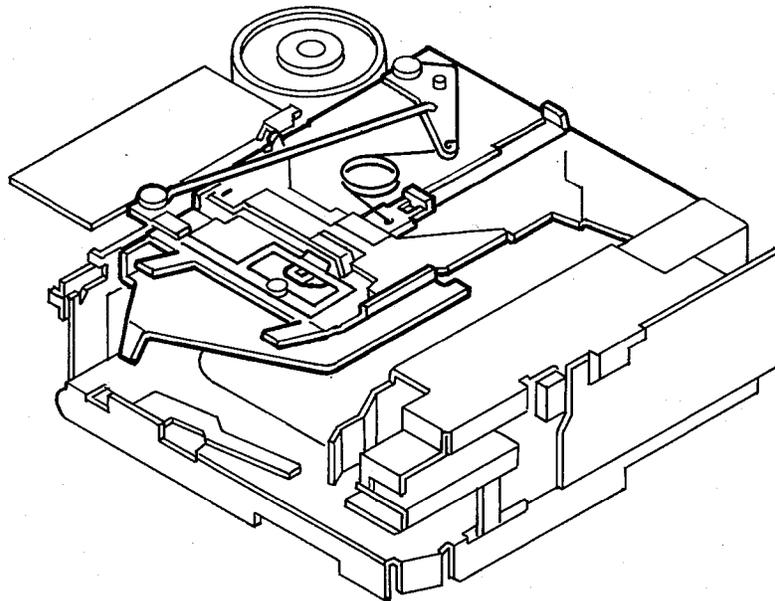


Technical Guide

Vol. 24

CASSETTE DECK

AUTOMATIC REVERSING
how to replace major parts



Panasonic

AUTO PRODUCTS DIVISION
Matsushita Communication Industrial Co., Ltd.

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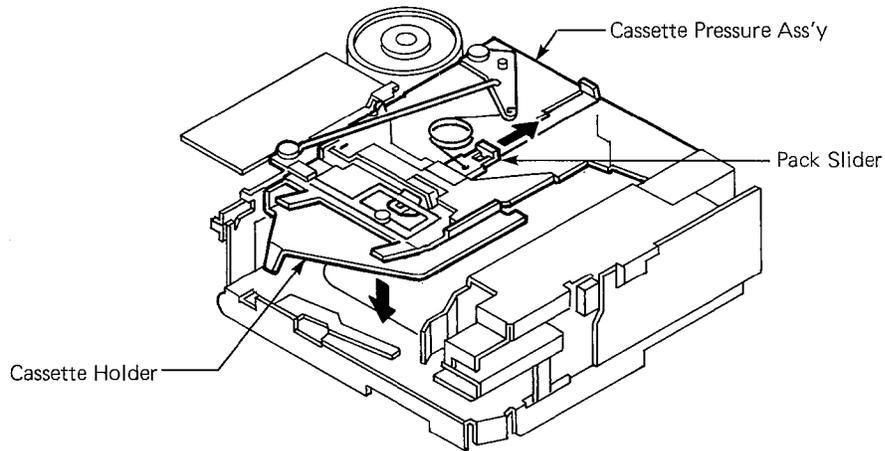
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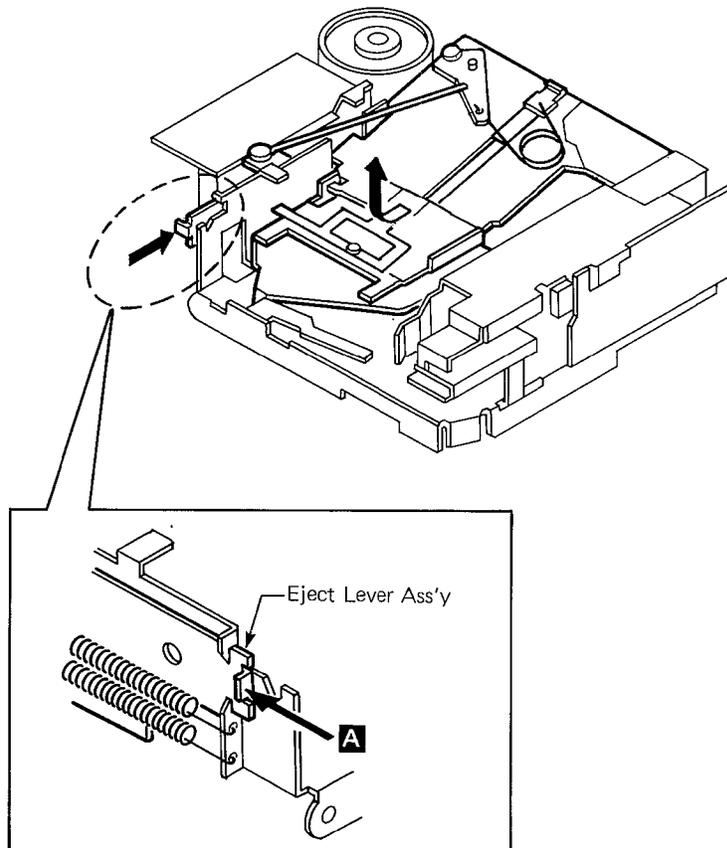
- Remove the deck from the set before servicing.
- For the removal of the deck from the set, refer to the Disassembly Instructions for Deck Removal in the Service Manual available for each model.
- When removing parts from the deck, carefully check beforehand how they are assembled so that they can be properly reassembled later on.

How to Create Cassette Tape Loaded Condition for Service

- When the pack slider of the cassette pressure assembly is moved in the arrow direction, the cassette pressure assembly falls together with the cassette holder in the tape loading position.



- To return the deck to cassette tape ejected condition, push the eject lever assembly at point **A** in the arrow direction. The cassette pressure assembly and cassette holder in the down position will return to their original position.



A Reel Chassis Assembly

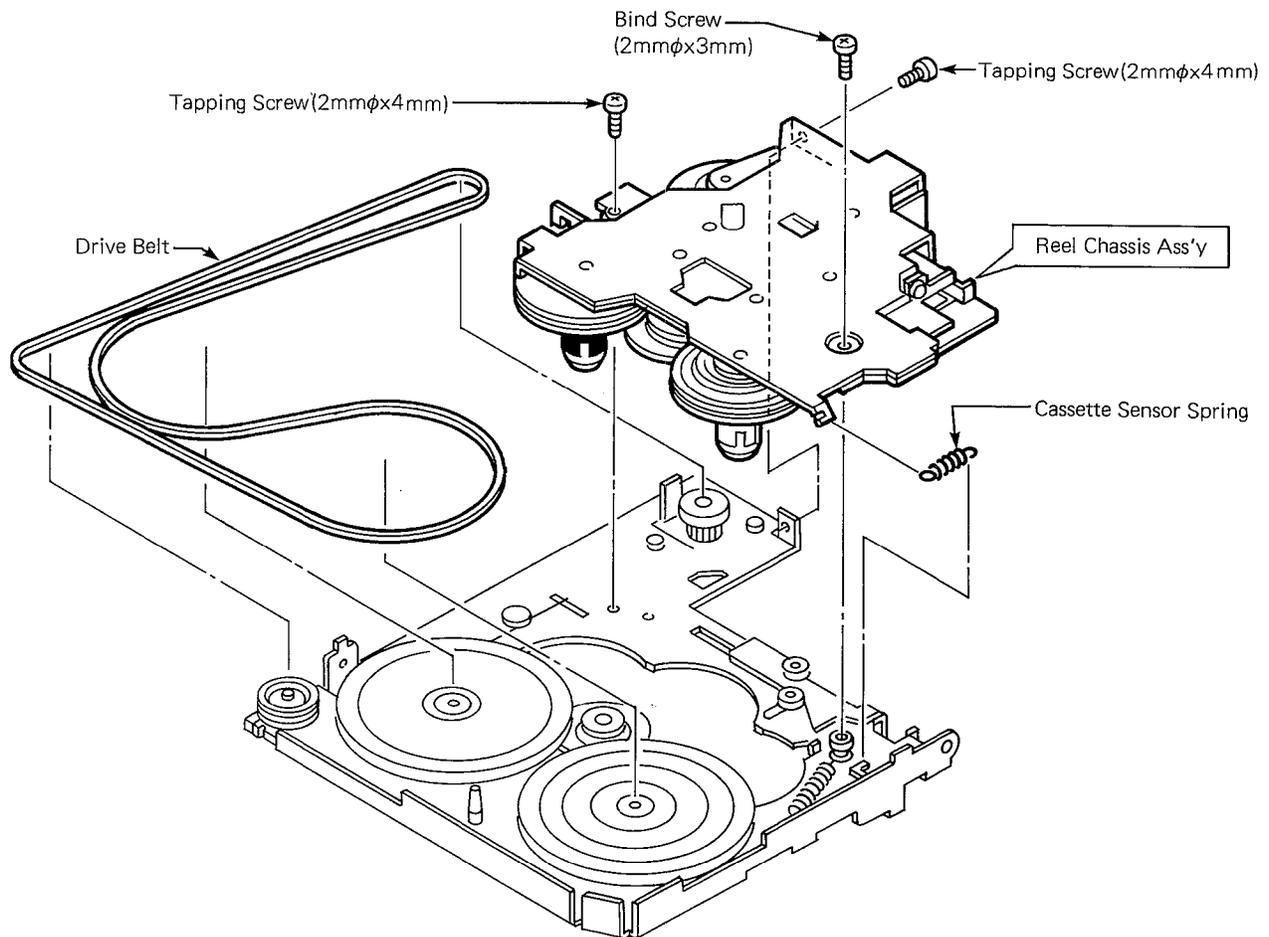
■ Removal

Keep the deck in cassette loaded condition during service work.

- (1) Remove cassette sensor spring.
- (2) Remove one bind screw, 2mm ϕ × 3mm, and two tapping screws, 2mm ϕ × 4mm.

[Helpful Hints]

- Proceed in the order of (1) and (2). This enables you to remove the reel chassis assembly and replace the reel assembly, gears and other parts in the assembly.
- It is suggested that the drive belt be removed before proceeding to steps (1) and (2).



■ Mounting

Keep the deck in cassette loaded condition during service work.

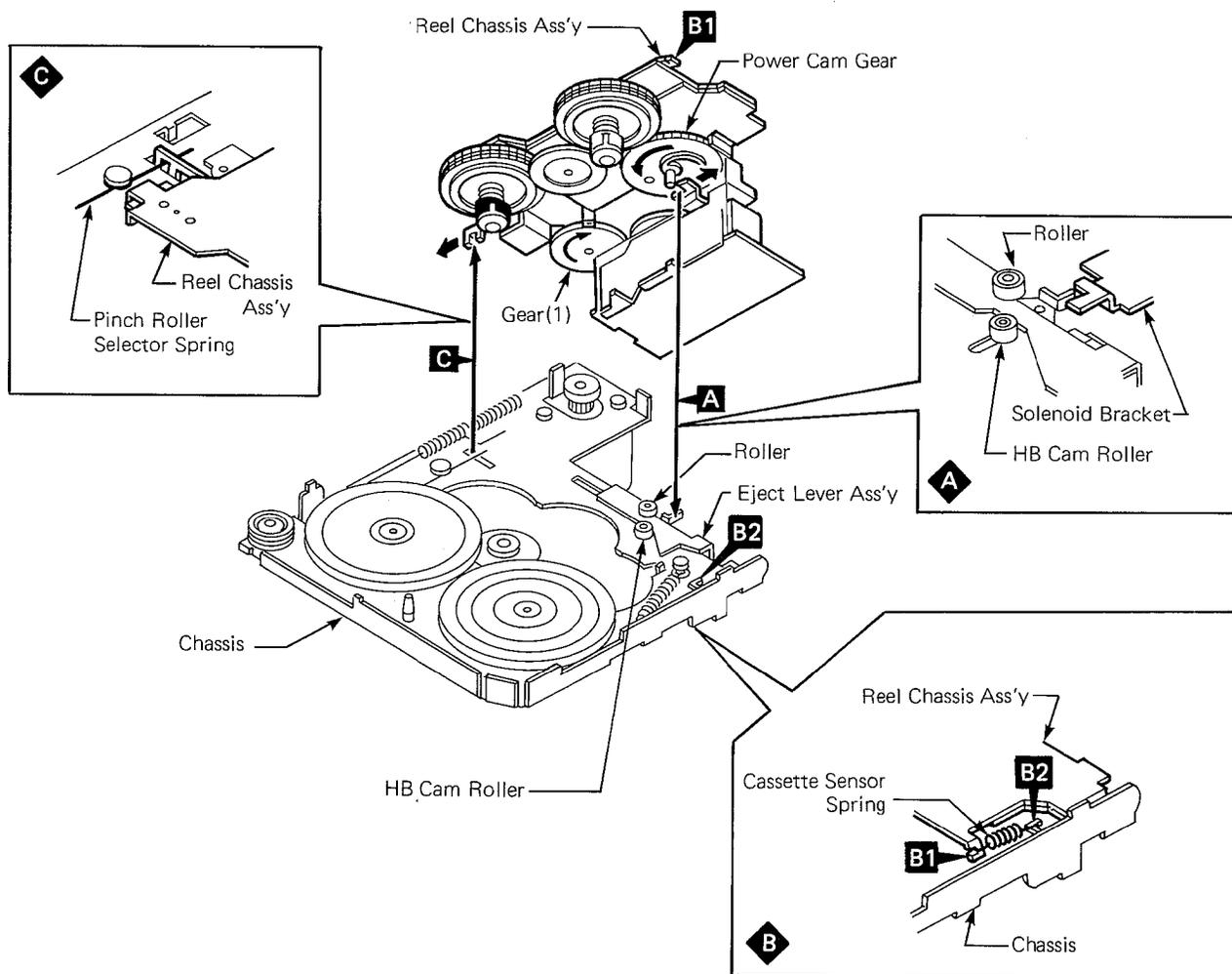
(1) Combine the reel chassis assembly with the chassis assembly.

[Helpful Hints]

- When taking step (1), exercise care about two movable parts **A** and **C** of the chassis assembly and reel chassis assembly.
 - Assemble part **A** as shown in Figure **A**.
 - Assemble part **C** as shown in Figure **C**.
- (2) After properly combining the chassis assembly and reel chassis assembly, fasten them with two bind screws and one tapping screw.
- (3) Set the cassette sensor spring in place.

[Helpful Hints]

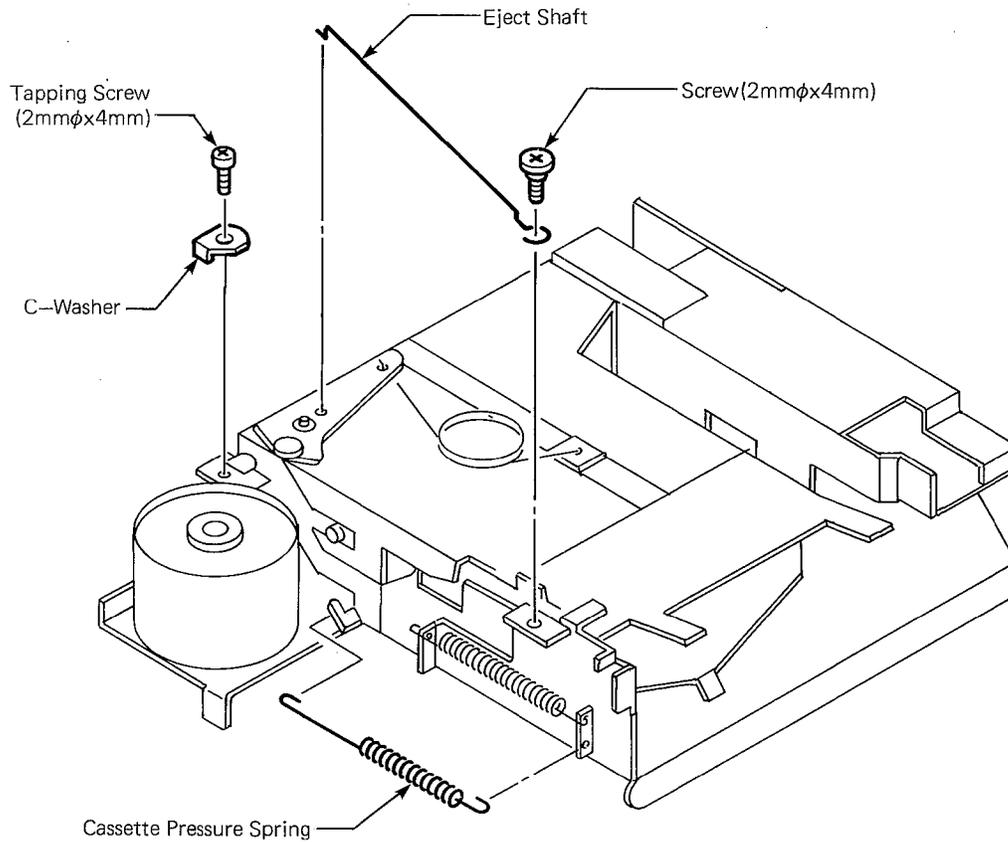
- Set the cassette sensor spring in place as shown in Figure **B**.



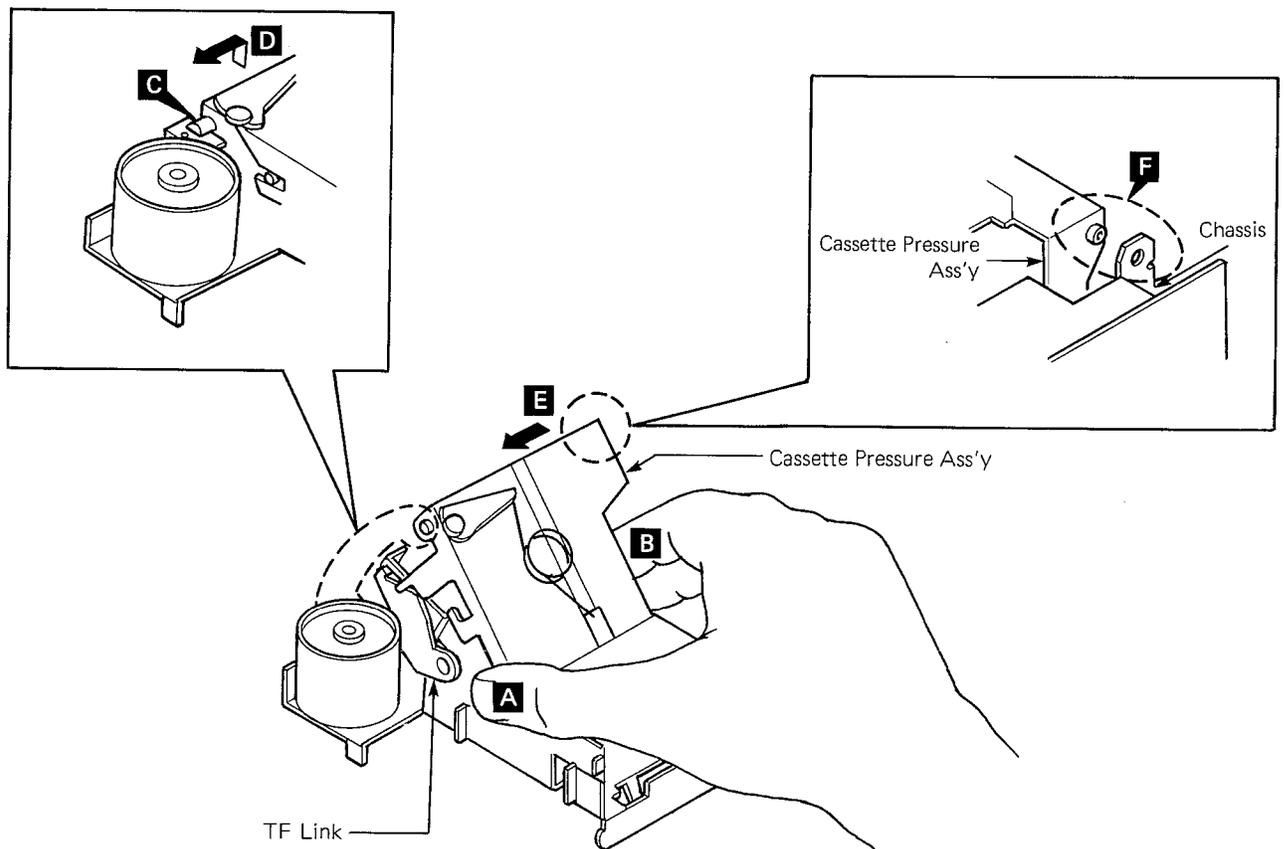
B Cassette Pressure Assembly and Cassette Holder

Removal

- (1) Remove the drive belt.
- (2) Remove the reel chassis assembly as described in the reel chassis assembly removal procedure in Section A above.
- (3) Remove the cassette pressure spring.
- (4) Remove one tapping screw (2mm ϕ × 4mm) and C-washer.
- (5) Remove one screw (2mm ϕ × 4mm) and the eject shaft.



- (6) Hold the cassette pressure assembly by **A-B**, and raise it in the arrow direction **D** to disengage chassis supporting point **C** from the cassette pressure assembly on the motor side.
- (7) Move the cassette pressure assembly in the arrow direction **E** to disengage support **F**.
- (8) Slightly raise the cassette pressure assembly and turn it in the arrow direction **E**. Shake forward and back so that the TF link is disconnected and the cassette pressure assembly can be removed.



Helpful Hint

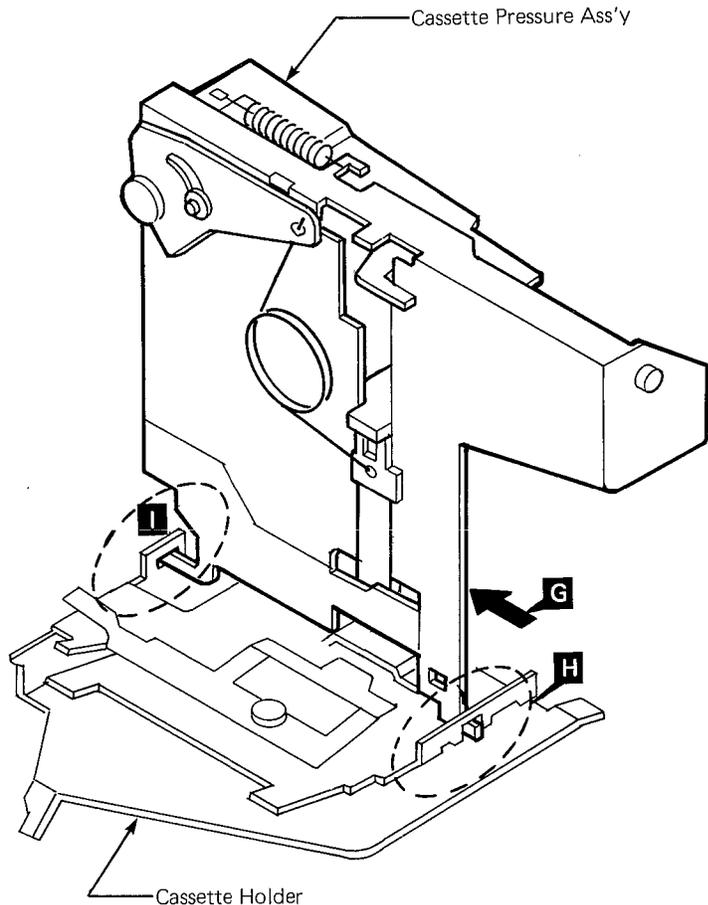
● Cassette Pressure Assembly and Cassette Holder Disassembly

[Disassembly procedure]

- Raise the cassette pressure assembly to upright position.
- Slide the cassette pressure assembly in the arrow direction **G**, and disengage the assembly at point **H**.
- Then disengage at point **I**. The cassette pressure assembly and cassette holder can now be disassembled.

[Reassembly procedure]

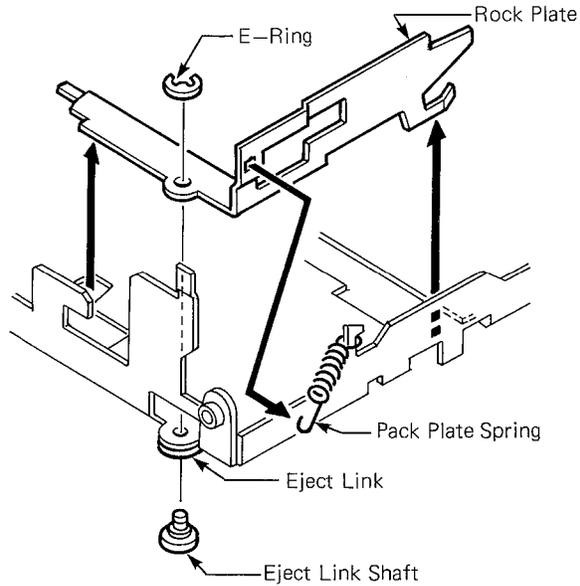
- Hold the cassette pressure assembly upright and assemble the side of point **I**.
- Slide the cassette pressure assembly in the direction of point **H**, and assemble the side of point **H**.
- Return the cassette pressure assembly to the horizontal position.



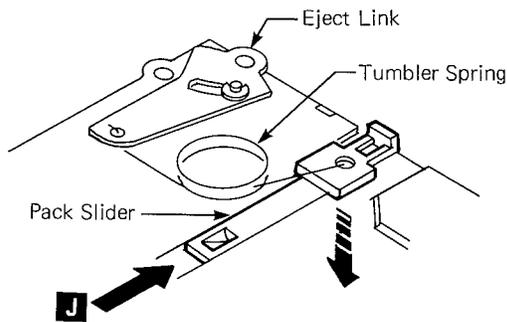
Pack Slider changing method

- Remove the pack plate spring.
- Remove the E-ring and lock plate.

Note: It is suggested that the eject link shaft be removed beforehand.



- Slide the pack slider all the way in the arrow direction **J** , and push it down from the tumbler spring to remove it.
- Insert the tip of the tumbler spring into the cutout in which the pack slider moves, and assemble it with a new pack slider.
- Mount the pack slider in the original position.
- Assemble the removed parts as they were before.



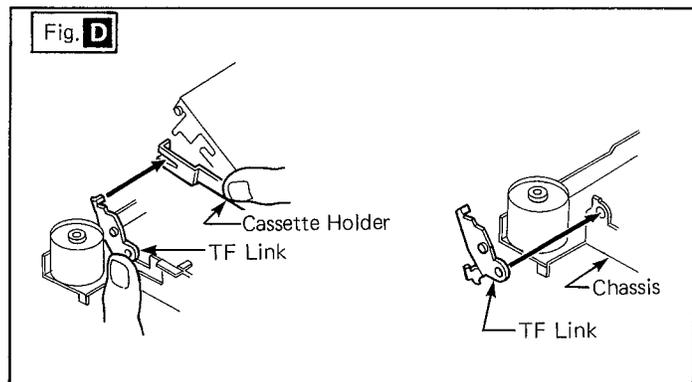
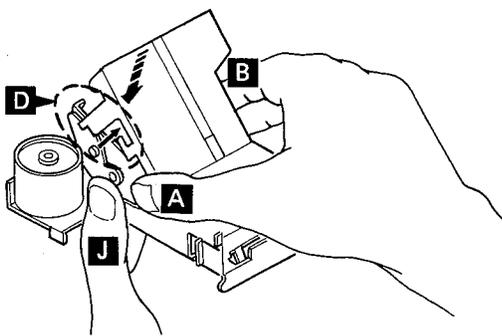
Mounting

- (1) Raise the cassette pressure assembly at points **A**-**B**, and place the cassette holder in the tape loading position of the chassis.
- (2) Attach the TF link to the chassis.

[Helpful Hints]

- Assemble the TF link with the cassette holder as shown in Figure **D**.

- (3) Push the cassette pressure assembly downward, and move point **J** of the TF link in the arrow direction.

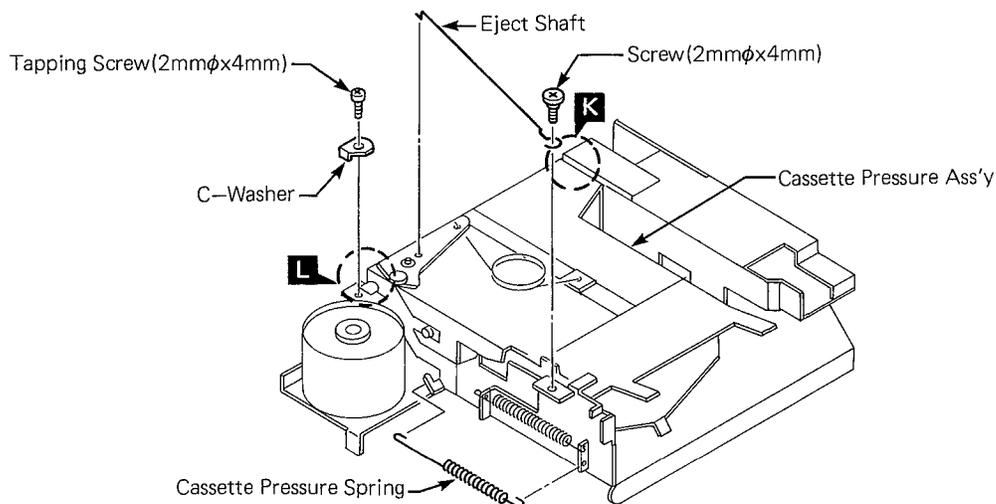


- (4) Assemble in such a way that the shaft collar of the TF link engages the lock cutout in the cassette pressure assembly as shown in Figure (Point **D**).

[Helpful Hints]

- When taking step (4), exercise care so that the TF link and cassette holder will not disengage.

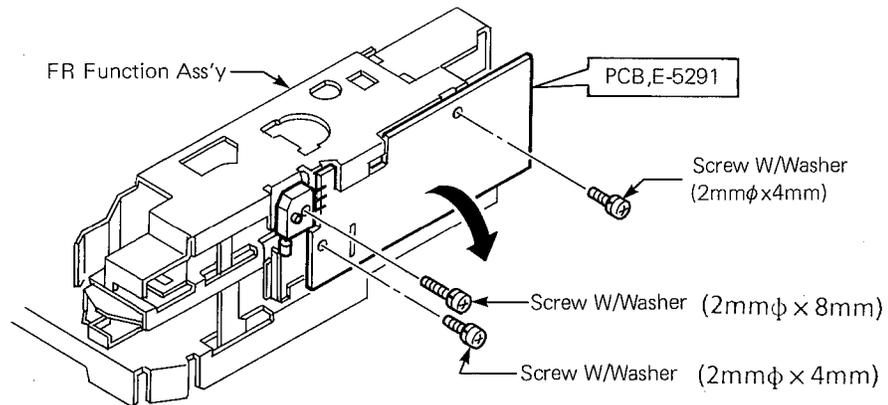
- (5) Insert the shaft at point **K** of the cassette pressure assembly into the shaft hold in the chassis.
- (6) Drop the shaft at point **L** of the cassette pressure assembly into the shaft groove in the chassis.
- (7) Tighten tapping screw (2mm ϕ × 4mm) together with C-washer.



Ⓢ FR Function Assembly(1)

■ Removal

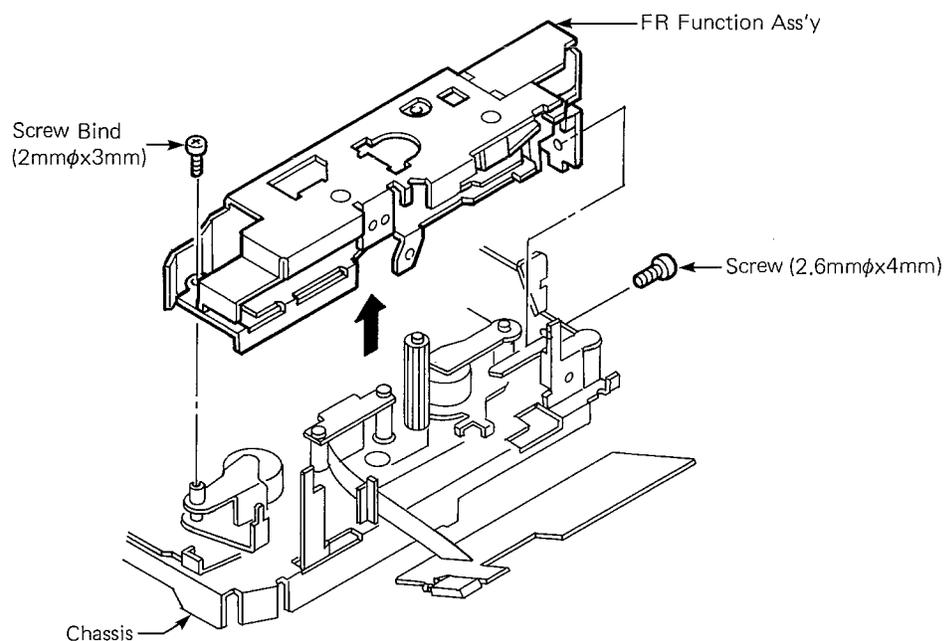
- (1) Remove two screws with washers (2mm ϕ × 4mm) and one screw (2mm ϕ × 8mm). Then remove the circuit board (E-5291) from the FR function assembly.



- (2) Remove one bind screw (2mm ϕ × 3mm).
- (3) Remove one screw (2.6mm ϕ × 4mm).
- (4) Raise the FR function assembly straight up and remove it from this chassis.

[Helpful Hints]

- When the FR function assembly is removed, the pinch roller arm assemblies (L) and (R), head return lever, FR cancel lever, etc. can be checked and replaced.
- For service instructions for the FR function assembly, refer to Section **D** FR Function Assembly (2).



■ Mounting

- (1) Check the mechanisms that they are properly assembled, and install the FR function assembly in place.

[Helpful Hints] When taking step (1), assemble the movable parts of the mechanisms as follows:

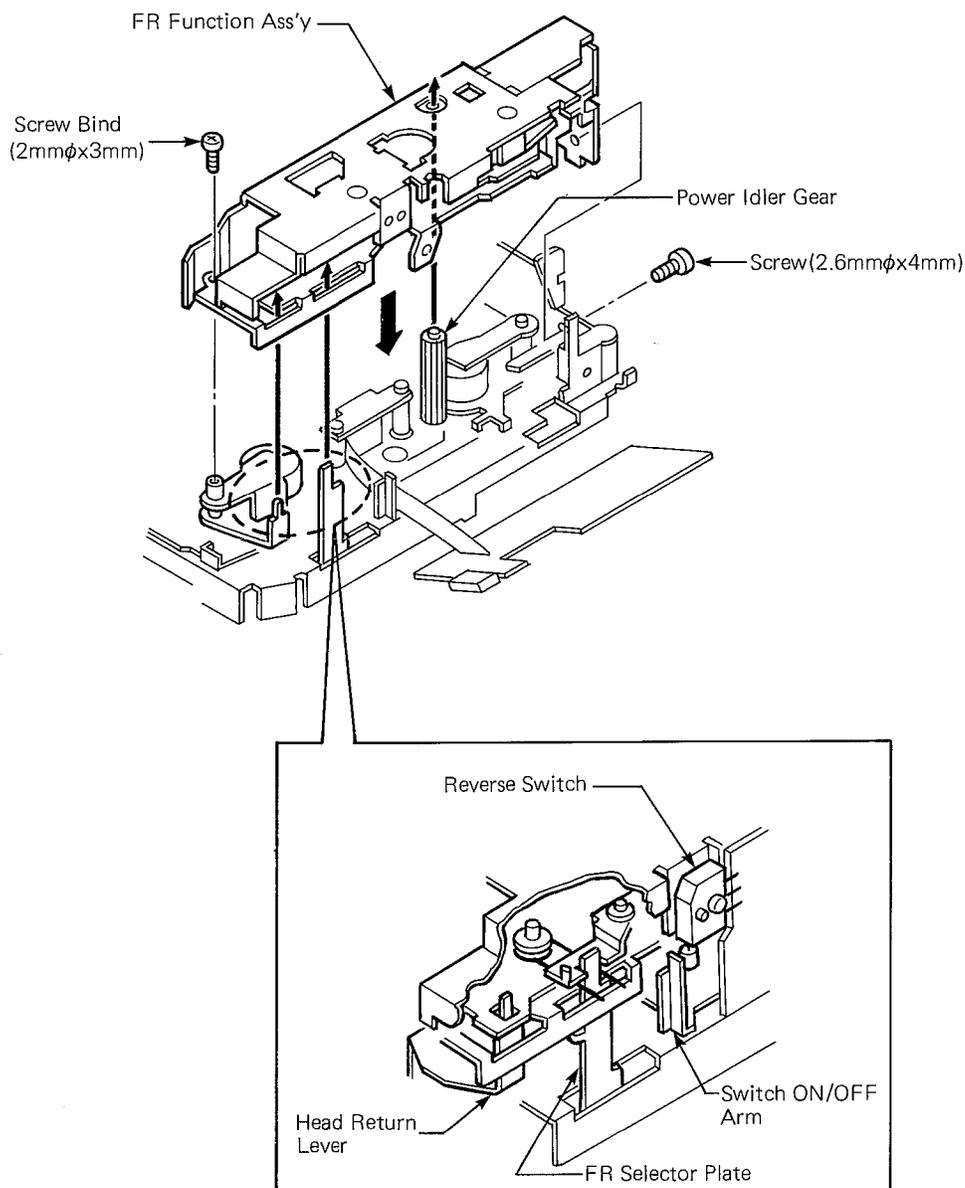
- Insert the power idler gear shaft into the shaft hold in the FR cover.
- Assemble the head return lever with the FR assembly as shown in Figure.
- Assemble the FR selector plate with the FR assembly as shown in Figure.

- (2) Fasten the FR function assembly to the chassis with one bind screw (2mm ϕ × 3mm) and one screw (2.6mm ϕ × 4mm).

- (3) Fasten the circuit board to the function assembly with two screws with washers (2mm ϕ × 4mm).

- (4) Fasten the switch to the function assembly with screw with washer (2mm ϕ × 8mm).

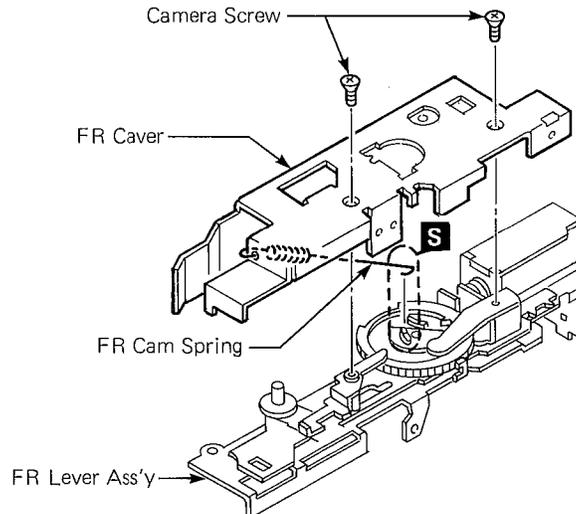
[Helpful Hints] When taking step (4), assemble the switch on arm of the reverse plate as shown in Figure.



D FR Function Assembly(2)

Replacement Procedures for Assembly Component Parts
[Preparations]

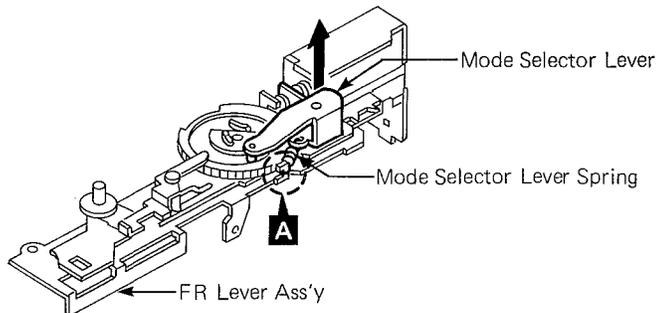
- (1) Remove the two camera screws. Disconnect the FR cam spring at point **S**.
- (2) Remove the FR cover.



☆ Mode Selector Lever

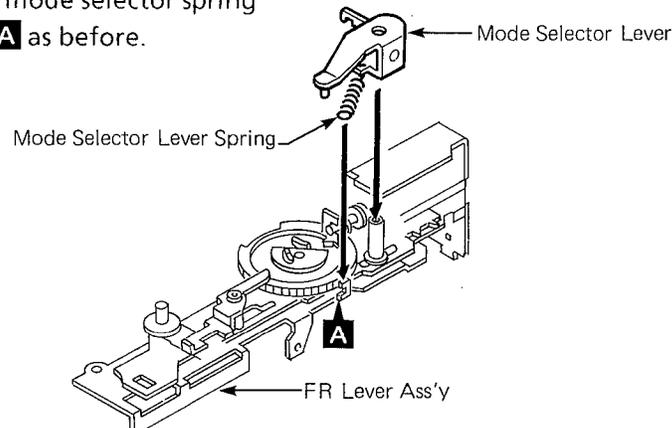
■ Removal

- (1) Disconnect the mode selector lever spring at point **A**.
- (2) Raise the mode selector lever and remove it.



■ Mounting

- (1) Attach the mode selector lever to the shaft.
- (2) Hook the mode selector spring at point **A** as before.



☆ FR Cam Gear

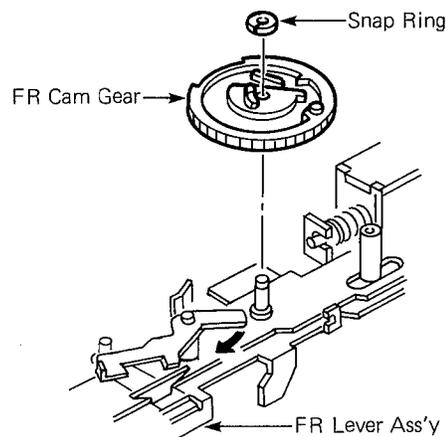
■ Removal

- (1) Remove the snap ring, exercising care not to lose it.
- (2) Pull out the FR cam gear from the shaft.

[Helpful Hint] *To properly reassemble the gear later, carefully check and remember its mounting direction.*

■ Mounting

- (1) Mount the FR cam gear on the shaft in the original direction.
- (2) Return the snap ring in place.



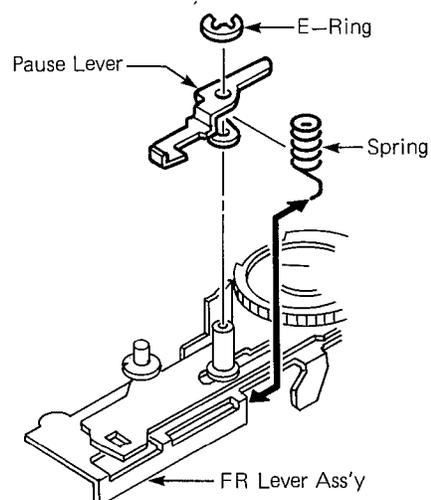
☆ Pause Lever

■ Removal

- (1) Remove the E-ring, exercising care not to lose it.
- (2) Unhook the spring from the FR lever assembly, and remove the pause lever from the shaft.
- (3) Remove the spring from the pause lever.

■ Mounting

- (1) Hook the spring to the pause lever.
- (2) Fit the pause lever on the pause lever mounting shaft, and hook the spring to the FR assembly.
- (3) Fit the E-ring on.



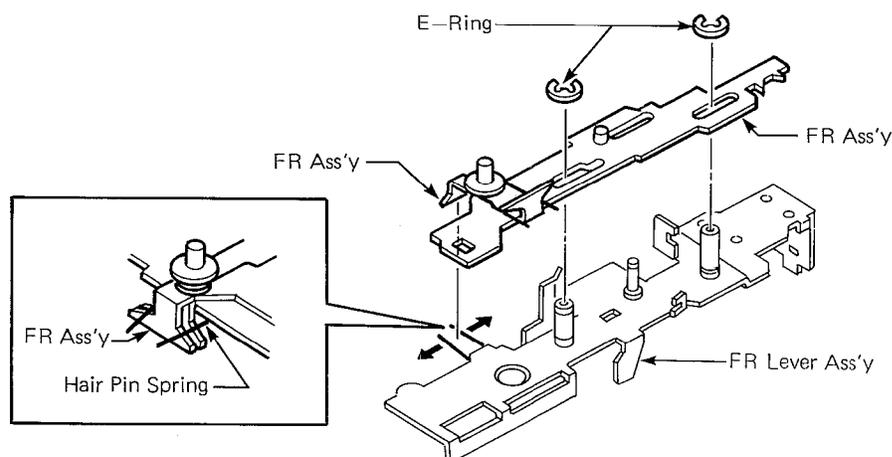
☆ FR Assembly

■ Removal

- (1) Remove two E-rings.
- (2) Spread open the hair pin spring that holds the FR assembly in place, and remove the spring.
- (3) Lift the FR assembly and remove it.

■ Mounting

- (1) Hold the FR assembly in the position where the hair pin spring can be hooked, and mount the assembly on the FR lever assembly.
- (2) Hook the hair pin spring to the FR assembly.
- (3) Fit the two E-rings back on.



☆ Mode Solenoid Assembly

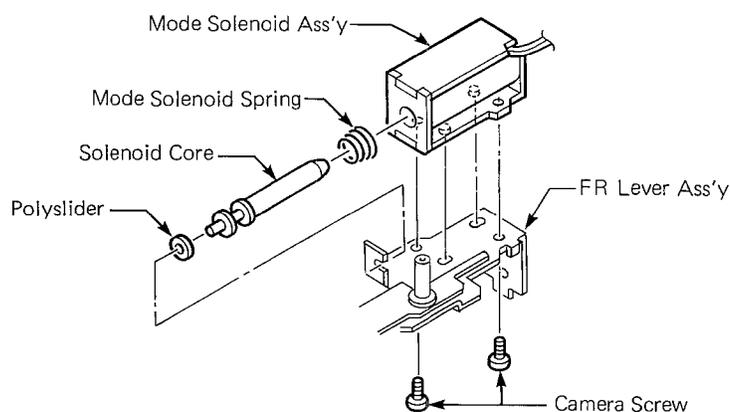
■ Removal

[Preparations] Remove the mode selector lever assembly.

- (1) Remove two camera screws.
- (2) Remove the mode solenoid assembly.

■ Mounting

- (1) Assemble the mode solenoid spring, solenoid core, and polyslider as shown in the figure.
- (2) Place the mode solenoid assembly on the FR lever assembly, with dowels in line with their matching holes.
- (3) Tighten the two camera screws.



E Pinch Roller Arm Assembly(R)

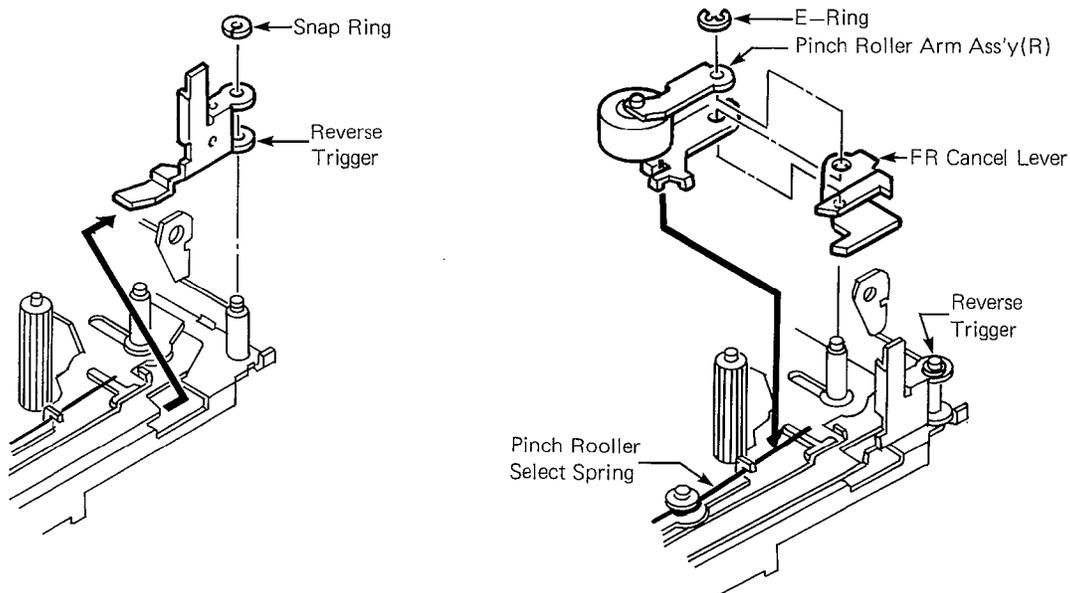
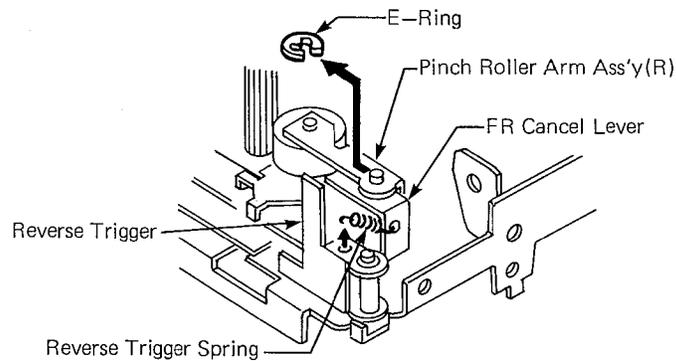
■ Removal

- (1) Remove the FR function assembly (1) according to the removal procedure for the FR function assembly (1) in Section C.
- (2) Remove the E-ring.
- (3) Unhook the reverse trigger spring on the reverse trigger end.
- (4) Remove the pinch roller arm assembly (R) and FR cancel lever from the shaft by pulling them upward.

[Helpful Hint] When the snap ring is removed, the reverse trigger can be removed.

■ Mounting

- (1) If the reverse trigger was removed, fit it back in place.
- (2) Mount the pinch roller arm assembly (R) and FR cancel lever back on the shaft in their original position relative to the head assembly.
- (3) Fit the E-ring back on.
- (4) Hook the spring to the reverse trigger, and then the other end of the spring to the FR cancel lever.



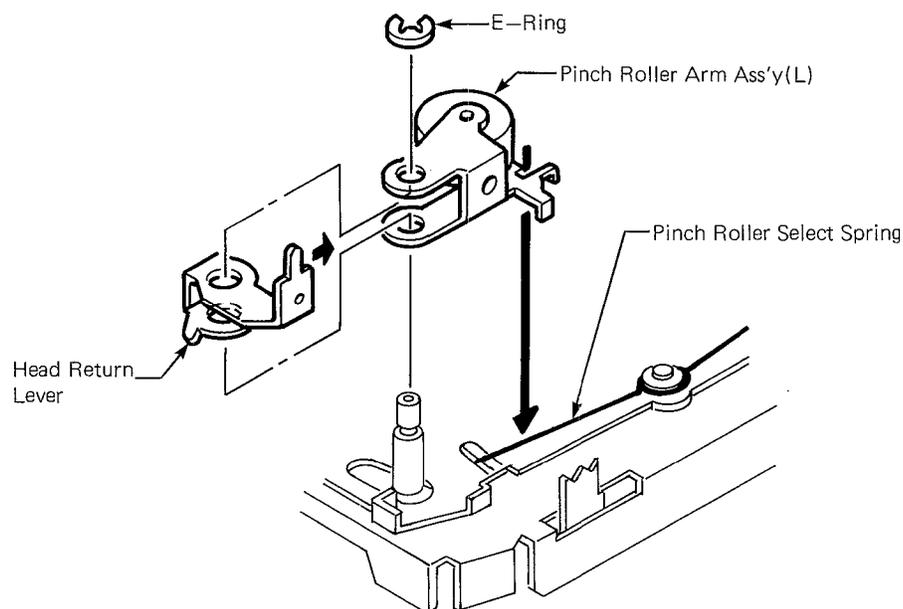
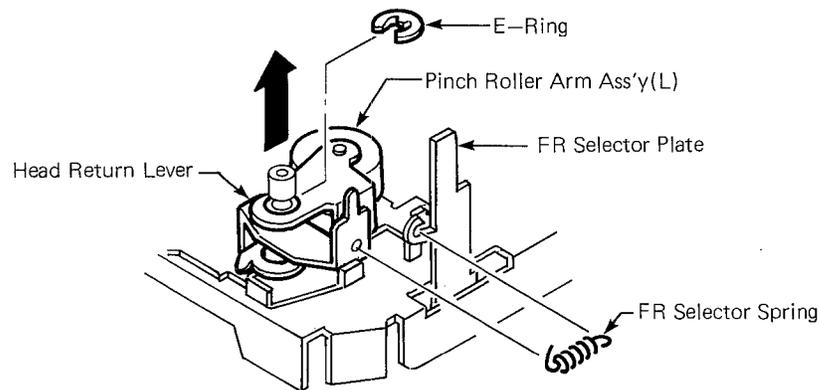
F Pinch Roller Arm Assembly(L)

Removal

- (1) Unhook the FR selector spring from the FR selector plate and head return lever.
- (2) Remove the E-ring.
- (3) Remove the pinch roller arm assembly (L) and head return lever from the shaft by putting them upward.

Mounting

- (1) Mount the pinch roller arm assembly(R) and head return lever back on the shaft in their original position relative to the head chassis assembly.
- (2) Fit the E-ring back on.
- (3) Hook the FR selector spring to the FR selector plate and then the other end of the spring to the head return lever.



G Flywheels(L) and(R)

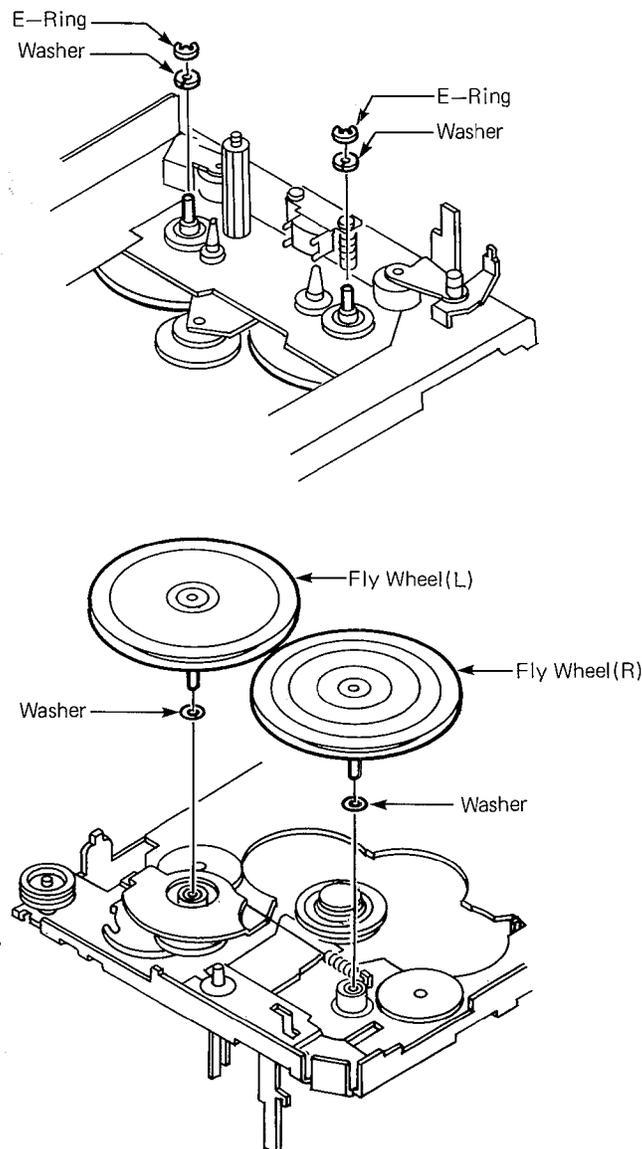
■ Removal

- (1) Remove the E-rings.
- (2) Remove the washers.
- (3) Remove the flywheels from the back of the chassis.

[Helpful Hint] Remember which flywheel is for the left and which for the right.

■ Mounting

- (1) Fit the washers back on the flywheel shaft (capstan).
- (2) Fit the flywheels on the capstan bearings from the back of the chassis, making sure that the left flywheel is on the left and the other on the right.
- (3) Fit the washers back on.
- (4) Fit the E-rings back on.



H FI Gear(Left)

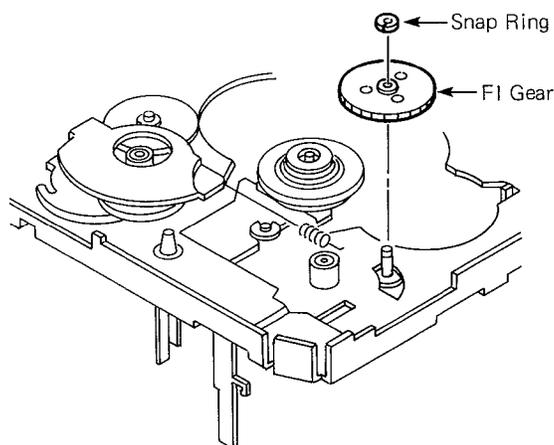
■ Removal

[Helpful Hints] *Remove the left flywheel before doing this work.*

- (1) Remove the snap ring.
- (2) Remove the FI gear from the shaft.

■ Mounting

- (1) Fit the FI gear back on the shaft.
- (2) Fit the snap ring back on.



I FR Idler Assembly

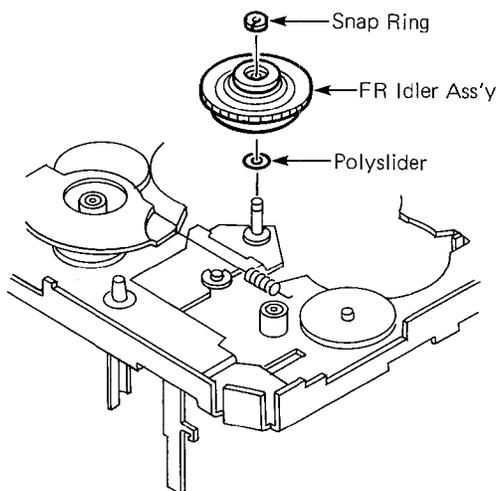
■ Removal

[Helpful Hint] *Remove the right and left flywheel before doing this work.*

- (1) Remove the snap ring.
- (2) Remove the FR idler assembly from the shaft.

■ Mounting

- (1) Fit the FR idler assembly back on the shaft.
- (2) Fit the snap ring back on.



J FI Gear(Right)

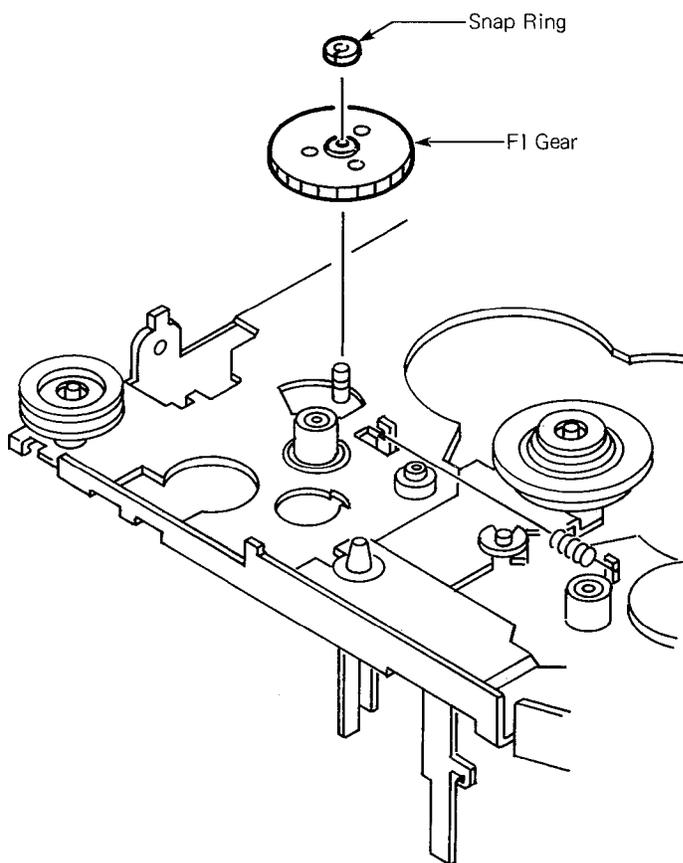
■ Removal

[Helpful Hint] *Remove the right flywheel and reverse gear plate assembly before doing this work.*

- (1) Remove the snap ring.
- (2) Remove the FI gear from the shaft.

■ Mounting

- (1) Fit the FI gear back on the shaft.
- (2) Fit the snap ring back on.



K Power Idler Gear and Reverse Gear

Removal

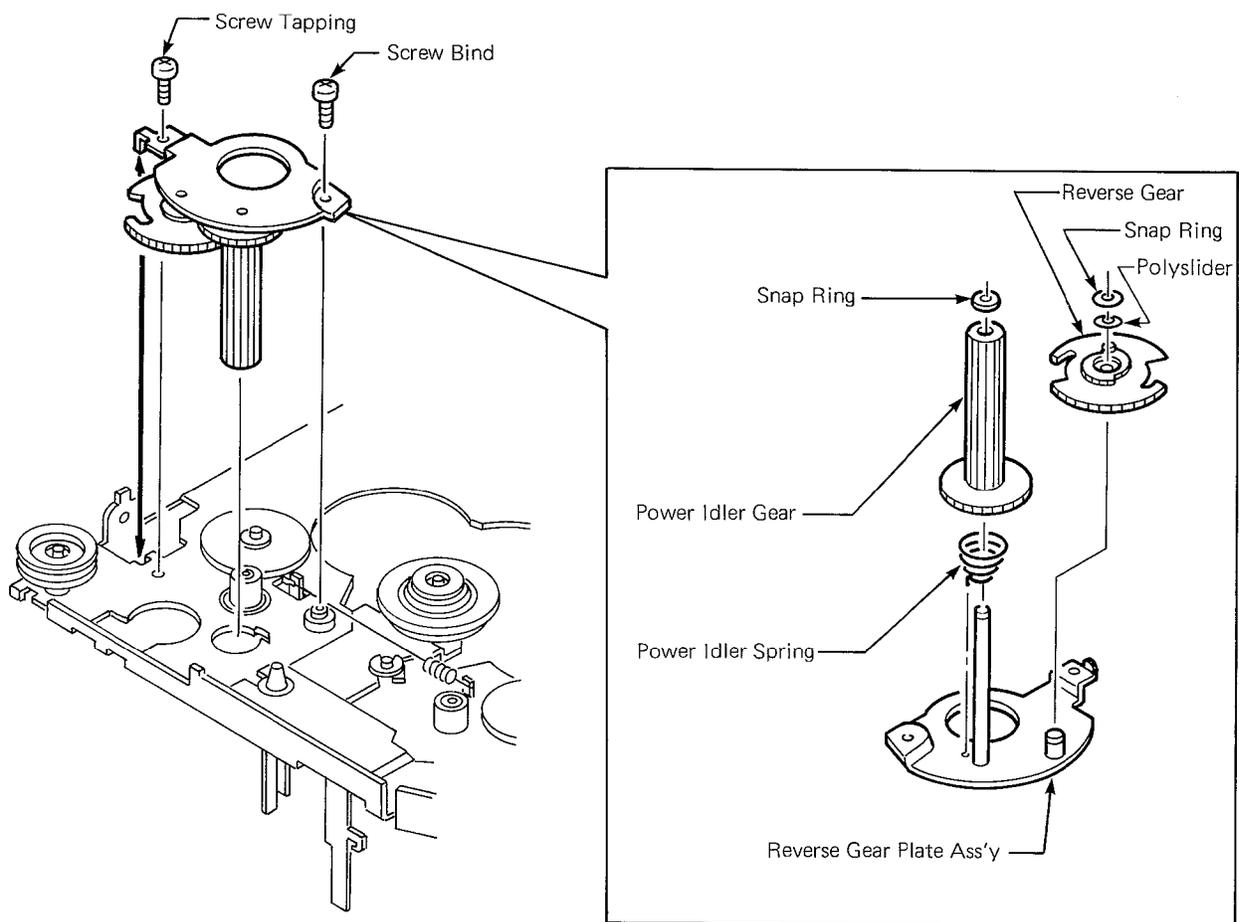
- (1) Remove one bind screw (2mm ϕ × 3mm) and one tapping screw (2mm ϕ × 4mm).
- (2) Remove the reverse gear plate assembly.
- (3) Remove the snap ring and polyslider from the reverse gear.
- (4) Remove the reverse gear from the shaft.
- (5) Remove the snap ring.
- (6) Remove the power idler gear from the shaft.

Mounting

- (1) Fit the power idler gear back on the shaft.
- (2) Fit the snap ring back on.
- (3) Fit the reverse gear back on the shaft.
- (4) Fit the polyslider on first, then the snap ring.
- (5) Mount the reverse gear plate assembly in its mounting position on the chassis.

[Helpful Hint] When taking step (5) above, carefully position the reverse gear plate assembly by checking that the boss on the reverse gear is inserted into the reverse collar.

- (6) Fasten the reverse gear plate with the chassis using one bind screw and one tapping screw.

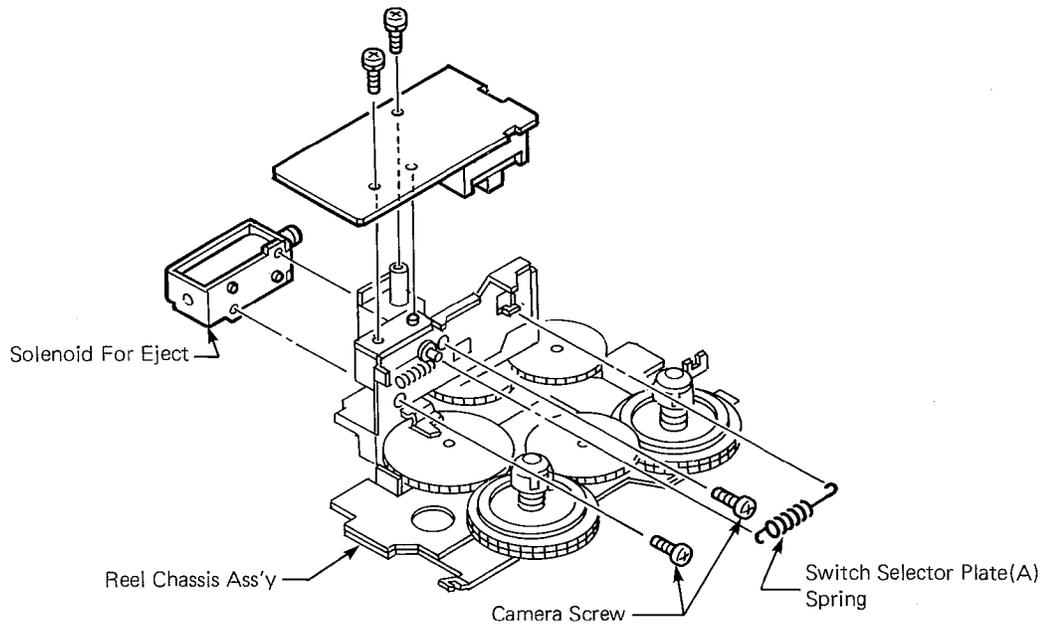


Reel Chassis Assembly Parts Replacement

☐ Solenoid for Eject

■ Removal

- (1) Remove the switch selector plate (A) spring.
- (2) Remove the camera screws.
- (3) Remove the solenoid for eject.

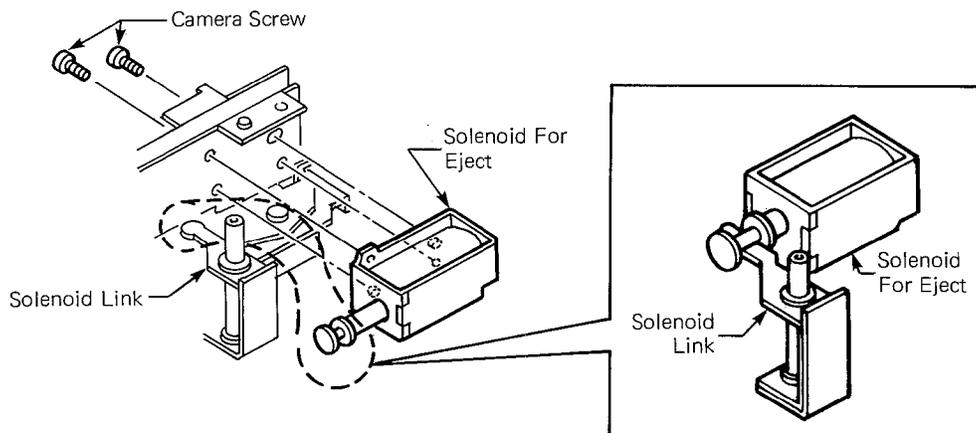


■ Mounting

- (1) Mount the solenoid for eject in position, making sure that the dowels are fitted into the matching holes.

[Helpful Hint] *When taking step (1) above, assemble the solenoid core with the solenoid link as in the figure.*

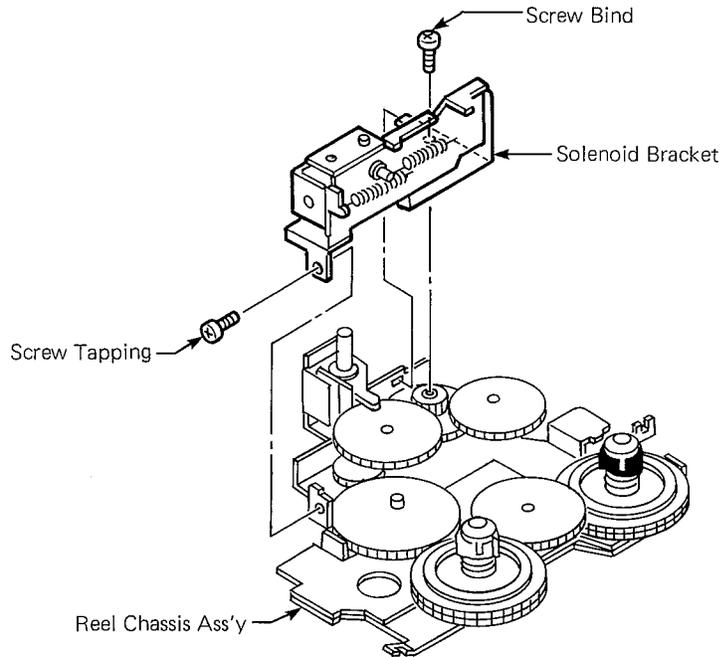
- (2) Tighten the two camera screws.
- (3) Hook the switch selector plate (A) spring as before.



M Power Cam Gear, Gear(3), Gear(1), Gear(2), Gear(4)

PREPARATIONS

- (1) Remove one bind screw and tapping screw.
- (2) Remove the solenoid bracket from the reel chassis assembly.



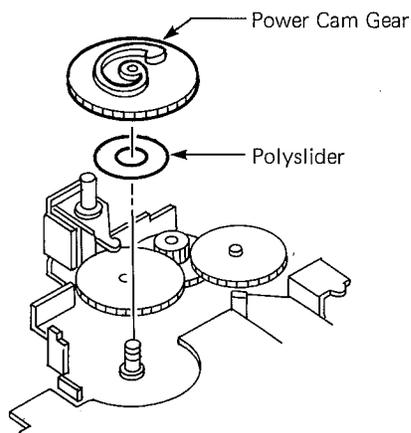
★ Power Cam Gear

■ Removal

- (1) Lift the gear and remove it from the shaft.

■ Mounting

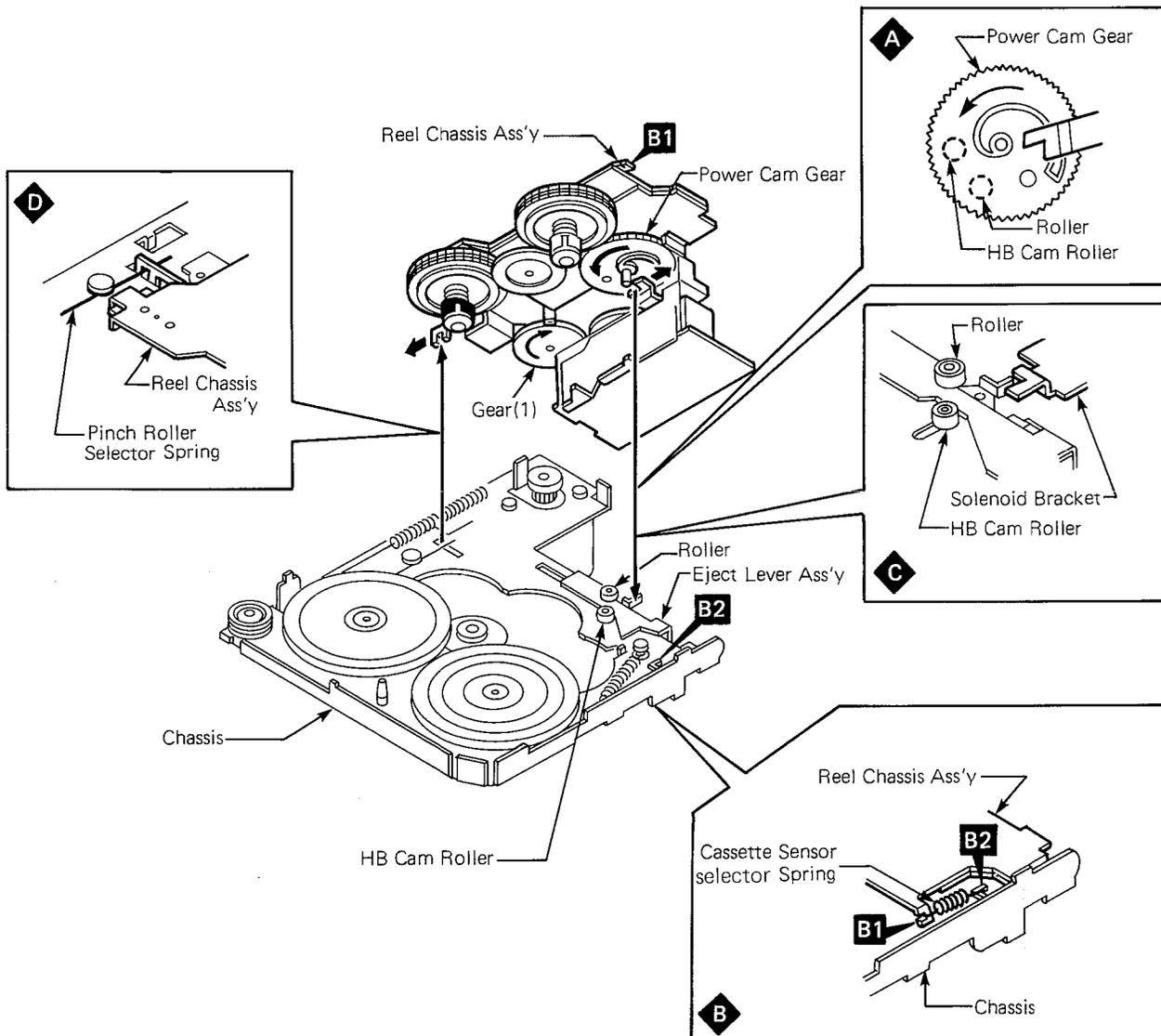
- (1) Fit the polyslider back on.
- (2) Fit the power cam gear back on the shaft.



Helpful Hint

After mounting the power cam gear, the reel chassis assembly is mounted on the chassis. In the case, make sure that the power cam gear and chassis mechanisms are as mentioned below.

- (1) Fit the power cam gear on the shaft in the position illustrated. **A**
- (2) Set the deck in step loaded condition.
- (3) Assemble the sensor selector spring with the reel chassis assembly as illustrated. **B**
- (4) When the power cam gear shaft is inserted into the shaft hole in the chassis, the relative position of the gear cam with the eject lever assembly roller and HB Cam roller must be as illustrated. **A C**
- (5) Turn gear (1) by finger (in the arrow direction). When the power cam gear makes about one turn, the head must move back to set the deck in tape eject condition.



☆ Gear (1) and Gear(3)

■ Removal

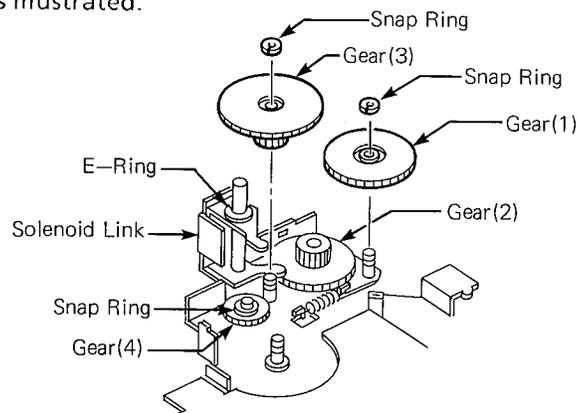
- (1) Remove the snap rings.
- (2) Remove each gear from the shaft.

[Helpful Hints]

- When gear (1) and (2) is removed, gear (2) comes off the shaft. When the snap ring is removed then, gear (4) comes off the shaft.
- When gear (2) is removed, the solenoid link can be removed after removing the E-ring.

■ Mounting

- (1) Mount each gear as illustrated.



☆ Sensor Gear Assembly

■ Removal

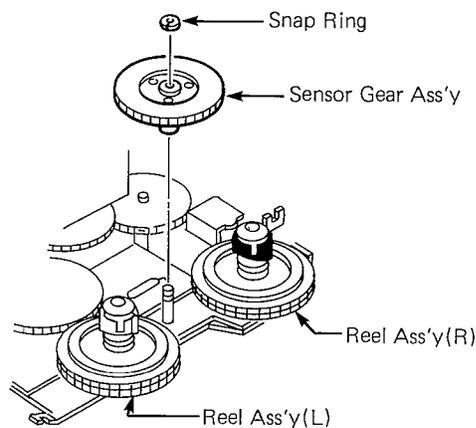
- (1) Remove the snap ring.
- (2) Remove the sensor gear assembly from the shaft.

[Helpful Hints]

- When this gear is removed, the tape end detector switch can be replaced.
- The reel assembly (L)(R) can be removed after removing this gear.

■ Mounting

- (1) Fit the sensor gear assembly back on the shaft.
- (2) Fit the snap ring back on.



☆ Reel Assemblies(L) and(R)

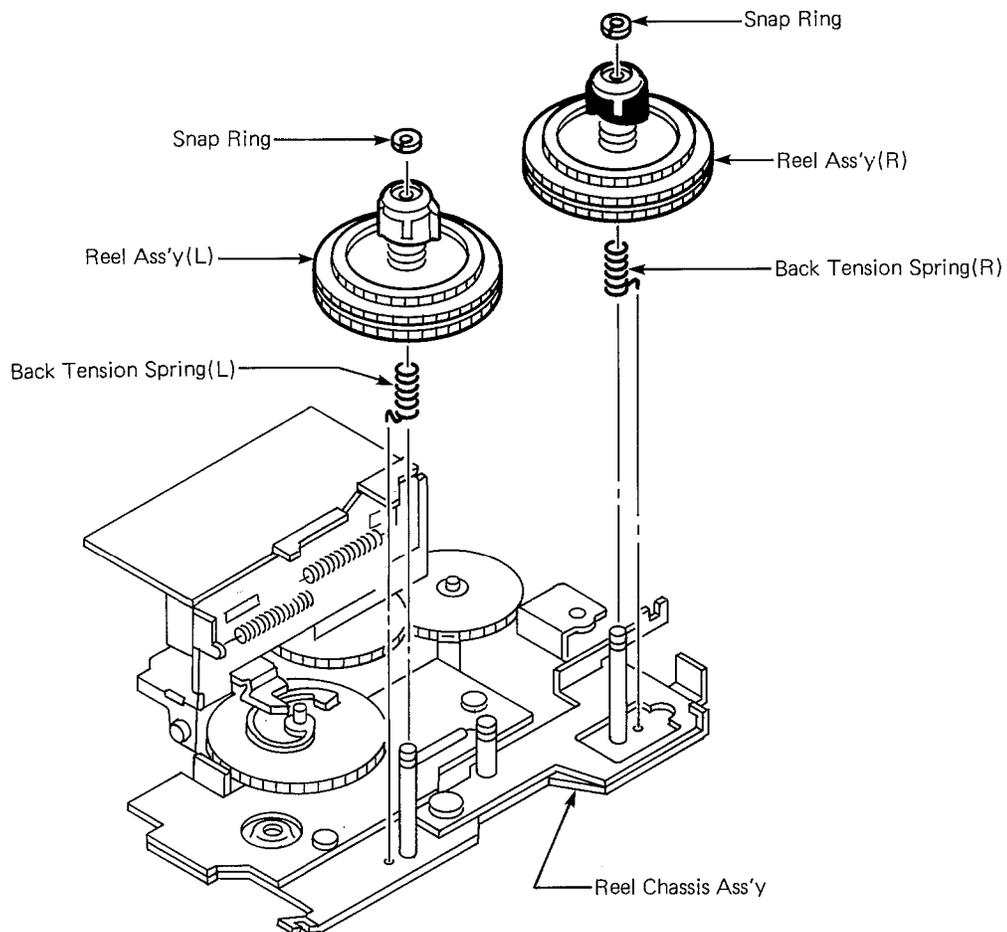
CAUTION The reel assemblies and back tension spring are not interchangeable with each other.
When using new reels, make not to take one for the other.

■ Removal

- (1) Remove the snap ring.
- (2) Remove the reel assemblies from the shaft.

■ Mounting

- (1) Fit the back tension spring back on.
- (2) Fit the reel assemblies back on the shaft.
- (3) Fit the snap ring back on.



Models Assembled with this type CASSETTE DECK

For After Market

CQ-F30EE/EG	CQ-F35EE/EG	CQ-F40EE/EG	CQ-F50EE/EG	CQ-F60EN
CQ-F31EG	CQ-F36EG	CQ-F41EG	CQ-F51EG	CQ-F61EG