

Instructions for

Counter Demonstrator CRD-9 (DC)

(Direct Current Model)

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.

INSTALLATION

Preliminary—After withdrawing the instrument from the shipping container, remove the shipping block from the bottom of the cabinet. Then remove the corrugated support and tape holding the pickup arm. Unpack the turntable and Radiotrons from their separate containers.

Turntable—Mount the turntable on the motor spindle. Make sure that the pin on the spindle engages the slot in the turntable hub.

Radiotrons—To install the Radiotrons, slide the small door in the rear panel toward the right. The positions of the tubes in the respective sockets are shown on the rating label which can be seen through the door opening. They are, left to right, as follows: RCA-89, RCA-89, and RCA-37. Attach the two flexible leads, indicated on the label, to the top terminals of the RCA-89 Radiotrons—press the spring contact clips down firmly.

Power Supply—After placing the demonstrator in its desired location on the counter, connect the power cord to an electrical outlet supplying direct current within the voltage limits specified on the rating label. **IMPORTANT**—*The amplifier will not function unless the prongs of the attachment plug are inserted in the outlet so as to give the proper polarity. The correct position of the plug must be determined by trial operation.*

OPERATION

The controls of the demonstrator are located as follows (viewing the instrument from the rear):

Power Switch—On right-hand side panel. This switch is "on" when the knob is upward.

Motor Switch—On left-hand side panel. This switch is "on" when the knob is upward.

Volume Control—On rear of cabinet, near right-hand side. Turn this control clockwise to increase the volume.

Speed Regulator—Lever extending from under turntable on left side of motor board.

The demonstrator should be operated as follows:

1. Set the Power Switch to the "on" position.
2. Place a standard (78 r.p.m.) record on the turntable. Insert a needle in the pickup needle holder and tighten the needle screw. Any of the following types of needles may be used:
 - (a) RCA Victor "Tungstone"—Full Volume. This needle with care, will play from 100 to 200 records.
 - (b) RCA Victor "Chromium"—either green or orange shank. The green needle will play 75 to 100 records, and the orange needle approximately 25 records. *Never re-insert a used Chromium needle after once removed from the pickup.*

(c) RCA Victor Steel—Full Volume. A new steel needle should be inserted before playing each record.

3. Start the turntable by setting the Motor Switch to the "on" position.
4. Lower the needle onto the smooth outer rim of the record and slide it onto the first groove.
5. Adjust the Volume Control to obtain the desired volume.

NOTE—If the maximum volume, obtained with the volume control in the extreme clockwise position, is insufficient to meet the requirements of a particular installation, the locking device may be re-adjusted as follows: (1) Remove volume control knob by pulling outward; (2) take off rear panel by removing screws at edges; (3) loosen lock nut holding right angled bracket which serves as stop for metal pointer on shaft; (4) turn shaft clockwise until volume is increased to desired level; (5) lock bracket in new position against pointer, by retightening lock nut; and (6) replace rear panel and knob.

6. When the record has been played, or when it is desired to interrupt the record, lift the pickup and lower it outside the turntable toward the right. Stop the turntable by setting the Motor Switch downward.
7. When operation is to be discontinued for an appreciable interval, set the Power Switch to the "off" position, downward.

NOTE—The pickup should not be left resting on a record or on the turntable when not playing.

Turntable Speed—The correct speed of the turntable is 78 revolutions per minute. This should be checked frequently by placing a piece of white paper under the edge of the record and counting the revolutions during one minute *while playing*. If speed is under 78 r.p.m., move Speed Regulator toward "F"; if over 78 r.p.m., move the lever toward "S," until the correct speed is obtained.

CARE OF INSTRUMENT

Cabinet—The cabinet may be polished at necessary intervals, using any good non-abrasive lacquer polish (such as RCA Victor Cabinet Cleaner), which should be applied with a soft cloth. The motor board and pickup arm should be kept free of dust, using a slightly moist cloth if necessary.

Radiotrons—*Always set the Power Switch in the "off" position before removing any Radiotron from its socket.* The Radiotrons should be tested periodically by substituting a new one in place of each in succession and comparing the reproduction. If a new Radiotron shows appreciable increase in volume the old one is worn out and should be discarded.

Lubrication—The motor should be regularly lubricated, as follows: **Monthly**—Remove the turntable and apply light machine oil in each of the two "OIL" holes leading to the motor shaft main bearings, also at the top spindle bearing. Remove the rear panel (after first pulling off the volume control knob) and apply light machine oil on the bottom spindle bearing, also on the governor friction pad (which presses against metal disc adjacent to governor weights). **Semi-annually**—With rear panel removed, apply two or three drops of light machine oil at the two motor shaft *thrust* bearings (one located to right of commutator and the other to left of governor); also apply light motor grease (or petroleum jelly) on the worm gear.

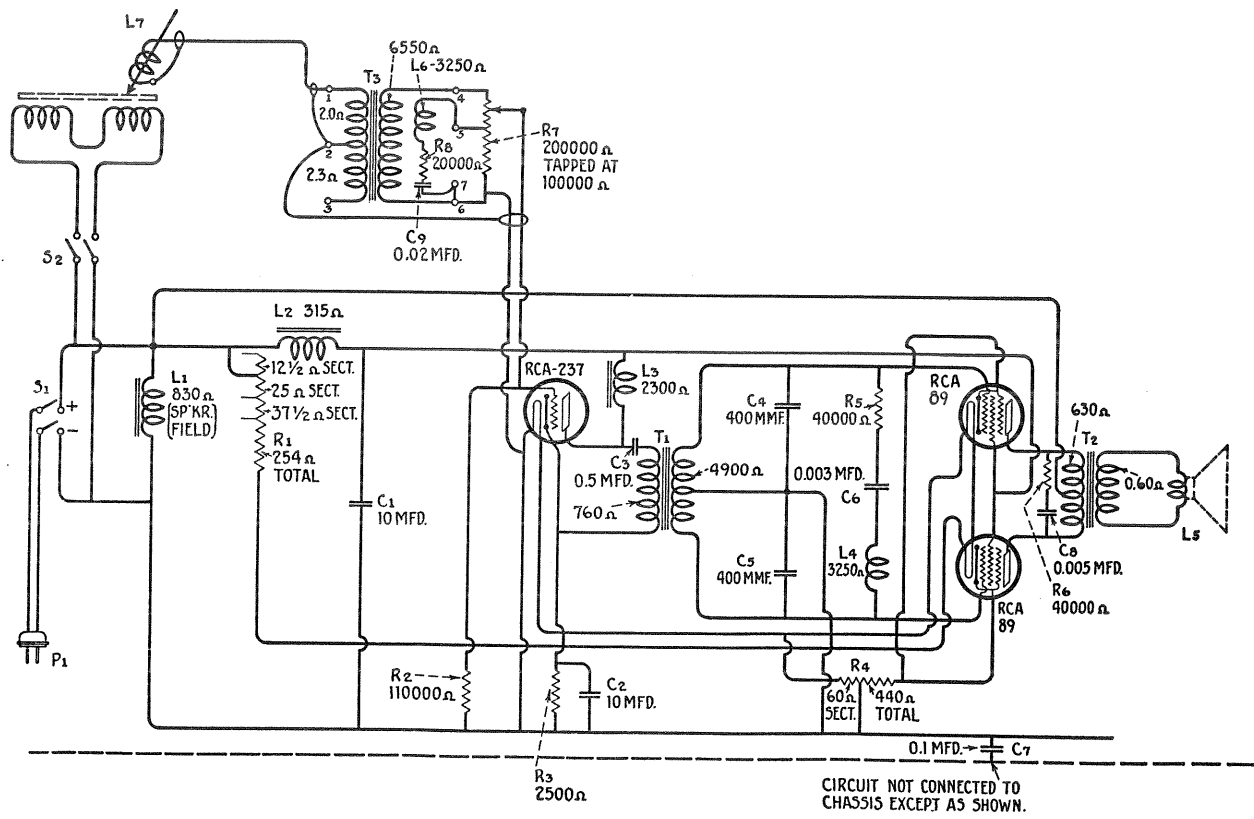


Figure A—Schematic Circuit Diagram

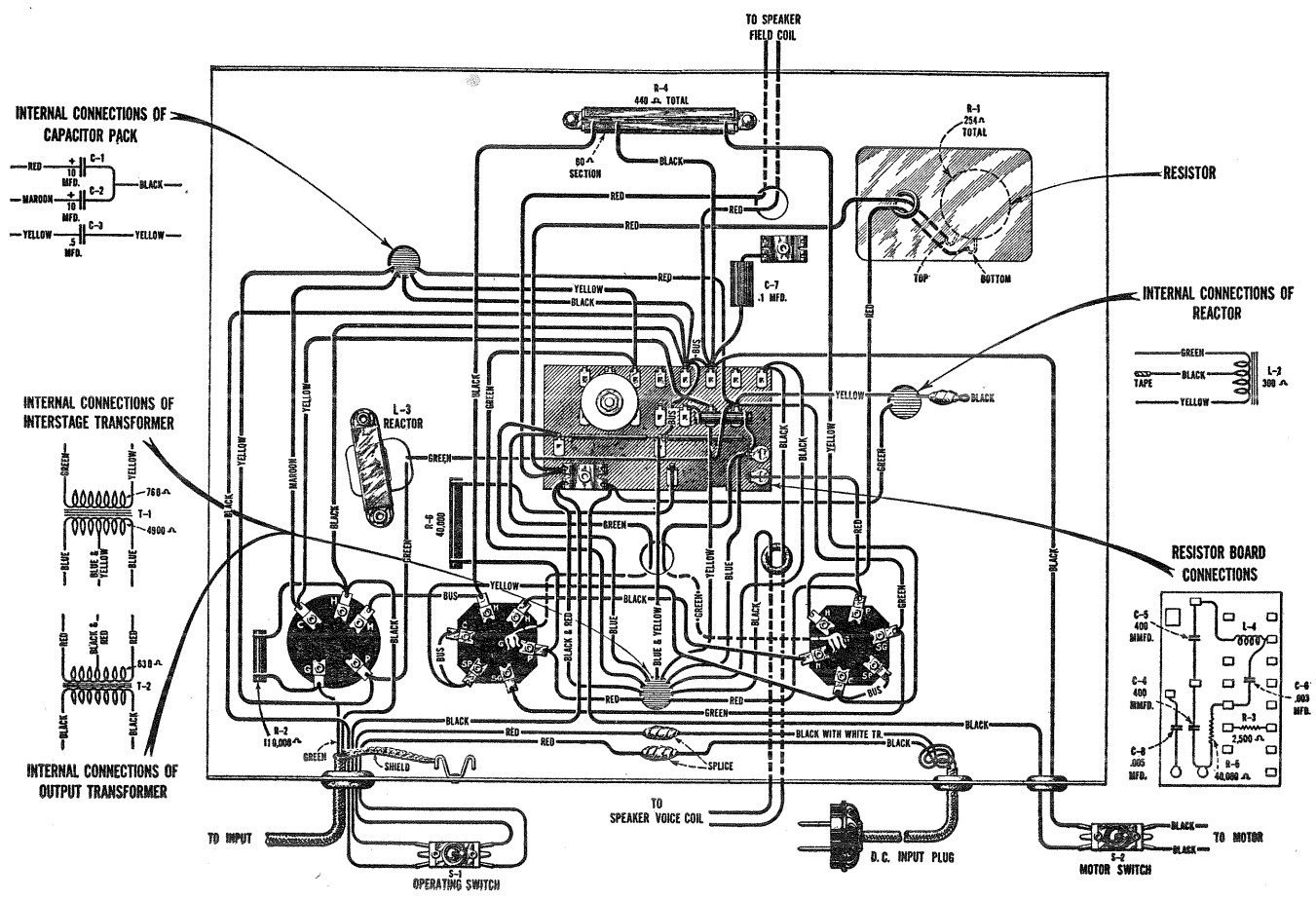


Figure B—Amplifier Wiring

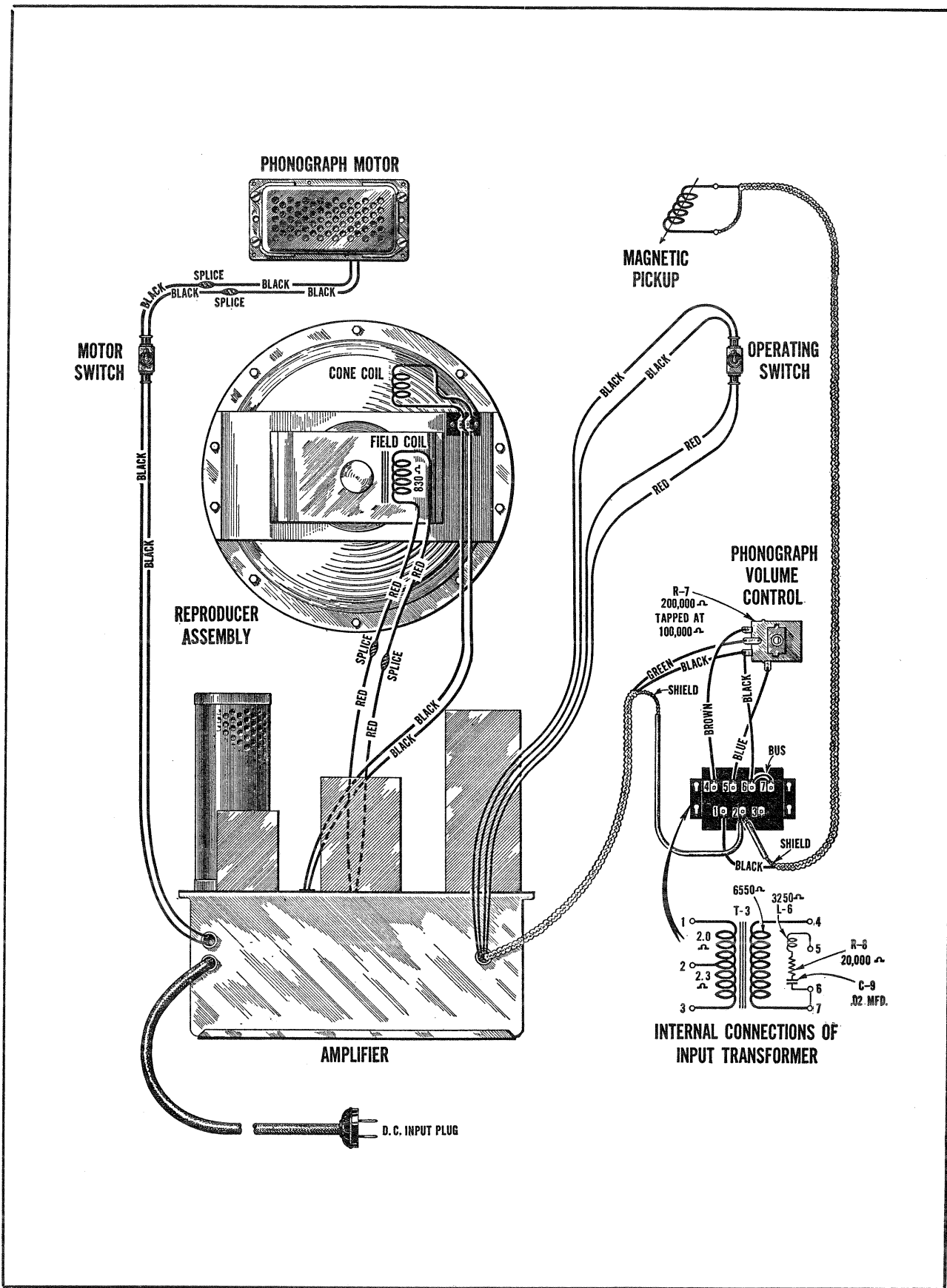


Figure C—Assembly Wiring

RADIOTRON SOCKET VOLTAGES

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

REPLACEMENT PARTS

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

Stock No.	DESCRIPTION	List Price	Stock No.	DESCRIPTION	List Price
	PICKUP, ARM AND TURNTABLE ASSEMBLIES				
3385	Coil—Pickup coil.....	\$0.50	7270	Reactor—Filter reactor.....	\$4.00
3386	Cover—Pickup cover.....	.75	7458	Resistor—Flat type—440 ohms—Tapped at 60, 130 and 250 ohms—Complete with mounting rivets.....	1.10
3387	Screw assembly—Pickup mounting screw assembly—Comprising one screw, one nut, and one washer—Package of 10.....	.60	7485	Socket—Radiotron 6 contact socket.....	.70
3388	Screw—Pickup needle holding screw—Package of 10.....	.80	7512	Reactor—RCA-237 plate reactor.....	2.00
3389	Rod—Automatic brake trip rod with lock nut—Package of 5.....	.50	7568	Transformer—Audio transformer assembly—Comprising interstage and output transformer in metal container.....	4.48
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets.....	.65	7573	Resistor—Filament regulating resistor.....	2.60
3417	Armature—Pickup armature.....	.75	7574	Shield—Filament resistor shield complete....	1.60
3418	Cushions—Pickup rubber cushions—Comprising one damper, two spacer cushions and one damper bushing—Pkg. of 5 sets.....	1.25		MOTOR ASSEMBLIES	
3419	Screw—Pickup cover mounting screw—Package of 10.....	.50	3486	Motor mounting assembly—Comprising 1 washer, 4 spacers, 4 screws, 4 lock washers and 4 nuts.....	.30
6335	Pickup—Pickup unit complete.....	12.00	3487	Governor assembly — Comprising friction disc, two springs, two balls—Assembled and mounted.....	2.00
6346	Back—Pickup housing back.....	.65	3488	Pin—Governor (speed) regulating pin.....	.30
7084	Cover—Suede cover for turntable.....	.50	3489	Indicator pointer—Speed indicator pointer complete with mounting screws and washers.....	1.65
7530	Arm—Pickup arm complete—Less escutcheon, pickup, pickup mounting screw, nut and washer.....	6.00	6387	Spindle—Turntable spindle with fibre gear...	14.20
8968	Turntable complete.....	2.58	6388	Rotor—Rotor and shaft.....	16.20
	AMPLIFIER ASSEMBLIES		8970	Motor—D. C. 110 volt motor complete.....	34.40
2882	Socket—Radiotron 5 contact socket.....	.50		REPRODUCER ASSEMBLIES	
3045	Resistor — 40,000 ohms — Carbon type — 1 watt—Package of 5.....	2.50	3483	Bolt—Reproducer mounting bolt assembly—Comprising 2 hook bolts, 2 washers, 2 lock washers and 2 nuts.....	.78
3085	Capacitor—400 mmfd.—Located on resistor board.....	.60	6382	Transformer—Input transformer.....	3.88
3099	Capacitor—0.005 mfd.—Located on resistor board.....	.75	8916	Cone—Reproducer cone—Package of 5.....	15.00
3295	Resistor—110,000 ohms—Carbon type—½ watt—Package of 5.....	2.50	9424	Coil assembly—Comprising field coil, magnet and cone support.....	9.00
3476	Cable—Shielded two conductor cable—Approximately 13½" long.....	.36		MISCELLANEOUS PARTS	
3478	Resistor—254 ohms—Porcelain type—Tapped at 12.5, 12.5, 12.5 and 216.5 ohms....	1.86	3118	Resistor—100,000 ohms—Carbon type—¼ watt—Package of 5.....	2.00
3480	Capacitor—0.1 mfd.....	1.34	3484	Switch—Power or motor switch—Double pole, single throw—Toggle type.....	1.76
3481	Coil—Choke coil—Located on resistor board.....	.70	6288	Knob—Volume control knob—Package of 5.....	1.50
3482	Capacitor—0.003 mfd.—Located on resistor board.....	1.52	6384	Volume control complete with mounting washer and nut.....	1.60
6383	Capacitor pack—Comprising two 10.0 mfd. and one 0.5 mfd. capacitors in metal container.....	7.84	7054	Cord—Power cord.....	1.00

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RCA Victor Company, Inc.

Camden, N. J., U. S. A.

Instructions for Counter Demonstrator CRD-9 (A. C. Operated)

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.

INSTALLATION

Preliminary—After withdrawing the instrument from the shipping container, remove the shipping block from the bottom of the cabinet. Then remove the corrugated support and tape holding the pickup arm. Unpack the turntable and Radiotrons from their separate containers.

Turntable—Mount the turntable on the motor spindle. Make sure that the pin on the spindle engages the slot in the turntable hub.

Radiotrons—To install the Radiotrons, slide the small door in the rear panel toward the right. The positions of the tubes in the respective sockets are shown on the rating label which can be seen through the door opening. They are, left to right, as follows: RCA-80, RCA-47, RCA-47 and RCA-30.

Power Supply—After placing the demonstrator in its desired location on the counter, connect the power cord to an electrical outlet supplying alternating current at the voltage and frequency (cycles) specified on the rating label.

OPERATION

The controls of the demonstrator are located as follows (viewing the instrument from the rear):

Power Switch—On right-hand side panel (upper switch). This switch is "on" when the knob is upward.

Motor Switch—On left-hand side panel. This switch is "on" when the knob is upward.

Transfer Switch—On right-hand side panel (lower switch) just above external input jacks. The positions of this switch are upward when using the demonstrator pickup and downward for external input.

Volume Control—On rear of cabinet, near right-hand side. Turn this control clockwise to increase the volume.

To play records on the turntable of the demonstrator, proceed as follows:

1. Set the Power Switch to the "on" position. Make sure that the Transfer Switch is set in the upward position.
2. Place a standard (78 r.p.m.) record on the turntable. Insert a needle in the pickup needle holder and tighten the needle screw. Any of the following types of needles may be used:
 - (a) RCA Victor "Tungstone"—Full Volume. This needle with care, will play from 100 to 200 records.
 - (b) RCA Victor "Chromium"—either green or orange shank. The green needle will play 75 to 100 records, and the orange needle approximately 25 records. *Never re-insert a used Chromium needle after once removed from the pickup.*

(c) RCA Victor Steel—Full Volume. A new steel needle should be inserted before playing each record.

3. Start the turntable by setting the Motor Switch to the "on" position.
4. Lower the needle onto the smooth outer rim of the record and slide it into the first groove.
5. Adjust the Volume Control to obtain the desired volume.

NOTE—If the maximum volume, obtained with the volume control in the extreme clockwise position, is insufficient to meet the requirements of a particular installation, the locking device may be re-adjusted as follows: (1) Remove volume control knob by pulling outward; (2) take off rear panel by removing screws at edges; (3) loosen lock nut holding right angled bracket which serves as stop for metal pointer on shaft; (4) turn shaft clockwise until volume is increased to desired level; (5) lock bracket in new position against pointer, by retightening lock nut; and (6) replace rear panel and knob.

6. When the record has been played, or when it is desired to interrupt the record, lift the pickup and lower it outside the turntable toward the right. Stop the turntable by setting the Motor Switch downward.
7. When operation is to be discontinued for an appreciable interval, set the Power Switch to the "off" position, downward.

NOTE—The pickup should not be left resting on a record or on the turntable when not playing.

External Input—To use the demonstrator amplifier and loudspeaker for reproduction from an external source of audio frequency input, proceed as follows:

1. Plug the two wires (which should be equipped with pin terminals) from the external source into the pin jacks located below the Transfer Switch.

NOTE—The impedance of the external input circuit should match that of the demonstrator input, which is approximately 10 ohms at 1,000 cycles.

2. Set the Power Switch to the "on" position. The Motor Switch should be in the "off" position.
3. Set the Transfer Switch in the downward position. Signals originating in the external input circuit will now be heard through the demonstrator loudspeaker.
4. Adjust the volume to the desired level by means of the demonstrator Volume Control.
5. When through operating, set the Power Switch to the "off" position.

CARE OF INSTRUMENT

Cabinet—The cabinet may be polished at necessary intervals, using any good non-abrasive lacquer polish (such as RCA Victor Cabinet Cleaner), which should be applied with a soft cloth. The motor board and pickup arm should be kept free of dust, using a slightly moist cloth if necessary.

Radiotrons—Always set the Power Switch in the "off" position before removing any Radiotron from its socket. The Radiotrons should be tested periodically by substituting a new one in place of each in succession and comparing the reproduction. If a new Radiotron shows appreciable increase in volume the old one is worn out and should be discarded.

Motor—The motor should be lubricated monthly with light oil. Two oil holes, on the top of the motor, are accessible when the turntable is removed.