

# SERVICE NOTES

*for*

# RCA Victor Radiola Electrola

# RE-20

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## ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts
Frequency Rating.....	25, 30, 50 and 60 Cycles
Power Consumption (Radio only).....	145 Watts
Power Consumption (Phonograph).....	160 Watts (Approximately)
Type of Circuit.....	A. V. C. Super-Heterodyne with Push-pull Pentode Output Stage
Type and Number of Radiotrons.....	3 RCA-235, 1 UY-224, 3 UY-227, 2 RCA-247, 1 UX-280—Total 10
Number of R. F. Stages.....	One—Two Tuned Circuits Ahead of First Tube
Type of First Detector.....	Tuned Input Grid Bias
Number of Intermediate Stages.....	Two
Type of Tone Control.....	Variable resistor, capacitor and reactor in plate circuit of second detector
Number of Audio Stages (Radio).....	1 (Push-Pull Pentode)
Number of Audio Stages (Phonograph).....	2 (one UY-227 and one Push-pull Pentode)
Type of Magnetic Pickup.....	Low Impedance
Type of Tone Arm.....	Inertia
Diameter of Turntable.....	12 inches
Type of Phonograph Motor.....	Induction, running at synchronous speed
Turntable Speed.....	78 and 33 $\frac{1}{3}$ R. P. M.
Type of Rectifier.....	Full Wave, UX-280
Type of Loudspeaker.....	Electro-Dynamic
Wattage Dissipation in Loudspeaker Field.....	10 Watts
Undistorted Output.....	4.0 Watts

## PHYSICAL SPECIFICATIONS

Height.....	43 inches
Depth.....	16 $\frac{3}{4}$ inches
Width.....	26 $\frac{3}{8}$ inches
Weight Alone.....	152 Pounds
Weight Packed for Shipment.....	209 Pounds

RCA Victor RE-20 is a ten tube De Luxe Super-Heterodyne combination radio receiver and electric phonograph. Except for the differences in cabinet and omission of the automatic record changing mechanism, the RE-20 is similar to the RAE-59.

Service work in conjunction with this model is similar to that of the R-50, R-55 and RAE-59. Reference to these Service Notes should therefore be made when such information is necessary. The replacement parts and the diagrams are given on the following pages.

## REPLACEMENT PARTS

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
<b>RECEIVER ASSEMBLY</b>					
2563	Resistor—6,000 ohms—Carbon type—1 watt—Package of 5.....	\$3.00	7368	Shaft assembly—Drive shaft assembly—Comprising bracket, drive shaft, idler shaft and two drive cord bushings.....	\$0.90
2726	Socket—Five contact Radiotron socket—Complete with insulator—7 used.....	.70	8708	Capacitor—Tuning capacitor assembly—Comprising four variable capacitors, drive, drive cord, spring and dial drum—Assembled.....	12.25
2731	Resistor—10,000 ohms—Carbon type—1 watt—Package of 5.....	2.00	8791	Cover—Receiver chassis shield removable cover.....	1.50
2732	Resistor—110,000 ohms—Carbon type—1 watt—Package of 5.....	2.00	8794	Shield—Receiver chassis shield complete.....	7.25
2736	Resistor—170 ohms—Carbon type—1 watt—Package of 5.....	2.00	<b>S. P. U. REPRODUCER ASSEMBLY</b>		
2740	Cord—Tuning condenser drive cord—Package of 5..	1.00	2240	Resistor—30,000 ohms—Carbon type—1 watt.....	.70
2741	Idler—Tuning condenser drive cord idler—Package of 5.....	.80	2546	Fuse—Glass type—1.5 amperes—Package of 5.....	.50
2746	Socket—Dial lamp socket.....	.50	2882	Socket—Five contact Radiotron socket complete with insulator.....	.50
2747	Cap—Grid contactor cap—Package of 5.....	.50	3045	Resistor—40,000 ohms—Carbon type—1 watt—Package of 5.....	2.50
2749	Capacitor—2400 mmfd.....	1.50	3058	Resistor—100,000 ohms—Carbon type—1 watt—Package of 5.....	2.50
2970	Resistor—500,000 ohms—Carbon type—1 watt—Package of 5.....	2.50	3085	Capacitor—400 mmfd.....	.60
3031	Board—Terminal board complete with insulator—Three terminals.....	.50	3099	Capacitor—0.005 mfd.....	.75
3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5.....	2.00	3145	Resistor—700 ohms—Carbon type—3 watt.....	.85
3045	Resistor—40,000 ohms—Carbon type—1 watt—Package of 5.....	2.50	3146	Board—Terminal board complete with insulator—Less capacitor No. 3099.....	1.25
3050	Resistor—14,000 ohms—Carbon type—3 watt.....	.60	3147	Cover—Fuse cover with insulator.....	.95
3137	Knob—Station selector, Volume control or tone control knob—Package of 5.....	3.25	3149	Switch—Toggle type—Operating switch complete with mounting nuts and escutcheon plate.....	1.25
3138	Board—Terminal board complete with soldering terminal.....	.50	6114	Resistor—20,000 ohms—Carbon type—1 watt—Package of 5.....	2.00
3139	Coil—1st detector and oscillator coil complete with shield.....	3.95	7290	Reactor—Filter reactor.....	4.75
3142	Volume Control—Volume control complete with mounting nut.....	1.65	7291	Board—Terminal board and four contact radiotron socket complete with all terminals and fuse clips.....	.50
3143	Tone control—Tone control complete with mounting nut.....	1.50	7293	Strip—Terminal strip—Complete with 8 terminals..	1.15
3144	Inductor—Tone control inductor.....	1.65	7294	Cover—Terminal strip cover for 7293.....	.60
3153	Resistor—1500 ohms—Carbon type—1 watt—Package of 5.....	2.75	7295	Strip—Terminal strip—Complete with 5 terminals..	.85
3154	Resistor—2,000 ohms—Carbon type—1 watt—Package of 5.....	2.75	7370	Cover—Terminal strip cover for 7295.....	.55
3220	Resistor—15 ohms—Flexible wire type—Package of 5.....	2.75	8710	Transformer—Power transformer—105-125 volts, 50-60 cycles.....	12.50
3240	Nut—Shield cover mounting nut—Package of 13...	.50	8711	Transformer—Audio transformer.....	6.60
6034	Cushion—Receiver chassis sponge rubber cushion—Package of 4.....	1.20	8712	Capacitor pack—Comprising one 2.0 mfd., one 3.0 mfd., one 0.1 mfd., and two 0.5 mfd. capacitors in metal container—50-60 cycles.....	7.80
6114	Resistor—20,000 ohms—Carbon type—1 watt—Package of 5.....	2.00	8749	Transformer—Power transformer—105-125 volts, 25-40 cycles.....	20.50
6220	Capacitor—0.05 mfd.—Package of 5.....	1.10	8750	Transformer—Power transformer—220 volts, 50-60 cycles.....	13.00
7062	Capacitor—Adjustable capacitor—15-70 mmfd.—2 used.....	1.00	8751	Capacitor pack—Comprising two 4.0 mfd., two 0.5 mfd. and one 0.1 mfd. capacitors in metal container.....	9.50
7063	Capacitor—Adjustable capacitor 5-40 mmfd.—3 used.....	1.00	10907	Fuse—Glass type—3 amperes—Package of 5.....	.50
7278	Coil—R. F. and link circuit coil.....	2.50	<b>LOUDSPEAKER ASSEMBLY</b>		
7280	Board—Terminal board complete with six terminals.....	.90	7292	Screw assembly—Speaker mounting screw assembly—Comprising two screws, two nuts, two washers and one plate—Package of 1 set.....	.95
7281	Transformer—1st intermediate transformer.....	3.25	8558	Cone—Speaker paper cone.....	4.00
7282	Transformer—2nd intermediate transformer.....	3.50	8559	Ring—Cone retaining ring.....	.80
7283	Transformer—3rd intermediate transformer.....	3.25	8713	Coil—Speaker field coil.....	5.00
7284	Board—Resistor board complete with insulator—Less resistors, capacitors and coils.....	2.70	<b>MOTOR BOARD AND MISCELLANEOUS ASSEMBLIES</b>		
7285	Capacitor pack—Comprising one 1.0 mfd., one 0.5 mfd., and two 0.1 mfd. capacitors in metal container—6 leads.....	3.50	X-75	Board—Motor board.....	5.15
7286	Capacitor pack—Comprising one 1.0 mfd., one 0.5 mfd., and three 0.1 mfd. capacitors in metal container—10 leads.....	4.50	X-76	Block—Microphone wood block.....	1.35
7287	Bracket—Dial lamp bracket and indicator.....	.50	2614	Switch—Automatic brake switch.....	1.40
7288	Scale—Dial scale—Package of 5.....	2.50	2620	Cushion—Pickup rubber cushions—Comprising 1 damper and two pivot cushions—Package of 5 sets.....	1.25
7297	Coil—R.F. choke coil for 2nd detector or automatic volume control.....	.75	2749	Capacitor—2400 mmfd.....	1.50
7298	Capacitor—0.01 mfd.....	.80	2767	Spring—Pickup magnet retaining spring—Package of 10.....	.50
7299	Capacitor—745 mfd.....	.70	2768	Armature—Pickup armature.....	.50
7331	Cable—Shielded receiver cable.....	2.30	2770	Plate—Pickup damper plate—Package of 5.....	.50
7367	Drum—Dial scale drum.....	1.10	2771	Screw—Pickup damper plate mounting screw—Package of 10.....	.50

## REPLACEMENT PARTS—(Continued)

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
2779	Pointer—Selector switch pointer—Package of 10 . . .	\$0.50	7327	Mechanism—Microphone mechanism complete with cord . . . . .	14.95
3052	Screw assembly—Pickup pole shoe mounting screw assembly comprising screw, nut and washer—Package of 10 sets . . . . .	.50	7375	Resistor—13175 ohms tapped porcelain resistor . . . . .	2.10
3137	Knob—Selector switch knob—Package of 5 . . . . .	3.25	7387	Reactor—Tone compensating reactor complete with mounting bracket . . . . .	.85
3157	Gear—Driving gear—Located on turntable spindle above top plate . . . . .	1.00	7388	Spindle—Turntable spindle with fibre gear—110 volts or 220 volts—60 cycles . . . . .	6.00
3159	Friction brake—Gear reducing friction brake spring with felt pad—Complete with mounting rivet—Package of 4 . . . . .	2.00	7389	Rotor and shaft—110 volts or 220 volts—60 cycles . . . . .	9.00
3161	Spring—Shift lever spring—Package of 5 . . . . .	1.20	7390	Motor mounting washers and springs—Comprising 9 cup washers, 3 "C" washers and 6 springs—Package of 1 set . . . . .	.75
3167	Magnet—Pickup magnet . . . . .	2.60	7393	Block—Pickup connector block and wire . . . . .	.90
3169	Pole shoe—Pickup pole shoe—R.H. . . . .	1.45	7400	Spindle—Turntable spindle with fibre gear—25 cycles . . . . .	8.00
3170	Pole shoe—Pickup pole shoe—L.H. . . . .	1.45	7401	Rotor and shaft—25 cycles . . . . .	10.00
3183	Socket—Microphone socket—Package of 5 . . . . .	2.00	7443	Rotor and shaft—110 volts or 220 volts—50 cycles . . . . .	9.00
3184	Board—Pickup terminal board complete with two terminals . . . . .	.50	7444	Spindle—Turntable spindle with fibre gear—110 volts or 220 volts—50 cycles . . . . .	6.00
3205	Screw—Pickup needle holding screw—Package of 10 . . . . .	.80	8795	Motor—Motor complete—110 volts—60 cycles . . . . .	19.85
3207	Screw—Pickup cover mounting screw—Package of 10 . . . . .	.50	8800	Motor—Motor complete—110 volts—25 cycles . . . . .	24.65
3208	Screw assembly—Pickup mounting screw assembly—Comprising screw, nut and washer—Package of 10 . . . . .	.60	8856	Motor—Motor complete—110 volts—50 cycles . . . . .	19.85
3211	Washer—Turntable spindle leather washer—Package of 10 . . . . .	.50	8872	Shift lever—Shift lever complete with mounting screws . . . . .	1.60
3215	Plug—Microphone cord plug . . . . .	.50	8873	Brake—Automatic brake complete with mounting screws and washers . . . . .	3.50
3216	Cushions—Microphone unit suspension rubbers—Package of 6 . . . . .	.50	8877	Turntable—Turntable with cover . . . . .	4.60
3261	Cap—Rubber record drive cap—Package of 5 . . . . .	.50	8880	Arm—Pickup arm complete less pickup unit . . . . .	6.00
3278	Bearing—Rotor shaft fibre thrust bearing and cork button—Package of 10 . . . . .	.50	8881	Switch—Selector switch with mounting nut . . . . .	6.40
3279	Screw and nut—Rotor shaft thrust bearing adjusting screw and lock nut—Package of 10 . . . . .	.50	8882	Cable—Main cable—From amplifier to input transformer, tapped resistor and selector switch . . . . .	2.30
3280	Washer—Metal washer—Located on turntable spindle underneath gear reducing unit—Package of 20 . . . . .	.50	8883	Microphone—Microphone complete . . . . .	21.50
3281	Pawl—Gear reducing pawl with mounting stud . . . . .	.50	8884	Frame—Microphone frame assembly—Less cover assemblies . . . . .	1.50
6119	Motor hanging stud—Package of 6 . . . . .	0.50	8885	Cover—Microphone screen cover assembly . . . . .	1.25
6120	Screw—For holding turntable spindle bearing and grease cap—Package of 10 . . . . .	.50	8886	Cord—Microphone 3 conductor cord . . . . .	.80
6121	Bearing—Turntable spindle bearing and grease cap . . . . .	1.10	8887	Motor—Motor complete—220 volts—60 cycles . . . . .	19.85
6216	Rod—Automatic brake trip rod with nut—Package of 5 . . . . .	.50	8888	Motor—Motor complete—220 volts—50 cycles . . . . .	19.85
6218	Screw and washer—Motor board mounting screw and washer—Package of 10 . . . . .	.50	10174	Spring—Automatic brake springs—Set of 4 springs—Package of 2 sets . . . . .	.50
6221	Cover—Pickup cover . . . . .	.75	10184	Plate—Automatic brake latch trip plate with mounting screws—Package of 5 . . . . .	.60
6222	Pickup—Pickup unit complete . . . . .	12.50	<b>CABINET ASSEMBLY</b>		
6223	Cable—Power cable from motor and motor switch to S. P. U. terminal board . . . . .	.65	X-77	Panel—Control panel . . . . .	4.70
6224	Receptacle—Tungstone needle box receptacle . . . . .	.75	X-78	Escutcheon—Tuning dial wood escutcheon . . . . .	1.40
6225	Volume control—Record volume control—Complete with mounting nut and washer . . . . .	1.35	X-79	Baffle board and grille cloth . . . . .	1.40
6226	Transformer—Phono input transformer . . . . .	3.75	X-80	Stretcher . . . . .	4.50
6227	Resistor board assembly—Comprising one 200,000 ohms—Carbon type— $\frac{1}{4}$ watt resistor and one 2400 mmfd. tooth pick capacitor on board . . . . .	1.35	X-81	Foot . . . . .	.75
6228	Resistor—200,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 . . . . .	2.50	X-82	Ornament—Leg ornament . . . . .	1.20
6229	Cable—30' shielded red cable from selector switch to volume control—Package of 2 . . . . .	.70	X-83	Lid—Cabinet lid . . . . .	13.00
6230	Cable—30' shielded green cable from selector switch to volume control—Package of 2 . . . . .	.70	X-84	Doors—R.H. and L.H. doors—Less cabinet door hinges and pulls—Package of 1 pair . . . . .	10.90
6231	Cable—18' shielded black cable from selector switch to pickup terminal board—Package of 2 . . . . .	.60	2776	Catch—Door catch and strike with nail—Package of 2 sets . . . . .	.50
6232	Box—Needle box with lid—Package of 2 . . . . .	.90	3136	Screen—Dial screen—Package of 2 . . . . .	.50
6233	Weight—Recording weight . . . . .	1.40	3156	Label—Metal trade mark label—Package of 5 . . . . .	2.50
6234	Escutcheon—Speed escutcheon plate with mounting screws—Package of 2 . . . . .	.70	6211	Pull—Door pull with mounting screw—Package of 4 . . . . .	1.20
6235	Escutcheon—Selector switch escutcheon—Package of 5 . . . . .	3.50	6219	Hinge—Cabinet lid hinge with mounting screws—Package of 2 . . . . .	.50
7084	Cover—Turntable cover . . . . .	.50	7279	Support—Dial screen metal support . . . . .	.50
7151	Back—Pickup housing back . . . . .	.50	8876	Support—Lid support . . . . .	2.00
7305	Gear reducing unit complete . . . . .	4.50	9409	Cabinet—Cabinet complete less equipment . . . . .	116.35
			10254	Hinge assembly—Cabinet door hinge—Comprising 4 hinges and 16 mounting screws—Package of 1 set . . . . .	1.70



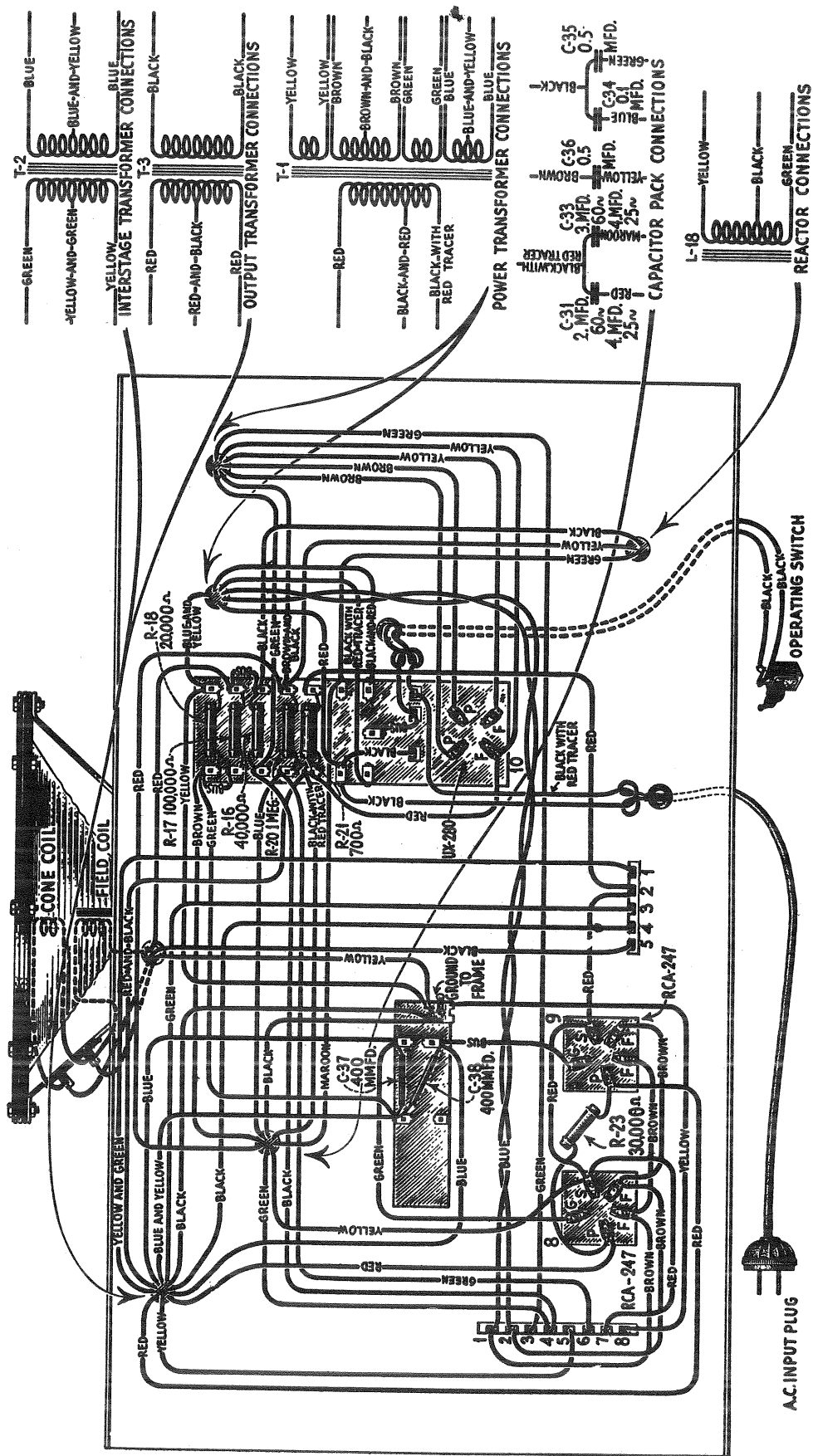


Figure 3—S. P. U. Reproducer Wiring Diagram

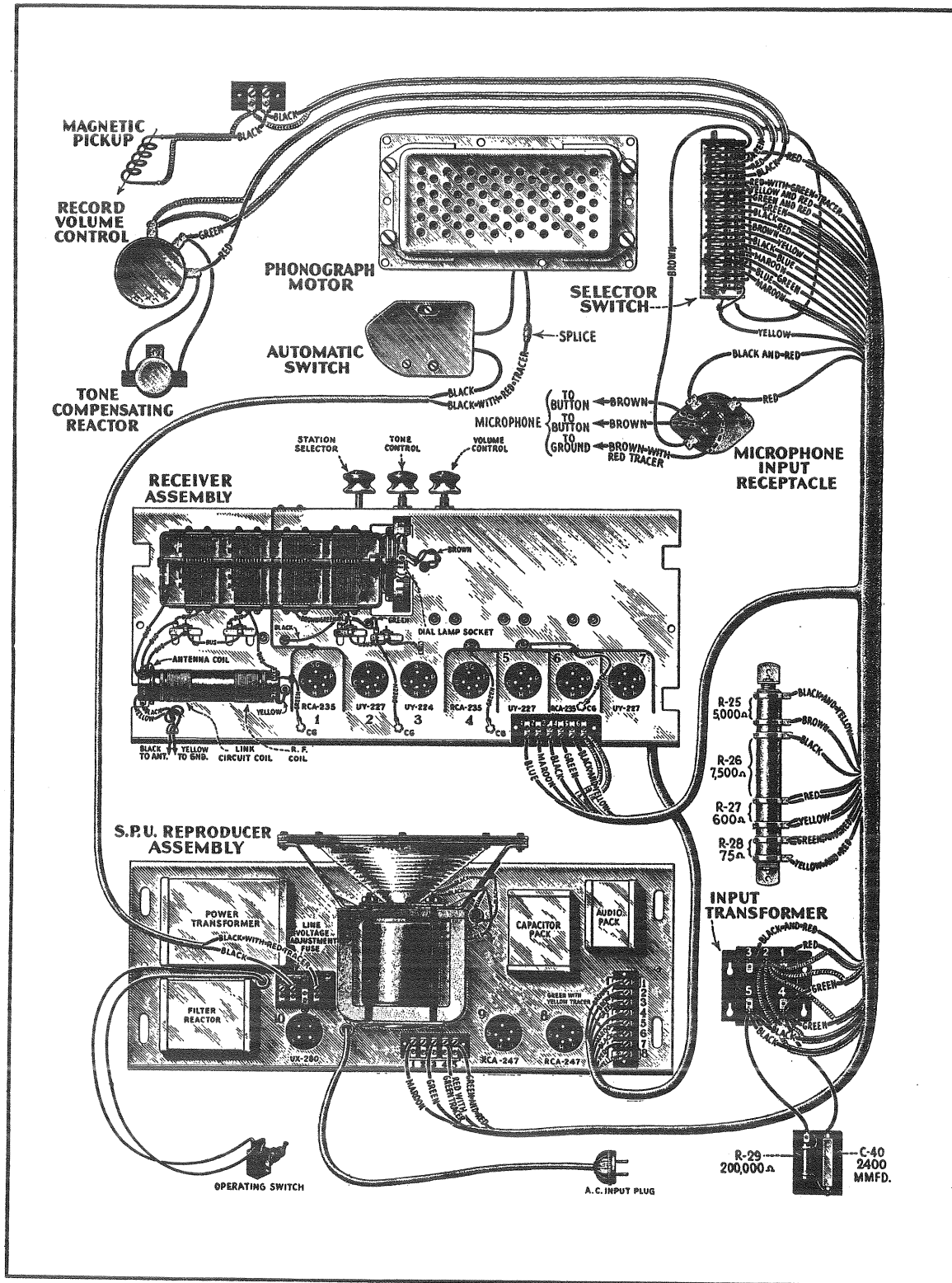


Figure 4—Assembly Wiring

Service Division  
**RCA Victor Company, Inc.**  
 Camden, N. J., U. S. A.