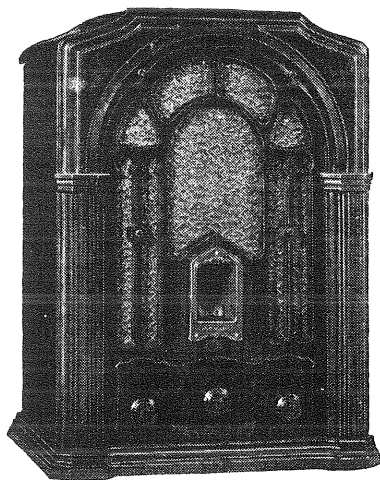


RCA Victor

Models R-74, R-76 and R-77

SERVICE NOTES



RCA Victor R-74

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SERVICE DIVISION
RCA Victor Company, Inc.
Camden, N.J.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

REPRESENTATIVES IN PRINCIPAL CITIES

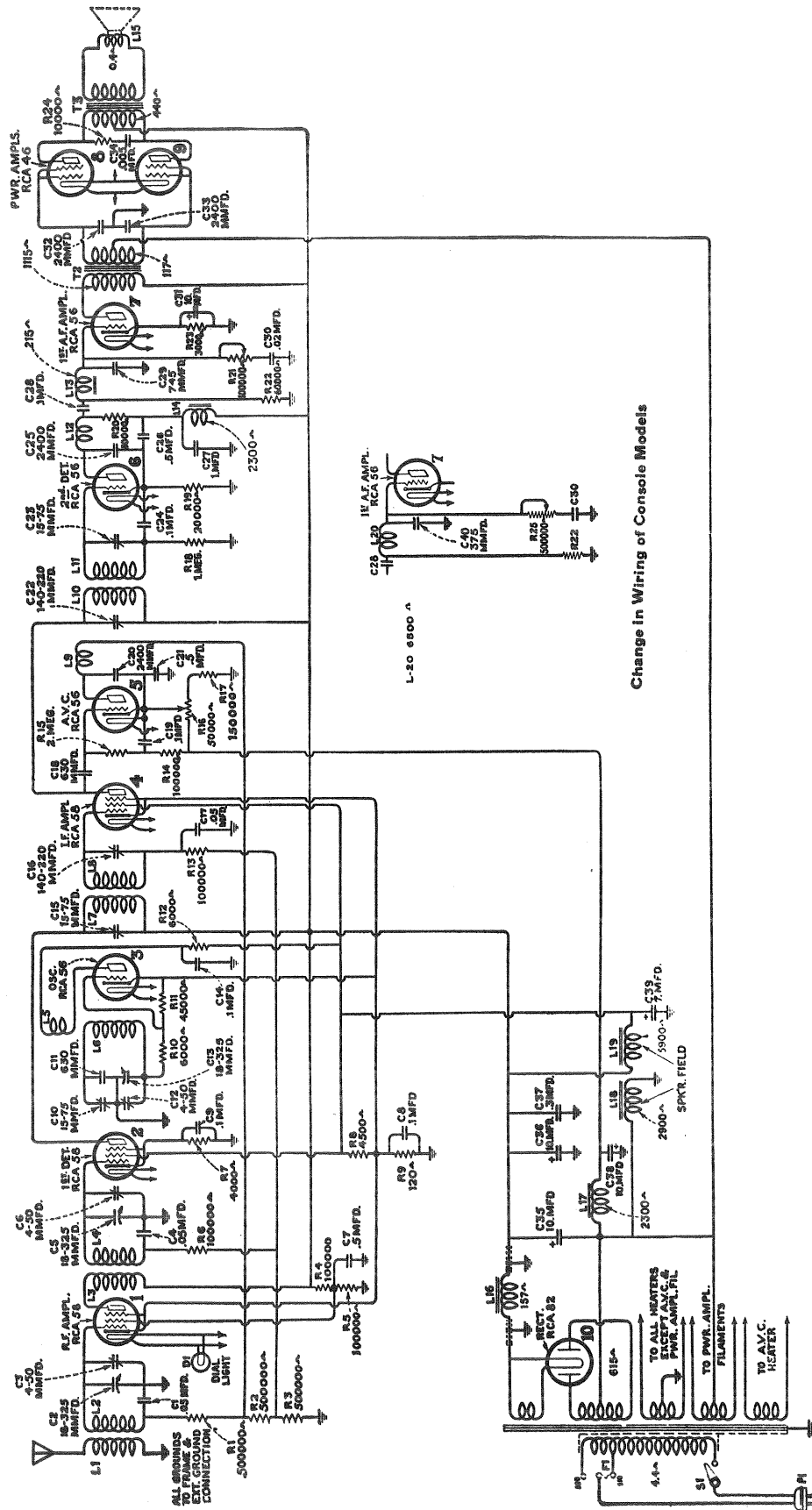


Figure 1—Schematic Circuit Diagram

SERVICE NOTES

for

RCA Victor Models R-74, R-76 and R-77

ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts
Frequency Rating.....	50-60 Cycles
Power Consumption.....	100 Watts Maximum
Recommended Antenna Length.....	25-100 Feet
Type of Circuit.....	Super-Heterodyne with A.V.C. and Class "B" Output Stage
Type and number of Radiotrons.....	4 RCA-56, 3 RCA-58, 2 RCA-46, 1 RCA-82, Total 10
Number of R. F. Stages.....	One
Number of I. F. Stages.....	One
Number of A. F. Stages.....	Two, One single and one Class "B" RCA-46
Type of A.V.C.....	RCA-56 grid voltage supplied by output of I.F. controlling R.F., 1st detector and I.F. by drop across resistor in plate circuit of A.V.C. tube. Manual volume control adjusts grid bias voltage on A.V.C. tube.
Type of Second Detector.....	Power Grid Bias
Type of Tone Control.....	Variable resistance and capacitor for reducing high frequency output of 1st A. F. stage.
Type of Rectifier.....	Mercury Vapor full wave RCA-82
Undistorted Output.....	7.0 Watts

PHYSICAL SPECIFICATIONS

	R-74	R-76	R-77
Height.....	20 inches	40 inches	41 $\frac{1}{8}$ inches
Width.....	14 $\frac{3}{8}$ inches	23 $\frac{3}{8}$ inches	25 $\frac{1}{8}$ inches
Depth.....	11 $\frac{1}{8}$ inches	12 $\frac{3}{8}$ inches	13 $\frac{3}{8}$ inches
Weight Alone.....	44 Lbs.	71 Lbs.	82 Lbs.
Weight Packed for Shipment.....	54 Lbs.	93 Lbs.	118 Lbs.

RCA Victor Models R-74, R-76, and R-77 are ten tube Super-Heterodyne radio receivers employing such features as, continuously variable tone control, automatic volume control, Class "B" output amplifier and the inherent sensitivity, selectivity, and tone quality of all RCA Victor receivers. The R-74 is a table model, the R-76 an open face console while the R-77 is a door model console. Except for a slight difference in the console model to improve the fidelity, all models are similar and use the same chassis and loudspeaker.

The R. F. Circuit used in these receivers is identical with that used in Models R-71 and R-72. It uses the new improved automatic volume control and the new R. F. Pentode Radiotrons. The location of the manual volume control in the cathode circuit of the A. V. C. so that it varies the grid bias for different volume levels, gives improved A. V. C. action.

The audio amplifier consists of two stages, the first being a resistance coupled driver stage using a single RCA-56 and the second a transformer coupled Class B output stage. The undistorted output is approximately 7 watts, its exact maximum depending on the percentage of modulation of the incoming signal.

The RCA-82 rectifier is used to provide the necessary D. C. voltages for plate and grid requirements of the Radiotrons. It also gives the degree of regulation necessary for use with the Class B output amplifier. A low D. C. resistance reactor is used for filtering the rectified voltage used by the output stage. As this is of a highly varying current value, it cannot be used for loudspeaker field excitation. The loudspeaker field is therefore excited by using a double field coil. One section is a reactor for filtering the voltages used by all Radiotrons except the output stage. The other section is used to filter the screen grid supply and also to drop this voltage to a desired value. Together about 10 watts is obtained for field excitation.

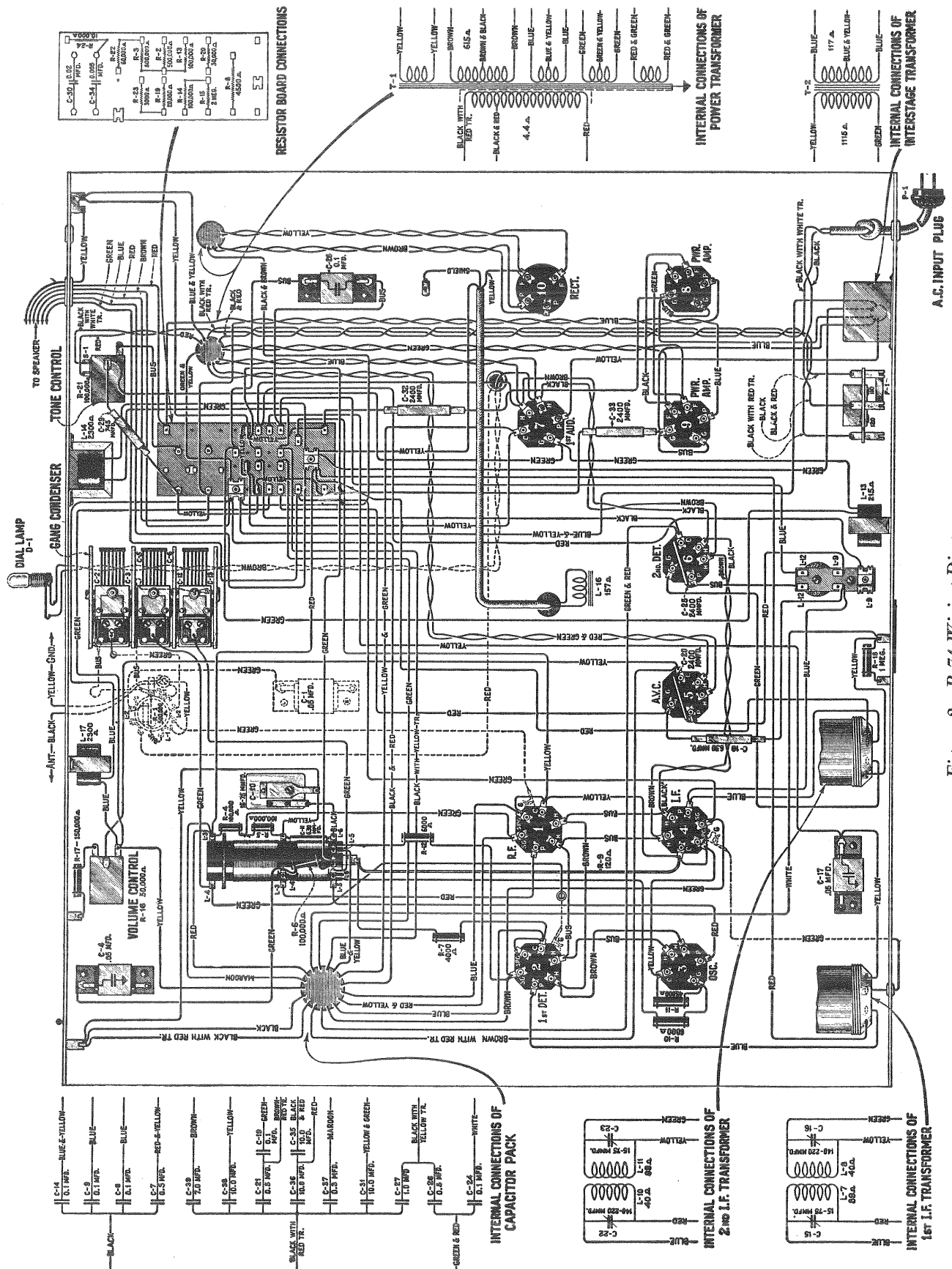


Figure 2—R-74 Wiring Diagram

SERVICE DATA

Service data in conjunction with these receivers will be found to be similar to that of other RCA Victor Super-Heterodyne receivers employing automatic volume control. A dummy Radiotron RCA-56 should replace the tube normally in the A. V. C. socket when making R. F., oscillator and I. F. adjustments. The Radiotron socket voltages are given below and the Replacement Parts on Pages 7 and 8.

Figure 1 shows the schematic diagram for all models. Figures 2 and 4 show the wiring diagrams while Figure 3 shows the loudspeaker wiring. Figures 5, 6, and 7 show various magnetic pickup connections and Figure 8 gives the correct manner of attaching the RCA Victor Short Wave Adaptor.

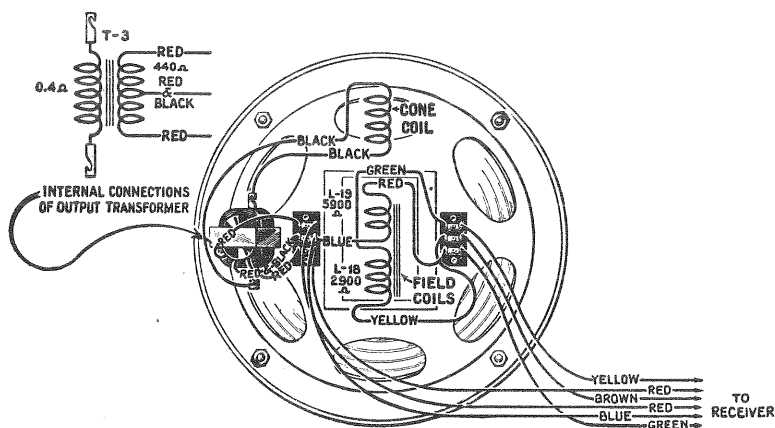


Figure 3—Loudspeaker Wiring

RADIOTRON SOCKET VOLTAGES

120 Volt A. C. Line

(No Signal Being Received—Antenna Lead Grounded to Chassis)

Radiotron No.	Cathode to Heater Volts, D. C.	Cathode or Filament to Control Grid Volts, D. C.	Cathode or Filament to Screen Grid Volts, D. C.	Cathode or Filament to Plate Volts, D. C.	Plate Current, M. A.	Heater or Filament Volts, D. C.
VOLUME CONTROL AT MINIMUM						
1. R. F.	+4	1.0	90	280	0	2.4
2. 1st Det.	0	1.2	90	275	0	2.4
3. Osc.	+4	0	—	55	5.0	2.4
4. I. F.	+3	1.8	90	280	0	2.4
5. A. V. C.	0	0	—	5	0	2.4
6. 2nd Det.	+15	3.0	—	225	1.0	2.4
7. 1st A. F.	+14	10.0	—	260	5.0	2.4
8. Power	—	0	—	400	6.0	2.4
9. Power	—	0	—	400	6.0	2.4
VOLUME CONTROL AT MAXIMUM						
1. R. F.	+4	0	70	250	4.5	2.4
2. 1st Det.	+6	0.6	75	235	2.0	2.4
3. Osc.	+4	0	—	50	5.0	2.4
4. I. F.	+4	1.5	84	250	4.5	2.4
5. A. V. C.	0	0	—	15	0	2.4
6. 2nd Det.	+15	3.0	—	210	1.0	2.4
7. 1st A. F.	+14	10.0	—	240	5.0	2.4
8. Power	—	0	—	400	6.0	2.4
9. Power	—	0	—	400	6.0	2.4

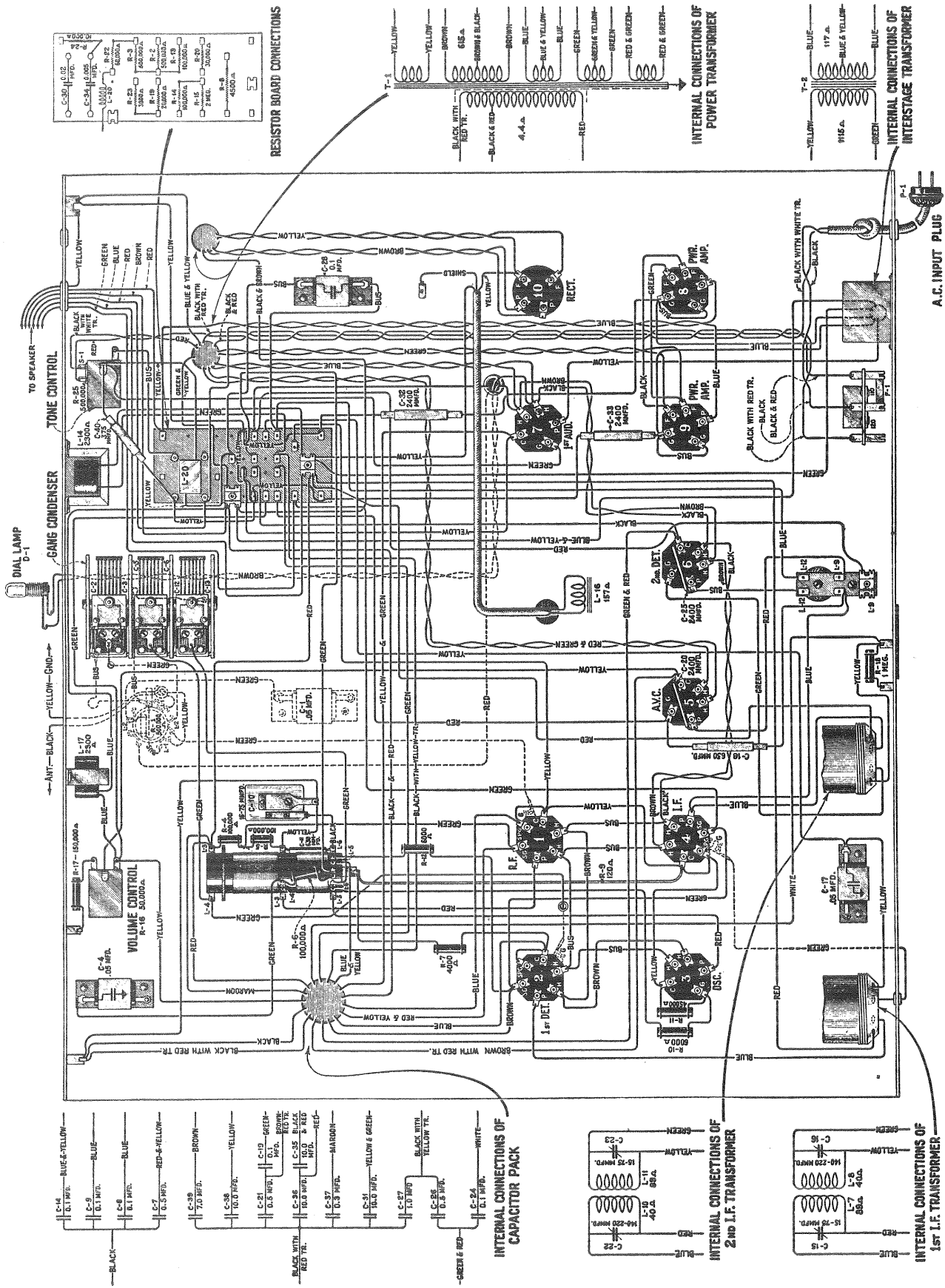


Figure 4—R-76 and R-77 Wiring Diagram

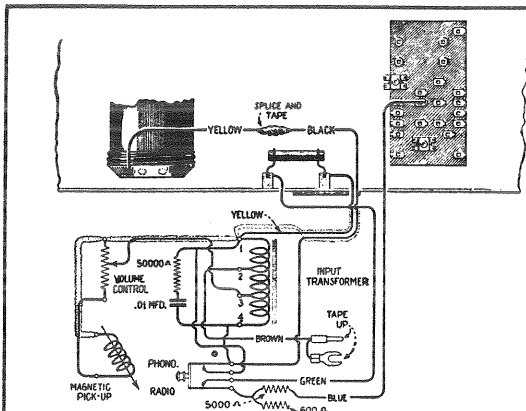


Figure 5—Connections for attaching End Table Model T-5

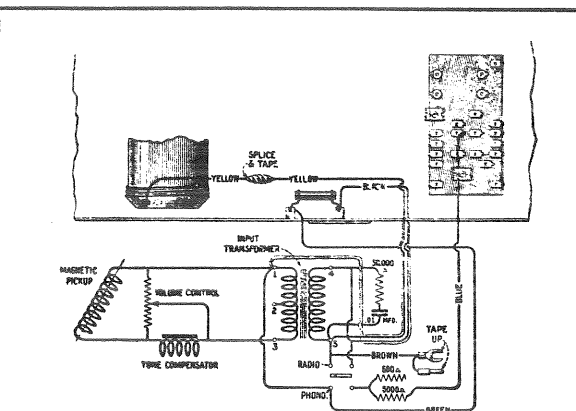


Figure 6—Connections for attaching Portable Turntable Model PT-33

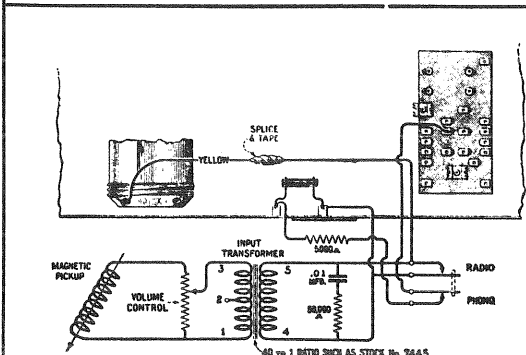


Figure 7—Magnetic Pickup Connections

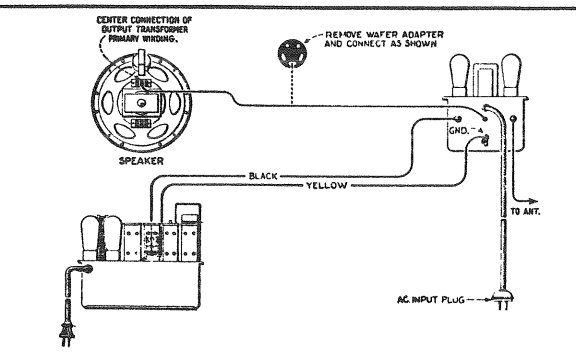


Figure 8—Connections for attaching Short Wave Adaptor Model SWA-2

REPLACEMENT PARTS

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
RECEIVER ASSEMBLIES					
2725	Fuse—1.5 Ampere—Cartridge type fuse—Package of 5.....	\$0.50	3368	Socket—UX type Radiotron socket.....	\$0.50
2731	Resistor—10,000 ohms—Carbon type resistor 1 watt—Package of 5.....		2.00	3369	
2734	Capacitor—745 mmfd. capacitor—Package of 5.....	2.20	3370	Capacitor—0.02 mfd. capacitor.....	.75
2746	Socket—Dial lamp socket.....	.50	3372	Cover—Fuse cover.....	.50
2747	Cap—Contact cap—Package of 5.....	.50	3373	Board—Terminal board—1 terminal and insulator.....	.50
2749	Capacitor—2,400 mmfd. capacitor.....	1.50	3374	Reactor—A. V. C. Filter reactor.....	2.00
3048	Resistor—500,000 ohms—Carbon type—½ watt—Package of 5.....	2.50	3375	Reactor—Tone compensating reactor—For R-74 only.....	1.50
3055	Cushion—Sponge rubber chassis cushion support—One set of 4.....	.50	3376	Mounting board—Fuse mounting board complete with mounting screws and lockwashers—Less fuse.....	.60
3056	Shield—Radiotron tube shield—Package of 2.....	.50	3377	Coil—Choke coil.....	1.50
3076	Resistor—1 megohm—Carbon type—½ watt—Package of 5.....	2.50	3378	Capacitor—375 mmfd. capacitor—For R-76 and R-77—Package of 5.....	2.50
3077	Resistor—30,000 ohms—Carbon type—½ watt—Package of 5.....	2.50	6142	Resistor—6,000 ohms—Carbon type—½ watt—Package of 5.....	2.00
3099	Capacitor—.005 mfd. capacitor.....	.75	6186	Resistor—500,000 ohms—Carbon type—½ watt.....	2.00
3252	Resistor—100,000 ohms—Carbon type resistor—½ watt—Package of 5.....	2.75	6188	Resistor—2 megohm—Carbon type—½ watt—Package of 5.....	2.00
3358	Resistor—3,000 ohms—Carbon type—½ watt—Package of 5.....	2.50	6192	Spring—3 gang tuning capacitor drive cord tension spring—Package of 10.....	.50
3359	Resistor—120 ohms—Flexible wire type—Package of 5.....	1.25	6250	Resistor—4,000 ohms—Carbon type—½ watt—Package of 5.....	2.00
3360	Resistor—150,000 ohms—Carbon type—½ watt—Package of 5.....	2.50	6277	Capacitor—0.1 mfd. capacitor—Located on metal shield.....	.75
			6282	Resistor—60,000 ohms—Carbon type—½ watt—Package of 5.....	2.50

REPLACEMENT PARTS (Continued)

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
3384	Capacitor—630 mmfd. oscillator series capacitor—Package of 5.....	\$2.50	3005	REPRODUCER ASSEMBLIES	
6288	Knob—Station selector—Volume control or tone control knob—Package of 5.....	1.50	3237	Screw assembly—Comprising 4 screws, 8 nuts, 4 washers, and 4 eyelets—Package of 1 set—For R-74.....	\$0.50
6298	Cord—3 gang tuning capacitor drive cord—Package of 5.....	1.00	6184	Screw Assembly—Comprising 4 screws, 8 nuts, 4 washers, and 4 eyelets—Package of 1 set—For R-76 and R-77.....	.50
6302	Bracket—Dial lamp bracket and indicator—Package of 2.....	.50	6325	Board—Terminal board with 3 terminals.....	.50
6303	Resistor—20,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....	2.50	8920	Transformer—Output transformer.....	2.20
6308	Coil—R. F. coil complete with mounting bracket.....	1.90	8935	Ring—Cone retaining ring.....	.50
6315	Resistor—45,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5.....	2.50	9420	Cone — Reproducer cone complete — Package of 5.....	12.50
6317	Capacitor—0.05 mfd.—Capacitor.....	.70		Coil assembly—Comprising field coil, cone bracket and magnet.....	5.50
6322	Volume control—Complete with mounting nut.....	1.65		CABINET ASSEMBLIES—R-74	
6323	Shaft—Tuning condenser drive shaft with one flat washer and two "C" washers—Package of 2.....	.85	X120	(Prices furnished upon request)	
6324	Tone control—Complete with mounting nut—For R-74 only.....	1.90	X121	Cabinet — Cabinet complete — Less equipment.....	
7054	Cord—Power cord.....	1.00	6113	Baffle—Board and grille cloth.....	
7062	Capacitor—Adjustable tuning capacitor—15 to 70 mmfd.....	1.00	7441	Foot—Cabinet felt foot—Package of 15.....	
7439	Drum—Dial drum with set screws and 3 dial mounting nuts.....	.50		Escutcheon—Station selector escutcheon.....	
7440	Scale—Dial and dial scale.....	.75		CABINET ASSEMBLIES—R-76	
7484	Socket—UY type Radiotron socket—6 used.....	.65	X122	(Prices furnished upon request)	
7485	Socket—6 contact socket—4 used.....	.70	X123	Cabinet—Cabinet complete less equipment.....	
7487	Shield—Radiotron tube shield—6 used—Plain finish.....	.50	X124	Moulding—Post moulding.....	
7488	Shield—Tube shield top—1 used—Plain finish.....	.50	X125	Panel—Control panel.....	
7501	Capacitor—3 gang variable tuning capacitor complete with mounting screws and washers.....	5.20	X126	Overlay—Control panel top overlay.....	
7504	Coil—Detector and oscillator coil complete with mounting bracket.....	3.50	X127	Moulding—Control panel side moulding—Package of 2.....	
7510	Shield—Radiotron tube shield—6 used—Maroon finish.....	.50	X128	Moulding — Control panel bottom moulding.....	
7511	Shield—Radiotron shield top—1 used—Maroon finish.....	.50	X129	Cap—Control panel overlay cap—Package of 4.....	
7512	Reactor—Detector plate reactor.....	2.00	X138	Top—Cabinet top.....	
7513	Capacitor pack—Comprising five 0.1 mfd., three 0.5 mfd., one 7. mfd., four 10. mfd., one 0.3 mfd., and one 1. mfd. capacitor in metal container.....	11.00	X139	Stretcher assembly—Comprising front, side, and rear rails.....	
7514	Transformer—1st intermediate frequency transformer.....	3.00	X140	Leg—Cabinet leg.....	
7515	Transformer—2nd intermediate frequency transformer.....	3.00	X141	Foot—Cabinet foot.....	
7516	Board—Resistor board—Less resistors and capacitors.....	1.20	7441	Baffle—Board and grille cloth.....	
7517	Shield—Metal shield—Located under power transformer and Radiotron RCA-82.....	.55		Escutcheon—Station selector escutcheon.....	
7518	Reactor—Filter reactor.....	3.00		CABINET ASSEMBLIES—R-77	
7519	Transformer—Audio input transformer.....	3.25		(Prices furnished upon request)	
7521	Reactor—Tone compensating reactor—For R-76 and R-77.....	1.70	2776	Catch—Door catch and strike with nail—Package of 2 sets.....	
7522	Tone control—Complete with mounting nut—For R-76 and R-77.....	1.90	6294	Hinge—Door hinges—1 set of 4 hinges with mounting screws.....	
8932	Transformer—Power transformer—105-125 volts—50-60 cycles.....	8.25	X130	Knob—Door knob with mounting screw.....	
8933	Transformer—Power transformer—105-125 volts—25-50 cycles.....	10.00	X131	Doors—Left and right hand door—1 pair.....	
8934	Transformer—Power transformer—200-250 volts—50-60 cycles.....	9.00	X132	Top—Cabinet top.....	
			X133	Overlay—Door overlay—Top.....	
			X134	Overlay — Door overlay — Center — Package of 2.....	
			X135	Baffle—Board and grille cloth.....	
			X136	Panel—Control panel.....	
			X137	Cap—Cap ornament for post—One set of 2.....	
			X142	Overlay—Door Overlay—Bottom.....	
			X143	Foot—Cabinet Foot.....	
			X144	Leg—Cabinet Leg.....	
			X145	Stretcher Assembly—Comprising End, Front and Back Rails.....	
			7441	Escutcheon—Station Selector escutcheon.....	