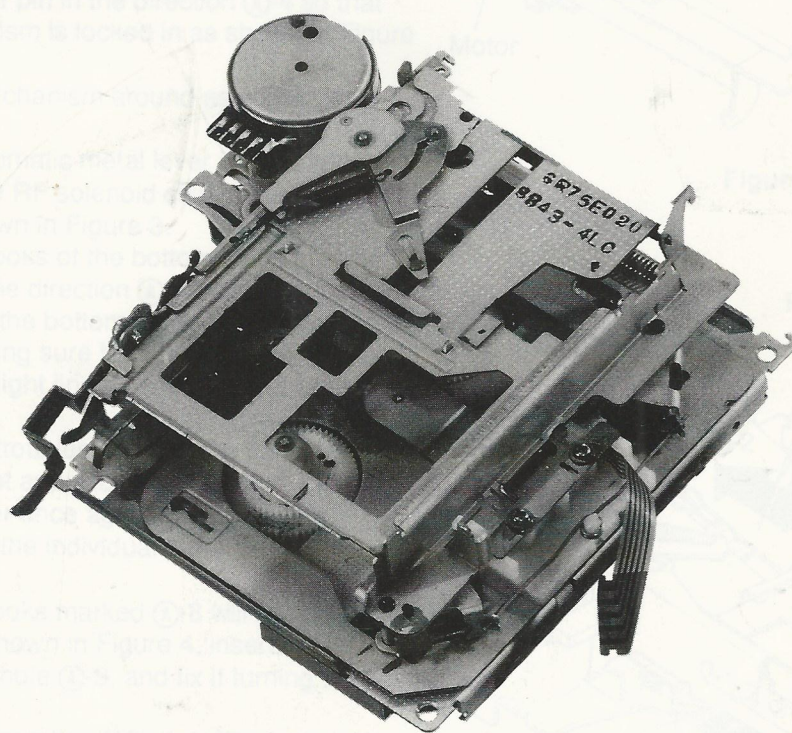


ALPINE SERVICE MANUAL

Exploded View & Parts List For Cassette Deck Mechanism

ADDENDUM & REVISED



GR SERIES

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List of Usable Lock Washers

	SIZE	PARTS NO.	QUANTITY
1	(M1.2 × 3.5 × 0.25)	04A41345P01	8
2	(M1.7 × 3.5 × 0.25)	04A41345P02	1
3	(M2.1 × 5 × 0.25)	04A41345P06	1
4	(M1.2 × 2.5 × 0.25)	04A41345P11	8
5	(M1.7 × 3.5 × 0.35)	04A41345P12	2
6	(M1.2 × 3.5 × 0.35)	04A41345P15	1
7	(M1 × 2.5 × 0.25)	04A41345P17	1
8	(M2.6 × 5 × 0.25)	04A41345P29	1
9	(M3.1 × 8 × 0.05)	04A41345P30	1
10	(M1.7 × 3 × 0.25)	04A41345P31	1
11	(M3.1 × 5 × 0.35)	04A41345P32	2

List of Usable Oil

- 1) Molykote E paste
- 2) Grease EM-30L
- 3) Grease FLOIL 425A

List of Usable Jigs

- 1) GR bottom gear jig (Part No. 44A20788W01)
- 2) Head height adjustment gauge
(M-300 or AT-500)

Disassembly, Assembly and Replacement of Functional Parts

1. Disassembly and Assembly of Bottom Cover

- (1) Turn the mechanism around as shown in Figure 1.
- (2) Remove M1 lock washer ① as shown in Figure 1.
- (3) Remove three screws ② as shown in Figure 1.
- (4) Lift the bottom cover slowly from the position ③-1, pull the hooks out of the holes in the chassis, and remove the bottom cover as shown in Figure 1.
- (5) When remounting the bottom cover, first turn the front of the mechanism up as shown in Figure 2.
- (6) Slide the slider in the direction ④-2 as shown in Figure 2.
- (7) Push down the cassette holder in the direction ④-3 as shown in Figure 2.
- (8) Pull the door pin in the direction ④-4 so that the mechanism is locked in as shown in Figure 2.
- (9) Turn the mechanism around as shown in Figure 3.
- (10) Pull the automatic metal lever in the direction ④-5 and the RF solenoid chip in the direction ④-6 as shown in Figure 3.
- (11) Insert the hooks of the bottom cover into the chassis in the direction ④-7, and then join the part ④-8 of the bottom cover to the chassis slowly, making sure that the 3 points indicated with the straight lines in the Figure 3 are fitted properly.
If there are troubles in mounting the bottom cover, do not apply force but remove the bottom cover once again and check the positions of the individual parts. (Refer to Figure 3.)
- (12) Since the hooks marked ④-8 will be lifted slightly as shown in Figure 4, insert the jig through the hole ④-9, and fix it turning the jig slightly.
Instead of operation (12), turn the gear nose slowly with a precision screwdriver etc., taking care not to damage it.
After 2 to 3 turns, it will click into place.
(Refer to Figure 4 and 5.)
- (13) Fix the screws and the lock washer that have been removed.

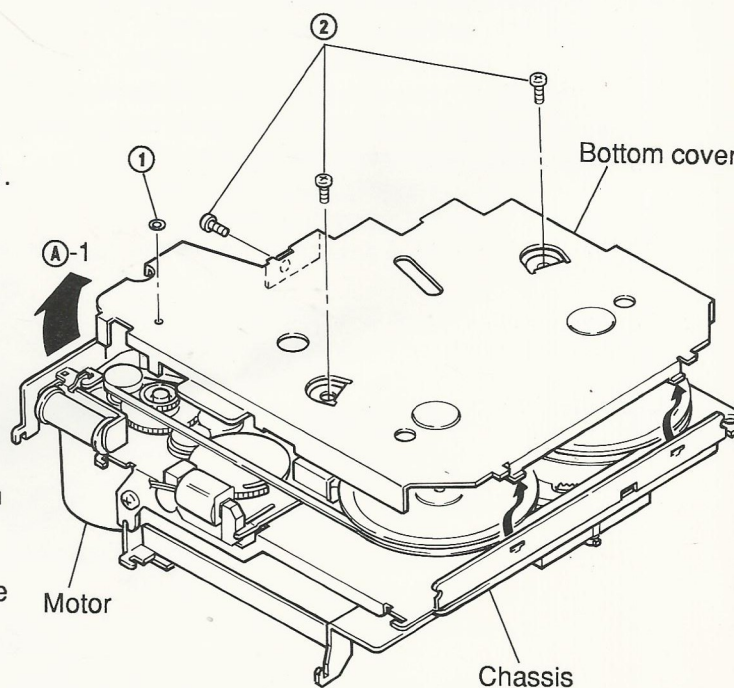


Figure 1

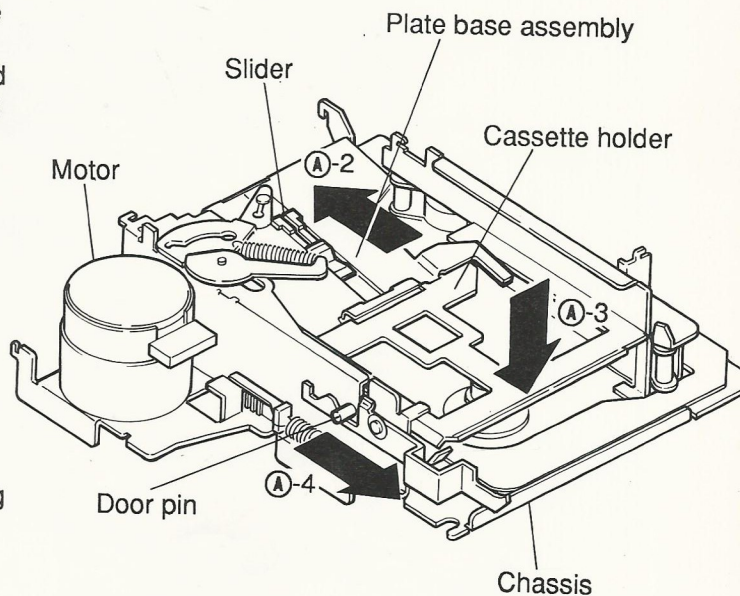


Figure 2

- (14) Insert the jig into the hole (A-9) as shown in Figure and rotate the eject solenoid counterclockwise about 20 times, pulling it in the direction (A-10) with the finger. Then the eject operation is completed. Instead of operation (14), the eject operation can be performed by mounting the mechanism to the product. (Refer to Figures 4 and 5.)

Note: Do not reuse the used lock washers for mounting. When turning the mechanism, be careful not to drop the gear and the flywheel. Fasten the three screws with a fastening torque of 6 kg/cm.

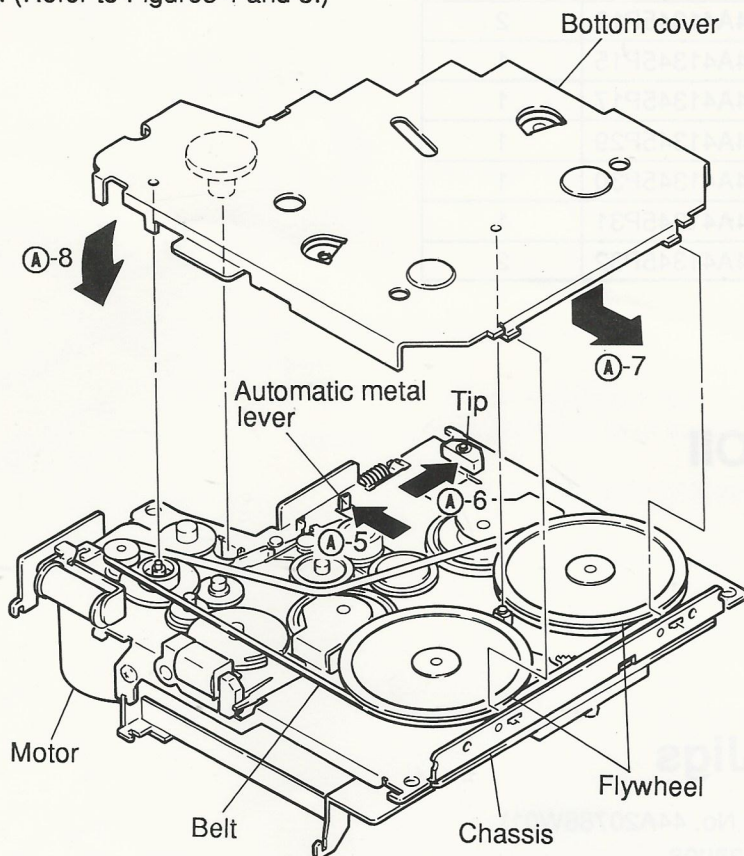


Figure 3

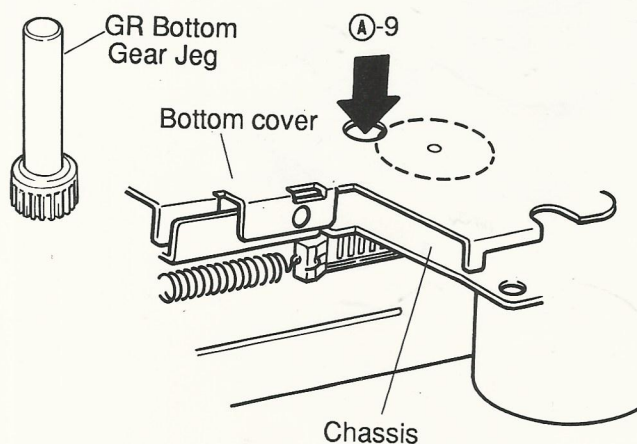


Figure 4

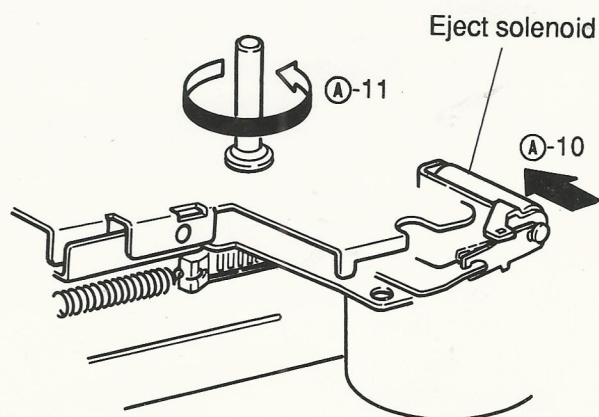


Figure 5

2. Replacement of the bottom cover mounting parts

a. Replacement of the eject gear

- (1) Remove M1.2 lock washer ③ as shown in Figure 6.
- (2) Pull the eject pinion out of the eject gear and remove the eject gear as shown in Figure 6.
- (3) Apply the molykote E paste to the section B-1, and mount the eject gear following the removal steps in the reverse order. After replacement is finished, make sure that the gear rotates smoothly. (Refer to Figure 6.)

Note: Do not reuse the used lock washers for remounting.
Take care to avoid damage by piercing and tearing.

b. Replacement of the RF solenoid

- (1) Remove two solders ④ and remove the RF solenoid from the bottom cover by pulling it up as shown in Figure 6.
- (2) Replace the solenoid with a new one, and remount it following the removal steps in the reverse order as shown in Figure 6.

Note: When removing solder ④, set the temperature of the soldering iron to $350^{\circ} \pm 10^{\circ}$ and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged.

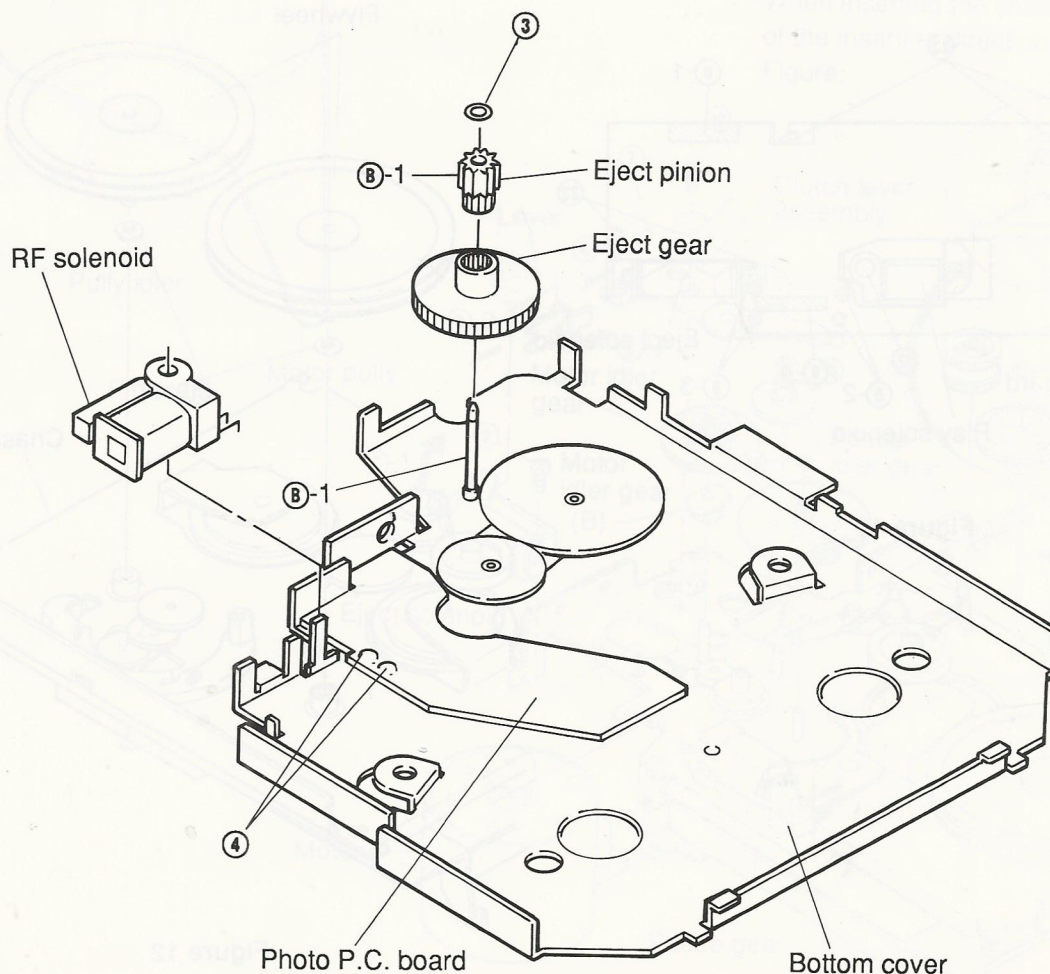


Figure 6

c. Replacement of the photo sensor

- (1) Remove four solders ⑤ as shown in Figure 7.
- (2) Remove the photo guide together with the photo sensor from the photo PC board as shown in Figure 7.
- (3) Insert the new photo sensor into the photo guide, and bend the legs of the photo sensor in the direction marked ⑧-2 as shown in Figure 7.
- (4) Insert the photo guide into the PC board and solder the legs so that the photo sensor is set as indicated by [] in Figure 7.

Note: When using the soldering iron, set the temperature of the soldering iron to $350^{\circ} \pm 10^{\circ}$ and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged. Also take care that the photo guide is properly fixed and straight.

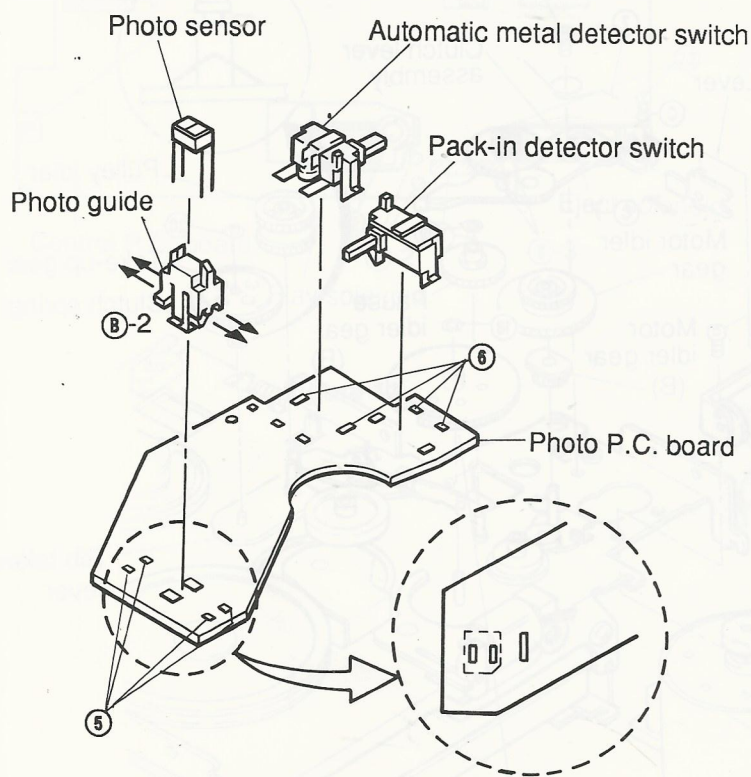


Figure 7

d. Replacement of the detector switch

(Automatic metal packing ???)

- (1) Remove 2 solders ⑥ with which the the switch is fixed as shown in Figure 7.
- (2) Prepare the terminals of the switch of the new solder as shown in Figure 8.
- (3) After that, insert the switch into the photo PC board, and solder the terminals.

Note: When using the soldering iron, refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Also take care that the switch guide is properly fixed and straight.

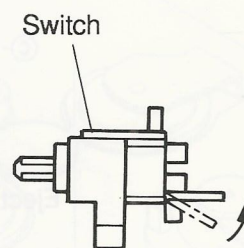


Figure 8

3. Replacement of the mounting parts on the rear of the main chassis

a. Replacement of the belt

- (1) After removing the bottom cover, remove the belt.
- (2) Clean the new belt with absolute alcohol, and fix it as shown in Figure 9.

Note: When fixing the belt, make sure that it is not twisted or dirty. When removing the belt, do not turn up the front of the chassis.

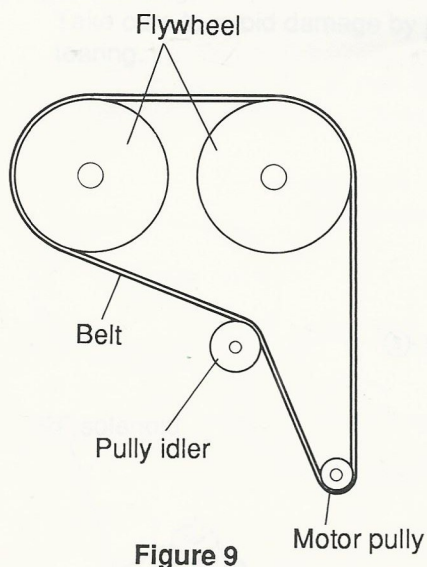


Figure 9

b. Replacement of the motor

- (1) After removing the belt, remove spring ⑦ as shown in Figure 10.
- (2) Remove solder ⑧-1, and remove the parallel wire (5P) from the control PC board as shown in Figure 11.
- (3) Remove two screws ⑨ and ⑩, and remove the motor, taking care not to damage the motor idler gear. (Refer to Figure 10.)
- (4) Mount the new motor following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Since the parallel wire is very easily damaged, handle it with care.

Fasten the two screws with a fastening torque of 3 kg.cm.

*When inserting the clutch spring, be careful of the inserting direction as shown in the Figure.

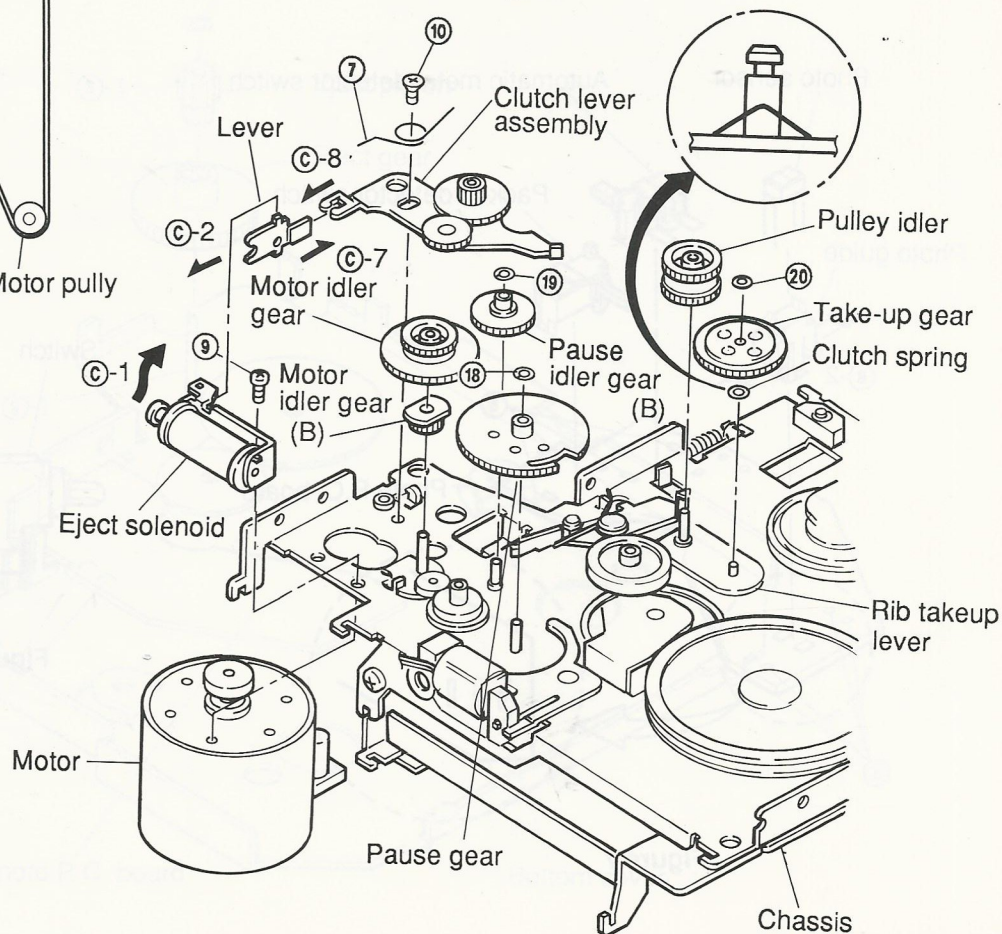


Figure 10

c. Replacement of the flywheels

- (1) After removing the belt, pull out the two flywheels. Take care not to loose the polyslider washer (11) located between the flywheel and the chassis. (Refer to Figure 12.)
- (2) Fix the polyslider washer to the new flywheel and mount the flywheel to the chassis.

d. Replacement of the play solenoid

- (1) Remove the two solders (8-2) as shown in Figure 11.
- (2) Remove one screw (12) and remove the solenoid as shown in Figure 11.
- (3) Mount the new solenoid following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 2.3 kg.cm.

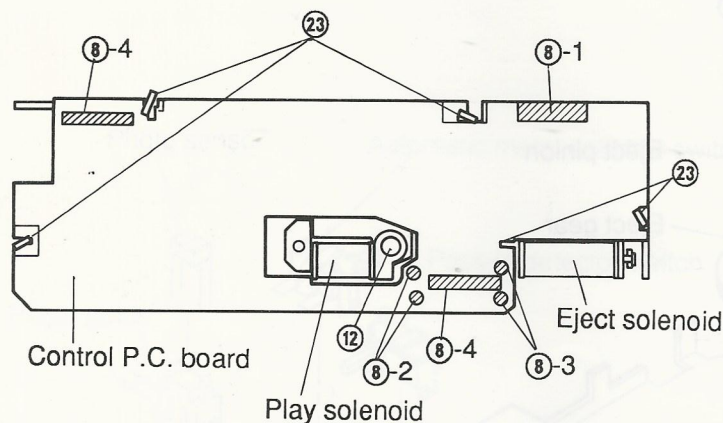


Figure 11

e. Replacement of the eject solenoid

- (1) Remove two solders (8-3). Take care not to loose the tube that protects the wire. (Refer to Figure 11.)
- (2) Remove screw (9) and remove the play solenoid as shown in Figure 10.
- (3) Align position (C)-1 of the new solenoid with position (C)-2 of the lever and fasten the screws as shown in Figure 10.
- (4) Lead the wire through the tube and solder it.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 3 kg.cm. As the solder wires are not insulated, do not let them cross each other.

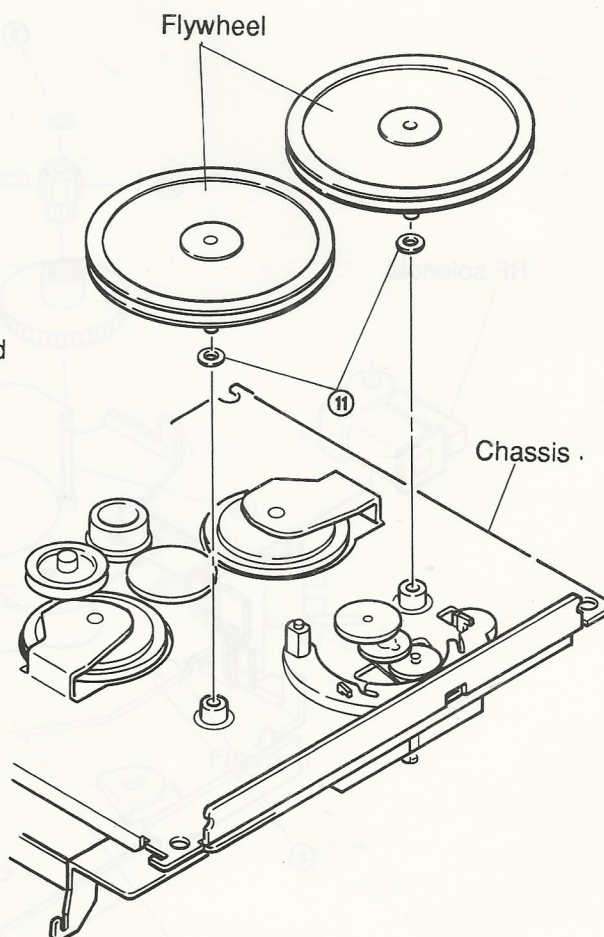


Figure 12

f. Replacement of gears

(f-1) Replacement of the reverse idler gear

- (1) Remove M1.2 lock washer (13), pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
- (2) Remount following the removal steps in the reverse order.

(f-2) Replacement of the sun gear

- (1) Remove M1.2 lock washer (14), pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
- (2) Mount it, following the removal steps in the reverse order.

(f-3) Replacement of the fixing gear

- (1) Adjust the two mounting claws for the fix gear on the chassis (15) and remove the section C-3 of the gear by pulling it up in the direction of the arrow shown in Figure 13.
- (2) Insert the section C-4 of the new gear into the chassis, and mount it following the removal steps in the reverse order as shown in Figure 13.

(f-4) Replacement of the reverse lever assembly and planet gear

- (1) Remove both the fixing gear and the sun gear and remove the reverse lever assembly as shown in Figure 13.
- (2) Remove M1.7 lock washer (16) and remove the planet gear as shown in Figure 14.
- (3) Mount the new planet gear and reverse lever following the removal steps in the reverse order.

Notes on f-1 through f-4:

After mounting all parts, check if the reverse lever assembly moves in the directions marked C-5 when the reverse gear is turned clockwise and counterclockwise.

* After mounting the fixing gear, bend them into the form of as shown in the Figure.

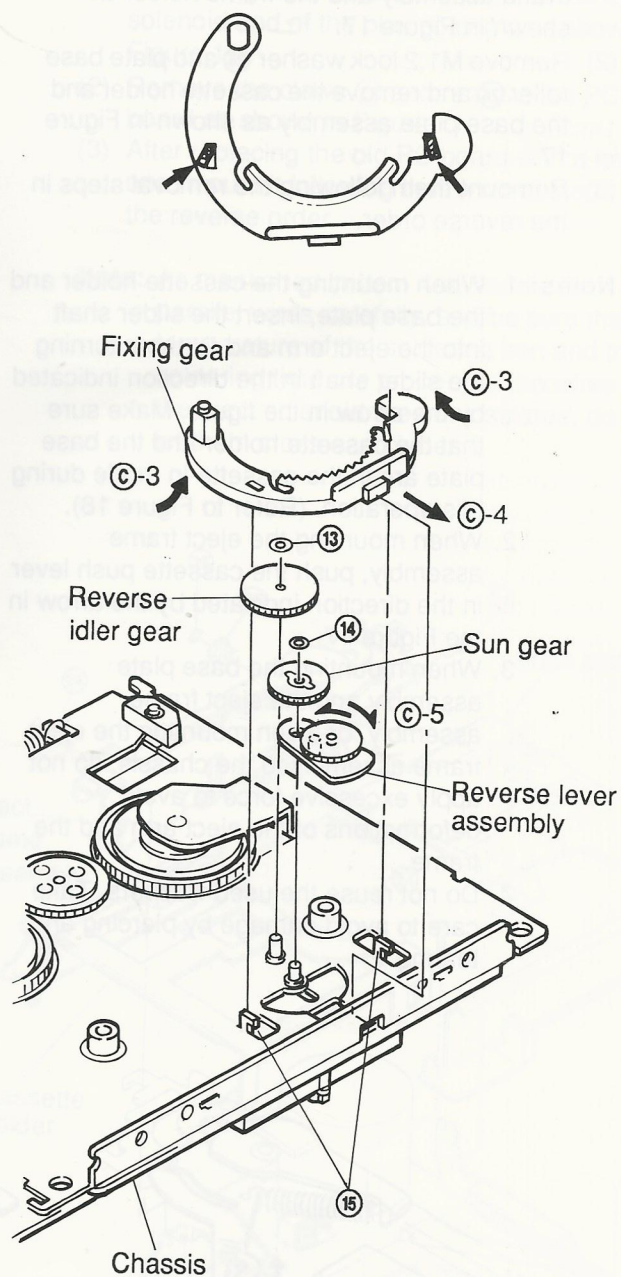


Figure 13

(f-5) Replacement of the clutch lever assembly and eject idler gear

- (1) After removing the motor, remove the motor idler gear and the motor idler gear (B) and remove the clutch lever assembly as shown in Figure 10.
- (2) Remove M1.2 lock washer (17) and remove the eject idler gear as shown in Figure 15.
- (3) Mount the new gears and clutch lever following the removal steps in the reverse order.

Note: When mounting the gears to the lever, apply grease (FLOIL 425A) to the position C-6 as shown in Figure 15. Align the position C-7 with the position C-8 and mount the clutch lever as shown in Figure 10.

(f-6) Replacement of the pause gear

- (1) Remove M1.2 lock washer (18) and remove the pause gear pulling it up from the stud of the chassis as shown in Figure 10.
- (2) Mount the new gear following the removal steps in the reverse order.

(f-7) Replacement of the pause idler gear (B)

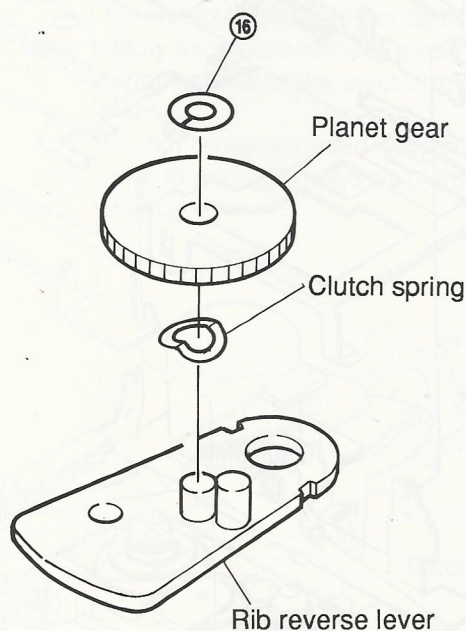
- (1) After removing the motor and the motor idler gear, remove M1.2 lock washer (19) and remove the gear by pulling it up from the stud of the chassis as shown in Figure 10.
- (2) Mount the new gear by following the removal steps in the reverse order.

(f-8) Replacement of the take-up gear

- (1) After removing the belt and the pulley idler gear, remove M1.2 lock washer (20) by pulling it up from the stud of the rib take-up lever assembly as shown in Figure 10.
- (2) Remount the take-up gear following the removal steps in the reverse order.

Notes on f:

Do not reuse the used washers. Take care to avoid damage by piercing and tearing.



[Disassembly Reverse Lever Assembly]

Figure 14

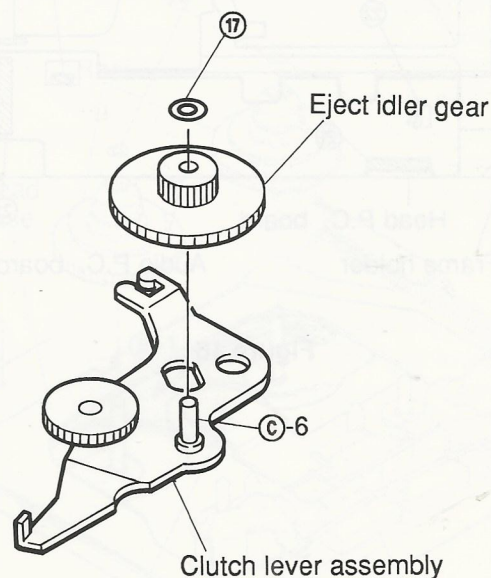


Figure 15

4. Replacement of the parts mounted on the front of the chassis

a. Replacement of the audio PC board

- (1) Remove two solders (21) and remove the parallel wire (7P) and the head PC board as shown in Figure 16.
- (2) Adjust the two claws (22) to the rectangular holes on the PC board and remove the PC board as shown in Figure 16.
- (3) After replacement, mount the new PC board following the removal steps in the reverse order.

Note: The head PC board and the parallel wires are easily damaged. Handle them with care. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head PC board.

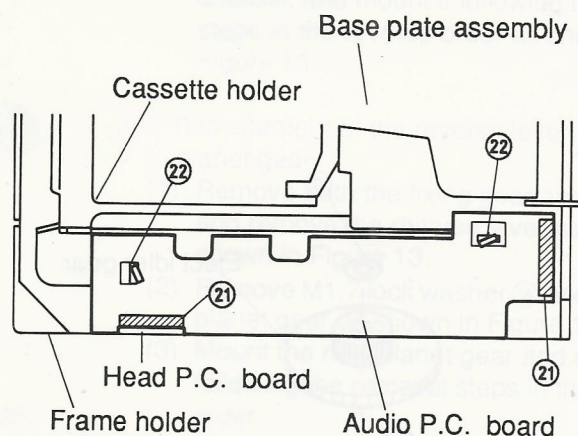


Figure 16

b. Replacement of the control PC board

- (1) Remove seven solders (8) and remove the three parallel wires and the wires of the eject solenoid and of the play solenoid as shown in Figure 11.
- (2) Remove the claws (23) and remove the PC board as shown in Figure 11.
- (3) After replacing the old PC board with a new one, mount it following the removal steps in the reverse order.

Note: As mentioned in Item 4-a, handle the parallel wires carefully, and be sure that the temperature of the soldering iron and the soldering time are proper. As the wires of the eject solenoid are not insulated, do not let them cross each other.

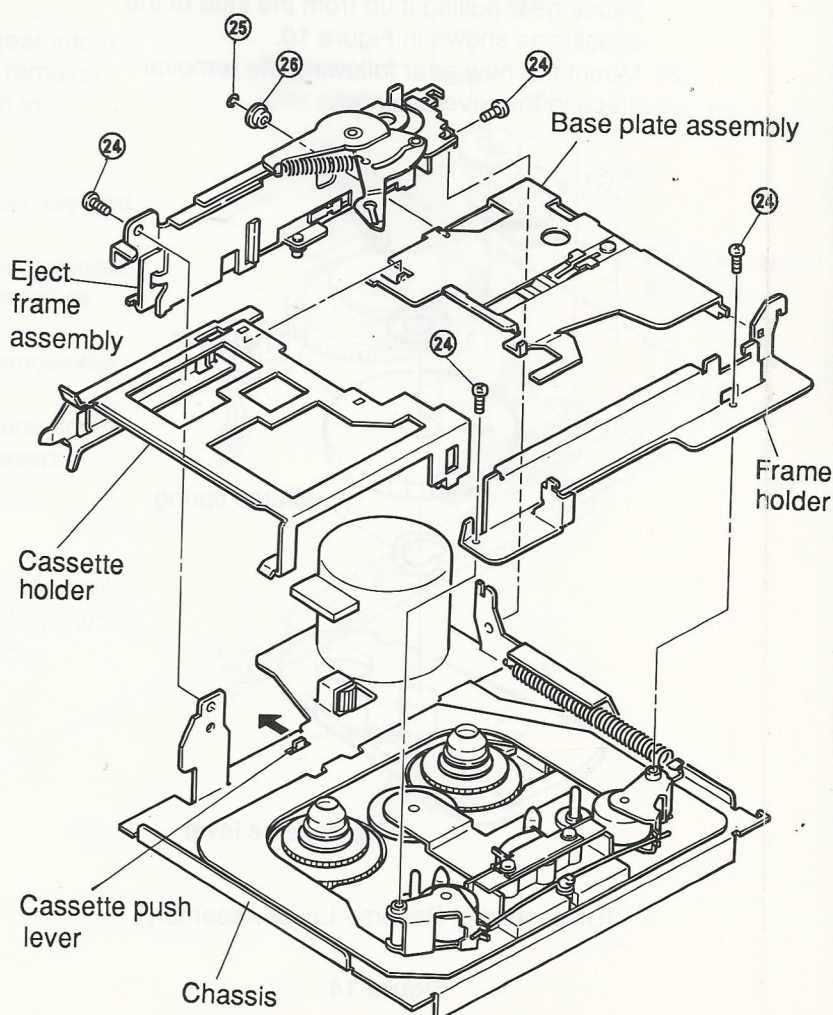


Figure 17

c. Disassembly and assembly of the cassette holder

- (1) Remove four screws ②④ and remove the eject frame assembly and the frame holder as shown in Figure 17.
- (2) Remove M1.2 lock washer ②⑤ and plate base roller ②⑥ and remove the cassette holder and the base plate assembly as shown in Figure 17.
- (3) Remount them following the removal steps in the reverse order.

- Notes:**
1. When mounting the cassette holder and the base plate, insert the slider shaft into the eject arm and fix them turning the slider shaft in the direction indicated by the arrow in the figure. Make sure that the cassette holder and the base plate are in the cassette-in mode during this operation. (Refer to Figure 18).
 2. When mounting the eject frame assembly, push the cassette push lever in the direction indicated by the arrow in the Figure 17.
 3. When mounting the base plate assembly and the eject frame assembly, or when mounting the eject frame assembly to the chassis, do not apply excessive force to avoid deformations of the eject arm and the frame.
 4. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

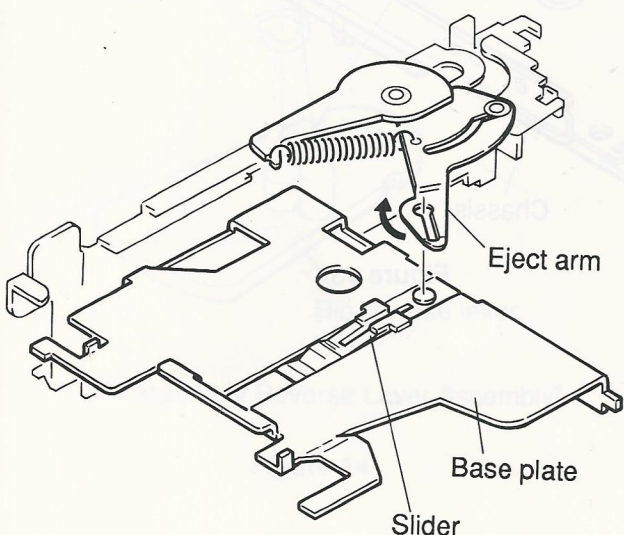


Figure 18

d. Replacement of the reels

- (1) Remove M1.7 lock washers ②⑥ (Refer to figure 19).
- (2) Move the select lever in the direction marked ①-1 in the Figure and remove the reel by gripping the reel gear as shown in Figure 19.
- (3) After replacement, mount the new reels following the removal steps in the reverse order.
- (4) After mounting, check the tape speed and the wow and flutter with test tape MTT-III.

Note: Since the reel is easily loosened if the cap is gripped, always handle it gripping the gear. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

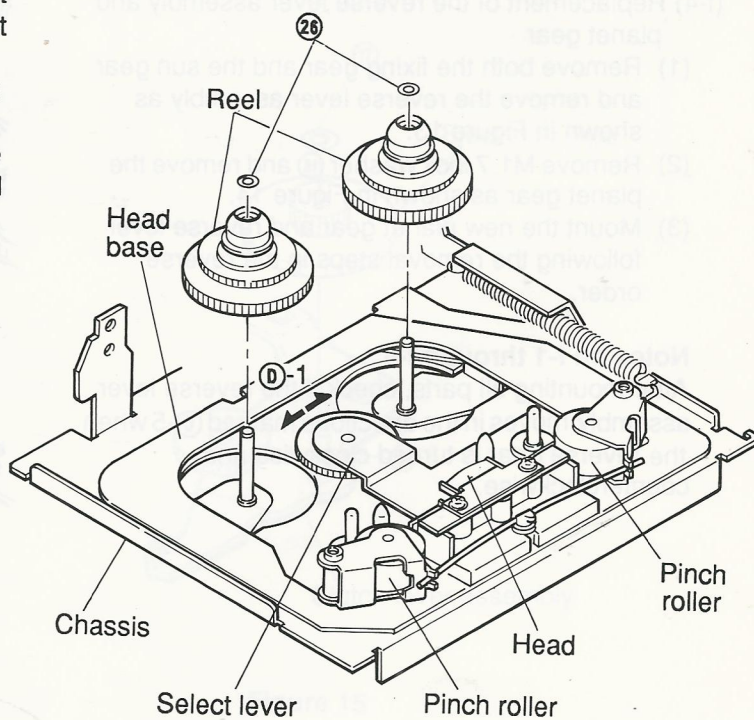


Figure 19

e. Replacement of the pinch rollers

- (1) Remove pinch roller spring ②⑦ as shown in Figure 20.
- (2) Remove M3.1 lock washers ②⑧ and remove the pinch roller as shown in Figure 20.
- (3) Mount the pinch rollers following the removal steps in the reverse order.

Apply insulation coating to the position ①-2 of the pinch roller as shown in Figure 20.

Note: Make sure that the pinch rollers are thoroughly fixed and that they are not deformed. Do not reuse used lock washers. Take care to avoid damage by piercing and tearing.

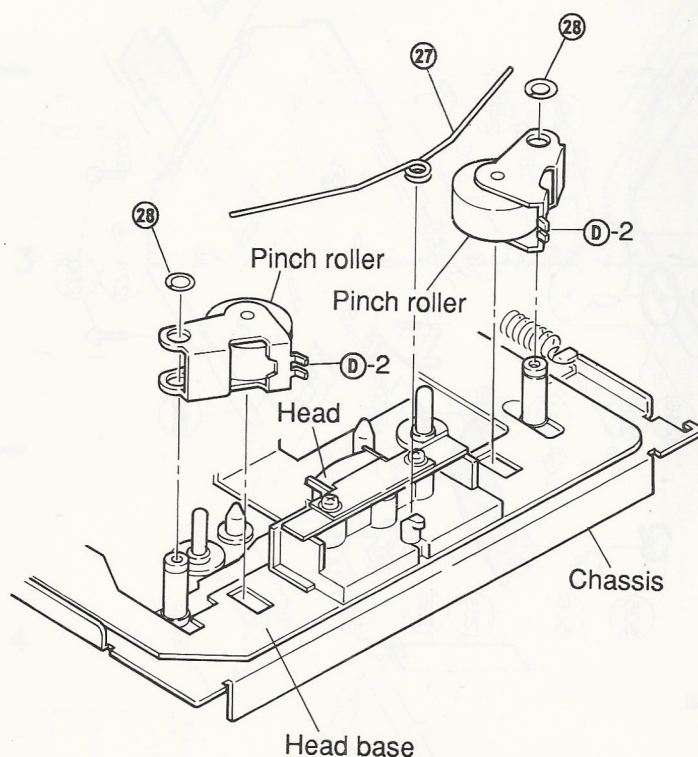


Figure 20

f. Replacement of the head

- (1) After removing the pinch roller spring, remove two screws ②⑨ as shown in Figure 21.
- (2) Remove solder ③⑩ and remove the head from the head PC board as shown in Figure 22.
- (3) After replacement, mount the new head following the removal steps in the reverse order.

Notes: 1. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head PC board. Make sure that the head PC board is not lifted.

2. Fasten the two screws with a fastening torque of 2.3 kg.cm. Note that the tension of the head spring can be decreased if the screws are fastened too strongly.

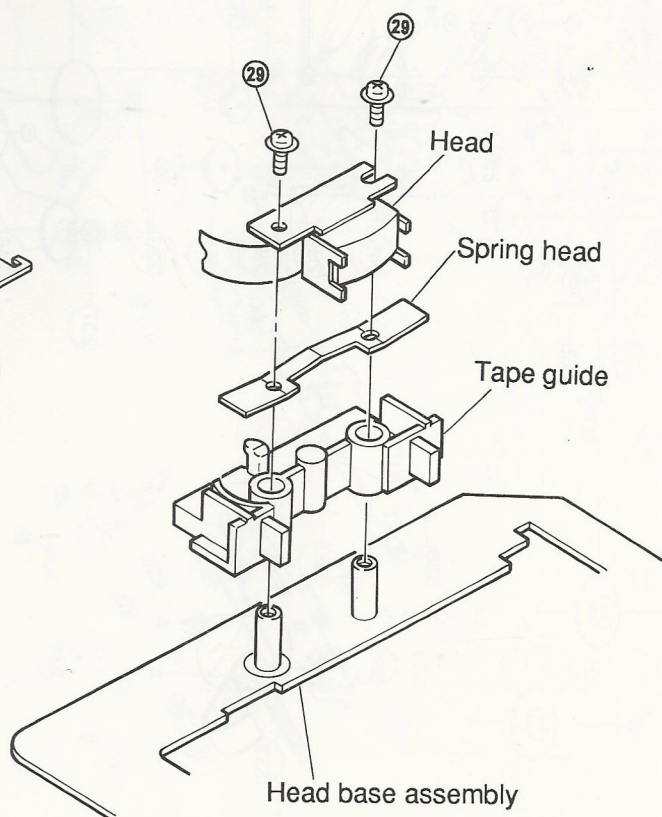


Figure 21

- (4) Adjust the height of the head as shown in Figures 23, 24 and 25.
- ① Place the height adjustment gauge (M-300 or AT-500) on the head base, and adjust the height so that the check bar fits in the tape head guide smoothly.
 - ② When the check bar touches the top (or bottom) of the tape guide, insert a spacer (t 0.1 mm or polislid washer t 0.13 mm). If necessary, remove the spacer.

Note: If you do not have a height gauge like described in ④-①, run the tape at normal speed and adjust the height of the head and the tape head guide so that the tape does not curl.

- (5) After having assembled the complete mechanism, adjust the angle of the head with test tape MTT-113C. (Refer to chapter "Adjustment of the head angle".) After the adjustment, apply the screw lock and fix the screws.

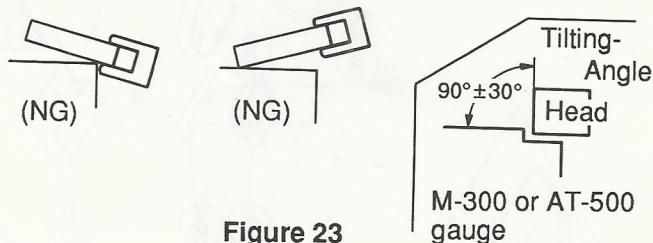


Figure 23

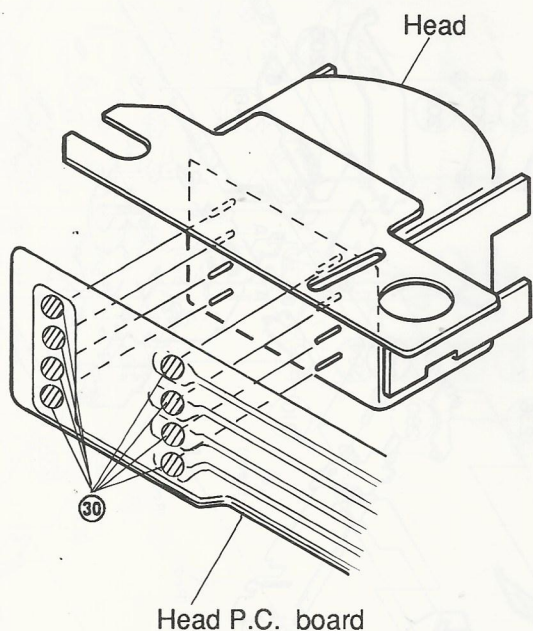


Figure 22

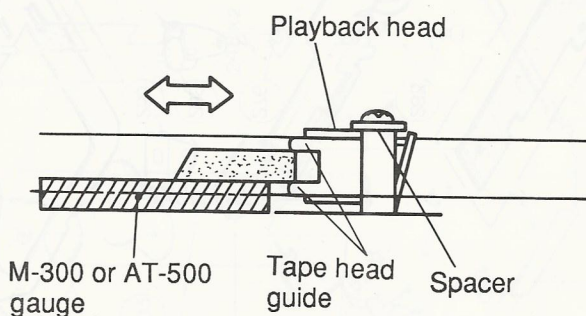


Figure 24

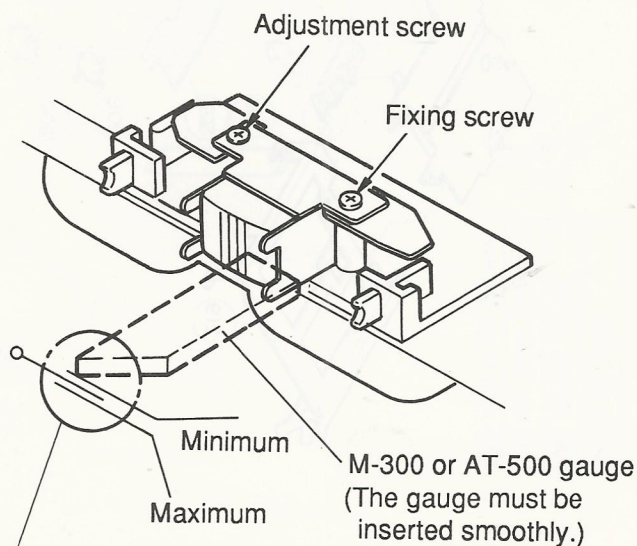
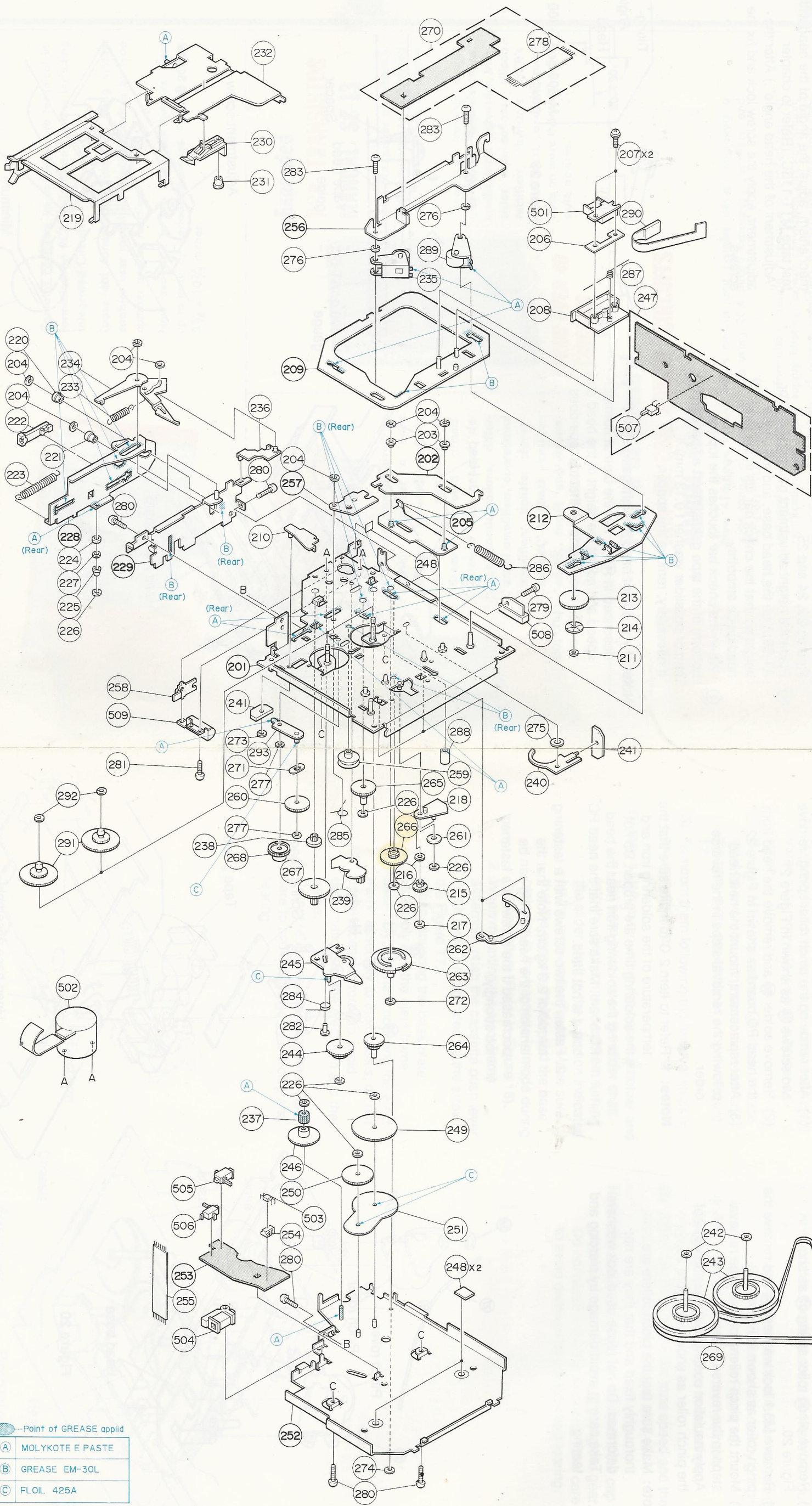


Figure 25

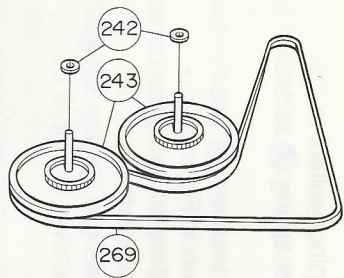
Exploded View (Cassette Deck)

GR Series

GR Series



●	Point of GREASE applid
(A)	MOLYKOTE E PASTE
(B)	GREASE EM-30L
(C)	FLOIL 425A



Cassette Deck Assembly Parts List

Note: The parts without part numbers are not supplied.

Symbol	IN-	No.	Part No.	Description
203	3-C	43A11072W01	Roller, Sub Head	
204		04A41345P01	Washer, Lock (M1.2)	
206	2-B	41A10095W01	Spring, Head	
207	2-B	03S40019C03	Screw, F-Locks (M2x4)	
208	2-B	43B125454W01	Tape, Guide	
210	4-C	01A10206W01	Assy., Riv Lever R/F	
211	2-D	04A41345P29	Washer, Lock (M2.6)	
213	2-D	44A10295W01	Gear, Sensor	
214	2-D	14A10681W01	Reflector	
215	3-E	44A10142W01	Gear, Planet	
216	3-E	41A10097W02	Spring, Clutch	
217	3-E	04A41345P31	Washer, Lock (M1.7)	
218	3-E	01A10203W01	Assy., Riv Lever	
219	4-B	07B10074W01	Holder, Cassette	
220	5-B	43A12583W01	Roller, Eject	
221	5-C	43A63281F01	Roller, Plate Base	
222	5-C	44A82206F01	Rack	
223	5-C	41B10386W03	Spring, GR (Rack)	
224	4-C	43A10121W01	Roller, Eject A	
225	4-D	43A10380W01	Roller, Eject B	
226		04A41345P11	Washer, Lock (M1.2)	
227	4-D	43A12377W01	Roller, Eject C	
230	4-A	45B10376W01	Slider	
231	4-B	47A63278F01	Shaft, Slider	
232	4-A	01A10212W01	Assy., Riv Plate Base	
233	4-C	41B10386W01	Spring, Eject Arm	
234	4-B	01A10148W01	Assy., Riv Eject	
235	3-B	01B10381W02	Assy., Pinch Roller	
236	4-C	01A10202W01	Assy., Riv Lever	
237	4-F	44A12975W01	Pinion, Eject	
238	4-E	44A13617W01	Gear, Motor Idler (B)	
239	3-E	01A10201W01	Assy., Riv Lever	
240	2-D	45A10092W01	Lever, Play	
241		76T10374W01	Chip	
242	1-C	04S40075C05	Washer, Polyslider	
243	1-C	01A10368W01	Assy., Flywheel	
244	3-F	44A10141W01	Gear, Eject Idler	
245	3-E	01A10205W01	Assy., Riv Lever	
246	3-F	44A10145W01	Gear, Eject	
247	2-B	01V11500W18	Assy., CR Control	
248		43A90918F01	Spacer, Polyslider	
249	3-F	44A11063W01	Gear, Bottom A	
250	3-F	44A11064W01	Gear, Bottom B	
251	3-C	04A111122W01	Washer, CR	
254	3-C	15B11065W01	Guide, Photo	
255	4-C	30T15126W01	Wire, PC Sensor (7P)	
258	4-D	45A10101W01	Lever, Eject Sol	
259	3-D	49A10131W01	Pulley, Idler	
260	4-E	44A10133W01	Gear, Take Up	
261	3-E	44A10134W01	Gear, Sun	
262	3-E	44B10135W01	Gear, Fix	
263	3-E	44B10136W01	Gear, Pause	
264	3-F	44A10137W01	Gear, Pause Idler A	
265	3-D	44A10379W01	Gear, Pause Idler B	
266	3-E	44A10138W01	Gear, Reverse Idler	
267	3-E	44A10139W01	Gear, Motor Idler	
268	4-E	44A11062W01	Gear, Reel Idler	
269	1-C	42A10380W01	Belt, CR	
270	3-A	01V14700W68	Assy., CR Audio	
270	3-A	01V11500W19	Assy., CR Audio	
270	3-A	01V11500W19	Assy., CR Audio	
271	4-D	41A10097W02	Spring, Clutch	
272	3-F	04A41345P15	Washer, Lock (M1.2)	
273	4-D	04A41345P02	Washer, Lock (M1.7)	
274	3-H	04A41345P17	Washer, Lock (M1)	
275	2-D	04A41345P30	Washer, Lock (M3.1)	
276	3-B	04A41345P32	Washer, Lock (M3.1)	
277		04A41345P06	Washer, Lock (M2.1)	
278	2-A	30T15126W02	Wire, PC Joint 7P	
279	2-D	03S44205C78	Screw, Pan (M2x6)	
280		03S44205C30	Screw, Pan (M2.6x4)	
281	4-D	03S72235F38	Screw, Pan (M2x3.3)	
282	3-F	03A12132W02	Screw, Eject Clutch	
283		03S43997P64	Screw, Pan (M1.7x3)	
284	3-F	41A10384W01	Spring, Eject Clutch	
285	3-E	41A10385W01	Spring, Cas Push	
286	2-C	41B10386W02	Spring, Sub Head	
287	2-B	41A10387W01	SP, Pinch Roller	
288	3-D	43A12719W01	Roller, Pause	
289	3-B	01B10381W01	Assy., Pinch Roller	

Notes : ● : For CR75E020 model only ■ : For CR75E010 model only ▲ : For CR75E01A model only Others : Common

Symbol No.	IN-dex	Part No.	Description		
● 290	2-B	84T10367W01	Panel, Head		
● 291	4-E	01T15164W01	Assy., Reel		
■ 291	4-E	01T15164W01	Assy., Reel		
▲ 291	4-E	01T15164W02	Assy., Reel		
292	4-E	04A41345P12	Washer, Lock(M1.7)		
293	4-D	01A11078W01	Assy., Riv Lever Take Up		
Miscellaneous					
● 501	2-B	88T15971W01	Head		
■ 501	2-B	88T10373W01	Head		
▲ 501	2-B	88T10373W01	Head		
502	4-E	01V11500W64	Assy., Motor		
503	3-G	51T15144W01	Sensor, Photo		
504	4-G	01T10371W01	R/F Sol. Assy.		
505	4-F	40T15382W01	SW., Detector (Pack Down)		
506	4-G	40T15382W01	SW., Detector(Metal)		
507	2-C	40T15222W01	SW., Detector (Pack In)		
508	2-D	01T15249W01	Assy., Play Solenoid		
509	4-D	01T10369W01	Assy., Eject Solenoid		

Notes : ● ; For GR75E020 model only ■ ; For GR75E010 model only
▲ ; For GR75E01A model only Others ; Common