RCA VICTOR MODEL 322-E

Six-Tube, Three-Band A. C. Radio-Phonograph

SERVICE NOTES

ELECTRICAL SPECIFICATIONS

Voltage Rating	105–125 Volts and 105–130/200–250 Volts (Double Range Transformer)
Frequency Rating	50 and 60 Cycles
Power Consumption	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

PHYSICAL SPECIFICATIONS

Height	42 1/8 Inches
Width	23 5/8 Inches
Depth	15 Inches

This six-tube, three-band A. C. radio-phonograph combination instrument combines the performance of the all-wave chassis and the perfected manual phonograph mechanism. Outstanding world-wide radio performance and unusual musical record quality characterize this instrument.

The receiver is of the "all-wave" type and has a tuning range of from 140 K. C. to 410 K. C., 540 K. C. to 1720 K. C. and 5400 K. C. to 18,000 K. C. This tuning range includes all of the important short-wave broadcasting, standard broadcasting and European broadcasting bands. Excellent sensitivity, selectivity and tone quality, together with a number of important operating features, make this an outstanding receiver of its type.

Operating features include a full-vision "airplane" type dial, double-ratio vernier drive, high-frequency tone control, three-position band switch with visual band indicator on dial, and an automatic volume control. High tonal fidelity is realized by adequate power output, 1.9 watts undistorted, and a well-designed reproducer unit. The record-reproducing facilities make use of the audio amplifier and loudspeaker of the receiver.

DESCRIPTION OF ELECTRICAL CIRCUIT

RADIO

The general circuit arrangement consists of an R. F. stage, a combined oscillator and first detector, an I. F. stage, a combined second detector, first audio stage and automatic volume control and a single Pentode output stage. An RCA-80 rectifier, together with a suitable filtering system, provides plate and grid voltages for all tubes and field excitation for the loudspeaker. Figure 1 shows the schematic circuit diagram, Figure 2 the chassis wiring, and Figure 3 the loudspeaker wiring.

The signal enters the receiver through a shielded antenna lead and is applied to the grid of the R. F. tube through the antenna coupling transformer. The secondary of this transformer is tuned to the signal frequency by means of one unit of the gang-capacitor. The output of this stage is transformer coupled to the grid circuit of the first detector, which is also tuned to the signal frequency by a unit of the gang-capacitor.

Combined with the signal in the first detector is the local oscillator, which is always at a 460 K. C. frequency difference (higher) from the signal frequency. A separate coil system and the third unit of the gang-capacitor are used in this circuit.

In conjunction with these three tuned circuits, it is well to point out that three different groups of tuned circuits are used, one for each tuning band. A three-position selector switch is provided for selecting the

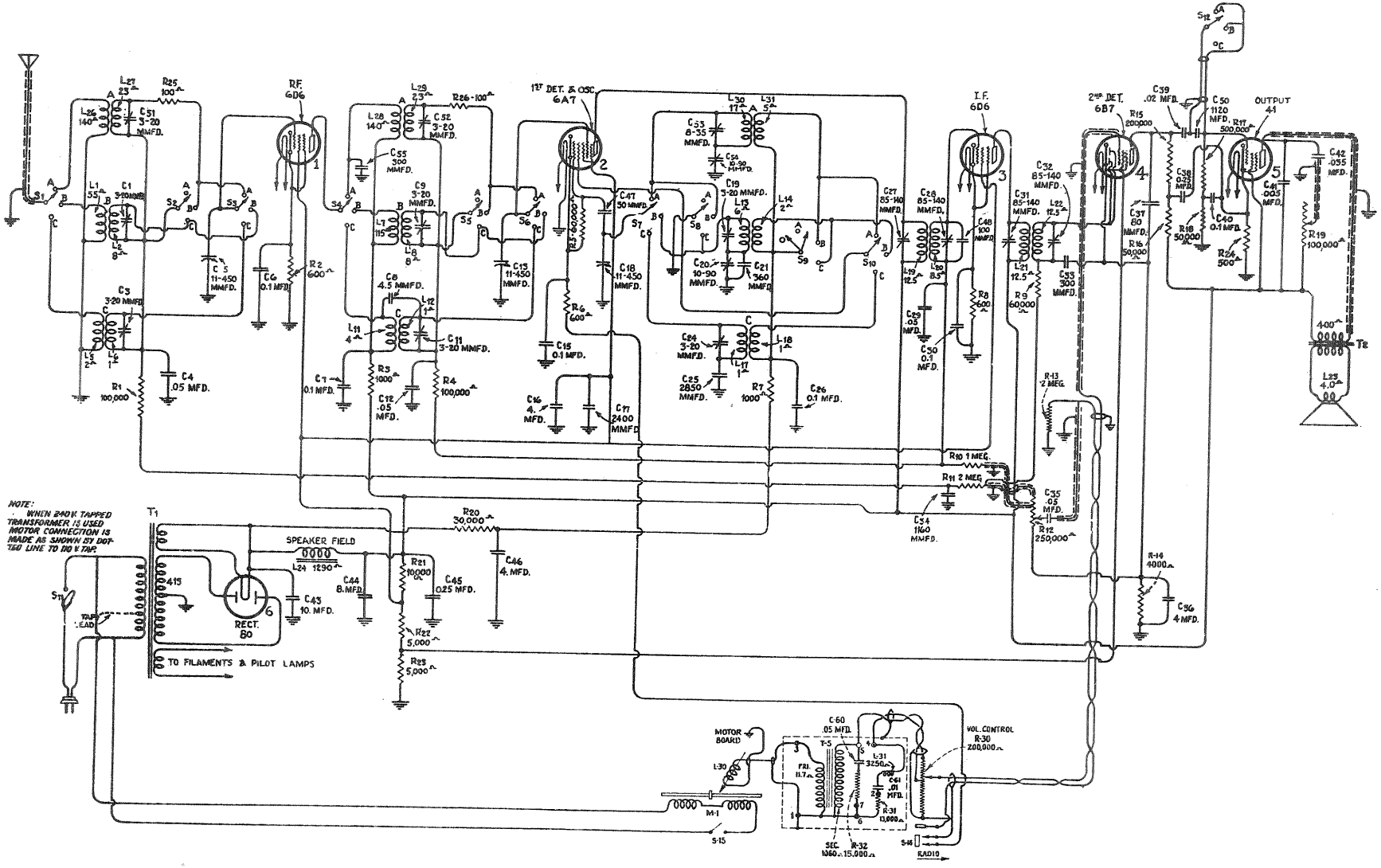
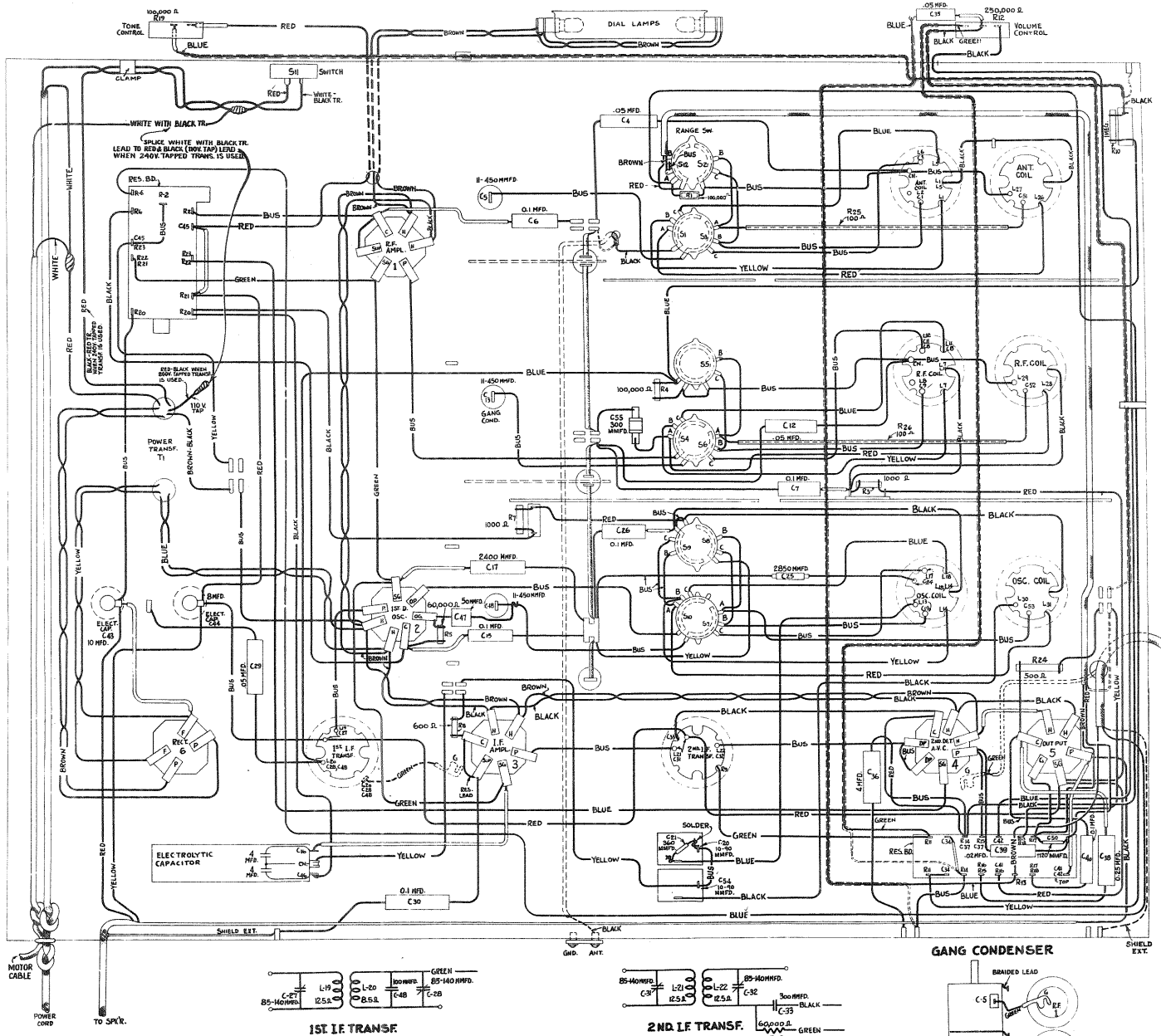
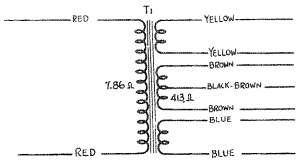
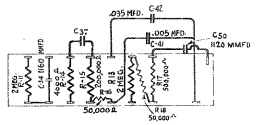


Figure 1—Schematic Circuit Diagram—Some models may have R-32 comprised of two resistors, one internal (4000-ohm) and one external (10,000-ohm)

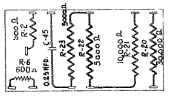


INTERNAL CONNECTIONS OF POWER TRANSFORMER

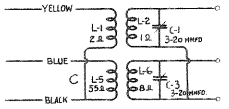




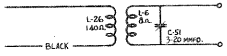
RESISTOR BOARD



RESISTOR BOARD



ANT. COIL



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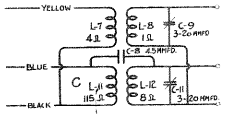
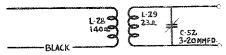
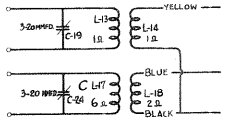


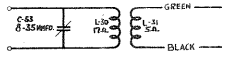
R.F. COIL



R.F. COIL



OSC. COIL



OSC. COIL

Figure 2—Chassis Wiring Diagram

band in which the desired signal is located. In addition to selecting the desired coil system, additional groups of contacts are provided for short-circuiting the Band A coils when using Band B and the Band B coils together with Band A oscillator coil when using Band C.

The output of the first detector, which is the I. F. signal (460 K. C.), is fed directly through two tuned circuits to the grid of the I. F. amplifier stage. The I. F. stage, which utilizes Radiotron RCA-6D6, uses two transformers, which consist of four tuned circuits, all of which are tuned to 460 K. C.

The output of the I. F. amplifier is then applied to the diode electrodes of the RCA-6B7, which is a combined second detector, A. F. amplifier and automatic volume control. The direct current component of the rectified signal produces a voltage drop across resistor R-12. The full voltage drop constitutes the automatic bias voltage for the R. F., while a tap is provided for the first detector and I. F. voltage. These automatic bias voltages for the R. F., first detector and I. F. give the automatic volume control action of the receiver. The volume control selects the amount of audio voltage that is applied to the grid of the RCA-6B7 and thereby regulates the audio output of the entire receiver.

The output of the RCA-6B7 is resistance coupled to the grid of the RCA-41 tube, which is the power output amplifier. This tube is operated as a Pentode and provides high audio gain and satisfactory output power. The plate circuit of the output stage is matched to the cone coil of the reproducer by means of a stepdown transformer.

It should be noted that a small coupling capacitor C-50 is connected in series with C-39 during operation on band C. This is to reduce the low-frequency output on this band, which ensures better operation. During record reproduction it is important that the band switch be at the A or B position.

The tone control consists of a variable resistor and fixed capacitor connected in series across the primary of the output transformer. At the minimum resistance position of the variable resistor, maximum attenuation of the high audio frequencies is obtained.

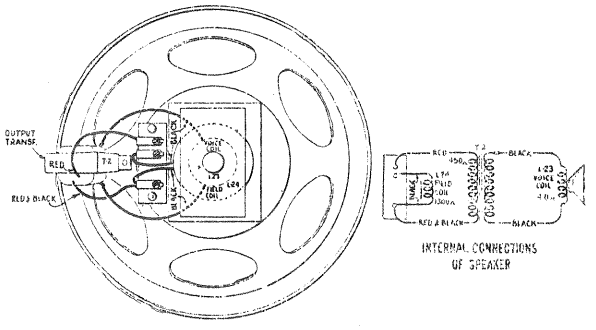


Figure 3—Loudspeaker Wiring

Plate and grid voltages for all tubes are supplied from the output of the rectifier-filter system. An RCA-80 is used as a rectifier and a suitable network of capacitors and resistors gives the necessary filtering and voltages. The loudspeaker field is used as a filter reactor.

PHONOGRAPH

The phonograph facilities consist of the standard perfected manual motor-board assembly, audio amplifier of the receiver and the loudspeaker.

A low-impedance pickup, a compensated input system consisting of a transformer, record volume control and compensation network are connected to the input of the audio section of the RCA-6B7. The circuit functions from this point to the loudspeaker are identical with that of the audio output from the detector during radio operation. The radio receiver is made inoperative during record reproduction by opening the cathode circuit of the RCA-6A7.

SERVICE DATA

(1) LINE-UP PROCEDURE

The line-up procedure of this receiver is somewhat involved and it is important that these instructions be carefully followed when making adjustments. Properly aligned, this receiver has outstanding performance; improperly aligned, it may be impossible to receive signals on all bands.

Equipment

To properly align this receiver, proper test equipment must be used. This consists of a modulated R. F. oscillator having proper frequency range, an output indicator, an alignment tool and a tuning wand. These parts, which are shown on page 14, have been developed by the manufacturer of this receiver for use by service men to duplicate the original factory adjustments.

Checking with Tuning Wand

Before making any R. F., oscillator or first detector adjustments, the accuracy of the present adjustments may be checked by means of the tuning wand (Stock No. 6679). The tuning wand consists of a bakelite rod having a brass cylinder at one end and a special finely divided iron insert at the other end. Inserting the cylinder into the center of a coil lowers its inductance, while inserting the iron end increases its inductance. From this, it is seen that unless the trimmer adjustment for a particular coil is perfect at alignment frequencies, inserting one end of the wand may increase the output of a particular signal. A perfect adjustment is evidenced by a lowering of output when either end of the wand is inserted into a coil.

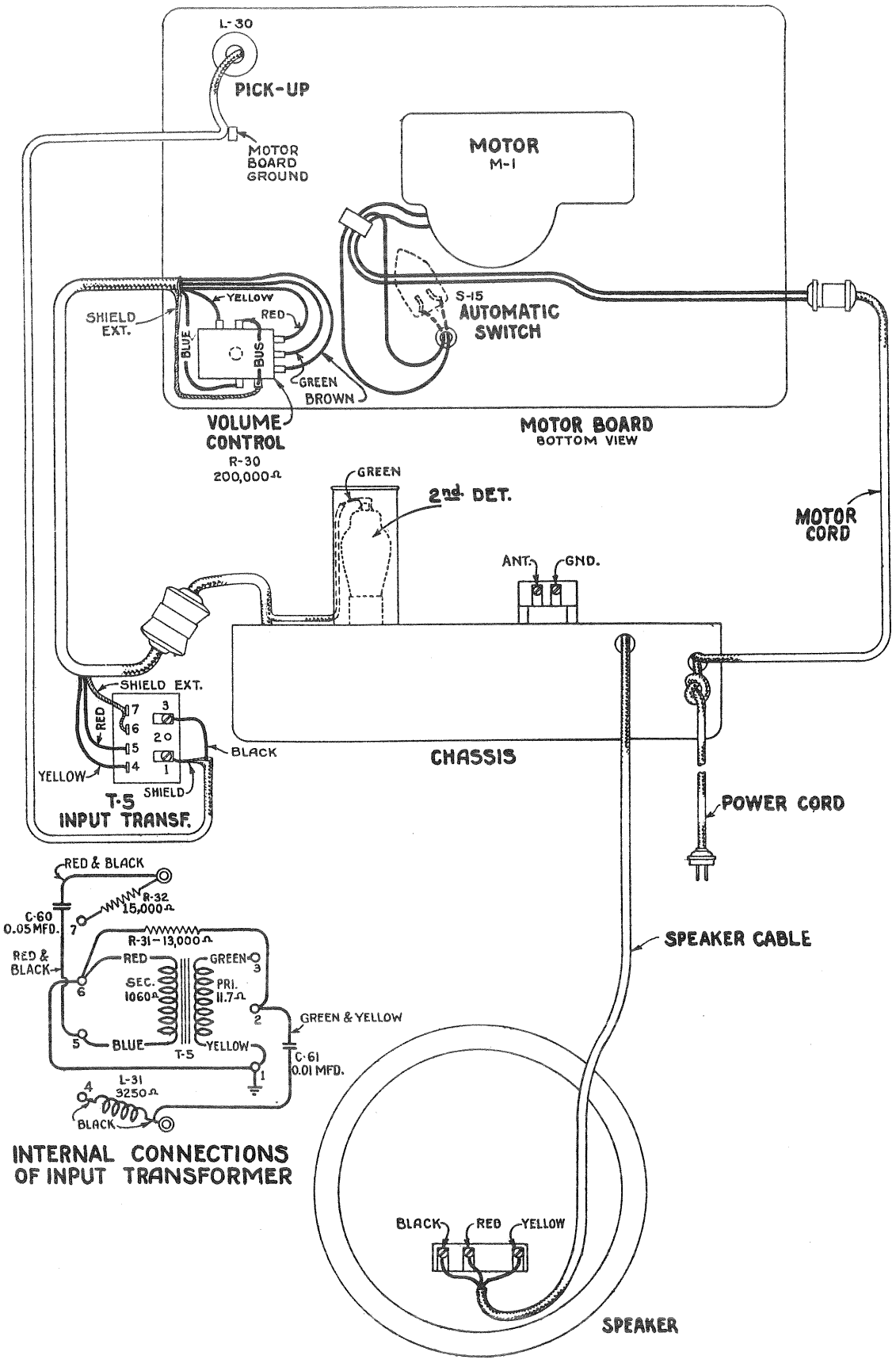


Figure 4—Assembly Wiring Diagram—Some models may have R-32 consisting of a 4000-ohm resistor with an additional 10,000-ohm resistor substituted for the jumper between terminals 6 and 7 of the input transformer.

The shields over the R. F. coil assembly have a hole at their top for entrance of the tuning wand. The location of the various coils inside of the shield is shown in Figure 5. An example of the proper manner of using the tuning wand would be to assume the external oscillator were set at 1720 and the signal tuned in, and the output indicator should be connected across the voice coil of the loudspeaker. Then the tuning wand would be inserted, first one end and then the other end, into the top of the three transformers at the left of the R. F. assembly, facing the front of the chassis. A perfect adjustment of the trimmer would be evidenced by a reduction in output when each end of the wand is inserted in each of the three transformers. If one end—for example, the iron end—when inserted in one coil caused an increase in output, then that circuit is low. An increase in the trimmer capacitance would be the proper remedy.

(2) I. F. TUNING CAPACITOR ADJUSTMENTS

This receiver has one I. F. stage, which uses two transformers. The transformers are all peaked at 460 K. C.

A detailed procedure for making this adjustment follows:

(a) Connect the output of an external oscillator tuned to 460 K. C. between the first detector grid and ground. Connect the output indicator across the voice coil of the loudspeaker.

(b) Place the oscillator in operation at 460 K. C. Place the receiver in operation and adjust the station selector until a point is reached (band B) where no signals are heard and turn the volume control to its maximum position. Reduce the oscillator input until a slight indication is obtained in the output indicator.

(c) Refer to Figure 6. Adjust each trimmer of the I. F. transformers until a maximum output is obtained. Go over the adjustments a second time.

This completes the I. F. adjustments. However, it is good practice to follow the I. F. adjustments with the R. F. and oscillator adjustments due to interlocking which always occurs.

(3) R. F. OSCILLATOR AND FIRST DETECTOR ADJUSTMENTS

Four R. F., oscillator and first detector adjustments are required in bands "A and B." Three are required in band "C."

To properly align the various bands, each band must be aligned individually. The preliminary set-up requires the external oscillator to be connected between the antenna and ground terminals of the receiver and the output indicator must be connected across the voice coil of the loudspeaker. The volume control must be at its maximum position and the input from the oscillator must be at the minimum value possible to get an output indication under these conditions. In the high-frequency band, it may be necessary to disconnect the oscillator from the receiver and place it at a distance in order to get a sufficiently low input to the receiver.

The dial pointer must be properly set before starting any actual adjustments. This is done by turning the variable capacitor until it is at its maximum capacity position. One end of the pointer should point exactly at the horizontal line at the lowest frequency end of band "B," while the other end should point to within 1/64 inch of the horizontal line at the highest frequency end of band "B."

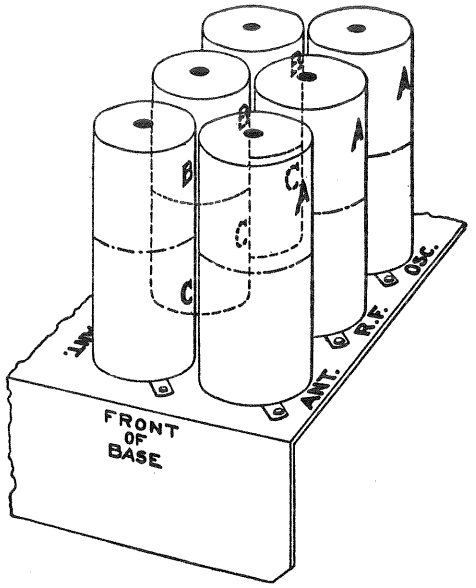


Figure 5—Location of Coils in Shields

Figure 6 shows the location of the trimmers for each band. Care must be exercised to merely adjust the trimmers in the band under test.

Band "A"

(a) Set the Band Switch at "A."

(b) Tune the external oscillator to 410 K. C., set the dial pointer at 410 K. C. and adjust the oscillator, detector and R. F. trimmers for maximum output.

(c) Shift the external oscillator frequency to 175 K. C. Tune in the 175 K. C. signal irrespective of scale calibration and adjust the series trimmer, marked 175 K. C. on Figure 6, for maximum output, at the same time rocking the variable tuning capacitor. Then readjust at 410 K. C. as described in (b).

Band "B"

(a) Set the Band Switch at "A."

(b) Tune the external oscillator to 1,720 K. C., set the pointer at 1,720 K. C. and adjust the oscillator, detector and R. F. trimmers for maximum output.

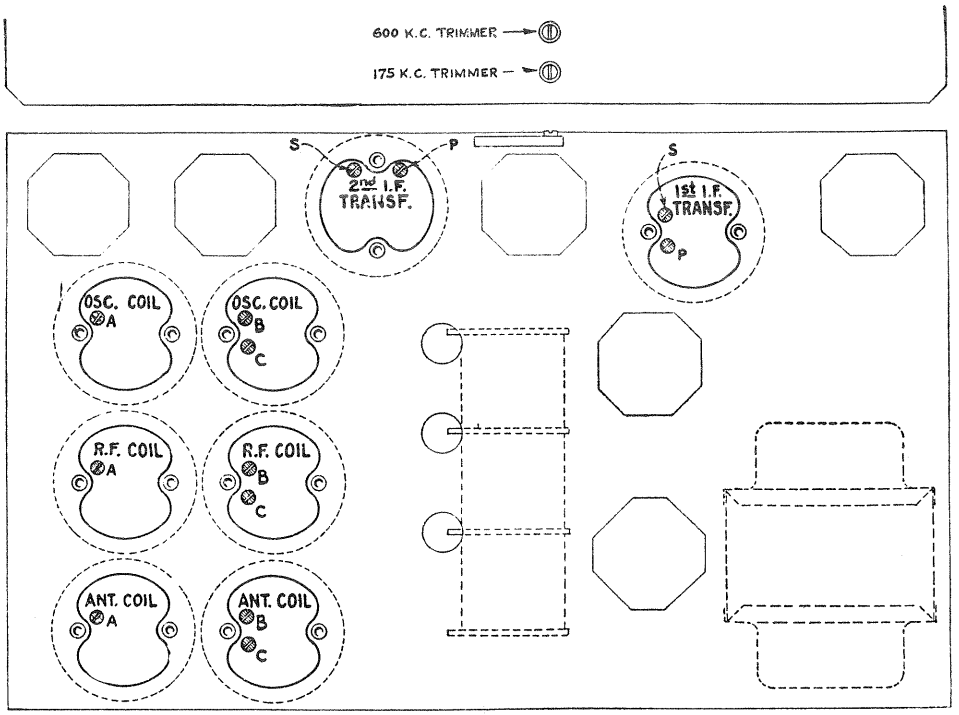


Figure 6—Location of Line-up Capacitors

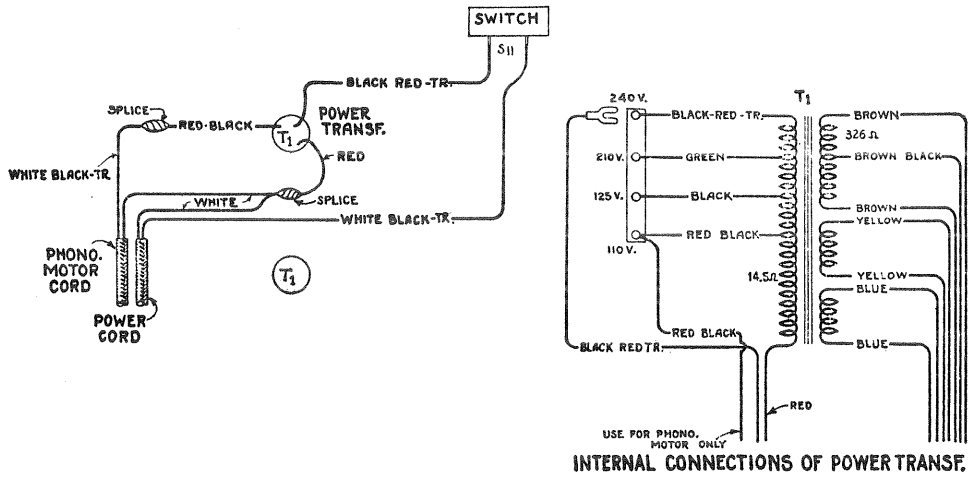


Figure 7—Universal Power Transformer Connections

(c) Shift the external oscillator frequency to 600 K. C. Tune in the 600 K. C. signal, irrespective of scale calibration, and adjust the series trimmers, located on rear apron of chassis, for maximum output, at the same time rocking the variable tuning capacitor. Then readjust at 1,720 K. C. as described in (b).

Band "C"

(a) Set the Band Switch at "C."

(b) Tune the external oscillator to 18,000 K. C., and set the pointer at 18 M. C. Adjust the oscillator trimmer for maximum output. The trimmer should be set at the first peak obtained when increasing the trimmer capacitor from minimum to maximum.

(c) Check for the image signal, which should be received at approximately 17,080 on the dial. It may be necessary to increase the external oscillator output for this check.

(d) Reduce the capacity of the detector trimmer, while rocking the tuning capacitor, until the signal disappears. The first detector circuit is then aligned with the oscillator circuit and the RCA-6A7 tube is blocked. Then increase the capacity of the detector trimmer, while rocking the tuning capacitor, until the signal is peaked for maximum output.

(e) The antenna trimmer should now be peaked for maximum output. It is not necessary to rock the main tuning capacitor while making this adjustment.

(4) POWER TRANSFORMER CONNECTIONS

The 220-volt power transformer furnished with some instruments includes taps for operating on 110-volt lines. Figure 6 shows the schematic circuit of the transformer and the proper voltage to be applied to the various taps. The taps are located on the power transformer assembly and are accessible without removing the chassis from the cabinet.

(5) VOLTAGE READINGS

The voltages on page 10 are those at the various tube sockets while the receiver is in operating condition. No allowance has been made for currents drawn by the meter, and if low-resistance meters are used, such allowances must be made. Figure 8 shows the actual voltage at each socket contact.

(6) SERVICE DATA ON MAGNETIC PICKUP

The Magnetic Pickup used in this combination instrument is of a new design with an improved frequency range. While in physical appearance it is similar to that of the older type, details of construction are considerably different. It consists essentially of a chromium steel magnet, two thin pole pieces, a mechanism support and bracket, a coil, and an armature that is damped by means of an anchored damping block.

The use of the anchored damping block eliminates any bad peaks in the frequency range. The frequency-response characteristic is substantially flat from 50 to 5,000 cycles.

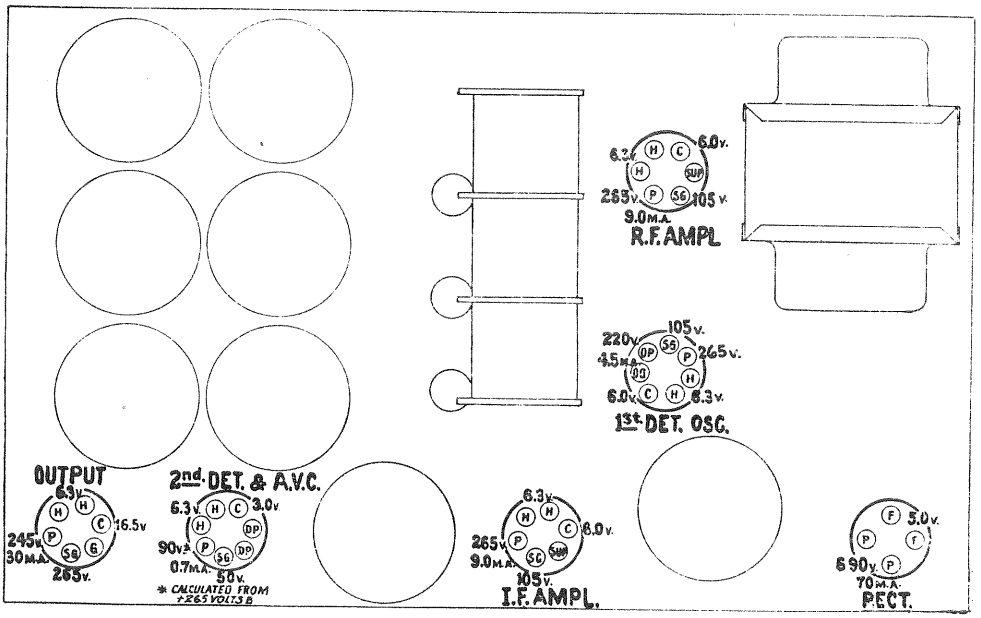


Figure 8—Tube Socket Voltages

In assembling, it may be desirable to check the armature air gap by means of a small Feeler Gauge. This air gap should be .009" on each side of the

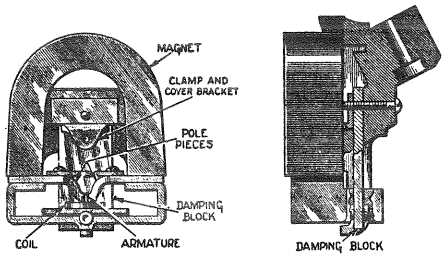


Figure 9—Details of Magnetic Pickup

armature. However, a little practice with the needle in place will quickly disclose whether or not the armature is centered.

(7) REPLACING MAGNET COIL, PIVOT RUBBERS, ARMATURE OR DAMPING BLOCK

In order to replace a defective coil or the hardened pivot rubbers (see Figure 9), it is necessary to proceed as follows:

(a) Remove the pickup cover by removing the center holding screw and needle screw.

(b) Remove the pickup magnet and the magnet clamp by pulling them forward.

(c) Unsolder the coil leads and remove the mechanism assembly from the back plate by releasing the two mounting screws and the damping block clamping screw.

(d) Remove screws A and B, Figure 10, and then remove the mechanism assembly from the pole pieces.

(e) The coil or the front pivot rubber may now be removed and replaced. If it is desired to replace the rear pivot rubber, then the end of the armature soldered to the mechanism support must be unsoldered and the damping block removed. The rear pivot rubber now may be replaced. After putting the pivot rubbers in place a new damping block should be fastened to the armature as outlined in instructions on replacing the damping block.

(f) The mechanism should now be reassembled, except for the magnet, which must be magnetized. After being magnetized, the mechanism—with the pole pieces upward—should be placed so that the magnet may be slid from the magnetizer onto the pole pieces without breaking physical contact. After placing the pole pieces on the magnet, the entire assembly should be remagnetized thoroughly, being careful not to change the polarity obtained by the initial magnetization.

RADIOTRON SOCKET VOLTAGES

115 Volt A. C. Line—No Signal—Volume Control Maximum

Radiotron Number		Cathode to Ground, Volts, D. C.	Screen Grid to Ground, Volts, D. C.	Plate to Ground, Volts, D. C.	Plate Current, M. A.	Heater Volts, A. C.
RCA-6D6—R. F.		6.0	105	265	9.0	6.3
RCA-6A7	Det.	6.0	105	265	3.5	6.3
	Osc.	—	—	220	4.5	
RCA-6D6—I. F.		6.0	105	265	9.0	6.3
RCA-6B7—2nd Detector		3.0	50	90*	0.7	6.3
RCA-41—Power		16.5	265	245	30.0	6.3
RCA-80—Rectifier		—	—	690 (RMS—P to P)	70.0	5.0

*Voltage calculated from 265 v. + B.

(g) After assembling to the mechanism, the entire assembly should be fastened to the back plate by means of the screws provided, making sure the damping block is securely clamped. At the same time, the metal dust cover must be placed in position.

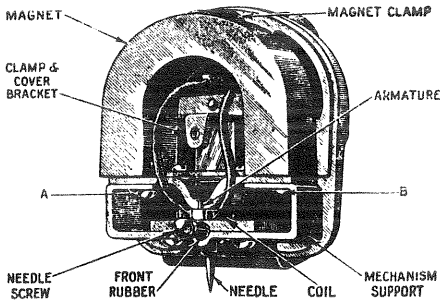


Figure 10—Pickup Nomenclature

(h) After remagnetizing, it is necessary to correctly center the armature. This may be done quite accurately by feeling its play after the needle is inserted. A little practice will quickly show which way an adjustment is necessary to have the armature centered properly. The adjustment is made by loosening screws A and B (Figure 10), and sliding the mechanism slightly in relation to the pole pieces.

(i) The cover may be now replaced over the entire assembly, and the pickup returned to the tone arm.

(8) REPLACING THE DAMPING BLOCK

If it is desired to replace the damping block, it may be done in the following manner:

(a) Disassemble the pickup as described under the preceding section.

(b) Remove the armature entirely by unsoldering it at its joint with the mechanism support.

(c) Remove the damping block from the armature and clean the bushing for holding the damping block with emery paper.

(d) Insert the armature through the new block so that it occupies the same position as that of the old. Also ascertain that the block is in correct vertical alignment with the armature. It will be noted that the hole in the damping block is somewhat smaller than the diameter of the armature. This is done so that a snug fit will be obtained.

(e) After properly locating the damping block, a soldering iron should be applied to the armature so that the block will melt slightly at its point of contact with the armature. A special tip, constructed as shown in Figure 11, will prove desirable for fusing the block in place. The iron should be applied long enough to slightly melt the block and cause a small bulge on both sides, but should not be applied long enough to cause any bubbling. The pickup should then be reassembled as described in the preceding section.

Only rosin core solder should be used for soldering the coil leads in the pickup. Also rosin core solder should be satisfactory for resoldering the end of the spring in the hole in the mechanism, since both these parts have been previously tinned. In case the parts are not well tinned, it will be necessary to scrape the end of the spring and the hole in the mechanism until bright. These parts may now be tinned by using as a flux a water solution of zinc chloride (commonly called acid flux). After tinning, dip the parts in water to wash off the acid flux and thereby prevent serious subsequent corrosion. After making sure that the pivot rubbers and damping block are properly in place,

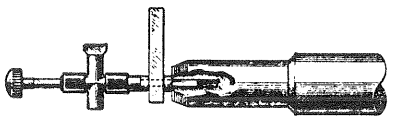


Figure 11—Special Soldering-Iron Tip

as described under (e) above, the armature may now be soldered in place in the mechanism by using rosin core solder, since the parts are now tinned. Care must be exercised to get the needle hole perfectly square with respect to the mechanism, or otherwise it will be difficult if not impossible to center the armature in the air gap as explained under (h), section (7).

REPLACEMENT PARTS

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

Stock No	Description	List Price
	RECEIVER ASSEMBLIES	
4427	Bracket—Volume control or tone control mounting bracket	$0.18
4729	Cable—2-conductor shielded—From range switch to resistor board	.20
2747	Cap—Contact cap—Package of 5	.50
3861	Capacitor — Adjustable trimmer capacitor (C20)	.78
4442	Capacitor—50 mmfd. (C47)	.22
4662	Capacitor—80 mmfd. (C37)	.24
4413	Capacitor—360 mmfd. (C21)	.22
4634	Capacitor—1120 mmfd. (C50)	.35
4515	Capacitor—1160 mmfd. (C34)	.22
4670	Capacitor—2250 (C14)	.30
4523	Capacitor—2400 mmfd. (C17)	.26
4524	Capacitor—2850 mmfd. (C25)	.35
4435	Capacitor—.02 mfd. (C39)	.25
4518	Capacitor—.05 mfd. (C35)	.52
4417	Capacitor—.05 mfd. (C4, C12, C29)	.25
3877	Capacitor—.1 mfd. (C40)	.32
4415	Capacitor—.1 mfd. (C6, C15, C30)	.30
4645	Capacitor—.1 mfd. (C7, C26)	.25
3597	Capacitor—.25 mfd. (C38, C45)	.40
4525	Capacitor—4.0 mfd. (C36)	.70
4428	Capacitor—8 mfd. (C44)	1.05
7790	Capacitor—10 mfd. (C43)	1.05
4692	Capacitor pack—Comprising one 0.035 mfd. and one 0.005 mfd. capacitors (C41, C42)	.30
7589	Capacitor pack—Comprising two 4. mfd. capacitors (C16, C46)	1.64
4358	Clamp—Electrolytic capacitor mounting clamp	.15
4734	Coil—Antenna coil "A" (L26, L27, C51)	3.05
7803	Coil—Antenna coil "B & SW" (L1, L2, L5, L6, C1, C3)	1.82
4751	Coil—Detector coil "A" (L28, L29, C52)	2.38
7805	Coil—Detector coil "B & SW" (L7, L8, L11, L12, C8, C9, C11)	2.15
7807	Coil—Oscillator coil "B & SW" (L13, L14, L17, L18, C19, C24)	1.62
4733	Coil—Oscillator coil "A" (L30, L31, C53)	3.05
7801	Condenser—3-gang variable tuning condenser (C5, C13, C18)	4.42
4340	Lamp—Dial lamp—Package of 5	.60
3632	Resistor—500 ohms—Carbon type—1 watt (R24)—Package of 5	1.10
3218	Resistor—600 ohms—Carbon type—¼ watt (R2, R6, R8)—Package of 5	1.00
4370	Resistor—1000 ohms—Carbon type—¼ watt (R3, R7)—Package of 10	2.00
3997	Resistor—4000 ohms—Carbon type—¼ watt (R14)—Package of 5	1.00
6318	Resistor—10,000 ohms (R21)	.80
3114	Resistor—50,000 ohms—Carbon type—¼ watt (R16, R18)—Package of 5	1.00
3602	Resistor—60,000 ohms—Carbon type—¼ watt (R5)—Package of 5	1.00
3118	Resistor—100,000 ohms—Carbon type—¼ watt (R1, R4)—Package of 5	1.00
3116	Resistor—200,000 ohms—Carbon type—¼ watt (R15)—Package of 5	1.00
6186	Resistor—500,000 ohms—Carbon type—¼ watt (R17)—Package of 5	$1.00
3033	Resistor—1 megohm—Carbon type—¼ watt (R10)—Package of 5	1.00
6242	Resistor — 2 megohms — Carbon type — ¼ watt (R11, R13)—Package of 5	1.00
3413	Resistor—5000 ohms—Carbon type—½ watt (R22, R23)—Package of 5	1.00
4513	Resistor — 30,000 ohms — Carbon type — 3 watt (R20)	.25
4521	Shield—Antenna R. F. or oscillator coil shield	.42
3942	Shield—First detector or output Radiotron shield	.18
7487	Shield—I. F. amplifier Radiotron shield	.25
4705	Shield—R. F. amplifier Radiotron shield	.30
3782	Shield—Second detector Radiotron shield	.26
3529	Socket—Dial lamp socket	.32
3859	Socket—4-contact Radiotron socket	.30
6676	Socket—6-contact output Radiotron socket	.40
7485	Socket—6-contact Radiotron socket	.40
3572	Socket—7-contact Radiotron socket	.38
4379	Strip—Antenna terminal engraved "ANT GND"	.20
4684	Switch—Operating switch (S11)	.45
4728	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10)	4.32
4517	Tone control (R19)	.90
4431	Transformer — First intermediate frequency transformer (L19, L20, C27, C28, C48)	2.28
4433	Transformer—Second intermediate frequency transformer (L21, L22, C31, C32, C33, R9)	2.15
9511	Transformer—Power transformer 105–125 volts, 50–60 cycles (T1)	4.78
9512	Transformer—Power transformer 105–125 volts, 25–40 cycles	6.58
9513	Transformer—Power transformer—105–250 volts—40–60 cycles	4.85
4519	Volume control (R12)	1.25
	DRIVE ASSEMBLIES	
4362	Arm—Band indicator operating arm	.28
10194	Ball—Steel ball for condenser drive assembly—Package of 20	.25
4422	Clutch—Clutch drive assembly for variable condenser drive	.88
4732	Dial—Station selector dial	.40
4510	Drive—Tuning condenser drive assembly	2.42
4704	Indicator—Band indicator (celluloid)	.12
4520	Indicator—Station selector indicator pointer	.18
3943	Screen—Dial light screen (celluloid)—Package of 2	.18
3993	Screw—Number 6–32–5/32" square head set screws for band indicator operating arm—Package of 10	.25
4669	Screw—Number 8–32–5/32" set screw for variable condenser drive assembly—Package of 10	.25
4377	Spring—Band indicator and arm tension spring—Package of 5	.25
4378	Stud—Band indicator operating arm stud—Package of 5	.25

REPLACEMENT PARTS (Continued)

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

Stock No.	Description	List Price
	MOTOR ASSEMBLIES	
4577	Connector—Male section two-prong motor connector plug	$0.30
8989	Motor—105–125 volts—60 cycle motor complete	18.52
8990	Motor—105–125 volts—50 cycle motor complete	18.52
8991	Motor—105–125 volts—40 cycle motor complete	23.36
8992	Motor—105–125 volts—25 cycle motor complete	23.36
8993	Rotor and shaft—For 105–125 volt—60 cycle motor	7.00
8995	Rotor and shaft—For 105–125 volt—50 cycle motor	7.00
8999	Rotor and shaft—For 105–125 volt—25 cycle motor	8.00
8994	Spindle—Turntable spindle with fibre gear for 60 cycle motor	4.75
8996	Spindle—Turntable spindle with fibre gear for 50 cycle motor	4.75
9001	Spindle—Turntable spindle with fibre gear for 25 cycle motor	5.50
3817	Stud—Motor mounting stud—Package of 3	.18
3398	Motor mounting—Spring and washer assembly—Comprising 2 cup washers, 4 springs and 1 "C" washer	.48
	PICKUP AND ARM ASSEMBLIES	
7842	Arm—Pickup arm complete, less escutcheon and pickup	4.75
3417	Armature—Pickup armature	.72
6346	Back—Pickup housing back	.45
3385	Coil—Pickup coil (L30)	.50
3386	Cover—Pickup cover	.56
3521	Cover—Magnetic pickup back cover	.18
3418	Cushions—Pickup rubber cushions—Comprising one damper and two spacer cushions and one damper bushing—5 sets	1.10
3516	Damper assembly—Comprising one upper and one lower damper, one upper bushing and one lower bearing—Located in bottom of pickup base	.14
3390	Escutcheon—Pickup arm escutcheon complete with mounting rivets	.46
6335	Pickup—Pickup unit complete	4.00
3389	Rod—Automatic brake trip rod with lock nut—Package of 5	.40
3387	Screw assembly—Pickup mounting screw assembly comprising one screw, one nut and one washer—10 sets	.40
3388	Screw—Pickup needle holding screw—Package of 10	.60
3419	Screw—Pickup cover mounting screw—Package of 10	.40
	REPRODUCER ASSEMBLY	
4473	Board—Terminal board assembly	.26
9460	Coil—Field coil, magnet and cone support (L24)	6.00
8935	Cone—Reproducer cone (L23)—Package of 5	5.25
9527	Reproducer—Complete	8.00
4472	Transformer—Output transformer (T2)	1.40

Stock No.	Description	List Price
	SWITCH ASSEMBLIES	
3994	Cover—Motor switch cover	$0.26
10184	Plate—Automatic brake latch plate—Package of 5	.40
10174	Springs—Automatic brake springs—Package of 4	.50
6896	Switch—Eccentric automatic switch complete	2.50
3322	Switch—Motor switch (S15)	.75
	TURNTABLE ASSEMBLIES	
7084	Cover—Turntable cover	.40
7838	Turntable complete	2.15
	MISCELLANEOUS ASSEMBLIES	
3166	Bolt — Reproducer mounting assembly — Comprising 2 bolts, 2 nuts, 2 lockwashers and 1 plate	.50
7837	Bezel—Station selector (escutcheon) bezel	.82
3430	Box—Needle box with lid—Package of 2	.90
4696	Cable—2-conductor motor cable with section of connector plug—From receiver chassis to motor cord connector	.95
4695	Cable—3-conductor shielded cable with grid and female section of connector—From receiver chassis to volume control cable connector	1.05
7843	Cable—5-conductor shielded with male section of connector plug—From phonograph volume control to input transformer	.98
4153	Connector—Female section (4-contact) of connector for cable Stock No. 4695	.48
4573	Connector—Female section (2-contact) of connector plug for cable Stock No. 4696	.30
6614	Glass—Station selector dial glass	.30
3829	Knob—Phonograph volume control knob—Package of 5	1.10
4449	Knob—Station selector volume control, range switch or operating switch knob—Package of 5	.60
6123	Plug—Male section (4-prong) of phonograph volume control and input transformer cable plug	.30
3396	Receptacle—Needle receptacle	.52
4678	Ring—Dial retaining ring—Package of 5	.34
4393	Screw—8–32–5/16" headless set screw for knob No. 3829—Package of 10	.25
4698	Screw—Chassis mounting screw assembly—Comprising 1 screw, 1 lockwasher, 1 washer, 2 cushions and 1 spacer	.45
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	.50
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)	5.38
6766	Volume control—Phonograph volume control (R30, S16)	2.28