

CDP-CX355

SERVICE MANUAL

Ver 1.0 2002. 02



US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM54-K1BD45
Base Unit Type	BU-K1BD45
Optical Pick-up Type	KSS-213BFN

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser ($\lambda = 780$ nm) Emission duration: continuous
Laser output	Max 44.6 μ W* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.
Frequency response	20 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio	More than 107 dB
Dynamic range	More than 86 dB
Harmonic distortion	Less than 0.009 %
Channel separation	More than 100 dB

Outputs

	Jack type	Maximum output level	Load impedance
ANALOG OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm

General

Where purchased	Power consumptions	Power requirements
USA and Canadian	120 V AC, 60 Hz	13 W
Australia	240 V AC, 50/60 Hz	14 W
Europe and Asia	230 V AC, 50/60 Hz	13 W
Other countries	120 V AC, 50/60 Hz	13 W

Dimensions (approx.)
(w/h/d) 430 × 189 × 493 mm
(17 × 7 1/2 × 19 3/8 in.)
incl. projecting parts

Mass (approx.) 8.5 kg (18 lbs 12 oz)

Supplied accessories

- Audio cord (1)
- Remote commander (remote) (1)
- Size AA (R6) batteries (2)

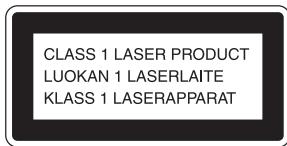
Design and specifications are subject to change without notice.

COMPACT DISC PLAYER

SONY®

9-873-551-01 **Sony Corporation**
2002B1600-1 Home Audio Company
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Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.



CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

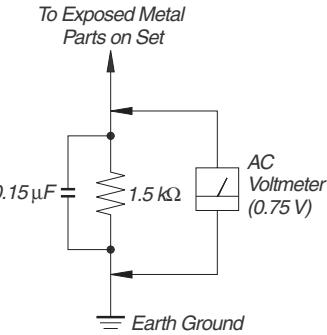
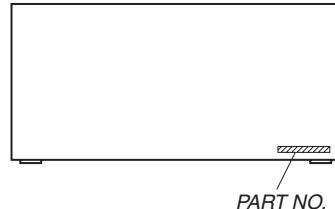


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION

— BACK PANEL —



PARTS No.	MODEL
4-238-109-0□	US
4-238-109-1□	Canadian
4-238-109-2□	AEP, UK
4-238-109-3□	Singapore
4-238-109-4□	Australian
4-238-109-5□	E

SECTION 1

SERVICING NOTE

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NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens. The emission check enables continuous checking of the S curve.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “CD section adjustment” and check that the S curve waveform is output three times.

CD-TEXT TEST DISC

This unit is able to display the TEXT data (character information) written in the CD on its fluorescent indicator tube. The CD-TEXT TEST DISC (TGCS-313:J-2501-126-A) is used for checking the display. To check, perform the following procedure.

Checking Method:

1. Turn ON the power, set the disc on the disc table with the side labeled as "test disc" as the right side, close the front cover, and chuck the disc.
2. The following will be displayed on the fluorescent indicator tube. (The display switches each time the **[TIME/TEXT]** button is pressed.)
Display : CD TEXT TEST DISC (Album Title)
3. Press the **[▷]** button and play back the disc.
4. The following will be displayed on the fluorescent indicator tube. (If nothing is displayed, press the **[TIME/TEXT]** button.)
Display : 1kHz/0 dB/L&R
5. Rotate **[◀◀] and [▶▶]** knob to switch the track. The text data of each track will be displayed.
For details of the displayed contents for each track, refer to "Table 1 : CD-TEXT TEST DISC Text Data Contents" and "Table 2 : CD-TEXT TEST DISC Recorded Contents and Display".

Restrictions in CD-TEXT Display

In this unit, some special characters will not be displayed properly. These will be displayed as a space or a character resembling it. For details, refer to "Table 2 : CD-TEXT DISC Recorded Contents and Display".

Table 1 : CD-TEXT TEST DISC Text Data Contents (TRACKS No. 1 to 41:Normal Characters)

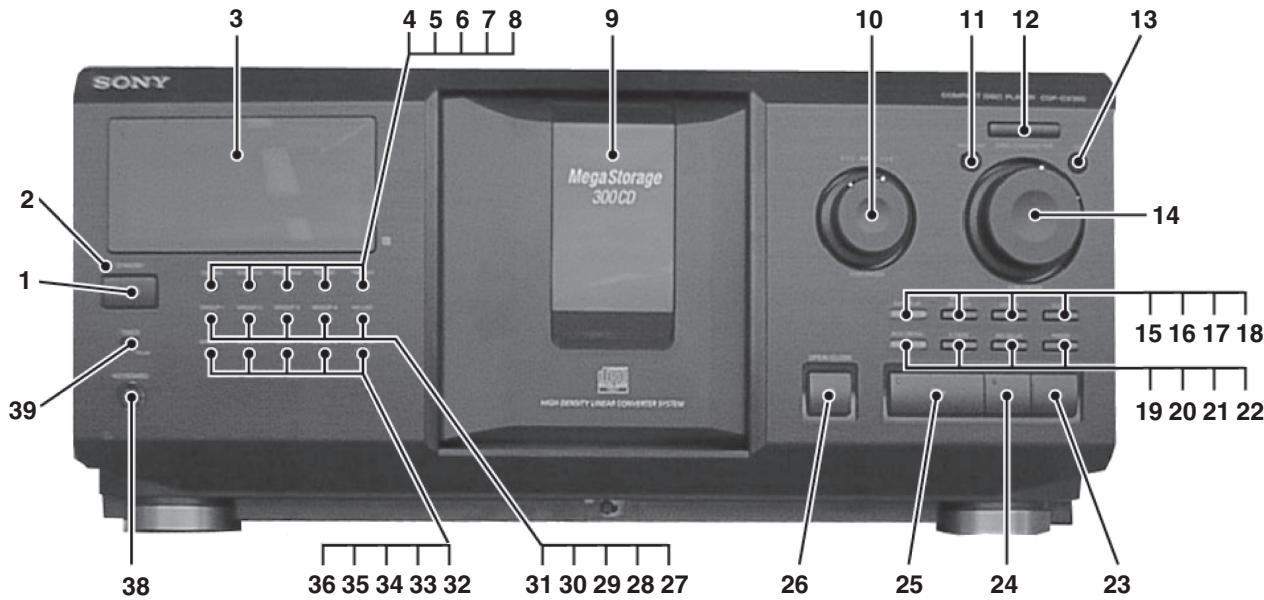
TRACK No.	Displayed Contents	TRACK No.	Displayed Contents
1	1kHz/0dB/L&R	22	1kHz/-90dB/L&R
2	20Hz/0dB/L&R	23	Infinity Zero w/o emphasis//L&R
3	40Hz/0dB/L&R	24	Infinity Zero with emphasis//L&R
4	100Hz/0dB/L&R	25	400Hz+7kHz(4:1)/0dB/L&R
5	200Hz/0dB/L&R	26	400Hz+7kHz(4:1)/-10dB/L&R
6	500Hz/0dB/L&R	27	19kHz+20kHz(1:1)/0dB/L&R
7	1kHz/0dB/L&R	28	19kHz+20kHz(1:1)/-10dB/L&R
8	5kHz/0dB/L&R	29	100Hz/0dB/L*
9	7kHz/0dB/L&R	30	1kHz/0dB/L*
10	10kHz/0dB/L&R	31	10kHz/0dB/L*
11	16kHz/0dB/L&R	32	20kHz/0dB/L*
12	18kHz/0dB/L&R	33	100Hz/0dB/R*
13	20kHz/0dB/L&R	34	1kHz/0dB/R*
14	1kHz/0dB/L&R	35	10kHz/0dB/R*
15	1kHz/-1dB/L&R	36	20kHz/0dB/R*
16	1kHz/-3dB/L&R	37	100Hz Squer Wave//L&R
17	1kHz/-6dB/L&R	38	1kHz Squer Wave//L&R
18	1kHz/-10dB/L&R	39	1kHz w/emphasis/-0.37dB/L&R
19	1kHz/-20dB/L&R	40	5kHz w/emphasis/-4.53dB/L&R
20	1kHz/-60dB/L&R	41	16kHz w/emphasis/-9.04dB/L&R
21	1kHz/-80dB/L&R		

NOTE : The contents of Track No. 1 to 41 are the same as those of the current TEST DISC-their titles are displayed.

Table 2: CD-TEXT TEST DISC Recorded Contents and Display
 (In this unit, some special characters cannot be displayed. This is no a fault.)

TRACK No.	Recorded contents	Display
42	! " # \$ % & ' (21h to 27h)1kHz 0dB L&R	↔ All the same
43	() * + , - . / (28h to 2Fh)	↔ All the same
44	0 1 2 3 4 5 6 7 (30h to 37h)	↔ All the same
45	8 9 : ; < = > ? (38h to 3Fh)	↔ All the same
46	@ A B C D E F G (40h to 47h)	↔ All the same
47	H I J K L M N O (48h to 4Fh)	↔ All the same
48	P Q R S T U V W (50h to 57h)	↔ All the same
49	X Y Z [¥] ^ _ (58h to 5Fh)	X Y Z [\] ^ _ (58....)
50	` a b c d e f g (60h to 57h)	↔ All the same
51	h i j k l m n o (68h to 6Fh)	↔ All the same
52	p q r s t u v w (70h to 77h)	↔ All the same
53	x y z { } ~ █ (78h to 7Fh)	x y z { } ~ (78....)
54	█ i ¢ £ ¤ ¥ ¦ § (A0h to A7h) 8859-1	i ¢ £ ¤ ¥ ¦ § (A0.... █ is not displayed)
55	♪ © ª « ¬(P)(R)¬ (A8h to AFh)	♪ (A8.... © ª « ¬(P)(R)¬ are not displayed)
56	· ± ² ³ ' μ ¶ • (B0h to B7h)	' μ • (B0.... · ± ² ³ ¶ are not displayed)
57	† ¹ ² » ¼ ½ ¾ Ł (B8h to BFh)	† Ł (B8.... ¹ ² » ¼ ½ ¾ Ł are not displayed)
58	À Á Â Ã Ä Å Æ Ç (C0h to C7h)	↔ All the same
59	È É Ê Ë Ì Í Î Ï (C8h to CFh)	↔ All the same
60	Ð Ñ Ò Ó Ô Ö × (D0h to D7h)	↔ All the same
61	Ø Ù Ú Û Ü Ý Þ ß (D8h to DFh)	Φ Ù Ú Û Ü Ý Þ ß (D8....)
62	à á â ã ä å æ ç (E0h to E7h)	↔ All the same
63	è é ê ë ì í î ï (E8h to FFh)	↔ All the same
64	ð ñ ò ó ô ö õ ÷ (F0h to F7h)	ð ñ ò ó ô ö õ ÷ (F0....)
65	ø ù ú û ü ý þ ÿ (F8h to FFh)	↔ All the same
66	No.66	↔ All the same
67	No.67	↔ All the same
to	to	to
99	No.99	↔ All the same

SECTION 2 GENERAL



Location of Parts and Controls

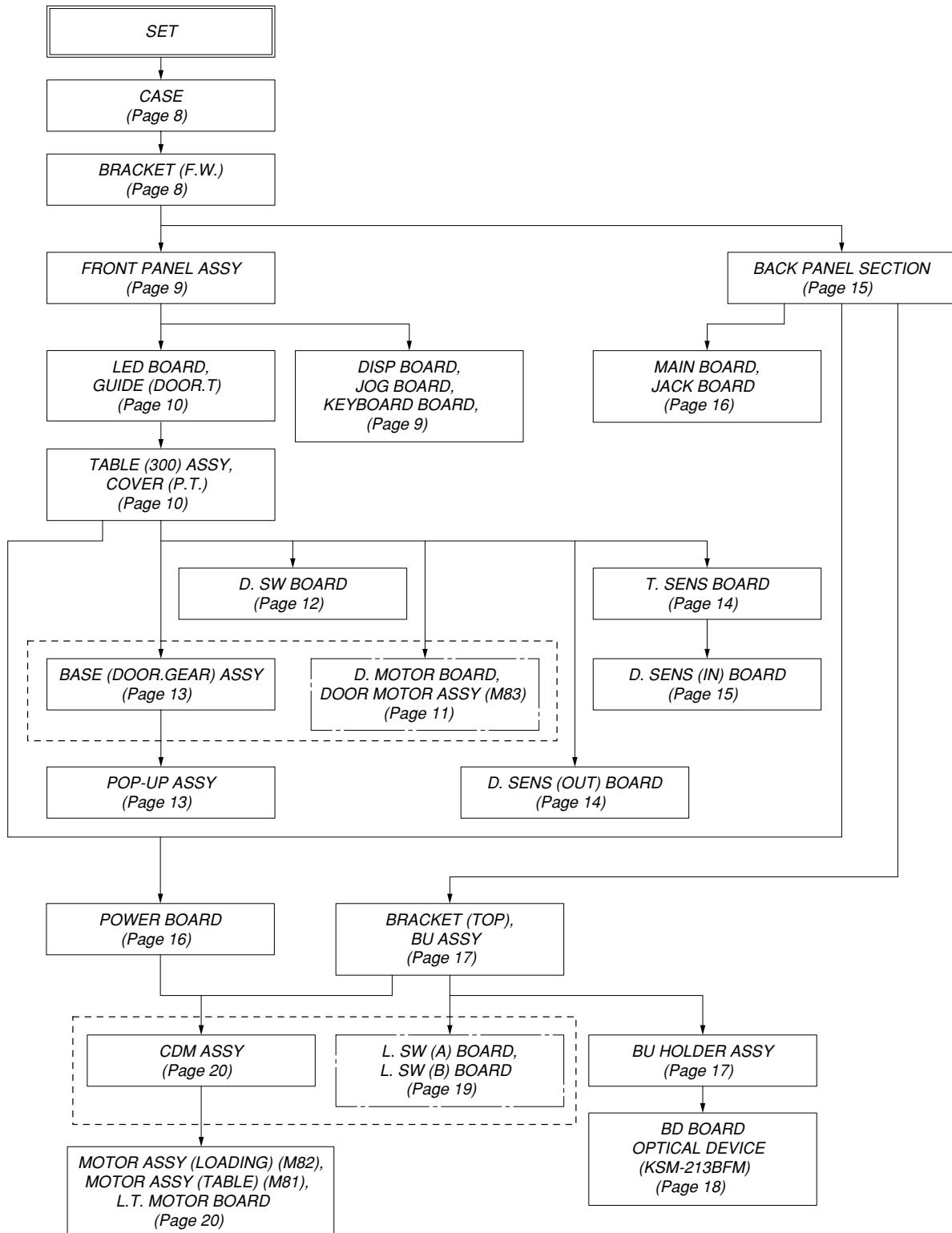
- | | | | |
|-----------|---|-----------|--------------------------------|
| 1 | I/O (power) button | 21 | NO DELAY button |
| 2 | STANDBY indicator | 22 | FADER button |
| 3 | Display window | 23 | ■ (stop)/DISC EJECT button |
| 4 | CONTINUE button | 24 | ■ (pause) button and indicator |
| 5 | SHUFFLE button | 25 | ▷ (play) button and indicator |
| 6 | PROGRAM button | 26 | △ OPEN/CLOSE button |
| 7 | REPEAT button | 27 | HIT LIST button and indicator |
| 8 | TIME/TEXT button | 28 | GROUP 4 button and indicator |
| 9 | Front cover | 29 | GROUP 3 button and indicator |
| 10 | ◀◀ AMS ▷▷/PUSH ENTER knob and button | 30 | GROUP 2 button and indicator |
| 11 | MENU/NO button | 31 | GROUP 1 button and indicator |
| 12 | +100 button | 32 | GROUP FILE button |
| 13 | YES button | 33 | GROUP 8 button and indicator |
| 14 | DISC/CHARACTER/PUSH ENTER knob and button | 34 | GROUP 7 button and indicator |
| 15 | EASY PLAY button and indicator | 35 | GROUP 6 button and indicator |
| 16 | MEMO/SEARCH button | 36 | GROUP 5 button and indicator |
| 17 | CHECK button | 38 | KEYBOARD jack |
| 18 | CLEAR button | 39 | TIMER OFF/PLAY switch |
| 19 | MEGA CONTROL button and indicator | | |
| 20 | X-FADE button | | |

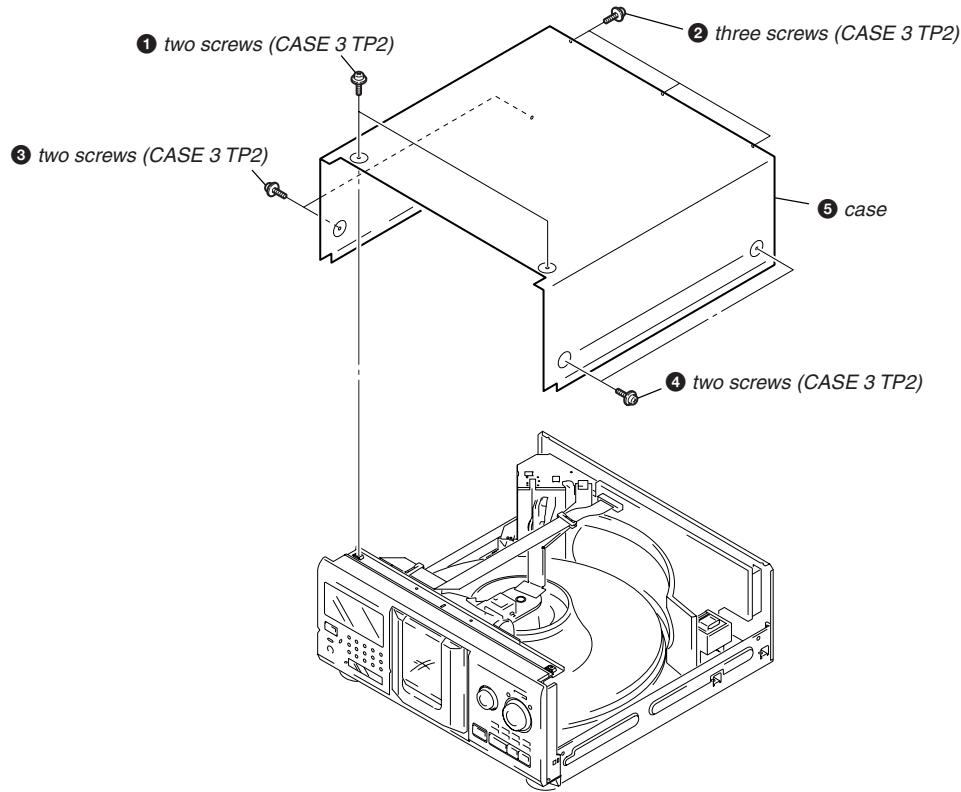
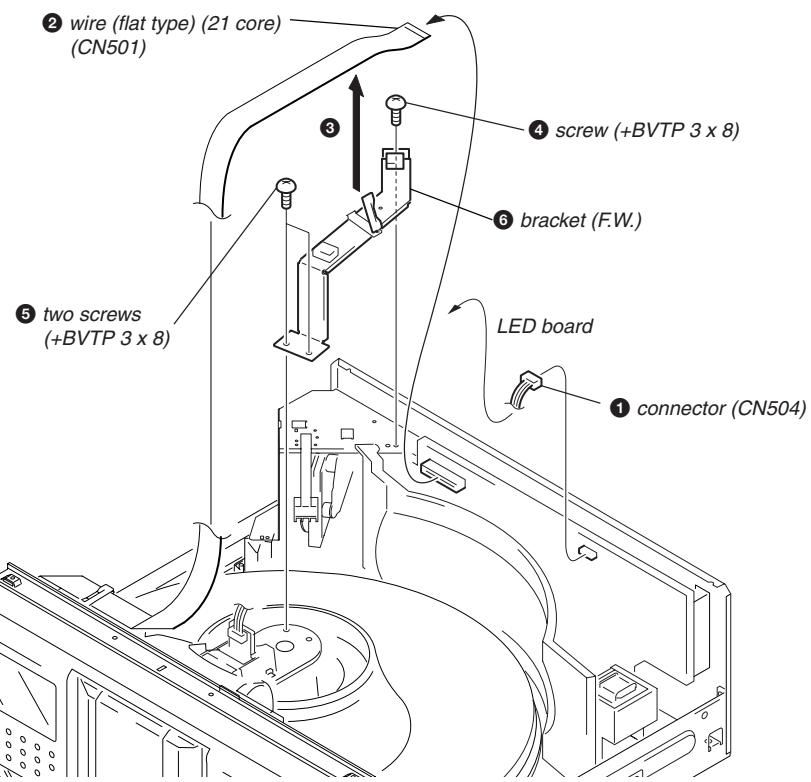
* AMS is abbreviation for Automatic Music Sensor.

SECTION 3 DISASSEMBLY

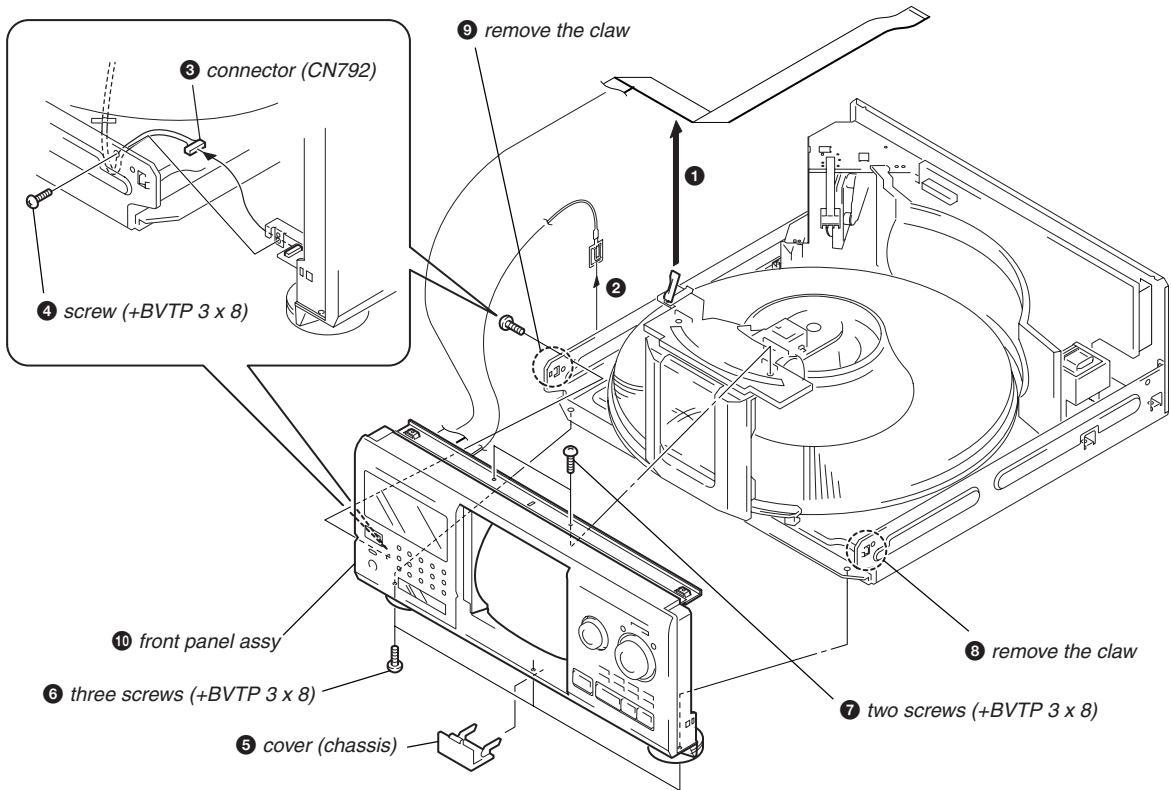
Note : Disassemble the unit in the order as shown below.

- The parts surrounded by square [] are included in the solid line square [] in the area shown by the dotted line square [].

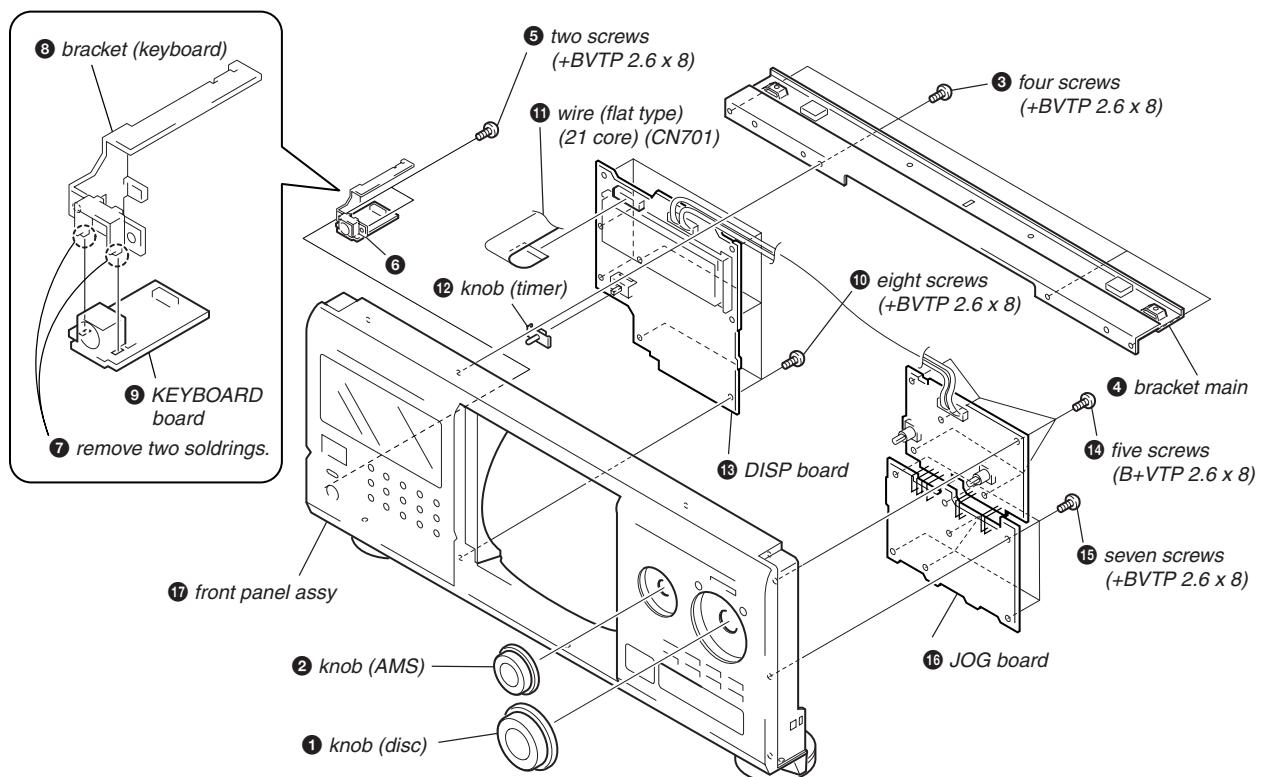


3-1. Case**3-2. Bracket (F. W.)**

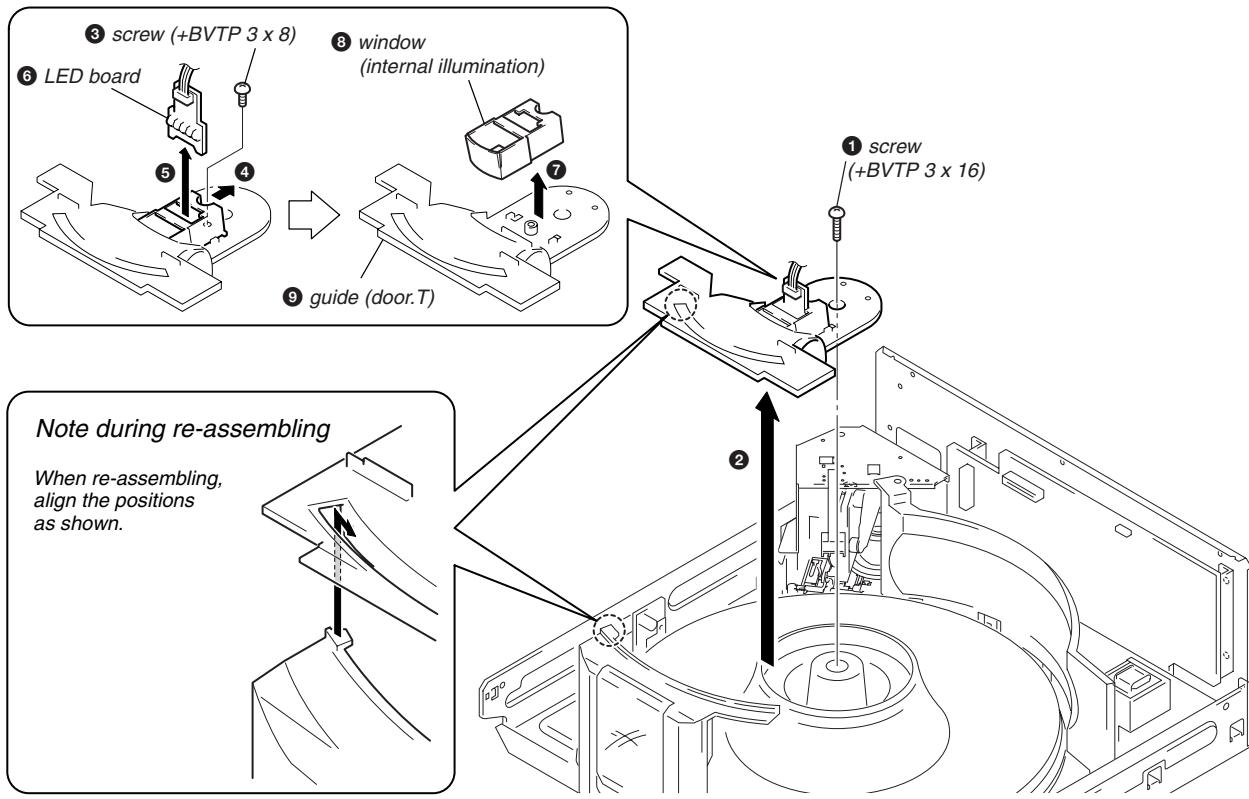
3-3. Front Panel Assy



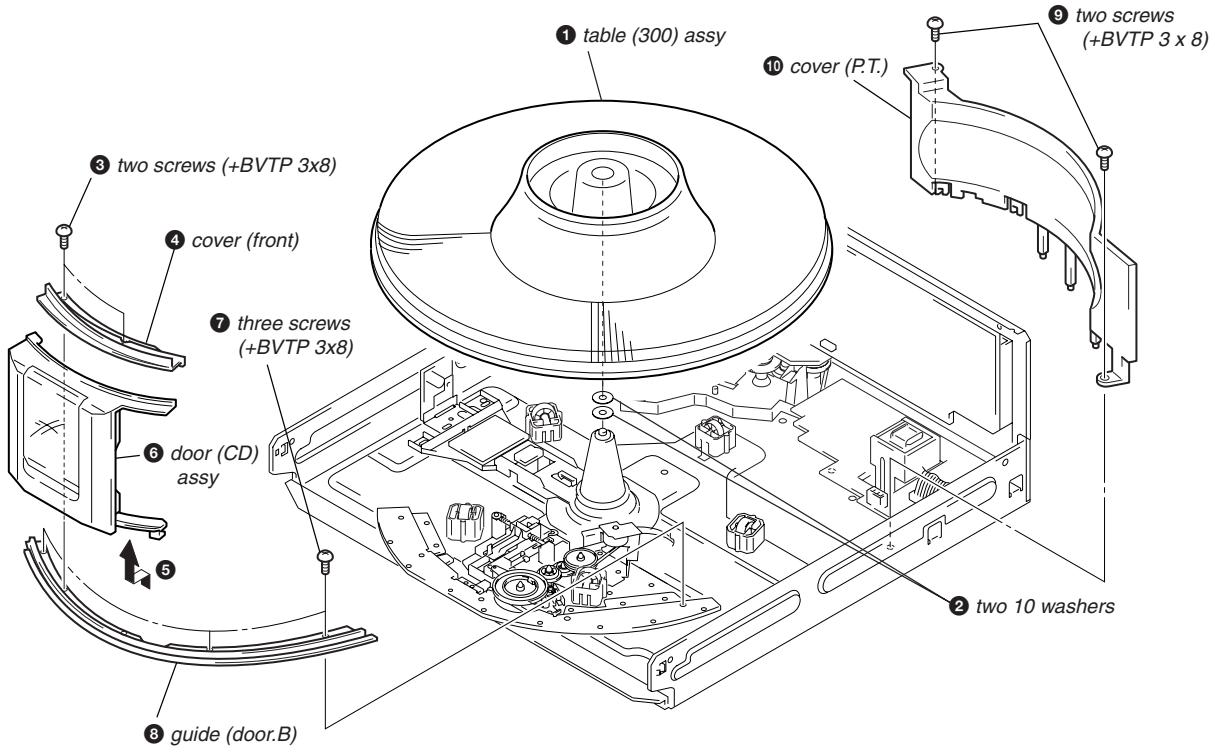
3-4. DISP Board, JOG Board, KEYBOARD Board



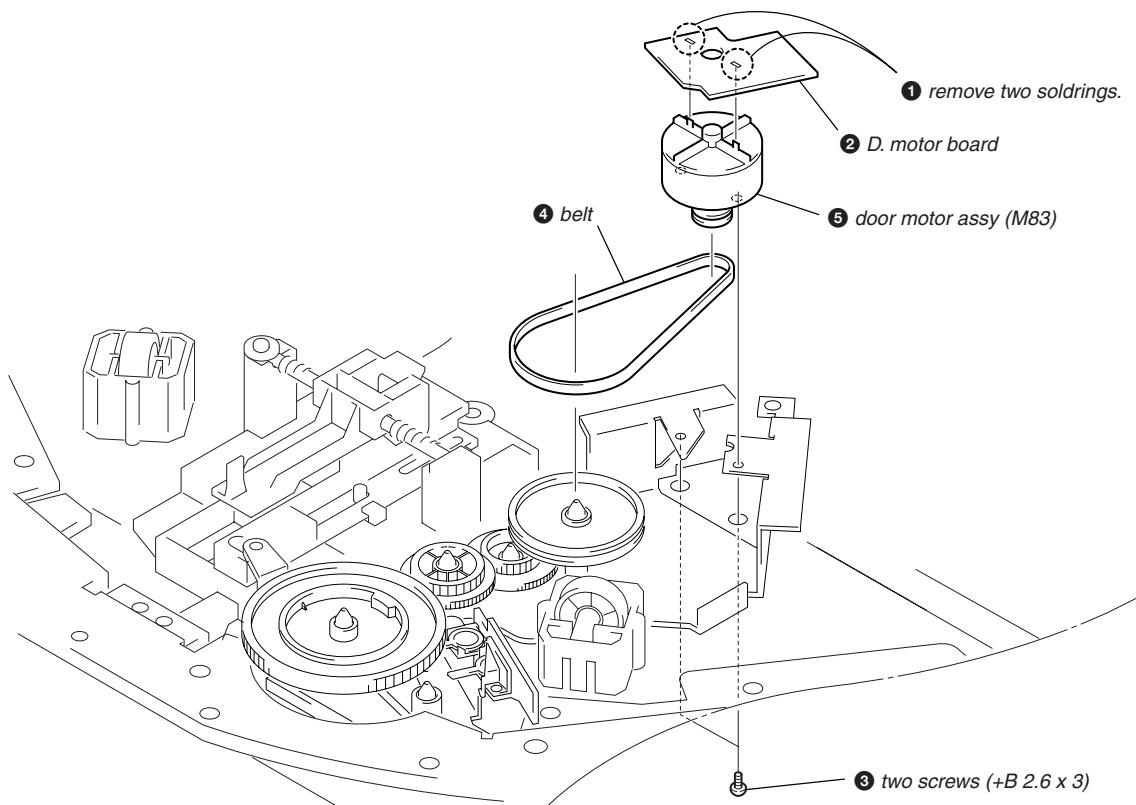
3-5. LED Board, Guide (Door.T)



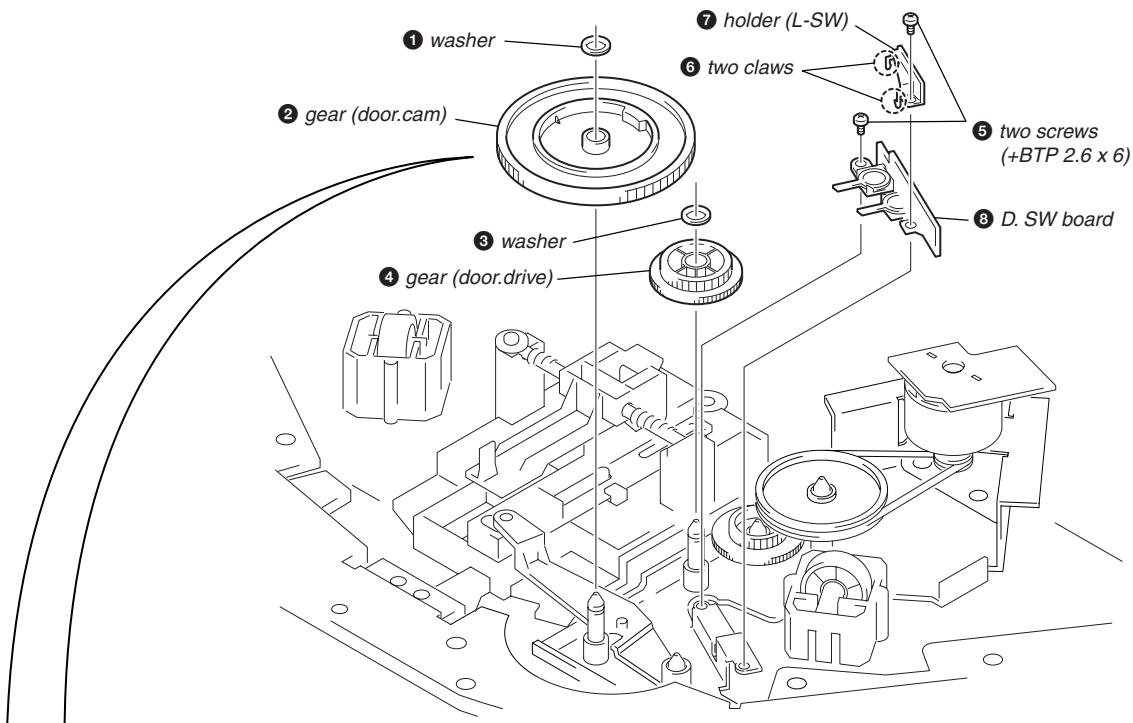
3-6. Table (300) Assy, Cover (P.T.)



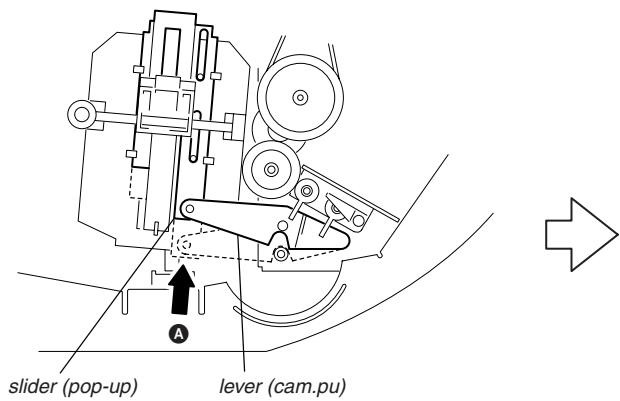
3-7. D. MOTOR Board, Door Motor Assy (M83)



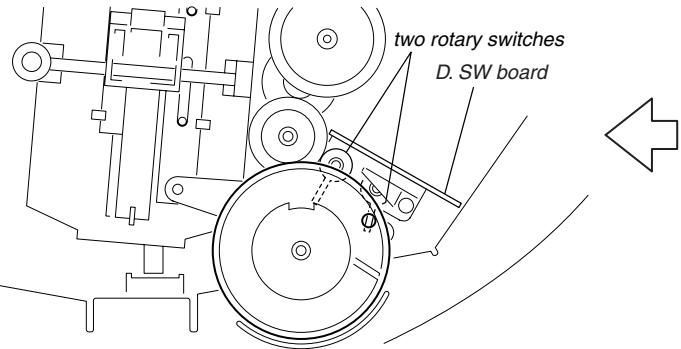
3-8. D. SW Board

*Precaution during the gear (door.cam) installation*

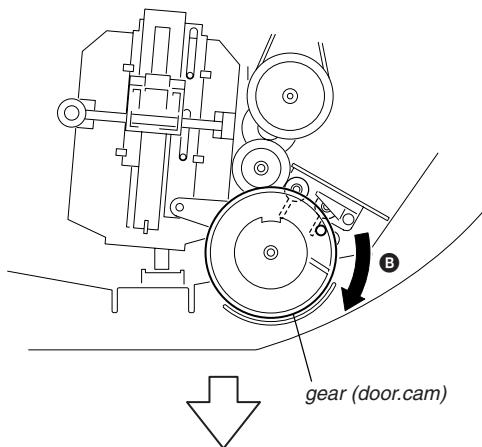
① Move the slider (pop-up) and the lever (cam.pu) fully in the direction of the arrow **A**.



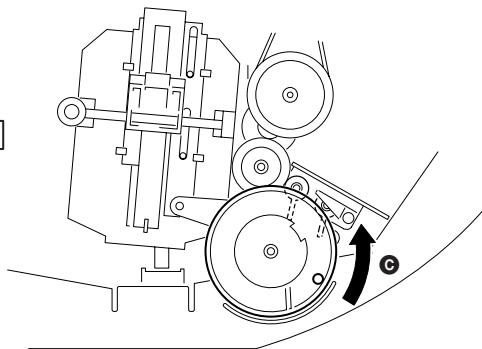
(The levers of the two rotary switches on the D. SW board)
are shown in the illustration below.



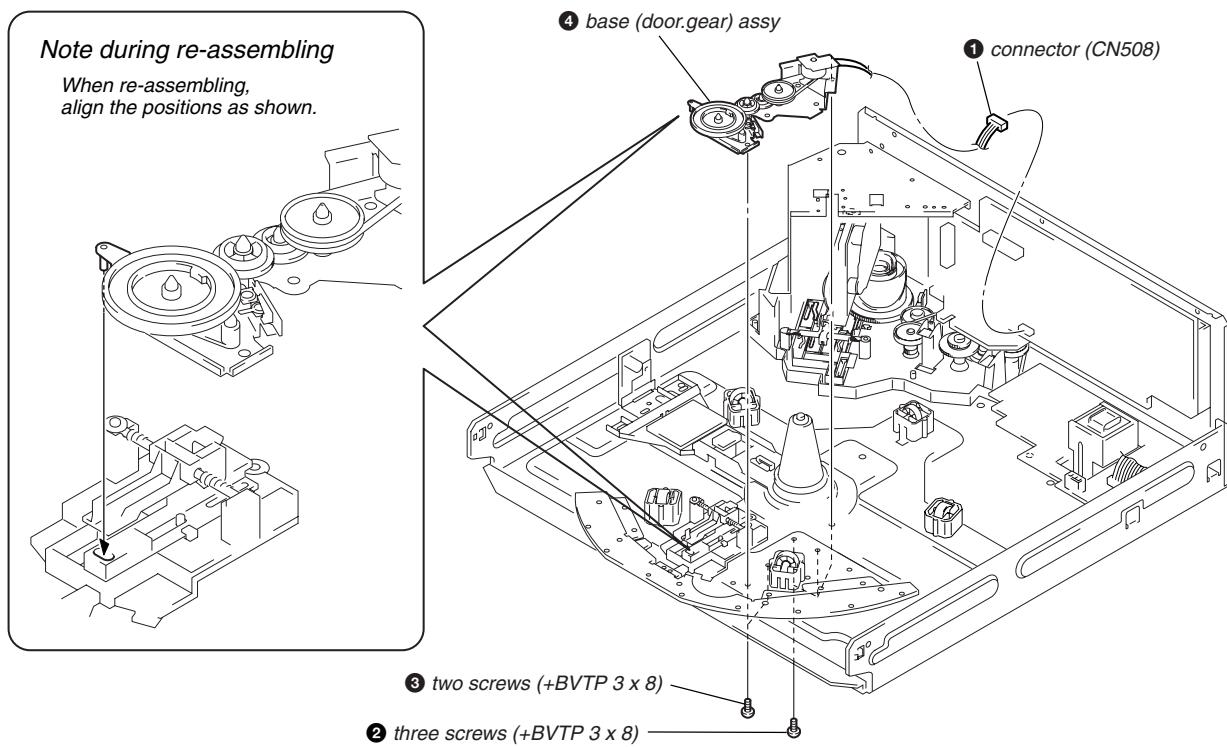
② Install the gear (door.cam) in the direction shown in the illustration and rotate it fully in the direction of the arrow **B**.



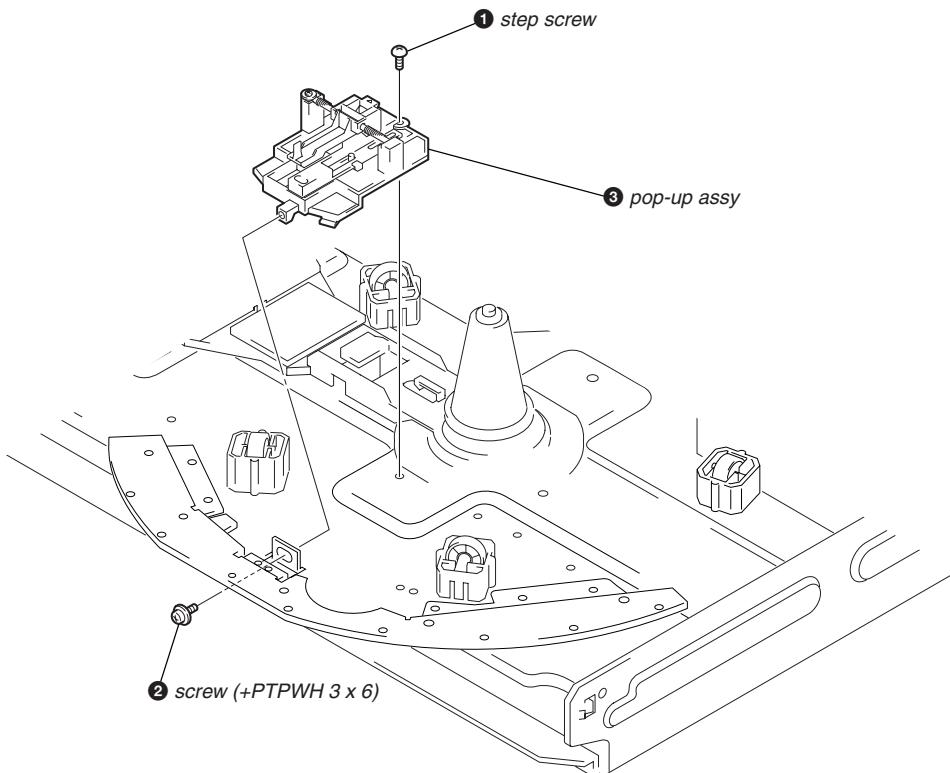
③ When the gear (door.cam) happens to go too deep, return it to the original position in the direction of the arrow **C**.

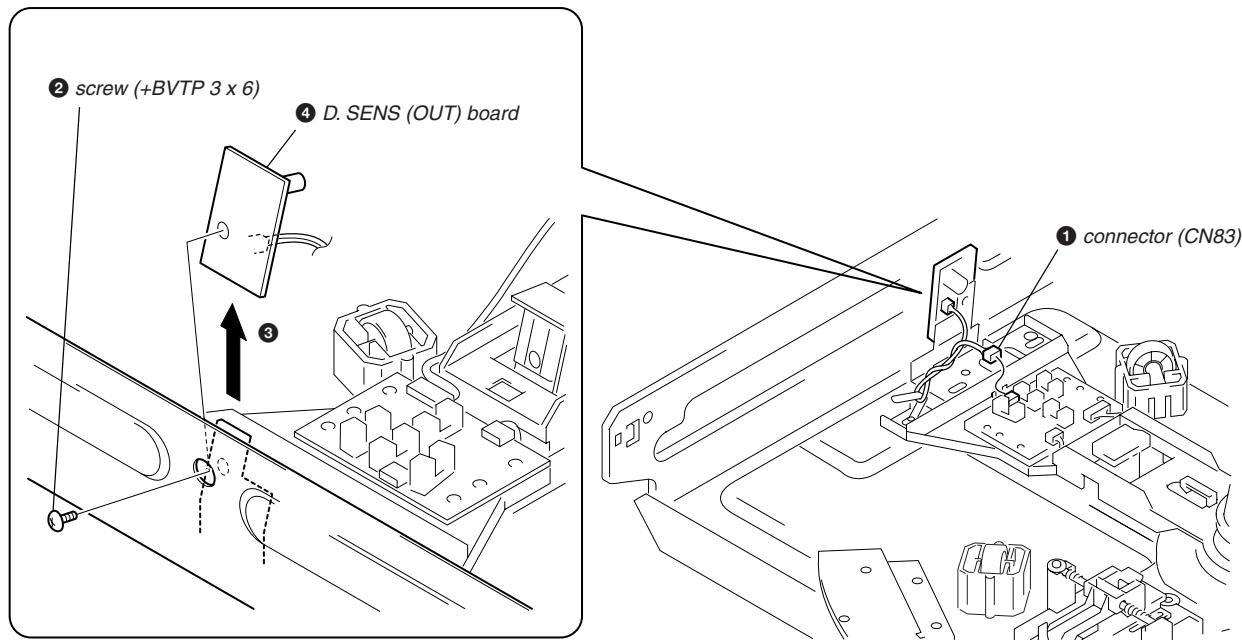
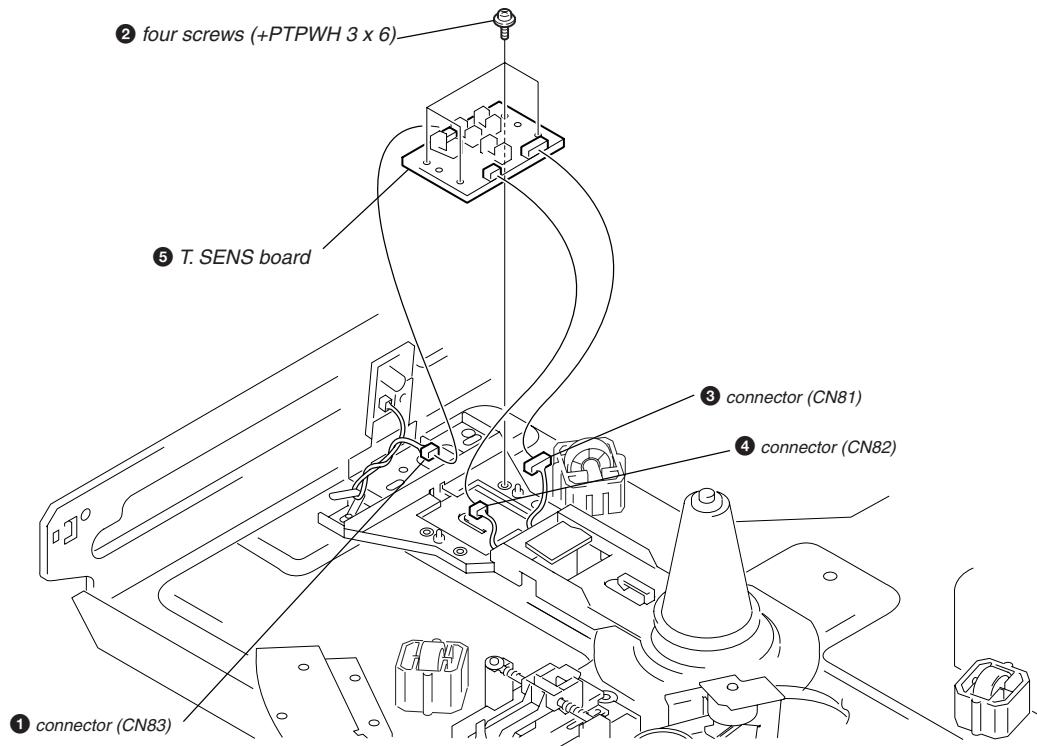


3-9. Base (Door. Gear) Assy

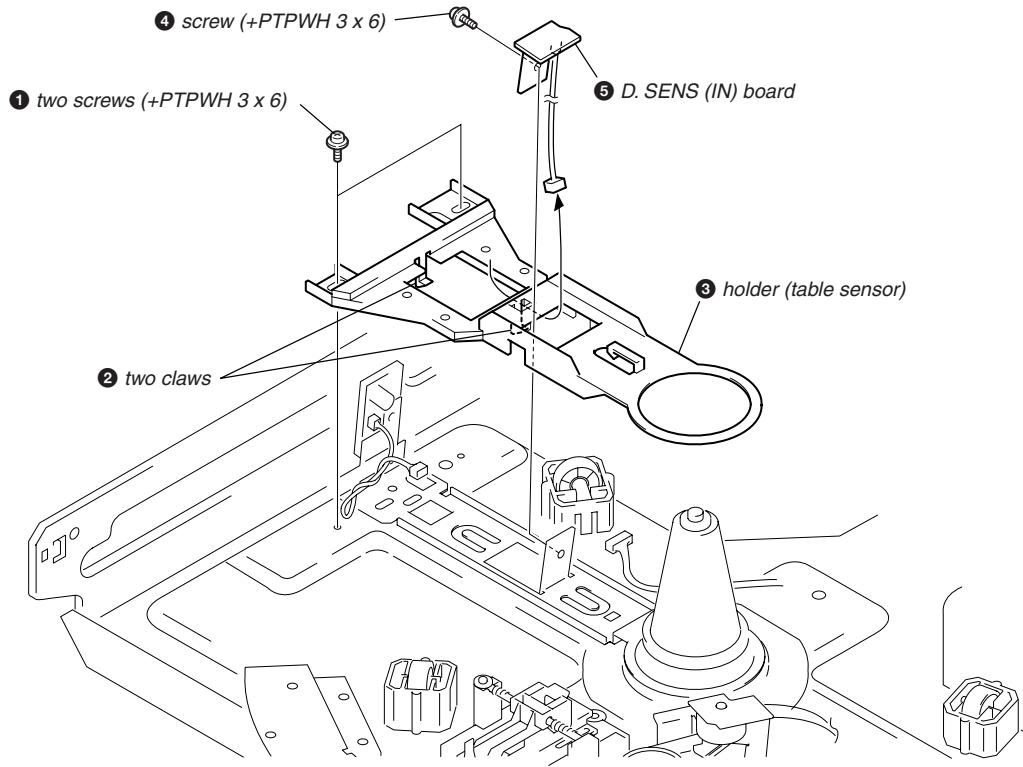


3-10. Pop-up Assy

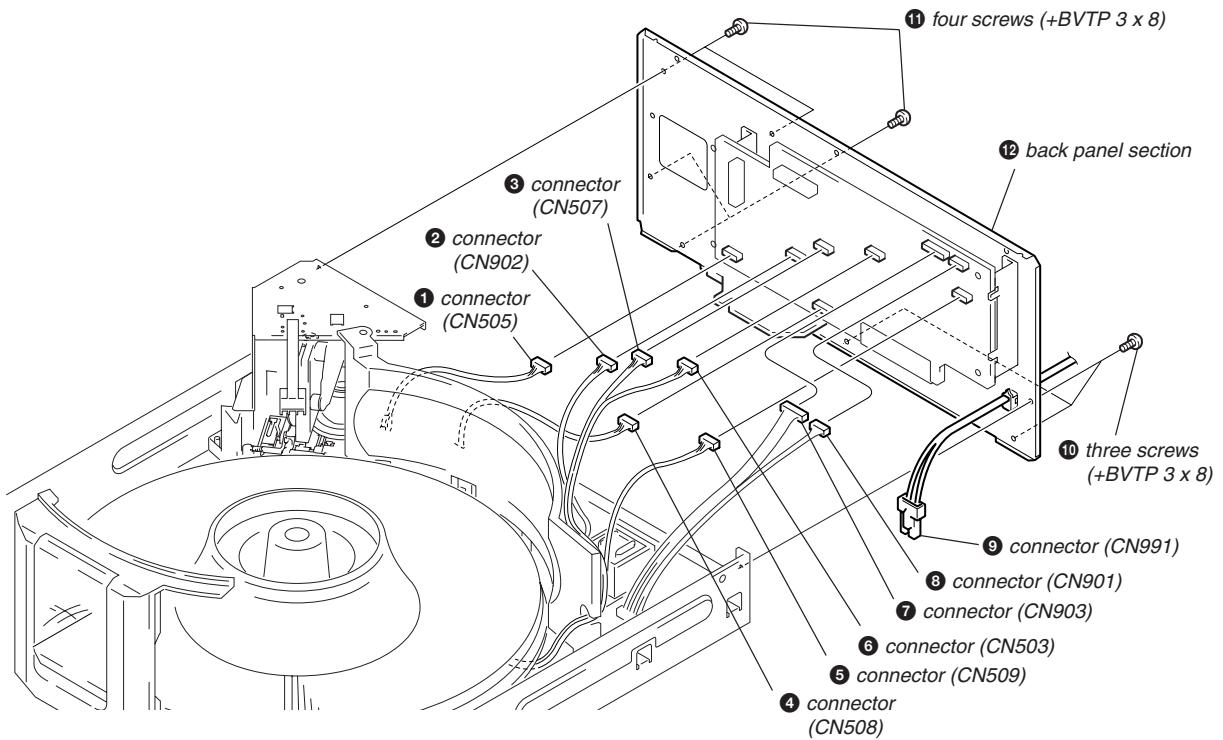


3-11. D. SENS (OUT) Board**3-12. T. SENS Board**

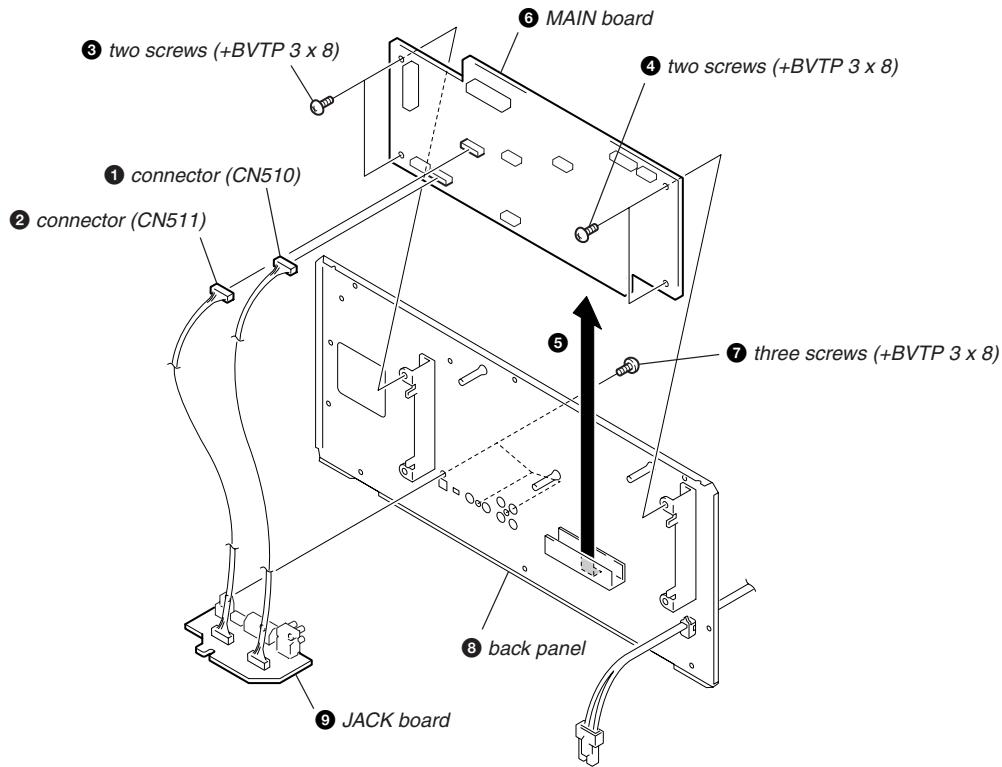
3-13. D. SENS (IN) Board



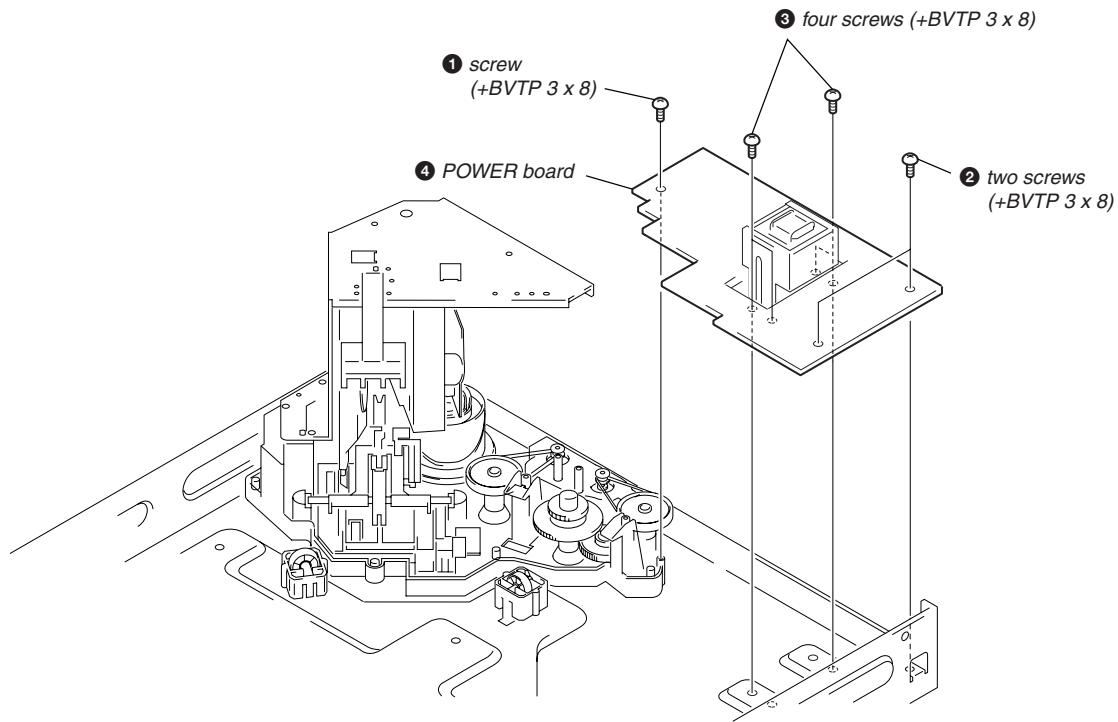
3-14. Back Panel Section



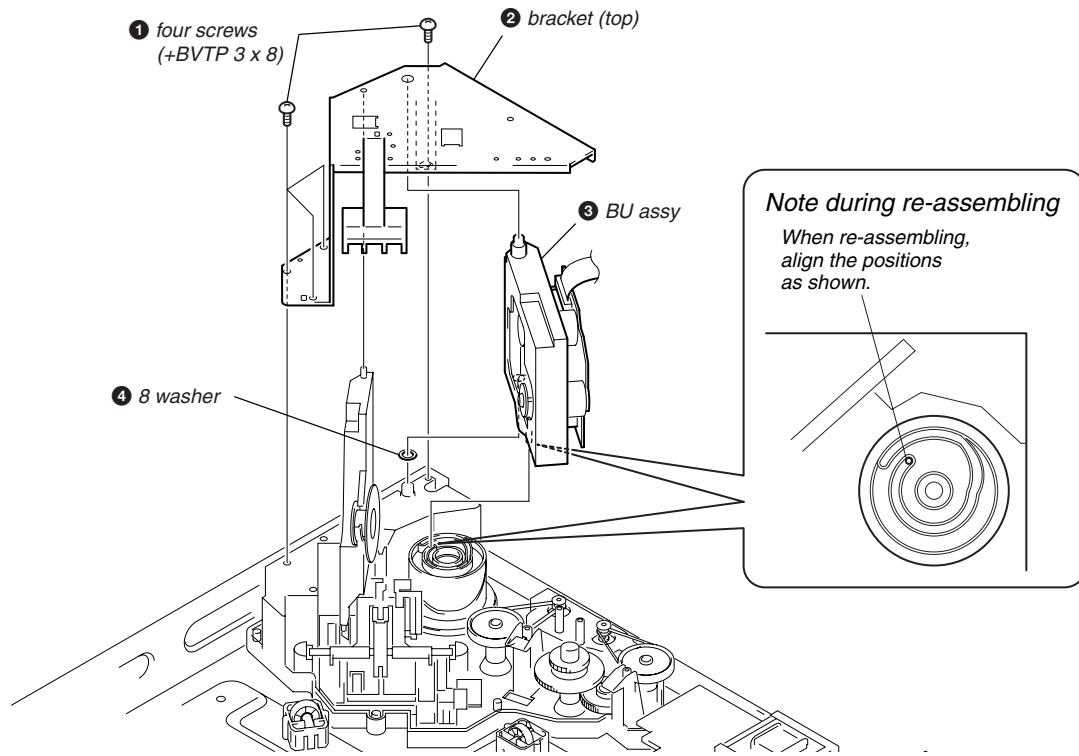
3-15. MAIN Board, JACK Board



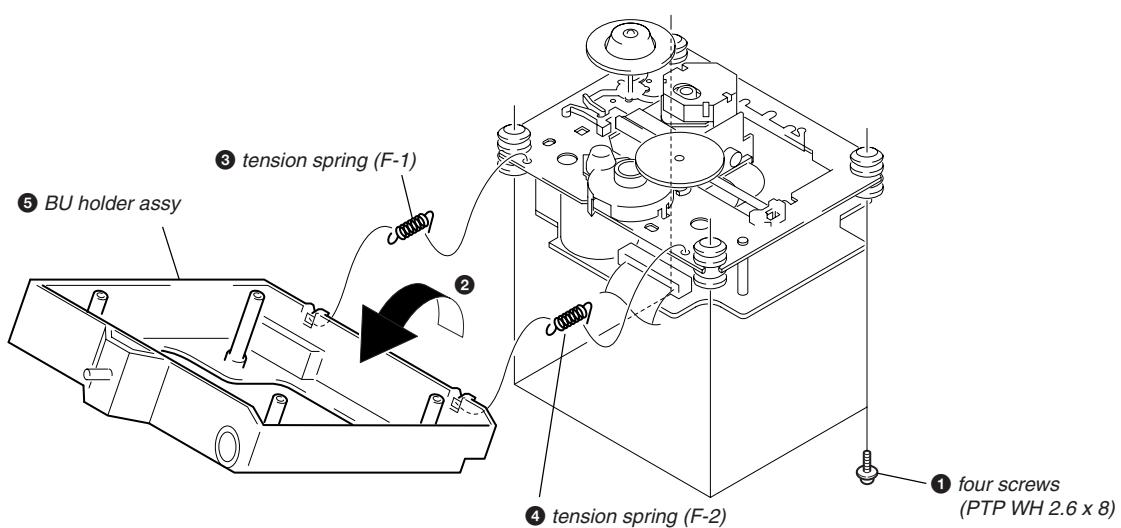
3-16. POWER Board



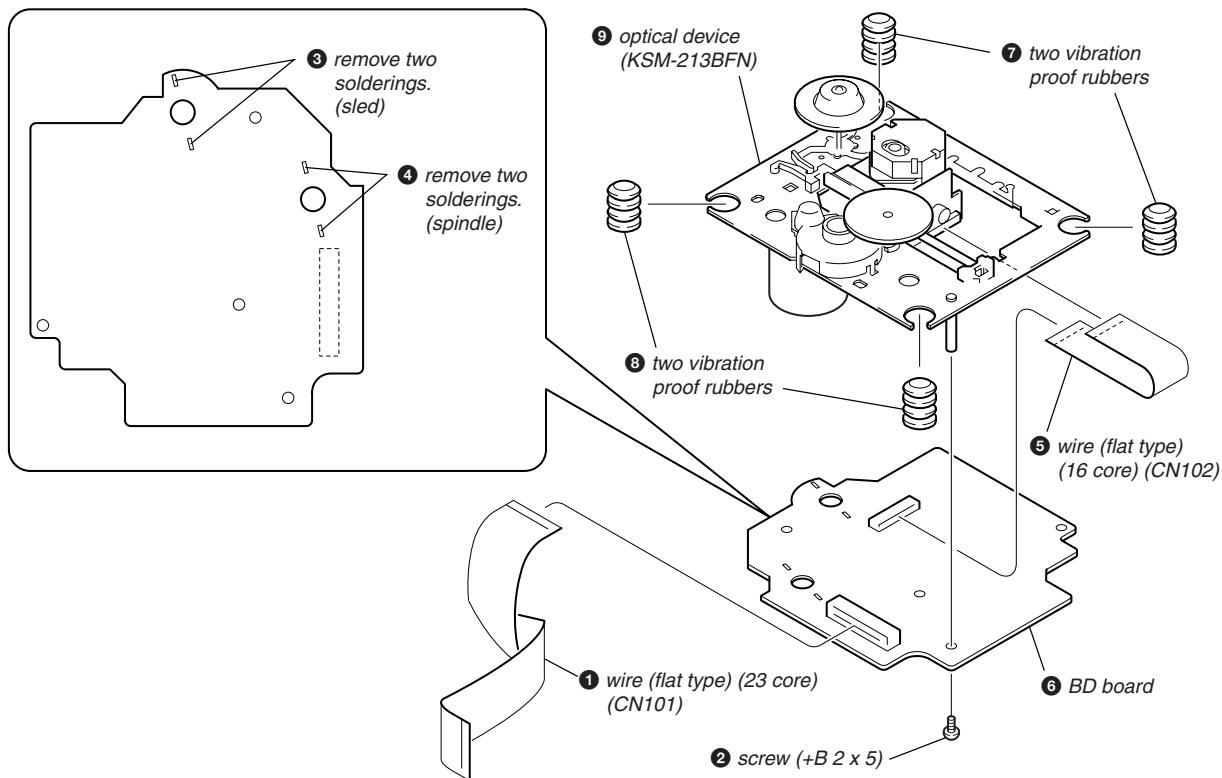
3-17. Bracket (Top) , BU Assy



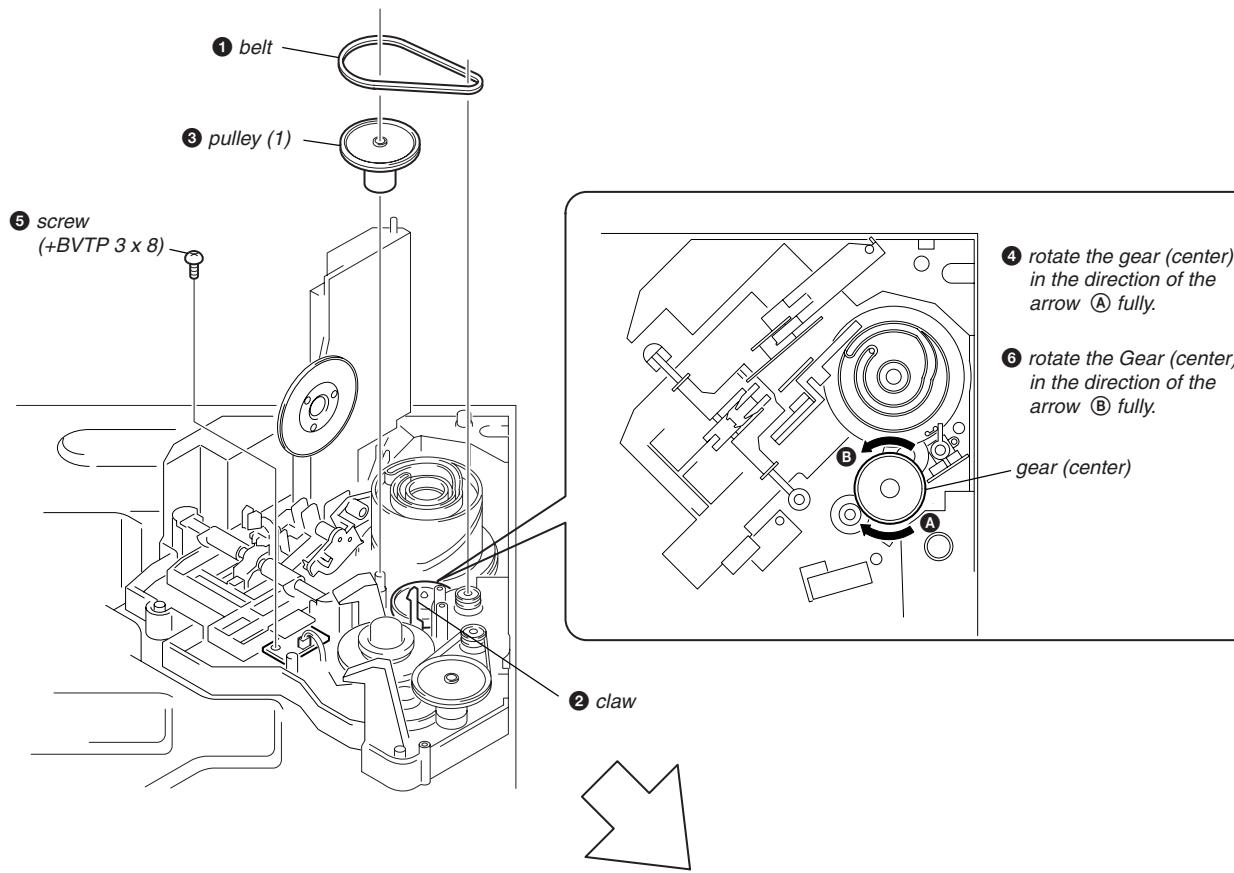
3-18. BU Holder Assy



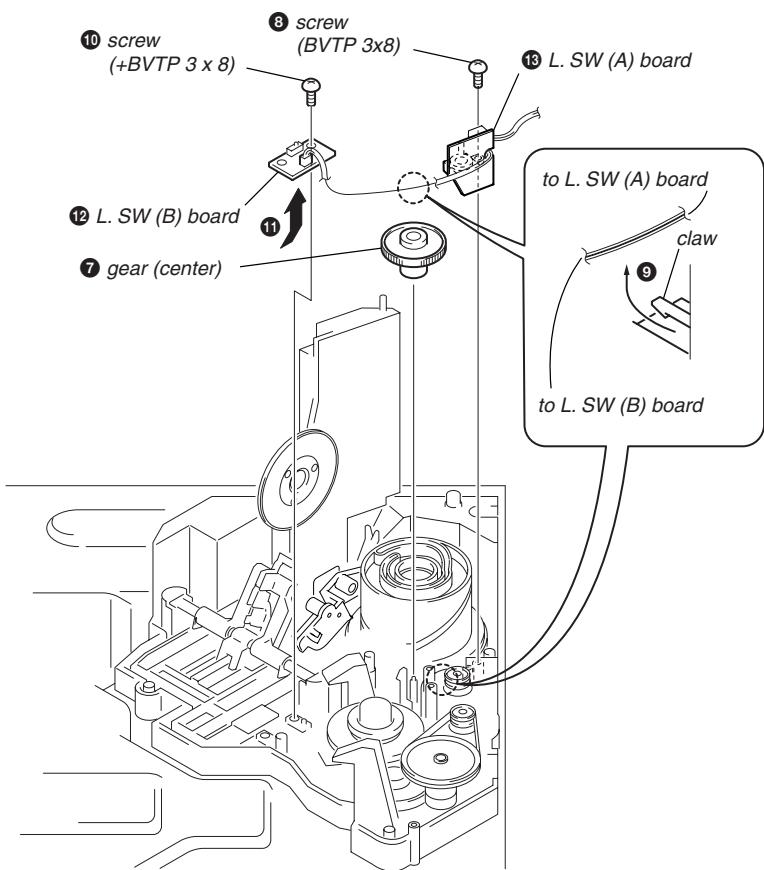
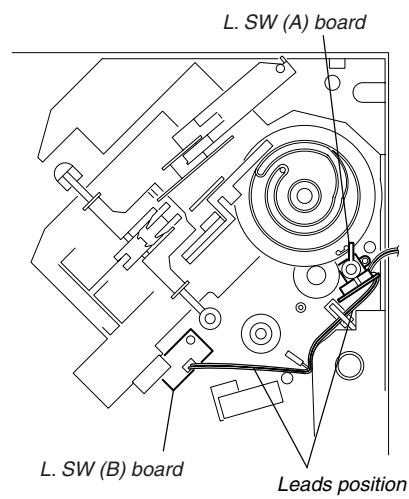
3-19. BD Board, Optical Device (KSM-213 BFN)

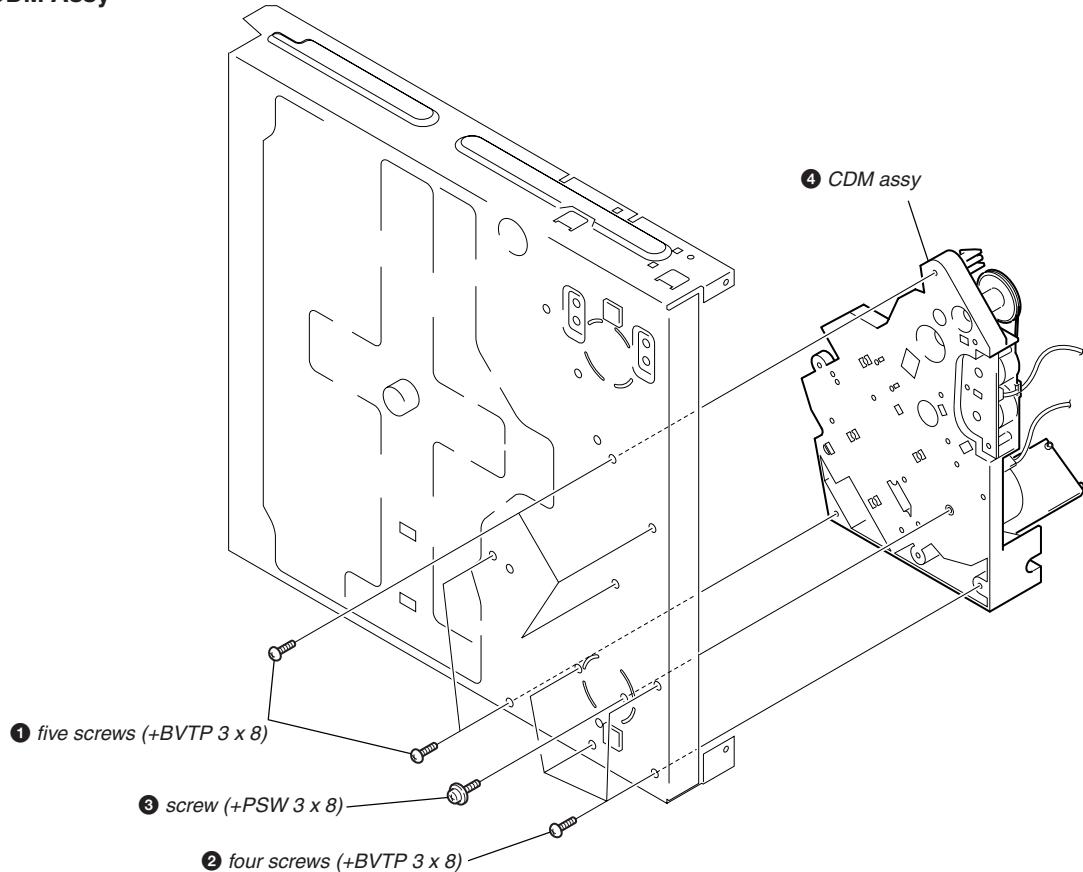
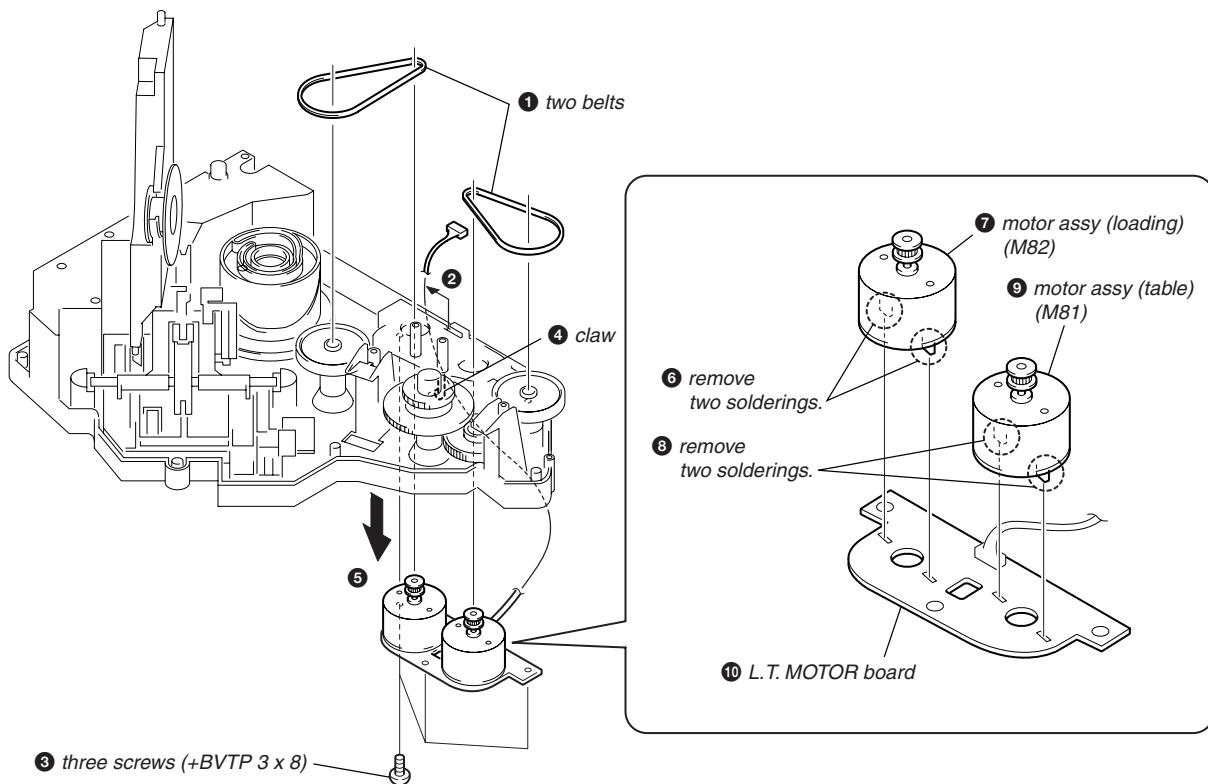


3-20. L. SW (A) Board, L. SW (B) Board

*Note during re-assembling*

When re-assembling the L. SW (A) and L. SW (B) boards,
align the leads position as shown.



3-21. CDM Assy**3-22. Motor Assy (Loading) (M82) , Motor Assy (Table) (M81) , L. T. MOTOR Board**

SECTION 4 SERVICE MODE

SPECIAL FUNCTION

This unit is provided with several service modes.

Details are shown in the following table.

Mode name	Power supply state	Button operation	Remarks
ALL ERASE	OFF	[CLEAR] + [I/O]	Note 1
AGING MODE	ON	[GROUP 1] + [OPEN/CLOSE] + [+100]	
LOADING AGING MODE	ON	[GROUP 2] + [OPEN/CLOSE] + [+100]	
TABLE AGING MODE	ON	[GROUP 3] + [OPEN/CLOSE] + [+100]	
DOOR POP UP AGING MODE	ON	[GROUP 4] + [OPEN/CLOSE] + [+100]	
TABLE LOTATION MODE	ON	[GROUP 5] + [OPEN/CLOSE] + [+100]	Used in adjustment
TITLE MEMO SHIFT MODE	ON	[GROUP 7] + [OPEN/CLOSE] + [+100]	
MODEL NAME DISPLAY	ON	[GROUP 1] + []>+ [+100]	
MICROPROCESSOR VERSION DISPLAY	ON	[GROUP 2] + []>+ [+100]	
ALL LIT MODE	ON	[GROUP 3] + []>+ [+100]	
MECHANISM ADJUSTMENT MODE	ON	[GROUP 4] + []>+ [+100]	
SHIPMENT MODE	ON	[GROUP 5] + []>+ [+100]	Note 1
TITLE MEMO RECORDING CHECK MODE	ON	[GROUP 6] + []>+ [+100]	Note 1

Note 1

Do not execute unless with a proper reason, otherwise the memory of the title memo recorded by the customer will be erased.
The title memo recording check mode is not required for servicing. Do not execute.

ALL ERASE

This mode is used for clearing information such as the title memo.
Do not execute if information such as the title memo is not to be erased.

Procedure:

While pressing the [CLEAR] button with the power OFF, press the [I/O] button and turn on the power.

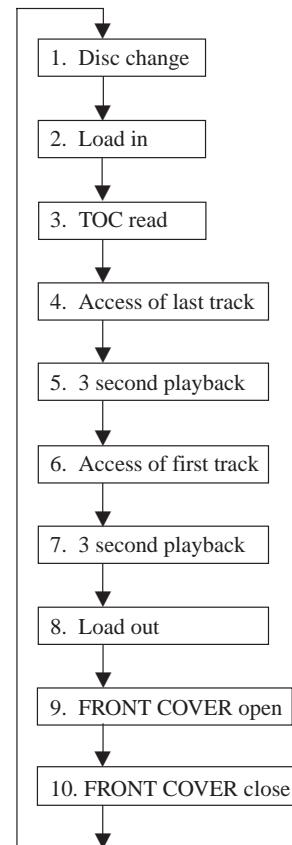
The fluorescent display tube displays "ALL ERASE" and all memories will be cleared.

AGING MODE

- Mode which repeatedly changes and plays back discs automatically in the unit.
- It will repeat aging as long as no errors occur.
- If an error occurs during aging, it will stop all servos, motors, etc. instantaneously, display the error number, and stop operations. However, the stopping conditions differ according to whether the unit is equipped with the "self-protection function during errors" described later.

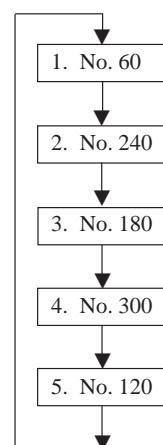
The function serves to maintain the state of the unit when errors occur.

Sequence of Aging Mode



Order of Disc Change

(1 cycle takes 3 minutes)



Special Aging Mode Functions

The aging mode is provided with the following convenient functions

- Disc setting mode (*1)
- Selection of presence of protection function during error (*2)
- Count function of aging cycle (*3)

***1 Disc setting mode:**

5 discs are set before setting the aging mode. This mode makes the setting of these discs more easy.

***2 Self protection function during errors:**

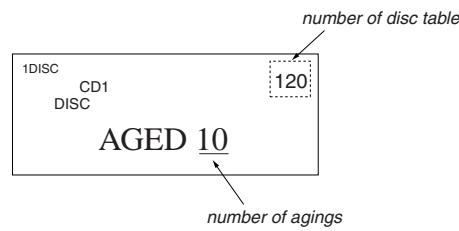
Function which voluntarily corrects errors which occur during normal operations by retries.

If this function is not provided, all operations will be stopped without retiring. It is suitable for checking errors with low reproducibility.

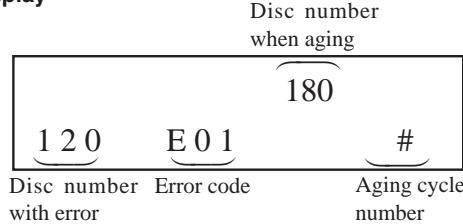
If this function is provided, and errors can be corrected by retries, aging will be continued without stopping.

***3 Aging cycle count function:**

Functions which displays the number of agings carried out on the Fluorescent indicator tube in numbers. One aging cycle consists of five discs.

**Aging Procedure**

1. Turn ON the power of the unit. Press the [OPEN/CLOSE] button and open the front cover.
2. Change the [COMMAND MODE] switch (S902) on set to [CD1].
3. Press the [AGING START] button of the remote commander for aging mode (J-2501-123-A).
4. When the disc set mode is set, the [▶] and [■] LEDs blink.
5. Rotate the [DISC/CHARACTER] dial. The slits (No. 60, 120, 180, 240, 300) for setting the discs will come forward. Insert the discs into these slits. Do not set the discs in other slits.
6. Set whether the self-protection function during errors is equipped with the unit. Press the [REPEAT] button. If "REPEAT" is displayed on the Fluorescent indicator tube, it means the function is provided. If "REPEAT" is not displayed, it means the function is not provided.

Error Display

7. Press the [▶] button.
8. The [▶] LED blinks, the aging mode is set, and aging is started.
9. The aging cycle lasts 3 minutes. If errors occur during aging, the error number will be displayed on the Fluorescent indicator tube. (Refer to the following table for the details of the errors.)
10. Aging will be repeated as long as no errors occur.
11. After each aging cycle, the number displayed on the Fluorescent indicator tube will increase.
12. To end aging, disconnect the power cord from the outlet.

NOTE: As an alternative to steps 2 and 3, press the [GROUP 1] button, [OPEN/CLOSE] button, and [+100] button at the same time.

Error code

Code number	Name	Contents
Err 01	DISC sensor check 1	No disc in the specified slit
Err 02	DISC sensor check 2	Disc in other slits
Err 03	Table operation check 1	Table motor current over
Err 04	Table operation check 2	No table sensor input
Err 05	Loading operation check 1	Load in timeover
Err 06	Loading operation check 2	Load out timeover
Err *1	BU related check 1	Access timeover
Err *2	BU related check 2	High speed search NG
Err *3	BU related check 3	Q data read error
Err *4	BU related check 4	BU operation (from focus search to until signal can be read) timeover
Err *5	BU related check 5	GFS monitor error
Err *6	BU related check 6	Focus cannot be imposed by focus search
Err *7	BU related check 7	Auto focus bias adjustment cannot be performed

The following * numbers mean according to the state of the unit during aging

*2 : From chucking to end of TOC read

*3 : From end of TOC read to end of last track playback

*4 : From end of last track playback to end of first track playback

LOADING AGING MODE

- This mode is used for repeating loading operations continuously.
- Aging will be performed continuously unless an error occurs.
- When an error occurs, the error code will be displayed on the fluorescent indicator tube.

Procedure:

1. Set a disc in the DISC 1 slit.
2. With the power ON, while pressing the [GROUP 2] button and [OPEN/CLOSE] button, press the [+100] button.
3. When the mode is set, both the [▶] and [II] indicators will start to blink.
4. When the [▶] button is pressed, only the [▶] indicator will blink and aging starts.
5. To end the mode, press the [I/O] button or disconnect the power cord from the outlet.

The error codes displayed during operations and when errors occur are the same as the “**AGING MODE**” described earlier.

TABLE AGING MODE

- This mode is used for rotating the table randomly.
- Aging will be performed continuously unless an error occurs.
- When an error occurs, the error code will be displayed on the fluorescent indicator tube.

Procedure:

1. Set discs in slits 1, 2, 99, 100, and 200.
2. With the power ON, while pressing the [GROUP 3] button and [OPEN/CLOSE] button, press the [+100] button.
3. When the mode is set, both the [▶] and [II] indicators will start to blink.
4. When the [▶] button is pressed, only the [▶] indicator will blink and aging starts.
5. To end the mode, press the [I/O] button or disconnect the power cord from the outlet.

During aging, operations will be carried out sequentially in the order of No. 1, No. 2, No. 100, No. 99, and No. 200 slits.

The error codes displayed during operations and when errors occur are the same as the “**AGING MODE**” described earlier.

DOOR POP UP AGING MODE

- This mode is used for performing aging of the CD pop up part and door open/close.
- It is used for checking if operations are performed normally.

Method:

1. To select a slot to be aged, press the [OPEN/CLOSE] button and rotate the [DISC/CHARACTER] knob with the front door opened to select a number.
2. With the power ON, while pressing the [GROUP 4] button and [OPEN/CLOSE] button, press the [+100] button.
3. When the [▶] button is pressed, aging starts, and door open/close and up/down operations of the pop up part are performed continuously.
4. To end the mode, press the [I/O] button.

If DISC is not selected at step 1, aging will be performed at the 192 slot.

The number of times aging is performed will be displayed on the fluorescent indicator tube during operations.

TABLE ROTATION MODE

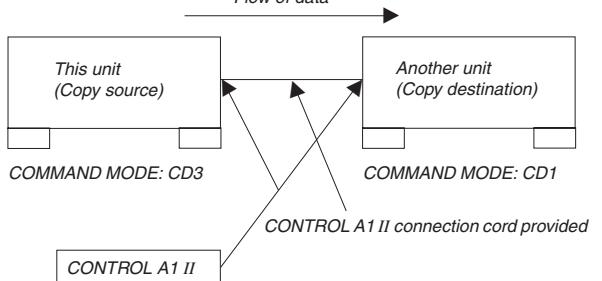
- This mode is used for electrical adjustments. Refer to the section on Electrical Adjustments.

TITLE MEMO SHIFT MODE

- This mode is used for writing title memo information recorded in this unit in a different unit.

Use it for transferring disc memo contents written by the customer to the new units when replacing the unit, etc.

Connection:



Procedure:

1. Connect two units using the [CONTROL A1 II] connection cord shown in the figure.
2. Set the [COMMAND MODE] switch of the copy source unit to [CD3] and the [COMMAND MODE] switch of the copy destination unit to [CD1].
3. With the power on, while pressing the [GROUP 7] button and [OPEN/CLOSE] button of the copy destination unit, press the [+100] button.
4. When the data has been transferred, the fluorescent indicator tube displays “complete” for about 1 second.

MODEL NAME DISPLAY

- Model names can be displayed on the fluorescent indicator tube for checking the microprocessor model setting, etc.

Procedure:

With the power ON, while pressing the [GROUP 1] and [▶] buttons, press the [+100] button.
The model name is displayed on the fluorescent indicator tube.

MICROPROCESSOR VERSION DISPLAY

- The microprocessor version can be displayed on the fluorescent indicator tube.

Procedure:

With the power ON, while pressing the [GROUP 2] and [▶] buttons, press the [+100] button.
The microprocessor version is displayed on the fluorescent indicator tube.

ALL LIT MODE

- This mode is used for lighting the whole fluorescent indicator tubes and LEDs.

Procedure:

With the power ON, while pressing the [GROUP 3] and [▶] buttons, press the [+100] button.
Both the fluorescent indicator tubes and LEDs will light up completely.
To end this mode, press the [I/O] mode.

MECHANISM ADJUSTMENT MODE

- This mode is used for mechanism adjustments. Refer to the section on Mechanism Adjustments.

SHIPMENT MODE

- This mode is used for setting the unit to the shipment state.
Do not execute it without a proper reason as it erases the memory of the title memo recorded by the customer.

Procedure:

Set the [COMMAND MODE] switch to [CD1] and the [TIMER] switch to OFF. Next, with the power ON, while pressing the [GROUP 5] button and [▷] button, press the [+100] button. If the switch state is normal, the model name will be displayed on the fluorescent indicator tube and the unit will set into the shipment mode.

If the various switches are not set to their designated positions, error codes will be displayed on the fluorescent indicator tube.

TITLE MEMO RECORDING CHECK MODE

This mode is not required for servicing. Do not execute without a proper reason.

If executed, the memory of the title memo recorded by the customer will be erased.

SECTION 5

TEST MODE

5-1. ADJ Mode

- Turn ON the power of the unit, set disc to disc table, and perform chucking.
- Disconnect the power supply plug from the outlet.
- To set ADJ mode, connect the test point (ADJ) of the MAIN board to Ground, and connect the power supply plug to the outlet.

In this mode, table rotation and loading operations are not performed because it is taken that the disc has already been chucked.

Note: The same operations are also performed in the following when the test point (ADJ) is connected to Ground after turning on the power.

- Direct search (movement of sledding motor) is not performed during accessing
- Ignored even when GFS becomes L
- Ignored even when the Q data cannot be read
- Focus gain does not decrease

ADJ Mode Special Functions Table

(The buttons shown with () function by using the supplied remote commander only)

Button	Function
CONTINUE	Servo average display Displays VC, FE, RF, TE and traverse in hexadecimal numbers
SHUFFLE	Focus bias display Each time this is pressed, the focus bias is switched between (1) and (2) (1) Bias actually set Optimum bias Minimum jitter (2) U:Upper aliasing bias L:Lower aliasing bias
PROGRAM	Auto gain display Displays focus, tracking, sledding in hexadecimal numbers
GROUP 3 (3)	Turns off the tracking and sledding servo
GROUP 8 (8)	Turns on the tracking and sledding servo
CHECK	S-curve observation mode. (Exits this mode when the  button is pressed.)

5-2. Key and Display Check Mode

To set this mode, connect the test point (AFADJ) on the MAIN board to Ground, and connect the power supply plug to the outlet.

Note: When this mode is executed, all title memos recorded will be erased.

- When this button is pressed, "line # No. #" will be displayed. However, these will not be displayed for the following special buttons. However, these will not be displayed for the following special buttons.

 (stop) button: FL segment check
(Refer to FL Tube Check Patterns)

 (pause) button: FL grid check
(Refer to FL Tube Check Patterns)
The  LED also light up simultaneously.

 (play) button: All FL segment and grid will light up.
All LEDs also light up simultaneously.

 switch: When the switch position is PLAY, the  LED light up. It goes off when set to OFF.

Each time this button is pressed, the value of the "Got ## keys" increases. Buttons pressed once will not be counted when pressed again.

FL Tube Check Patterns

Segment check



Grid check



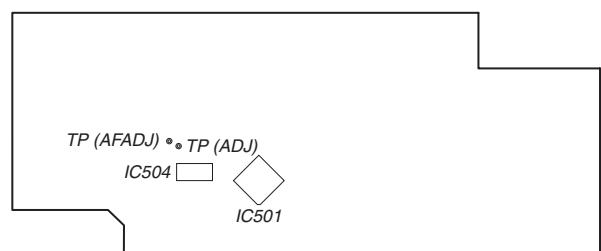
- When the jog dial is rotated to the right, the GROUP LEDs light up in the order of 1→2..8→HIT LIST→EASY PLAY→MEGA CONTROL→1.

- When the jog dial is rotated to the left, the GROUP LEDs light up in the order of 8→7..1→ MEGA CONTROL→ EASY PLAY→HIT LIST→8.

- Abbreviation

FL: Fluorescent Indicator Tube

[MAIN BOARD] – Conductor Side –



SECTION 6 ADJUSTMENTS

6-1. Mechanical Adjustments

Pop Up Mechanism Adjustment

1. With the power ON, while pressing the [GROUP 4] and [▶] buttons, press the [+100] button to enter the mechanism adjustment mode.
2. Press the [GROUP 1] button to operate the loading mechanism, and continue pressing until the disc table locks. (Fig-1)
3. Press the [GROUP 2] button to raise the pop up part.
4. Remove the cover (chassis), loosen the adjusting screw, move the screwdriver left and right until the lever (POP UP) does not touch the slit wall, and secure the screw. (Fig-2)

The following buttons have special functions in this mode.

[GROUP 1] button:	Loading mechanism IN operation
[GROUP 5] button:	Loading mechanism OUT operation
[GROUP 2] button:	Pop up part UP operation
[GROUP 6] button:	Pop up part DOWN operation

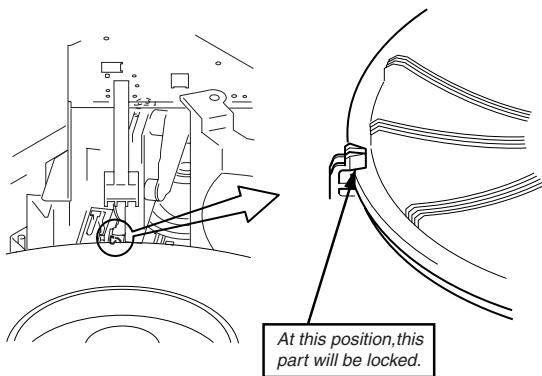
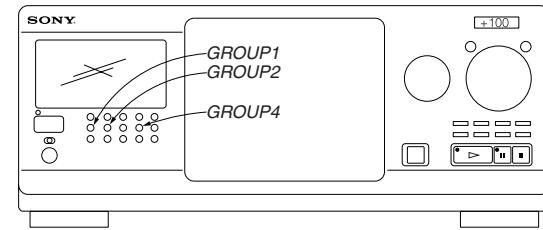


Fig-1

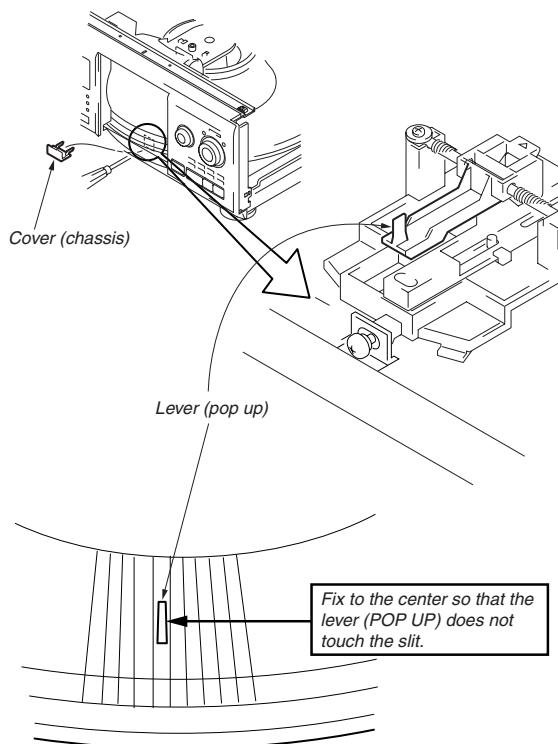


Fig-2

Sensor Adjustment

- With the power ON, while pressing the [GROUP 4] and [▷] buttons, press the [+100] button to enter the mechanism adjustment mode.
- Press the [GROUP 1] button to operate the loading mechanism, and continue pressing until the disc table locks. (Fig-3)
- Loosen the fixing screw, move the holder (TABLE SENSOR) slightly, and when the LED (green) of the [PLAY] button switches to the LED (orange) of the [PAUSE] button (or vice versa), secure the holder (TABLE SENSOR). (Fig-4)
- Moving the disc table right and left with a hand after the screw is fixed, the table will move by the play of a disc table. If the LEDs light up alternately, the adjustment will be performed correctly. (Fig-4)

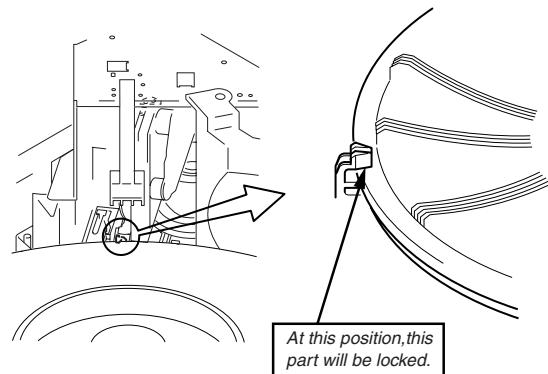
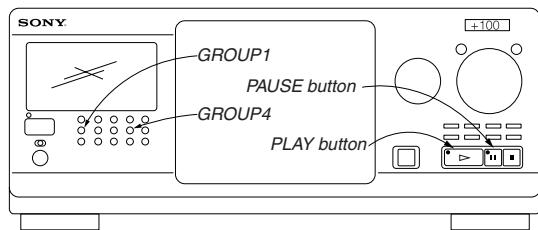
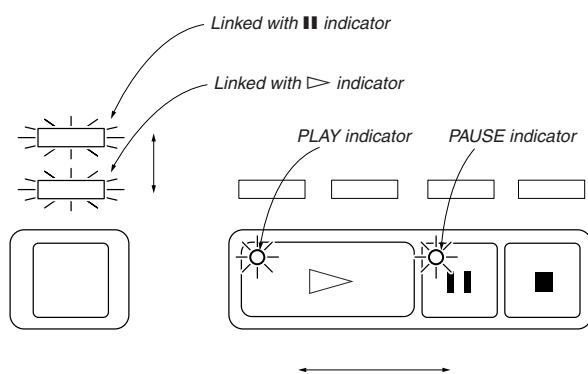


Fig-3

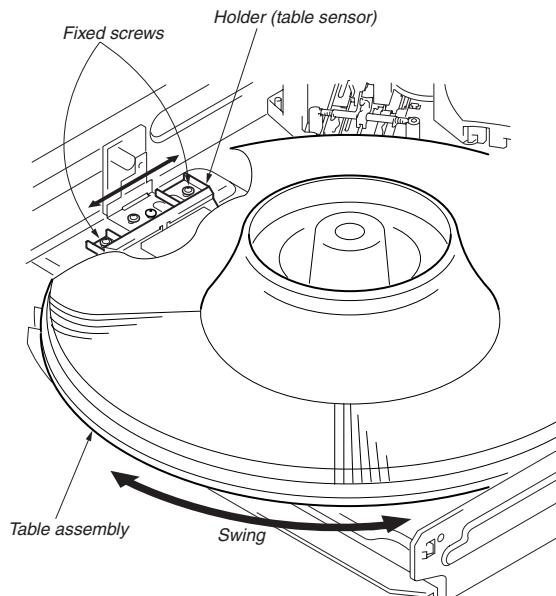


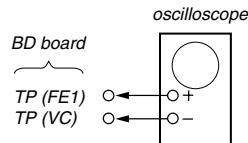
Fig-4

6-2. Electrical Adjustment

Note:

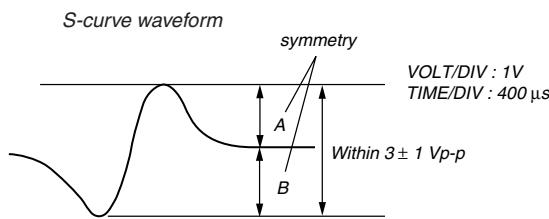
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than $10M\Omega$ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



Procedure :

1. Chuck the disc (YEDS-18) beforehand, and disconnect the power cord from the outlet.
2. Connect oscilloscope to test point TP (FE1) on BD board.
3. Connect test point TP (ADJ) on MAIN board to ground with lead wire.
4. The ADJ mode is set when the power cord is inserted into the outlet and power is supplied.
5. The fifth track is played automatically.
6. Press the [CHECK] button.
7. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3 ± 1 Vp-p.

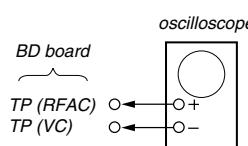


8. Pressing the [] button stops the output of the waveform (s curve).
9. After check, remove the lead wire connected in step 3.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

Adjustment Location: BD board (See page 30)

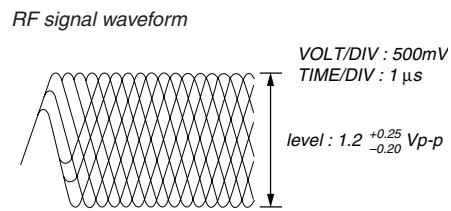
RF Level Check



Procedure :

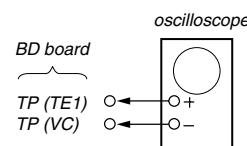
1. Connect oscilloscope to test point TP (RFAC) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: A clear RF signal waveform means that the shape “◊” can be clearly distinguished at the center of the waveform.



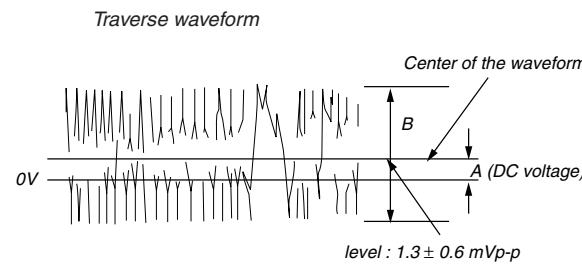
Adjustment Location: BD board (See page 30)

E-F Balance Check

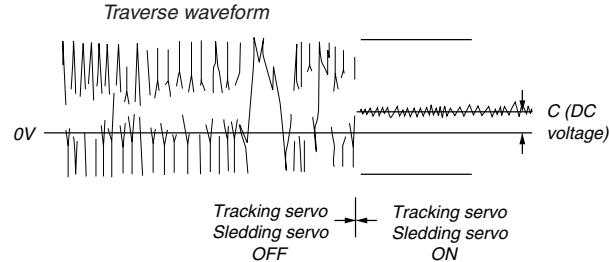


Procedure :

1. Chuck the disc (YEDS-18) beforehand, and disconnect the power cord from the outlet.
2. Connect oscilloscope to test point TP (TE1) on BD board.
3. Connect test point TP (ADJ) on MAIN board to ground with lead wire.
4. The ADJ mode is set when the power cord is inserted into the outlet and power is supplied.
5. The fifth track is played automatically.
6. Press the [GROUP 3] button. (The tracking servo and the sledding servo are turned OFF.) “TRK Off” is displayed.
7. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 22\%$



8. Press the [GROUP 8] button. (The tracking servo and sledding servo are turned ON.) “TRK On” is displayed. Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 7.

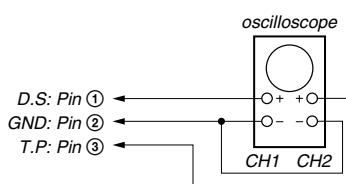
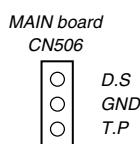
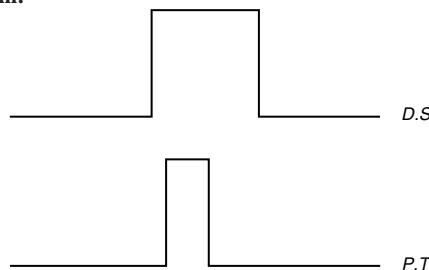


9. After check, disconnect the lead wire of TP (ADJ) connected in step 3.

Adjustment Location: MAIN board (See page 30)

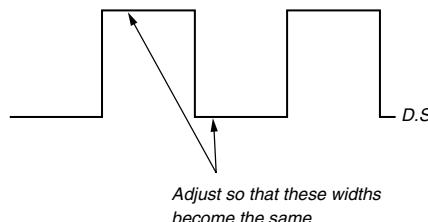
Disc Sensor Adjustment

Be sure to perform this adjustment after sensor adjustment in MECHANICAL ADJUSTMENT.

Connection:**Waveform:**

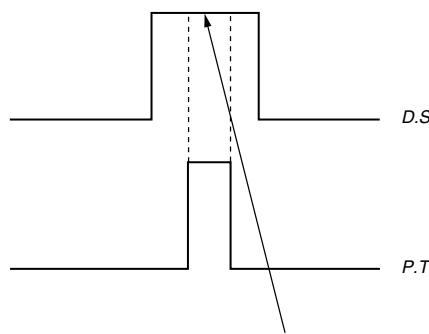
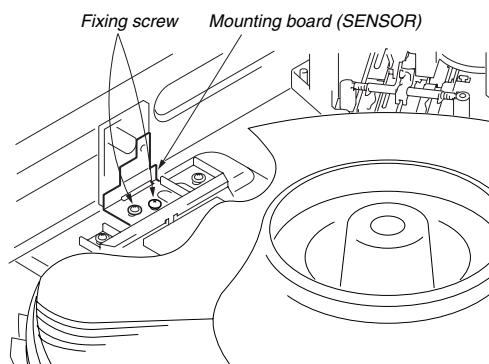
1. Connect the oscilloscope to Pins ①, ②, and ③ of CN506 of the MAIN board.
2. Check that no discs are loaded in the unit.
3. With the power ON, while pressing the [GROUP 5] and [OPEN/CLOSE] buttons, press the [+100] button. The disc table starts to rotate in the clockwise direction.
4. Loosen the fixing screw, move the mounting board (SENSOR), and secure the mounting board (SENSOR) at the point the H portion of the P.T. waveform comes the center of the H portion of the D.S. waveform.

5. Rotate the [DISC/CHARACTER] knob in the counterclockwise direction and the disc table starts to rotate in the same direction. Check that the waveform at this time is the same as that in step 4. If larger by a considerable extent, rotate the [DISC/CHARACTER] knob in the clockwise direction and the disc table starts to rotate in the same direction. Repeat from step 4.
6. Rotate RV501 of the MAIN board and adjust so that the H and L portions of the D.S. waveform become the same.



Adjust so that these widths become the same.

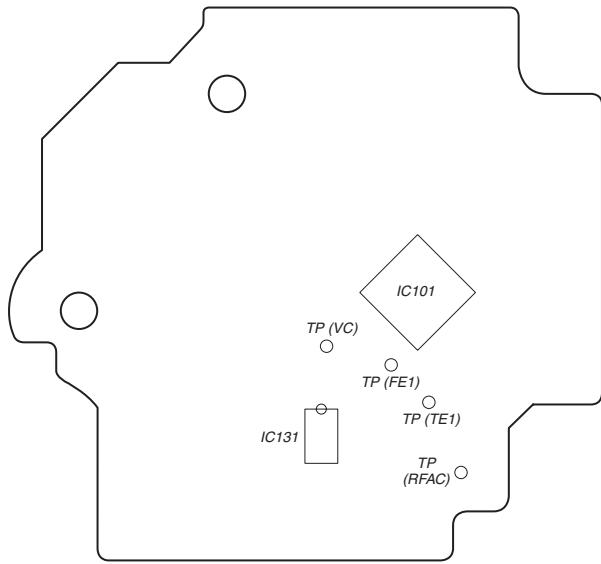
Adjustment Location: MAIN board (See page 30)



Should be at the center

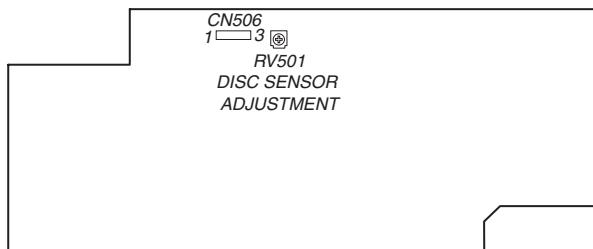
Adjustment Location :

[BD BOARD] – Conductor Side –

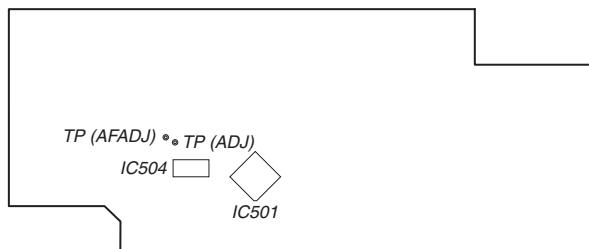


[MAIN BOARD]

– Component Side –



– Conductor Side –



SECTION 7 DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in μF unless otherwise noted. p : μF 50 MV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- \triangle : internal component.
- [] : panel designation.

Note:	Note:
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

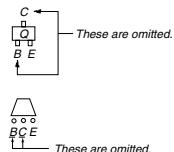
- : B+ Line.
- : B- Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. No mark : STOP.
- Voltages are taken with a VOM (Input impedance $10\text{ M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- : CD
- : digital

For printed wiring boards.

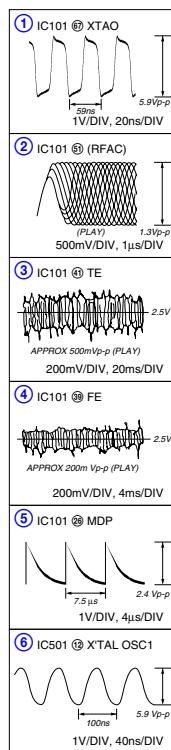
Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Through hole.
- : Patterned from the side which enables seeing. (The other layers' patterns are not indicated.)

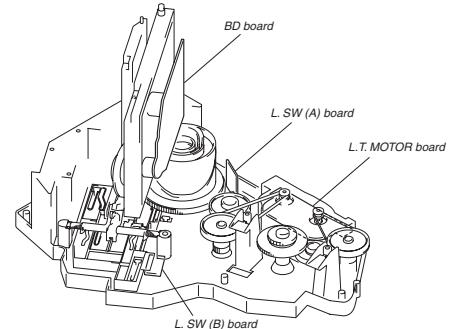
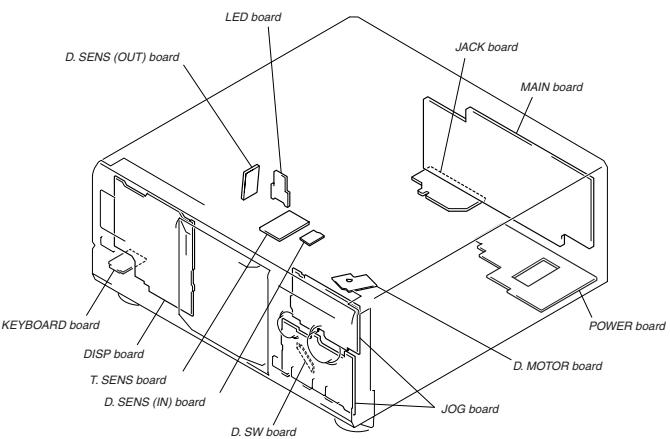
Indication of transistor



• Waveform

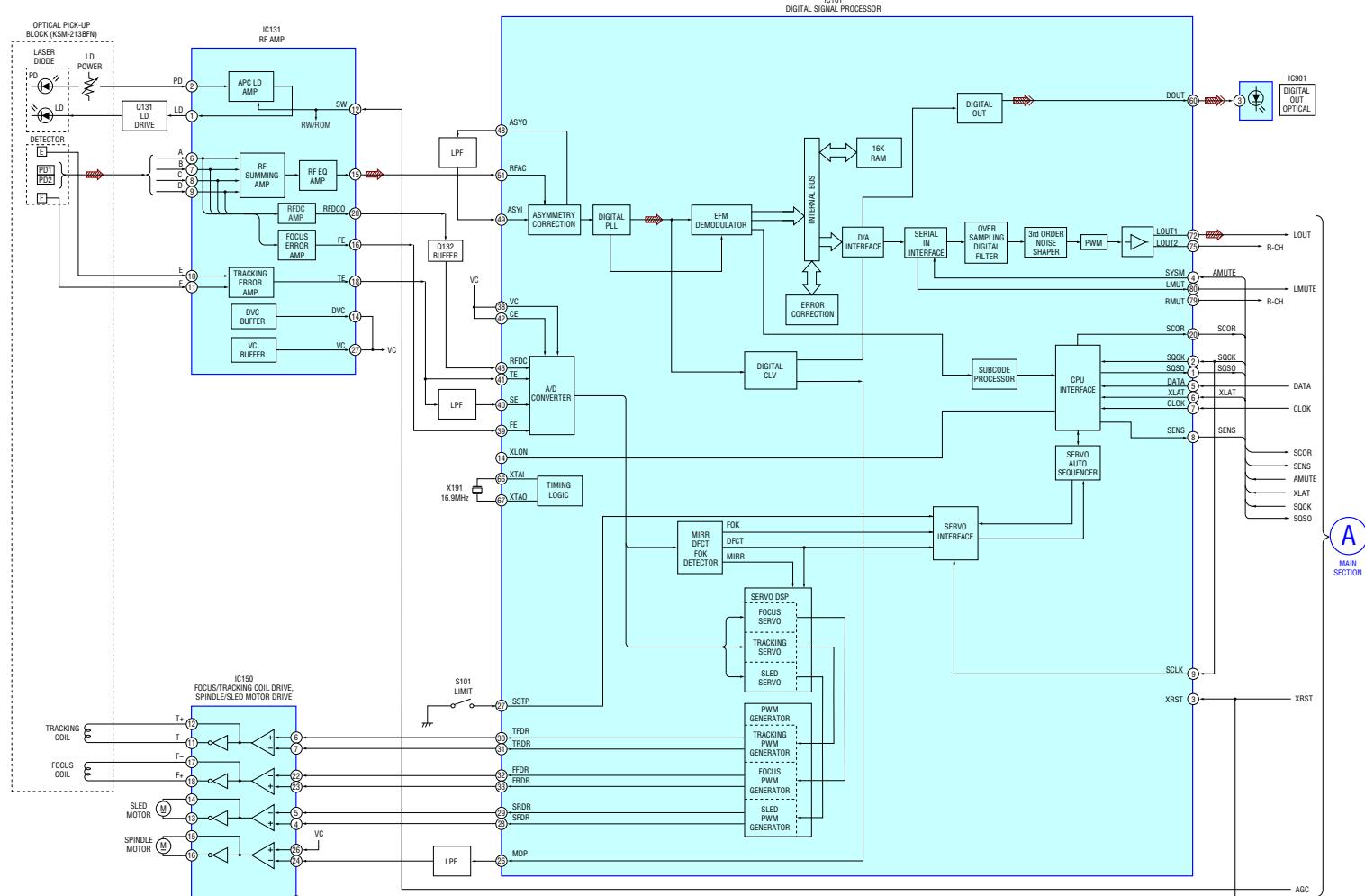


• Circuit Board Location

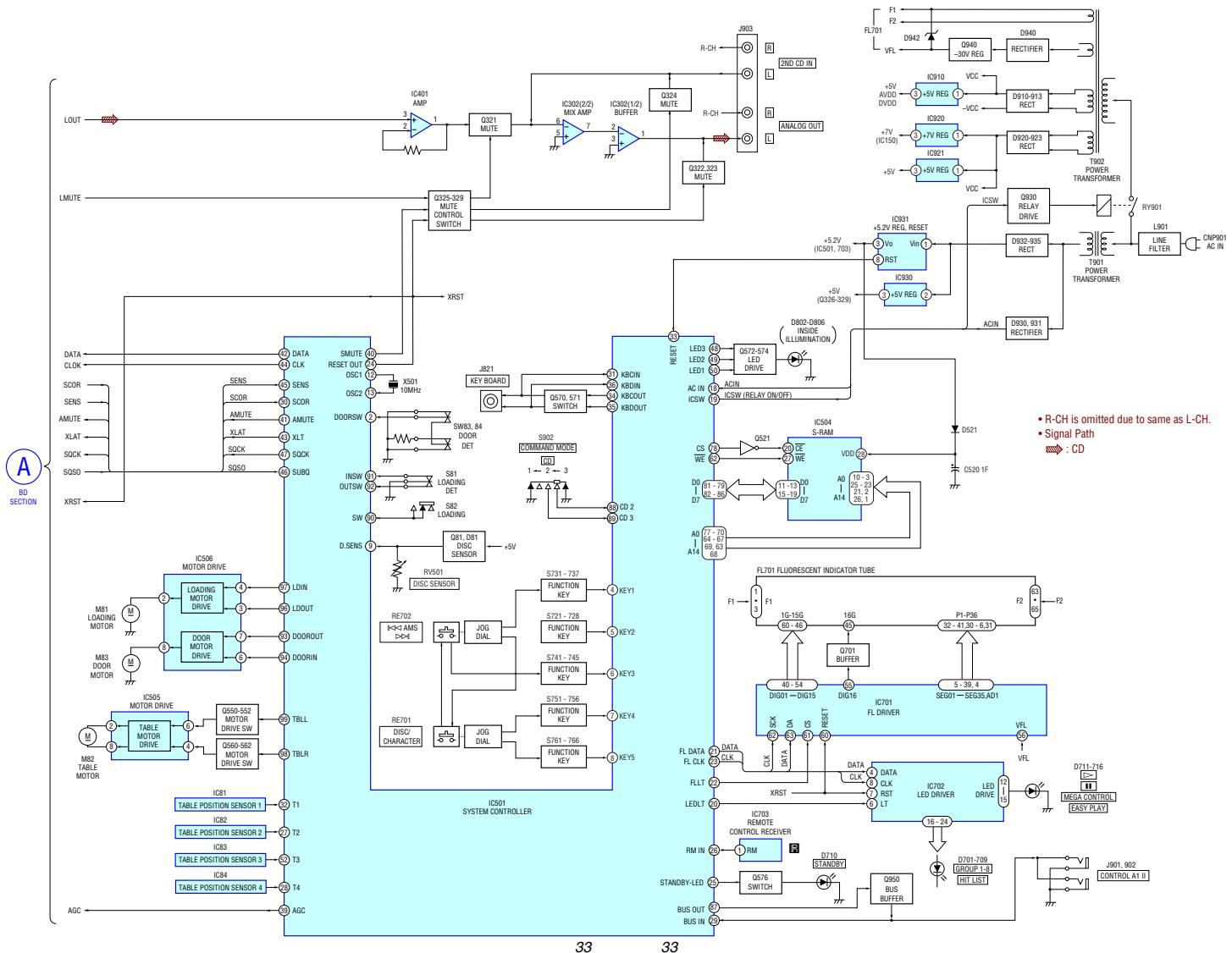


CDP-CX355

7-1. Block Diagrams – BD Section –



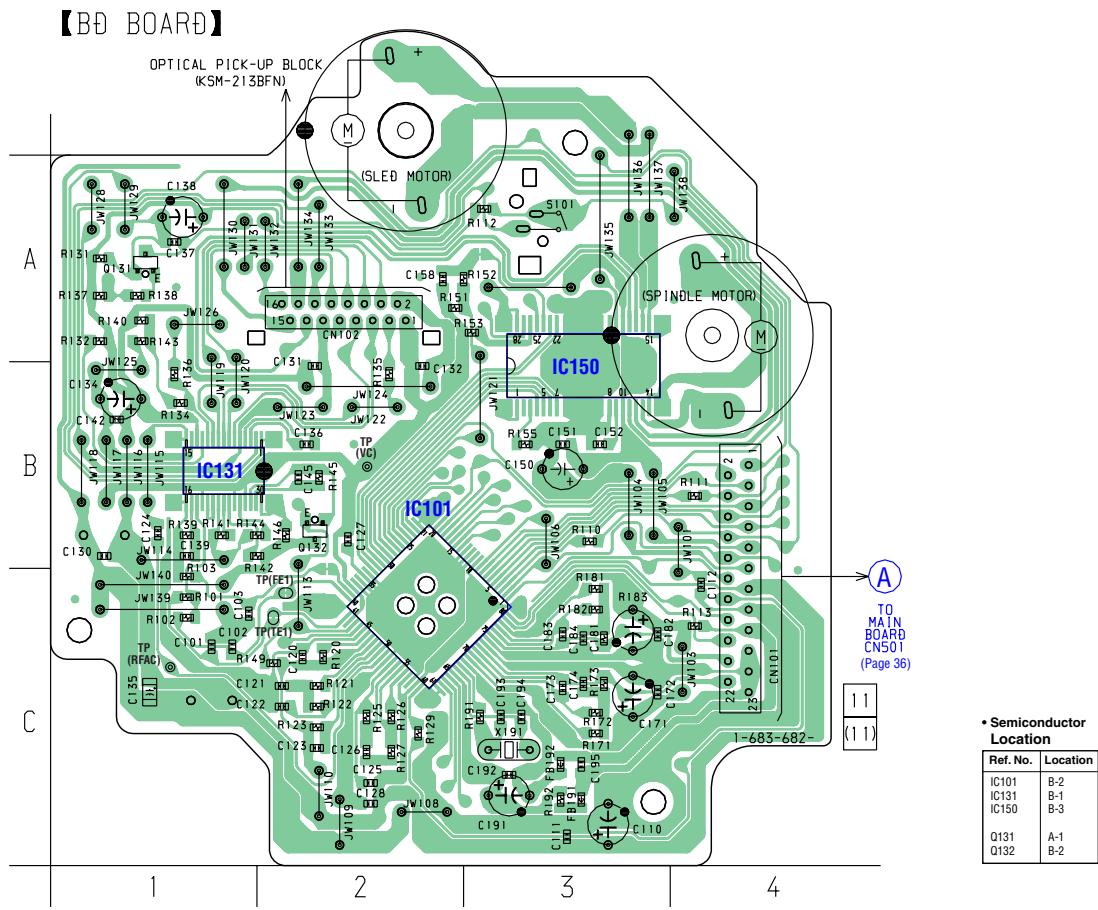
- MAIN Section -



CDP-CX355

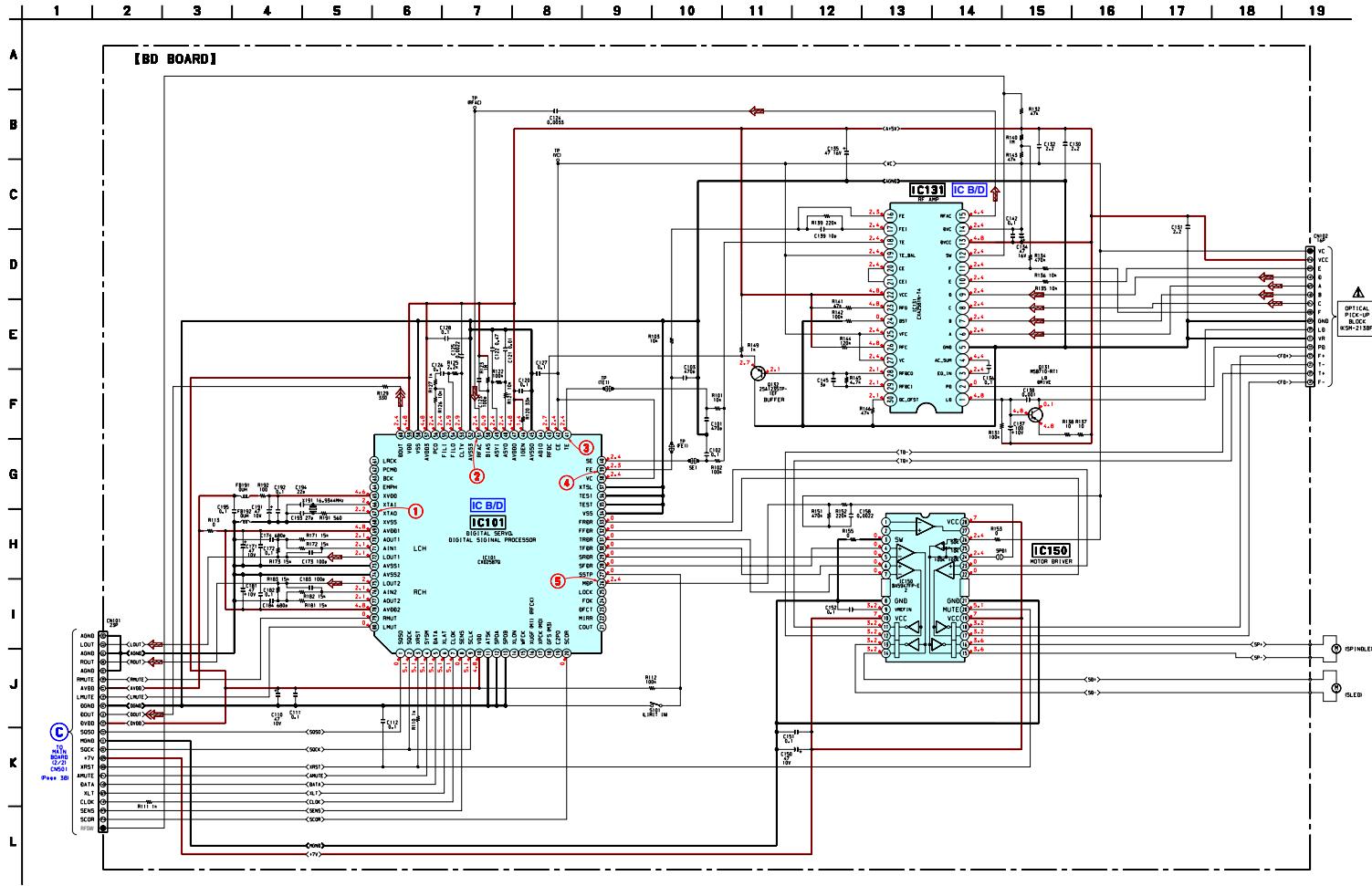
7-2. Printed Wiring Board – BD Section –

• See page 31 for Circuit Boards Location.

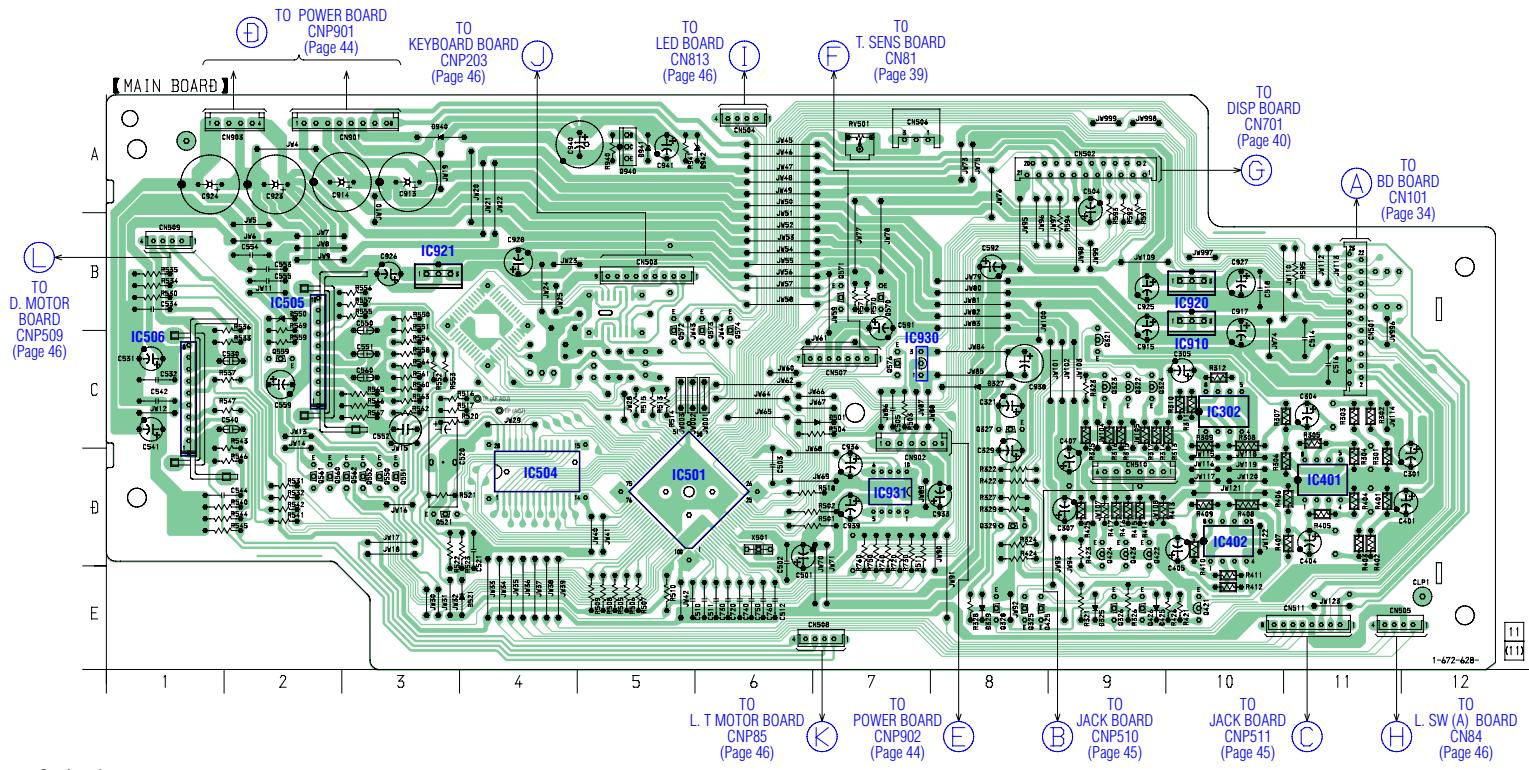


7-3. Schematic Diagram – BD Section –

- See page 31 for Waveforms.
- See page 47, 48 for IC Block Diagrams.
- See page 50 for IC Pin Function.



7-4. Printed Wiring Board - MAIN Section - • See page 31 for Circuit Boards Location.



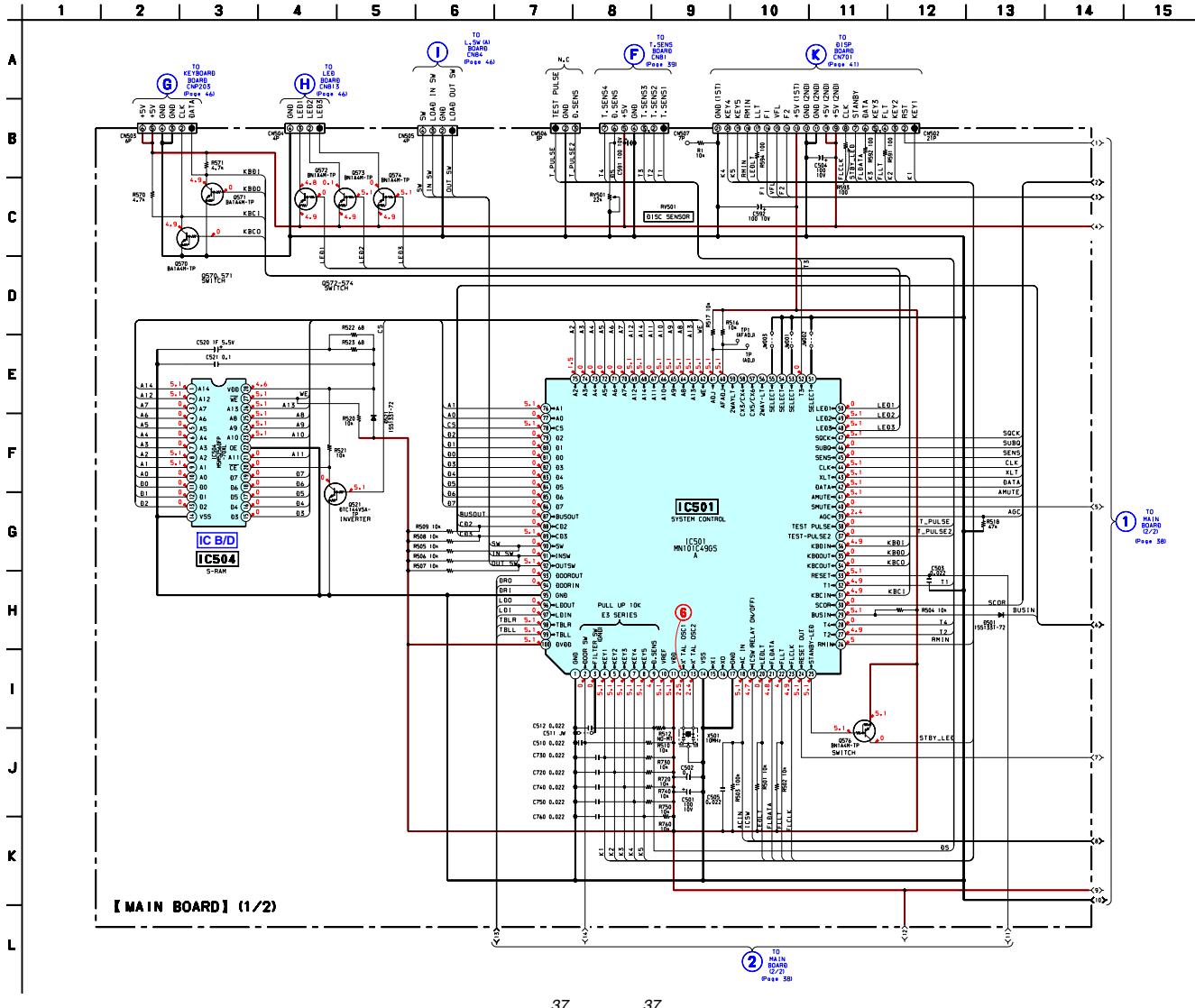
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D325	E-9	IC302	C-10	Q321	C-10	Q521	D-3
D327	C-8	IC401	D-11	Q322	C-9	Q550	D-3
D329	E-8	IC402	D-10	Q323	C-9	Q551	D-3
D425	E-9	IC501	D-5	Q324	C-9	Q552	D-3
D501	C-7	IC504	D-4	Q325	E-8	Q559	C-2
D521	E-4	IC505	C-2	Q326	E-9	Q560	D-2
D550	B-2	IC506	C-1	Q327	C-8	Q561	D-2
D940	A-3	IC910	B-10	Q328	E-8	Q562	D-3
D941	A-5	IC920	B-10	Q329	D-8	Q570	B-7
D942	A-6	IC921	B-3	Q421	E-10	Q571	B-7
		IC931	C-7	Q422	D-9	Q572	B-5
			D-7	Q423	D-9	Q573	C-6
				Q424	D-9	Q574	C-6
				Q425	E-8	Q576	C-7
				Q426	E-9	Q940	A-5

CDP-CX355

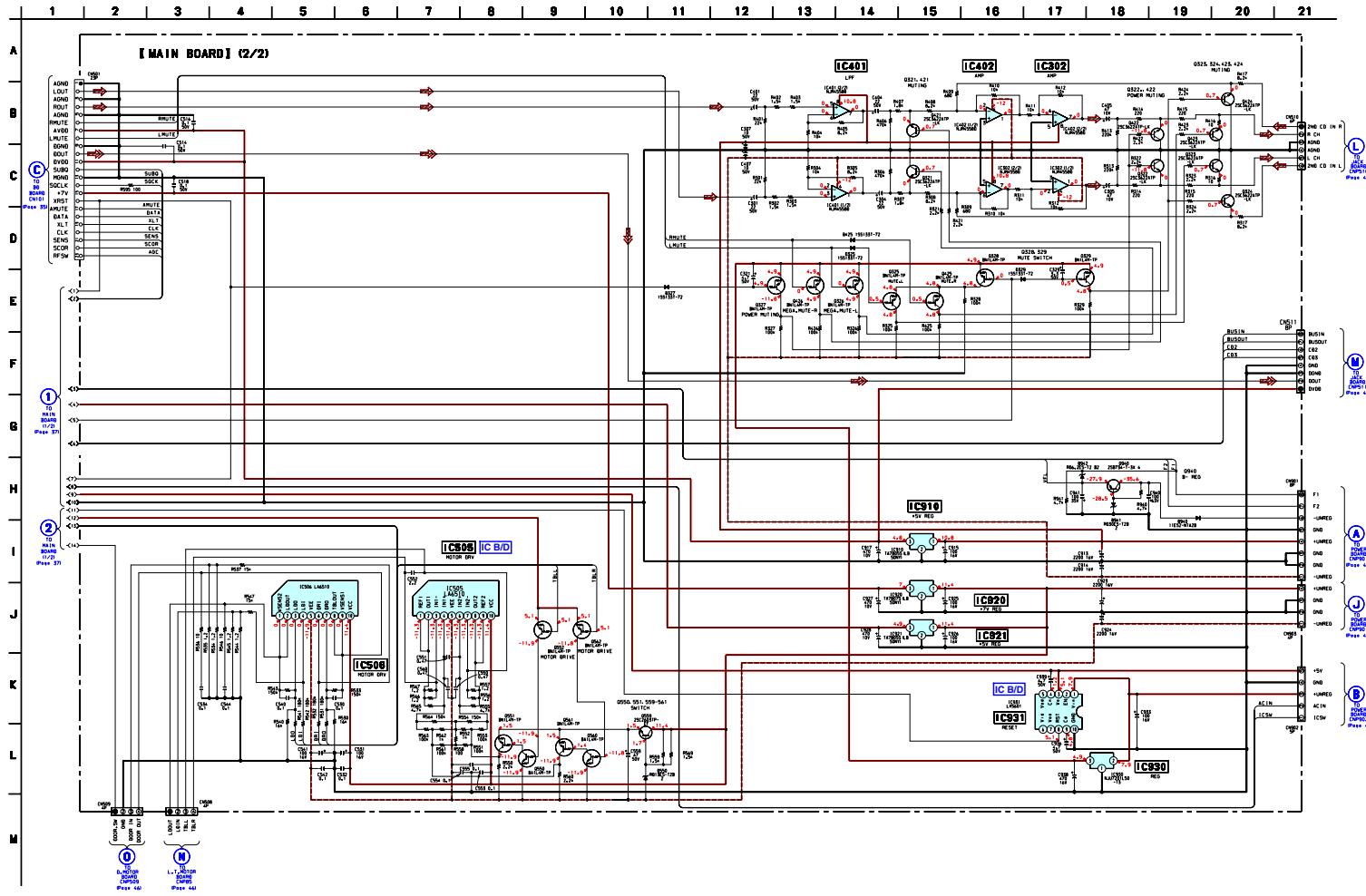
7-5. Schematic Diagram – MAIN Section (1/2)

• See page 31 for Waveform. • See page 48 for IC Block Diagrams. • See page 52 for IC Pin Function.



7-6. Schematic Diagram – MAIN Section (2/2) –

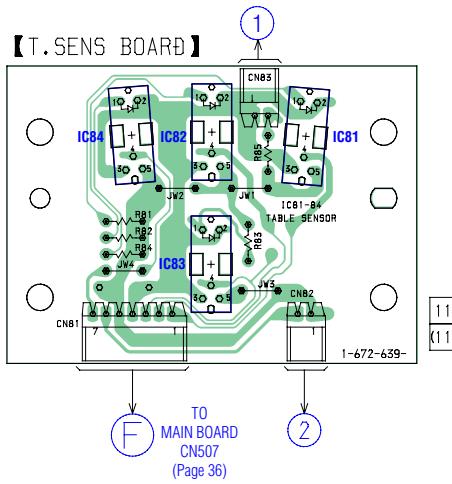
• See page 49 for IC Block Diagrams.



CDP-CX355

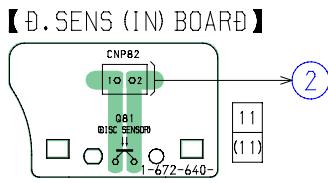
7-7. Printed Wiring Board – T.SENS Section –

• See page 31 for Circuit Boards Location.



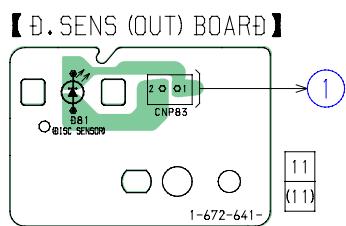
7-8. Printed Wiring Board – D.SENS (IN) Section –

• See page 31 for Circuit Boards Location.



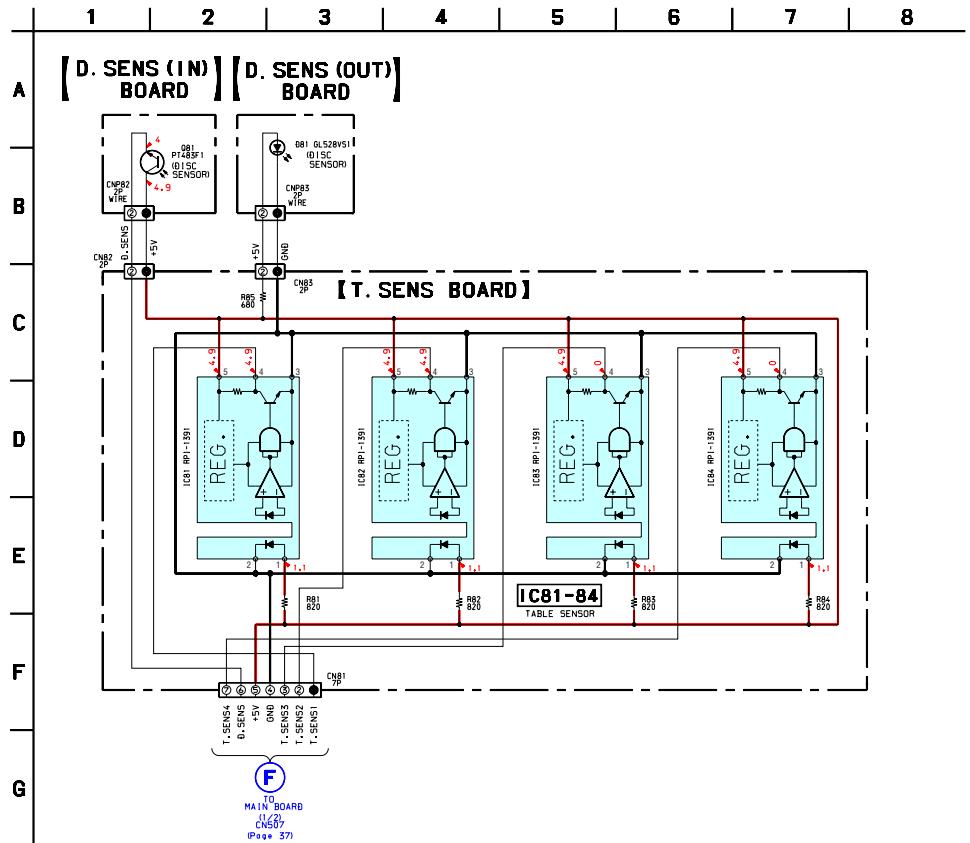
7-9. Printed Wiring Board – D.SENS (OUT) Section –

• See page 31 for Circuit Boards Location.



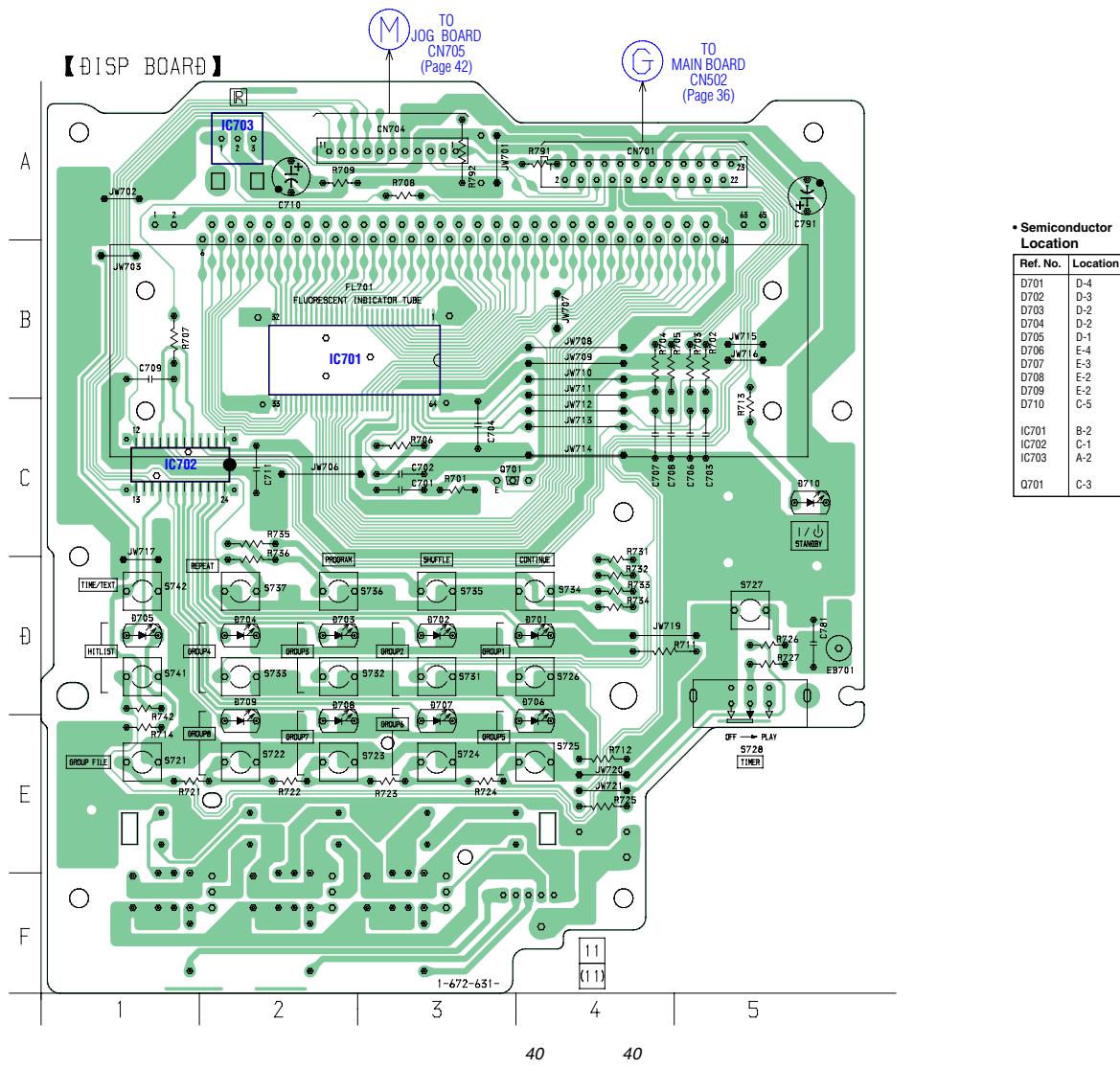
7-10. Schematic Diagram – SENSOR Section –

• See page 31 for Circuit Boards Location.



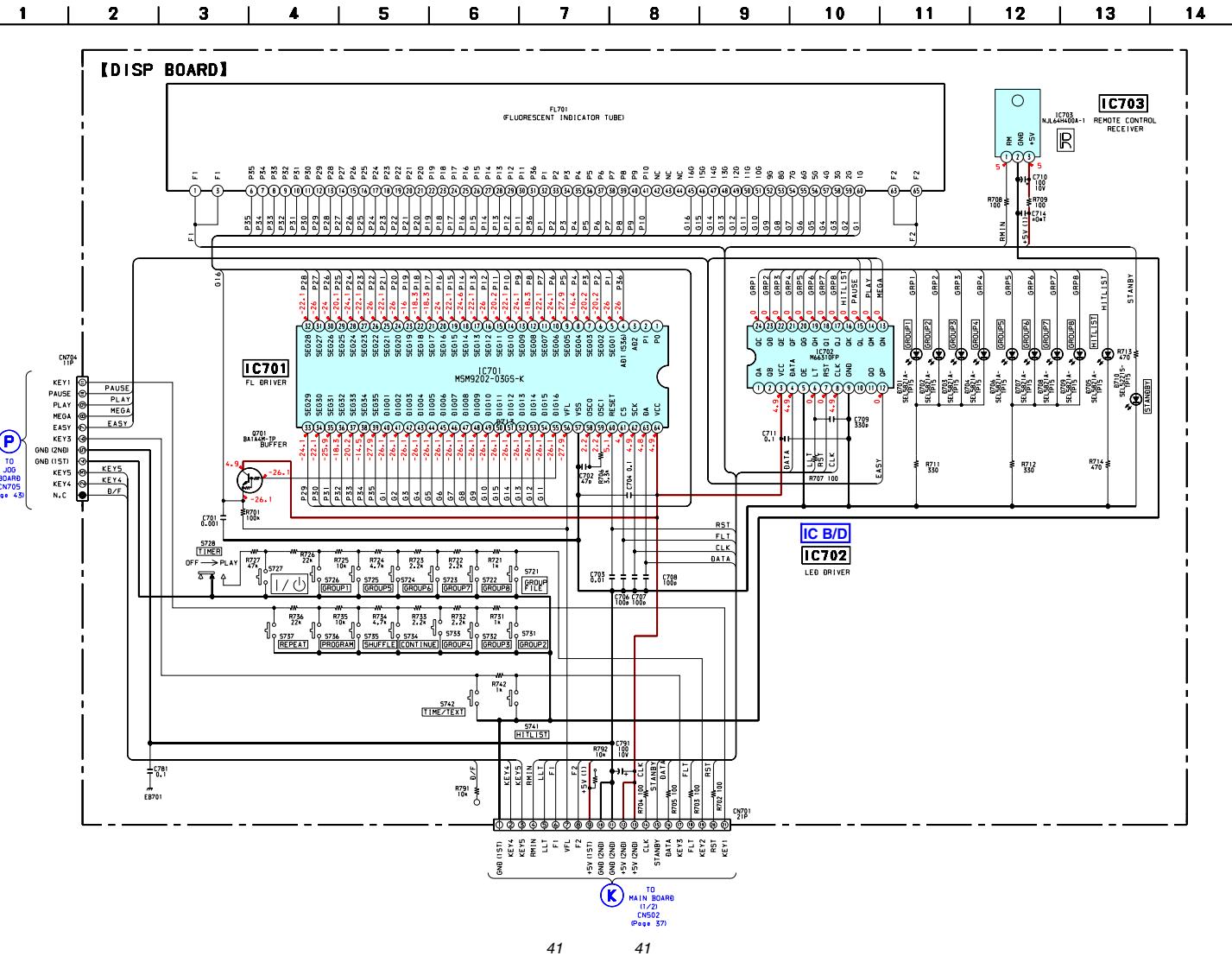
7-11. Printed Wiring Board - DISPLAY Section -

• See page 31 for Circuit Boards Location.



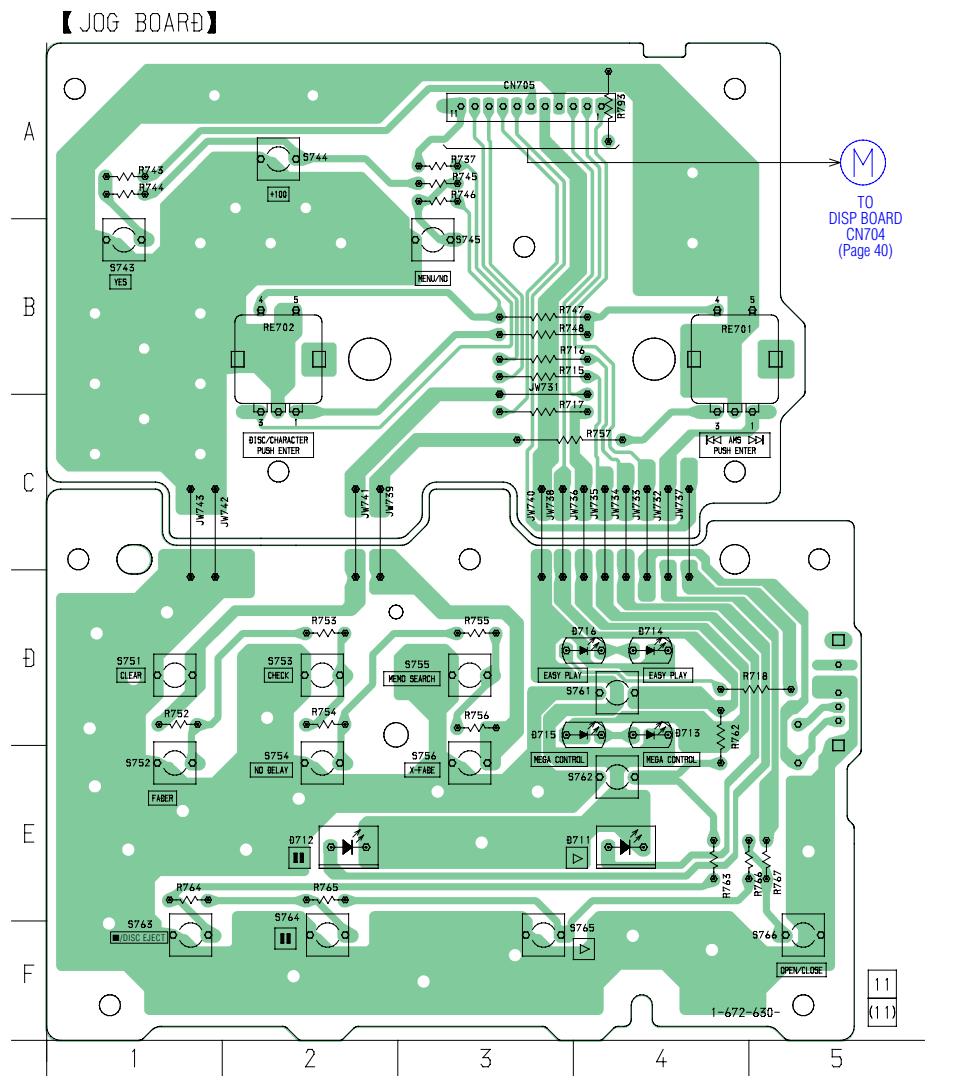
CDP-CX355
7-12. Schematic Diagram – DISPLAY Section –

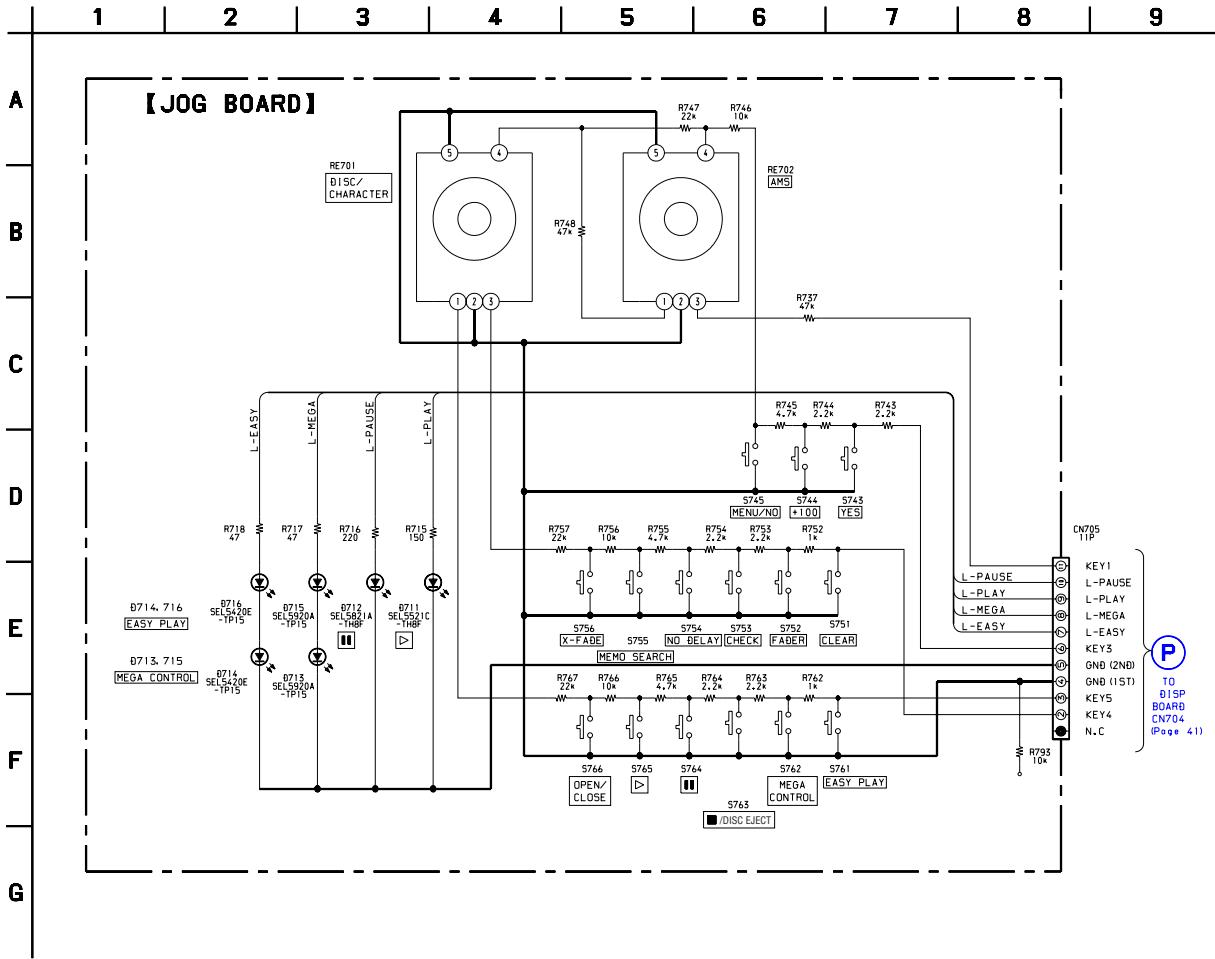
See page 49 for IC Block Diagrams.



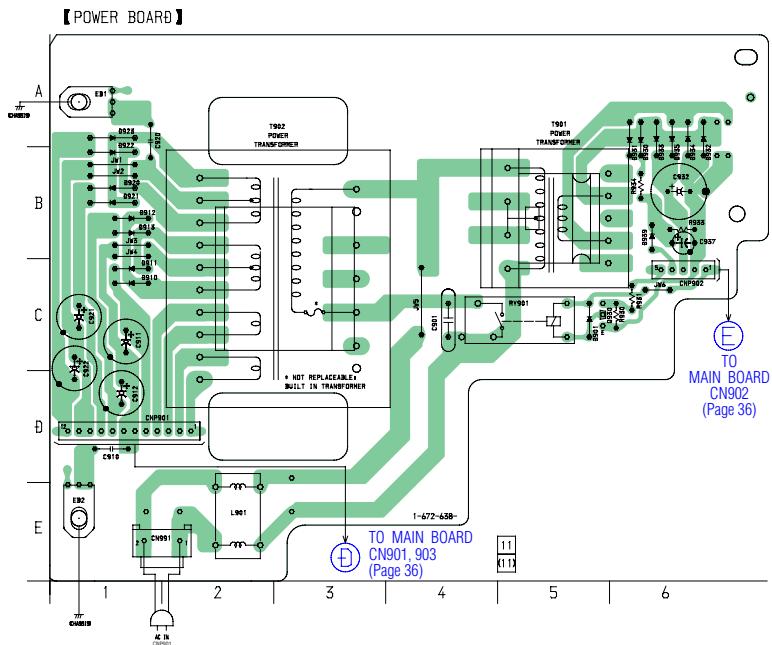
7-13. Printed Wiring Board – JOG Section –

• See page 31 for Circuit Boards Location.



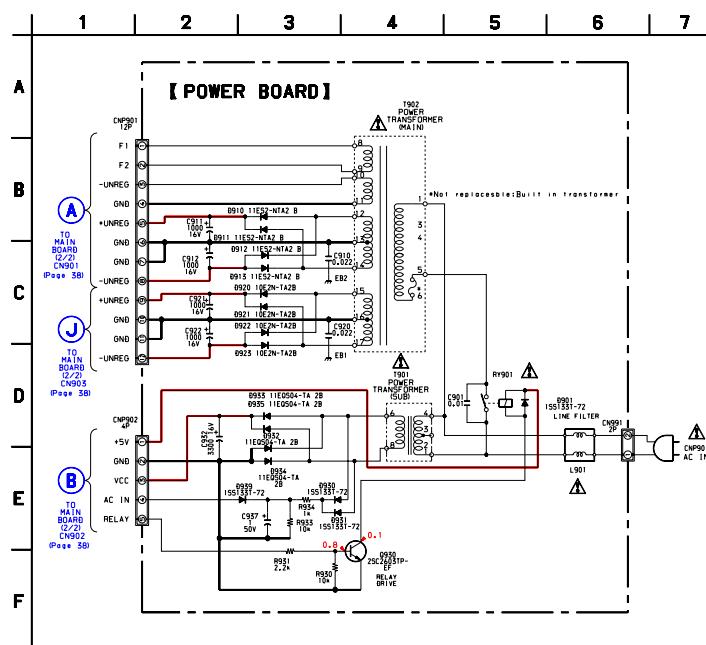


7-15. Printed Wiring Board – POWER Section –



• See page 31 for Circuit Boards Location.

7-16. Schematic Diagram – POWER Section –

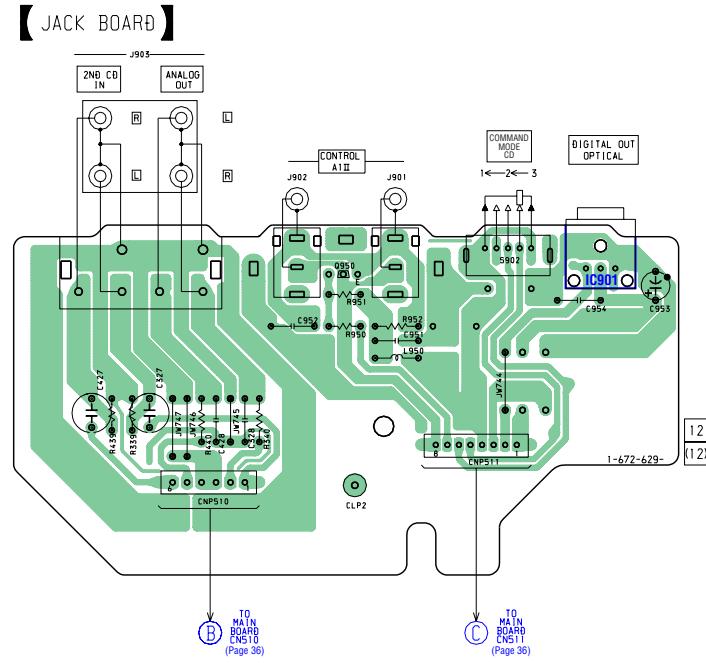


• Semiconductor Location

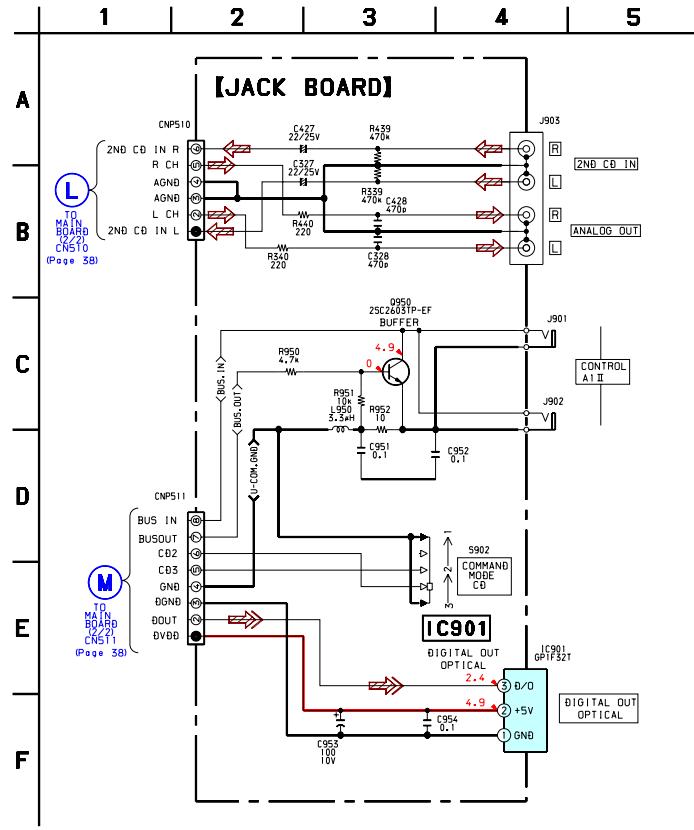
Ref. No.	Location
D930	C-5
D901	C-5
D910	C-1
D911	C-1
D912	B-1
D913	B-1
D920	B-1
D921	B-1
D922	B-1
D923	A-1
D930	B-6
D931	B-6
D932	B-6
D933	B-6
D934	B-6
D935	B-6
D939	B-6

CDP-CX355

7-17. Printed Wiring Board – JACK Section – • See page 31 for Circuit Boards Location.

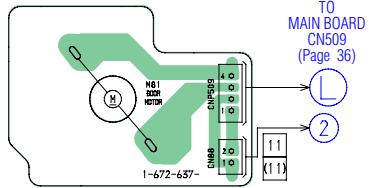


7-18. Schematic Diagram – JACK Section –

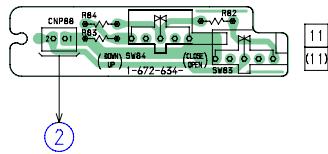


7-19. Printed Wiring Board – SWITCH/MOTOR Section –
See page 31 for Circuit Boards Location.

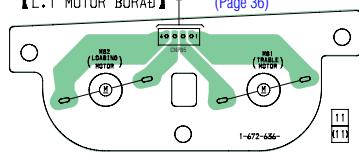
[B. MOTOR BOARD]



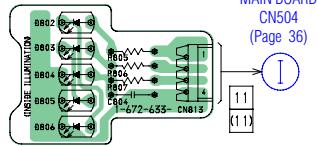
[D. SW BOARD]



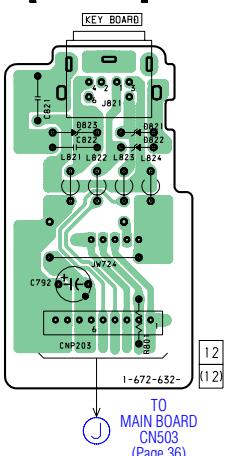
[L.T. MOTOR BOARD]



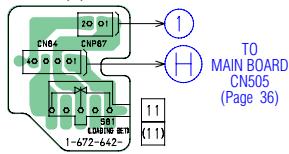
[LED BOARD]



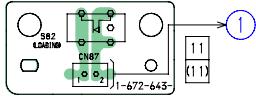
[KEYBOARD BOARD]



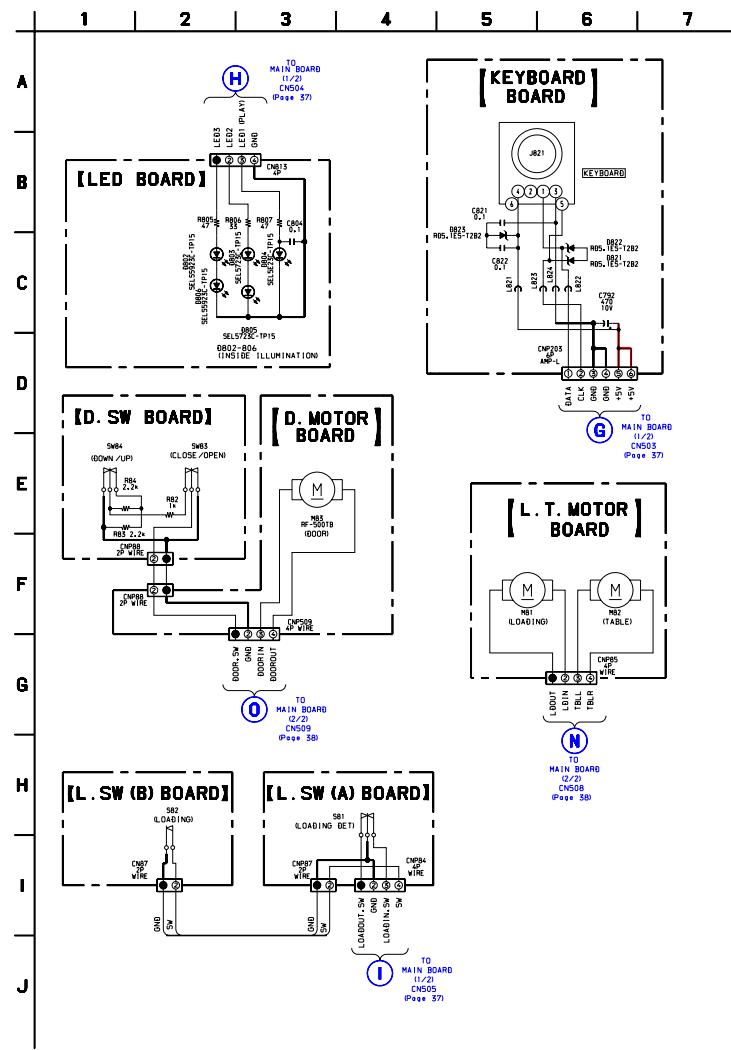
[L.SW (A) BOARD]



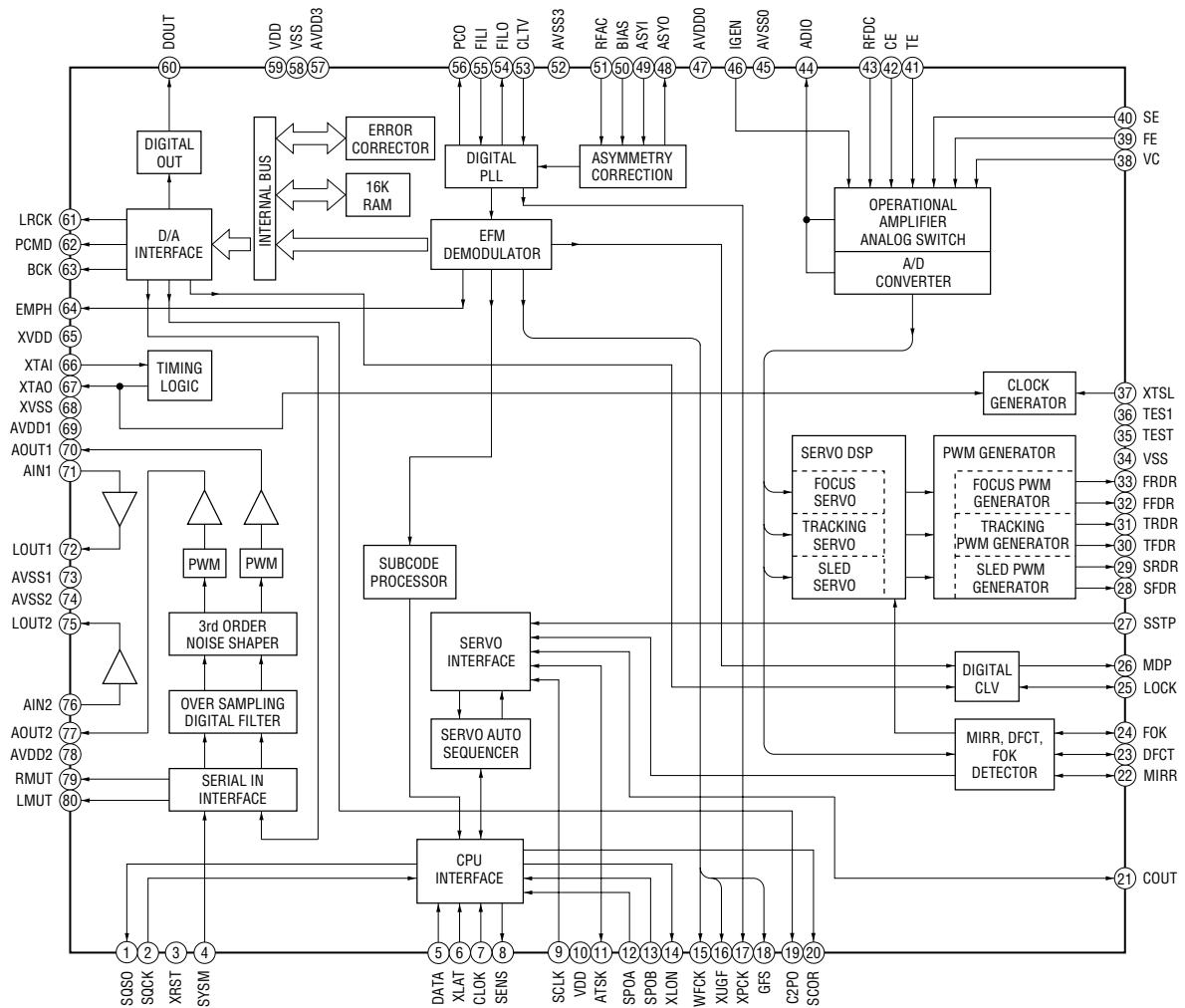
[L.SW (B) BOARD]



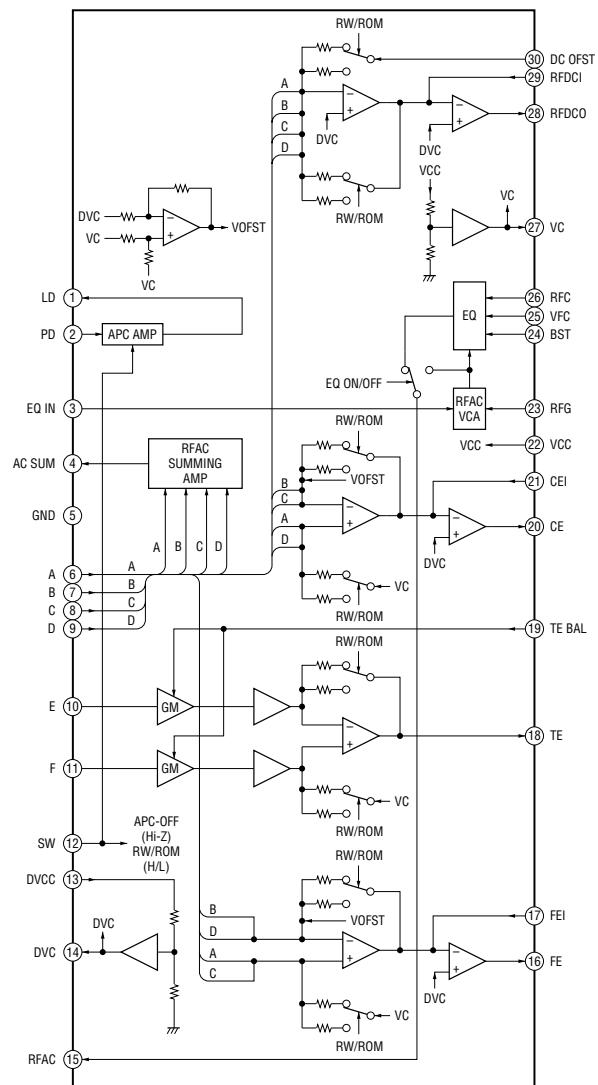
7-20. Schematic Diagram – SWITCH/MOTOR Section –



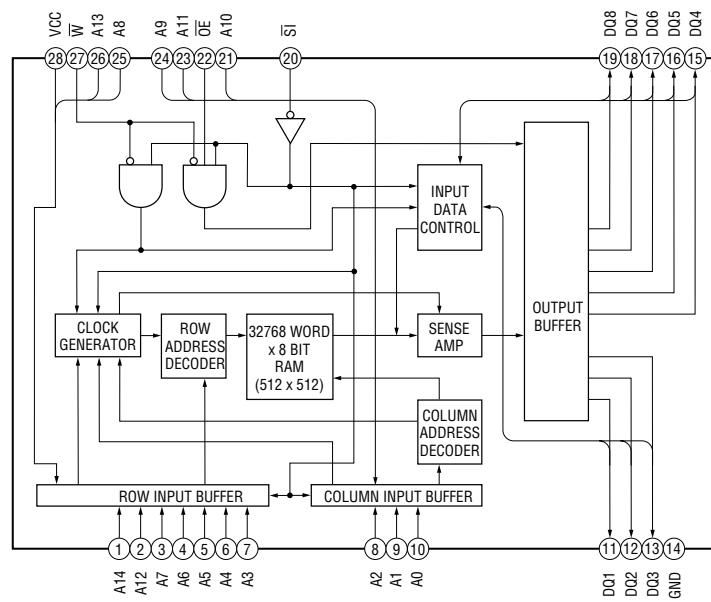
• IC Block Diagrams
IC101 CXD2587Q (BD Section)



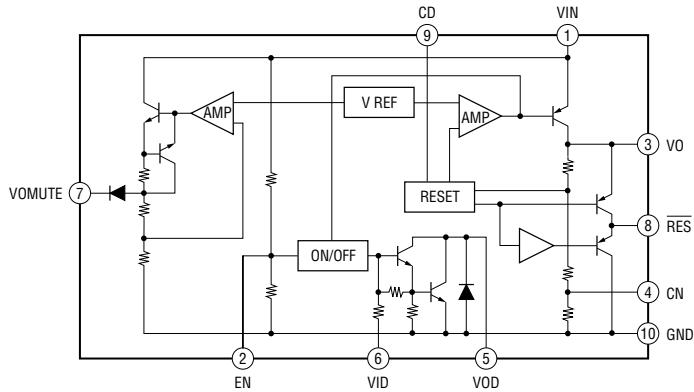
IC131 CXA2581N-T4 (BD Section)



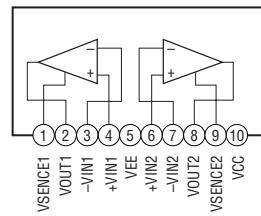
IC504 M5M5256DFP-70XL (MAIN Section)



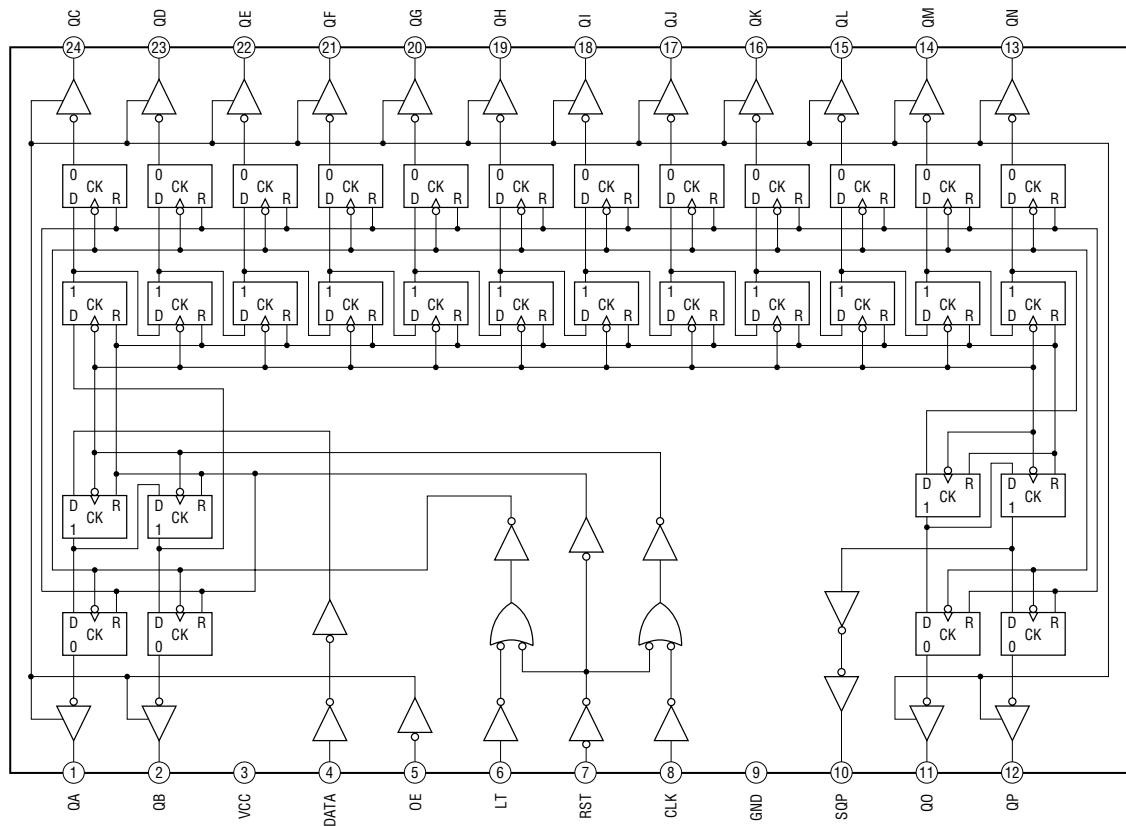
IC931 LA5601 (MAIN Section)



IC505 LA6510 (MIAN Section)



IC702 M66310FP (DISPLAY Section)



7-21. IC Pin Functions

• IC101 DIGITAL SIGNAL PROCESSOR (CXD2587Q) (BD Section)

Pin No.	Pin Name	I/O	Description
1	SQSO	O	Sub-Q 80-bit and PCM peak level data output (CD text data output)
2	SQCK	I	Clock input for SQSO read-out
3	XRST	I	System reset "L" : reset
4	SYSM	I	Muting input "H" : mute
5	DATA	I	Serial data input, supplied from CPU
6	XLAT	I	Latch input, supplied from CPU
7	CLOK	I	Serial data transfer clock input, supplied from CPU
8	SENS	O	SENS signal output to CPU
9	SCLK	I	SENS serial data read-out clock input
10	VDD	—	Digital power supply
11	ATSK	I/O	Input pin for anti-shock (Connected to ground)
12	SPOA	I	Microcomputer escape interface input A
13	SPOB	I	Microcomputer escape interface input B
14	XLON	O	Microcomputer escape interface output (Not used)
15	WFCK	O	WFCK output (Not used)
16	XUGF	O	Not used
17	XPCK	O	Not used
18	GFS	O	Not used
19	C2PO	O	Not used
20	SCOR	O	Sub-code sync output
21	COUT	I/O	Numbers of track counted signal input/output (Not used)
22	MIRR	I/O	Mirror signal input/output (Not used)
23	DFCT	I/O	Defect signal input/output (Not used)
24	FOK	I/O	Focus OK input/output (Not used)
25	LOCK	I/O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
26	MDP	O	Output to control spindle motor servo
27	SSTP	I	Input signal to detect disc inner most track
28	SFDR	O	Sled drive output
29	SRDR	O	Sled drive output
30	TFDR	O	Tracking drive output
31	TRDR	O	Tracking drive output
32	FFDR	O	Focus drive output
33	FRDR	O	Focus drive output
34	VSS	—	Digital ground
35	TEST	I	TEST pin connected normally to ground
36	TES1	I	TEST pin connected normally to ground
37	XTSL	I	X'tal selection input (Connected to ground)
38	VC	I	Center voltage input pin
39	FE	I	Focus error signal input
40	SE	I	Sled error signal input
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADIO	O	Test pin (Not used)
45	AVSS0	—	Analog ground
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	—	Analog power supply

- Abbreviation
GFS : Guarded Frame Sync

Pin No.	Pin Name	I/O	Description
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry comparate voltage input
50	BIAS	I	Asymmetry circuit constant current input
51	RFAC	I	EFM signal input
52	AVSS3	—	Analog ground
53	CLTV	I	Control voltage input for master VCO1
54	FILO	O	Filter output for master PLL
55	FILI	I	Filter input for master PLL
56	PCO	O	Charge-pump output for master PLL
57	AVDD3	—	Analog power supply
58	VSS	—	Digital ground
59	VDD	—	Digital power supply
60	DOUT	O	Digital-out output pin
61	LRCK	O	D/A interface LR clock output ($f = F_s$) (Not used)
62	PCMD	O	D/A interface serial data output (Not used)
63	BCK	O	D/A interface bit clock output (Not used)
64	EMPH	O	Playback disc output in emphasis mode (Not used)
65	XVDD	—	Power supply for master clock
66	XTAI	I	X'tal oscillator circuit input (16.9344MHz)
67	XTAO	O	X'tal oscillator circuit output (16.9344MHz)
68	XVSS	—	Ground for master clock
69	AVDD1	—	Analog power supply
70	AOUT1	O	L-ch analog output
71	AIN1	I	L-ch operational amplifiers input
72	LOUT1	O	L-ch line output
73	AVSS1	—	Analog ground
74	AVSS2	—	Analog ground
75	LOUT2	O	R-ch line output
76	AIN2	I	R-ch operational amplifiers input
77	AOUT2	O	R-ch analog output
78	AVDD2	—	Analog power supply
79	RMUT	O	R-ch "0" detection flag output
80	LMUT	O	L-ch "0" detection flag output

- Abbreviation

EFM : Eight to Fourteen Modulation

PLL : Phase Locked Loop

• IC501 SYSTEM CONTROL (MN101C49GSA) (MAIN Section)

Pin No.	Pin Name	I/O	Description
1	GND	—	Ground
2	DOOR SW	I	Door panel SW (5V: OPEN)
3	GND	I	Digital filter (not used)
4	KEY1	I	Key A/D input
5	KEY2	I	
6	KEY3	I	
7	KEY4	I	
8	KEY5	I	
9	D.SENS	I	Disc sensor input
10	VREF	—	A/D standard power terminal
11	VDD	—	Power supply terminal (+5V)
12	OSC2	O	Main clock (10MHz) Output
13	OSC1	I	Main clock (10MHz) Input
14	VSS	—	Ground terminal
15	XI	I	Not used
16	XO	O	Not used
17	GND	—	Ground terminal
18	AC IN	I	Power monitor input
19	ICSW (RELAY ON/OFF)	O	Power terminal for circumference IC
20	LEDLT	O	Latch for LED driver output
21	FLDATA	O	Data for fluorescent indicator driver output
22	FLLT	O	Latch for fluorescent indicator output
23	FLCLK	O	Clock for fluorescent indicator output
24	RESET OUT	O	Reset output for circumference IC
25	STAND-BY LED	O	LED output for STANDBY
26	RMIN	I	Remote control input
27	T2	I	Table sensor input
28	T4	I	
29	BUSIN	I	CONTROL A1 input
30	SCOR	I	Sub code Q synchronous signal
31	KBCIN	I	Keyboard clock input
32	T1	I	Table sensor input
33	RESET	I	System reset signal input
34	KBCOUT	O	Keyboard clock output
35	KBDOUT	O	Keyboard data output
36	KBDIN	I	Keyboard data input
37	TEST-PULSE2	O	DISC detection test output
38	TEST PULSE	O	TSENS1, 2 output
39	AGC	O	CXD2587Q LPH output
40	SMUTE	O	Mute on output
41	AMUTE	I	Mute on input
42	DATA	O	CXD2587Q D/F data output
43	XLT	O	CXD2587Q Latch output
44	CLK	O	CXD2587Q D/F clock output
45	SENS	I	CXD2587Q Servo sensor signal input
46	SUBQ	I	CXD2587Q Q data input
47	SQCK	O	CXD2587Q Q data clock output
48	LED3	O	interior illumination
49	LED2	O	interior illumination
50	LED1	O	interior illumination

Pin No.	Pin Name	I/O	Description
51	SELECT	I	CX691 select port (H: CX691 L: Other)
52	T2	I	Table sensor input
53	SELECT	I	J select port (H: J L: Other)
54	SELECT	I	ES select port (H: ES L: HiFi)
55	SELECT	I	2WAY select port (H: 2WAY L: 1WAY)
56	2WAY-LT	O	U-COM chip enable output (Not used)
57	CX5/CX6	O	Not used
58	CX3/CX4	O	Not used
59	2WAYLT	O	Reset output (Not used)
60	AFADJ	I	AFADJ select port
61	ADJ	I	ADJ mode select port
62	WE	O	SRAM write enable output
63	A13	O	SRAM address output
64	A8	O	
65	A9	O	
66	A10	O	
67	A11	O	
68	A14	O	
69	A12	O	
70	A7	O	
71	A6	O	
72	A5	O	
73	A4	O	
74	A3	O	
75	A2	O	
76	A1	O	
77	A0	O	
78	CS	O	SRAM chip select output
79	D2	I/O	SRAM data input/output
80	D1	I/O	
81	D0	I/O	
82	D3	I/O	
83	D4	I/O	
84	D5	I/O	
85	D6	I/O	
86	D7	I/O	
87	BUSOUT	O	CONTROL-A1 output
88	CD2	I	Remote control mode select input (CD2)
89	CD3	I	Remote control mode select input (CD3)
90	SW	I	Table close switch input
91	INSW	I	Loading in switch input
92	OUTSW	I	Loading out switch input
93	DOOROUT	O	Door open output
94	DOORIN	O	Door close output
95	GND	—	Ground terminal
96	LDOUT	O	Loading motor PWM output for outside direction
97	LDIN	O	Loading motor PWM output for inside direction
98	TBLR	O	Table motor PWM output for right turn
99	TBLL	O	Table motor PWM output for left turn
100	DVDD	—	D/A converter standard power terminal

SECTION 8

EXPLODED VIEWS

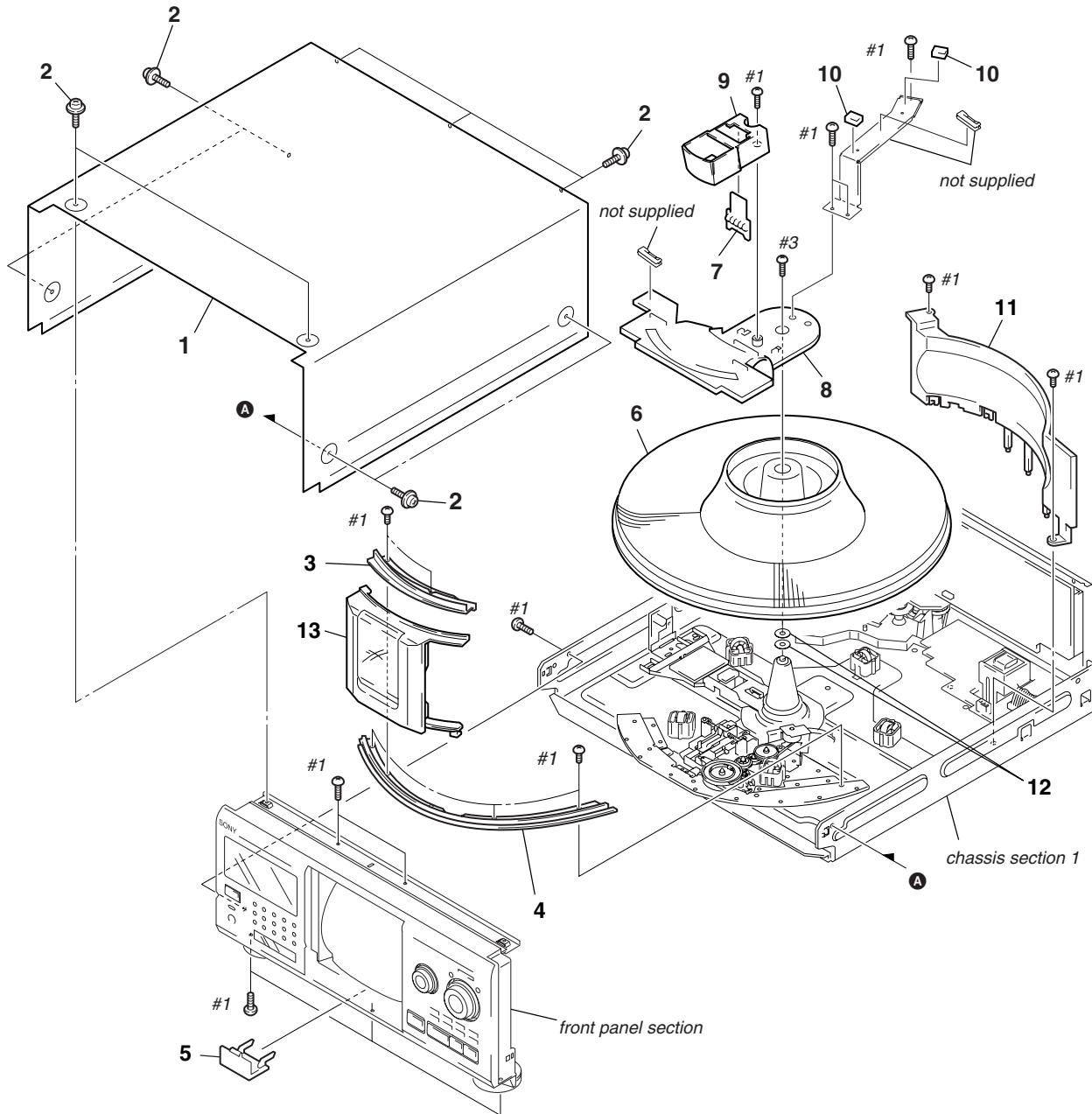
NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CND : Canadian model
AUS : Australian model
SP : Singapore model

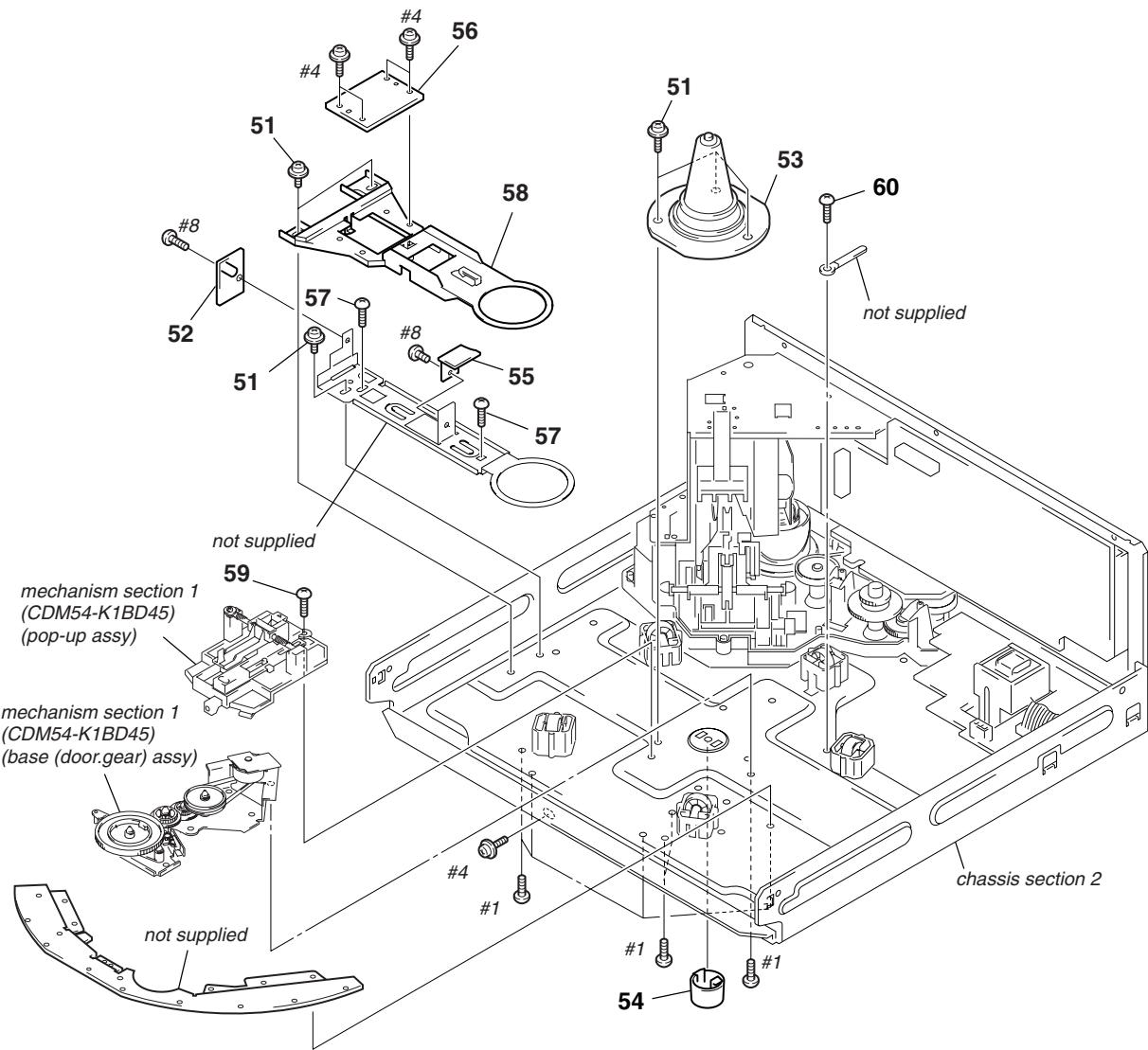
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1. Case Section

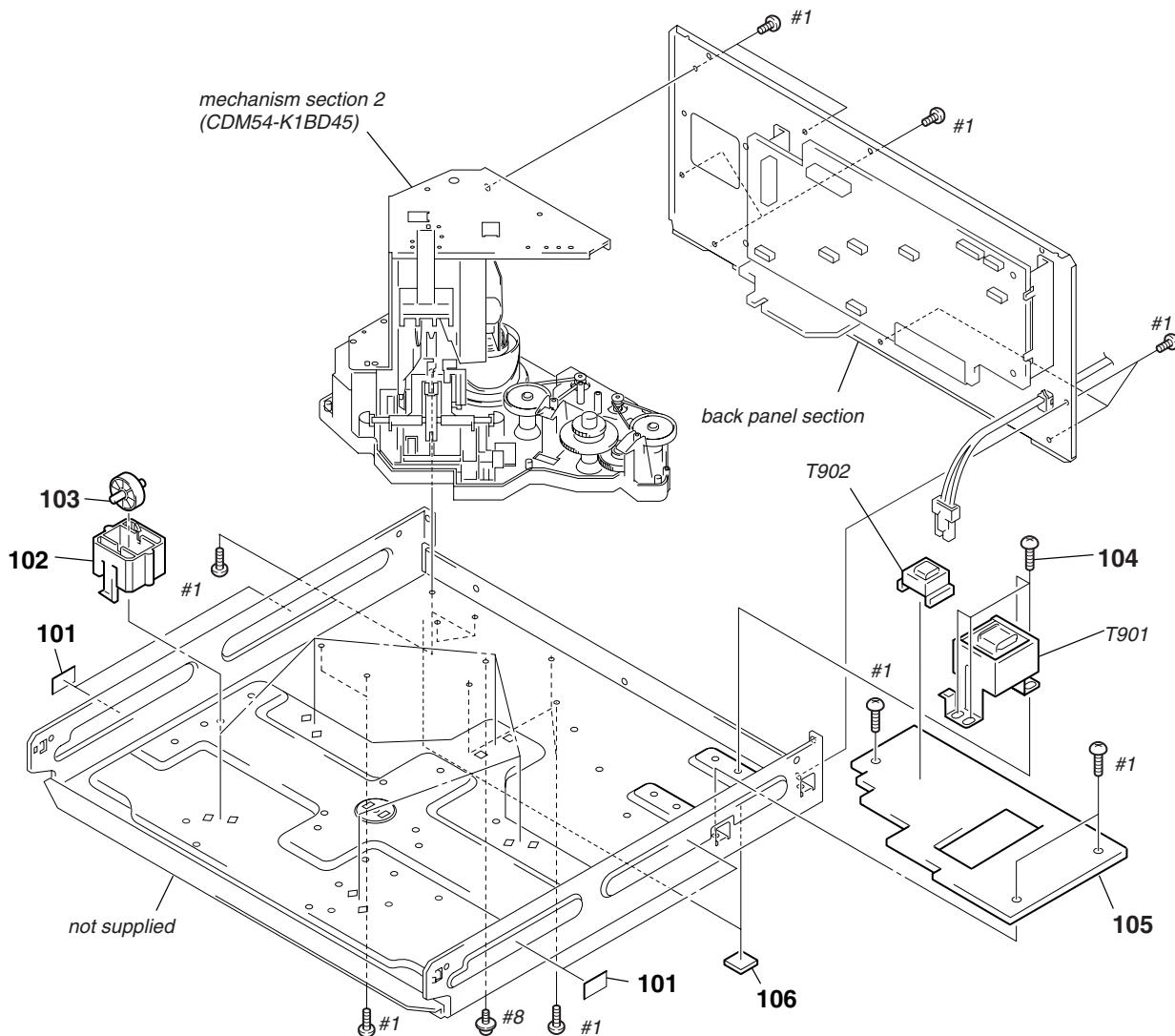
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	4-215-970-11	CASE		9	4-215-968-01	WINDOW (INTERNAL ILLUMINATION)	
2	4-210-291-01	SCREW (CASE 3 TP2)		10	4-985-553-11	CUSHION	
3	4-215-954-01	COVER (FRONT)		11	4-215-967-01	COVER (P.T.)	
4	4-215-952-01	GUIDE (DOOR.B)		12	3-701-447-21	WASHER, 10	
5	4-215-960-01	COVER (CHASSIS)		13	X-4950-889-1	DOOR (CD) ASSY	
6	X-4950-902-1	TABLE (300) ASSY		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
7	1-672-633-11	LED BOARD		#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
8	4-215-953-01	GUIDE (DOOR.T)					

8-2. Chassis Section 1



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		58	4-216-091-01	HOLDER (TABLE SENSOR)	
52	1-672-641-11	D.SENS(OUT) BOARD		59	3-356-601-11	SCREW, STEP	
53	4-216-089-01	SHAFT (CENTER)		60	3-970-608-01	SUMITITE (B3), +BV	
54	4-931-169-01	FOOT		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
55	1-672-640-11	D.SENS(IN) BOARD		#4	7-685-903-11	SCREW +PTPWH 3X6 (TYPE2)	
56	1-672-639-11	T.SENS BOARD		#8	7-682-948-01	SCREW +PSW 3X8	
57	4-216-096-01	SCREW (T1), STEP					

8-3. Chassis Section 2

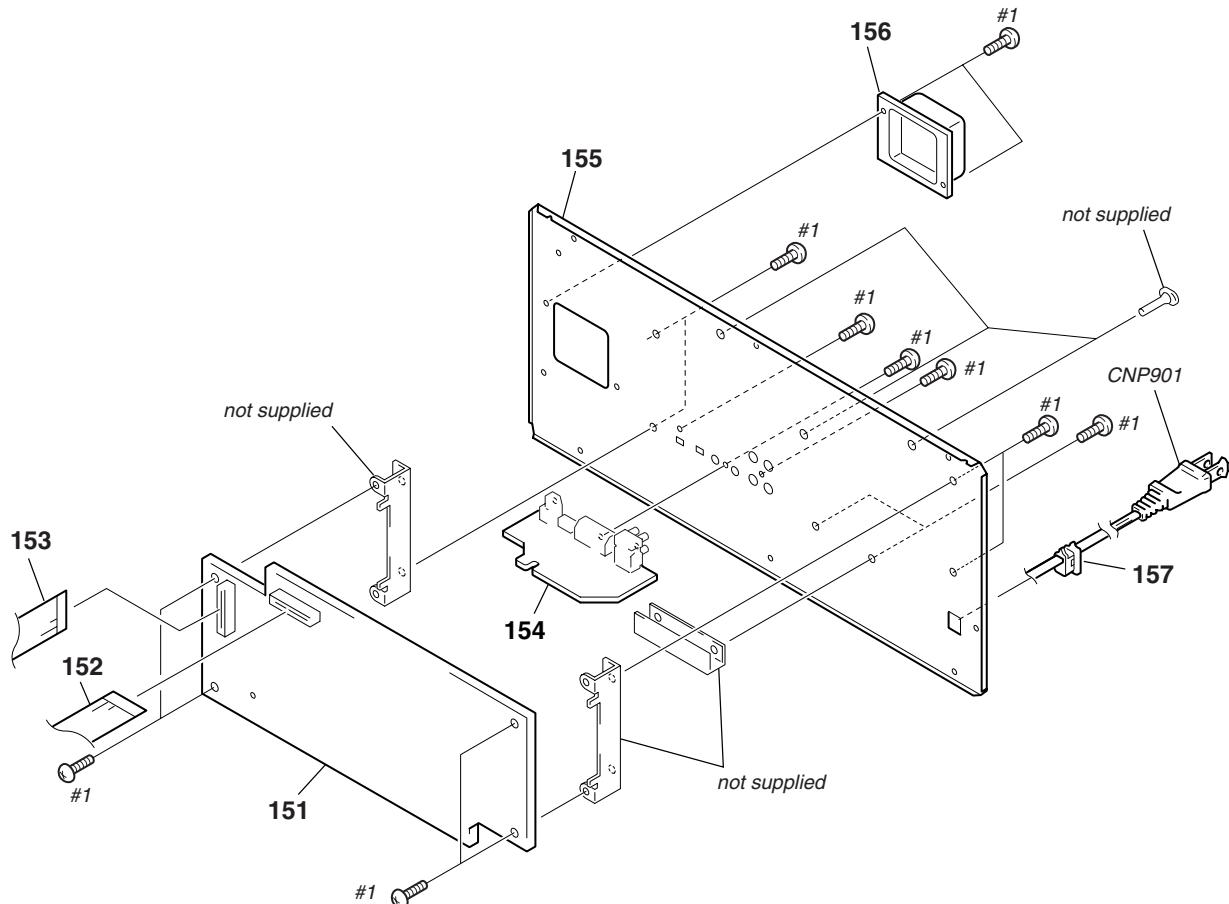


Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101				△ T901	1-433-668-11	TRANSFORMER, POWER (SUB) (AEP, UK, SP)	
102	4-216-092-01	HOLDER (ROLLER)		△ T901	1-433-877-11	TRANSFORMER, POWER (SUB) (AUS)	
103	4-216-093-01	ROLLER		△ T902	1-433-663-11	TRANSFORMER, POWER (MAIN) (US, CND, E)	
104	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		△ T902	1-433-665-11	TRANSFORMER, POWER (MAIN) (AEP, UK, SP, AUS)	
105	1-672-638-11	POWER BOARD		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
106	4-215-971-01	CUSHION (FOOT)		#8	7-682-948-01	SCREW +PSW 3X8	
△T901	1-433-666-11	TRANSFORMER, POWER (SUB) (US, CND, E)					

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-4. Back Panel Section

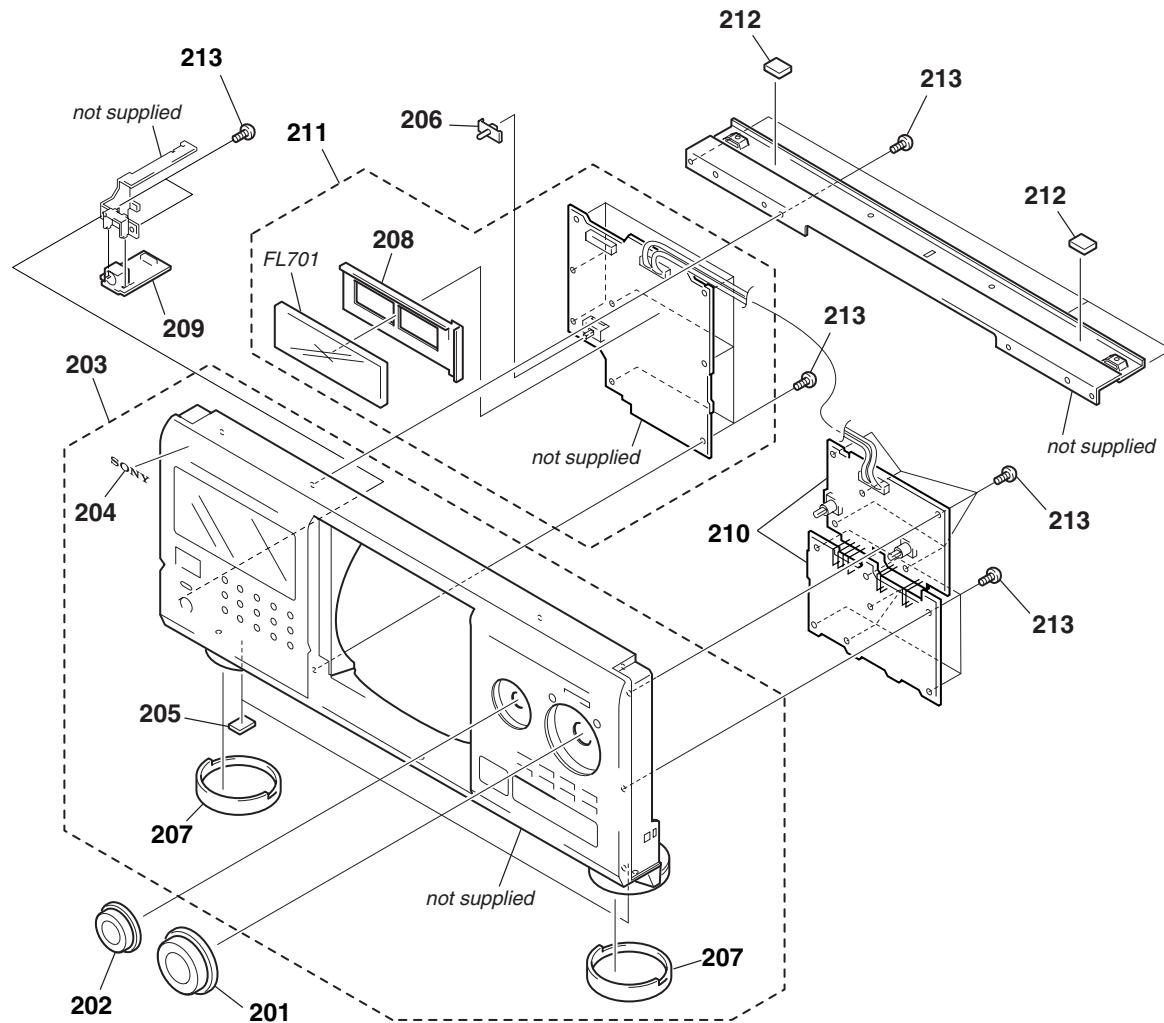


<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
151	A-4727-794-A	MAIN BOARD, COMPLETE		155	4-238-109-42	PANEL, BACK (AUS)	
152	1-790-420-11	WIRE (FLAT TYPE) (21 CORE)		155	4-238-109-51	PANEL, BACK (E)"	
153	1-773-183-11	WIRE (FLAT TYPE) (23 CORE)		* 156	4-982-807-01	COVER (FFC)	
154	1-672-629-12	JACK BOARD		* 157	3-703-244-00	BUSHING (2104), CORD	
155	4-238-109-01	PANEL, BACK (US)		△ CNP901	1-696-845-11	CORD, POWER (AUS)	
				△ CNP901	1-777-071-61	CORD, POWER (AEP, UK, SP)	
155	4-238-109-11	PANEL, BACK (CND)		△ CNP901	1-783-531-31	CORD, POWER (US, CND, E)	
155	4-238-109-21	PANEL, BACK (AEP, UK)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
155	4-238-109-32	PANEL, BACK (SP)					

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

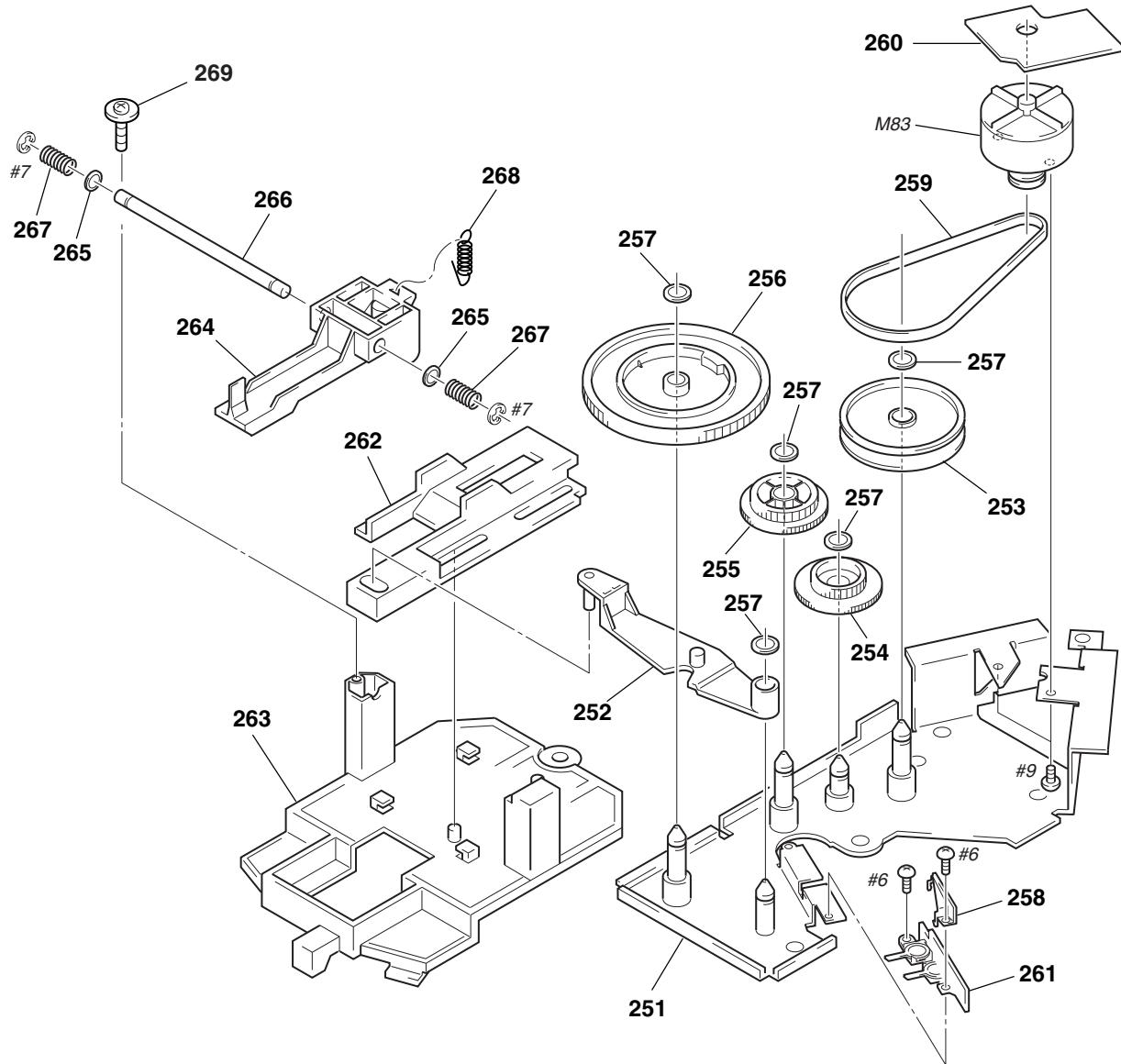
Les composants identifiés par une marque △ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-5. Front Panel Section



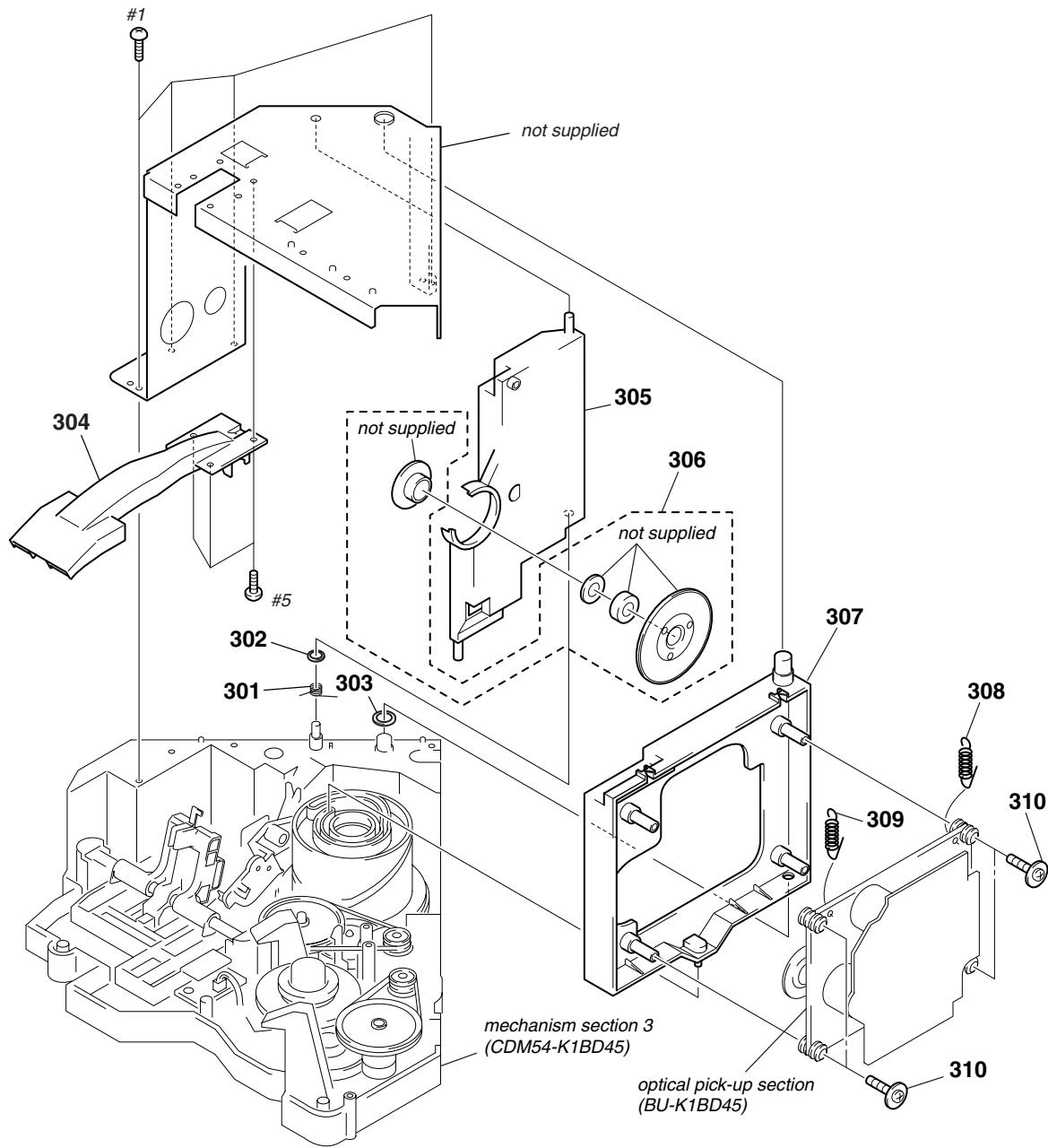
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	4-215-818-01	KNOB (DISC)		208	4-982-811-11	HOLDER (FL)	
202	4-215-819-01	KNOB (AMS)		209	1-672-632-12	KEYBOARD BOARD	
203	X-4954-417-1	PANEL ASSY, FRONT (US, CND)		210	A-4727-728-A	JOG BOARD, COMPLETE	
203	X-4954-470-1	PANEL ASSY, FRONT (AUS, UK, AEP, E, SP)		211	A-4727-729-A	DISP BOARD, COMPLETE	
204	4-996-698-61	EMBLEM, SONY		212	4-985-553-21	CUSHION	
205	4-977-358-01	CUSHION		213	4-951-620-01	SCREW (2.6X8), +BVTP	
206	3-917-216-21	KNOB (TIMER)		FL701	1-517-861-11	INDICATOR TUBE, FLUORESCENT	
207	4-219-323-01	RING (DIA. 50-CX300)					

8-6. Mechanism Section 1 (CDM54-K1BD45)
(Pop-up Assy, Base (Door. Gear) Assy)



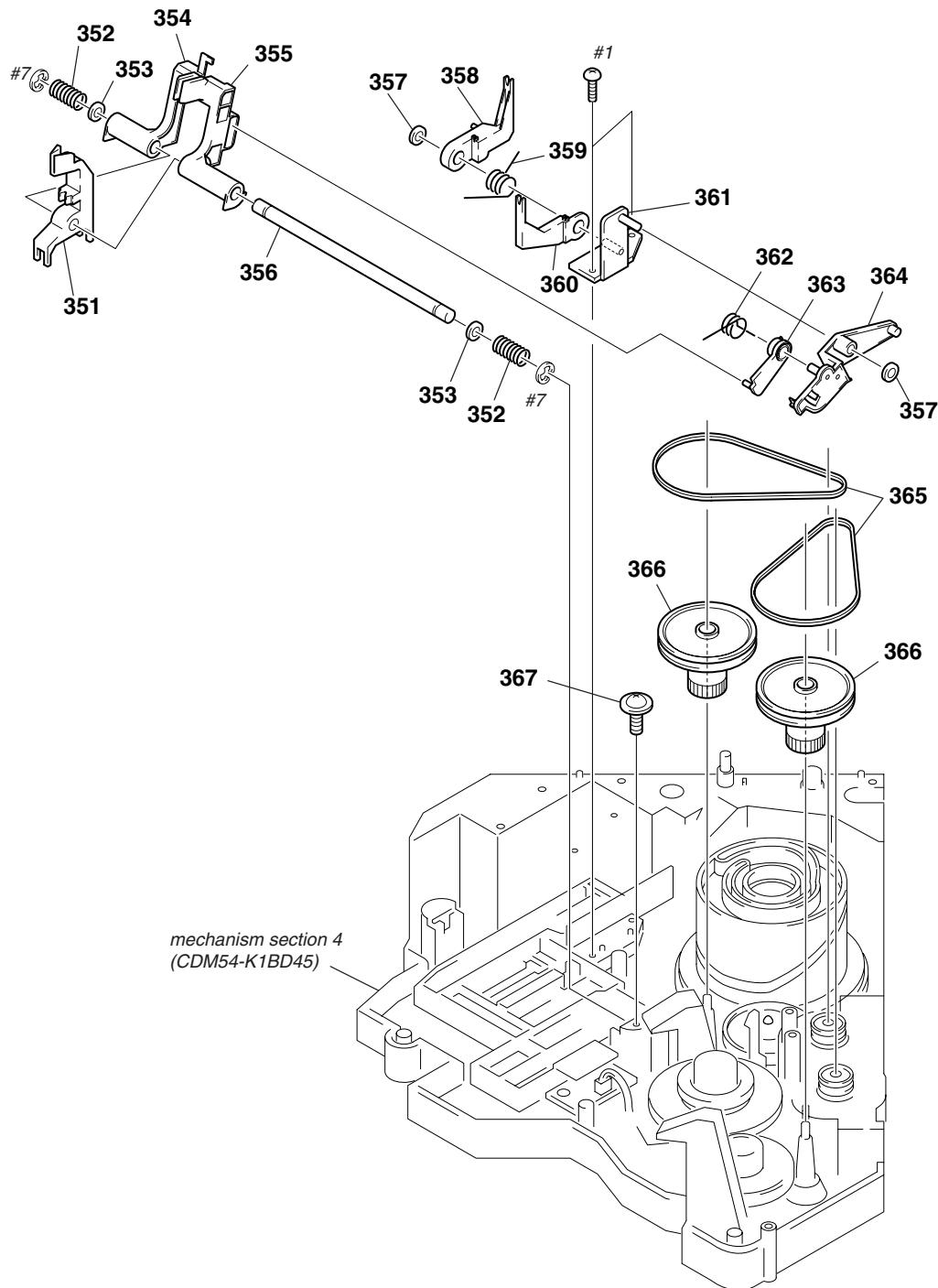
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
251	X-4950-888-1	BRACKET (DOOR.GEAR) ASSY		263	4-216-100-01	HOLDER (POP-UP)	
252	4-215-959-01	LEVER (CAM.PU)		264	4-216-098-01	LEVER (POP-UP)	
253	4-215-955-01	GEAR (DOOR.PULLEY)		265	3-701-441-21	WASHER	
254	4-215-956-01	GEAR (DOOR.CENTER)		266	4-216-102-01	SHAFT (POP-UP FULCRUM)	
255	4-215-957-01	GEAR (DOOR.DRIVE)		267	4-216-103-01	SPRING (POP-UP), COMPRESSION	
256	4-215-958-01	GEAR (DOOR.CAM)		268	4-216-104-01	SPRING (POP-UP), TENSION	
257	3-325-697-21	WASHER		269	4-998-716-01	SCREW, BU FITTING	
258	4-219-324-01	HOLDER (L-SW)		M83	X-4950-062-1	MOTOR ASSY (DOOR)	
259	4-219-326-01	BELT (DIA. 42X1.2)		#6	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
260	1-672-637-11	D.MOTOR BOARD		#7	7-624-106-04	STOP RING 3.0, TYPE -E	
261	1-672-634-11	D.SW BOARD		#9	7-621-775-00	SCREW +B 2.6X3	
262	4-216-099-01	SLIDER (POP-UP)					

8-7. Mechanism Section 2 (CDM54-K1BD45)



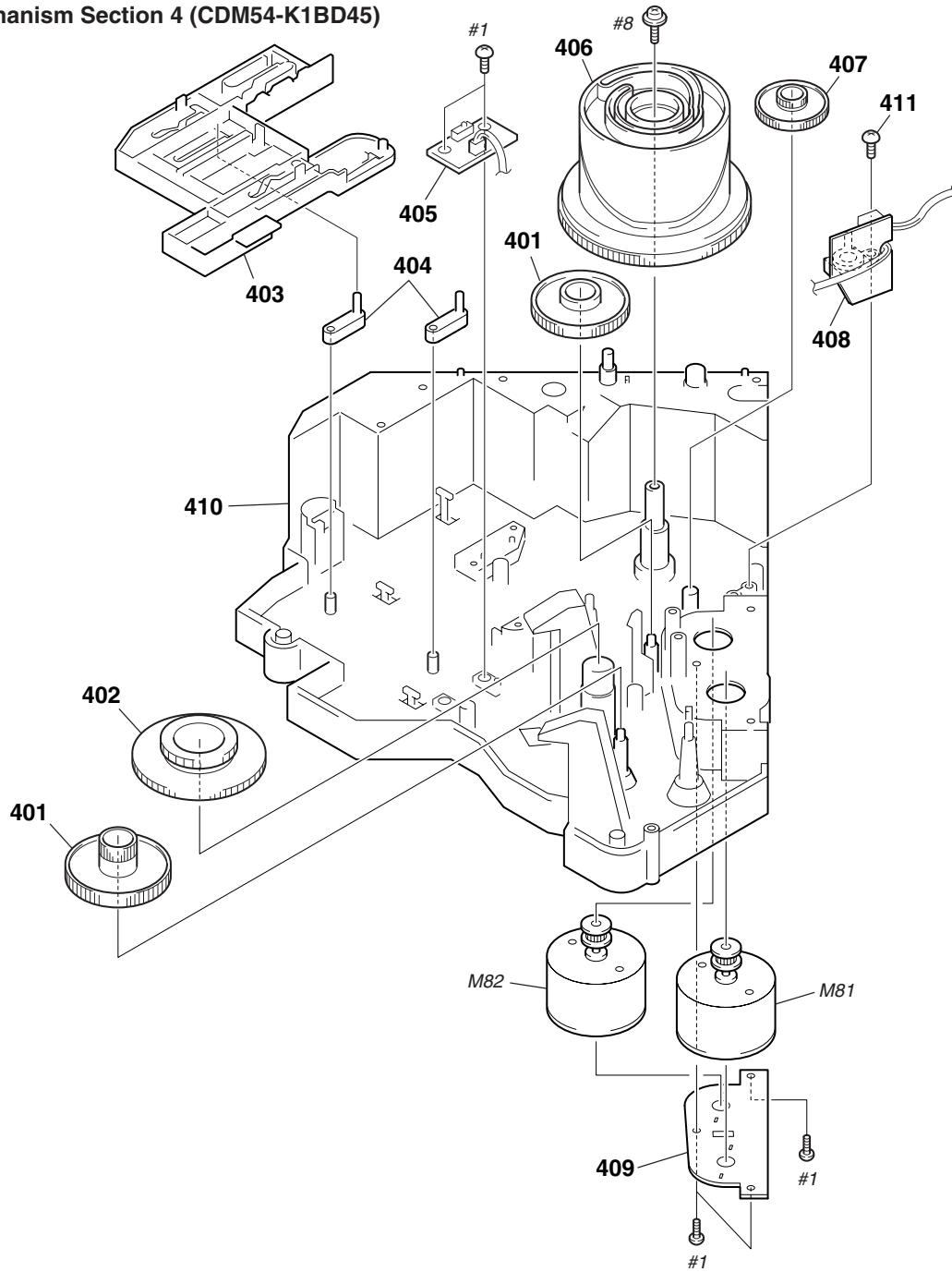
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
301	4-216-081-01	SPRING (MG), TORSION		307	X-4950-901-4	HOLDER ASSY, BU	
302	3-701-441-21	WASHER		308	4-216-086-01	SPRING (F-2), TENSION	
303	3-701-446-21	WASHER, 8		309	4-216-085-01	SPRING (F-1), TENSION	
304	4-216-088-02	GUIDE (DISC)		310	4-957-577-01	SCREW PTP WH (2.6X8) (DIA. 10)	
305	4-216-082-01	HOLDER (MAGNET), TORSION		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
306	A-4672-768-A	MAGNET ASSY		#5	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	

8-8. Mechanism Section 3 (CDM54-K1BD45)



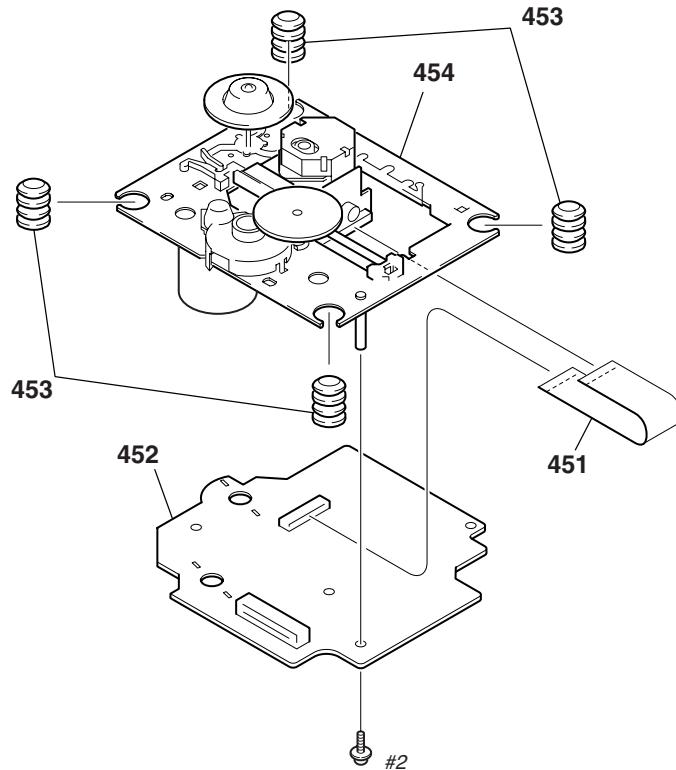
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
351	4-216-070-01	LEVER (LOCK)		361	X-4950-900-1	BRACKET (LEVER) ASSY	
352	4-216-067-01	SPRING (CLAMP), COMPRESSION		362	4-216-080-01	SPRING (LIMITER), TORSION	
353	3-701-441-21	WASHER		363	4-216-079-01	LIMITTER (LEVER)	
354	X-4950-885-1	HOLDER (DISC L) ASSY		364	4-216-078-01	LEVER (LOADING)	
355	X-4950-886-1	HOLDER (DISC R) ASSY		365	4-216-061-01	BELT	
356	4-216-066-01	SHAFT (CLAMP)		366	4-216-060-01	PULLEY (1)	
357	3-325-697-21	WASHER		367	4-998-716-01	SCREW, BU FITTING"	
358	4-216-076-01	HOLDER (R)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
359	4-216-077-01	SPRING (HOLDER FR), TORSION		#7	7-624-106-04	STOP RING 3.0, TYPE -E	
360	4-216-075-01	HOLDER (F)					

8-9. Mechanism Section 4 (CDM54-K1BD45)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
401	4-216-058-01	GEAR (CENTER)		409	1-672-636-11	L.T.MOTOR BOARD	
402	4-216-059-01	GEAR (TABLE)		410	4-216-054-01	BASE (CDM)	
403	4-216-063-02	SLIDER		411	4-951-620-01	SCREW (2.6X8), +BVTP	
404	4-216-062-01	LEVER (FULCRUM)		M81	A-4672-675-A	MOTOR ASSY (TABLE)	
405	1-672-643-11	L.SW(B) BOARD		M82	A-4672-675-A	MOTOR ASSY (LOADING)	
406	A-4672-676-A	CAM ASSY		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
407	4-216-057-01	GEAR (CENTER 2)		#8	7-682-948-01	SCREW +PSW 3X8	
408	1-672-642-11	L.SW(A) BOARD					

8-10. Optical Pick-up Section (BU-K1BD45)



Ref. No.	Part No.	Description	Remarks
451	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)	
452	A-4727-737-A	BD BOARD, COMPLETE	
* 453	4-992-054-01	RUBBER, VIBRATION PROOF	
△ 454	A-3328-818-A	OPTICAL PICK-UP KSM-213BFN/C2NP	
#2	7-621-772-21	SCREW +B 2X5	

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

T. SENS

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
	1-672-639-11	T.SENS BOARD	*****			ACCESSORIES	*****
		< CONNECTOR >				1-418-419-11 REMOTE COMMANDER (RM-DX300)	
* CN81	1-506-486-11	PIN, CONNECTOR 7P				1-558-271-11 CORD, CONNECTION	
CM82	1-506-481-11	PIN, CONNECTOR 2P		△		1-770-019-11 ADAPTOR, CONVERSION PLUG 3P (UK)	
CN83	1-506-481-11	PIN, CONNECTOR 2P				3-866-670-11 MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL A1) (ENGLISH) (AUS, UK, US)	
		< PHOTO INTERRUPTER >				3-866-670-21 MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL A1)	
IC81	8-749-924-18	PHOTO INTERRUPTER RPI-1391 (TABLE SENSOR)				(ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, PORTUGUESE, SWEDISH, ITALIAN, CHINESE)	
IC82	8-749-924-18	PHOTO INTERRUPTER RPI-1391 (TABLE SENSOR)				(CND, AEP, E, SP)	
IC83	8-749-924-18	PHOTO INTERRUPTER RPI-1391 (TABLE SENSOR)				4-238-111-11 MANUAL, INSTRUCTION (ENGLISH) (AUS, US)	
IC84	8-749-924-18	PHOTO INTERRUPTER RPI-1391 (TABLE SENSOR)				4-238-111-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH) (CND, UK, AEP, E, SP)	
		< RESISTOR >				4-238-111-31 MANUAL, INSTRUCTION (GERMAN, SPANISH, DUTCH) (AEP, E)	
R81	1-249-416-11	CARBON	820	5%	1/4W F	4-238-111-41 MANUAL, INSTRUCTION (SWEDISH, ITALIAN, POLISH) (AEP)	
R82	1-249-416-11	CARBON	820	5%	1/4W F	4-238-111-51 MANUAL, INSTRUCTION (CHINESE) (E, SP)	
R83	1-249-416-11	CARBON	820	5%	1/4W F	4-238-111-61 MANUAL, INSTRUCTION (DANISH, FINNISH) (AEP)	
R84	1-249-416-11	CARBON	820	5%	1/4W F	4-238-111-71 MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
R85	1-249-415-11	CARBON	680	5%	1/4W F	4-239-580-11 MANUAL, INSTRUCTION (GREEK) (AEP)	

		MISCELLANEOUS	*****			4-239-580-21 MANUAL, INSTRUCTION (HUNGARIAN, CZECH) (AEP)	
			*****			4-239-580-31 MANUAL, INSTRUCTION (TURKISH) (AEP)	
7	1-790-420-12	WIRE (FLAT TYPE) (21 CORE)				4-239-580-41 MANUAL, INSTRUCTION (SLOVAK) (AEP)	
8	1-773-183-11	WIRE (FLAT TYPE) (23 CORE)				4-981-643-01 COVER, BATTERY (FOR RM-DX300)	
301	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)				*****	
△ 304	A-3328-818-A	OPTICAL PICK-UP KSM-213BFN/C2NP					
△ CNP901	1-696-845-11	CORD, POWER (AUS)					
△ CNP901	1-777-071-61	CORD, POWER (UK, AEP, SP)					
△ CNP901	1-783-531-31	CORD, POWER (CND,E,US)					
△ FL701	1-517-861-11	INDICATOR TUBE, FLUORESCENT					
M81	A-4672-675-A	MOTOR ASSY (TABLE)					
M82	A-4672-675-A	MOTOR ASSY (LOADING)					
M83	X-4950-062-1	MOTOR ASSY (DOOR)					
△ T901	1-433-666-11	TRANSFORMER, POWER (SUB) (CND, E, US)					
△ T901	1-433-668-11	TRANSFORMER, POWER (SUB) (UK, AEP, SP)					
△ T901	1-433-877-11	TRANSFORMER, POWER (SUB) (AUS)					
△ T902	1-433-663-11	TRANSFORMER, POWER (MAIN) (CND, E, US)					
△ T902	1-433-665-11	TRANSFORMER, POWER (MAIN) (AUS, UK, AEP, SP)					

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REVISION HISTORY

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2002.02	New