

Section 6: Mechanical Adjustments

LUBRICATION

Your phonograph mechanism requires no lubrication.

UNSCHEDULED MAINTENANCE

This section contains adjustments, removal, and replacement procedures that are to be followed whenever a malfunction has occurred.

MECHANISM MAINTENANCE AND ADJUSTMENTS



CAUTION:

The CD mechanism is extremely sensitive to static discharges. The photo diodes and the laser are more sensitive to discharges than MOS IC's. Careless handling may immediately destroy components within the player or cause undetectable damage that will lead to failure after several weeks or even months of use. Before you touch the player, discharge your hands and tools by touching a grounded metal part of the phonograph, such as the amplifier or power supply chassis. If you need to remove the CD player for servicing, place the CD player into the anti-static bag (shipped with the phonograph for this purpose) immediately after you remove it from the phonograph.

CD Player Mechanism

The only maintenance required on the CD player is an occasional cleaning of the lens. If you need to clean the CD player lens, be sure to follow the lens cleaning procedure that follows.

Cleaning The Laser Lens



NOTE:

Before you clean the laser lens, be sure to turn the jukebox power OFF and ground yourself by touching a grounded component (such as the lower door) to discharge any static buildup that may harm the CDM-4 player.

1. Remove loose particles from the lens by gently brushing it with a camel's hair brush or a blow brush (both items can be purchased at most camera supply stores). Take care not to snag brush bristles under the lens. The lens is mounted on a delicate suspension spring that may be damaged with even a soft brush.
2. Remove any remaining dirt by placing one to three drops of Kodak Lens Cleaner (Kodak Catalog Number 176 7136, available from photographic supply stores or Rowe Part Number 21966601) on a lint-free "Q"-Tip and very gently wiping dust and smoke deposits from the lens. Take care not to damage the delicate lens suspension spring. Do not allow any of the lens cleaner to run down the side of the lens.

CD Player Maintenance

The CD player does not require any adjustments or field replaceable parts. Individual parts and components are not available for distributor or field repairs. All CD players that require repair must be sent to Rowe for service.

Removing Mechanism Control Unit

If you have followed the troubleshooting procedure in *Section 5*, and you have found the mechanism control unit needs to be removed for factory service, follow this procedure:

1. Turn the POWER switch (on the back of the phonograph) OFF, or place the POWER switch (on the left side of the phonograph) in the OFF position.
2. Remove all connectors from the mechanism control unit (including the two attached to the player), loosen the mechanism control unit mounting screw (*figure 6-1*), and remove the mechanism control unit.

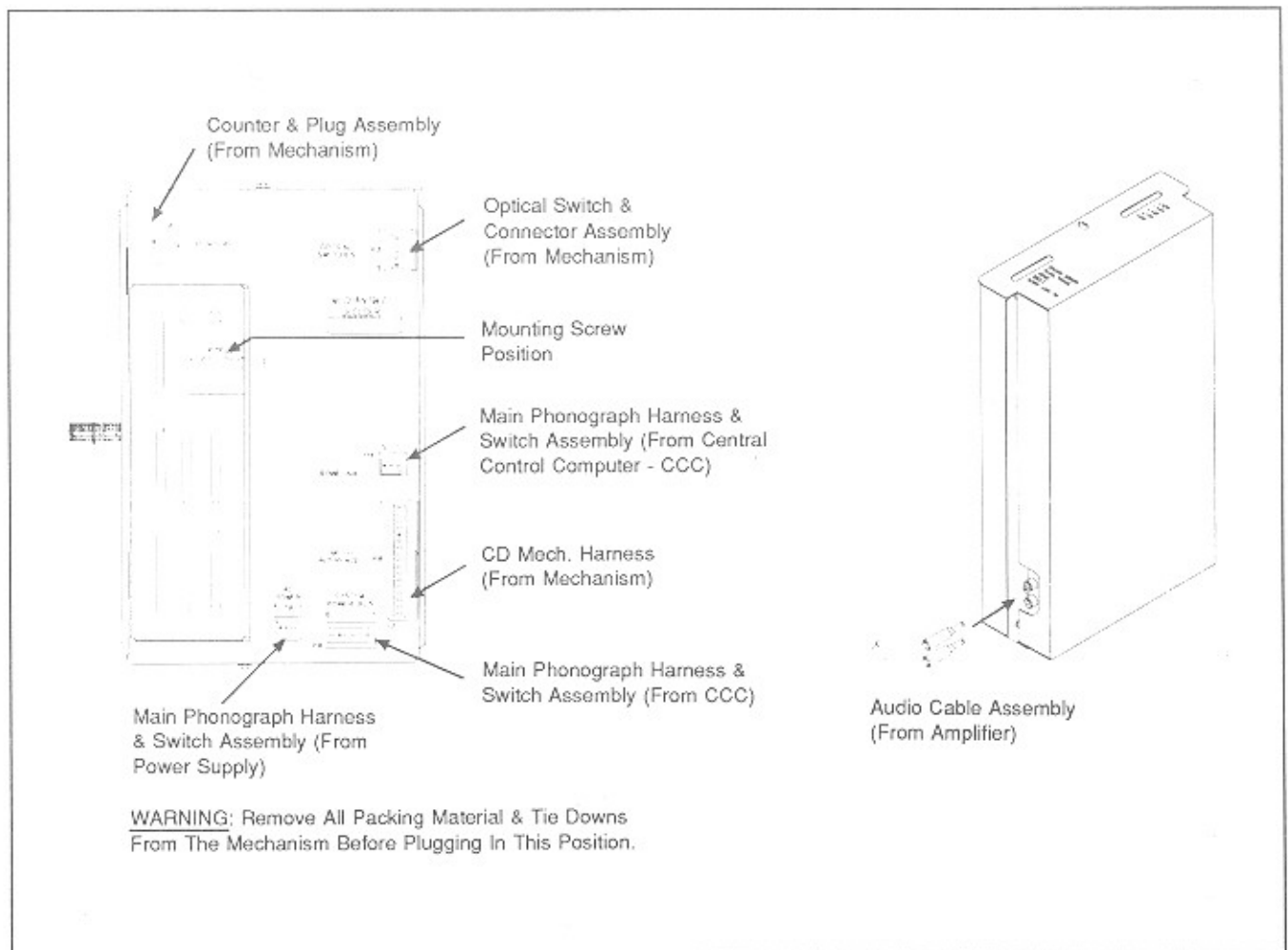


Figure 6-1. Mechanism Control Connecting Diagram

Removing The CD Player

1. Read the following Caution before you remove the CD player:



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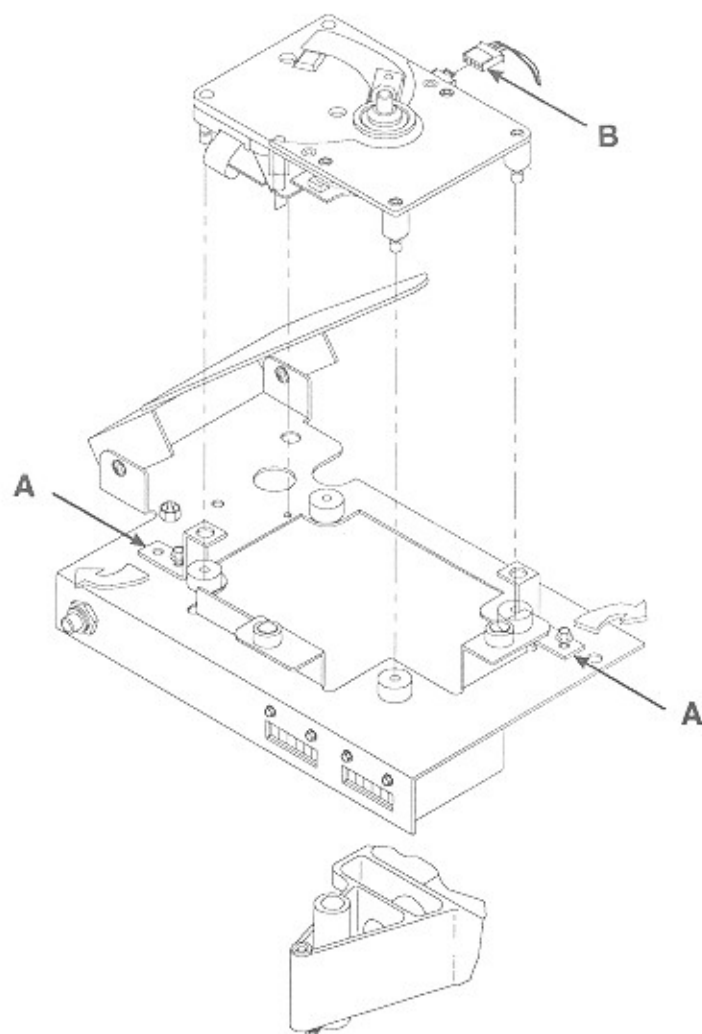


Figure 6-2A. Removing The CD Player

2. Refer to *figure 6-2A* as you do this step. To remove the player, loosen the screws holding the two retaining brackets (A) in place, swing the brackets out of the way, and lift the player straight up (If any of the four grommets from the player posts remain attached to the player, remove them from the player posts and place them in corresponding hole in the mounting frame).
3. Refer to *figure 6-2A* as you do this step. If not previously done, disconnect the small player electrical plug (B).
4. Refer to *figure 6-2B*. Remove the main CD harness, which is on the bottom of the CD player as follows:
 - A. Pull the locking tab away from the plug body and hold it away from the plug body.
 - B. Pull the plug out of the socket while you continue to hold the tab away from the plug body.
5. Immediately place the CD player into the anti-static bag (supplied with the phonograph) and return the CD player to your distributor.
6. To replace the CD player, reverse the previous steps. Make sure that the four grommets are in place in the holes in the mounting plate before pushing the player posts into the grommets. When you have properly positioned the CD player, make sure that all grommets are seated and that the CD player sets level in the mechanism frame.

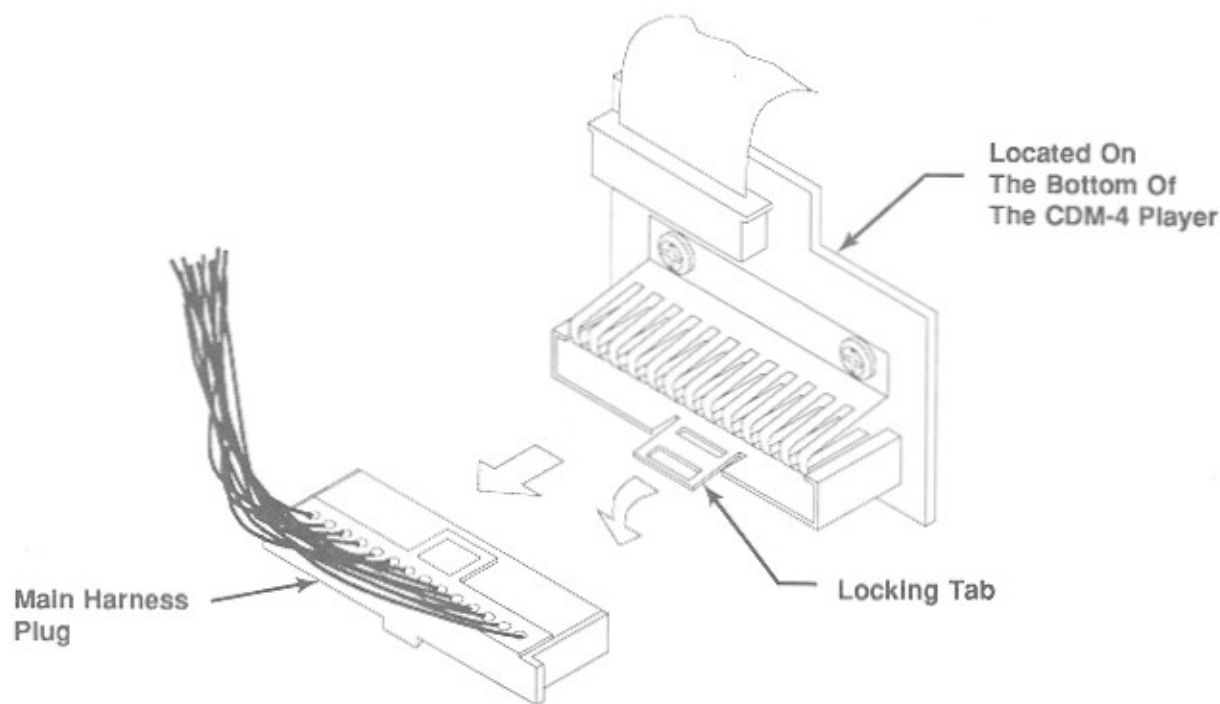


Figure 6-2B. Disconnecting The Main CD Player Harness

Hold Down Assembly And Hold Down Plate Height

SERVICE CHECK

With the gripper bow in the play position and the disc on the turntable (the outer cam switch is actuated), the aluminum hold down plate (figure 6-3) should be $3/32$ to $5/32$ inch ($1/8 \pm 1/32$) under the flange of the magnetic hold down hub.

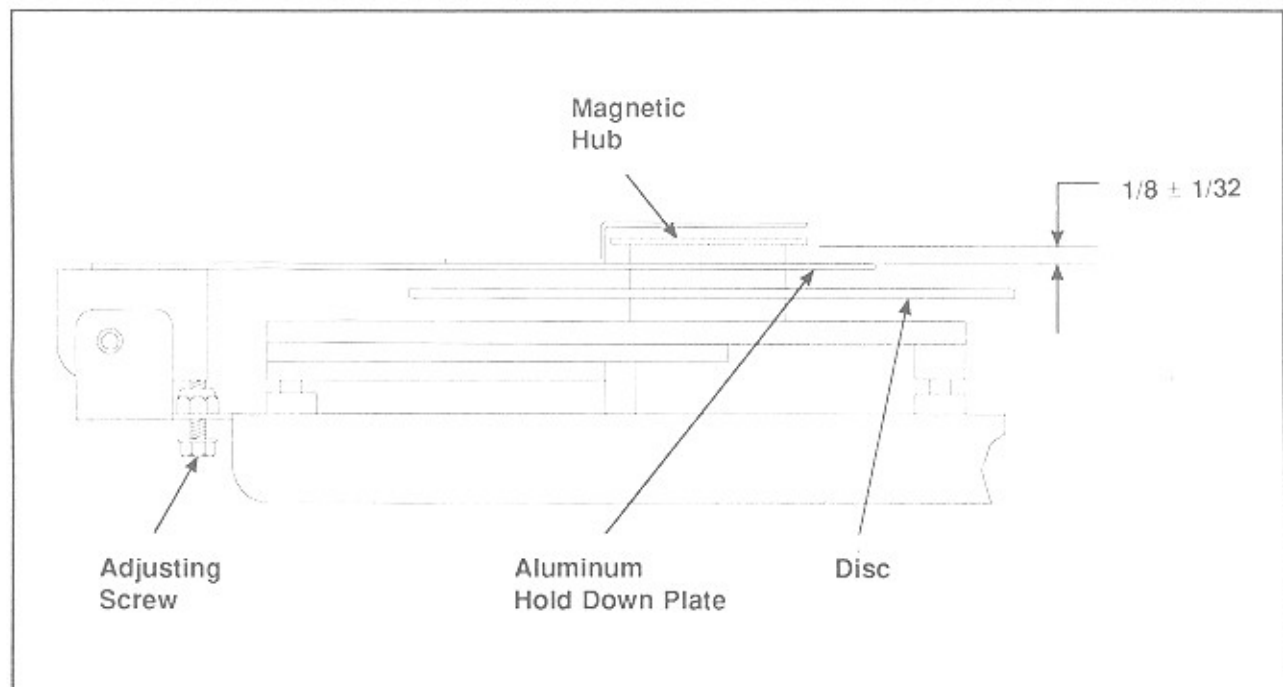


Figure 6-3. Hold Down Plate

ADJUSTMENT

If the hold down plate height is not correct, turn the adjustment screw (figure 6-3) until the $3/32$ to $5/32$ inch ($1/8 \pm 1/32$) height is attained.

HOLD DOWN PLATE CENTERING

Refer to figure 6-4 for this adjustment.

1. With the gripper bow in the PLAY position and the disc on the turntable, loosen the two centering adjustment screws slightly.
2. Look straight down on the turntable hub and rotate the hold down plate until the two "witness" marks are centered around the magnetic hold down hub.
3. Tighten the two centering adjustment screws and recheck the previous adjustments.

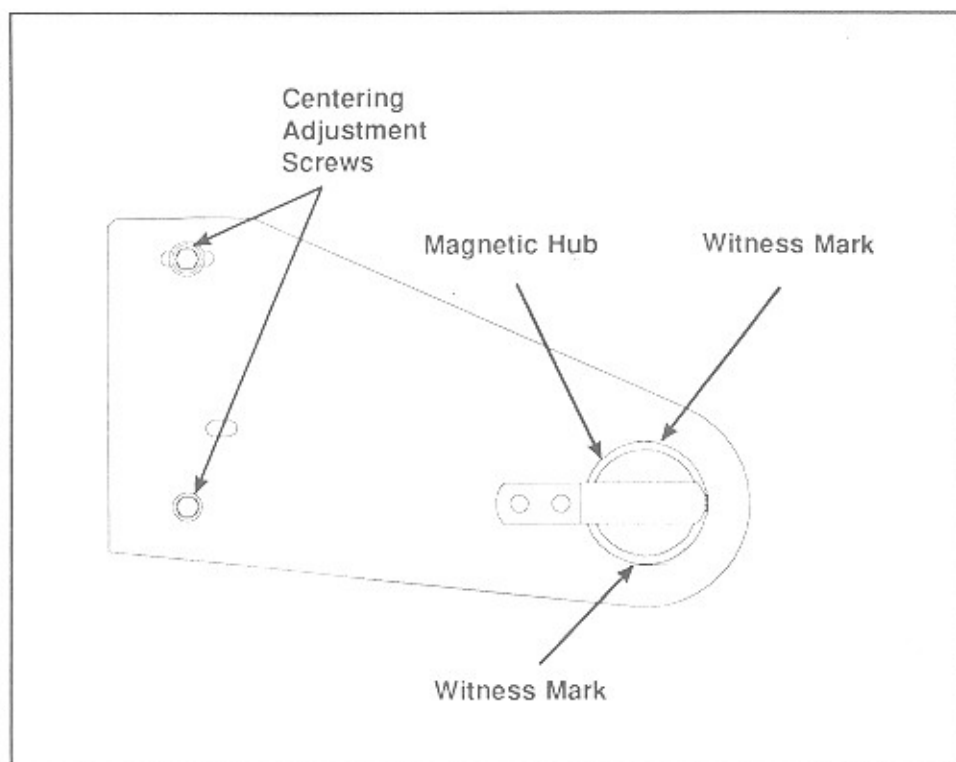


Figure 6-4. Hold Down Plate Centering

Optical Switch Adjustment

1. Push in the detent plunger, so that the magazine can be rotated to Position 99. Engage the detent plunger.
2. Loosen the optical switch bracket mounting screw, turn the adjustment knob counter clockwise to top of its travel, and move the bracket down to the bottom of its travel (*refer to figure 6-5*). Snug the optical switch mounting screw, so that the bracket can move with resistance.
3. With the detent plunger engaged, rotate the magazine counter-clockwise to remove gear backlash and maintain pressure for Steps 4 and 5.
4. Turn the adjustment knob clockwise until both the INDEX and HOME LED's are ON.

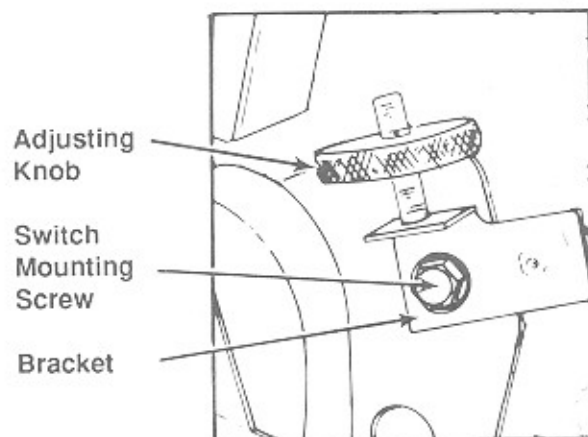


Figure 6-5. Optical Switch Adjustment

5. Continue turning the adjustment knob clockwise until the INDEX LED goes OFF. The HOME LED must remain ON. Then turn the knob one full turn clockwise and tighten the mounting screw. The INDEX LED must be OFF and the HOME LED can be ON or OFF.
6. Push in the detent plunger and rotate the magazine to Position 06.
7. With the detent plunger engaged, rotate the magazine in both directions as far as you can by hand (taking up the gear backlash in both directions). The INDEX and HOME LED's will remain OFF when properly adjusted.
8. Push in the detent plunger and rotate the magazine to Positions 56, 07, and 57. Repeat Step 7 at each position.

Sprag Assembly

ADJUSTMENTS

The following steps must be used to make sprag assembly adjustments.



WARNING:

Turn the power OFF before servicing the sprag assembly.

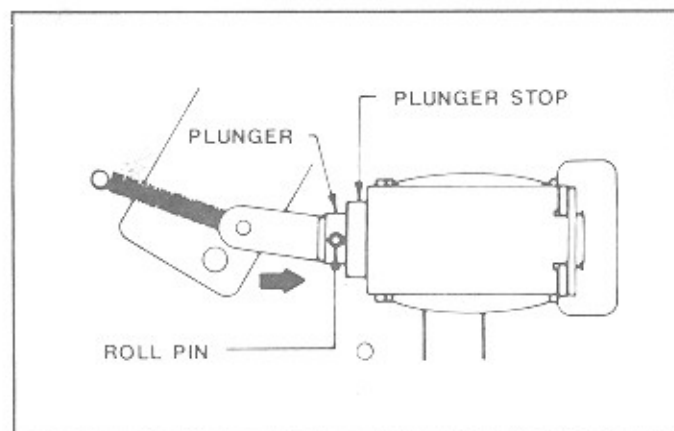


Figure 6-6. Sprag Assembly (Plunger)

1. Refer to figure 6-6. Depress solenoid plunger until the roll pin bottoms on the plunger stop (actuate by pressing on plunger).
2. Rotate the disc magazine and note the clearance between the sprag lever and the sprag wheel located on the backside of the sprag plate assembly.

The sprag lever must not touch the sprag wheel and the clearance must be .015 to .025 inches (see figure 6-7). It will be necessary to remove the sprag assembly if corrections are required.

SPRAG ASSEMBLY REMOVAL

1. To remove sprag assembly, disconnect wires to the solenoid and motor, remove the three mounting screws and slide the assembly out of the right side of the mechanism (see figure 6-8).
2. Loosen the solenoid mounting screws (see figure 6-9) and with the roll pin against the plunger stop, position the solenoid so that there is a .015 to .025-inch gap between the sprag lever and the highest point on the sprag wheel (see figure 6-7).
3. Tighten solenoid mounting screws.
4. Replace sprag assembly in mechanism with three mounting screws and replace the Black and White/Blue wires to the solenoid and the Yellow and Yellow/Black wires to the magazine motor.
5. After you have replaced the sprag assembly, perform the *Aligning Magazine Stopping Position With The Gripper Bow* procedure in this section.
6. To adjust the optical switch, refer to *Optical Switch* in this section.

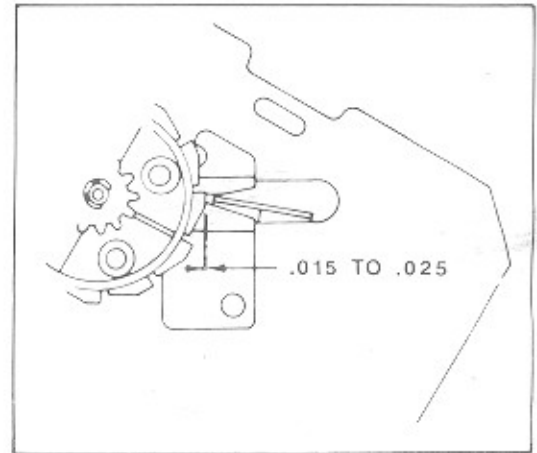


Figure 6-7. Sprag Wheel

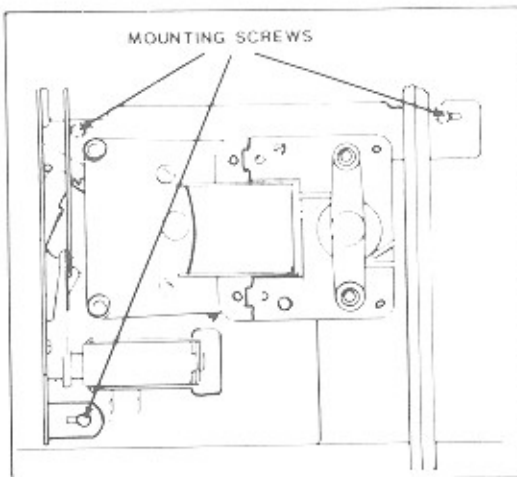


Figure 6-8. Sprag Assembly Removal

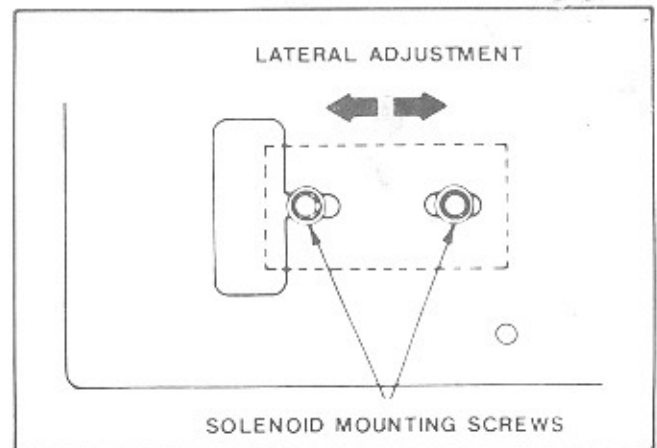


Figure 6-9. Lateral Adjustment

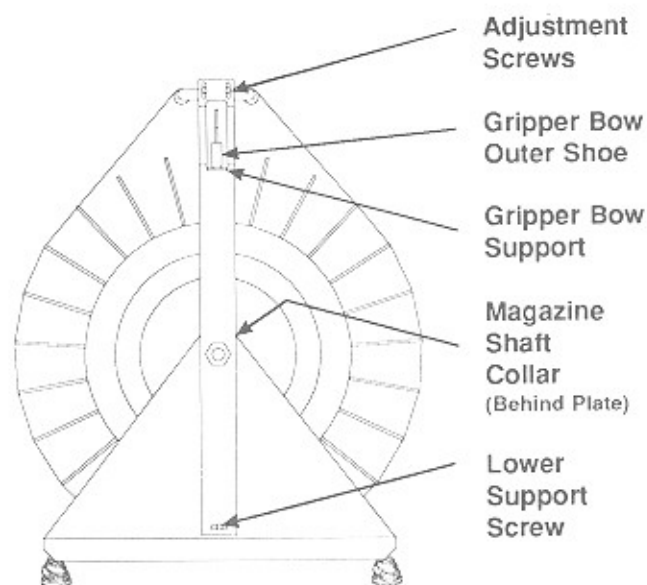


Figure 6-10. Magazine Belt Adjustment

Disc Magazine And Gripper Bow Support

See *figure 6-10* for this adjustment.

ADJUSTMENT

To eliminate magazine end play and to adjust the gripper bow support:

1. Loosen the set screws in rear magazine shaft collar. Push the collar on to magazine shaft to eliminate end play and tighten the screws.
2. Loosen the lower screw that holds the gripper bow support to the mechanism frame.
3. Adjust the gripper bow support so that the gripper bow outer shoe is centered in the opening.
4. Tighten the support to the frame with the lower screw.

Magazine Belt Adjustment

1. Loosen the two adjustment screws shown in *figure 6-10*.
2. Raise the bracket to tighten the belt around the magazine.
3. Check that belt rides evenly in the center of the belt guides, all the way around the magazine.
4. Tighten the two adjustment screws.

Cam Switch

ADJUSTMENTS

If you need to remove the switch cam from the transfer motor, the following procedure must be followed to ensure that the cam is properly located and not 180 degrees out of position.

Locate the inner lobe so that it is pointing in the same direction as the crank. Turn cam so that neither cam lobe is on a switch before removing or installing the cam (see figure 6-11).

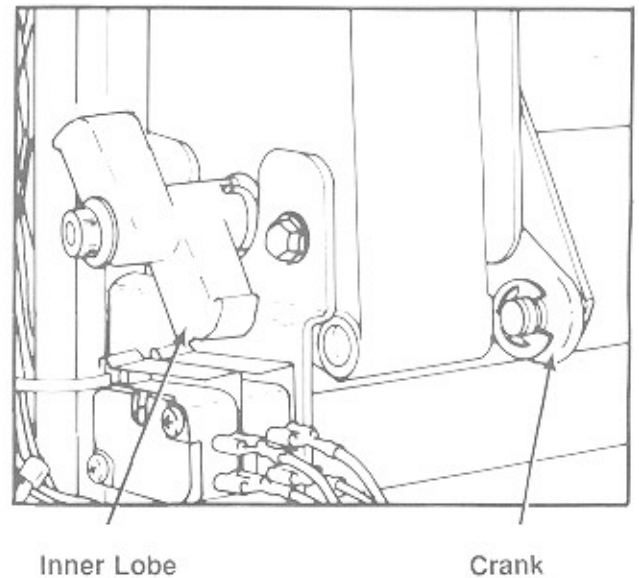


Figure 6-11. Cam Switch

CAM SWITCH CHECK AND ADJUSTMENT

1. Check that the leaf spring is resting in the cam lobes and that the switch plunger just touches the bottom of the leaf spring as shown in figure 6-12.
2. To adjust the switches, loosen mounting screw under plunger end and move the switch housing as described in the previous step (see figure 6-12).
3. Tighten mounting screw and recheck operation.

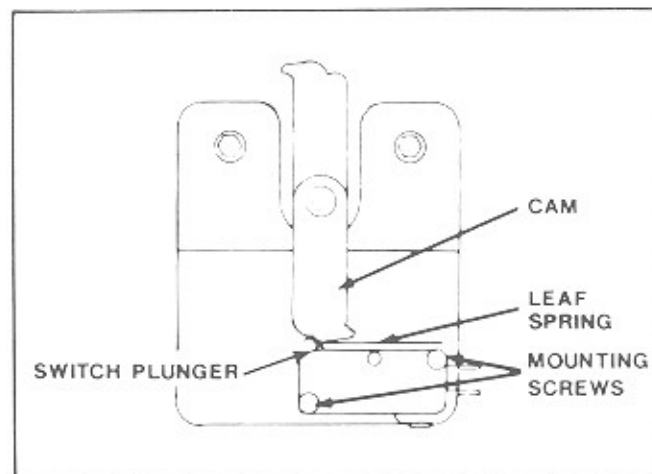


Figure 6-12. Cam Switch Adjustment

Aligning Magazine Stopping Position With The Gripper Bow

1. Place a disc in any position in the disc magazine and rotate the magazine until this disc is in the top position. Allow the magazine sprag lever to engage and lock the magazine in this position.
2. Using a 5/32-inch Allen wrench in the end of transfer motor shaft, turn motor shaft clockwise until the gripper bow starts to lift the disc out of the magazine (*see figure 6-13*).
3. With the disc and gripper bow in this position, rock the magazine to the left and right to make sure the magazine vertical slot is centered relative to the edge of the disc.

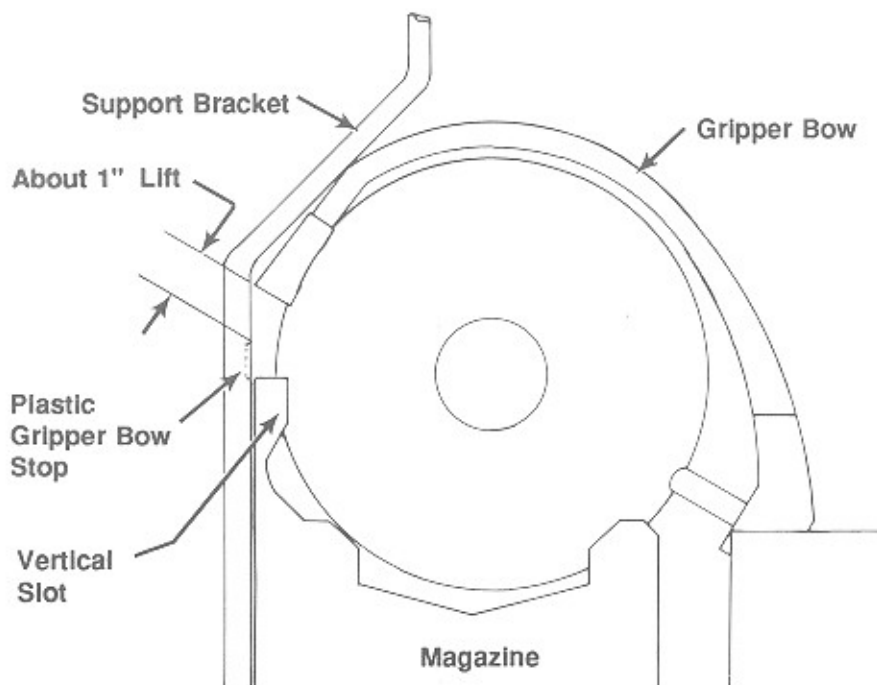


Figure 6-13. Magazine and Gripper Bow Stopping Position

IF ADJUSTMENT IS NECESSARY:

4. Loosen three screws in the magazine motor mounting plate.
5. With sprag wheel locked, move the magazine until the disc is centered in the magazine vertical slot (The adjustment screws will be approximately centered in the slots, *see figure 6-14*).
6. Tighten the three screws in the magazine motor mounting plate securely.
7. Perform the *Optical Switch Adjustment* described earlier in this section.

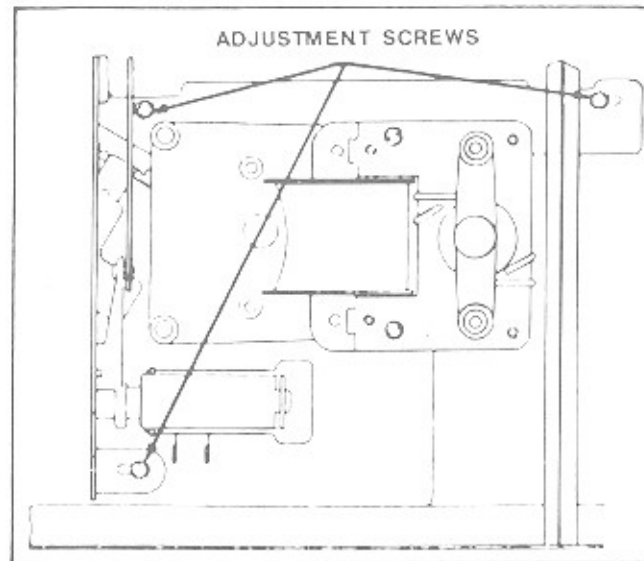


Figure 6-14. Magazine Adjustment

Title Rack Switch Adjustment



WARNING:

Do not attempt to turn the CD title pages by hand unless you use the handwheel on the back of the title rack (see figure 6-2A).

Refer to figure 6-15 for illustration of the title rack adjustment.

1. Open the top door, unplug the title rack from the phonograph, and remove the title rack from the phonograph.
2. Loosen the switch mounting screw and the adjusting screw so that the switch can be rotated.
3. Use the handwheel to move the rack and pinion (and the title rack pages) so that the switch roller is directly over the top of one of the rack lobes. This will cause two of the title rack pages to point approximately straight out.
4. Insert a 0.040-inch feeler gauge between the switch body and the switch actuator arm.
5. Slowly rotate the switch downward until all clearance between the switch and the switch body is removed.
6. Tighten the switch mounting screw and the switch adjustment screw.
7. Turn the handwheel in both directions and verify that the switch clicks before the roller reaches the bottom of the rack (as it rolls "down hill") and before it reaches the top of the rack (as it rolls "up hill"). This distance should be approximately halfway between the peaks and the valleys of the lobes.
9. Re-install the title rack.
10. Perform *Title Page Re-Synchronizing* that follows this step.

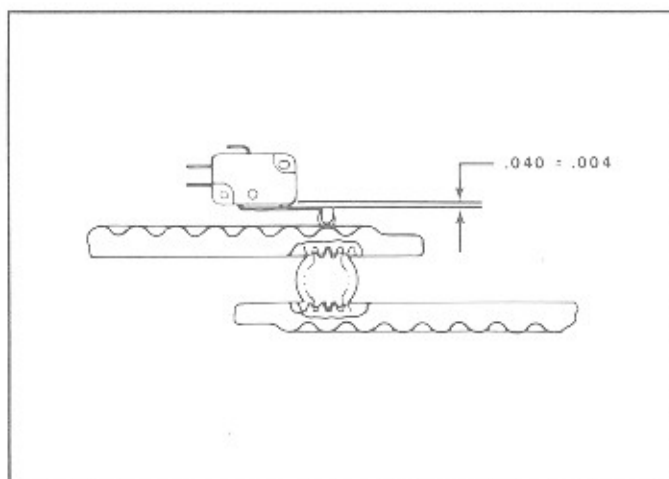


Figure 6-15. Title Rack Switch Adjustment

Title Page Re-Synchronizing

Title page re-synchronizing is necessary whenever power to the phonograph is interrupted or after the title pages have been changed with the handwheel.

1. Press either PAGE CHANGE button repeatedly until the pages no longer change (The pages may not advance as far as you expect them to. This is normal when the pages are being re-synchronized).
2. Press the other PAGE CHANGE button repeatedly until the pages no longer change.