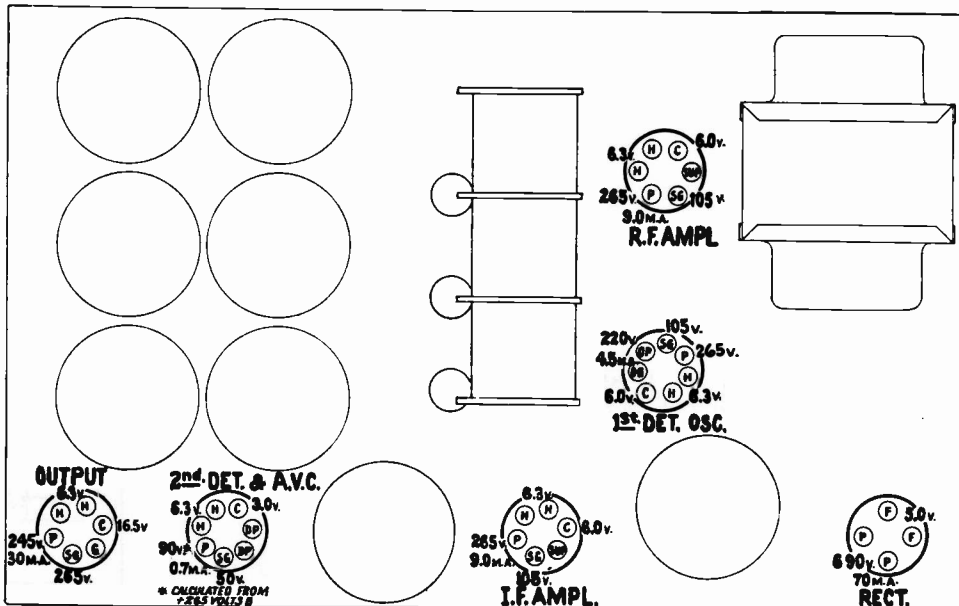
-Location of Line-up Capacitors



-Table Loudspeaker Wiring



-Console Loudspeaker Wiring



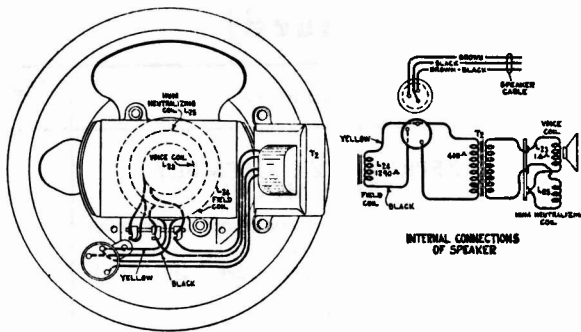
ALL VOLTAGES ARE TO GROUND

-Tube Socket Voltages

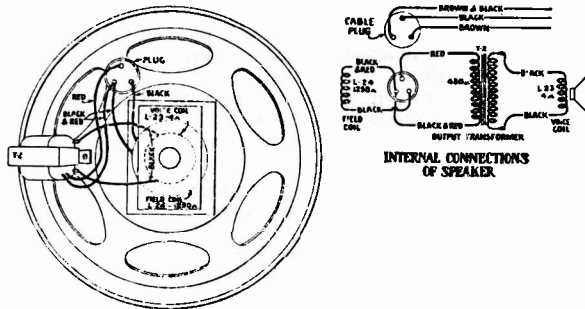
128, 224, 226 & 322

Alignment Procedure

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band scale.



-Table Model Loudspeaker Wiring (with cable plug)



-Console Model Loudspeaker (with cable plug)

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1720 Kc	1720 Kc "A" Band	Osc. R-F & Ant. Trimmers "A" Band
4		600 Kc	600 Kc "A" Band	600 Kc Trimmer Rock Gang
5		Repeat Step 3		
6	Antenna in series with 300 ohms	5160 Kc	5160 Kc "B" Band	Osc. † R-F & Ant. Trimmers "B" Band
7		18000 Kc	18 Mc "C" Band	Osc. † R-F & Ant. Trimmers "C" Band

Osc. tracks 480 Kc above signal on all bands.

† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES		4692	Capacitor pack—Comprising one 0.035 mfd. and one 0.005 mfd. capacitors (C41, C42).	
4427	Bracket—Volume control or tone control mounting bracket.....		7589	Capacitor Pack—Comprising two 4. mfd. capacitors (C16, C46).....	
4729	Cable—2-conductor shielded—From range switch to resistor board.....		4358	Clamp—Electrolytic capacitor mounting clamp	
2747	Cap—Contact cap—Package of 5.....		4516	Coil—Antenna coil "PB" (L3, L4, C2).....	
3861	Capacitor—Adjustable trimmer capacitor (C20).....		7803	Coil—Antenna coil "B & SW" (L1, L2, L5, L6, C1, C3).....	
4442	Capacitor—50 mmfd. (C47).....		4514	Coil—Detector Coil "PB" (L9, L10, C10)...	
4662	Capacitor—80 mmfd. (C37).....		7805	Coil—Detector coil "B & SW" (L7, L8, L11, L12, C8, C9, C11).....	
4811	Capacitor—340 mmfd. (C21).....		7807	Coil—Oscillator coil "B & SW" (L13, L14, L17, L18, C19, C24).....	
4413	Capacitor—360 mmfd. (C21).....		4511	Coil—Oscillator coil "PB" (L15, L16, C22)...	
4412	Capacitor—1120 mmfd. (C23).....		7801	Condenser—3-gang variable tuning condenser (C5, C13, C18).....	
4634	Capacitor—1120 mmfd. (C50).....		4340	Lamp—Dial lamp—Package of 5.....	
4515	Capacitor—1160 mmfd. (C34).....		3632	Resistor—500 ohms—Carbon type—1 watt (R24)—Package of 5.....	
4670	Capacitor—2250 (C14).....		3218	Resistor—600 ohms—Carbon type—¼ watt (R2, R6, R8)—Package of 5.....	
4523	Capacitor—2400 mmfd. (C17).....		4370	Resistor—1000 ohms—Carbon type—¼ watt (R3, R7)—Package of 10.....	
4524	Capacitor—2850 mmfd. (C25).....		3997	Resistor—4000 ohms—Carbon type—¼ watt (R14)—Package of 5.....	
4792	Capacitor—.015 mfd. (C39).....		6318	Resistor—10,000 ohms (R21).....	
4435	Capacitor—.02 mfd. (C39).....		3114	Resistor—50,000 ohms—Carbon type—¼ watt (R16, R18)—Package of 5.....	
4518	Capacitor—.05 mfd. (C35).....		3602	Resistor—60,000 ohms—Carbon type—¼ watt (R5)—Package of 5.....	
4417	Capacitor—.05 mfd. (C4, C12, C29).....		3118	Resistor—100,000 ohms—Carbon type—¼ watt (R1, R4)—Package of 5.....	
3877	Capacitor—.1 mfd. (C40).....				
4415	Capacitor—.1 mfd. (C6, C15, C30).....				
4645	Capacitor—.1 mfd. (C7, C26).....				
3597	Capacitor—.25 mfd. (C38, C45).....				
4525	Capacitor—4.0 mfd. (C36).....				
4428	Capacitor—8 mfd. (C44).....				
7790	Capacitor—10 mfd. (C43).....				

REPLACEMENT PARTS—(Continued)

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR ASSEMBLIES					
4577	Connector—Male section two-prong motor connector plug.....		4678	Ring—Dial glass retaining ring —Package of 5.....	
8989	Motor—105-125 volts—60 cycle motor complete.....		4446	Screw—Chassis mounting screw assembly comprising 4 spacers, 4 screws, 4 lockwashers, 4 washers, 8 cushions—For table model.....	
8990	Motor—105-125 volts—50 cycle motor complete.....		4945	Screw—Chassis mounting screw assembly—Comprising 4 spacers, 4 screws, 4 lockwashers, 4 washers and 8 cushions—For console model.....	
8991	Motor—105-125 volts—40 cycle motor complete.....		4613	Screw—Number 8-32-7/16 headless set screw for knobs—Package of 10.....	
8992	Motor—105-125 volts—25 cycle motor complete.....		MISCELLANEOUS ASSEMBLIES		
8993	Rotor and shaft—For 105-125 volt—60 cycle motor.....		MODEL 322		
8995	Rotor and shaft—For 105-125 volt—50 cycle motor.....		3166	Bolt—Reproducer mounting assembly—Comprising 2 bolts, 2 nuts, 2 lockwashers and 1 plate.....	
8999	Rotor and shaft—For 105-125 volt—25 cycle motor.....		4677	Bezel—Station selector (escutcheon) bezel...	
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....		3430	Box—Needle box with lid—Package of 2...	
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....		4696	Cable—2-conductor motor cable with section of connector plug—From receiver chassis to motor cord connector.....	
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....		4695	Cable—3-conductor shielded cable with grid and female section of connector—From receiver chassis to volume control cable connector.....	
3817	Stud—Motor mounting stud—Package of 3.....		7843	Cable—5-conductor shielded with male section of connector plug—From phonograph volume control to input transformer.....	
3398	Motor mounting—Spring and washer assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer.....		4153	Connector—Female section (4-contact) of connector for cable Stock No. 4695.....	
PICKUP AND ARM ASSEMBLIES					
7842	Arm—Pickup arm complete, less escutcheon and pickup.....		4573	Connector—Female section (2-contact) of connector plug for cable Stock No. 4696.....	
3417	Armature—Pickup armature.....		6614	Glass—Station selector dial glass.....	
6346	Back—Pickup housing back.....		3829	Knob—Phonograph volume control knob—Package of 5.....	
3385	Coil—Pickup coil (L30).....		4449	Knob—Station selector volume control, range switch or operating switch knob—Package of 5.....	
3386	Cover—Pickup cover.....		6123	Plug—Male section (4-prong) of phonograph volume control and input transformer cable plug.....	
3521	Cover—Magnetic pickup back cover.....		3396	Receptacle—Needlereceptacle.....	
3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bushing—5 sets.....		4678	Ring—Dial retaining ring—Package of 5...	
3516	Damper assembly—Comprising one upper and one lower damper, one upper bushing and one lower bearing—Located in bottom of pickup base.....		4393	Screw—8-32-5/16" headless set screw for knob No. 3829—Package of 10.....	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....		4698	Screw—Chassis mounting screw assembly—Comprising 1 screw, 1 lockwasher, 1 washer, 2 cushions and 1 spacer.....	
6335	Pickup—Pickup unit complete.....		3391	Suspension spring and washer assembly—For motor board—Comprising 1 bolt, 1 top spring, 1 bottom spring, 2 cup washers, 1 "C" washer and 1 nut.....	
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....		7844	Transformer—Phonograph input transformer pack comprising one transformer, one reactor, one 4000 ohm and one 13,000 ohm resistor, one .01 mfd. and one .05 mfd. capacitor (T5, L31, R31, R32, C60, C61)...	
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—10 sets.....		6766	Volume control—Phonograph volume control (R30, S16).....	
3388	Screw—Pickup needle holding screw—Package of 10.....				
3419	Screw—Pickup cover mounting screw—Package of 10.....				
MISCELLANEOUS ASSEMBLY					
MODELS 128 224 & 226					
4677	Bezel—Station selector dial (escutcheon) bezel				
4661	Dial—Station selector dial.....				
6614	Glass—Station selector dial glass.....				
4520	Indicator—Station selector indicator pointer.....				
4449	Knob—Station selector, volume control, tone control, range switch or operating switch knob—Package of 5.....				

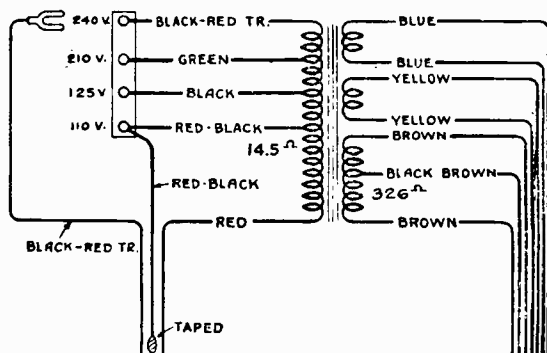
MODELS 128-E 224-E and 322-E

Six-Tube, Three-Band A. C. Receivers and Radio-Phonograph

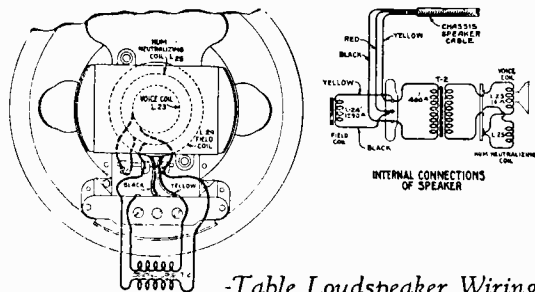
NOTE: Cabinets identical in appearance to Models 128, 224 and 322.

ELECTRICAL SPECIFICATIONS

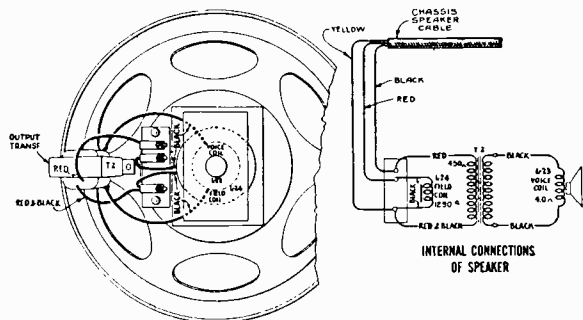
Voltage Rating.....	105-125 Volts and 105-130/200-250 Volts (Double Range Transformer)
Frequency Rating.....	50 and 60 Cycles
Power Consumption.....	(RADIO ONLY. 85 WATTS) 130 Watts (60 Cycles)
Type and Number of Radiotrons.....	2 RCA-6D6, 1 RCA-6A7, 1 RCA-6B7, 1 RCA-41, 1 RCA-80—Total, 6
Tuning Frequency Range.....	{ Band A— 140 K. C.— 410 K. C. Band B— 540 K. C.— 1720 K. C. Band C— 5400 K. C.— 18000 K. C.
Line-up Frequencies.....	175 K. C., 410 K. C., 460 K. C., 600 K. C., 1720 K. C., 18000 K. C.
Maximum Undistorted Output.....	1.9 Watts
Maximum Output.....	3.5 Watts
Pickup Impedance at 1000 Cycles.....	7 Ohms
Type of Tone Arm.....	Inertia
Turntable Speed.....	78 R. P. M. Only



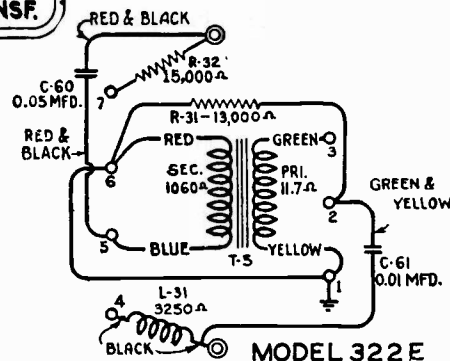
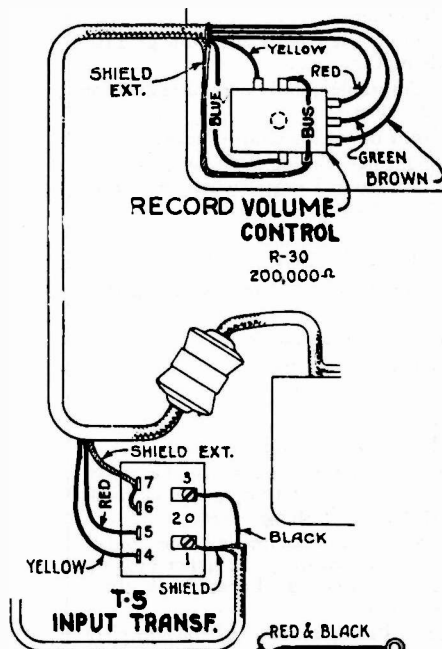
-Universal Transformer Connections



-Table Loudspeaker Wiring



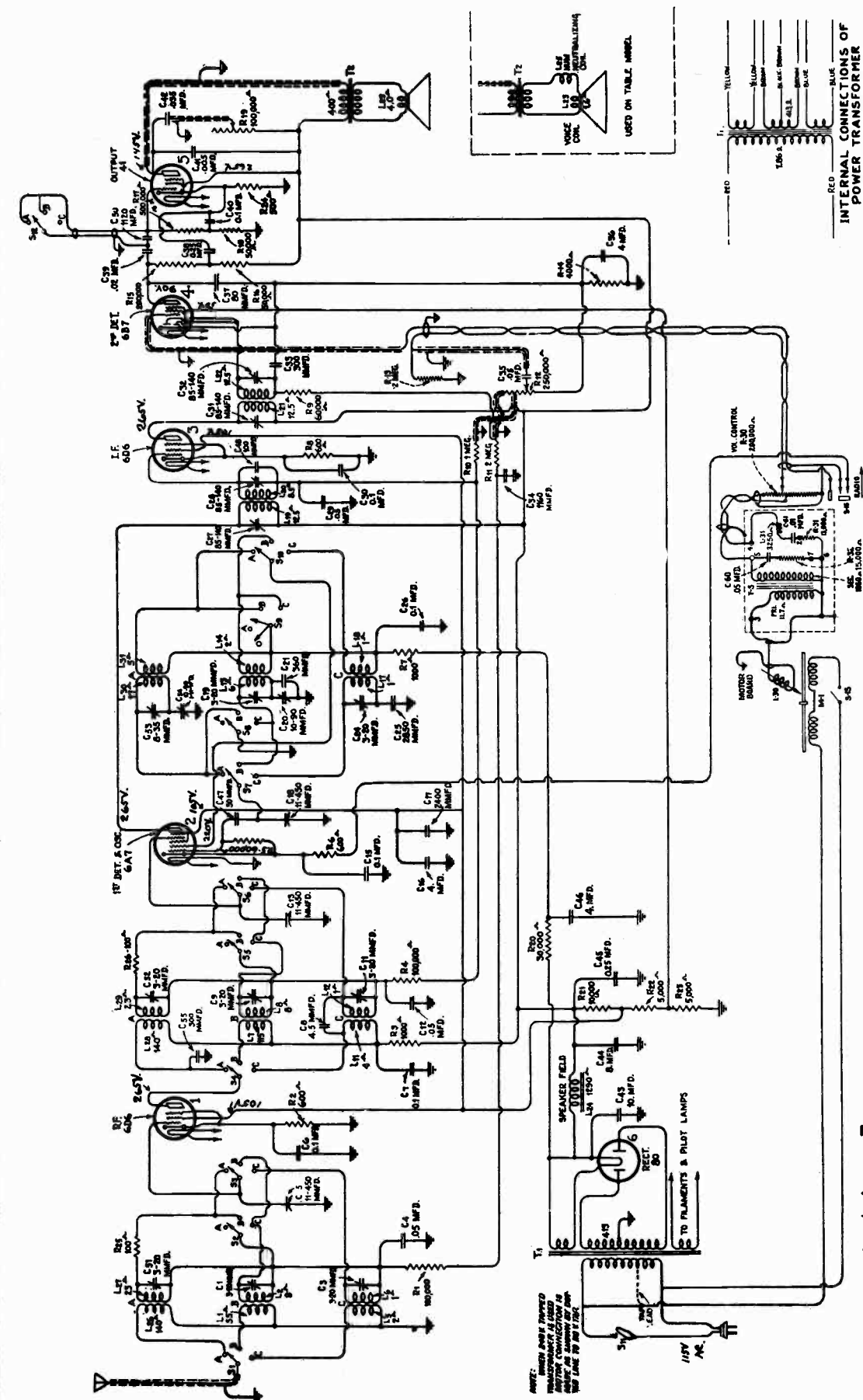
Console Loudspeaker Wiring



322 E INTERNAL CONNECTIONS OF INPUT TRANSFORMER

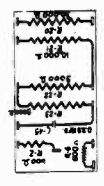
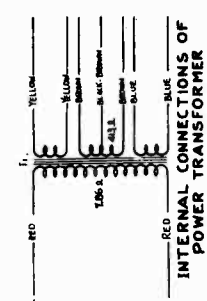
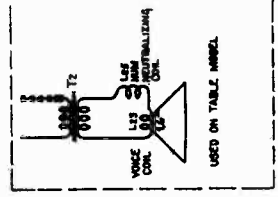
Assembly Wiring Diagram—Some models may have R-32 consisting of a 4000-ohm resistor with an additional 10,000-ohm resistor substituted for the jumper between terminals 6 and 7 of the input transformer.

128E, 224E & 322E

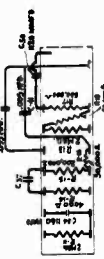


Model 322E
 -Schematic Circuit Diagram—Some models may have R-32 comprised of two resistors, one internal (4000-ohm) and one external (10,000-ohm)

NOTE: In Models 128-E and 224-E, 1st Det. cathode resistor R6 is connected direct to chassis, 2nd Det. control grid is connected direct to junction of R13 and C35.



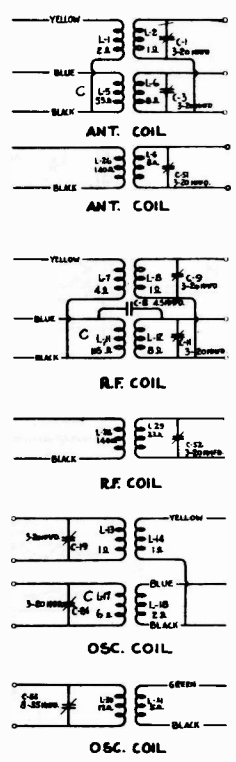
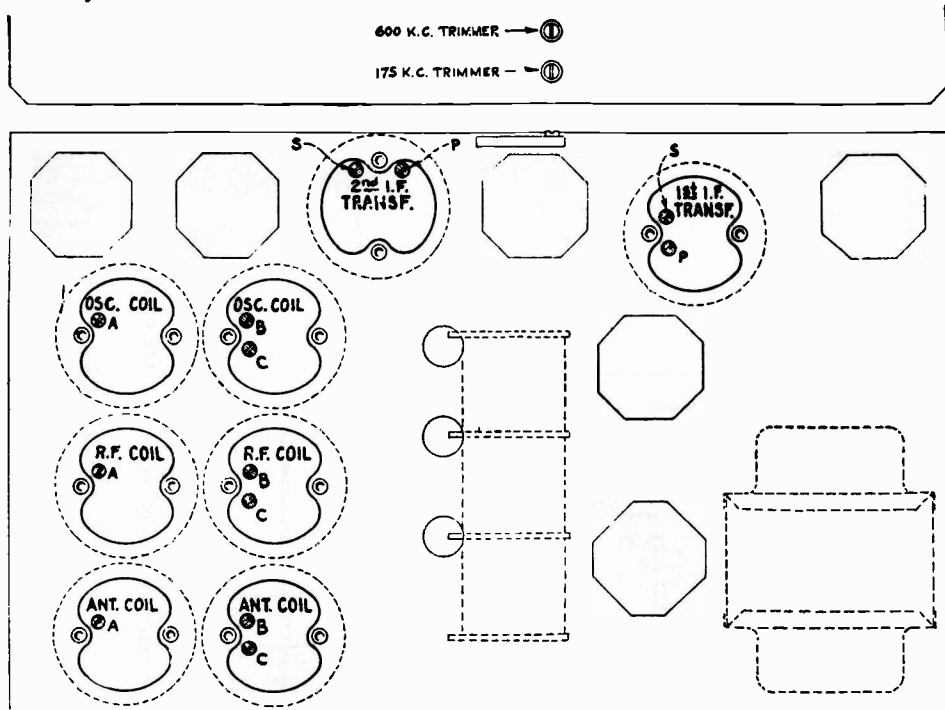
RESISTOR BOARD



RESISTOR BOARD

NOTE: THESE PARTS SHOWN TRANSFORMER AS USED IN THIS CONNECTION IS NOT THE SAME AS SHOWN IN THE

128E, 224E & 322E



Location of Line-up Capacitors

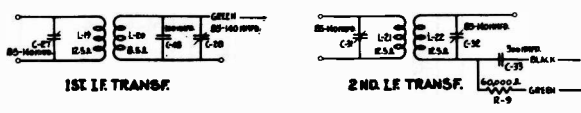
ALIGNMENT PROCEDURE

DIAL CALIBRATION:

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC. TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT	
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc #B Band	S&P of 2nd I-F Trans.	
2	1st Det. Grid in series with 0.01mfd			S&P of 1st I-F Trans.	
3	Antenna in series with 200 mmfd	410 Kc	410 Kc #A Band	Osc. R-F & Ant. Trimmers #A Band	
4		175 Kc	175 Kc #A Band	175 Kc Trimmer Rock Gang	
5		<i>Repeat Step 3</i>			
6		1720 Kc	1720 Kc #B Band	Osc. R-F & Ant. Trimmers #B Band	
7		600 Kc	600 Kc #B Band	600 Kc Trimmer #B Band	
8		<i>Repeat Step 6</i>			
9		Antenna in series with 300 ohms	18000 Kc	18 Mc #C Band	Osc. † R-F & Ant. Trimmers #C Band

Osc. tracks 460 Kc above signal on all bands.
 † Use minimum capacity peak.
 ▲ Use maximum capacity peak - ROCK GANG.



REPLACEMENT PARTS

Stock No	DESCRIPTION
RECEIVER ASSEMBLIES	
4427	Bracket—Volume control or tone control mounting bracket
4729	Cable—2-conductor shielded—From range switch to resistor board
2747	Cap—Contact cap—Package of 5
3861	Capacitor—Adjustable trimmer capacitor (C20)
4442	Capacitor—50 mmfd. (C47)
4662	Capacitor—80 mmfd. (C37)
3981	Capacitor—300 mmfd. (C55)
4113	Capacitor—360 mmfd. (C21)
4634	Capacitor—1120 mmfd. (C50)
4515	Capacitor—1160 mmfd. (C34)
4670	Capacitor—2250 (C14)
4523	Capacitor—2400 mmfd. (C17)
4524	Capacitor—2850 mmfd. (C25)
4435	Capacitor—.02 mfd. (C39)
4518	Capacitor—.05 mfd. (C35)
4417	Capacitor—.05 mfd. (C4, C12, C29)
3877	Capacitor—.1 mfd. (C40)

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
4415	Capacitor—.1 mfd. (C6, C15, C30).....		3572	Socket—7-contact Radiotron socket.....	
4645	Capacitor—.1 mfd. (C7, C26).....		4379	Strip—Antenna terminal engraved "ANT GND".....	
3597	Capacitor—.25 mfd. (C38, C45).....		4684	Switch—Operating switch (S11).....	
4525	Capacitor—.40 mfd. (C36).....		4728	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10).....	
4428	Capacitor—.8 mfd. (C44).....		4517	Tone control (R19).....	
7790	Capacitor—10 mfd. (C43).....		4431	Transformer—First intermediate frequency transformer (L19, L20, C27, C28, C48).....	
4692	Capacitor pack—Comprising one 0.035 mfd. and one 0.005 mfd. capacitors (C41, C42).....		4433	Transformer—Second intermediate frequency transformer (L21, L22, C31, C32, C33, R9).....	
7589	Capacitor pack—Comprising two 4. mfd. capacitors (C16, C46).....		9511	Transformer—Power transformer 105-125 volts, 50-60 cycles (T1).....	
4358	Clamp—Electrolytic capacitor mounting clamp.....		9512	Transformer—Power transformer 105-125 volts, 25-40 cycles.....	
4734	Coil—Antenna coil "A" (L26, L27, C51).....		9513	Transformer—Power transformer—105-250 volts—40-60 cycles.....	
7803	Coil—Antenna coil "B & SW" (L1, L2, L5, L6, C1, C3).....		4519	Volume control (R12).....	
4751	Coil—Detector coil "A" (L28, L29, C52).....			DRIVE ASSEMBLIES	
7805	Coil—Detector coil "B & SW" (L7, L8, L11, L12, C8, C9, C11).....		4362	Arm—Band indicator operating arm.....	
7807	Coil—Oscillator coil "B & SW" (L13, L14, L17, L18, C19, C24).....		10194	Ball—Steel ball for condenser drive assembly—Package of 20.....	
4733	Coil—Oscillator coil "A" (L30, L31, C53).....		4422	Clutch—Clutch drive assembly for variable condenser drive.....	
7801	Condenser—3-gang variable tuning condenser (C5, C13, C18).....		4732	Dial—Station selector dial.....	
4340	Lamp—Dial lamp—Package of 5.....		4510	Drive—Tuning condenser drive assembly.....	
3632	Resistor—500 ohms—Carbon type—1 watt (R24)—Package of 5.....		*4361	Indicator—Band indicator (celluloid).....	
3218	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R6, R8)—Package of 5.....		4704	Indicator—Band indicator (celluloid).....	
4370	Resistor—1000 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R7)—Package of 10.....		4520	Indicator—Station selector indicator pointer.....	
3997	Resistor—4000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		3943	Screen—Dial light screen (celluloid)—Package of 2.....	
6318	Resistor—10,000 ohms (R21).....		3993	Screw—Number 6-32-5/32" square head set screws for band indicator operating arm—Package of 10.....	
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16, R18)—Package of 5.....		4669	Screw—Number 8-32-5/32" set screw for variable condenser drive assembly—Package of 10.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....		4377	Spring—Band indicator and arm tension spring—Package of 5.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R4)—Package of 5.....		4378	Stud—Band indicator operating arm stud—Package of 5.....	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R15)—Package of 5.....			REPRODUCER ASSEMBLY TABLE MODEL	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R17)—Package of 5.....		4526	Cable—3-conductor—Reproducer cable.....	
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....		9579	Coil—Field coil (L24).....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R11, R13)—Package of 5.....		9533	Cone—Reproducer cone mounted and centered on housing.....	
3413	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R22, R23)—Package of 5.....		7818	Reproducer complete.....	
4513	Resistor—30,000 ohms—Carbon type—3 watt (R20).....		4818	Transformer—Output transformer (T2).....	
4521	Shield—Antenna R. F. or oscillator coil shield.....			REPRODUCER ASSEMBLY CONSOLE MODEL	
*4145	Shield—First detector or output Radiotron shield.....		4473	Board—Terminal board assembly.....	
*4103	Shield—I. F. amplifier Radiotron shield.....		9460	Coil—Field coil, magnet and cone support (L24).....	
*6955	Shield—R. F. amplifier Radiotron shield.....		8935	Cone—Reproducer cone (L23)—Package of 5.....	
3942	Shield—First detector or output Radiotron shield.....		9527	Reproducer—Complete.....	
7487	Shield—I. F. amplifier Radiotron shield.....		4472	Transformer—Output transformer (T2).....	
4705	Shield—R. F. amplifier Radiotron shield.....			*USED ON 128E & 224-E only	
3782	Shield—Second detector Radiotron shield.....				
3529	Socket—Dial lamp socket.....				
3859	Socket—4-contact Radiotron socket.....				
6676	Socket—6-contact output Radiotron socket.....				
7485	Socket—6-contact Radiotron socket.....				

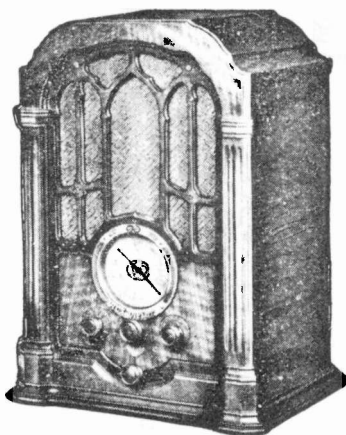
128E, 224E & 322E

REPLACEMENT PARTS—Continued

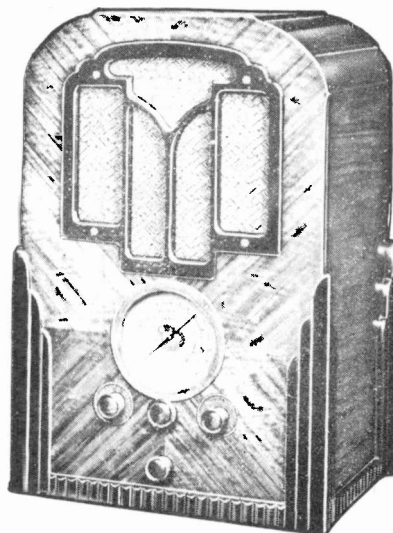
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MOTOR ASSEMBLIES			MISCELLANEOUS ASSEMBLY 128E & 224E		
4577	Connector—Male section two-prong motor connector plug.....		4677	Bezel—Station selector dial (escutcheon) bezel	
8989	Motor—105-125 volts—60 cycle motor complete.....		6614	Glass—Station selector dial glass.....	
8990	Motor—105-125 volts—50 cycle motor complete.....		4520	Indicator—Station selector indicator pointer.	
8991	Motor—105-125 volts—40 cycle motor complete.....		4449	Knob—Station selector, volume control, tone control, range switch or operating switch knob—Package of 5.....	
8992	Motor—105-125 volts—25 cycle motor complete.....		4678	Ring—Dial glass retaining ring—Package of 5.....	
8993	Rotor and shaft—For 105-125 volt—60 cycle motor.....		4527	Screw—Chassis mounting screw assembly comprising 4 spacers, 4 screws, 4 lockwashers, 4 washers, 8 cushions—For table model.....	
8995	Rotor and shaft—For 105-125 volt—50 cycle motor.....		4685	Screw—Chassis mounting screw assembly—Comprising 4 spacers, 4 screws, 4 lockwashers, 4 washers and 8 cushions—For console model.....	
8999	Rotor and shaft—For 105-125 volt—25 cycle motor.....		4632	Screw—Number 8-32-7/16 headless set screw for knobs—Package of 10.....	
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....		MISCELLANEOUS ASSEMBLIES 322 E		
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....		3166	Bolt—Reproducer mounting assembly—Comprising 2 bolts, 2 nuts, 2 lockwashers and 1 plate.....	
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....		7837	Bezel—Station selector (escutcheon) bezel...	
3817	Stud—Motor mounting stud—Package of 3..		3430	Box—Needle box with lid—Package of 2...	
3398	Motor mounting—Spring and washer assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer.....		4696	Cable—2-conductor motor cable with section of connector plug—From receiver chassis to motor cord connector.....	
PICKUP AND ARM ASSEMBLIES			4695	Cable—3-conductor shielded cable with grid and female section of connector—From receiver chassis to volume control cable connector.....	
7842	Arm—Pickup arm complete, less escutcheon and pickup.....		7843	Cable—5-conductor shielded with male section of connector plug—From phonograph volume control to input transformer.....	
3417	Armature—Pickup armature.....		4153	Connector—Female section (4-contact) of connector for cable Stock No. 4695.....	
6346	Back—Pickup housing back.....		4573	Connector—Female section (2-contact) of connector plug for cable Stock No. 4696..	
3385	Coil—Pickup coil (L30).....		6614	Glass—Station selector dial glass.....	
3386	Cover—Pickup cover.....		3829	Knob—Phonograph volume control knob—Package of 5.....	
3521	Cover—Magnetic pickup back cover.....		4449	Knob—Station selector volume control, range switch or operating switch knob—Package of 5.....	
3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bushing—5 sets.....		6123	Plug—Male section (4-prong) of phonograph volume control and input transformer cable plug.....	
3516	Damper assembly—Comprising one upper and one lower damper, one upper bushing and one lower bearing—Located in bottom of pickup base.....		3396	Receptacle—Needle receptacle.....	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....		4678	Ring—Dial retaining ring—Package of 5...	
6335	Pickup—Pickup unit complete.....		4393	Screw—8-32-5/16" headless set screw for knob No. 3829—Package of 10.....	
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....		4698	Screw—Chassis mounting screw assembly—Comprising 1 screw, 1 lockwasher, 1 washer, 2 cushions and 1 spacer.....	
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—10 sets.....		3391	Suspension spring and washer assembly—For motor board—Comprising 1 bolt, 1 top spring, 1 bottom spring, 2 cup washers, 1 "C" washer and 1 nut.....	
3388	Screw—Pickup needle holding screw—Package of 10.....		7844	Transformer—Phonograph input transformer pack comprising one transformer, one reactor, one 15,000 ohm and one 13,000 ohm resistor, one .01 mfd. and one .05 mfd. capacitor (T5, L31, R31, R32, C60, C61)	
3419	Screw—Pickup cover mounting screw—Package of 10.....		6766	Volume control—Phonograph volume control (R30, S16).....	
SWITCH ASSEMBLIES					
3994	Cover—Motor switch cover.....				
10184	Plate—Automatic brake latch plate—Package of 5.....				
10174	Springs—Automatic brake springs—Package of 4.....				
6896	Switch—Eccentric automatic switch complete.....				
3322	Switch—Motor switch (S15).....				
TURNTABLE ASSEMBLIES					
7084	Cover—Turntable cover.....				
7838	Turntable complete.....				

Models 140, 141, 141-E, 240, 240-E, 340 and 340-E

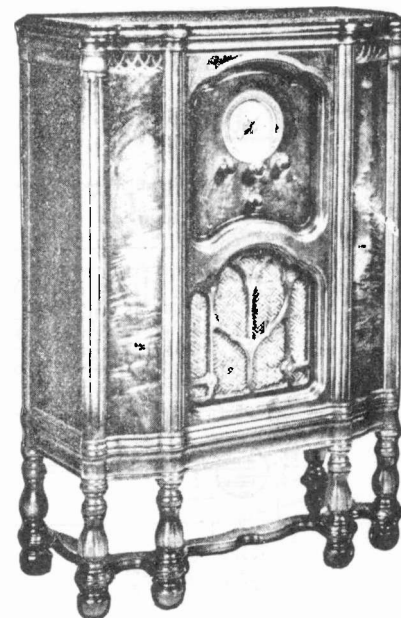
Eight-Tube, Four and Five-Band, Superheterodyne, A. C. Receivers and Radio-Phonographs



MODEL 140



MODELS 141 & 141E



MODELS 240 & 240E

Electrical Specifications

Voltage Rating.....100-125 Volts and 200-250 Volts

Frequency Rating
25-60 (100-125 Volts Only) and 50-60 Cycles

Power Consumption. **RADIO ONLY**110 Watts

MODELS 340 & 340E

RADIO & PHONOGRAPH

Frequency Rating.....25, 30, 50 and 60 Cycles

Power Consumption.....140 Watts

Type and Number of Radiotrons

3 RCA-58, 1 RCA-2A7, 1 RCA-2B7, 1 RCA-56,
1 RCA-53, 1 RCA-80—Total, 8

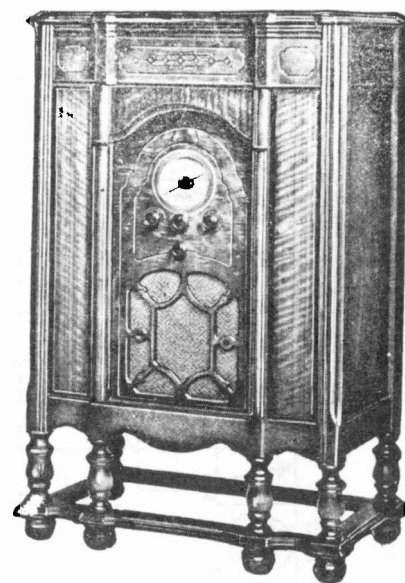
Type of Circuit

Straight Super-Heterodyne for all frequencies with
Class "B" Output Stage.

Undistorted Output.....6 Watts

This all-wave super-heterodyne receiver is of the continuous tuning type, utilizing a straight super-heterodyne circuit in all bands. The bands are as follows:

Selector Switch Position	Frequency Range (Kilocycles)	Wave-Length Range (Meters)
X	150-410	2000-732
A	540-1500	555-200
B	1500-3900.	200-77.0
C	3900-10000	77.0-300
D	8000-18000	37.5-16.7



MODELS 340 & 340E

Models 140, 141 and 240 are 4 band receivers.

Models 141-E and 240-E are 5 band receivers.

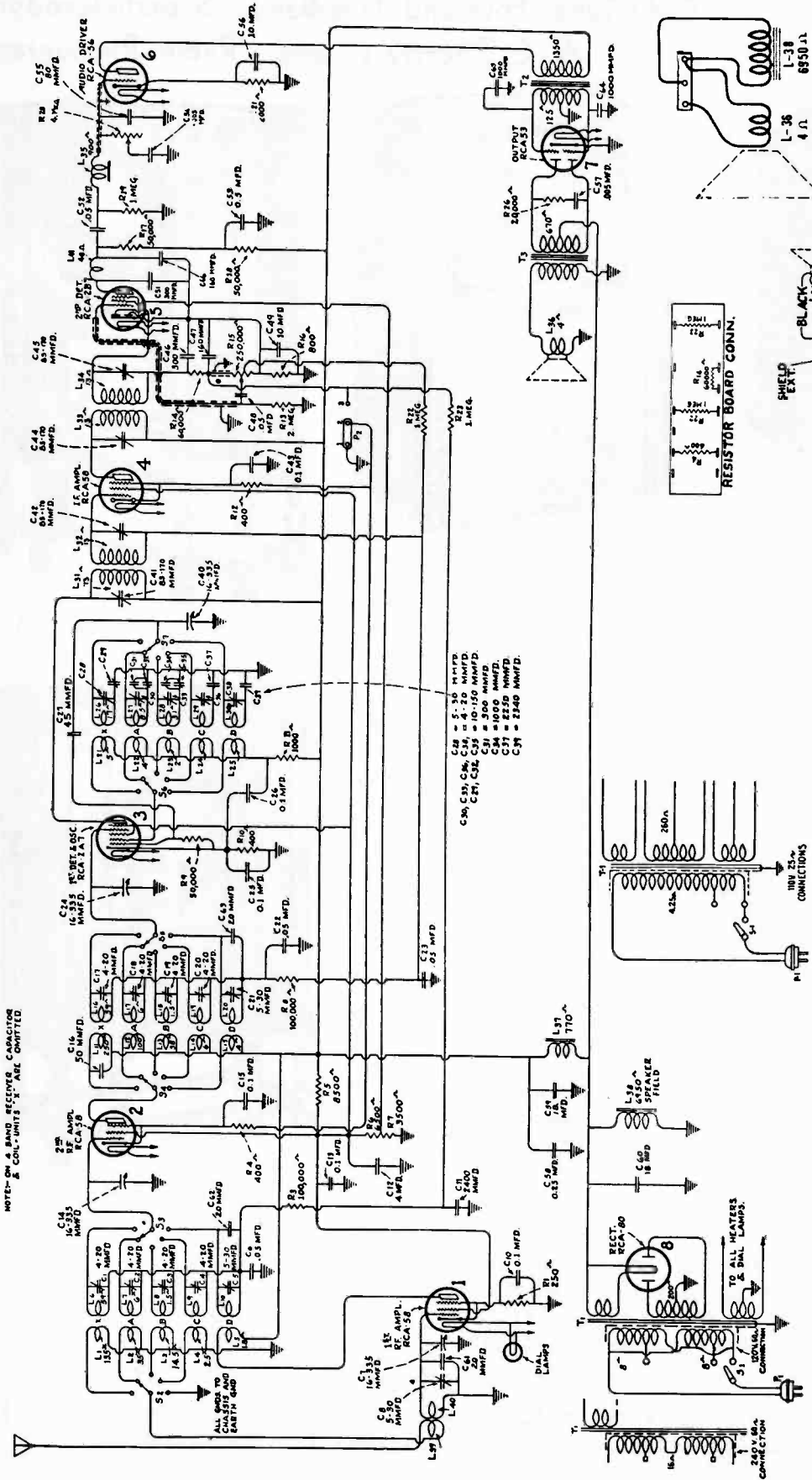
Model 340 is 4 band radio-phonograph.

Model 340-E is 5 band radio-phonograph.

Four band radio receivers and radio phonographs do not have "X" band.

Two types of each model were produced, the first (1933) used internal I-F Transformers and the second (1934) used external I-F Transformers.

140, 141, 141E, 240, 240E, 340 & 340E



Schematic Circuit Diagram

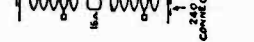
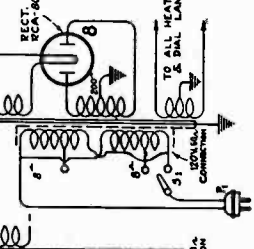
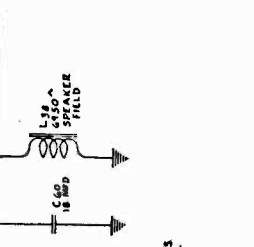
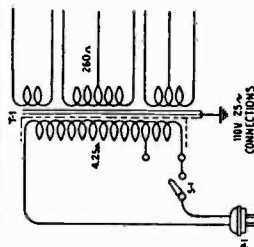
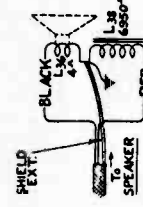
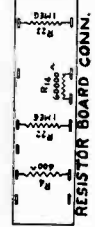
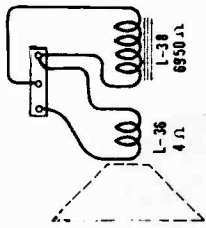
MODELS 140, 141, 141-E, 240 AND 240-E
(External I-F Trans.)

NOTE: Models with internal I-F Trans.

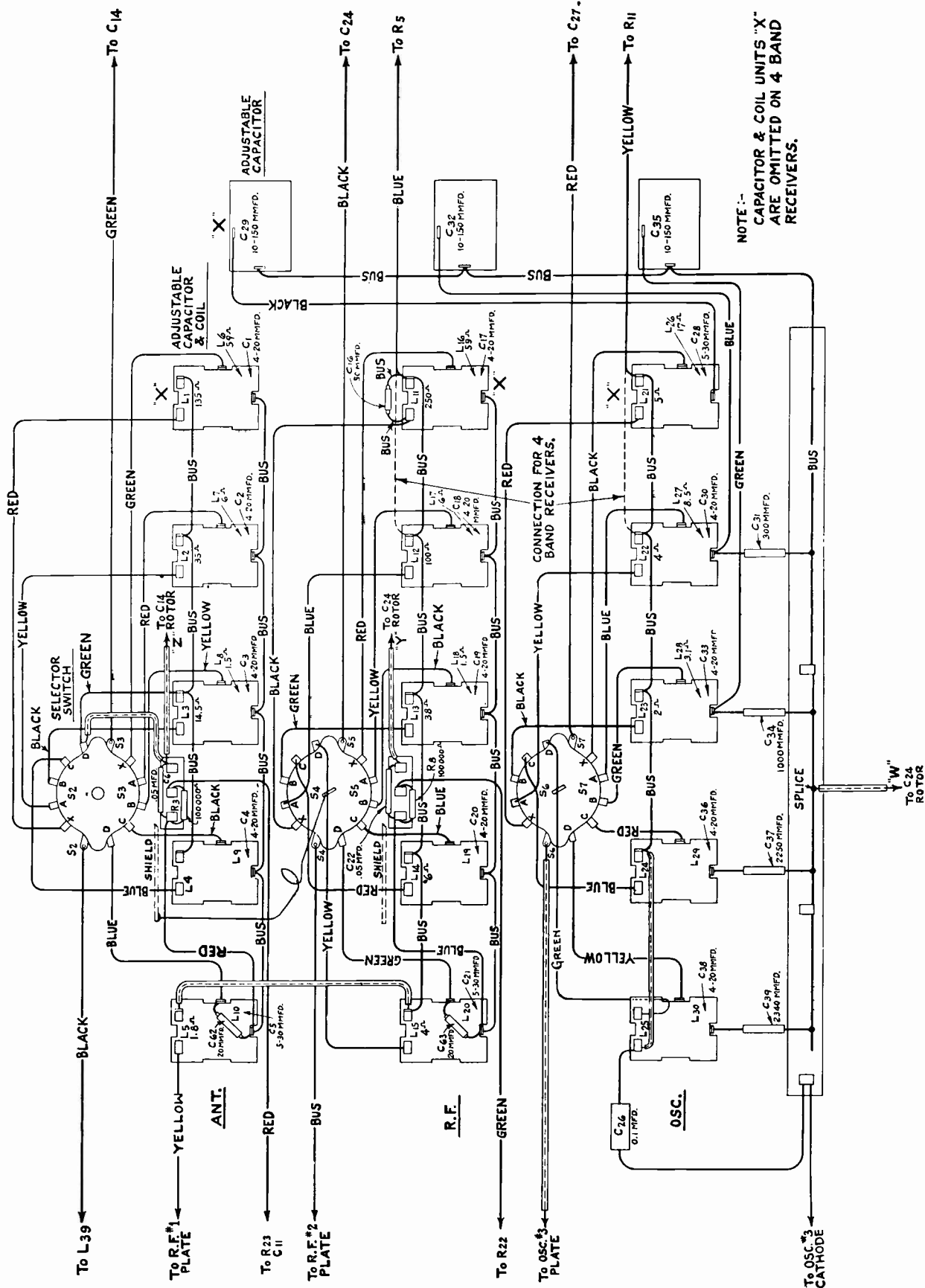
- C51 is 1500 mfd
- C57 is 0.01 mfd
- C60 is 10 mfd
- C66 omitted
- L41 omitted
- R20 is 1 megohm
- R26 is 15,000 ohms

See audio schematic 1933 models.

INTERNAL CONNECTIONS OF SPEAKER



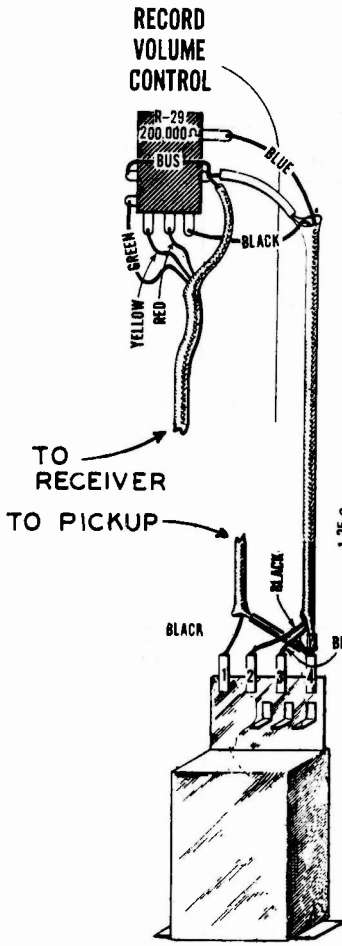
140, 141, 141E, 240, 240E, 340 & 340E



NOTE :-
CAPACITOR & COIL UNITS "X"
ARE OMITTED ON 4 BAND
RECEIVERS.

Wiring Diagram of Coil Assembly

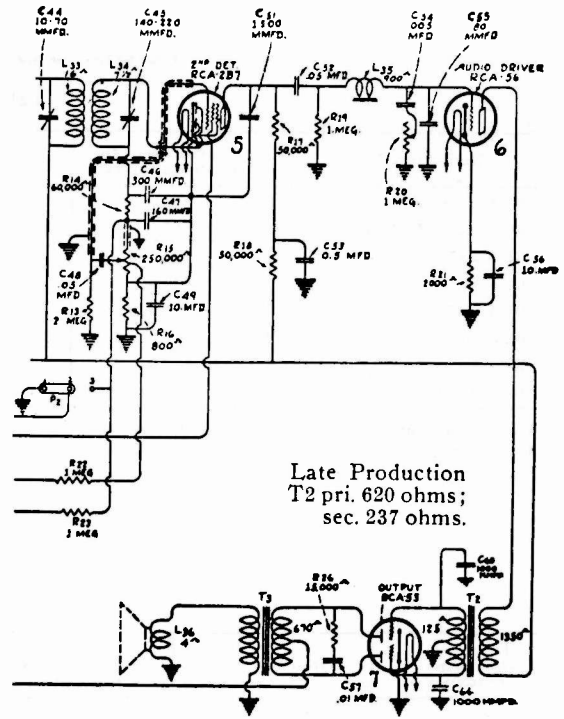
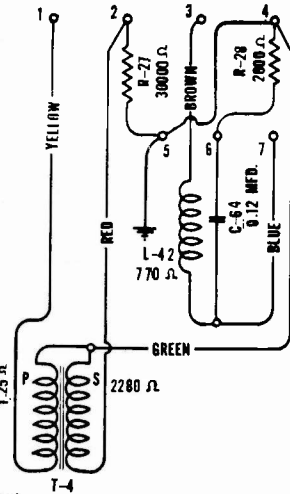
140, 141, 141E, 240, 240E, 340 & 340E



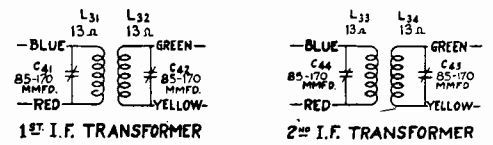
INPUT TRANSFORMER PACK

Phono. connections Models 340 and 340-E

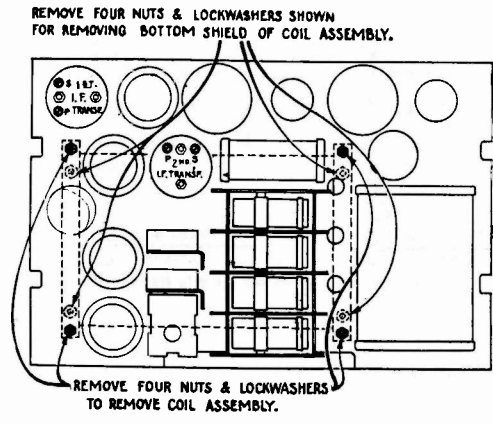
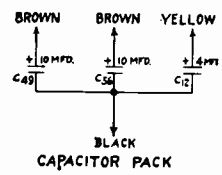
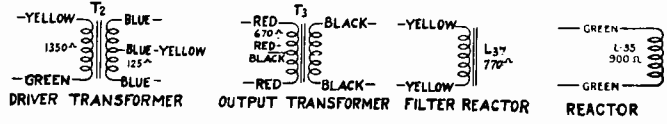
INTERNAL CONNECTIONS OF INPUT TRANSFORMER PACK



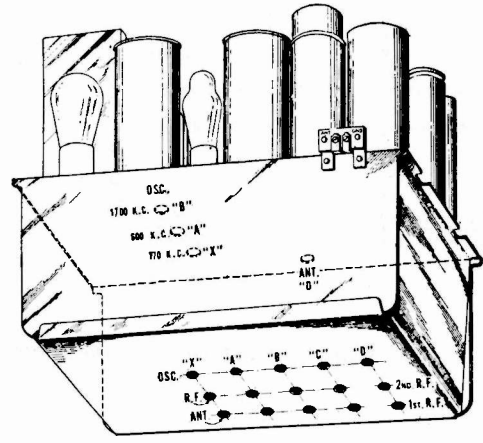
AUDIO SCHEMATIC 1933 MODELS



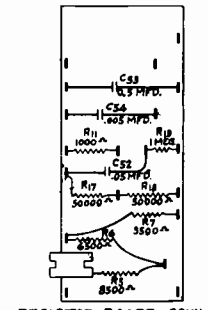
NOTE: Internal I-F Trans.
 C41, C42 & C45 are 140-220 mmfd.
 C44 is 10-70 mmfd.
 L31, L32, L34 are 7 1/2 ohms
 L33 is 18 ohms.



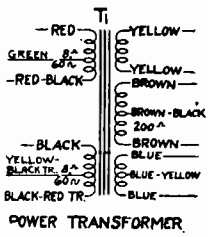
Location of nuts and lockwashers holding coil assembly



Location of line-up capacitors



RESISTOR BOARD CONN



POWER TRANSFORMER

Trimmers of internal I-F Trans. accessible from rear of chassis.

140, 141, 141E, 240, 240E, 340 & 340E

TUBE SOCKET VOLTAGES

120 Volt A. C. Line

Radiotron No.	Control Grid to Cathode, Volts	Screen Grid to Cathode, Volts	Plate to Cathode Volts	Plate Current M. A.	Filament or Heater Volts
RCA-58, R. F.	**2.0	100	255	6.0	2.6
RCA-58, S. W. R. F.	**2.0	100	255	6.0	2.6
RCA-2A7, Det.-Osc.	**2.5	100	250	*5.0	2.6
RCA-58, I. F.	**2.0	100	255	6.0	2.6
RCA-2B7, 2nd Det.-AVC	**1.5	35	105	1.5	2.6
RCA-56, A. F. Driver	**12.0	—	245	6.0	2.6
RCA-53, Output	0	—	300	36.0	2.6
RCA-80, Rectifier	640 R. M. S. Plate to Plate			130 per Plate	5.0

* Voltages and current apply to detector portion of tube.

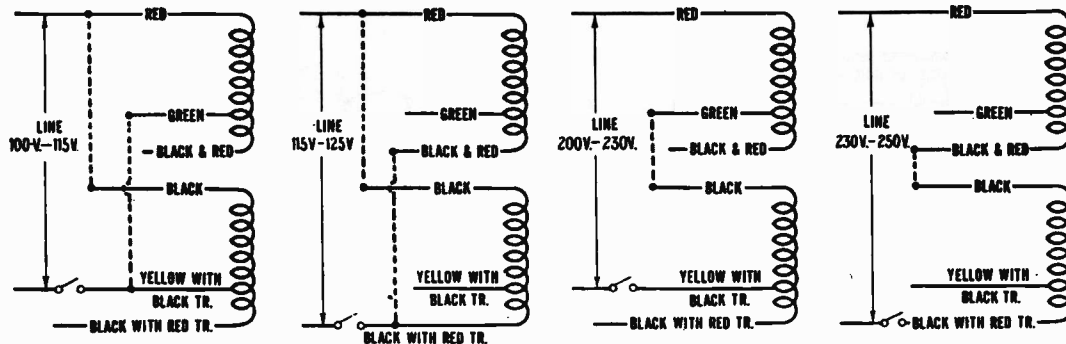
** These voltages cannot be measured because of the high resistance of the circuits.

Alignment Procedure

External Oscillator Frequency	Dial Setting	Location of Line-Up Capacitors	Position of Selector Switch	Adjust for	Number of Adjustments to be Made
445 K. C.	Any setting that does not bring in station.	At rear of chassis.	Any position that does not bring in station.	Maximum output.	4
370 K. C.	370 K. C.	Bottom of chassis.	X	Maximum output.	3
175 K. C.	Set for signal.	Top of chassis.	X	Maximum output while rocking dial back and forth.	1
1400 K. C.	1400 K. C.	Bottom of chassis.	A	Maximum output.	3
600 K. C.	Set for signal.	Top of chassis.	A	Maximum output while rocking dial back and forth.	1
3900 K. C.	3900 K. C.	Bottom of chassis.	B	Maximum output.	3
1710 K. C.	Set for signal.	Top of chassis.	B	Maximum output while rocking dial back and forth.	1
10 M. C.	10 M. C.	Bottom of chassis.	C	Maximum output. (See Note.)	3
15 or 18 M. C.	15 or 18 M. C.	Bottom and top.	D	Maximum output. (See Note.)	4

NOTE—It is important to note, when aligning bands C and D, that two peaks will be observed on the trimmers for the oscillator and for the first detector. The correct oscillator peak is the one obtained using the lower trimmer capacitance, whereas the correct detector peak is the one obtained with the greater capacitance. It is essential that the proper peak be chosen, as otherwise tracking and sensitivity will be very poor at other frequencies. When adjusting the detector trimmer, the tuning capacitor should be rocked, since there is a reaction on the oscillator tuning.

Trimmers of external I-F Trans. accessible from top of chassis.



Power Transformer Connections (50-60 cycles)

140, 141, 141E, 240, 240E, 340 & 340E

REPLACEMENT PARTS (Continued)

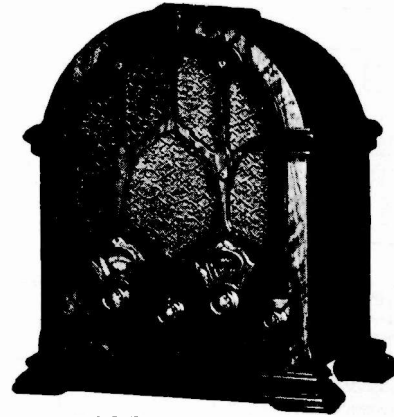
Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
3817	Stud—Motor mounting stud—Package of 3.	3952	Escutcheon—Volume control escutcheon.....
8989	Motor—Motor complete 105-125 volts—60 cycle.....	3953	Escutcheon—Range switch escutcheon—5-band.....
8990	Motor—Motor complete 105-125 volts—50 cycle.....	3992	Escutcheon—Range switch escutcheon—4-band.....
8991	Motor—105-125 volts—40 cycle.....	4160	Screwdriver—Combination insulated screwdriver and socket wrench for I. F. and R. F. adjustments.....
8992	Motor—Motor complete 105-125 volts—25 cycle.....	6112	Cushions—Rubber cushions for chassis—Package of 4.....
8993	Rotor and shaft for 105-125 volts, 60 cycle motor.....	6614	Glass—Station selector dial glass.....
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor.....	6615	Ring—Retaining ring for dial glass—Package of 5.....
8995	Rotor and shaft for 105-125 volts, 50 cycle motor.....	6616	Bezel—Metal bezel for station selector dial (RCA).....
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor.....	6671	Cable—2-conductor shielded for loudspeaker—5-band.....
8997	Rotor and shaft for 105-125 volts, 40 cycle motor.....	6672	Screen—Translucent celluloid screen—For dial lamps—Package of 5.....
8998	Spindle—Turntable spindle with fibre gear for 40 cycle motor.....	6673	Pointer—Station selector pointer—Package of 5.....
8999	Rotor and shaft for 105-125 volts, 25 cycle motor.....	6677	Dial—Station selector dial—5-band—Package of 5.....
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor.....	6678	Dial—Station selector dial—4-band—Package of 5.....
	PICKUP, PICKUP ARM ASSEMBLIES	6756	Bezel—Metal bezel for station selector dial (Plain).....
3386	Cover—Pickup cover.....		MISCELLANEOUS PARTS 340 & 340E
3387	Screw assembly—Pickup mounting screw assembly, comprising one screw, one nut and one washer—10 sets.....	2947	Leather—Friction leather—Package of 20.....
3388	Screw—Pickup needle holding screw—Package of 10.....	3055	Cushion—Chassis support cushion—Package of 4.....
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....	3322	Switch—Automatic brake switch with mounting screws.....
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....	3391	Suspension spring and washer for motor board—Comprising one bolt, one top spring, one bottom spring, 2 cup washers, one "C" washer and one nut.....
3417	Armature—Pickup armature.....	3430	Box—Needle box with lid—Package of 2.....
3419	Screw—Pickup cover mounting screw—Package of 10.....	3829	Knob—Radio or phonograph volume or tone control knob—Package of 5.....
3516	Damper and bushing assembly—Comprising one upper and one lower damper, one upper bushing and one lower bearing—Located in bottom of pickup arm base.....	3830	Knob—Station selector knob—Package of 5.....
3521	Cover—Pickup back cover.....	3831	Knob—Range switch knob—Package of 5.....
3728	Coil—Pickup coil (L41).....	3876	Cable—3-conductor cable for loudspeaker—4-band.....
6346	Back—Pickup housing back.....	3878	Screws—No. 4-40— $\frac{3}{16}$ " fillister head screw and washer for fastening station selector pointer—Package of 20.....
6601	Pickup—Pickup unit complete.....	3952	Escutcheon—Volume control escutcheon.....
7706	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut and washer.....	3953	Escutcheon—Range switch escutcheon—5-band.....
	TURNTABLE ASSEMBLIES	3992	Escutcheon—Range switch escutcheon—4-band.....
3261	Bushing—Rubber bushing—Used on turntable spindle for long-playing records—Package of 5.....	3994	Cover—Automatic brake switch cover.....
3338	Ring—Clamp ring assembly—Comprising spring, latch lever and stud.....	4053	Cable—3-conductor cable—From phonograph volume control to resistor boards.....
3340	Washer—Thrust washer—Package of 2.....	4160	Screwdriver—Combination insulated screwdriver and socket wrench for I. F. and R. F. adjustments.....
3341	Pin—Groov-Pin—Package of 2.....	6614	Glass—Station selector dial glass.....
3342	Spring—Latch spring—Located on clamping ring—Package of 2.....	6615	Ring—Retaining ring for dial glass—Package of 5.....
3343	Sleeve—Sleeve complete with ball race.....	6616	Bezel—Metal bezel for station selector dial.....
3344	Cover—Grease retainer cover—Package of 2.....	6671	Cable—2-conductor shielded for loudspeaker—5-band.....
3346	Bushing—Speed shifter lever bushing—Package of 4.....	6672	Screen—Translucent celluloid screen—For dial lamps—Package of 5.....
3347	Spring—Speed shifter lever spring—Pkg. of 2.....	6673	Pointer—Station selector pointer—Pkg. of 5.....
3399	Lever—Speed shifter lever with mounting screws.....	6677	Dial—Station selector dial—5-band—Pkg. of 5.....
7084	Cover—Suede cover for turntable.....	6678	Dial—Station selector dial—4-band—Pkg. of 5.....
8948	Turntable—Complete.....	6766	Volume control—Phonograph volume control and switch (R29, S9).....
	MODELS 140 141 141E 240 & 240E	6767	Transformer—Input transformer—Comprising one 30,000 ohm resistor, one 2,000 ohm resistor, one .12 mfd. capacitor, one compensating reactor and one transformer (T4, R27, R28, C64, L42).....
	MISCELLANEOUS	6768	Cable—3-conductor shielded—From phonograph volume control to input transformer.....
3829	Knob—Volume control or tone control knob—Package of 5.....	8837	Support—Metal support for chassis—Pkg. of 4.....
3830	Knob—Station selector knob—Package of 5.....	9050	Oscillator—Test oscillator—90-25,000 K.C.....
3831	Knob—Range switch knob—Package of 5.....	10174	Springs—Automatic brake springs—One set of 4 springs.....
3876	Cable—3-conductor for loudspeaker—4-band.....	10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5.....
3878	Screws—No. 4-40— $\frac{3}{16}$ " fillister head screw and washer for fastening station selector pointer—Package of 20.....		REPRODUCER ASSEMBLIES
		8969	Cone—Reproducer cone complete (L36)—Package of 5.....
		9438	Reproducer complete.....
		9439	Coil assembly—Field coil, magnet and cone support (L38).....

8-Tube Battery-Operated
Superheterodyne Receivers

Models 142-B and 241-B



MODEL 241 B



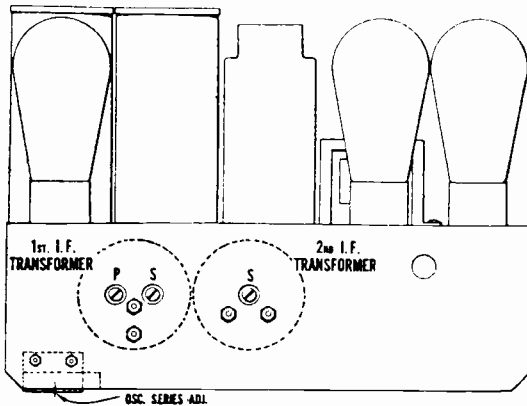
MODEL 142 B

Total "A" Battery Current.....0.48 Ampere
Average "B" Battery Current.....15 M. A.
Type and Number of Radiotrons:
2 RCA-34, 1 RCA-32, 5 RCA-30—Total, 8
Tuning Range.....540-1500 K. C.
Maximum Undistorted Output.....1.0 Watt

Alignment Procedure

DIAL CALIBRATION:

With tuning condenser fully meshed set dial so that pointer coincides with small arrow on edge of dial.



Location of Line-up Capacitor

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid thru 0.05 mfd	175 Kc	Quiet point	S of 2nd I-F Trans.
2				S&P of 1st I-F Trans.
3	Antenna thru 250 mmfd	1400 Kc	1400 Kc	Osc. Det. & R-F Trimmers Cond. On gang cond.
4		600 Kc	600 Kc	600 Kc Osc. Trimmers Rock Gang
5			Repeat Step 2	

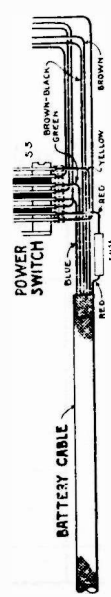
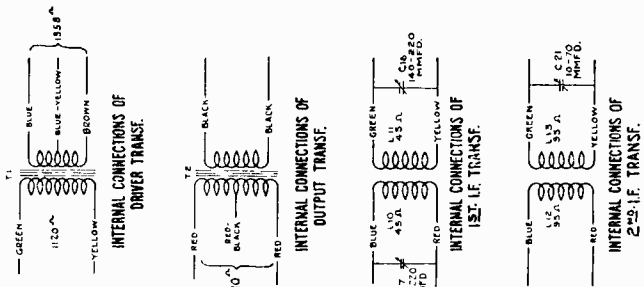
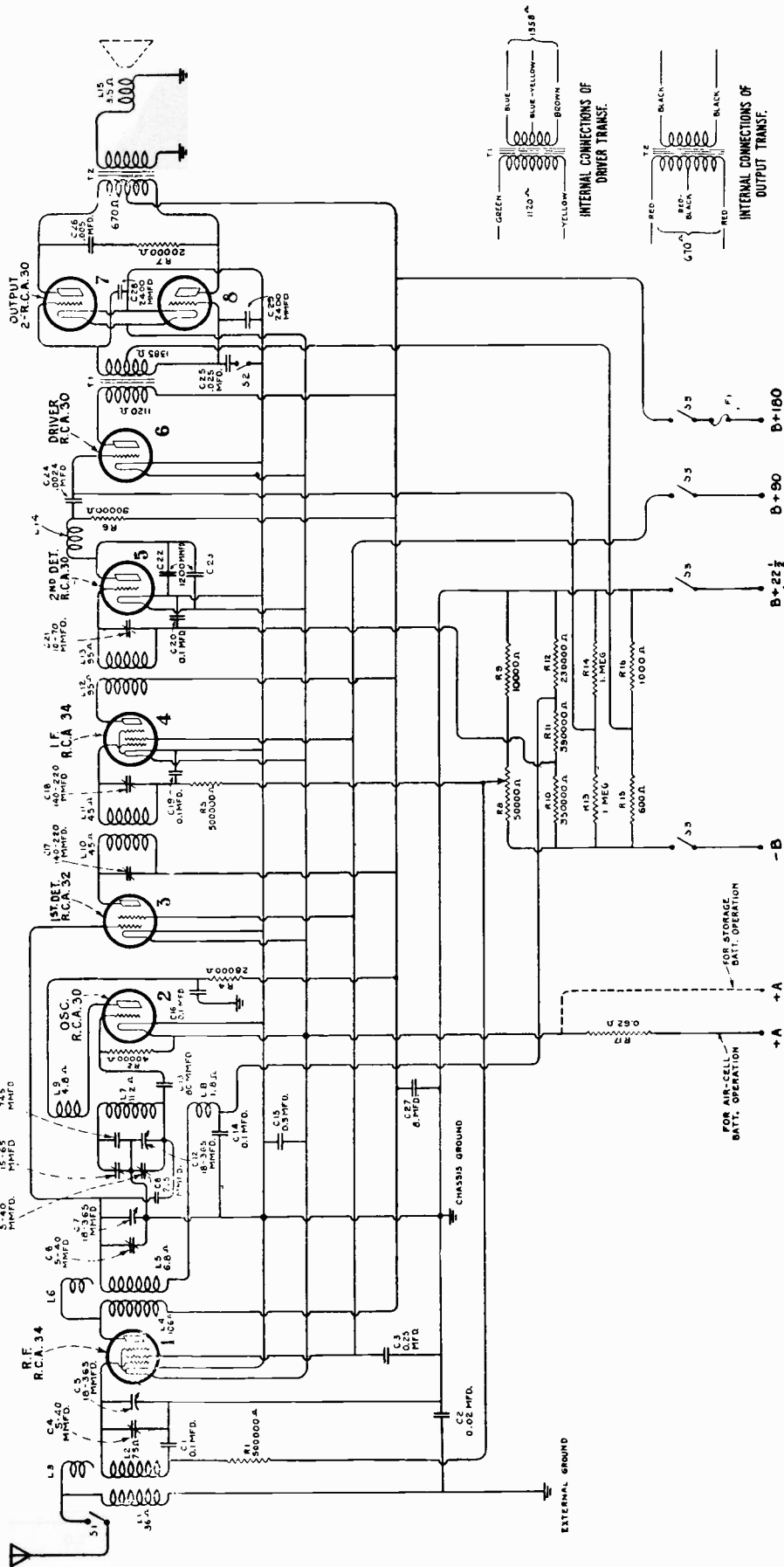
RADIOTRON SOCKET VOLTAGES

New "A" and "B" Batteries—No Signal Received—Volume Control at Maximum

Radiotron No.	Control Grid to Filament Volts	Screen Grid to Filament Volts	Plate to Filament Volts	Plate Current M. A.	Filament Volts
1. R. F.—RCA-34	*3.0	65	155	2.5	2.0
2. Oscillator—RCA-30	—	—	55	4.0	2.0
3. 1st Detector—RCA-32	*4.0	65	155	0.5	2.0
4. I. F.—RCA-34	*3.0	65	155	2.5	2.0
5. 2nd Detector—RCA-30	*10.0	—	*130	0.25	2.0
6. A. F.—RCA-30	*7.0	—	150	2.5	2.0
7. Power—RCA-30	*14.0	—	155	2.0 Total	2.0
8. Power—RCA-30	*14.0	—	155		2.0

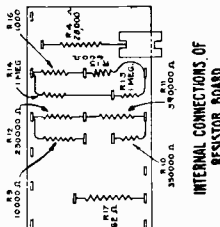
*Voltages are obtained by means of high resistance dividers and it is not possible to accurately measure them with ordinary equipment.

142B & 241B



Schematic Diagram

Note—Some models have additional fuse in 90-volt lead



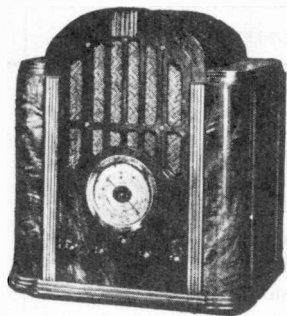
REPLACEMENT PARTS

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

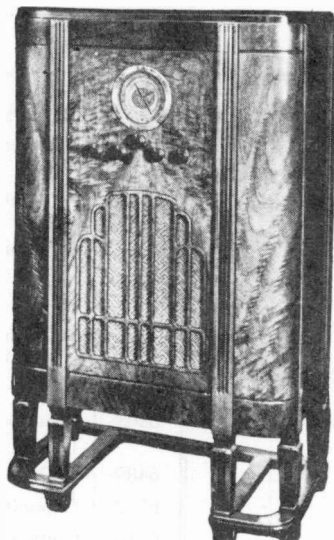
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2012	Capacitor—1,200 mmfd. (C22, C23).....		3932	Capacitor—2,400 mmfd. (C28, C29).....	
2734	Capacitor—745 mmfd. (C11)—Package of 5.....		3946	Resistor—230,000 ohms—Carbon type— $\frac{1}{2}$ watt (R12)—Package of 5.....	
2737	Escutcheon—Local-Distant switch escutcheon—Package of 5.....		3947	Resistor—390,000 ohms—Carbon type— $\frac{1}{2}$ watt (R11)—Package of 5.....	
2747	Cap—Contact cap—Package of 5.....		3948	Resistor—350,000 ohms—Carbon type— $\frac{1}{2}$ watt (R10)—Package of 5.....	
2816	Resistor — 1,000 ohms — Carbon type — $\frac{1}{2}$ watt (R16)—Package of 5.....		3950	Shield—Radiotron shield.....	
2966	Resistor — 28,000 ohms — Carbon type — 1 watt (R4)—Package of 5.....		6176	Escutcheon—Operating switch escutcheon—Package of 5.....	
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt (R1, R5)—Package of 5.....		6300	Socket—4-contact Radiotron socket.....	
3056	Shield—Radiotron shield—R. F. or oscillator—Package of 2.....		6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Package of 5.....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R13, R14)—Package of 5.....		6489	Coil—Antenna coil (L1, L2, L3).....	
3078	Resistor — 10,000 ohms — Carbon type — $\frac{1}{2}$ watt (R9)—Package of 5.....		6512	Capacitor—0.005 mfd. (C26).....	
3088	Knob—Operating switch knob—Package of 5.....		6516	Connector—Fuse connector.....	
3238	Screw—Set screw for switch knob—Package of 10.....		6548	Capacitor—8.0 mfd. (C27).....	
3472	Capacitor—2,400 mmfd. (C24).....		6604	Capacitor—0.5 mfd. (C15).....	
3584	Ring—R. F., oscillator or antenna coil retaining ring—Package of 5.....		6709	Transformer—Output transformer (T2).....	
3592	Knob—Station selector, tone or volume control knob—Package of 5.....		6710	Transformer—Audio driver transformer (T1).....	
3623	Shield—R. F., oscillator or antenna coil shield.....		6711	Coil—Choke coil (L14).....	
3639	Capacitor—0.02 mfd. (C2).....		6712	Transformer—First intermediate frequency transformer (L10, L11, C17, C18).....	
3702	Capacitor—0.25 mfd. (C3).....		6713	Transformer—Second intermediate frequency transformer (L12, L13, C21).....	
3711	Capacitor—80 mmfd. (C13).....		6714	Volume control (R8).....	
3748	Fuse— $\frac{1}{2}$ ampere fuse (F1)—Package of 5.....		6715	Dial—Volume indicator dial assembly.....	
3765	Capacitor—0.025 mfd. (C25).....		6716	Switch—Tone control switch.....	
3768	Screw—Volume indicator or station selector dial scale set screw—Package of 10.....		6717	Condenser—3-gang variable tuning condenser (C4, C5, C6, C7, C10, C12).....	
3859	Socket—4-contact Radiotron socket—Audio driver and output Radiotrons.....		6718	Scale—Station selector dial scale assembly.....	
3877	Capacitor—0.1 mfd. (C1, C14, C16, C19, C20).....		6719	Coil—R. F. coil (L4, L5, L6).....	
3881	Escutcheon—Station selector escutcheon.....		6720	Coil—Oscillator coil (L7, L8, L9).....	
3892	Resistor—600 ohms—Carbon type— $\frac{1}{2}$ watt (R15)—Package of 5.....		6721	Cable—Main cable—For table models.....	
3899	Escutcheon—Volume control escutcheon.....		6737	Resistor—0.62 ohms—Wire wound (R17).....	
3908	Switch—Local-Distant switch—For table models.....		7062	Capacitor—Adjustable capacitor—15 to 70 mmfd. (C9).....	
3909	Switch—Local-Distant switch—For console models.....		7065	Screw-driver—For R. F. and I. F. adjustments.....	
3910	Screw assembly—Chassis mounting screw assembly—Comprising 4 screws, 4 washers and 4 spacers.....		REPRODUCER ASSEMBLIES		
3911	Resistor—40,000 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5.....		3949	Magnet.....	
3912	Resistor—90,000 ohms—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5.....		9428	Cone—Reproducer cone—Package of 5.....	
3913	Switch—Operating switch—4-pole, single throw.....		9453	Reproducer complete.....	
			9454	Housing—Cone housing and core assembly.....	

MODELS 143, 242, 243, 341 AND 342

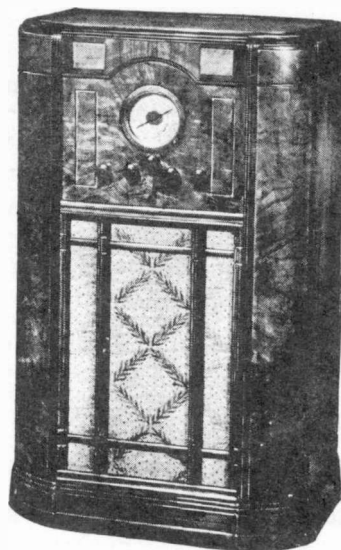
Eight-Tube, Four-Band, A. C., Superheterodyne Receivers and Radio-Phonographs



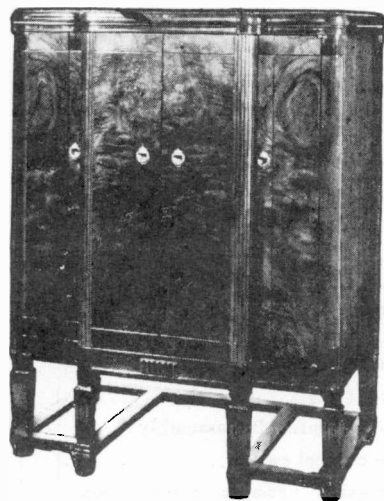
MODEL 143



MODEL 242

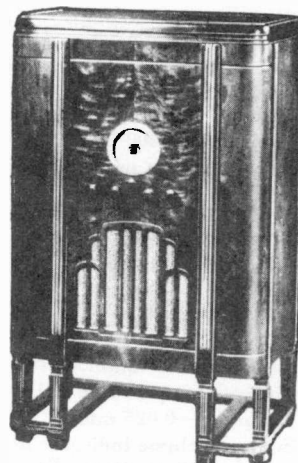


MODEL 243



MODEL 341

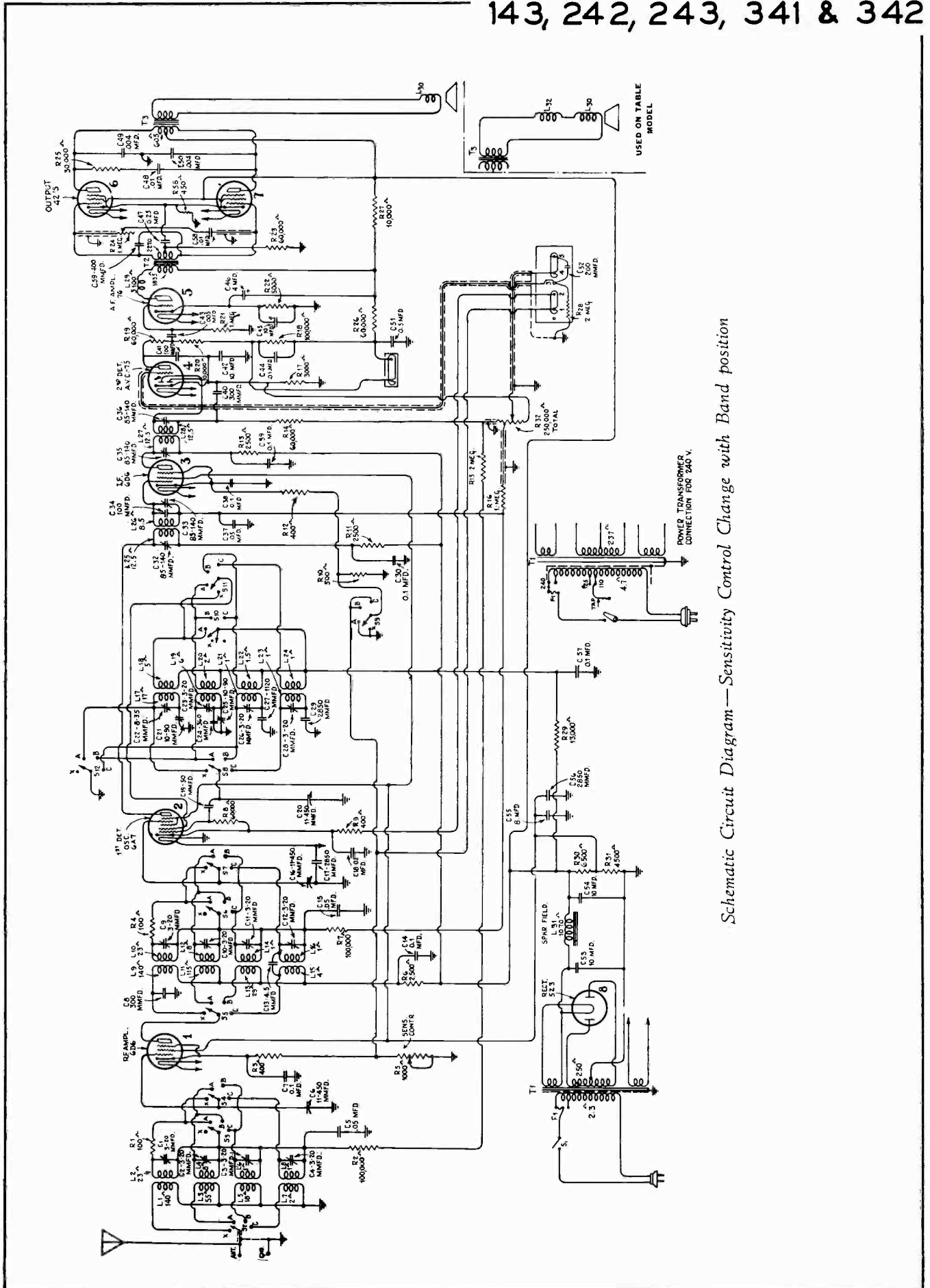
REFER TO INDEX FOR DATA
ON AUTOMATIC RECORD CHANGER
MODEL 341



MODEL 342

ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts and 100-130/195-250 Volts (Double Range)																						
Frequency Rating.....	25-60 and 50-60 Cycles																						
Power Consumption... RADIO ONLY	130 Watts (All Frequencies)																						
Frequency Rating.....	25, 30, 40, 50 and 60 Cycles																						
Power Consumption.. MODELS 341 & 342	170 Watts, 60 Cycles																						
Type and Number of Radiotrons	2 RCA-6D6, 1 RCA-6A7, 1 RCA-75, 1 RCA-76, 2 RCA-42, 1 RCA-5Z3—Total, 8																						
Tuning Frequency Range.....	<table border="0"> <tr> <td rowspan="4"> <table border="0"> <tr> <td rowspan="4"> <table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table> </td> <td colspan="3"></td> </tr> </table> </td> </tr> </table>	<table border="0"> <tr> <td rowspan="4"> <table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table> </td> <td colspan="3"></td> </tr> </table>	<table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table>	{	Band X—	140 K. C.—	410 K. C.	{	Band A—	540 K. C.—	1720 K. C.	{	Band B—	1720 K. C.—	5400 K. C.	{	Band C—	5400 K. C.—	18,000 K. C.				
<table border="0"> <tr> <td rowspan="4"> <table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table> </td> <td colspan="3"></td> </tr> </table>	<table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table>			{	Band X—	140 K. C.—	410 K. C.	{	Band A—	540 K. C.—	1720 K. C.	{	Band B—	1720 K. C.—	5400 K. C.	{	Band C—	5400 K. C.—	18,000 K. C.				
				<table border="0"> <tr> <td>{</td> <td>Band X—</td> <td>140 K. C.—</td> <td>410 K. C.</td> </tr> <tr> <td>{</td> <td>Band A—</td> <td>540 K. C.—</td> <td>1720 K. C.</td> </tr> <tr> <td>{</td> <td>Band B—</td> <td>1720 K. C.—</td> <td>5400 K. C.</td> </tr> <tr> <td>{</td> <td>Band C—</td> <td>5400 K. C.—</td> <td>18,000 K. C.</td> </tr> </table>	{	Band X—	140 K. C.—	410 K. C.	{	Band A—	540 K. C.—	1720 K. C.	{	Band B—	1720 K. C.—	5400 K. C.	{	Band C—	5400 K. C.—	18,000 K. C.			
					{	Band X—	140 K. C.—	410 K. C.															
		{	Band A—		540 K. C.—	1720 K. C.																	
{	Band B—	1720 K. C.—	5400 K. C.																				
{	Band C—	5400 K. C.—	18,000 K. C.																				
Maximum Undistorted Output.....	4.0 Watts																						
Maximum Output.....	5.0 Watts																						
Type of Record Changer.. MODEL 341	Record Ejector Type																						
Capacity of Record Changer.....	Eight 10" or seven 12" Records																						
Type of Magnetic Pickup.....	Low Impedance, Viscoloid																						
Turntable Speed.....	33 $\frac{1}{3}$ R. P. M. and 78 R. P. M.																						
Type of Magnetic Pickup. MODEL 342	High Impedance, Viscoloid																						
Turntable Speed.....	78 R. P. M.																						



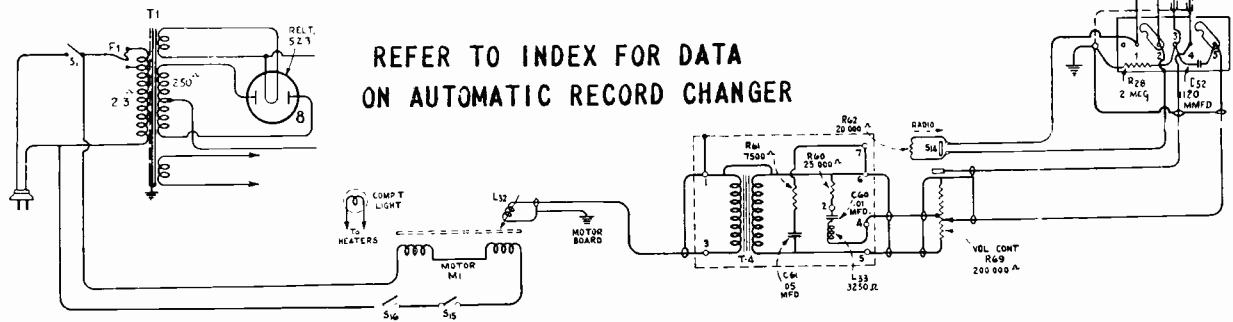
Schematic Circuit Diagram—Sensitivity Control Change with Band position

USED ON TABLE MODEL

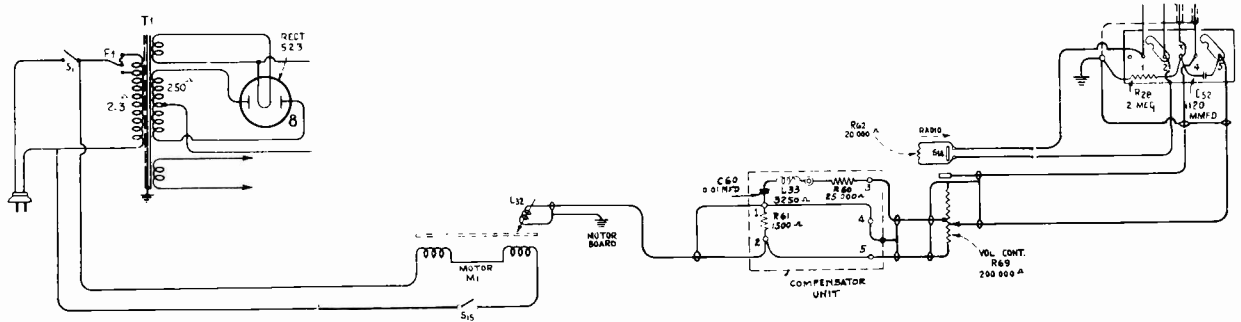
DOWNS TRANSFORMER CONNECTION FOR 240 V.

143, 242, 243, 341 & 342

REFER TO INDEX FOR DATA
ON AUTOMATIC RECORD CHANGER



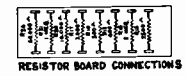
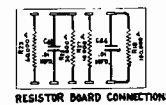
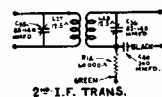
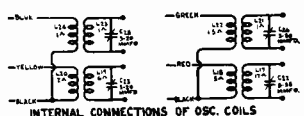
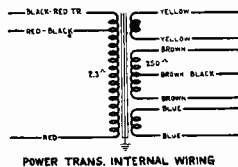
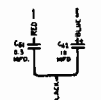
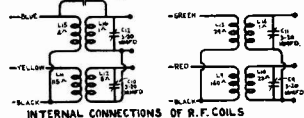
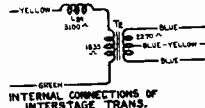
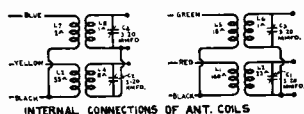
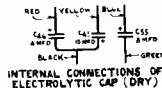
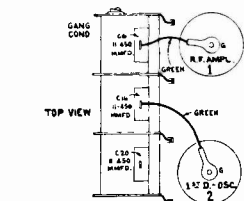
MODEL 341 Phonograph Wiring Schematic Diagram.



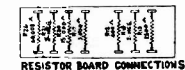
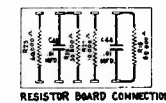
MODEL 342 Phonograph Wiring Schematic Diagram.

Changes in Models:

- 1st Prod: 1934 - Sensitivity change with band position. (Models 143 and 242).
- 2nd Prod: 1934 - Fidelity change with band position. (Models 143, 242 and 341).
- 3rd Prod: 1935 - Fidelity change with band position. (Models 143, 242, 243 and 342).
 C17 omitted
 C24 changed to 340 mmfd.
 R6, R11 and R13 changed to 2600 ohms.
 R18 changed to 1.1 megohm.



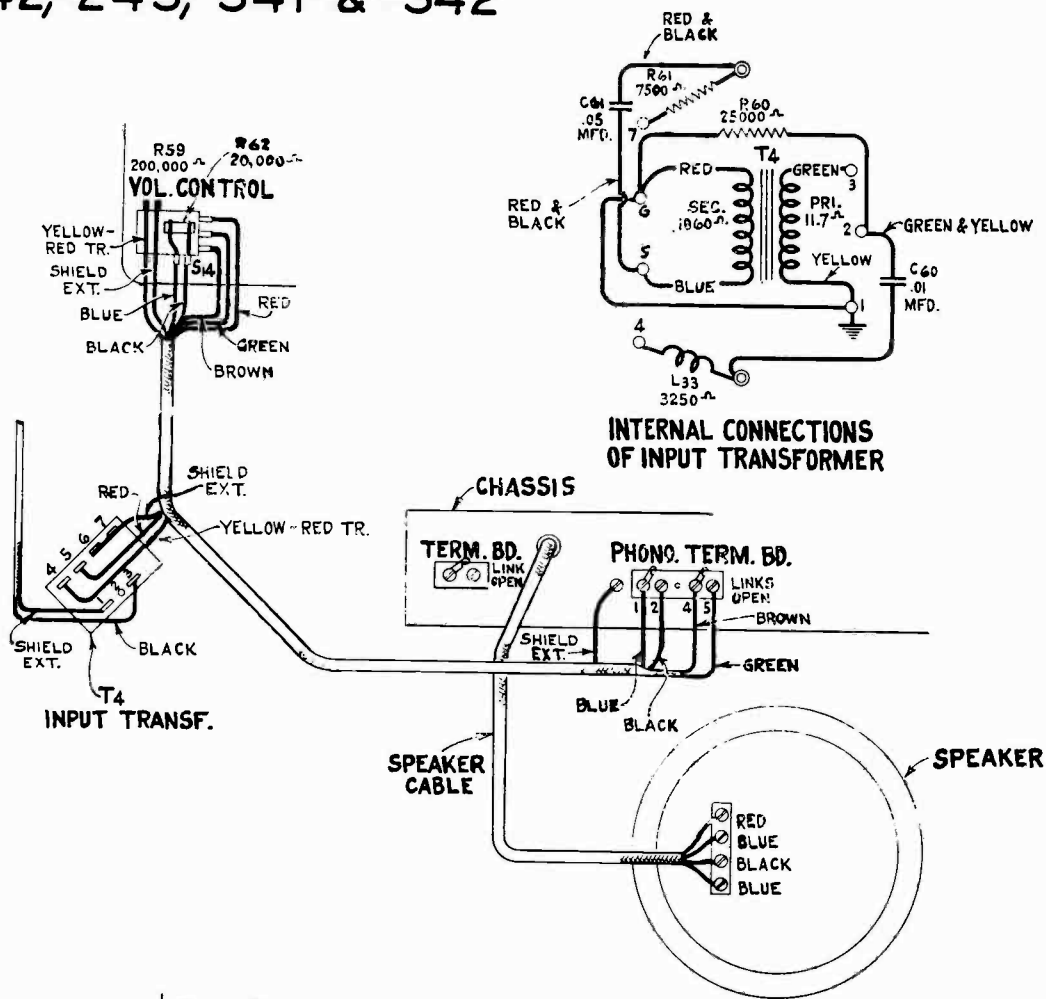
-Sensitivity Control Change with Band position



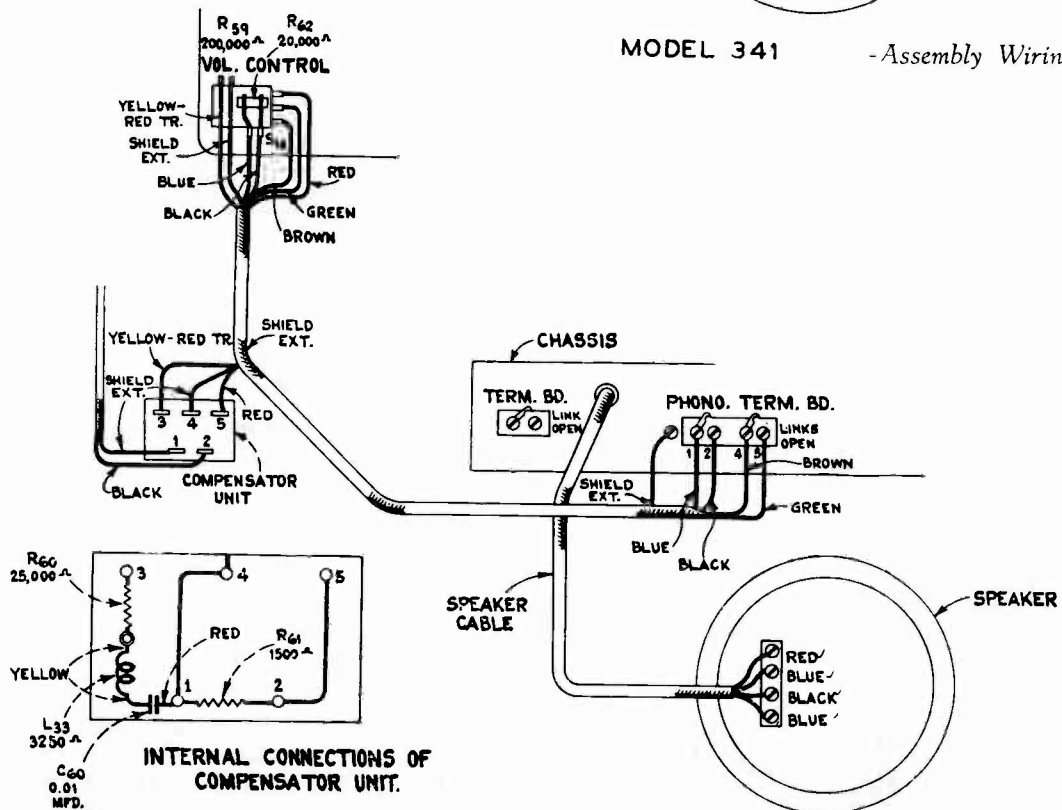
-Fidelity Change with Band position

FIDELITY LINK

It will be noted that a small link is mounted on the rear apron of the chassis which is closed on table models and open on console models. The purpose of the link is to increase the low frequency output of the receiver when open.

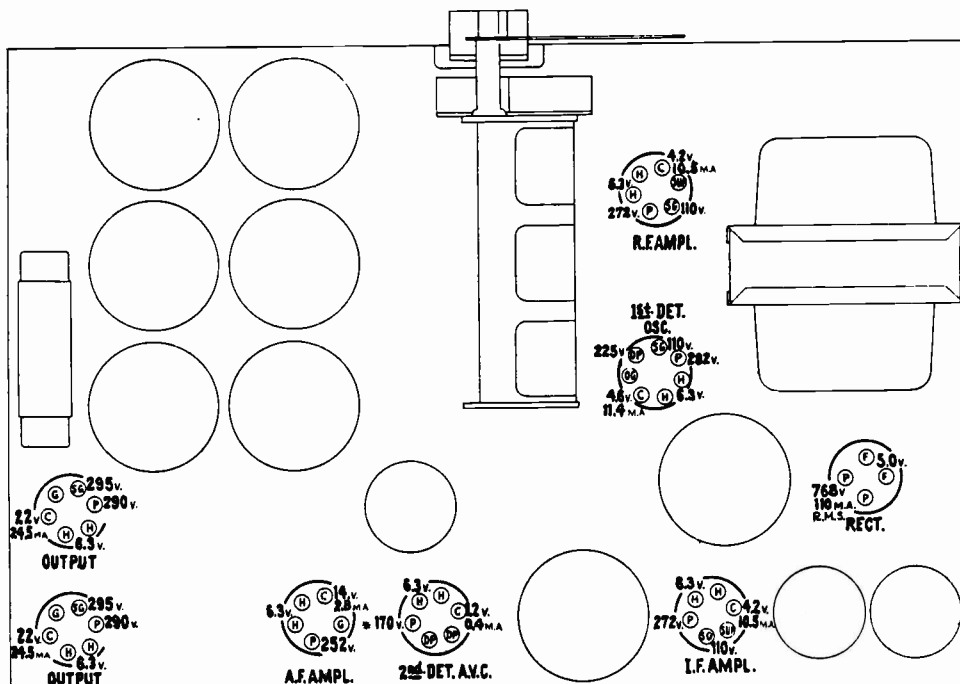


MODEL 341 - Assembly Wiring



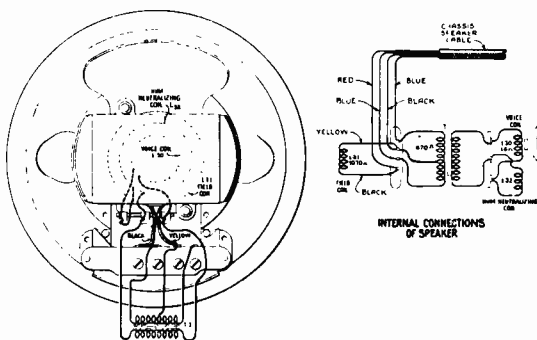
MODEL 342 - Phonograph Wiring Diagram

143, 242, 243, 341 & 342

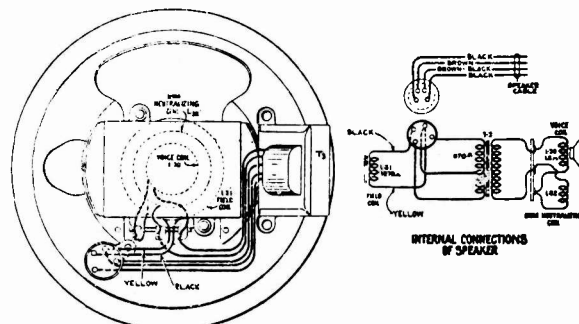


* CANNOT BE MEASURED WITH ORDINARY VOLTMETER
 ALL D. C. VOLTAGES ARE TO GROUND

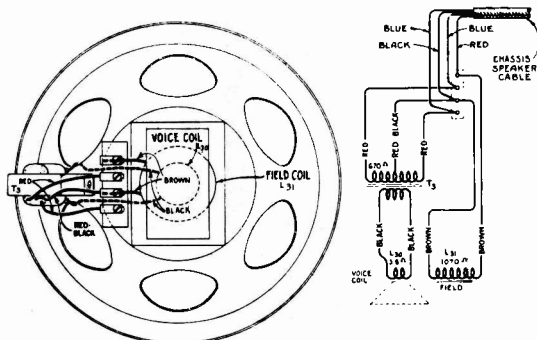
-Radiotron Socket Voltages



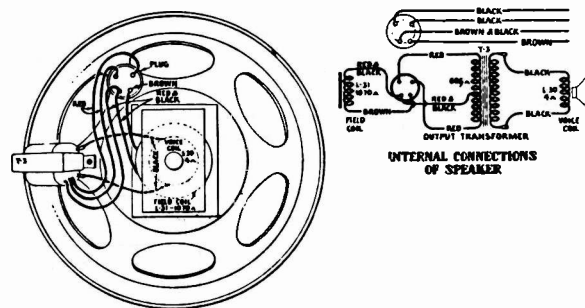
-Table Loudspeaker Wiring



-Table Loudspeaker Wiring—
 With Cable Plug

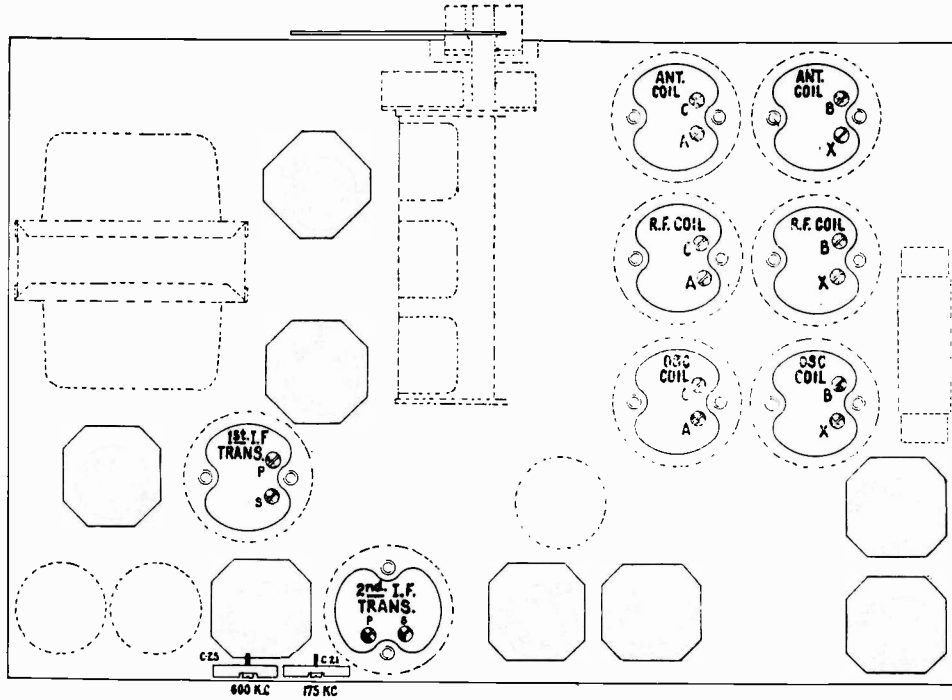


Console Loudspeaker Wiring



Console Loudspeaker Wiring—
 With Cable Plug

143, 242, 243, 341 & 342



Alignment Procedure

-Location of Trimmer Capacitors

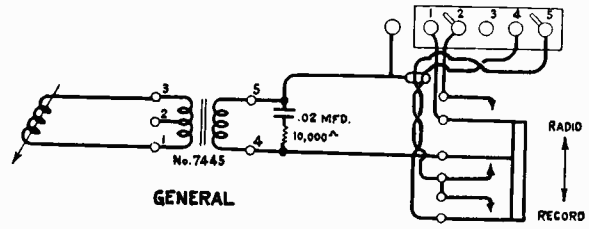
With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	460 Kc	Quiet point near 600 Kc "A" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	410 Kc	410 Kc "X" Band	Osc. R-F & Ant. Trimmers "X" Band
4		175 Kc	175 Kc "X" Band	175 Kc Trimmers Rock Gang
5		<i>Repeat Step 3</i>		
6		1720 Kc	1720 Kc "A" Band	Osc. R-F & Ant. Trimmers "A" Band
7		600 Kc	600 Kc "A" Band	600 Kc Trimmers Rock Gang
8	<i>Repeat Step 6</i>			
9	Antenna in series with 300 ohms	5160 Kc	5160 Kc "B" Band	Osc. † R-F & Ant. Trimmers "B" Band
10		18000 Kc	18 MC "C" Band	Osc. † R-F & Ant. Trimmers "C" Band

Osc. tracks 460 Kc above signal on all bands.

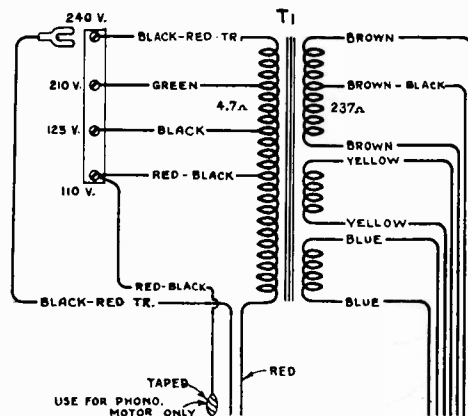
† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.



General Connections

Magnetic Pickup Connections



INTERNAL CONNECTIONS OF POWER TRANSF.

143, 242, 243, 341, & 342

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
4632	Board—Terminal board—Two terminals and link—For changing fidelity.....		7809	Coil—Oscillator coil "P.B.-L.W." (L17, L18, L21, L22, C22, C26).....	
4379	Board—Antenna terminal board.....		7801	Condenser—3-gang variable tuning condenser (C6, C16, C20).....	
4427	Bracket—Volume control, tone control or noise suppressor mounting bracket.....		4806	Condenser—3-gang variable tuning condenser (C6, C16, C20).....	
4244	Cap—Contact cap—Package of 5.....		4371	Cover—Fuse mount cover.....	
3861	Capacitor—Oscillator trimmer capacitor (C21, C25).....		4631	Cover—Terminal strip cover.....	
4633	Capacitor—50 mmfd. (C19).....		10907	Fuse—3-ampere—Package of 5.....	
4635	Capacitor—100 mmfd. (C41).....		3376	Mount—Fuse mount—105-125-volt instrument.....	
4697	Capacitor—200 mmfd. (C52).....		4604	Mount—Fuse mount for 200-250-volt instrument.....	
3937	Capacitor—300 mmfd. (C8).....		4625	Resistor—Wire wound resistor—Comprising one 6500-ohm—4500-ohm and 450 section (R30, R31, R58).....	
4248	Capacitor—300 mmfd. (C8).....		3704	Resistor—400 ohms—Carbon type— $\frac{1}{4}$ watt (R9, R3, R12)—Package of 5.....	
4811	Capacitor—340 mmfd. (C24).....		4622	Resistor—500 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R10).....	
4413	Capacitor—360 mmfd. (C24).....		4338	Resistor—2500 ohms—Carbon type— $\frac{1}{4}$ watt (R6, R11, R13)—Package of 10.....	
4183	Capacitor—400 mmfd. (C59).....		4812	Resistor—2600 ohms—Carbon type— $\frac{1}{4}$ watt (R6, R11, R13)—Package of 5.....	
4412	Capacitor—1120 mmfd. (C27).....		4242	Resistor—3000 ohms—Carbon type— $\frac{1}{4}$ watt (R17)—Package of 5.....	
4409	Capacitor—1120 mmfd. (C43).....		4436	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R22)—Package of 10.....	
4634	Capacitor—1120 mmfd. (C52).....		2871	Resistor—5000 ohms—Carbon type— $\frac{1}{4}$ watt (R22)—Package of 5.....	
4524	Capacitor—2850 mmfd. (C29).....		3381	Resistor—10,000 ohms—Carbon type— $\frac{1}{4}$ watt (R20)—Package of 5.....	
4615	Capacitor—2850 mmfd. (C17, C56).....		3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R20).....	
4628	Capacitor—0.004 mfd. (C49, C50).....		3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R8, R19 ^o , R10 ^o , R23, R26).....	
6512	Capacitor—0.005 mfd. (C43).....		3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R2, R7, R18, R18 ^o).....	
3787	Capacitor—0.01 mfd. (C48).....		3619	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R59)—Package of 5.....	
4212	Capacitor—0.01 mfd. (C44).....		3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R16, R21 R21 ^o).....	
4624	Capacitor—0.01 mfd. (C58).....		4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16)—Package of 5.....	
3888	Capacitor—0.05 mfd. (C37).....		6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R15, R21, R28)—Package of 5.....	
4417	Capacitor—0.05 mfd. (C5, C15).....		3078	Resistor—10,000 ohms—Carbon type— $\frac{1}{2}$ watt (R27)—Package of 5.....	
4836	Capacitor—0.05 mfd. (C5, C15, C37).....		4623	Resistor—13,000 ohms—Carbon type— $\frac{1}{2}$ watt (R29)—Package of 10.....	
3877	Capacitor—0.1 mfd. (C38).....		2240	Resistor—30,000 ohms—Carbon type—1 watt (R25).....	
4415	Capacitor—0.1 mfd. (C18).....		4418	Resistor—100 ohms—Flexible type (R1, R4)—Package of 10.....	
4645	Capacitor—0.1 mfd. (C7, C14, C30, C39, C57).....		4618	Rheostat—Sensitivity control (R5).....	
4791	Capacitor—0.1 mfd. (C7, C18, C38).....		7800	Shield—Antenna, detector or oscillator coil shield.....	
4885	Capacitor—0.1 mfd. (C14, C30, C39, C57).....		4742	Shield—Antenna, detector or oscillator coil shield.....	
4840	Capacitor—0.25 mfd. (C47).....		4627	Shield—First detector—Oscillator Radiotron shield.....	
3750	Capacitor—0.25 mfd. (C47).....				
7790	Capacitor—10 mfd. (C53, C54).....				
4619	Capacitor pack—Comprising one 0.5 mfd., one 10 mfd. capacitor (C42, C51).....				
4626	Capacitor pack—Comprising one 4 mfd., one 10 mfd. and one 8 mfd. capacitor (C45, C46, C55).....				
4358	Clamp—Electrolytic capacitor clamp—For capacitor stock No. 7790.....				
4693	Clamp—Electrolytic capacitor clamp—For capacitor stock No. 4626.....				
7810	Coil—Antenna coil "PB-LW" (L1, L2, L5, L6, C1, C3).....				
7803	Coil—Antenna coil "B.S.W." (L3, L4, L7, L8, C2, C4).....				
7808	Coil—Detector coil "P.B.-L.W." (L9, L10, L13, L14, C9, C11).....				
7805	Coil—Detector coil "B.-S.W." (L11, L12, L15, L16, C10, C12, C13).....				
7807	Coil—Oscillator coil "B.S.W." (L19, L20, L23, L24, C23, C28).....				

o Sensitivity change models only.

o 1935 Productions only.

Replacement Parts (Continued)

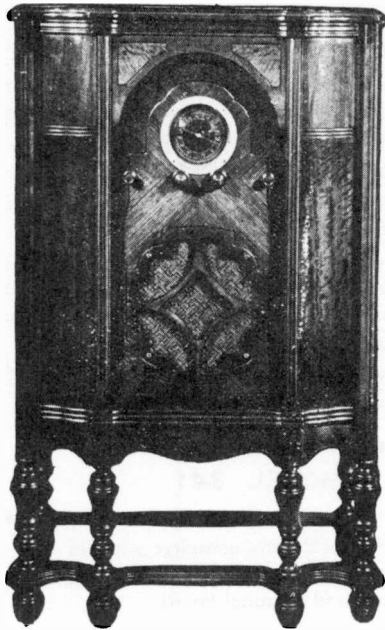
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
7488	Shield—First detector—Oscillator Radiotron shield top.....		4827 [□]	Gear—Spring gear assembly complete with hub, pinion, gear, cover and spring.....	
6956 [□]	Shield—First detector—Oscillator Radiotron shield top.....		4704	Indicator—Band indicator—Celluloid.....	
4452	Shield—I. F. amplifier Radiotron shield.....		4367	Indicator—Station selector vernier pointer—Small.....	
4629	Shield—I. F. amplifier Radiotron shield top..		4520	Indicator—Station selector main pointer—Large.....	
3950 [□]	Shield—I. F. amplifier Radiotron shield.....		3943	Screen—Translucent screen for dial light—Package of 2.....	
4521 [□]	Shield—I. F. transformer shield.....		3993	Screw—No. 6-32-5/32" square head set screw for band indicator operating arm or condenser drive—Package of 10.....	
4452 [□]	Shield—Second detector—"A.V.C." Radiotron shield.....		4377	Spring—Band indicator and arm tension spring—Package of 5.....	
4629	Shield—Second detector—"A.V.C." Radiotron shield top.....		4360	Stem—Station selector pointer stem.....	
4663	Shield—Oscillator coil wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal board, clamp and resistor.....		4378	Stud—Band indicator operating arm stud—Package of 5.....	
4664	Shield—Oscillator wiring shield—Shields oscillator coil wiring from R. F. coil—Complete with terminal strip and resistor.....		1934 PRODUCTION		
4630	Shield—R. F. amplifier—Radiotron shield...		REPRODUCER ASSEMBLY (TABLE MODEL)		
4665	Shield—R. F. coil wiring shield with two resistors and terminal board.....		9534	Coil—Field coil (L31).....	
3529	Socket—Dial lamp socket.....		9533	Cone—Cone mounted and centered on housing (L30).....	
3859	Socket—4-contact Radiotron socket.....		9532	Reproducer complete.....	
7484	Socket—5-contact Radiotron socket.....		9535	Transformer—Output transformer (T3)....	
4784 [□]	Socket—4-contact Radiotron socket.....		REPRODUCER ASSEMBLY (CONSOLE MODEL)		
4814 [□]	Socket—5-contact Radiotron socket.....		4636	Cable—4-conductor—Reproducer cable.....	
4786 [□]	Socket—6-contact Radiotron socket.....		9537	Coil—Field coil magnet and cone support (L31).....	
4787 [□]	Socket—7-contact Radiotron socket.....		8969	Cone—Reproducer cone—Package of 5 (L30)	
7485	Socket—6-contact Radiotron socket.....		9536	Reproducer complete.....	
3572	Socket—7-contact Radiotron socket.....		4637	Transformer—Output transformer (T3)....	
4617	Switch—Range switch (S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12).....		1935 PRODUCTION		
4616	Tone control (R24, S1).....		REPRODUCER ASSEMBLY (TABLE MODEL)		
4813 [□]	Tone control (R24, S1).....		5038	Cable—4-conductor—Reproducer cable with female connector plug.....	
4431	Transformer—First intermediate frequency transformer (L25, L26, C32, C33, C34)...		9534	Coil—Field coil (L31).....	
9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....		9533	Cone—Cone mounted and centered on housing (L30).....	
9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....		5039	Connector—4-prong male connector for reproducer cable.....	
9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....		5040	Connector—4-contact female connector for reproducer cable.....	
4433	Transformer—Second intermediate frequency transformer (L27, L28, C35, C36, C40, R14).....		9593	Reproducer complete.....	
4620	Transformer and reactor—Interstage transformer and reactor (T2, L29).....		9535	Transformer—Output transformer (T3)....	
4809 [□]	Volume control (R32).....		REPRODUCER ASSEMBLY (CONSOLE MODEL)		
4519	Volume control (R32).....		5038	Cable—4-conductor—Reproducer cable with female connector plug.....	
DRIVE ASSEMBLIES			9591	Coil—Field coil magnet and cone support (L31).....	
4362	Arm—Band indicator operating arm.....		8969	Cone—Reproducer cone (L30)—Package of 5	
10194	Ball—Steel ball for variable condenser drive assembly—Package of 20.....		5039	Connector—4-prong male connector for reproducer cable.....	
4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shaft, balls, ring, spring and washers assembled.....		5040	Connector—4-contact female connector for reproducer cable.....	
4621	Dial—Station selector dial.....		9592	Reproducer complete.....	
7799	Drive—Variable tuning condenser drive complete.....		5041	Transformer—Output transformer (T3)....	
4364	Gear—Spring gear assembly complete with hub, pinion, gear, cover and spring.....		[□] Sensitivity change models only. [□] 1935 Productions only.		

Replacement Parts (Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
MODEL 342 MOTOR ASSEMBLIES					
4577	Connector—Male section two-prong motor connector plug		4621	Dial—Station selector dial	
8989	Motor—105-125 volts—60 cycle motor complete		6614	Glass—Station selector dial glass	
8990	Motor—105-125 volts—50 cycle motor complete		4449	Knob—Station selector, volume control, tone control, noise suppressor rheostat on range switch knob—Package of 5	
8992	Motor—105-125 volts—25 cycle motor complete		4340	Lamp—Dial lamp—Package of 5	
8993	Rotor and shaft—For 105-125 volt—60 cycle motor		4678	Ring—Retaining ring for dial glass—Package of 5	
8995	Rotor and shaft—For 105-125 volt—50 cycle motor		4446	Screw assembly—Chassis mounting screw assembly—Comprising four screws, four lockwashers, four washers, four spacers and eight cushions	
8999	Rotor and shaft—For 105-125 volt—25 cycle motor		4613	Screw—No. 8-32— $\frac{1}{8}$ " headless set screw for knobs—Package of 10	
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor		MOTORBOARD ASSEMBLIES		
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor		MODEL 341		
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor		4556	Base—Phonograph compartment lamp base	
3817	Stud—Motor mounting stud—Package of 3		4555	Box—Needle box complete with lid	
3398	Motor mounting—Spring and washer assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer		4673	Cable—From volume control to transformer pack and terminal board	
SWITCH ASSEMBLIES					
3994	Cover—Motor switch cover		4573	Connector—2-contact female section of motor connecting plug	
10184	Plate—Automatic brake latch plate—Package of 5		4577	Connector—2-prong male section of connector plug—Motor plug	
10174	Springs—Automatic brake springs—Package of 4		4674	Connector—2-prong male section of connector plug	
6896	Switch—Eccentric automatic switch complete		4696	Cord—Motor power cord—2-conductor with female section of connector	
3322	Switch—Motor switch (S15)		4710	Receptacle—Needle receptacle	
MODEL 342 TURNTABLE ASSEMBLIES					
7084	Cover—Turntable cover		6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R62)—Package of 5	
7838	Turntable complete		4557	Shade—Phonograph compartment lamp shade	
MODEL 342 PICKUP AND ARM ASSEMBLIES					
4942	Arm—Pickup arm complete, less escutcheon and pickup		4671	Switch—Toggle type—Motor starting switch (S16)	
4940	Armature—Pickup armature		4672	Transformer—Input transformer pack comprising one transformer, one reactor, one 0.01 mfd., one 0.05 mfd. capacitor, one 7500-ohm and one 25,000-ohm resistor (T4, L33, C60, C61, R60, R61)	
6346	Back—Pickup housing back		6766	Volume control—Phonograph volume control (R69, S14)	
4941	Coil—Pickup coil (L32)		MOTORBOARD ASSEMBLIES		
5091	Cushion—Pickup armature spacer cushion—Package of 10		MODEL 342		
3386	Cover—Pickup cover		3430	Box—Needle box with lid—Package of 2	
3521	Cover—Magnetic pickup back cover		5092	Cable—2-conductor motor cable with section of connector plug—From receiver chassis to motor cord connector	
3737	Damper—Pickup damper—Package of 5		4673	Cable—6-conductor shielded—From phonograph volume control to compensator unit and chassis	
3516	Damper assembly—Comprising one upper and one lower damper, one upper bushing and one lower bearing—Located in bottom of pickup base		4938	Compensator unit—Comprising one reactor, one 1500 ohm resistor, one 25,000 ohm resistor and one .01 mfd. capacitor (L33, R60, R61, C60)	
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets		4573	Connector—Female section (2-contact) of connector plug for cable Stock No. 5092	
4939	Pickup—Pickup unit complete		3396	Receptacle—Needle receptacle	
3389	Rod—Automatic brake trip rod with lock nut—Package of 5		6306	Resistor—20,000 ohms—Carbon type— $\frac{1}{4}$ watt (R62)—Package of 5	
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—10 sets		3391	Suspension spring and washer assembly—For motor board—Comprising 1 bolt, 1 top spring, 1 bottom spring, 2 cup washers, 1 "C" washer and 1 nut	
3388	Screw—Pickup needle holding screw—Package of 10		6766	Volume control—Phonograph volume control (R59, S14)	
3419	Screw—Pickup cover mounting screw—Package of 10		MISCELLANEOUS PARTS		
ALL MODELS					
7837	Bezel—Metal bezel (escutcheon) for station selector dial... 342 ONLY				
4677	Bezel—Metal bezel (escutcheon) for station selector dial				

MODELS 220 & 222

Six-Tube Double-Range Superheterodyne Receivers



MODEL 220



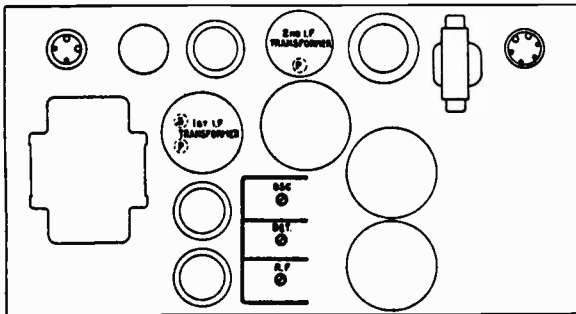
MODEL 222

Electrical Specifications

Voltage Rating.....105-125 Volts
 Frequency Rating.....25-60 and 50-60 Cycles
 Power Consumption...60 Cycle 75 Watts, 25 Cycle 80 Watts
 Number and Types of Radiotrons.....2 RCA-58,
 1 RCA-2A7, 1 RCA-2B7, 1 RCA-2A5, 1 RCA-80—Total 6
 Undistorted Output.....1.75 Watts
 Frequency Range.....540 K. C. to 1500 K. C.
 and 1600 K. C. to 3500 K. C.

Alignment Procedure

With tuning condenser fully meshed set dial so that pointer coincides with 530 calibration at low frequency end of BC Band.



-Location of Line-up Capacitors

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 600 Kc "BC" Band	P of 2nd I-F Trans.
2	1st Det. in series with 0.01 mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "BC" Band	Osc. Det. & R-F Trimmers on gang condenser
4		600 Kc	600 Kc "BC" Band	600 Kc Trimmers Rock Gang
5		<i>Repeat Step 3</i>		
6		2440 Kc	244 Kc "HF" Band	Osc. Det. & R-F Trimmers on range switch

REPLACEMENT PARTS

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

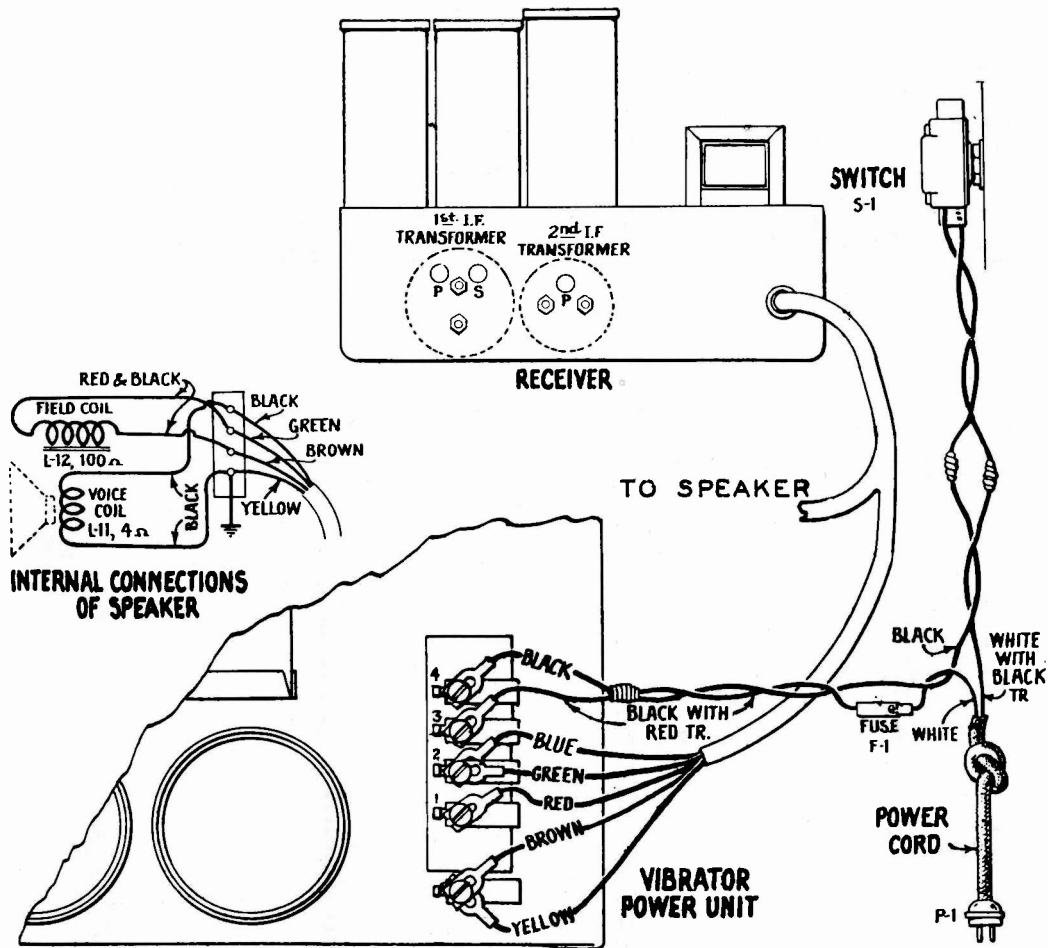
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.....		6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt—Located on antenna coil (R1)—Package of 5.....	
2816	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....		6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R6, R11, R16)—Package of 5.....	
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R18)—Package of 5.....		6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 5.....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R8)—Package of 5.....		6512	Capacitor—0.005 mfd. (C31).....	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R4, R17)—Package of 5.....		6571	Capacitor—10.0 mfd. (C37).....	
3529	Socket—Dial lamp socket.....		6614	Glass—Station selector dial glass.....	
3556	Capacitor—0.05 mfd.—Located on antenna coil (C2).....		6615	Ring—Retaining ring for dial glass—Package of 5.....	
3572	Socket—7-contact Radiotron socket.....		6616	Bezel—Metal bezel for station selector dial.....	
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R19)—Package of 5.....		6620	Capacitor—Comprising one 0.005 and one 0.035 mfd. capacitors (C35, C36).....	
3616	Capacitor—300 mmfd. (C27, C30).....		6672	Screen—Translucent screen for dial light—Package of 5.....	
3620	Capacitor—770 mmfd. (C20).....		6673	Pointer—Station selector indicator—Package of 5.....	
3622	Shield—Radiotron shield—Second detector and output.....		6676	Socket—6-contact output Radiotron socket.....	
3630	Resistor—10,000 ohms—Carbon type—3 watt (R2).....		6680	Condenser—3-gang variable tuning condenser.....	
3639	Capacitor—0.02 mfd. (C33).....		6681	Tone control (R21, S1).....	
3682	Shield—Radiotron shield—Oscillator and first detector.....		6682	Volume control (R12).....	
3702	Capacitor—0.25 mfd. (C7, C32).....		6683	Coil—Antenna coil (L1, L2, C2, R1).....	
3711	Capacitor—80 mmfd. (C16).....		6684	Coil—Detector coil (L3, L4).....	
3768	Screw—Square head—No. 6-32— $\frac{1}{4}$ " set screw for condenser drive—Package of 10.....		6685	Coil—Oscillator coil (L5, L6).....	
3783	Capacitor—9 mmfd. (C1, C8)—Package of 2.....		6686	Transformer—First intermediate frequency transformer (L7, L8, C22, C23).....	
3789	Shield—Radiotron shield—R. F. and I. F.....		6687	Transformer—Second intermediate frequency transformer (L9, L10, C26).....	
3859	Socket—4-contact Radiotron socket.....		6688	Shield—Antenna, detector or oscillator coil shield.....	
3861	Capacitor—Adjustable capacitor.....		6689	Switch—Range switch.....	
3877	Capacitor—0.1 mfd. (C14, C34).....		6690	Transformer—Output transformer (T2).....	
3878	Screw—No. 4-40 screw and washer assembly for fastening station selector indicator—Package of 20.....		6691	Capacitor pack—Comprising one 8.0 mfd. and three 4.0 mfd. capacitors (C15, C24, C29, C38).....	
3891	Resistor—5,000 ohms—Carbon type—1 watt (R9, R10)—Package of 5.....		6693	Drive—Variable tuning condenser drive assembly complete.....	
3892	Resistor—600 ohms—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5.....		6722	Dial—Station selector dial—Package of 5.....	
3893	Resistor—5,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....		6789	Cable—4-conductor reproducer cable.....	
3894	Capacitor—820 mmfd. (C10).....		7485	Socket—6-contact Radiotron socket.....	
3895	Capacitor—950 mmfd. (C3).....		9441	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
3896	Capacitor—0.05 mfd. (C9, C25, C28).....		9442	Transformer—Power transformer—105-125 volts—25-40 cycles.....	
3897	Resistor—400 ohms—Carbon type—1 watt (R20)—Package of 5.....		9443	Transformer—Power transformer—200-250 volts—50-60 cycles.....	
3898	Knob—Station selector, volume control, tone control or range switch knob—Package of 5.....		10194	Ball—Steel ball for condenser drive assembly—Package of 20.....	
6188	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		REPRODUCER ASSEMBLIES		
6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt (R15)—Package of 5.....		8969	Cone—Reproducer cone (L11)—Package of 5.....	
			9444	Coil—Field coil, magnet and cone support (L12).....	
			9445	Reproducer complete.....	

MODEL 223

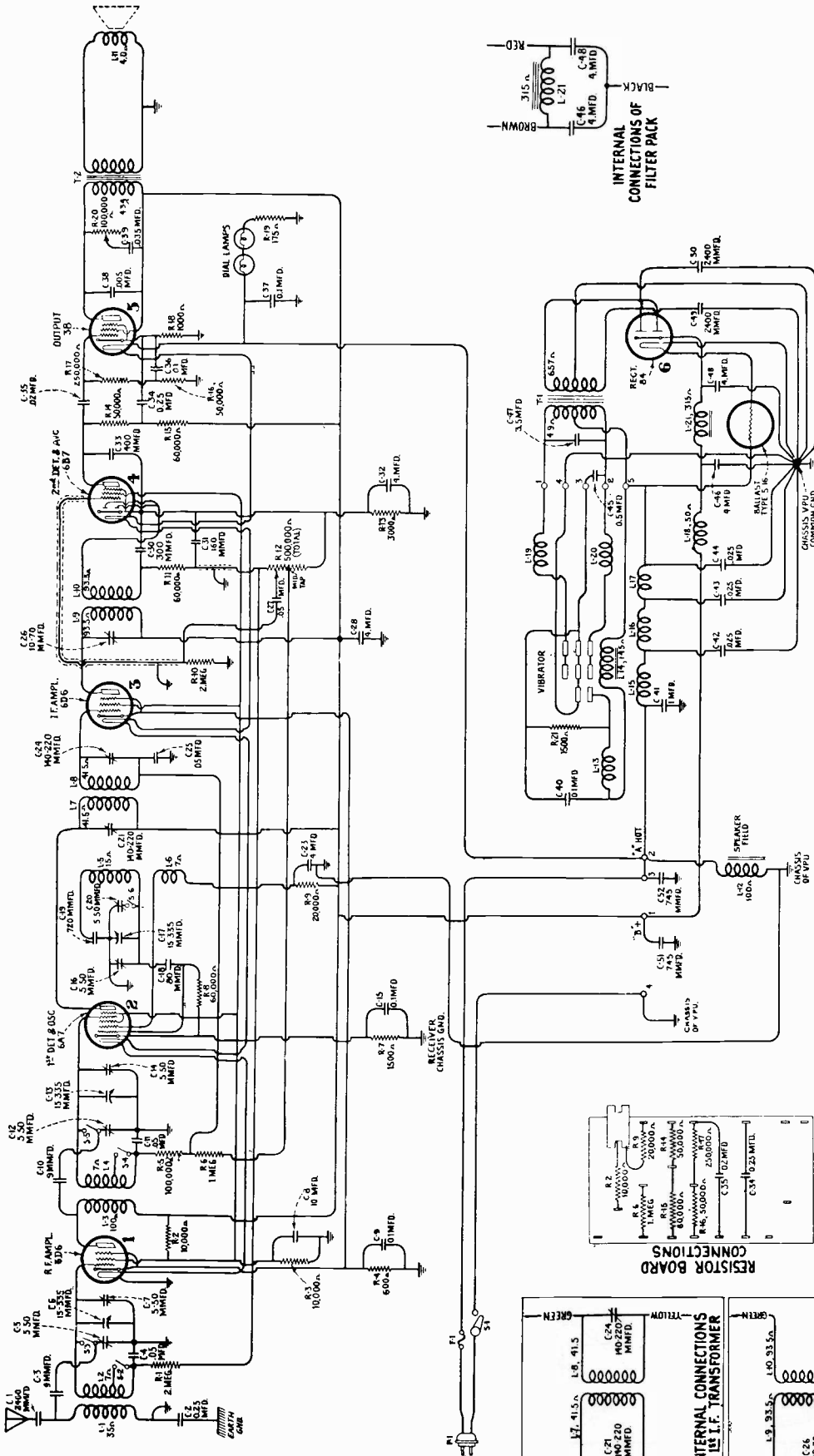
32 VOLT DC RECEIVER

Electrical Specifications

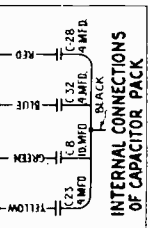
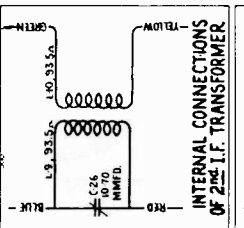
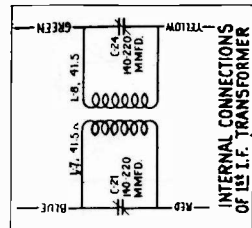
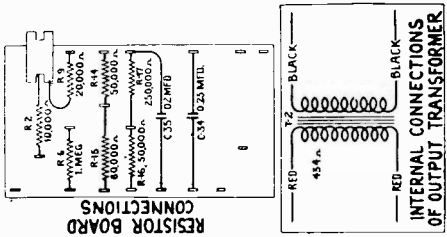
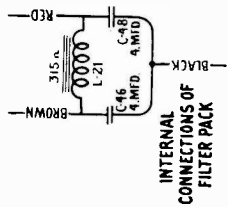
Voltage Rating 26-40 Volts D. C.
 Power Consumption 60 Watts at 32 Volts
 Number and Types of Radiotrons 2 RCA-6D6,
 1 RCA-6A7, 1 RCA-6B7, 1 RCA-38, 1 RCA-84
 —Total, 6
 Type of Ballast Lamp Amperite 5-16
 Undistorted Output . . . 1.1 Watts (Max. 1.6 Watts)
 Tuning Frequency Range 540 K. C.—1500 K. C.
 and 1400 K. C.—2800 K. C.



Assembly Wiring Diagram



Schematic Circuit Diagram

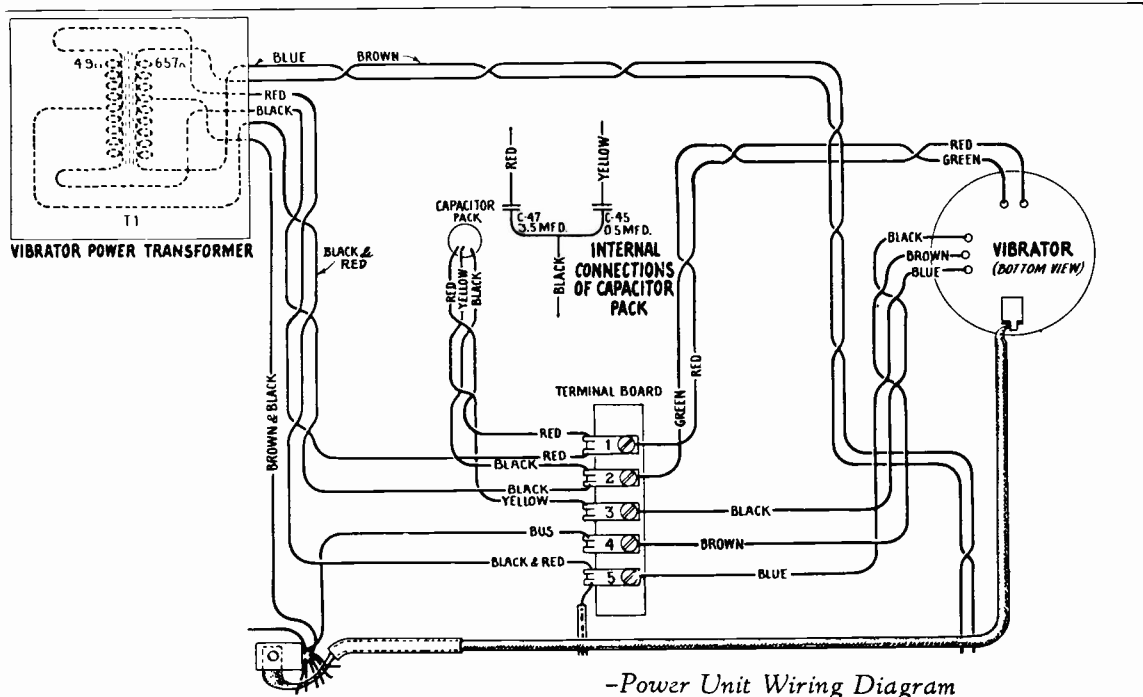


TUBE SOCKET VOLTAGES

32-Volt D.C. Input — No Signal — Volume Control at Minimum

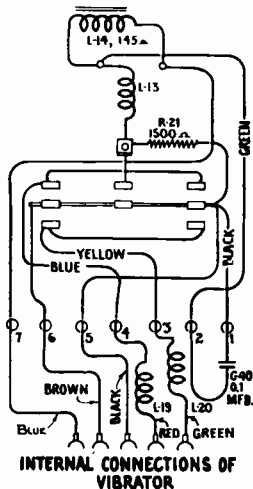
RADIOTRON No.	CATHODE TO GROUND, VOLTS	CATHODE TO SCREEN GRID, VOLTS	CATHODE TO PLATE, VOLTS	PLATE CURRENT M. A	HEATER VOLTS
RCA-6D6 R. F.	8.4	77	216	4.2	6.2
RCA-6A7—Osc. Det.	9.7	76	215	6.5	6.2
RCA-6D6 I. F.	8.4	77	216	4.2	6.2
RCA-6B7—2nd Det.	5.7	80	52	1.9	6.2
RCA-38 Pwr.	19.5	205	197	21.5	6.2
RCA-84 Rect.	244			50	6.5-7.0*

*Varies with ballast tubes and with time.



Alignment Procedure

With tuning condenser fully meshed, set dial so that end calibration coincides with pointer.



STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with .01 mfd	175 kc	Quiet Point near 60 BC Band	P of 2nd I-F Trans.
2	1st Det. Grid in series with .01 mfd			S & P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 kc	140 BC Band	Osc., Det. and R-F Trimmers on gang condenser
4		2440 kc	120 SW Band	Osc., Det. and R-F Trimmers on range switch

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2816	Resistor—1,000 ohms—Carbon type— $\frac{1}{2}$ watt (R18)—Package of 5.....		6485	Volume control with mounting nut (R12)...	
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Package of 5.....		6527	Coil—Antenna coil (L1, L2).....	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5.....		6528	Coil—R. F. coil (L3, L4).....	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5.....		6534	Switch—Range switch (S2, S3, S4, S5, S6, C5, C12, C20).....	
3358	Resistor—3,000 ohms—Carbon type— $\frac{1}{2}$ watt (R13)—Package of 5.....		6598	Condenser—3-gang variable tuning condenser (C6, C7, C13, C14, C16, C17).....	
3514	Resistor—250,000 ohms—Carbon type— $\frac{1}{2}$ watt (R17)—Package of 5.....		6622	Dial—Station selector dial scale and drive assembly.....	
3572	Socket—7 Contact Radiotron socket.....		6859	Capacitor—Comprising three 4 mfd. and one 10 mfd. capacitors (C8, C23, C28, C32).....	
3584	Ring—Antenna, R. F. or oscillator coil retaining ring—Package of 5.....		6860	Tone control with mounting nut (R20).....	
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R14, R16)—Package of 5.....		6861	Transformer—Output transformer (T2).....	
3597	Capacitor—.25 mfd. (C34).....		7484	Socket—5-contact Radiotron socket.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R8, R11)—Package of 5.....		7485	Socket—6-contact Radiotron socket.....	
3616	Capacitor—300 mmfd. (C30).....		VIBRATOR POWER UNIT ASSEMBLIES		
3622	Shield—Antenna or R. F. coil shield.....		3765	Capacitor—.025 mfd. (C42, C43, C44).....	
3624	Socket—Dial lamp socket and bracket.....		3859	Socket—4-contact Radiotron socket.....	
3625	Scale—Volume indicator scale assembly.....		3860	Socket—5-contact Radiotron socket.....	
3626	Shield—Oscillator coil shield.....		4145	Shield—Radiotron shield—Rectifier.....	
3630	Resistor—10,000 ohms—Carbon type—3 watt (R2, R3).....		4148	Suspension assembly—Comprising one bolt assembly, one "C" washer, two cup washers, two springs, two damping bushings.....	
3634	Capacitor—160 mmfd. (C31).....		4150	Clamp assembly—Vibrator mounting clamp assembly.....	
3639	Capacitor—.02 mfd. (C35).....		4186	Capacitor—2400 mmfd. (C49, C50).....	
3750	Capacitor—.25 mfd. (C2).....		4187	Capacitor—745 mmfd. (C51, C52).....	
3783	Capacitor—9 mmfd. (C3, C10)—Package of 2.....		6862	Filter pack—Comprising one reactor and two 4.0 mfd. capacitors (C46, C48, L21).....	
3877	Capacitor—.1 mfd. (C9, C15, C36, C37).....		6863	Capacitor—Comprising one 3.5 mfd. and one .5 mfd. capacitors (C45, C47).....	
3888	Capacitor—.05 mfd. (C4, C11, C25, C27).....		6864	Tube—Regulator tube.....	
3892	Resistor—600 ohms—Carbon type— $\frac{1}{2}$ watt (R4)—Package of 5.....		6865	Shield—Regulator tube shield.....	
3993	Screw—Set screw for volume control dial—Package of 10.....		6866	Coil—Line R. F. choke coil (L15).....	
4046	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt (R1)—Package of 5.....		6867	Coil—Line R. F. choke coil.....	
4142	Mounting assembly for receiver chassis—Comprising 8 cushions, 8 washers, 4 spacers, 4 lockwashers and 4 screws.....		6868	Coil—Line R. F. choke coil (L16).....	
4143	Capacitor—2400 mmfd. (C1).....		6869	Capacitor—1.0 mfd. capacitor (C41).....	
4144	Clamp—Capacitor mounting clamp—Package of 5.....		6870	Shield—Outer shield with felt pad for vibrator assembly.....	
4145	Shield—Radiotron shield.....		6871	Coil—Filter coil (L18).....	
4181	Capacitor—720 mmfd. (C19).....		7734	Transformer—Power transformer (T1).....	
4182	Capacitor—80 mmfd. (C18).....		7735	Vibrator complete (L13, L14, L19, L20, C40, R21).....	
4183	Capacitor—400 mmfd. (C33).....		REPRODUCER ASSEMBLIES		
4184	Capacitor pack—Comprising one .035 and one .005 mfd. capacitors (C38, C39).....		4149	Shield—Terminal board shield.....	
4185	Resistor—175 ohms—Wire wound (R19).....		8935	Cone—Reproducer cone (L11) Package of 5.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R10)—Package of 5.....		9474	Reproducer complete.....	
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R15)—Package of 5.....		9475	Coil—Field coil magnet and cone support (L12).....	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R9)—Package of 5.....		MISCELLANEOUS PARTS		
6471	Coil—Oscillator coil (L5, L6).....		3592	Knob—Station selector—Volume control or tone control knob—Package of 5.....	
6483	Transformer—First intermediate frequency transformer (L7, L8, C21, C24).....		3615	Knob—Range switch knob—Package of 5.....	
6484	Transformer—Second intermediate frequency transformer (L9, L10, C26).....		3881	Escutcheon—Station selector escutcheon.....	
			3899	Escutcheon—Volume control escutcheon.....	
			4292	Capacitor—Generator capacitor—.5 mfd.....	
			6151	Suppressor—Spark plug suppressor.....	
			6152	Suppressor—Distributor suppressor.....	
			6516	Connector—Fuse connector complete.....	

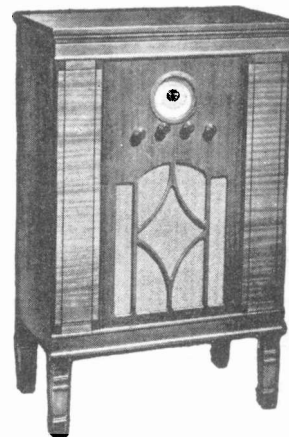
MODEL 236-B

Seven-Tube, Superheterodyne Battery Receiver

Alignment Procedure

With gang condenser fully meshed set pointer to coincide with dial reading of 540 Kc.

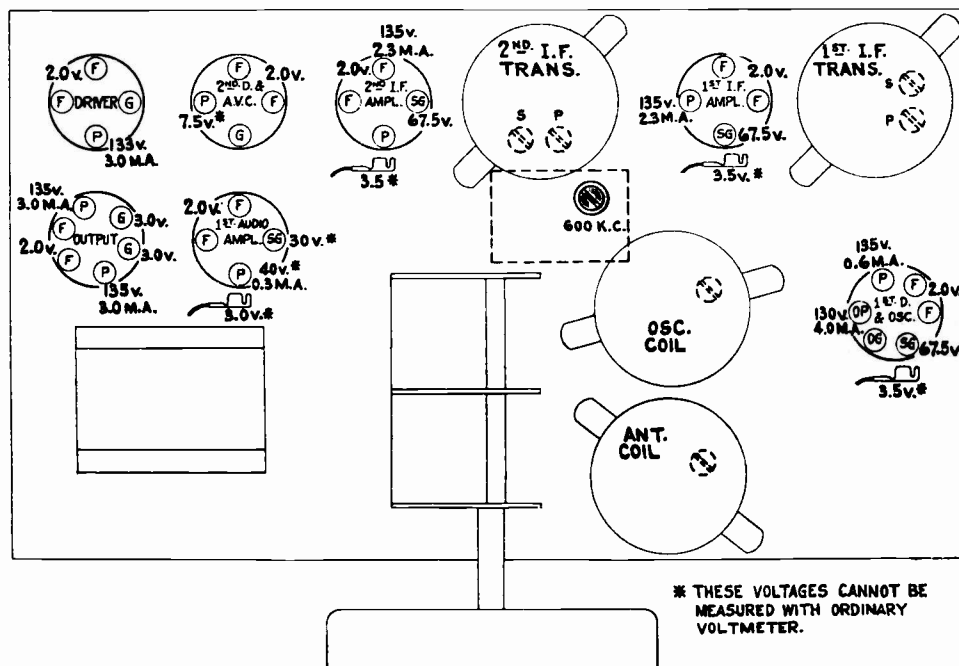
STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	1st Det. Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc	S&P of 2nd I-F Trans.
2	Antenna in series with 200 mmfd	1720 Kc	1720 Kc	C44 C45 Osc. Ant.
3		600 Kc	600 Kc	C40 Rock Gang L-F Osc.
4		<i>Repeat Step 2</i>		



MODEL 236 B

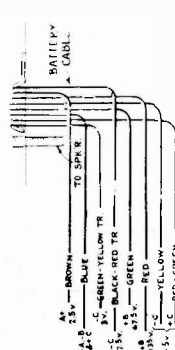
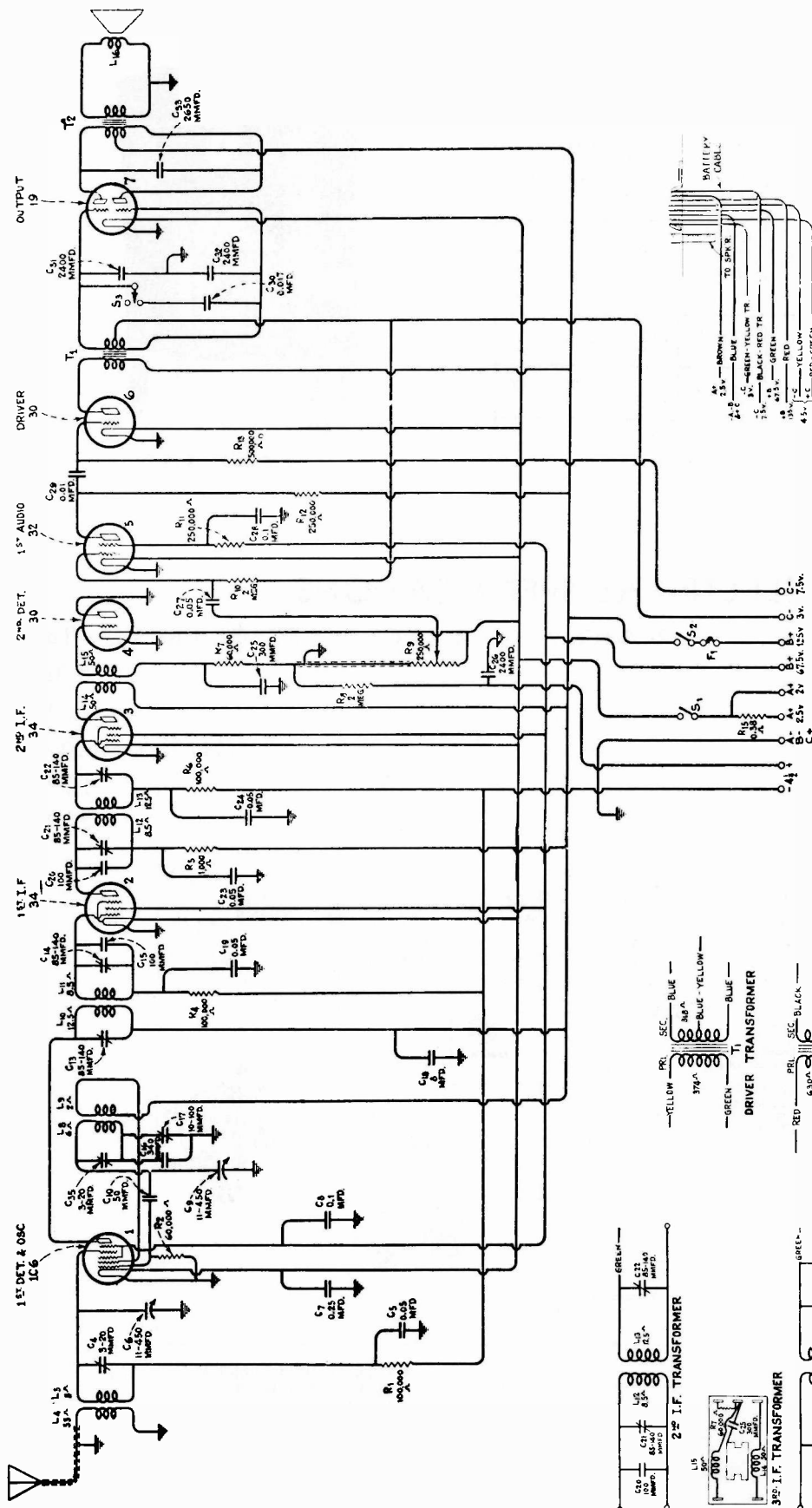
ELECTRICAL SPECIFICATIONS

Type and Number of Radiotrons 1 RCA-1C6, 2 RCA-34, 2 RCA-30, 1 RCA-32, 1 RCA-19—Total, 7
 Total "A" Battery Current 0.68 Ampere
 Maximum "B" Battery Current 21 M. A.
 Tuning Range 540 K. C.—1720 K. C.
 Maximum Undistorted Output 1.2 Watts
 Maximum Output 2.2 Watts

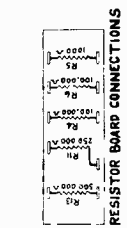
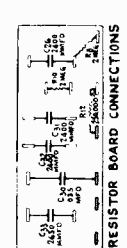
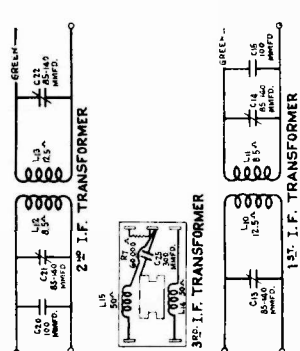


* THESE VOLTAGES CANNOT BE MEASURED WITH ORDINARY VOLTMETER.

-Line-Up Capacitor Locations and Voltage Values at Socket Contacts



-Schematic Circuit Diagram



RESISTOR BOARD CONNECTIONS

RESISTOR BOARD CONNECTIONS

OSC. COIL

ANT. COIL

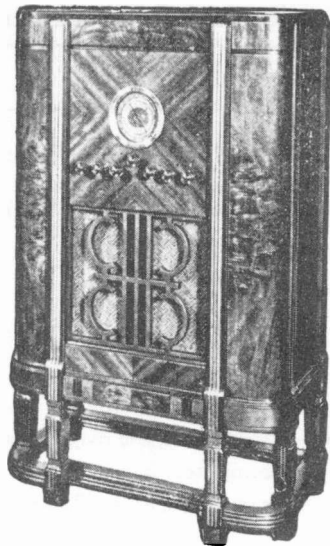
REPLACEMENT PARTS

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

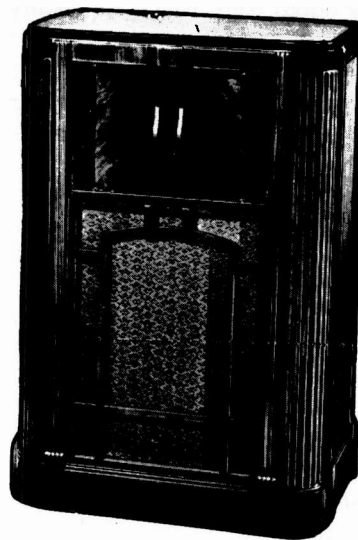
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
2747	Cap—Contact cap—Package of 5.....		4538	Transformer—Third intermediate frequency transformer (L14, L15).....	
4498	Capacitor—8 mfd. (C18).....		4533	Transformer pack—Audio transformer pack—Comprising driver and output transformer (T1, T2).....	
4442	Capacitor—50 mmfd. (C10).....		4535	Volume control (R9).....	
3981	Capacitor—300 mmfd. (C25).....		REPRODUCER ASSEMBLIES		
4413	Capacitor—360 mmfd. (C16).....		4541	Cable—2-conductor reproducer cable.....	
2749	Capacitor—2400 mmfd. (C26).....		9432	Cone—Reproducer cone (L16).....	
4801	Capacitor—2400 mmfd. (C31, C32).....		7820	Magnet—Cone housing and magnet assembly.....	
4529	Capacitor—2650 mmfd. (C33).....		7819	Reproducer complete.....	
4858	Capacitor—0.01 mfd. (C29).....		4234	Rivet—Cone mounting rivet—Package of 100.....	
4518	Capacitor—0.05 mfd. (C27).....		DRIVE ASSEMBLY		
4836	Capacitor—0.05 mfd. (C5, C19, C23, C24).....		4996	Dial—Station selector dial.....	
4906	Capacitor—0.017 mfd. (C30).....		4798	Drive—Variable tuning condenser drive assembly complete.....	
4791	Capacitor—0.1 mfd. (C8, C28).....		4363	Pointer—Station selector pointer.....	
4840	Capacitor—0.25 mfd. (C7).....		4669	Screw—No. 8-32-5/32 square head set screw for condenser drive—Package of 10.....	
3861	Capacitor—Adjustable trimmer capacitor (C17).....		4997	Shaft—Condenser drive shaft.....	
4796	Coil—Antenna coil (L4, L5, R1, C4).....		MISCELLANEOUS ASSEMBLIES		
4800	Coil—Oscillator coil (L8, L9, C35).....		4895	Bezel—Metal bezel (escutcheon) and crystal for station selector drive.....	
4504	Condenser—2-gang variable tuning condenser (C6, C9).....		4289	Body—Fuse connector body—Package of 10.....	
4370	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R5).....		7867	Cable—8-conductor battery cable complete.....	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R2, R7)—Package of 5.....		4288	Cap—Fuse connector cap—Package of 10.....	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R4, R6)—Package of 5.....		6516	Connector—Fuse connector complete.....	
3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11, R12)—Package of 5.....		4286	Ferrule—Fuse connector ferrule and bushing—Package of 10.....	
6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R13)—Package of 5.....		3748	Fuse—0.5 ampere—Package of 5.....	
6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R8, R10)—Package of 5.....		4290	Insulator—Fuse connector insulator—Package of 10.....	
4521	Shield—Antenna, oscillator or I. F. transformer shield.....		4449	Knob—Station selector, volume control, tone or battery switch knob—Package of 5.....	
7487	Shield—Second detector Radiotron shield—"AVC".....		4644	Resistor—0.38 ohms—Flexible type—Filament series (R15)—Package of 5.....	
3942	Shield—First detector and oscillator Radiotron shield.....		4638	Screw—Chassis mounting screw assembly—Comprising eight cushions, four screws, four washers, four lockwashers and four spacers.....	
3056	Shield—First I. F., second I. F., first audio Radiotron shield—Package of 2.....		3238	Screw—6-40- $\frac{1}{8}$ " knurled head—Set screw for operating switch knob No. 3088—Package of 10.....	
4794	Socket—4-contact Radiotron socket.....		4613	Screw—8-32- $\frac{1}{8}$ " headless set screw for station selector volume control, tone control or range switch knob—Package of 10.....	
4784	Socket—4-contact audio amplifier—Radiotron socket.....		4284	Spring—Fuse connector spring—Package of 10.....	
4786	Socket—6-contact detector-oscillator Radiotron socket.....		4797	Switch—Operating switch.....	
4785	Socket—6-contact output Radiotron socket.....		4285	Washer—Fuse connector insulating washer—Package of 10.....	
4799	Switch—Tone control switch (S3).....				
4431	Transformer—First intermediate transformer (L10, L11, C13, C14, C15).....				
7840	Transformer—Second intermediate transformer (L12, L13, C20, C21, C22).....				

MODELS 262 AND 263

Ten-Tube, Five-Band A. C. Superheterodyne



MODEL 262



MODEL 263

ELECTRICAL SPECIFICATIONS

Voltage Rating.....105-125 Volts
 Frequency Rating.....25-60 and 50-60 Cycles
 Power Consumption.....130 Watts (All Frequencies)
 Type and Number of Radiotrons.

1934 PRODUCTION...2 RCA-6D6, 1 RCA-6A7, 4 RCA-76, 2 RCA-42, 1 RCA-5Z3—Total, 10

Number and Type of Radiotrons

1935 PRODUCTION 2 RCA-6D6, 1 RCA-6A7, 2 RCA-76, 1 RCA-85, 2 RCA-42, 2 RCA-80—Total, 10

Tuning Frequency Range.....
 { Band X— 140 KC - 410 KC
 { Band A— 540 KC - 1720 KC
 { Band B— 1720 KC - 5400 KC
 { Band C— 5400 KC - 18,000 KC
 { Band D— 18,000 KC - 36,000 KC

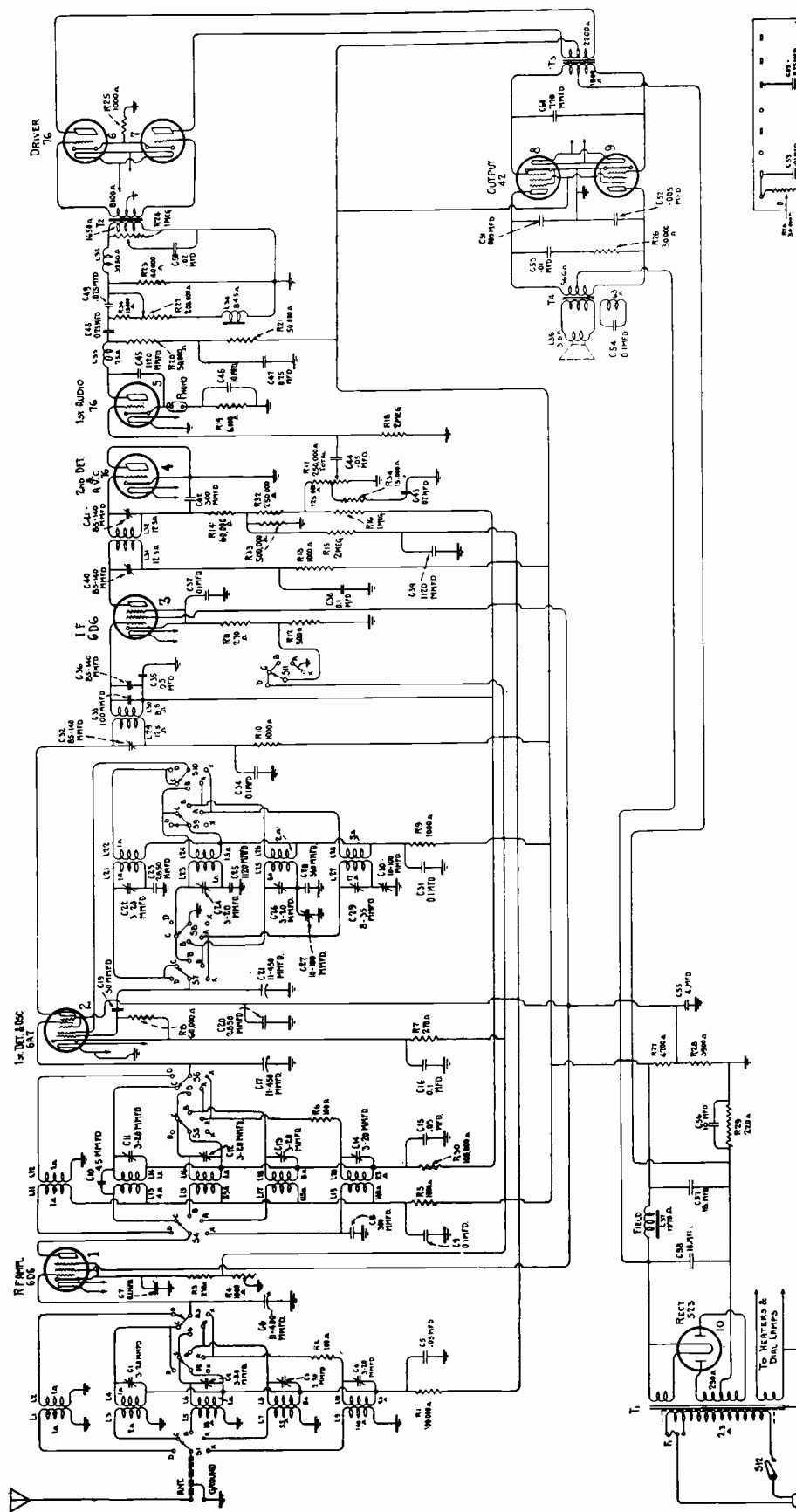
Line-up Frequencies.....175 KC, 410 KC, 460 KC, 600 KC, 1720 KC, 5160 KC, 18,000 KC

Maximum Undistorted Output.....7 Watts

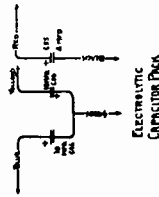
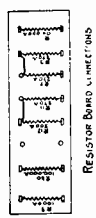
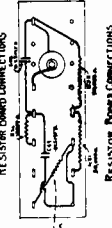
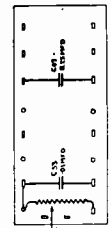
Maximum Output.....14 Watts

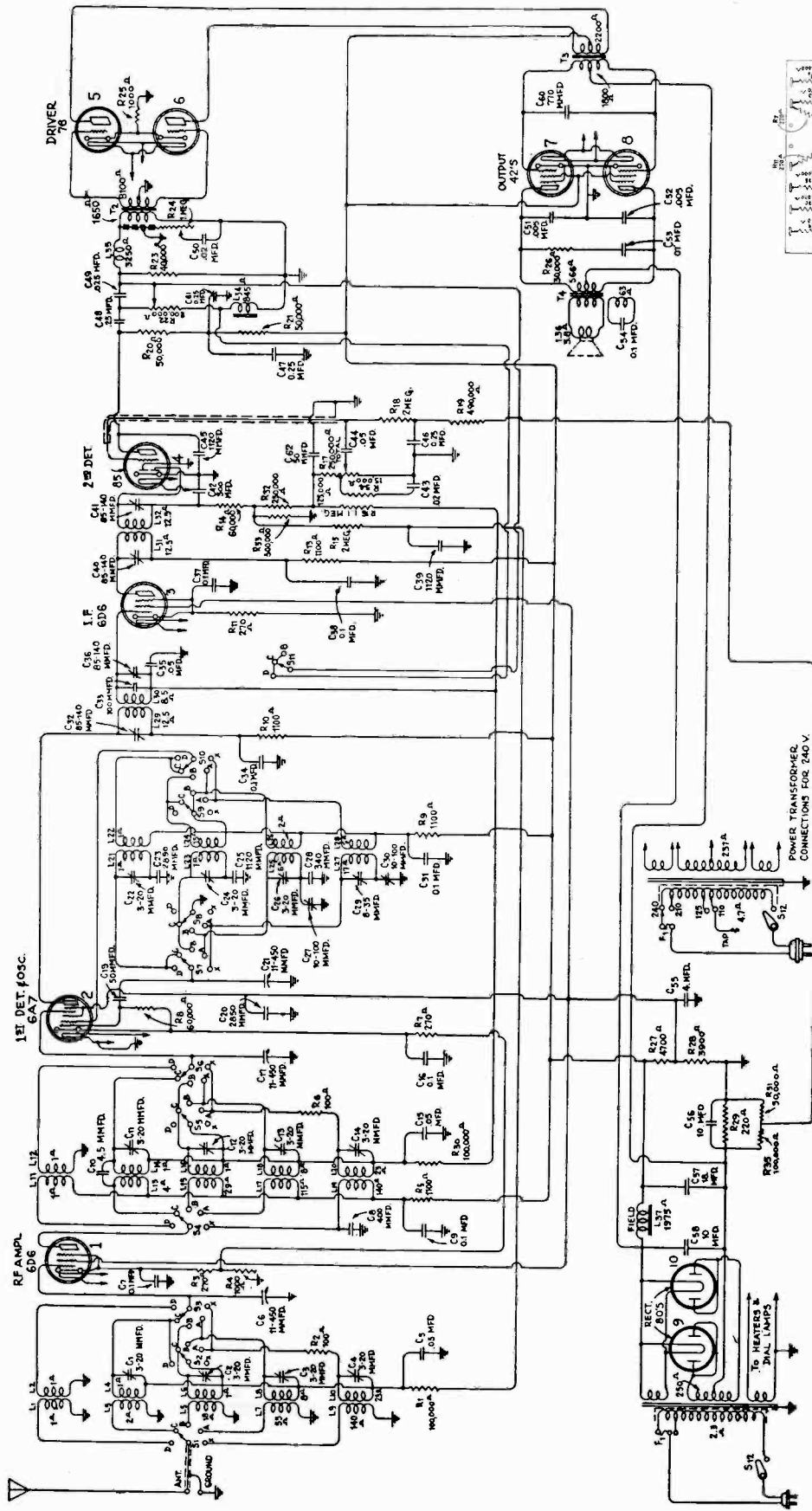
VARIATIONS IN MODELS 262 AND 263

- #1 - Early 1934 - Uses Type 76 as 2nd Det. & A.V.C.
 Type 76 as 1st Audio Amplifier.
 Type 5Z3 as rectifier.
 Sensitivity control change with band position.
- #2 - Late 1934 - Uses Type 76 as 2nd Det. & A.V.C.
 Type 76 as 1st Audio Amplifier.
 Type 5Z3 as rectifier
 Fidelity change with band position.
- #3 - Late 1934 - Uses Type 1-V as 2nd Det. & A.V.C.
 Type 76 as 1st Audio Amplifier.
 Type 5Z3 as rectifier.
 Fidelity change with band position.
- #4 - 1935 - Uses Type 85 as 2nd Det., A.V.C. & 1st A.F.
 2 Type 80 as rectifiers.
 Fidelity change with band position.

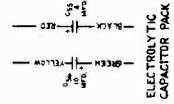
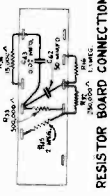
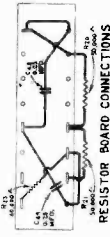
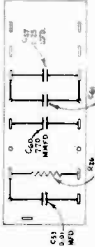


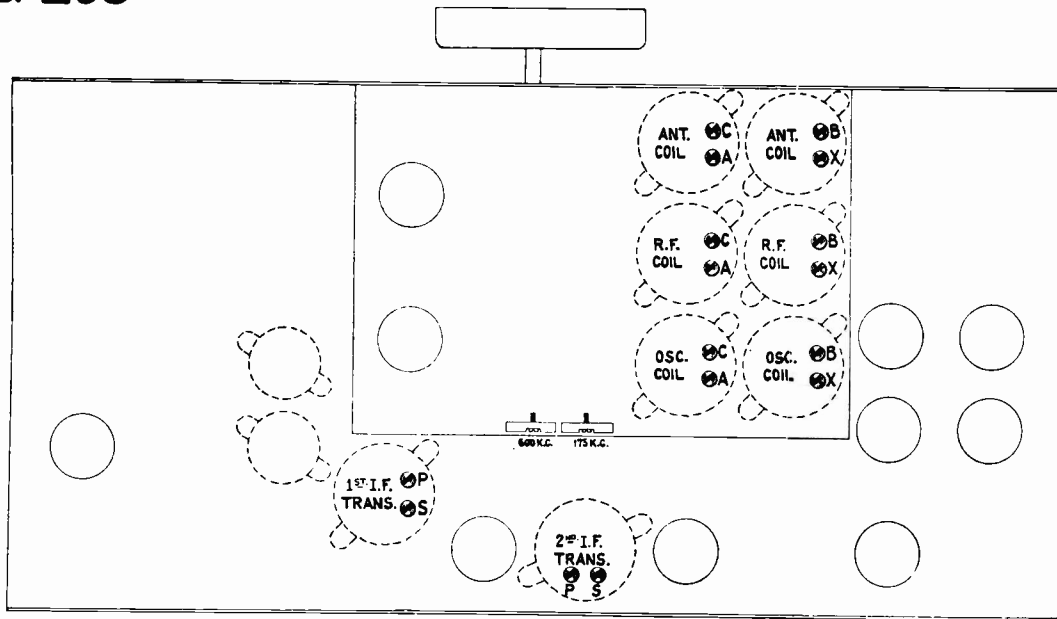
Schematic Circuit Diagram — Models with sensitivity control change for band position





Schematic Circuit Diagram (1935 production 262 and 1935 production 263)





-Location of Trimmer Capacitors

Alignment Procedure

DIAL CALIBRATION:

With tuning condenser fully meshed set pointer to coincide with horizontal line at low frequency end of A Band scale.

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	480 Kc	Quiet point near 600 Kc "A" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01mfd		S&P of 1st I-F Trans.	
3	Antenna in series with 200 mmfd	410 Kc	410 Kc "X" Band	Osc. R-F & Ant. Trimmers "X" Band
4		175 Kc	175 Kc "X" Band	175 Kc Trimmers Rock Gang
5		<i>Repeat Step 3</i>		
6		1720 Kc	1720 Kc "A" Band	Osc. R-F & Ant. Trimmers "A" Band
7		600 Kc	600 Kc "A" Band	600 Kc Trimmers Rock Gang
8		<i>Repeat Step 6</i>		
9		5160 Kc	5160 Kc "B" Band	Osc. † R-F ▲ & Ant. Trimmers "B" Band
10		18000 Kc	18 Mc "C" Band	Osc. † R-F ▲ & Ant. Trimmers "C" Band

Osc. tracks 480 Kc above signal on all bands.

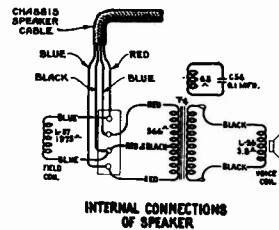
† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

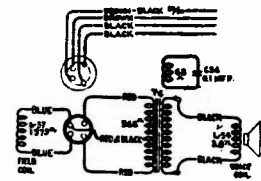
HUM INDUCTION

In chasses of early manufacture (models with a type-76 or 1-v second detector), a slight "buzz" or "hum" will often be encountered. In order to reduce this interference the following steps should be taken:

- (1) Remove the connections of the red with yellow tracer lead from the 10 mfd. electrolytic capacitor (C-56) and from the lug on the resistor board where it terminates. In place of this conductor, install a new one that will be outside of the chassis cable, carried along the front side of the chassis.
- (2) Connect the grounding lead from the second detector cathode to a ground point nearer the detector socket.
- (3) The secondary leads of the interstage transformer connecting to the driver stage, should be kept away from the heater prongs and heater wiring. It is desirable to shorten these leads as much as possible.
- (4) It is important that the heater leads of the audio stages of the receiver be carefully twisted.



INTERNAL CONNECTIONS OF SPEAKER



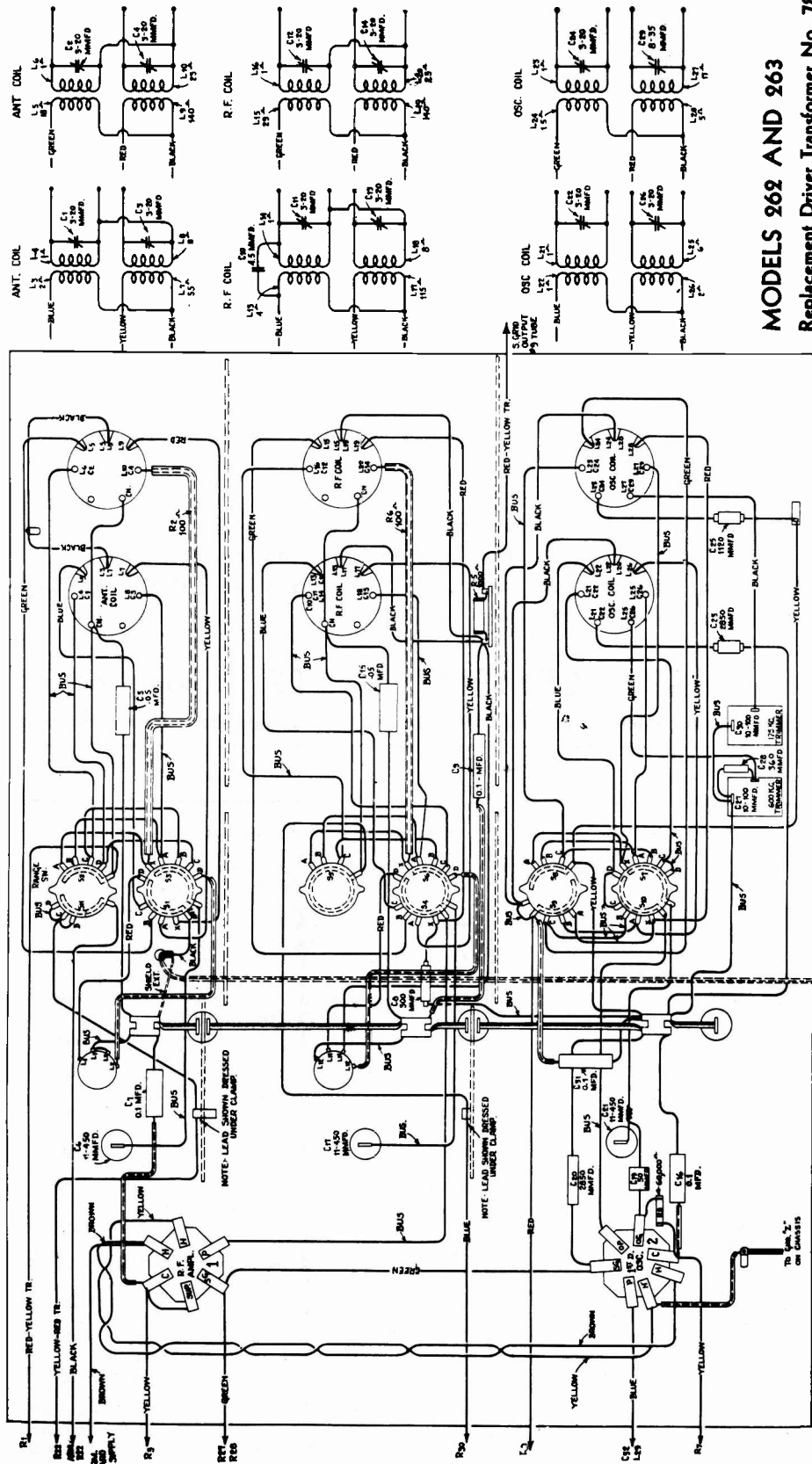
INTERNAL CONNECTIONS OF SPEAKER

Loudspeaker Wiring

MAGNETIC PICKUP CONNECTIONS

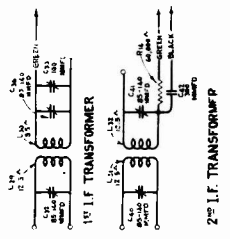
A terminal board (link in series with first audio stage cathode) is provided at the rear of the chassis for adding phonograph facilities to this instrument.

262 & 263

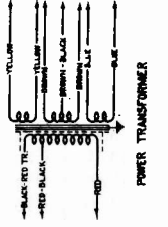
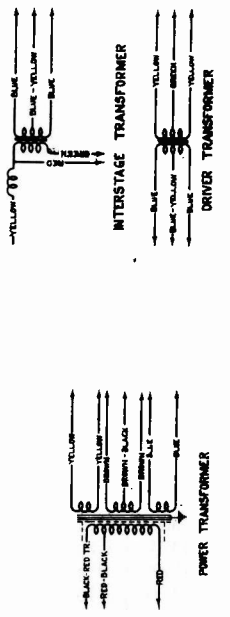


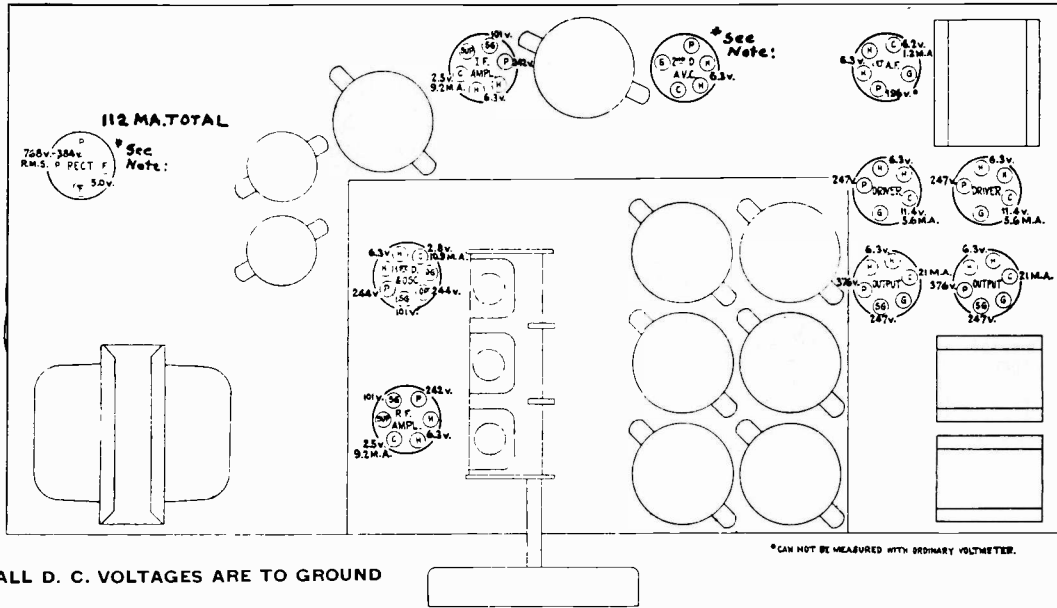
MODELS 262 AND 263

Replacement Driver Transformer No. 7892:
 New shipments of the replacement audio driver transformer for Models 262 and 263 will be found to have a revised coil design in that the primary d-c resistance equals 1,350 ohms and the secondary total d-c resistance is 2,000 ohms. In addition to the coil revision, these transformers have been manufactured and tested by the latest methods to withstand the stringent conditions of humid climate and high temperature. An extra connection has also been provided on the unit for equalizing the primary and core potentials so that electrolysis between these parts will be reduced. This additional lead is colored RED-GREEN; and it should be connected to plus "B" (green lead) of the primary circuit.



-R. F. Unit Wiring Diagram





ALL D. C. VOLTAGES ARE TO GROUND

-Radiotron Socket Voltages

*NOTE: 1935 Production. Two Type 80 Radiotrons used as rectifiers. Type 85 Radiotron used as 2nd Det., A.V.C. & 1st A-F. Plate Voltage 107 * Volts - 1.4 millamperes.

REPLACEMENT PARTS 1934 PRODUCTION

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4372	Bracket—Bass tone control mounting bracket.		4604	Mount—Fuse mount for 200-250 volt operation	
4683	Bracket—Treble tone control mounting bracket.		7784	Reactor—Tone control reactor (L34)	
4406	Bracket—Volume control mounting bracket.		6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R3, R7, R11)	
3794	Capacitor—100 mmfd.—Located on first I. F. transformer (C33)		4622	Resistor—500 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R12)*	
3981	Capacitor—300 mmfd.—Located on second I. F. transformer (C42)		4370	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R9, R10, R13, R25)	
4668	Capacitor—770 mmfd. (C60)		6243	Resistor—6,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R19)	
4409	Capacitor—1120 mmfd. (C39, C45)		3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R34)	
3643	Capacitor—0.005 mfd. (C51, C52)		6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R23)	
3787	Capacitor—0.01 mfd. (C53)		3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R14)	
3639	Capacitor—0.02 mfd. (C43)		3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R1, R30)	
4652	Capacitor—0.02 mfd. (C50)		3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R32)	
3888	Capacitor—0.05 mfd. (C35)		6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R33)	
4694	Capacitor—0.05 mfd. (C44)		3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R16)	
3765	Capacitor—0.025 mfd. (C49)		6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R15, R18)	
3877	Capacitor—0.1 mfd. (C37)		3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5 (R20, R21)	
4645	Capacitor—0.1 mfd. (C34, C38)		2240	Resistor—30,000 ohms—Carbon type—1 watt (R26)	
3597	Capacitor—0.25 mfd. (C47)		4649	Resistor—Flat type—Total resistance 8820 ohms—Divided as follows: one 220 ohms, one 3,900 ohms and one 4,700 ohms section (R27, R28, R29)	
3702	Capacitor—0.25 mfd. (C48)		7804	Rheostat—Sensitivity control rheostat (R4)	
7790	Capacitor—10. mfd. (C58)				
7788	Capacitor—18. mfd. (C57)				
7833	Capacitor pack—Comprising two 10. mfd. and one 4. mfd. capacitor (C46, C55, C56)				
4420	Clamp—Antenna lead clamp and screw—Package of 10.				
4358	Clamp—Mounting clamp for capacitor—Stock No. 7788 or No. 7790.				
7806	Coil—First audio plate choke (L33)				
4371	Cover—Fuse mount cover.				
10907	Fuse—3 amperes—Package of 5.				
3376	Mount—Fuse mount—105-125 volt operation.				

* R12 Resistor—500 ohms—Some Models

REPLACEMENT PARTS (Continued) 1934 PRODUCTION

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
4656	Screw—Volume control mounting assembly—Comprising one bushing, one washer, one shakeproof washer and one nut.....		4656	Screw—Chassis mounting screw assembly—Comprising one bushing, one washer, one shakeproof washer, and one nut (four sets required to mount chassis).....	
4452	Shield—First audio, second detector A.V.C. or driver Radiotron shield.....		7800	Shield—Antenna, detector or oscillator coil shield.....	
3683	Shield—Second detector—A.V.C. Radiotron shield top.....		4452	Shield—First detector-oscillator Radiotron shield.....	
4453	Shield—I. F. Radiotron shield.....		3683	Shield—Radiotron shield top.....	
7800	Shield—Intermediate frequency transformer shield.....		4454	Shield—R. F. amplifier Radiotron shield.....	
3859	Socket—4-contact rectifier Radiotron socket.....		3529	Socket—Dial lamp socket.....	
7484	Socket—5-contact first audio, second detector A.V.C. or driver Radiotron socket.....		7485	Socket—6-contact R. F. amplifier Radiotron socket.....	
7485	Socket—6-contact I. F. Radiotron socket.....		3572	Socket—7-contact first detector-oscillator Radiotron socket.....	
6676	Socket—6-contact output Radiotron socket.....		7836	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11).....	
4686	Strip—"ANT-GND" terminal strip—Two terminals and link.....			DRIVE ASSEMBLIES	
7796	Switch—Operating switch (S12).....		4362	Arm—Band indicator operating arm.....	
7795	Tone control—Bass tone control (R22).....		10194	Ball—Steel ball for variable condenser drive assembly—Package of 20.....	
4648	Tone control—Treble tone control (R24).....		4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shafts, balls, ring, spring and washers—Assembled.....	
7841	Transformer—Audio transformer pack comprising interstage transformer and reactor (T2, L35).....		4455	Dial—Station selector dial.....	
4431	Transformer—First intermediate frequency transformer (L29, L30, C32, C33, C36).....		7799	Drive—Variable tuning condenser drive assembly complete.....	
4433	Transformer—Second intermediate frequency transformer (L31, L32, C40, C41, C42).....		4364	Gear—Spring gear assembly complete with hub, pinion, gear cover and spring.....	
7832	Transformer—Driver transformer (T3).....		4361	Indicator—Band indicator—Celluloid lettered—D. C. B. A. X.....	
9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....		4363	Pointer—Station selector main (large) pointer.....	
9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....		4367	Pointer—Station selector vernier (small) pointer.....	
9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....		3943	Screen—Celluloid screen for dial light—Package of 2.....	
4650	Volume control (R17).....		3993	Screw—No. 6-32-5/32" square head set screw for band indicator operating arm or variable condenser drive—Package of 10.....	
	R. F. UNIT ASSEMBLIES		4377	Spring—Band indicator and arm tension spring—Package of 5.....	
2747	Cap—Contact cap—Package of 5.....		4378	Stud—Band indicator operating arm stud—Package of 5.....	
4646	Capacitor—4.5 mmfd. (C10).....			CABLE ASSEMBLIES	
4633	Capacitor—50 mmfd. (C19).....		4653	Cable—Main cable.....	
3981	Capacitor—300 mmfd. (C8).....		4654	Cable—4-conductor—Reproducer cable.....	
4413	Capacitor—360 mmfd. (C28).....		4655	Cable—Shielded cable—From low-frequency tone control to resistor boards.....	
4412	Capacitor—1,120 mmfd. (C25).....			REPRODUCER ASSEMBLY	
4524	Capacitor—2,850 mmfd. (C23).....		4645	Capacitor—0.1 mfd.—Located on output transformer (C54).....	
4615	Capacitor—2,850 mmfd. (C20).....		7835	Coil—Field coil, magnet and cone support (L37).....	
4417	Capacitor—0.05 mfd. (C5, C15).....		8969	Cone—Reproducer cone (L36)—Package of 5.....	
4415	Capacitor—0.1 mfd. (C7, C16).....		9543	Reproducer—Reproducer complete.....	
4645	Capacitor—0.1 mfd. (C9, C31).....		6999	Screen—Dust (cloth) screen—Package of 6.....	
3861	Capacitor—Adjustable capacitor (C27, C30).....		7834	Transformer—Output transformer and capacitor (T4, C54).....	
4420	Clamp—Antenna lead clamp and screw—Package of 10.....			MISCELLANEOUS PARTS	
4410	Coil—Antenna coil—Band "D" (L1, L2).....		4677	Bezel—Metal bezel (escutcheon) for station selector dial glass.....	
7803	Coil—Antenna coil—B.-S.W. (L3, L4, L7, L8, C1, C3).....		6614	Glass—Station dial glass.....	
7810	Coil—Antenna coil—P.B.-L.W. (L5, L6, L9, L10, C2, C4).....		3829	Knob—Bass or treble tone control, volume or sensitivity control range switch or operating switch knob—Package of 5.....	
7805	Coil—Detector coil—B.-S.W. (L13, L14, L17, L18, C11, C13).....		4657	Knob—Knob station selector knob—Package of 5.....	
7808	Coil—Detector coil—P.B.-L.W. (L15, L16, L19, L20, C12, C14).....		4678	Ring—Retaining ring for dial glass—Pkg. of 5.....	
4421	Coil—Detector coil—Band "D" (L11, L12).....		4119	Screw—8-32-1/4" headless set screw for knob—Stock No. 4657—Package of 20.....	
7807	Coil—Oscillator coil—B.-S.W. (L21, L22, L25, L26, C22, C26).....		4393	Screw—8-32-5/16" headless set screw for knob—Stock No. 3829—Package of 10.....	
7809	Coil—Oscillator coil—P.B.-L.W. (L23, L24, L27, L28, C24, C29).....				
7801	Condenser—3-gang variable tuning condenser (C6, C17, C21).....				
4340	Lamp—Dial lamp—Package of 5.....				
4370	Resistor—1,000 ohms—Carbon type—1/4 watt—Package of 10 (R5).....				
3602	Resistor—60,000 ohms—Carbon type—1/4 watt—Package of 5 (R8).....				
4418	Resistor—100 ohms—Flexible type—Package of 10 (R2, R6).....				

REPLACEMENT PARTS

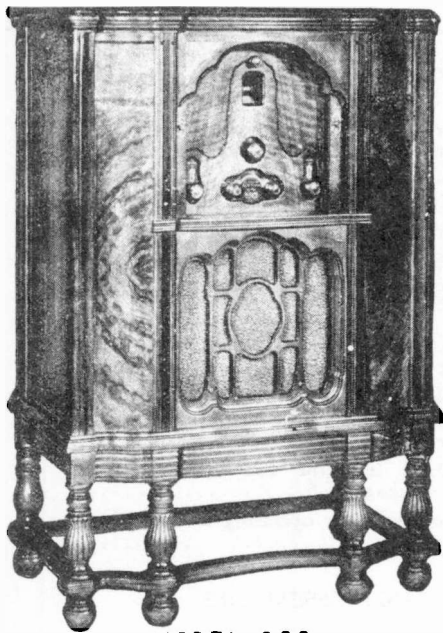
1935
PRODUCTION

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

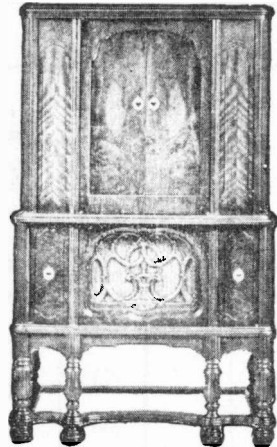
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES					
4372	Bracket—Bass tone control mounting bracket.		3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt (R32)—Package of 5.....	
4683	Bracket—Treble tone control mounting bracket.....		6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt (R33)—Package of 5.....	
4406	Bracket—Volume control mounting bracket..		4783	Resistor—1,100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R16)—Package of 5.....	
4416	Capacitor—50 mmfd. (C62)—Package of 5..		6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R15, R18)—Package of 5.....	
3794	Capacitor—100 mmfd.—Located on first I.F. transformer (C33).....		3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R20, R21)—Package of 5.....	
3981	Capacitor—300 mmfd.—Located on second I. F. transformer (C42).....		2240	Resistor—30,000 ohms—Carbon type—1 watt (R26).....	
4668	Capacitor—770 mmfd. (C60).....		4649	Resistor—Flat type—Total resistance 8820 ohms—Divided as follows: one 220 ohms, one 3,900 ohms and one 4,700 ohms section (R27, R28, R29).....	
4409	Capacitor—1120 mmfd. (C39, C45).....		7804	Rheostat—Sensitivity control rheostat (R4)..	
4838	Capacitor—0.005 mfd. (C51, C52).....		4656	Screw—Volume control mounting assembly—Comprising one bushing, one washer, one shakeproof washer and one nut.....	
3787	Capacitor—0.01 mfd. (C53).....		4452	Shield—Second detector A.V.C. Radiotron shield.....	
3639	Capacitor—0.02 mfd. (C43).....		3683	Shield—Second detector—A.V.C. Radiotron shield top.....	
4652	Capacitor—0.02 mfd. (C50).....		4453	Shield—I. F. Radiotron shield.....	
4836	Capacitor—0.05 mfd. (C35).....		4742	Shield—Intermediate frequency transformer shield.....	
4694	Capacitor—0.05 mfd. (C44).....		4784	Socket—4-contact rectifier Radiotron socket..	
3765	Capacitor—0.025 mfd. (C49).....		4814	Socket—5-contact driver Radiotron socket..	
4835	Capacitor—0.1 mfd. (C38).....		4786	Socket—6-contact I. F. amplifier—Second detector—"A.V.C." or output Radiotron socket.....	
4841	Capacitor—0.1 mfd. (C34, C37).....		4686	Strip—"ANT-GND" terminal strip—Two terminals and link.....	
3597	Capacitor—0.25 mfd. (C46, C47, C61).....		7796	Switch—Operating switch (S12).....	
3702	Capacitor—0.25 mfd. (C48).....		4829	Tone control—Bass tone control (R22).....	
7790	Capacitor—10. mfd. (C58).....		4830	Tone control—Treble tone control (R24)....	
7788	Capacitor—18 mfd. (C57).....		7841	Transformer—Audio transformer pack comprising interstage transformer and reactor (T2, L35).....	
4831	Capacitor pack—Comprising one 10. mfd. and one 4. mfd. capacitor (C55, C56).....		4431	Transformer—First intermediate frequency transformer (L29, L30, C32, C33, C36)....	
4420	Clamp—Antenna lead clamp and screw—Package of 10.....		4433	Transformer—Second intermediate frequency transformer (L31, L32, C40, C41, C42)....	
4358	Clamp—Mounting clamp for capacitor—Stock No. 7788 or No. 7790.....		7832	Transformer—Driver transformer (T3).....	
7806	Coil—First audio plate choke (L33).....		9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	
4371	Cover—Fuse mount cover.....		9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....	
10907	Fuse—3 amperes—Package of 5.....		9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....	
3376	Mount—Fuse mount—105-125 volt operation.....		4832	Volume control (R17).....	
4604	Mount—Fuse mount for 200-250 volt operation.....		R. F. UNIT ASSEMBLIES		
7784	Reactor—Tone control reactor (L34).....		4244	Cap—Contact cap—Package of 5.....	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R7, R11)—Package of 5.....		4646	Capacitor—4.5 mmfd. (C10).....	
4687	Resistor—1000 ohms—Carbon type— $\frac{1}{2}$ watt (R25)—Package of 10.....		4633	Capacitor—50 mmfd. (C19).....	
4834	Resistor—1100 ohms—Carbon type— $\frac{1}{4}$ watt (R9, R10, R13)—Package of 5.....		4842	Capacitor—400 mmfd. (C8).....	
4833	Resistor—490,000 ohms—Carbon type— $\frac{1}{4}$ watt (R19)—Package of 5.....		4811	Capacitor—340 mmfd. (C28).....	
3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt (R34)—Package of 5.....				
6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{4}$ watt (R23)—Package of 5.....				
3114	Resistor—50,000 ohms—Carbon type— $\frac{1}{4}$ watt (R31)—Package of 5.....				
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R14)—Package of 5.....				
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R1, R30, R35)—Package of 5.....				

MODELS 280, 380 & 380 HR

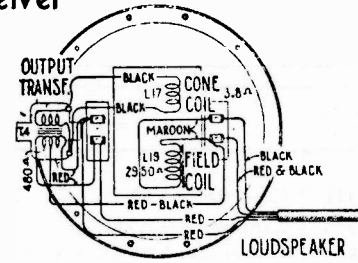
Twelve-Tube Two-Band A. C. Superheterodyne Receiver and Radio-Phonographs



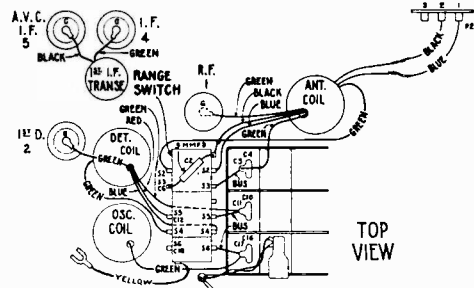
MODEL 280



MODELS 380 & 380HR



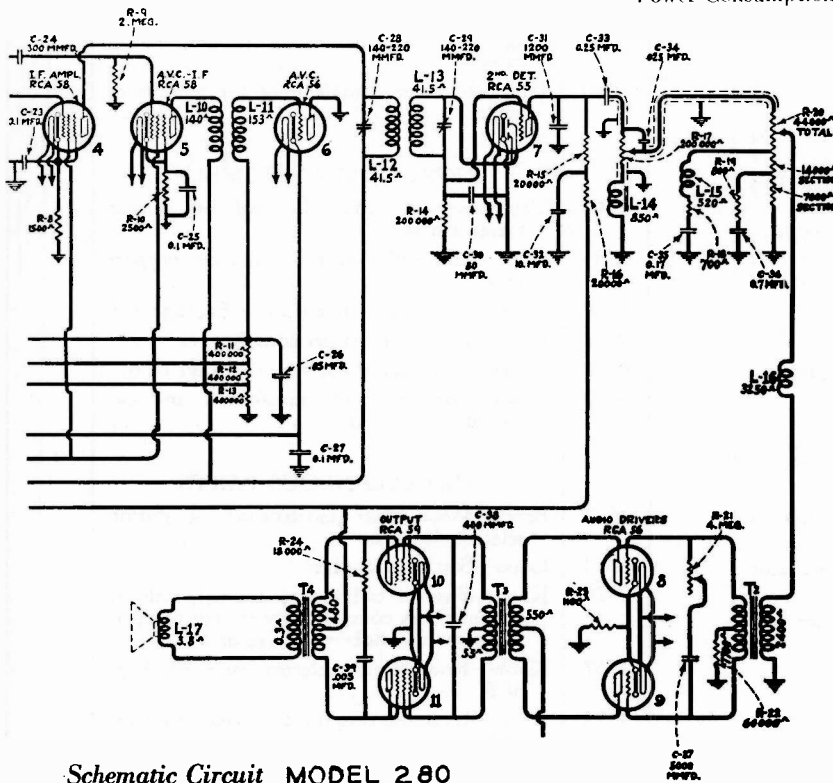
MODELS 280 & 380



TOP VIEW

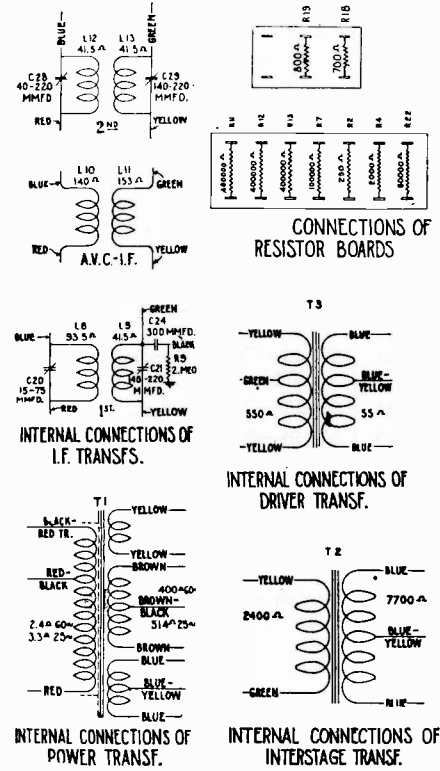
Electrical Specifications

Voltage Rating 105-125 Volts
 Power Consumption 120 Watts
 Type and Number of Radiotrons 4 RCA-56, 4 RCA-58,
 1 RCA-55, 2 RCA-59, 1 RCA-5Z3—Total, 12
 Frequency Range 540 K.C.-1500 K.C.—1400 K.C.-2800 K.C.
 Undistorted Output 10.0 Watts
MODELS 380 & 380HR
 Power Consumption (60 Cycle) 175 Watts



Schematic Circuit MODEL 280

NOTE: The radio receivers of Models 280, 380 and 380-HR are very similar, differing only in the adaptations for phono. operation. In Model 280 resistor R2 is connected direct to noise suppressor control R3, resistor R8 (I-F cathode) is connected direct to chassis, and the grid of 2nd Det. is connected direct to junction of resistor R14 and capacitor C30.



CONNECTIONS OF RESISTOR BOARDS

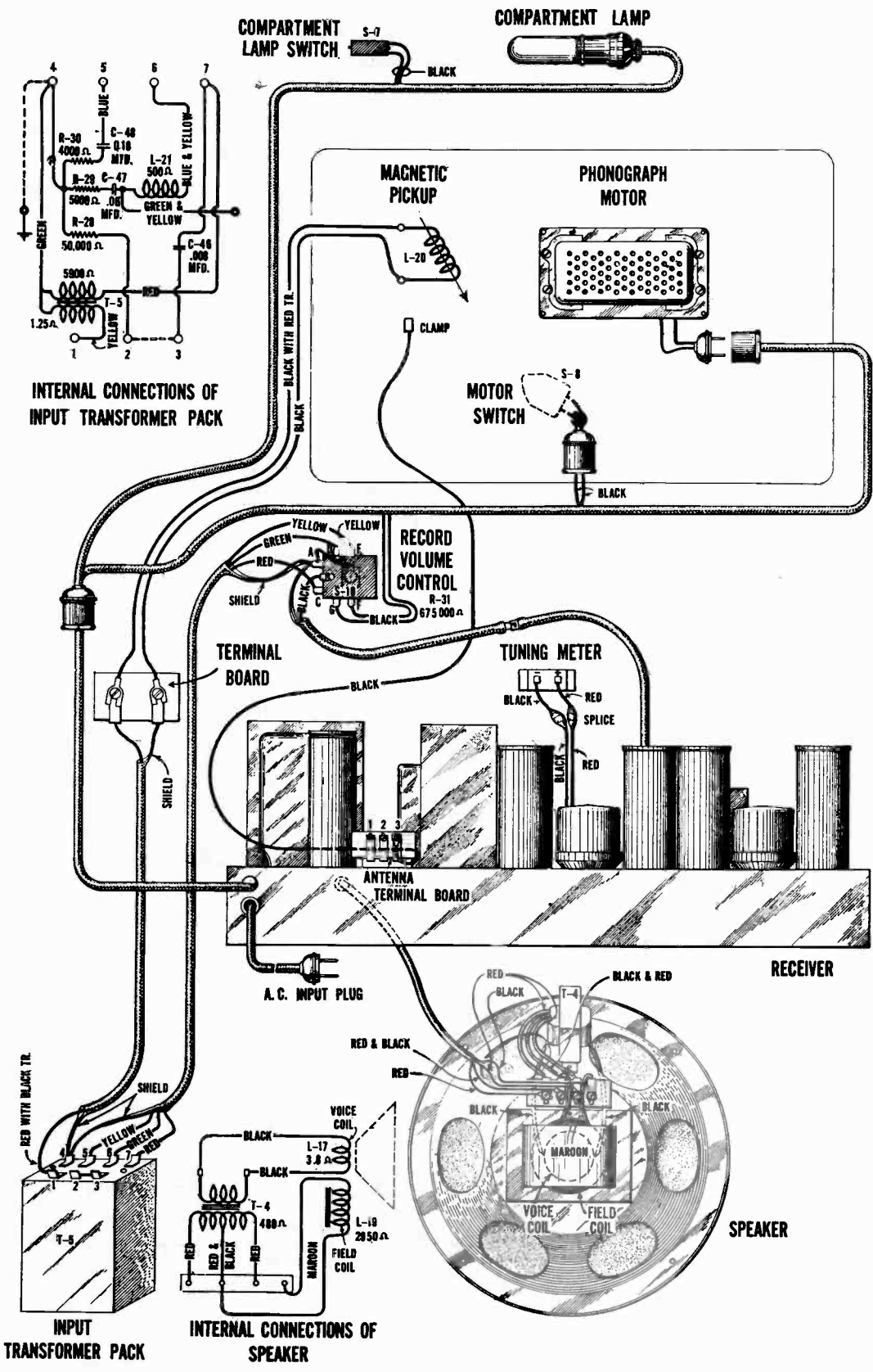
INTERNAL CONNECTIONS OF I.F. TRANSFS.

INTERNAL CONNECTIONS OF DRIVER TRANSF.

INTERNAL CONNECTIONS OF POWER TRANSF.

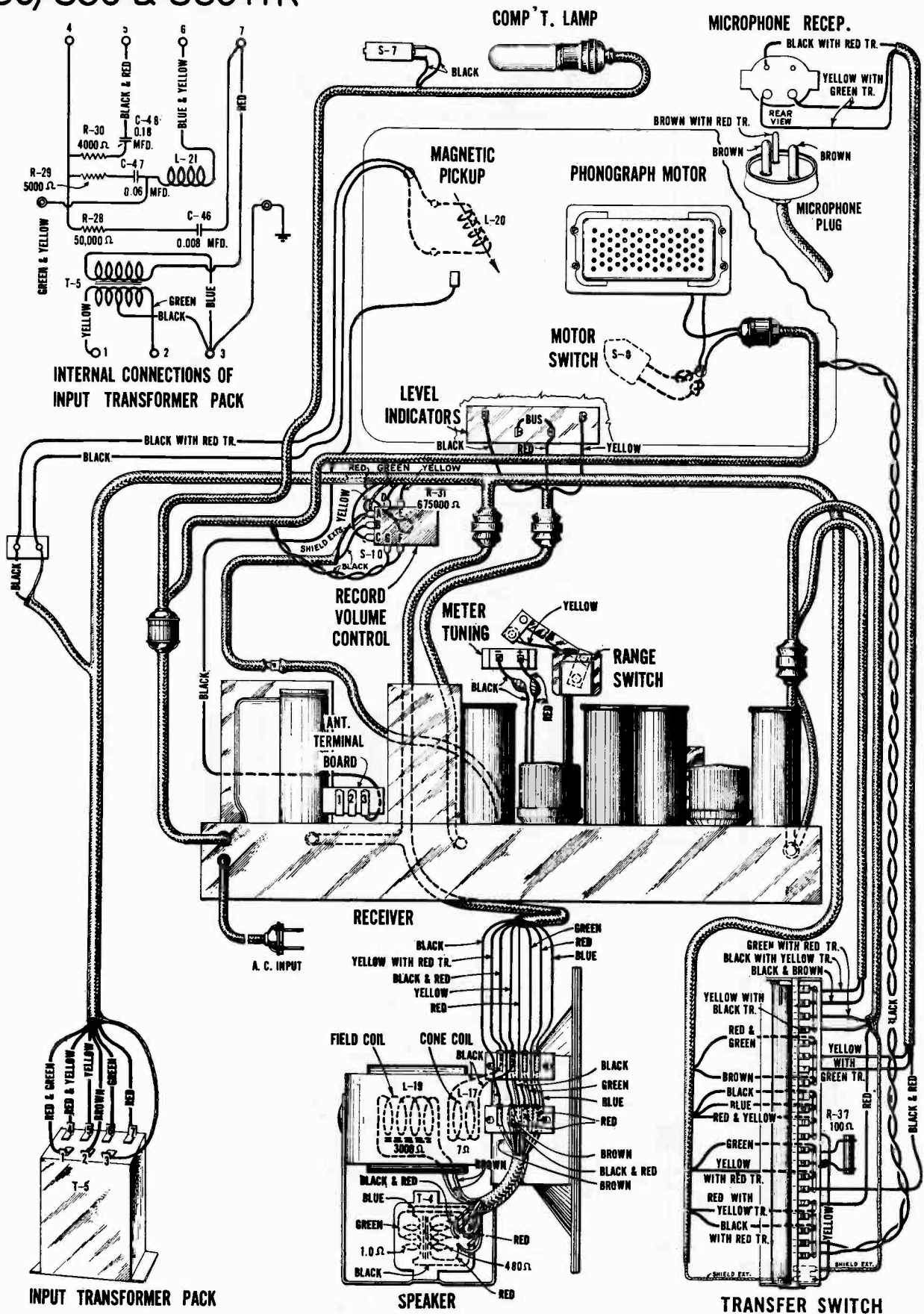
INTERNAL CONNECTIONS OF INTERSTAGE TRANSF.

280, 380 & 380 HR



MODEL 380 *Assembly Wiring Diagram*

280, 380 & 380 HR



MODEL 380 HR - Assembly Wiring Diagram

280, 380 & 380 HR

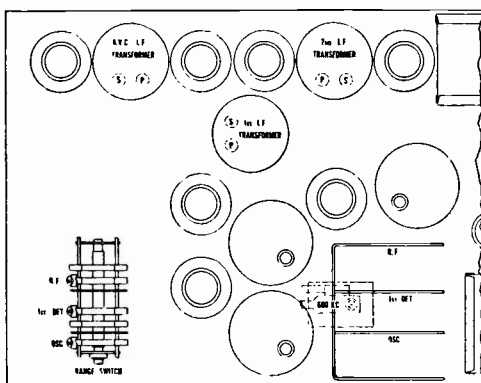
RADIOTRON SOCKET VOLTAGES (RADIO OPERATION)

120 Volt A. C. Line—Volume Control and Sensitivity Control at Maximum—No signal being received

Radiotron No.	Cathode to Control Grid, Volts	Cathode to Screen Grid, Volts	Cathode to Plate, Volts	Plate Current, M. A.	Heater Volts
RCA-58 R. F.	3.1	97	212	7.5	2.5
RCA-56 Osc.	—	—	100	6.0	2.5
RCA-58 1st Det.	9.5	91	206	2.8	2.5
RCA-58 I. F.	7.5	93	208	4.0	2.5
RCA-58 A. V. C.—I. F.	8.5	92	207	3.0	2.5
RCA-56 A. V. C.	12.0	—	—	0	2.5
RCA-55 2nd Det.	0	—	74	8.0	2.5
RCA-56 A. F. Driver	11.0	—	205	5.0	2.5
RCA-56 A. F. Driver	11.0	—	205	5.0	2.5
RCA-59 Power	0	—	394	13.0	2.5
RCA-59 Power	0	—	394	13.0	2.5
RCA-5Z3 Rect.	990-495 R. M. S.	—	—	92 Total	5.0

Alignment Procedure

With tuning condenser fully meshed set dial so that end calibration coincides with pointer.
Set silent tuning control for maximum sensitivity.



-Location of Line-up Capacitors

STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT
1	I-F Grid in series with 0.01 mfd	175 Kc	Quiet point near 600 Kc "BC" Band	S&P of 2nd I-F Trans.
2	1st Det. Grid in series with 0.01 mfd			S&P of 1st I-F Trans.
3	Antenna in series with 200 mmfd	1400 Kc	1400 Kc "BC" Band	Osc. Det. & R-F Trimmers on gang condenser
4		600 Kc	600 Kc "BC" Band	600 Kc Osc. Trimmers Rock Gang
5		Repeat Step 3		
6		2440 Kc	244 Kc "SW" Band	Osc. Det. & R-F Trimmers on range switch

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
MODEL 280			
RECEIVER ASSEMBLIES			
2730	Resistor—18,000 ohms—Carbon type—1 watt (R24)—Package of 5.	3597	Capacitor—0.25 mfd. (C35, C36)
3024	Capacitor—9 mmfd. (C2)—Package of 2.	3615	Knob—Range switch knob—Package of 5.
3047	Resistor—1,500 ohms—Carbon type—1/2 watt (R8)—Package of 5.	3638	Scale—Tuning meter scale—Package of 5.
3085	Capacitor—400 mmfd. (C38)	3640	Capacitor—0.05 mfd. (C9, C22, C26)
3118	Resistor—100,000 ohms—Carbon type—1/2 watt (R5)—Package of 5.	3641	Capacitor—0.1 mfd. (C7, C13, C23, C25, C27)
3252	Resistor—100,000 ohms—Carbon type—1/2 watt (R6, R7)—Package of 5.	3643	Capacitor—0.005 mfd.—Output stage—In series with 18,000 ohm resistor (C39)
3435	Resistor—250 ohms—Carbon type—1/2 watt (R2)—Package of 5.	3719	Socket—7-contact Radiotron socket
3460	Capacitor—1,200 mmfd. (C31)	3726	Arm—Range switch operating arm assembly—Comprising arm, link, studs and set screws.
3526	Resistor—2,000 ohms—Carbon type—1/2 watt (R4)—Package of 5.	3727	Shaft—Shaft and bushing assembly for range switch operating arm—Comprising two washers, shaft, bushing and nut.
3527	Resistor—800 ohms—Carbon type—1/2 watt (R19)—Package of 5.	3747	Capacitor—15 mmfd. (C8)
3529	Socket—Noise suppressor or volume indicator lamp socket	3749	Capacitor—0.1 mfd.—Tuning meter filter (C40)
3533	Shutter—High frequency tone control shutter	3765	Capacitor—0.025 mfd. (C34)
3534	Shutter—Low frequency tone control shutter	3774	Resistor—7,400 ohms—Tapped at 3,800 and 500 ohms (R25, R26, R27)
3535	Socket—High or low frequency indicator lamp socket	3780	Shutter—Noise suppressor shutter
3548	Knob—High or low frequency tone control knob	3781	Shutter—Volume control shutter
3551	Screw assembly—Chassis mounting washer and screw assembly—Comprising 4 screws, 4 lockwashers, 4 washers, 8 cushions and 4 spacers—One set.	3782	Shield—Radiotron shield—Second detector
3556	Capacitor—0.05 mfd.—Located on antenna coil (C3)	3797	Reactor—Volume control compensating reactor (L15)
3558	Capacitor—50 mmfd. (C19)	3798	Resistor—700 ohms—Carbon type—1/2 watt (R18)—Package of 5.
3563	Socket—Tuning meter lamp socket and bracket	3799	Capacitor—80 mmfd. (C30)
3564	Bracket—Station selector dial lamp bracket	3883	Fuse—2 amperes—Package of 5.
3565	Socket—Dial lamp socket	4013	Capacitor—200 mmfd.—C1
		5817	Resistor—20,000 ohms—Carbon type—3 watts (R15, R16)
		6186	Resistor—500,000 ohms—Carbon type—Located on antenna coil (R1)—Package of 5.
		6192	Spring—3-gang tuning condenser drive cord tension spring—Package of 10.

Replacement Parts (Continued)

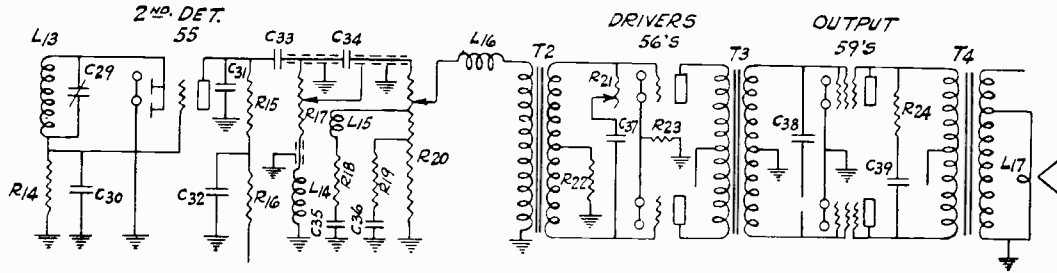
Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
MODEL 280 CONT.			
6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{2}$ watt (R14)—Package of 5	3529	Socket—Noise suppressor, volume control lamp socket or tuning meter
6280	Resistor—400,000 ohms—Carbon type— $\frac{1}{2}$ watt (R11, R12, R13)—Package of 5	3533	Shutter—High frequency tone control shutter
6281	Resistor—1,100 ohms—Carbon type— $\frac{1}{2}$ watt (R23)—Package of 5	3534	Shutter—Low frequency tone control shutter
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R22)—Package of 5	3535	Socket—High or low frequency tone control lamp socket
6288	Knob—Volume control or noise suppressor knob—Package of 5	3556	Capacitor—0.05 mfd.—Located on antenna coil (C3)
6298	Cord—3-gang tuning condenser drive cord—Package of 5	3558	Capacitor—50 mmfd. (C19)
6300	Socket—4-contact Radiotron socket	3564	Bracket—Station selector dial lamp—Mounting bracket
6312	Capacitor—650 mmfd. (C15)—Package of 5	3565	Socket—Station selector dial lamp socket
6316	Resistor—2,500 ohms—Carbon type— $\frac{1}{2}$ watt (R10)—Package of 5	3597	Capacitor—0.25 mfd. (C33, C45)
6323	Shaft—3-gang variable tuning condenser drive shaft—Comprising 1 shaft, 2 "C" washers and 2 flat washers—Package of 2	3640	Capacitor—0.05 mfd. (C9, C22, C26)
6437	Coil—Oscillator coil (L5, L6, L7)	3641	Capacitor—0.1 mfd. (C7, C13, C23, C25, C27)
6447	Volume control complete with mounting nut (R20)	3643	Capacitor—0.005 mfd. (C39)
6448	Tone control—Low frequency tone control complete with mounting nut (R17)	3652	Screw—No. 10-32— $\frac{1}{4}$ set screw for bracket and bushing assembly—Package of 10
6449	Tone control—High frequency tone control complete with mounting nut (R21)	3719	Socket—7-contact Radiotron socket
6450	Rheostat—Noise suppressor rheostat (R3)	3726	Arm—Range switch operating arm assembly—Comprising arm, link, studs and set screws
6461	Meter—Tuning meter	3727	Shaft—Shaft and bushing assembly for range switch operating arm—Comprising two washers, shaft, bushing and nut
6512	Capacitor—0.005 mfd.—High frequency tone control (C37)	3747	Capacitor—15 mmfd. (C8)
6536	Capacitor—3-gang variable tuning condenser assembly	3749	Capacitor—0.1 mfd. (C40)
6537	Switch—Range switch	3765	Capacitor—0.025 mfd. (C34)
6539	Coil—Detector coil (L3, L4)	3774	Resistor—7,400 ohms—Tapped at 3,800 and 500 ohms (R25, R26, R27)
6541	Scale—Dial and dial scale	3797	Reactor—Volume control compensating reactor (L15)
6547	Bezel—Tuning meter bezel	3798	Resistor—700 ohms—Carbon type— $\frac{1}{2}$ watt (R18)—Package of 5
6456	Escutcheon—Volume control escutcheon and color screen	3799	Capacitor—80 mmfd. (C30)
6457	Escutcheon—Noise suppressor escutcheon and color screen	3883	Fuse—2-ampere (F1)—Package of 5
6458	Escutcheon—High and low frequency escutcheon and color screen	4013	Capacitor—200 mmfd (C1)
6561	Coil—Antenna coil (L1, L2, R1)	4035	Switch—Radio-Phonograph switch (S9)
6562	Transformer—Driver transformer (T3)	4036	Shield—Low or high frequency tone control light shield
6563	Reactor—Volume control series reactor (L16)	4037	Shield—Antenna, detector or oscillator shield
6564	Transformer—First intermediate frequency transformer (C20, C21, C24, L8, L9, R9)	4038	Shield—Radiotron shield
6565	Transformer—Second intermediate frequency transformer (L10, L11)	4039	Shield—Radiotron shield—Second detector shield
6566	Transformer—Third intermediate frequency transformer (C28, C29, L12, L13)	4040	Shield—Radiotron tube shield top
6567	Capacitor pack—Comprising one 0.17 mfd. and one 0.7 mfd. capacitors (C35, C36)	4041	Cover—Fuse cover
6568	Transformer—Interstage audio transformer (T2)	4042	Reactor—Volume control series reactor (L16)
6571	Capacitor—10.0 mfd. (C43, C44)	4046	Resistor—2-megohm—Carbon type— $\frac{1}{2}$ watt (R33)—Package of 5
6572	Reactor—Tone control reactor (L14)	4129	Bracket—Bracket and bushing assembly for radio-phonograph switch shaft—Located on receiver chassis
6574	Capacitor pack—Comprising two 10.0 mfd. capacitors (C32, C41)	4130	Shield—R. F. Radiotron shield
6578	Reactor—Filter reactor (L18)	5817	Resistor—20,000 ohms—Carbon type—3 watt (R15, R16)
6618	Cable—Braid covered—4-conductor—Reproducer cable	6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt—Located on antenna coil (R1)—Package of 5
7062	Capacitor—Adjustable trimming capacitor—15 to 70 mmfd.	6192	Spring—3-gang tuning condenser drive cord tension spring—Package of 10
7065	Screw driver—Non-metallic screw driver for oscillator and I. F. adjustments	6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{2}$ watt (R14, R34, R35, R36)—Package of 5
7439	Drum—Dial drum with set screw, and three dial mounting nuts	6277	Capacitor—0.1 mfd.—Located on rectifier socket shield (C50)
7484	Socket—5-contact Radiotron socket	6280	Resistor—400,000 ohms—Carbon type— $\frac{1}{2}$ watt (R11, R12, R13)—Package of 5
7485	Socket—6-contact Radiotron socket	6281	Resistor—1,100 ohms—Carbon type— $\frac{1}{2}$ watt (R23)—Package of 5
7487	Shield—Radiotron shield	6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt (R22)—Package of 5
7488	Shield—Radiotron shield top	6298	Cord—3-gang tuning condenser drive cord—Package of 5
9028	Transformer—Power transformer—105-125 volts—50-60 cycles (T1)	6300	Socket—4-contact Radiotron socket
9029	Transformer—Power transformer—105-125 volts—25-40 cycles	6312	Capacitor—650 mmfd. (C15)—Package of 5
9030	Transformer—Power transformer—200-250 volts—50-60 cycles	6316	Resistor—2,500 ohms—Carbon type— $\frac{1}{2}$ watt (R10)—Package of 5
MODELS 380 & 380HR			
RECEIVER ASSEMBLIES			
2730	Resistor—18,000 ohms—Carbon type—1 watt (R24)—Package of 5	6437	Coil—Oscillator coil (L5, L6, L7)
2747	Cap—Contact cap—Package of 5	6447	Volume control (R20, S1)
3024	Capacitor—9 mmfd. (C2)—Package of 2	6448	Tone control—Low frequency (R17)
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt (R8)—Package of 5	6449	Tone control—High frequency (R21)
3085	Capacitor—400 mmfd. (C38)	6450	Rheostat—Noise suppressor rheostat (R3)
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5	6450	Capacitor—0.005 mfd. (C37)
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt (R6, R7)—Package of 5	6537	Switch—Range switch
3376	Mount—Fuse mount	6539	Coil—Detector coil (L3, L4)
3435	Resistor—250 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5	6541	Dial—Tuning condenser dial and scale
3460	Capacitor—1,200 mmfd. (C31)	6561	Coil—Antenna coil (L1, L2, R1, C3)
3526	Resistor—2,000 ohms—Carbon type— $\frac{1}{2}$ watt (R4, R32)—Package of 5	6562	Transformer—Audio driver transformer (T3)
3527	Resistor—800 ohms—Carbon type— $\frac{1}{2}$ watt (R19)—Package of 5	6564	Transformer—First intermediate frequency transformer (L8, L9, R9, C20, C21, C24)
3528	Bracket—Noise suppressor or volume control lamp bracket	6565	Transformer—A. V. C. intermediate frequency transformer (L12, L13, C28, C29)
		6566	Transformer—Second intermediate frequency transformer (L10, L11)
		6567	Capacitor pack—Comprising one 0.17 mfd., and one 0.7 mfd. capacitors (C35, C36)
		6568	Transformer—Interstage audio transformer (T2)
		6571	Capacitor—10 mfd. (C43, C44)
		6572	Reactor—Tone control reactor (L14)
		6574	Capacitor pack—Comprising two 10.0 mfd. capacitors (C32, C41)
		6578	Reactor—Filter reactor (L18)
		6797	Capacitor—10.0 mfd. (C49)
		6847	Shield—Rectifier socket shield and capacitor
		7062	Capacitor—Adjustable capacitor (C14)
		7439	Drum—Dial drum with set screw and three dial mounting nuts

Replacement Parts (Continued)

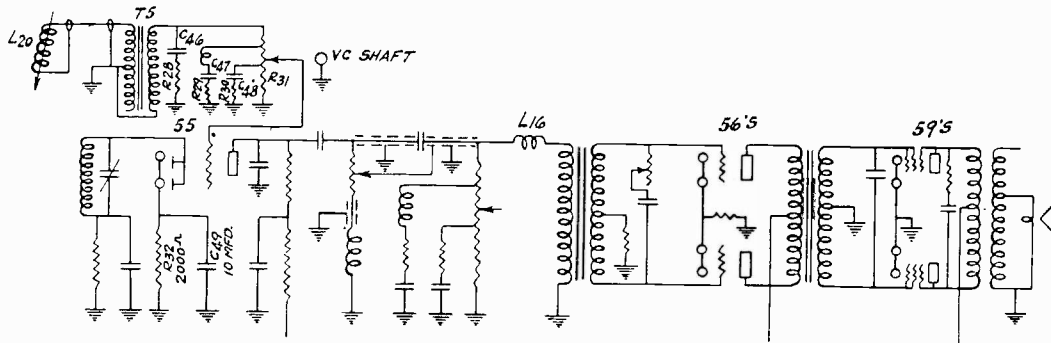
280, 380 & 380 HR

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
7484	Socket—5-contact Radiotron socket.....				
7485	Socket—6-contact Radiotron socket.....				
7700	Condenser—3-gang variable tuning condenser (C4, C5, C6, C10, C11, C12, C16, C17, C18, S2, S3, S4, S5, S6).....		4161	Lamp—Neon lamp.....	
9468	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....		4162	Escutcheon—Recording indicator escutcheon.....	
9469	Transformer—Power transformer—105-125 volts—25-40 cycles.....		4163	Screw—Screen, escutcheon, and terminal board mounting screw assembly—Comprising two screws, two spacers, two nuts and two lockwashers.....	
	MODELS 280 & 380		4164	Screen—Recording indicator lamp screen.....	
	REPRODUCER ASSEMBLIES			MODEL 380	
4131	Mounting assembly for reproducer—Comprising two plates, two bolts, two nuts, and two lockwashers.....		3638	Scale—Tuning meter scale—Package of 5.....	
6569	Transformer—Output transformer (T4).....		3763	Motor mounting board spring, washer and stud assembly—Comprising one bolt, two "C" washers, one bottom spring, one top spring, two cup washers, one shakeproof washer, and one nut.....	
6618	Cable—4-conductor—Reproducer cable.....		3780	Shutter—Noise suppressor shutter.....	
8969	Cone—Reproducer cone (L17)—Package of 5.....		3781	Shutter—Volume control shutter.....	
9031	Coil—Field coil magnet and cone support (L19).....		4043	Switch—Operating switch (S7).....	
9472	Reproducer complete.....		4044	Socket—Compartment lamp socket.....	
	MODEL 380HR		4045	Shade—Compartment lamp shade.....	
	REPRODUCER ASSEMBLIES		4047	Receptacle—Needle receptacle.....	
4131	Mounting assembly for reproducer—Comprising two plate, two bolts, two nuts, and two lockwashers.....		4066	Rest—Pickup rest.....	
4193	Board—Terminal Board.....		4080	Knob—Range switch knob—Package of 5.....	
6887	Transformer—Output transformer (T4).....		4081	Knob—Station selector, volume control or noise suppressor knob—Package of 5.....	
9480	Reproducer complete.....		4082	Knob—High or low frequency tone control, radio-phonograph switch or phonograph volume control knob—Package of 5.....	
9481	Cone—Reproducer cone (L17)—Package of 5.....		6456	Escutcheon—Volume control escutcheon and color screen.....	
9490	Coil—Field coil magnet and cone support (L19).....		6457	Escutcheon—Noise suppressor escutcheon and color screen.....	
	MODEL 380		6458	Escutcheon—High and low frequency escutcheon and color screen.....	
	CABLE ASSEMBLIES		6461	Meter—Tuning meter.....	
6793	Cable—2-conductor shielded—From radio volume control to Radio-Phonograph switch.....		6547	Bezel—Tuning meter bezel.....	
6794	Cable—Single conductor shielded—From Radio-Phonograph switch to Phonograph volume control (R31).....		6799	Volume control—Phonograph volume control (R31, S10).....	
6795	Cable—Phonograph motor cable—3-conductor with female section of connector plug.....		6800	Transformer—Phonograph input transformer—Comprising one transformer, one .008 mfd., one 0.06 mfd., and one 0.18 mfd. capacitors, one 50,000 ohm, one 4,000 ohm, and one 5,000 ohm resistors, and one choke coil (R28, R29, R30, C46, C47, C48, L21, T5).....	
6796	Cable—2-conductor—Compartment lamp cable.....		6801	Shaft—Flexible drive shaft for Radio-Phonograph switch.....	
6798	Cable—Compartment lamp and switch cable.....		6802	Bearing and plate assembly—For Radio-Phonograph switch shaft—Located on cabinet.....	
6848	Cable—Tapped cable with two connectors—From Phonograph Motor connector to motor starting switch plug and Phonograph volume control.....			MODEL 380HR	
6849	Cable—Single-conductor shielded cable with male section of connector—From Phonograph volume control to receiver chassis.....			MISCELLANEOUS ASSEMBLIES	
6850	Cable—Single-conductor shielded cable—From input transformer to terminal board.....		3638	Scale—Tuning meter scale—Package of 5.....	
	MODEL 380HR		3651	Screw—No. 10-32- $\frac{1}{2}$ "—Self locking set screw for flexible shaft—Package of 10.....	
	CABLE ASSEMBLIES		3763	Motor mounting board spring, washer and stud assembly—Comprising one bolt, two "C" washers, one bottom spring, one top spring, two cup washers, one shakeproof washer, and one nut—Package of 1 set.....	
4151	Plug—Tone control or reproducer cable connector.....		3780	Shutter—Noise suppressor shutter.....	
4152	Cable—Neon lamp cable—3-conductor with female section of connector.....		3781	Shutter—Volume control shutter.....	
4153	Plug—Neon lamp connector plug.....		4043	Switch—Compartment lamp switch (S7).....	
4154	Cord—Single conductor shielded—From volume control (R20) to terminal board.....		4044	Socket—Compartment lamp socket.....	
4155	Cord—Single conductor shielded—From low frequency tone control (R17) to tone control reactor (L14).....		4045	Shade—Compartment lamp shade.....	
4156	Cable—2-conductor shielded—From radio-phonograph switch (S9) to volume control (R20).....		4047	Receptacle—Needle receptacle.....	
4159	Cable—Microphone cable—3-conductor from selector switch to microphone socket.....		4066	Rest—Pickup rest.....	
6794	Cable—Single conductor shielded cable—From radio-phonograph switch (S9) to phonograph volume control (R31).....		4157	Weight—Recording weight.....	
6795	Cable—Power cable—Phonograph motor cable—3-conductor with female section of connector plug.....		4160	Wrench—Trimmer adjustment wrench and screwdriver.....	
6796	Cable—2-conductor—Compartment lamp and operating switch cable.....		4165	Radio-phonograph operating arm and pin—Fastened to switch arm.....	
6849	Cable—Single conductor shielded cable with female section of connector—From phonograph volume control to receiver cable.....		4166	Arm—Slotted arm for radio-phonograph switch—Fastened to end of flexible shaft.....	
6872	Cable—Reproducer cable—8-conductor—Tapped and shielded with female section of connector.....		4167	Bracket—Bracket and bearing assembly for radio-phonograph flexible shaft—Located on selector switch.....	
6873	Cable—Tone control cable—Two sections with female section of connector.....		4168	Escutcheon—Selector switch escutcheon—Package of 5.....	
6878	Cable—Main cable—From selector switch to receiver chassis cable, to speaker cable, and input transformer.....		4169	Escutcheon—Phonograph volume control escutcheon—Package of 5.....	
6879	Cable—Neon lamp cable—3-conductor with male section of connector—From chassis cable to neon indicator.....		4170	Resistor—100 ohms—Carbon type— $\frac{1}{2}$ watt (R37)—Package of 5.....	
6880	Cable—2-conductor—Motor cable from receiver cable to motor connector.....		4190	Pointer—Selector switch pointer—Package of 5.....	
6881	Cable—Tone control cable—2 sections with male section of connector—From receiver cable to selector switch.....		4191	Screw—No. 10-32 dog point fillister head set screw for flexible shaft—Package of 5.....	
	MICROPHONE ASSEMBLIES		4192	Hook—Microphone hook.....	
3216	Cushion—Microphone rubber cushions—Package of 6.....		6456	Escutcheon—Volume control escutcheon and color screen.....	
4158	Socket—Microphone socket.....		6457	Escutcheon—Noise suppressor escutcheon and color screen.....	
4171	Plug—3-contact microphone plug.....		6458	Escutcheon—High and low frequency escutcheon and color screen.....	
6882	Microphone complete.....		6547	Bezel—Tuning meter bezel.....	
6883	Cover—Microphone cover.....		6799	Volume control—Phonograph volume control (R31, S10).....	
6884	Frame—Microphone frame.....		6802	Bearing and plate assembly—For radio-phonograph switch shaft—Located on cabinet.....	
7533	Mechanism—Microphone mechanism.....		6874	Transformer pack—Phonograph input transformer pack—Comprising one transformer, one reactor, one 0.008 mfd., one 0.06 mfd., one 0.18 mfd. capacitors, one 50,000 ohm, one 4,000 ohm and one 50,000 ohm resistors (T5, L21, C46, C47, C48, R28, R29, R30).....	
7534	Cord—Microphone cord.....		6875	Switch—Radio-phonograph or recording selector switch (S11).....	
			6876	Cover—Radio-phonograph or recording selector switch cover.....	
			6877	Shaft—Flexible drive shaft for radio-phonograph switch.....	
			6886	Meter—Tuning meter.....	
			6294	Hinge—Door hinge—4 complete hinges.....	
			6959	Pull—Door pull—Package of 2.....	

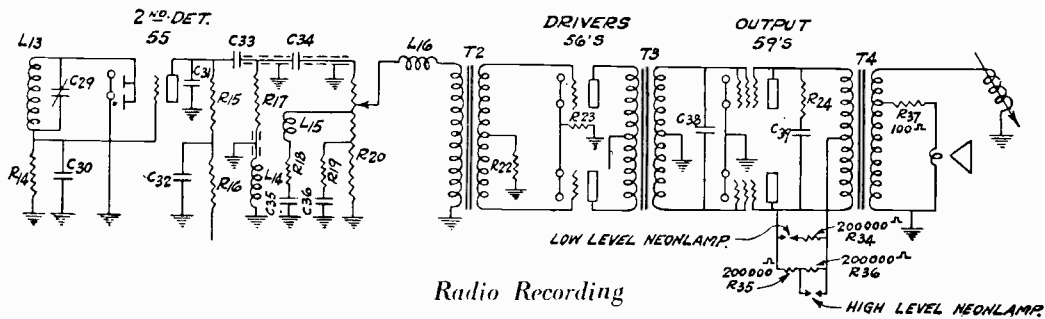
280, 380 & 380HR



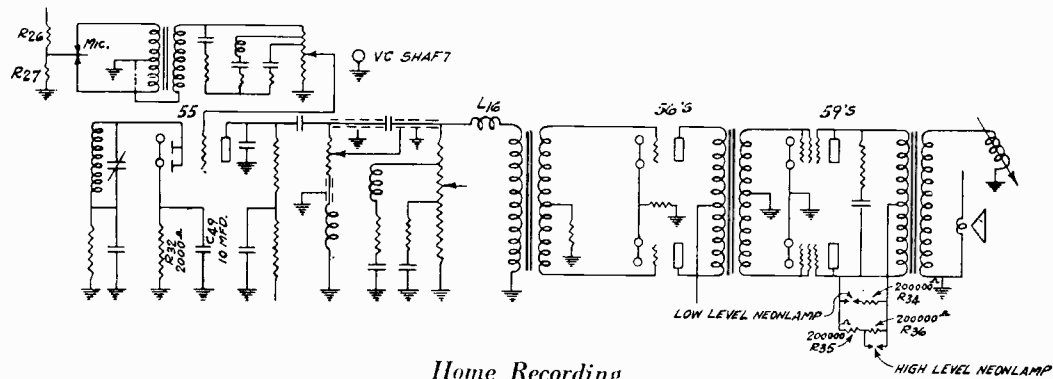
Radio Reproduction



Record Reproduction



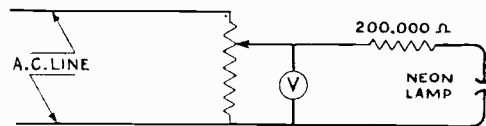
Radio Recording



Home Recording

Testing Neon Level Indicating Lamps

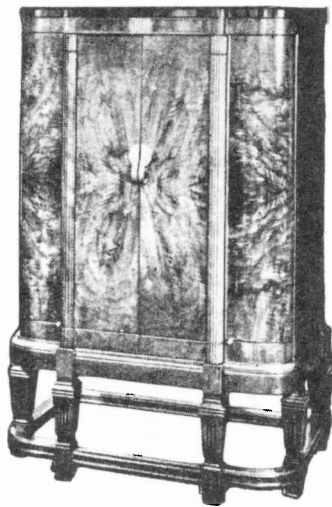
The method for checking involves testing for lighting between certain voltages. The lamps must not light before 52 volts have been applied and must not require a voltage greater than 64 volts to cause them to light.



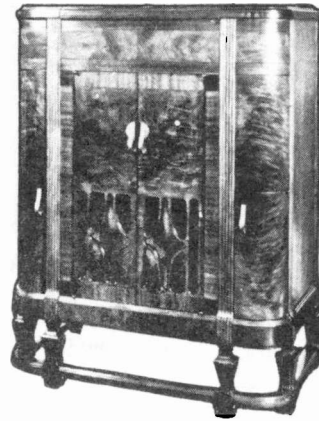
-Testing Circuit

MODELS 281 and 381

Twelve-Tube, Five-Band A. C. Superheterodyne Receiver and Radio-Phonograph



MODEL 281

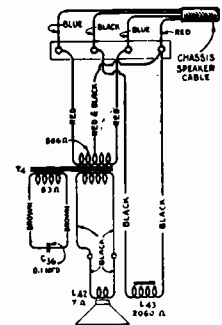
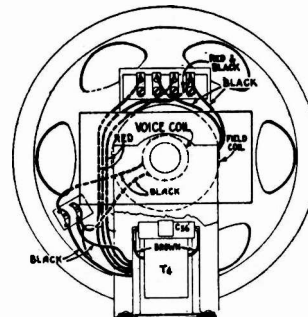
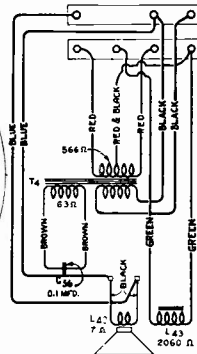
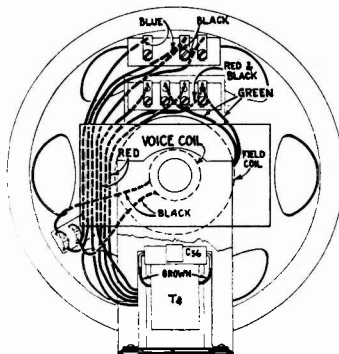


MODEL 381

REFER TO INDEX FOR DATA ON AUTOMATIC RECORD CHANGER

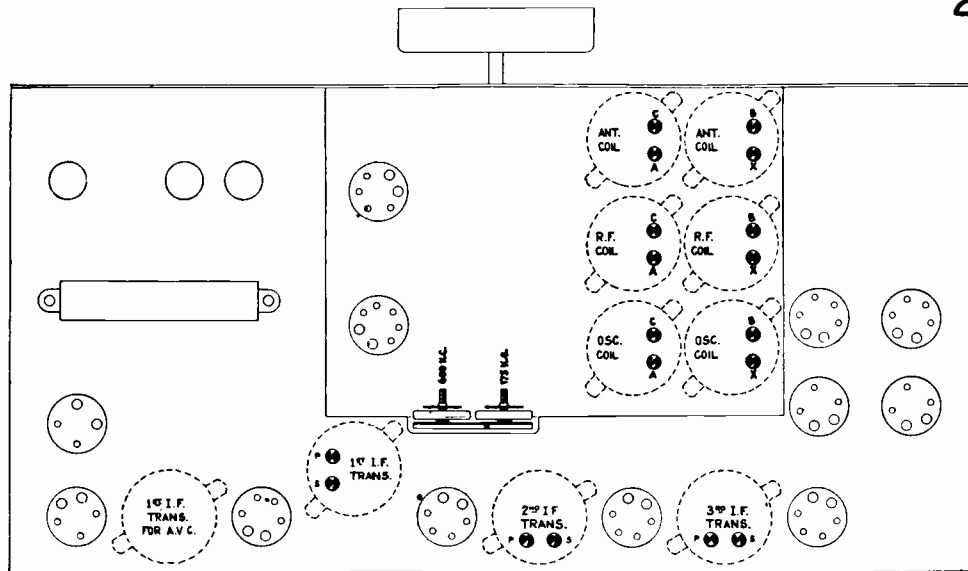
ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts
Frequency Rating.....	25-60 and 50-60 Cycles
Power Consumption.. (MODEL 281).....	130 Watts (all frequencies)
Frequency Rating.....	25, 30, 40, 50 and 60 Cycles
Power Consumption.. (MODEL 381).....	170 Watts, 60 Cycles
Type and Number of Radiotrons.....	4 RCA-6D6, 1 RCA-6A7, 3 RCA-76, 1 RCA-85, 2 RCA-42, 1 RCA-5Z3 —Total 12
Tuning Frequency Range.....	{ Band X.....140 K. C.-410 K. C. Band A.....540 K. C.-1720 K. C. Band B.....1720 K. C.-5400 K. C. Band C.....5400 K. C.-18,000 K. C. Band D..18,000 K. C.-36,000 K. C.
Line-up Frequencies.....	175 K. C., 410 K. C., 600 K. C., 1720 K. C., 5160 K. C., 18,000 K. C.
Maximum Undistorted Output.....	8 Watts
Maximum Output.....	16 Watts
Type of Magnetic Pickup.....	MODEL 381 Low Impedance, Viscaloid
Type of Record Changer.....	Record Ejector Type
Capacity of Record Changer.....	Eight 10-Inch and Seven 12-Inch Records
Turntable Speed.....	33 $\frac{1}{3}$ R.P.M. and 78 R.P.M.



MODEL 381 Loudspeaker Wiring

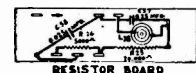
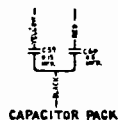
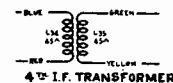
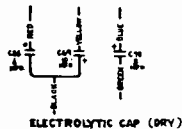
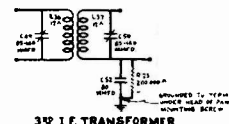
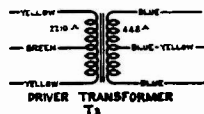
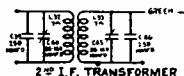
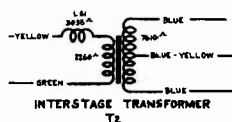
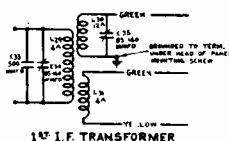
MODEL 281 Loudspeaker Wiring



Location of Various Trimmer Capacitors

Alignment Procedure

With tuning condenser fully meshed set dial pointer to coincide with horizontal line at low frequency end of A Band.

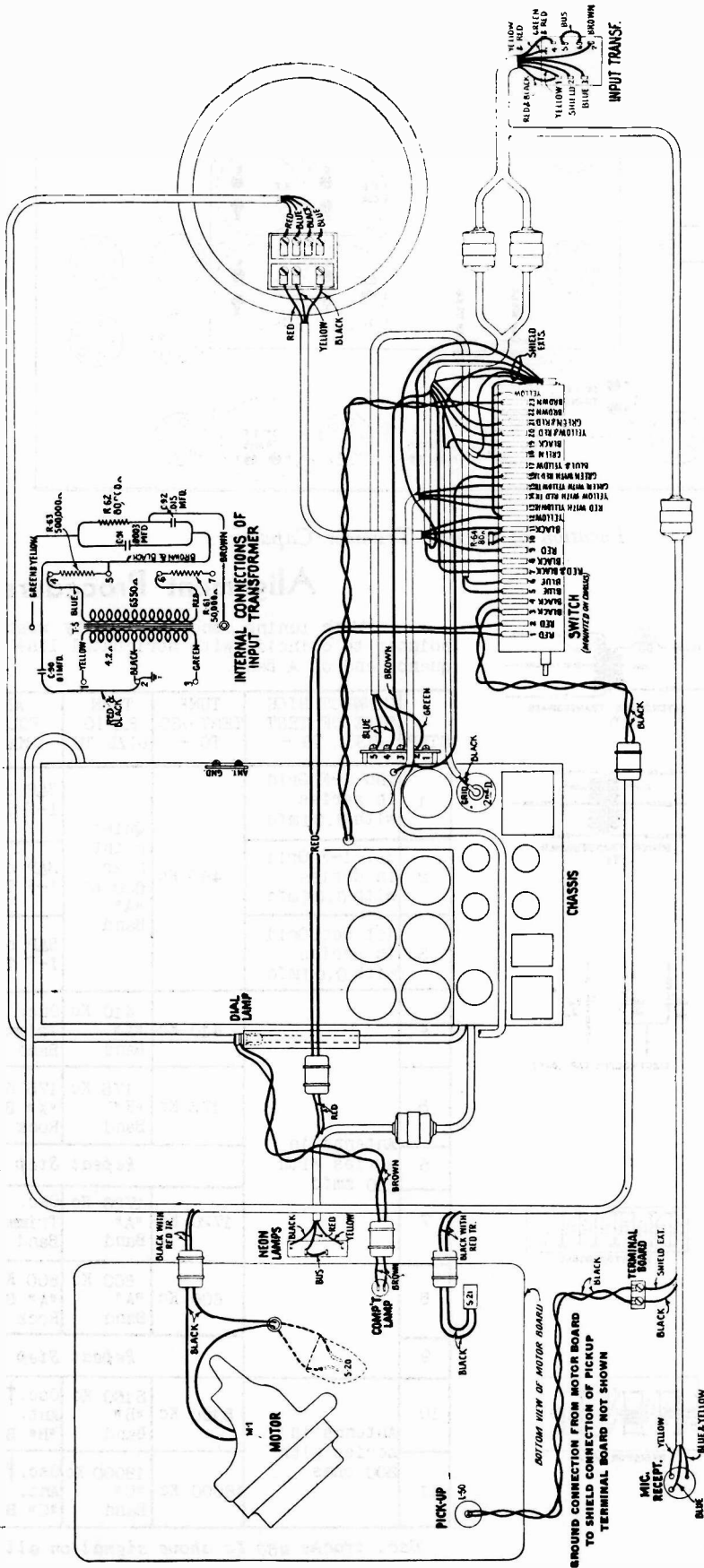


STEP	CONNECT HIGH SIDE OF TEST OSC. TO -	TUNE TEST OSC TO -	TURN RADIO DIAL TO	ADJUST THE FOLLOWING FOR MAX. OUTPUT	
1	2nd I-F Grid in series with 0.01mfd	460 Kc	Quiet point near 600 Kc "A" Band	S&P of 3rd I-F Trans.	
2	1st I-F Grid in series with 0.01mfd			S&P of 2nd I-F Trans.	
3	1st Det. Grid in series with 0.01mfd			S&P of 1st I-F Trans.	
4	Antenna in series with 200 mmfd	410 Kc	410 Kc "X" Band	Osc. R-F & Ant. Trimmers "X" Band	
5		175 Kc	175 Kc "X" Band	175 Kc Trimmer "X" Band Rock Gang	
6		Repeat Step 4			
7		1720 Kc	1720 Kc "A" Band	Osc. R-F & Ant. Trimmer "A" Band	
8		600 Kc	600 Kc "A" Band	600 Kc Trimmers "A" Band Rock Gang	
9		Repeat Step 7			
10		Antenna in series with 300 ohms	5160 Kc	5160 Kc "B" Band	Osc. † R-F & Ant. Trimmer "B" Band
11			18000 Kc	18000 Kc "C" Band	Osc. † R-F & Ant. Trimmer "C" Band

Osc. tracks 460 Kc above signal on all bands.

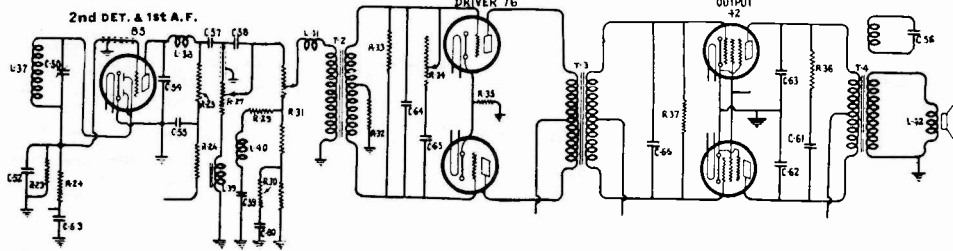
† Use minimum capacity peak.

▲ Use maximum capacity peak - ROCK GANG.

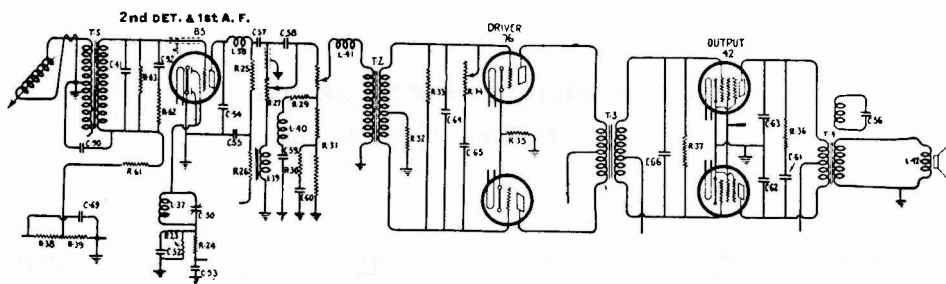


MODEL 381 - Assembly Wiring Diagram

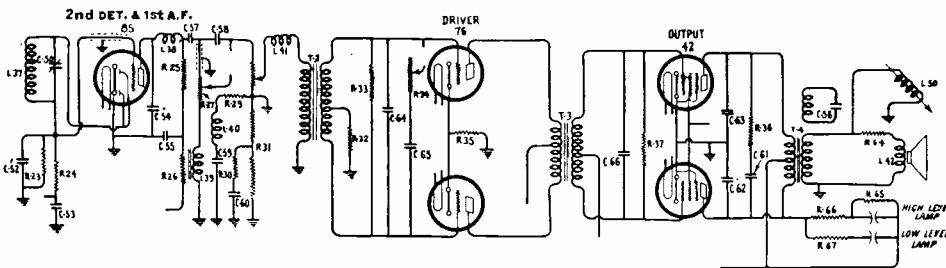
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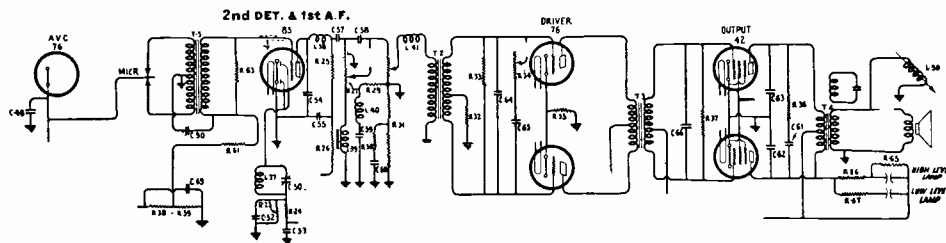
Radio Receiving



Record Reproduction



Radio Recording



Home Recording

Schematic Circuits of Audio Amplifier at each Selector Switch Position

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES				
4372	Bracket—Low frequency tone or volume control mounting bracket.		6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt (R24, R33)—Package of 5.	
4406	Bracket—High frequency tone control mounting bracket.		3413	Resistor—5,000 ohms—Carbon type— $\frac{1}{2}$ watt (R26)—Package of 5.	
2747	Cap—Contact cap—Package of 5.		2240	Resistor—30,000 ohms—Carbon type—1 watt (R36).	
4407	Capacitor—30 mmfd. (C64).		5817	Resistor—20,000 ohms—Carbon type—3 watt (R25).	
4405	Capacitor—80 mmfd. (C52)—Package of 5.		6997	Resistor—Total resistance 14,470 ohms with 160-60-350-7150 and 6750 ohm sections (R38, R39, R40, R41, R42).	
4376	Capacitor—250 mmfd.—Located on second intermediate frequency transformer (C39, C46)—Package of 5.		7804	Rheostat—Noise suppressor rheostat (R4).	
4404	Capacitor—500 mmfd. (C33, C53)—Package of 5.		4453	Shield—First I. F., AVC—I. F. or second I. F. Radiotron shield.	
4409	Capacitor—1120 mmfd. (C54).		3583	Shield—Radiotron shield top.	
4070	Capacitor—.004 mfd. (C66).		4452	Shield—Second detector or AVC Radiotron shield.	
3543	Capacitor—.005 mfd. (C62, C63).		7800	Shield—Shield for intermediate frequency coils.	
512	Capacitor—.005 mfd. (C65).		3859	Socket—4-contact rectifier Radiotron socket.	
3787	Capacitor—.01 mfd. (C61).		7484	Socket—5-contact AVC Radiotron socket.	
3888	Capacitor—.05 mfd. (C36, C44, C48).		6676	Socket—6-contact output Radiotron socket.	
3765	Capacitor—.025 mfd. (C42, C58).		7485	Socket—6-contact driver Radiotron socket.	
4545	Capacitor—.1 mfd. (C32, C41, C43, C51).		7796	Switch—Operating switch (S13).	
3877	Capacitor—.1 mfd. (C37, C38, C47).		7795	Tone control—Low frequency (R27).	
4720	Capacitor—.035 mfd. (C57).		7797	Tone control—High frequency (R34).	
3702	Capacitor—.25 mfd. (C57) MOD. 281		7794	Transformer—AVC intermediate frequency transformer (L34, L35).	
1190	Capacitor—10 mfd. (C67).		7785	Transformer—Driver transformer (T3).	
7788	Capacitor—18 mfd. (C68).		7791	Transformer—First intermediate frequency transformer (L29, L30, L31, C33, C34, C35)	
7787	Capacitor pack—Comprising one .15 mfd. and one .5 mfd. capacitors (C59, C60).		9505	Transformer—Power transformer 105-125-volt, 50-60 cycle (T1).	
7789	Capacitor pack—Comprising one 4., one 8. and one 10. mfd. capacitors (C55, C69, C70).		9506	Transformer—Power transformer 105-125 volts, 25-40 cycles.	
4358	Clamp—Electrolytic capacitor clamp.		7792	Transformer—Second intermediate frequency transformer (L32, L33, C39, C40, C45, C46).	
7806	Coil—Second detector plate choke coil (L38).		7793	Transformer—Third intermediate frequency transformer (L36, L37, C49, C50, C52, R23).	
4371	Cover—Fuse mount cover.		7786	Transformer pack—Comprising one reactor and interstage transformer (L41, T2).	
4359	Cover—Terminal board cover.		7798	Volume control—Radio and Phonograph (R31)	
10907	Fuse—3-ampere—Package of 5.			R. F. UNIT ASSEMBLIES	
3376	Mount—Fuse mount 105-125-volt instrument.		4646	Capacitor—4.5 mmfd. (C10).	
7784	Reactor—Tone control reactor (L39).		4416	Capacitor—50 mmfd. (C19)—Package of 5.	
7483	Reactor—Volume control compensating reactor (L40).		3981	Capacitor—300 mmfd. (C8).	
6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt (R3, R7, R14, R20)—Package of 5.		4413	Capacitor—360 mmfd. (C28).	
4240	Resistor—700 ohms—Carbon type— $\frac{1}{4}$ watt (R30)—Package of 5.		4412	Capacitor—1120 mmfd. (C25).	
4375	Resistor—800 ohms—Carbon type— $\frac{1}{4}$ watt (R29)—Package of 10.		4524	Capacitor—2850 mmfd. (C23).	
6247	Resistor—850 ohms—Carbon type— $\frac{1}{4}$ watt (R21)—Package of 5.		4615	Capacitor—2850 mmfd. (C20).	
4687	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt (R9, R10, R13, R15, R16, R22, R35)—Package of 10.		4417	Capacitor—0.05 mfd. (C5, C15).	
3110	Resistor—25,000 ohms—Carbon type— $\frac{1}{4}$ watt (R37)—Package of 5.		4415	Capacitor—0.1 mfd. (C7, C16).	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt (R32)—Package of 5.		4645	Capacitor—0.1 mfd. (C9, C31).	
3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R11, R17)—Package of 5.		3861	Capacitor—Adjustable capacitor (C27, C30).	
3116	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt—Located on third I. F. transformer (R23)—Package of 5.		4420	Clamp—Antenna lead clamp and screw—Package of 10.	
4368	Resistor—400,000 ohms—Carbon type— $\frac{1}{4}$ watt (R18, R19)—Package of 10.		4410	Coil—Antenna coil—Band "D" (L1, L2).	
			7803	Coil—Antenna coil—"B"—"SW" (L3, L4, L7, L8, C1, C3).	

REPLACEMENT PARTS—(Continued)

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	MICROPHONE ASSEMBLIES			MODEL 381	
7534	Cord—Microphone cord.....			MISCELLANEOUS PARTS	
6883	Cover—Microphone cover—Two sides.....		4556	Base—Phonograph compartment lamp base and socket.....	
3216	Cushion—Microphone rubber cushions—Pkg. of 6.....		4546	Bearing—Selector flexible shaft bearing and nut and set screw—Fastened to motor board.....	
6884	Frame—Microphone frame.....		4677	Bezel—Metal bezel (escutcheon) for station selector dial.....	
7533	Mechanism—Microphone mechanism.....		4555	Box—Needle box complete with lid.....	
6882	Microphone complete.....		4559	Bracket and bushing—Selector switch flexible shaft bracket and bushing—Fastened to selector switch.....	
4171	Plug—3-contact microphone plug.....		4572	Escutcheon—Selector switch escutcheon.....	
4158	Socket—Microphone socket.....		6614	Glass—Station selector dial glass.....	
	RECORDING INDICATOR ASSEMBLIES		4425	Knob—Station selector or Radio-phonograph—Recording switch knob—Package of 5.....	
4162	Escutcheon—Recording indicator escutcheon..		3829	Knob—Volume control, tone control, noise suppressor or range switch knob—Package of 5.....	
4161	Lamp—Neon lamp.....		4340	Lamp—Dial lamp—Package of 5.....	
4164	Screen—Indicator lamp screen.....		4190	Pointer—Selector switch pointer—Package of 5.....	
4163	Screw—Screen, escutcheon and terminal board mounting screw assembly—Comprising two screws, two spacers, two nuts and two lockwashers.....		4710	Receptacle—Needle receptacle.....	
	MODEL 281		4091	Resistor—80 ohms—Carbon type— $\frac{1}{4}$ watt—Located on selector switch (R64)—Package of 5.....	
	REPRODUCER ASSEMBLIES		3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt (R65, R66, R67)—Package of 5.....	
4193	Board—Terminal board.....		4678	Ring—Station selector dial glass retaining ring—Package of 5.....	
9509	Coil—Field coil, magnet and cone support (L43).....		4119	Screw—8-32- $\frac{1}{4}$ " headless set screw for knob—Stock Number 4425—Package of 20....	
7000	Cone—Reproducer cone (L42)—Package of 5.		4393	Screw—8-32- $\frac{3}{16}$ " headless set screw for knob—Stock Number 3829—Package of 10....	
9508	Reproducer complete.....		4191	Screw—10-32- $\frac{7}{16}$ " dog point fillister head set screw—Used with flexible shaft bearing—Package of 10.....	
6999	Screen—Dust screen—Package of 6.....		3651	Screw—10-32- $\frac{3}{16}$ " self-locking headless set screw—Used with flexible shaft bearing—Package of 10.....	
4506	Transformer—Output transformer and capacitor (T4, C56).....		3652	Screw—10-32- $\frac{1}{2}$ " self-locking set screw for selector switch, flexible shaft bracket and bushing—Package of 10.....	
	MODEL 381		4580	Screw—6-32- $\frac{3}{16}$ square head set screw for selector switch flexible shaft—Package of 10	
	REPRODUCER ASSEMBLIES		4560	Screw assembly—Receiver chassis mounting screw and washer assembly—Package of 10.	
4706	Board—Terminal board—Three terminals...		4557	Shade—Phonograph compartment lamp shade.	
4568	Bolt assembly—Reproducer mounting bolt assembly—Comprising one bolt, one lock-washer, one washer and one nut—Package of 10.....		4558	Shaft—Selector switch flexible shaft.....	
9542	Coil—Field coil, magnet and cone support (L43).....		4544	Switch—Radio-phonograph, or home recording selector switch (S22).....	
7000	Cone—Reproducer cone (L42)—Package of 5.		4579	Switch—Toggle type—Motor starting switch (S21).....	
9541	Reproducer complete.....		4545	Transformer—Input transformer pack—Comprising one input transformer, one 50,000 ohm, one 500,000 ohm and one 80,000 ohm resistor, one .0003 mfd. and one 0.1 mfd. and one .015 mfd. capacitors (T5, C90, C91, C92, R61, R62, R63)....	
6999	Screen—Dust screen—Package of 6.....				
7826	Transformer—Output transformer and capacitor (T4, C56).....				
	MODEL 281				
	MISCELLANEOUS ASSEMBLIES				
4677	Bezel—Metal bezel (escutcheon) for station selector dial.....				
6614	Glass—Station selector dial glass.....				
4425	Knob—Station selector knob—Package of 5..				
3829	Knob—Volume control, tone control, noise suppressor or range switch knob—Package of 5.....				
4340	Lamp—Dial lamp—Package of 5.....				
4678	Ring—Station selector dial glass retaining ring—Package of 5.....				
4119	Screw—8-32- $\frac{1}{4}$ " headless set screw for knob—Stock Number 4425—Package of 20....				
4393	Screw—8-32- $\frac{3}{16}$ " headless set screw for knob—Stock Number 3829—Package of 10....				

AUTOMATIC RECORD CHANGER USED WITH MODELS 331, 341, 380, 380HR & 381

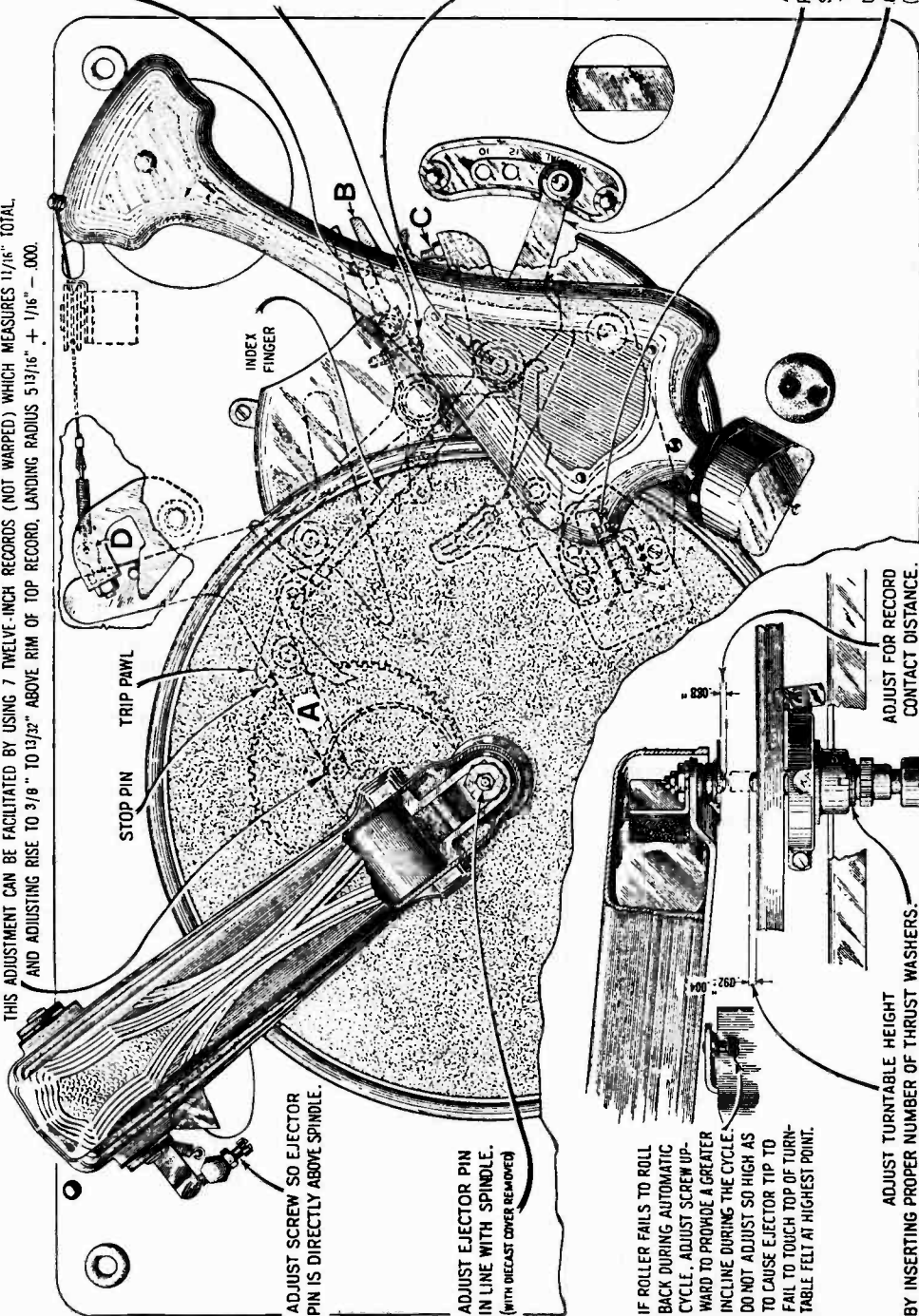
TO ADJUST RISE AND SWING OF TONE ARM — WITH MANUAL INDEX LEVER IN 12" POSITION AND ROLLER ON MAIN LEVER A ENGAGED IN CAM AT HALF CYCLE POSITION AS SHOWN, AND SWITCH LEVER B IS AGAINST STOP SCREW C, ADJUST EYEBOLT D SO NEEDLE POINT (ORANGE SHANK) IS $1\frac{1}{16}" \pm .000$ TO $1\frac{3}{32}" - .000$ ABOVE TURNABLE FELT. AT THE SAME TIME ADJUST SCREW E SO THAT NEEDLE LANDS AT A RADIUS OF $5\frac{13}{16}" \pm .000$ FROM CENTER OF TURNABLE SPINDLE. THIS ADJUSTMENT CAN BE FACILITATED BY USING 7 TWELVE-INCH RECORDS (NOT WARPED), WHICH MEASURES $1\frac{1}{16}"$ TOTAL, AND ADJUSTING RISE TO $3\frac{1}{8}"$ TO $13\frac{1}{32}"$ ABOVE RIM OF TOP RECORD, LANDING RADIUS $5\frac{13}{16}" \pm .000$.

ADJUST NEEDLE HEIGHT BY MEANS OF TRIP ROD UNTIL NEEDLE POINT OF ORANGE SHANK NEEDLE IS $\frac{1}{16}" \pm .010$ INCH BELOW TOP SURFACE OF RUBBER PICKUP REST.

ADJUST SCREW UNTIL FRICTION WILL JUST FORCE FINGER TO MOVE TRIP PAWL. (MAKE THIS ADJUSTMENT WITH COVER REMOVED)

TO ADJUST MANUAL INDEX FINGER, PLACE MANUAL INDEX LEVER IN POSITION SHOWN (MANUAL) SET MANUAL INDEX FINGER TO FORCE TRIP PAWL AGAINST STOP PIN; TIGHTEN SCREW FIRMLY.

ADJUST AUTOMATIC SWITCH AS FOLLOWS: PLACE MANUAL INDEX LEVER IN POSITION SHOWN AND WITH SWITCH IN TRIPPED POSITION, ADJUST SWITCH UNTIL CONTACT POINTS ARE OPENED $.020 \pm .010$ INCH AS INDICATED. (MAKE THIS ADJUSTMENT WITH TURNABLE REMOVED)



ADJUST SCREW SO EJECTOR PIN IS DIRECTLY ABOVE SPINDLE.

ADJUST EJECTOR PIN IN LINE WITH SPINDLE. (WITH DIECAST COVER REMOVED)

IF ROLLER FAILS TO ROLL BACK DURING AUTOMATIC CYCLE, ADJUST SCREW UPWARD TO PROVIDE A GREATER INCLINE DURING THE CYCLE. DO NOT ADJUST SO HIGH AS TO CAUSE EJECTOR TIP TO FAIL TO TOUCH TOP OF TURNABLE FELT AT HIGHEST POINT.

ADJUST TURNABLE HEIGHT BY INSERTING PROPER NUMBER OF THRUST WASHERS.

ADJUST FOR RECORD CONTACT DISTANCE.

Automatic Record Changer Adjustments

AUTOMATIC RECORD CHANGER

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
MODEL 331		MODEL 341 & 381	
AUTOMATIC RECORD CHANGER		EJECT ARM ASSEMBLIES	
EJECT ARM ASSEMBLIES			
2917	Washer—Spring washer—Package of 10.....	4713	Arm—Eject arm complete.....
3655	Retainer—Ball retainer with three ball bearings.....	3658	Ball—Steel ball bearing—Package of 20.....
3656	Bearing—Ejector tip bearing.....	3656	Bearing—Ejector tip bearing.....
3657	Tip—Ejector tip.....	4054	Bracket—Eject arm bracket assembly.....
3658	Ball—Ball bearing—Package of 20.....	4058	Collar—Eject arm shaft collar and set screw.....
3660	Shaft—Eject arm shaft.....	4714	Cover—Eject arm cover.....
3661	Yoke—Eject arm yoke assembly.....	3930	Cushion—Counter balance cushion and bracket—Located inside of eject arm.....
3662	Plate—Ejector plate and felt pad—Package of 5.....	3662	Plate—Ejector plate—Package of 5.....
3663	Spring—Eject arm horizontal action tension spring—Package of 10.....	4055	Post—Vertical adjustment post—Located on eject arm bracket.....
3665	Screw—Eject arm adjustment screw and nut—Package of 5.....	3655	Retainer—Ball retainer with three balls.....
3729	Roller—Counter balance roller—Located inside of eject arm.....	3729	Roller—Counterbalance roller—Located inside of eject arm.....
3930	Cushion—Counter balance roller stop Cushion and bracket Located inside of eject arm.....	3665	Screw—Eject arm horizontal adjustment screw and nut—Package of 5.....
6575	Cover—Eject arm cover.....	4057	Shaft and collar—For eject arm.....
7605	Arm—Eject arm assembly complete.....	4067	Spring—Eject arm bracket spring—Package of 10.....
MOTOR ASSEMBLIES		4125	Spring—Eject arm horizontal action tension spring—60-cycle operation—Package of 10.....
9011	Motor—Motor complete 105-125 volts—60 cycles.....	4126	Spring—Eject arm—Horizontal action tension spring—For 25-cycle operation—Package of 10.....
9012	Motor—Motor complete 105-125 volts—25 cycles.....	3657	Tip—Ejector tip.....
9013	Motor—Motor complete 105-125 volts—40 cycles.....	4056	Yoke—Eject arm yoke assembly.....
9014	Motor—Motor complete 105-125 volts—50 cycles.....	MODELS 341 & 381	
9015	Rotor and shaft for 60 cycle motor.....	MOTOR BOARD ASSEMBLIES	
9017	Rotor and shaft for 25 cycle motor.....	4060	Escutcheon—Index escutcheon engraved "Manual 12-10".....
9019	Rotor and shaft for 40 cycle motor.....	3764	Nut—Cap nut for motor board—Package of 4.....
9021	Rotor and shaft for 50 cycle motor.....	3672	Pin—Manual index pin.....
MOTOR BOARD ASSEMBLIES		4066	Rest—Pickup rest.....
2893	Spring—Trip lever tension spring—Package of 10.....	3654	Roller—Pickup arm guide roller assembly—Comprising bracket and guide pin.....
2897	Screw—Cable lever tension spring adjustment screw and nut—Package of 5.....	3763	Suspension spring, washer and bolt assembly for motor board—Comprising one bolt, two cup washers, two springs, one "C" washer and one cap nut.....
3322	Switch—Motor switch complete.....	MODELS 341 & 381	
3653	Spring—Phosphor bronze—Trip pawl spring—Package of 5.....	MOTOR BOARD ASSEMBLIES	
3654	Roller—Guide roller assembly—Comprising bracket, roller, and guide pin.....	4060	Escutcheon—Index escutcheon engraved "Manual 12-10".....
3666	Spring—Cable lever tension spring—Package of 10.....	3764	Nut—Cap nut for motor board—Package of 4.....
3667	Plate—Actuating plate assembly.....	3672	Pin—Manual index pin.....
3669	Screw—Special screw for holding main lever to actuating plate—Package of 5.....	4066	Rest—Pickup rest.....
3670	Finger—Friction finger assembly.....	3654	Roller—Pickup arm guide roller assembly—Comprising bracket and guide pin.....
3671	Finger—Manual index lever.....	3763	Suspension spring, washer and bolt assembly for motor board—Comprising one bolt, two cup washers, two springs, one "C" washer and one cap nut.....
3672	Pin—Manual index lever pin.....	MODELS 341 & 381	
3673	Screw—Manual index lever adjustment screw and nut—Package of 5.....	OPERATING MECHANISM ASSEMBLIES	
3674	Escutcheon—Engraved MANUAL 12-10.....	6502	Cam—Cam and gear assembly.....
3675	Lever—Trip lever assembly.....	6808	Clutch—Trip lever friction clutch.....
3676	Spring—Cam and gear tension spring—Package of 10.....	4719	Cover—Metal cover for trip lever and friction finger assembly.....
3677	Lever—Cable lever assembly.....	3670	Finger—Friction finger assembly.....
3777	Motor mounting spring, washer, and stud assembly—Comprising three upper and three lower springs, six cup washers, three spring washers, and three studs—Package of 1 set.....	6809	Finger—Manual index lever finger assembly.....
3778	Spring—Main lever and link assembly tension spring—Package of 10.....	6846	Lever—Main lever and link assembly.....
6502	Cam and gear assembly.....	6810	Lever—Main spring lever.....
6503	Pawl—Trip pawl assembly.....	6806	Lever—Manual control index lever—Less pin.....
6504	Lever—Main lever and link assembly.....	3677	Lever—Pickup arm cable lever assembly complete—Comprising lever with cable screw spring and nut.....
10174	Springs—Automatic brake springs—One set of four springs—Package of 2 sets of 4.....	6807	Lever—Trip lever and friction clutch assembly.....
10184	Plate—Automatic brake latch plate—Package of 5.....	6503	Pawl—Trip pawl assembly.....
PICKUP AND PICKUP ARM ASSEMBLIES		4124	Plate—Eject arm actuating plate assembly.....
3388	Screw—Pickup needle holding screw—Package of 10.....	4563	Screw—Cable lever cable screw and nut—Package of 10.....
3417	Armature—Pickup armature.....		
3419	Screw—Pickup cover mounting screw—Package of 10.....		
3516	Damper and bushing assembly—Located at bottom of pickup arm base—Package of 1 set.....		
3680	Rest—Pickup rest.....		
3728	Coil—Pickup coil.....		
3732	Cover—Pickup cover.....		
3733	Back—Pickup housing back.....		
3734	Cover—Pickup back cover.....		
3735	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut, and one washer—Package of 10.....		
3736	Rod—Automatic brake trip rod with lock nut—Pkg. of 5.....		
3737	Damper—Package of 5.....		
3739	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....		
6542	Pickup—Pickup unit complete.....		
6543	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut, and washer.....		
TURNTABLE ASSEMBLIES			
3338	Ring—Clamp ring assembly—Comprising spring, latch lever, and stud.....		
3340	Washer—Thrust washer—Package of 2.....		
3341	Pin—Groove-Pin—Package of 2.....		
3342	Spring—Latch spring—Located on clamping ring—Package of 2.....		
3344	Cover—Grease retainer cover—Package of 2.....		
3346	Bushing—Speed shifter lever bushing—Package of 4.....		
3347	Spring—Speed shifter lever spring—Package of 2.....		
3678	Sleeve—Sleeve complete with ball race.....		
3679	Lever—Speed shifter lever with mounting screws.....		
9010	Turntable—Complete.....		

AUTOMATIC RECORD CHANGER

REPLACEMENT PARTS (Continued)

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

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
4564	Screw—Manual index lever finger set screw— Package of 10.....	6817	Sleeve—Sleeve complete with ball race.....
4567	Screw—Manual index lever assembly—Ad- justment screw and nut—Package of 10....	3342	Spring—Latch spring—Located on clamping ring—Package of 2.....
4566	Screw—Special screw used to fasten main lever and link assembly bushing—Package of 10.....	3347	Spring—Speed shifter lever spring—Package of 2.....
4059	Screw—Trip lever clutch tension adjustment screw—Package of 10.....	3340	Washer—Thrust washer—Package of 2.....
4127	Spring—Actuating plate tension spring— Package of 10.....	MODEL 341	
3666	Spring—Cable lever tension spring—Package of 10.....	PICKUP AND ARM ASSEMBLIES	
3676	Spring—Cam and gear, pawl carrier tension spring—Package of 10.....	7839	Arm—Pickup arm complete less escutcheon and pickup unit.....
4061	Spring—Main spring.....	3417	Armature—Pickup armature.....
4565	Spring—Manual index lever finger tension spring—Package of 10.....	6813	Back—Pickup housing back.....
2893	Spring—Trip lever latch plate tension spring —Package of 10.....	4064	Cable—Pickup arm cable—Package of 5.....
2917	Washer—Spring washer "U" type—Package of 10.....	4676	Coil—Pickup coil (L32).....
MODELS 341 & 381		4711	Cover—Pickup cover.....
SWITCH ASSEMBLIES		4709	Cover—Pickup back cover with two mount- ing screws.....
3994	Cover—Motor switch cover.....	3737	Damper—Pickup damper—Package of 5.....
10184	Plate—Automatic brake latch plate—Package of 5.....	6815	Escutcheon—Pickup arm escutcheon.....
10174	Springs—Automatic brake springs—Package of 4.....	4675	Pickup unit complete.....
6805	Switch assembly—Automatic switch complete.	4062	Rod—Automatic brake trip rod.....
3322	Switch—Motor switch (S15).....	4063	Screw assembly—Pickup mounting screw assembly—Comprising one screw, one washer and one nut—Package of 10.....
MODEL 341		3388	Screw—Needle holding screw—Package of 10.
MOTOR ASSEMBLIES		3419	Screw—Pickup cover holding screw—Pack- age of 10.....
9011	Motor—105-125 volts—60 cycles.....	MODEL 381	
9014	Motor—105-125 volts—50 cycles.....	PICKUP AND ARM ASSEMBLIES	
9012	Motor—105-125 volts—25 cycles.....	4581	Arm—Pickup arm complete less escutcheon and pickup unit.....
4562	Motor mounting spring, washer and stud assembly—Comprising six springs, six cup washers, three spring washers and three studs.....	4128	Armature—Pickup armature.....
MODEL 381		6813	Back—Pickup housing back.....
MOTOR ASSEMBLIES		4064	Cable—Pickup arm cable—Package of 5.....
9477	Motor—105-125 volts—60 cycles.....	4583	Coil—Pickup coil (L50).....
9478	Motor—105-125 volts—50 cycles.....	4711	Cover—Pickup cover.....
9479	Motor—105-125 volts—25 cycles.....	4709	Cover—Pickup back cover with two mount- ing screws.....
4562	Motor mounting spring, washer and stud assembly—Comprising six springs, six cup washers, three spring washers and three studs.....	3737	Damper—Pickup damper—Package of 5.....
MODELS 341 & 381		6815	Escutcheon—Pickup arm escutcheon.....
TURNTABLE ASSEMBLIES		4561	Pad—Cork pad—Used when making home recordings.....
4065	Bushing—Speed shifter lever bushing—Pack- age of 4.....	4582	Pickup unit complete.....
3344	Cover—Grease retainer cover—Package of 2..	4062	Rod—Automatic brake trip rod.....
6818	Lever—Speed shifter lever.....	4063	Screw assembly—Pickup mounting screw assembly—Comprising one screw, one washer and one nut—Package of 10.....
3341	Pin—Groov pin—Package of 2.....	3388	Screw—Needle holding screw—Package of 10.
6816	Ring—Clamp ring assembly—Comprising spring, latch lever and stud.....	3419	Screw—Pickup cover holding screw—Pack- age of 10.....
4708	Turntable complete.....	4157	Weight—Home recording weight.....

AUTOMATIC RECORD CHANGER

REPLACEMENT PARTS -Continued

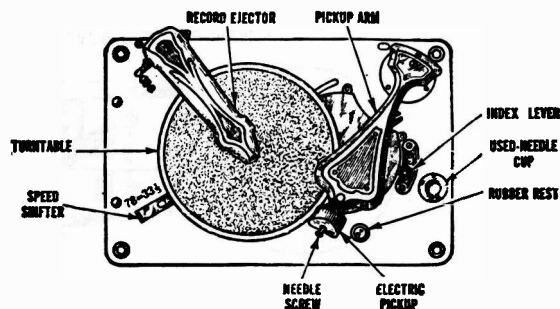
STOCK No.	DESCRIPTION
MODELS 380 & 380HR	
EJECT ARM ASSEMBLIES	
3655	Retainer—Ball retainer with three ball bearings.....
3656	Bearing—Ejector tip bearing.....
3657	Tip—Ejector tip.....
3658	Ball—Ball bearing—Package of 20.....
3662	Plate—Ejector plate—Package of 5.....
3665	Screw—Eject arm horizontal adjustment screw and nut—Package of 5.....
3729	Roller—Counter balance roller—Located inside of eject arm.....
3930	Cushion—Counter balance cushion and bracket—Located inside of eject arm.....
4054	Bracket—Eject arm bracket assembly.....
4055	Post—Vertical adjustment post—Located on eject arm.....
4056	Yoke—Eject arm yoke assembly.....
4057	Shaft and collar—For eject arm.....
4058	Collar—Eject arm shaft collar.....
4067	Spring—Eject arm bracket spring—Package of 10.....
4125	Spring—Eject arm horizontal action tension spring—60 cycle operation—Package of 10.....
4126	Spring—Eject arm horizontal action tension spring—For 25 cycle operation—Package of 10.....
7708	Arm—Eject arm complete.....
7709	Cover—Eject arm cover.....
MODELS 380 & 380HR	
MOTOR BOARD ASSEMBLIES	
2893	Spring—Trip lever latch tension spring—Package of 10.....
2917	Washer—Spring washer, "U" type—Package of 10.....
3654	Roller—Guide roller assembly—Comprising bracket roller and guide pin.....
3666	Spring—Cable lever tension spring—Package of 10.....
3670	Finger—Friction finger.....
3672	Pin—Manual index lever pin.....
3673	Screw—Manual index lever adjustment screw and nut—Package of 5.....
3676	Spring—Cam and gear pawl carrier tension spring—Package of 10.....
3677	Lever—Cable lever assembly.....
4059	Screw—Trip lever clutch tension adjustment screw—Package of 10.....
4060	Escutcheon—Manual—12-10.....
4061	Spring—Main spring—Package of 10.....
4124	Plate—Actuating plate assembly.....
4127	Spring—Actuating plate spring—Package of 10.....
6502	Cam—Cam and gear assembly.....
6503	Pawl—Trip pawl assembly.....
6806	Lever—Manual index lever—Less pin.....
6807	Lever—Trip lever assembly.....
6808	Clutch—Trip lever friction clutch.....
6809	Finger—Manual index finger assembly.....
6810	Lever—Main spring lever.....
6846	Lever—Main lever and link assembly.....
7710	Cover—Metal cover for trip lever and friction finger assemblies.....
MODELS 380 & 380HR	
PICKUP AND ARM ASSEMBLIES	
3388	Screw—Pickup needle holding screw—Package of 10.....
3728	Coil—Pickup coil (L20).....
3737	Damper—Package of 5.....
4062	Rod—Automatic brake trip rod.....
4063	Screw—Pickup mounting screw assembly—Comprising one screw one nut, and one washer—Package of 10.....
4064	Cable—Pickup arm cable—Package of 5.....
4128	Armature—Pickup armature.....
6811	Pickup—Pickup unit complete.....
6812	Cover—Pickup cover.....
6813	Back—Pickup housing back.....
6814	Cover—Pickup back cover.....
6815	Escutcheon—Pickup arm escutcheon with mounting rivets.....
7707	Arm—Pickup arm complete, less escutcheon, pickup, pickup mounting screw, nut and washer.....

STOCK No.	DESCRIPTION
MODELS 380 & 380HR	
TURNTABLE ASSEMBLIES	
3340	Washer—Thrust washer—Package of 2.....
3341	Pin—Groov-pin—Package of 2.....
3342	Spring—Latch spring—Located on clamping ring—Package of 2.....
3344	Cover—Grease retainer cover—Package of 2.....
3347	Spring—Speed shifter lever spring—Package of 2.....
4065	Bushing—Speed shifter lever bushing—Package of 4.....
6816	Ring—Clamp ring assembly—Comprising spring, latch lever, and stud.....
6817	Sleeve—Sleeve complete with ball race.....
6818	Lever—Speed shifter lever.....
7711	Turntable—Complete.....
MODELS 380 & 380HR	
AUTOMATIC SWITCH ASSEMBLIES	
3994	Cover—Motor switch cover.....
10184	Plate—Automatic brake latch plate—Package of 5.....
10174	Springs—Automatic brake springs—Package of 2.....
6805	Switch Assembly—Automatic switch complete.....
3322	Switch—Motor switch.....
MODEL 380	
MOTOR ASSEMBLIES	
3777	Motor mounting spring washers and stud assembly—Comprising three upper and three lower springs, six cup washers, three spring washers, and three studs.....
9011	Motor—Motor complete—105-125 volts—60 cycles.....
9012	Motor—Motor complete—105-125 volts—25 cycles.....
9013	Motor—Motor complete—105-125 volts—40 cycles.....
9014	Motor—Motor complete—105-125 volts—50 cycles.....
MODEL 380HR	
MOTOR ASSEMBLIES	
9479	Motor—105-125 volts—25 cycles—(M1).....
9478	Motor—105-125 volts—50 cycles—(M1).....
9477	Motor—105-125 volts—60 cycles—(M1).....
3777	Suspension Spring—Motor mounting spring, washer, and stud assembly—comprising six springs, six cup washers, three spring washers and three studs.....

CAUTION—Never attempt to move the Index Lever from the Manual position when the pickup is on the rubber rest.

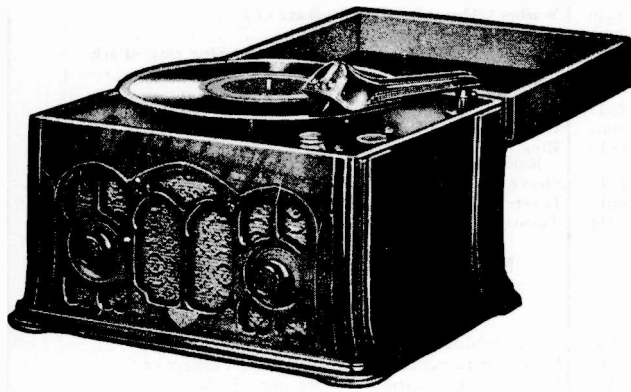
Start the turntable by turning the Motor Switch clockwise; then set the Speed Shifter for the speed (78 or 33½ R. P. M.) corresponding to the records on the turntable.

NOTE—The speed shifter should not be moved inward (from the 78 to the 33½ R. P. M. position) while the turntable is at rest.



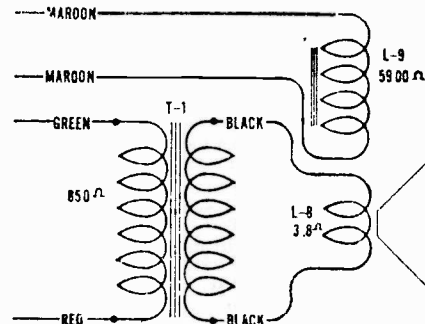
MODEL 300

Four-Tube Radio-Phonograph Combination (A. C.)

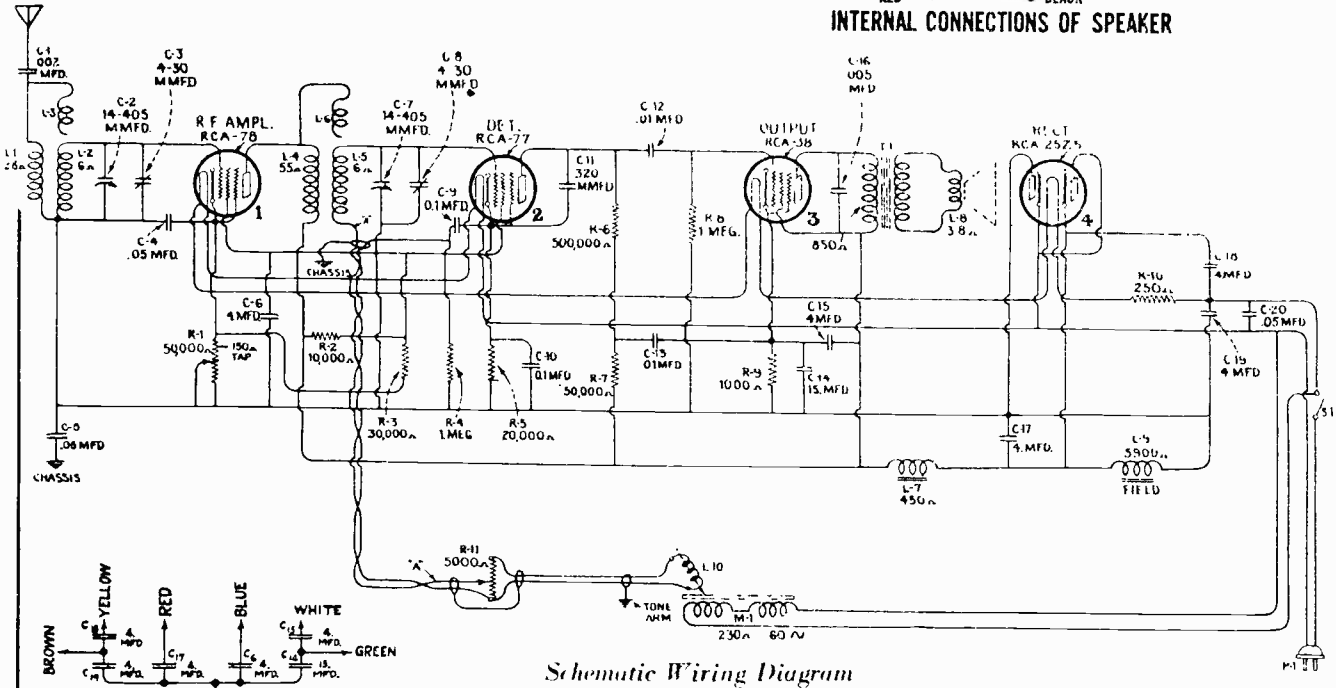


Electrical Specifications

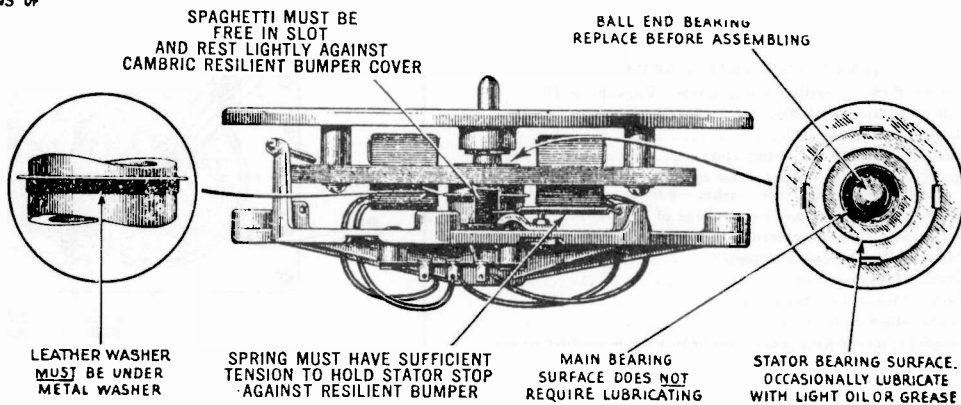
Voltage Rating 105-115 Volts
 Frequency Rating 25, 50, and 60 Cycles
 Power Consumption55 Watts
 Tuning Range 540-1710 K. C.
 Type and number of Radiotrons
 1 RCA-78, 1 RCA-77, 1 RCA-38, 1 RCA-25Z5—Total, 4
 Undistorted Output 0.3 Watts at 60 Cycles



INTERNAL CONNECTIONS OF SPEAKER



Schematic Wiring Diagram



-Details of Motor

RADIOTRON SOCKET VOLTAGES

Measured at Maximum Volume—115 Volts, 60 Cycles

Radiotron No.	Cathode to Control Grid, Volts D.C.	Cathode to Screen Grid, Volts D.C.	Cathode to Plate, Volts D.C.	Plate Current M. A.	Filament or Heater Volts
RCA-78, R. F.	2.5*	100	200	3.0	6.0
RCA-77, Detector	*5.0	95	*100	0.2	6.0
RCA-38, Output	13.0	120	170	14.0	6.0
RCA-25Z5, Rectifier	—	—	115	30.0	25.0

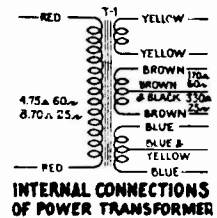
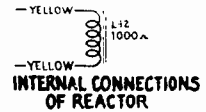
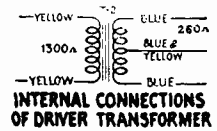
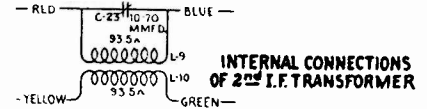
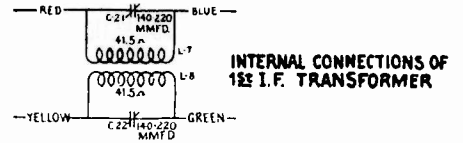
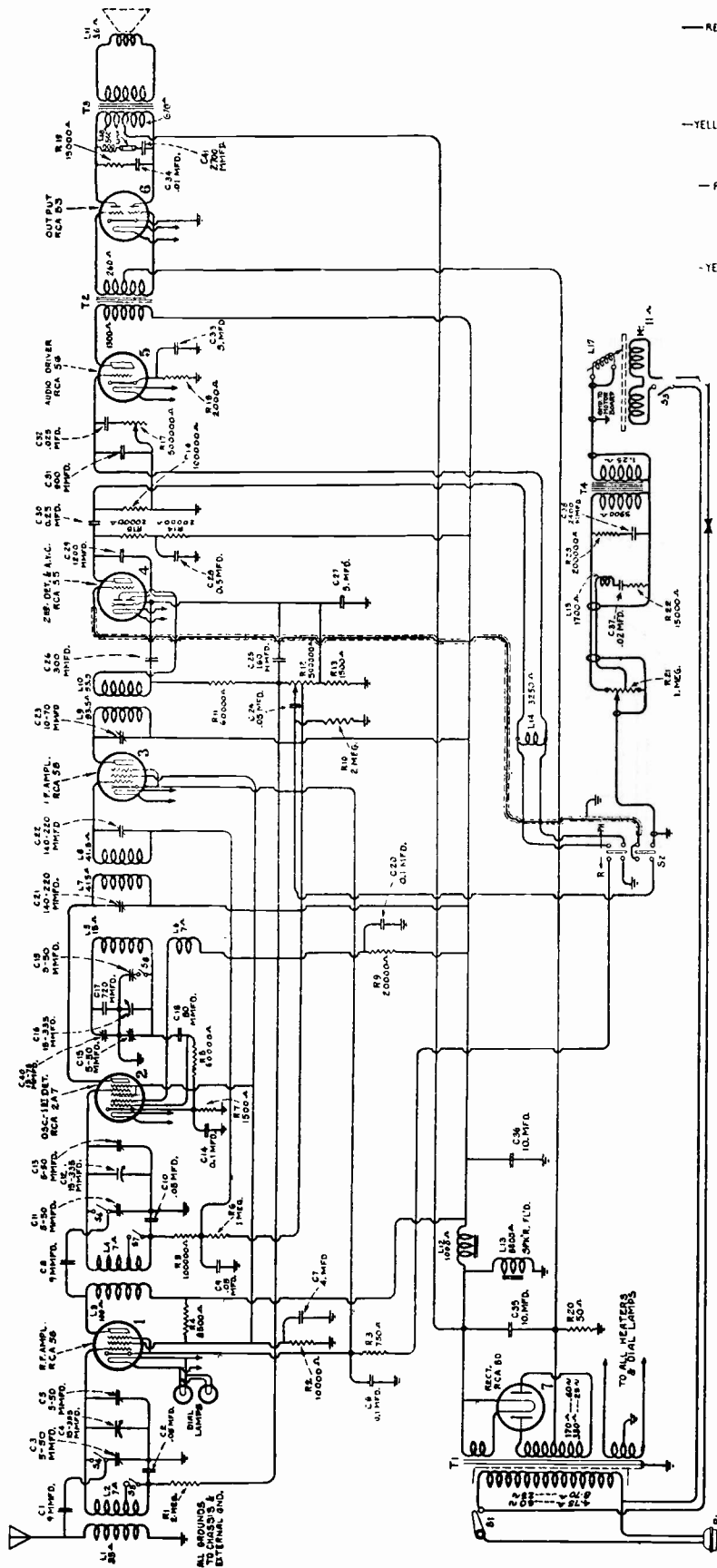
*Impossible to measure on ordinary voltmeter.

NOTE: 25 cycle voltages will be less than those obtained on 60 cycles.

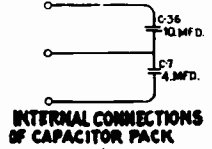
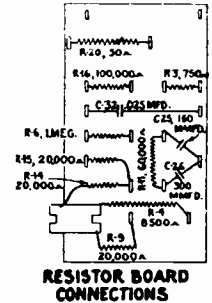
REPLACEMENT PARTS

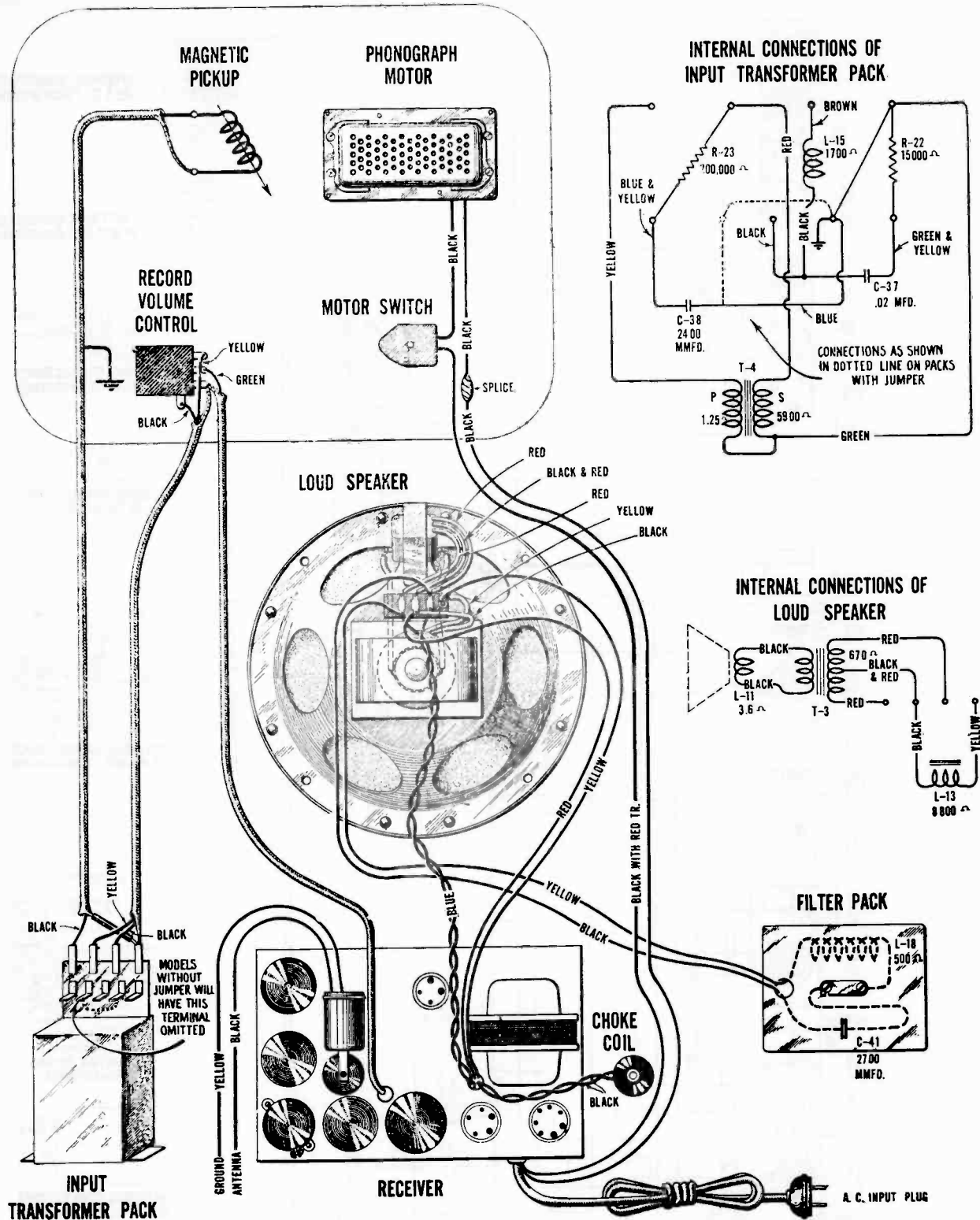
Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
	RECEIVER ASSEMBLIES		7484	Socket—Radiotron five contact socket	
2816	Resistor—1,000 ohms—Carbon type— $\frac{1}{2}$ watt (R9)—Package of 5		7458	Socket—Radiotron six contact socket	
2981	Capacitor—320 mmfd. (C11)			PICKUP AND ARM ASSEMBLIES	
3048	Resistor—500,000 ohms—Carbon type— $\frac{1}{2}$ watt (R6)—Package of 5		3810	Coil—Pickup coil (L10)	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt (R4, R8)—Package of 5		3811	Screw—Needle holding screw—Package of 10	
3077	Resistor—30,000 ohms—Carbon type— $\frac{1}{2}$ watt (R3)—Package of 5		3812	Armature	
3078	Resistor—10,000 ohms—Carbon type— $\frac{1}{2}$ watt (R2)—Package of 5		6592	Pickup and arm assembly complete	
3556	Capacitor—0.05 mfd. (C4, C5)			TURNTABLE AND MOTOR ASSEMBLIES	
3569	Knob—Station selector or volume control knob—Package of 5		3808	Board—Motor terminal board	
3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt (R7)—Package of 5		3809	Spring—Package of 5	
3615	Knob—Phonograph volume control knob—Package of 5		3813	Motor suspension assembly—Comprising one screw, one metal bushing, two rubber bushings, one flat washer, one lockwasher and one nut—3 sets	
3460	Capacitor—0.05 mfd. (C20)		4052	Spring—Stator tension spring—Package of 5	
3641	Capacitor—0.1 mfd. (C9, C10, C13)		4123	Damper—Motor damping block—Package of 5	
3697	Escutcheon—Station selector escutcheon—Package of 2		7651	Coil—Stator coil—60 cycle operation	
3698	Escutcheon—Volume control escutcheon—Package of 2		7652	Coil—Stator coil—50 cycle operation	
3701	Capacitor—0.01 mfd. (C12)		7653	Lamination—Stator laminations—Assembled—60 cycle operation	
3724	Reactor—Filter reactor (L7)		7654	Lamination—Stator laminations—Assembled—50 cycle operation	
3806	Resistor—250 ohms—Wire wound—Porcelain type—Filament resistor (R10)		7655	Lamination—Rotor lamination assembly—60 cycle operation	
3807	Screw—Chassis mounting screw and washer—Package of 10		7656	Lamination—Rotor lamination assembly—50 cycle operation	
4007	Capacitor—0.0024 mfd. (C1)		7657	Base—Motor base and bearing assembly	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt (R5)—Package of 5		9038	Motor complete—105–125 volts—60 cycles	
6512	Capacitor—0.005 mfd. (C16)		9039	Motor complete—105–125 volts—50 cycles	
6585	Condenser—Two gang variable tuning condenser		9040	Turntable complete—With spindle for 50 or 60 cycle operation	
6586	Volume control—Radio volume control (R1)		10194	Ball—Steel ball bearing—Package of 20	
6587	Capacitor—Comprising five 4.0 mfd. and one 15.0 mfd. capacitors (C6, C14, C15, C17, C18, C19)			REPRODUCER ASSEMBLIES	
6588	Coil—R. F. coil assembly (L1, L2, L3)		6591	Transformer—Output transformer	
6589	Coil—Detector coil (L4, L5)		8987	Cone—Reproducer cone complete (L8)—Package of 5	
6590	Volume control—Phonograph volume control (R11)		9037	Coil assembly—Comprising field coil, magnet and cone support (L9)	
			9044	Reproducer complete	



Schematic Circuit Diagram





MODELS 330 & 331

-Assembly Wiring Diagram

SEE INDEX FOR SERVICE DATA
ON AUTOMATIC RECORD CHANGER

Fidelity—A link is provided in the filter circuit connected across the plates of Radiotron RCA-53. Opening this link increases the high frequency output of the phonograph approximately 2000 cycles. The link is accessible by removing the filter unit from the cabinet.

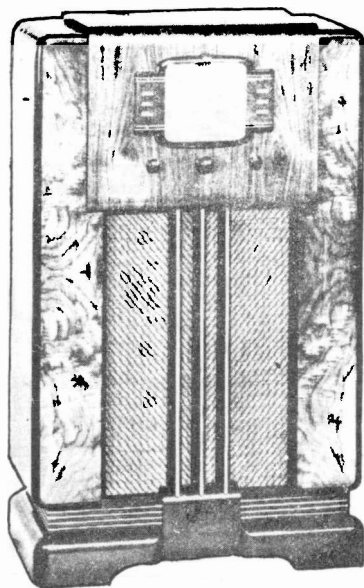
MODEL 331
REPLACEMENT PARTS

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

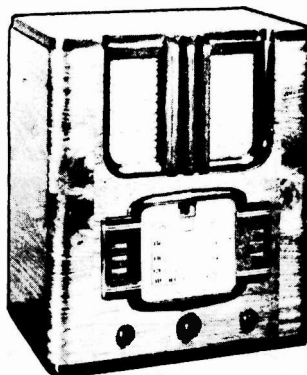
Stock No.	DESCRIPTION	List	Stock No.	DESCRIPTION	List
RECEIVER ASSEMBLIES			AUTOMATIC RECORD CHANGER EJECT ARM ASSEMBLIES		
2269	Capacitor—720 mmfd.		2917	Washer—Spring washer—Package of 10	
2747	Cap—Contact cap—Package of 5		3655	Retainer—Ball retainer with three ball bearings	
3047	Resistor—1,500 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3656	Bearing—Ejector tip bearing	
3076	Resistor—1 megohm—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3657	Tip—Ejector tip	
3252	Resistor—100,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3658	Ball—Ball bearing—Package of 20	
3459	Capacitor—80 mmfd.		3660	Shaft—Eject arm shaft	
3460	Capacitor—1,200 mmfd.		3661	Yoke—Eject arm yoke assembly	
3526	Resistor—2,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3662	Plate—Ejector plate and felt pad—Package of 5	
3536	Capacitor—Filter capacitor—Two 5.0 mfd.		3663	Spring—Eject arm horizontal action tension spring— Package of 10	
3555	Capacitor—0.1 mfd.—R. F. and I. F. Bias		3665	Screw—Eject arm adjustment screw and nut—Package of 5	
3572	Socket—7 contact Radiotron socket—Oscillator		3729	Roller—Counter balance roller—Located inside of eject arm	
3584	Ring—Antenna, R. F. and oscillator coil retaining ring— Package of 5		3930	Cushion—Counter balance roller stop cushion and bracket— Located inside of eject arm	
3592	Knob—Station selector, volume control, or radio-phonograph knob—Package of 5		6575	Cover—Eject arm cover	
3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		7605	Arm—Eject arm assembly complete	
3615	Knob—Range switch or tone control knob—Package of 5		MOTOR ASSEMBLIES		
3616	Capacitor—300 mmfd.		9011	Motor—Motor complete 105-125 volts—60 cycles	
3622	Shield—Radiotron shield—Second detector		9012	Motor—Motor complete 105-125 volts—25 cycles	
3624	Socket—Station selector or volume control lamp socket and bracket assembly		9013	Motor—Motor complete 105-125 volts—40 cycles	
3630	Resistor—10,000 ohms—Carbon type—3 watt		9014	Motor—Motor complete 105-125 volts—50 cycles	
3634	Capacitor—160 mmfd.		9015	Rotor and shaft for 60 cycle motor	
3640	Capacitor—0.05 mfd.		9017	Rotor and shaft for 25 cycle motor	
3641	Capacitor—0.1 mfd.		9019	Rotor and shaft for 40 cycle motor	
3682	Shield—Radiotron shield—Oscillator and 1st detector		9021	Rotor and shaft for 50 cycle motor	
3719	Socket—7 contact Radiotron socket		MOTOR BOARD ASSEMBLIES		
3760	Switch—Radio-phonograph—Rotary type—Double pole— Double throw		2893	Spring—Trip lever tension spring—Package of 10	
3761	Scale—Volume control dial and scale assembly		2897	Screw—Cable lever tension spring adjustment screw and nut—Package of 5	
3762	Screw—Chassis mounting screw and washer—Pkg. of 10		3322	Switch—Motor switch complete	
3765	Capacitor—0.025 mfd.		3653	Spring—Phosphor bronze—Trip pawl spring—Package of 5	
3766	Extension—Tone control, rotary switch, volume control, or range switch shaft extension		3654	Roller—Guide roller assembly—Comprising bracket, roller, and guide pin	
3767	Extension—Station selector shaft extension		3666	Spring—Cable lever tension spring—Package of 10	
3768	Screw—Set screw for shaft extension coupling—Pkg. of 10		3667	Plate—Actuating plate assembly	
3769	Resistor—750 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5		3669	Screw—Special screw for holding main lever to actuating plate—Package of 5	
3770	Resistor—50 ohms—Wire wound—Porcelain type		3670	Finger—Friction finger assembly	
3771	Resistor—8,500 ohms—Carbon type—3 watt		3671	Lever—Manual index lever	
3772	Capacitor—0.5 mfd.		3672	Pin—Manual index lever pin	
3783	Capacitor—9 mmfd.—Package of 2		3673	Screw—Manual index lever adjustment screw and nut— Package of 5	
3784	Capacitor—900 mmfd.		3674	Escutcheon—Engraved MANUAL 12-10	
3787	Capacitor—0.01 mfd.		3675	Lever—Trip lever assembly	
3788	Coil—High frequency compensator choke coil		3676	Spring—Cam and gear tension spring—Package of 10	
3942	Shield—Radiotron shield—Oscillator and 1st detector		3677	Lever—Cable lever assembly	
6188	Resistor—2 megohm—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3777	Motor mounting spring, washer, and stud assembly—Com- prising three upper and three lower springs, six cup washers, three spring washers, and three studs—Pack- age of 1 set	
6279	Resistor—15,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		3778	Spring—Main lever and link assembly tension spring— Package of 10	
6282	Resistor—60,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		6502	Cam and gear assembly	
6300	Socket—4 contact Radiotron socket		6503	Pawl—Trip pawl assembly	
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt—Pkg. of 5		6504	Lever—Main lever and link assembly	
6471	Coil—Oscillator coil		10174	Springs—Automatic brake springs—One set of four springs —Package of 2 sets of 4	
6485	Volume control with mounting nut		10184	Plate—Automatic brake latch plate—Package of 5	
6527	Coil—Antenna coil		PICKUP AND PICKUP ARM ASSEMBLIES		
6528	Coil—R. F. coil		3388	Screw—Pickup needle holding screw—Package of 10	
6534	Switch—Range switch		3417	Armature—Pickup armature	
6551	Transformer—Driver transformer		3419	Screw—Pickup cover mounting screw—Package of 10	
6552	Reactor—Filter reactor		3516	Damper and bushing assembly—Located at bottom of pickup arm base—Package of 1 set	
6553	Transformer—First intermediate frequency transformer		3680	Rest—Pickup rest	
6554	Transformer—Second intermediate frequency transformer		3728	Coil—Pickup coil	
6555	Capacitor assembly—Comprising one 10.0 mfd. and one 4.0 mfd. capacitors		3732	Cover—Pickup cover	
6557	Scale—Dial and dial scale—Tuning capacitor		3733	Back—Pickup housing back	
6559	Tone control complete with mounting nut		3734	Cover—Pickup back cover	
6648	Capacitor—0.25 mfd.		3735	Screw assembly—Pickup mounting screw assembly com- prising one screw, one nut, and one washer—Package of 10	
6674	Output Filter—Comprising reactor and capacitor		3736	Rod—Automatic brake trip rod with lock nut—Pkg. of 5	
7062	Capacitor—Adjustable trimming capacitor		3737	Damper—Package of 5	
7484	Socket—5 contact Radiotron socket		3779	Escutcheon—Pickup arm escutcheon complete with mount- ing rivets	
7485	Socket—6 contact Radiotron socket		6542	Pickup—Pickup unit complete	
7487	Shield—Radiotron shield—R. F. and I. F.		6543	Arm—Pickup arm complete less escutcheon, pickup, pickup mounting screw, nut, and washer	
7588	Condenser—3 gang variable tuning condenser		TURNTABLE ASSEMBLIES		
7590	Capacitor—10.0 mfd.		3338	Ring—Clamp ring assembly—Comprising spring, latch lever, and stud	
9026	Transformer—Power transformer 105-125 volt—50-60 cycle		3340	Washer—Thrust washer—Package of 2	
9035	Transformer—Power transformer 105-125 volt—25-40 cycle		3341	Pin—Groove-Pin—Package of 2	
MISCELLANEOUS			3342	Spring—Latch spring—Located on clamping ring—Pack- age of 2	
3759	Receptacle—Needle receptacle with mounting screws		3344	Cover—Grease retainer cover—Package of 2	
3763	Suspension spring, washer and bolt assembly for motor board—Comprising one bolt, two cup washers, 2 springs, one "C" washer, and one cap nut		3346	Bushing—Speed shifter lever bushing—Package of 4	
3764	Nut—Cap nut for motor board suspension assembly— Package of 4		3347	Spring—Speed shifter lever spring—Package of 2	
6288	Knob—Phonograph volume control knob—Package of 5		3678	Sleeve—Sleeve complete with ball race	
6560	Volume control—Phonograph volume control		3679	Lever—Speed shifter lever with mounting screws	
6576	Cable—Shielded two conductor cable from phonograph volume control to transformer pack		9010	Turntable—Complete	
6646	Socket and base assembly—For compartment lamp				
6647	Shade—Compartment lamp shade				
6649	Escutcheon—Station selector—Package of 2				
6650	Escutcheon—Volume control—Package of 2				
7632	Transformer pack—Comprising input transformer, two reactors, one 2,400 mmfd., one 300 mmfd., one 0.02 mfd. capacitors, one 200,000 ohm and one 15,000 ohm resistor —In metal container				
10241	Box—Needle box with lid—Package of 2				
REPRODUCER ASSEMBLIES					
6184	Board—Terminal board complete with three terminals— Package of 5				
6556	Transformer—Output transformer				
8969	Cone—Reproducer cone—Package of 5				
9434	Coil assembly—Comprising field coil, magnet and cone support				

MODELS 810K, 810K1, and 810T

Ten-Tube, Three-Band, A-C, Superheterodyne Receivers



Model 810K1



Model 810T



Model 810K

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A)..... 530-1,720 kc
 "Medium Wave" (B)..... 2,100-6,800 kc
 "Short Wave" (C)..... 6,800-22,000 kc

Intermediate Frequency..... 460 kc

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.
 Pilot Lamps (4).....

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C)..... 20,000 kc (osc., det., ant.)
 "Medium Wave" (B)..... 6,000 kc (osc.)
 "Broadcast" (A)..... 600 kc (osc.), 1,500 kc (osc.)

(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-5T4..... Full-Wave Rectifier

Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

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

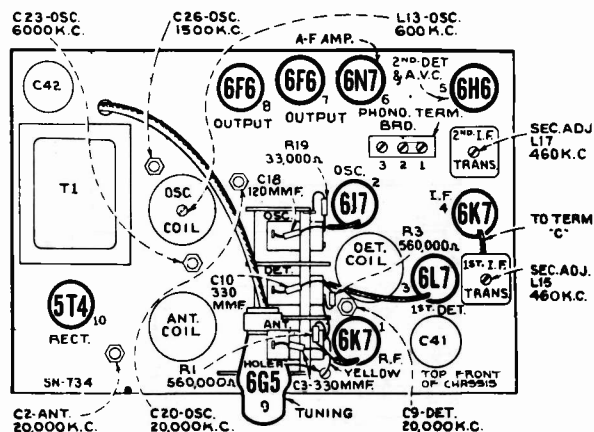
POWER OUTPUT

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

LOUDSPEAKER

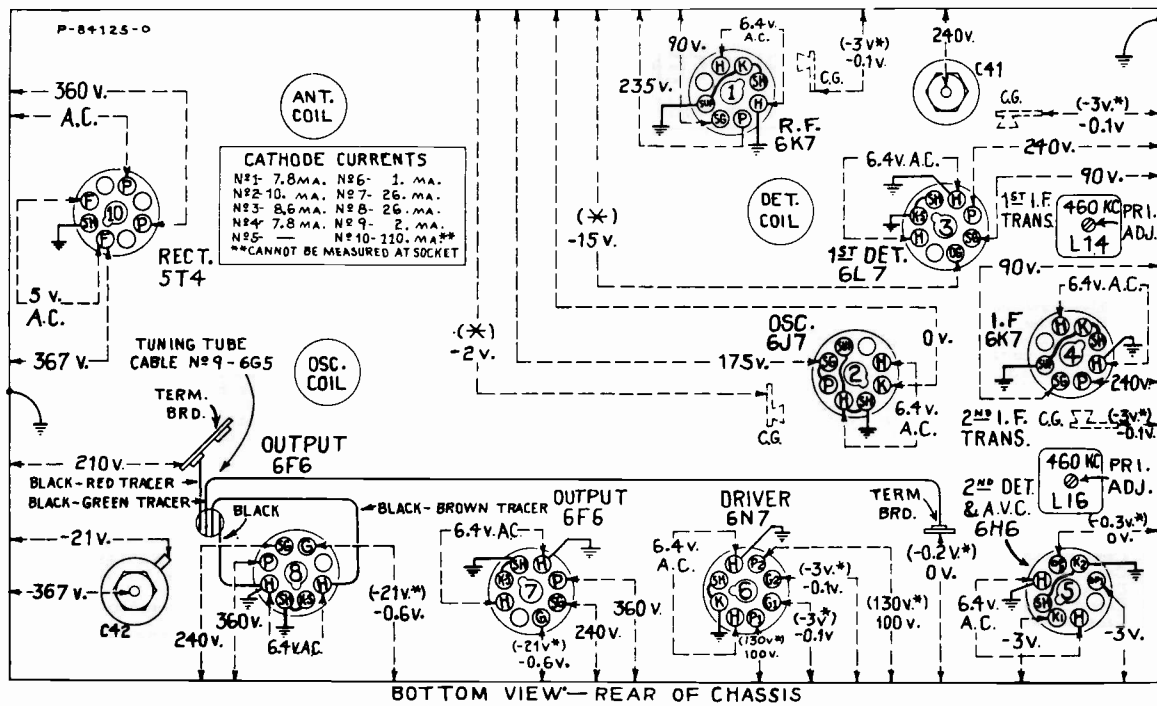
Type..... Electrodynamic
 Impedance (v.c.)..... 2.2 ohms at 400 cycles

Precautionary Lead Dress.—(1) Keep leads to a-c switch dressed away from antenna coil and trimmer C2. (2) Keep all filament leads twisted. (3) Keep yellow lead from term. E of 2nd i-f trans. to phono. term. board as short as possible. (4) Keep leads of C21 as short as possible. (5) Dress shielded lead from volume control to phono. term. board against side of chassis and away from 6L7 socket. (6) Yellow lead from 6J7 oscillator cathode to dummy terminal on 6L7 socket must be dressed away from chassis base and from brown filament lead. (7) All molded capacitors should be dressed so that flat side is perpendicular to chassis base. (8) Yellow lead from cathode of 6J7 socket to term. 22 of S2 must be dressed under spaghetti on 6J7 socket jumper and pulled tight away from chassis. The following bus-leads should be kept as short as possible and, when necessary, replaced only with wire having same diameter as original: (9) Lead from L11-L12-L13 to ground lance; (10) Lead from term. 13 of S3 to ground lance; (11) Lead from term. 9 of S3 to L6-L7; (12) Lead from L6 to C8; (13) Lead from C9 to C8; (14) Lead from term. 5 of S1 to ground lance; (15) Lead from L1-L2 to term. 4 of S1; (16) Lead from L1 to C1; (17) Lead from term. 21 of S2 to C19. (18) Keep filament leads dressed away from grid prongs of 6N7. (19) Keep blue and green leads from plate prongs of output tubes twisted their entire length.



Radiotron, Coil, and Trimmer Locations

810K 810K1 & 810T



Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—
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.*

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 "O." These are friction adjustments.

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	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L16 and L17	Max. (peak)
2	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L14 and L15	Max. (peak)
3	Ant. Term.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C20	Max. (peak) *
4	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Det.	C9	Max. (peak) †
5	Ant. Term.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak) ‡
6	Ant. Term.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C23	Max. (peak) *
7	Ant. Term.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" L-F Osc.	L13	Max. (peak)
8	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	Max. (peak)
9	Ant. Term.	200 Mmfd.	600 kc	"A"	600 kc	"A" L-F Osc.	L13	Max. (peak)
10	Ant. Term.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" H-F Osc.	C26	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 kc.

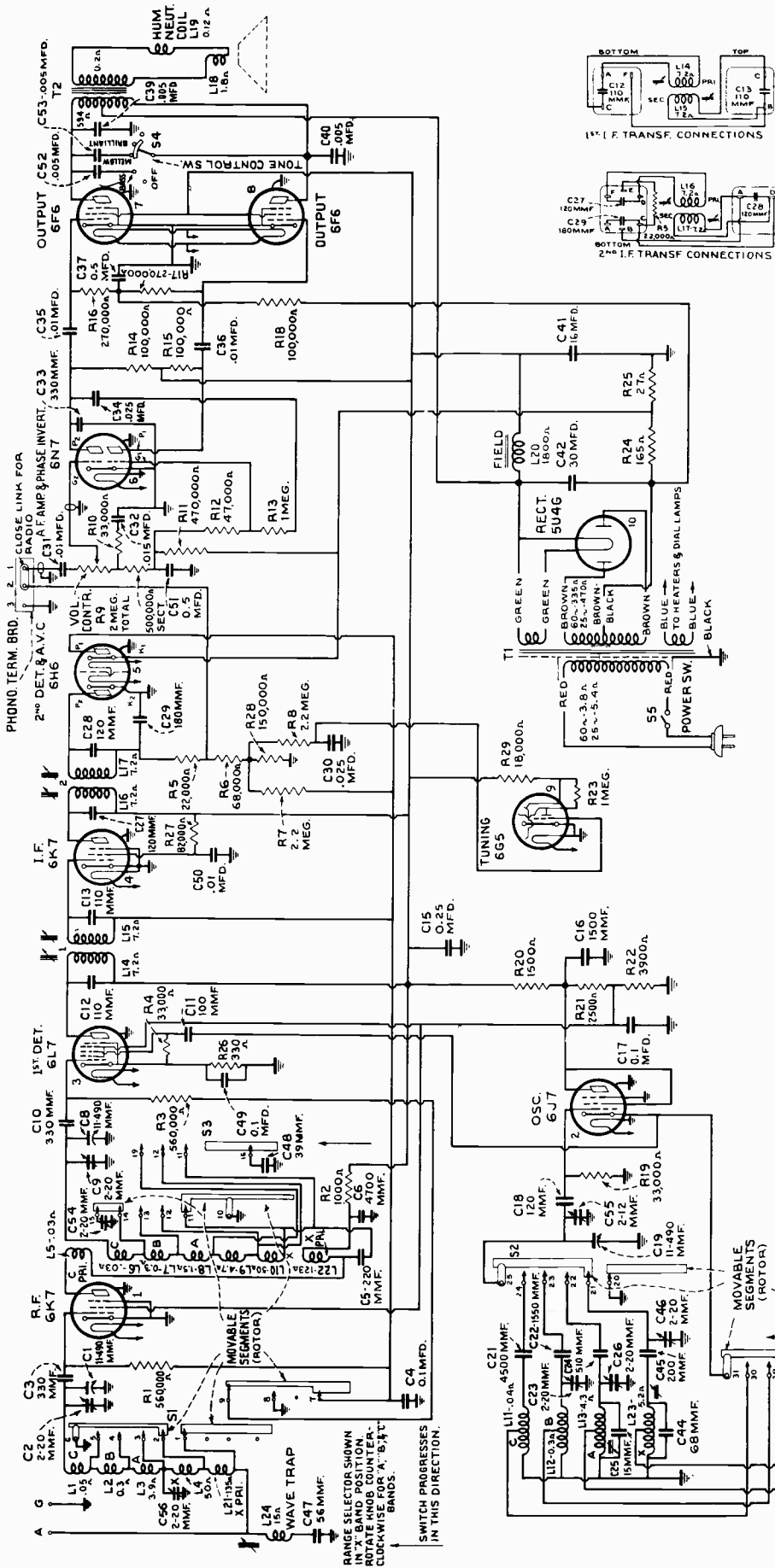
REPLACEMENT PARTS

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

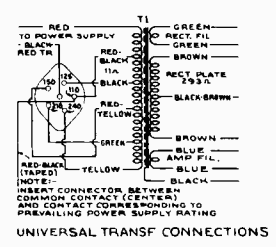
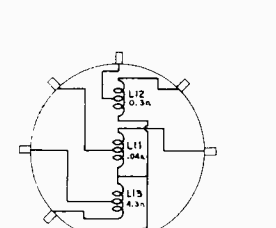
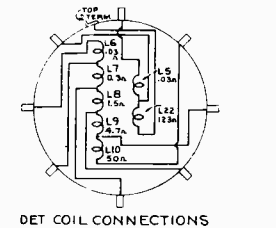
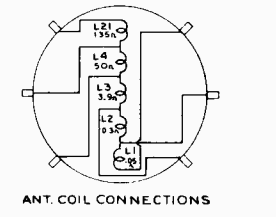
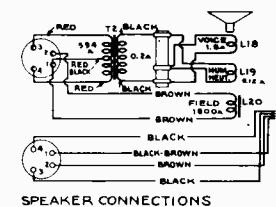
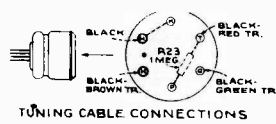
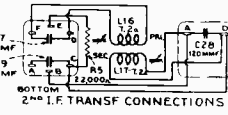
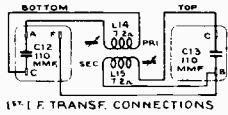
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION	
RECEIVER ASSEMBLIES				
12038	Band—Rubber band for tuning tube	11172	Resistor—470,000 Ohms, Carbon type, 1/2 watt (R11)	
14384	Belt—Variable condenser drive belt	11397	Resistor—560,000 Ohms, Carbon type, 1/10 watt (R1, R3)	
14517	Board—Antenna and ground terminal board	12013	Resistor—1 Megohm, Carbon type, 1/10 watt (R23)	
12717	Board—Phonograph terminal board	13730	Resistor—1 Megohm, Carbon type, 1/2 watt (R13)	
14338	Bushing—Variable condenser mounting bushing assembly	11626	Resistor—2.2 Megohm, Carbon type, 1/2 watt (R7, R8)	
14524	Cable—Band indicator cable approx. 6 1/2 in. long	11668	Resistor—5.6 Megohm, Carbon type, 1/2 watt (R26)	
14523	Cable—Tone control indicator cable approx. 3 in. long	14532	Resistor—Voltage divider comprising one 1500 Ohm, one 2500 Ohm, one 3900 Ohm, one 27 Ohm and one 165 Ohm sections (R20, R21, R22, R24, R25)	
14394	Cable—Tuning tube cable and socket	14343	Retainer—Station selector knob shaft and pulley retainer	
11350	Cap—Grid contact cap	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	
12607	Cap—First I.F. transformer shield top	14374	Shield—Antenna or R.F. coil shield	
12581	Cap—Second I.F. transformer shield top	12008	Shield—First or Second I.F. transformer shield	
12884	Capacitor—Adjustable trimmer (long) (C2, C23, C26)	14375	Shield—Oscillator coil shield	
12714	Capacitor—Adjustable trimmer (Medium) (C9, C20)	14114	Socket—Dial lamp socket	
14021	Capacitor—22 Mmfd. (C25)	11195	Socket—5 contact 5T4 Radiotron socket	
13545	Capacitor—39 Mmfd. (C7)	11196	Socket—8 contact 6F6, 6H6, 6K7, 6L7, 6N7, or 6J7 Radiotron socket	
12720	Capacitor—100 Mmfd. (C11)	12907	Spring—Tension spring for indicator drum gear Stock No. 30085	
14262	Capacitor—110 Mmfd. (C12, C13)	14342	Spring—Tension spring for idler Stock No. 14341	
12404	Capacitor—120 Mmfd. (C27, C28)	12007	Spring—Retaining spring for core Stock No. 12006 and No. 12800	
12724	Capacitor—120 Mmfd. (C18)	14371	Switch—Low frequency tone and power switch (S4, S5)	
12406	Capacitor—180 Mmfd. (C29)	14615	Switch—Range switch (S1, S2, S3)	
12952	Capacitor—330 Mmfd. (C3, C10, C33)	14376	Transformer—First I.F. transformer (L14, L15, C12, C13)	
12727	Capacitor—555 Mmfd. (C24)	14283	Transformer—Second I.F. transformer (L16, L17, C27, C28, C29, R5, R6)	
12537	Capacitor—560 Mmfd. (C5)	11211	Transformer—Power transformer 105-125 volts, 50-60 cycle (T1)	
13762	Capacitor—1500 Mmfd. (C16)	11212	Transformer—Power transformer 105-125 volts, 25-60 cycle (T1)	
12729	Capacitor—1550 Mmfd. (C22)	11213	Transformer—Power transformer 105-125/140-160/300-250 volts, 50-60 cycle (T1)	
12728	Capacitor—4500 Mmfd. (C31)	14335	Volume Control—(R9)	
12897	Capacitor—4700 Mmfd. (C8)	14379	Washer—Felt washer for indicator pointer	
4838	Capacitor—005 Mfd. (C39, C40)	14356	REPRODUCER ASSEMBLIES	
13135	Capacitor—.01 Mfd. (C31, C35, C36)	13866	Board—3 contact reproducer terminal board	
4937	Capacitor—.01 Mfd. (C38)	11234	Cap—Cone center dust cap	
11315	Capacitor—.015 Mfd. (C33)	11469	Coil—Field coil (L20)	
4870	Capacitor—.025 Mfd. (C30, C34)	12642	Coil—Hum neutralizing coil (L19)	
4839	Capacitor—.01 Mfd. (C4, C17)	5039	Cone—Reproducer cone and dust cap (L18)	
12484	Capacitor—.025 Mfd. (C15)	14533	Plug—4 contact male plug for reproducer	
12741	Capacitor—.05 Mfd. (C14, C37)	14358	Reproducer—Reproducer complete	
5212	Capacitor—.18 Mfd. (C41)	14534	Screw—Screw, washer, and lockwasher to hold core in yoke	
14531	Capacitor—.25 Mfd. (C42)	14357	Transformer—Output transformer (T2)	
14372	Coil—Antenna coil and shield (L1, L2, L3, L4)	13866	Washer—Spring washer to hold field coil	
14516	Coil—Oscillator coil and shield (L11, L12, L13)	11234	REPRODUCER ASSEMBLIES	
14414	Coil—R.F. coil and shield (L5, L6, L7, L8, L9, L10)	11469	MODELS 810K and 810K1 (RL-70-E2)	
14513	Condenser—3 gang variable tuning condenser (C1, C8, C19)	12667	Cap—Dust cap for cone center	
5040	Connector—4 contact female connector for reproducer cable	5039	Coil—Field coil (L20)	
12006	Core—Adjustable core and stud for transformer Stock No. 14376 and Stock No. 14283	14533	Coil—Hum neutralizing coil (L19)	
12800	Core—Adjustable core and stud for coil Stock No. 14516	14358	Cone—Reproducer cone and dust cap (L18)	
14518	Dial—Station selector dial scale complete with tuning tube escutcheon	14535	Plug—4 contact male plug for reproducer	
14514	Drive—Variable condenser vernier drive pinion gear and shaft	14358	Reproducer—Reproducer complete	
14345	Drum—Variable condenser drive belt drum complete with set screws	14534	Screw—Screw, washer, and lockwasher to hold core in yoke	
14387	Escutcheon—Tuning tube escutcheon	14357	Transformer—Output transformer (T2)	
11982	Fastener—Dial scale fastener	14357	Washer—Spring washer to hold field coil	
30085	Gear—Indicator drive gear and hub, and pointer stem and gear	13866	REPRODUCER ASSEMBLIES	
14341	Idler—Station selector drive belt idler	11234	MODELS 810K and 810K1 (RL-70-E2)	
14519	Indicator—Station selector indicator pointer	11469	Cap—Dust cap for cone center	
14520	Indicator—Vernier indicator pointer	12667	Coil—Field coil (L20)	
5226	Lamp—Dial lamp	5039	Coil—Hum neutralizing coil (L19)	
14028	Nut—Jamb nut for adjustable trimmer capacitor Stock No. 12714 and No. 12884	14533	Cone—Reproducer cone and dust cap (L18)	
12471	Plate—6J7 Radiotron socket mounting plate and rubber cushions—less socket	14358	Plug—4 contact male plug for reproducer	
14340	Pulley—Station selector drive belt pulley and knob shaft	14358	Reproducer—Reproducer complete	
14522	Reflector—Dial reflector and bracket complete with dial lamp bracket, tuning tube bracket and tone and band indicators	14534	Screw—Screw, washer, and lockwasher to hold core in yoke	
14720	Resistor—1000 Ohms, Carbon type, 1/2 watt (R2)	14534	Transformer—Output transformer (T2)	
14078	Resistor—18,000 Ohms, Carbon type, 1 watt (R27)	14357	Washer—Spring washer to hold field coil	
14284	Resistor—22,000 Ohms, Carbon type, 1/10 watt (R5)	14527	MISCELLANEOUS ASSEMBLIES	
11300	Resistor—33,000 Ohms, Carbon type, 1/10 watt (R19)	14528	Escutcheon—Station selector escutcheon and crystal complete with tone and band indicating strips	
13735	Resistor—33,000 Ohms, Carbon type, 1/2 watt (R4, R10)	14529	Index—Tone control indicating strip—mounts in station selector escutcheon	
11322	Resistor—39,000 Ohms, Carbon type, 1/2 watt (R12)	14359	Index—Band indicating strip—mounts in station selector escutcheon	
5145	Resistor—100,000 Ohms, Carbon type, 1/2 watt (R14, R15, R18)	14269	Knob—Station selector knob	
11398	Resistor—220,000 Ohms, Carbon type, 1/10 watt (R6)	11210	Knob—Volume control, tone control or range switch knob	
11453	Resistor—270,000 Ohms, Carbon type, 1/10 watt (R16, R17)	11377	Screw—Chassis mounting screw and washer assembly for console model	
		4982	Screw—Chassis mounting screw and washer assembly for the table model	
		14270	Spring—Retaining spring for knob Stock No. 14359	
			Spring—Retaining spring for knob Stock No. 14289	

MODEL 810K1 - ADDITIONAL REPLACEMENT PARTS

- 5040 Connector -- 4 contact female for reproducer interconnecting cable.
- 30687 Connector -- 4-contact female with metal shell for reproducer cable.
- 30688 Connector -- 4-contact male with metal shell for reproducer interconnecting cable.
- 30678 Cable - Reproducer interconnecting cable assembly (25 inches long)



-Schematic Circuit Diagram



WAVE TRAP
C47 56MMF
C48 56MMF
C49 0.1 MFD.
C50 0.1 MFD.
C51 0.1 MFD.
C52 0.1 MFD.
C53 0.005MFD.
C54 0.005MFD.
C55 0.005MFD.
C56 0.005MFD.
C57 0.005MFD.
C58 0.005MFD.
C59 0.005MFD.
C60 0.005MFD.
C61 0.005MFD.
C62 0.005MFD.
C63 0.005MFD.
C64 0.005MFD.
C65 0.005MFD.
C66 0.005MFD.
C67 0.005MFD.
C68 0.005MFD.
C69 0.005MFD.
C70 0.005MFD.
C71 0.005MFD.
C72 0.005MFD.
C73 0.005MFD.
C74 0.005MFD.
C75 0.005MFD.
C76 0.005MFD.
C77 0.005MFD.
C78 0.005MFD.
C79 0.005MFD.
C80 0.005MFD.
C81 0.005MFD.
C82 0.005MFD.
C83 0.005MFD.
C84 0.005MFD.
C85 0.005MFD.
C86 0.005MFD.
C87 0.005MFD.
C88 0.005MFD.
C89 0.005MFD.
C90 0.005MFD.
C91 0.005MFD.
C92 0.005MFD.
C93 0.005MFD.
C94 0.005MFD.
C95 0.005MFD.
C96 0.005MFD.
C97 0.005MFD.
C98 0.005MFD.
C99 0.005MFD.
C100 0.005MFD.

MOVABLE SEGMENTS (ROTOR)
C21 11.0M.
C22 2.20M.
C23 2.20M.
C24 2.20M.
C25 2.20M.
C26 2.20M.
C27 180MMF.
C28 180MMF.
C29 180MMF.
C30 0.25 MFD.
C31 0.25 MFD.
C32 0.25 MFD.
C33 330MMF.
C34 330MMF.
C35 330MMF.
C36 330MMF.
C37 270000.
C38 270000.
C39 270000.
C40 270000.
C41 16MFD.
C42 30MFD.
C43 16MFD.
C44 68MMF.
C45 200.
C46 200.
C47 56MMF.
C48 56MMF.
C49 0.1 MFD.
C50 0.1 MFD.
C51 0.1 MFD.
C52 0.1 MFD.
C53 0.005MFD.
C54 0.005MFD.
C55 0.005MFD.
C56 0.005MFD.
C57 0.005MFD.
C58 0.005MFD.
C59 0.005MFD.
C60 0.005MFD.
C61 0.005MFD.
C62 0.005MFD.
C63 0.005MFD.
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C67 0.005MFD.
C68 0.005MFD.
C69 0.005MFD.
C70 0.005MFD.
C71 0.005MFD.
C72 0.005MFD.
C73 0.005MFD.
C74 0.005MFD.
C75 0.005MFD.
C76 0.005MFD.
C77 0.005MFD.
C78 0.005MFD.
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C81 0.005MFD.
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C85 0.005MFD.
C86 0.005MFD.
C87 0.005MFD.
C88 0.005MFD.
C89 0.005MFD.
C90 0.005MFD.
C91 0.005MFD.
C92 0.005MFD.
C93 0.005MFD.
C94 0.005MFD.
C95 0.005MFD.
C96 0.005MFD.
C97 0.005MFD.
C98 0.005MFD.
C99 0.005MFD.
C100 0.005MFD.

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.

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.

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.

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.

810T4

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 fila-

ment 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.

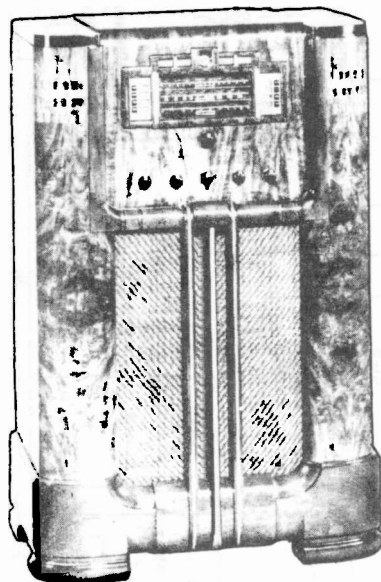
REPLACEMENT PARTS

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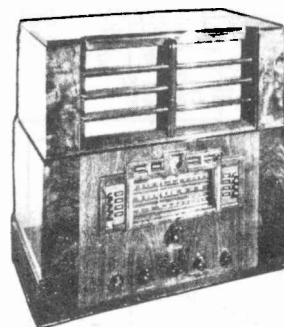
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
12038	Band—Rubber band for tuning tube	14720	Resistor—1,000 ohms, carbon type, ½ watt (R2)
14384	Belt—Variable condenser drive belt	14078	Resistor—18,000 ohms, carbon type, 1 watt (R29)
14517	Board—Antenna and ground terminal board	14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R5)
12717	Board—Phonograph terminal board	11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R19)
14338	Bushing—Variable condenser mounting bushing assembly	13735	Resistor—33,000 ohms, carbon type, ½ watt (R4, R10)
14524	Cable—Band indicator cable, approximately 6½ inches long	11646	Resistor—47,000 ohms, carbon type, ½ watt (R12)
14523	Cable—Tone control indicator cable, approximately 3 inches long	12333	Resistor—68,000 ohms, carbon type, ½ watt (R6)
14394	Cable—Tuning tube cable and socket	8064	Resistor—82,000 ohms, carbon type, ½ watt (R27)
11350	Cap—Grid contact cap	11281	Resistor—100,000 ohms, carbon type, 1/10 watt (R18)
12607	Cap—First I-F transformer shield top	5145	Resistor—100,000 ohms, carbon type, ½ watt (R14, R15)
12581	Cap—Second I-F transformer shield top	5027	Resistor—150,000 ohms, carbon type, ½ watt (R28)
12884	Capacitor—Adjustable trimmer (long) (C2, C9, C23, C26, C46, C54, C56)	11453	Resistor—270,000 ohms, carbon type, 1/10 watt (R16, R17)
12714	Capacitor—Adjustable trimmer (medium) (C55)	11172	Resistor—470,000 ohms, carbon type, ½ watt (R11)
12896	Capacitor—15 Mmfd. (C25)	11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R3)
13545	Capacitor—39 Mmfd. (C46)	12013	Resistor—1 megohm, carbon type, 1/10 watt (R23)
12723	Capacitor—56 Mmfd. (C47)	13730	Resistor—1 megohm, carbon type, ½ watt (R13)
30233	Capacitor—88 Mmfd. (C44)	11626	Resistor—2.2 megohms, carbon type, ½ watt (R7, R8)
12720	Capacitor—100 Mmfd. (C11)	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)
14262	Capacitor—110 Mmfd. (C12, C13)	14343	Retainer—Station selector knob shaft and pulley retainer
12404	Capacitor—120 Mmfd. (C27, C28)	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
12724	Capacitor—120 Mmfd. (C18)	12799	Shield—Antenna or R-F coil shield
12406	Capacitor—180 Mmfd. (C29)	12008	Shield—First or second I-F transformer shield
30232	Capacitor—200 Mmfd. (C45)	14375	Shield—Oscillator coil shield for Stock No. 14518
14546	Capacitor—220 Mmfd. (C5)	12883	Shield—Oscillator coil shield for Stock No. 12881
12952	Capacitor—330 Mmfd. (C3, C10, C33)	14114	Socket—Dial lamp socket
30231	Capacitor—510 Mmfd. (C24)	11195	Socket—5-contact 6U4G Radiotron socket
13762	Capacitor—1,500 Mmfd. (C16)	11196	Socket—8-contact 6F6, 6H6, 6K7, 6L7, 6J7, or 6N7 Radiotron socket
12729	Capacitor—1,550 Mmfd. (C22)	12907	Spring—Tension spring for indicator drum gear, Stock No. 30085
12728	Capacitor—4,500 Mmfd. (C21)	14342	Spring—Tension spring for idler, Stock No. 14341
12897	Capacitor—4,700 Mmfd. (C6)	12007	Spring—Retaining spring for core, Stock Nos. 12006 and 12800
4838	Capacitor—.005 Mfd. (C39, C40, C52, C53)	30084	Switch—High-frequency tone and power switch (S4, S5)
13138	Capacitor—.01 Mfd. (C31, C35, C36, C50)	30226	Switch—Range switch (S1, S2, S3)
11315	Capacitor—.015 Mfd. (C32)	12654	Trap—Wave trap (L24)
4870	Capacitor—.025 Mfd. (C30, C34)	14376	Transformer—First I-F transformer (L14, L15, C12, C13)
4839	Capacitor—.04 Mfd. (C4, C17, C49)	14308	Transformer—Second I-F transformer (L16, L17, C27, C28, C29, R5)
12484	Capacitor—.025 Mfd. (C15)	11212	Transformer—Power transformer, 105-125 volts, 25-60 cycles (T1)
12741	Capacitor—.05 Mfd. (C37, C51)	11213	Transformer—Power transformer, 105-250 volts, 50-60 cycles (T1)
5212	Capacitor—.16 Mfd. (C41)	14335	Volume Control (R9)
14531	Capacitor—.25 Mfd. (C42)	14379	Washer—Felt washer for indicator pointer
30228	Coil—Antenna coil and shield—A, B, C, and X bands (L1, L2, L3, L4, L21)	REPRODUCER ASSEMBLIES (RL-63F-2)	
14516	Coil—Oscillator coil and shield—A, B, and C bands (L11, L12, L13)	14356	Board—3-contact reproducer terminal board
12881	Coil—Oscillator coil and shield—X band only (L23)	13866	Cap—Cone center dust cap
30229	Coil—R-F coil and shield—A, B, C, and X bands (L5, L6, L7, L8, L9, L10, L22)	11234	Coil—Field coil (L20)
14513	Condenser—3-gang variable tuning condenser (C1, C8, C19)	11469	Coil—Hum neutralizing coil (L19)
5040	Connector—4-contact female connector for reproducer cable	12642	Cone—Reproducer cone and dust cap (L18)
30567	Connector—4-contact female connector with metal shell for reproducer cable in later production	5039	Plug—4-contact male plug for reproducer
12006	Core—Adjustable core and stud for transformer, Stock Nos. 14376 and 14308	14533	Reproducer, complete
12800	Core—Adjustable core and stud for coil, Stock No. 14518	14358	Screw—Screw, washer, and lockwasher to hold core in yoke
30230	Dial—Station selector dial scale, complete with tuning tube escutcheon	14534	Transformer—Output transformer (T2)
14514	Drive—Variable condenser vernier drive pinion gear and shaft	14357	Washer—Spring washer to hold field coil
14345	Drum—Variable condenser drive belt drum, complete with set screws	MISCELLANEOUS ASSEMBLIES	
14387	Escutcheon—Tuning tube escutcheon	5040	Connector—4-contact female connector for reproducer interconnecting cable in later production
11982	Fastener—Dial scale fastener	30568	Connector—4-contact male connector for reproducer interconnecting cable in later production
30085	Gear—Indicator drive gear and hub, and pointer stem and gear	30234	Escutcheon—Station selector escutcheon and crystal, complete with tone and band indicating strips
14341	Idler—Station selector drive belt idler	14611	Index—Tone control indicating strip—mounts in station selector escutcheon
4519	Indicator—Station selector indicator pointer	30235	Index—Band indicating strip—mounts in station selector escutcheon
14382	Indicator—Vernier indicator pointer.	14359	Knob—Station selector knob
5226	Lamp—Dial lamp	14269	Knob—Volume control, tone control, or range switch knob
14028	Nut—Jamb nut for adjustable trimmer capacitor, Stock Nos. 12714 and 12884	11377	Screw—Chassis mounting screw and washer assembly
12471	Plate—6J7 Radiotron socket mounting plate and rubber cushions—less socket	4982	Spring—Retaining spring for knob, Stock No. 14359
14340	Pulley—Station selector drive belt pulley and knob shaft	14270	Spring—Retaining spring for knob, Stock No. 14269
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)		

MODELS 811K & 811T

Eleven-Tube, Three-Band, A-C, Superheterodyne Receivers



Model 811K



MODEL 811T

Electrical Specifications

FREQUENCY RANGES

"Broadcast" (A).....	530-1,720 kc
"Medium Wave" (B)	2,100-6,800 kc
"Short Wave" (C).....	6,800-23,500 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6K7.....	R-F Amplifier
(2) RCA-6L7.....	First Detector
(3) RCA-6J7.....	Heterodyne Oscillator
(4) RCA-6J7.....	Oscillator Control
(5) RCA-6K7.....	I-F Amplifier

Pilot Lamps (7)..... Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 140 watts
Rating B	105-125 volts, 25 cycles, 140 watts
Rating C	105-125/140-160/195-250 volts, 50-60 cycles, 140 watts

POWER OUTPUT

Undistorted	10 watts
Maximum.....	12½ watts

Precautionary Lead Dress.—(1) Bus lead from oscillator coil directly to ground must be as short as possible for correct alignment, (2) bus lead from range switch S3 to oscillator section C53 of variable condenser should be 1½ inches long for correct alignment, (3) bus lead from detector coil to range switch S4 must be as short as possible for correct alignment, (4) bus lead from detector coil to detector section C7 of variable condenser should be 2½ inches long for correct alignment, (5) detector trimming capacitor C8 lead should connect directly to variable condenser C7, (6) bus lead from antenna section of range switch S2 to chassis ground lance must be as short as possible, (7) bus lead from antenna coil to range switch S2 should be 2¼ inches for correct alignment, (8) bus lead from antenna coil to antenna section C1 of variable condenser must be 3⅞ inches over-all with ½ inch bend at coil end for correct alignment, (9) filament leads should be dressed away from RCA-6N7 grids, pins Nos. 4 and 5, to reduce hum pickup, (10) resistors R41, R43, and R44 in the oscillator control tube circuit must be

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C).....	20,000 kc (osc., det., ant.)
"Medium Wave" (B).....	6,000 kc (osc.)
"Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc.)

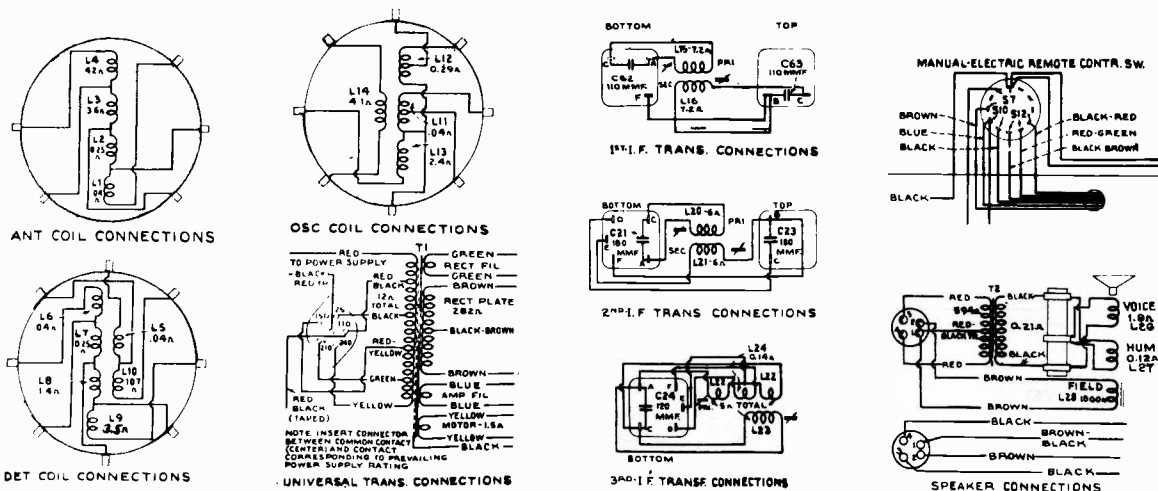
(6) RCA-6H6.....	Second Detector, A.V.C., and A.F.C.
(7) RCA-6N7.....	Audio Phase Inverter
(8) RCA-6F6.....	Power Output
(9) RCA-6F6.....	Power Output
(10) RCA-5T4.....	Full-Wave Rectifier
(11) RCA-6G5.....	"Magic Eye" Tuning Tube

LOUDSPEAKER

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

kept free of other component parts for satisfactory operation of the a-f-c circuit, (11) capacitor C29 and resistor R16 leads from terminal board to the phonograph terminal board should be as short as possible and dressed away from other parts to reduce hum pickup, (12) filament leads should all be twisted to reduce hum pickup, (13) filament leads should be dressed away from the terminal board near the 3rd i-f transformer. (14) Lead from the range switch S3 to the oscillator cathode socket terminal should be dressed under bus wire on socket to hold this lead down close to chassis.

REFER TO INDEX FOR ADDITIONAL DATA PERTAINING TO ELECTRIC TUNING.



ALIGNMENT PROCEDURE

Calibrate the tuning dial by adjusting dial pointer to the left ends of horizontal calibration lines with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

The "Manual-Electric-Remote" switch should be turned to "Manual" (right) during alignment unless otherwise specified.

CAUTION.—The magnetite core screw L22 on the bottom of the 3rd i-f transformer has been accurately adjusted, for an exact electrical balance of coil L22 to center tap, during manufacture and should not be disturbed. However, if for any reason the adjustment has been moved from its original position, it will be necessary to mechanically adjust this screw until the end of the stud protrudes exactly 3/16 of an inch (six threads exposed) above the brass bushing prior to any alignment operations.

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	—	—	—	—	—	3rd I-F Trans.	L23	Turn Extreme Counter-clockwise
2	6K7 I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	2nd I-F Trans.	L20 and L21	Max. (peak)
3	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal * 550-750 kc	1st I-F Trans.	L15 and L16	Max. (peak)
4	Ant.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C43	Max. (peak)*
5	Ant.	300 Ohms	20,000 kc	"C"	Rock thru 20,000 kc	"C" Det.	C8	Max. (peak)†
6	Ant.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak)‡
7	Ant.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C45	Max. (peak)*
8	Ant.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L14	Max. (peak)
9	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
10	Ant.	200 Mmfd.	600 kc	"A"	600 kc	"A" Osc.	L14	Max. (peak)
11	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
12	Proceed to A-F-C Discriminator Adjustments Outlined Below							

* 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 kc.

A-F-C Discriminator Adjustments.—These adjustments are rather critical and should be performed with extreme care. Improper adjustment may result in complete failure of the oscillator control tube to function or else may cause it to detune the oscillator instead of tuning it to the signal. It is assumed that the magnetite core adjusting screw L23 (top of

3rd i-f transformer) has been turned all the way out (extreme counter-clockwise) prior to the preceding tabulated adjustments. Adjustments are as follows: Remove spring "N" on link and arm assembly which connects the "Manual-Electric-Remote" switch shaft to the throw-out gear bracket. Connect antenna to receiver antenna "A" terminal. With the "Manual-

811K & 811T

Electric-Remote" switch in "Manual" (right) position, tune in a strong local station near 600 kc or the low-frequency end of the "A" band as accurately as possible by means of the tuning tube "Magic Eye." The most accurate adjustment will be obtained by adjusting the "vernier" tuning knob mid-way between the two points where the eye just appears to start to open. This will place the generated i-f carrier signal frequency exactly in the center of the i-f amplifier response curve (should be 460 kc if i-f amplifier was properly aligned) and is the frequency to which the a-f-c discriminator (3rd i-f transformer) should be tuned to resonance. Without disturbing any of the receiver adjustments, place the "high" test-oscillator lead about 3/4 of an inch from the grid cap lead of the RCA-6K7 i-f amplifier tube, adjust the test-oscillator output to maximum, turn test-oscillator "Modulation" off, and carefully zero-beat the test-oscillator frequency (approximately 460 kc) with the i-f carrier signal. Avoid placing the test-oscillator lead nearer to the grid cap lead than specified above, as doing so will tend to detune the i-f amplifier. It may be necessary to reduce the local station signal, during this operation, by shortening antenna lead or grounding antenna "A" terminal to chassis in order to increase the loudness of the beat note sufficiently for accurate zero-beat adjustment.

Throw "Manual-Electric-Remote" switch to "Electric" (center) position. A high whistle or beat note will now be heard. Turn the magnetite core screw L23 (top of 3rd i-f transformer) slowly clockwise. As this screw is turned, the beat note will first increase to a high audio frequency and will then decrease to a zero-beat and then increase in fre-

quency again. The point of exact zero-beat is the position for correct adjustment of the discriminator. Zero-beat should also still exist when the "Manual-Electric-Remote" switch is thrown back to "Manual" position. The adjustment is now

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

- (1) RCA-6K7—R-F Amp. 8.5 ma.
- (2) RCA-6L7—1st Det. 7 ma.
- (3) RCA-6J7—Osc. 10 ma.
- (4) RCA-6J7—Osc. Control..... 1.2 ma.
- (5) RCA-6K7—I-F Amp. 8.5 ma.
- (6) RCA-6H6—2nd Det., A.V.C. and A.F.C.
- (7) RCA-6N7—Phase Inverter..... 1.8 ma.
- (8) RCA-6F6—Output 26 ma.
- (9) RCA-6F6—Output 26 ma.
- (10) RCA-5T4—Rectifier 112 ma.*
- (11) RCA-6G5—Tuning Tube..... 2.5 ma.

(*Cannot be measured at socket)

complete and may be checked by slightly detuning the receiver above and below the local station frequency with the "Manual-Electric-Remote" in "Manual" position, switching to "Electric" position, and noting the oscillator pull-in. Release spring "N."

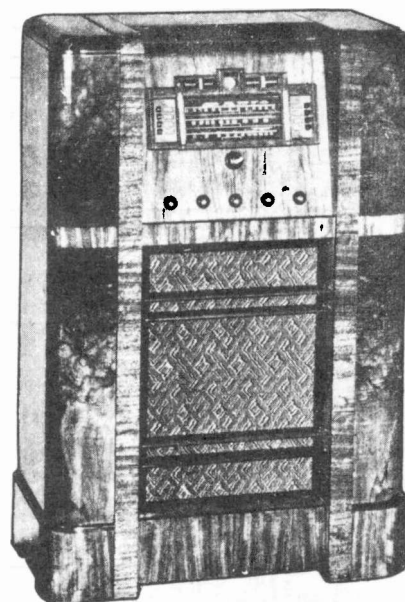
REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14701	Arm—Hub and arm for operating band indicator shutter—located on range switch shaft	14372	Coil—Antenna coil and shield (L1, L2, L3, L4)
14726	Arm—Hub and arm complete with set screws—connects station selector drum to rear of tuning condenser shaft	14414	Coil—Detector coil and shield (L5, L6, L7, L8, L9, L10)
14517	Board—Antenna and ground terminal board	14713	Coil—Oscillator coil and shield (L11, L12, L13, L14)
12717	Board—Phonograph terminal board	14727	Condenser—3-gang variable tuning condenser, complete with gear train (C1, C7, C53)
5237	Bushing—Variable condenser rubber mounting bushing	5040	Connector—4-contact female connector for reproducer cable
13656	Button—Plug button for detector coil shield	14733	Contact—Spring contact for engaging discs in station selector drum for type 1 contact assembly
14725	Cable—Tuning tube cable and socket	30365	Contact—Comprising 8 spring contacts assembled on insulating strip for engaging discs in station selector drum (type 2 contact assembly)
12607	Cap—Shield cap for first or second I.F. transformer	14699	Cord—Indicator pointer drive cord
12581	Cap—Shield cap for third I.F. transformer	12006	Core—Adjustable core and stud for I.F. transformer
11350	Cap—Grid contact cap	12800	Core—Adjustable core and stud assembly for oscillator coil
12884	Capacitor—Adjustable trimmer (long) (C2, C45, C51)	14717	Dial—Station selector dial scale
12714	Capacitor—Adjustable trimmer (med.) (C8, C43)	14740	Drive—Tuning condenser vernier drive shaft and pinion gear
13200	Capacitor—10 Mmfd. (C52)	14698	Drum—Drum for indicator drive cord—fastens on tuning condenser shaft
14021	Capacitor—22 Mmfd. (C61)	14731	Drum—Station selector drum rotor—comprising 8 station selector contactor discs assembled on shaft
12720	Capacitor—100 Mmfd. (C26, C60)	14738	Gear—Drive pinion gear and arm
14262	Capacitor—109 Mfd. (C62, C63)	14739	Gear—Drive gear and set screws—located on tuning condenser knob shaft
12404	Capacitor—120 Mmfd. (C24)	14734	Gear—Intermediate gear assembly—comprising one .749" O.D.—34 tooth—gear and one .291" O.D.—12 tooth pinion assembled
12724	Capacitor—120 Mmfd. (C54)	14735	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth gear and one .291" O.D.—12 tooth pinion assembled
14712	Capacitor—180 Mmfd. (C21, C23)	14736	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth gear and one hub assembled
12952	Capacitor—330 Mmfd. (C3, C34, C59)	14737	Gear—Throw-out gear and bracket
13052	Capacitor—470 Mmfd. (C48)	14718	Holder—Dial scale holder and reflector, complete with holding springs for band indicating shutter
14724	Capacitor—560 Mmfd. (C4)	14715	Indicator—Station selector indicator pointer and support
14723	Capacitor—690 Mmfd. (C47)	5226	Lamp—Dial or indicating lamp
12729	Capacitor—1,550 Mmfd. (C46)	14719	Link—Link and lever assembly
12897	Capacitor—4,700 Mmfd. (C5, C49)	14730	Motor—Tuning drive motor for 25-cycle models only (T3)
14722	Capacitor—5,100 Mmfd. (C44)	14729	Motor—Tuning drive motor for 60-cycle models only (T3)
4838	Capacitor—.005 Mfd. (C39, C41)	14028	Nut—Jamb nut for trimmer, Stock Nos. 12714 and 12884
13138	Capacitor—.01 Mfd. (C29, C33)		
14393	Capacitor—.01 Mfd. (C36)		
11315	Capacitor—.015 Mfd. (C32, C35, C37)		
4870	Capacitor—.025 Mfd. (C28)		
4886	Capacitor—.05 Mfd. (C56)		
4841	Capacitor—.01 Mfd. (C9, C10, C14, C64)		
5170	Capacitor—.025 Mfd. (C19)		
4840	Capacitor—.025 Mfd. (C55)		
12741	Capacitor—.05 Mfd. (C38)		
5212	Capacitor—16 Mfd. (C58)		
14531	Capacitor—25 Mfd. (C57)		
14829	Capacitor Pack—Comprising one 16 Mfd. and one 20 Mfd. sections (C50, C65)		

REPLACEMENT PARTS—(Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
12471	Plate—Mounting plate for cushion socket—less socket	12418	Screw—No. 8-32 x 3/16 milled head set screw for gear, Stock No. 14739
14741	Plate—Tuning condenser front plate and studs assembled for mounting drive gears	14848	Selector—Station selector drum mechanism—comprising selector contactor discs, spring contacts, and motor reversing switch assembled in metal frame
14897	Pulley—Indicator pointer cable pulley	14374	Shield—Antenna or detector coil shield
13988	Resistor—10 ohms—carbon type, 1/2 watt (R40)	14375	Shield—Oscillator coil shield
11932	Resistor—330 ohms—carbon type, 1/10 watt (R4)	12008	Shield—I.F. transformer shield
5030	Resistor—470 ohms—carbon type, 1/2 watt (R39)	14718	Shutter—Band indicating shutter and arm assembly
14720	Resistor—1,000 ohms—carbon type, 1/2 watt (R2, R43)		MODEL 811T
14078	Resistor—18,000 ohms—carbon type, 1 watt (R34)		REPRODUCER ASSEMBLIES (RL-63F-2)
11305	Resistor—22,000 ohms—carbon type, 1/2 watt (R16)	14358	Board—3-contact reproducer terminal board
14721	Resistor—22,000 ohms—carbon type, 1/2 watt (R13)	13866	Cap—Cone center dust cap
11300	Resistor—33,000 ohms—carbon type, 1/10 watt (R42)	11234	Coil—Field coil (L20)
13735	Resistor—33,000 ohms—carbon type, 1/2 watt (R5)	11469	Coil—Hum neutralizing coil (L19)
12454	Resistor—33,000 ohms—insulated 1/2 watt (R53)	12642	Cone—Reproducer cone and dust cap (L18)
11646	Resistor—47,000 ohms—carbon type, 1/2 watt (R25)	5039	Plug—4-contact male plug for reproducer
11365	Resistor—82,000 ohms—carbon type, 1/2 watt (R50)	14533	Reproducer, complete
14560	Resistor—100,000 ohms—insulated, 1/2 watt (R27)	14358	Screw—Screw, washer, and lockwasher to hold core in yoke
5145	Resistor—100,000 ohms—carbon type, 1/2 watt (R28, R30)	14534	Transformer—Output transformer (T2)
14696	Slider—Indicator pointer holder and spring	14357	Washer—Spring washer to hold field coil
11195	Socket—5-contact 5T4 Radiotron socket		MODEL 811K
11196	Socket—8-contact 6K7, 6L7, 6J7, 6H6, 6F6 or 6N7 Radiotron socket		REPRODUCER ASSEMBLIES
14114	Socket—Dial or indicating lamp socket		(Speaker No. RL-70E2)
12007	Spring—Retaining spring for core, Stock No. 12006	13866	Cap—Dust cap for cone center
3676	Spring—Tension spring for link and lever, Stock No. 14719	11234	Coil—Field coil (L28)
13638	Spring—Tension spring for cord, Stock No. 14699	11469	Coil—Neutralizing coil (L27)
14694	Spring—Tension spring for lockplate pawl on station selector push-button switches	12667	Cone—Reproducer cone, voice coil, center suspension and dust cap (L26)
14742	Stud—Mounting stud for gear and arm, Stock No. 14738	5039	Plug—4-contact male plug for reproducer
14702	Switch—"Manual - Electric - Remote" switch (S7, S10, S12)	14535	Reproducer, complete
14705	Switch—L.F. tone and power switch (S1, S8, S11)	14534	Transformer—Output transformer (T2)
14732	Switch—Motor reversing switch and mounting plate for station selector (S9)	14357	Washer—Spring washer to hold field coil securely
14704	Switch—Range switch (S2, S3, S4, S6)		MISCELLANEOUS ASSEMBLIES
14728	Switch—A-F-C and A-F amplification suppression switch (S13)	12038	Band—Rubber band for tuning tube
14693	Switch—Station selector button switch—comprising four contacts and corresponding lockplates, completely assembled on insulating strips	14744	Bracket—Tuning tube mounting bracket and clamp
14764	Tone Control—H.F. tone control (R29)	14745	Button—Automatic station selector push button
14828	Transformer—First I.F. transformer (L15, L16, C62, C63)	14747	Card—Call letter cards for station selector
14765	Transformer—Second I.F. transformer (L20, L21, C21, C23)	14743	Escutcheon—Station selector and tuning tube escutcheon—complete with crystal, indicating cards, and buttons—less station indicating cards
14709	Transformer—Third I.F. transformer (L22, L23, L24, C24)	14749	Indicator—"Electric-Manual" indicator screen
14689	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T1)	14748	Indicator—"Music-Speech" indicator screen
14690	Transformer—Power transformer, 105-125 volts, 25-60 cycle (T1)	14751	Key—Key for use in setting "Electric Tuning" mechanism
14691	Transformer—Power transformer, 105-240 volts, 50-60 cycle (T1)	14359	Knob—Large station selector knob
13144	Volume Control (R52)	14688	Knob—Range switch knob
12478	Resistor—150,000 ohms—carbon type, 1/10 watt (R54)	14269	Knob—Volume control, "Manual-Electric-Remote" switch, H.F. tone control, L.F. tone control or small station selector knob
11453	Resistor—270,000 ohms—carbon type, 1/10 watt (R31, R32)	5210	Screw—Chassis mounting screw and washer assembly
11297	Resistor—330,000 ohms—carbon type, 1/10 watt (R51)	14746	Shield—Celluloid shield for station call letter cards
1172	Resistor—470,000 ohms—carbon type, 1/2 watt (R17)	4982	Spring—Retaining spring for knob, Stock No. 14359
11452	Resistor—470,000 ohms—carbon type, 1/10 watt (R20)	14270	Spring—Retaining spring for knob, Stock Nos. 14269 and 14688
11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R3)		ADDITIONAL REPLACEMENT PARTS
12013	Resistor—1 meg.—carbon type, 1/10 watt (R36)		R-34, 18,000 ohm tuning tube plate resistor is omitted on some instruments.
13730	Resistor—1 meg.—carbon type, 1/2 watt (R26, R44)	30625	Capacitor -- 1.0 mfd. (C27)
11626	Resistor—2.2 meg.—carbon type, 1/2 watt (R18, R21)	30667	Connector -- 4-contact female with metal shell for reproducer cable.
13732	Resistor—10 meg.—carbon type, 1/2 watt (R35)	30652	Resistor -- 120,000 ohms, special carbon type, 1/4 watt (R41)
14692	Resistor—Voltage divider—comprising one 1,100 ohm, one 4,000 ohm, one 6,000 ohm, one 180 ohm and two 90 ohm sections (R9, R10, R11, R12, R37, R38)	5040	Connector-- 4-contact female for reproducer interconnecting cable.
14695	Rod—Tie rod for joining lockplate pawls on station selector push-button switches	30668	Connector-- 4-contact male with metal shell for reproducer interconnecting cable
4669	Screw—No. 8-32 x 5/32 square head set screw for arm, Stock No. 14701, or link, Stock No. 14719, or drum, Stock No. 14693	30669	Escutcheon - Station selector dial and tuning tube escutcheon and crystal complete with "Speech-Music" and "Electric-Manual" indicating screens - less right and left-hand side panels for buttons.
		30670	Escutcheon - Right and left-hand side panels - less buttons, call letter cards, retainers, celluloid shields, and metal front plates.
		30670	Screws - Screws for attaching metal retainer plate on escutcheon side panels.
		30675	Retainer - Metal retainer plate for Electric Tuning Buttons on escutcheon side panels.

MODEL 812K**Twelve-Tube, Three-Band, A-C, Superheterodyne Receiver**

Model 812K

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket
Cathode Terminals Under Conditions Similar to
Those of Voltage Measurements

(1) RCA-6K7—R-F Amp.	5.0 ma.
(2) RCA-6L7—1st Det.	6.0 ma.
(3) RCA-6J7—Osc.	8.5 ma.
(4) RCA-6J7—Osc. Control.	1.2 ma.
(5) RCA-6K7—1st I-F Amp.	6.0 ma.
(6) RCA-6K7—2nd I-F Amp.	7.5 ma.
(7) RCA-6H6—2nd Det., A.V.C. and A.F.C.	— ma.
(8) RCA-6N7—Phase Inverter.	1.8 ma.
(9) RCA-6F6—Output	26 ma.
(10) RCA-6F6—Output	26 ma.
(11) RCA-5T4—Rectifier	118 ma.*
(12) RCA-6G5—Tuning Tube.	2.5 ma.

(*Cannot be measured at socket)

Electrical Specifications**FREQUENCY RANGES**

"Broadcast" (A)	530-1,720 kc
"Medium Wave" (B)	2,100-6,800 kc
"Short Wave" (C)	6,800-23,500 kc

Intermediate Frequency

RADIOTRON COMPLEMENT

(1) RCA-6K7	R-F Amplifier
(2) RCA-6L7	First Detector
(3) RCA-6J7	Heterodyne Oscillator
(4) RCA-6J7	Oscillator Control
(5) RCA-6K7	First I-F Amplifier
(6) RCA-6K7	Second I-F Amplifier

Pilot Lamps (7)

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 145 watts
Rating B	105-125 volts, 25 cycles, 145 watts
Rating C	105-125/140-160/195-250 volts, 50-60 cycles, 145 watts

POWER OUTPUT

Undistorted	10 watts
Maximum	12½ watts

R-F ALIGNMENT FREQUENCIES

"Short Wave" (C)	20,000 kc (osc., det., ant.)
"Medium Wave" (B)	6,000 kc (osc.)
"Broadcast" (A)	600 kc (osc.), 1,500 kc (osc.)

(7) RCA-6H6	Second Detector, A.V.C., and A.F.C.
(8) RCA-6N7	Audio Phase Inverter
(9) RCA-6F6	Power Output
(10) RCA-6F6	Power Output
(11) RCA-5T4	Full-Wave Rectifier
(12) RCA-6G5	"Magic Eye" Tuning Tube

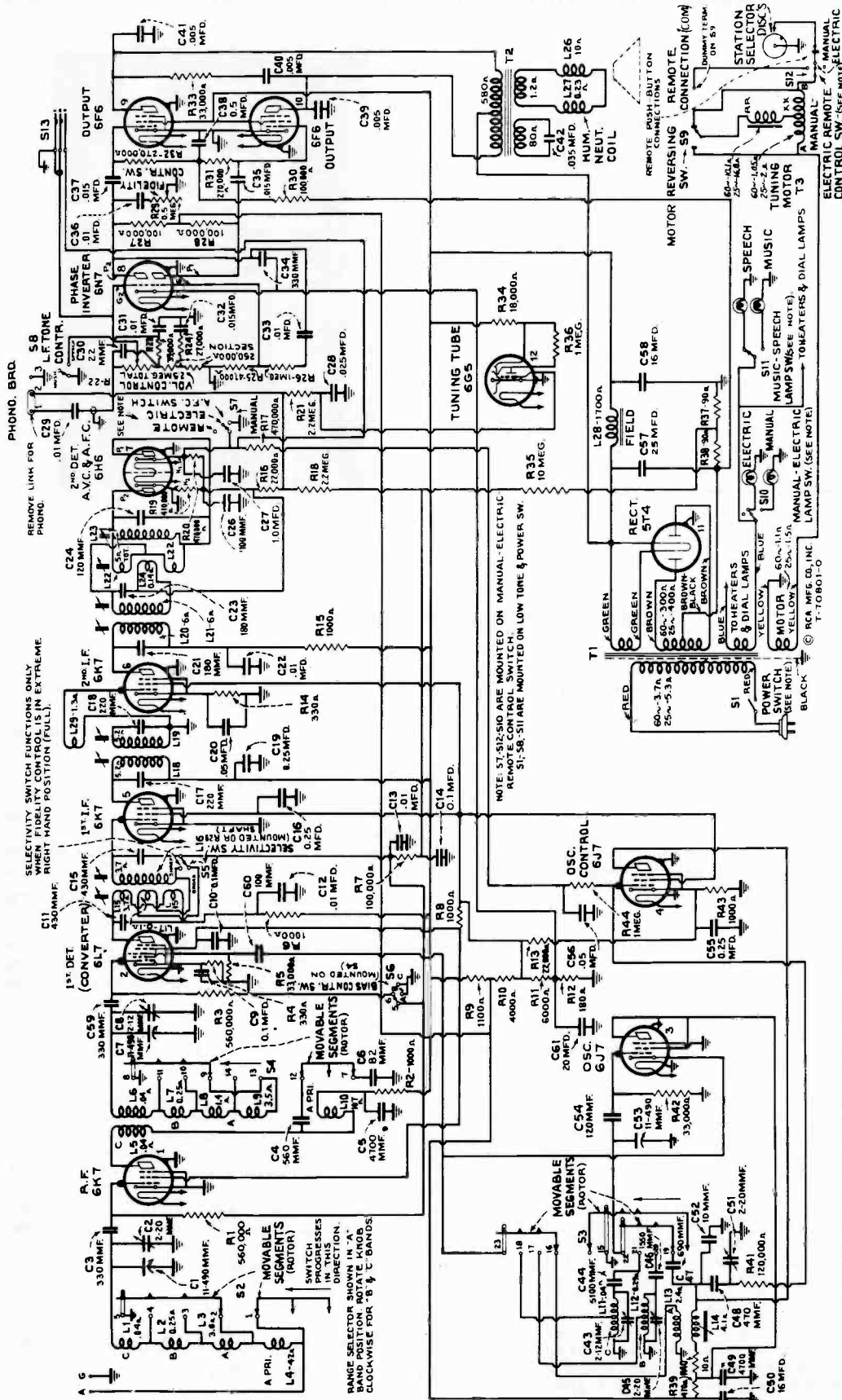
LOUDSPEAKER

Type	12-inch Electrodynamic
Impedance (v.c.)	11½ ohms at 400 cycles

Precautionary Lead Dress.—(1) Bus lead from oscillator coil directly to ground must be as short as possible for correct alignment, (2) bus lead from range switch S3 to oscillator section C53 of variable condenser should be 1½ inches long for correct alignment, (3) bus lead from detector coil to range switch S4 must be as short as possible for correct alignment, (4) bus lead from detector coil to detector section C7 of variable condenser should be 2½ inches long for correct alignment, (5) detector trimming capacitor C8 lead should connect directly to variable condenser C7, (6) bus lead from antenna section of range switch S2 to chassis ground lance must be as short as possible, (7) bus lead from antenna coil to range switch S2 should be 2¼ inches for correct alignment, (8) bus lead from antenna coil to antenna section C1 of variable condenser must be 3⅞ inches over-all with ½ inch bend at coil end for correct alignment, (9) filament leads should be dressed away from RCA-6N7 grids, pins Nos. 4 and 5, to reduce hum pickup, (10) resistors R41, R43, and R44 in the oscillator control tube circuit must be

kept free of other component parts for satisfactory operation of the a-f-c circuit, (11) capacitor C29 and resistor R16 leads from terminal board to the phonograph terminal board should be as short as possible and dressed away from other parts to reduce hum pickup, (12) filament leads should all be twisted to reduce hum pickup, (13) filament leads should be dressed away from the terminal board near the 4th i-f transformer. (14) Lead from the range switch S3 to the oscillator cathode socket terminal should be dressed under bus wire on socket to hold this lead down close to chassis.

REFER TO INDEX FOR ADDITIONAL DATA PERTAINING TO ELECTRIC TUNING.

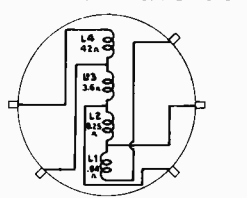
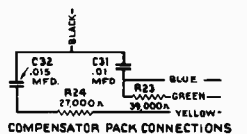
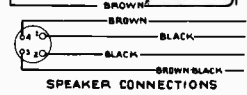
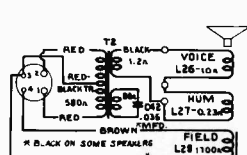


OSCILLATOR STOPPAGE OR INTERMITTENCY

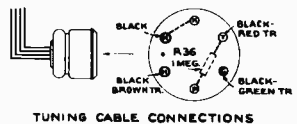
Where trouble develops due to lack of oscillation on "A" band, or intermittent variation of sensitivity, carefully check capacitors C5 and C49 for leakage or short circuit. A D.C. voltage in the order of 500 should be applied to these parts as a check for breakdown.

Schematic Circuit Diagram

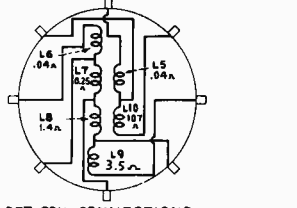
NOTE: Resistor R34 omitted on some models.



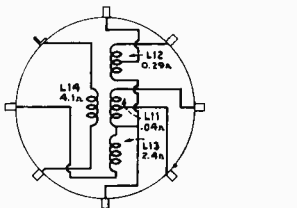
ANT. COIL CONNECTIONS



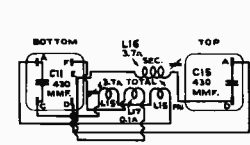
TUNING CABLE CONNECTIONS



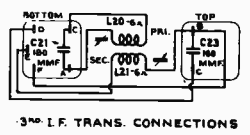
DET. COIL CONNECTIONS



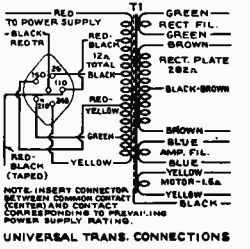
OSC. COIL CONNECTIONS



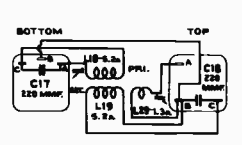
1ST I.F. TRANS. CONNECTIONS



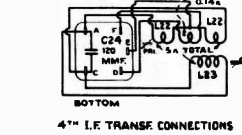
3RD I.F. TRANS. CONNECTIONS



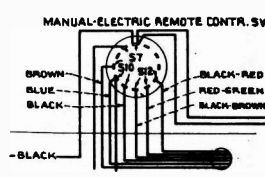
UNIVERSAL TRANS. CONNECTIONS



2ND I.F. TRANS. CONNECTIONS



4TH I.F. TRANS. CONNECTIONS



MANUAL-ELECTRIC REMOTE CONTR. SW

ALIGNMENT PROCEDURE

Calibrate the tuning dial by adjusting dial pointer to the left ends of horizontal calibration lines with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

The "Fidelity" control should be turned counter-clockwise during all alignment operations. The "Manual-Electric-Remote" switch should be turned to "Manual" (right) during alignment unless otherwise specified.

CAUTION.—The magnetite core screw L22 on the bottom of the 4th i-f transformer has been accurately adjusted, for an exact electrical balance of coil L22 to center tap, during manufacture and should not be disturbed. However, if for any reason the adjustment has been moved from its original position, it will be necessary to mechanically adjust this screw until the end of the stud protrudes exactly 3/16 of an inch (six threads exposed) above the brass bushing prior to any alignment operations.

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	—	—	—	—	—	4th I-F Trans.	L23	Turn Extreme Counter-clockwise
2	6K7 2nd I-F Grid Cap	.001 Mfd.	460 kc	"A" Left	No Signal 550-750 kc	3rd I-F Trans.	L20 and L21	Max. (peak)
3	6K7 1st I-F Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	2nd I-F Trans.	L18 and L19	Max. (peak)
4	6L7 Det. Grid Cap	.001 Mfd.	460 kc	"A"	No Signal 550-750 kc	1st I-F Trans.	L15 and L16	Max. (peak)
5	Ant.	300 Ohms	20,000 kc	"C" Right	20,000 kc	"C" Osc.	C43	Max. (peak)*
6	Ant.	300 Ohms	20,000 kc	"C"	Rock thru 20,000 kc	"C" Det.	C8	Max. (peak)†
7	Ant.	300 Ohms	20,000 kc	"C"	20,000 kc	"C" Ant.	C2	Max. (peak)‡
8	Ant.	300 Ohms	6,000 kc	"B" Center	6,000 kc	"B" Osc.	C45	Max. (peak)*
9	Ant.	200 Mmfd.	600 kc	"A" Left	600 kc	"A" Osc.	L14	Max. (peak)
10	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
11	Ant.	200 Mmfd.	600 kc	"A"	600 kc	"A" Osc.	L14	Max. (peak)
12	Ant.	200 Mmfd.	1,500 kc	"A"	1,500 kc	"A" Osc.	C51	Max. (peak)
13	Proceed to A-F-C Discriminator Adjustments Outlined Below							

* 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 kc.

A-F-C Discriminator Adjustments.—These adjustments are rather critical and should be performed with extreme care. Improper adjustment may result in complete failure of the oscillator control tube to function or else may cause it to detune the oscillator instead of tuning it to the signal. It is assumed that the magnetite core adjusting screw L23 (top of 4th i-f transformer) has been turned all the way out (extreme counter-clockwise) prior to the preceding tabulated adjustments. Adjustments are as follows: Remove spring "N" on link and arm assembly which connects the "Manual-Electric-Remote" switch shaft to the throw-out gear bracket. Turn "Fidelity" control counter-clockwise. Connect antenna to receiver antenna "A" terminal. With the "Manual-Electric-Remote" switch in "Manual" (right) position, tune in a strong local station near 600 kc or the low-frequency end of the "A" band as accurately as possible by means of the tuning tube "Magic Eye." The most accurate adjustment will be obtained by adjusting the "vernier" tuning knob mid-way between the two points where the eye just appears to start to open. This will place the generated i-f carrier signal frequency exactly in the center of the i-f amplifier response curve (should be 460 kc if i-f amplifier was properly aligned) and is the frequency to which the a-f-c discriminator (4th i-f transformer) should be tuned to resonance. Without disturbing any of the receiver adjustments, place the "high" test-oscillator lead about 3/4 of an inch from the grid cap lead of the RCA-6K7, 1st i-f amplifier tube, adjust the test-

oscillator output to maximum, turn test-oscillator "Modulation" off, and carefully zero-beat the test-oscillator frequency (approximately 460 kc) with the i-f carrier signal. Avoid placing the test-oscillator lead nearer to the grid cap lead than specified above, as doing so will tend to detune the i-f amplifier. It may be necessary to reduce the local station signal, during this operation, by shortening antenna lead or grounding antenna "A" terminal to chassis in order to increase the loudness of the beat note sufficiently for accurate zero-beat adjustment.

Throw "Manual-Electric-Remote" switch to "Electric" (center) position. A high whistle or beat note will now be heard. Turn the magnetite core screw L23 (top of 4th i-f transformer) slowly clockwise. As this screw is turned, the beat note will first increase to a high audio frequency and will then decrease to a zero-beat and then increase in frequency again. The point of exact zero-beat is the position for correct adjustment of the discriminator. Zero-beat should also still exist when the "Manual-Electric-Remote" switch is thrown back to "Manual" position. The adjustment is now complete and may be checked by slightly detuning the receiver above and below the local station frequency with the "Manual-Electric-Remote" in "Manual" position, switching to "Electric" position, and noting the oscillator pull-in. Replace spring "N."

REPLACEMENT PARTS

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

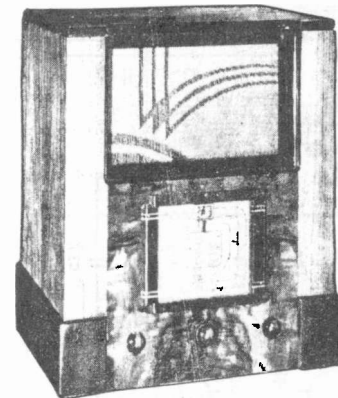
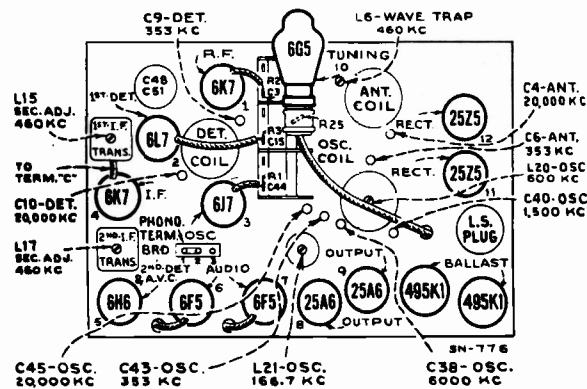
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14701	Arm—Hub and arm for operating band indicator shutter—located on range switch shaft	14372	Coil—Antenna coil and shield (L1, L2, L3, L4)
14726	Arm—Hub and arm complete with set screws—connects station selector drum to rear of tuning condenser shaft	14414	Coil—Detector coil and shield (L5, L6, L7, L8, L9, L10)
14517	Board—Antenna and ground terminal board	14713	Coil—Oscillator coil and shield (L11, L12, L13, L14)
12717	Board—Phonograph terminal board	14727	Condenser—3-gang variable tuning condenser, complete with gear train (C1, C7, C53)
5237	Bushing—Variable condenser rubber mounting bushing	5040	Connector—4-contact female connector for reproducer cable
13656	Button—Plug button for detector coil shield	14733	Contact—Spring contact for engaging discs in station selector drum for type 1 contact assembly
14725	Cable—Tuning tube cable and socket	30365	Contact—Comprising 8 spring contacts assembled on insulating strip for engaging discs in station selector drum (type 2 contact assembly)
12607	Cap—Shield cap for first or second I.F. transformer	14699	Cord—Indicator pointer drive cord
12581	Cap—Shield cap for third or fourth I.F. transformer	12006	Core—Adjustable core and stud for I.F. transformer
11350	Cap—Grid contact cap	12800	Core—Adjustable core and stud assembly for oscillator coil
12884	Capacitor—Adjustable trimmer (long) (C2, C45, C51)	14717	Dial—Station selector dial scale
12714	Capacitor—Adjustable trimmer (med.) (C8, C43)	14740	Drive—Tuning condenser vernier drive shaft and pinion gear
13200	Capacitor—10 Mmfd. (C52)	14698	Drum—Drum for indicator drive cord—fastens on tuning condenser shaft
14021	Capacitor—22 Mmfd. (C30)	14731	Drum—Station selector drum rotor—comprising 8 station selector contactor discs assembled on shaft
12813	Capacitor—82 Mmfd. (C6)	14738	Gear—Drive pinion gear and arm
12720	Capacitor—100 Mmfd. (C26, C60)	14739	Gear—Drive gear and set screws—located on tuning condenser knob shaft
12404	Capacitor—120 Mmfd. (C24)	14734	Gear—Intermediate gear assembly—comprising one .749" O.D.—34 tooth—gear and one .291" O.D.—12 tooth pinion assembled
12724	Capacitor—120 Mmfd. (C54)	14735	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth gear and one .291" O.D.—12 tooth pinion assembled
14712	Capacitor—180 Mmfd. (C21, C23)	14736	Gear—Intermediate gear assembly—comprising one 1.541" O.D.—72 tooth gear and one hub assembled
14711	Capacitor—220 Mmfd. (C17, C18)	14737	Gear—Throw-out gear and bracket
12952	Capacitor—330 Mmfd. (C3, C34, C59)	14716	Holder—Dial scale holder and reflector, complete with holding springs for band indicating shutter
14710	Capacitor—430 Mmfd. (C11, C15)	14715	Indicator—Station selector indicator pointer and support
13052	Capacitor—470 Mmfd. (C48)	5226	Lamp—Dial or indicating lamp
14724	Capacitor—560 Mmfd. (C4)	14719	Link—Link and lever assembly
14723	Capacitor—690 Mmfd. (C47)	14730	Motor—Tuning drive motor for 25-cycle models only (T3)
12729	Capacitor—1,550 Mmfd. (C46)	14729	Motor—Tuning drive motor for 60-cycle models only (T3)
12897	Capacitor—4,700 Mmfd. (C5, C49)	14028	Nut—Jamb nut for trimmer, Stock Nos. 12714 and 12884
14722	Capacitor—5,100 Mmfd. (C44)	12471	Plate—Mounting plate for cushion socket—less socket
4838	Capacitor—.005 Mfd. (C39, C40, C41)	14741	Plate—Tuning condenser front plate and studs assembled for mounting drive gears
13138	Capacitor—.01 Mfd. (C12, C13, C22, C29, C33)	14697	Pulley—Indicator pointer cable pulley
14393	Capacitor—.01 Mfd. (C36)		
11315	Capacitor—.015 Mfd. (C35, C37)		
4870	Capacitor—.025 Mfd. (C28)		
4886	Capacitor—.05 Mfd. (C20, C56)		
4839	Capacitor—.1 Mfd. (C9, C10, C14)		
12484	Capacitor—.25 Mfd. (C16, C19, C55)		
12741	Capacitor—.5 Mfd. (C38)		
5212	Capacitor—16 Mfd. (C58)		
14531	Capacitor—25 Mfd. (C57)		
14714	Capacitor Pack—Comprising one .015 Mfd. and one .010 Mfd. capacitor, one 27,000 ohm and one 39,000 ohm resistors (C31, C32, R23, R24)		
14829	Capacitor Pack—Comprising one 16 Mfd. and one 20 Mfd. sections (C50, C61)		

REPLACEMENT PARTS—(Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
13988	Resistor—10 ohms—carbon type, ¼ watt (R40)	14690	Transformer—Power transformer, 105-125 volts, 25-60 cycle (T1)
11932	Resistor—330 ohms—carbon type, 1/10 watt (R4)	14691	Transformer—Power transformer, 105-240 volts, 50-60 cycle (T1)
13250	Resistor—330 ohms—carbon type, ¼ watt (R14)	12861	Volume Control (R22)
5030	Resistor—470 ohms—carbon type, ¼ watt (R39)		REPRODUCER ASSEMBLIES
14720	Resistor—1,000 ohms—carbon type, ¼ watt (R2, R8, R43)		(Speaker No. RL76-1)
14837	Resistor—1,000 ohms—carbon type, 1/10 watt (R6, R15)	14606	Cap—Dust cap for cone center
14078	Resistor—18,000 ohms—carbon type, 1 watt (R34)	14603	Coil—Field coil (L28)
11305	Resistor—22,000 ohms—carbon type, ¼ watt (R16)	14604	Coil—Neutralizing coil (L27)
14721	Resistor—22,000 ohms—carbon type, ¼ watt (R13)	14602	Cone—Reproducer cone, voice coil, center suspension and dust cap (L26)
5033	Resistor—33,000 ohms—carbon type, 1 watt (R33)	5039	Plug—4-contact male plug for reproducer
11300	Resistor—33,000 ohms—carbon type, 1/10 watt (R42)	14600	Reproducer, complete
13735	Resistor—33,000 ohms—carbon type, ¼ watt (R5)	14601	Transformer—Output transformer (T2, C42)
11646	Resistor—47,000 ohms—carbon type, ¼ watt (R25)	14357	Washer—Spring washer to hold field coil securely
14560	Resistor—100,000 ohms—insulated, ¼ watt (R27)		MISCELLANEOUS ASSEMBLIES
5145	Resistor—100,000 ohms—carbon type, ¼ watt (R7, R28, R30)	12038	Band—Rubber band for tuning tube
11453	Resistor—270,000 ohms—carbon type, 1/10 watt (R31, R32)	14744	Bracket—Tuning tube mounting bracket and clamp
11172	Resistor—470,000 ohms—carbon type, ¼ watt (R17)	14745	Button—Automatic station selector push button
11452	Resistor—470,000 ohms—carbon type, 1/10 watt (R19, R20)	14747	Card—Call letter cards for station selector
11397	Resistor—560,000 ohms—carbon type, 1/10 watt (R1, R3)	14743	Escutcheon—Station selector and tuning tube escutcheon—complete with crystal, indicating cards, and buttons—less station indicating cards
12013	Resistor—1 meg.—carbon type, 1/10 watt (R36)	14749	Indicator—"Electric-Manual" indicator screen
13730	Resistor—1 meg.—carbon type, ¼ watt (R26, R44)	14748	Indicator—"Music-Speech" indicator screen
11626	Resistor—2.2 meg.—carbon type, ¼ watt (R18, R21)	14751	Key—Key for use in setting "Electric Tuning" mechanism
13732	Resistor—10 meg.—carbon type, ¼ watt (R35)	14359	Knob—Large station selector knob
14692	Resistor—Voltage divider—comprising one 1,100 ohm, one 4,000 ohm, one 6,000 ohm, one 180 ohm and two 90 ohm sections (R9, R10, R11, R12, R37, R38)	14688	Knob—Range switch knob
14695	Rod—Tie rod for joining lockplate pawls on station selector push-button switches	14269	Knob—Volume control, "Manual-Electric-Remote" switch, H.F. tone control, L.F. tone control or small station selector knob
4669	Screw—No. 8-32 x 5/32 square head set screw for arm, Stock No. 14701, or link, Stock No. 14719, or drum, Stock No. 14693	5210	Screw—Chassis mounting screw and washer assembly
12418	Screw—No. 8-32 x 3/16 milled head set screw for gear, Stock No. 14739	14746	Shield—Celluloid shield for station call letter cards
14848	Selector—Station selector drum mechanism—comprising selector contactor discs, spring contacts, and motor reversing switch assembled in metal frame	4982	Spring—Retaining spring for knob, Stock No. 14359
14374	Shield—Antenna or detector coil shield	14270	Spring—Retaining spring for knob, Stock Nos. 14269 and 14688
14375	Shield—Oscillator coil shield		ADDITIONAL REPLACEMENT PARTS
12008	Shield—I.F. transformer shield	30623	Capacitor - 1.0 mfd (C27).
14718	Shutter—Band indicating shutter and arm assembly	30567	Connector - 4 contact female with metal shell for reproducer cable.
14696	Slider—Indicator pointer holder and spring	5040	Connector - 4 contact female for reproducer inter connecting cable.
11195	Socket—5-contact 5T4 Radiotron socket	30568	Connector - 4 contact male with metal shell for reproducer inter connecting cable.
11196	Socket—8-contact 6K7, 6L7, 6J7, 6H6, 6F6 or 6N7 Radiotron socket	30569	Escutcheon - Station selector and tuning tube escutcheon and crystal complete with "Speech-Music" and "Electric-Manual" indicating screens - less right and left side panels for buttons.
14114	Socket—Dial or indicating lamp socket	30570	Escutcheon - Right and left side panels - less buttons, call letter cards, retainers, celluloid shields and metal front plates.
12007	Spring—Retaining spring for core, Stock No. 12006	30552	Resistor - 120,000 ohms - special carbon type - 1/4 watt (R41).
3676	Spring—Tension spring for link and lever, Stock No. 14719	30675	Retainer - Metal retainer plate for Electric Tuning buttons on escutcheon side panels.
13638	Spring—Tension spring for cord, Stock No. 14699	30670	Screws - Screws for attaching metal retainer plate on escutcheon side panels.
14694	Spring—Tension spring for lockplate pawl on station selector push-button switches	30678	Cable - Reproducer interconnecting cable assembly (25 inches long)
14742	Stud—Mounting stud for gear and arm, Stock No. 14738		
14702	Switch—"Manual - Electric - Remote" switch (S7, S10, S12)		
14705	Switch—L.F. tone and power switch (S1, S8, S11)		
14732	Switch—Motor reversing switch and mounting plate for station selector (S9)		
14704	Switch—Range switch (S2, S3, S4, S6)		
14728	Switch—A-F-C and A-F amplification suppression switch (S13)		
14693	Switch—Station selector button switch—comprising four contacts and corresponding lockplates, completely assembled on insulating strips		
14703	Tone Control—H.F. tone control (R29, S5)		
14706	Transformer—First I.F. transformer (L15, L16, L17, C11, C15)		
14707	Transformer—Second I.F. transformer (L18, L19, L29, C17, C18)		
14708	Transformer—Third I.F. transformer (L20, L21, C21, C23)		
14709	Transformer—Fourth I.F. transformer (L22, L23, L24, C24)		
14689	Transformer—Power transformer, 105-125 volts, 50-60 cycle (T1)		

MODEL 812X

Twelve-Tube, Four-Band, AC-DC, Superheterodyne Receiver



Model 812X

-Radiotron, Component Part, and Trimmer Locations

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)

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.)

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

- (1) RCA-6K7..... R-F Amplifier
- (2) RCA-6L7..... First Detector
- (3) RCA-6J7..... Heterodyne Oscillator
- (4) RCA-6K7..... Intermediate Amplifier
- (5) RCA-6H6..... Second Detector and A.V.C.
- (6) RCA-6F5..... Audio Amplifier

- (7) RCA-6F5..... Audio Amplifier
- (8) RCA-25A6..... Power Output
- (9) RCA-25A6..... Power Output
- (10) RCA-6G5..... "Magic Eye" Tuning Tube
- (11) RCA-25Z5..... Half-Wave Rectifier
- (12) RCA-25Z5..... Half-Wave Rectifier

Pilot Lamps (2)..... Mazda No. 40, 6.3 volts, 0.15 amp.

POWER SUPPLY RATINGS

A-C Rating..... 200-250 volts, 40-60 cycles, 220 watts
 D-C Rating..... 200-250 volts, 195 watts

LOUDSPEAKER

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

POWER OUTPUT

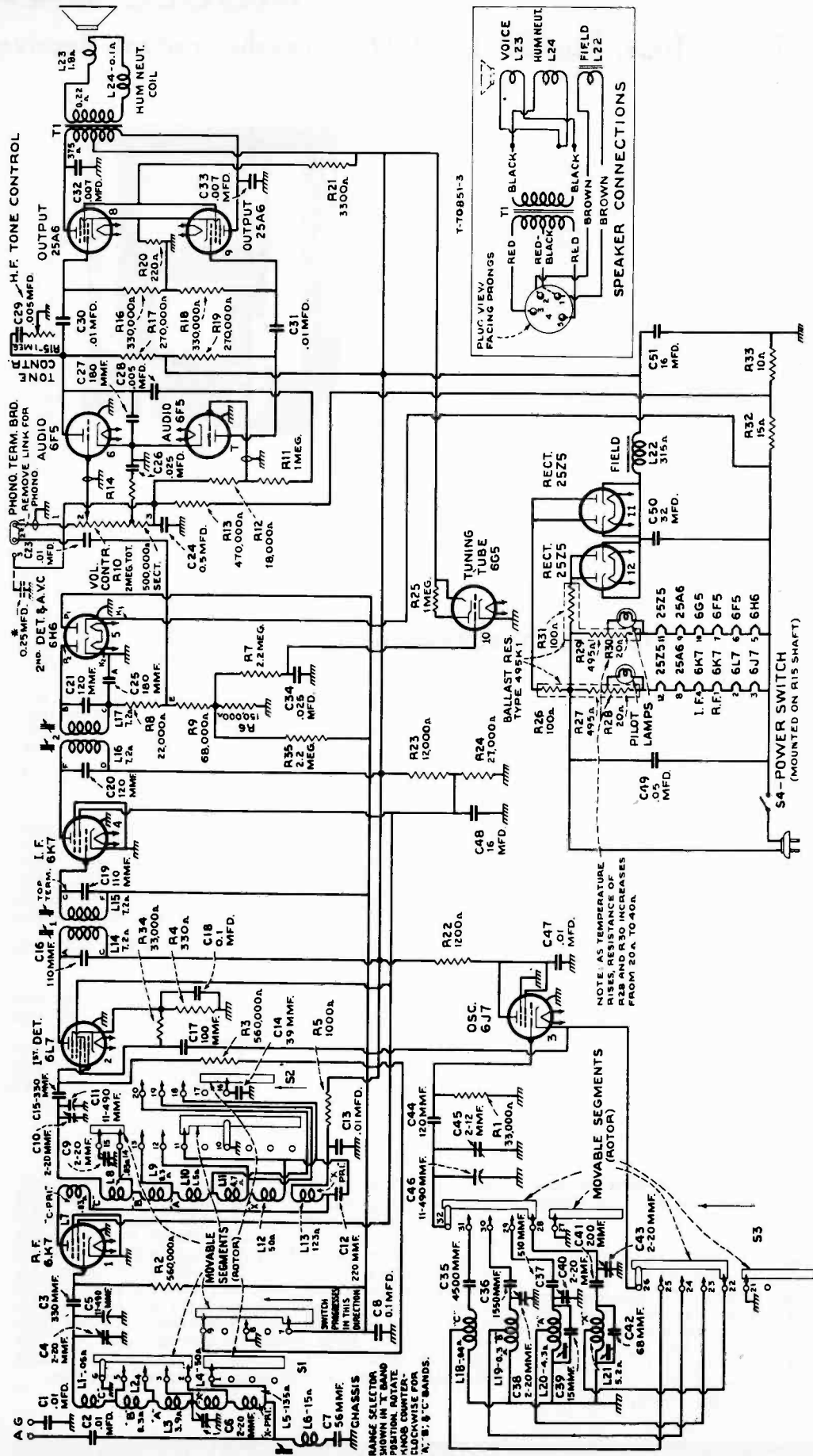
Undistorted.....	A-C Rating	D-C Rating
Maximum.....	5 watts.....	4 watts
	7½ watts.....	5½ watts

CAUTION: Disconnect receiver power cord before making phonograph connections. Tape shield extension on Radio-Record cable so it cannot make metallic connection with receiver chassis ground.

Precautionary Lead Dress.—(1) Twist yellow, blue, and green leads from oscillator coil to range selector. Dress the following away from the short trimmer: (2) capacitor from "X" oscillator coil to range selector; (3) black lead from rear section of range selector to ground lance. (4) Dress yellow lead from 6J7 socket under bus lead on the socket. (5) Dress shielded lead from volume control to phonograph terminal board away from 6L7 socket. (6) Dress yellow leads from 6J7 socket away from chassis and brown filament

leads. (7) Dress all molded capacitors with flat side perpendicular to chassis. (8) Dress C35 and C36 apart and away from air trimmers. (9) Maintain length and size of lead from center section of range selector to ground and dress away from chassis. Do not change length or wire size of the following: (10) lead from oscillator coil (L18, L19, L20) to ground; (11) lead from rear section of range selector to rear section of tuning condenser; (12) lead from detector coil to center section of tuning condenser; (13) lead from front section of range selector to ground lance; (14) bus lead from antenna coil to range selector; and (15) lead from antenna coil to front section of tuning condenser.

812 X



Schematic Circuit Diagram

* Some instruments have this capacitor and do not have jumper from terminal 3 of phono. term. board to junction of R12 and R13. In service remove capacitor and connect jumper from term. 3 to junction of R12 and R13.

CAUTION: The chassis is connected to one side of the power supply. Avoid contact of chassis or parts to external ground when servicing.

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.

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.

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	L6	Minimum Output
4	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Osc.	C45	Max. (peak)*
5	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Det.	C10	Max. (peak)†
6	Ant. Term.	300 Ohms	20,000 kc	"Short Wave 2"	20 mc	"C" Ant.	C4	Max. (peak)‡
7	Ant. Term.	300 Ohms	6,000 kc	"Short Wave 1"	6 mc	"B" Osc.	C38	Max. (peak)*
8	Ant. Term.	200 Mmfd.	600 kc	"Medium Wave"	500 meters	"A" L-F Osc.	L20	Max. (peak)
9	Ant. Term.	200 Mmfd.	1,500 kc	"Medium Wave"	200 meters	"A" H-F Osc.	C40	Max. (peak)
10	Ant. Term.	200 Mmfd.	600 kc	"Medium Wave"	500 meters	"A" L-F Osc.	L20	Max. (peak)
11	Ant. Term.	200 Mmfd.	1,500 kc	"Medium Wave"	200 meters	"A" H-F Osc.	C40	Max. (peak)
12	Ant. Term.	200 Mmfd.	166.7 kc	"Long Wave"	1,800 meters	"X" L-F Osc.	L21	Max. (peak)
13	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" H-F Osc.	C43	Max. (peak)
14	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" Det.	C9	Max. (peak)
15	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" Ant.	C6	Max. (peak)
16	Ant. Term.	200 Mmfd.	166.7 kc	"Long Wave"	1,800 meters	"X" L-F Osc.	L21	Max. (peak)
17	Ant. Term.	200 Mmfd.	353 kc	"Long Wave"	850 meters	"X" H-F Osc.	C43	Max. (peak)

* Use minimum capacity peak if two peaks can be obtained.

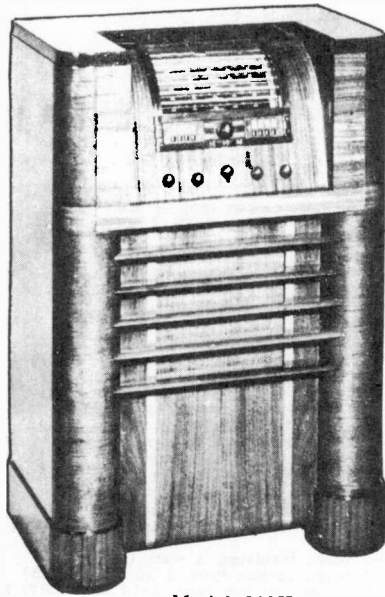
† Use maximum capacity peak if two peaks can be obtained.

‡ After this adjustment, check for image signal by shifting receiver dial to 19,060 mc.

REPLACEMENT PARTS

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

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14542	Arm—Band indicator operating arm and hub—less set-screw Stock No. 4869	13988	Resistor—10 ohms, carbon type, 1/2 watt (R33)
12038	Band—Rubber band for tuning tube	12014	Resistor—15 ohms, carbon type, 1/2 watt (R32)
30605	Belt—Drive belt	13218	Resistor—220 ohms, carbon type, 2 watt (R20)
13218	Board—Antenna and ground terminal board	13250	Resistor—330 ohms, carbon type, 1/2 watt (R4)
12717	Board—Phonograph terminal board	14837	Resistor—1,000 ohms, carbon type, 1/10 watt (R5)
13656	Button—Plug button for R.F. coil shield	30104	Resistor—1,200 ohms, carbon type, 1/2 watt (R22)
12607	Cap—First I.F. transformer top shield cap	5147	Resistor—3,300 ohms, carbon type, 1 watt (R21)
12581	Cap—Second I.F. transformer top shield cap	8073	Resistor—12,000 ohms, carbon type, 2 watt (R23)
11350	Cap—Grid contact cap	13045	Resistor—18,000 ohms, insulated, 1/2 watt (R12)
12884	Capacitor—Adjustable trimmer (long) (C4, C8, C9, C10, C38, C40, C43)	14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R8, R14)
12714	Capacitor—Adjustable trimmer (medium) (C45)	8065	Resistor—27,000 ohms, carbon type, 1/2 watt (R24)
12896	Capacitor—15 Mmfd. (C39)	11300	Resistor—33,000 ohms, carbon type, 1/10 watt (R1, R34)
13545	Capacitor—39 Mmfd. (C14)	12010	Resistor—68,000 ohms, carbon type, 1/10 watt (R9)
12723	Capacitor—56 Mmfd. (C7)	12478	Resistor—150,000 ohms, carbon type, 1/10 watt (R6)
13057	Capacitor—68 Mmfd. (C42)	11323	Resistor—270,000 ohms, carbon type, 1/2 watt (R17, R19)
12720	Capacitor—100 Mmfd. (C17)	13733	Resistor—330,000 ohms, carbon type, 1/2 watt (R16, R18)
14262	Capacitor—110 Mmfd. (C16, C19)	11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R13)
12404	Capacitor—120 Mmfd. (C20, C21)	11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R2, R3)
12724	Capacitor—120 Mmfd. (C44)	12200	Resistor—1 meg., insulated, 1/2 watt (R11)
12406	Capacitor—180 Mmfd. (C25)	12013	Resistor—1 meg., carbon type, 1/10 watt (R25)
13003	Capacitor—180 Mmfd. (C27)	5131	Resistor—2.2 meg., carbon type, 1/10 watt (R7, R35)
30232	Capacitor—200 Mmfd. (C41)	14343	Retainer—Retaining ring for range switch shaft—holds station selector knob shaft and pulley
12694	Capacitor—220 Mmfd. (C12)	4669	Screw—No. 8-32 x 5/32-in. square head set screw for arm Stock No. 14542
12952	Capacitor—330 Mmfd. (C3, C15)	14350	Screw—No. 8-32 x 3/16-in. square head set screw for gear Stock No. 30085—drum Stock No. 14345
30608	Capacitor—510 Mmfd. (C37)	4814	Socket—5-contact Radiotron socket
12729	Capacitor—1,550 Mmfd. (C36)	4786	Socket—6-contact Radiotron socket
12728	Capacitor—4,500 Mmfd. (C35)	11198	Socket—8-contact Radiotron socket
4838	Capacitor—.005 Mfd. (C28, C29)	14171	Socket—Dial lamp socket
5148	Capacitor—.007 Mfd. (C32, C33)	13871	Socket—Tuning tube socket
4858	Capacitor—.01 Mfd. (C1, C2, C13)	30609	Socket—Pilot lamp socket and lead assembly
14393	Capacitor—.01 Mfd. (C23, C30, C31, C47)	14342	Spring—Tension spring for idler Stock No. 14341
4870	Capacitor—.025 Mfd. (C26, C34)	30226	Switch—Range switch (S1, S2, S3)
4886	Capacitor—.05 Mfd. (C49)	30574	Tone control and power switch (R15, S4)
4839	Capacitor—.01 Mfd. (C8, C18)	14376	Transformer—First I.F. transformer (L14, L15, C16, C19)
12741	Capacitor—.05 Mfd. (C24)	14308	Transformer—Second I.F. transformer (L16, L17, C20, C21, R8)
30597	Capacitor Pack—2 sections each 16 Mfd. (C48, C51)	12854	Trap—Wave trap (L6)
30598	Capacitor—32 Mfd. (C50)	30598	Volume Control (R10)
30228	Coil—Antenna coil and shield (A-B-C-X) (L1, L2, L3, L4, L5)	14379	Washer—Felt washer for indicator pointer
14516	Coil—Oscillator coil and shield (A-B-C) (L18, L19, L20)	REPRODUCER ASSEMBLIES	
12881	Coil—Oscillator coil and shield (X) (L21)	Speaker RL-63H-2	
30229	Coil—R.F. coil and shield (A-B-C-X) (L7, L8, L9, L10, L11, L12, L13)	14356	Board—3-contact reproducer terminal board
14513	Condenser—3-gang variable tuning condenser (C5, C11, C46)	13866	Cap—Cone center dust cap
30800	Dial—Station selector dial scale and tuning tube escutcheon for European use	30613	Coil—Field coil (L22)
30801	Dial—Station selector dial scale and tuning tube escutcheon for other than European use	11469	Coil—Hum neutralizing coil (L24)
14514	Drive—Vernier drive shaft and pinion gear for variable condenser	12642	Cone—Reproducer cone and dust cap (L23)
14345	Drum—Variable condenser drive belt drum complete with set screws	30611	Connector—4-prong male plug
11982	Fastener—Dial scale fastener	30610	Reproducer complete
30085	Gear—Indicator drive gear and hub and indicator stem and gear assemblies	14358	Screw—Screw, washer and lockwasher to hold core in yoke
14341	Idler—Drive belt idler pulley, bracket and spring	30612	Transformer—Output transformer (T1)
30603	Indicator—Band indicator and bracket	14357	Washer—Spring washer to hold field coil
14344	Indicator—Station selector indicator pointer (long)	MISCELLANEOUS ASSEMBLIES	
14382	Indicator—Station selector indicator pointer (vernier)	11823	Cord—Power cord and plug for back cover of cabinet
4340	Lamp—Dial lamp	14396	Escutcheon—Station selector escutcheon and crystal
14028	Nut—Jamb nut for adjustable trimmer capacitor	14359	Knob—Station selector knob
12471	Plate—Metal plate and rubber cushions for cushion socket	30606	Knob—Volume control, tone control, or range switch knob
11979	Plug—2-prong male plug for chassis power leads	12993	Screw—No. 8-32 x 3/8-in. cone-pointed set-screw for knob Stock No. 30606
30602	Pulley—Drive belt pulley and knob shaft	4982	Spring—Retaining spring for knob Stock No. 14359
30599	Resistor—Ballast resistor tube type 495K1 (2 used) (R26, R27, R28) (R29, R30, R31)		

MODEL 813K**Thirteen-Tube, Five-Band, A-C, Superheterodyne Receiver**

Model 813K

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

(1) RCA-6K7—R-F Amp.....	9.0 ma.
(2) RCA-6L7—1st Det.....	3.5 ma.
(3) RCA-6J7—Osc.	8.5 ma.
(4) RCA-6J7—Osc. Control.....	1.8 ma.
(5) RCA-6K7—1st I-F Amp.....	9.0 ma.
(6) RCA-6K7—2nd I-F Amp.....	8.0 ma.
(7) RCA-6H6—2nd Det.....	—
(8) RCA-6C5—A-F Amp.....	0.9 ma.
(9) RCA-6F6—Driver.....	22 ma.
(10) RCA-6F6—Output.....	25 ma.
(11) RCA-6F6—Output.....	25 ma.
(12) RCA-6G5—Tuning Tube.....	3.0 ma.
(13) RCA-5T4—Rectifier.....	128 ma.**

(**Cannot be measured at socket)

Electrical Specifications**FREQUENCY RANGES**

"Standard Broadcast" (A).....	530-1,720 kc
"49M." (49 Meters).....	5,970-6,240 kc
"31M." (31 Meters).....	9,410-9,690 kc
"25M." (25 Meters).....	11,680-11,920 kc
"19M." (19 Meters).....	15,090-15,380 kc

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6K7.....	R-F Amplifier
(2) RCA-6L7.....	First Detector
(3) RCA-6J7.....	Heterodyne Oscillator
(4) RCA-6J7.....	Oscillator Control
(5) RCA-6K7.....	First I-F Amplifier
(6) RCA-6K7.....	Second I-F Amplifier

Pilot Lamps (9) Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 150 watts
Rating B	105-125 volts, 25 cycles, 150 watts
Rating C	100-130/140-160/195-250 volts, 50-60 cycles, 150 watts

POWER OUTPUT

Undistorted	15 watts
Maximum	20 watts

Precautionary Lead Dress.—(1) Green bus leads from C1 to S1 and from C59 to S2 should be dressed away from nearby parts. (2) Green bus lead from C13 to S3 should be 2 $\frac{3}{4}$ -inches long and dressed away from nearby parts. (3) Bus leads from C12 to L18 and from L18 to S3 should be as short as possible. (4) Red and blue leads from tube No. 3 to 19M. oscillator coil should be dressed away from coil. (5) Tube No. 3 grid lead should be 6-inches long and dressed away from grounded metal parts. (6) All leads behind oscillator coils should be dressed close to chassis. (7) "Magic Eye" cable should be clamped to dial bracket. (8) Filament leads should all be twisted. (9) Leads from C44 and C48 should be dressed close to chassis. (10) A-c leads near R22 should be dressed away from R22. (11) Leads from S11 to the first i-f transformer should be twisted and dressed away from chassis. (12) Capacitors C7, C8, and C9

R-F ALIGNMENT FREQUENCIES

"31M." (31 Meters).....	9,600 kc (osc., det., ant.)
"25M." (25 Meters).....	11,700 kc (osc.)
"19M." (19 Meters).....	15,300 kc (osc.)
"49M." (49 Meters).....	6,100 kc (osc.)
"Standard Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc.)

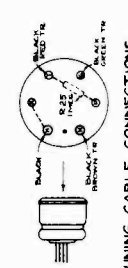
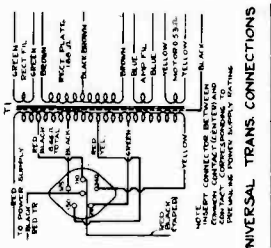
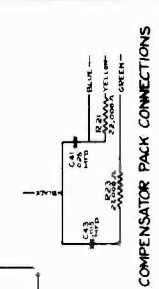
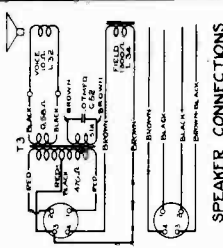
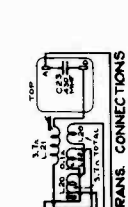
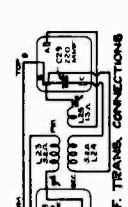
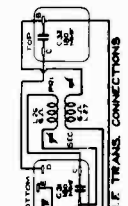
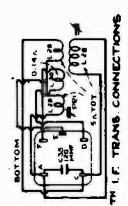
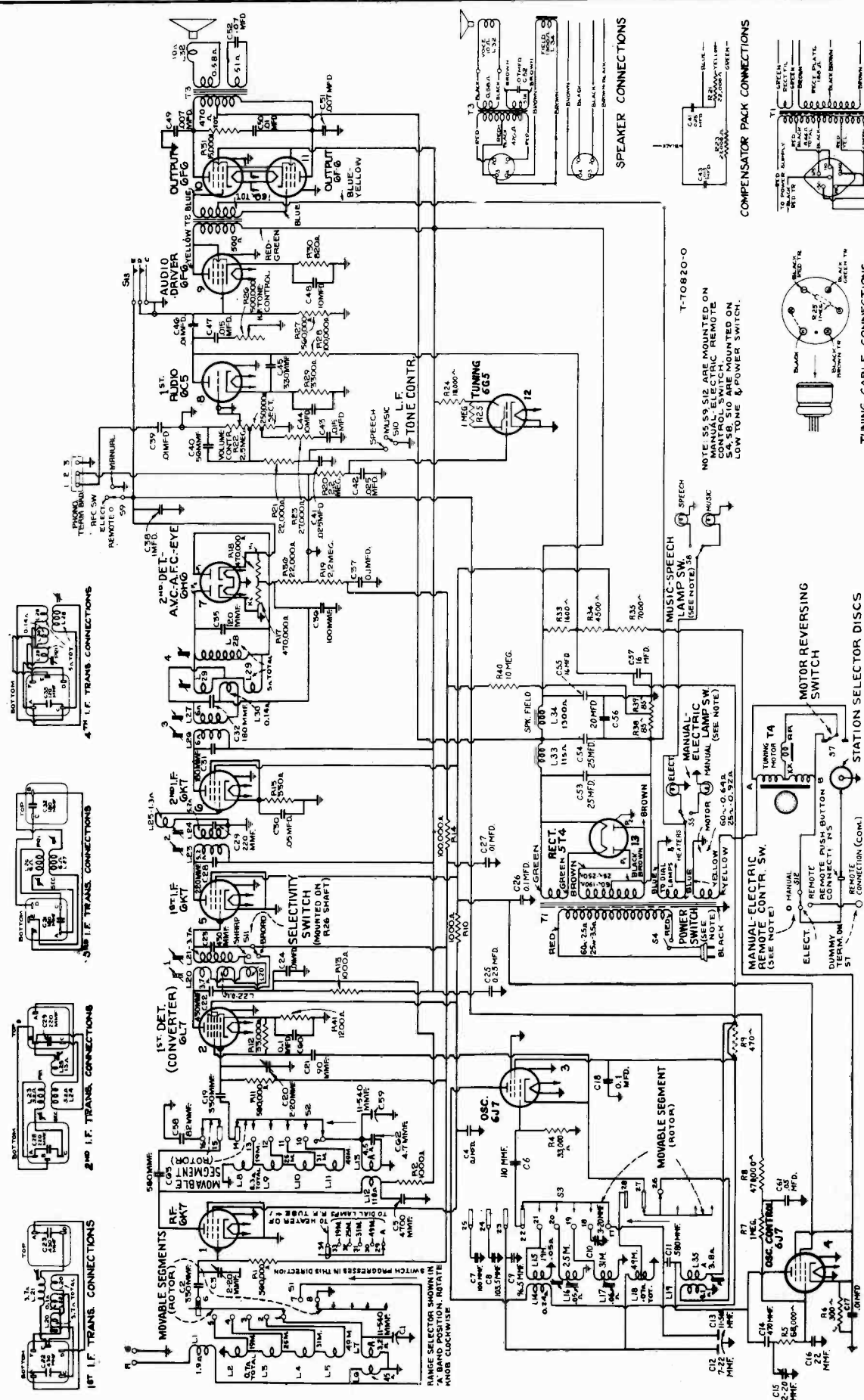
(7) RCA-6H6.....	Second Detector, A.V.C., and A.F.C.
(8) RCA-6C5.....	First Audio Amplifier
(9) RCA-6F6.....	Audio Driver
(10) RCA-6F6.....	Power Output
(11) RCA-6F6.....	Power Output
(12) RCA-6G5.....	"Magic Eye" Tuning Tube
(13) RCA-5T4.....	Full-Wave Rectifier

LOUDSPEAKER

Type.....	12-inch Electrodynamic
Impedance (v.c.).....	11.5 ohms at 400 cycles

should be dressed perpendicular to chassis and away from each other and grounded metal parts. (13) Motor-cable leads should be dressed away from pinion gear. (14) Blue bus lead from "A" detector coil to "P" of tube No. 1 should be dressed centrally between band-switch shield and air trimmer C20. The following should be dressed away from the chassis: (15) Yellow bus lead from "K" of tube No. 3 to S3. (16) Yellow bus lead from "OG" of tube No. 2. (17) Blue bus lead from C47 to R26.

REFER TO INDEX FOR ADDITIONAL DATA PERTAINING TO ELECTRIC TUNING.



NOTE: S5, S9, S12 ARE MOUNTED ON MANUAL-ELECTRIC REMOTE. S4, S8, S10 ARE MOUNTED ON LOW-TONE & POWER SWITCH.

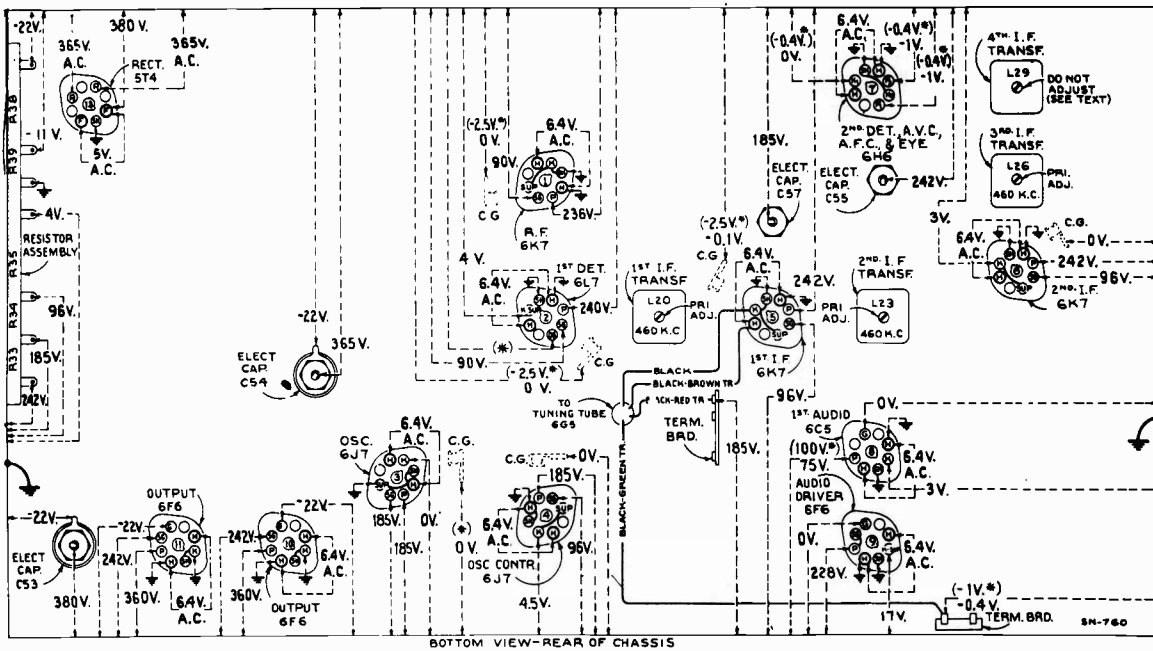
between indicator lamps. (See figure between 30647) should be installed.

—Schematic Circuit Diagram

NOTE: On later production, a 1.8-ohm resistor (R42) is connected in series with the indicator lamps. (See figure between 30647) should be installed.

Refer to text for additional changes and service hints

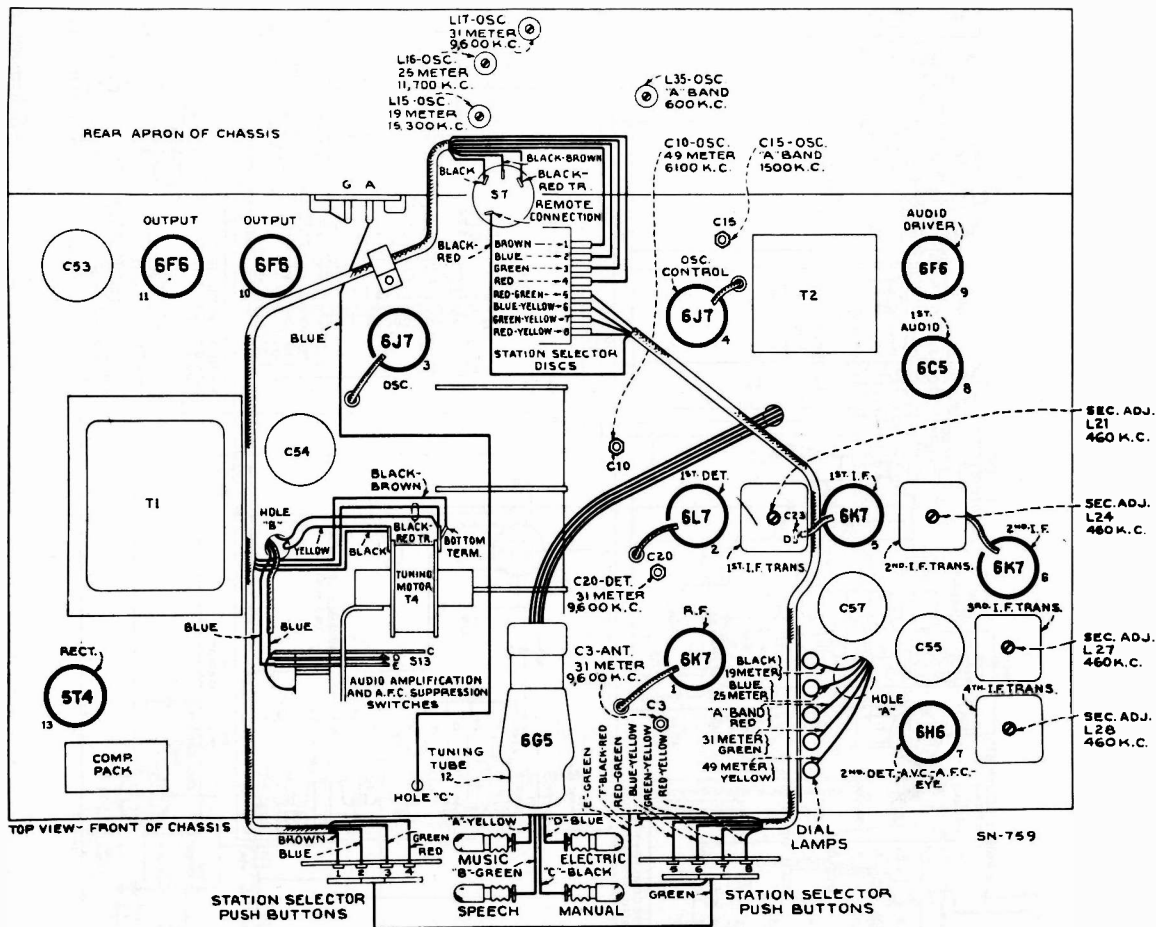
813K



—Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—"Manual" control—
No signal being received—Volume control minimum—Fidelity control optional

Note: Two voltage values are shown for some readings. The value shown in parentheses () indicates operating conditions without voltmeter loading.*



—Radiotron, Coil, and Trimmer Locations

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the left ends of horizontal calibration lines with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

The "Fidelity" control should be turned counter-clockwise during all alignment operations. The "Manual-Electric-Remote" switch should be turned to "Manual" (clockwise) during alignment unless otherwise specified. The bottom shield-pan must be in place during spread-band alignment. Permit the set to operate at least five minutes before attempting alignment.

Cathode-ray alignment is preferable for adjustments 2, 3, and 4 due to the flat-top i-f characteristics

The Magic Eye may be used as an output indicator for all other adjustments. It is preferable to replace the 6G5 tuning tube with a 6E5 during alignment.

CAUTION.—The magnetite core screw L29 on the bottom of the 4th i-f transformer has been accurately adjusted, for an exact electrical balance of coil L29 to center tap, during manufacture and **should not be disturbed**. However, if for any reason the adjustment has been moved from its original position, it will be necessary to mechanically adjust this screw until the end of the stud protrudes exactly $\frac{1}{8}$ of an inch (four threads exposed) above the brass bushing prior to any alignment operations.

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	—	—	—	—	—	4th I-F Trans.	L28	Turn Extreme Counter-clockwise
2	No. 6, 6K7 2nd I-F Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	3rd I-F Trans.	L26 and L27	Max. (peak)
3	No. 5, 6K7 1st I-F Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	2nd I-F Trans.	L23 and L24	Max. (peak)
4	No. 2, 6L7 Det. Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	1st I-F Trans.	L20 and L21	Max. (peak)
5	Ant. Term.	300 Ohms	1,600 kc _a	"31M."	9.6 mc	"31M." Osc.	L17	Min. Eye _b
6	Ant. Term.	300 Ohms	1,600 kc _a	"31M."	9.6 mc	"31M." Det.	C20	Min. Eye
7	Ant. Term.	300 Ohms	1,600 kc _a	"31M."	9.6 mc	"31M." Ant.	C3	Min. Eye
8	Ant. Term.	300 Ohms	1,300 kc _a	"25M."	11.7 mc	"25M." Osc.	L16	Min. Eye _c
9	Ant. Term.	300 Ohms	1,700 kc _a	"19M."	15.3 mc	"19M." Osc.	L15	Min. Eye _d
10	Ant. Term.	300 Ohms	6,000 kc _e	"49M."	6.0 mc	"49M." Osc.	C10	Min. Eye _f
11	Ant. Term.	300 Ohms	6,100 kc _e	"49M."	6.1 mc	"49M." Osc.	C10	Min. Eye
12	Ant. Term.	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L35	Min. Eye
13	Ant. Term.	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C15	Min. Eye
14	Ant. Term.	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L35	Min. Eye
15	Ant. Term.	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C15	Min. Eye
16	Proceed to A-F-C Discriminator Adjustments Outlined Below							

a—Refer to "Spread-band Adjustments" below for Test Oscillator setting for adjustments

b—Use minimum inductance peak (plunger out) if two peaks can be obtained. To check for correct harmonic, carefully set Test Oscillator to 1,200 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "31M." band near 9.6 mc.

c—Use minimum inductance peak (plunger out) if two peaks can be obtained. To check for correct harmonic, carefully set Test Oscillator to 900 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "25M." band near 11.7 mc.

d—Use minimum inductance peak (plunger out) if two peaks can be obtained. To check for correct harmonic, carefully set Test Oscillator to 900 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "19M." band near 15.3 mc.

e—Refer to "Spread-band Adjustments" below for method of using the RCA Stock No. 9572 Crystal Calibrator for adjustments 10 and 11.

f—Use minimum capacity peak if two peaks can be obtained from 1,000 kc harmonics.

Spread-band Adjustments.—Bottom shield-pan must be in place before attempting spread-band alignment. Alignment of the spread ("Overseas") bands requires special procedure since test oscillators used alone are not ordinarily sufficiently accurate for this purpose. The RCA Stock No. 9572 Crystal Calibrator affords a convenient and accurate alignment standard. Wrap a few turns of wire around the crystal calibrator and connect one free end to the antenna terminal of the receiver. Using the crystal calibrator to obtain the necessary accuracy, follow the tabulated alignment procedure for the "31M.", "25M.", and "19M." bands.

The "31M." band alignment, for example, is done as follows: Tune the receiver ("Standard broadcast" band) to the 1,000 kc crystal calibrator output with the crystal calibrator "Hi-Lo" switch in "Hi" position. Snap "Hi-Lo" switch to "Lo" and carefully tune receiver to 1,600 kc (the sixth 100 kc harmonic above 1,000 kc) for minimum "Magic Eye" opening (Min. Eye). Move crystal calibrator away from antenna wire, connect test oscillator, and carefully adjust test oscillator for minimum "Magic Eye" opening at a setting of approximately 1,600 kc.

Raise test-oscillator output to give sufficient harmonic output and use 6th harmonic (9,600 kc) for aligning in "31M." band at 9.6 mc. Align in the "25M." band at 11.7 mc (11,700 kc), the 9th harmonic of the test-oscillator 1,300 kc output. Align in the "19M." band at 15.3 mc (15,300 kc), the 9th harmonic of the test-oscillator 1,700 kc output. In each case select the peak giving minimum "Magic Eye" opening.

A-F-C Discriminator Adjustments.—These adjustments are rather critical and should be performed with extreme care. Improper adjustment may result in complete failure of the oscillator control tube to function or else may cause it to detune the oscillator instead of tuning it to the signal. It is assumed that the magnetite core adjusting screw L28 (top of 4th i-f transformer) has been turned all the way out (extreme counter-clockwise) during the preceding tabulated adjustments. Adjustments are as follows: Remove spring "N" on link and arm assembly which connects the "Manual-Electric-Remote" switch shaft to the throw-out gear bracket. Turn "Fidelity" control counter-clockwise. Connect antenna to receiver antenna terminal. With the "Manual-Electric-Remote" switch in "Manual" (right) position, tune in a strong local station near 600 kc or the low-frequency end of the "A" band as accurately as possible by means of the tuning tube "Magic Eye." The most accurate adjustment will be obtained by adjusting the "vernier" tuning knob mid-way between the two points where the eye just appears to start to open. This will place the generated i-f carrier signal frequency exactly in the center of the i-f amplifier response curve (should be 460 kc if i-f amplifier was properly aligned) and is the frequency to which the a-f-c discriminator (4th i-f transformer) should be tuned to resonance. Without disturbing any of the receiver adjustments, place the "high" test-oscillator lead about $\frac{3}{4}$ of an inch from the grid cap lead of the RCA-6K7, 1st i-f amplifier tube, adjust the test-oscillator output to maximum, turn test-oscillator "Modulation" off, and carefully zero-beat the test-oscillator frequency (approximately 460 kc) with the i-f carrier signal. Avoid placing the test-oscillator lead nearer to the grid-cap lead than specified above, as doing so will tend to detune the i-f amplifier. It may be necessary to reduce the local station signal, during this operation, by shortening antenna lead or grounding antenna "A" terminal to chassis in order to increase the loudness of the beat note sufficiently for accurate zero-beat adjustment.

Throw "Manual-Electric-Remote" switch to "Electric" (center) position. A high whistle or beat note will now be heard. Turn the magnetite core screw L28 (top of 4th i-f transformer) slowly clockwise. As this screw is turned, the beat note will first increase to a high audio frequency and will then decrease to a zero-beat and then increase in frequency again. The point of exact zero-beat is the position for correct adjustment of the discriminator. Zero-beat should also still exist when the "Manual-Electric-Remote" switch is thrown back to "Manual" position. The adjustment is now complete and may be checked by slightly detuning the receiver above and below the local station frequency with the "Manual-Electric-Remote" in "Manual" position, switching to "Electric" position, and noting the oscillator pull-in. Replace spring "N."

Service Hints

a. Capacitor C18 should be carefully checked for leakage or short circuit in cases of intermittent operation or no operation. R9 should be shorted out and C18 replaced by Stock No. 4839, as shown by the Schematic Circuit Diagram figure 1, in the event of trouble in this circuit.

b. Capacitor C5 should be checked for leakage of short circuit.

c. Resistor R5 was 33,000 ohms in some instruments. Replace with Stock No. 12333.

d. Capacitor C16 was 82 mmfd. in some instruments. Replace with Stock No. 14021.

e. Capacitor C38 was two 0.5 mfd. in parallel on some instruments. Replace with Stock No. 30623.

DIAL CALIBRATION

Abnormal variations of dial readings on the 49, 31, 25, or 19 meterspread bands, from the correct frequency, may be caused in some instances by insecure contact at various points in the oscillator circuit. The following points should be carefully checked should this type of trouble be exhibited:—

- (1) Poor or intermittent contact of the oscillator section of the range switch. The rotary disc may be loose on the shaft causing insecure and irregular connection. A metal or wooden wedge should be driven between the disc and the shaft to make the two rigid with each other.
- (2) Intermittent contact of the metal sleeves or spacers on the support rods of the band switch will upset the ground circuit and produce frequency variations. These should be tightly pinched with a pair of pliers at their ends in order to provide solid contact with the assembly rods.
- (3) The connection between the feet of the band switch shield partitions and the chassis must be secure. Soldering of the shield to the chassis is effective in eliminating variations of ground circuit at this point.
- (4) Vibration of rear end shield partition of the band switch may be causing trouble. A strip of felt, mounted on the chassis shelf directly below the rear partition, to prevent its vibration, will be of considerable advantage.
- (5) Variation of r-f potential of band switch shaft and consequent change of circuit constants may be minimized by grounding the inner end of the shaft with a flexible pigtail to the chassis.

The 100 mmfd. molded Lucite capacitors which connect in parallel with the bandspread oscillator tuning condenser for short-wave operation, are specially designed to have a negative thermal coefficient of capacity to compensate for variations in other parts of the oscillator circuit with temperature changes. These capacitors are therefore, not inter-changeable with ordinary types and replacements should always be of the particular RCA stock number specified in the Replacement Parts Lists. Care must be exercised in replacing these parts, to avoid twisting the leads excessively and allowing too much heat to be applied when soldering.

REPLACEMENT PARTS

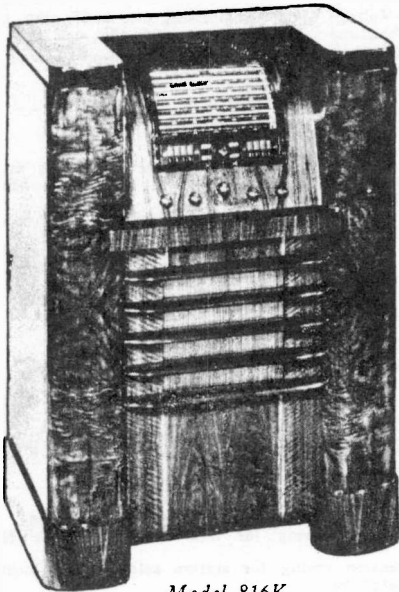
STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES	
14726	Arm—Hub and arm complete with set screws—Connects station selector drum to rear of tuning condenser shaft
14883	Arm—Arm and hub assembly located on "Manual-Electric-Remote" switch shaft
14617	Board—Antenna and ground terminal board
12717	Board—Phonograph terminal board
14886	Bracket—Left hand dial bracket and pulley assembly
14884	Bracket—Right hand dial bracket and pulley assembly
14878	Bracket—Tuning tube mounting bracket and clamp assembly
5237	Bushing—Variable condenser rubber mounting bushing assembly
14919	Cable—5 conductor push-button selector cable
14918	Cable—7 conductor tuning drive motor and push-button selector cable
12607	Cap—First or second I-F transformer shield cap
12581	Cap—Third or fourth I-F transformer shield cap
11350	Cap—Grid contact cap
12884	Capacitor—Adjustable trimmer (long) (C3, C10, C15, C20)
14392	Capacitor—4.7 Mmfd. (C82)
14021	Capacitor—22 Mmfd. (C16)
12723	Capacitor—66 Mmfd. (C40)
12813	Capacitor—82 Mmfd. (C58)
14910	Capacitor—90 Mmfd. (C21)
14908	Capacitor—96.5 Mmfd. (C9)
14906	Capacitor—100 Mmfd. (C7)
12720	Capacitor—100 Mmfd. (C36)
14907	Capacitor—103.5 Mmfd. (C8)
14909	Capacitor—110 Mmfd. (C8)
12404	Capacitor—120 Mmfd. (C35)
14712	Capacitor—180 Mmfd. (C31, C32)
14711	Capacitor—220 Mmfd. (C28, C29)
12952	Capacitor—330 Mmfd. (C2, C18, C45)
14710	Capacitor—430 Mmfd. (C22, C23)
13052	Capacitor—470 Mmfd. (C14)
14724	Capacitor—560 Mmfd. (C63)

REPLACEMENT PARTS (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
14911	Capacitor—580 Mmfd. (C11)	14875	Resistor—Voltage divider comprising one 1600 ohm, one 4500 ohm, one 7,000 ohm, one 300 ohm and two 85 ohm sections (R6, R33, R34, R35, R38, R39)
12897	Capacitor—4700 Mmfd. (C5)	14887	Retainer—Indicator drive cord pulley retainer
13033	Capacitor—.007 Mfd. (C49, C51)	14897	Scale—19 meter glass dial strip
4937	Capacitor—.01 Mfd. (C50)	14896	Scale—25 meter glass dial strip
13138	Capacitor—.01 Mfd. (C17, C24, C27, C39, C46)	14894	Scale—31 meter glass dial strip
11315	Capacitor—.015 Mfd. (C47)	14893	Scale—49 meter glass dial strip
4870	Capacitor—.025 Mfd. (C42)	30012	Scale—"A" band glass dial strip
4886	Capacitor—.05 Mfd. (C30, C61)	4669	Screw—No. 8-32x5/32 square head set screw for drum Stock No. 14856, arm Stock No. 14726 and Stock No. 14883
4839	Capacitor—.1 Mfd. (C4, C18, C26, C37, C60)	12418	Screw—No. 8-32x3/16 milled head screw for gear Stock No. 14739
5170	Capacitor—.25 Mfd. (C25)	14848	Selector—Station selector drum mechanism—comprising selector contactor discs, spring contacts, and motor reversing switch assembled in metal frame
30823	Capacitor—1 Mfd. (C38)	14882	Shield—Chassis bottom shield
5212	Capacitor—18 Mfd. (C55)	12735	Shield—Dial lamp shield
14377	Capacitor—18 Mfd. (C57)	12008	Shield—I-F transformer shield can
13611	Capacitor—20 Mfd. (C56)	14901	Shield—Rubber shield for tuning tube
14531	Capacitor—25 Mfd. (C53, C54)	14892	Slide—Indicator pointer slider and spring assembly
30017	Capacitor Pack—Compensating capacitor pack comprising one .025 Mfd. and one .015 Mfd. capacitor, one 22,000 ohm and one 27,000 ohm resistor (C41, C43, R21, R23)	11195	Socket—5 contact 5T4 Radiotron socket
14902	Capacitor Pack—Comprising two sections 10 mfd. each (C44, C48)	11196	Socket—8 contact 6K7, 6J7, 6F6, 6H6, or 6C5, Radiotron socket
14865	Coil—"A" band antenna coil (L6, L7)	14877	Socket—8 contact 6J7 Radiotron impregnated socket for socket mounting plate Stock No. 12471 and 6K7 or 6L7 Radiotron
14866	Coil—Special band spread antenna coil (L1, L2, L3, L4, L5)	14114	Socket—Dial lamp socket
14867	Coil—"A" band detector coil (L12, L13)	13638	Spring—Drive cord tension spring
14868	Coil—Special band spread detector coil (L8, L9, L10, L11)	12007	Spring—Retaining spring for core Stock No. 12006
14869	Coil—"A" band oscillator coil (L19, L35)	3676	Spring—Tension spring for link and arm Stock No. 14883
14873	Coil—19 meter band oscillator coil (L14, L15)	14694	Spring—Tension spring for station selector push-button switch latch bar
14872	Coil—25 meter band oscillator coil (L16)	14889	Strap—Strap and bolt assembly used to hold glass dial strips in position
14871	Coil—31 meter band oscillator coil (L17)	14899	Strip—Bottom glass dial strip
14870	Coil—49 meter band oscillator coil (L18)	14891	Strip—Finish strip used between glass dial strips
14858	Condenser—3 gang variable tuning condenser complete with gear train (C1, C12, C13, C59)	14898	Strip—Top glass dial strip
5040	Connector—4 contact female connector for reproducer cable	14742	Stud—Mounting stud for gear and arm Stock No. 14738
30567	Connector—4 contact female connector with metal shell for reproducer cable in later production	14874	Switch—"Manual-Electric-Remote" switch (S5, S9, S12)
14733	Contact—Spring contact for engaging discs in station selector drum for type 1 contact assembly	14863	Switch—"Power-Tone" (Music-Speech) switch (S4, S8, S10)
30365	Contact—Comprising 8 spring contacts assembled on insulating strip for engaging discs in station selector drum (type 2 contact assembly)	14732	Switch—Motor reversing switch and mounting plate for station selector (S7)
14857	Cord—Indicator drive cord	14864	Switch—Range switch (S1, S2, S3)
12006	Core—Adjustable core and stud for I-F transformers	14728	Switch—A-F-C and A-F amplification suppression switch (S13)
14890	Cushion—Black rubber dial cushion	14904	Switch—Station selector switch parts comprising one 4 point contact board, one 4 point conductor plate, insulator and lockplate
14888	Dial—Dial assembly, ready to mount on support brackets. Includes 7 glass dial strips and indicator slider assembled on metal frame	14703	Tone control—"Fidelity" control (R26, S14)
14862	Drive—Tuning condenser vernier drive shaft and pinion gear	14706	Transformer—First I-F transformer (L20, L21, L22, C22, C23)
14856	Drum—Drive cord drum complete with set screws	14707	Transformer—Second I-F transformer (L23, L24, L25, C28, C29)
14731	Drum—Station selector drum rotor—comprising 8 station selector contactor discs assembled on shaft	14708	Transformer—Third I-F transformer (L26, L27, C31, C32)
14738	Gear—Drive pinion gear and arm	14709	Transformer—Fourth I-F transformer (L28, L29, L30, C35)
14739	Gear—Drive gear and set screws—located on tuning condenser knob shaft	14855	Transformer—Driver transformer (T2)
14734	Gear—Intermediate gear assembly—comprising one .749-in. O.D., 34 tooth gear and one .291-in. O.D., 12 tooth pinion assembled	14879	Transformer—Power transformer 105-125 volts, 50-60 cycle (T1)
14735	Gear—Intermediate gear assembly—comprising one 1.541-in. O.D., 72 tooth gear and one .291-in. O.D., 12 tooth pinion assembled	14880	Transformer—Power transformer 105-125 volts, 25-60 cycle (T1)
14860	Gear—Intermediate gear assembly—comprising one 1.541-in. O.D., 72 tooth gear and hub assembled	14881	Transformer—Power transformer 100-130/140-160/195-250 volts, 50-60 cycle (T1)
14861	Gear—Throwout gear and bracket	12861	Volume Control (R22)
14900	Indicator—Station selector indicator pointer	REPRODUCER ASSEMBLIES (RL76-2)	
5226	Lamp—Dial Lamp	14606	Cap—Dust cap for cone center
14729	Motor—Tuning drive motor for 60 cycle models only (M-1)	14922	Coil—Reproducer field coil (L34)
14730	Motor—Tuning drive motor for 25 cycle models only (M-1)	14602	Cone—Reproducer cone, voice coil, center suspension and dust cap (L32)
14859	Plate—Tuning condenser front plate and studs assembled for mounting drive gears	5039	Plug—4 contact male plug for reproducer
12471	Plate—6J7 socket mounting plate assembly for cushion socket—less socket	14920	Reproducer—Complete
14886	Pulley—Indicator drive cord pulley—located on right or left hand dial bracket	14921	Transformer—Output transformer (T3, C52)
14854	Reactor—Filter reactor (L33)	14357	Washer—Spring washer to hold field coil securely
30647	Resistor—1.8 ohms, Resisto-fuse, 1 amp. (R42)	MISCELLANEOUS ASSEMBLIES	
13250	Resistor—330 ohms, carbon type, 1/2 watt (R15)	14745	Button—Station selector switch button
30158	Resistor—820 ohms, carbon type, 1/2 watt (R30)	30361	Card—Call letter cards for station selector
5112	Resistor—1000 ohms, carbon type, 1/2 watt (R10)	5040	Connector—4-contact female connector for reproducer inter-connecting cable in later production
13030	Resistor—1000 ohms, carbon type 1/10 watt (R2, R13)	30568	Connector—4-contact male connector for reproducer inter-connecting cable in later production
11283	Resistor—1200 ohms, carbon type, 1/2 watt (R41)	14925	Crystal—Dial escutcheon crystal only
13031	Resistor—3300 ohms, carbon type, 1/10 watt (R29)	14923	Escutcheon—Dial and tuning tube escutcheon only—less crystal and buttons
5114	Resistor—15,000 ohms, carbon type, 1 watt (R31)	14924	Escutcheon—Dial and tuning tube escutcheon and crystal complete
14078	Resistor—18,000 ohms, carbon type, 1 watt (R31)	14926	Indicator—"Electric-Manual" indicating screen
14284	Resistor—22,000 ohms, carbon type, 1/10 watt (R36)	14927	Indicator—"Music-Speech" indicating screen
12454	Resistor—33,000 ohms, insulated, 1/2 watt (R4, R12)	14751	Key—Key for use in adjusting "Electric Tuning"
12333	Resistor—68,000 ohms, carbon type, 1/2 watt (R5)	14359	Knob—"Tuning" (large) control knob
5145	Resistor—100,000 ohms, carbon type, 1/2 watt (R14, R28)	14688	Knob—"Range Selector" knob
11452	Resistor—470,000 ohms, carbon type, 1/10 watt (R17, R18)	14269	Knob—"Power-Tone" (Music-Speech), "Volume", "Tuning" (small), "Manual-Electric-Remote", and "Fidelity" control knobs
11172	Resistor—470,000 ohms, carbon type, 1/2 watt (R8)	5210	Screw—Chassis mounting screw and washer assembly
11397	Resistor—560,000 ohms, carbon type, 1/10 watt (R1, R11, R27)	14746	Shield—Celluloid shield for station markers
12013	Resistor—1 Megohm, carbon type, 1/10 watt (R25)	4932	Spring—Retaining spring for knob Stock No. 14359
3033	Resistor—1 Megohm, carbon type, 1/2 watt (R7)	14270	Spring—Retaining spring for knob Stock Nos. 14269 and 14688
11151	Resistor—2.2 Megohm, carbon type, 1/2 watt (R20)		
5131	Resistor—2.2 Megohm, carbon type, 1/10 watt (R19)		
13673	Resistor—10 Megohm, carbon type, 1/2 watt (R40)		

MODEL 816K

Sixteen-Tube, Seven-Band, AC, Superheterodyne Receiver



Model 816K

Radiotron Cathode Current Readings

Measured with Milliammeter Connected at Tube Socket Cathode Terminals Under Conditions Similar to Those of Voltage Measurements

(1) RCA-6K7—R-F Amp.....	6.2 ma.
(2) RCA-6L7—1st Det.....	3.0 ma.
(3) RCA-6J7—Osc.....	10.0 ma.
(4) RCA-6J7—Osc. Control.....	1.2 ma.
(5) RCA-6K7—1st I-F Amp.....	6.7 ma.
(6) RCA-6K7—A-V-C, A-F-C, Eye I-F Amp.	8.0 ma.
(7) RCA-6K7—2nd I-F Amp.....	6.9 ma.
(8) RCA-6H6—2nd Det.....	—
(9) RCA-6H6—A.V.C., A.F.C., and Eye..	—
(10) RCA-6C5—A-F Amp.....	1.0 ma.
(11) RCA-6F6—Driver.....	23.0 ma.
(12) RCA-6L6—Output.....	51.5 ma.
(13) RCA-6L6—Output.....	51.5 ma.
(14) RCA-6G5—Tuning Tube.....	2.2 ma.
(15) RCA-5T4—Rectifier.....	90 ma.**
(16) RCA-5T4—Rectifier.....	90 ma.**

(**Cannot be measured at socket)

Electrical Specifications

FREQUENCY RANGES

"Standard Broadcast" (A).....	530-1,720 kc
"M.W." Medium Wave (B).....	2,400-7,100 kc
"S.W." Short Wave (C).....	7,100-21,750 kc
"49M." (49 Meters).....	5,970-6,240 kc
"31M." (31 Meters).....	9,410-9,690 kc
"25M." (25 Meters).....	11,680-11,920 kc
"19M." (19 Meters).....	15,090-15,380 kc

R-F ALIGNMENT FREQUENCIES

"49M." (49 Meters).....	6,100 kc (osc., det., ant.)
"31M." (31 Meters).....	9,600 kc (osc.)
"25M." (25 Meters).....	11,700 kc (osc.)
"19M." (19 Meters).....	15,300 kc (osc.)
"S.W." Short Wave (C).....	9,500 kc (osc.), 20,000 kc (osc.)
"M.W." Medium Wave (B).....	6,000 kc (osc.)
"Standard Broadcast" (A).....	600 kc (osc.), 1,500 kc (osc.)

Intermediate Frequency..... 460 kc

RADIOTRON COMPLEMENT

(1) RCA-6K7.....	R-F Amplifier
(2) RCA-6L7.....	First Detector
(3) RCA-6J7.....	Heterodyne Oscillator
(4) RCA-6J7.....	Oscillator Control
(5) RCA-6K7.....	First I-F Amplifier
(6) RCA-6K7.....	A-V-C, A-F-C, and Eye I-F Amplifier
(7) RCA-6K7.....	Second I-F Amplifier
(8) RCA-6H6.....	Second Detector

(9) RCA-6H6.....	A.V.C., A.F.C., and Eye
(10) RCA-6C5.....	First Audio Amplifier
(11) RCA-6F6.....	Audio Driver
(12) RCA-6L6.....	Power Output.
(13) RCA-6L6.....	Power Output
(14) RCA-6G5.....	"Magic Eye" Tuning Tube
(15) RCA-5T4.....	Half-wave Rectifier
(16) RCA-5T4.....	Half-wave Rectifier

Pilot Lamps (11)..... Mazda No. 46, 6.3 volts, 0.25 amp.

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycles, 200 watts
Rating B	105-125 volts, 25 cycles, 200 watts
Rating C	100-130/140-160/195-250 volts, 50-60 cycles, 200 watts

POWER OUTPUT

Undistorted.....	25 watts
Maximum.....	30 watts

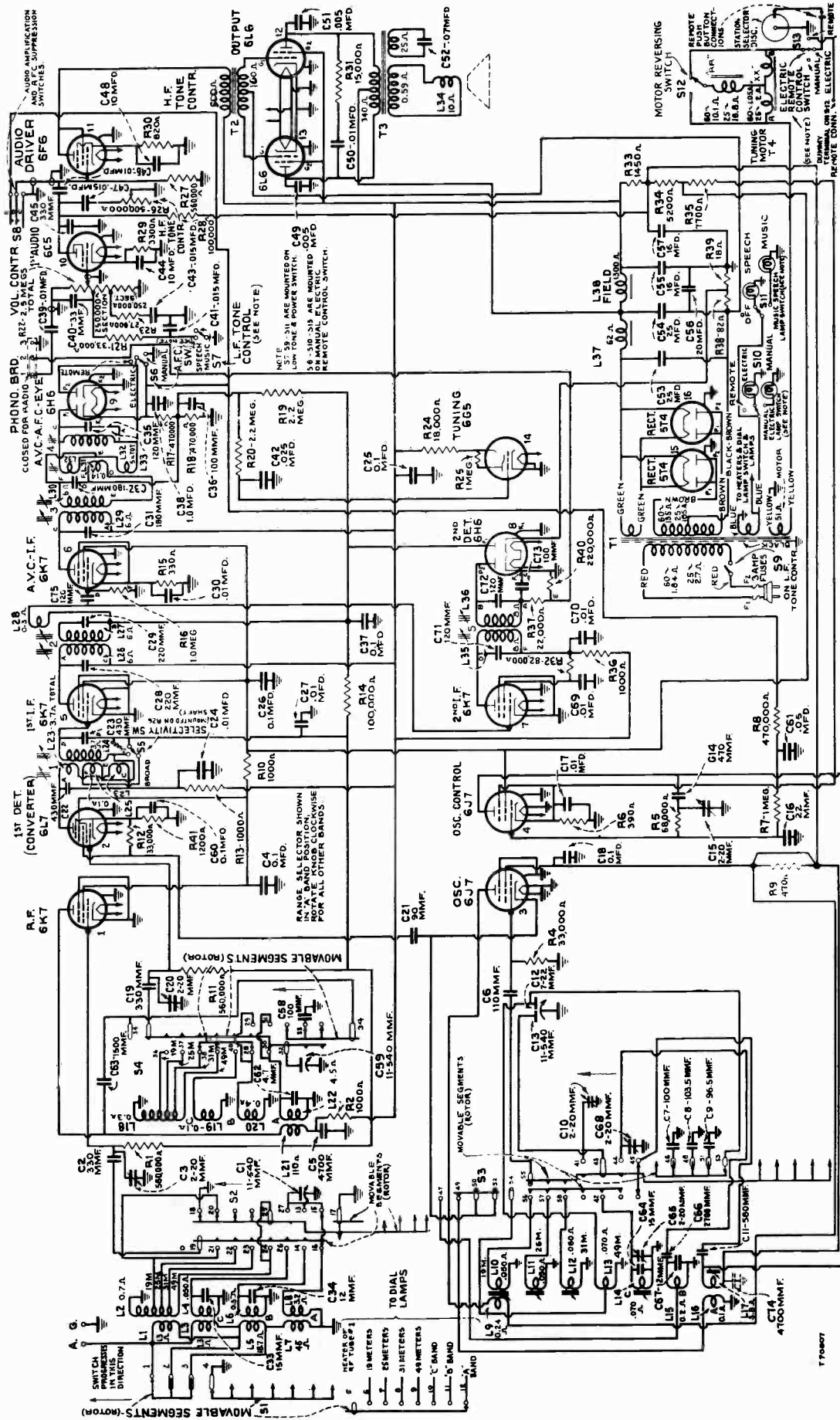
LOUDSPEAKER

Type.....	12-inch Electrodynamic
Impedance (v.c.).....	11.5 ohms at 400 cycles

Precautionary Lead Dress.—(1) Green bus lead from C1 to S2 should be 2¼ inches long, (2) green bus lead from C59 to S4 should be 2½ inches long, (3) green bus lead from C13 to S3 should be 2¾ inches long, (4) bare bus lead from C12 to S3 should be 1½ inches long, (5) blue and red leads from tube No. 3 to L9 should be dressed away from the coil, (6) tube No. 3 grid lead should be 6 inches long, (7) all leads to rear of oscillator coils should be dressed close to the chassis, (8) clamp "Magic Eye" cable to the dial bracket, (9) filament leads should all be twisted, (10) leads from C44 and C48 should be replaced dressed away from other leads, (11) twisted a-c leads near R22 should be dressed away from R22, (12) leads from S5 to the first i-f transformer should be twisted, (13) temperature-stabilizing capacitors marked 1A, 2A, and 3A should be

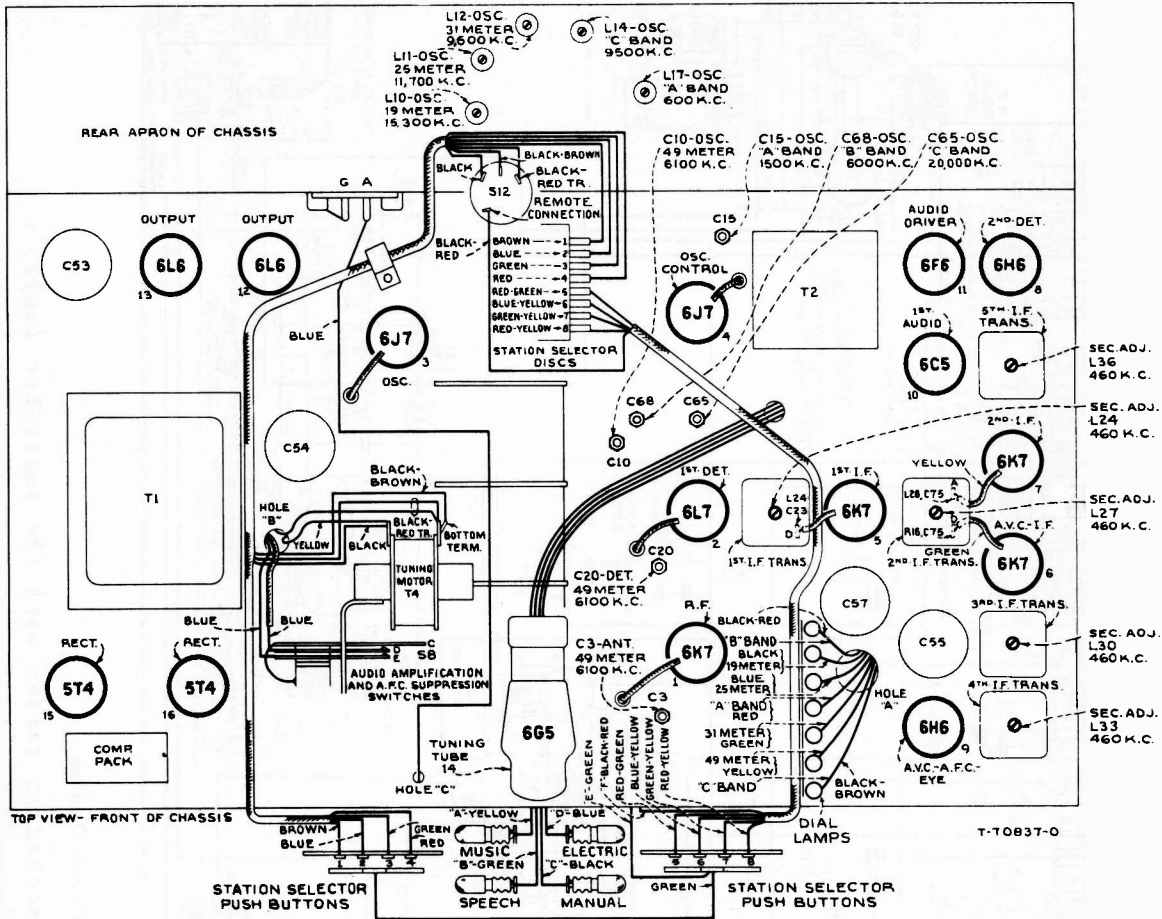
dressed perpendicular to chassis, (14) blue bus lead from L21 to tube No. 1 plate should be dressed away from shield plate on range selector assembly, (15) C36, C38, and K₂ of tube No. 9 should be grounded to the ground lances near corner of chassis. The following should be dressed away from chassis: (16) Yellow bus lead from cathode of tube No. 3 to S3, (17) yellow bus lead to OG of tube No. 2, (18) yellow bus lead from the 5th i-f transformer to phonograph terminal board, (19) blue bus lead from C47 to R26. When necessary to replace bus leads, use only wire having same diameter as original.

REFER TO INDEX FOR ADDITIONAL DATA PERTAINING TO ELECTRIC TUNING

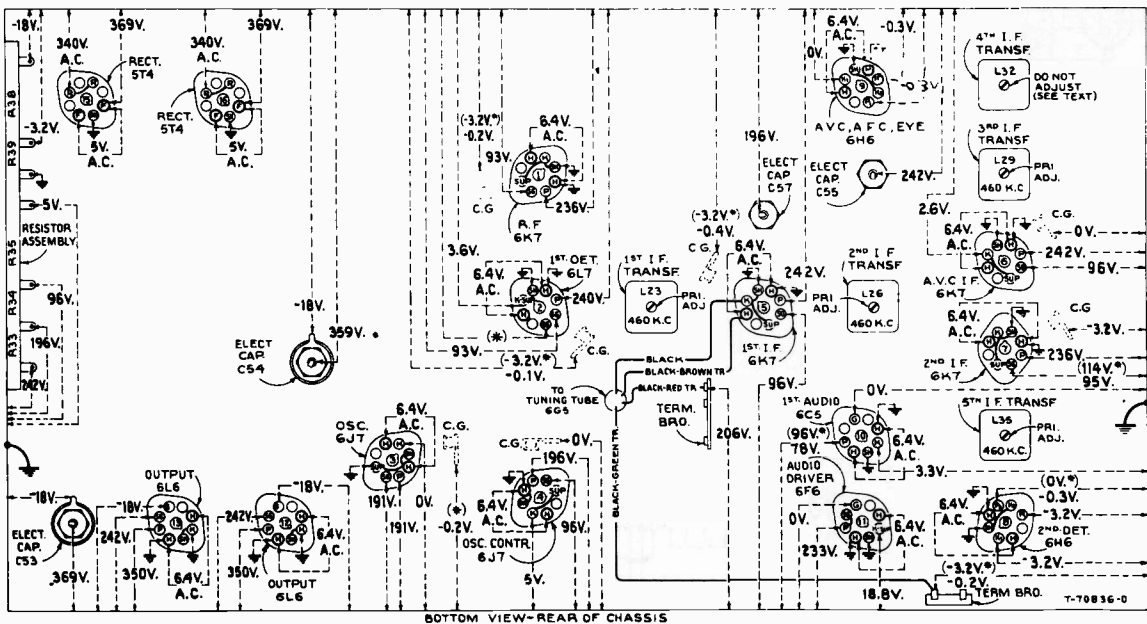


-Schematic Circuit Diagram

NOTE: On later production, a 1.8 ohm resistor is connected in series with the indicator lamps. When servicing, this resistor should be installed. Refer to text for additional changes and service hints.



-Radiotron, Coil, and Trimmer Locations



-Radiotron Socket Voltages, Coil, and Trimmer Locations

Measured at 115 volts, 60-cycle supply—Tuned to approximately 1,000 kc ("Standard Broadcast")—"Manual" control—No signal being received—Volume control minimum—Fidelity control optional

Note: Two voltage values are shown for some readings. The value shown in parentheses with asterisk (*) indicates operating conditions without voltmeter loading.

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the left ends of horizontal calibration lines with the gang tuning-condenser plates in full-mesh position. This is a screw-driver adjustment.

The "Fidelity" control should be turned counter-clockwise during all alignment operations. The "Manual-Electric-Remote" switch should be turned to "Manual" (clockwise) during alignment unless otherwise specified. The bottom shield pan must be in place during spread-band alignment. Permit the set to operate at least five minutes before attempting alignment.

The Magic Eye may be used as an output indicator for all adjustments except L35 and L36. It is preferable to replace the 6G5 tuning tube with a 6E5 during alignment.

CAUTION.—The magnetite core screw L32 on the bottom of the 4th i-f transformer has been accurately adjusted, for an exact electrical balance of coil L32 to center tap, during manufacture and should not be disturbed. However, if for any reason the adjustment has been moved from its original position, it will be necessary to mechanically adjust this screw until the end of the stud protrudes exactly $\frac{1}{8}$ of an inch (four threads exposed) above the brass bushing prior to any alignment operations.

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	—	—	—	—	—	4th I-F Trans.	L33	Turn Extreme Counter-clockwise
2	No. 6 6K7 Eye I-F Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	3rd I-F Trans.	L29 and L30	Min. Eye
3	No. 5 6K7 1st I-F Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	2nd I-F Trans.	L26 and L27	Min. Eye
4	No. 4 6L7 Det. Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	1st I-F Trans.	L23 and L24	Min. Eye
5	No. 2 6L7 Det. Grid Cap	.001 Mfd.	460 kc	"Standard Broadcast"	No Signal 550-750 kc	5th I-F Trans.	L35 and L36	Max. (peak)
6	Ant. Term.	300 Ohms	6,000 kc _a	"49M."	6.0 mc	"49M." Osc.	C10	Min. Eye _b
7	Ant. Term.	300 Ohms	6,100 kc	"49M."	6.1 mc	"49M." Osc.	C10	Min. Eye
8	Ant. Term.	300 Ohms	6,100 kc	"49M."	6.1 mc	"49M." Det.	C20	Min. Eye
9	Ant. Term.	300 Ohms	6,100 kc	"49M."	6.1 mc	"49M." Ant.	C3	Min. Eye
10	Ant. Term.	300 Ohms	1,200 kc _c	"31M."	9.6 mc	"31M." Osc.	L12	Min. Eye _d
11	Ant. Term.	300 Ohms	1,300 kc	"25M."	11.7 mc	"25M." Osc.	L11	Min. Eye _e
12	Ant. Term.	300 Ohms	1,700 kc	"19M."	15.3 mc	"19M." Osc.	L10	Min. Eye _f
13	Ant. Term.	300 Ohms	20,000 kc	"S.W."	20 mc	"S.W." H-F Osc. ("C")	C65	Min. Eye _g
14	Ant. Term.	300 Ohms	8,500 kc	"S.W."	9.5 mc	"S.W." L-F Osc. ("C")	L14	Min. Eye _h
15	Ant. Term.	300 Ohms	20,000 kc	"S.W."	20 mc	"S.W." H-F Osc. ("C")	C65	Min. Eye
16	Ant. Term.	300 Ohms	6,000 kc	"M.W."	6.0 mc	"M.W." Osc. ("B")	C68	Min. Eye
17	Ant. Term.	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C15	Min. Eye
18	Ant. Term.	200 Mmfd.	600 kc	"Standard Broadcast"	600 kc	"A" L-F Osc.	L17	Min. Eye
19	Ant. Term.	200 Mmfd.	1,500 kc	"Standard Broadcast"	1,500 kc	"A" H-F Osc.	C15	Min. Eye
20	Proceed to A-F-C Discriminator Adjustments Outlined Below							

a—Refer to "Spread-band Adjustments" below for method of using the RCA Stock No. 9572 Crystal Calibrator for adjustments 6, 7, 8, and 9.

b—Use minimum capacity peak if two peaks can be obtained from 1,000 kc harmonics.

c—Refer to "Spread-band Adjustments" below for Test Oscillator setting for adjustments 10, 11 and 12.

d—To check for correct harmonic carefully set Test Oscillator to 1,600 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "31M." band near 9.6 mc.

e—To check for correct harmonic carefully set Test Oscillator to 900 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "25M." band near 11.7 mc.

f—To check for correct harmonic carefully set Test Oscillator to 900 kc using Crystal Calibrator. Signal should be indicated by "Magic Eye" in "19M." band near 15.3 mc.

g—After this adjustment, check for image signal by shifting receiver dial to 19.08 mc. (19,080 kc).

h—Check for image at 8.58 mc. (8,580 kc).

Spread-band Adjustments.—Alignment of the spread ("Overseas") bands requires special procedure since test oscillators used alone are not ordinarily sufficiently accurate for this purpose. The RCA Stock No. 9572 Crystal Calibrator affords a convenient and accurate alignment standard. Wrap a few turns of wire around the crystal calibrator and connect one free end to the antenna terminal of the receiver. Snap crystal calibrator "Hi-Lo" switch to "Hi" (1,000 kc), turn the range selector to "49M." band, and set receiver dial pointer to 6.0 mc. Adjust oscillator trimming capacitor C10 for minimum "Magic Eye" opening (Min. Eye). Use the peak indicated by the alignment table. Snap "Hi-Lo" switch to "Lo" (100 kc) and locate 6,100 kc (the first 100 kc harmonic above 6,000 kc) by slightly readjusting C10 with the dial pointer set at 6.1 mc. This method insures selection of correct crystal calibrator harmonic. Adjust 1st detector and antenna trimming capacitors, C20 and C3, for maximum output.

Follow the tabulated alignment procedure for the "31M.", "25M.", and "19M." bands. Use the crystal calibrator to obtain the necessary accuracy. For example, tune the receiver to the 1,000 kc crystal calibrator output with the crystal calibrator "Hi-Lo" switch in "Hi" position. Snap "Hi-Lo" switch to "Lo" and carefully tune receiver to 1,200 kc (the second 100 kc harmonic above 1,000 kc) for minimum "Magic Eye" opening. Move crystal calibrator away from antenna wire, connect test oscillator, and carefully adjust test oscillator for minimum "Magic Eye" opening at a setting of approximately 1,200 kc. Raise test-oscillator output to give sufficient harmonic output and use 8th harmonic (9,600 kc) for aligning in "31M." band at 9.6 mc. Align in the "25M." band at 11.7 mc, (11,700 kc), the 9th harmonic of the test-oscillator 1,300 kc output. Align in the "19M." band at 15.3 mc (15,300 kc), the 9th harmonic of the test-oscillator 1,700 kc output. In each case select the peak giving minimum "Magic Eye" opening.

When aligning with the RCA Stock No. 150 Test Oscillator use the variable (unmodulated) oscillator and "Magic Eye" indication of receiver output. Set test-oscillator dial 800 kc lower than the desired signal for the four lower frequency ranges and 800 kc higher than the desired signal for the two high ranges and use in same manner as TMV97-C. Insert an open-circuit telephone plug in the test oscillator "Ext. Mod." jack, so the modulated fixed-frequency oscillator will be cut off, and align on the unmodulated variable oscillator signal, which will close the "Magic Eye" and evidence itself by a rushing noise in the speaker.

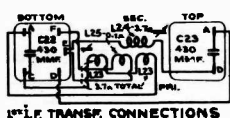
If the crystal calibrator signals are weak, disconnect test oscillator while using the crystal calibrator.

More accurate alignment in the spread-bands can be accomplished by making final slight adjustments using American, English, or German short-wave broadcasting stations of known frequency for frequency standards.

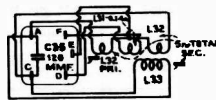
† The No. 150 Test Oscillator employs a fixed-frequency (800 kc), modulated oscillator and a variable, unmodulated oscillator. The scale is calibrated to the sum frequency for the two higher frequency ranges and to the difference frequency for the four lower frequency ranges.

A-F-C Discriminator Adjustments.—These adjustments are rather critical and should be performed with extreme care. Improper adjustment may result in complete failure of the oscillator control tube to function or else may cause it to detune the oscillator instead of tuning it to the signal. It is assumed that the magnetite core adjusting screw L33 (top of 4th i-f transformer) has been turned all the way out (extreme counter-clockwise) during the preceding tabulated adjustments. Adjustments are as follows: Remove spring "N" on link and arm assembly which connects the "Manual-Electric-Remote" switch shaft to the throw-out gear bracket. Turn "Fidelity" control counter-clockwise. Connect antenna to receiver antenna terminal. With the "Manual-Electric-Remote" switch in "Manual" (right) position, tune in a strong local station near 600 kc or the low-frequency end of the "A" band as accurately as possible by means of the tuning tube "Magic Eye." The most accurate adjustment will be obtained by adjusting the "vernier" tuning knob mid-way between the two points where the eye just appears to start to open. This will place the generated i-f carrier signal frequency exactly in the center of the i-f amplifier response curve (should be 460 kc if i-f amplifier was properly aligned) and is the frequency to which the a-f-c discriminator (4th i-f transformer) should be tuned to resonance. Without disturbing any of the receiver adjustments, place the "high" test-oscillator lead about 3/4 of an inch from the grid cap lead of the RCA-6K7, 1st i-f amplifier tube, adjust the test-oscillator output to maximum, turn test-oscillator "Modulation" off, and carefully zero-beat the test-oscillator frequency (approximately 460 kc) with the i-f carrier signal. Avoid placing the test-oscillator lead nearer to the grid cap lead than specified above, as doing so will tend to detune the i-f amplifier. It may be necessary to reduce the local station signal, during this operation, by shortening antenna lead or grounding antenna "A" terminal to chassis in order to increase the loudness of the beat note sufficiently for accurate zero-beat adjustment.

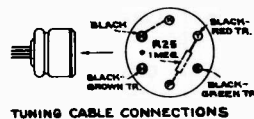
Throw "Manual-Electric-Remote" switch to "Electric" (center) position. A high whistle or beat note will now be heard. Turn the magnetite core screw L33 (top of 4th i-f transformer) slowly clockwise. As this screw is turned, the beat note will first increase to a high audio frequency and will then decrease to a zero-beat and then increase in frequency again. The point of exact zero-beat is the position for correct adjustment of the discriminator. Zero-beat should also still exist when the "Manual-Electric-Remote" switch is thrown back to "Manual" position. The adjustment is now complete and may be checked by slightly detuning the receiver above and below the local station frequency with the "Manual-Electric-Remote" in "Manual" position, switching to "Electric" position, and noting the oscillator pull-in. Replace spring "N."



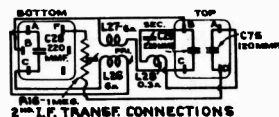
1st I.F. TRANSF. CONNECTIONS



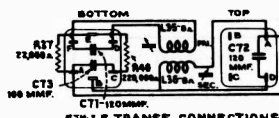
4th I.F. TRANSF. CONNECTIONS



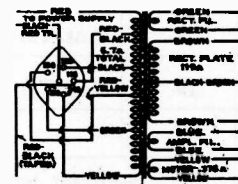
TUNING CABLE CONNECTIONS



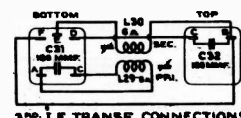
2nd I.F. TRANSF. CONNECTIONS



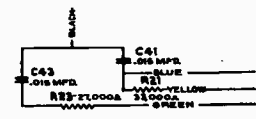
5th I.F. TRANSF. CONNECTIONS



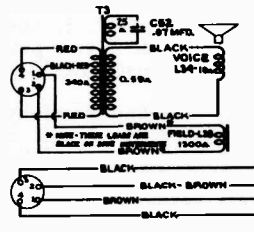
UNIVERSAL TRANSF. CONNECTIONS



3rd I.F. TRANSF. CONNECTIONS



COMPENSATOR PACK CONNECTIONS



SPEAKER CONNECTIONS

Loudspeaker Jumper Cable:

The jumper cable assembly used on later instruments is available in complete form, including the male plug and female connector, as Stock No. 30678. The cable is 25 inches long.

DIAL CALIBRATION

Abnormal variations of dial readings on the 49, 31, 25 or 19 meter spread bands, from the correct frequency may be caused in some instances by insecure contact at various points in the oscillator circuit. The following points should be carefully checked should this type of trouble be exhibited.

- (1) Poor or intermittent contact of the oscillator section of the range switch. The rotary disc may be loose on the shaft causing insecure and irregular connection. A metal or wooden wedge should be driven between the disc and the shaft to make the two rigid with each other.
- (2) Intermittent contact of the metal sleeves or spacers on the support rods of the band switch will upset the ground circuit and produce frequency variations. These should be tightly pinched with a pair of pliers at their ends in order to provide solid contact with the assembly rods.
- (3) The connection between the feet of the band switch shield partitions and the chassis must be secure. Soldering of the shield to the chassis is effective in eliminating variations of ground circuit at this point.
- (4) Vibration of rear end shield partition of the band switch may be causing trouble. A strip of felt, mounted on the chassis shelf directly below the shield partition to prevent its vibration will be of considerable advantage.
- (5) Variation of R-F potential of band switch shaft and consequent change of circuit constants may be minimized by grounding the inner end of the shaft with a flexible pigtail to the chassis.

Service Hints

- a. Capacitors C18 and C74 should be carefully checked for leakage or short circuit in cases of intermittent operation or no operation. C74 should be eliminated from the circuit, R9 should be shorted out, and C18 replaced by Stock No. 4839, as shown by the Schematic Circuit Diagram figure 1, in the event of trouble in this circuit.
- b. Capacitor C5 should be checked for leakage or short circuit.
- c. Resistor R5 was 33,000 ohms in some instruments. Replace with Stock No. 12333.
- d. Capacitor C16 was 82 mmfd. in some instruments. Replace with Stock No. 14021.

OSCILLATOR CAPACITORS

The 100 mmfd. molded Lucsite capacitors which connect in parallel with the band spread oscillator tuning condenser for short wave operation, are specially designed to have a negative thermal coefficient of capacity to compensate for variations in other parts of the oscillator circuit with temperature changes. These capacitors are therefore *not* interchangeable with ordinary types and replacements should always be made with the particular RCA Stock No. specified in the replacement parts list. Care must be exercised in replacing these parts, to avoid twisting the leads excessively or allowing too much heat to be applied when soldering.

ADDITIONAL REPLACEMENT PARTS

- 30623 Capacitor - 1.0 mfd (C38).
 30587 Connector - 4 contact female with metal shell for reproducer cable (some models only).
 5040 Connector - 4 contact female for reproducer. Inter connecting cable (some models only).
 30568 Connector - 4 contact male with metal shell for reproducer inter connecting cable. (some models only).
 30647 Resistor - 1.8 ohm resisto-fuse lamp. (R42).

REPLACEMENT PARTS

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

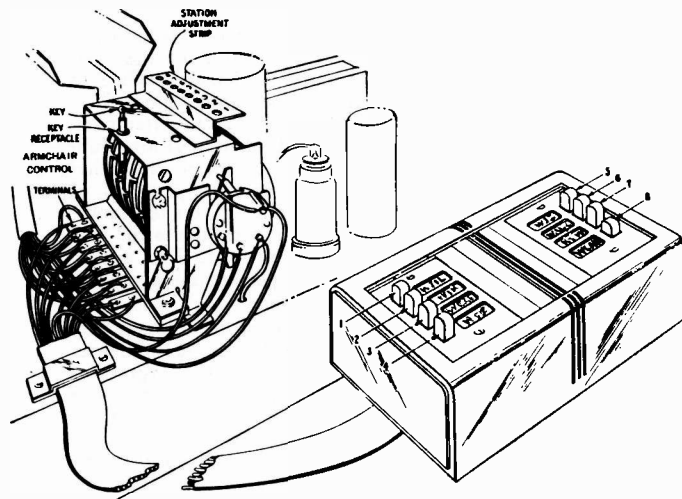
STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
RECEIVER ASSEMBLIES			
14726	Arm—Hub and arm complete with set screws—Connects station selector drum to rear of tuning condenser shaft	30016	Capacitor—12 Mmfd. (C34)
14883	Arm—Arm and hub assembly located on "Manual-Electric-Remote" switch shaft	12896	Capacitor—15 Mmfd. (C64)
14517	Board—Antenna and ground terminal board	30015	Capacitor—15 Mmfd. (C33)
12717	Board—Phonograph terminal board	14021	Capacitor—22 Mmfd. (C16)
14885	Bracket—Left hand dial bracket and pulley assembly	12948	Capacitor—33 Mmfd. (C40)
14884	Bracket—Right hand dial bracket and pulley assembly	14910	Capacitor—90 Mmfd. (C21)
14878	Bracket—Tuning tube mounting bracket and clamp assembly	14908	Capacitor—98.5 Mmfd. (C9)
5237	Bushing—Variable condenser rubber mounting bushing assembly	14906	Capacitor—100 Mmfd. (C7)
14919	Cable—5 conductor push-button selector cable	12720	Capacitor—100 Mmfd. (C36, C58)
14918	Cable—7 conductor tuning drive motor and push-button selector cable	14960	Capacitor—100 Mmfd. (C73)
12807	Cap—First or second I-F transformer shield cap	14907	Capacitor—103.5 Mmfd. (C8)
12581	Cap—Third, fourth or fifth I-F transformer shield cap	14909	Capacitor—110 Mmfd. (C8)
11350	Cap—Grid contact cap	12404	Capacitor—120 Mmfd. (C35, C71, C72, C75)
12884	Capacitor—Adjustable trimmer (long) (C3, C10, C15, C20, C65, C68)	14712	Capacitor—180 Mmfd. (C31, C32)
14392	Capacitor—4.7 Mmfd. (C62)	14711	Capacitor—220 Mmfd. (C28, C29)
13002	Capacitor—12 Mmfd. (C67)	12952	Capacitor—330 Mmfd. (C2, C19, C45)
		14710	Capacitor—430 Mmfd. (C22, C23)
		13052	Capacitor—470 Mmfd. (C14)
		14911	Capacitor—580 Mmfd. (C11)
		13140	Capacitor—1500 Mmfd. (C63)
		30160	Capacitor—2700 Mmfd. (C66)
		12897	Capacitor—4700 Mmfd. (C5)
		4838	Capacitor—.005 Mfd. (C49, C51)
		4937	Capacitor—.01 Mfd. (C50)

ELECTRIC TUNING & MODEL G-8 (ARMCHAIR CONTROL)

USED WITH MODELS U 108, U 109, 811T, 811K, 812K, 813K & 816K

REPLACEMENT PARTS

Stock No.	MODEL G 8	DESCRIPTION
14850		Bar—Tie bar for connecting push button lock plates.
14851		Box—Control box case only—less buttons, switches, cable and top and bottom covers.
14745		Button—Station selector push button.
14853		Cable—9-conductor flat cable, approximately 25 feet long.
14747		Card—Station call letter cards.
14852		Cover—Control box top cover.
14746		Shield—Celluloid shield for station markers.
14694		Spring—Tension spring for push button lock plate.
14693		Switch—Station selector button switch, comprising 4 contacts and 1 lock plate completely assembled, on insulating strip.



Model G8 ARMCHAIR CONTROL

Extra lengths of control cable should not be used where power-line voltages are low. The voltage drop in the cable circuit, due to the added resistance, will reduce the power of the drive motor and prevent correct operation.

CONTINUOUS OPERATION - ELECTRIC TUNING DRIVE

The mechanical drive mechanism of the Electric Tuning instruments is not rated for continuous operation over sustained periods. Tests and demonstrations which require constant running should therefore be avoided. Temperature rise of the motor coils, wear of contact fingers, wear of gears, and wear of bearings are likely consequence of abnormal operation. Under conditions of regular operation, wear and mechanical deterioration of parts will not become excessive within several years of usage.

ARCING CONTACTS - ELECTRIC TUNING DRIVE

Noisy reception due to an arcing condition at the selector disc contacts should be remedied by the following procedure:

- (1) Thoroughly clean all excess grease and dirt from the selector discs. It is necessary to clean between the discs as well as on their edges. Carbena or an equivalent cleaning fluid may be used if necessary.
- (2) Clean and polish spring contacts with a plain cloth or crocus cloth.
- (3) Complete cleaning and polish the periphery of each disc with crocus cloth. Make sure the insulating segment is smooth and clean.
- (4) Moisten a cloth with a very slight amount of Vaseline or Petrolatum and apply sparingly to discs. Wipe off excess, so that only a film remains.
- (5) Check adjustment of contact springs.
- (6) Check instrument for operation.

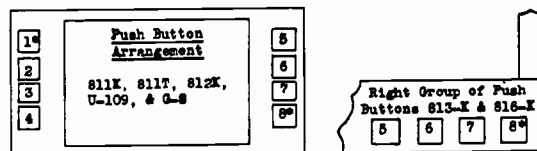
40-CYCLE OPERATION - MODELS 811K, 811T, 812K, 813K, 816K

These instruments may be operated on 40-cycles, 115-volt, A-C circuits by making the following modifications:-

- (A) Standard 105-125 volt, 50-60 cycle instruments (Rating A) to be altered as follows for 105-125 volt, 40-cycle operation:
 - (1) Replace power transformer with either the 25 cycle, or the Universal type (105-240 volts) specified in Service Notes for particular instrument concerned.
 - (2) Insert a 5 ohm, 25 watt resistor in series with one of the "yellow" leads of the power transformer secondary winding which supplies drive motor current.
- (B) Where the instrument available is 105-125 volts, 25 cycles (Rating B) -
 - (1) Change Electric Tuning motor to 60 cycle type.
 - (2) Add resistor as in (2) of "A" above.

PUSH BUTTON RELEASE - ELECTRIC TUNING

Provisions are incorporated on the Electric Tuning control buttons for simple release where the entire group of eight have been pushed in and are latched.



When all eight buttons are latched due to error or tampering, it is only necessary to push either the number 1 or number 8 button on the 811K, 811T, 812K, U-109 or G-8 type; while on the 813-K and 816-K, push the number 8 button. These buttons are asterisked in the above diagrams. In pushing the indicated buttons they must be forced slightly (more than required for tuning) so as to actuate the auxiliary release lever.

CLUTCH PIN ON ELECTRIC TUNING MOTORS

The small clutch pin, which is fitted to the end of electric tuning motor shaft, and engages with the gear mechanism may be obtained separately as a replacement by ordering stock #30252. Five pins are supplied in each package.

Mechanism Adjustments

A-F-C and A-F Amplification Suppression Switches.— This switch assembly is located on the motor bracket and closes due to solenoid action of motor armature. Before attempting switch adjustment, loosen "Tilt Compensating Spring" adjusting screws (rear of tuning-motor bracket) and move spring to extreme travel away from motor armature shaft. The tension of the long contact spring "C" is important in bringing about quick disengagement of the motor and in permitting the motor to pull into mesh with the drive mechanism. Normal adjustment is attained when the short springs "D" and "E" are aligned exactly straight with contact points separated approximately 1/32 of an inch and with the spring "C" spaced approximately 7/32 of an inch from spring "D" at the point of contact. If necessary, in order to obtain positive pull-in

ELECTRIC TUNING

and quick dis-engagement of the motor, the tension of spring "C" should be increased or decreased by bending. This action should be checked with the front apron of the chassis raised two inches higher than the rear. Contacts of the switch must be kept clean. Crocus cloth or a relay burnisher may be used for this purpose.

Tilt Compensating Spring.—The function of this spring is to compensate for the force of gravity, acting to the rear, on the tuning motor armature when the chassis is tilted as mounted in cabinet. The "Tilt Compensating Spring" is located on the rear of the tuning motor bracket. After completion of adjustment "A-F-C and A-F Amplification Suppression Switches," raise the front apron of chassis six inches higher than the rear, and then adjust spring by means of its elongated mounting holes until the pin "F" on the motor shaft will pull in and remain in mesh with the arm "G" on the pinion when a push button is pressed. This adjustment should be made with the lowest power-supply voltage that will be encountered at the installation.

Motor Reversing Switch.—It is necessary to automatically stop and reverse the drive motor before the tuning condenser reaches the ends of its travel. Approximately 175 degrees of sweep is required, and the reversal must take place above 1,700 kc and below 540 kc but not too near the limits of the scale. The coupling between the station selector drum and the tuning condenser shaft should be attached so that the reversing switch trip lever "H" is exactly vertical when the condenser is full-out of mesh. There should be 1/32 of an inch clearance between the end of the condenser shaft and the selector drum shaft. While the trip lever is in this position the reversing switch bracket should be adjusted by means of its elongated mounting holes until the switch pin "I" just lightly touches trip lever "H."

Main Pinion Gear.—Clearance between the small high-speed pinion gear "E" and the intermediate gear "K" determines the amount of mechanical noise produced. Correct adjustment will give approximately 1/32 of an inch movement of back lash at the end of pinion arm "G" when gear "K" is held stationary. Arm "G" must also be adjusted for correct mesh with motor shaft drive pin "E." With the motor shaft completely forward and pinion "E" tight against its front bearing, the pinion mounting stud "J" should be adjusted so that pin "F" meshes its full thickness with the rotating arm "G." An increase of this mesh will increase over travel on tuning while a decrease of mesh will decrease the over travel. The elongated hole in the front bracket allows sufficient movement of the mounting stud "J" to permit above mentioned gear mesh adjustment.

MODELS 811T, 811K, 812K, U108 & U109

"Manual-Electric-Remote" Changeover.—(1) Link and lever adjustment—To properly line up the mechanical link between the switch shaft and throw-out gear bracket "MM," the set screws holding the link lever on the switch shaft must be loosened, the switch turned to the "Remote" position (extreme left) and the link lever revolved until the distance between the bottom of its link-connecting pin (extends through chassis apron) and the bottom of the "C" slot, in front apron of chassis, is exactly 1/4 of an inch.

MODELS 813K & 816K

"Manual-Electric-Remote" Changeover.—(1) Link and arm adjustment—To properly line up the mechanical link between the switch shaft and throw-out gear bracket "MM," the set screws holding the link arm on the switch shaft must be loosened, the switch turned to the "Manual" position (extreme right) and the link lever revolved until the distance between the link-connecting pin (extends through chassis apron) and the right-hand (viewed from front) side of the slot, in front apron of chassis, is exactly 5/16 of an inch.

If this adjustment is not properly made, correct operation of "Electric" or "Remote" tuning will not result. (2) Throw-out Gear Adjustment—To obtain smooth operation on "Electric" or "Remote" positions it is important that the proper clearance is maintained between the throw-out gear "M" and the intermediate gear "L." With the "Manual-Electric-Remote" control thrown to "Remote" position (extreme left) adjust the mesh between these gears by means of the eccentric screw "O" and lock nut "P" on the throw-out gear bracket "MM" until there is approximately 1/64 of an inch backlash of gear "L" when gear "M" is held stationary.

Vernier Tuning.—In case it becomes necessary to remove tuning condenser drive shaft "T," it should be replaced by sliding anti-backlash gear "R" on condenser shaft apart so that compression amounting to one tooth on the gear is obtained in the springs. Adjust mesh of gear "R" with pinion gear "U" on vernier shaft before tightening screws "S" so that smooth tuning is obtained throughout the range.

Motor Alignment.—The motor shaft must be exactly aligned with the axis of the pinion gear with which it engages. This may be adjusted by loosening the mounting screws "V" of the motor and aligning shaft by sight. Correct alignment may be tested by slowly rotating motor and observing the relation between the pin "F" of the motor shaft and the arm "G" on the pinion. The relation of the two should remain the same throughout the revolution. Additional movement for adjustment may be obtained by the motor bracket screws "W" if necessary.

Station Selector Drum.—(1) Bearing Adjustment—The selector drum may be removed by unscrewing the two bearing adjusting screws "X" on the front and rear bearings and sliding shaft out of slots on frame. To replace drum, the reverse procedure should be followed holding bearing adjusting plates "Y" firmly against the shaft and tightening adjusting screws. (2) Contact adjustment—Two types of contact strips are used. They are designated on figure , as types 1 and 2, on which the individual contacts are respectively adjustable and fixed. On type 1, the individual contacts should be adjusted by setting the end contact springs near the mid-position of their travel and aligning the remaining springs to them by means of a straight edge. Either type of contact strip should be adjusted to the selector drum by placing two selector adjusting keys in the station adjustment strip, positions 1 and 8, loosening contact strip adjusting nuts "Z" and shifting the contact strip until the end contacts are exactly centered on the respective disc insulating segments. More accurate adjustment may be made by silhouetting the point of contact with a piece of white paper held behind the contact. Adjustment will be facilitated by removing complete assembly from rear of tuning condenser by unscrewing the three mounting screws. Contacts and discs must be kept free of dirt, filings, and other extraneous matter.

Station Adjustment

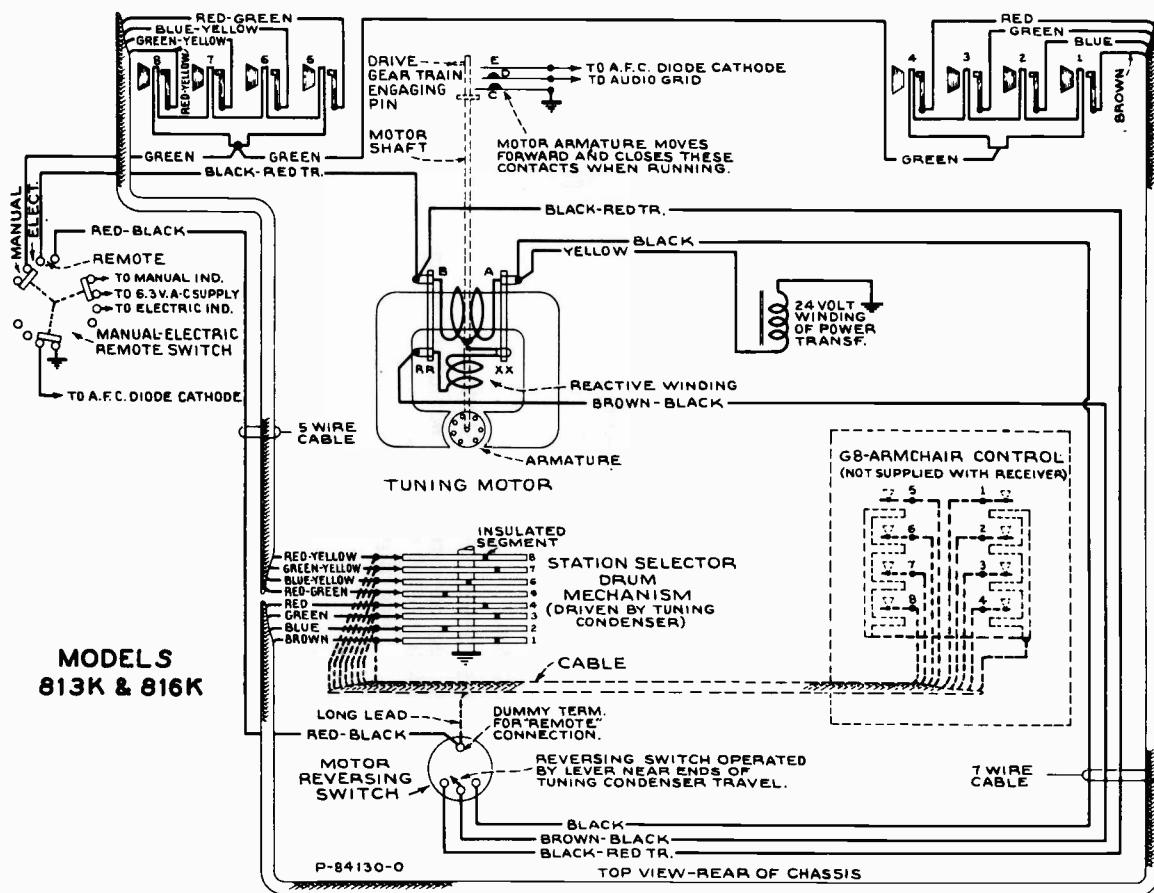
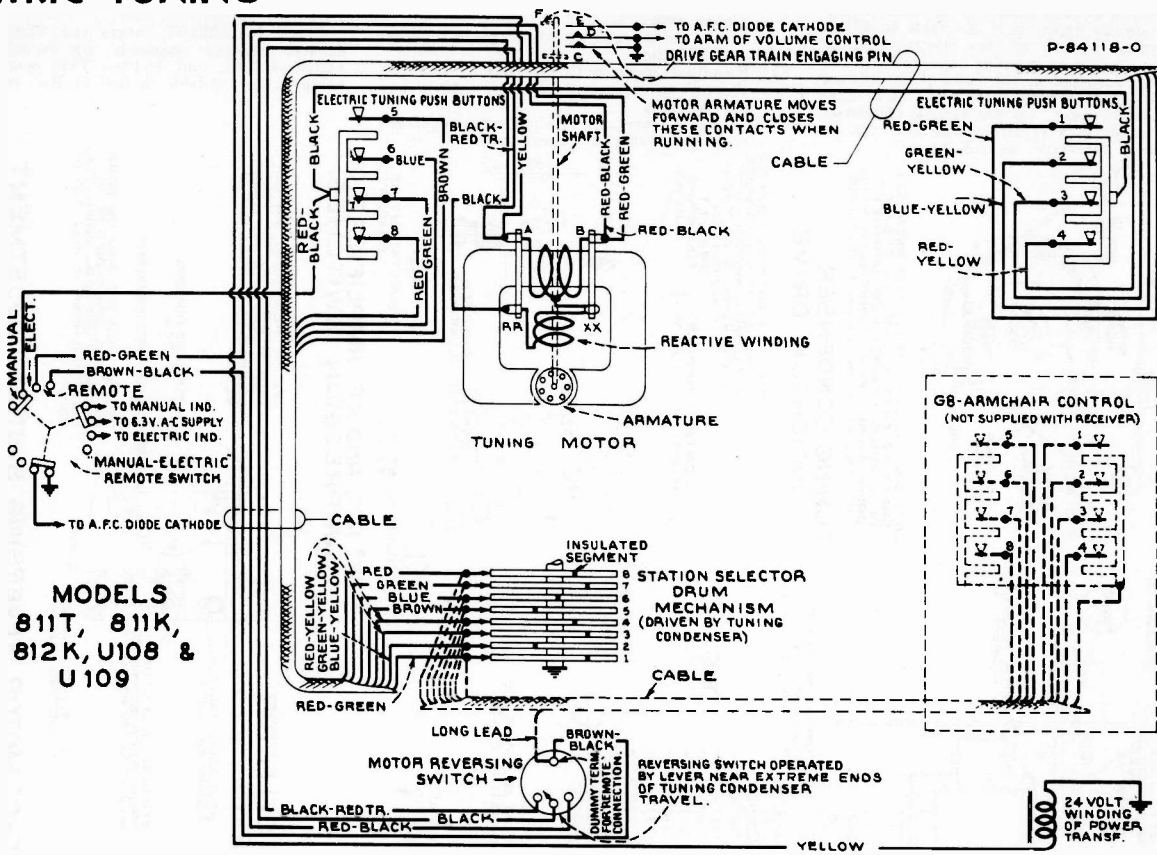
Any eight stations may be chosen for "Electric" tuning. Remove the two escutcheon plates from the side of the dial, place proper call letter labels in the celluloid windows, and replace escutcheons. Turn the power on and proceed to set up the "Electric" tuning as follows:

1. Set Range Selector to "Broadcast."
2. Turn "Manual-Electric-Remote" control to "Electric."
3. Turn Fidelity control counter-clockwise.
4. Press push button No. 1 and wait until station pointer comes to rest.
5. Turn the "Manual-Electric-Remote" control to "Manual."
6. Remove adjusting key from receptacle on top of station selector drum mechanism.
7. Insert key in position marked, "1" in station adjustment strip and push the key all the way down to properly fit in slot in disc.
8. Tune the receiver very carefully by means of the manual tuning knob and the "Magic Eye," to station chosen for No. 1.
9. Remove key.
10. Turn the "Manual-Electric-Remote" control to "Electric."

Button No. 1 is now properly set for "Electric" tuning. Proceed similarly for the other seven push buttons, matching each station on the dial with the same number on the station adjustment strip. Repeat the above steps but place the key respectively in positions 2, 3, 4, etc., and in each case tune to the proper station. Now when you press a button the desired station will be tuned in electrically.

Note.—In the event that all the push-button switches are locked "in" at once, they may be released by pressing either the upper left-hand or the lower right-hand push buttons (Nos. 1 or 8) in farther than would ordinarily be required.

ELECTRIC TUNING



"Electric Tuning" Wiring Diagram
(Viewed from rear of chassis)

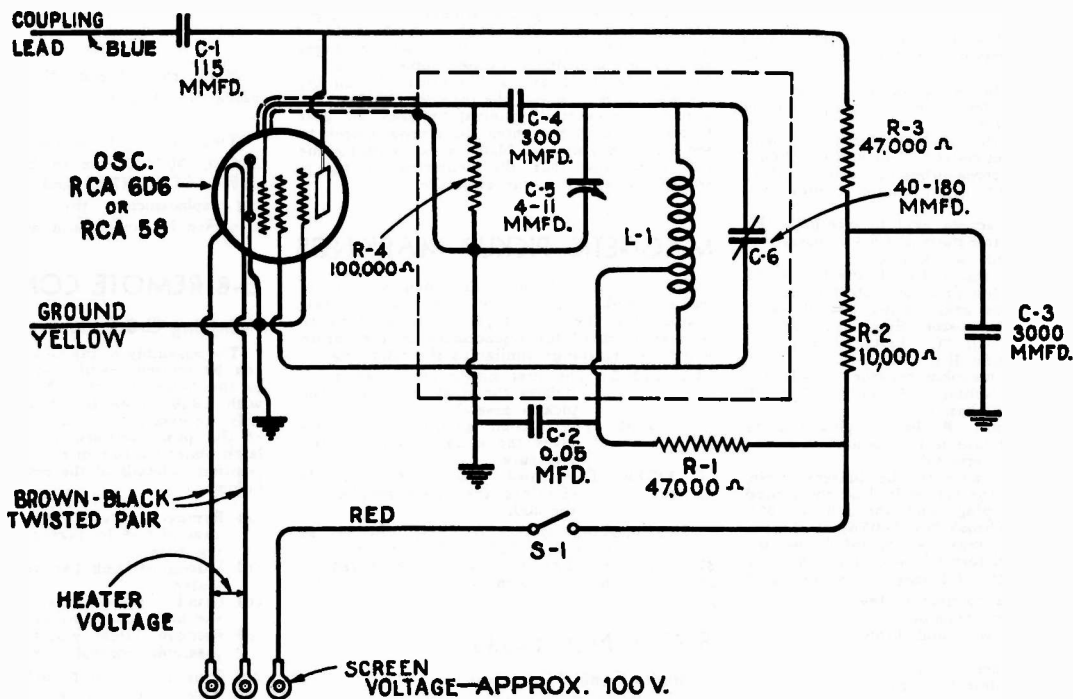
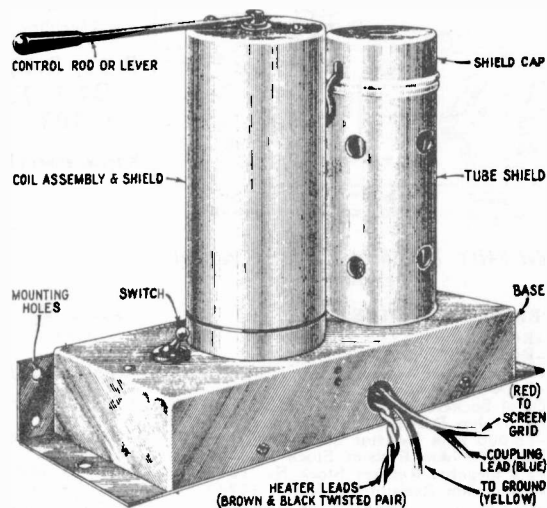
Beat Oscillator

Stock No. 9606
25054

Note—A setting or adjustment of the main tuning capacitor will be necessary when first operating. This is made with a screwdriver through a hole in the bottom of the chassis under the coil assembly and this fact should be borne in mind when making the installation.

Note—With the main tuning capacitor set at 460 k.c. and the control rod at the center of rotation, the range of the auxiliary capacitor will be approximately 3500 cycles on each side of zero beat.

NOTE: Coupling is made to receiver by wrapping 3 or 4 turns around I-F or detector grid lead. No response may be due too much coupling between oscillator and receiver. It may be necessary to place blue lead 8 or 8 inches away.



Schematic Diagram

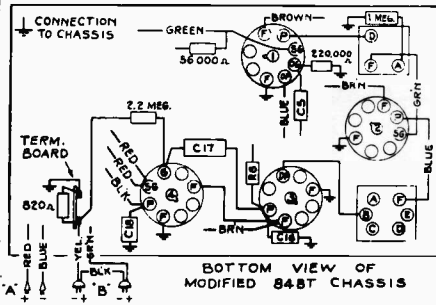
REPLACEMENT PARTS

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION
4244	Cap—Grid contact cap—Package of 5.....	8077	Handle—Beat Oscillator Adjustment Handle—Complete with knob.....
8076	Capacitor—115 Mmfd.—(C1).....	3078	Resistor—10,000 Ohms—Carbon Type—½ Watt—Package of 5—(R2).....
8075	Capacitor—3000 Mmfd.—(C3).....	8074	Resistor—47000 Ohms—Carbon Type—½ Watt—Package of 5—(R1, R3).....
4886	Capacitor—0.05 Mfd.—(C2).....	6955	Shield—Radiotron shield and shield cap.....
5209	Coil—Beat Frequency Oscillator Coil Assembly—Complete with shield and control handle (L1, C4, C5, C6, R4).....	4786	Socket—6-contact Radiotron socket.....
		7900	Switch—Control switch—toggle type (S1).....

Miscellaneous Data

MODEL 84BT

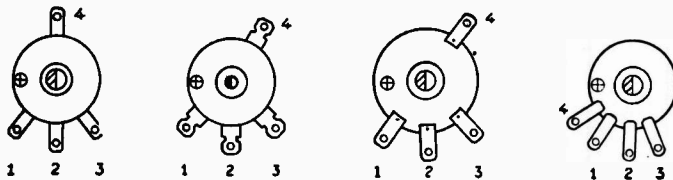
Adaption for 1½-Volt Operation:



Model 84BT Modifications for 1½ Volt Operation.

MATERIALS REQUIRED:

- 1—RCA-1A7G
 - 1—RCA-1N5G
 - 1—RCA-1H5G
 - 1—RCA-1C5G
 - 4 Octal Sockets Stock No. 81251
 - 1—820 ohm Resistor Stock No. 14076
 - 1—56,000 ohm Resistor Stock No. 12286
 - 1—220,000 ohm Resistor Stock No. 12264
 - 1—2.2 megohm Resistor Stock No. 12679
 - 1—1 megohm Resistor Stock No. 13730
- (a) Remove all connections from tube sockets; replace sockets with octal type (Stock No. 81251).
- (b) Connect octal sockets in accordance with socket connections on the accompanying diagram.
- Note that the following circuit changes are necessary: All symbols refer to designations in 84BT Service Notes.
- (c) Replace oscillator grid resistor (R-1) with a 220,000 ohm resistor (Stock No. 12264).
- (d) Replace the screen dropping resistor (R-2) with a 56,000 ohm resistor (Stock No. 12286).
- (e) Connect I-F screen grid to terminal "F" on first I-F transformer (B+) instead of to first detector screen grid.
- (f) Remove R-9 and C-15; connect R-8 (1 megohm) to 2nd detector plate terminal.
- (g) Replace output grid resistor (R-10) with a 2.2 megohm resistor (Stock No. 12679).
- (h) Remove R-6, all "C" battery leads, and yellow lead from R-6 to R-5.
- (i) Connect a 1 megohm resistor (Stock No. 13730) from terminal "A" on the first I-F transformer to chassis.
- (j) Remove the first "B" battery plug and the blue lead and fuse which connect it to the negative "A" terminal.
- (k) Add a fourth wire to the battery cable, connecting to the yellow lead on the second "B" battery plug, and through an 820 ohm resistor (Stock No. 14076) to chassis. This resistor may be mounted on the terminal board formerly used for R-6. The low end of the 2.2 megohm output grid resistor should connect to the battery side of the 820 ohm resistor.
- (l) Remove dial lamp and brown connecting lead.
- (m) Insert new tubes as follows:
 1A7-G 1st detector-oscillator
 1N5-G I-F amplifier
 1H5-G 2nd detector, A-F, A-V-C
 1C5-G Output
- (n) Replace tube shields.
- (o) Realign according to instructions in 84BT Service Notes.
- (p) Make alterations on rating label and instruction sheet to indicate the change of battery supply and tube complement.
- (q) Use 1.5 volt dry cell or 1.4 volt "Aircell" for "A" supply; and two 45 volt batteries for "B" supply. No "C" batteries are required.



Terminal Arrangement, Stock No. 14335 Volume Control.

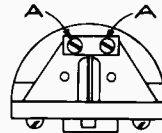
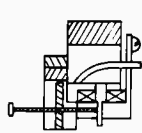
MODELS R-93 and R-93A

Replacement Pickup Mechanism No. 32205:

This pickup mechanism is available for replacement on record players R-93 and R-93A. It is identical in construction to Stock No. 31100, described below, except that the magnet is chrome instead of cobalt, and the output is approximately 0.4 volts.

R-93, R-93A, R-93-2, R-94, R-96, D7-7, 7U, 7U-2, U-101, U-102E, U-103

Replacement Pickup Mechanism No. 31100:



Replacement Pickup Mechanism Stock No. 31100 and 32205.

A service replacement pickup mechanism for the "midget" type tone arm can now be obtained by ordering Stock No. 31100—Pickup Unit, less Tone Arm. This unit is usable in the models listed above.

Latest design features, including a simple and substantial centering adjustment, are incorporated in this unit. The cobalt magnet employed assures sufficient output (0.6 volts average) and correct impedance (1,400 ohms) for all of the specified applications. To adjust, loosen the screws "A-A", move the needle so that the armature is centrally aligned between the pole pieces, and then re-tighten the screws. Check to see that the armature blade is not striking the coil form and that the centering spring is securely attached to the armature.

MAGNETIC PICKUP MARKINGS

In order to simplify the identification of pickups and proper stock numbers for their components, the various pickup mechanisms to be manufactured for replacement in the future will have stampings similar to the following:

- PU 32205 The first group of numerals indicates the stock number of the pickup assembly.
- A 14295 The second group of numerals gives the stock number of the armature.
- C 11782 The third group of numerals identifies the stock number of the coil.

This marking system is being effected at once on pickups No. 32205, No. 81100, No. 32228 and No. 12588. It will be continued on any additional replacement pickups to be produced.

STOCK NO. 14335

Volume Control Connections:

The Stock No. 14335, volume control, as used in several models of the 1937-88 line may have any one of four constructional arrangements.

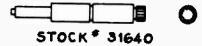
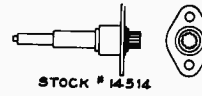
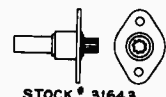
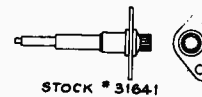
The different controls are, however, interchangeable, both electrically and mechanically. Terminal locations are shown in the diagram. Terminal No. 1 is the low potential end of unit; terminal No. 2 is the wiper arm; terminal No. 3 is the high potential end of the unit; and terminal No. 4 is the tone-compensation tap. The illustrations are as viewed from the front of the control.

1937-38 RECEIVERS

Vernier Tuning Drives:

Three types of vernier drives (Stock No. 31641, 31640, 14514) were employed on tuning condensers of the 6-10 tube receivers. These drives are not interchangeable and it is therefore essential, where replacement is required, to order the correct part. Identification may be established by comparison with the illustrations. These drives are used on the following models:

86E	86T	86K	87T
87K	87X	87E	88K
810T	810T4	810K	810K1
812X	U-105	U-107	



Vernier Tuning Drives for 1937-38 Receivers.

Note that Stock No. 14514 supersedes Stock No. 14864.

Two types of vernier drives (Stock No. 31643, 30741) are to be found on Models 37K1, 87T2, 87K2 and U-106. When ordering replacements, the correct part may be identified by comparison with the drawings.

G-8 REMOTE CONTROL

Adapting G-8 Control to 1938-39 Models:

The assembly of the G-8 Remote Control Unit can be revised readily, so that it is equivalent to the newer model G-8 A, and may be used with 1938-39 electric tuning receivers. It is only necessary to void the "latching" feature of the push buttons, by either removing the latch plates entirely or securing them in the open position. Details of the required changes are as follows:

- (a) Remove contact and latch assembly from case of G-8 by taking out six screws holding base.
- (b) Disconnect link bar between the two latch plates.
- (c) Grind or file off outer ends of studs holding the latch plates to support bracket.
- (d) Remove latch plates and discard. Reassemble control box.
- (e) Strip additional 5 inches of braiding from receiver end of remote cable, and shellac braid ends to prevent fraying.

As an alternative for operations (b), (c), and (d), the latch plates may be secured in the complete "open" position by tying the lower lever of the latch plate nearest cable to the support bracket.

"POPPING" INTERFERENCE

Reduction of Static Discharges, AC-DC Receivers:

Where AC/DC receivers are used with an external antenna which is exposed to steam, smoke, snow, or other influences of similar nature, a static accumulation may occur on the antenna and will produce objectionable interference by discharge to ground, chassis or other nearby objects. This condition can be obviated by connecting a 1 megohm resistor in parallel with the isolating capacitor which is normally used in series with the antenna input, thus maintaining the antenna at ground d-c potential at all times.