PIONEER

V2 1

Service Manual

ORDER NO.
CRT-467-0

CASSETTE MECHANISM UNIT

CX-152/A, CX-152/B

- This service manual is for cassette mechanism units used in car stereo components.
- Refer to the service manual for individual models for details on sections other than the cassette mechanism unit.

Model	Service Manual	Cassette Mechanism Unit
KP-A200/US, CA	CRT-463	CX-152/A
KP-A300/US, CA	CRT-464	CX-152/A
KP-4700/ES		CX-152/A
KP-4600/ES		CX-152/A
KPH-4830/EW		CX-152/A
KPH-4800/EW, ES		CX-152/A
KPH-4800SDK/WG		CX-152/A
KP-4400/EW KP-4400SDK/WG KP-4400/ES KP-4430/EW	CRT-466	CX-152/A
KEH-7700/ES		CX-152/A
KEH-7730/EW		CX-152/A
KEH-7730SDK/WG		CX-152/A
KX-E40/EW	CRT-465	CX-152/B

Model	Service Manual	Cassette Mechanism Unit
KEH-8800/ES		CX-152/B
KEH-8830/EW		CX-152/B
KEH-8830SDK/WG		CX-152/B

CONTENTS

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TEL: (03) 580-9911

1. REPLACEMENT OF PARTS IN CASSETTE MECHANISM

• Replacement of Belt and Motor

1. Remove the four screws labeled "A" in Figure 1 and remove cover.

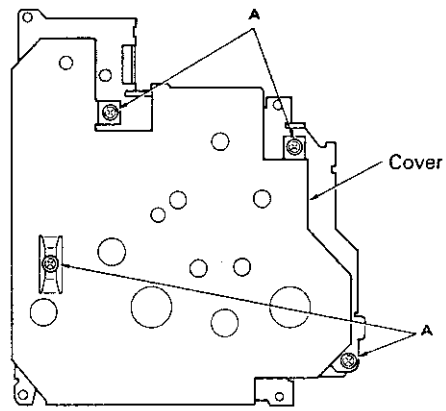


Fig. 1

2. Belt can be replaced as shown in Figure 2.
3. To replace the motor, remove the two screws labled "B" in Figure 2.

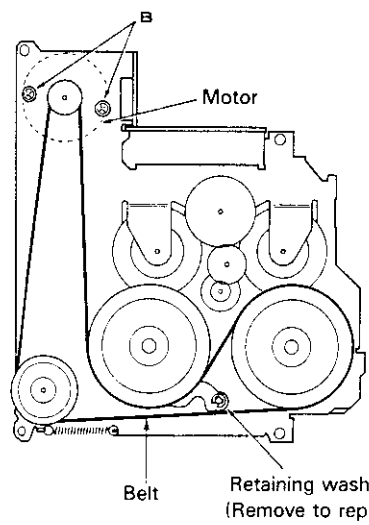


Fig. 2

• Replacement of Reel Unit

1. After removing the two screws retaining the loading assembly (labeled "C" in Figure 3), gently push the loading assembly in the direction indicated by the arrow. The loading assembly can now be removed by pulling upward.

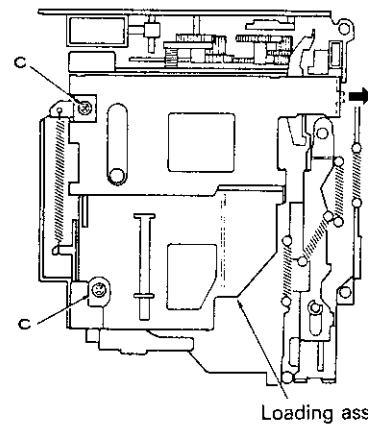


Fig. 3

2. Lift arm (B) (Figure 4), remove it from the pin on arm (A) (Figure 4), and move it in the direction indicated by the arrow (Figure 4). Next, remove the washer retaining the reel unit, and pull the ratchet in the direction indicated by the arrow. The reel unit can now be removed by lifting upward.

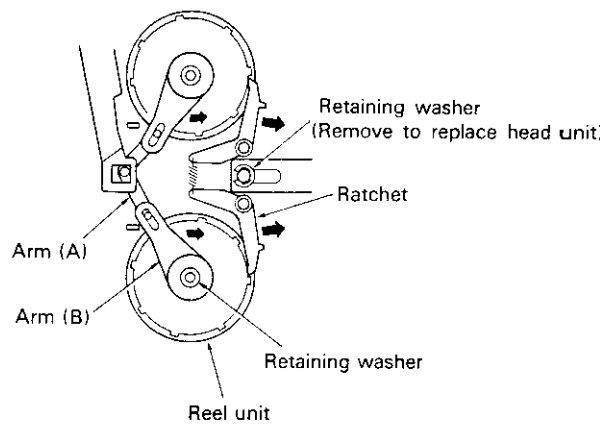


Fig. 4

• Replacement of FWD and REV Pinch Rollers

1. Remove the lever by removing the retaining washer (Figure 5). Next, remove the screws labeled "F" and "G" in the same figure and lift the lever assembly upward. Pull the head unit in the direction indicated by the capstan to remove the lever assembly.

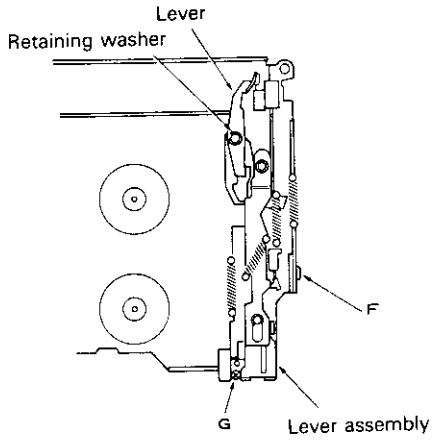


Fig. 5

2. To replace the FWD pinch roller unit, remove retaining washer A and remove arm (C) from the shaft. Spring (A) is also removed at the same time (Figure 6).
3. Remove retaining washer B (Figure 6) and remove the FWD pinch roller unit from its shaft. While removing this unit, remove the spring from the other shaft.
4. To replace the REV pinch roller unit, pull the slide plate in the direction indicated by the arrow in until it locks and remove retaining washer C (Figure 6).
5. Remove the REV pinch roller unit from its shaft in the same manner as when removing the FWD pinch roller unit from its shaft. While removing the REV pinch roller unit from its shaft, remove the spring from the other shaft.

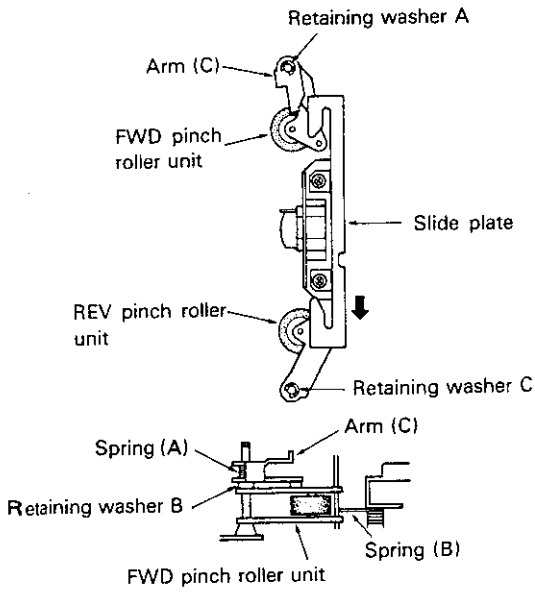


Fig. 6

• Replacement of Head Unit

1. Remove the head unit by removing the two retaining washers (Figures 2 and 4).
2. Remove the two screws labeled "H," and remove the azimuth plate by pulling it forward (Figure 7). When removing the azimuth plate, take care not to lose the springs which are held under compression beneath that plate.

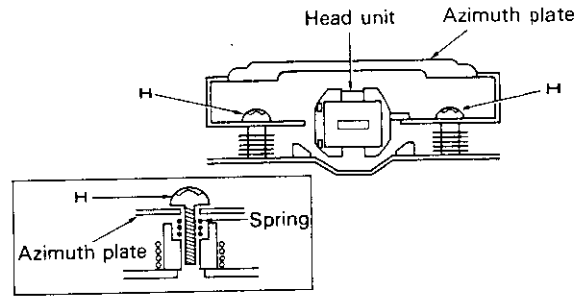


Fig. 7

3. Remove the spring and retaining washer (Figure 8), and remove the sector gear.
   Note: Install the sector gear with the head in a vertical position, aligning the mark on the sector gear with the mark on the head unit.

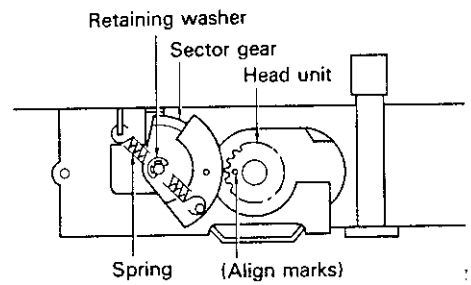


Fig. 8

4. Remove the two screws labeled "I" and the Mylar tape affixing the head leads (Figure 9). Unsolder the four head leads. The head unit can now be replaced.
   Note: When reassembling the unit, the head leads should be fixed in place with a moderate amount of slack using Mylar tape.

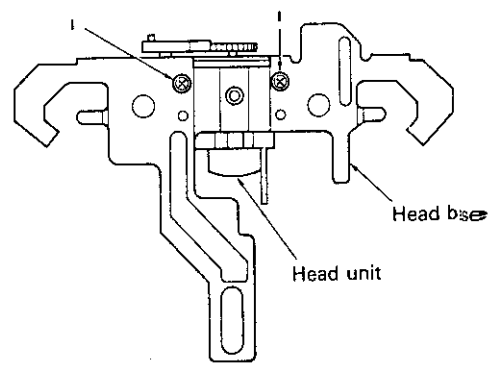


Fig. 9

• Replacement of Solenoid

1. Remove the pulley which is beneath the chassis (Figure 10). Remove the two screws (labeled "J") retaining the spring and gear assembly and lift that assembly upward. The gear assembly can now be removed from its pin by pulling it in the direction indicated by the arrow.
   Note: Take care not to change the shape of the mute switch upon reassembly.

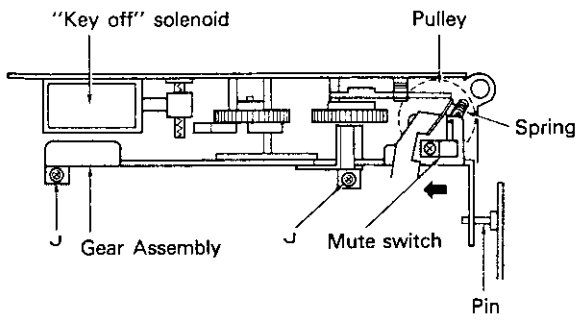


Fig. 10

2. To replace the "direction" solenoid, remove the two screws labeled "K" (Figure 11). To replace the "key-off" solenoid, remove the two screws labeled "L" in that figure.

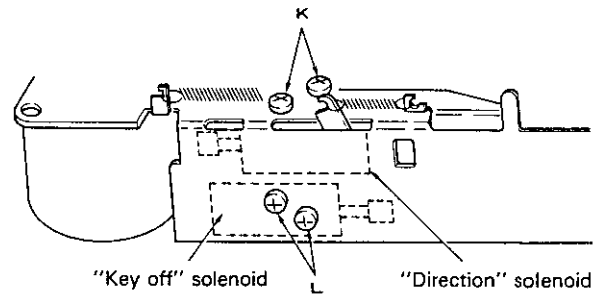


Fig. 11

2. MECHANISM DESCRIPTION

• CASSETTE LOADING AND EJECT MECHANISM

• Cassette Loading

1. When a cassette is inserted, the cassette guide moves in the direction indicated by arrow ❶ in Figure 12, moving arm (A) at its fulcrum in the direction indicated by arrow ❷.
2. When the cassette guide reaches point (A) (Figure 13), a downward force is applied to the loading arm. At this point, spring (A) forces the loading arm to ratate downward at its fulcrum, dropping the cassette into place. In this manner, loading is accomplished.
3. As arm (A) moves in the manner described at Paragraphs 1 and 2 above, a catch on that arm moves lever (A) in the direction indicated by the arrow in Figure 14, activating the switches as indicated.
4. As lever (A) shifts, it activates the switches as indicated in Figure 15. The tape/tuner switch is shifted to the "tape" position, the tape power switch is shifted to the "on" position, and the motor is activated.

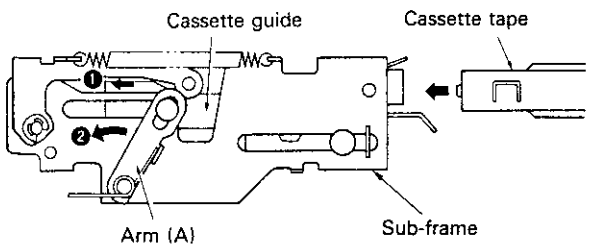


Fig. 12

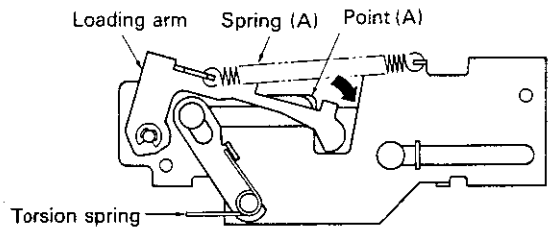


Fig. 13

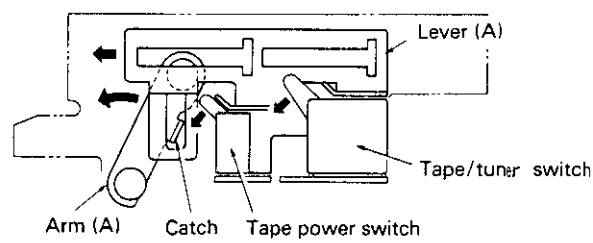


Fig. 14

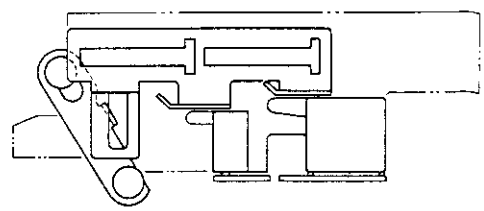


Fig. 15

• **Cassette Eject**

1. The cassette tape is ejected by simultaneously pressing the FF and REW levers. This causes lever (B) to move as indicated in Figure 16, switching the "key off" switch to the "off" position, and deactivating the "key off" solenoid. When this solenoid is deactivated, the tape heads, pinch rollers, and so forth retracted from the tape. Details concerning this action are set forth in the section entitled "Play Mechanism," below.

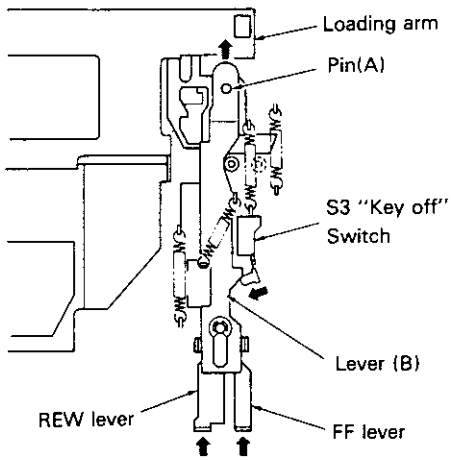


Fig. 16

2. The reason why simultaneous depression of the FF lever and the REW lever causes lever(B) to move is as follows: When the FF lever and REW lever are depressed simultaneously, spring (C) pulls lever (B) in the direction indicated by the arrow (Figure 17-①. Pin (B) on lever (B) then falls into indentations in the FF lever and the REW lever (Figure 17-③), moving from the position indicated in Figure 17-②. If either the FF lever or REW lever is depressed independently, pin (B) will not fall into the indentations and lever (B) will not move.

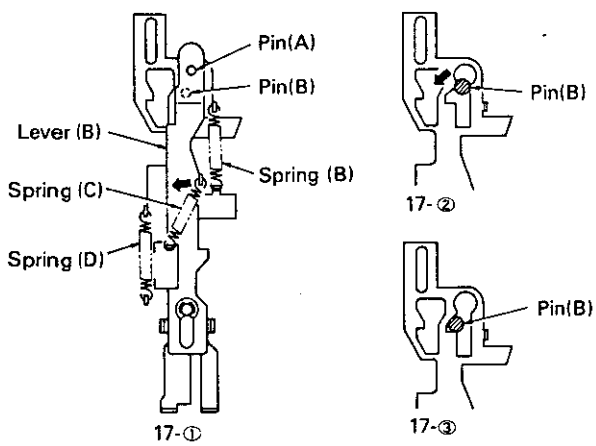


Fig. 17

3. When the FF lever and REW lever are depressed simultaneously, pin(A) (Figure 16) is pushed against the loading arm, starting the action shown in Figure 18 (the opposite action from that described in the section entitled "Cassette Loading," above). The loading arm then rotates at its fulcrum in the direction indicated by arrow ❸ (Figure 18). When the loading arm has rotated to point (A), torsion spring causes arm (A) to move in the direction of arrow ❹. This, in turn, causes the cassette guide to eject the cassette.

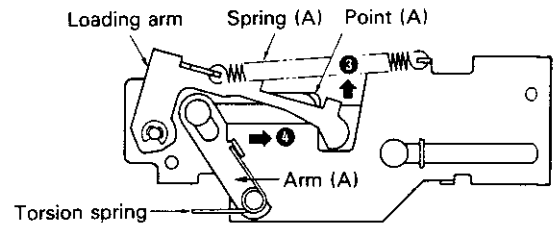


Fig. 18

4. As arm (A) moves, the tape/tuner switch and tape power switch are shifted in the opposite direction from that set forth in Paragraphs 3 and 4 of the section entitled "Cassette Loading," above. The tape/tuner switch is shifted to the "tuner" position and the tape power switch is shifted to the "off" position, causing the motor to stop.
5. A spring plate (Figure 19) prevents the cassette from springing out of the unit.

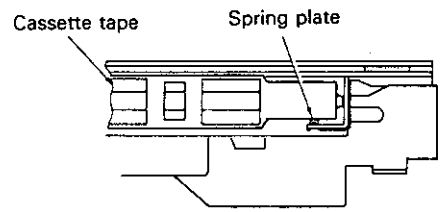


Fig. 19

• PLAY MECHANISM

1. Upon loading the cassette, the tape power switch is moved to the "on" position and the motor is activated, causing movement in the directions indicated by the arrows in Figure 20. Flywheel (A) moves in the FWD direction while flywheel (B) moves in the REV direction.

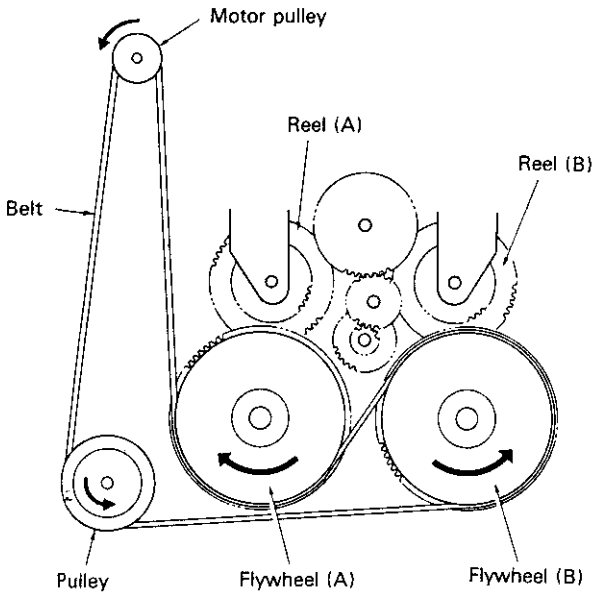


Fig. 20

2. As shown in Figure 21, the gears on flywheels (A) and (B) mesh with gears (A) and (B), which in turn mesh with the gears on reels (A) and (B).
3. Both reel (A) and reel (B) are now rotating, but at this point, the tape is not moving in either direction.

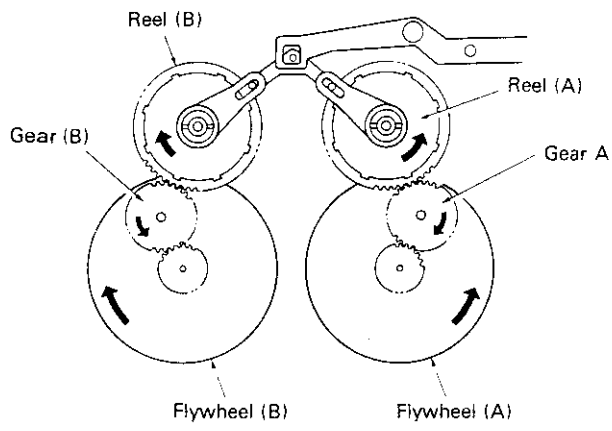


Fig. 21

4. Based upon a friction mechanism, part of the reel rotates while part is motionless. Motion is transferred from the flywheel by gear (C) (Figure 22). Pressure applied by spring (E) causes the transfer of motion from gear (C) to the reel unit. However, when a cassette tape has been inserted into the unit, both reels are pulling with equal force in opposite direction, resulting in the reel unit remaining motioness. Felt strip (A) (Figure 22) allows slippage in order to prevent stretching of the tape.
5. The fact that the reels are pulling in opposite directions, as described in Paragraph 4, above, also serves to eliminate slack in the tape within the cassette.

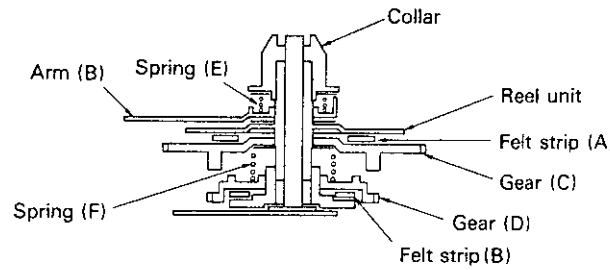


Fig. 22

6. In Figure 23, arms (B), (C) and (D) are at rest. However, the motor is driving a worm gear, which transfers motion to gear E through gears (D~G). The pin on lever (J) moves along the outside cam of gear (H) (Figure 24-①). However, at this point, because the tape is not yet running, arm (B) is motinless. Therefore, when the pin reaches the protruding section of gear (H), arm (D) moves in the direction of arrow ❶.
7. As a result of the movement of arm (D), arms (B) and (C) shift in the direction indicated by arrow ❷. At this point, because the reels are not moving, arms (B) and (C) will not

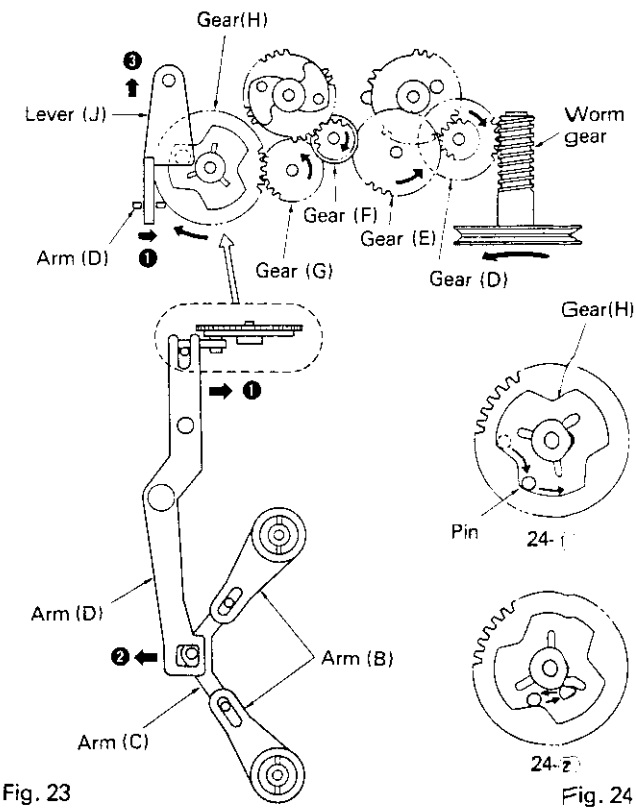


Fig. 23

Fig. 24

move in the direction oppsite that indicated by arrow ❷. Consequently, because arm (D) also is motionless, the pin on lever (J) shifts to the inside cam of gear (H) (Figure 24-②), and lever (J) begins to shift in the direction of arrow ❸ (Figure 23).

8. As lever (J) moves in the direction indicated by arrow ❹ in Figure 25, lever (J) moves in the direction indicated by → arrow ❺ and pushes against arm (G). Arm (G) moves in the direction of arrow ❻, releasing the pin on gear (I).

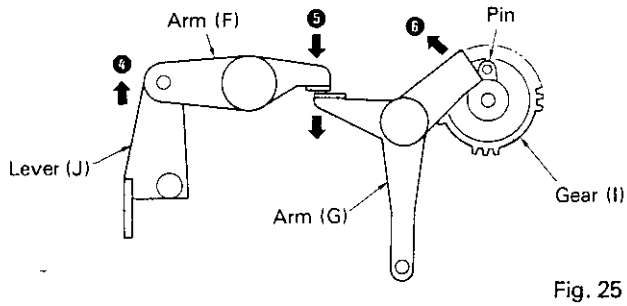


Fig. 25

9. As the pin on gear (I) is released, the spring pushes the roller on the opposite side in the direction of the arrow and point (B) on gear (I) meshes with the inside gear of gear (D), cansing it to rotate.

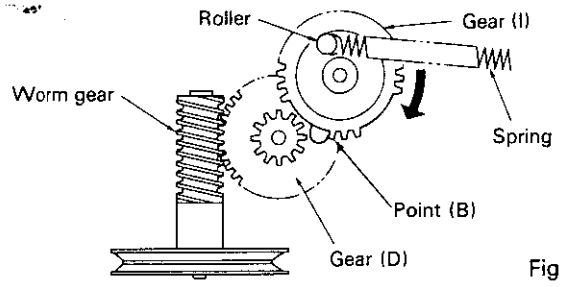


Fig. 26

10. As gear (I) rotates, pin (C) pushes lever (C) and lever (D) in the direction indicated by arrow in Figure 27-①. As it is pushed by lever (C) and pulled by spring (H), lever (E) moves in the direction indicated by the arrow in Figure 27-② and pushes against the arm (I) pin. At the same time, as lever (D) moves in the same way as lever (C), arm (H) is pulled by spring (G) in the direction indicated by the arrow. Because the "key off" solenoid is already in the "on" position, as arm (H) pushes against the solenoid lever, arm (H) is locked in place. This movement also causes lever (F) to move upward and lock in place. As a consequence, as long as the "key off" solenoid remains in the "on" position, arm (R) will not unlock, even if direction change, FF or REW operations are performed.
11. The mute switch moves from the "on" position to the "off" position as the pin on lever (C) moves along the cam. Pin (D) on lever (C) then falls into the notch on the cam and is locked in place.
12. As lever (E) moves, the arm (I) moves in the direction indicated by the arrow in Figure 28 and pushes the head base forward.

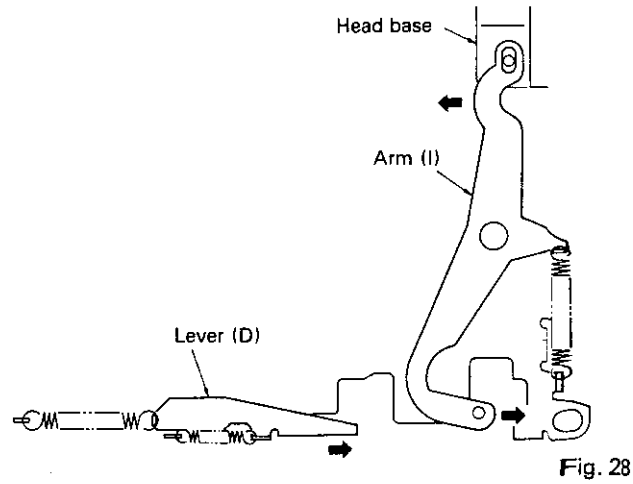


Fig. 28

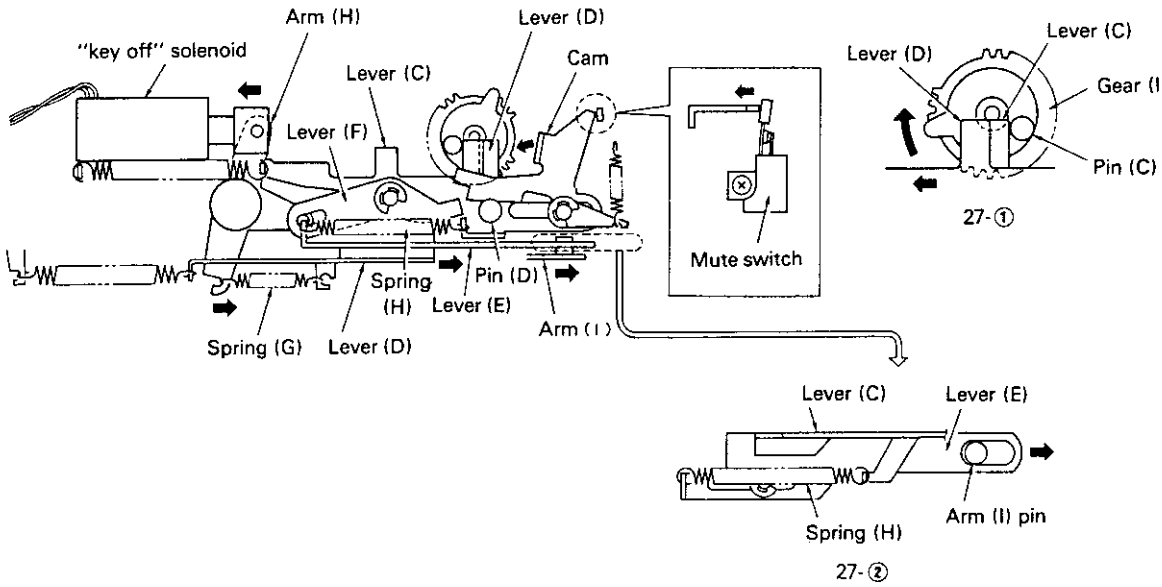


Fig. 27

13. As the head base (Figure 29) moves, the ratchet is pushed forwar and gear (C) is unlocked. In addition, arm (K) and the pinch roller begin to move.
14. As the head mount moves in the direction indicated by the arrow in Figure 29-①, pin (E) on arm (K) moves along the head base in the direction indicated by arrow ❼.
This causes arm (K) to move in the direction of arrow ❽, and gear (A) to separate from gear (C) and begin to rotate. The REV side moves in the same manner.

Next, as a result of the pull of spring (I) and the movement of pin (E) in the direction of arrow ❾ along the head base, arm (K) moves in the direction of arrow ❿. This action causes gear (A) to engage with gear (C). The motor thus drives gear (C)through gear (A), causing the reels to turn in the FWD direction. On the REV side, pin (E') moves in the direction indicated by the arrow in Figure 29-③. Because the head base is not moving, the arm (K') gear is disengaged from the reel gear.

15. The action of the pinch roller is shown in Figure 29-④. As a result of the pull of spring (J), pin (F) is pushed forward on the capstan side, but is held motionless by a catch on the head base. However, as the head base moves, pin (F) moves, and spring (J) causes pinch roller (A) to press the tape against the capstan, allowing the tape to turn on the FWD side at normal speed.

On the REV side, pin (G) is inserted in a notch in the slide plate, creating a gap between pinch roller (B) and the capstan.

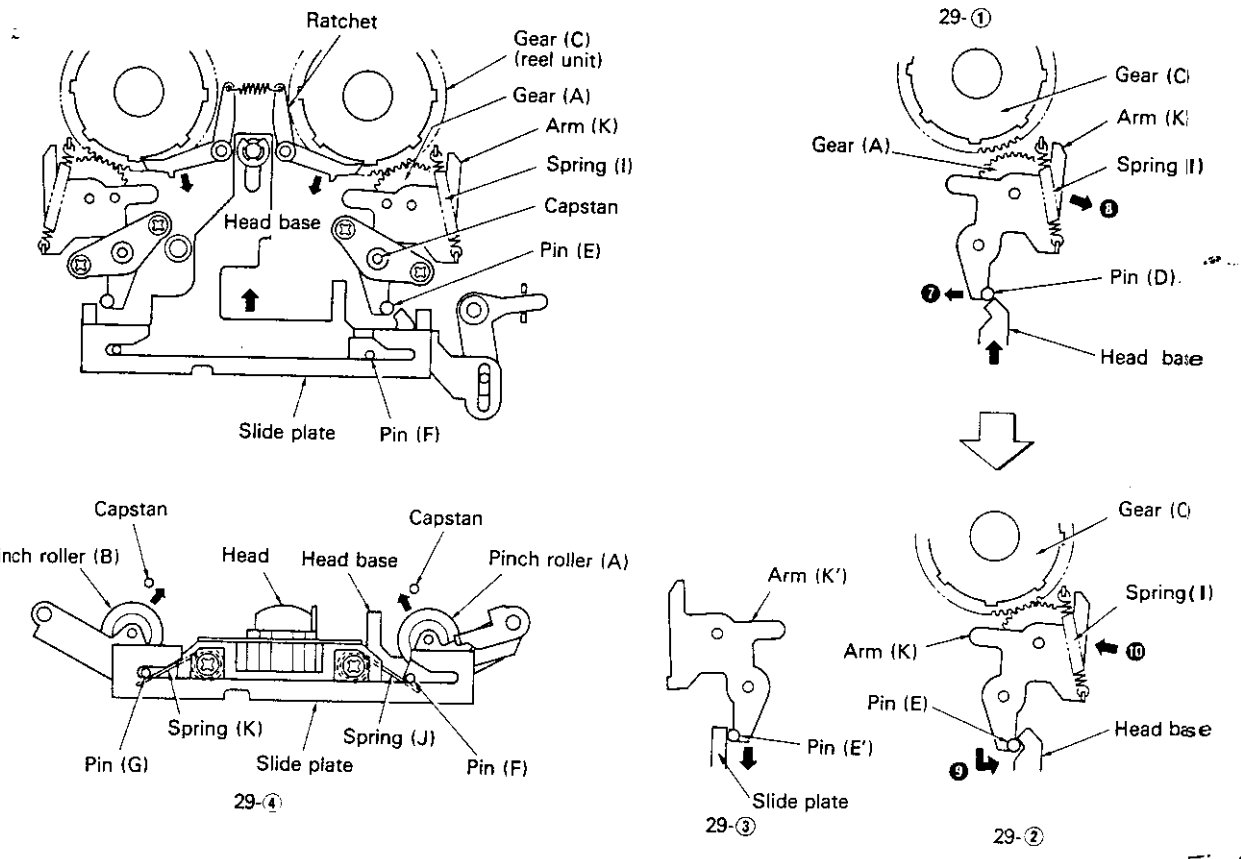


Fig. 29

• MECHANISM FOR SWITCHING BETWEEN FWD AND REV; AUTO REVERSE MECHANISM

• Mechanism for Switching from FWD to REV

1. When the "direction" switch is depressed, SO2 (the "direction" solenoid) is activated, pulling lever (G) in the direction indicated by arrow ❶ in Figure 30. Lever (G) in turn pushes against Arm (G).

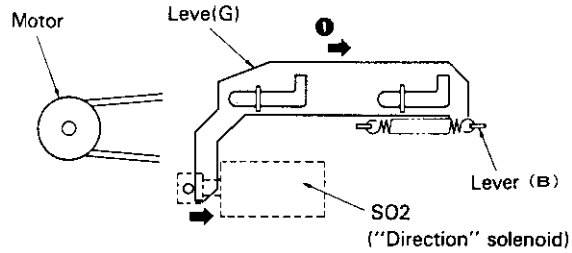


Fig. 30

2. As arm (G) is pushed, it moves in the direction indicated by arrow ❷ in Figure 31. As explained in the section entitled "Play Mechanism," gear (I) begins to rotate, and the catch on that gear pushes against the cam (arrow ❸). As the cam begins to turn in the direction of arrow ❹, pin (H) is unlocked.

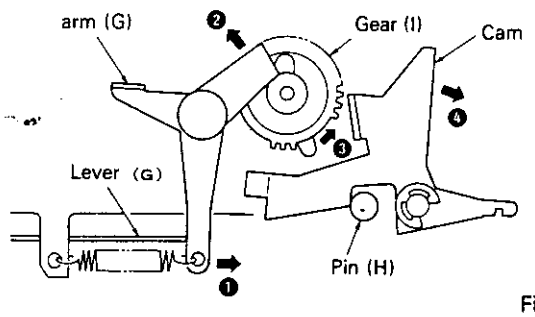


Fig. 31

3. When pin (H) is unlocked, lever (C) is pulled in the direction of arrow ❺ by spring (L) (Figure 32). Lever (C) is stopped by pin (J) connected with arm (H). (Lever (C) causes the heads to return to their original state by an action opposite that set forth undr "Play Function.")

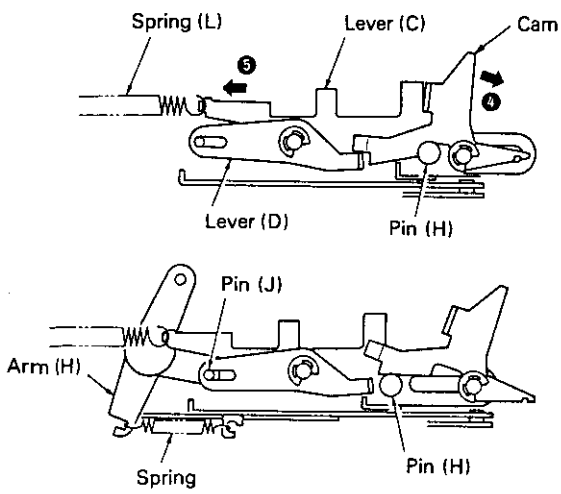


Fig. 32

4. As lever (C) moves in the direction indicated by arrow ❺ in Figure 33, pin (K) on gear (K) falls into the notch on lever (C). Gear (K) begins to turn as it meshes with gear (F). As gear (K) turns, pin (K) pushes against the catch on lever (C), pushing lever (C) in the direction indicated by arrow ❻. Just before pin (K) ceases pushing against the catch on lever (C), the pin on gear (H) takes over and continues to push against lever (C). The head base begins to move as described under the section entitled "Play Mechanism."

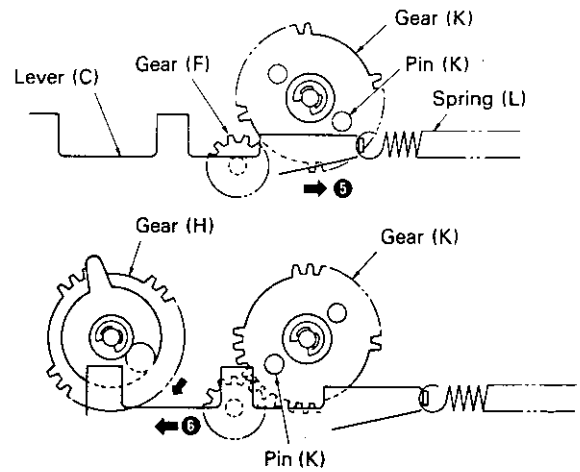


Fig. 33

5. Along with the action described under Paragraph 4, above, as gear (K) turns, pin (K') pushed against lever (H), which pushes arm (M) in the direction indicated by arrow ❽ in Figure 34. In addition, the FWD/REV switch is moved from the "FWD" position to the "REV" position (arrow ❾).

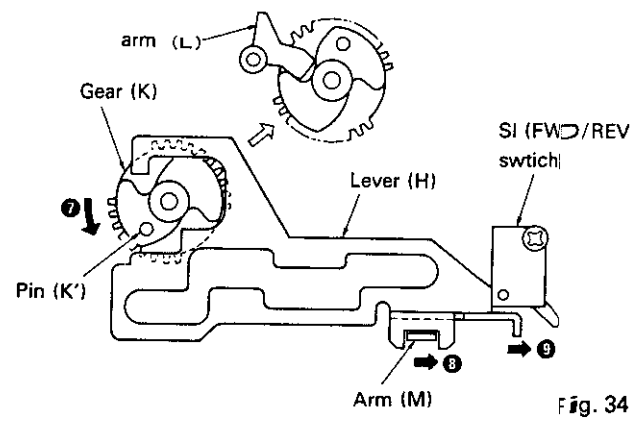


Fig. 34

6. As lever (H) moves, arm (M) moves in the direction indicated by arrow ⑩ in Figure 35. This, in turn, causes the pin on arm (M) to move the slide plate in the direction of arrow ⑪. At this point, the REV side reel is activated (see description of this action at "Play Mechanism").

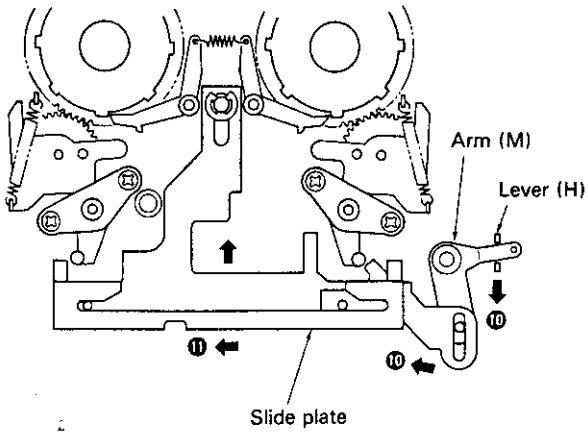


Fig. 35

7. Because the pin in the sector gear is in the notch in the slide plate at this time, the sector gear is in the notch in the slide plate in the direction indicated by arrow ⑫. Because the sector gear is meshed with the head unit gear, the head unit rotates half a revolution in the direction indicated by arrow ⑬. Figure 37 is view of this from tape side. When the head unit has ratated half a revolution, the catch on the head unit contacts the azimuth plate and pressure from the spring causes it to stop.
The above operations change the tape direction from FWD to REV, which, as described in "Play Mechanism", causes the head to move forward, starting tape reproduction in the REV direction.

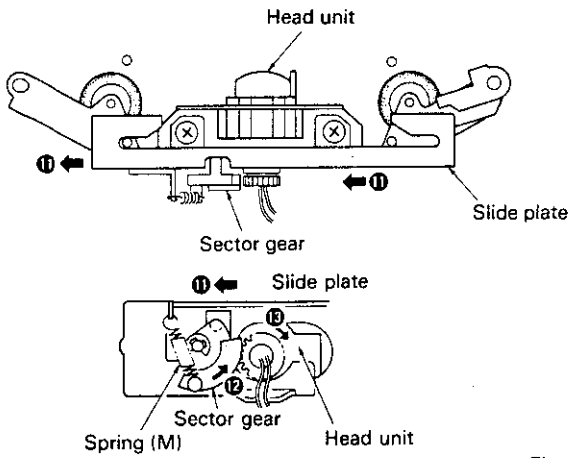


Fig. 36

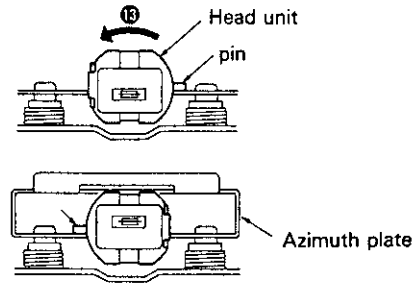


Fig. 37

• Mechanism for Switching from REV to FWD

1. When the "direction" switch is depressed, the actions described at Paragraphs 1-4 under the section entitled "Mechanism for Switching from FWD to REV" (above) take place.
2. As gear (K) turns (Figure 38) pin (K') pushes the catch on lever (H) in the direction indicated by the arrow.
3. As lever (H) moves, the FWD/REV switch is moved from the "REV" position to the "FWD" position. In addition, arm (M) moves in the direction indicated by the arrow, causing the head unit to change from REV to FWD (this action is the opposite of the action described at Paragraphs 6 and 7 of the section entitled "Mechanism for Switching from FWD to REV").

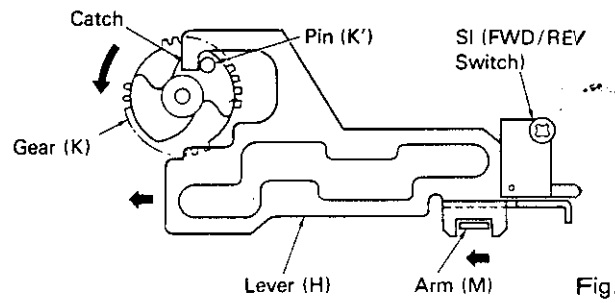


Fig. 38

• Auto-Reverse Mechanism

1. When the tape reaches the end of the reel within the cassette, the reel unit on both the FWD side and REV side stop moving. The actions set forth at Paragraphs 6-8 under the section entitled "Play Mechanism" then occur, causing the tape to automatically reverse direction pursuant to the actions set forth at Paragraph 2 et seq. under the section entitled "Mechanism for Switching from FWD to REV."

• FF AND REW MECHANISM

1. When the REW lever is depressed, the head base is pushed along the circumferance of the REW lever in the direction indicated by arrow ❶ in Fugure 39-①, causing the head to separate from the tape. At the same time, arm (N) moves along the circumferance of the REW lever as shown in Figure 39-②, switching the "mute" switch to the "on" position (the effect is the same when the FF lever is depressed).
2. Figure 39-③ illustrates the "play" mode. Figure 39-④ illustrates the action of arms (O) through (Q) when the REW lever is depressed. When the catch on the REW lever pushes against arm (O) (arrow ❷, the catch on the FF lever causes arm (O) to push against arm (P). The force applied to arm (O) causes it to move in the direction indicated by arrow ❸, thus moving arm (Q). As arm (Q) moves in the direction indicated by arrow ❹, lever (I) is moved.
3. When the FF lever is depressed, the effect similar to when the REW lever is depressed. As the FF lever moves in the direction indicated by arrow ❺, the catch on the REW lever causes arm (O) to push against arm (P). As arm (O) begins to move in the direction indicated by arrow ❻, arm (Q) moves in the direction indicated by arrow ❼, thus causing lever (I) to move.
4. When lever (I) moves in the REW or FF direction (arrows ❹ and ❼, Figure 39-⑥) the gear on lever (I) moves in the direction of arrow ❹ or arrow ❼. When the gear on lever (I) moves in the direction of arrow ❹ (REW side), the gear on the outer circumference of the FWD flywheel mesh with gear (L). Because the gear ratio is better than when in the "play" mode, gears (M) and (N) and the FWD reel mount revolve at high speed. The effect is similar when the FF lever is depressed.
5. The mechanism for locking the unit in either the FF or REW mode is based upon arm (R), which is attached above the pinch roller (Figure 39-⑦). Arm (R) is pressed against the pinch roller side by spring (N). Thus, when either the REW or FF lever is depressed, the catch on arm (R) moves along the circumference of the lever in the direction of the arrow until it enters point A, causing the lever to lock.

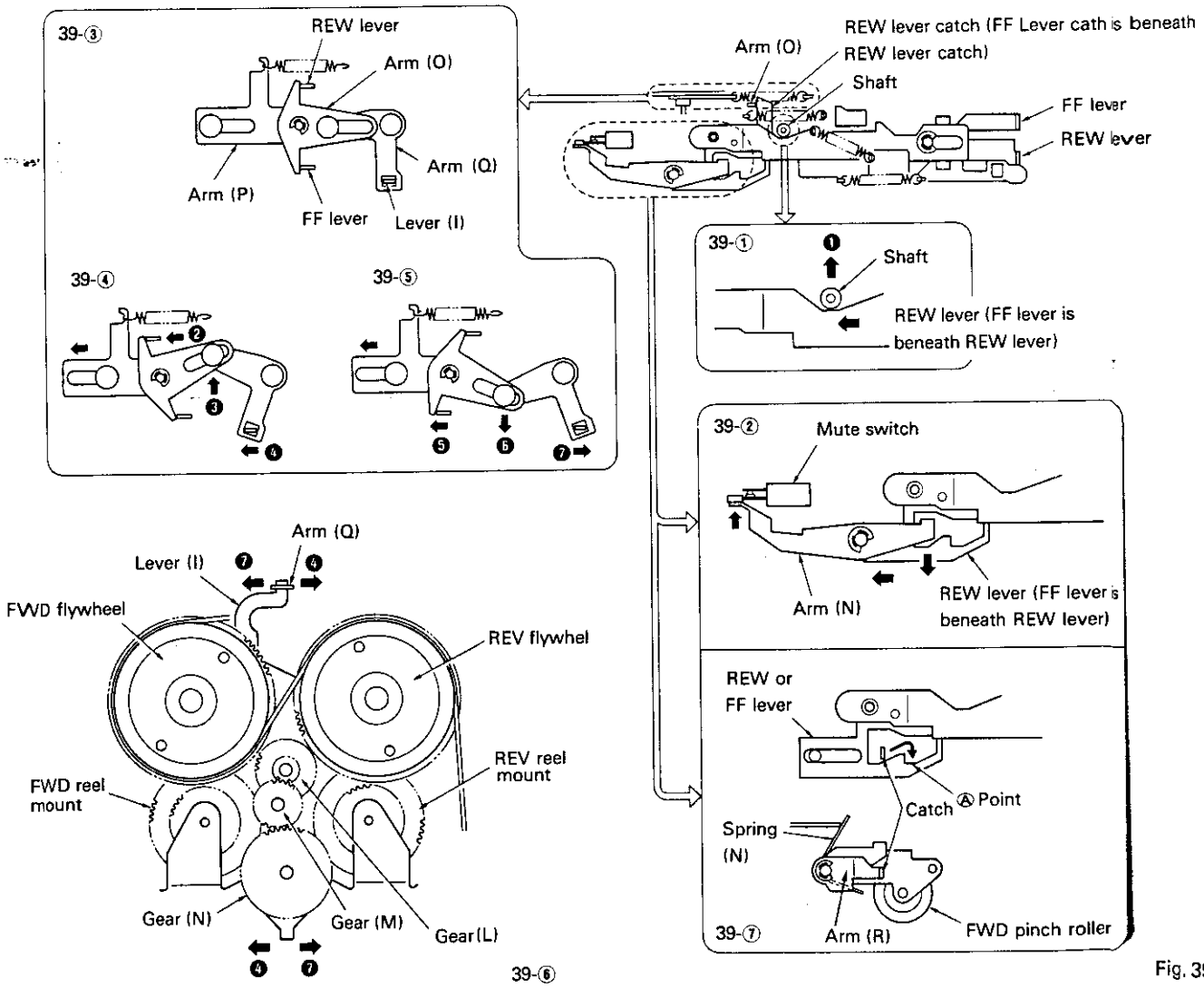
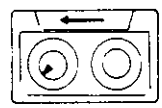
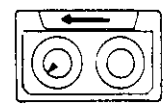
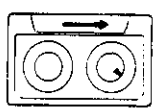
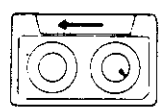


Fig. 39

3. ADJUSTMENT

• Check Points of Cassette Mechanism

Confirm the following items when replacing parts of the cassette mechanism.	■ Tape speed deviation: 3,000 $^{+90}_{-30}$ Hz (4.76 cm/s $^{+3}_{-1}$ %) Using an STD-301, measure the speed a the start and end of winding and take the maximum value. Measuring time shall be 5 ~ 6 seconds.	■ Wow and flutter: Less than 0.20% (WRMS) 0.30% (RMS) Using an STD-301, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5 ~ 6 seconds.
■ Fast forward and rewinding time: 95~115 seconds Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	■ Winding torque: 70~50 g·cm (CX-152/A) 60~45 g·cm (CX-152/B)  Using a cassette type torque meter (100 g·cm), measure the minimum value while in the play mode. Measuring time shall be 5 ~ 6 seconds.	■ F.F. torque: More than 50 g·cm (CX-152/A) 110~70 g·cm (CX-152/B)  Using a cassette type torque meter (120 g·cm), measure the value when the tape stops in the F.F. mode.
■ REW torque: More than 50 g·cm (CX-152/A) 110~70 g·cm (CX-152/B)  Using a cassette type torque meter (120 g·cm), measure the value when the tape stops in the REW mode.	■ Back tension torque: 2~5 g·cm  After setting in the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	■ Cassette loading force: Less than 1.5 kg Push the center of the cassette and measure the force with a tension meter (3 kg).
■ Eject force: Less than 3 kg Using a tension meter (3 kg), measure eject force from play mode to point at which cassette is ejected.		

AZIMUTH ADJUSTMENT

- **Adjustment Method**

1. Play "A" side of STD-341A (10kHz, −20dB). Adjust each screw for maximum output in forward and reverse directions.
2. Play "B" side in forward and reverse directions to confirm adjustment.

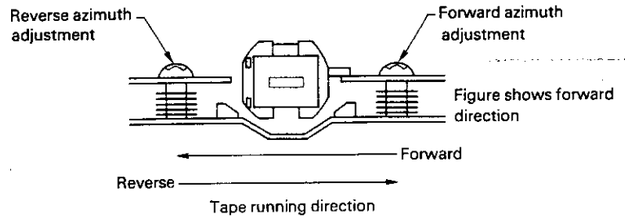


Fig. 40

4. SCHEMATIC CIRCUIT DIAGRAM

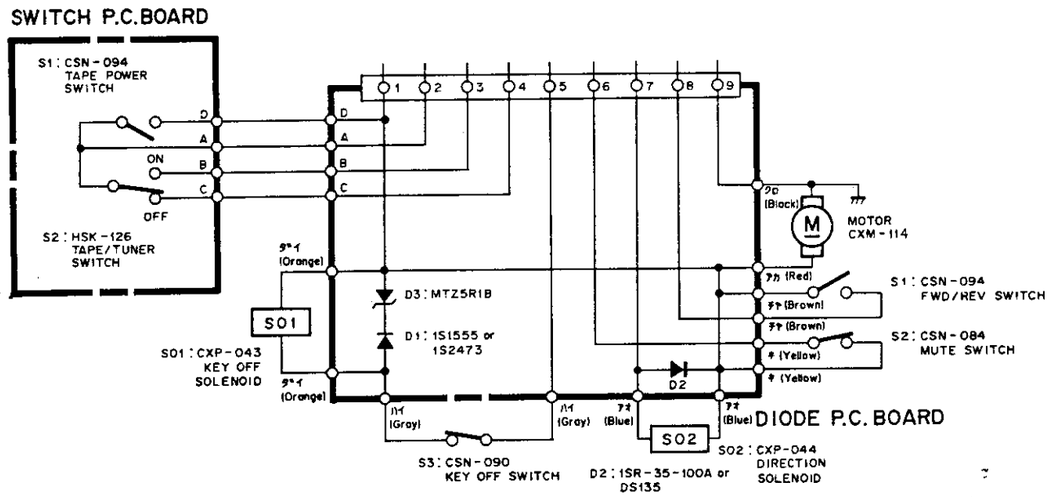


Fig. 41

5. CONNECTION DIAGRAM

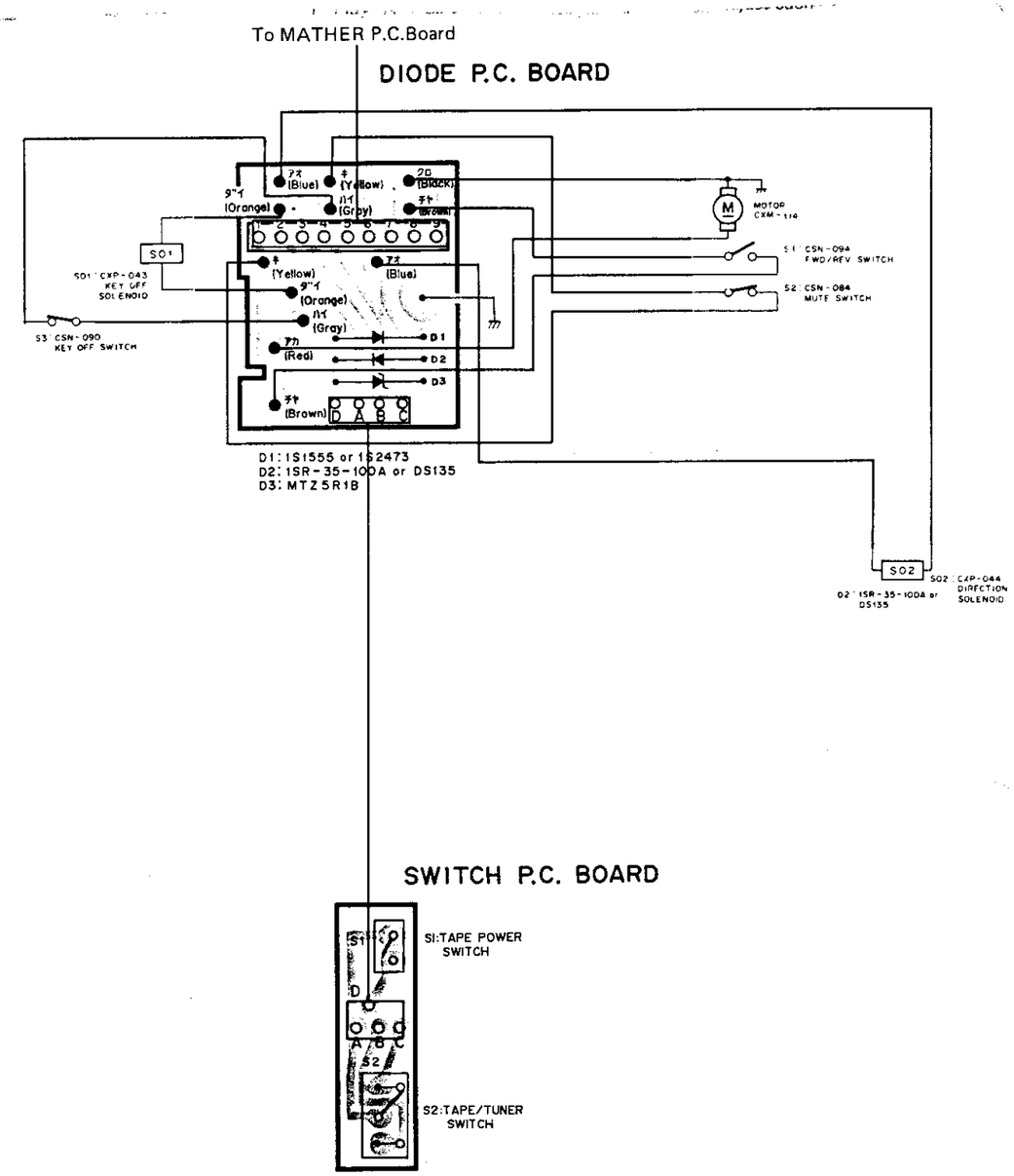


Fig. 42

6. EXPLODED VIEW

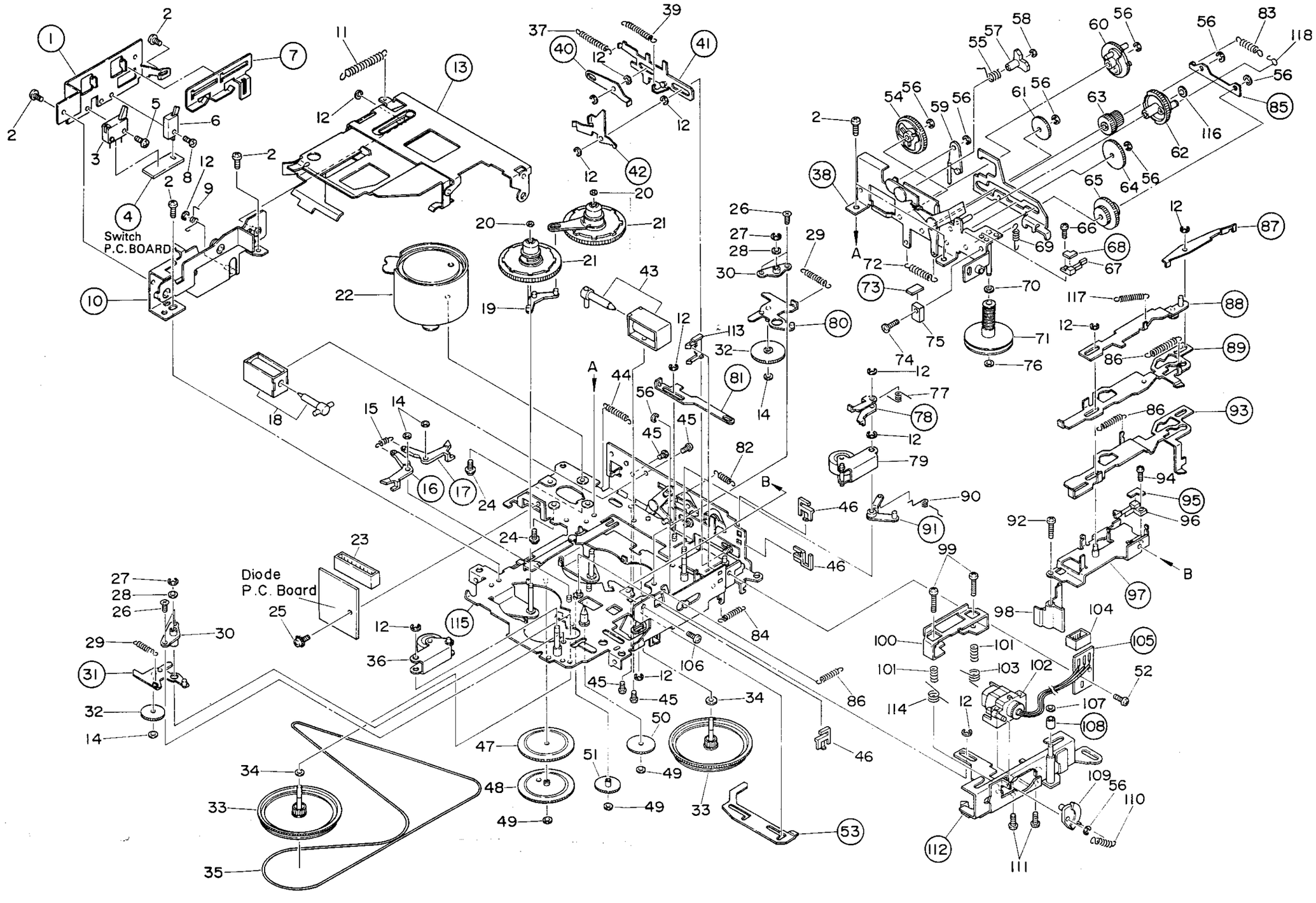


Fig. 43

NOTE:

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.*
  ★ ★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

• Parts List

Mark	No.	Part No.	Description
	1.		Bracket
	2.	BMZ26P030FBK	
★★	3.	HSK-126	Switch (Tape/Tuner)
	4.		P.C. Board
	5.	CBA-176	Screw
★★	6.	CSN-094	Switch (Tape Power)
	7.		Lever
	8.	CBA-172	Screw
	9.	CBH-860	Spring
	10.		Side Frame Unit
	11.	CBH-859	Spring
	12.	YE20FUC	Washer
	13.		Holder Unit
	14.	CBF-139	Washer
	15.	CBH-857	Spring
	16.		Ratchet
	17.		Ratchet
★	18.	CXP-043	Solenoid (Key off)
	19.	CNY-009	Arm
	20.	CBF-045	Washer
★★	21.	CXD-424	Reel Unit (CX-152/A)
★★		CXD-433	Reel Unit (CX-152/B)
★★	22.	CXM-114	Motor
	23.	CKS-475	Plug
	24.	PMS26P030FMC	Screw
	25.	CBA-104	Screw
	26.	CMZ20P030FMC	Screw
	27.	EBG-001	Washer
	28.	CBF-167	Washer
	29.	CBH-854	Spring
	30.	CNR-231	Bearing
	31.		Arm Unit
	32.	CNW-987	Gear
	33.	CNY-007	Flywheel
	34.	HBF-120	Washer
	35.	CNT-091	Belt
★★	36.	CXD-422	Pinch Roller Unit
	37.	CBH-848	Spring
	38.		Holder Unit
	39.	CBH-846	Spring
	40.		Arm
	41.		Lever Unit
	42.		Cam
★	43.	CXP-044	Solenoid (Direction)
	44.	CBH-845	Spring
	45.	BMZ20P025FMC	Screw
	46.	CNY-082	Cover
	47.	CNW-990	Gear (CX-152/A)
		CNY-016	Gear (CX-152/B)
	48.	CNY-015	Gear (CX-152/B Only)
	49.	CBF-126	Washer
	50.	CNW-989	Gear
	51.	CNW-988	Gear
	52.	PMS26P040FUC	Screw
	53.		Lever
	54.	CNW-997	Gear
	55.	CBH-838	Spring
	56.	YE15FUC	
	57.	CNY-081	Arm
	58.	YE12FUC	Washer
	59.	CNW-998	Lever
	60.	CNW-995	Gear
	61.	CNW-996	Gear
	62.	CNW-992	Gear
	63.	CNW-994	Gear
	64.	CNW-993	Gear
	65.	CNW-991	Gear
	66.	CBA-177	Screw
★★	67.	CSN-084	Switch (Mute)
	68.		P.C. Board
	69.	CBH-852	Spring
	70.	HBF-115	Washer
	71.	CNW-999	Pulley
	72.	CBH-847	Spring
	73.		P.C. Board
	74.	CBA-172	Screw
★★	75.	CSN-094	Switch (FWD/REV)
	76.	CBF-169	Washer
	77.	CBH-858	Spring
	78.		Arm
★★	79.	CXD-423	Pinch Roller Unit
	80.		Arm Unit
	81.		Lever
	82.	CBH-844	Spring
	83.	CBH-884	Spring
	84.	CBH-849	Spring
	85.		Holder
	86.	CBH-864	Spring
	87.		Arm
	88.		Lever Unit
	89.		Lever
	90.	CBH-851	Spring
	91.		Arm Unit
	92.	BMZ20P160FMC	Screw
	93.		Lever
	94.	CBA-177	Screw
	95.		P.C. Board
★★	96.	CSN-090	Switch (Key Off)
	97.		Bracket Unit
	98.	CNY-010	Guide
	99.	CBA-196	Azimuth Screw
	100.	CNG-771	Azimuth Plate
	101.	CBH-843	Spring
★★	102.	CXD-421	Head Unit
	103.	CBH-840	Spring
	104.	CKS-469	Plug
	105.		P.C. Board
	106.	PMS26P030FMC	Screw
	107.	CBF-135	Washer
	108.		Roller (CX-152/A)
			Roller (CX-152/B)
	109.	CNY-002	Gear
	110.	CBH-842	Spring
	111.	BMZ20P060FMC	Screw
	112.		Head Base Unit
	113.	CNY-115	Cover
	114.	CBH-841	Spring
	115.		Chassis Unit
	116.	CBF-046	Washer
	117.	CBH-885	Spring
	118.	CBH-891	Spring

Key No.	Description	Cassette Mechanism Unit	
		CX-152/A	CX-152/B
21.	Reel Unit	CXD-424	CXD-433
47.	Gear	CNW-990	CNY-016
48.	Gear	VACANT	CNY-015
108.	Roller	Non spare part	Non spare part

• Gear

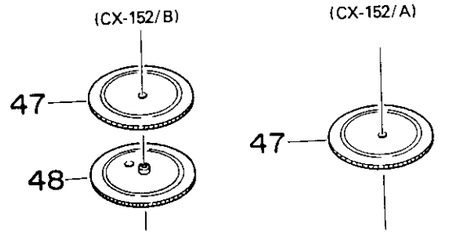


Fig. 44

Note:

- The differences between the CX-152/A and CX-152/B rollers (Key No. 108) are as follows:

	Roller Dia.	Music Search
CX-152/A	4.4 mm	Yes
CX-152/B	3.3 mm	No

- In addition to the differences listed above, some CX-152/A cassette mechanism units use CX-152/B gears (Key No. 47, 48) and reel units (Key No. 21).