

Introduction

The RP-151 is an automatic record changer of revolutionary design. It will play a series of fifteen 10-inch or twelve 12-inch records on both sides, or one side, at will. The pickup arm has two light-pressure, sapphire permanent-point, crystal pickups mounted on one arm. One pickup plays the top side of each record; the other pickup plays the bottom side. The turntable rotates in reverse while the bottom side of a record is being played.

The mechanism has two motors. One motor is used solely to rotate the turntable; the cycling motor drives the mechanism during the automatic record-changing cycle.

There are three simple controls.

1. **A Record Support**—Turn it one way to load a stack of 10-inch records, the reverse way to load 12-inch records.
2. **A Control Lever**—Push the lever to load position, then back to the "two-side" position to play both sides of each record; pull it forward to play only the top side of each record.
3. **A "Start-Reject" Button**—Push the button to start the mechanism or to reject a record when the mechanism is operating.

The mechanism uses a low-noise crystal pickup. Objectionable "needle chatter" has been removed by utilizing a low mass wire, suitably damped, to hold the sapphire point.

Service Procedure

To remove the bottom plate assembly from the motorboard:

1. Disconnect pickup leads from terminal board.
2. Remove the motor lead plugs from their sockets.
3. Loosen the set screws "C" and lift the tone arm out. Be careful not to lose the two ball bearings at the top and bottom of the tone arm pivot shaft.
4. Remove the four bottom plate mounting screws.

To remove the tone arm, turn out the slotted-head bearing through the side of the arm. Then simply lift the arm off. When replacing the arm, do not tighten the bearing enough to cause a bind in vertical motion.

Cautions

1. Do not oil the tone arm pivot shaft.
2. Never use force to start or stop the motor or any part of the record-changing mechanism or pickup arm.
3. Warped or damaged records may cause the mechanism to jam.
4. Do not leave records on the record-holder posts as they may warp, particularly in warm climates. Warped records may be flattened by placing them on a flat surface with a flat heavy article placed on top of them for a few days.
5. If for any reason the phonograph stalls, turn off the turntable switch and remove the records from the record holder shelves. Start the turntable and allow the pickup arm to complete its cycle.
6. **Packing material and special shipping brackets should be given to the customer at the time of installation. Advice as to their use may save service calls should the customer later move the instrument any considerable distance.**
7. Do not interfere with the motion of the tone arm at any time.

Lubrication

1. Apply Houghton Stayput at all bearing surfaces.
2. Apply graphite grease at cam and gear surfaces on the main cam and gear, pinion gear (1), and segment gear, pivot and cam surfaces on the slide, and the spring pin on the counterweight.
3. Apply Lubriplate No. 110 at all other points.
4. The rubber tires must be kept clean and free from oil, grease, dirt, etc., at all times. Any quick-drying naphtha is satisfactory for cleaning the rubber.

Service Hints

Last 10-inch record drops before next to last record is out of the way.

Separating knife jams on record edge.

Record on turntable strikes swivel posts.

Mechanism trips continuously.

Mechanism fails to trip.

Mechanism jams.

Sapphire jumps grooves intermittently.

Sapphire repeats grooves intermittently.

Control Lever can be pushed to only one position.

Unequal output from the two pickups.

(Trimmer Balance)

Delay the knife timing by placing a 1/8-inch spacer between the separator lever and the bottom bushing and then making adjustment B.

Record warped. Irregularities on the record separating knife and shelf teeth impeding the "elevating search" feature of the knife. Spacing washer too thick.

Tighten the belt drum springs (11) by taking off turns.

Cycle motor leads impeding movement of mercury switch.

Smooth off the end of the cycling switch trip lever and the stud against which it works.

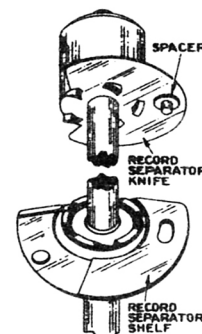
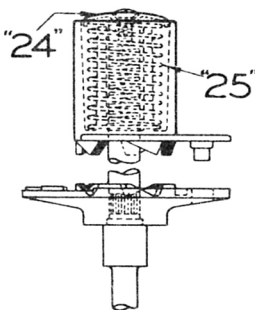
Stud on main cam and stud on star wheel have hit head on. This generally results when operator improperly positions the control lever and leaves it midway between the "One Side" and the "Two-Side" positions.

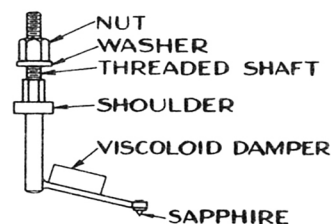
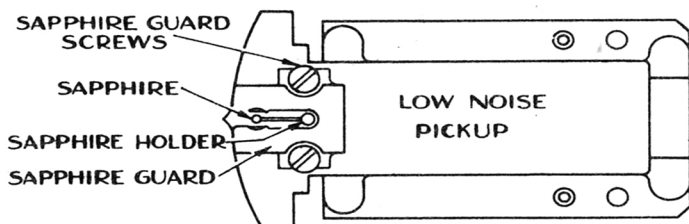
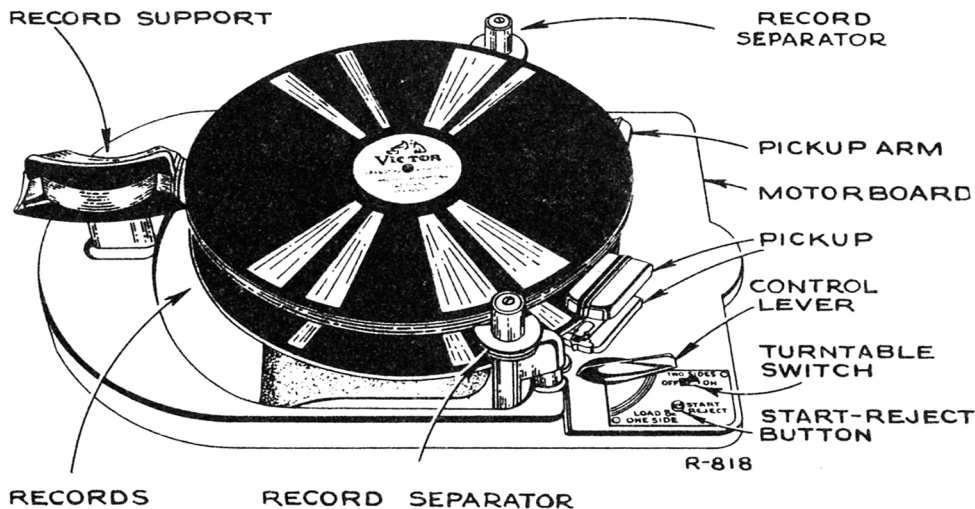
Check dress of pickup cable in motorboard slot, making certain that it is free over the full range of tone arm movement.

Feed-in spring is striking the trip lever pawl.

Check position of index lever with respect to the control lever shaft. When the control lever is in the two-side position, the star wheel lever stud should be at the end of the index lever slot nearest the control lever shaft. A set screw in the index lever hub permits positioning of the index lever.

Adjust the trimmer capacitors until the outputs are at the same level. Since there is a slight interaction between the trimmers it may be necessary to repeat the adjustment a second time.





The Low Noise Pickup

Specifications. . . . Output at 400 cycles. 0.50 volts
 Impedance at 1,000 cycles. . . 75,000 ohms

Replacement of Complete Unit. . . . Simply slide the unit out of the tone arm and insert a new one.

Replacement of Sapphire. Caution: Never bend the sapphire support wire. Slide the pickup forward out of the arm.

The nut on the sapphire holder assembly is locked by a light cement (such as Glyptal). Extreme care should be used when loosening the nut so that the twisting motion does not break the crystal.

Remove the two screws holding the sapphire guard in place and take the guard off. Remove the small nut and washer on

the threaded shaft of the sapphire holder and push the shaft through the hole in the viscoloid until the sapphire holder assembly comes free.

Insert threaded shaft of replacement sapphire holder through viscoloid and replace the washer and nut. Make sure that the flat sides of the shaft are firmly in place in the clamp and then tighten the nut very carefully so as not to strip the threads nor break the crystal. Replace the sapphire guard, positioning it by means of the oversize screw slots. Make certain that the sapphire and its supporting wire are centered in the guard. Tighten the guard screws. Before using, check to see that the sapphire projects far enough beyond the guard so that the guard will not strike the record. If necessary, bend the guard a little. Apply a drop of light cement (such as Glyptal) to the sapphire nut holder.

Bend the spring contacts to make good contact with the slides in the tone arm.

Function of Principal Parts

Record Support. Drives two belts which act to position the record separator posts in unison. This allows for loading 10- or 12-inch records.

Record Separators Provide shelves for holding stack of records and provide knives for separating bottom record from stack. Knives also support record stack during change cycle.

Control Lever Train Provides selection of two-side or one-side playing. Acts through index lever and star wheel lever to position star wheel.

Start-Reject Button Train. . . . Acts through button lever, reject lever, ratchet lever, cycling switch trip lever, and cycling switch pivot lever to tilt the mercury cycling switch and begin the automatic cycle.

Ratchet Lever. Starts the automatic cycle by releasing cycling switch trip lever when acted upon by reject lever or trip lever pawl.

Main Cam and Gear. Directs and co-ordinates all cycle operations.

Tone Arm Lever Directs horizontal movement of tone arm.

Tone Arm Return Lever . . . Keeps tone arm moving in with receding tone arm lever and provides proper landing. Provides feed-in spring to push sapphire into music grooves after landing.

Trip Lever Its pawl acts on the ratchet lever to trip the mechanism.

Record Separators' Lever Train Directs motion of separator knives and shelves.

Tone Arm Elevating Control Lever Directs vertical motion of tone arm through tone arm elevating lever and elevating rod.

Slide Train. The slide roller lever is directed by the main cam and acts through the slide throw-out lever and the slide control lever to move the slide.

Slide Directs tilting of the turntable. Directs motion of record separator lever train. Unlatches reversing switch.

Reversing Lever Controls turntable rotation by means of reversing switch.

Two-Side Operation

Slide Cycle

Turn Record Support to 10" or 12" position as desired.

Place Records on Posts.

Turn Control to "Load" position and return to "Two-Side" position.

Push "Start-Reject" button.

1. Record Separator posts position themselves in unison by means of belt drive.

1. Star wheel stud is rotated away from slide throw-out lever, thus insuring a "Slide" cycle. Motion is transferred from control to the index lever and the star wheel lever. Star wheel lever stud rides in the index lever slot.

1. Through button lever the reject lever is made to push on ratchet lever stud.
2. The ratchet lever moves out of the way of the cycling switch trip lever.

3. Switch trip lever moves the cycling switch pivot lever, thus tilting the switch and closing the circuit to the cycle motor.

4. Cycle motor starts.

5. Main cam is driven by cycle motor through a chain of gears.

Tone Arm Rises.

1. The elevating control lever is rotated because its stud rides on the outer guide on the bottom side of the main cam.

2. Elevating control lever closes shorting switch.

3. Elevating control lever pushes reversing lever.

4. Reversing lever rotates.

5. Elevating control lever pushes elevating lever roller.

6. Elevating lever roller moves in allowing elevating lever to rise, thus pushing up on elevating rod and tone arm.

Tone Arm Swings Out.

1. Reversing lever throws reversing switch. Then it latches and holds the switch button in position.
2. Turntable rotates counter-clockwise.

3. Tone arm lever swings outward from motion of its stud against outer guide on top of main cam.

4. It pushes against stud on trip lever.

5. Trip lever moves out and latches to return lever carrying it along.

6. Feed-in spring is depressed.

7. Cycling switch trip lever is reset by protrusion on main cam, and thus moves out of way of ratchet lever stud.

8. Ratchet lever returns to its original position.

Turntable Discards Played Record.

1. Eccentric track on top of main cam moves slide roller lever.
2. Slide roller lever pushes slide throw-out lever.

3. Slide throw-out lever moves slide control lever.

4. Slide control lever moves slide.

5. Underneath stud on slide moves along edge of turntable locating lever and finally rotates it.

6. Locating lever releases turntable assembly to control of counterbalance and spring, leaving sector gear free to move.

7. Slide strikes sector gear finger and rotates sector gear.

8. Sector gear rotates segment gear.

9. Segment gear, being fastened to turntable pivot shaft, turns this shaft and tilts the turntable.

10. Reversing lever is unlatched by slide at end of its travel. Turntable motor returns to clockwise rotation.

Record Drops from Stack to Motorboard.

1. Stud on top of slide moves into claw cam of the separator lever.

2. Lever rotates, thus moving link and crank.

3. Crank rotates separator assembly.

4. Record knife separates bottom record from stack.

5. Shelf rotates out from under bottom record and allows it to drop to motorboard.

Turntable picks up next record.

1. Slide reverses direction of travel.

2. Shelf and knife return to original position as top stud on slide releases separator lever.

3. Spring and counterbalance return turntable past its original position as slide recedes from sector gear finger.

4. Turntable spindle finds hole in record and picks record up.

5. Underneath stud on slide finally rotates locating lever.

6. Locating lever takes control and returns turntable to exact original position.

7. Turntable drive wheel again contacts drive disc and rotates it.

8. Off-center stud on the main cam and gear pushes star wheel stud.

9. Star wheel rotates 90°.

10. Stud on star wheel unlatches slide throw-out lever.

Tone Arm Returns.

1. Main cam allows tone arm lever to recede.

2. This allows return lever to follow, carrying trip lever along.

3. Return lever stops when its index finger reaches rear separator shaft.

4. Thus the trip lever and tone arm are stopped at the correct landing position.

Tone Arm Lowers.

1. Lower outside face on main cam recedes.

2. Elevating control lever returns to original position.

3. Reversing lever reaches original position.

4. Elevating lever is lowered, elevating rod follows and tone arm lowers.

5. Elevating control lever releases shorting switch.

6. Release stud on the tone arm lever pushes back the latch on the return lever.

7. Release of the latch frees the return lever from the trip lever and the tone arm.

8. Cycling switch pivot lever drops off the end of the main cam face.

9. Cycling switch returns to original position.

10. Cycle motor stops.

Sapphire is pushed into music grooves.

1. Feed-in spring returns to original position pushing stud on trip lever.

2. Trip lever carries tone arm slightly in.

Top side of Record Plays.

Non-Slide Cycle

Sapphire Reaches Eccentric Groove. Mechanism Trips.

1. Trip lever receives backward motion from tone arm.

2. Trip pawl pushes ratchet lever.

3. Ratchet lever stud moves away from cycling switch trip lever.

4. Cycling switch trip lever moves cycling switch pivot lever. Switch tilts, closing circuit.

5. Cycle motor starts.

Tone Arm Rises and Swings Out.

Same as previous cycle.

Turntable Remains in Playing Position and Turntable Rotation Reverses.

1. Eccentric track on top of main cam moves the slide roller lever.

2. Slide throw-out lever is not picked up by star wheel since this lever was unlatched during previous cycle.

3. Thus the slide does not move, the reversing lever remains latched and the turntable motor continues to revolve counter-clockwise.

4. Off-center stud on main cam pushes stud on star wheel.

5. Star wheel rotates 90°.

6. Star wheel latches slide throw-out lever.

Tone Arm Returns.

Same as previous cycle.

Tone Arm Lowers.

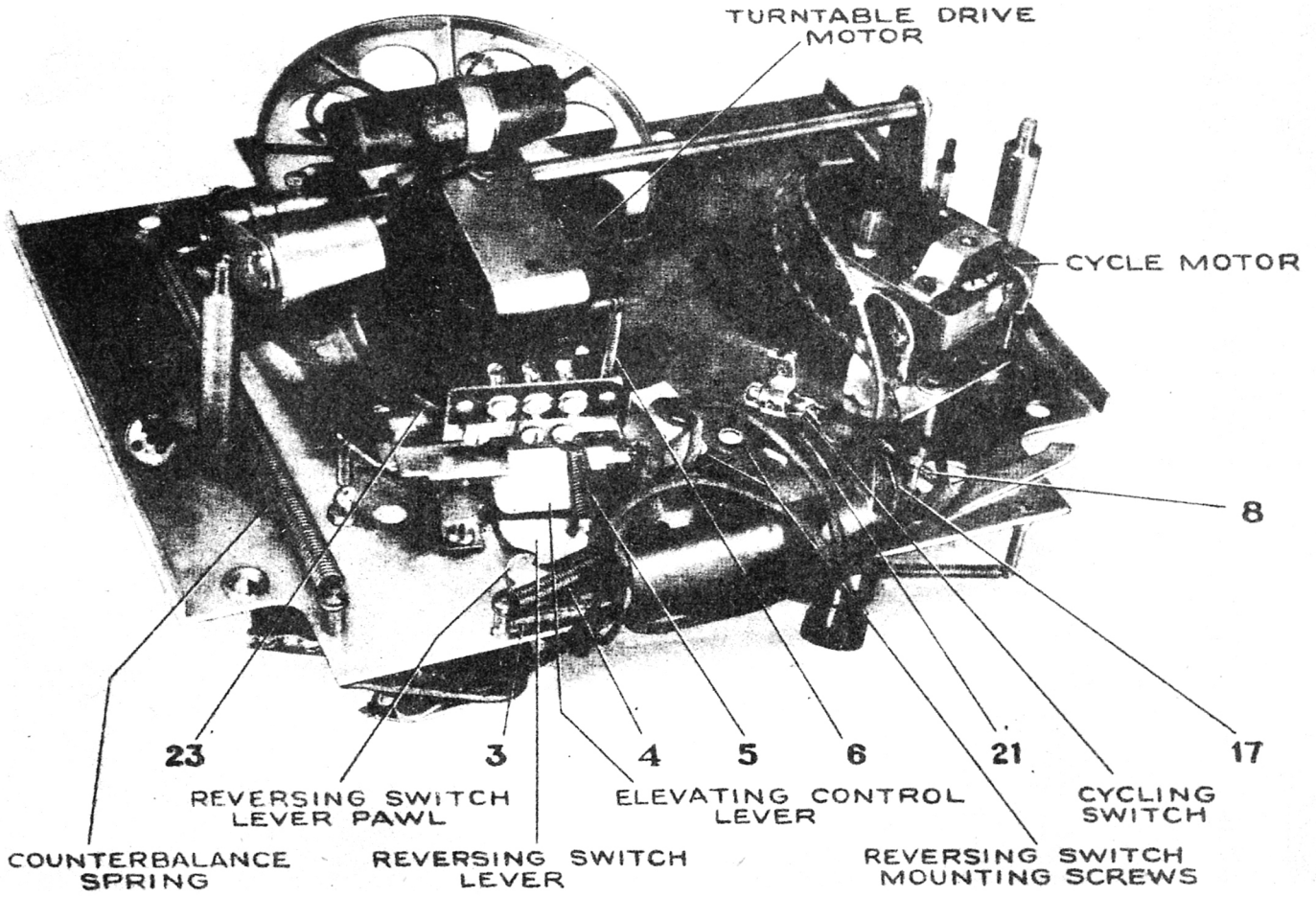
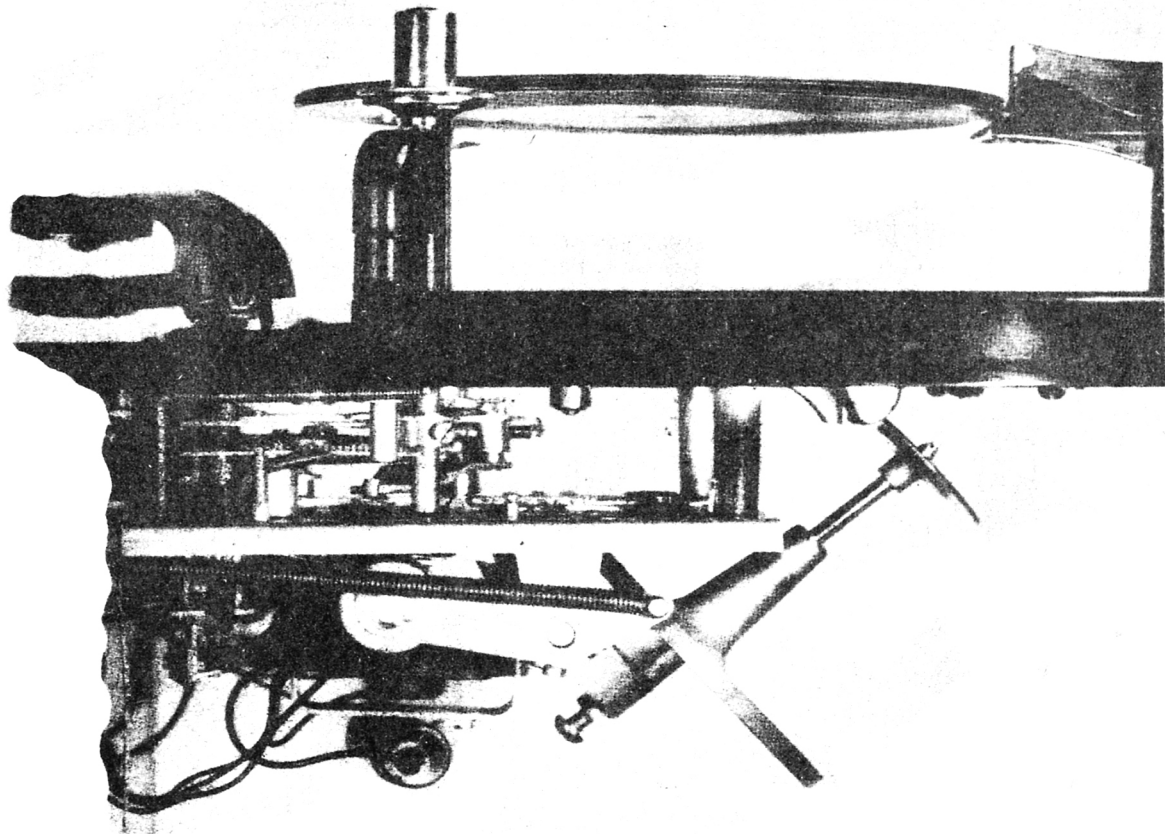
Same as previous cycle except: 1. Reversing lever remains latched and does not return.

Bottom Side of Record Plays.

Slide and non-slide cycles continue alternately until entire stack of records has been played.

After last record is played, mechanism trips, goes through cycle, and tone arm comes to rest on "Stop" button, thus opening the a.c. circuit.

In the "One-Side" position, the star wheel is pushed out of the path of the main cam stud and all cycles are **slide cycles**.



TURNTABLE DRIVE MOTOR

CYCLE MOTOR

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REVERSING SWITCH LEVER PAWL

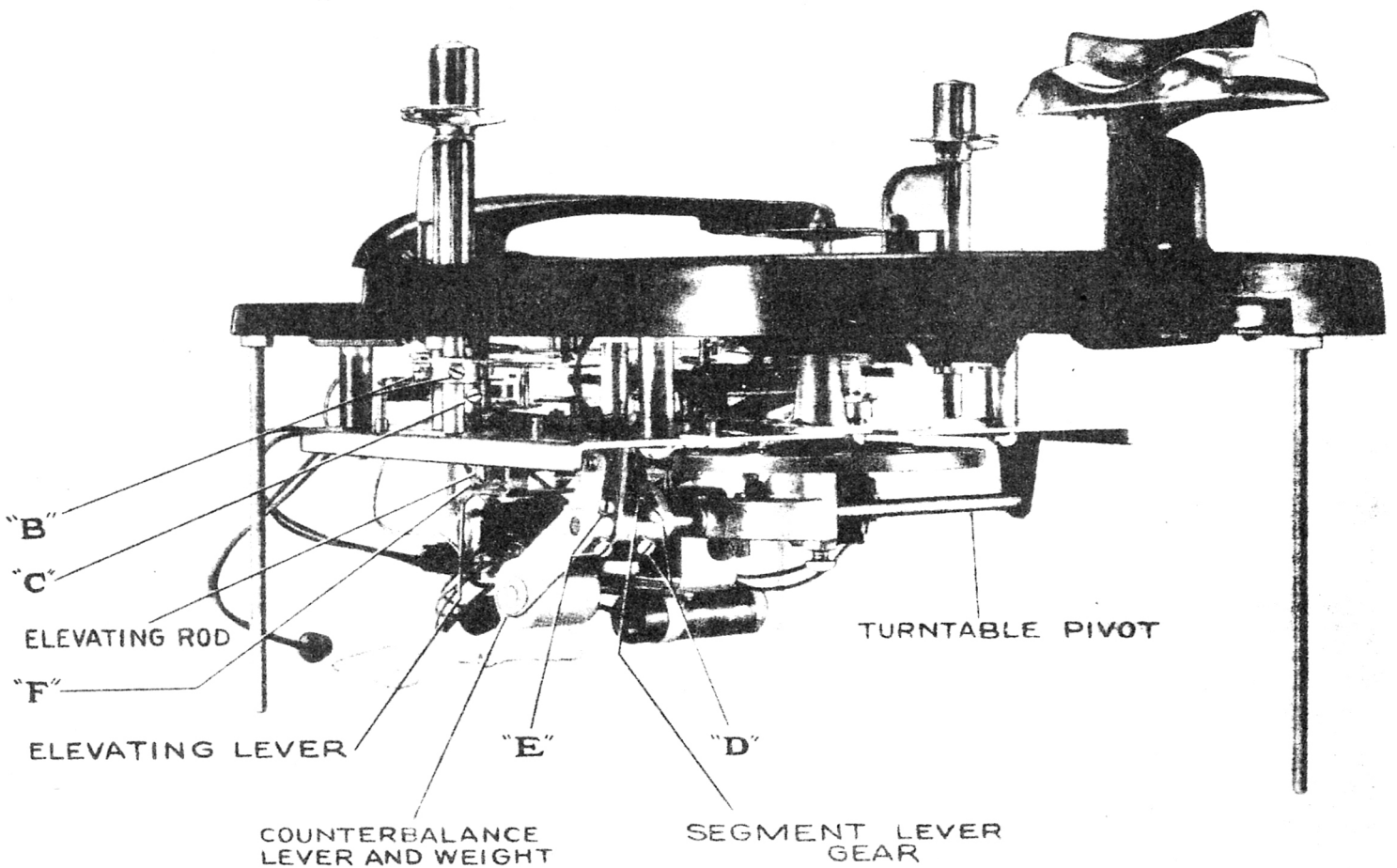
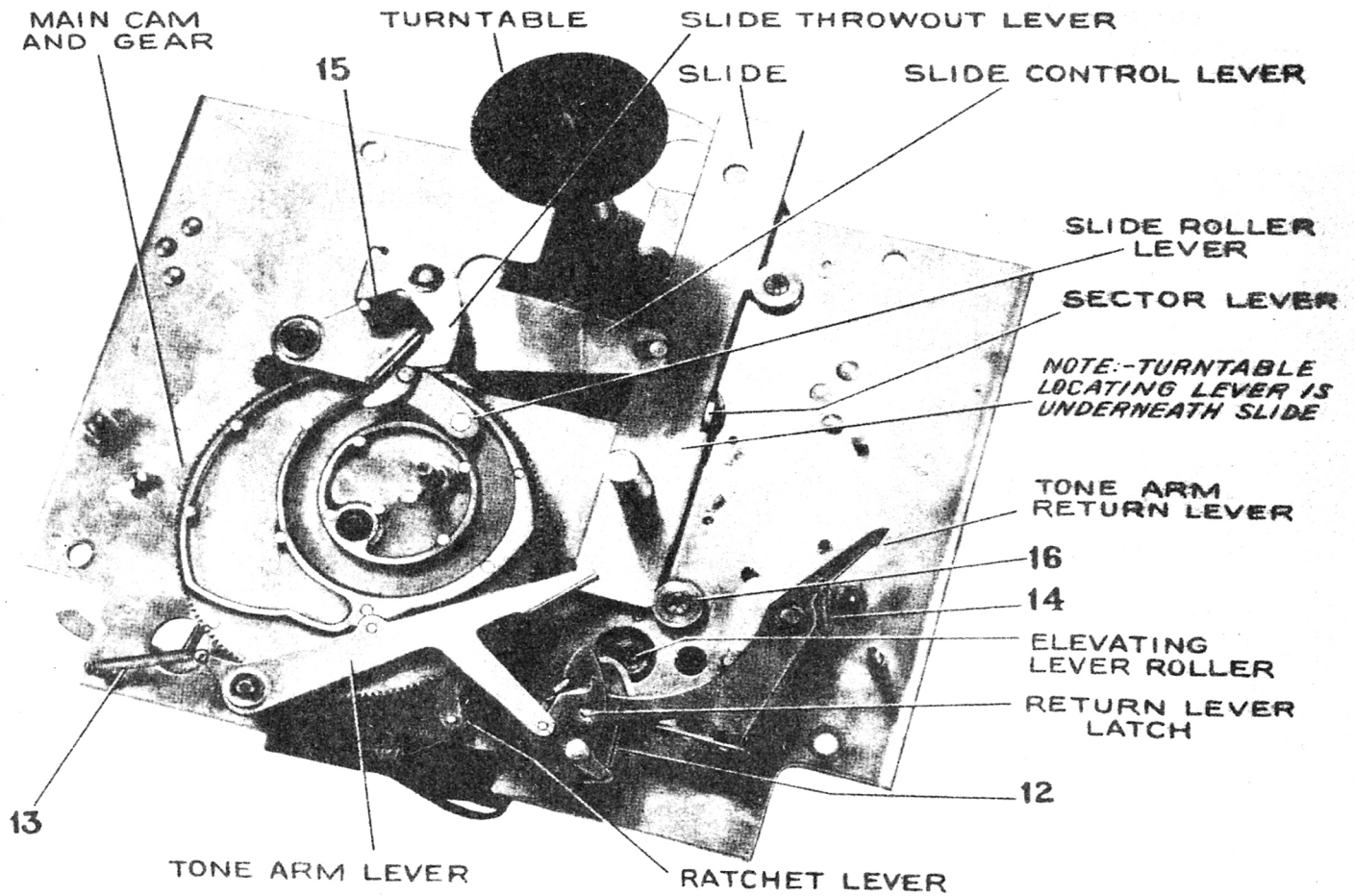
ELEVATING CONTROL LEVER

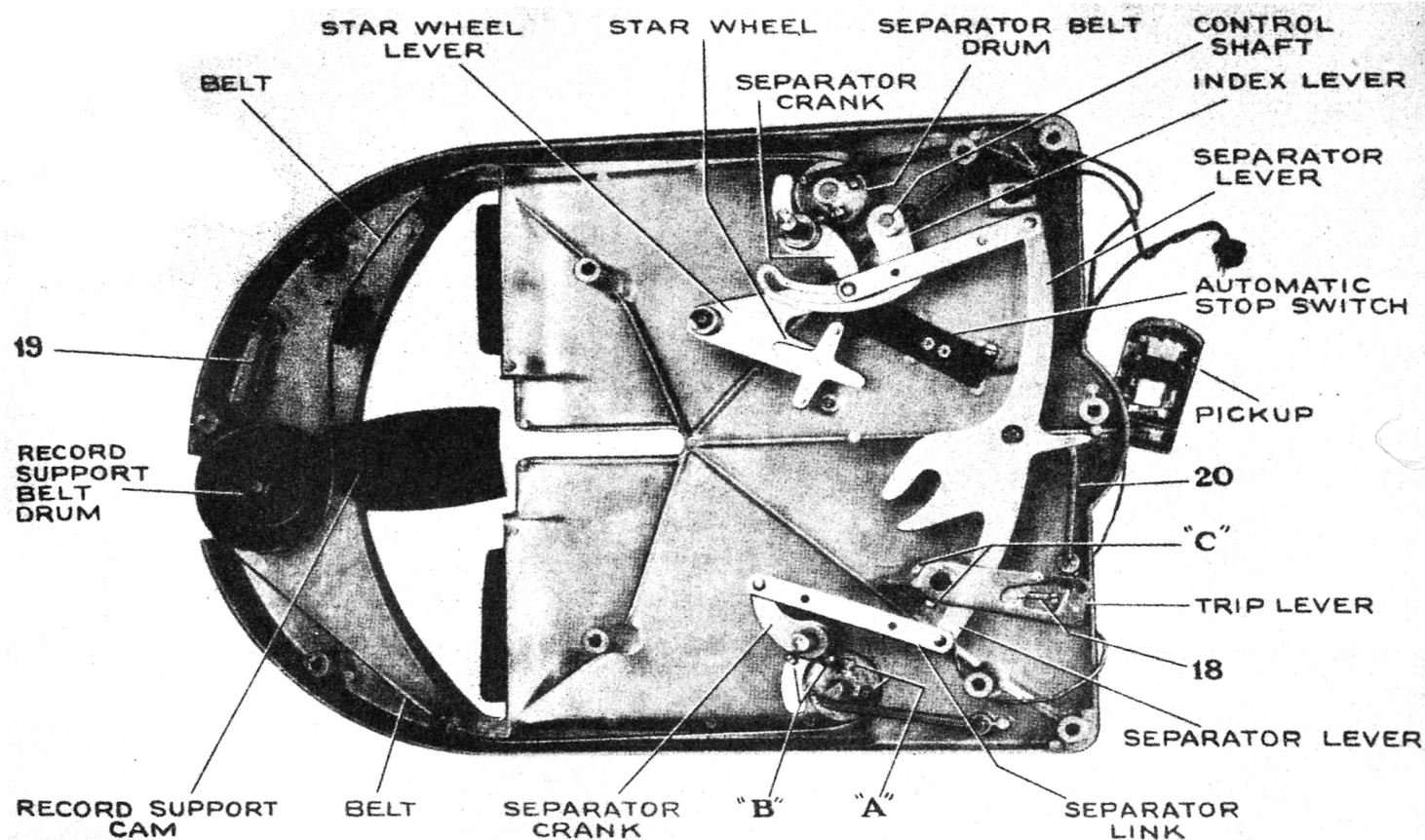
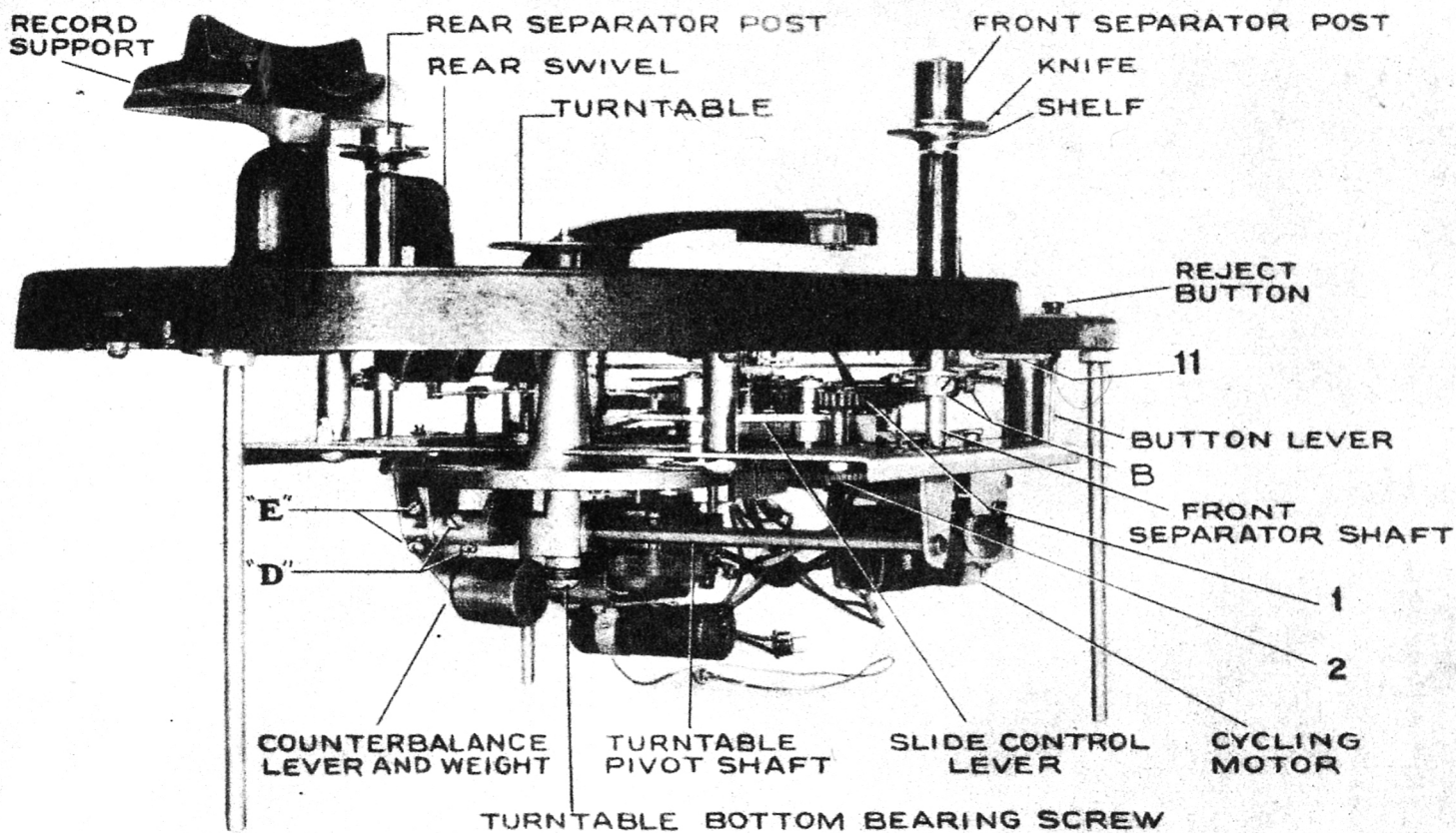
CYCLING SWITCH

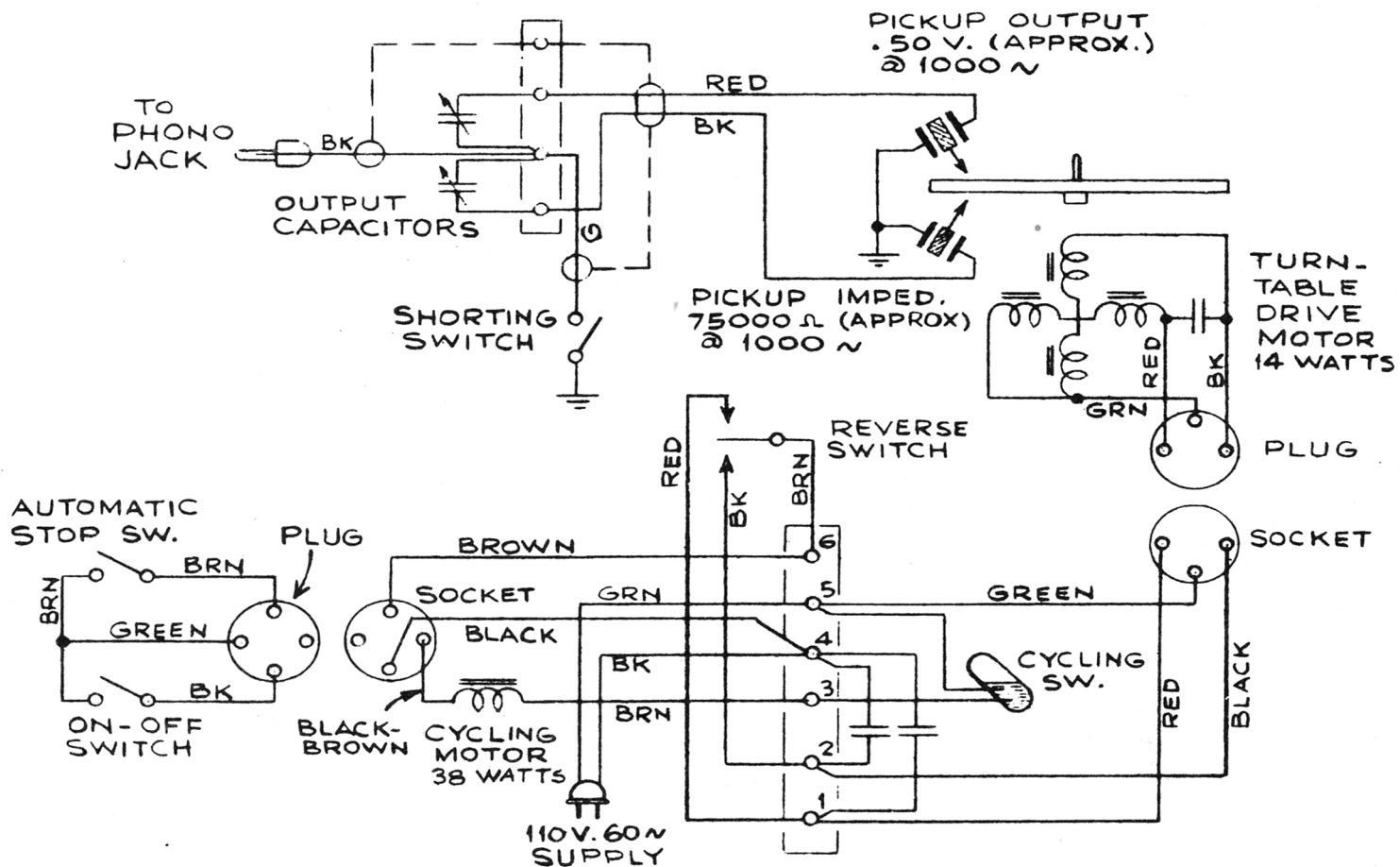
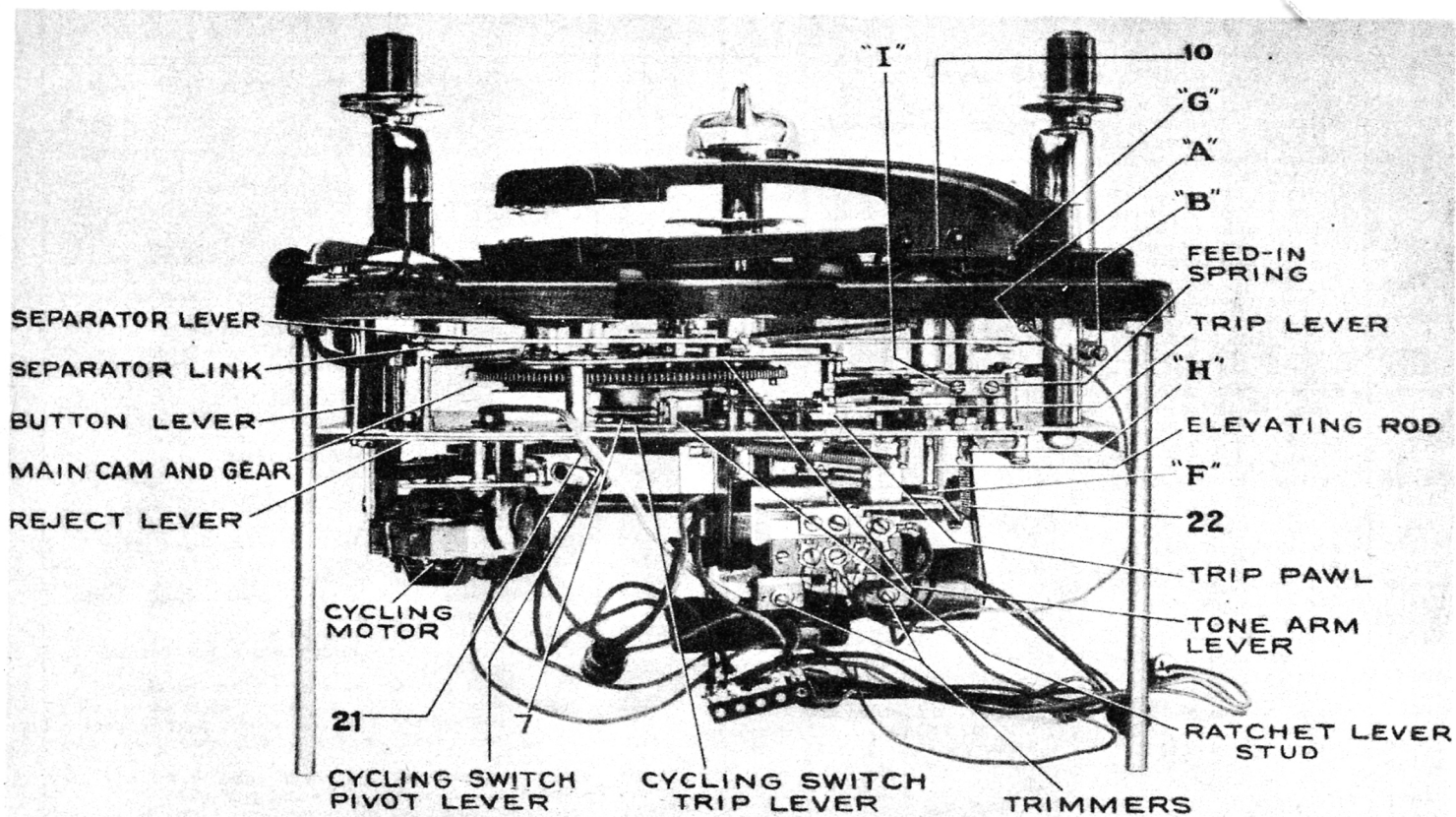
COUNTERBALANCE SPRING

REVERSING SWITCH LEVER

REVERSING SWITCH MOUNTING SCREWS



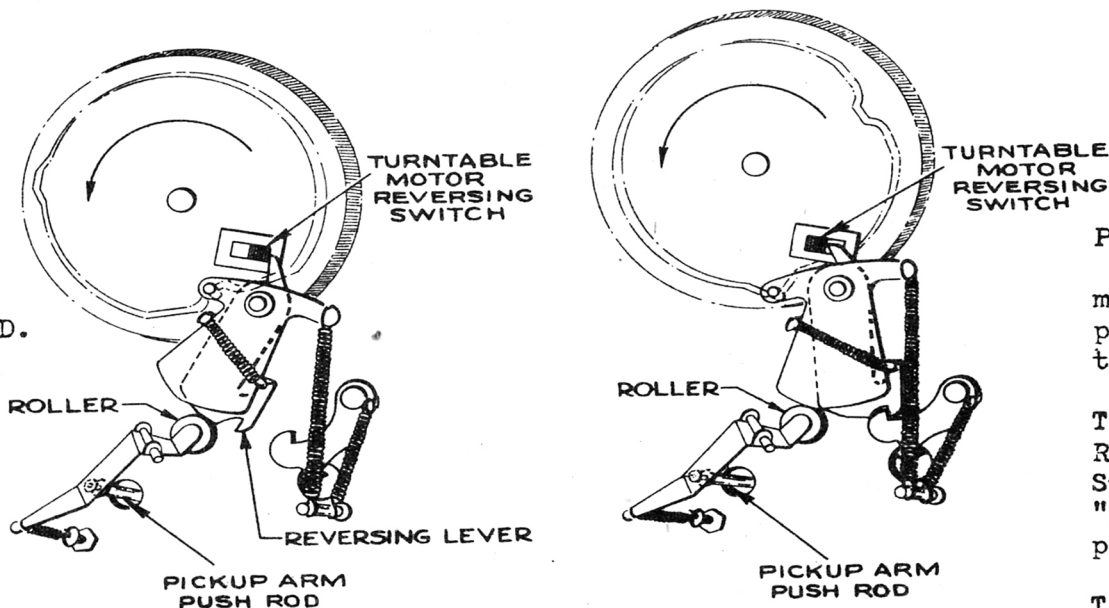




Replacement Parts

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
33726	Washer—"C" washer for turntable drive wheel or idler wheel.	.02	10941	Ball—1/8 diameter steel ball for pickup arm, or trip lever bearing.	.02
34373	Washer—"C" washer for turntable idler wheel arm.	.03	38565	Cable—Output cable and plug—connects shorting switch to amplifier.	.65
38529	Weight—Turntable pivot shaft counterweight and arm.	1.25	13762	Capacitor—1,500 mmfd.	.50
38535	Wheel—Cycling motor rubber-tired drive wheel and pinion gear.	.65	38561	Lever—Pickup arm trip lever—less spring.	.75
36274	Wheel—Rubber-tired turntable drive wheel or idler wheel.	.55	30870	Plug—2-prong male for power supply cable.	.35
	CYCLING MOTOR		31572	Plug—3-contact female for motor cable.	.15
38556	Motor—105-125 volts, 60 cycles.	4.00	31567	Plug—3-prong male for turntable motor leads.	.15
	TURNTABLE DRIVE MOTOR		35352	Plug—4-contact female for motor cable.	.25
36952	Cap—Bakelite top cover for motor.	.50	35384	Plug—4-prong male for power switch cable.	.25
36955	Capacitor—1.1 mfd., 200 volts for 60 or 50 cycle motors.	1.50	38563	Rod—Pickup arm elevating rod—less adjusting screw.	.25
38557	Motor—Motor and capacitor, 105-125 volts, 60 cycles.	8.75	38564	Screw—No. 4-40 x 5/16 hex. head screw and nut for pickup arm elevating rod.	.04
38558	Rotor—Rotor and shaft for 60 cycle motor.	3.25	31118	Screw—No. 10-32 x 5/16 cone point set screw for trip lever.	.06
38848	Sleeve—Motor spindle sleeve for 50 cycle conversion.	.25	32869	Screw—No. 10-32 x 5/16 set screw for trip lever unit to top plate.	.01
			38559	Screw—5/16—18 x 1/2 screw to mount lower unit to top plate.	.04
			38562	Spring—Spiral spring for trip lever latch (18).	.10
			38560	Washer—Felt washer for pickup arm pivot shaft bearing.	.04

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.



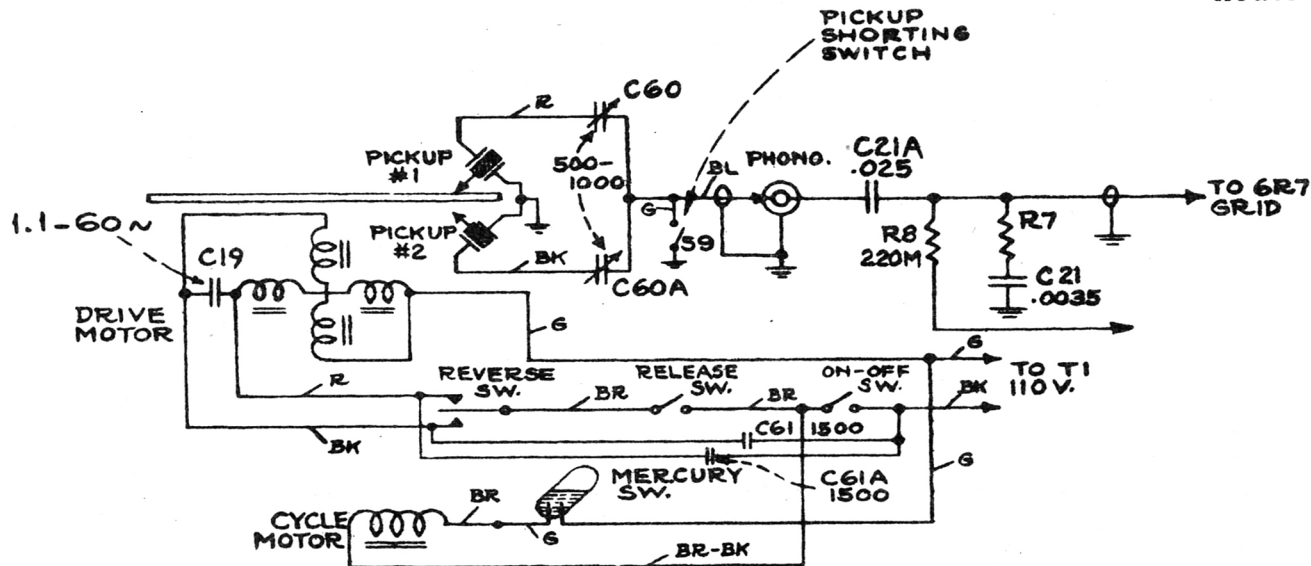
POSITION WHEN MAIN CYCLE IS COMPLETED AND PLAYING TOP SIDE OF RECORD.

Position of mechanism part way thru cycle.

Turntable Reversing Switch in "reversed" position.

Tone Arm in neutral.

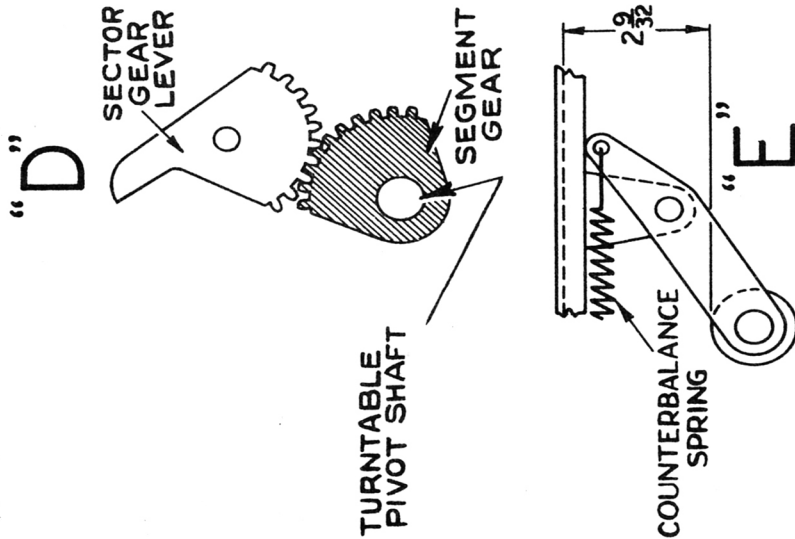
Pickup Arm Elevating Mechanism and Turntable Motor Reversing Switch



Electrical Schematic Diagram

Adjustment of Pickup Arm Feed-in Spring

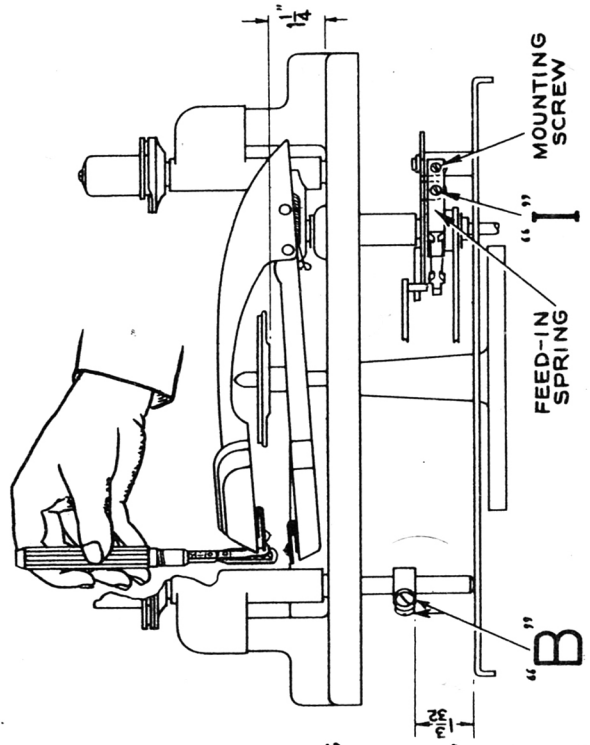
A bronze feed-in spring damped by a piece of Viscaloid is fastened to the pickup arm return lever. Its purpose is to move the pickup over into the first music groove after the pickup has landed on the record. This spring is mounted with one mounting screw which is always drawn up tight and in addition has an adjusting screw marked "I". Greater pressure is required from this feed-in spring to move the bottom pickup into the first music groove than is required to move the top pickup into the first music groove. Consequently, the adjustment of this spring will be a compromise between the two where sufficient force is exerted to move the bottom pickup into the first music groove and at the same time not enough force is exerted to cause the top pickup to jump several grooves when it moves inward. Due to the damping action of the Viscaloid on the spring, several seconds will frequently elapse between the time that the bottom pickup touches the record at the time that the bottom pickup is actually moved into the first music groove.



Turntable Adjustment

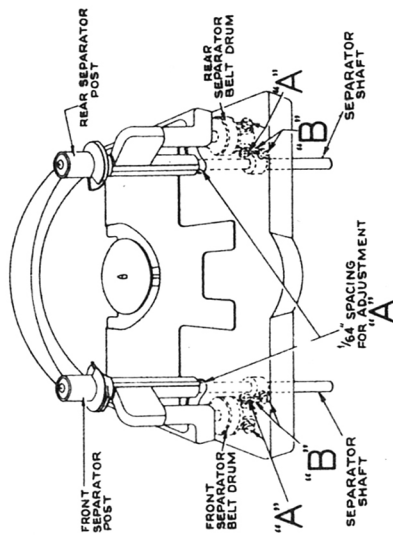
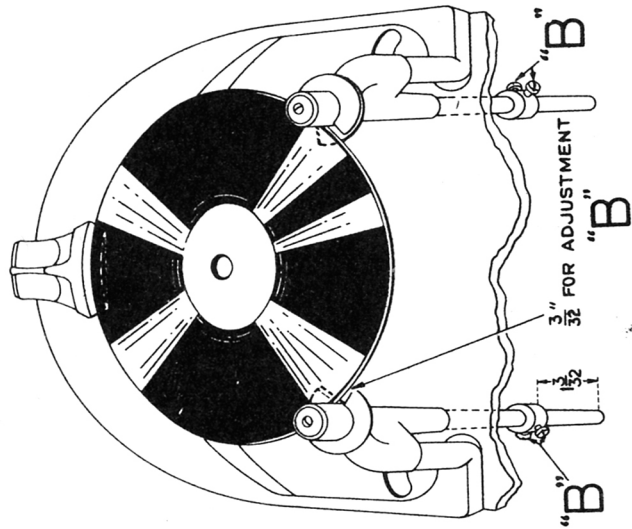
The sector gear lever is properly meshed at the factory with the segment gear and unless they have been tampered with, there will never be any occasion to change the mesh of these gears. Be sure that the mechanism is out of cycle and then remove the long spring from the counter balance lever. Loosen set screws "E" and "D". The long turntable pivot rod can now be moved forward or backward as necessary to exactly center the turntable spindle from front to back. This is most easily checked by holding a record against the record support posts and noting whether or not the center of the spindle is centered from front to back in the hole in the record. The turntable should then be moved from side to side as necessary so that it is exactly level. Hold it in this position and move the segment gear snugly against the pivot shaft bearing and tighten the zinc plated set screw "D". Now move the counter balance lever snugly against the turntable pivot bearing allowing just sufficient clearance so that there will be no binding and move the counter balance lever until the top of the counter balance weight is $2\frac{9}{32}$ inches below the main bottom plate. Tighten zinc plated set screw "E". Replace long spring on counter balance lever and run mechanism through several cycles several times to be sure it functions properly. Then tighten copper plated set screws "D" and "E".

TO MEASURE PRESSURE AT THE SAPPHIRE POINT USE POSTAL SCALE AS SHOWN



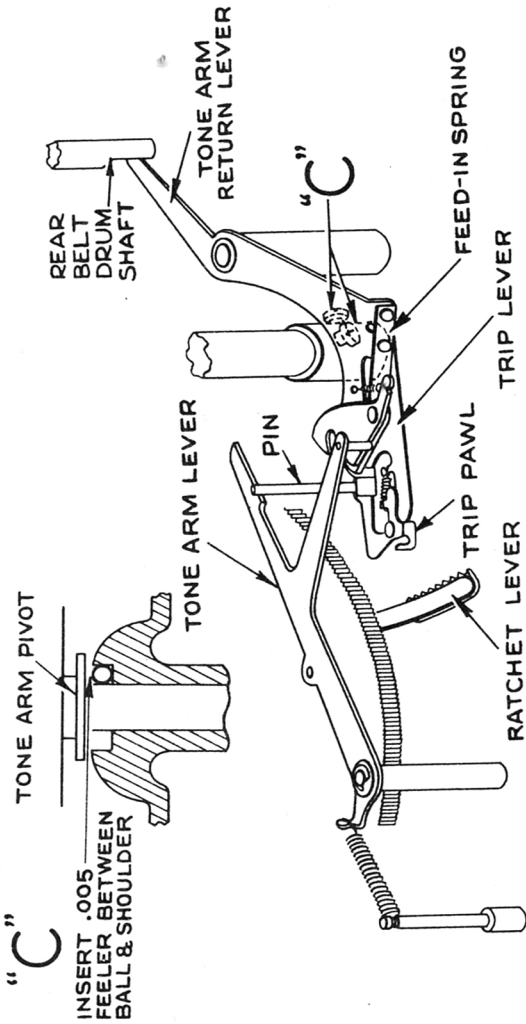
Record Post Separator Knife Adjustment

Turn the main record support to the 10" position, be sure the mechanism is out of cycle, and place a 10" record on the shelves pushed over snugly against the front and rear record separator posts. Loosen set screws "B" on the front record separator shaft and turn this shaft until the record separating knife is 3/32nd of an inch away from the edge of the record. Be sure that the bottom of the set screw collar is 1 3/32nd inch above the bottom plate. Tighten the zinc plated screw, run the mechanism through cycles several times as a check, then tighten the copper plated screw. Repeat this adjustment on the rear record separating post.



Records will not fit properly on the three record posts. (Record Post Spacing)

Turn the record support to the 10-inch position. Loosen the set screws "A." Move the front record separator post until its shaft is 1/64 from the end of the motorboard slot. Turn the belt drum to take up the slack in the belt and tighten the zinc-plated screw being certain to maintain the 1/64-inch spacing. Repeat the adjustment on the rear separator post. Check by placing a 10-inch record on the shelves posts and then tighten the copper-plated screws. Care should be taken to leave a small vertical clearance between the belt drum and the motorboard. The 12-inch position is automatically maintained.

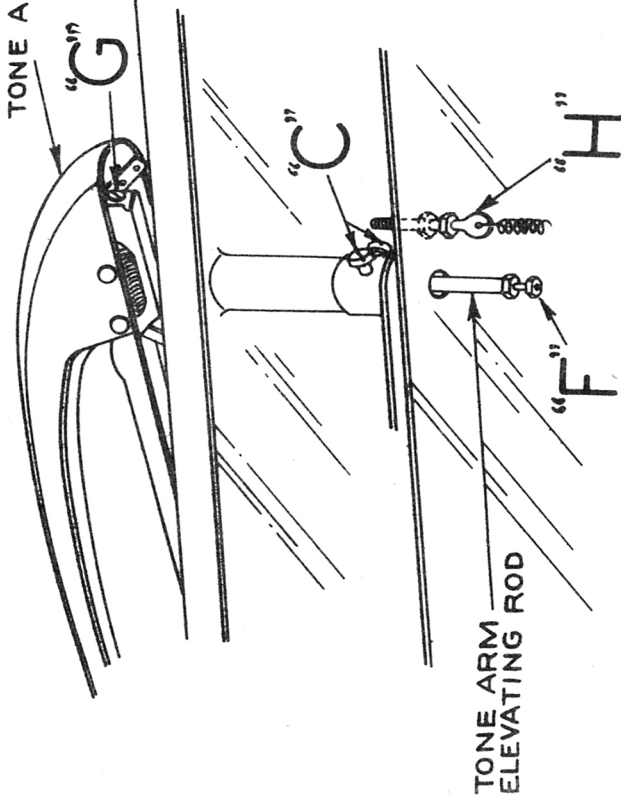


When properly adjusted the sapphire point should land on the smooth outer edge of the record just outside of the music grooves after which the feed-in spring will move the sapphire over into the first music groove. This condition is brought about by the proper relationship between the pickup arm position with respect to the trip lever. Place a 10" record on the turntable and rotate the changer through cycle until the sapphire is just ready to land and has not quite touched the record. Be sure that the pickup arm return lever is against the rear belt drum shaft and that the pin in the trip lever is still latched securely in the pickup arm return lever. Loosen both set screws "C" and place a .005 inch feeler between the shoulder on the pickup arm pivot shaft and its ball bearing as shown. Move the pickup arm to the point of proper landing, be sure that the set screw collar is up against the pickup arm pivot shaft bushing, and tighten the zinc plated screw. Remove feeler and run through cycle several times as a check and then tighten the copper plated screw. The 12" landing will then be correct also.

Correct Mesh of Sector Gear and Segment Gear

This shows the correct mesh of the sector gear with the segment gear. This mesh is set correctly at the factory and unless it has been tampered with, it will never require adjustment in the field. This is the gear mesh which was referred to in the previous slide.

TONE ARM



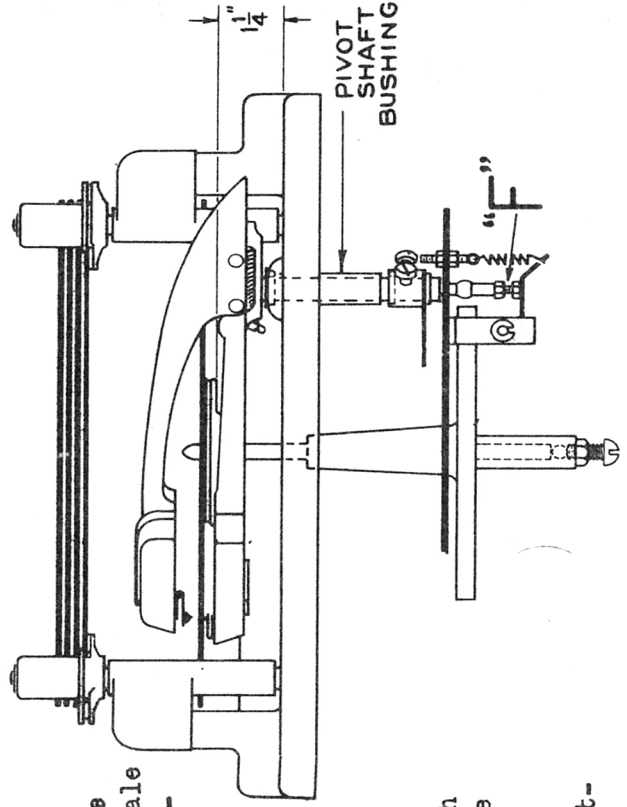
Turntable and Pickup Arm Height Adjustment

Adjust the screw, as necessary, on the bottom bearing of the turntable housing until the bottom of the turntable is 1 1/4 inches above the top of the main motor board. Then start mechanism through cycle until pickup arm has reached its neutral position where neither sapphire point touches a flat record placed on the turntable. The top and bottom sapphires should now be equally distant above and below the records. If they are not, the screw and lock nut "F" in the bottom of the pickup arm push rod should be adjusted until the sapphires are equally distant above and below the record.

Pickup Pressure Adjustment

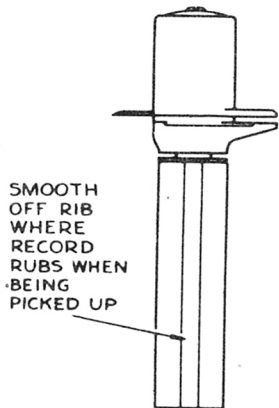
Run the mechanism through cycle so that it is in position to play the top side of a record. Use a small postal scale which can be very readily obtained from almost any stationery store at a very nominal cost and measure the downward pressure exerted by the top sapphire when the tray of the scale is held level with the top side of a record if one were lying on the turntable. Adjustment screw "G" should now be turned until the pressure is between one ounce and one and one-quarter ounces.

Run the mechanism through cycle again until it is in position to play the bottom side of a record. Now adjust the two lock nuts on screw "H" until the upward pressure exerted by the bottom sapphire is between one ounce and one and one-quarter ounces. This measurement must likewise be taken when the sapphire is raised up to a position where its point is level with the bottom side of a record if one were placed on the turntable. Suitable weights can be used for making this measurement or the postal scale just referred to can have its zero adjustment changed until it shows a reading of two ounces and it can then be pressed down on the pickup and the adjustment made so that the scale reading will be between three-quarters of an ounce and one ounce. It is important to make the adjustment for pressure of the top pickup before the adjustment is made for pressure of the bottom pickup.



Illustrated Hints for RCA RP-151 Record Changer

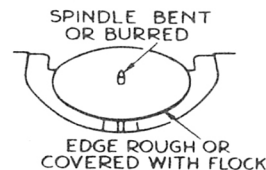
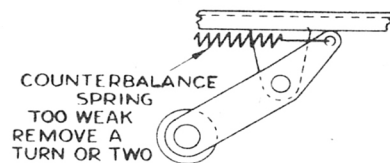
Caution: Do Not Handle The Tone Arm While The Mechanism Is Operating



Fails To Pick Up Record or 12-Inch Record Rubs Tone Arm

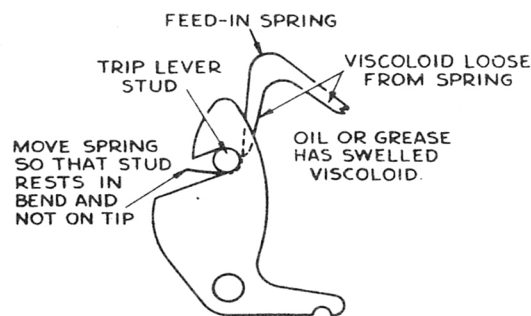
Check to see that turntable returns to level position. If necessary make Adjustments "D" and "E." Check turntable height.

Edge of hole in record is raised.



Incorrect Feed-In

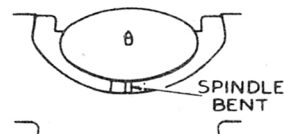
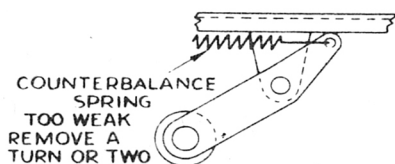
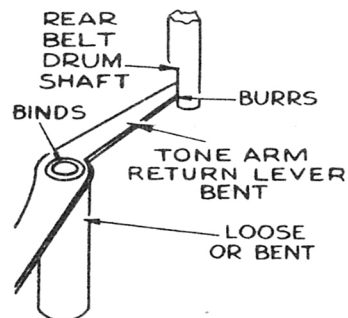
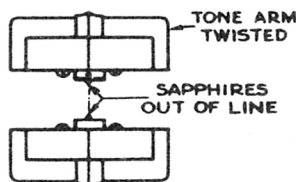
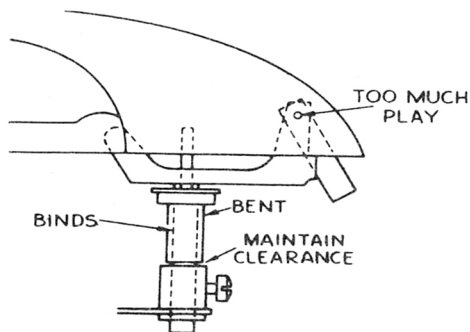
The feed-in spring has no effect until just after the pickup has landed. It then springs back to its original position, pushing on the trip lever stud and moving the pickup toward the music grooves. When feeding in on the top side of a record the feed-in spring is assisted by the rotational force of the record; on bottom side feed-in this force opposes the feed-in spring's action. Adjustment "I" should be made so that the sapphire does not jump grooves on top side feed-in and still accomplishes bottom side feed-in in less than ten seconds. Instrument is not level. Pickup cable binds.



Lands Incorrectly

First check Adjustment "C." Make certain that turntable returns to level position making Adjustment "D" and "E"

if necessary. Be sure that sapphire clears record on turntable making Adjustment "F" if necessary. Pickup cable binds.



Repeats Grooves

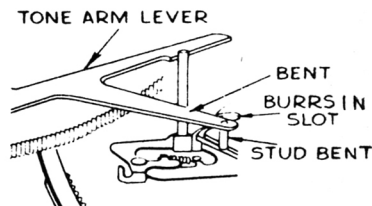
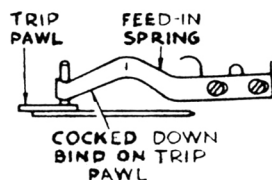
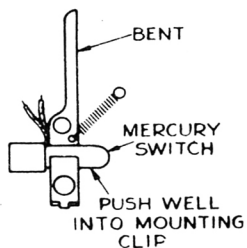
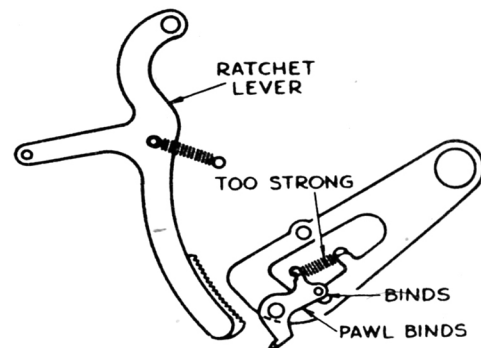
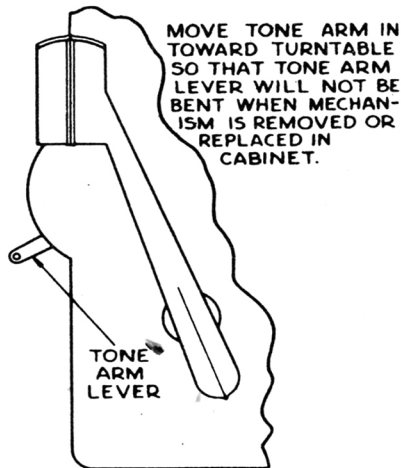
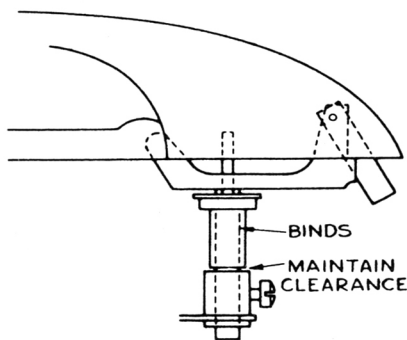
The mercury switch is operated to break the a.c. supply to the cycling motor a few moments before all the cycling operations are completed. The "coast" of the mechanism should then bring the tone arm lever stud against the return lever latch and disconnect the return lever from the trip lever. If excessive friction anywhere in the cycling motor or its gear train reduces this "coast" the pickup will land and repeat

grooves near the beginning of the record. Other causes for the repeating of grooves are shown below.

Check pickup pressure Adjustments "G" and "H."

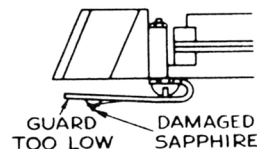
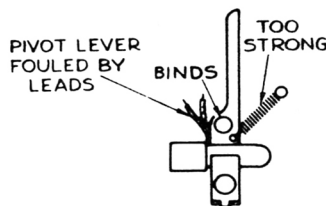
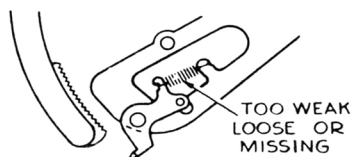
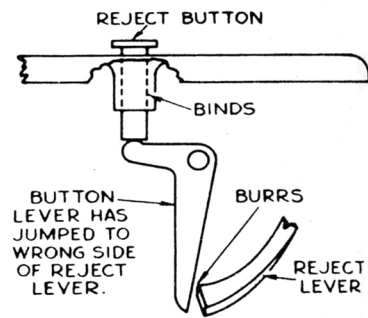
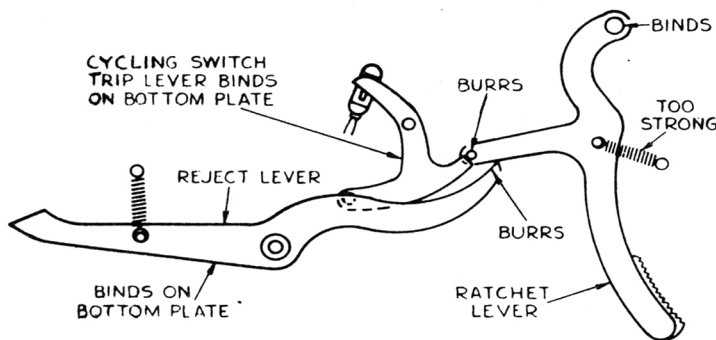
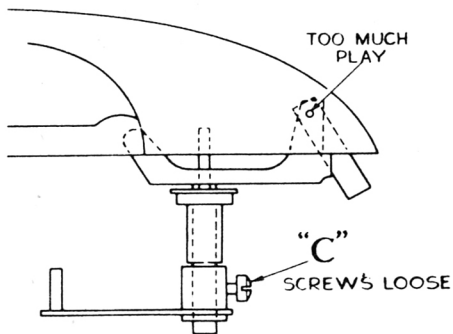
Groove wall in record is broken.

Pickup cable binds.



Fails To Trip (or Fails to Cycle)

Eccentric groove on record is too shallow or discontinuous. Defective mercury switch, circuit, or motor.



Record Drops Too Soon

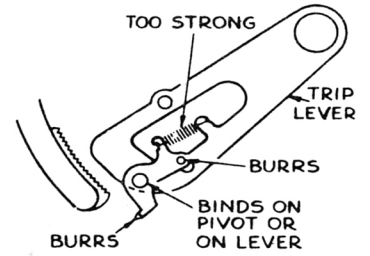
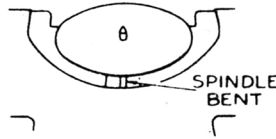
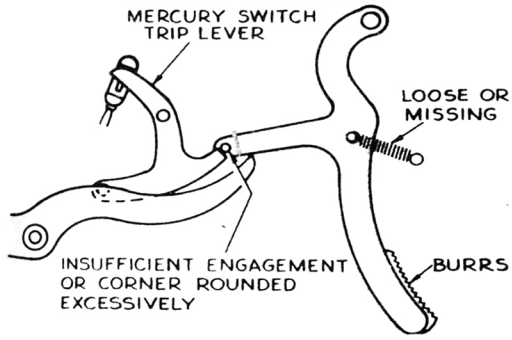
Check Adjustments "B" and "A" setting the knife spacing greater than 3/32 inches if necessary.

Adjustment Screws Slip

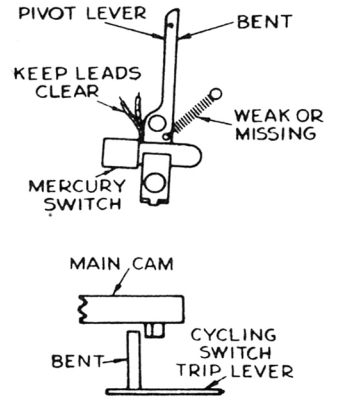
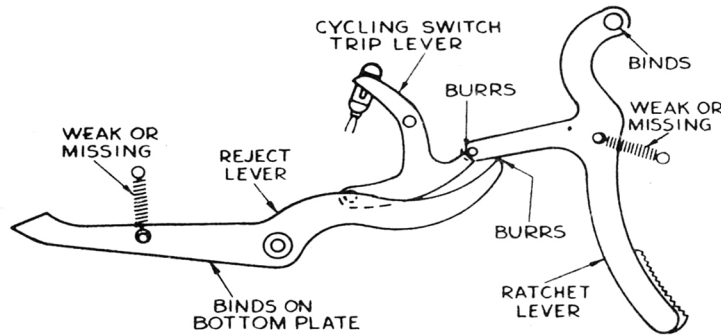
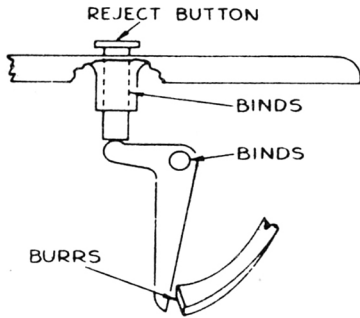
Two cone-pointed set screws Stock No. 31118 may be used if Adjustment "D" fails to hold. Similarly on Adjustment "E" two cone-pointed screws Stock No. 38527 may be used.

Trips Early

Off-center record.
Trip pawl not aligned with ratchet lever teeth.

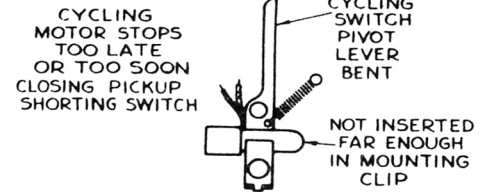
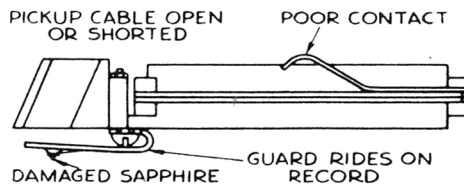
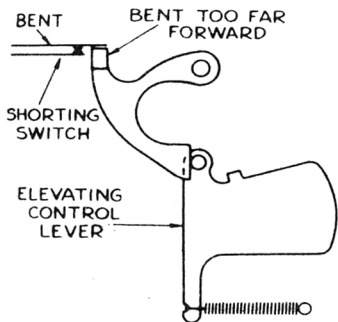


Trips Continuously



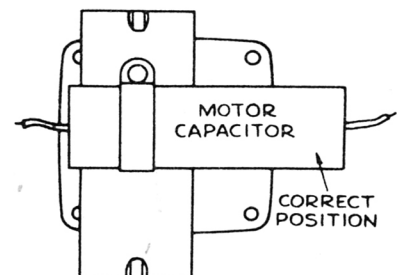
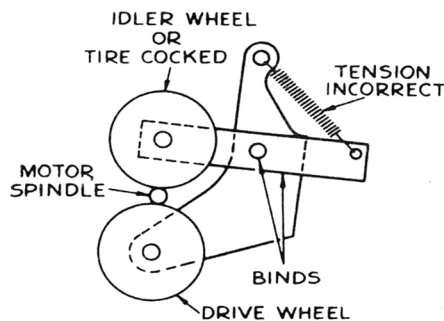
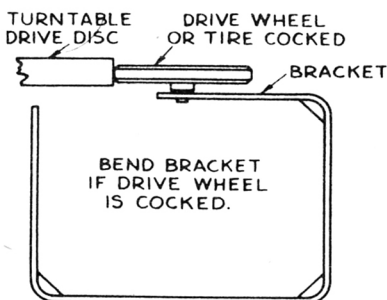
No—Low—Distorted Output

Defective crystal. Shield over terminal board is shorting to cable lugs. Sapphire strikes guard. Nut on sapphire holder shaft is loose.



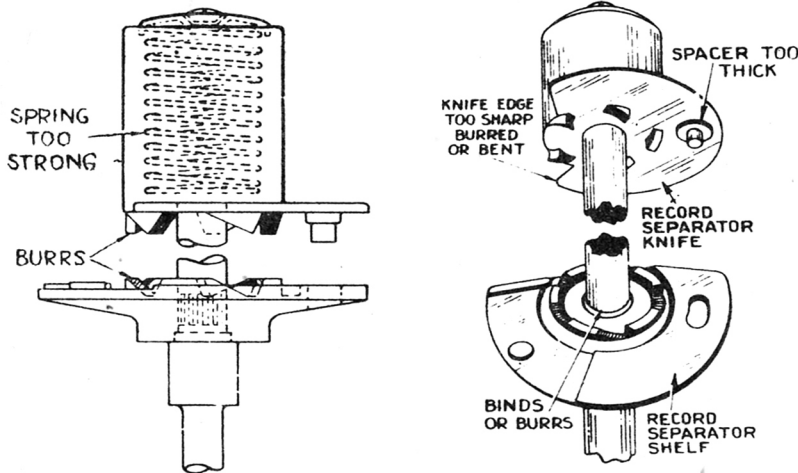
Slow or Varying Speed

Motor support spring tension is incorrect.



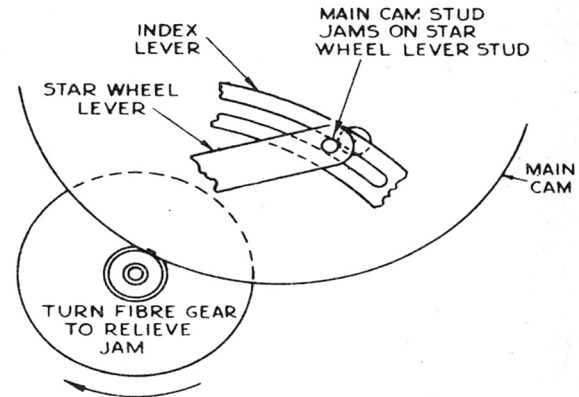
Record Jams

Record too thick, too thin, or warped. Separator knife shaft binds in its bushing.

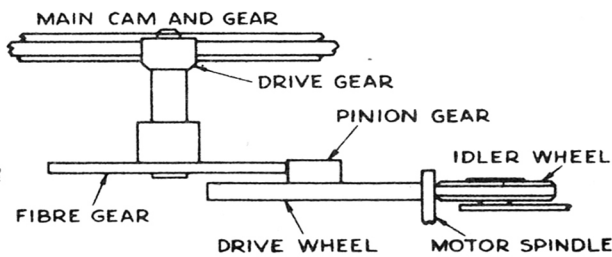


Mechanism Jams

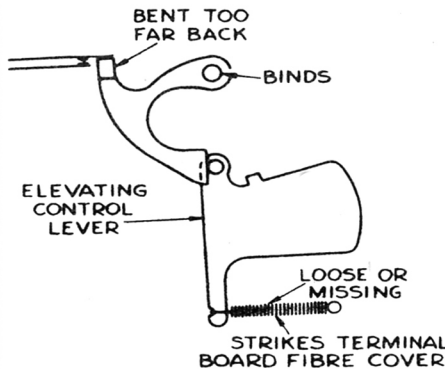
JAM CAUSED BY OPERATOR LEAVING CONTROL LEVER IN MID-POSITION



Cycling Drive System

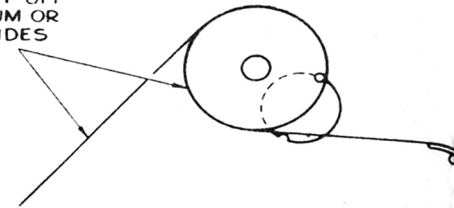


Reproduced Noise During Cycle



Record Posts Fail to Move

BELT OFF DRUM OR GUIDES



Turntable Stops While Playing Record or Fails to Reverse Rotation

First make certain that sapphires are equi-distant from the record on the turntable when the tone arm has been raised or lowered to its "in-cycle" position. Check Adjustment "F" if necessary.

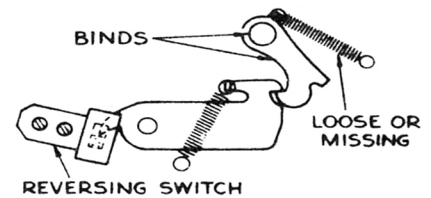
See that turntable is level making Adjustments "D" and "E" if necessary.

Check reversing switch adjustment.

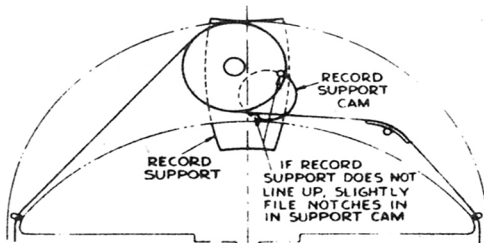
Check turntable height adjustment.

Warped record strikes automatic stop switch.

Automatic stop switch button binds on motorboard and fails to rise.



Record Support Misaligned



Tone Arm Action Erratic

