

Service Manual

Mechanism Unit

CRS1D



Please use this manual together with the service manual for Model No. [CRS1, Order No. MD0509368C0].

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

	Page		Page
1 Note	2	4.3. Setting the trays in 鉄 TOCK" position	16
2 Mechanism Overview	3	5 Assembling and Disassembling Procedure.	26
3 Self diagnosis and special mode setting	4	5.1. Disassembling Procedures	26
3.1. Service Mode Table 1	4	5.2. Assembling Procedure	46
3.2. Special Mode Table 2	10	6 Exploded Views	66
4 Troubleshooting Explorer	16	6.1. CD Loading Mechanism	66
4.1. Preparation of service jig	16	7 Replacement Parts List	67
4.2. Checking of Changer Unit	16		

Panasonic

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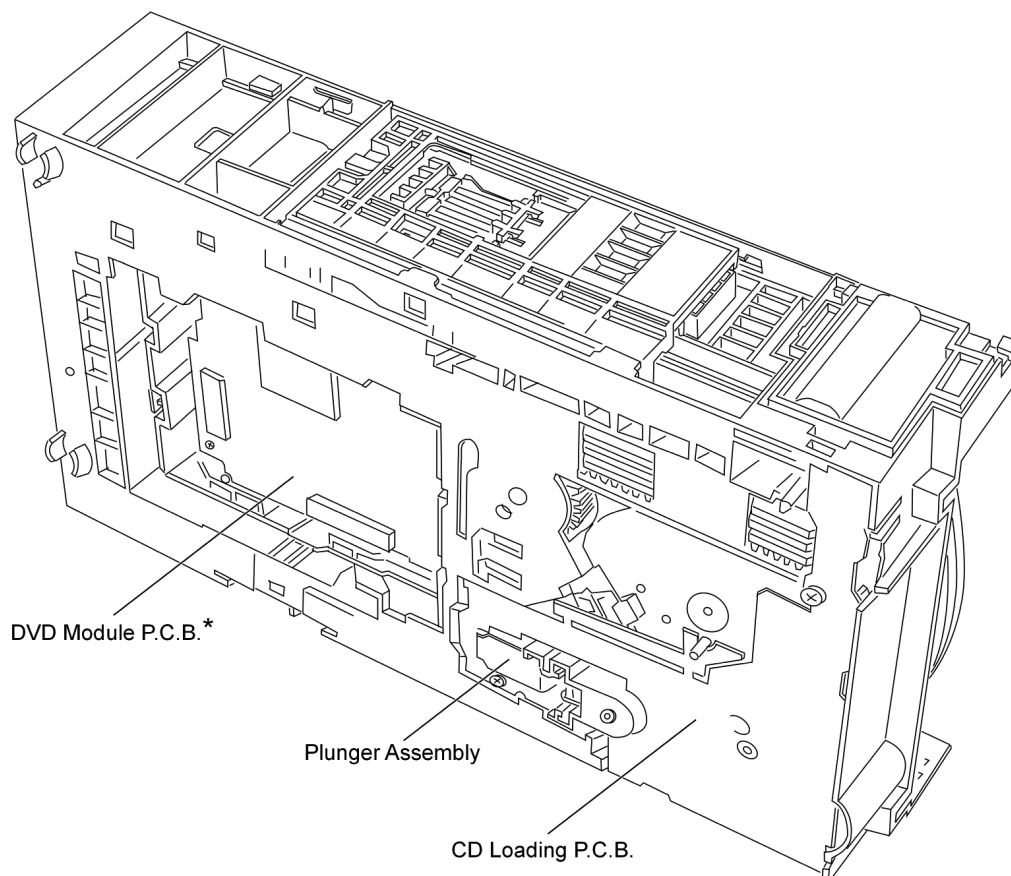
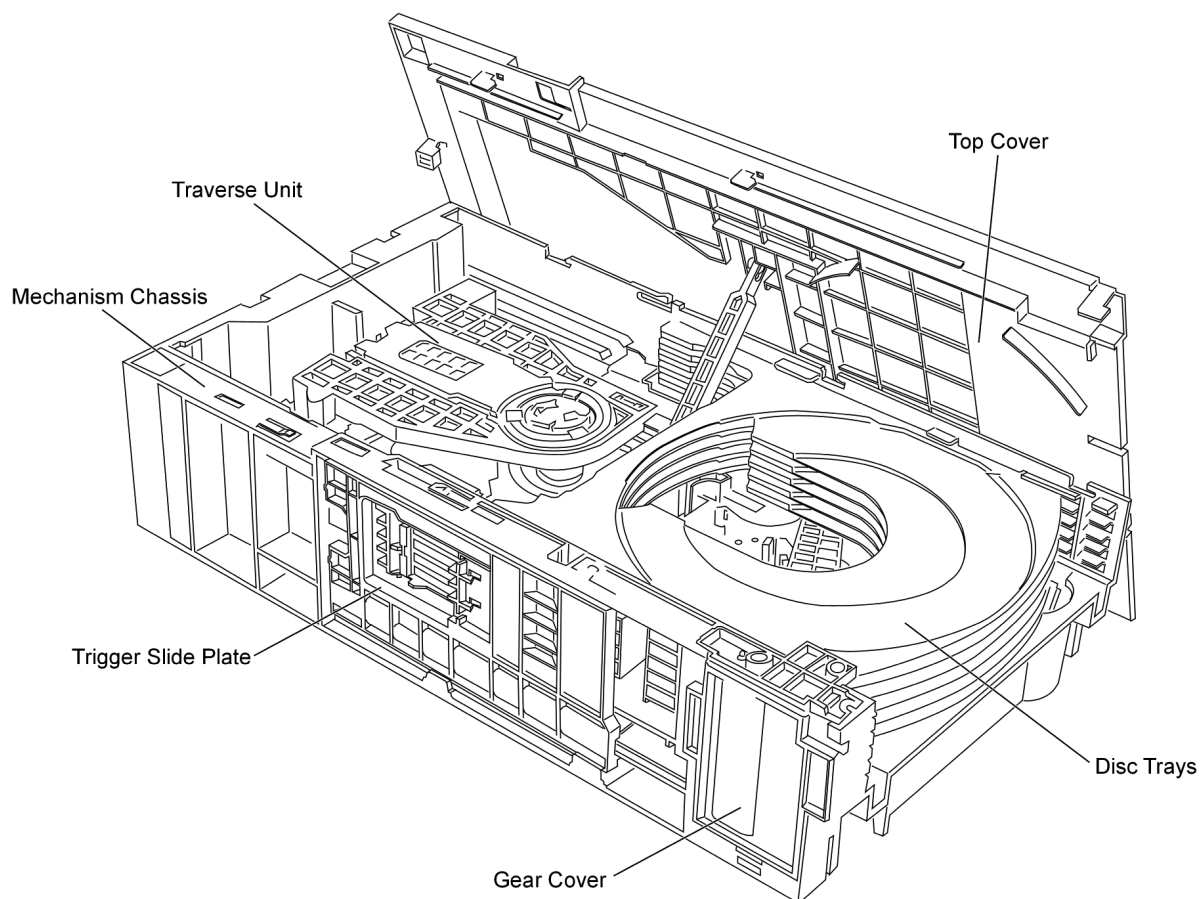
1 Note

This service manual does not include following information.

- Mechanism Drive Unit
- Mechanism Operation Description
- Flow Chart
- CRS1 (Change Unit) Ageing / Reliability
- Notes of Schematic Diagram
- Schematic Diagram
- Printed Circuit Board
- Exploded Views
- Replacement Parts List

Refer to the original service manual for CRS1 (order No. MD0509368C0)

2 Mechanism Overview



* Illustration for DVD Module P.C.B. (Applied models: VK450/650/750/850/950)

3 Self diagnosis and special mode setting

This unit is equipped with functions for checking and inspecting namely: Self-Diagnostic and Test Mode.

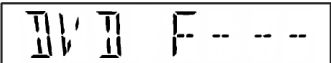


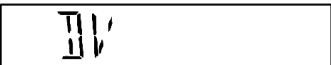

3.1. Service Mode Table 1

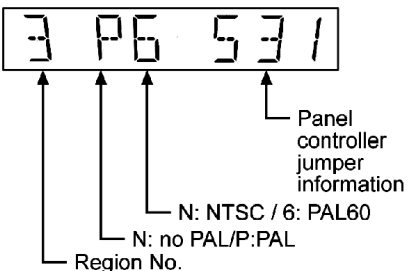
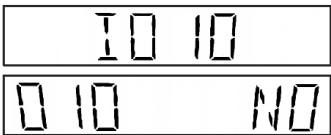
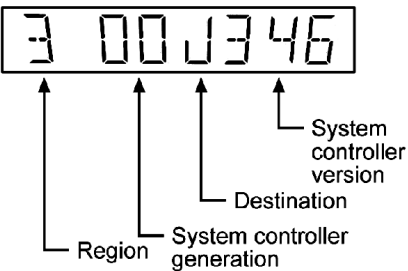

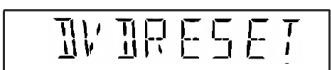
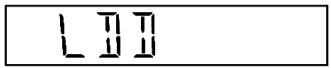



By pressing various button combinations on the player and remote control unit can activate the various service modes for checking.




Special Note:

Due to the limitations of the no. characters that can be shown on FL Display, the "FL Display" button on the remote control unit is used to show the following page. (Display 1 / Display 2).

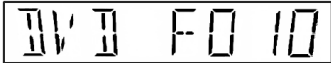
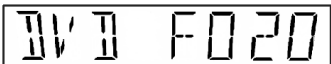

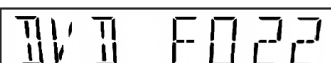
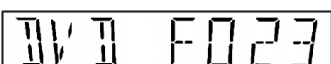
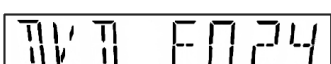
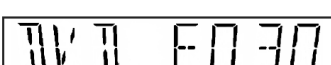
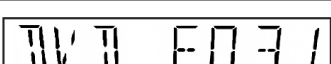
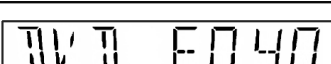
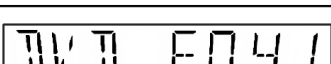
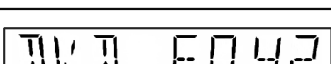
3.1.1. Service Mode Table 1

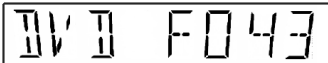


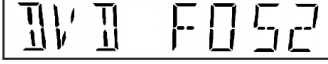
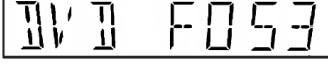

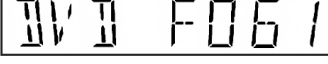
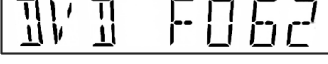
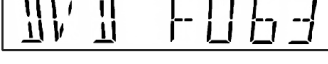
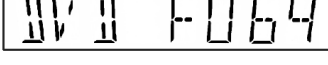
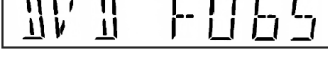
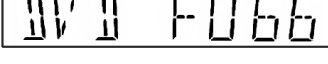
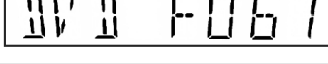
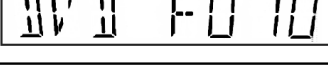
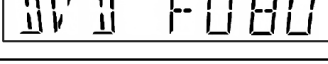
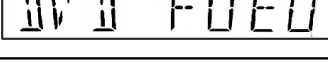
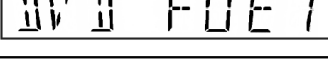
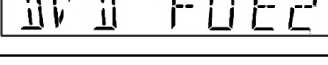
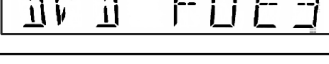
Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Error code check	Error code check. The latest error code stored in the EEPROM IC is displayed.	 <p>Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: DVDnn UXX Error code = 0 x DBXX is expressed: → DVDnn HXX Error code = 0 x DXXX is expressed: → DVDnn FXXX Error code = 0 x 0000 is expressed: → DVDnn F--- * "xx" denotes the error code →</p>	In STOP (no disc) mode, press STOP button on the player, and "0" button on the remote control unit. *With pointing of cursor up and down on display. Cancelled automatically 5 seconds later. To exit, press [POWER] button on main unit or remote control.
ADSC internal RAM data check	ADSC internal RAM data check. ADSC internal RAM data is read out and displayed.	 <p>The value is shown in hexadecimal notation. The above example shows the data in ADSC address OFAh is 6901h.</p>	In STOP (no disc) mode, press STOP button on the player, and "1" & "2" button on the remote control unit. Press STOP or PLAY button.
CD laser drive current measurement	CD laser drive current measurement. CD laser drive current measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 <p>The value denotes the current in decimal notation. The above example shows the initial current is 25mA and the measured value is 22mA.</p>	In STOP (no disc) mode, press STOP button on the player, and "3" button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page (FL Display).
Device Name	Display the device name.		In STOP (no disc) mode, press STOP button on the player, and "4" button on the remote control unit. *With pointing of cursor up and down on display. Cancelled automatically 5 seconds later. To exit, press [POWER] button on main unit or remote control.
Jitter check	Jitter check. Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retired to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	 <p>Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.</p>	In STOP (no disc) mode, press STOP button on the player, and "5" button on the remote control unit. Press STOP or OPEN button to exit. Press "FL DISPLAY" button on remote control unit for next page (FL Display).

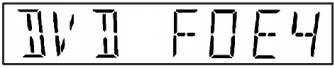
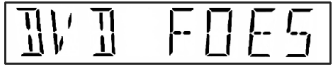

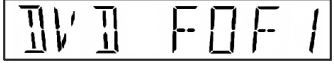
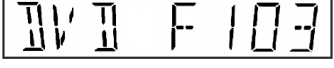

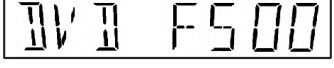

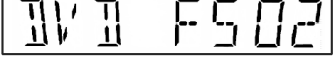
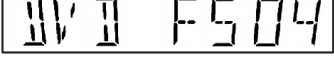
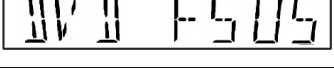
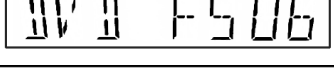
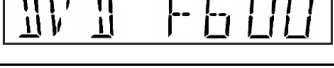
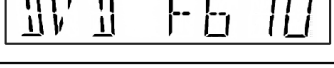
Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Region display	Region display & mode		In STOP (no disc) mode, press STOP button on the player, and "6" button on the remote control unit. Cancelled automatically 5 seconds later.
Micro-processor firmware version display & EEPROM checksum display.	Micro-processor firmware version display & EEPROM checksum display.		In STOP (no disc) mode, press STOP button on the player, and "7" button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page. (FL Display)
DVD module firmware version display	DVD module firmware version display is on the FL Display.		In STOP (no disc) mode, press STOP button on the player, and "8" button on the remote control unit. Cancelled automatically 5 seconds later.
Initialization	Initialization. User settings are cancelled and player is initialized to factory setting.		In STOP (no disc) mode, press STOP button on the player, and ≥ 10 button on the remote control unit.
DVD Module Reset	To reset DVD Module.		In initialisation, press and hold STOP button on the player followed by "Enter" button on the remote control. Cancelled automatically 5 seconds later.
DVD laser drive current measurement	DVD laser drive current measurement. DVD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 <p>↑ DVD laser current measurement mode</p> <p>The value denotes the current in decimal notation. The above example shows the initial current is 20mA and the measured value is 20mA.</p>	In STOP (no disc) mode, press STOP button on the player, and FUNCTIONS button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page (FL Display) on values of DVD drive current.
Communication error display	Displays frequency of communication errors between system control IC and mechanism control IC during DVD module.		In STOP (no disc) mode, press STOP button on the player, and "MENU" button on the remote control unit. Cancelled automatically 5 seconds later.
Initial setting of laser drive current	Initial setting of laser drive current. Initial current value for each of DVD laser and CD laser is separately saved in the EEPROM IC.	 <p>↑ Laser current measurement mode</p> <p>The value denotes the current in decimal notation. The above example shows the initial current 20mA and 23mA for DVD laser and CD laser respectively when the laser is switched on.</p>	In STOP (no disc) mode, press STOP button on the player, and PAUSE button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page (FL Display) on values of laser drive current.
ECC error display	ECC decode error display.		In STOP (no disc) mode, press STOP button on the player, and TOP MENU button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page (FL Display) on values of laser drive current.

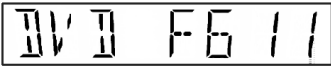
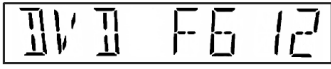

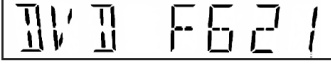
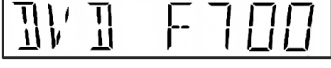
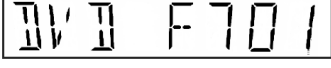

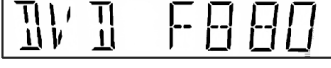
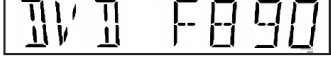
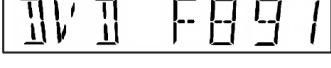
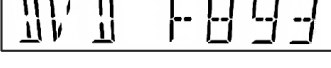
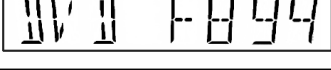

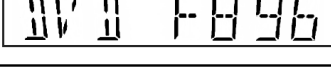
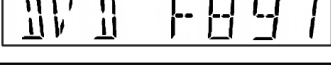
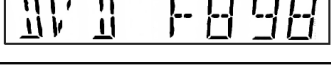
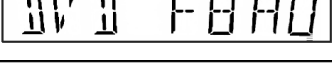
Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Time 1 check	Timer 1 check. Laser operation timer Operation time is measured separately for DVD laser and CD laser. Press "FL Display" button for next page of FL Display (to show CD laser time).	 <p>Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".</p>	In STOP (no disc) mode, press STOP button on the player, and "▲" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 1 reset	Timer 1 reset. Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	T1_0000/0000 (display1/display2)	While display Timer 1 data, press STOP button on the player, and "▼" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 check	Timer 2 check. Spindle motor operation timer. Press "FL Display" button for next page of FL Display.	 <p>Time is shown in 5 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".</p>	In STOP (no disc) mode, press STOP button on the player, and "▶" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 reset	Timer 2 reset. Spindle motor operation timer.		While display Timer 2 data, press STOP button on the player, and "◀" button on the remote control unit. Cancelled automatically 5 seconds later.

3.1.2. DVD Self-Diagnostic Function Error Code

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F010	DVD Media disk	A specification value is size from the PARENTAL LOCK value of the appointed country.		Press [■, STOP] on main unit for next error.
F020	DVD Media disk	There is no TT_SRPT. (RLBN is 0).		Press [■, STOP] on main unit for next error.
F021	DVD Media disk	The number of TT_SRP is 0.		Press [■, STOP] on main unit for next error.
F022	DVD Media disk	A specification value. It is size from the number of TT_SRP.		Press [■, STOP] on main unit for next error.
F023	DVD Media disk	VTSN or in agreement with VTS_TTN. There is no SRP.		Press [■, STOP] on main unit for next error.
F024	DVD Media disk	A specification value. It is size from TT_SRP. PTT_Ns		Press [■, STOP] on main unit for next error.
F030	DVD Media disk	The number of TTU_SRP is 0.		Press [■, STOP] on main unit for next error.
F031	DVD Media disk	A specification value. It is size from the number of TTU_SRP.		Press [■, STOP] on main unit for next error.
F040	DVD Media disk	The number of SRP1 is 0.		Press [■, STOP] on main unit for next error.
F041	DVD Media disk	The number of PGCI_SRP is 0.		Press [■, STOP] on main unit for next error.
F042	DVD Media disk	A specification value. It is size from the number of PGCI_SRP.		Press [■, STOP] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F043	DVD Media disk	It is in agreement with Menu ID. There is no PGCI_SRP.		Press [■, STOP] on main unit for next error.
F050	DVD Media disk	The number of TMAP_SRP is 0.		Press [■, STOP] on main unit for next error.
F051	DVD Media disk	A specification value. It is size from the number of TMAP_SRP.		Press [■, STOP] on main unit for next error.
F052	DVD Media disk	Specification TMAP_SA is 0.		Press [■, STOP] on main unit for next error.
F053	DVD Media disk	The number of MAP_EN is 0.		Press [■, STOP] on main unit for next error.
F060	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no PGMAP.		Press [■, STOP] on main unit for next error.
F061	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no PGMAP.		Press [■, STOP] on main unit for next error.
F062	DVD Media disk	A specification value inside of PGC. It is size from the number of PGeS.		Press [■, STOP] on main unit for next error.
F063	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no C_PBIT.		Press [■, STOP] on main unit for next error.
F064	DVD Media disk	Although C_POSIT exists, it is in PGC. The number of PGeS is 0.		Press [■, STOP] on main unit for next error.
F065	DVD Media disk	Specification A cell number is 0.'		Press [■, STOP] on main unit for next error.
F066	DVD Media disk	A specification value inside of PGC. It is size from the number of Cell(s).		Press [■, STOP] on main unit for next error.
F067	DVD Media disk	A blocked cell is present.		Press [■, STOP] on main unit for next error.
F070	DVD Media disk	There is no NV_PACK data.		Press [■, STOP] on main unit for next error.
F080	DVD Media disk	Under reference. There is no Cell number.		Press [■, STOP] on main unit for next error.
F0E0	DVD Media disk	For [used as a DFD object] a user guide. A PGC control file < impossible.		Press [■, STOP] on main unit for next error.
F0E1	DVD Media disk	DFD main microcomputer. Compatibility with a DFD type < download is impossible.		Press [■, STOP] on main unit for next error.
F0E2	DVD Media disk	DFD download start. PGC reproduction error.		Press [■, STOP] on main unit for next error.
F0E3	DVD Media disk	Waiting for the completion of DFD download. PGC reproduction error.		Press [■, STOP] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F0E4	DVD Media disk	At the time of DFD download AVDEC.		Press [■, STOP] on main unit for next error.
F0E5	DVD Media disk	It is the farm file lead error at the time of DFD download.		Press [■, STOP] on main unit for next error.
F0E6	DVD Media disk	DFD alteration check error of the read firmware.		Press [■, STOP] on main unit for next error.
F0F0	DVD Media disk	There is no farm file used as a DFD object and it is downloading needlessly.		Press [■, STOP] on main unit for next error.
F0F1	DVD Media disk	The firware which is in agreement with DFD download conditions < unnecessary.		Press [■, STOP] on main unit for next error.
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display		Press [■, STOP] on main unit for next error.
F4FF	Force initialize failure (time out)	Timeout when force initialization fails		Press [■, STOP] on main unit for next error.
F500	DSC error	DSC (IC8251) stops in the occurrence of servo error (startup, focus error, etc.)		Press [■, STOP] on main unit for next error.
F501	DSC not Ready error	DSC-system computer communication error (Communication failure caused by idling of DSC)		Press [■, STOP] on main unit for next error.
F502	DSC Time out error	Similar as F500		Press [■, STOP] on main unit for next error.
F503	DSC communication Failure	Communication error (result error occurred although communication command was sent)		Press [■, STOP] on main unit for next error.
F504	Abnormal adjusting DSC data slice offset			Press [■, STOP] on main unit for next error.
F505	DSC Attention error	Similar as F500		Press [■, STOP] on main unit for next error.
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc media		Press [■, STOP] on main unit for next error.
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect		Press [■, STOP] on main unit for next error.
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data		Press [■, STOP] on main unit for next error.
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable		Press [■, STOP] on main unit for next error.
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc		Press [■, STOP] on main unit for next error.
F610	ODC abnormality	No permission for command execution		Press [■, STOP] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F611	No CRC OK for a specific time (CD)	Access failure to seek address in CD series		Press [■, STOP] on main unit for next error.
F612	No CRC OK for a specific time (DVD)	Access failure to ID data in DVD series		Press [■, STOP] on main unit for next error.
F620	Laser safeguard: high temperature condition	High temperature of the laser guide unit (OPU unit)		Press [■, STOP] on main unit for next error.
F621	Laser safeguard: circuit failure condition	Circuitry failure of the laser guide unit (OPU unit)		Press [■, STOP] on main unit for next error.
F700	MBX overflow	When replying message to disc manager		Press [■, STOP] on main unit for next error.
F701	Message command does not end	Next message is sent before replying to disc manager		Press [■, STOP] on main unit for next error.
F702	Message command changes	Message is changed before it is sent as a reply to disc manager		Press [■, STOP] on main unit for next error.
F880	Task number is not appropriate	Message coming from a non-existing task		Press [■, STOP] on main unit for next error.
F890	Sending message when message is being sent to AV task	Sending message to AV task		Press [■, STOP] on main unit for next error.
F891	Message couldn't be sent to AV task	Begin sending message to AV task		Press [■, STOP] on main unit for next error.
F893	FLASH ROM IC problem	FLASH ROM IC installed is not operating properly (Necessary replacement of FLASH ROM IC) or firmware problem		Press [■, STOP] on main unit for next error.
F894	EEPROM abnormality	EEPROM IC installed is not operating in normal condition (EEPROM contains necessary data)		Press [■, STOP] on main unit for next error.
F895	Region setting abnormality	Firm version agreement check for factory preset setting failure prevention. Check region setting & re-initialize		Press [■, STOP] on main unit for next error.
F896	No existence model	Firm version agreement check for factory preset setting failure prevention		Press [■, STOP] on main unit for next error.
F897	Initialize is not completed	Initialize completion check for factory preset setting failure prevention		Press [■, STOP] on main unit for next error.
F898	Disagreement of hardware and software	Unsuitable combination of AV DECODER, SDRAM and FLASH ROM (firmware)		Press [■, STOP] on main unit for next error.
F8A0	Message command is not appropriate	Begin sending message to AV task		Press [■, STOP] on main unit for next error.

Note:

An error code will be canceled if a power supply is turned OFF.

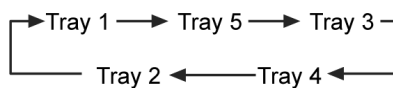
*1: CPPM is the copy guard function beforehand written in the disk for protection of copyrights.

3.2. Special Mode Table 2

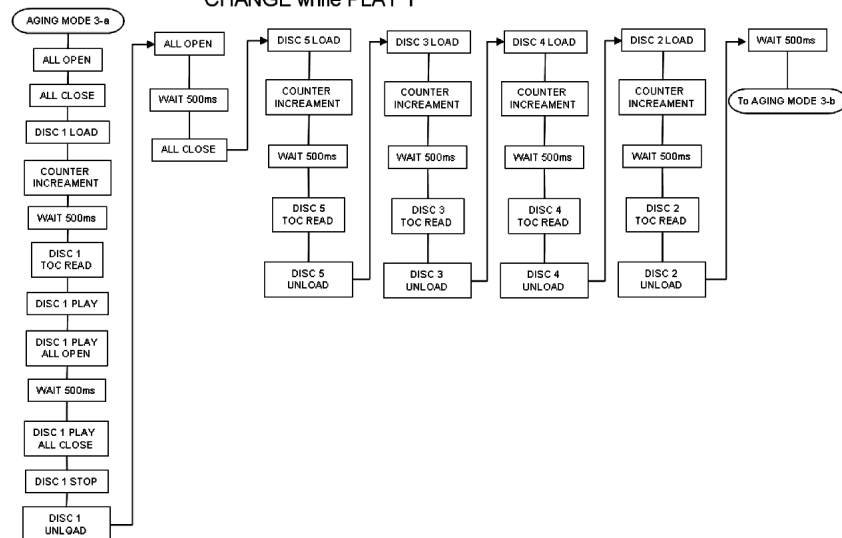
Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self-Diagnostic Mode	To enter into self diagnostic checking for main unit.		1. Press and hold [■, STOP] button for 2 seconds follow by [^/FF/▶▶]. To exit, press [⓪/I, AC IN] button on main unit or remote control.
CD Test Mode	To enter into checking the reliability of changer unit.		1. Select [DVD/CD▶] for DVD/CD mode. 2. Press and hold [■, STOP] button for 3 seconds follow by [^/FF/▶▶]. To exit, press [⓪/I, AC IN] button on main unit or remote control.
CD Auto Adjustment	To check the CD auto adjustment result for FLOCK, TLOCK and CLVS.		In CD Test Mode: 1. Press [0] button on the remote control. To exit, press [⓪/I, AC IN] button on main unit or remote control.
CD Changer Reliability Test (CRS1D)	To determine the reliability of CD/DVD Changer Unit. (For more information, refer to section 3.2.1)	 The counter will increment by one. When reach 99999 will change to 00000.	In Self-Diagnostic Mode: 1. Select [DVD/CD▶] for CD mode. 2. Press [1] on remote control.. To exit, press [⓪/I, AC IN] button on main unit or remote control. (The tray will return to PLAY position and then power off)
Doctor Mode	To enter into Doctor Mode for checking of various items and displaying EEPROM and firmware version.	1. 2. 1. All segments will light up for 1 second. 2. The Check Sum of EEPROM and firmware version will be display. * ROM correction ** Firmware version No:	In any mode: 1. Press [■, STOP] button on main unit follow by [4] and [7] on remote control. To exit, press [ENTER] button on remote control or [⓪/I, AC IN] button on main unit or remote control.
Changer Reliability Test	To check the function operation of changer unit. (For more information, refer to 3.2.1)		In self-diagnostic mode: 1. Press [1] on remote control. To exit, press [ENTER] button on remote control or [⓪/I, AC IN] button on main unit or remote control.
FL Display Test	To check the FL segments display (All segments will light up and LED will blink at 0.5 second interval)		In doctor mode: 1. Press [DIMMER] button on remote control.
Tape Eject Test	To check on the tape eject function (For deck 1/2)		In doctor mode: 1. Press [PROGRAM] button on remote control.

3.2.1. CD/DVD changer unit ageing test mode

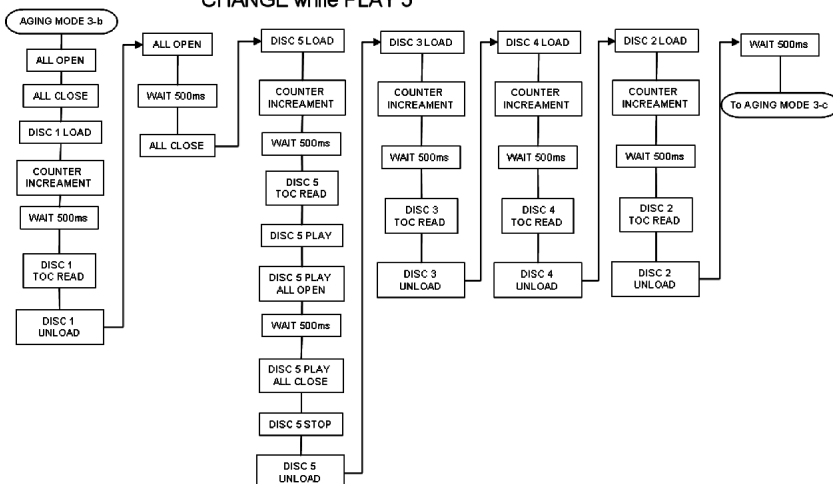
Below is the process flow chart of ageing for the CD/DVD changer unit. (CRS1D)

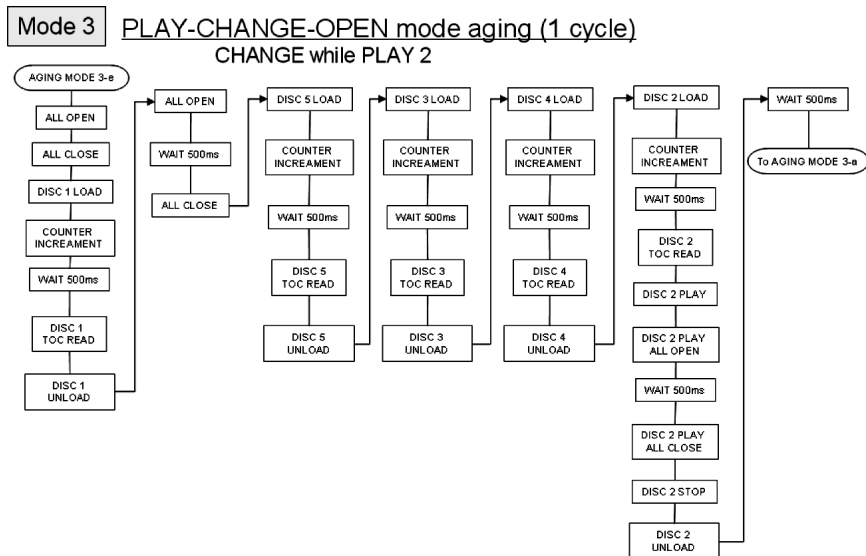
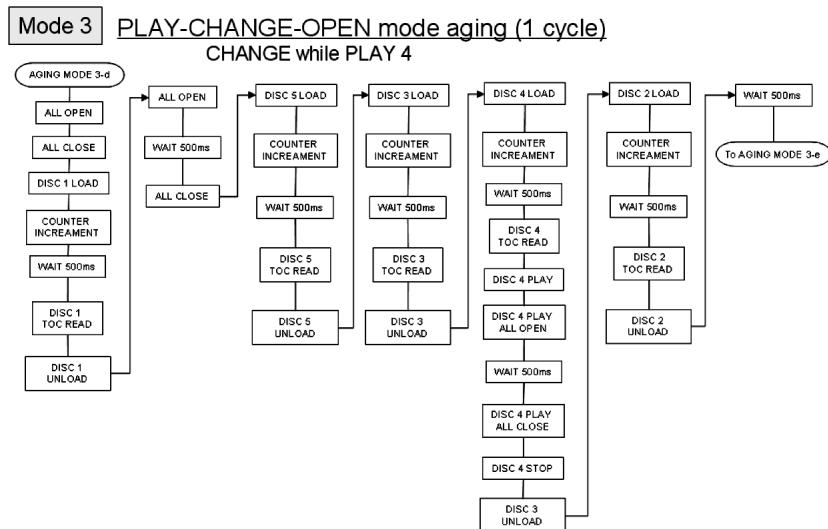
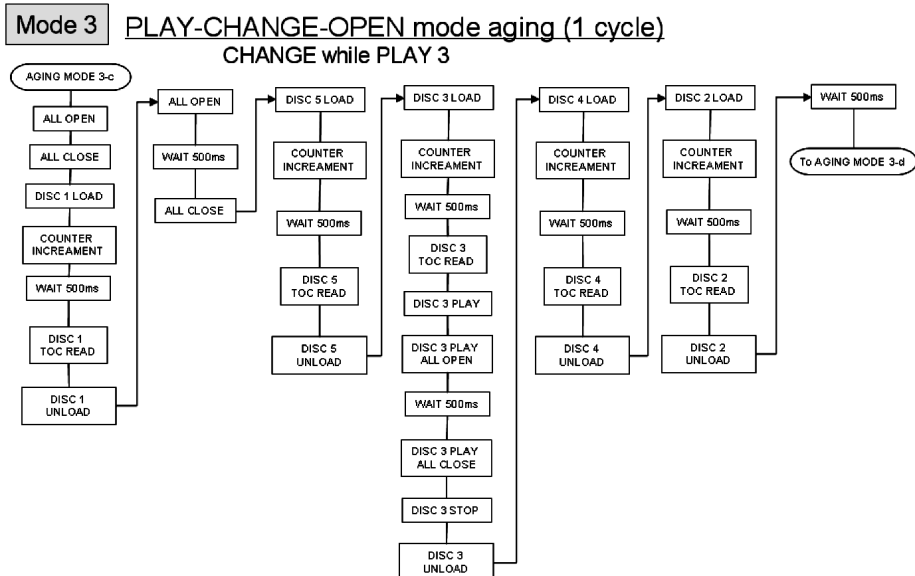


Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 1



Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)
CHANGE while PLAY 5

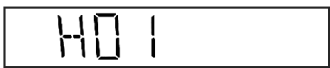
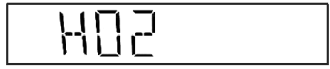

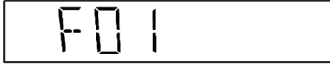

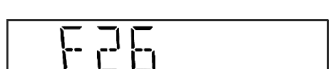
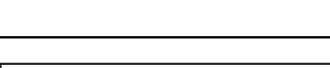
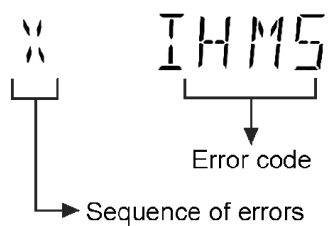
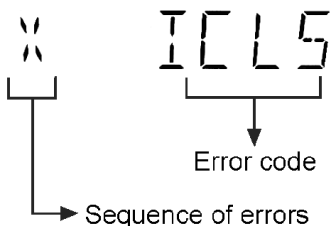
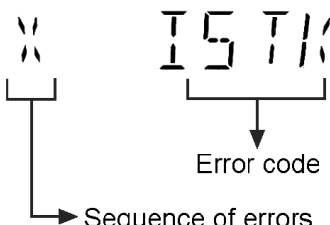
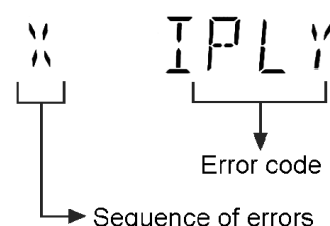


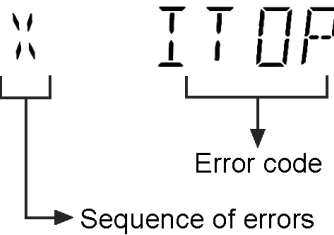
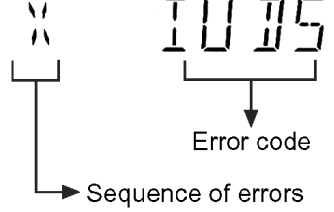
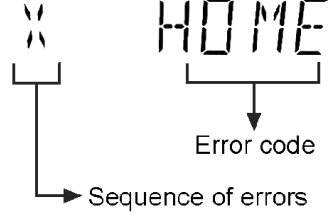
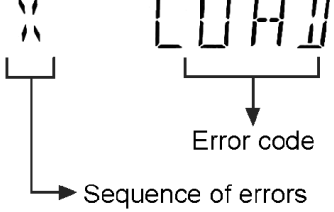
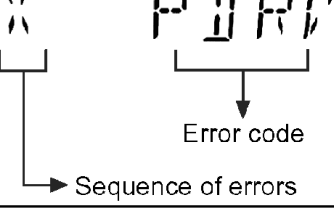


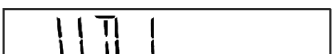
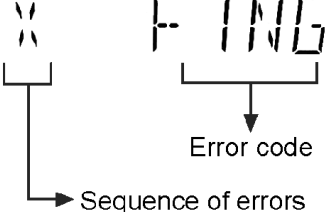


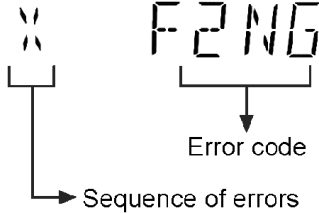

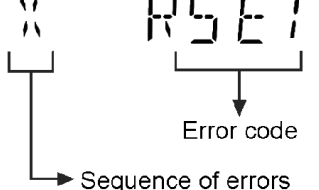
3.2.2. Error Code Table

Self-Diagnosis Function (refer Section 3.2) provides information on any problems occurring for the unit and its respective components by displaying the error codes. These error code such as U**, H** and F** are stored in memory and held unless it is cleared.

The error code is automatically display after entering into self-diagnostic mode.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
H01	Mode SW, plunger and capstan motor abnormal			For deck mechanism unit (For deck 1/2). Press [■, STOP] on main unit for next error.
H02	Rec INH SW abnormal			For deck mechanism unit (For deck 2). Press [■, STOP] on main unit for next error.
H03	HALF SW abnormal			For deck mechanism unit (For deck 1/2). Press [■, STOP] on main unit for next error.
F01	Reel pulse abnormal			For deck mechanism unit (For deck 1/2). Press [■, STOP] on main unit for next error.
F15	RESET SW abnormal	REST SW: ON is not detected within the specified time.		For DVD unit (For Traverse). Press [■, STOP] on main unit for next error.
F26	Transmission error between CD Servo LSI IC and microprocessor IC	When set to CD mode, the sense signal does not turn "Low", a fail safe time after system command transmission is sent.		For DVD unit (For Traverse). Press [■, STOP] on main unit for next error.
F61	Power Amp IC output abnormal	Upon power on, PCONT=HIGH, DCDDET=L after checking LSI.		For power. Press [■, STOP] on main unit for next error.
IHMS	Cam gear abnormality	Cam gear does not rotate to "HOME" position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
ICSL	Cam gear/gear units abnormal	Cam gear does not rotate to "PLAY" driving position and hence does not drive playing tray to "STOCK" position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
ISTK	Drive rack/gear assembly abnormal	The tray drive rack does not move to "STOCK" position. (Tray does not move to "STOCK" position)		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
IPLY	Drive rack/gear assembly abnormal	The tray drive rack does not move to "PLAY" position. (Tray does not move to "PLAY" position)		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
ITOP	UD assembly	UD Rack does not move to front direction. This lead to UD base not raise to top position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
IUDS	UD assembly	After TOP SW is detected, UD rack does not move into tray 1 position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
HOME	Cam gear/gear assembly abnormal	Cam gear does not move to "HOME" position under following conditions 1. After tray is load to "PLAY" position. 2. After tray is unload to "STOCK" position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
LOAD	Tray drive assembly abnormal	Tray unit does not move from "STOCK" to "PLAY" position		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
PDRV	Cam gear/gear assembly abnormal	Cam gear does not move from "HOME" to "PLAY" drive position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
UDU	UD base assembly abnormal	UD Base assembly does not move upwards from tray 5 to tray 2		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
UDD	UD base assembly abnormal	UD Base assembly does not move downwards from tray 1 to tray 5.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
UD1	UD base assembly abnormal	UD Base assembly does not move to tray 1.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
F1NG	Fail - safe mode. (For open/close tray unit(s))	When the tray open operation is performed, it fails to open. It will automatically close all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F2NG	Fail - safe mode. (For open/close tray unit(s))	When the tray close operation is performed, it fails to close. It will automatically open all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.
SRVC_TRV	To unlock the traverse unit for service	1. All trays set to "STOCK" position 2. Mechanism set to tray 5 3. Cam gear set to "HOME" position		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit.
RSET	Cam gear jam/close sensor faulty	During tray re-open, the cam gear will rotate in the opposite direction to reset the cam gear position. When it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] on main unit for next error.

CRS1D Error Code display

1. The errors that occurred in CRS1D Mechanism can be recalled and displayed, in the order of the occurrence under self-diagnostic (Refer to Section 3.2) for procedures to enter this mode.

· Only the first 5 errors will be memorized (in backup memory). The subsequent error shall be ignored and not memorize.

For system with EEPROM as memory backup, memory space in EEPROM is necessary.

2. To display all error code memorized

In CRS1D Self-Diagnostic mode, press [SINGLE CHANGE] to display subsequent error code.

It shall repeat after reaching error no. 5.

e.g.:

[1 _ _ _ _ I H M S] → [SINGLE CHANGE]

[2 _ _ _ _ I T O P] → [SINGLE CHANGE]

[3 _ _ _ _ H O M E] → [SINGLE CHANGE]

[4 _ _ _ _ L O A D] → [SINGLE CHANGE]

[5 _ _ _ _ _ U D D] → [SINGLE CHANGE]

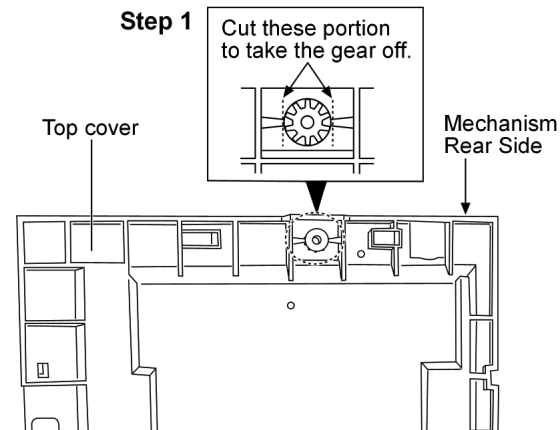
3. To clear the error code memory

In CRS1D Self-Diagnostic mode, long press [SINGLE CHANGE] key (2s or more)

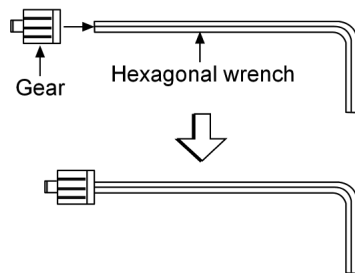
4 Troubleshooting Explorer

4.1. Preparation of service jig

- This unit has a gear which is used for checking items (open/close of disc tray, up/down operation of traverse unit by manually) when servicing. (For gear information, that is described on the items for disassembly procedures.)
- For preparation of gear (for servicing), perform the procedures as follows.
- In case of re-servicing the same set, the “gear for servicing” may be took off because it had been used. So, the “gear for servicing” must be stored.



Step 2: Insert the gear into the hexagonal wrench.



(Preparation of gear as jig is completed)

4.2. Checking of Changer Unit

Below is the procedures for checking the function of the changer unit. (Refer section 3 of this document for procedures in entering doctor mode)

Step 1: Enter into doctor mode.

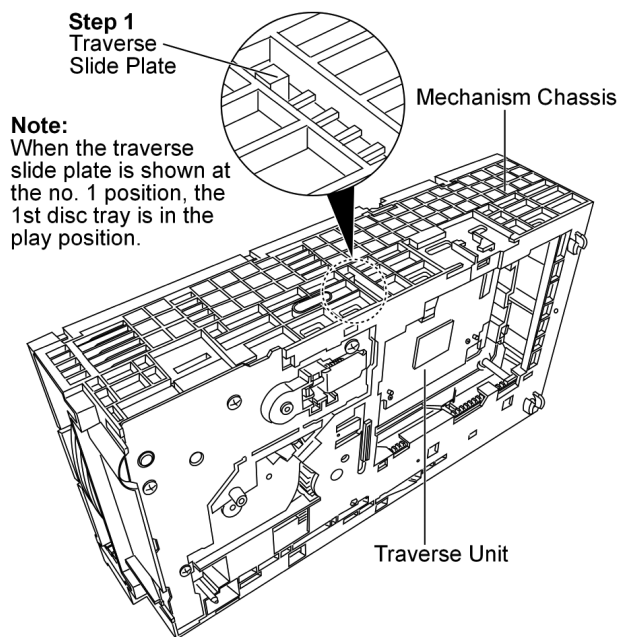
Step 2: Press [DISC] on remote control unit.

Note : Error code will appear if there is any function problems. (Pls refer to section 3.2.2 on more information of error code).

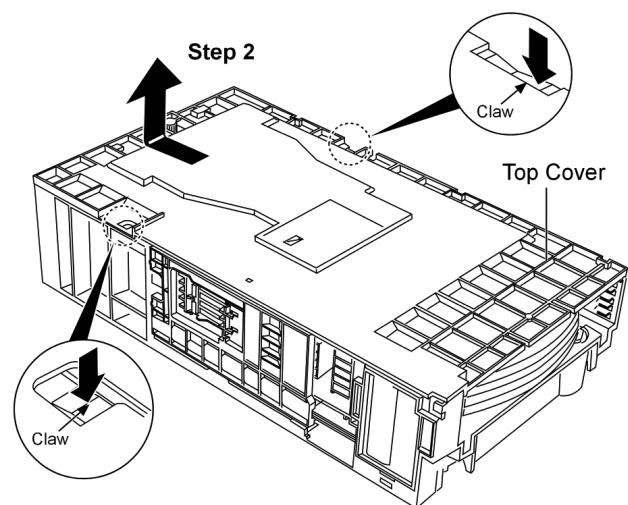
4.3. Setting the trays in “STOCK” position

- Below is procedures for setting the main unit into service mode:-
 1. Enter into self-diagnostic (Refer to section 3.2)
 2. Press [SINGLE CHANGE] on main unit.
- If fail to set the main unit into service mode, do it manually by following the procedures described in this section.

4.3.1. No CD in the tray

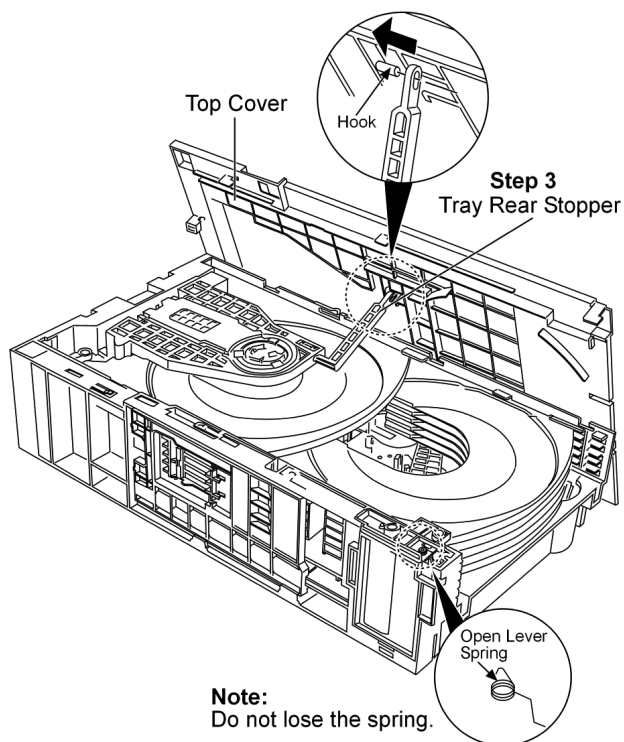


Step 1: Check any disc tray at the play position from the mechanism side. If no, proceed to step. If this is discs (engaged) play position, proceed to section 4.3.2.

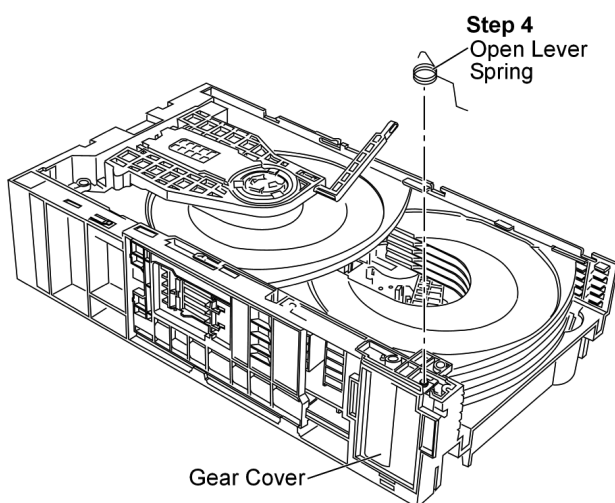


Step 2: Press the 2 claws and then lift up the top cover as arrows shown.

Caution: Do not exert strong force on the claws.

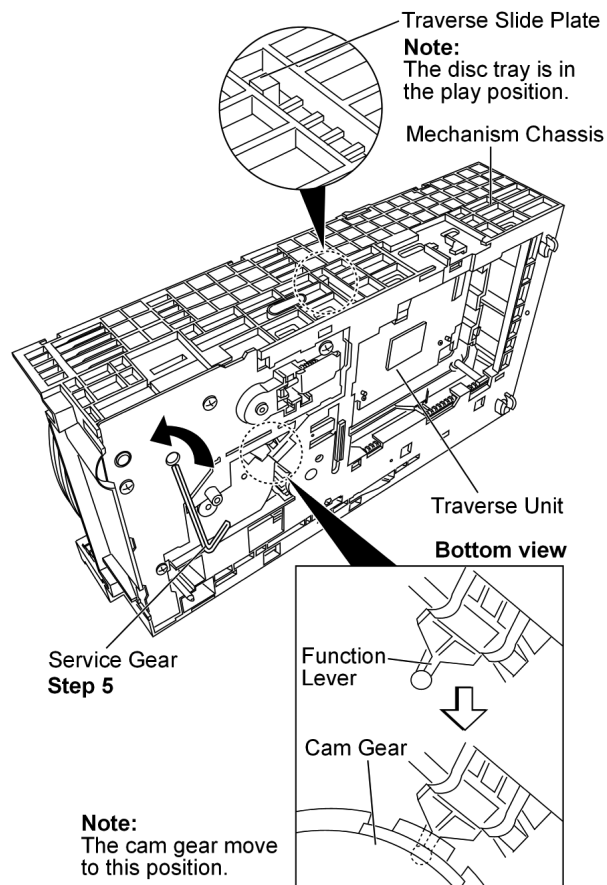


Step 3: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.

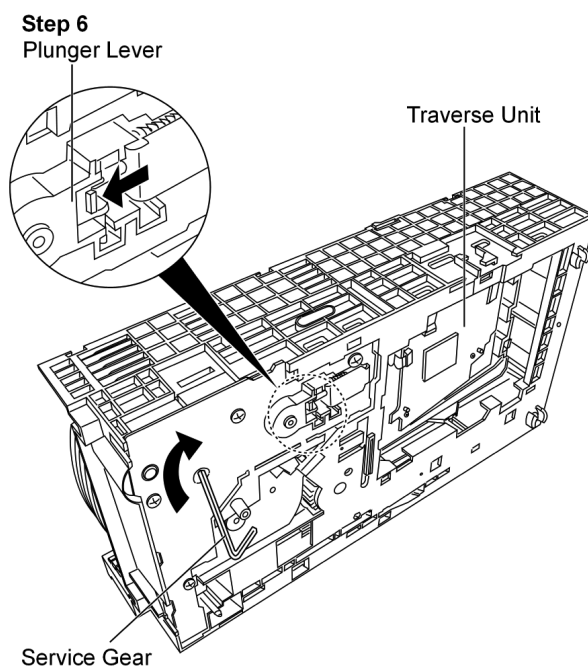


Step 4: Remove the open lever spring.

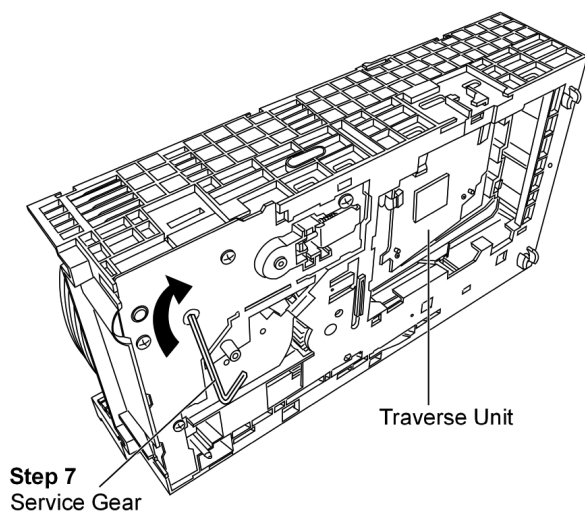
Caution: Keep the open lever spring in safe place in case of losing it.



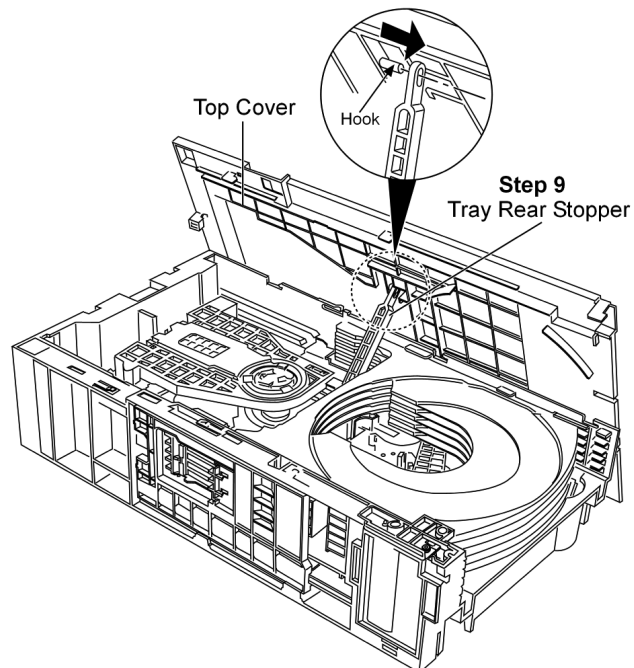
Step 5: Upset the unit, insert the service gear into the service hole and rotate anti-clockwise.



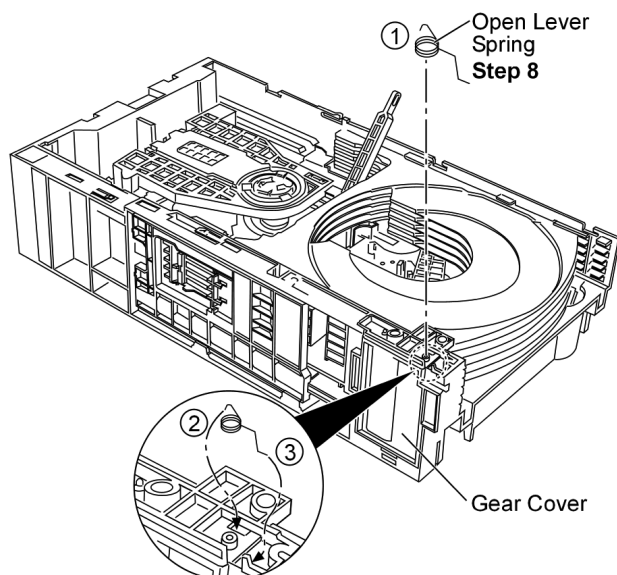
Step 6: Press and hold the plunger lever and rotate the gear clockwise until it stop.



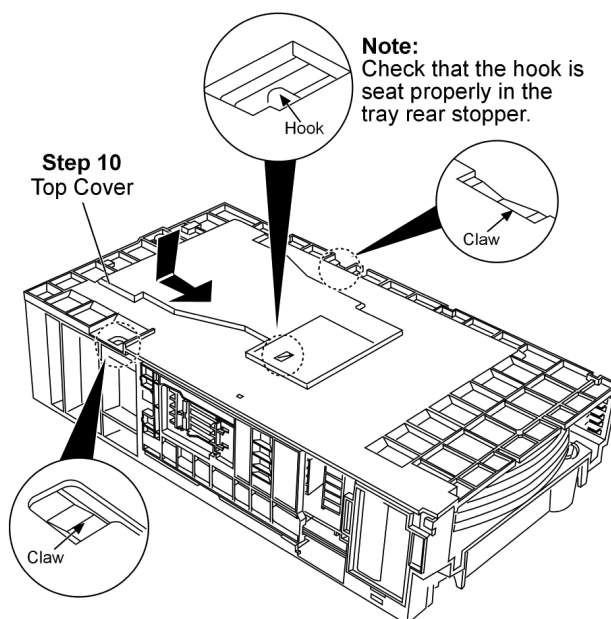
Step 7: Release the plunger lever, rotate the gear clockwise continuously until it stop at "HOME" position.



Step 9: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.



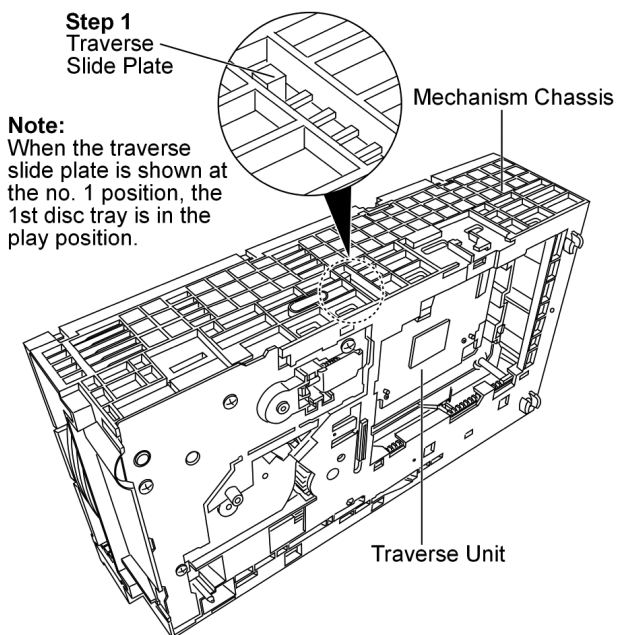
Step 8: Install the open lever spring as shown.



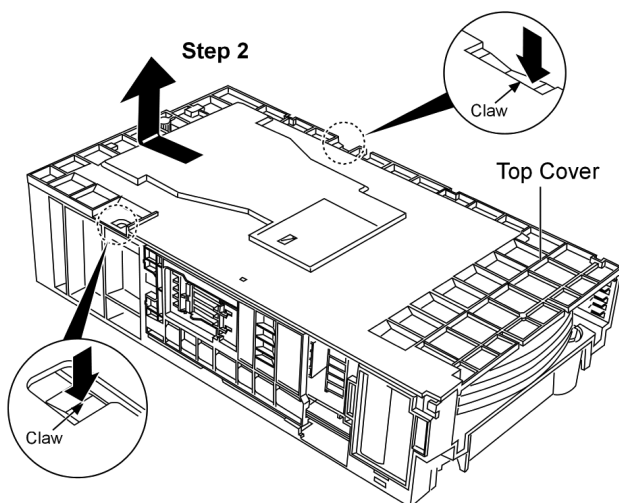
Step 10: Fix the top cover as arrow shown, the 2 claws should be latched.

4.3.2. When CD in the tray

Note: This procedures applies if there is one or more disc in the mechanism unit.

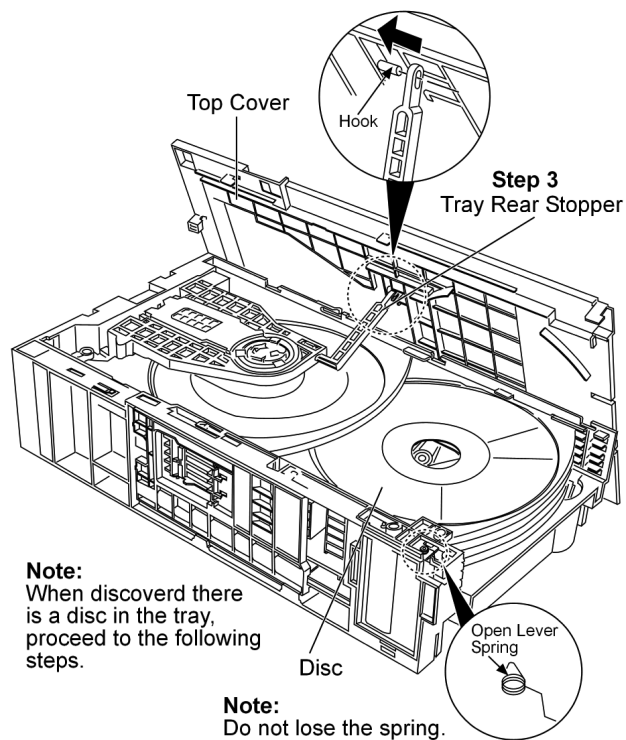


Step 1: Check any disc tray at the play position from the mechanism side.

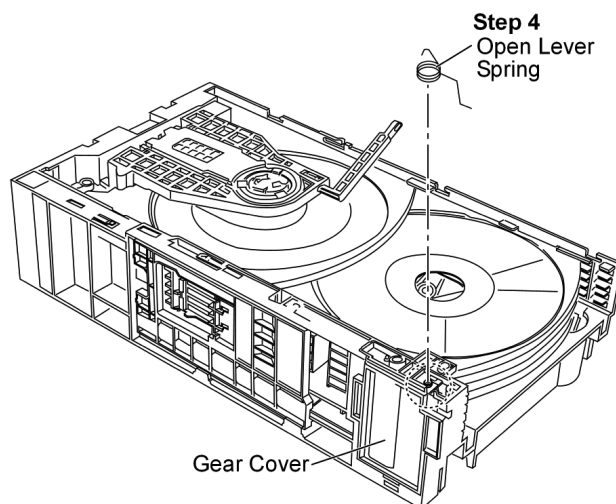


Step 2: Press the 2 claws and then lift up the top cover as arrows shown.

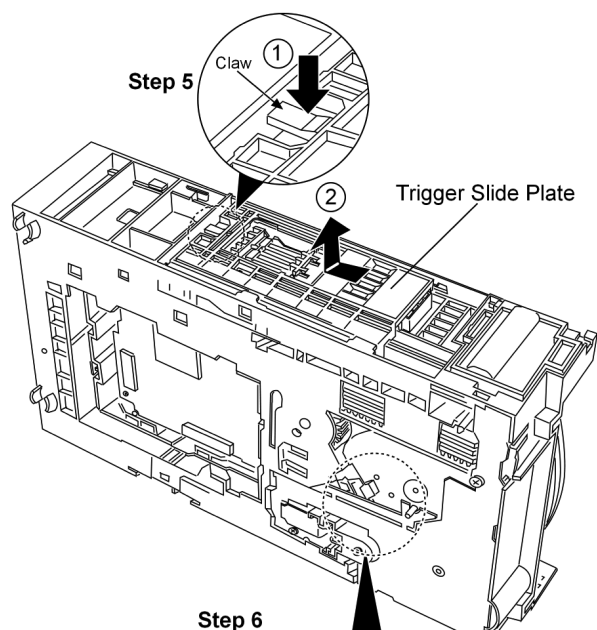
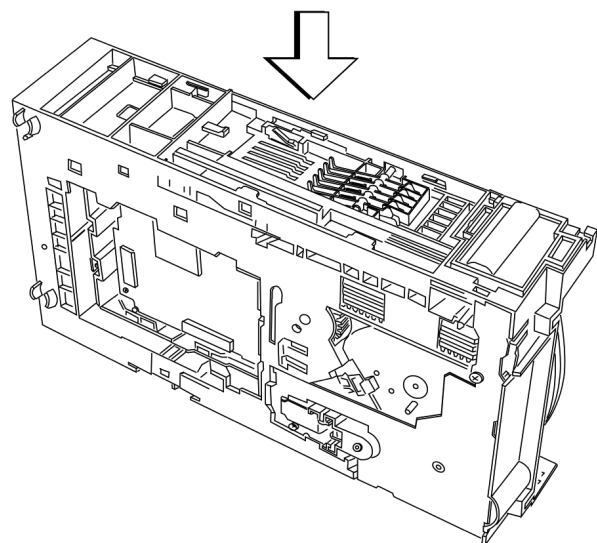
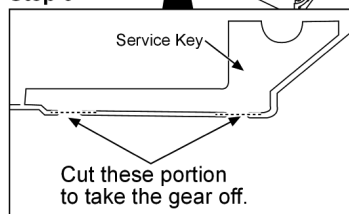
Caution: Do not exert strong force on the claws.



Step 3: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.

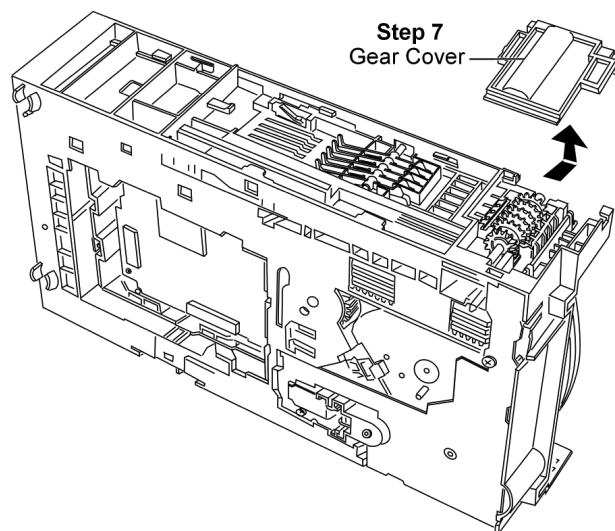


Step 4: Remove the open lever spring.

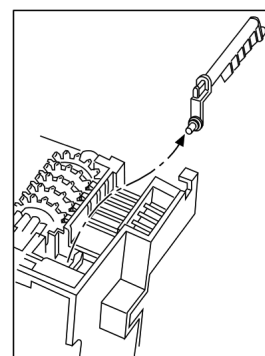
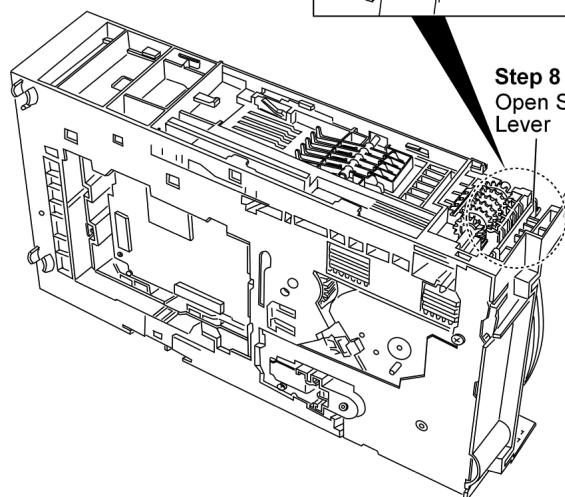
**Step 6**

Step 5: Press the claw, push backwards and remove the trigger slide plate as arrows shown.

Step 6: Prepare the service key for use.

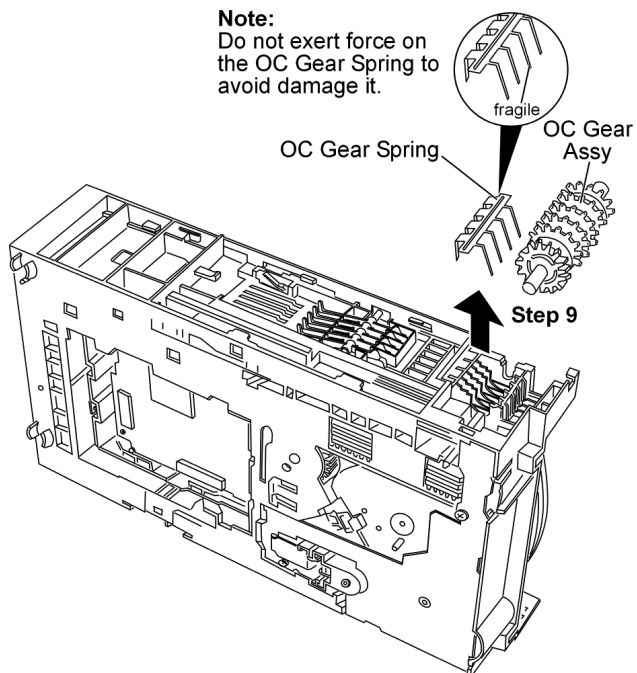


Step 7: Push forward and remove the gear cover as arrow shown.

**Step 8**
Open Switch Lever

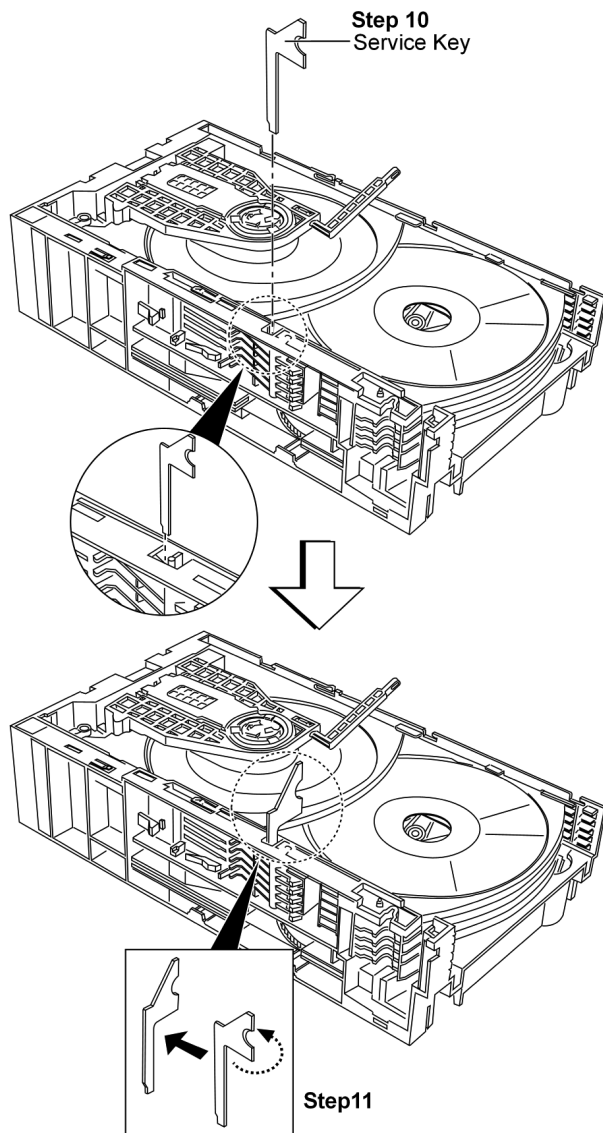
Step 8: Remove the open switch lever.

Note:
Do not exert force on
the OC Gear Spring to
avoid damage it.



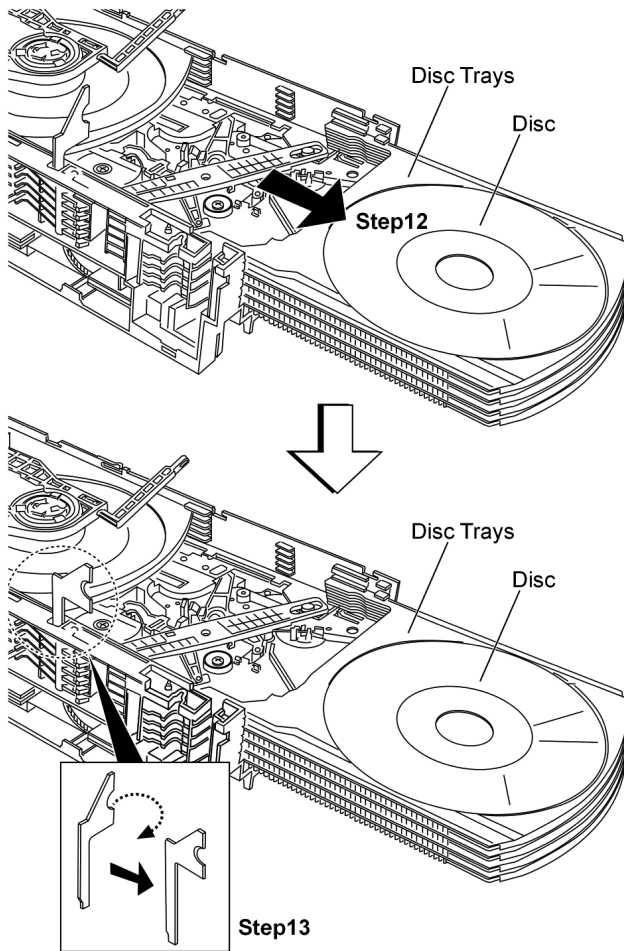
Step 9: Remove the OC gear assy followed by the OC gear spring as arrow shown.

Caution: Ensure the OC gear assy and OC gear spring are handle properly and keep them in a safe place. Do not cause the legs of the OC gear spring to be bend as it can affects the operation for the mechanism unit.



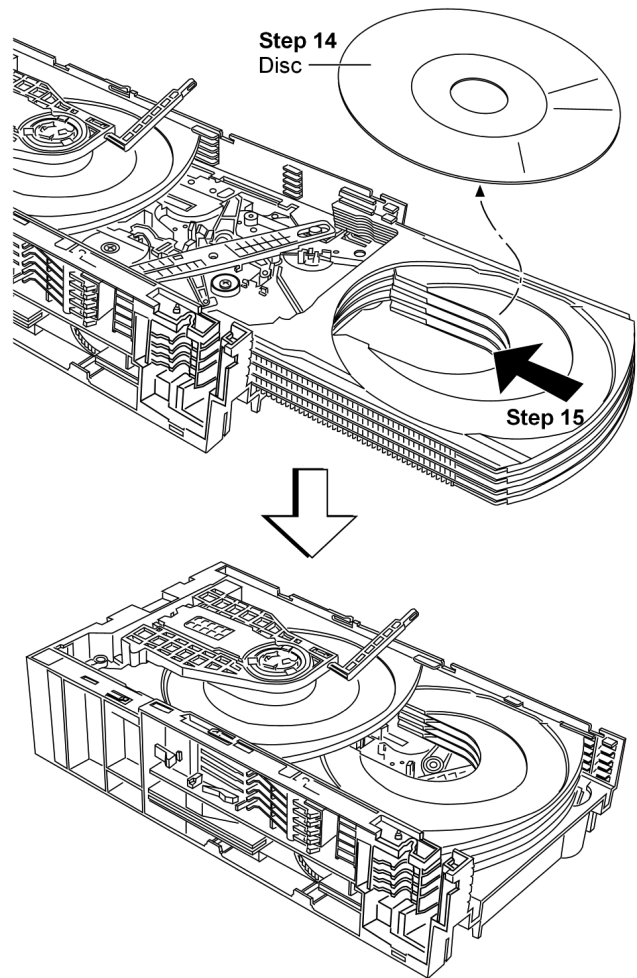
Step 10: Insert the service key into the hole.

Step 11: Turn the service key to release the tray lock lever.



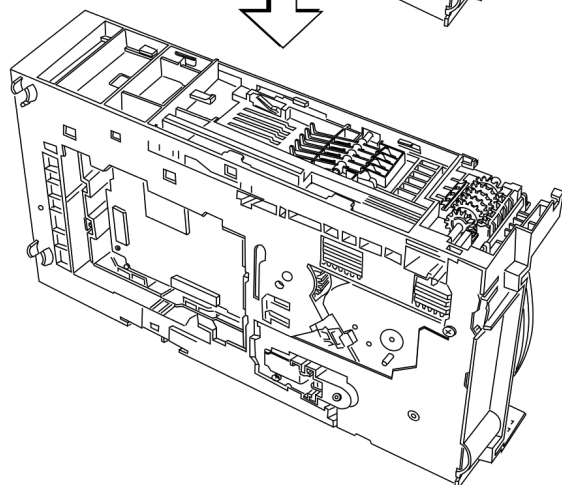
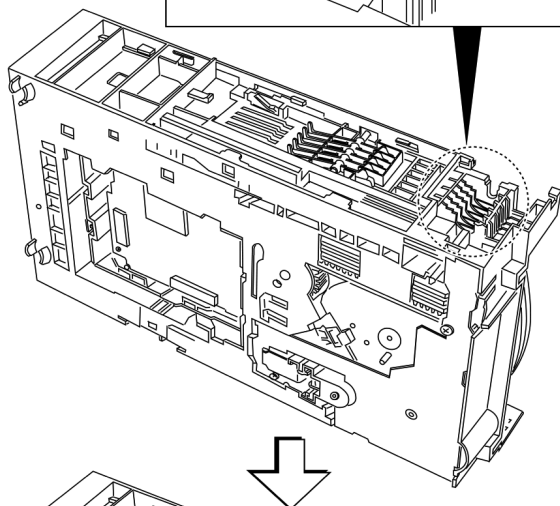
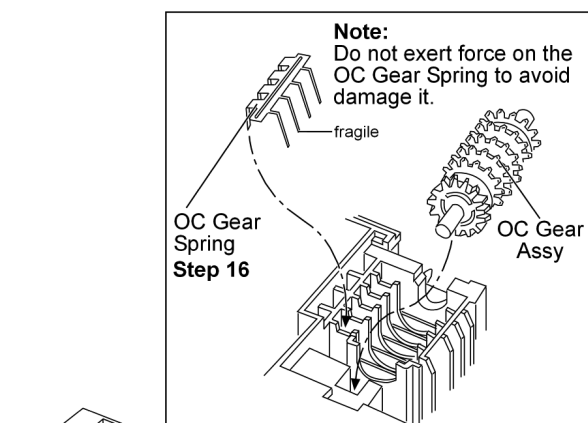
Step 12: Push the disc trays towards the front as arrow shown.

Step 13: Turn the service key back to its original position and remove it.

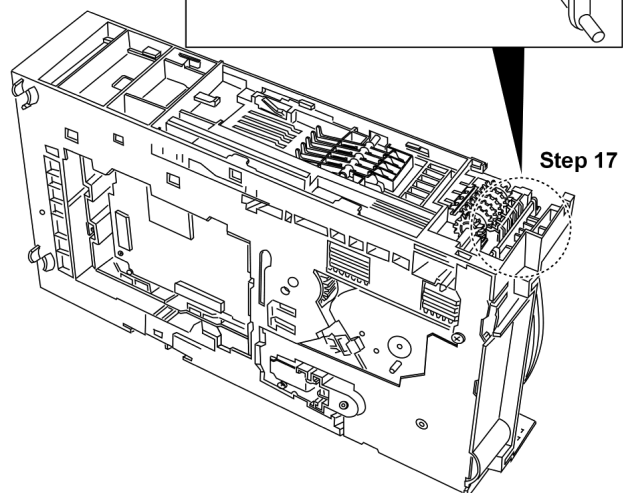
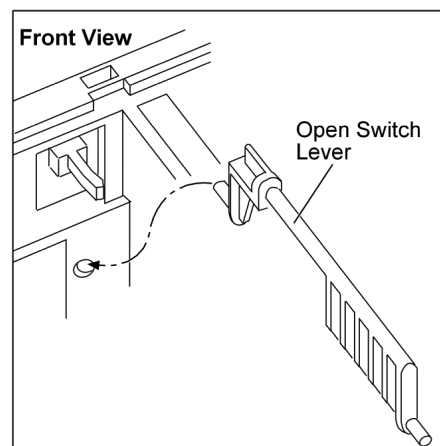


Step 14: Remove the disc.

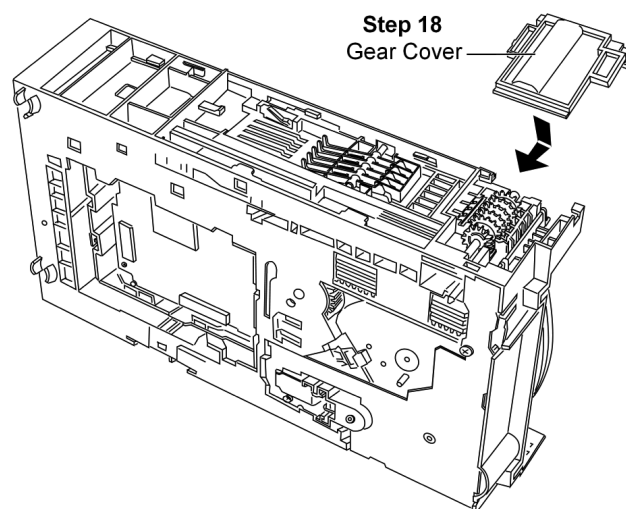
Step 15: Push the disc trays back to the unit as arrow shown.



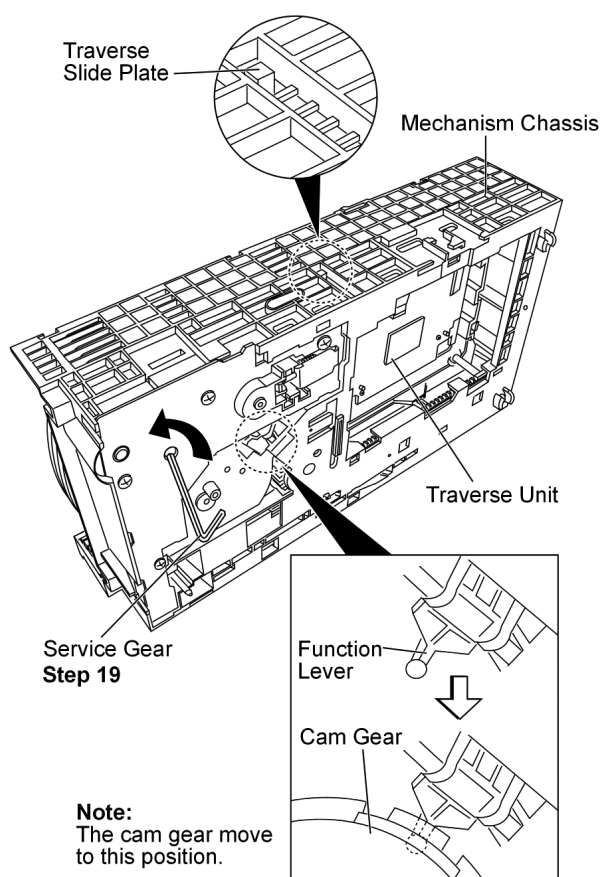
Step 16: Install the OC gear assy followed by the OC gear spring.



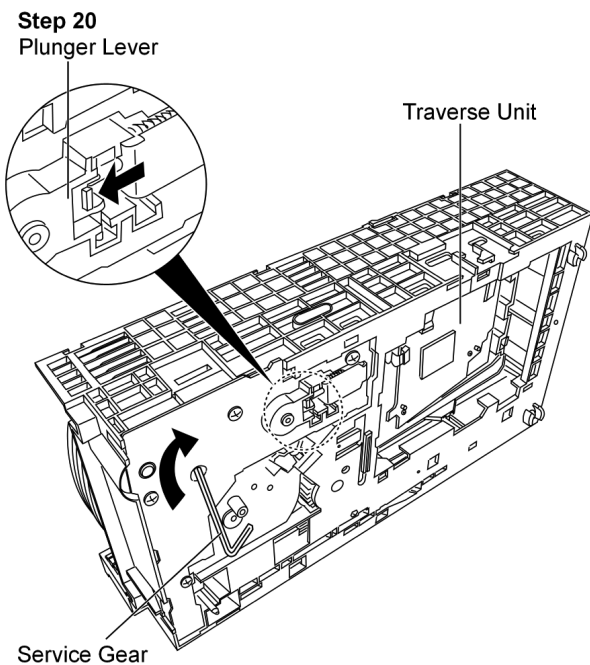
Step 17: Install the open switch lever.



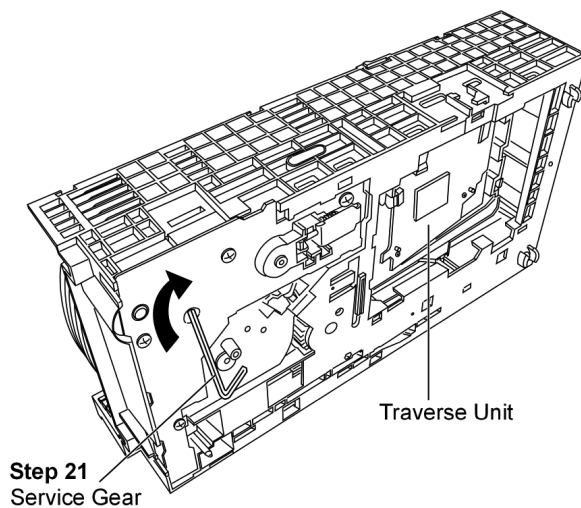
Step 18: Install the gear cover as arrow shown.



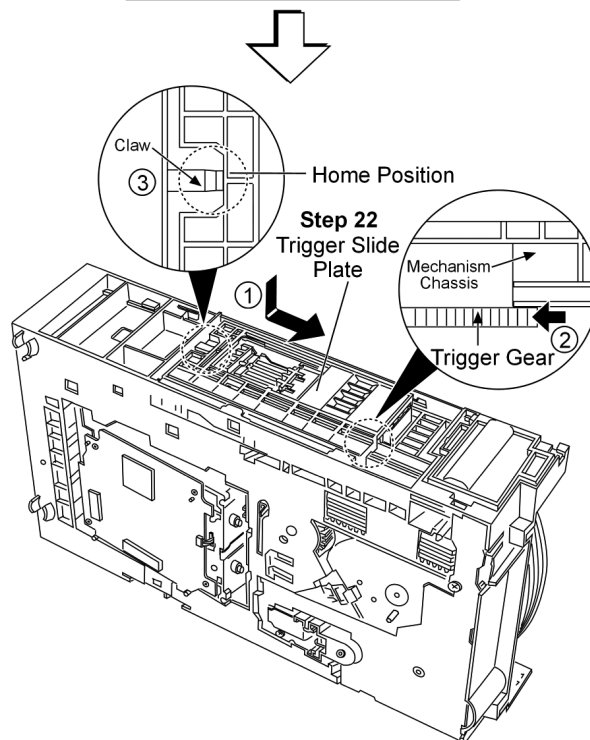
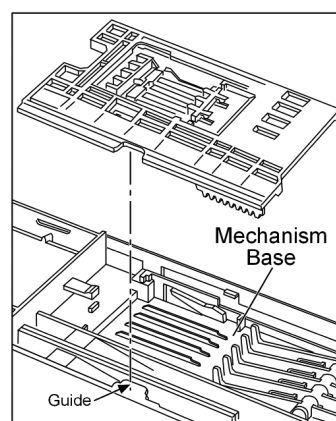
Step 19: Insert the service gear into the service hole and rotate the gear anti-clockwise.



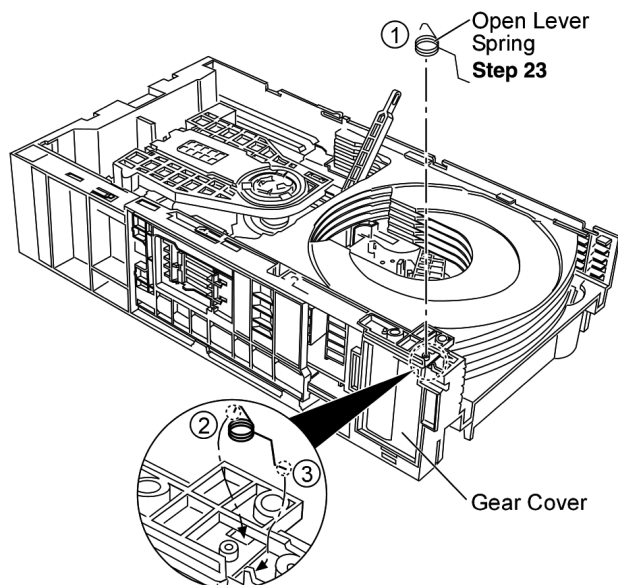
Step 20: Press and hold the plunger lever and rotate the gear clockwise until it stop.



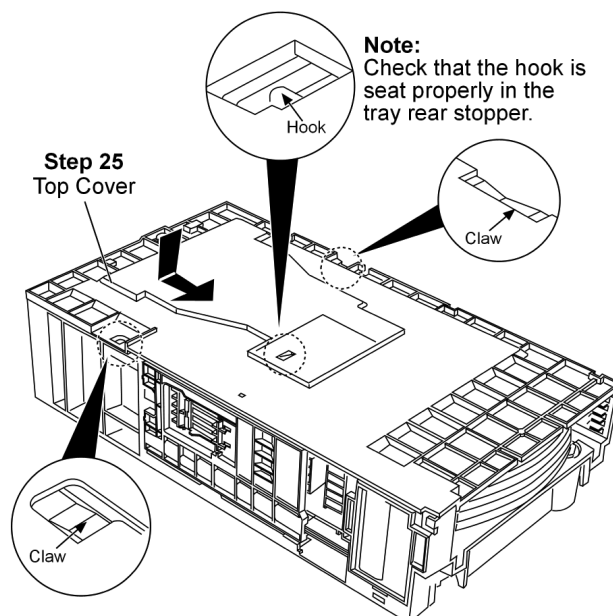
Step 21: Release the plunger lever, rotate the gear clockwise continuously until it stop at "HOME" position.



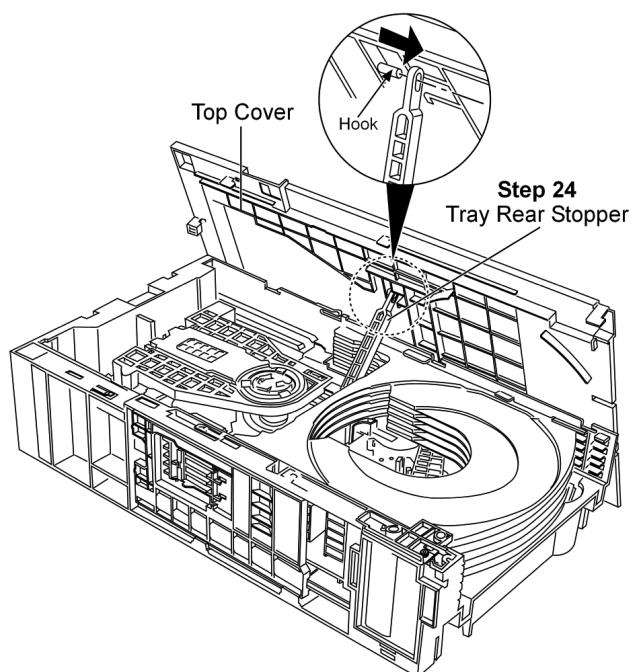
Step 22: Install the trigger slide plate as arrows shown in sequence.



Step 23: Install the open lever spring as shown.



Step 25: Fix the top cover as arrow shown, the 2 claws should be latched.



Step 24: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.

5 Assembling and Disassembling Procedure.

5.1. Disassembling Procedures

Caution:

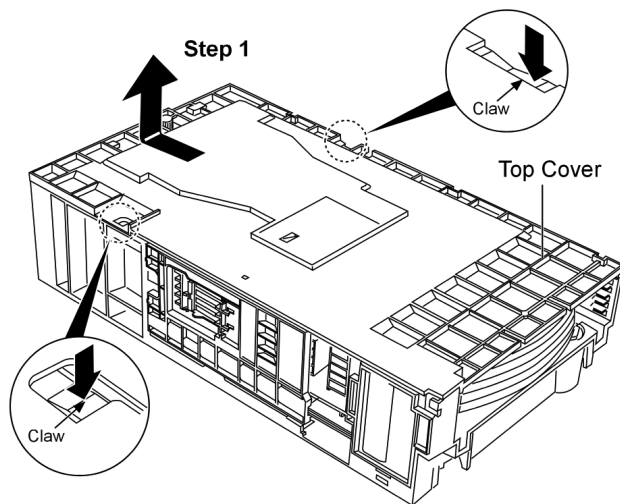
Do ensure that the main unit is set to service mode before repair. (All trays in "STOCK" position)

For information on setting to service mode for changer unit, pls refer to section 4.3.

Note:

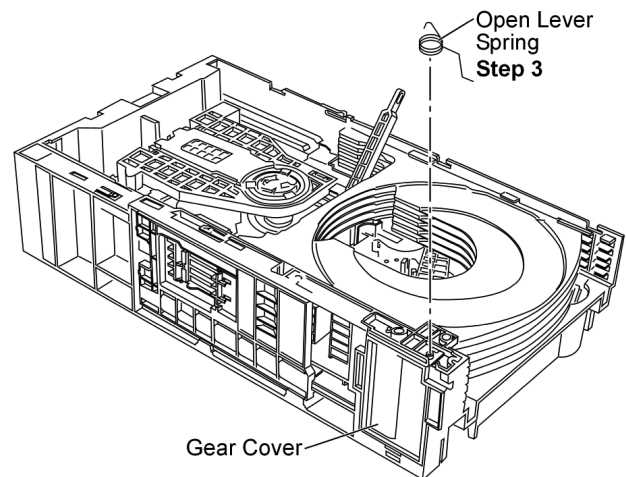
Change unit (CRS1) reliability test must carry out in complete unit or using the Service P.C.B.

5.1.1. Disassembly of UD Base Assembly



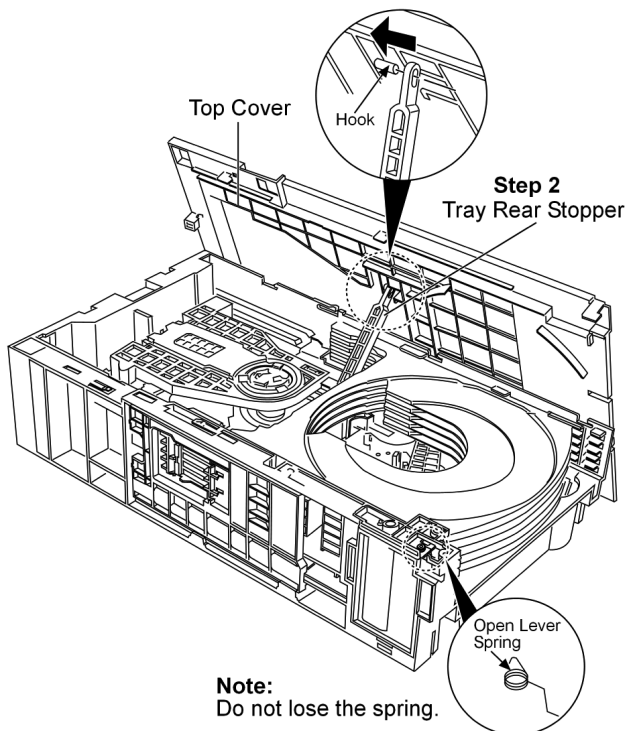
Step 1: Press the 2 claws downwards and push the top cover backwards and lift up the top cover to remove it.

Caution: Do not exert strong force on the claws when pressing the claws.

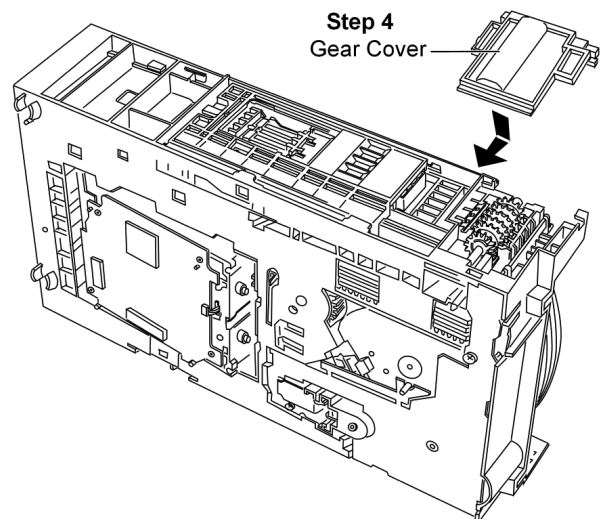


Step 3: Remove the open lever spring from the gear cover.

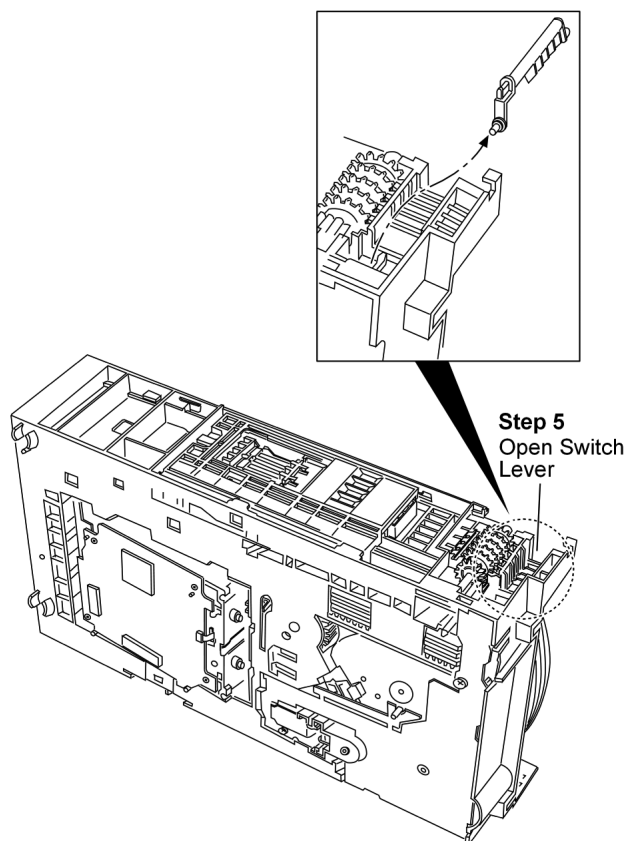
Caution: Ensure the open lever spring is handle properly and keep it in a safe place.



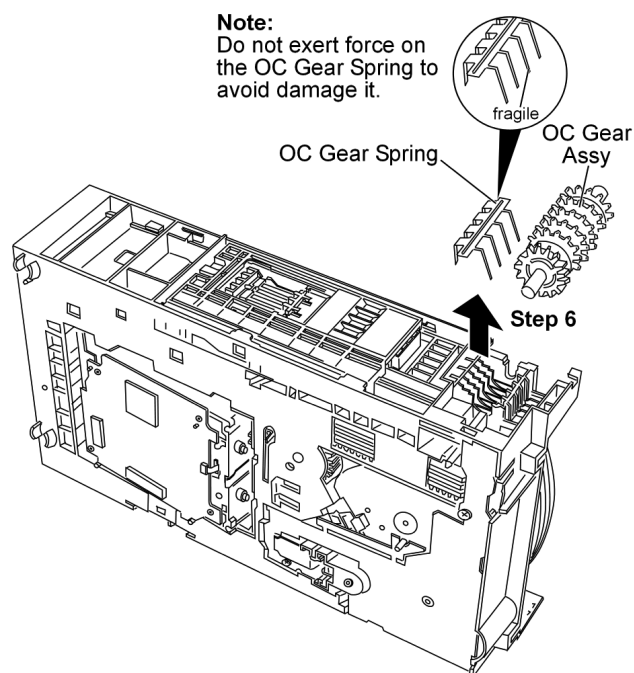
Step 2: Release the top cover from the tray rear stopper as arrow shown and remove the top cover.



Step 4: Push forwards and remove the gear cover as arrow shown.

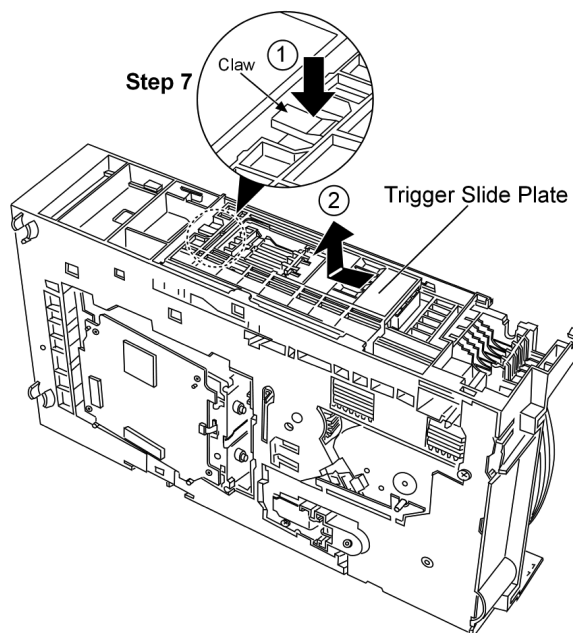


Step 5: Remove the open switch lever.

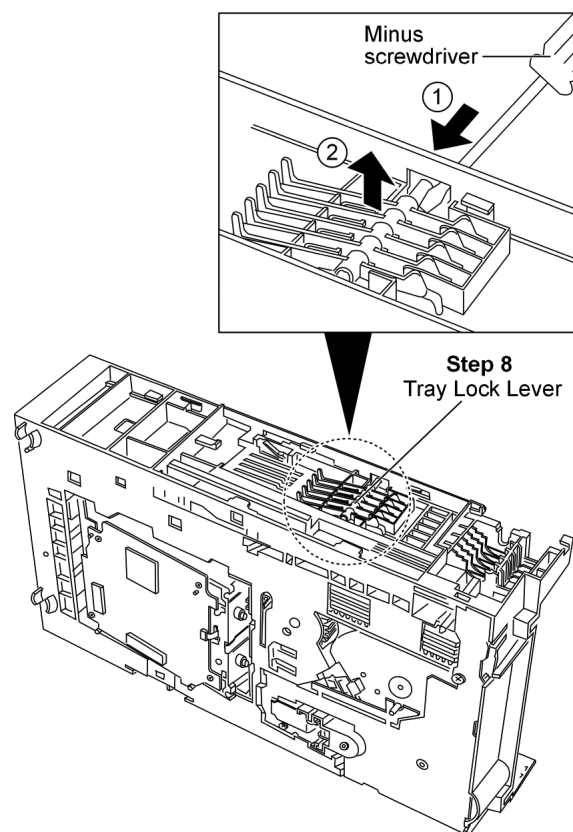


Step 6: Remove the OC gear assy followed by the OC gear spring as arrow shown.

Caution: Ensure the OC gear assy and OC gear spring are handle properly and keep them in a safe place.

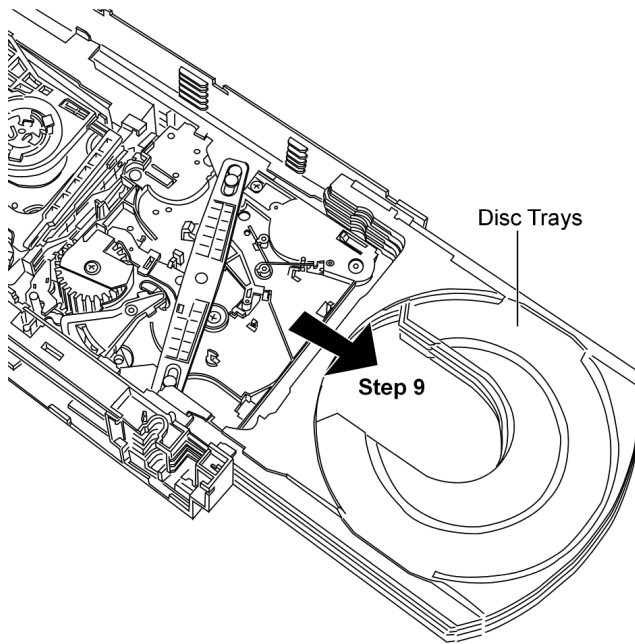


Step 7: Press the claw, push backwards and remove the trigger slide plate as arrows shown.

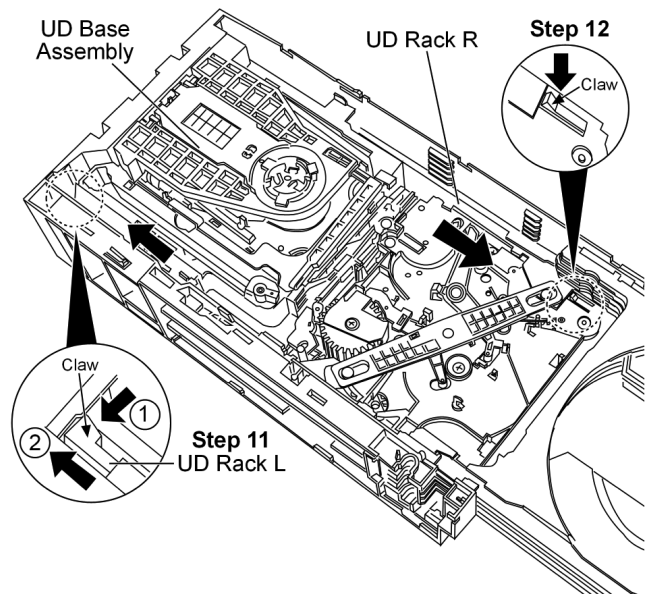


Step 8: Use a minus screwdriver slot into the gap and push out the tray lock lever as arrows shown.

Caution: Do not exert force as it may cause damage to the tray lock lever.

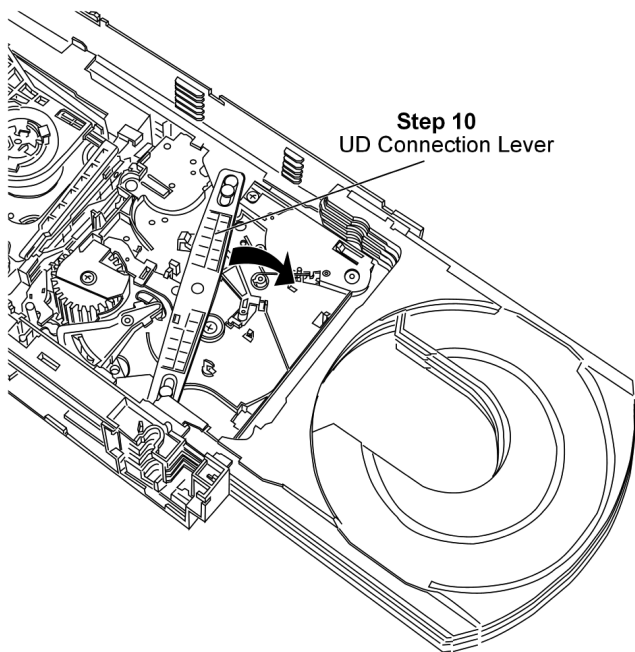


Step 9: Push the disc trays towards the front as arrow shown.

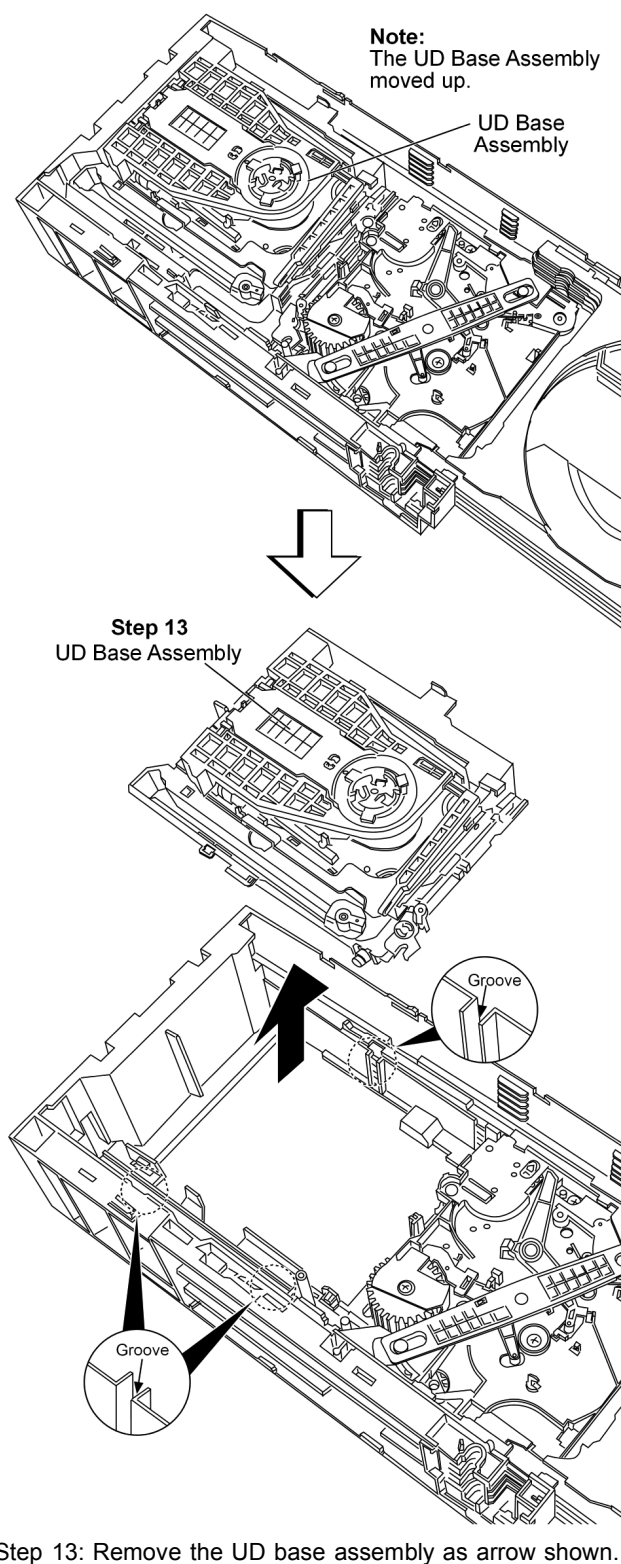


Step 11: Push the claw and slide the UD rack L as arrows shown.

Step 12: Press and hold the claw at the pitch plate then push the UD rack R as arrows shown.

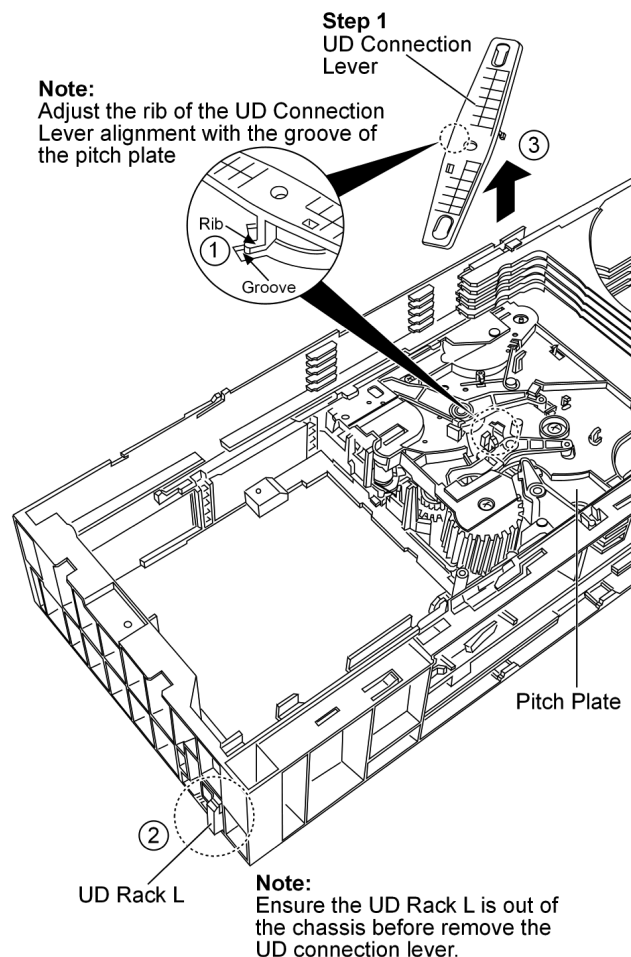


Step 10: Turn the UD connection lever clockwise.

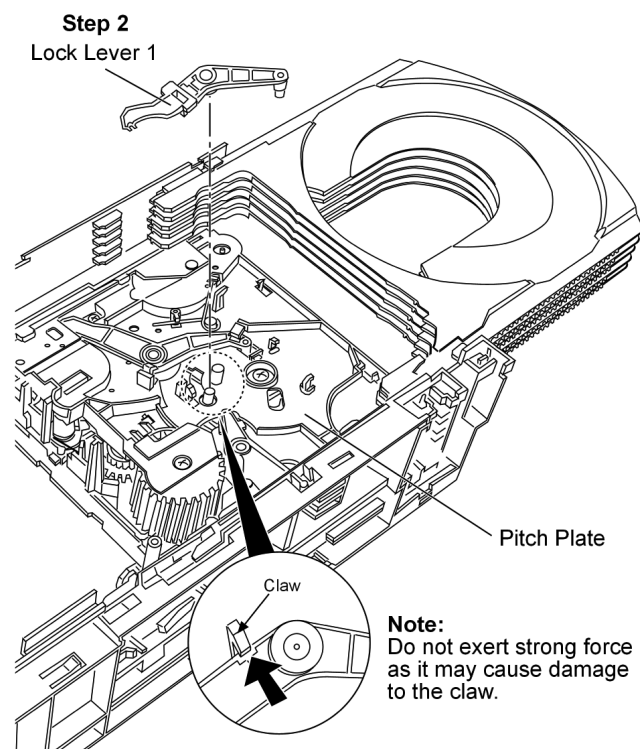


5.1.2. Disassembly of Disc Trays

- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- **Disassembly of UD connection lever**

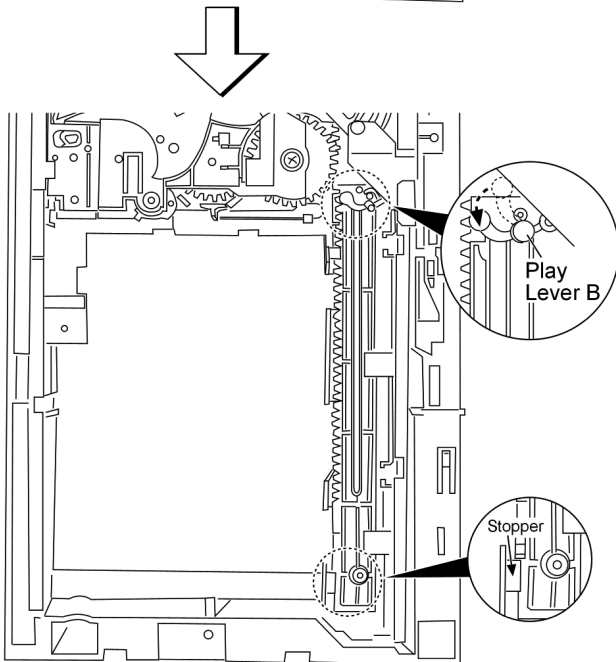
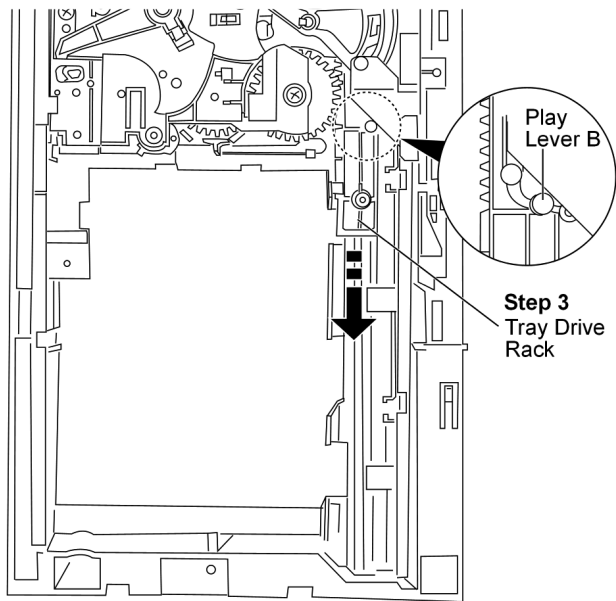


Step 1: Remove the UD connection lever.

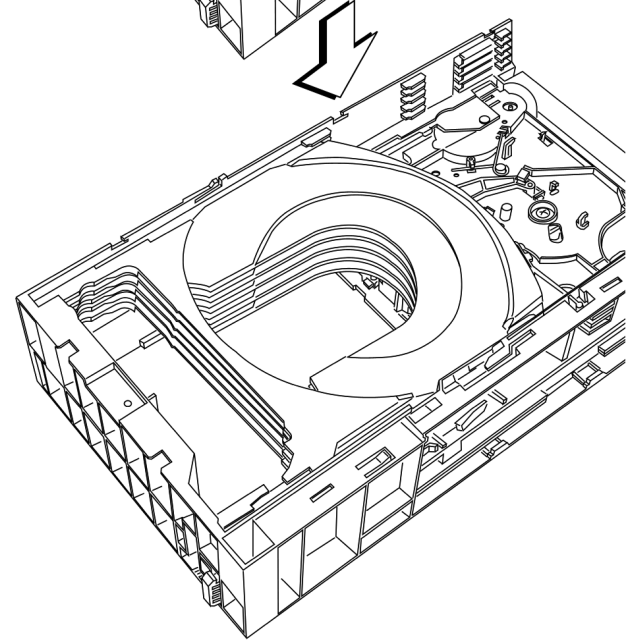
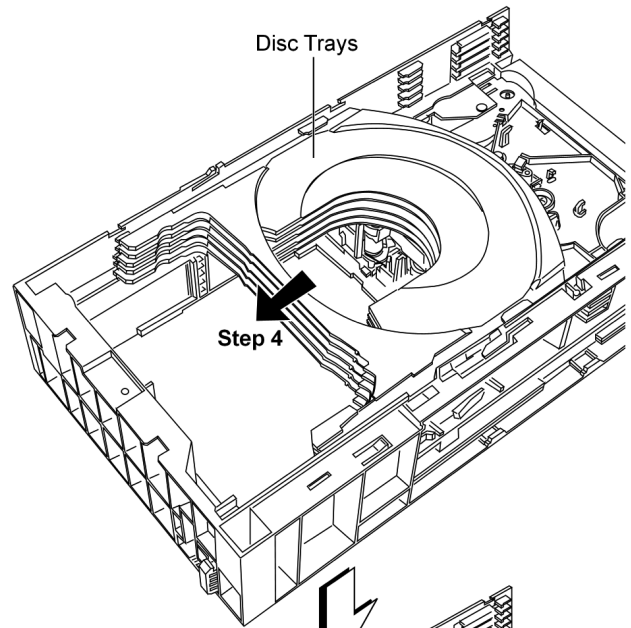


Step 2: Push the claw as arrow shown and remove the lock lever 1.

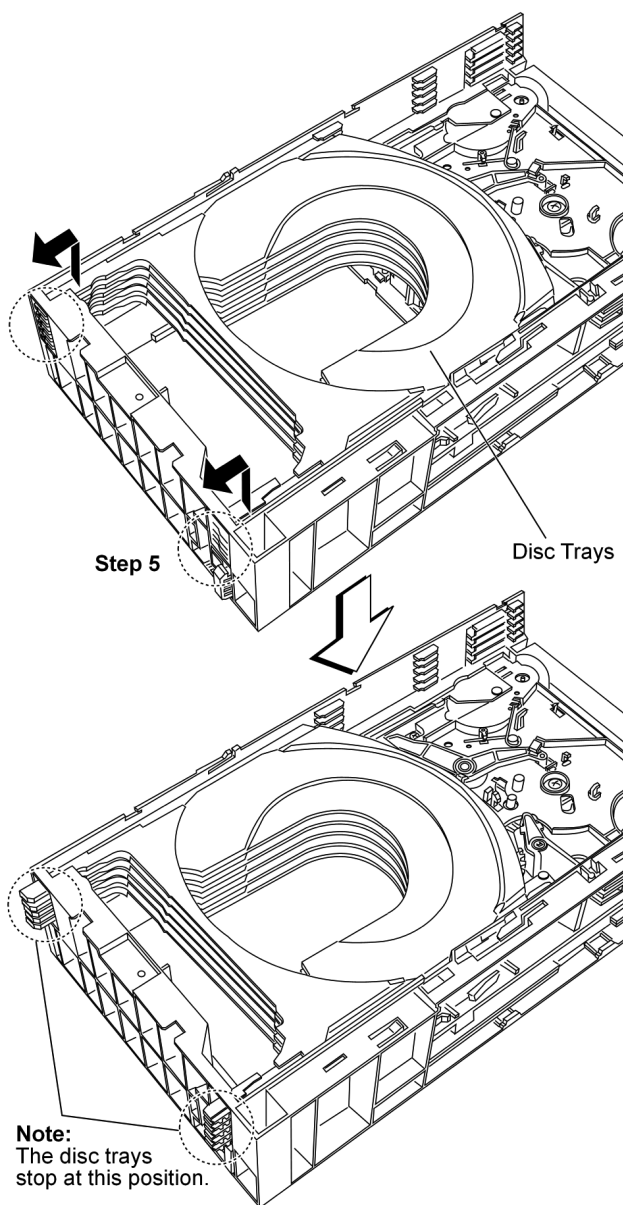
Caution: Do not exert force as it may cause the claw to be damage.



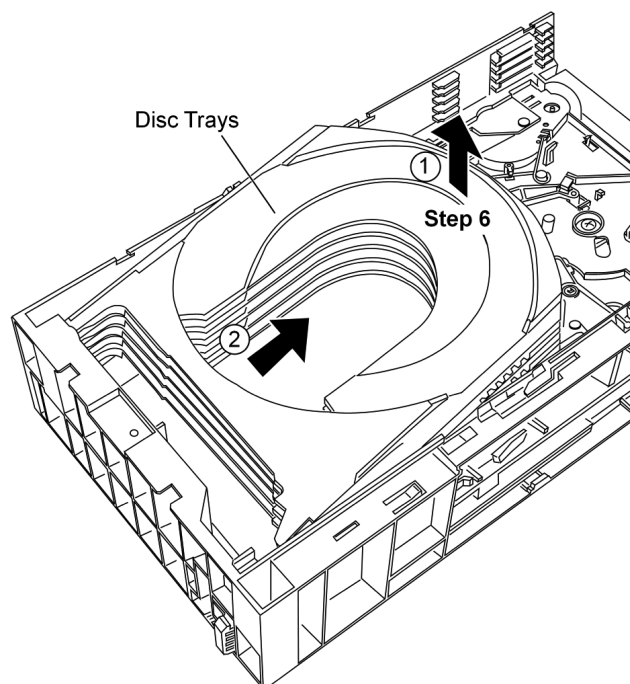
Step 3: Push the tray drive rack as arrow shown to hit the stopper.



Step 4: Push the 5 disc trays as arrow shown until it stop (bottom picture).



Step 5: Lift up slightly and push the 5 disc trays further as arrows shown.

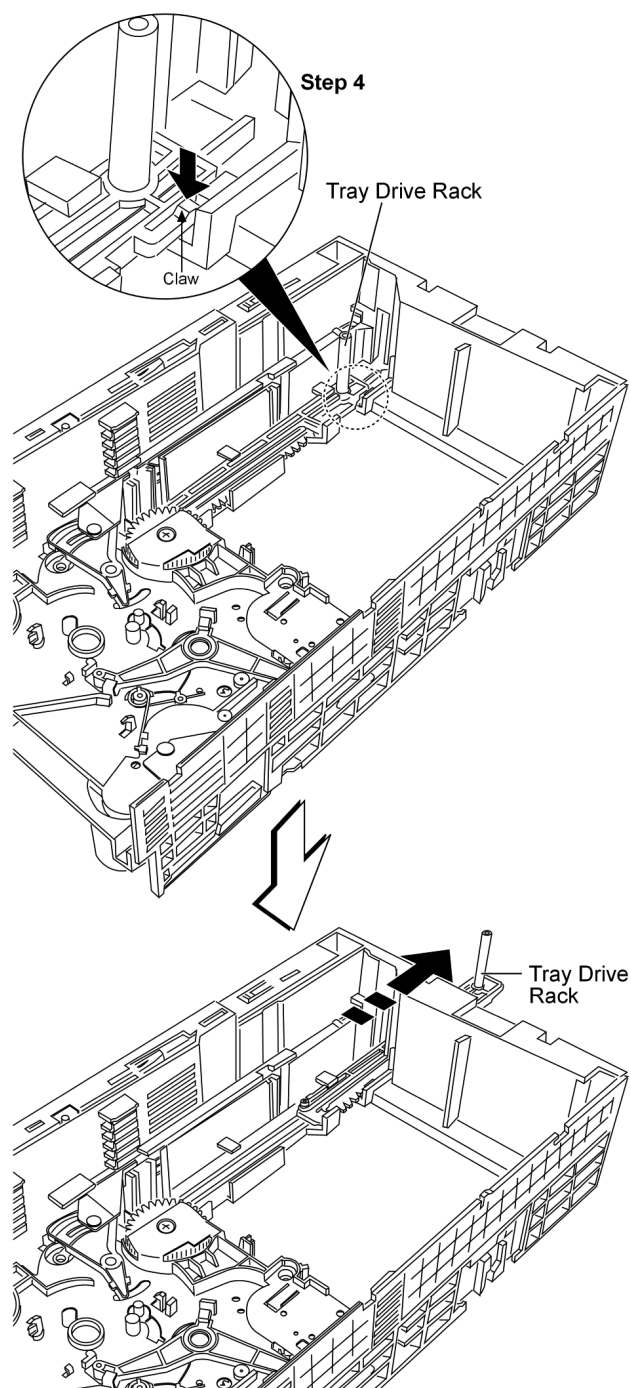
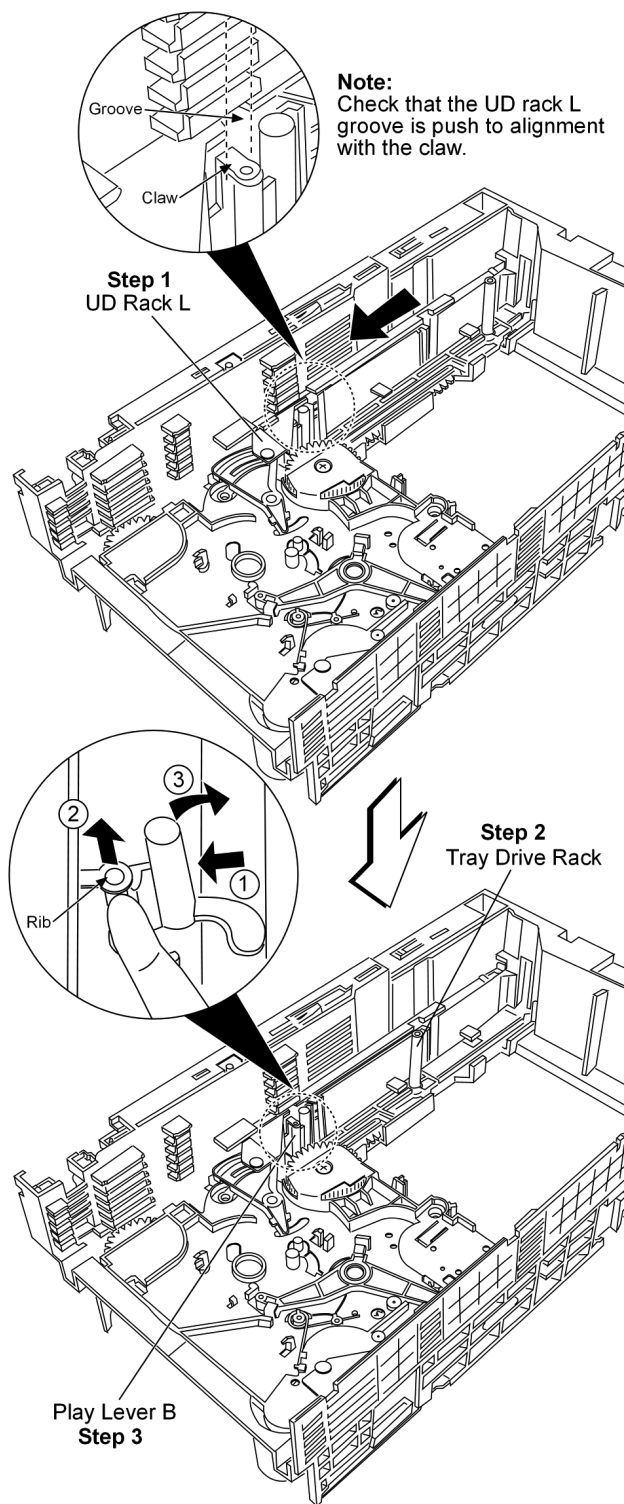


Step 6: Tilt and remove the 5 disc trays as arrows shown.

Note: All disc trays is numbered & must be place in correct position during assembly. Disc Tray 1 should be at top position.

5.1.3. Disassembly of CD Loading Unit

- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 5.1.2. (Disassembly of Disc Trays)
- **Disassembly of play lever B**



Step 4: Release the claw as arrow shown (top picture) then slide and remove the tray drive rack as arrow shown (bottom picture).

· Disassembly of UD rack L

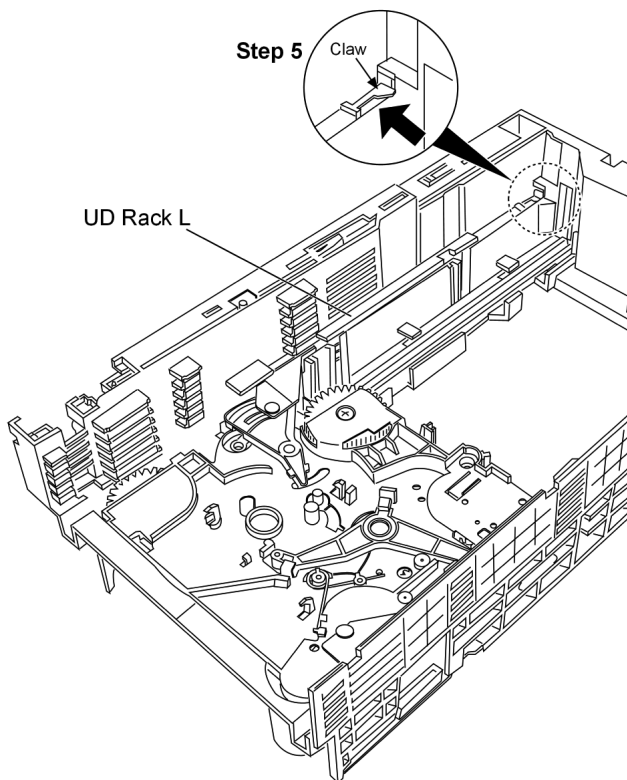
Step 1: Push the UD rack L forwards as arrow shown.

Step 2: Position the tray drive rack in the center.

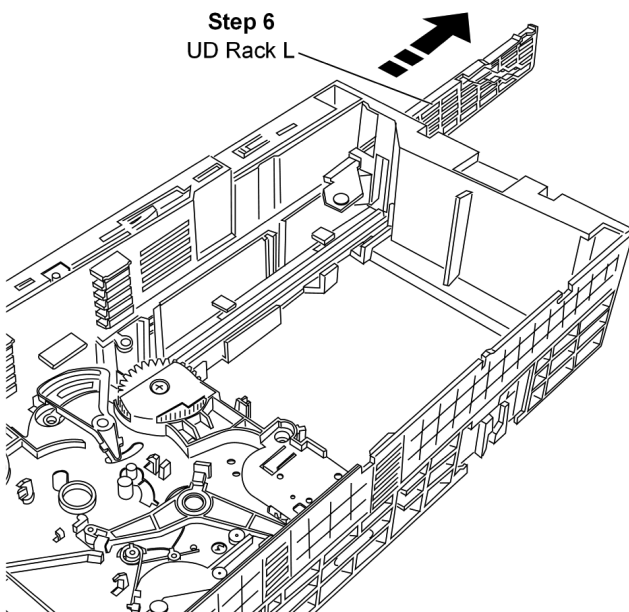
Step 3: Push the play lever B and lift up the rib slightly to remove the play lever B as arrows shown.

Caution: Make sure do not break the rib when removing the play lever B. The rib break easily by using the tools.

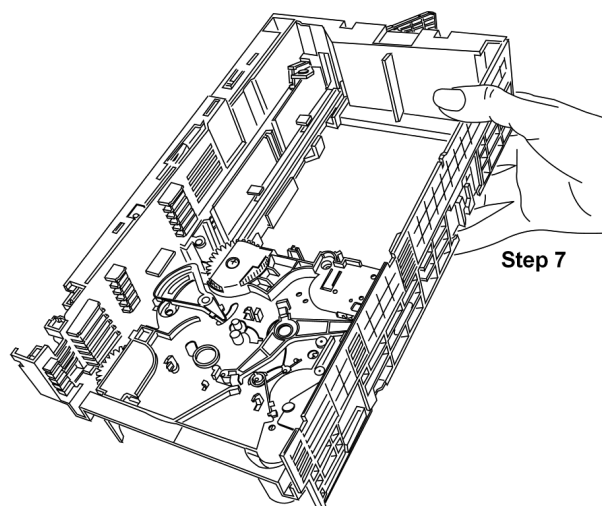
· Disassembly of tray drive rack



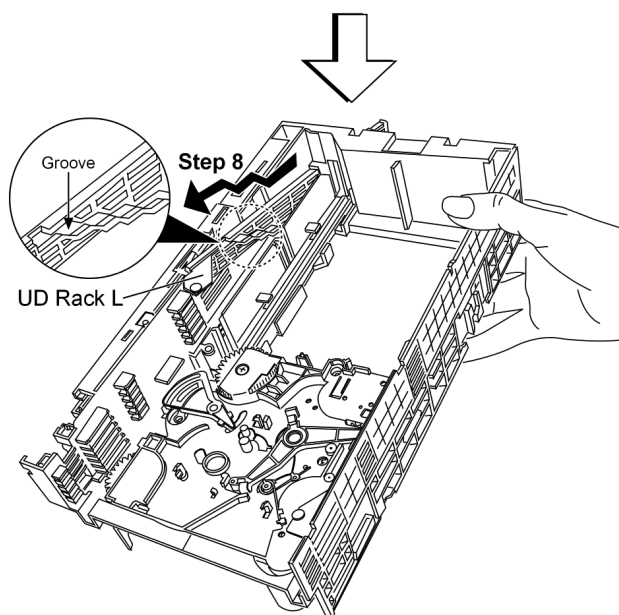
Step 5: Push the claw as arrow shown.



Step 6: Slide the UD rack L as arrow shown.



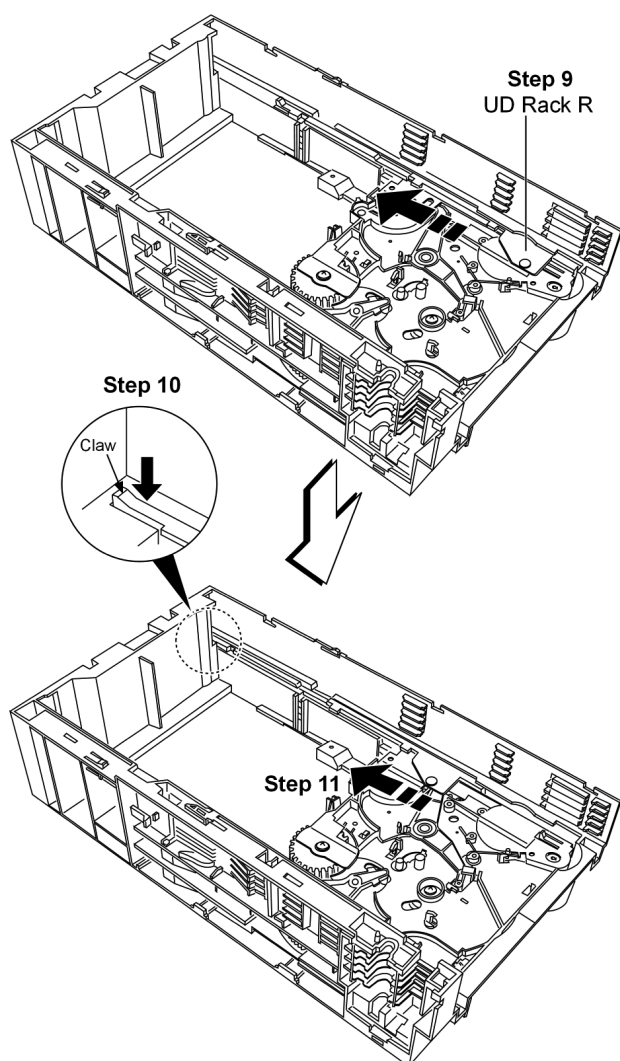
Step 7



Step 7: Lift up the unit as shown.

Step 8: Follow the groove to lift up and remove the UD rack L as arrow shown.

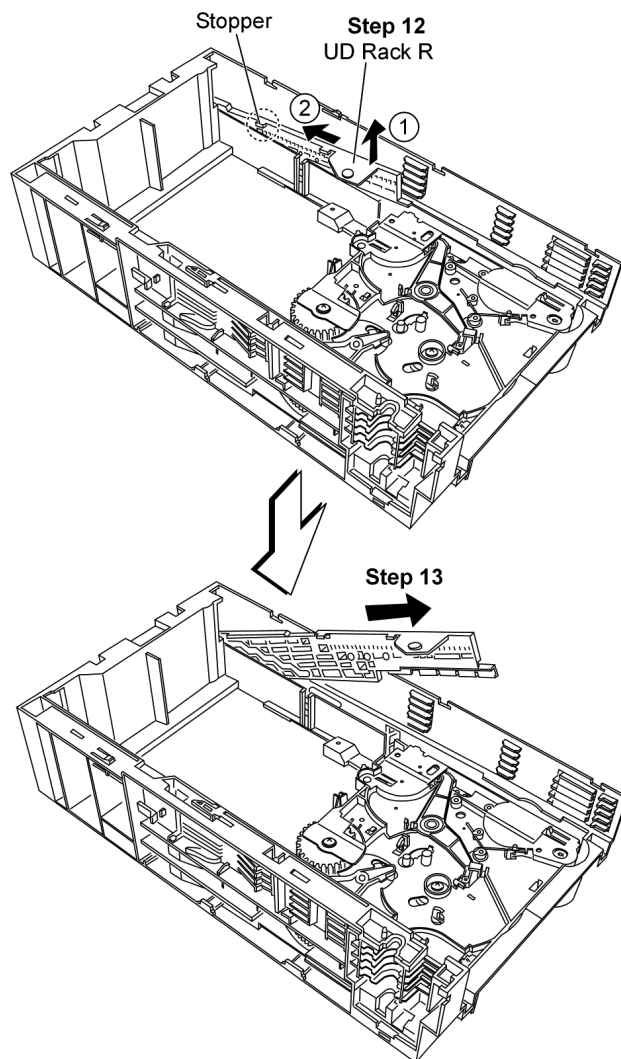
· Disassembly of UD rack R



Step 9: Slide the UD rack R as arrow shown until it stop.

Step 10: Press the claw as arrow shown.

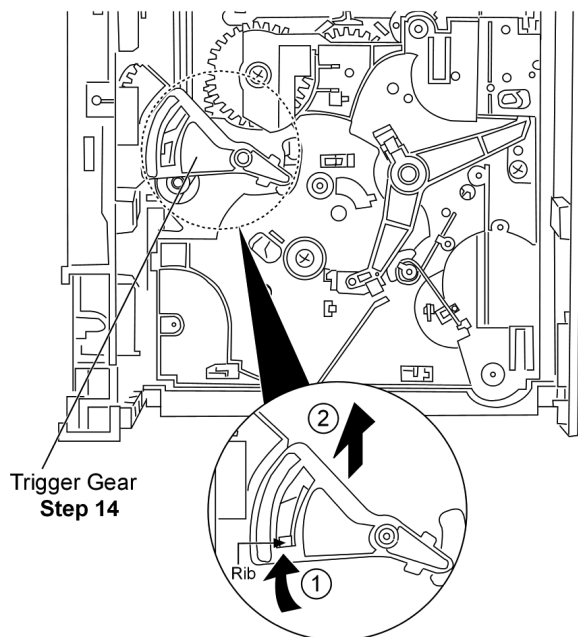
Step 11: Continue to slide the UD rack R as arrow shown until it stop.



Step 12: Lift up the UD rack R and slide backwards to stop at the stopper.

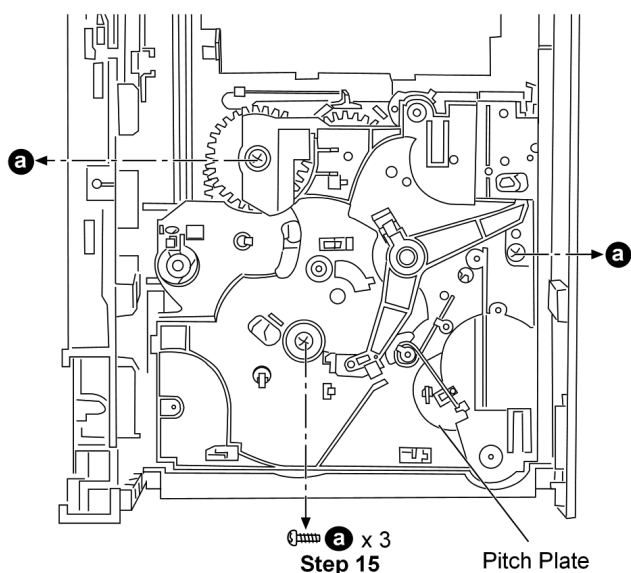
Step 13: Remove it as arrow shown.

• Disassembly of trigger gear

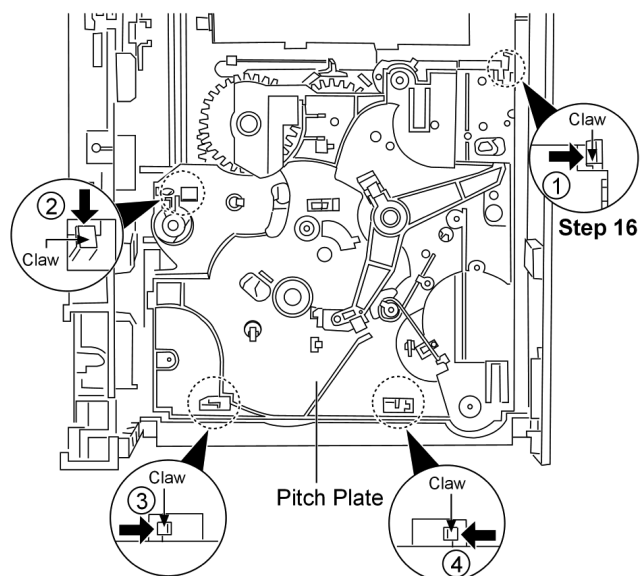


Step 14: Turn the trigger gear clockwise and remove it as arrows shown.

• Disassembly of pitch plate

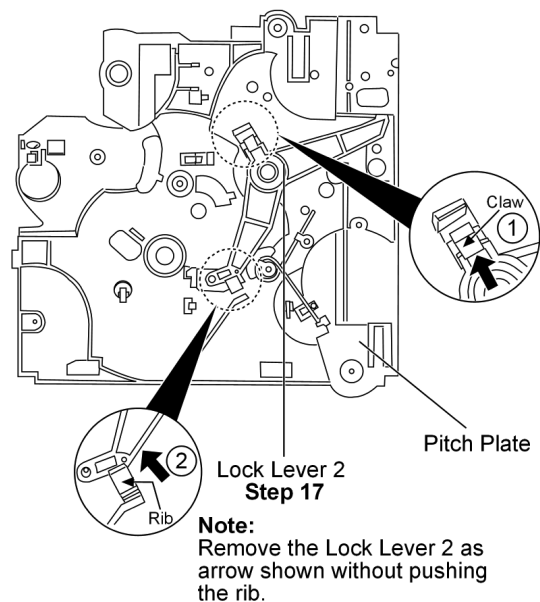


Step 15: Remove 3 screws



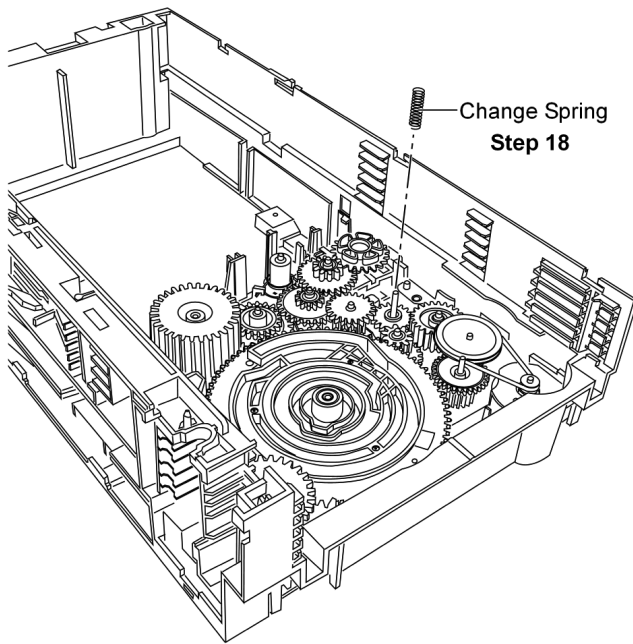
Step 16: Release 4 claws as arrows shown in order followed by detach the pitch plate.

• Disassembly of lock lever 2



Step 17: Release the claw and pull out the lock lever 2 as arrows shown. (The rib is fragile, do not exert force on it).

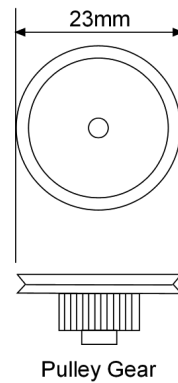
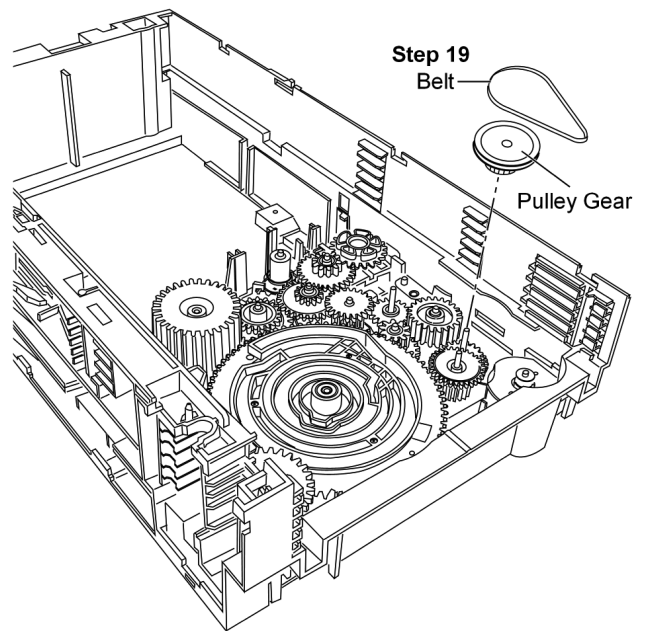
• Disassembly of change spring



Step 18: Remove the change spring.

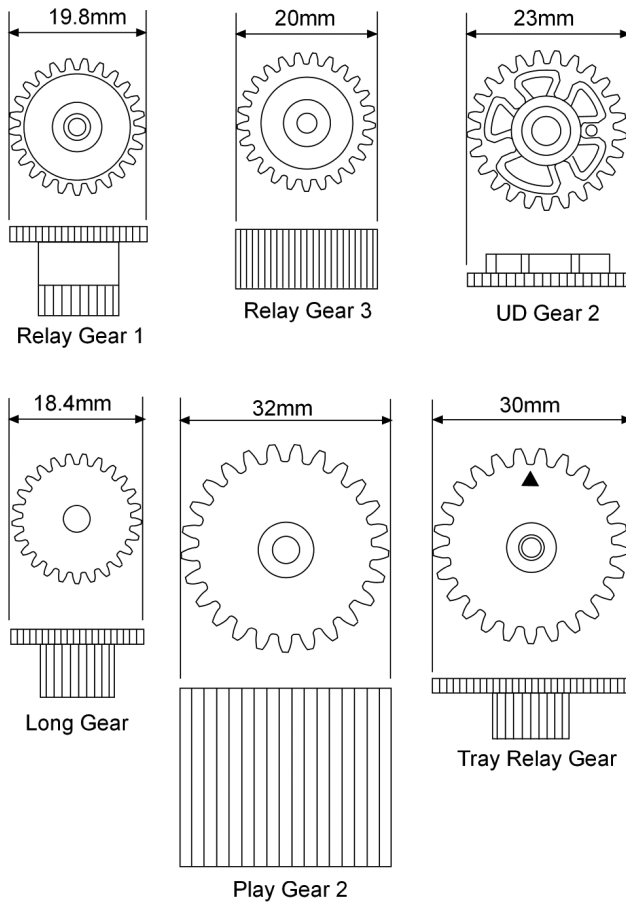
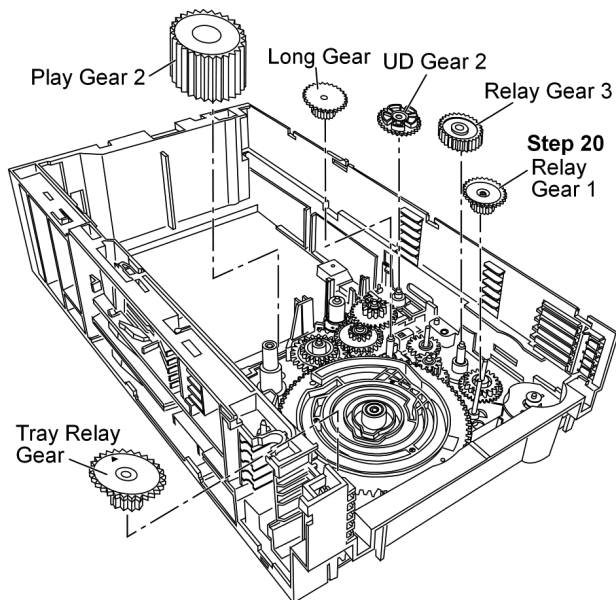
Caution: Handle the change spring carefully, do not lose it. Put in a proper storage location.

· Disassembly of pulley gear and belt

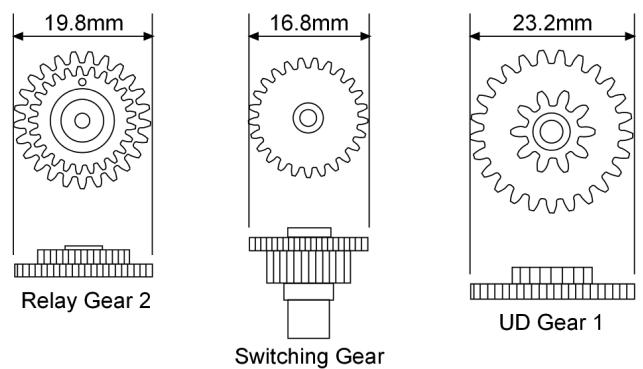
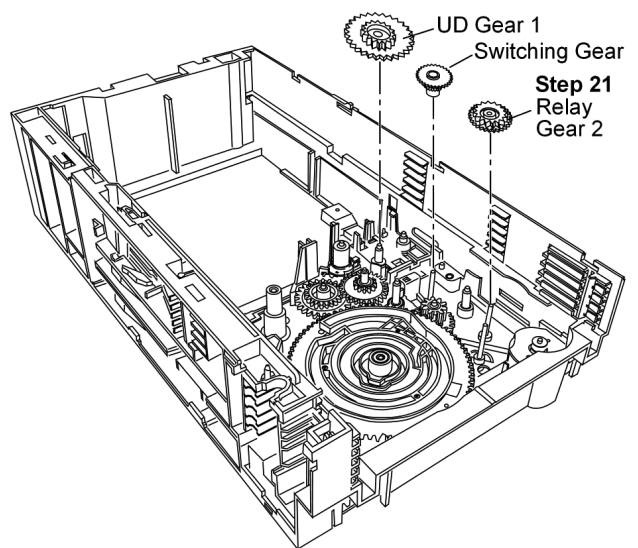


Step 19: Remove the belt and pull out the pulley gear.

· Disassembly of gears

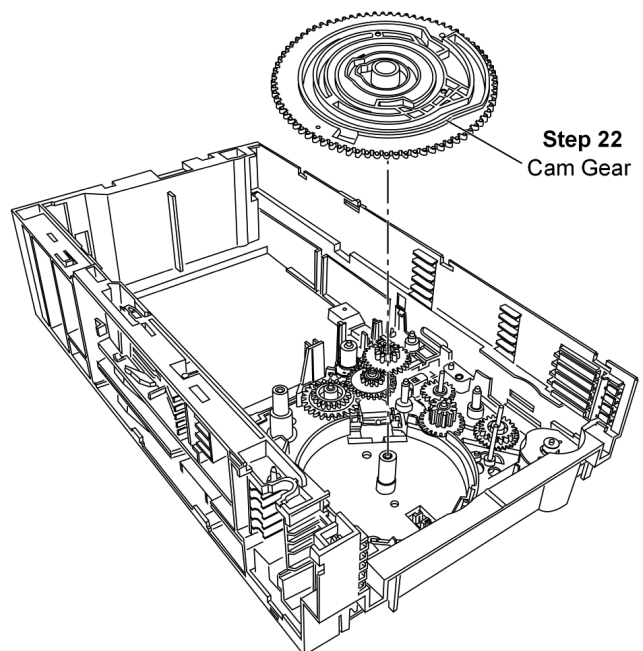


Step 20: Remove the relay gear 1, relay gear 3, UD gear 2, long gear, play gear 2 and tray relay gear in order.



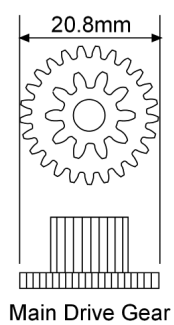
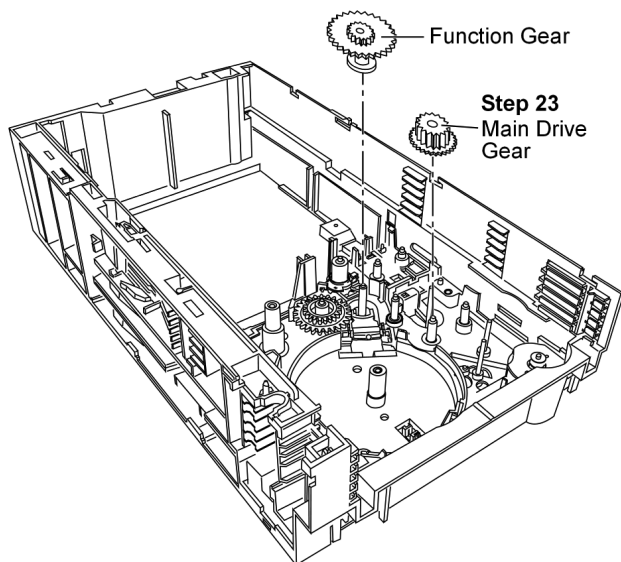
Step 21: Remove relay gear 2, switching gear, UD gear 1 in order.

• Disassembly of cam gear

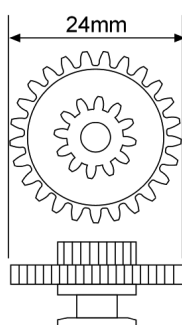


Step 22: Remove cam gear.

• Disassembly of function gear and main drive gear



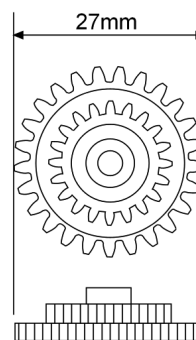
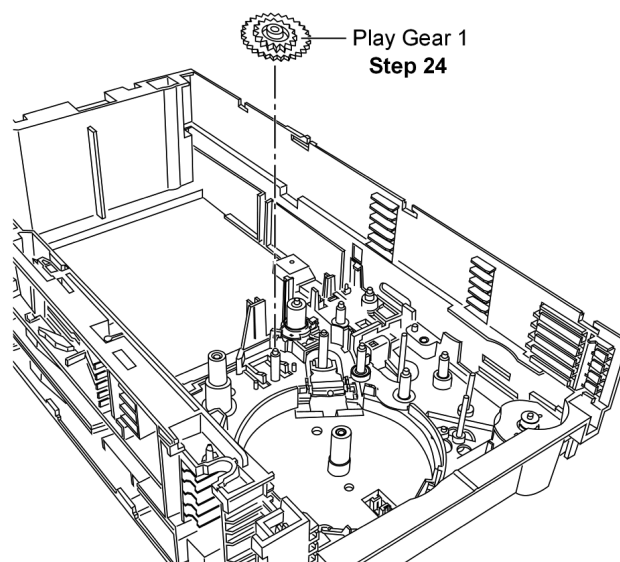
Main Drive Gear



Function Gear

Step 23: Remove main drive gear and function gear.

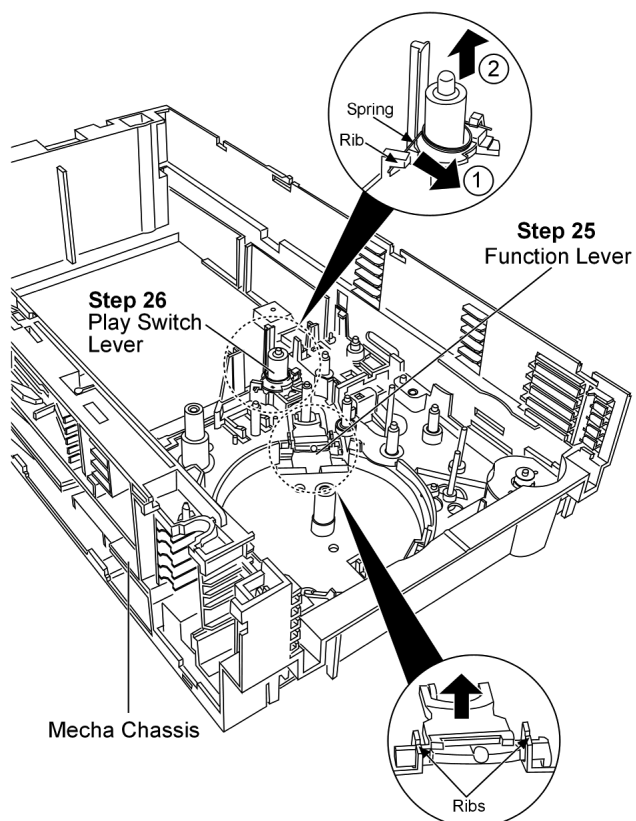
· Disassembly of play gear 1



Play Gear 1

Step 24: Remove play gear 1.

· Disassembly of function lever

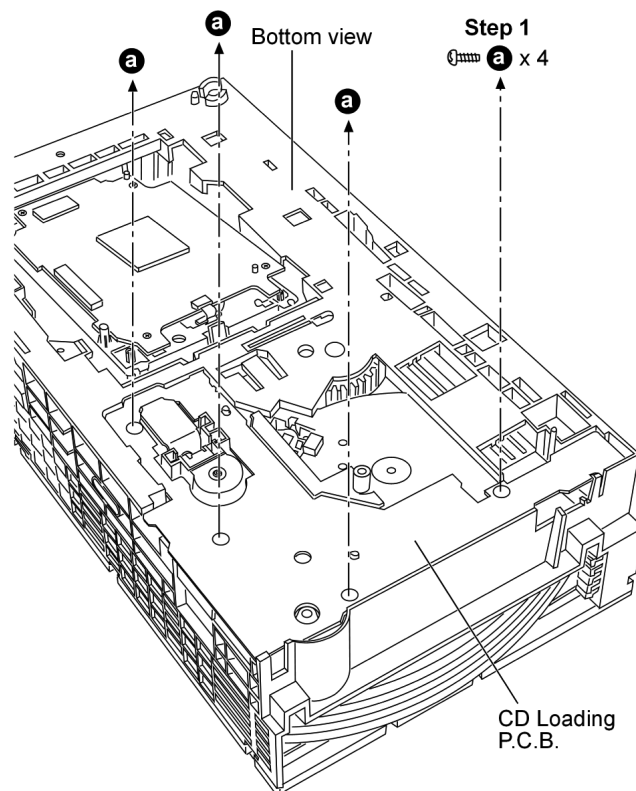


Step 25: Remove the function lever from the ribs as arrow shown.

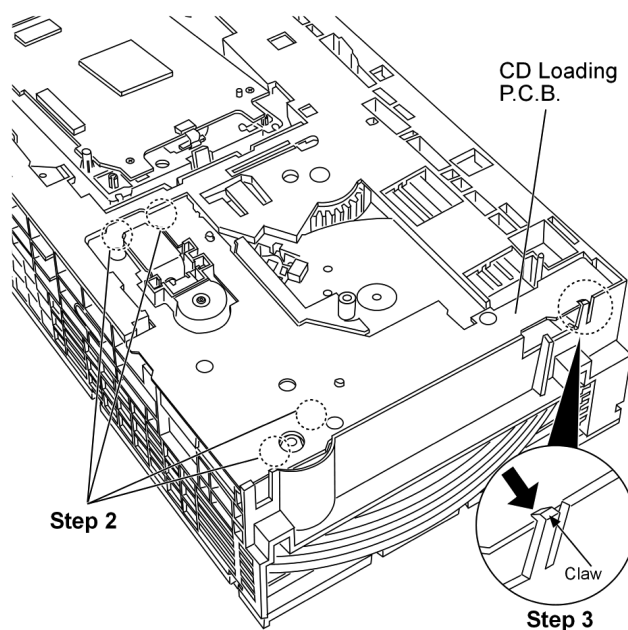
Step 26: Release the spring from the rib as arrow shown to remove the play switch lever.

Note: For changing of the mecha chassis, please follow Step 1 to Step 5 of item 5.1.4 (Disassembly of CD Loading P.C.B.), Step 3 to Step 4 of item 5.1.5 (Disassembly of Plunger Lever) and Step 2 of item 5.1.6 (Disassembly of Motor Unit)

5.1.4. Disassembly of CD Loading P.C.B.

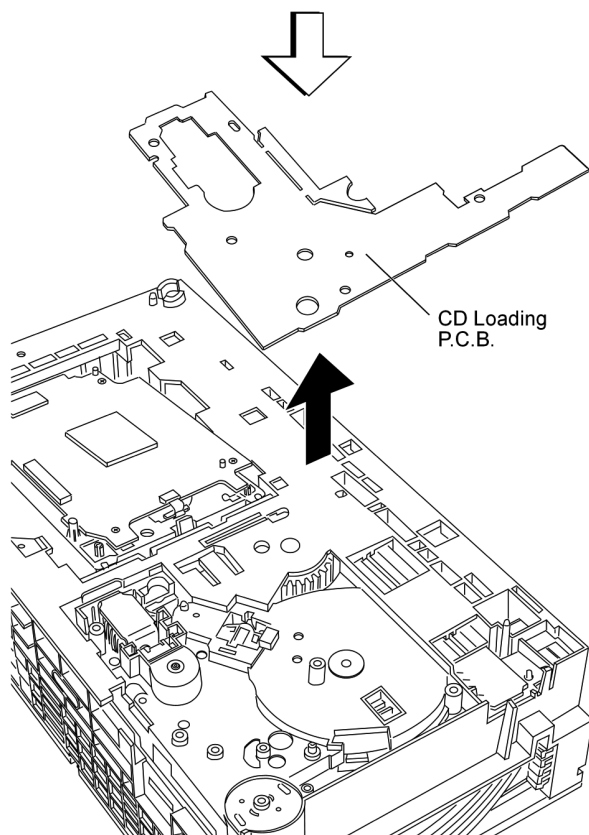
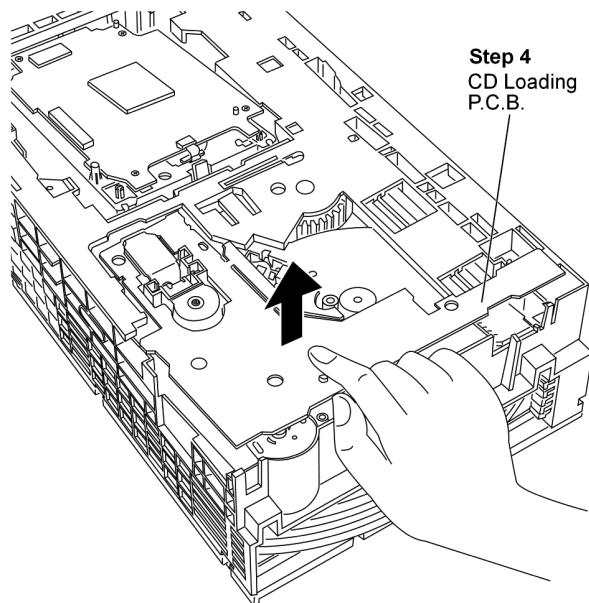


Step 1: Turn over the unit and remove 4 screws from the CD Loading P.C.B.



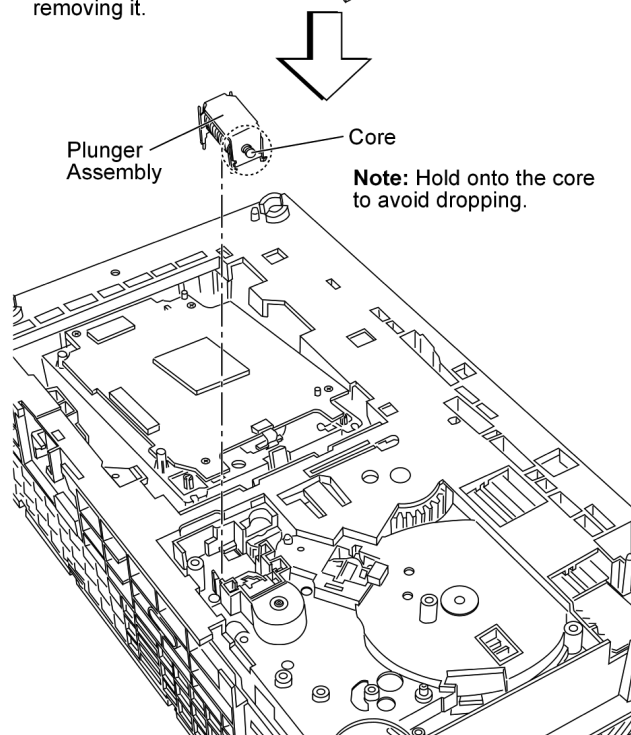
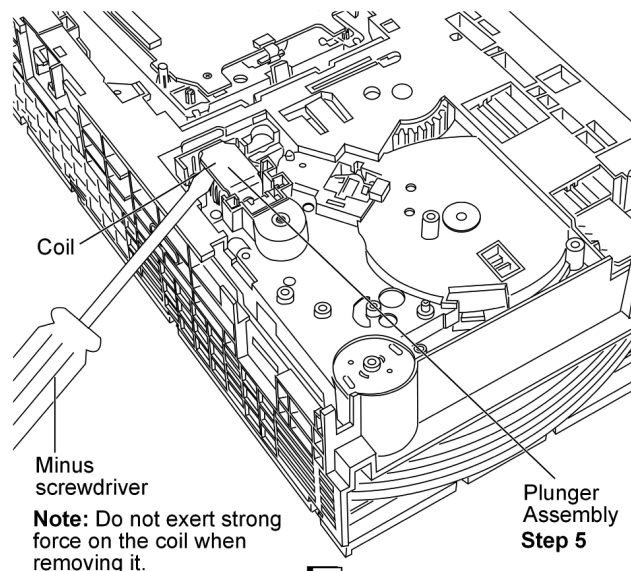
Step 2: Unsolder the 4 points.

Step 3: Release 1 claw as arrow shown.



Step 4: Remove the CD Loading P.C.B. as arrows shown.

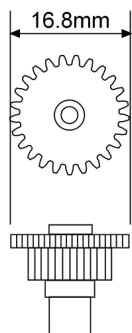
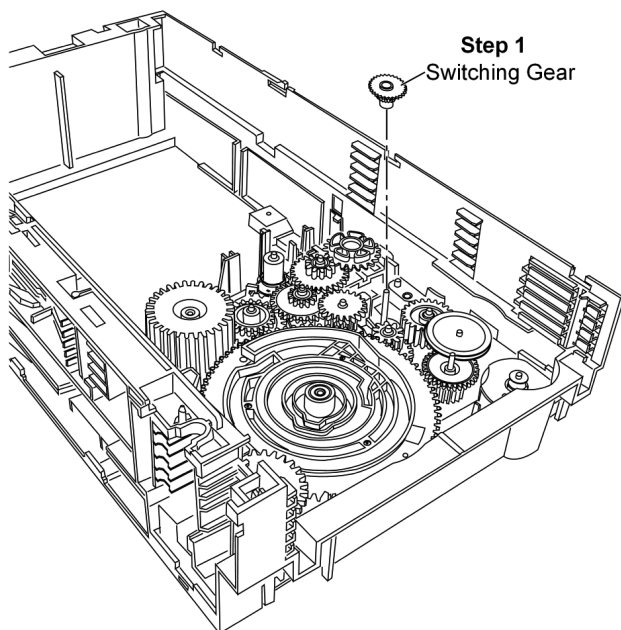
• **Disassembly of plunger assembly**



Step 5: Remove the plunger assembly by using a minus screwdriver.

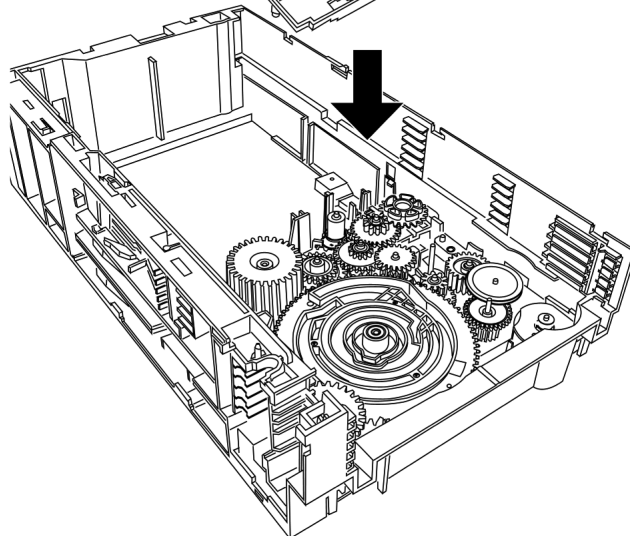
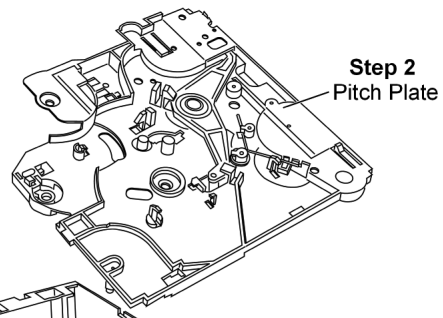
5.1.5. Disassembly of Plunger Lever

- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 5.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 18) of item 5.1.3. (Disassembly of CD Loading Unit)
- Follow the (Step 1) to (Step 5) of item 5.1.4. (Disassembly of CD Loading P.C.B.)



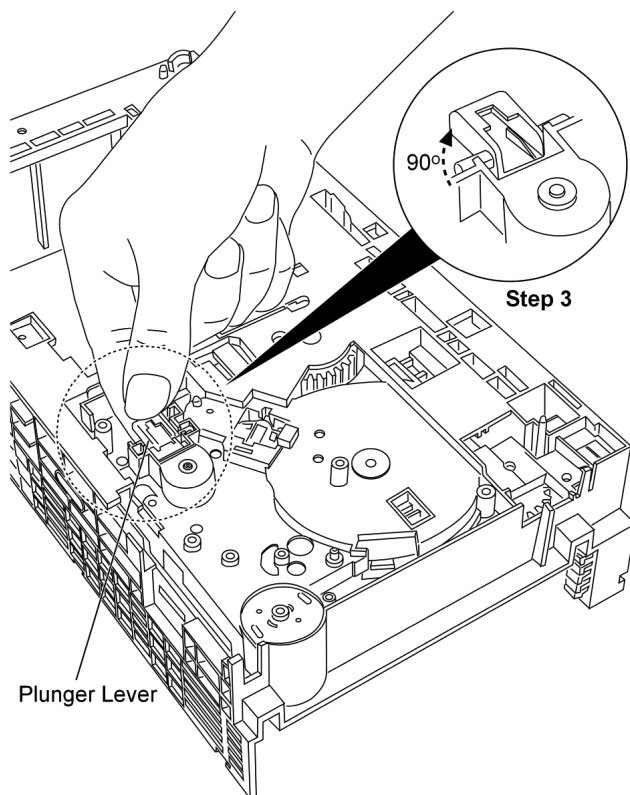
Switching Gear

Step 1: Remove the switching gear.

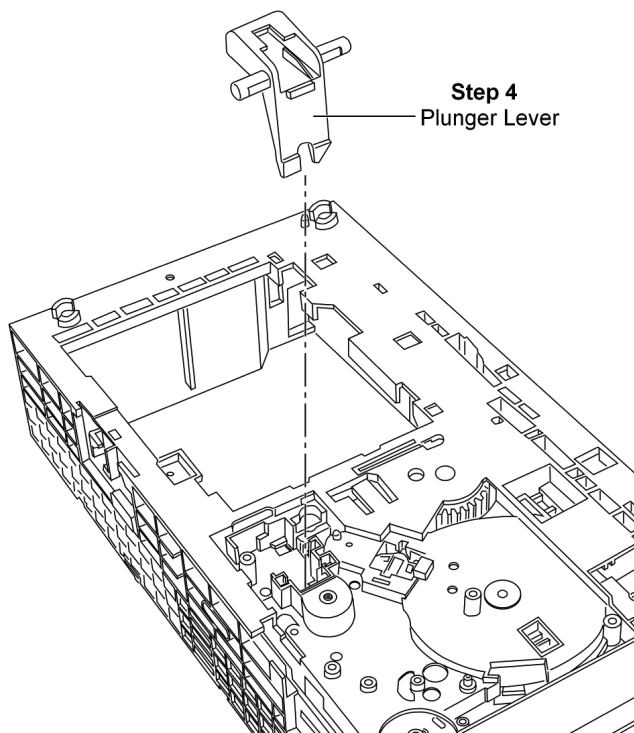


Step 2: Install the pitch plate.

Note: Ensure the pitch plate seats properly onto it.



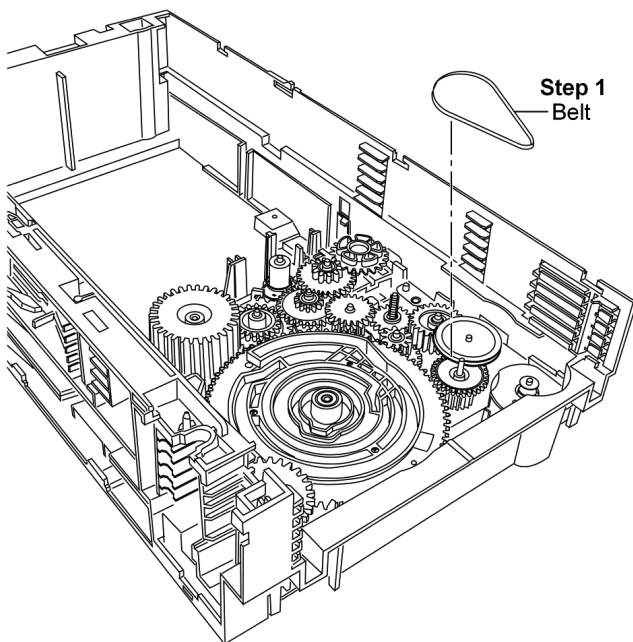
Step 3: Lift up the plunger lever in 90°



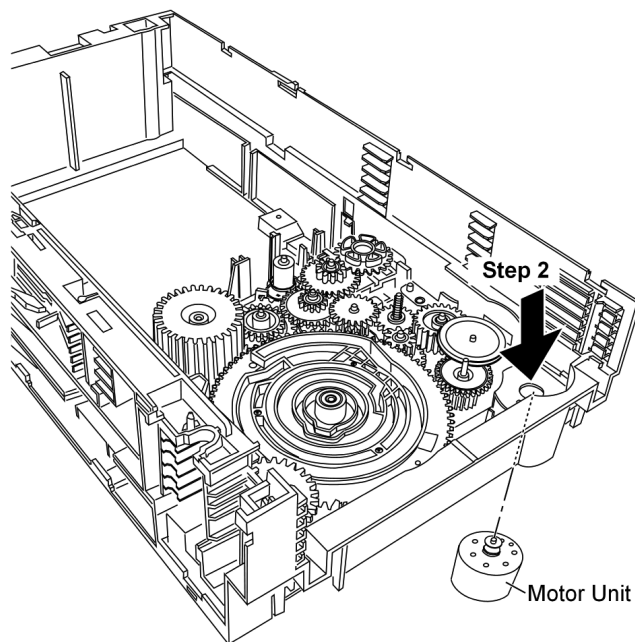
Step 4: Remove the plunger lever in 90° position.

5.1.6. Disassembly of Motor Unit

- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 5.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 16) of item 5.1.3. (Disassembly of CD Loading Unit)
- Follow the (Step 1) to (Step 4) of item 5.1.4. (Disassembly of CD Loading P.C.B.)



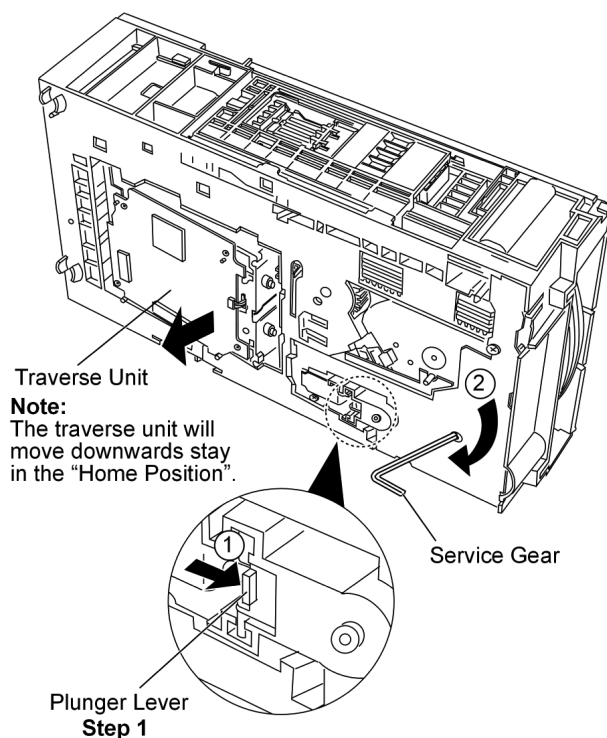
Step 1: Remove the belt.



Step 2: Push the motor unit as arrow show to remove it.

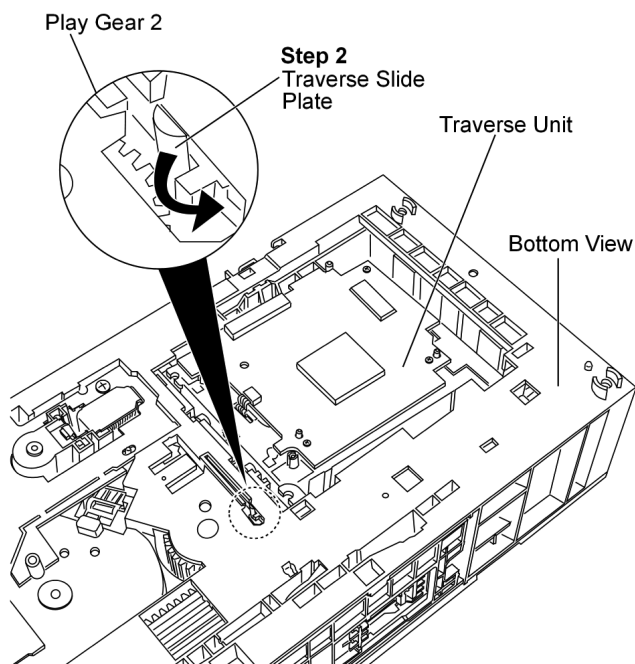
5.1.7. Disassembly of Traverse Unit

Important notes: Ensure all the trays are in the “STOCK” position before proceeding to the disassemble of traverse unit. For procedures to set the trays in “STOCK” position, please refer to (4. Troubleshooting Explorer)



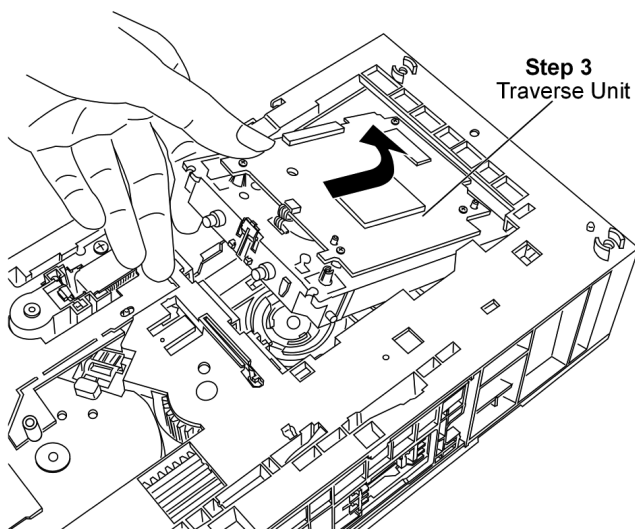
Step 1: Press and hold the plunger lever and rotate the gear as arrows shown until it stop.

Caution:
Do not damage the Play
Gear 2 when pushing the
Traverse Slide Plate.



Step 2: Push the traverse slide plate as arrow shown to release the traverse unit.

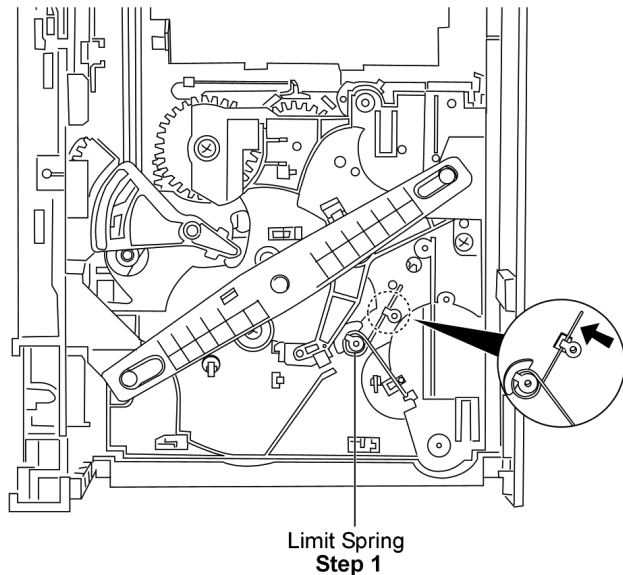
Caution: Do not exert strong force on the traverse slide plate.



Step 3: Remove the traverse unit as arrow shown.

5.1.8. Disassembly of Limit Spring

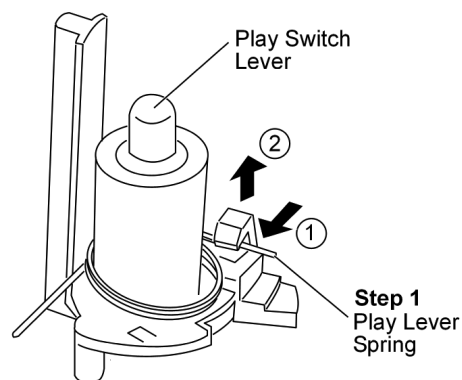
- Follow the (Step 1) to (Step 9) of item 5.1.1. (Disassembly of UD Base Assembly)



Step 1: Remove the limit spring as arrow shown.

5.1.9. Disassembly of Play Lever Spring

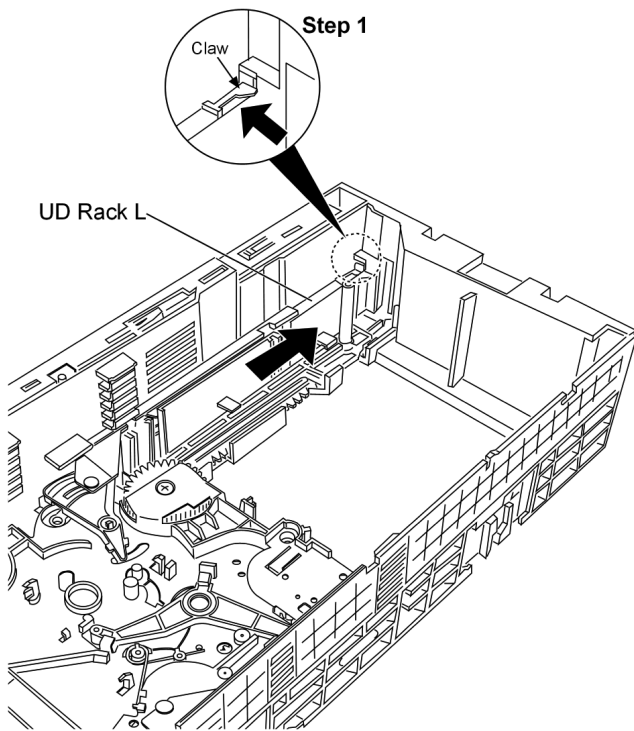
- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 5.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 26) of item 5.1.3. (Disassembly of CD Loading Unit)



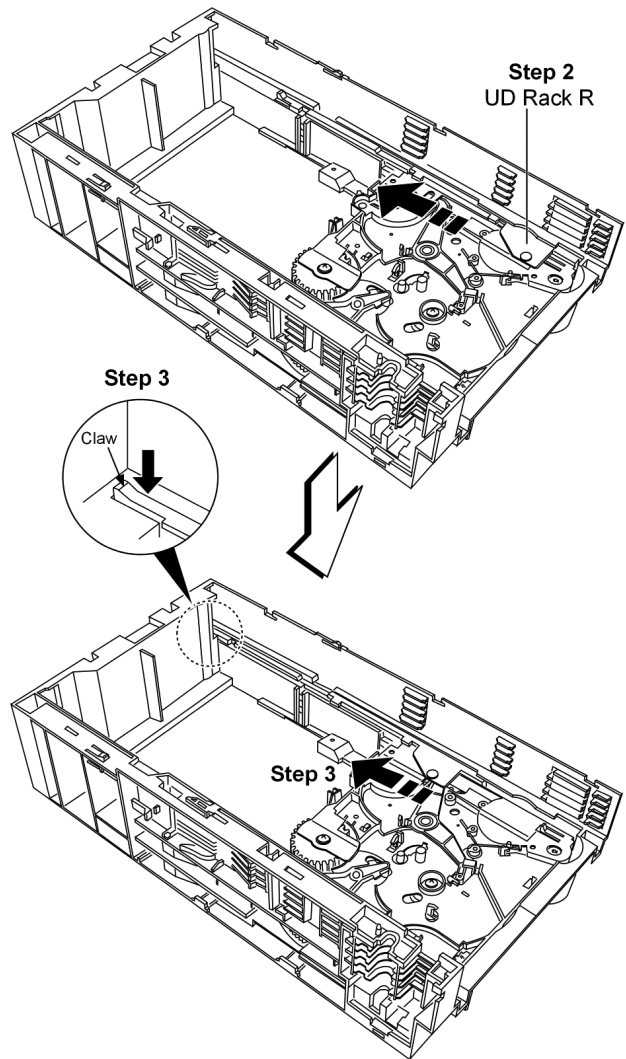
Step 1: Remove the play lever spring as arrow shown.

5.1.10. Disassembly of Pitch Plate Assembly

- Follow the (Step 1) to (Step 13) of item 5.1.1. (Disassembly of UD Base Assembly)
- Follow the (Step 1) to (Step 6) of item 5.1.2. (Disassembly of Disc Trays)
- Follow the (Step 1) to (Step 3) of item 5.1.3. (Disassembly of CD Loading Unit)

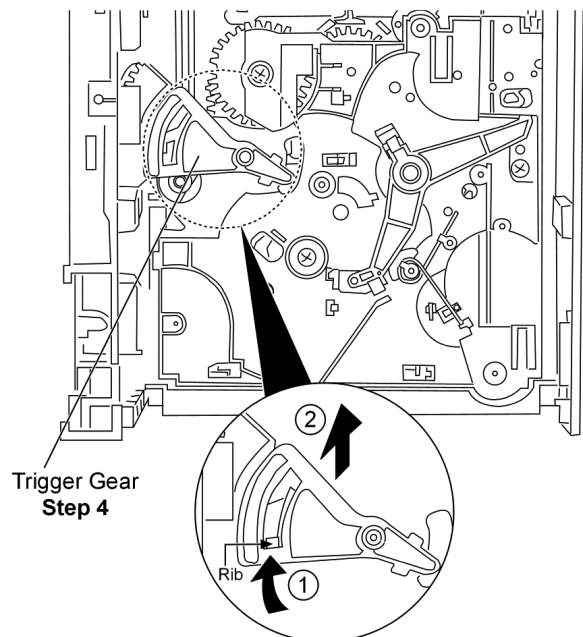


Step 1: Slide the UD rack L backwards, push the claw as arrow shown.

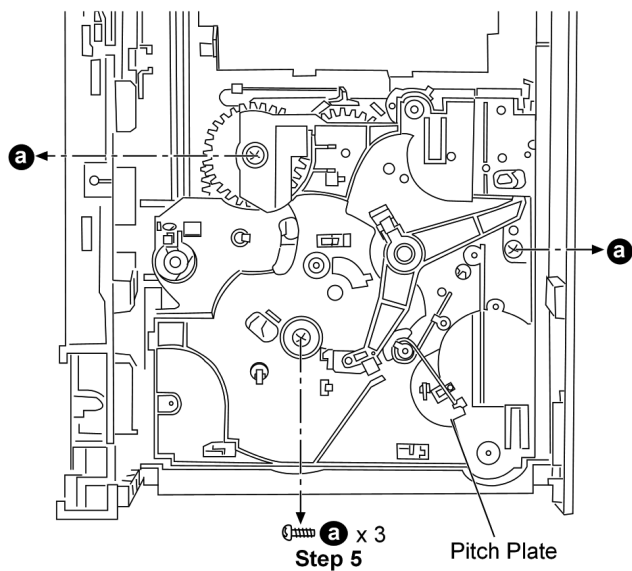


Step 2: Slide the UD rack R as arrow shown until it stop.

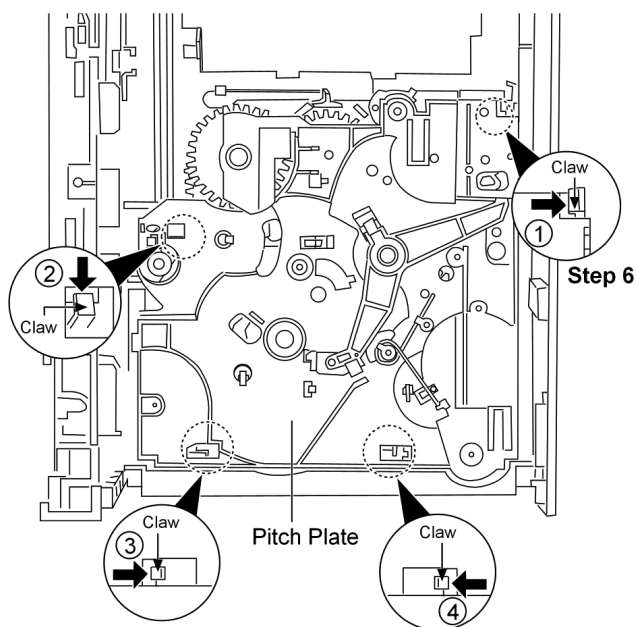
Step 3: Press the claw as arrow shown.



Step 4: Push the claw as arrow shown, then turn the trigger gear clockwise and remove it as arrows shown.



Step 5: Remove 3 screws.

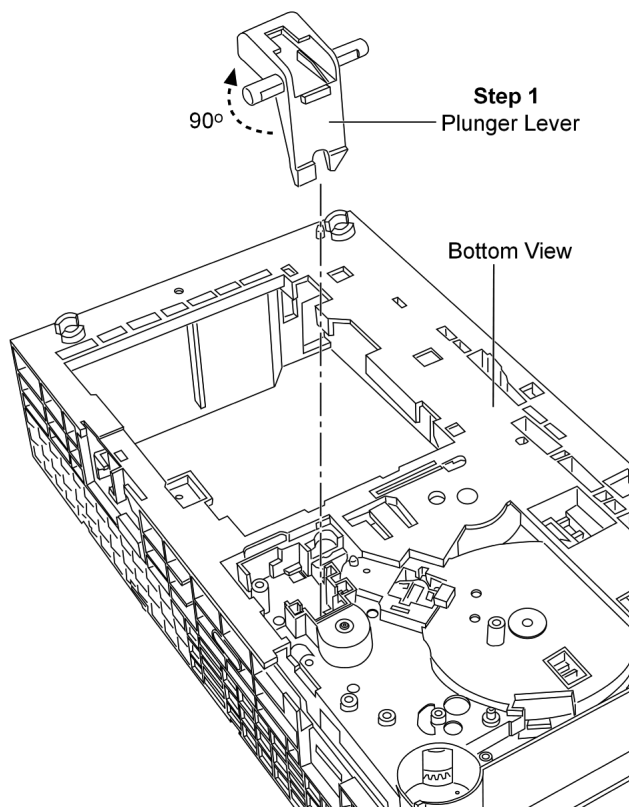


Step 6: Release 4 claws as arrows shown in order followed by detach the pitch plate.

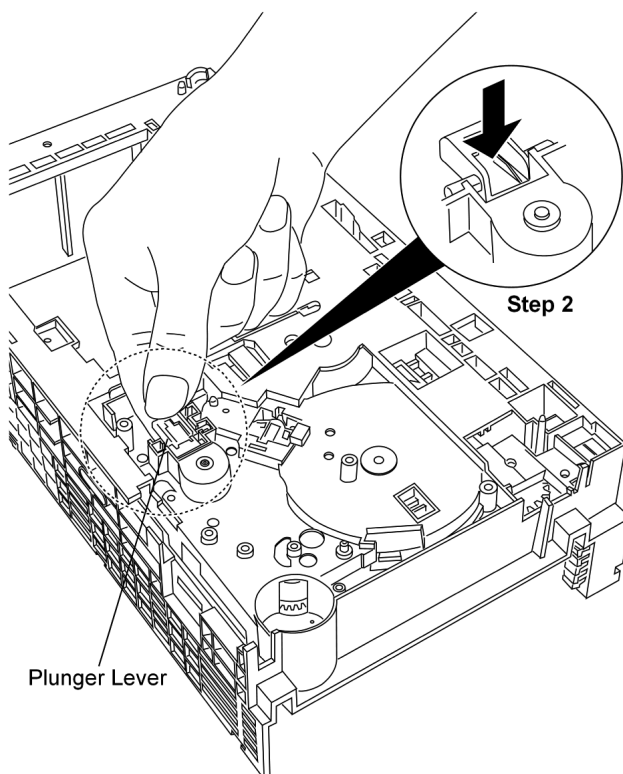
5.2. Assembling Procedure

5.2.1. Assembly of CD Loading Unit

• Assembly of Plunger Lever

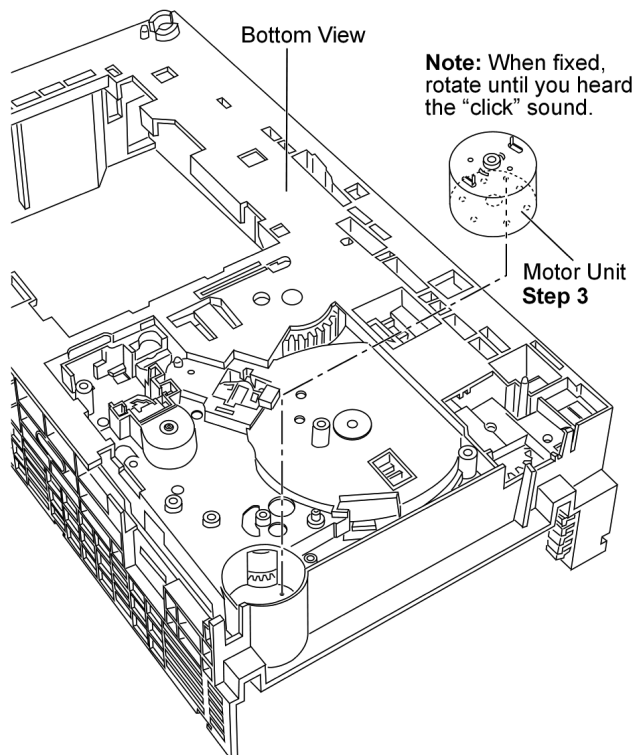


Step 1: Turn over the unit and install the plunger lever in 90° position.



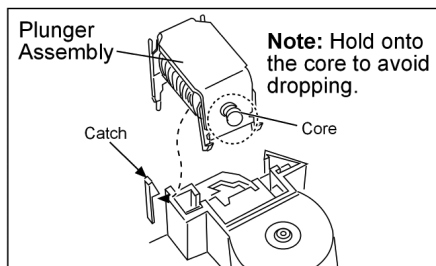
Step 2: Push in the plunger lever as arrow shown.

• Assembly of Motor Unit

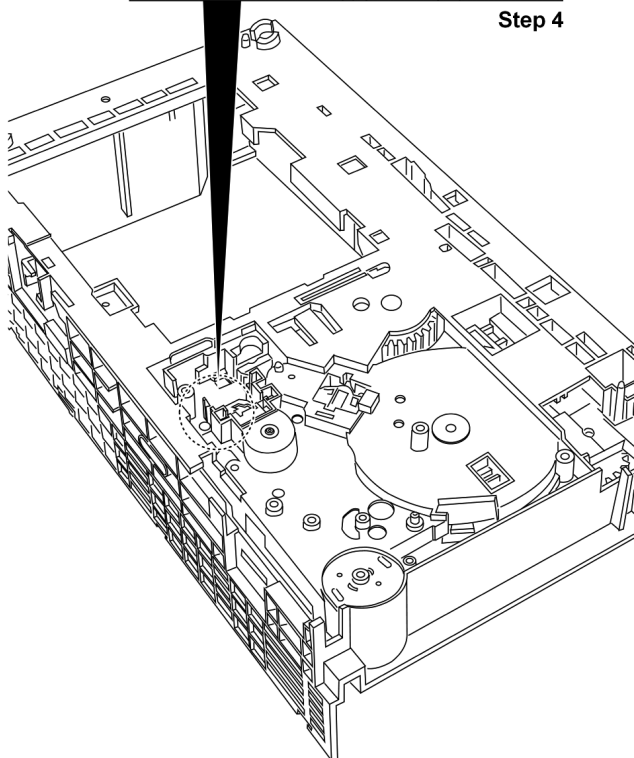


Step 3: Turn over the unit and install the motor unit properly.

• Assembly of Plunger Assembly

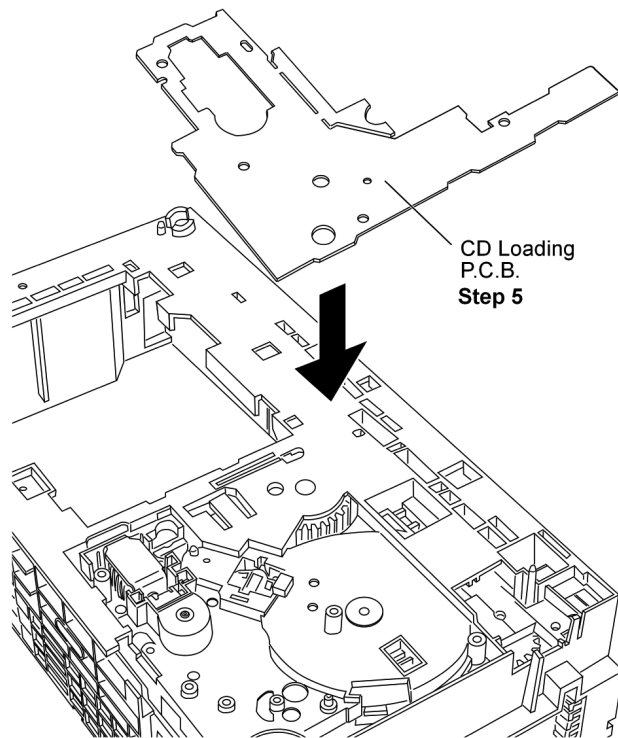


Step 4

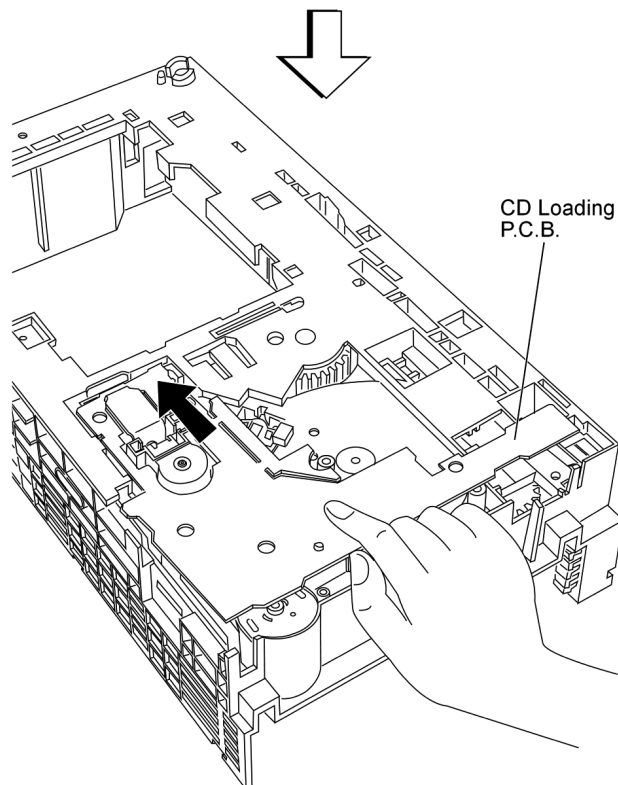


Step 4: Install the plunger assembly as arrow shown, the catch should be latched.

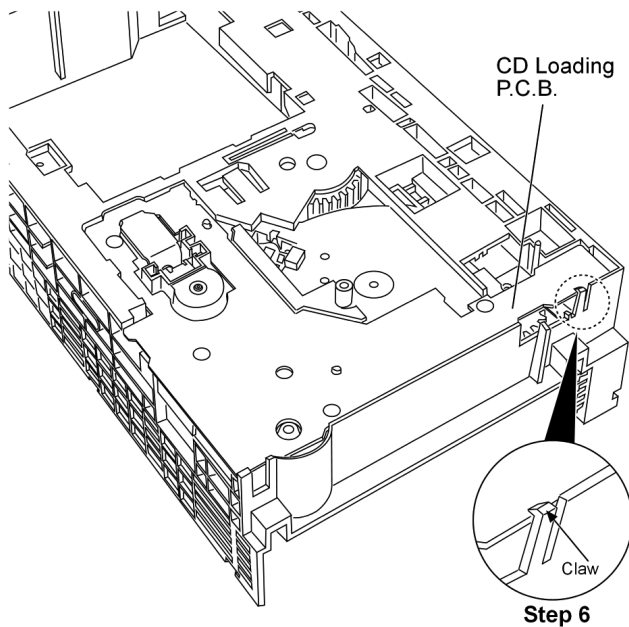
• Assembly of CD Loading P.C.B.



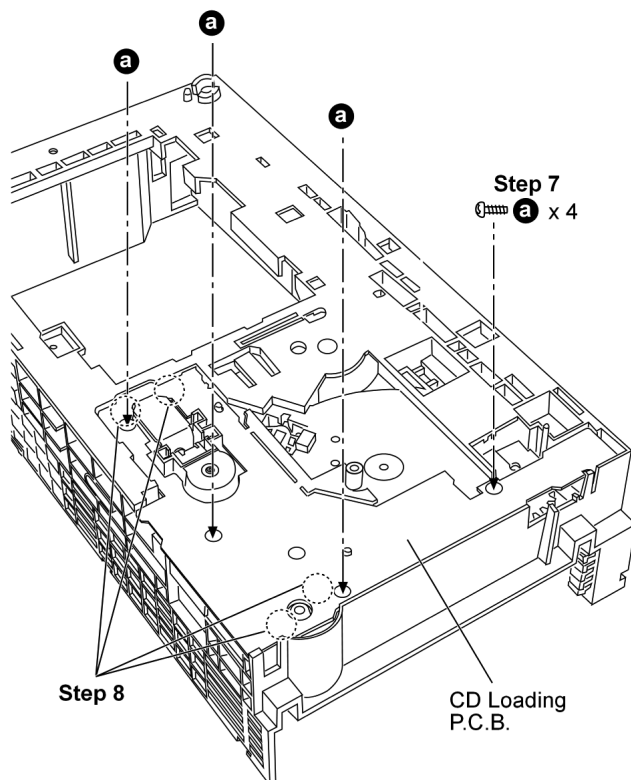
Step 5



Step 5: Install the CD Loading P.C.B. as arrows shown.



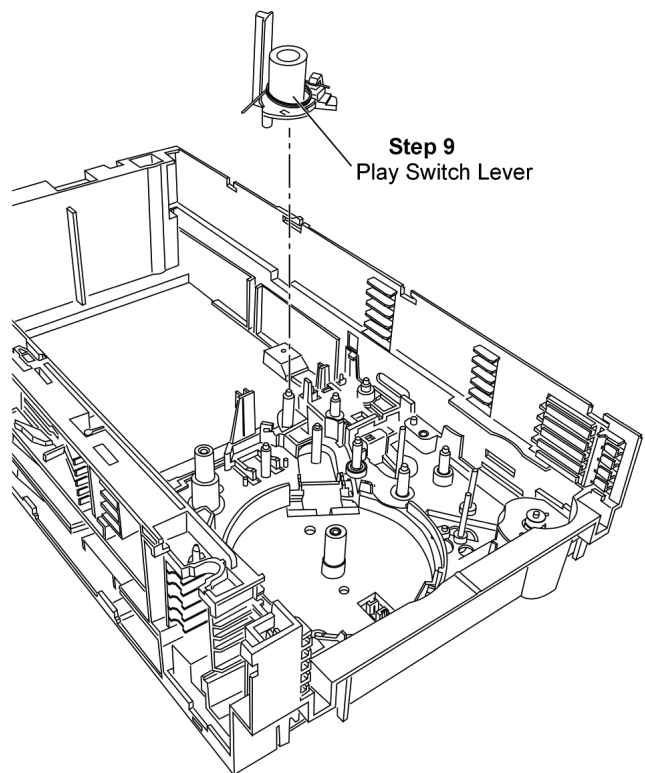
Step 6: The claw should be latched.



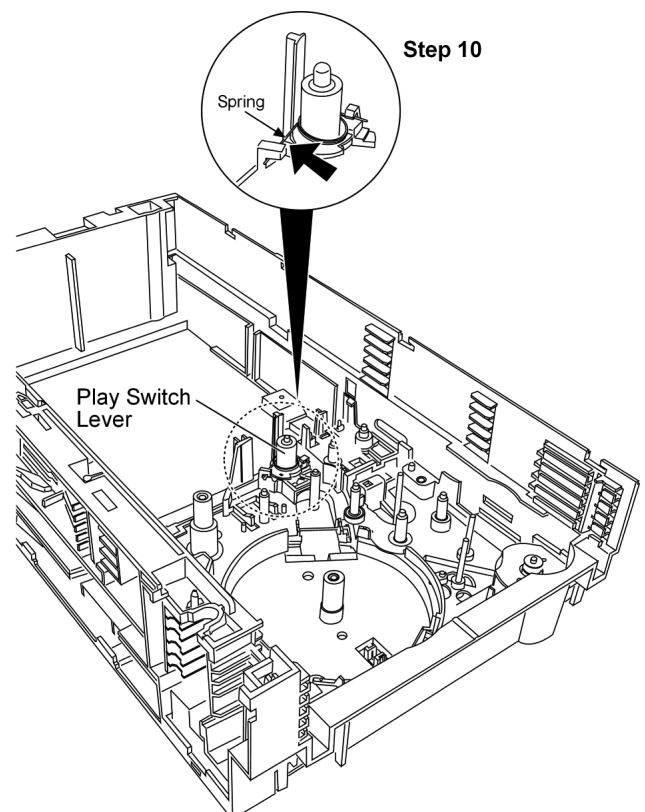
Step 7: Fix it with 4 screws.

Step 8: Solder the 4 points.

· Assembly of play switch lever

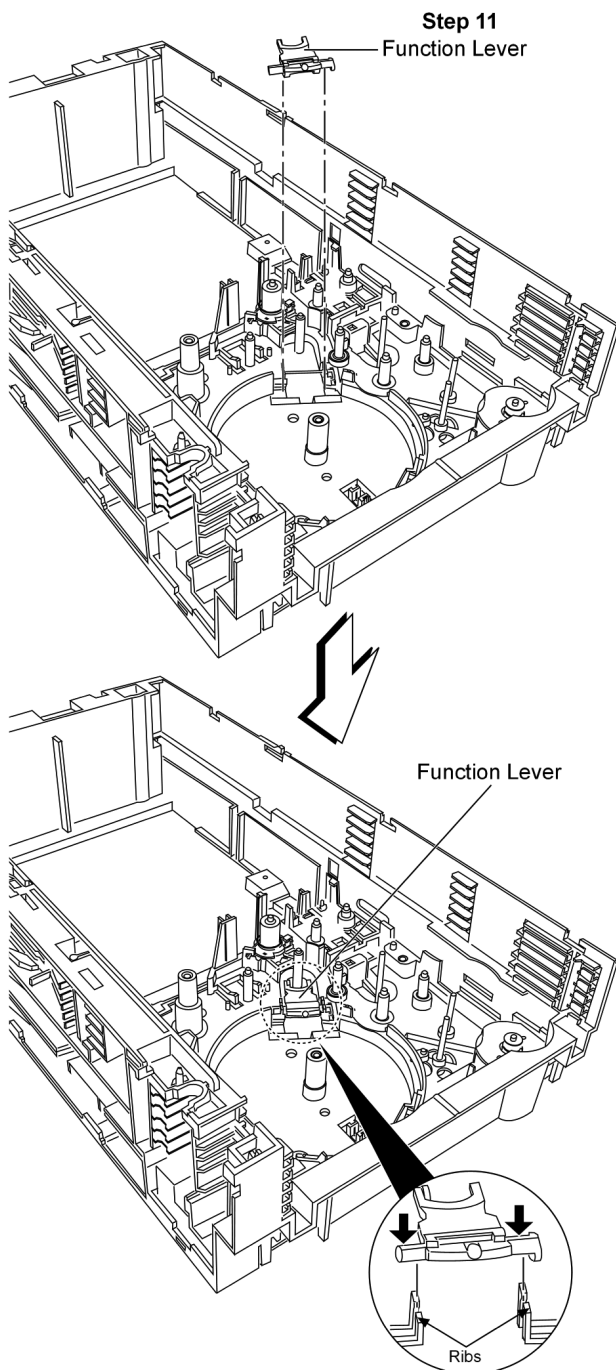


Step 9: Install the play switch lever.



Step 10: Fix the spring below the rib as arrow shown.

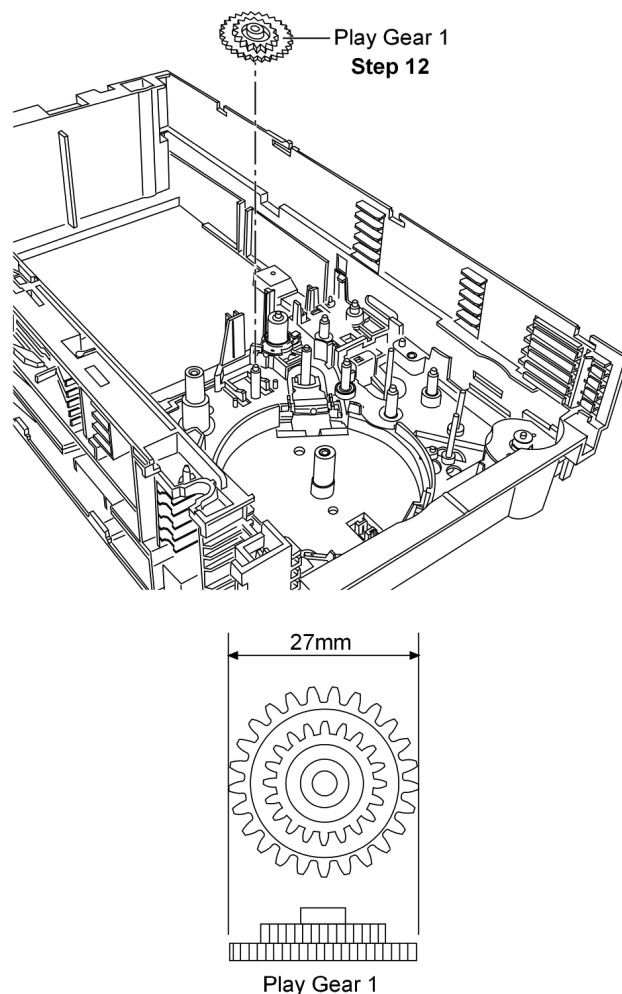
· Assembly of function lever



Step 11: Install the function lever.

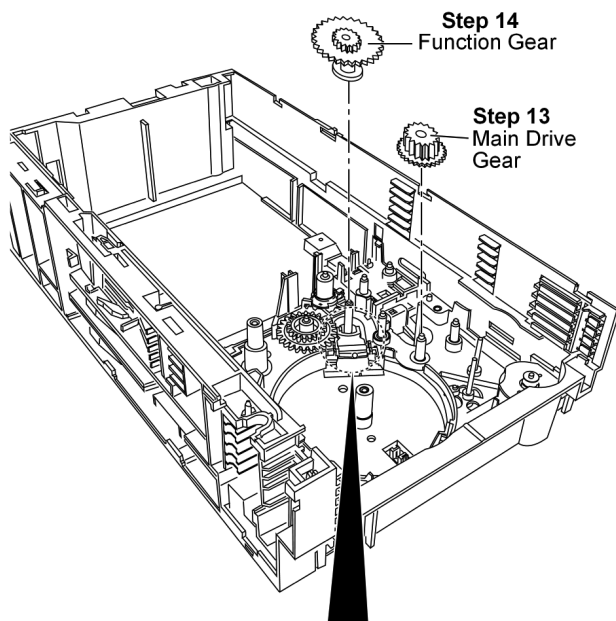
Note: Ensure the function lever seats properly onto the ribs. A click sound will be heard when installing.


· Assembly of play gear 1

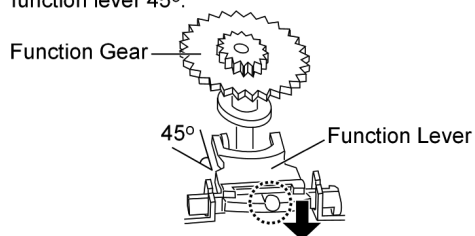


Step 12: Install the play gear 1.

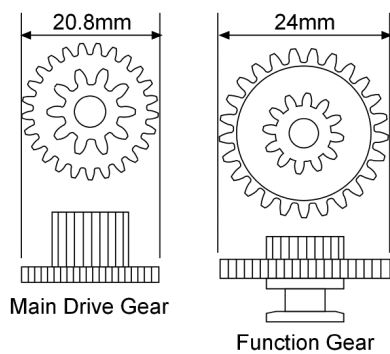
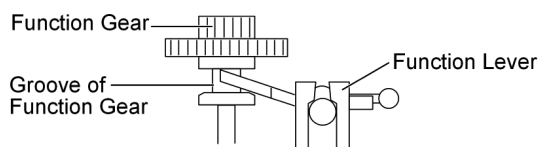
· Assembly of function gear and main drive gear



1. Press the  part as arrow shown below and pull up the function lever 45°.



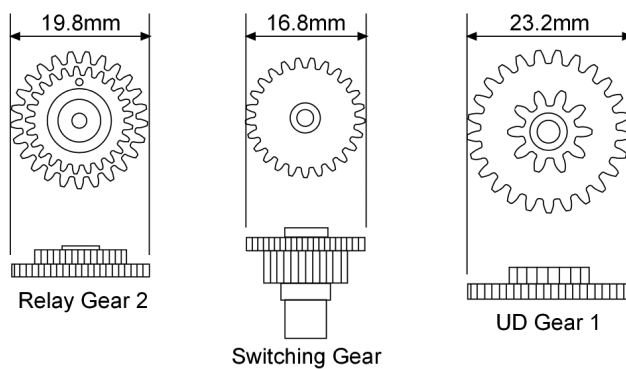
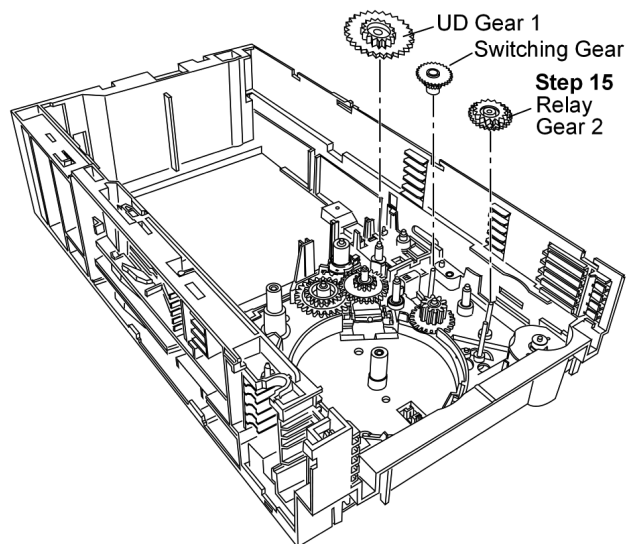
2. Insert the function lever into the groove of function gear.



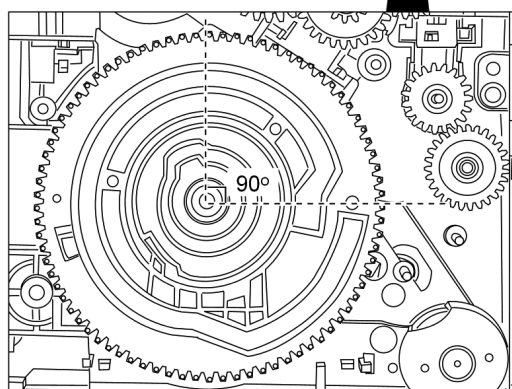
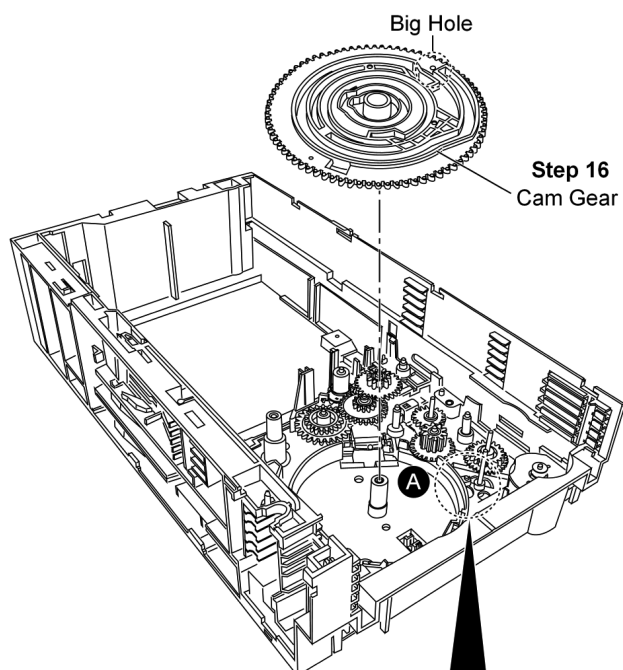
Step 13: Install the main drive gear.

Step 14: Install the function gear.

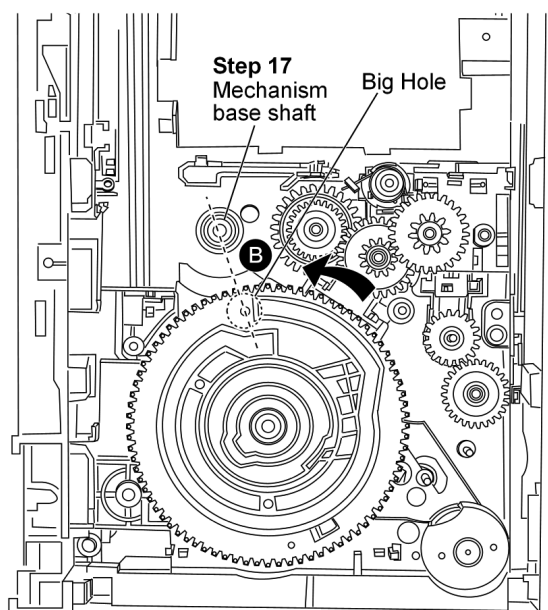
• Assembly of gears



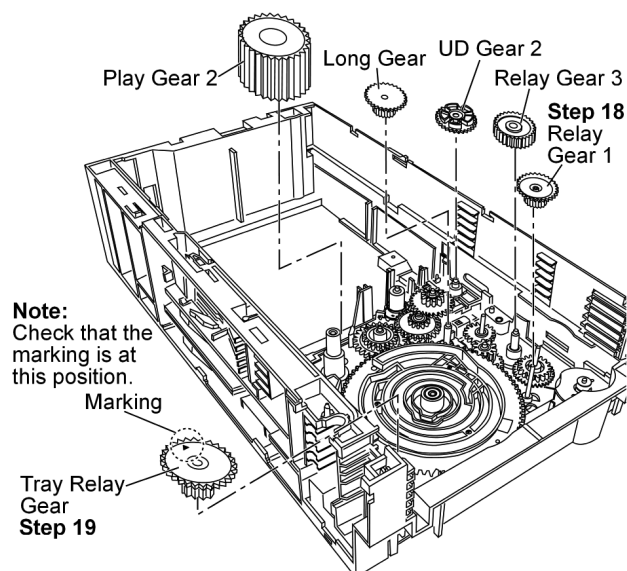
Step 15: Install the relay gear 2, switching gear and UD gear 1 respectively.



Step 16: Install the cam gear. Make sure the big hole is fix at the position (A) at 90°

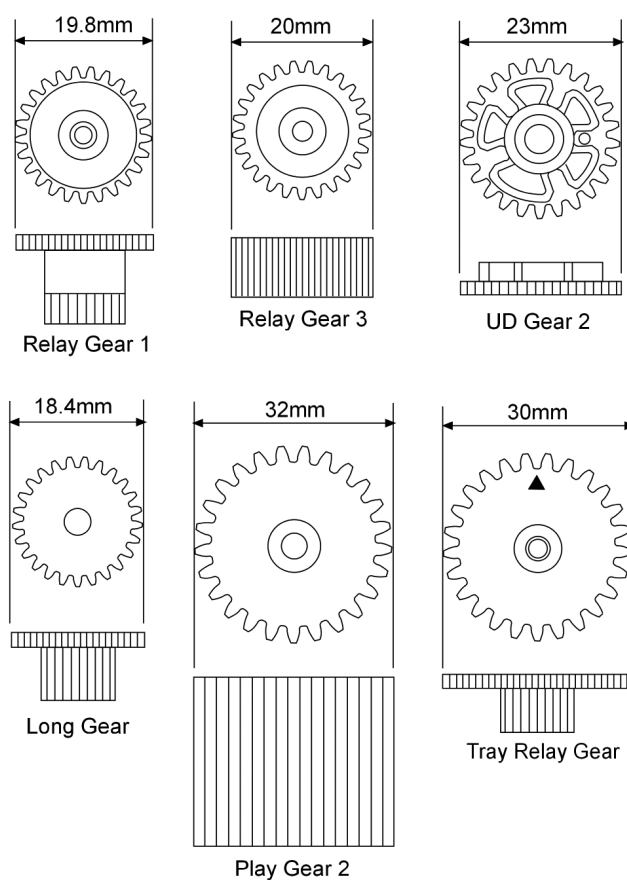


Step 17: Turn the cam gear anti-clockwise until the big hole stop at position (B).



Note:
Check that the marking is at this position.

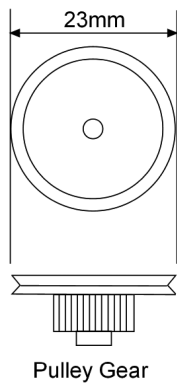
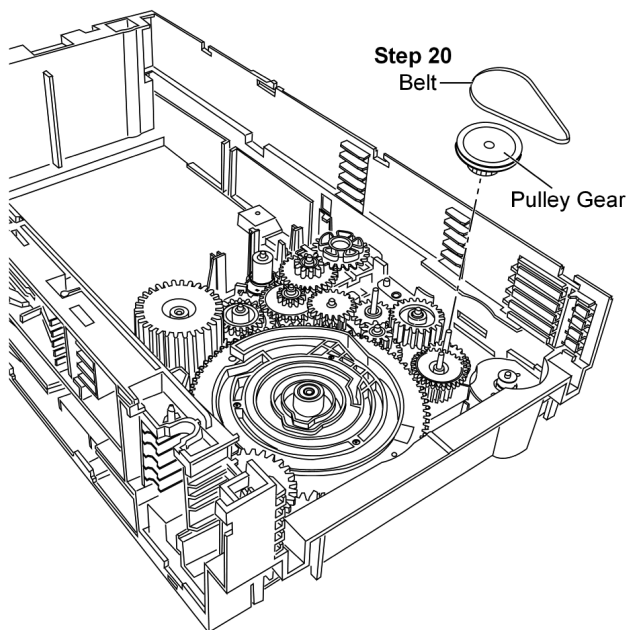
Tray Relay Gear
Step 19



Step 18: Install the relay gear 1, relay gear 3, UD gear 2, long gear and play gear 2 respectively.

Step 19: Install the tray relay gear.

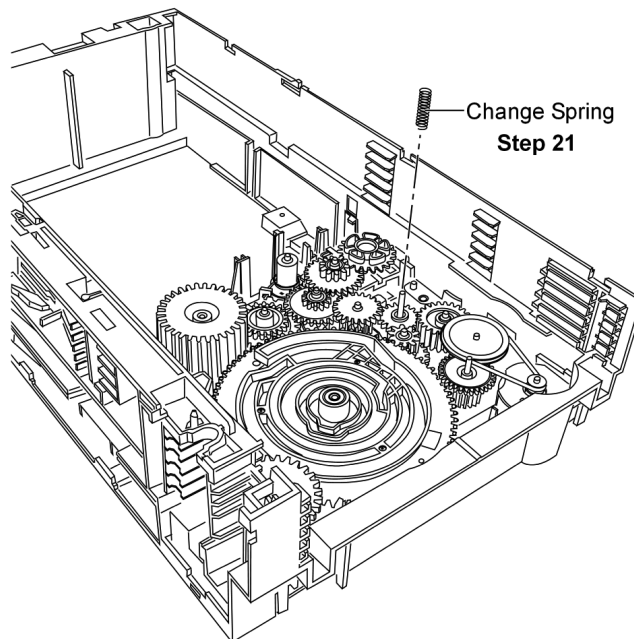
· Assembly of pulley gear and belt



Step 20: Install the pulley gear followed by the belt.

Note: Do not apply the grease to the belt.

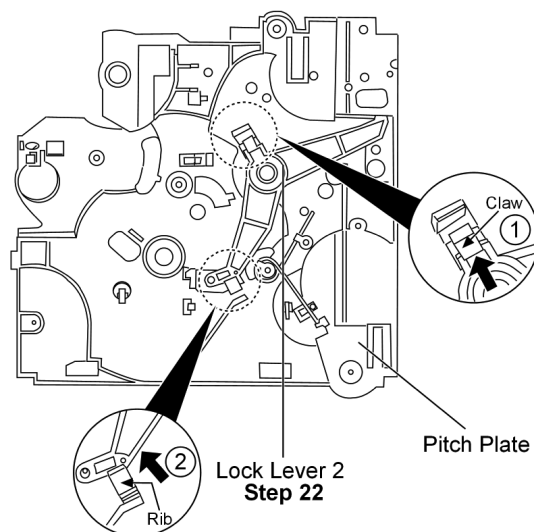
· Assembly of change spring



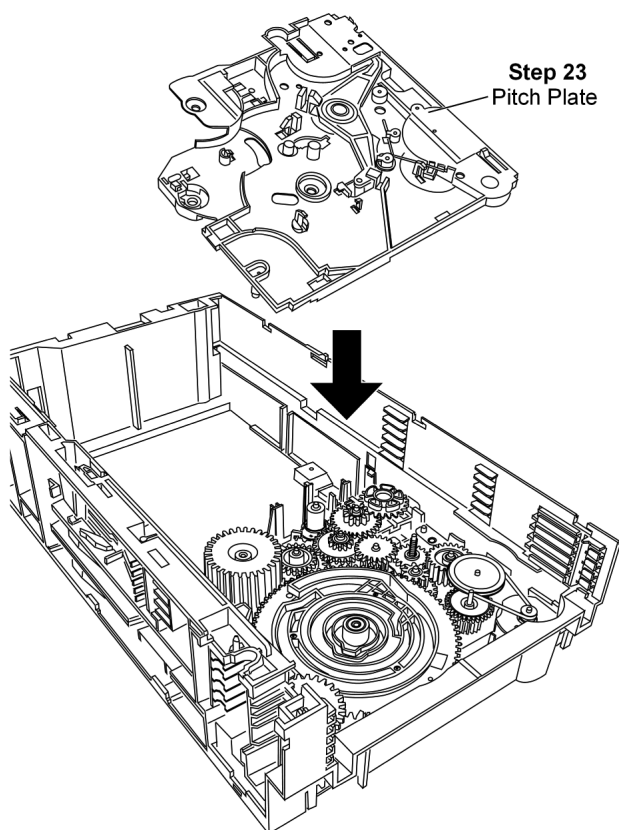
Step 21: Install the change spring.

Caution: Handle the change spring carefully, do not lose it. Ensure the change spring seats properly on the groove of long gear.

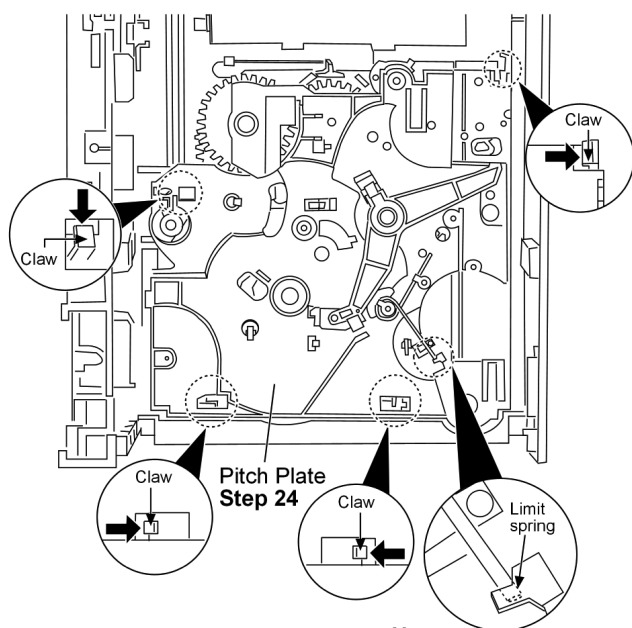
· Assembly of pitch plate



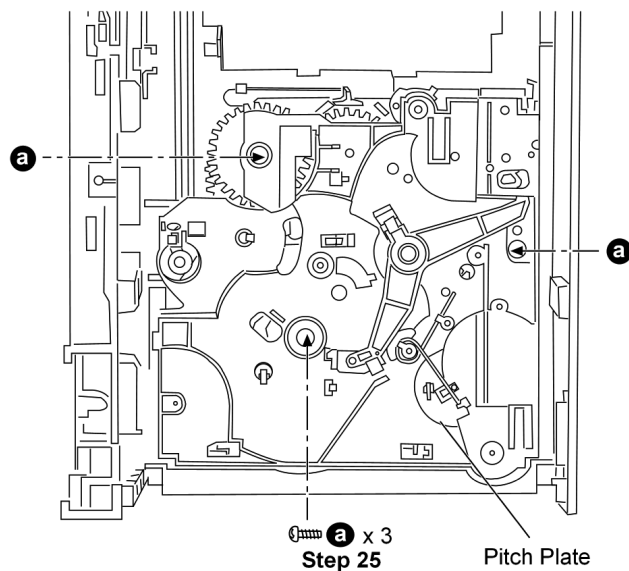
Step 22: Install the lock lever 2 as arrows shown in sequence.



Step 23: Install the pitch plate.

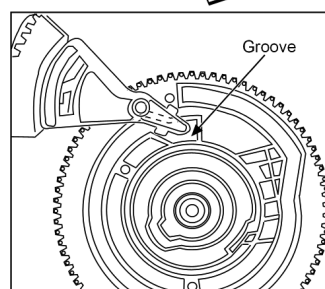
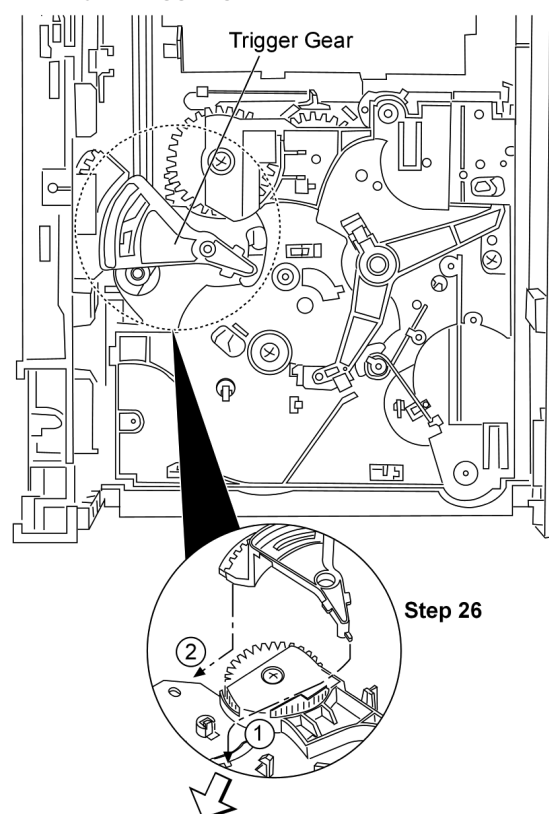


Step 24: The 4 claws should be latched properly.



Step 25: Fix it with 3 screws

· Assembly of trigger gear

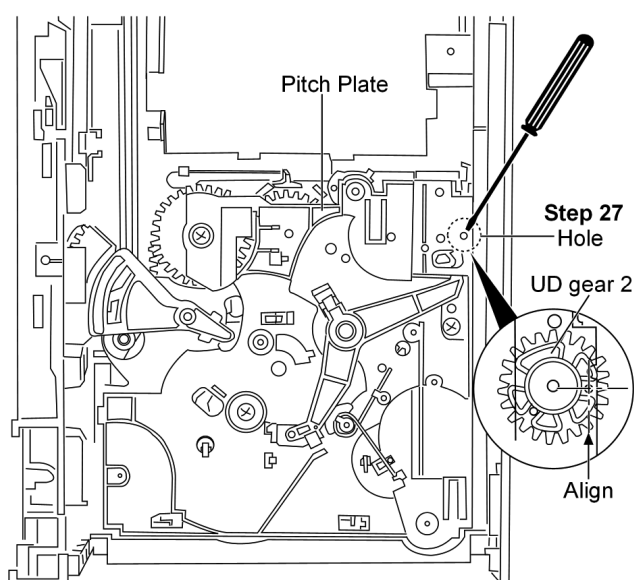


Note:
Ensure the trigger seats properly onto the groove of the cam gear below the pitch plate.

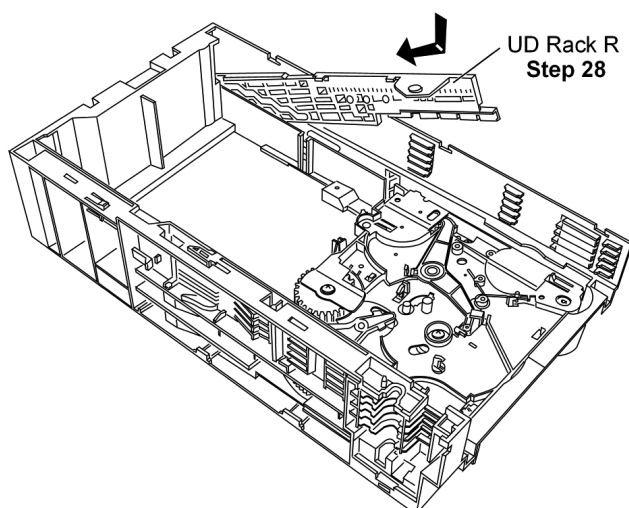
Step 26: Install the trigger gear in sequence.

Note: Ensure the trigger seats properly onto the groove (cam gear).

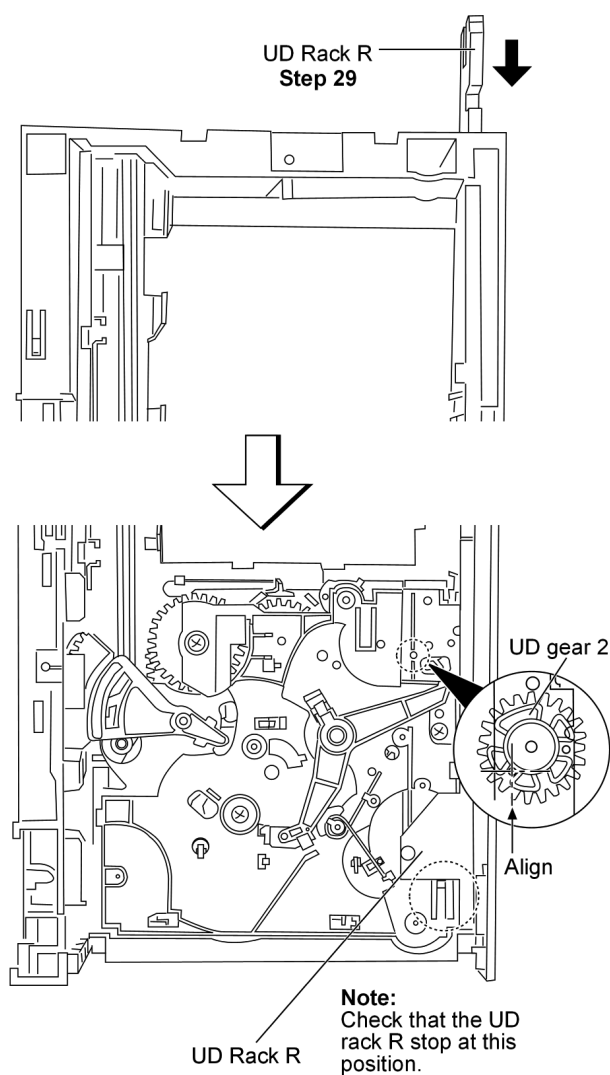
· Assembly of UD rack R



Step 27: Use the screwdriver to turn the hole on the UD gear 2 align with the pitch plate hole.

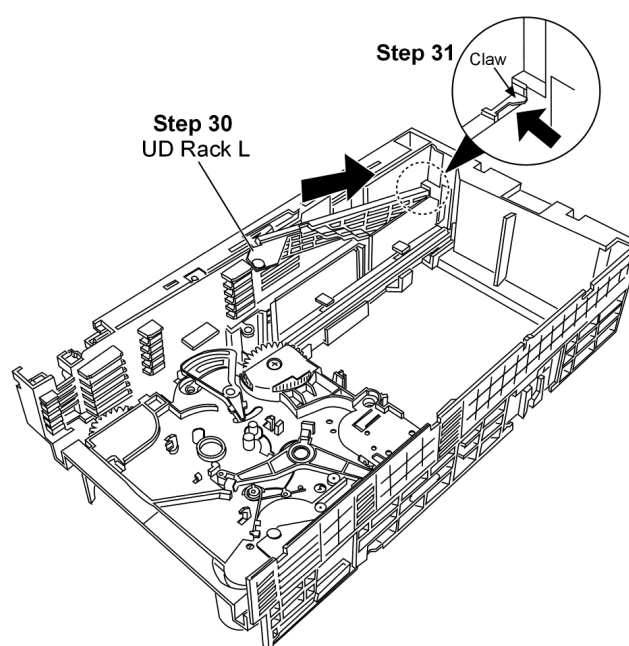


Step 28: Insert the UD rack R as arrow shown.



Step 29: Push the UD rack R as arrow shown.

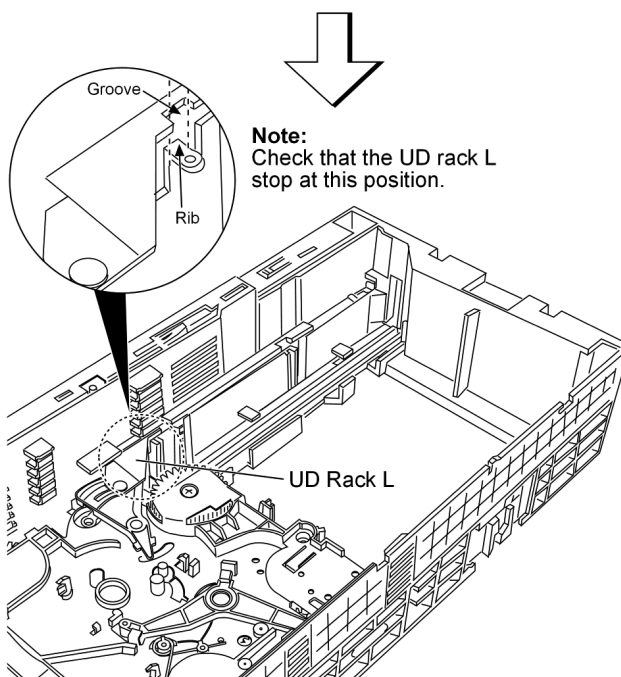
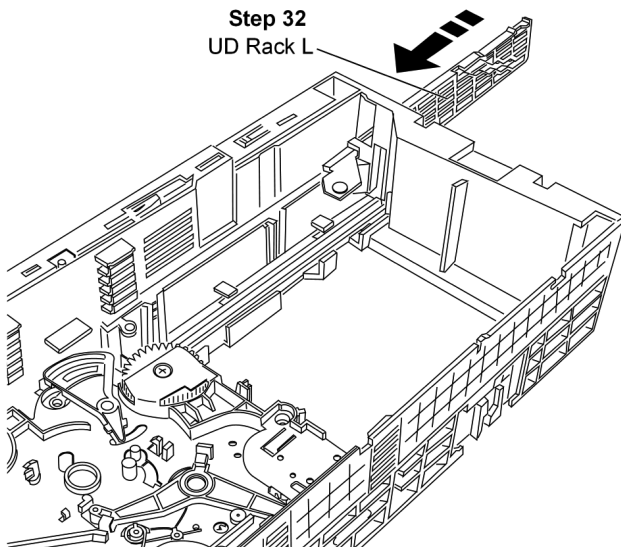
· Assembly of UD rack L



Step 30: Insert the UD rack L as arrow shown.

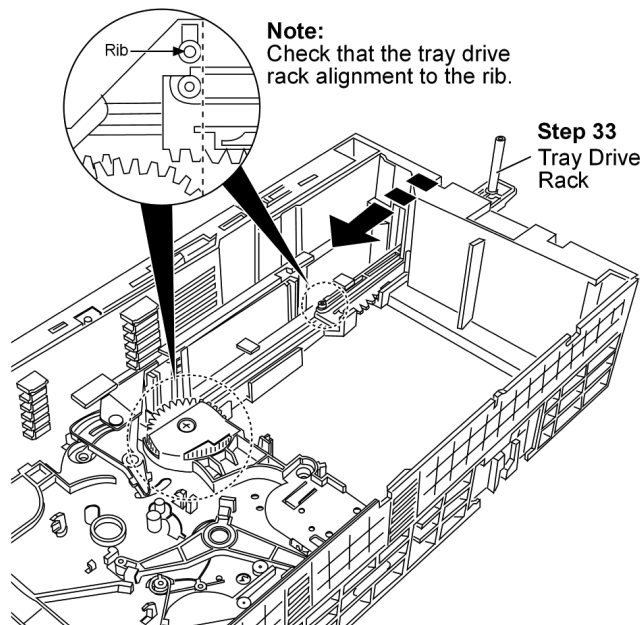
Step 31: Push the claw as arrow shown.

Step 32
UD Rack L



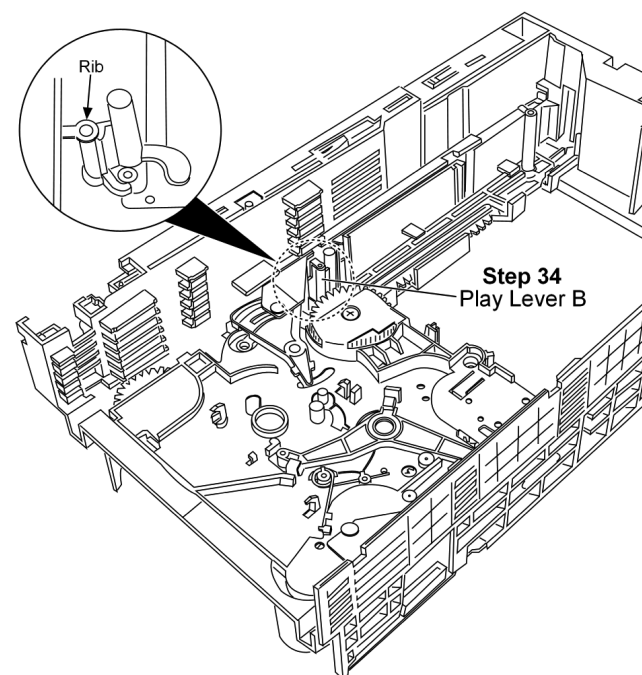
Step 32: Pull the UD rack L as arrow shown.

· **Assembly of tray drive rack**



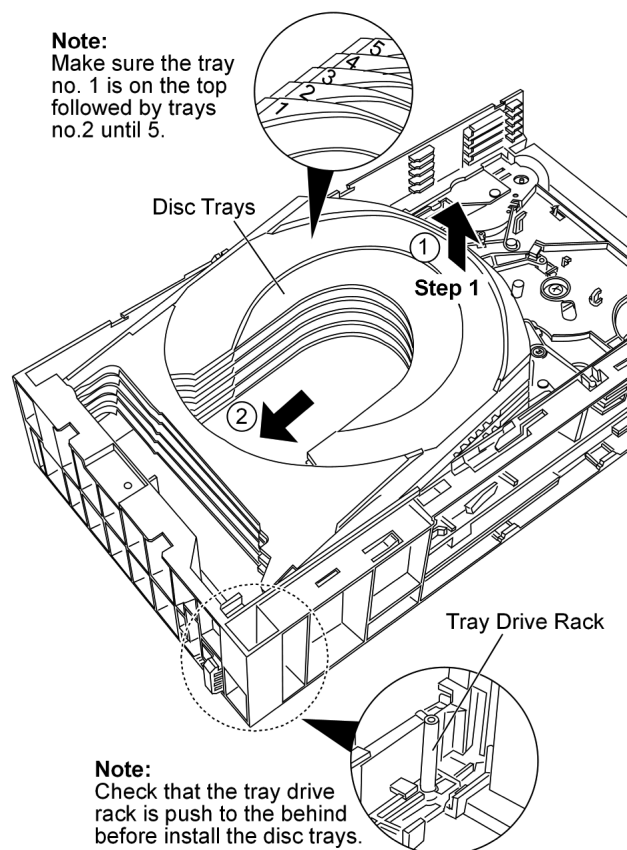
Step 33: Install the tray drive rack as arrow shown.

· **Assembly of play lever B**

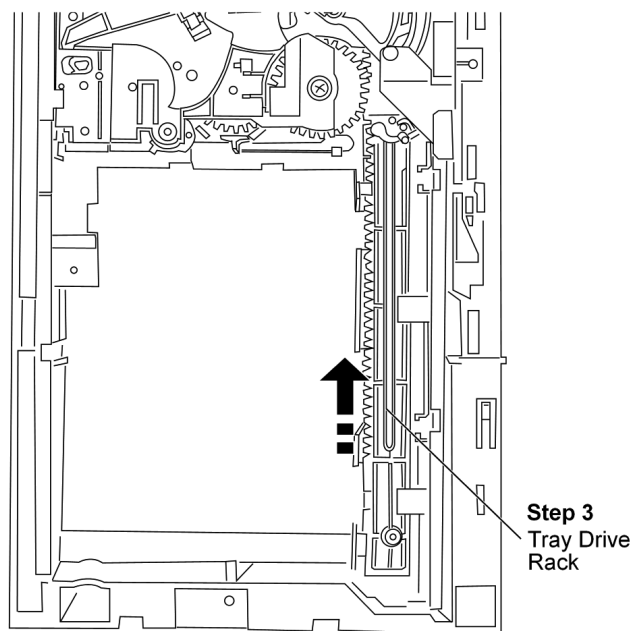


Step 34: Install the play lever B below the rib.

5.2.2. Assembly of Disc Trays

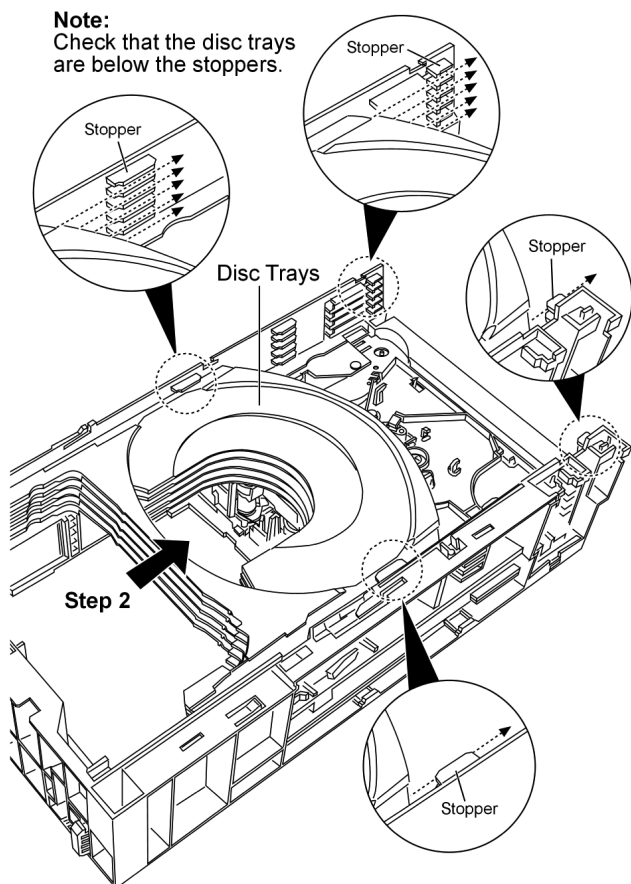


Step 1: Tilt and fix the 5 disc trays as arrows shown.

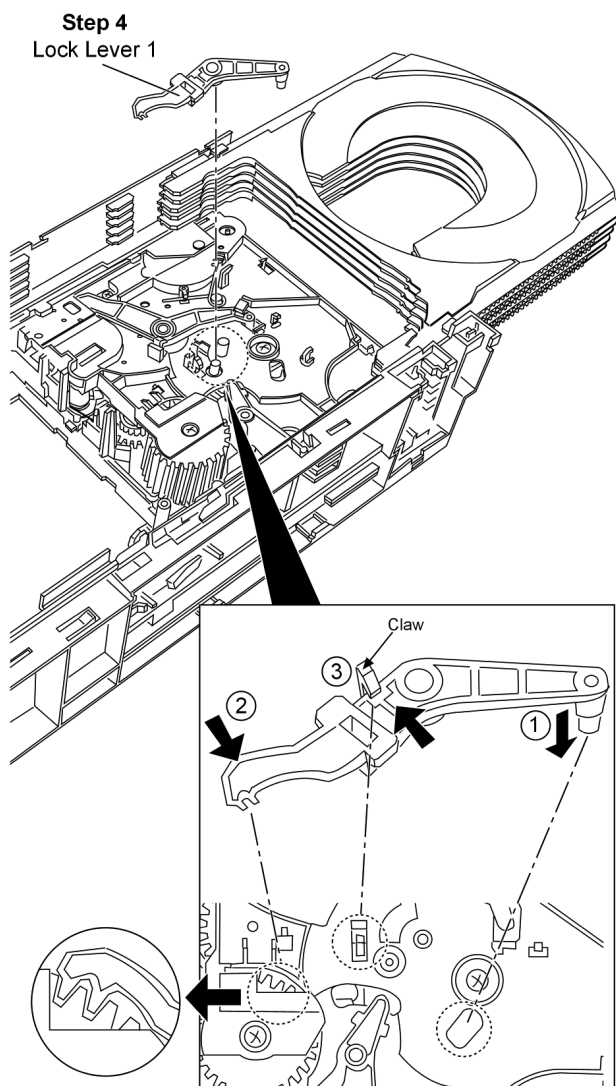


Step 3: Push the tray drive rack as arrow shown until it stop.

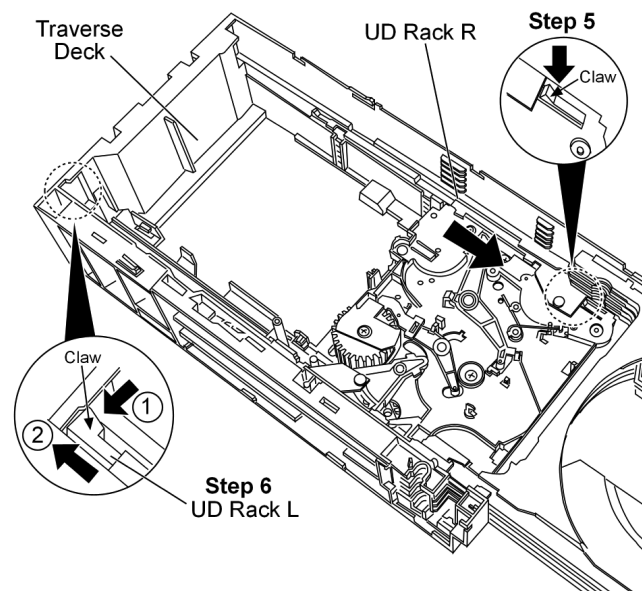
· Assembly of lock lever 1



Step 2: Push the 5 disc trays as arrow shown until it stop.



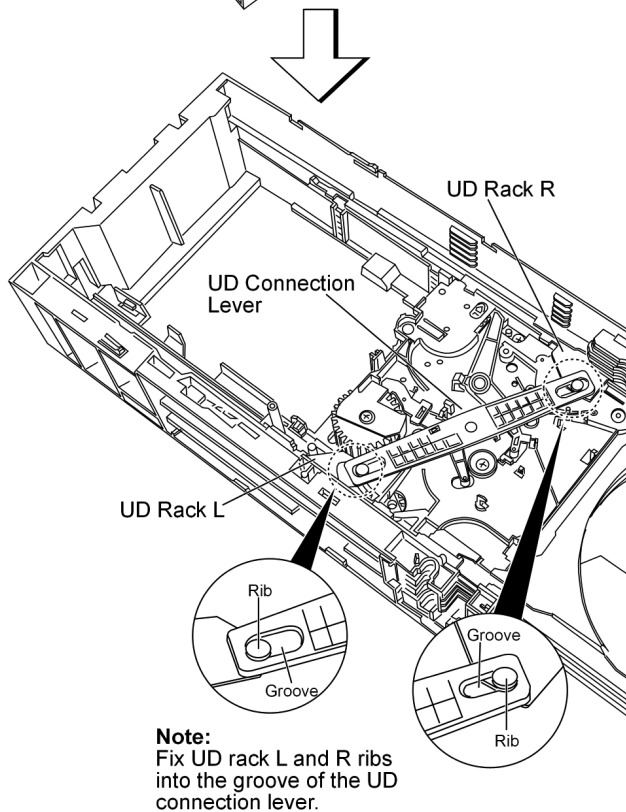
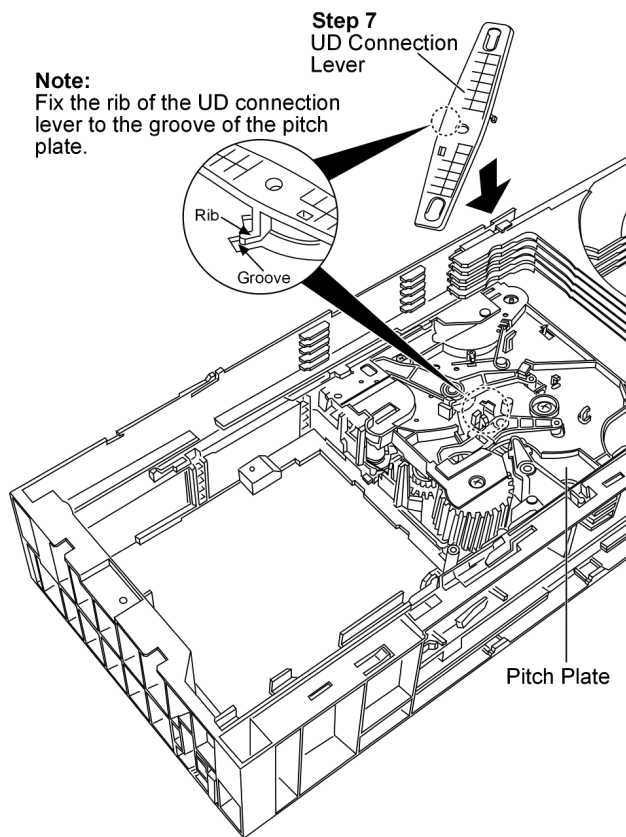
Step 4: Fix the lock lever 1 onto the pitch plate as arrow shown in sequence.



Step 5: Press and hold the claw at the pitch plate then push the UD rack R as arrows shown.

Step 6: Push the claw and slide the UD rack L as arrows shown.

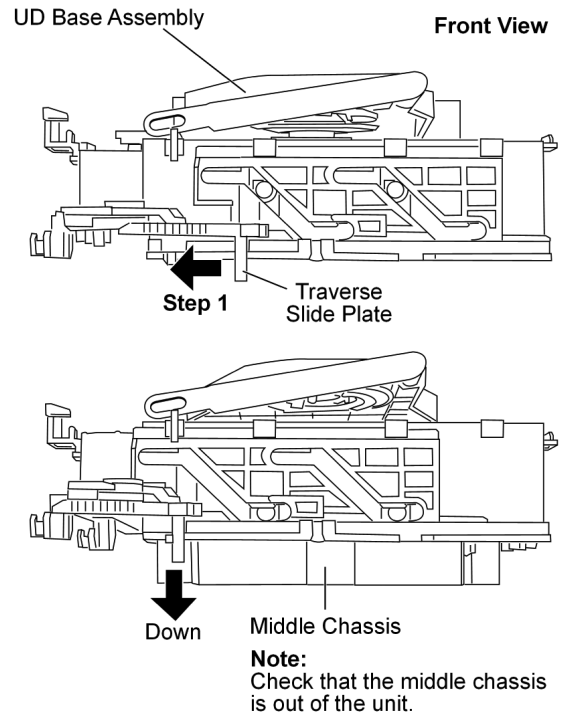
• **Assembly of UD connection lever**



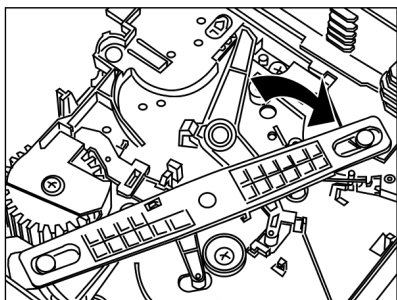
Step 7: Install the UD connection lever.

- Follow the (Step 1) to (Step 12) of item 5.2.3. (Assembly of UD Base Assembly)

5.2.3. Assembly of UD Base Assembly

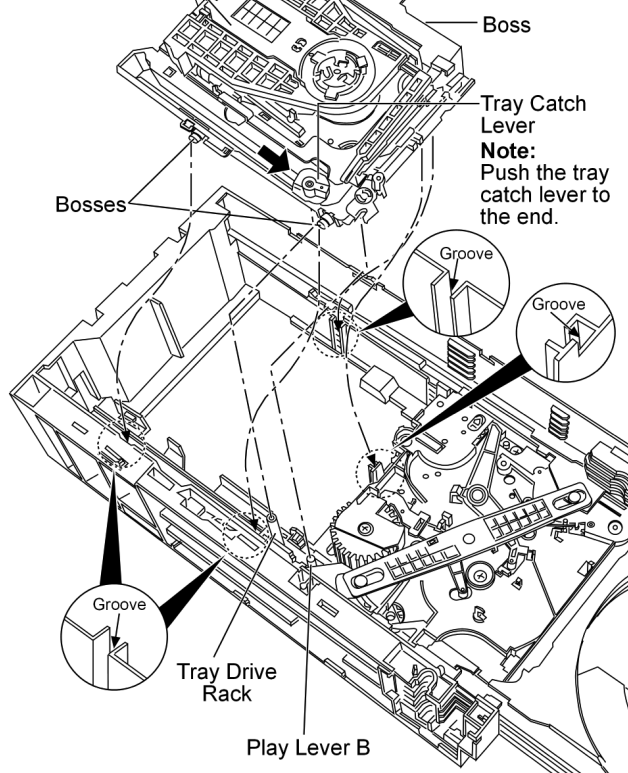


Step 1: Push the traverse slide plate as arrow shown.



Note:
Ensure the UD
connection lever
turn to this position.

Step 2
UD Base Assembly

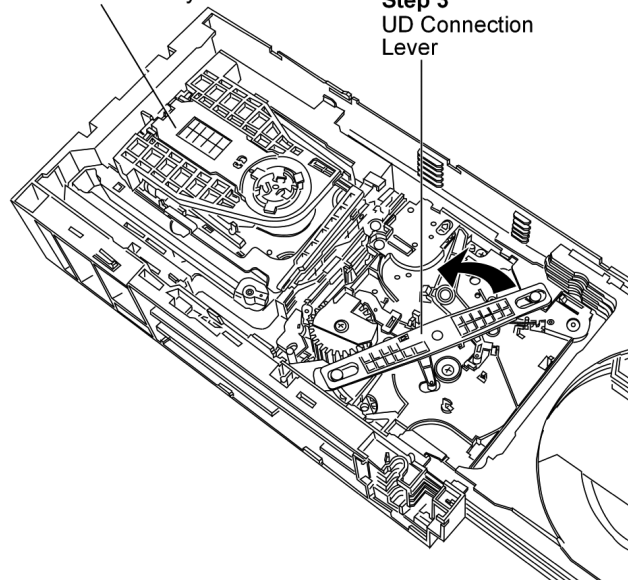


Step 2: Install the UD base assembly.

Note: Ensure the UD base assembly seats properly into the grooves and engage with the play lever B and tray drive rack.

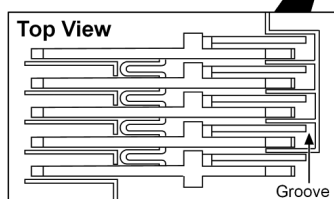
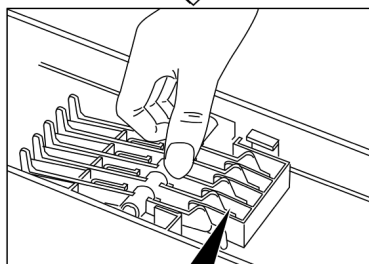
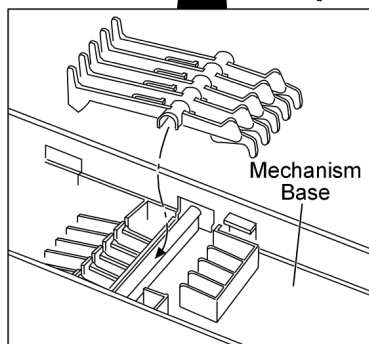
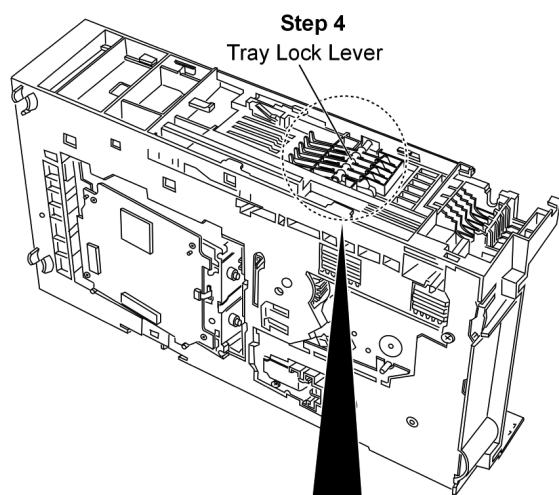
UD Base Assembly

Step 3
UD Connection
Lever



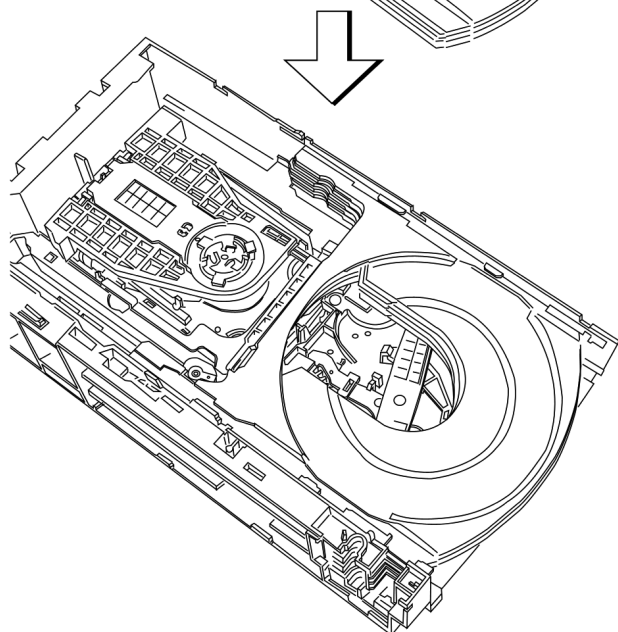
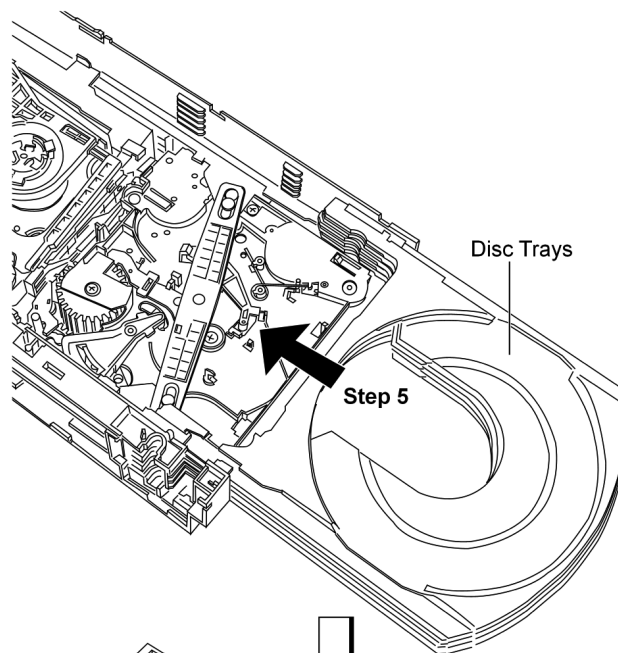
Step 3: Turn the UD connection lever anti-clockwise, the UD base assembly will move downwards.

Note: When the UD connection lever is turn and the UD base assembly did not move downwards, check for step 1 to step 3 again.



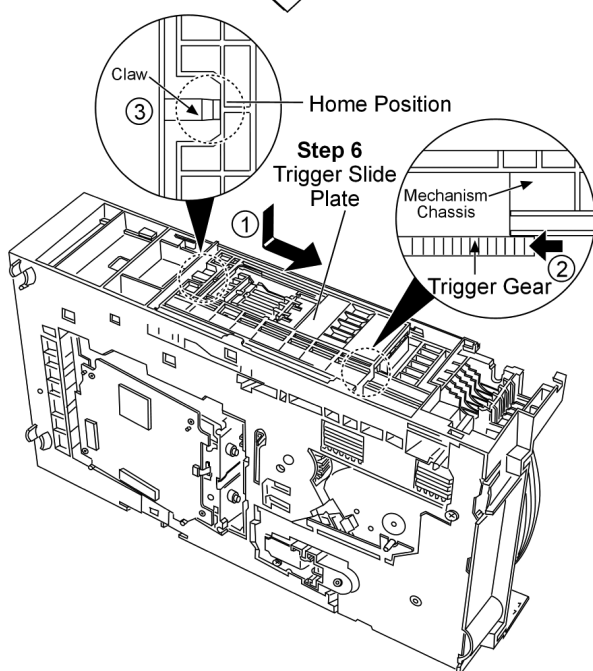
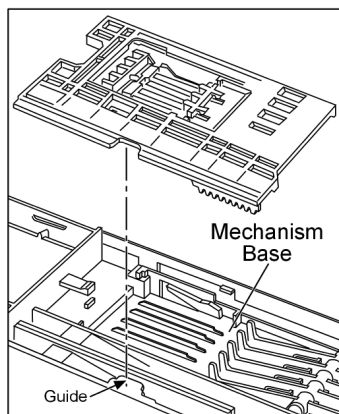
Note:
Ensure that tray lock lever seats properly onto the grooves.

Step 4: Install the tray lock lever to the mechanism base and push the tray lock lever with a hand to fix it.

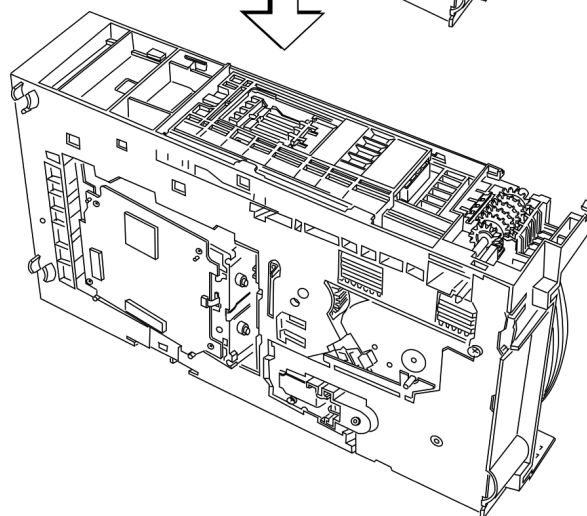
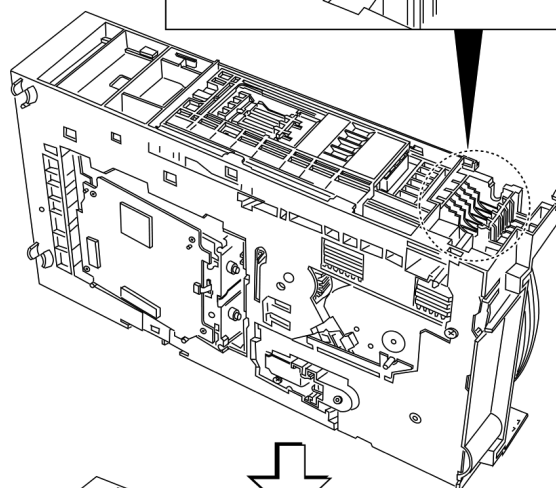
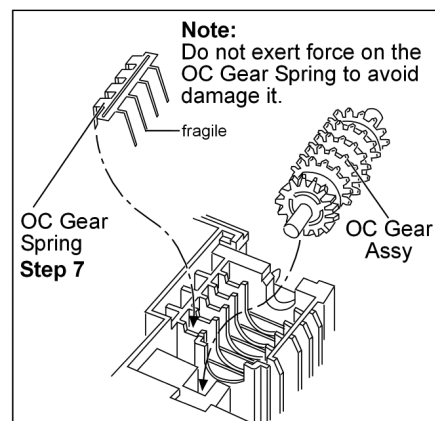


Step 5: Push the disc trays back to the unit as arrow shown.

· Assembly of Trigger Slide Plate

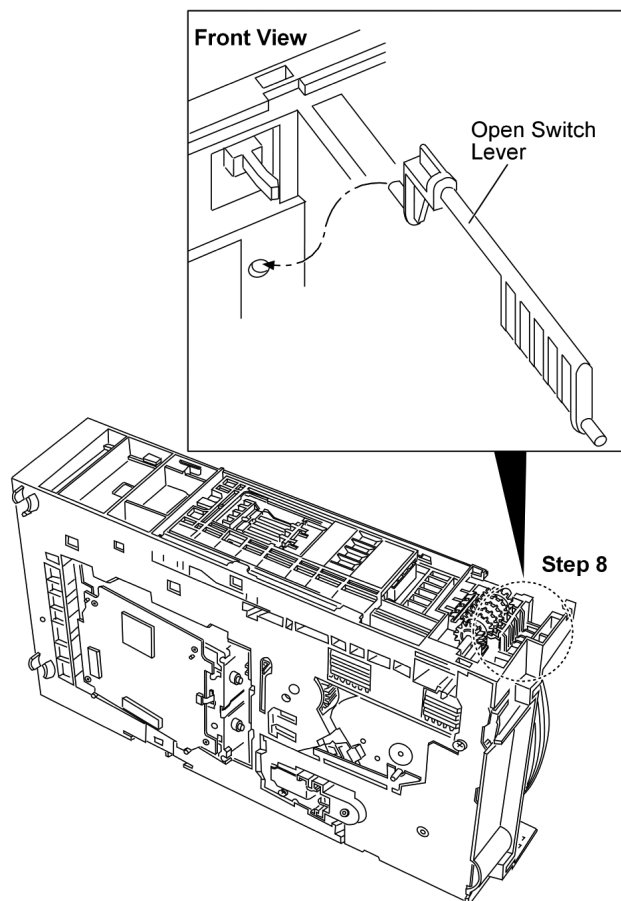


Step 6: Install the trigger slide plate, push forwards and push the trigger gear as arrows shown until locked by the claw.

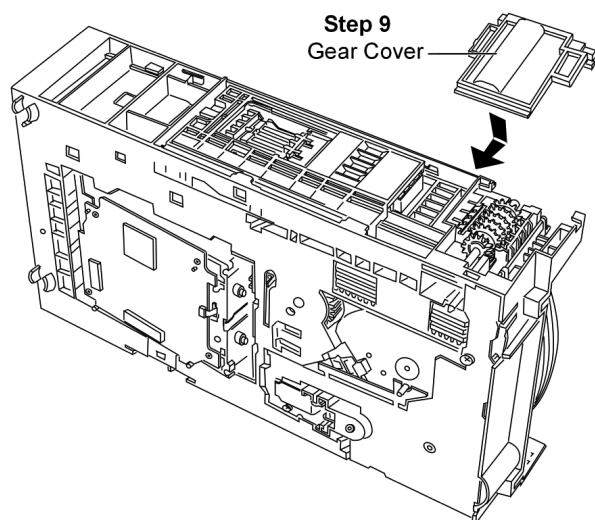


Step 7: Install the OC gear spring followed by the OC gear assy.

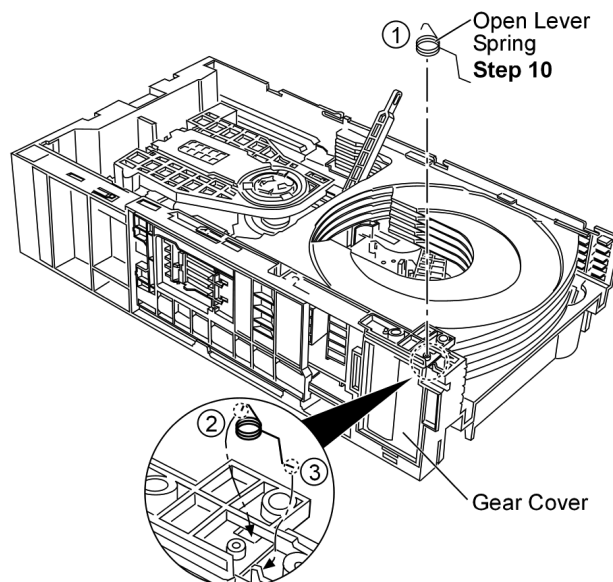
Caution: OC gear free to rotate after assembly



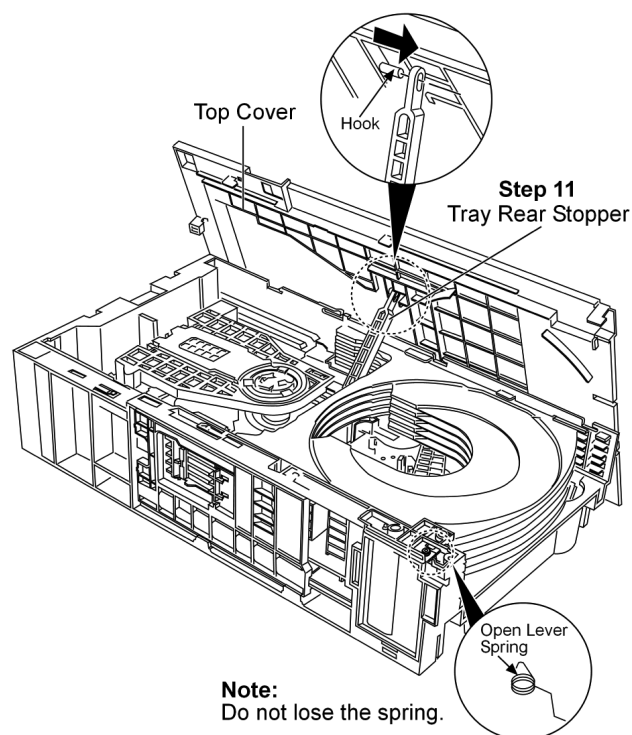
Step 8: Install the open switch lever.



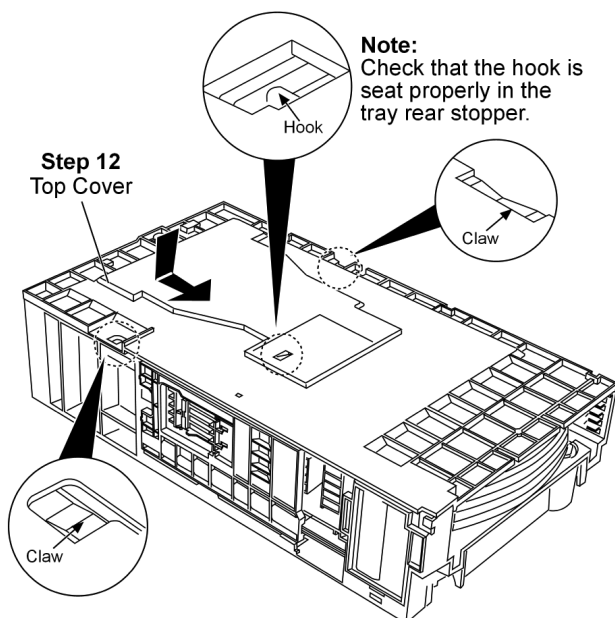
Step 9: Install the gear cover as arrow shown.



Step 10: Install the open lever spring.



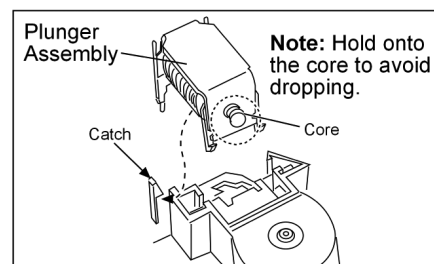
Step 11: Install the top cover, fix the top cover hook to the tray rear stopper as arrow shown.



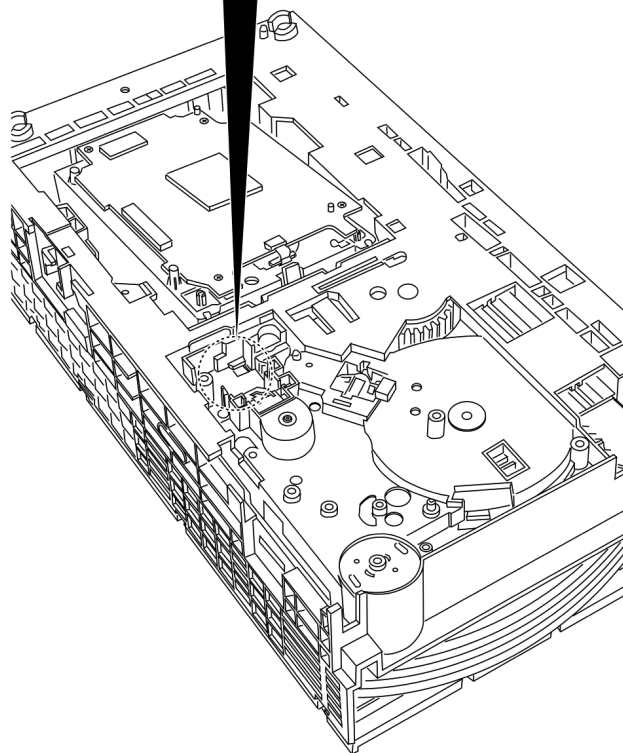
Step 12: Fix the top cover as arrow shown, the 2 claws should be latched.

The mechanism unit will be ready to be checked using service jig or be mounted to the main unit for checking.

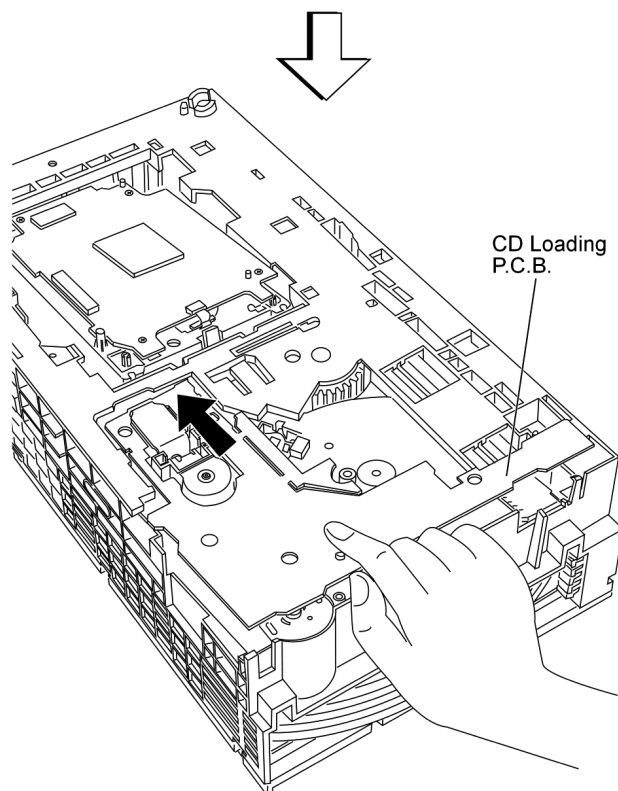
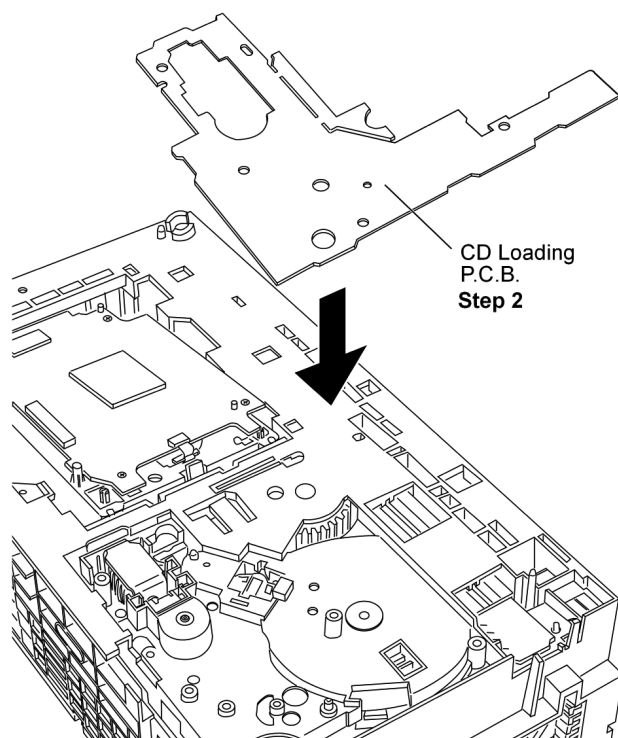
5.2.4. Assembly of CD Loading P.C.B.



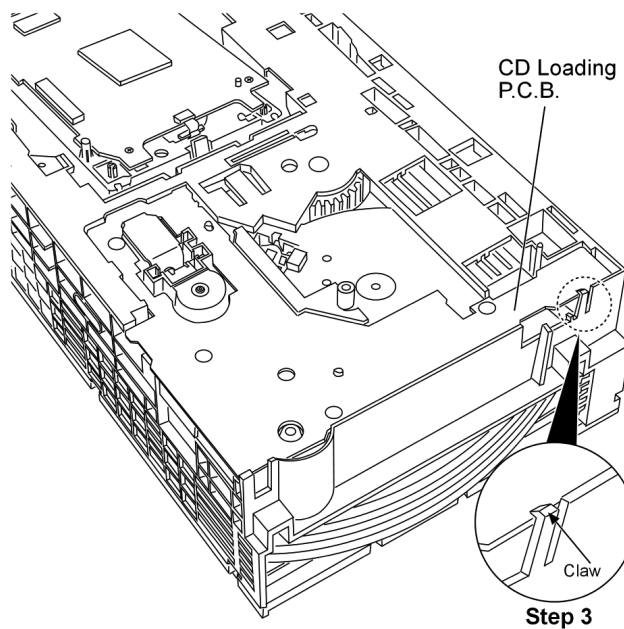
Step 1



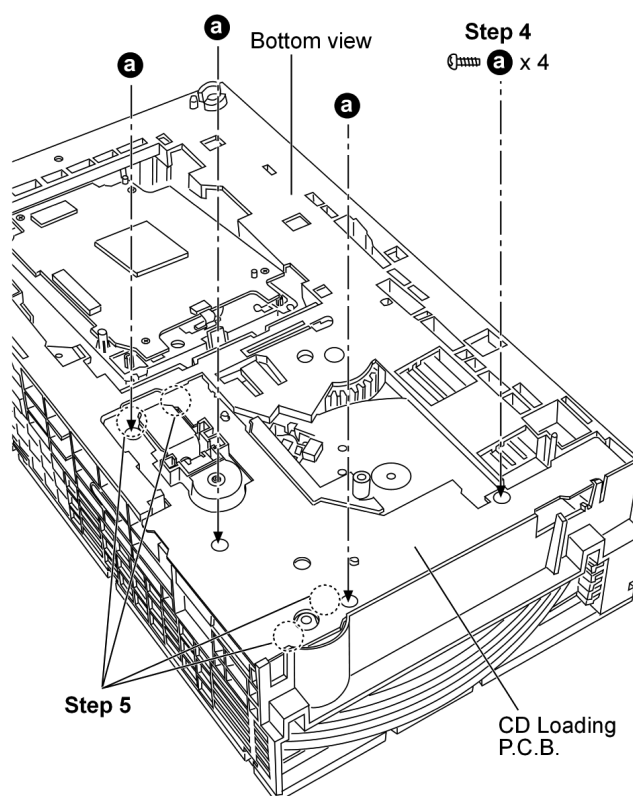
Step 1: Install the plunger assembly as arrow shown, the catch should be latched.



Step 2: Install the CD Loading P.C.B. as arrows shown.



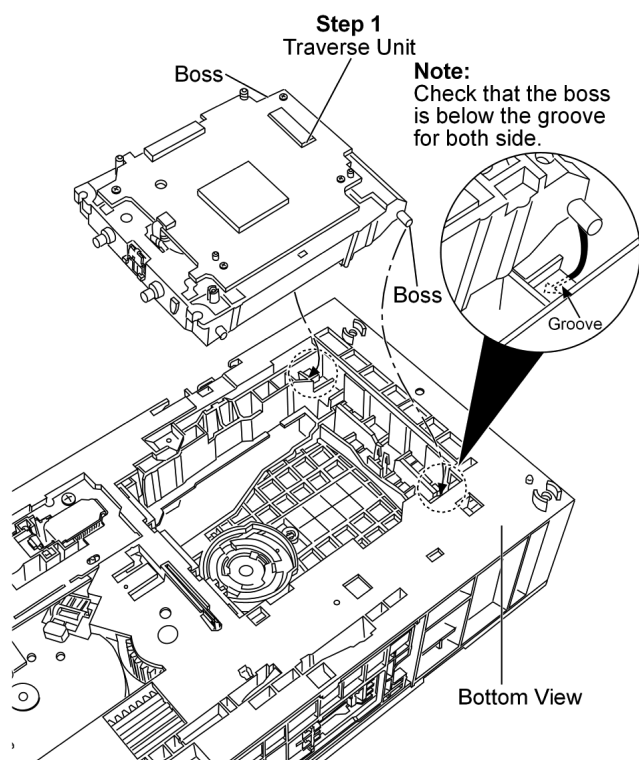
Step 3: The claw should be latched.



Step 4: Fix it with 4 screws.

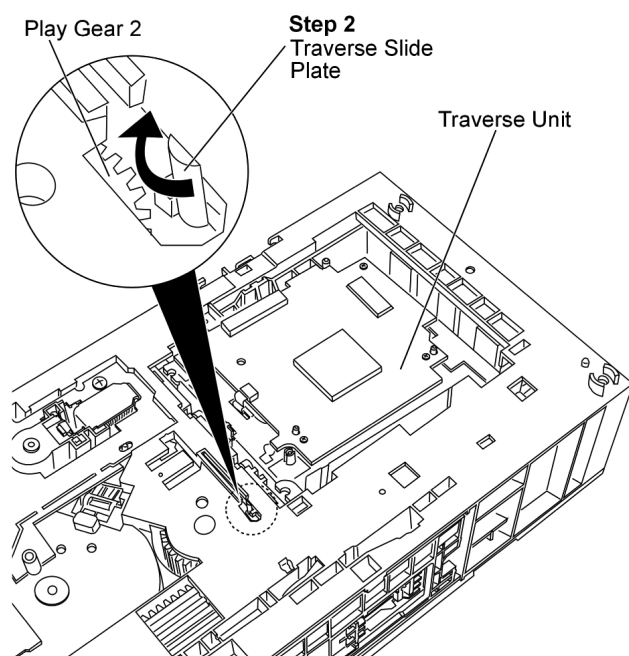
Step 5: Solder the 4 points.

5.2.5. Assembly of Traverse Unit



Step 1: Turn over the unit and install the traverse unit.

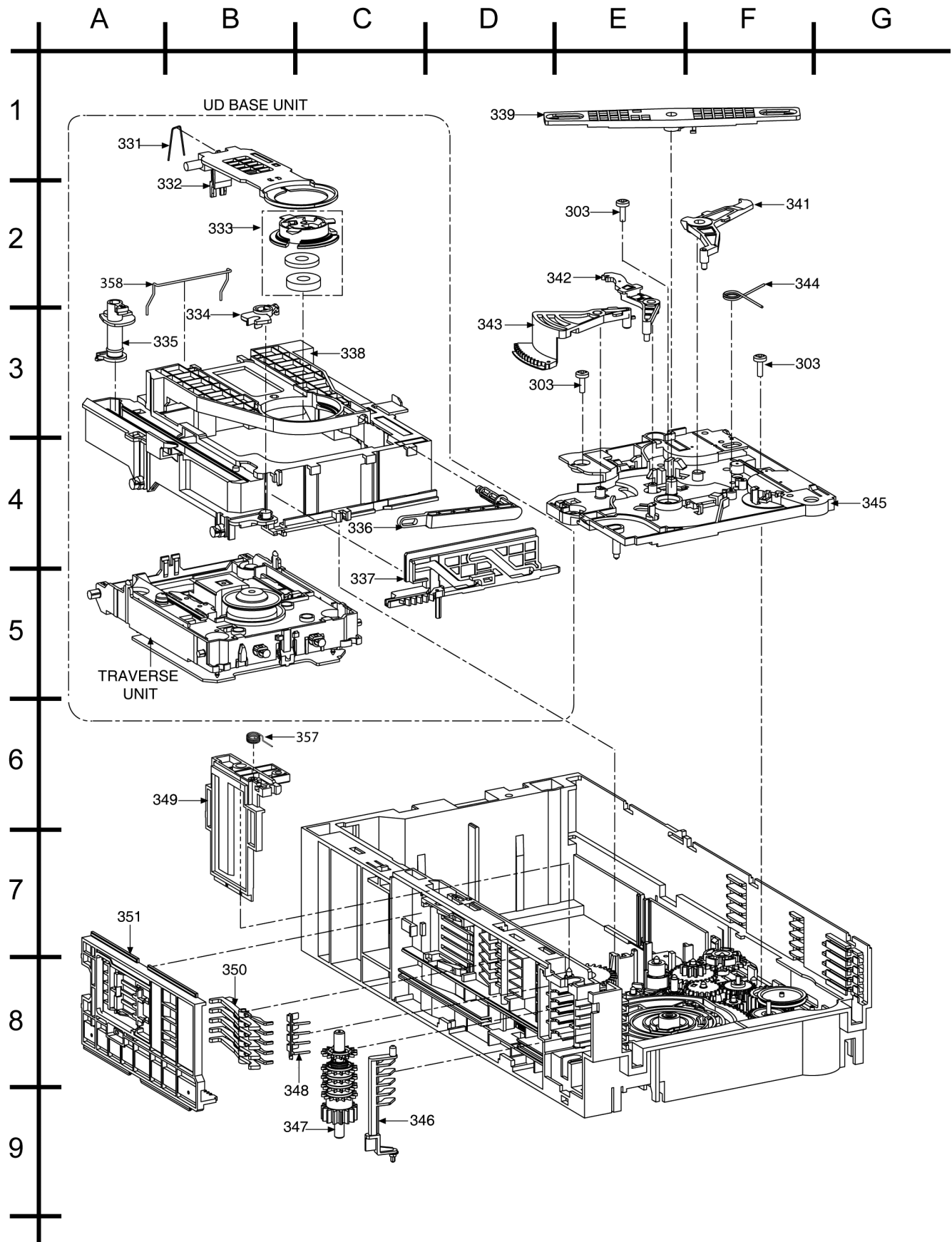
Caution:
Do not damage the Play Gear 2 when pushing the Traverse Slide Plate.



Step 2: Push the traverse slide plate as arrow shown to lock the traverse unit.

6 Exploded Views

6.1. CD Loading Mechanism



7 Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
311	RDGX0017-1	PULLEY GEAR	[M]
333	RXQX0027	CLAMPER UNIT FOR DVD	[M]
351	RMMX0006-1	TRIGGER SLIDE PLATE	[M]
358	RMEX0038	UD SUPPORT SPRING	[M]