

CDP-CX153

SERVICE MANUAL



*US Model
Canadian Model
AEP Model
UK Model
Singapore Model
Australian Model
Chinese Model*

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-34
Base Unit Type	KSM-410ABM
Optical Pick-up Type	KSS-410A

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz $\pm$ 0.3 dB
Signal-to-noise ratio	More than 107 dB
Dynamic range	More than 98 dB
Harmonic distortion	Less than 0.0027%
Channel separation	More than 100 dB

Outputs

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

General

Power requirements

Where purchased	Power requirements
AEP, German	220 V – 230 V AC, 50/60 Hz
UK	240 V AC, 50 Hz
US, Canadian	120 V AC, 60 Hz
Australian	240 V AC, 50/ 60Hz
Singapore, Chinese	110/120/220 – 240 V AC, 50/60Hz

Power consumption 14 W

Dimensions (approx.) (w/h/d)
When the front cover is closed
430 x 200 x 470 mm (17 x 7 7/8 x 18 5/8 in.) incl. projecting parts
When the front cover is open
430 x 200 x 620 mm (17 x 7 7/8 x 24 1/2 in.) incl. projecting parts

Mass (approx.) 10 kg (19 lbs 14 oz)

Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)
CD booklet holder (1)
Labels (2)

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER
SONY®

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Notes on chip component replacement

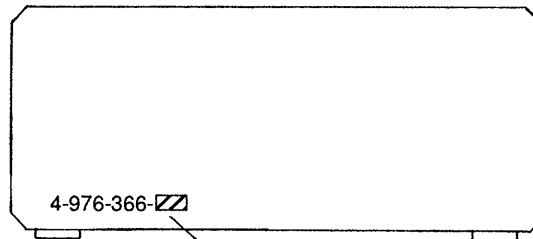
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the 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.

MODEL IDENTIFICATION

— BACK PANEL —



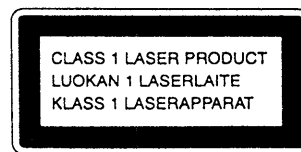
US Model	: 0□ (U)
Canadian Model	: 1□ (CA)
AEP, German Model	: 3□ (CEE)
UK Model	: 4□ (CEK/H)
Chinese Model	: 5□ (CN)
Australian Model	: 6□ (AU)

For detailed Singapore model, refer to Chinese model.

CAUTION

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

The 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	: INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSÅFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE
VARNING	: LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
ADVERSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN

SAFETY CHECK-OUT (US model only)

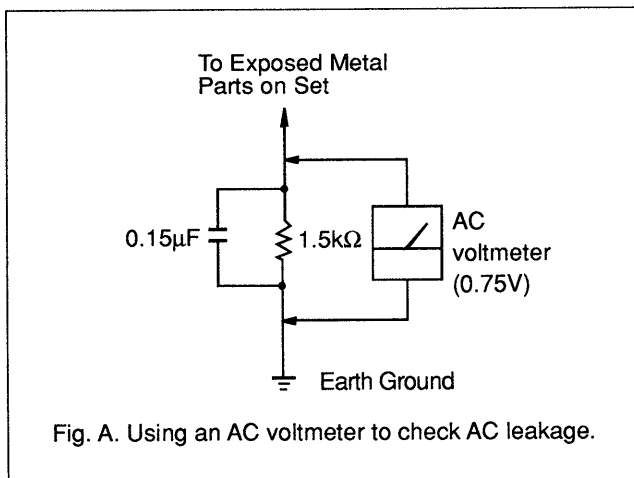
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

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)



SAFETY-RELATED COMPONENT WARNING !!
COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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.

SECTION 1 SERVICING NOTE

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.

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.

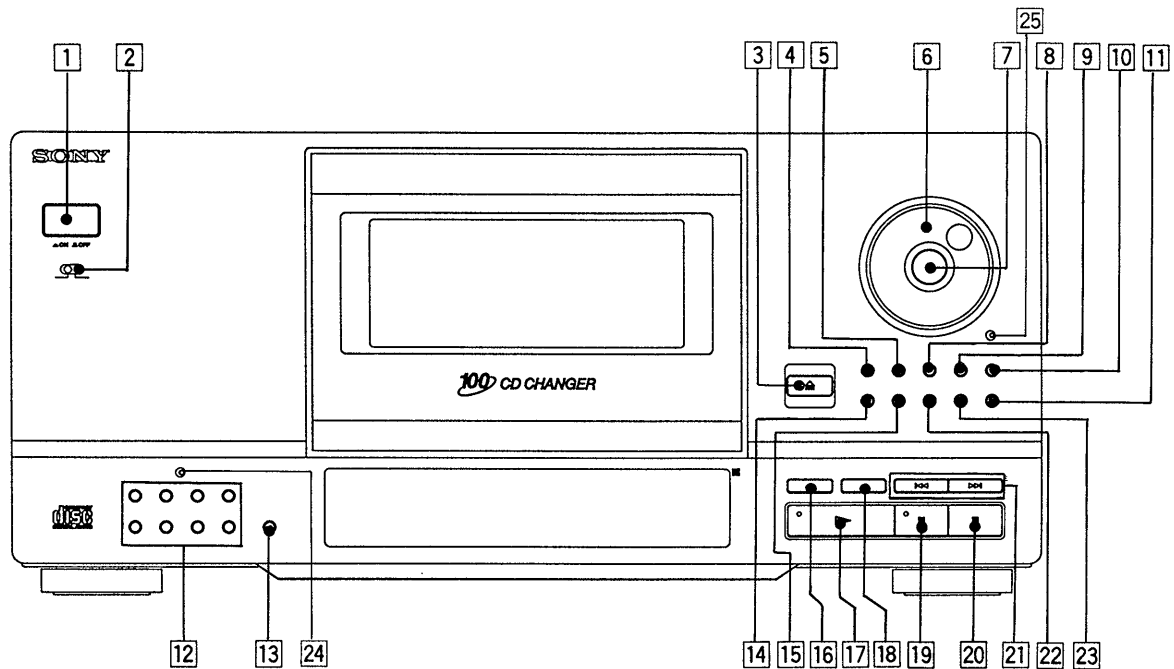
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ 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 SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 2

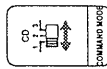
GENERAL

LOCATION OF CONTROLS



- | | |
|----------------------------|--------------------------------|
| 1 POWER switch | 12 GROUP 1-8 buttons |
| 2 TIMER switch | 13 GROUP FILE button |
| 3 $\triangle$ EJECT switch | 14 SCAN (MEMO) button |
| 4 CONTINUE button | 15 SEARCH (MEMO) button |
| 5 SHUFFLE button | 16 INPUT button |
| 6 JOG dial | 17 > (Play) button |
| 7 ENTER button | 18 REPEAT button |
| 8 PROGRAM button | 19 (Pause) button |
| 9 CHECK button | 20 ■ (Stop) button |
| 10 CLEAR button | 21 ◀◀/▶▶ (AMS) button |
| 11 ERASE button | (AMS : Automatic Music Sensor) |
| | 22 INPUT (MEMO) button |
| | 23 FILE (MEMO) button |
| | 24 GROUP indicator |
| | 25 DELETE indicator |

-  When to use the CONTROL A connectors and the COMMAND MODE selector
- You can control two or three of these players by connecting them to a controller unit, which will be available in the future, via the CONTROL A connectors on the player. When making the CONTROL A connection, set the COMMAND MODE selector to the appropriate position. For normal use, leave the selector at the CD1 position which is set at the factory.



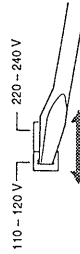
To control the connected players using the supplied remote, set the remote according to the position of the COMMAND MODE selector (displayed in the front panel display). It is set to CD1 at the factory.

To control	While holding down ■, press
CD1	Button 1
CD2	Button 2

Note that you cannot control the player using the remote, if the COMMAND MODE selector is set to the CD3 position.

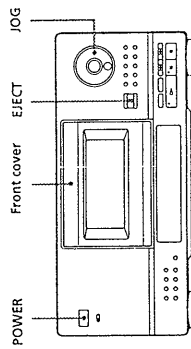
Setting the VOLTAGE SELECTOR (Singapore, Chinese model)

Check that the VOLTAGE SELECTOR on the rear panel of the player is set to the local power line voltage. If not, set the selector to the correct position using a screwdriver before connecting the AC power cord to a wall outlet.

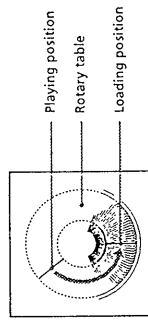
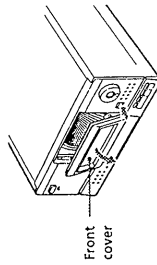


Inserting CDs

You can insert up to 100 discs into this player.

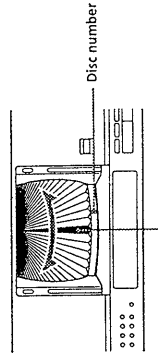


- 1 Press POWER to turn on the player.
- 2 Press EJECT to open the front cover.



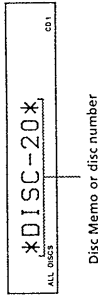
The rotary table turns and the disc slit at the playing position is released and comes to the loading position.

- 3 Find the disc slit where you want to insert a disc while checking the disc number (written beside the slit and also indicated in the display). If you want to move the slit toward you, turn the JOG dial.



Disc slit at the loading position

The disc number at the loading position or the Disc Memo (see page 18) appears in the display. As you turn the JOG dial, the disc number or the Disc Memo changes.

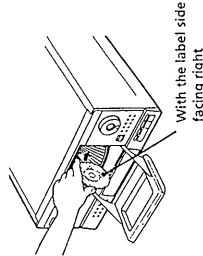


Disc Memo or disc number

When the disc does not have the Disc Memo, the disc number (e.g., *DISC-20*) appears instead of the Disc Memo. This disc number disappears if you do not play the disc for more than a minute. However, the disc number appears again when you play the disc.

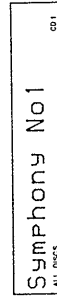
- 4 Insert a disc with the label side facing right.

Note
Make sure you have inserted the discs into each slit at a right angle to the rotary table. If the disc is not put in straight, it may damage the player or the disc.



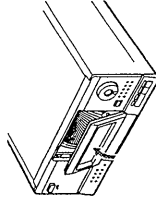
With the label side facing right

After inserting the disc, you can input the original disc titles instead of the current disc numbers (see "Labeling Discs (Disc Memo)" on page 18) to locate it easily when you start playing.



- 5 Repeat Steps 3 and 4 to insert more discs.

- 6 Close the front cover by pressing the right edge of the cover until it clicks.



Always close the front cover except when you insert or remove discs.

-  The supplied CD booklet holder helps you locate a disc

You can store up to 100 CD booklets. Insert booklets and stick the number label on the film of a pocket and the booklet so that you can locate the disc easily.

Notes

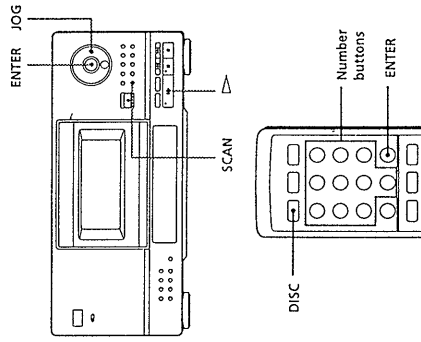
- When you insert an 8 cm (3-inch) CD, be sure to attach a Sony CSA-8 adaptor (not supplied) to the disc. Do not insert an empty 8 cm (3-inch) CD adaptor (CSA-8). It may damage the player.
- If you drop a disc into the player and the CD won't go into the slit correctly, consult your nearest Sony dealer.

Removing CDs

After following Steps 1 to 3 of "Inserting CDs" on page 6, remove the discs. Then close the front cover.

-  When the display shows the Disc Memo instead of the disc number, you can check the disc number of the displayed Disc Memo
- Press DISPLAY while the Disc Memo is displayed. The disc number will be shown for about 2 seconds.

Locating a Specific Disc



Selecting a disc with the player

Turn the JOG dial until the disc number you want appears in the display. Press ENTER to start play.

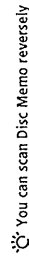
Selecting a disc directly with the remote [7]

- 1 Press DISC on the remote.
- 2 Press the number button of the disc.
To select a disc with a number over 10 Press the 10's digit first, then the 1's digit. To enter 0, use the button 10/0.
Example: To enter number 30 Press 3, then 0 (10/0)
To enter number 100, press 0 (10/0) twice.
- 3 Press ENTER to start play.

Locating a disc by scanning each Disc Memo (Memo Scan)

You can locate a disc you want to play quickly by scanning the Disc Memos (see page 18) in the display and start playing.
Note that you cannot use this function in the ALL DISCS Shuffle and Program Play modes.

- 1 Press SCAN until "MEMO SCAN" appears in the display.
The Disc Memos scroll in the display.
- 2 Press ENTER or Δ when the Disc Memo of the disc you want to play appears.
The disc is set to the playing position, and the player starts playing.



You can scan Disc Memo reversely

Turn the JOG dial counterclockwise while scanning.

Note

If "NO ENTRY" appears in the display, no disc has been labeled with the Disc Memo (see page 18). Try the Memo Scan function again after labeling the discs.

Locating a disc by searching a specific Disc Memo (Memo Search)

You can search and locate a disc you want by inputting the first character used in the Disc Memo of the disc.

- 1 Press SEARCH.
"MEMO SEARCH" appears in the display.
- 2 Press Δ / ∇ / $\rightarrow$ / $\leftarrow$ repeatedly to input the first character.
Each time you press Δ / ∇ / $\rightarrow$ / $\leftarrow$, the characters appear in the following order.

A B C D E F G H I J K L M N O P Q R S T U V W X
Y Z 0 1 2 3 4 5 6 7 8 9

If "NOT FOUND" appears in the display while inputting the first character with Δ / ∇ / $\rightarrow$ / $\leftarrow$, no disc has been labeled using the input character.

Notes

- When searching input characters, blanks and symbols before the first character in the Disc Memo are ignored.
- When searching input characters, upper and lower case cannot be differentiated.

- 3 Turn the JOG dial to find the disc you want.
As you turn the JOG dial, the Disc Memos starting with the input character appears in the display.

- 4 Press ENTER to select the disc.

To cancel Memo Search

Press SEARCH again so that the indicator turns off. If you press the other button, Memo Search is also canceled.



You can go back to the character entry display before cancelling Memo Search
Press Δ / ∇ or $\rightarrow$ / $\leftarrow$.

Note

You cannot use the Δ / ∇ / $\rightarrow$ / $\leftarrow$ buttons and the JOG dial while the rotary table is turning. Start searching after the rotary table stops turning.

What You Can Do With the Custom Files

The player can store 3 types of information called "Custom Files" for each disc. Once you have stored Custom Files for a disc, the player automatically recalls what you have stored whenever you select the disc. Note that Custom Files will be erased if you do not use the player for about 1 month.

You can store this information:

When you use	You can
Disc Memo (page 18)	Label the disc using up to 13 characters
Delete Bank (page 19)	Delete unwanted tracks and store only the tracks you want
Group File (page 19)	Group discs up to 8 groups to locate them easily

Where are Custom Files stored?

Custom Files are stored not on the disc, but in the player's memory. It means you cannot use Custom Files when you play the disc on other players. Also, since the player stores Custom Files with each disc slot, so you cannot use Custom File when you insert a disc in another slot.

How many discs can you file?

You can file up to 200 discs in the Custom File. If the player's memory for Custom Files becomes full, the player displays "FILE FULL" when you press FILE to store the information and you cannot store any more disc information. If you want to store another disc information, erase any unwanted custom files.

 You can check how many more discs you can file
Press FILE.
"REMAIN: XXX" is the number of the discs you can file will be displayed for about 2 seconds.

Erasing Custom Files

You can erase any unwanted Custom Files as follows:
• To erase all Custom Files of one disc:

Erase all the Custom Files (Disc Memo, Delete Bank and Group File) of the disc you want to clear. For details, see pages 19 and 21.

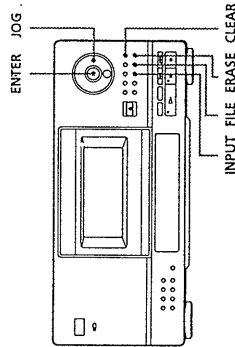
• To erase all Custom Files of all discs:

Turn off the player. While holding down ERASE and FILE, press POWER to turn on the player. "ALL ERASE" appears in the display, and all Custom Files will be erased.

Labeling Discs (Disc Memo)

You can label discs using up to 13 characters and have the player display the Disc Memo every time you select the disc. The Disc Memo can be anything you like, such as a title, musician's name, category or date of purchase.

You can also label discs while the front cover is open.



1 Turn the JOG dial until the disc number to which you want to assign a Disc Memo appears in the display.

When you label the disc with the front cover closed, the disc number of the disc at the playing position appears. When you label the disc with the front cover open, the disc number at the loading position appears.

2 Press INPUT until you find the letter type you want.

Each time you press the button, the display shows capital letters (ABC), small letters (abc) and numbers (123) in this order.

3 Turn the JOG dial until the character you want appears in the display.

When you turn the JOG dial clockwise, the characters appear in the following order. Turn the JOG dial counterclockwise to go back to the previous character.

(space) A B C D E F G H I J K L M N O P Q R S T U
V W X Y Z & a b c d e f g h i j k l m n o p q r s t u v
w x y z ã ö ü ; () [] % \$ # 0 1 2 3 4 5 6 7 8 9 → ← *
/ ! ? , ' " , . -



4 Press ENTER.

The selected character lights up, and the flashing cursor moves to the next position.

To insert a space, press CLEAR.



If you have made a mistake

Press K< or >K until the letter you want to change flashes, then enter the right letter.

5 Repeat Steps 3 and 4 to input more characters.

When you want to change the letter type, go back to Step 2.

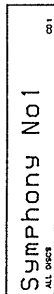
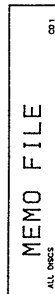
To stop labeling a disc

While assigning a Disc Memo, hold down INPUT.

If you are assigning a Disc Memo while playing a disc, or in the stop mode, press ■.

6 Press FILE to store the Disc Memo.

The Disc Memo appears in the display.



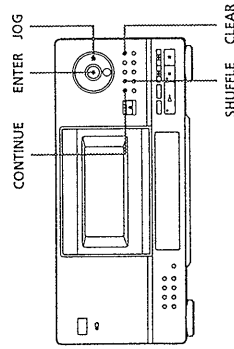
Repeat Steps 1 to 6 to assign a Disc Memo to other discs.

Erasing the Disc Memo

- 1 Select the disc containing the Disc Memo you want to erase.
- 2 Press INPUT.
The first letter of the Disc Memo flashes.
- 3 Press ERASE to erase the Disc Memo.
"FILE ERASE" appears in the display.

Storing Specific Tracks (Delete Bank)

You can delete unwanted tracks and store only the tracks you want. When you select the disc containing a Delete Bank, you can play only the remaining tracks. Note that you cannot delete the track numbered over 32.



- 1 Before you start playing, select the play mode by pressing CONTINUE or SHUFFLE.
- 2 Turn the JOG dial to select the disc.
- 3 Press CHECK repeatedly until you find the track you want to delete.
Each time you press this button, the display shows the track number and the playing time of the track.
- 4 Press CLEAR.
The DELETE indicator is lit.
- 5 Repeat Steps 3 and 4 to delete more tracks.

You can recover all the tracks temporarily
Hold down CLEAR in the stop mode until "ALL SELECT" appears in the display.



You can recover the tracks you have deleted
Press CHECK repeatedly until you find the track you want to recover in Continuous or Shuffle Play mode, then press CLEAR.

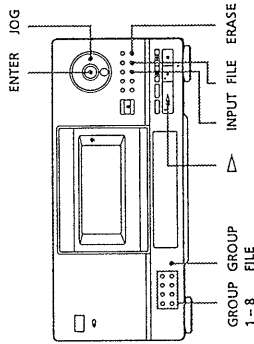
Note

The deleted tracks are skipped even in the Shuffle or Program Play mode (when the whole disc containing a Delete Bank is programmed as one step).

Grouping Discs (Group File)

You might find that too many discs make it hard to find the disc you want. This player has a feature that lets you group discs. When you insert a disc to which you have assigned a group, the group number indication (e.g., Group 1) appears in the display. The player has 8 preset groups and each group can contain up to 200 discs. One disc can be put into only one group.

You can enjoy Continuous, Shuffle, or Repeat Play only within a certain group (Group Play).



Assigning group names

Before you group discs, find the group you want. Each group name appears in the display when you press the corresponding GROUP 1 - 8 button.

Press GROUP	To display
1	Group 1
2	Group 2
3	Group 3
4	Group 4
5	Group 5
6	Group 6
7	Group 7
8	Group 8

(Continued)

If you want to change the group names, do the following:

- 1 Press one of GROUP 1 - 8 to select the group.
The preset group number appears in the display.
- 2 While the group name is lit in the display, press INPUT until you find the letter type you want.
The first letter of the group name flashes. Each time you press the button, the display shows capital letters (ABC), small letters (abc) and numbers (123) cyclically.
- 3 Turn the JOG dial to select a character, then press ENTER.
The selected character lights up, and the flashing cursor moves to the next position.
- 4 Repeat Step 3 to enter more characters.
- 5 Press FILE.
The group name is stored. You can enter up to 13 characters for a group name. See also "Labeling Discs (Disc Memo)" on page 18 for details.

Putting discs into groups

- 1 Before you start playing, select the play mode by pressing CONTINUE or SHUFFLE.
- 2 Turn the JOG dial to select the disc which you want to put into a group.
- 3 Press one of GROUP 1 - 8 to select a group.
The group number appears in the display.

- 4 Press GROUP FILE.
"GROUP FILE" appears in the display.

20^{EN}

Deleting discs from a group

- 1 Before you start playing, select the play mode by pressing CONTINUE or SHUFFLE.
- 2 Turn the JOG dial to select the disc which you want to delete from a group.

19^{EN} 21^{EN}

Playing discs in a group (Group Play)

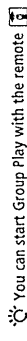
You can enjoy Continuous or Shuffle Play within a group.

- 1 Before you start playing, select the play mode by pressing CONTINUE or SHUFFLE.

When you select	The player plays
ALL DISCS Continuous Play	All tracks on all discs in the group consecutively
1 DISC Continuous Play	All tracks on the specified disc in the group consecutively
ALL DISCS Shuffle Play	All tracks on all discs in the group in a random order
1 DISC Shuffle Play	All tracks on the specified disc in the group in a random order

- 2 Press one of GROUP 1 - 8 to select the group and press $\triangleright$.
Group Play starts from the disc which is located closest upward to the playing position. If the disc in the playing position is put into the selected group, the play starts from that disc.

- 3 When you want to start Group Play from the disc you want, turn the JOG dial to select the disc, then press ENTER. (You can skip this step if you do not have any particular disc to start with.)
The GROUP indicator is lit and Group Play starts from the selected disc.



You can start Group Play with the remote $\square$
Before you start playing, press GROUP, the number button of the group you want to play, then ENTER.

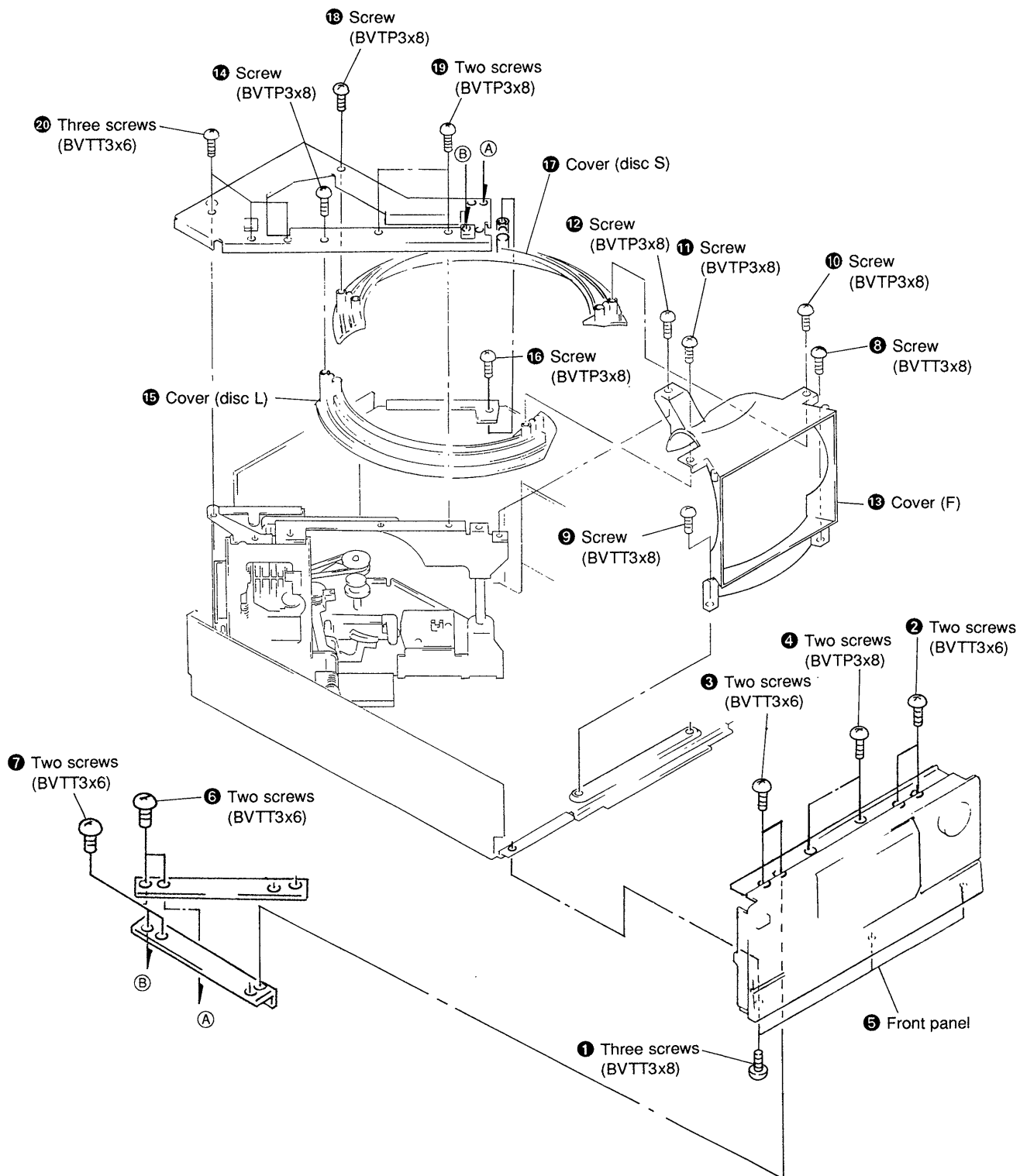
Note
If "NO ENTRY" appears in the display, no disc has been put into the selected group.

- 3 Press one of GROUP 1 - 8 to select a group.
The group number appears in the display.
- 4 While the group number is lit in the display, press ERASE.
"FILE ERASE" appears, and the group number indication disappears from the display.

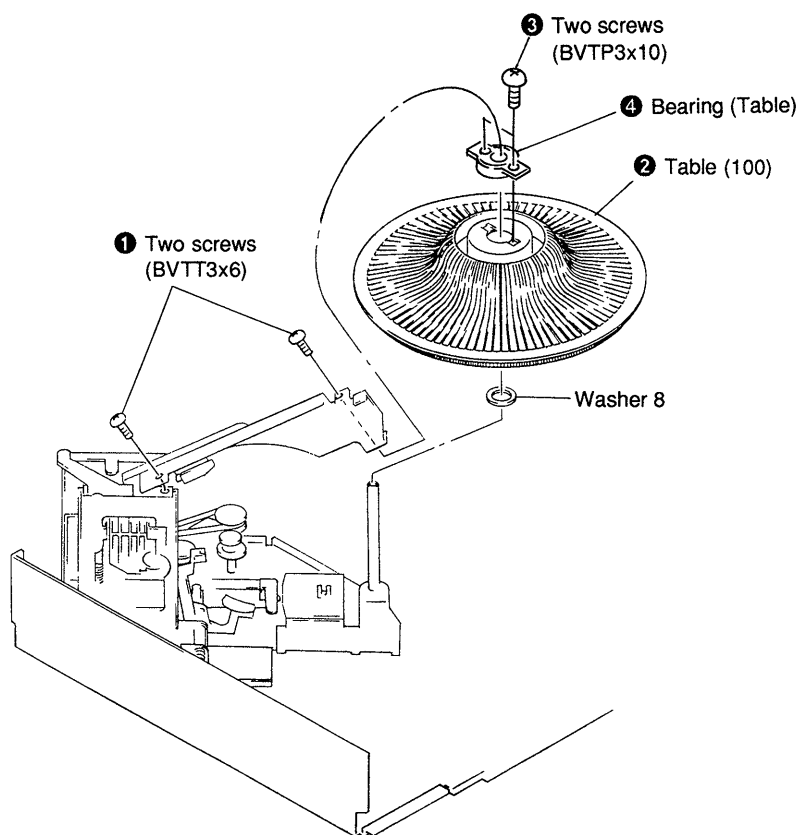
SECTION 3 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

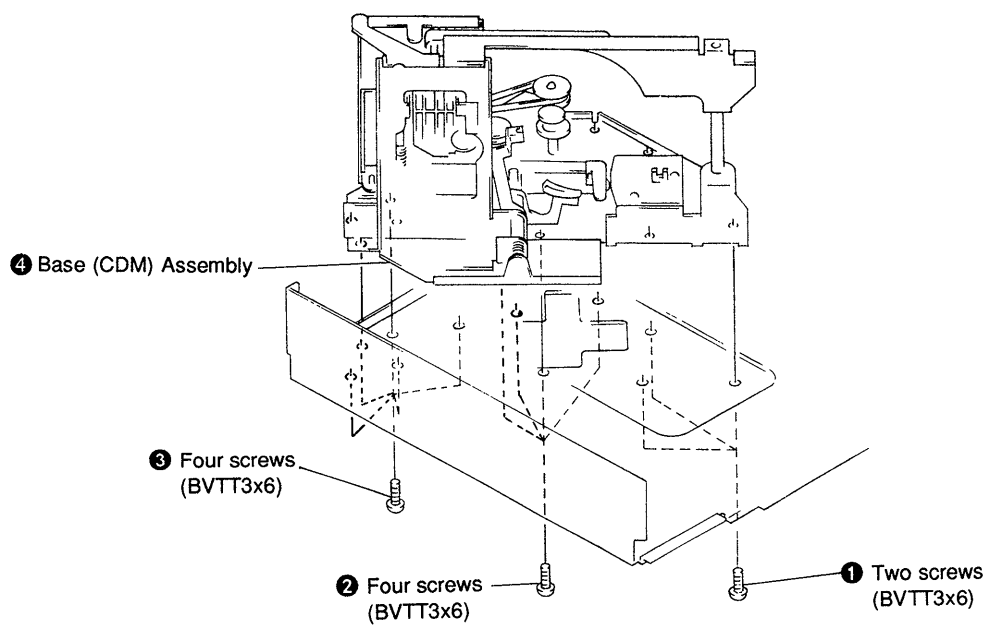
3-1. COVER (F), COVER (DISC L), COVER (DISC S)



3-2. TABLE (100)



3-3. BASE (CDM) ASSEMBLY



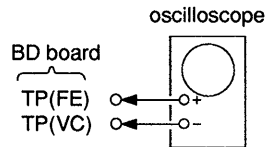
SECTION 4

ELECTRICAL ADJUSTMENTS

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 Ω 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.

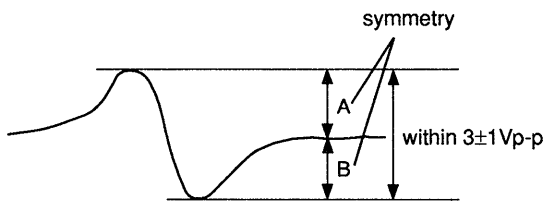
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect test point TP (ADJ) to ground with lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Press the SEARCH button.
6. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $3\pm 1\text{Vp-p}$.

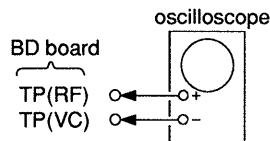
S-curve waveform



7. After check, remove the lead wire connected in step 2.

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.

RF Level Check



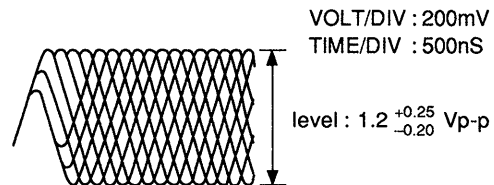
Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned 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.

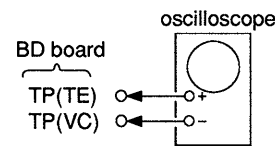
Note :

A clear RF signal waveform means that the shape “ $\diamond$ ” can be clearly distinguished at the center of the waveform.

RF signal waveform

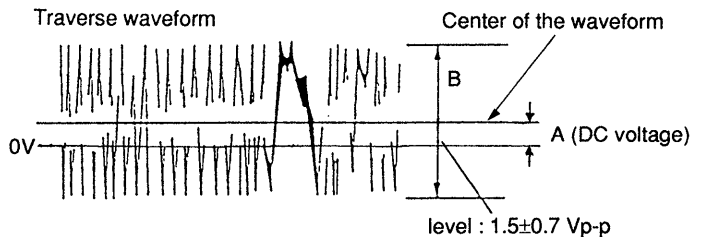


E-F Balance Check

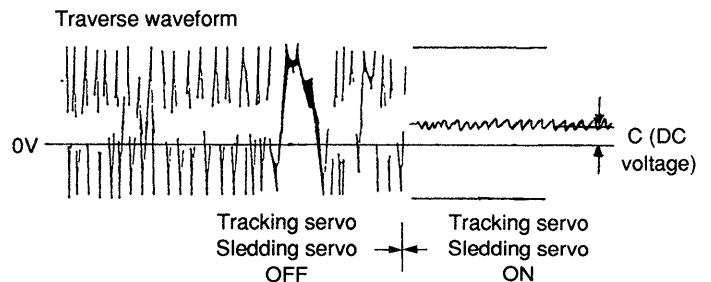


Procedure :

1. Connect test point TP (ADJ) to ground with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the “3” button. (The tracking servo and the sledding servo are turned OFF.)
6. Check the level B of the oscilloscope’s waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 20\%$.



7. Press the “8” button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) in step 6.

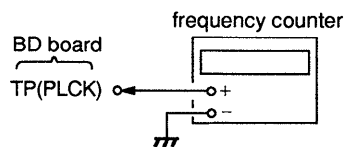


8. Disconnect the laed wire of TP (ADJ) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

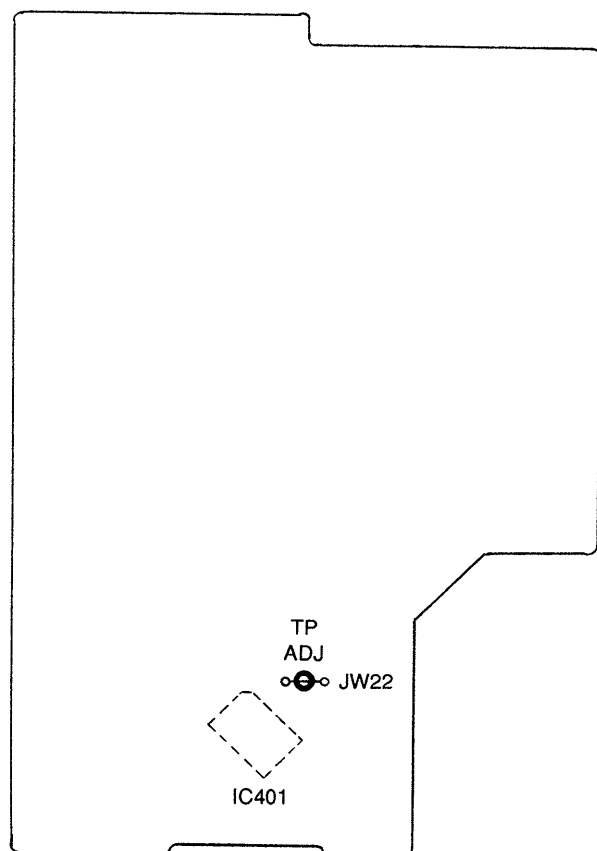
1. Connect frequency counter to test point (PLCK) with lead wire.



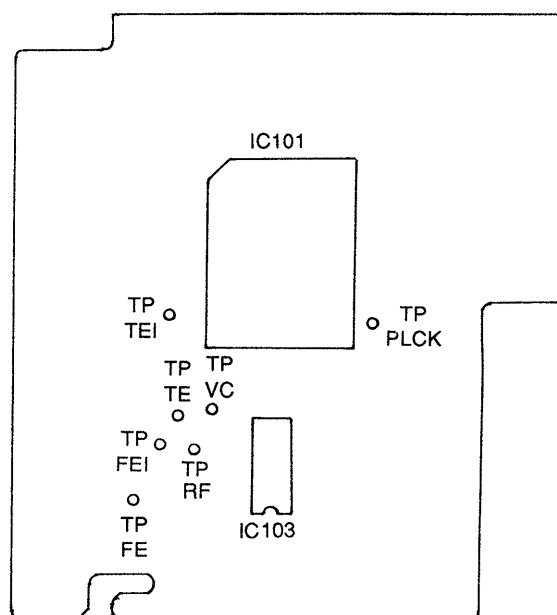
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track.
Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[MAIN BOARD] — Component Side —

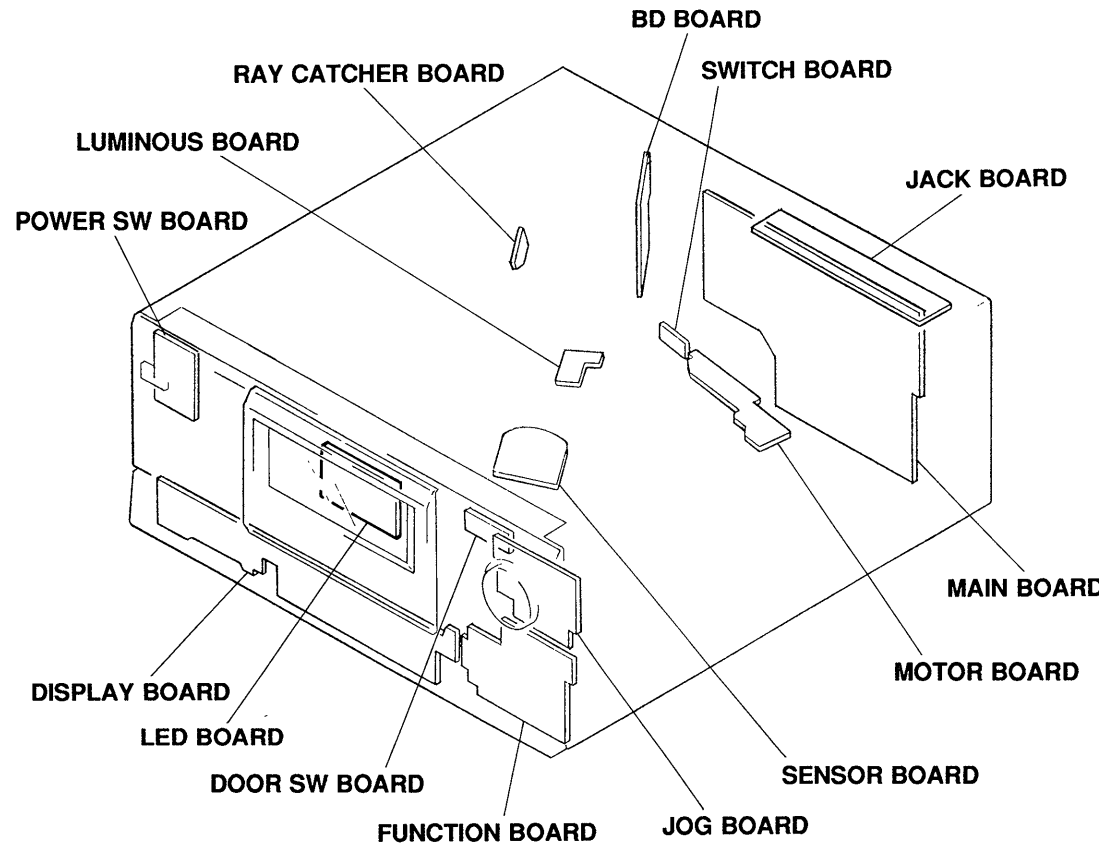


[BD BOARD] — SIDE B —

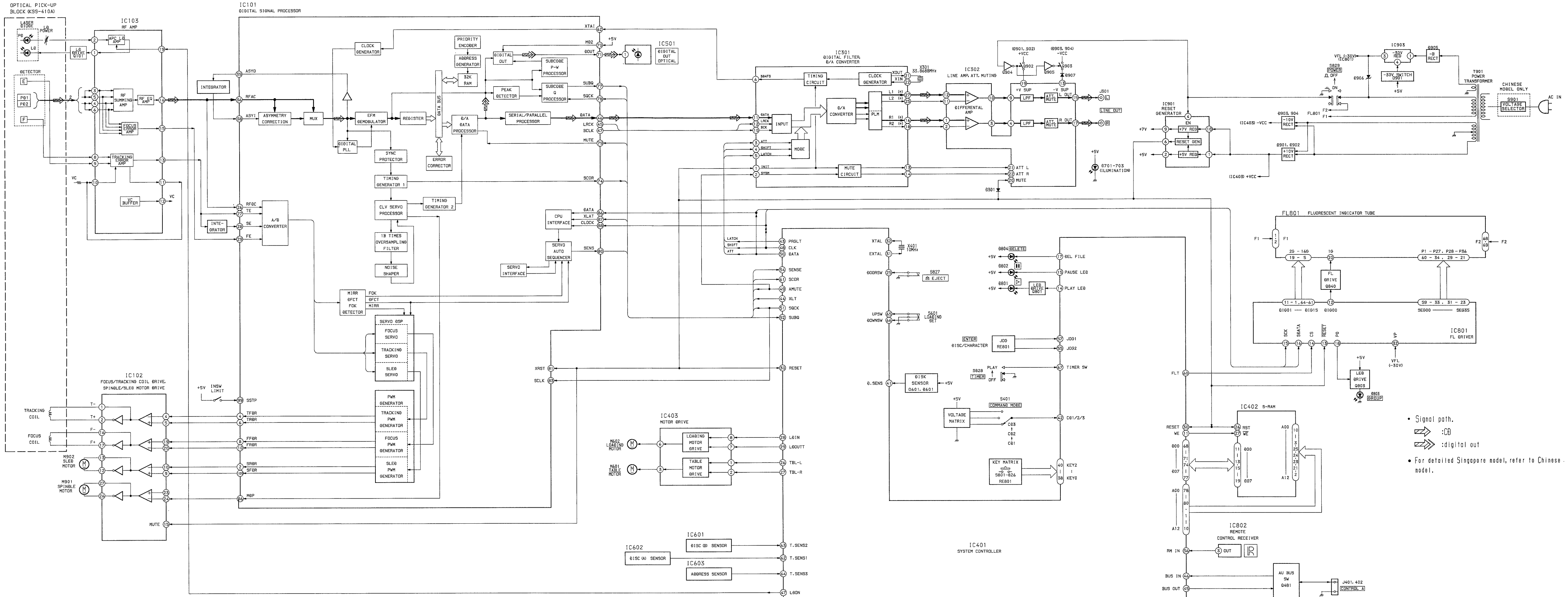


SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION

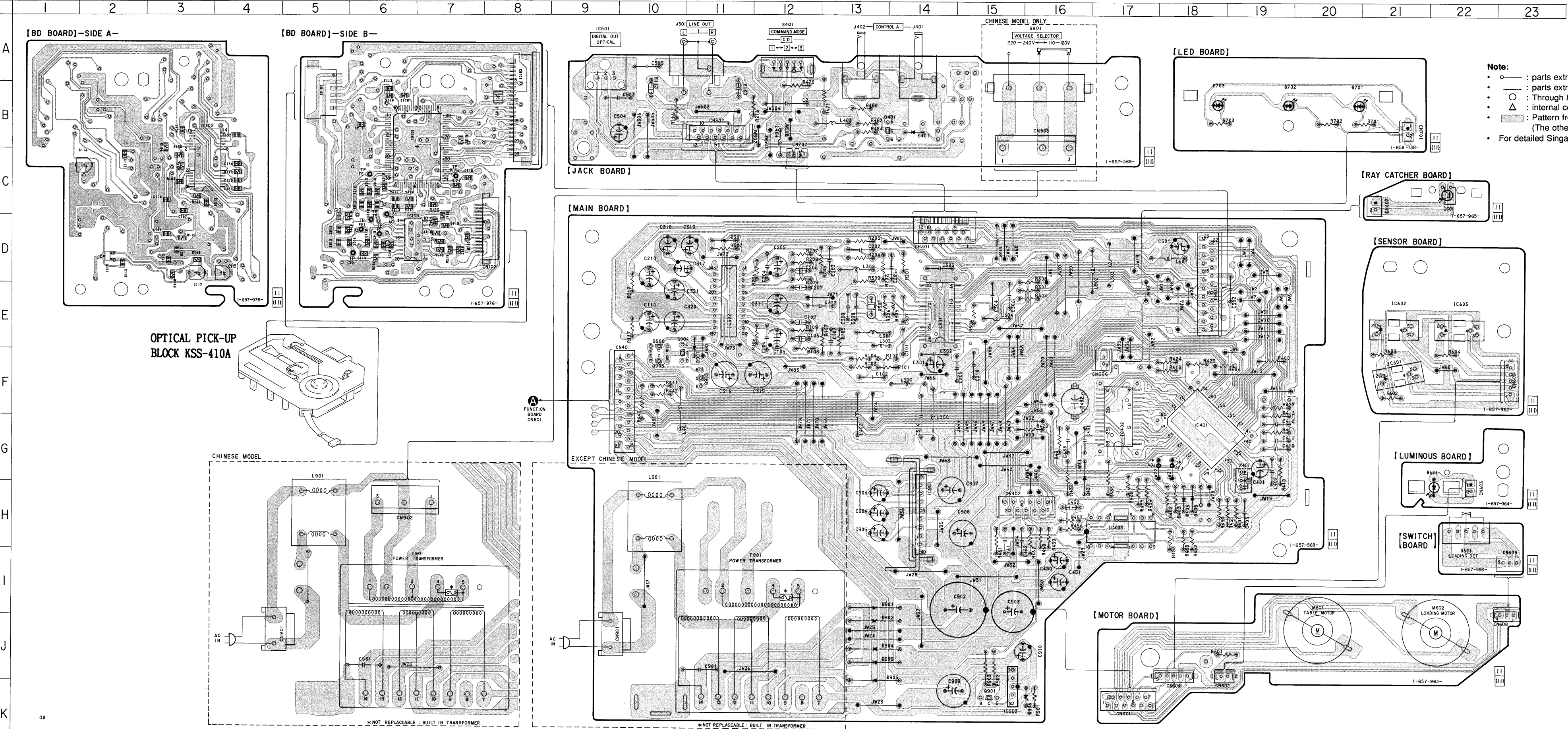


5-2. BLOCK DIAGRAM



- Signal path.
- For detailed Singapore model, refer to Chinese model.

5-3. PRINTED WIRING BOARD — MAIN SECTION —
• See page 13 for Circuit Boards Location.

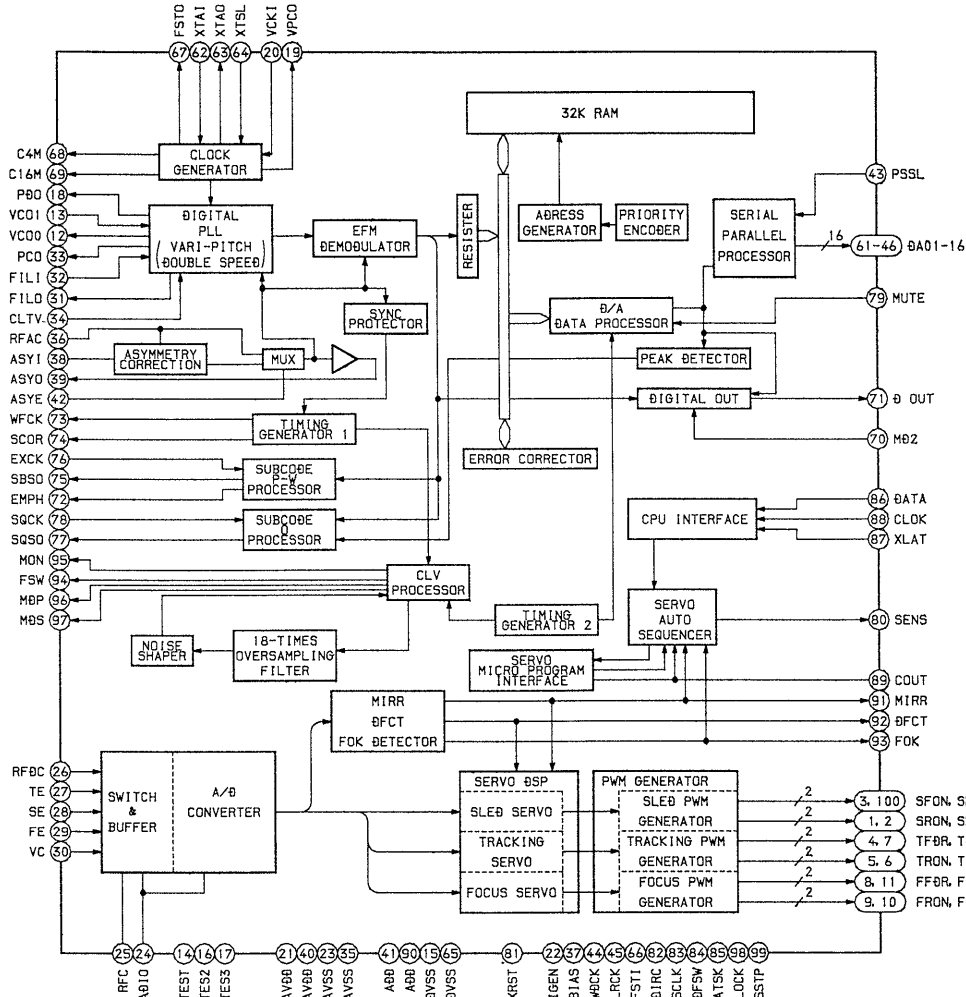


• Semiconductor Location

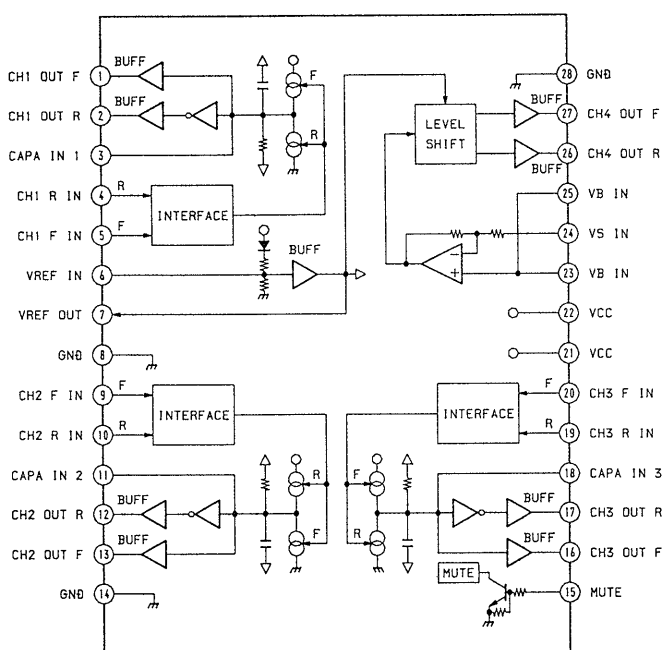
Ref. No.	Location
D301	D-11
D401	B-13
D405	H-18
D406	H-18
D431	H-16
D601	G-22
D701	B-20
D702	B-19
D703	B-18
D901	I-13
D902	J-13
D903	J-13
D904	J-13
D905	J-13
D906	K-16
D907	F-11
IC101	B-6
IC102	C-3
IC103	D-6
IC301	E-14
IC302	E-11
IC401	G-18
IC402	G-17
IC403	H-17
IC501	B-9
IC601	F-21
IC602	E-21
IC603	E-22
IC901	H-14
IC903	K-15
Q101	D-2
Q481	B-13
Q601	C-22
Q901	K-15
Q902	E-10
Q903	F-11
Q904	F-10
Q905	F-10

• IC Block Diagrams

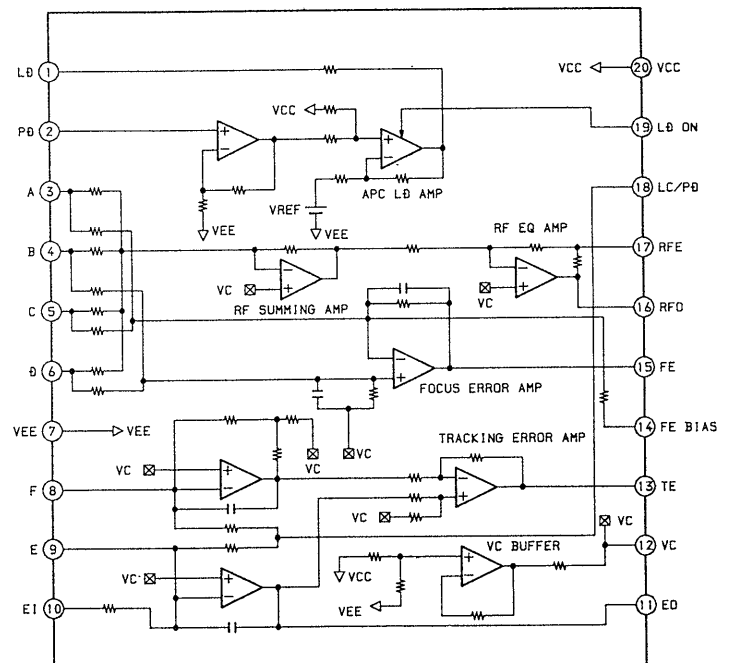
IC101 CXD2545

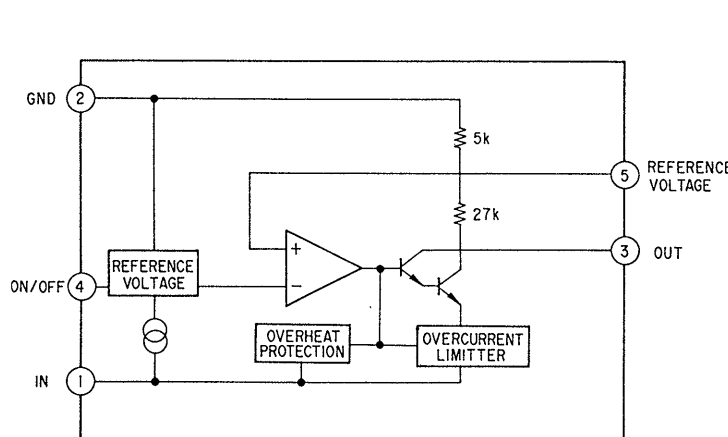
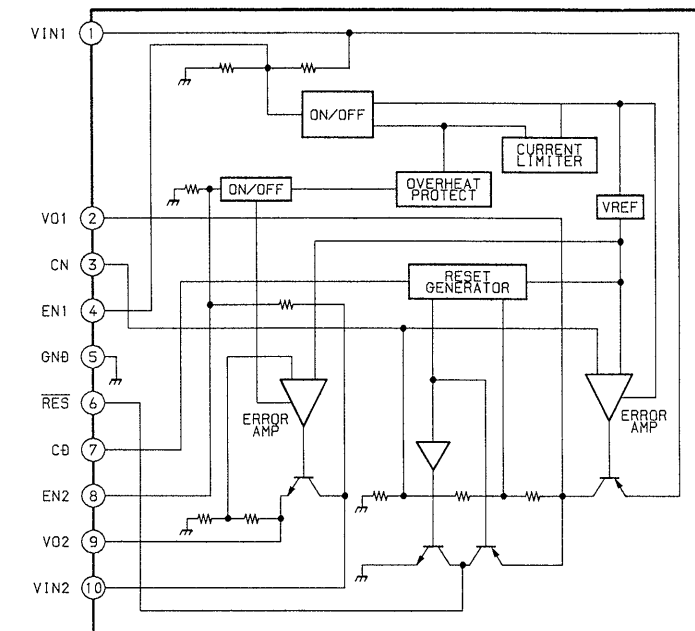
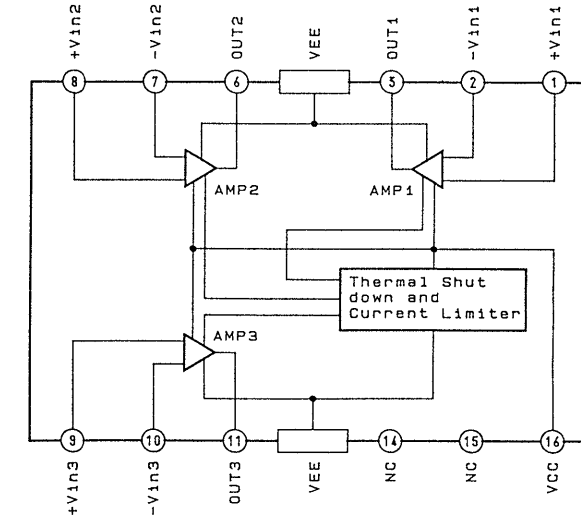
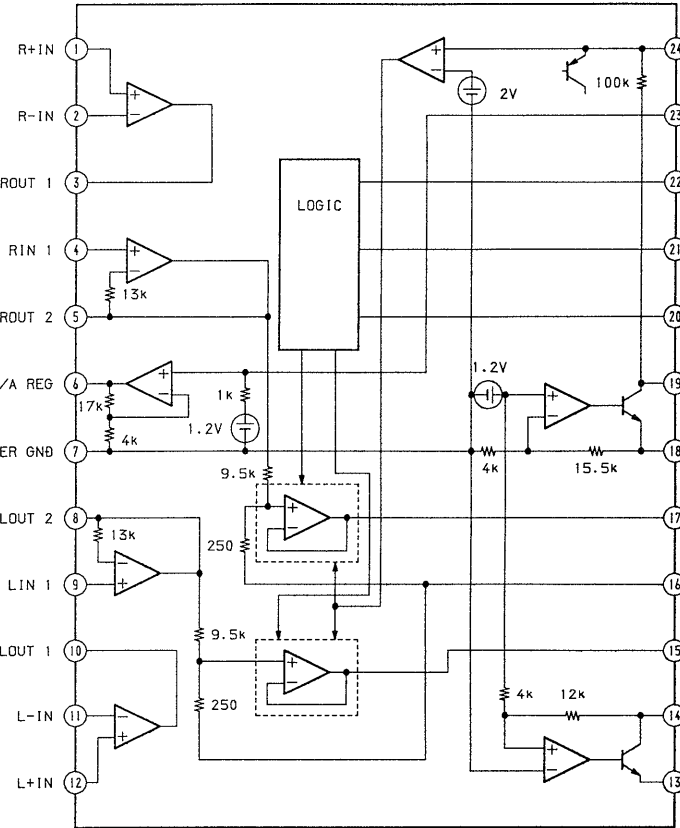
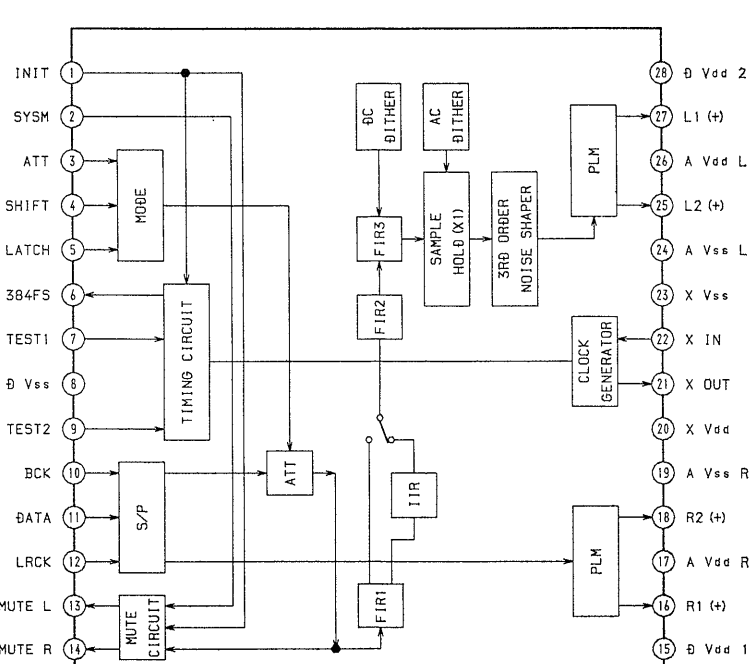


IC102 BA6392FP



IC103 CXA1821M





1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
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- All capacitors are in μF unless otherwise noted, $\text{pF} = \mu\text{F} / 1000$
50WV 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.
- Δ : internal component.
-  : panel designation.

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

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

- **B+** :B+ Line.
- **B-** :B- Line.

- Voltages and waveforms are dc with respect to ground under no-signal conditions.

no mark: STOP

- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.

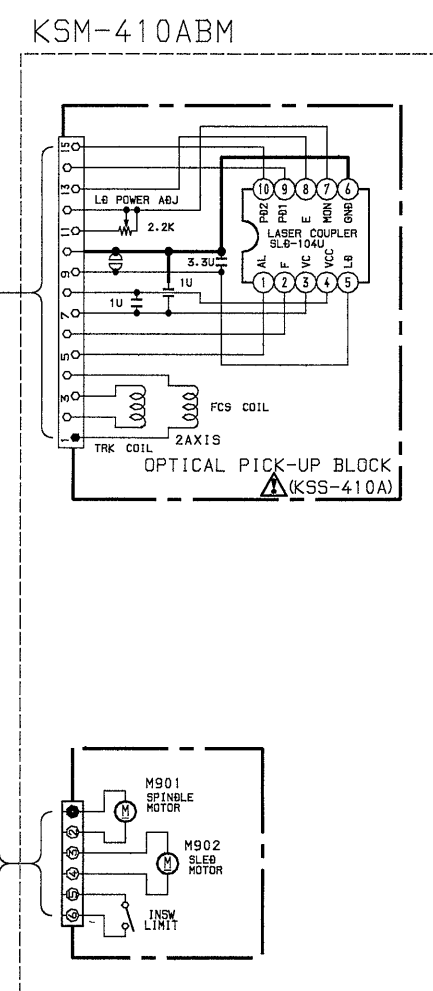
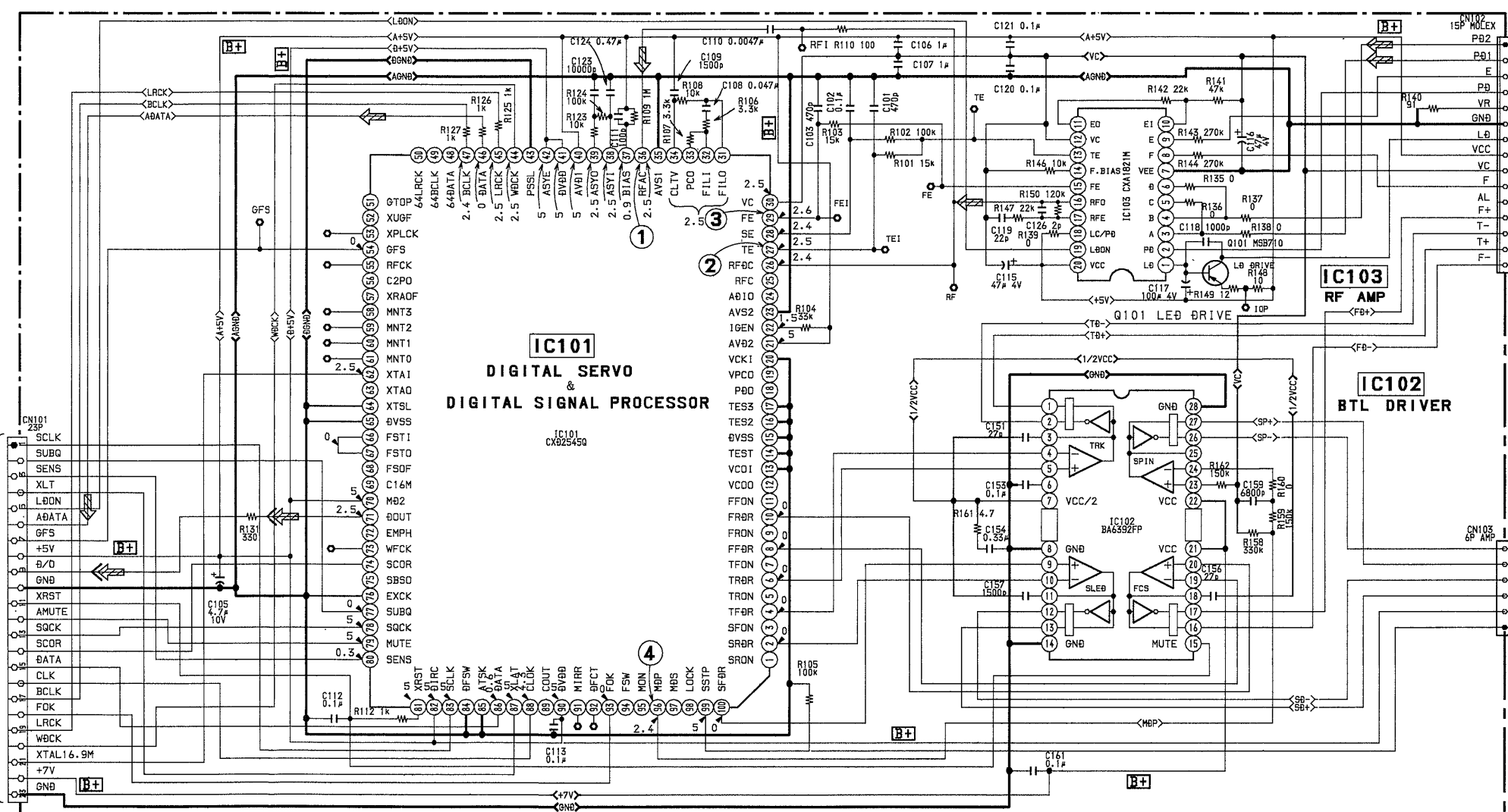
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.

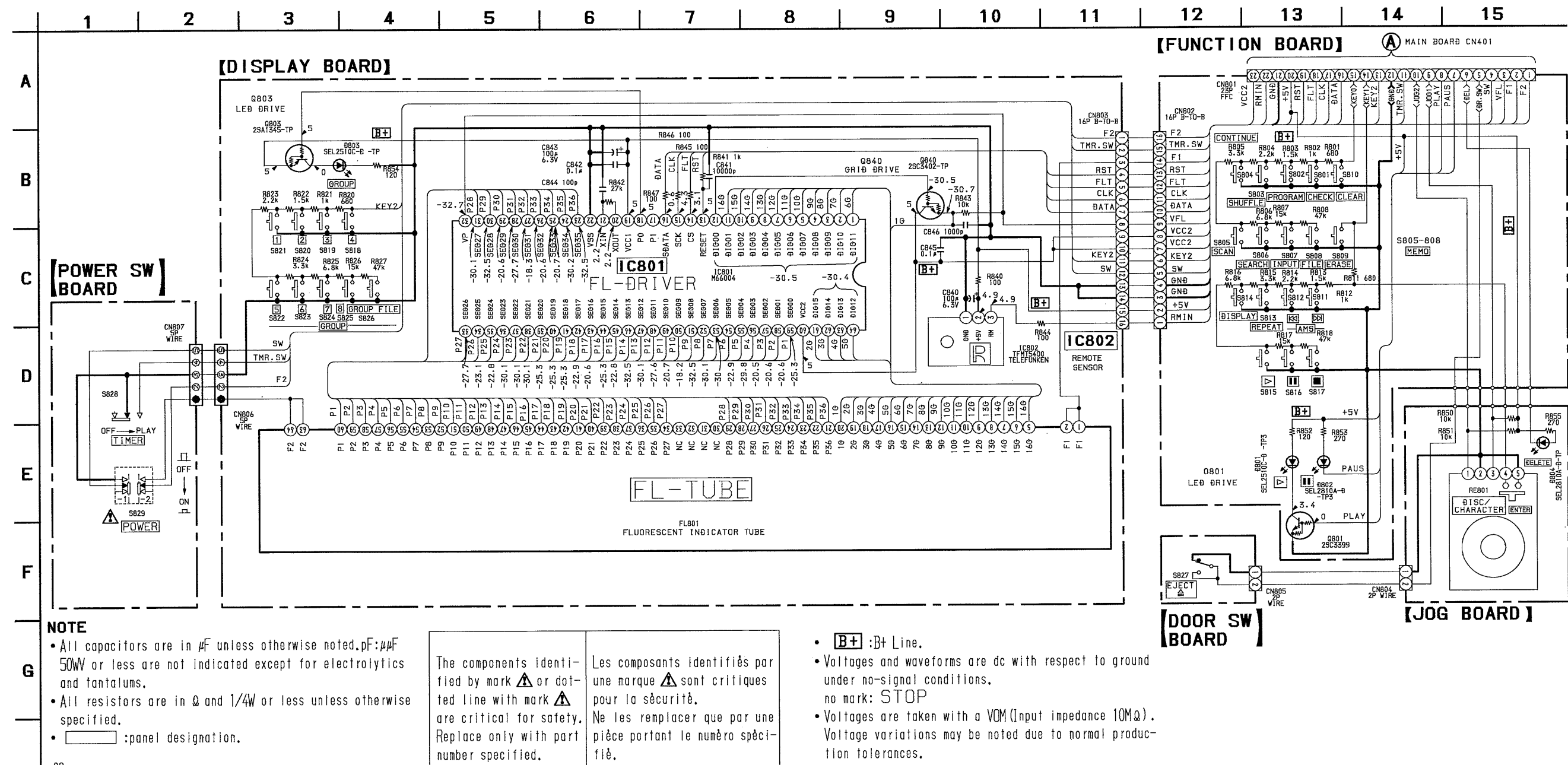
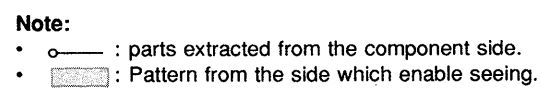
- Circled numbers refer to waveforms.

- Signal path.

 :C0
 :digital out

- For detailed Singapore model, refer to Chinese model.





5-7. IC PIN FUNCTIONS

• IC101 DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR (CXD2545Q)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used)
12	VCOO	O	VCO output for analog EFM PLL (Not used)
13	VCOI	I	VCO output for analog EFM PLL (GND)
14	TEST	I	TEST pin connected normally to GND
15	DVss	—	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL (Not used)
19	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
20	VCKI	I	Clock input from variable pitch external VCO (GND)
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADIO	I	(Not used)
25	RFC	O	(Not used)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	—	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry compare voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply

Pin No.	Pin Name	I/O	Function
41	DVDD	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1. 48-bit slot data when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA 09 output when PSSL=1. XPLCK output when PSSL=0
54	GFS	O	DA 08 output when PSSL=1. GFS output when PSSL=0
55	PFCK	O	DA 07 output when PSSL=1. RFCK output when PSSL=0
56	C2PO	O	DA 06 output when PSSL=1. C2PO output when PSSL=0 (Not used)
57	XRAOF	O	DA 05 output when PSSL=1. XRAOF output when PSSL=0
58	MNT3	O	DA 04 output when PSSL=1. MNT3 output when PSSL=0
59	MNT2	O	DA 03 output when PSSL=1. MNT2 output when PSSL=0
60	MNT1	O	DA 02 output when PSSL=1. MNT1 output when PSSL=0
61	MNT0	O	DA 01 output when PSSL=1. MNT0 output when PSSL=0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Not used)
64	XTSL	I	X'tal selection input pin (GND)
65	DVss	—	Digital GND
66	FSTI	I	2/3 divider output of pins 62, 63
67	FSTO	O	2/3 divider output of pins 62, 63
68	FSOF	O	(Not used)
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin (+5V)
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode (Not used)
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Not used)
76	EXCK	I	Clock input for SBS0 read-out (GND)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQS0 read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode (+5V)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (GND)
85	ATSK	I	Input pin for anti-shock (GND)

Pin No.	Pin Name	I/O	Function
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU
89	COUT	O	Numbers of track counted signal output (Not used)
90	DVDD	—	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter (Not used)
95	MON	O	Output to control ON/OFF of spindle motor (Not used)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Not used)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

• **IC301 DIGITAL FILTER, D/A CONVERTER (CXD2565M)**

Pin No.	Pin Name	I/O	Function
1	INIT	I	Re-synchronizing at rise-up edge of this signal
2	SYSM	I	System muting input
3	ATT	I	Attenuation data input
4	SHIFT	I	Shift clock input
5	LATCH	I	Latch clock input
6	384FSO	O	384fs clock output
7	TEST1	I	Test pin. Fixed to "L" level during normal operation
8	DVss	—	Digital GND
9	TEST2	I	Test pin. Fixed to "L" level during normal operation
10	BCK	I	BCK input
11	DATA	I	Data input
12	LRCK	I	LRCK input
13	MUTEL	O	Not used
14	MUTER	O	Not used
15	DVDD1	—	Digital power supply
16	R1 (+)	O	R-ch PLM output-1 (positive phase)
17	AVDDR	—	L-ch analog power supply
18	R2 (+)	O	R-ch PLM output-2 (positive phase)
19	AVssR	—	L-ch analog GND
20	XVDD	—	Master clock power supply
21	XOUT	O	X'tal oscillator output (33.8 MHz)
22	XIN	I	X'tal oscillator input (33.8 MHz)
23	XVss	—	Master clock GND
24	AVssL	—	L-ch analog GND
25	L2 (+)	O	L-ch PLM output-2 (positive phase)
26	AVDDL	—	L-ch analog power supply
27	L1 (+)	O	L-ch PLM output-1 (positive phase)
28	DVDD2	—	Digital power supply

• IC401 SYSTEM CONTROL (CXP84124-034Q)

Pin No.	Pin Name	I/O	Function
1	A3	O	SRAM address
2	A4	O	
3	A5	O	
4	A6	O	
5	A7	O	
6	A8	O	
7	A9	O	
8	A10	O	
9	A11	O	
10	A12	O	
11	WE	O	SRAM write enable
12	ADJ	I	Adjust
13	AFADJ	I	AF adjust
14	PLAY	O	LED
15	PAUSE	O	
16	—	O	Open
17	DELETE	O	LED
18	—	O	Open
19	—	O	
20	—	O	
21	—	O	
22	—	O	
23	U/J	I	Destination High: J/Low: U
24	TEST	I	GND
25	DOOR	I	Door SW
26	TBL-L	O	Table-L
27	TBL-R	O	Table-R
28	LOD-IN	O	Chuckling in
29	LOD-OUT	O	Chuckling out
30	RST	O	Reset
31	EXTAL	—	X'tal Oscillation (10 MHz)
32	XTAL	—	
33	Vss	—	GND
34	TX	—	Open
35	TEX	—	GND
36	AVss	—	
37	AVREF	—	+5V
38	KEY0	I	Key input
39	KEY1	I	
40	KEY2	I	

Pin No.	Pin Name	I/O	Function
41	D. SENS	I	Disk sensor
42	CD123	I	0V: CD3, +2.5V: CD2, +5V: CD1
43	PLT	O	Digital filter latch
44	XLT	O	2545 latch
45	BUS OUT	O	Control A OUT
46	BUS IN	I	Control A IN
47	LDON	O	Laser diode control
48	CLK	O	Serial data transfer clock
49	A MUTE	O	Audio muting control
50	DATA	I/O	Serial data
51	SQCLK	O	Sub code Q read out clock
52	SUBQ	I	Sub code Q data
53	—	O	
54	SENS	I	SENSE signal
55	JOG2	I	Jog signal
56	RM IN	I	Remote control signal
57	JOG1	I	Jog signal
58	—	O	} Open
59	—	O	
60	FLT	O	FL driver latch
61	SCOR	I	Sub code sync
62	T. SENS1	I	Table sensor 1
63	T. SENS2	I	Table sensor 2
64	T. SENS3	I	Table sensor 3
65	UP SW	I	Chucking switch
66	DOWN SW	I	Chucking out switch
67	TIMER	I	Timer switch
68	D0	I/O	} SRAM data
69	D1	I/O	
70	D2	I/O	
71	D3	I/O	
72	V _{DD}	—	} +5V
73	NC	—	
74	D4	I/O	} SRAM data
75	D5	I/O	
76	D6	I/O	
77	D7	I/O	
78	A0	O	} SRAM address
79	A1	O	
80	A2	O	

SECTION 6

EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference 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.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

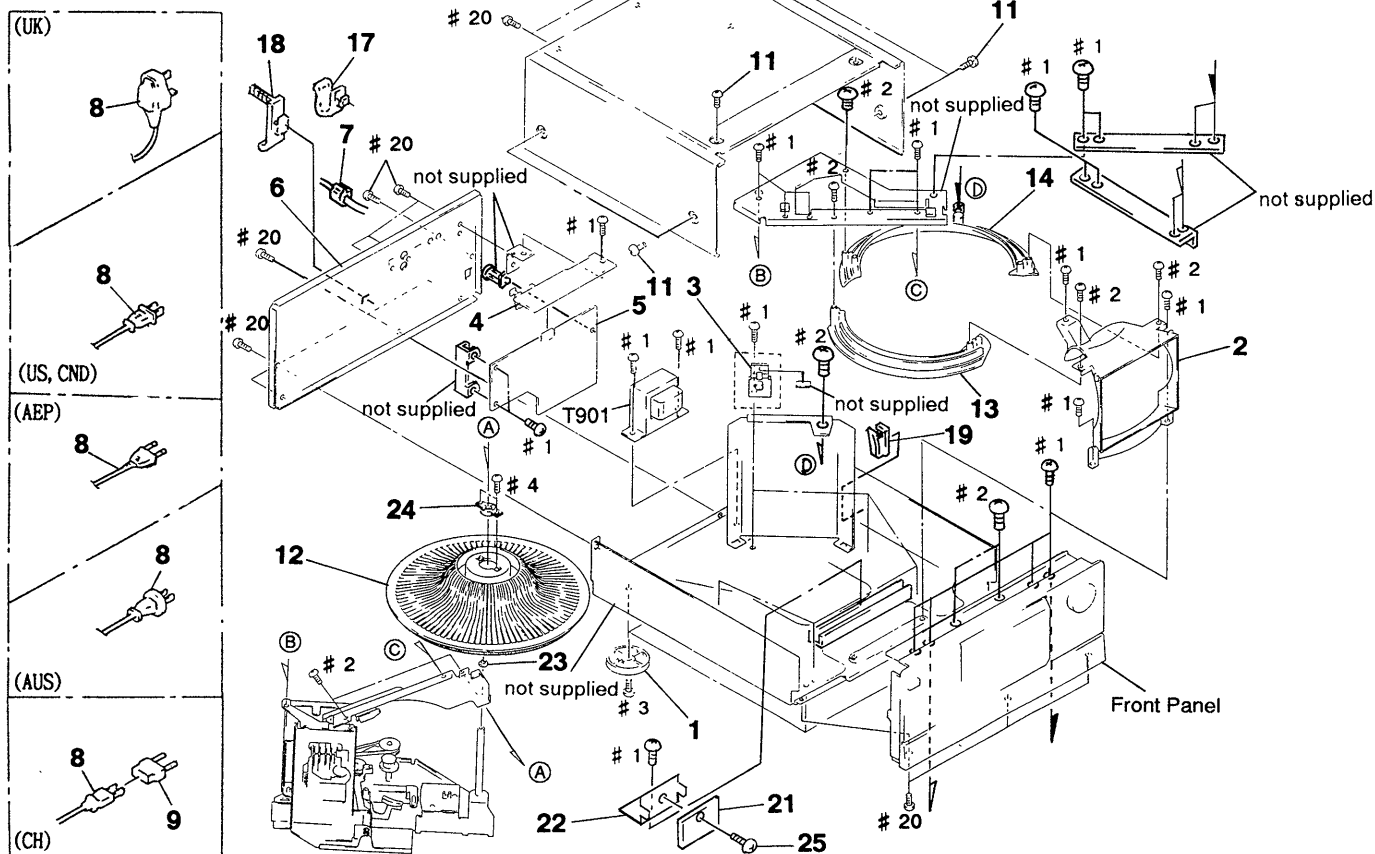
↑ ↑
Parts color Cabinet's color

- 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
CH : Chinese model
For detailed Singapore model, refer to CH model.

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

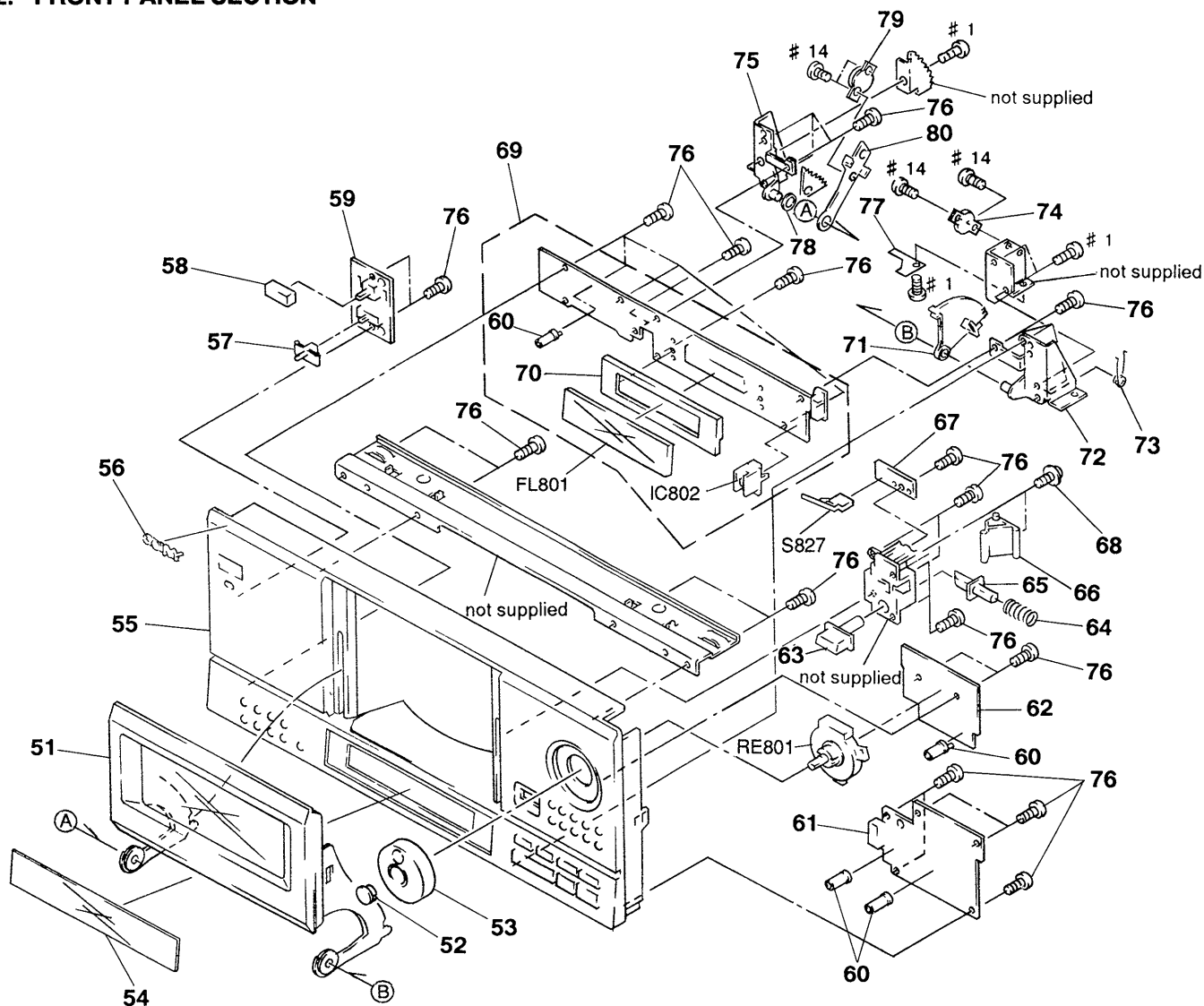
Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CASE, MAIN BOARD SECTION



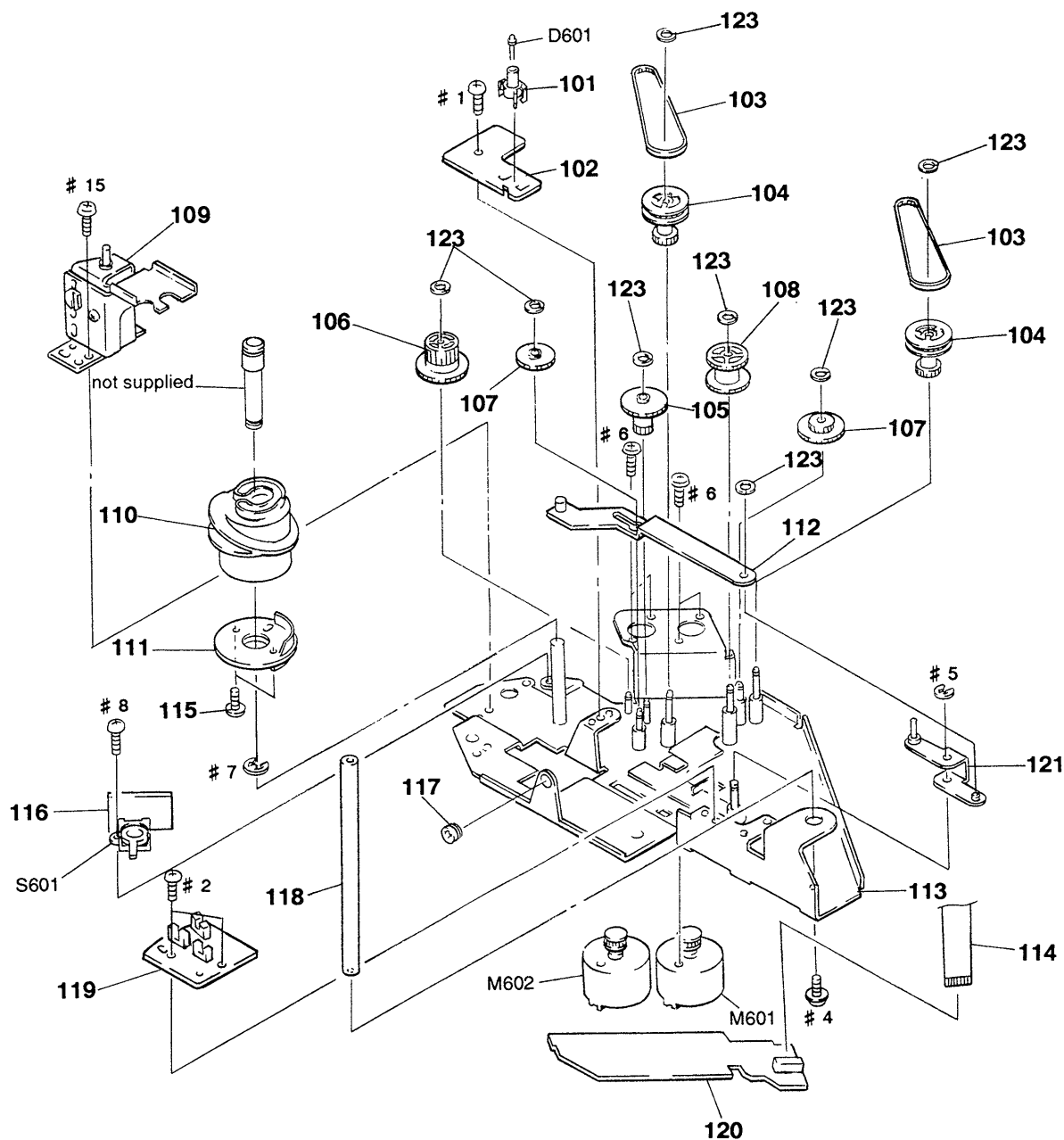
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-948-027-11	FOOT (DIA. 50)		9	1-569-007-11	ADAPTER, CONVERSION 2P (CH)	
2	4-976-368-01	COVER (F)		10	4-976-392-01	CASE	
* 3	X-4946-334-1	HOLDER (ROLLER) ASSY		11	3-363-099-41	SCREW (CASE 3 TP2)	
* 4	1-657-569-11	JACK BOARD		12	4-976-482-01	TABLE (100)	
* 5	A-4673-645-A	MAIN BOARD, COMPLETE (US, CND)		* 13	4-976-823-01	COVER (DISC S)	
* 5	A-4673-653-A	MAIN BOARD, COMPLETE (AEP, UK, AUS)		* 14	4-976-822-01	COVER (DISC L)	
* 5	A-4673-654-A	MAIN BOARD, COMPLETE (CH)		15	1-775-431-11	WIRE (FLAT TYPE) (23 CORE)	
* 6	4-976-366-01	PANEL, BACK (US)		16	1-775-432-11	WIRE (FLAT TYPE) (23 CORE)	
* 6	4-976-366-11	PANEL, BACK (CND)		* 17	4-949-235-01	HOOK (US, CND, AEP, CH)	
* 6	4-976-366-31	PANEL, BACK (AEP)		18	4-956-370-02	BAND, PLUG FIXED (UK, AUS)	
* 6	4-976-366-41	PANEL, BACK (UK)		* 19	4-966-273-01	CLAMP, FLAT CABLE	
* 6	4-976-366-51	PANEL, BACK (CH)		20	X-4924-457-1	ROLLER ASSY	
* 6	4-976-366-61	PANEL, BACK (AUS)		* 21	1-658-738-11	LED BOARD	
* 7	3-703-244-00	BUSHING (2104), CORD (US, CND, AEP, UK, AUS)		* 22	4-978-545-01	HOLDER, LED	
* 7	3-703-571-11	BUSHING (S) (4516), CORD (CH)		23	3-701-446-21	WASHER 8	
Δ 8	1-575-651-21	CORD, POWER (AEP)		24	4-976-471-01	BEARING (TABLE)	
Δ 8	1-590-836-11	CORD, POWER (US, CND)		25	4-951-620-01	SCREW (2. 6X8), +BVTP	
Δ 8	1-696-027-11	CORD, POWER (CH)		Δ T901	1-429-165-11	TRANSFORMER, POWER (US, CND)	
Δ 8	1-696-571-11	CORD, POWER (UK)		Δ T901	1-429-166-11	TRANSFORMER, POWER (AEP, UK, AUS)	
Δ 8	1-696-845-11	CORD, POWER (AUS)		Δ T901	1-429-167-11	TRANSFORMER, POWER (CH)	

6-2. FRONT PANEL SECTION



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
51	A-4660-951-A	DOOR ASSY		68	4-933-134-01	SCREW (+PTPWH M2.6X6)	
52	4-960-509-01	BUTTON (ENTER)		* 69	A-4673-640-A	DISPLAY BOARD, COMPLETE	
53	4-960-510-11	KNOB (JOG)		* 70	4-976-367-01	HOLDER (FL)	
54	4-976-400-01	PLATE, INDICATION		71	4-976-767-01	LEVER (DAMPER)	
55	X-4946-363-1	PANEL ASSY, FRONT (US, CND)		* 72	X-4946-360-1	PLATE (R) ASSY, FULCRUM	
55	X-4946-364-1	PANEL ASSY, FRONT (AEP, UK, AUS, CH)		73	4-976-769-01	SPRING (DAMPER), TORSION	
56	4-963-404-21	EMBLEM (5-A), SONY		74	3-712-786-01	DAMPER, OIL	
57	3-917-216-11	KNOB (TIMER)		* 75	X-4946-361-1	PLATE (L) ASSY, FULCRUM	
58	4-922-921-01	BUTTON (POWER)		76	4-951-620-01	SCREW (2.6X8), +BVTP	
* 59	1-657-566-11	POWER SW BOARD		77	4-976-824-01	SPRING (DOOR), LEAF	
* 60	3-362-478-01	HOLDER (T), LED		78	3-701-443-11	WASHER	
* 61	1-657-564-11	FUNCTION BOARD		79	3-712-786-11	DAMPER, OIL	
* 62	1-657-565-11	JOG BOARD		80	4-978-543-01	LEVER (DAMPER 2)	
63	4-976-369-01	BUTTON (EJECT)		FL801	1-517-449-11	INDICATOR TUBE, FLUORESCENT	
64	4-976-373-01	SPRING (LOCK), COMPRESSION		IC802	8-749-010-21	IC TFMT5400 (R)	
65	4-976-371-01	LEVER (LOCK)		RE801	1-692-615-11	SWITCH, JOG (DISC/CHARACTER, ENTER)	
66	4-976-372-01	LEVER (LOCK 2)		S827	1-762-576-11	SWITCH LEVER (DOOR SW DET)	
* 67	1-657-567-11	DOOR SW BOARD					

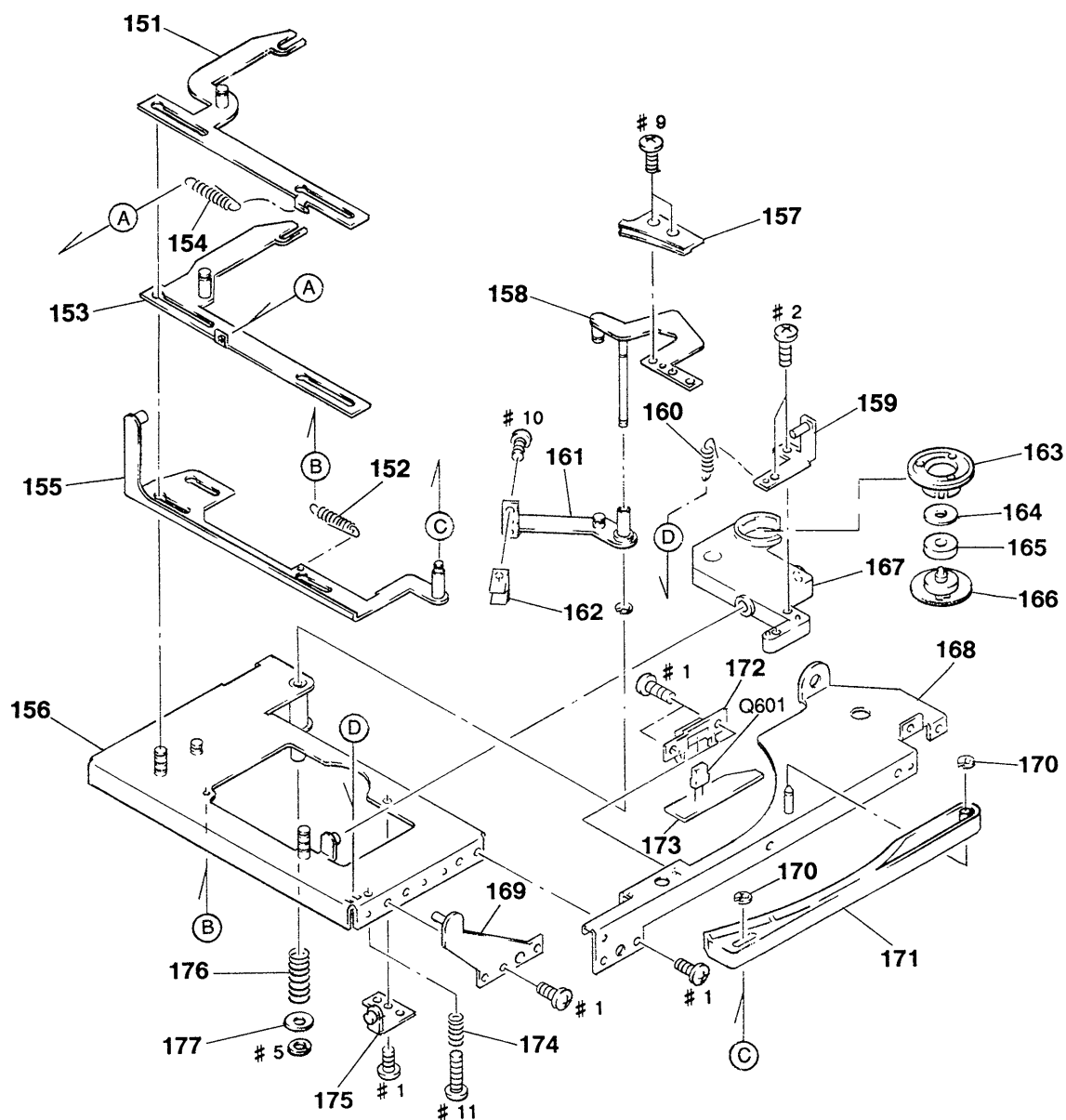
6-3. BASE (CDM) ASSY SECTION



Ref. No.	Part No.	Description
* 101	4-976-473-01	HOLDER (LED-S)
* 102	1-657-964-11	LUMINOUS BOARD
103	4-962-822-01	BELT (TIMING)
104	X-4944-234-1	GEAR (PULLEY) ASSY
105	4-976-466-01	GEAR (LOADING 2)
106	4-976-465-01	GEAR (LOADING 1)
107	4-976-467-01	GEAR (CENTER)
108	4-976-468-01	GEAR (TABLE)
109	X-4946-329-1	PLATE (BU LOWER) ASSY, FULCRUM
110	4-976-463-01	CAM (A)
111	4-976-464-01	CAM (B)
112	X-4946-333-1	LEVER (LINK LOCK) ASSY
* 113	X-4946-330-1	BASE (CDM) ASSY
114	1-775-430-11	WIRE (FLAT TYPE) (11 CORE)

Ref. No.	Part No.	Description	Remark
115	4-951-620-01	SCREW (2.6X8), +BVTP	
* 116	1-657-966-11	SWITCH BOARD	
117	3-489-073-00	SCREW, THRUST	
* 118	4-976-470-01	SHAFT (CENTER)	
* 119	1-657-962-11	SENSOR BOARD	
* 120	1-657-963-11	MOTOR BOARD	
121	X-4946-332-1	LEVER (STOPPER) ASSY	
123	3-325-697-01	WASHER	
D601	8-719-055-84	DIODE GL528VS1	
M601	A-4604-834-A	MOTOR ASSY (TABLE)	
M602	A-4604-834-A	MOTOR ASSY (LOADING)	
S601	1-571-300-21	SWITCH, ROTARY (LOADING DET)	

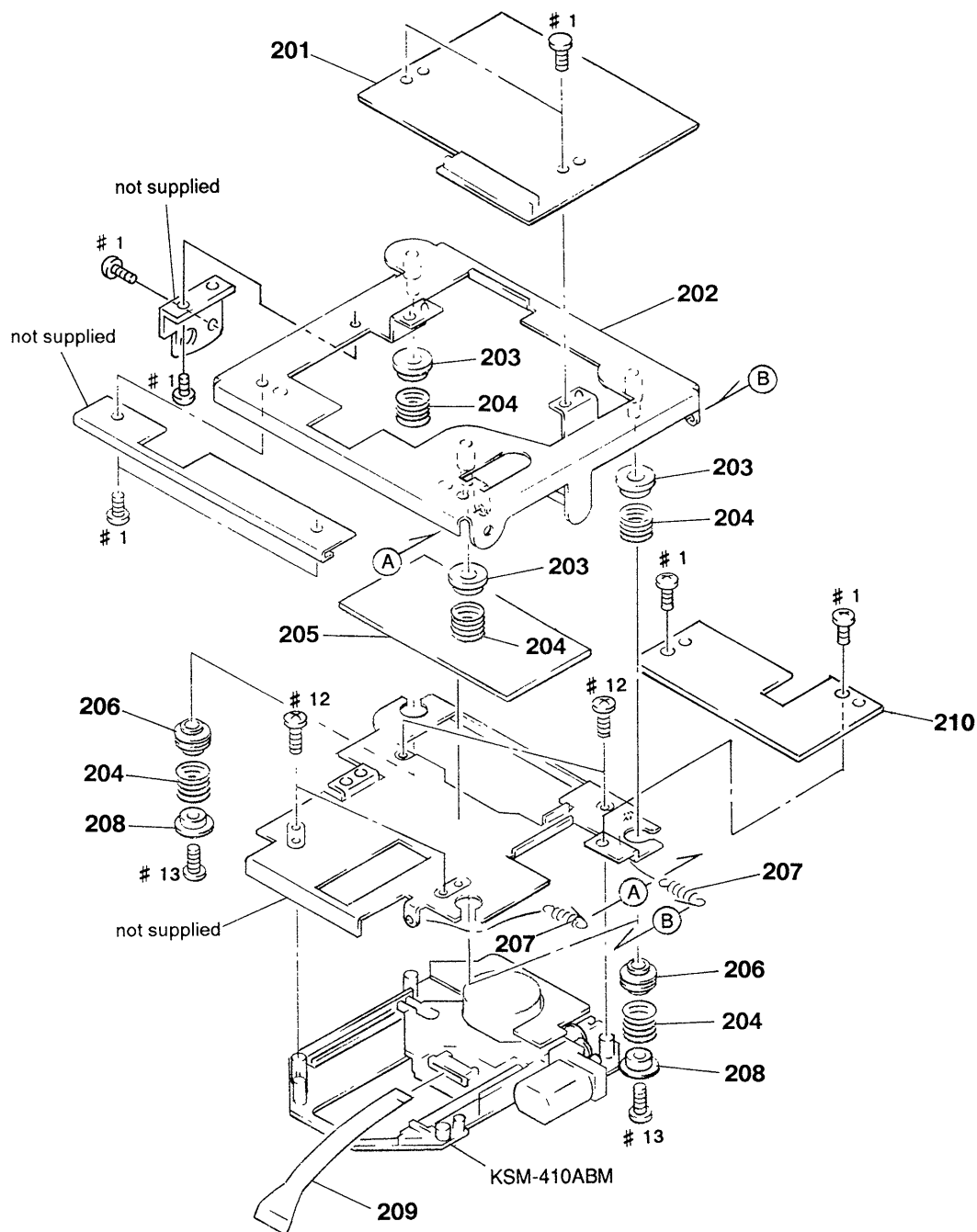
6-4. BU COMPLETE ASSY SECTION (1)



Ref. No.	Part No.	Description
151	X-4946-321-1	SLIDER (A) ASSY
152	4-976-475-01	SPRING (SLIDER 1), TENSION
153	X-4946-322-1	SLIDER (B) ASSY
154	4-976-476-01	SPRING (SLIDER 2), TENSION
155	X-4946-323-1	SLIDER (C) ASSY
156	X-4946-283-1	BASE (SLIDER) ASSY
157	4-976-454-01	HOLDER (DISC-A)
158	X-4946-324-1	LEVER (DISC-A) ASSY
159	X-4946-336-1	BRACKET (CLAMP) ASSY
160	4-976-909-01	SPRING (CHUCKING), TENSION
161	X-4946-325-1	LEVER (DISC-B) ASSY
162	4-976-455-01	HOLDER (DISC-B)
163	4-960-632-01	PULLEY (B)
164	4-960-633-01	YOKE (MAGNET)
165	3-366-559-02	MAGNET (CHUCK)

Ref. No.	Part No.	Description	Remark
166	4-960-631-01	PULLEY (A)	
167	4-976-458-01	HOLDER (MAGNET)	
* 168	X-4946-335-1	BRACKET (GUIDE) ASSY	
169	X-4946-328-1	PLATE (BU UPPER) ASSY, FULCRUM	
170	3-325-697-01	WASHER	
* 171	4-976-472-01	GUIDE (DISK)	
* 172	4-976-474-01	HOLDER (P-T)	
* 173	1-657-965-11	RAY CATCHER BOARD	
174	4-976-477-01	SPRING (SCREW LOCK), COMPRESSION	
175	X-4946-326-1	HOLDER (CLAMP) ASSY	
176	4-976-478-01	SPRING (THRUST), COMPRESSION	
* 177	4-976-456-01	WASHER (STOPPER)	
Q601	8-729-926-31	TRANSISTOR PT483F1S	

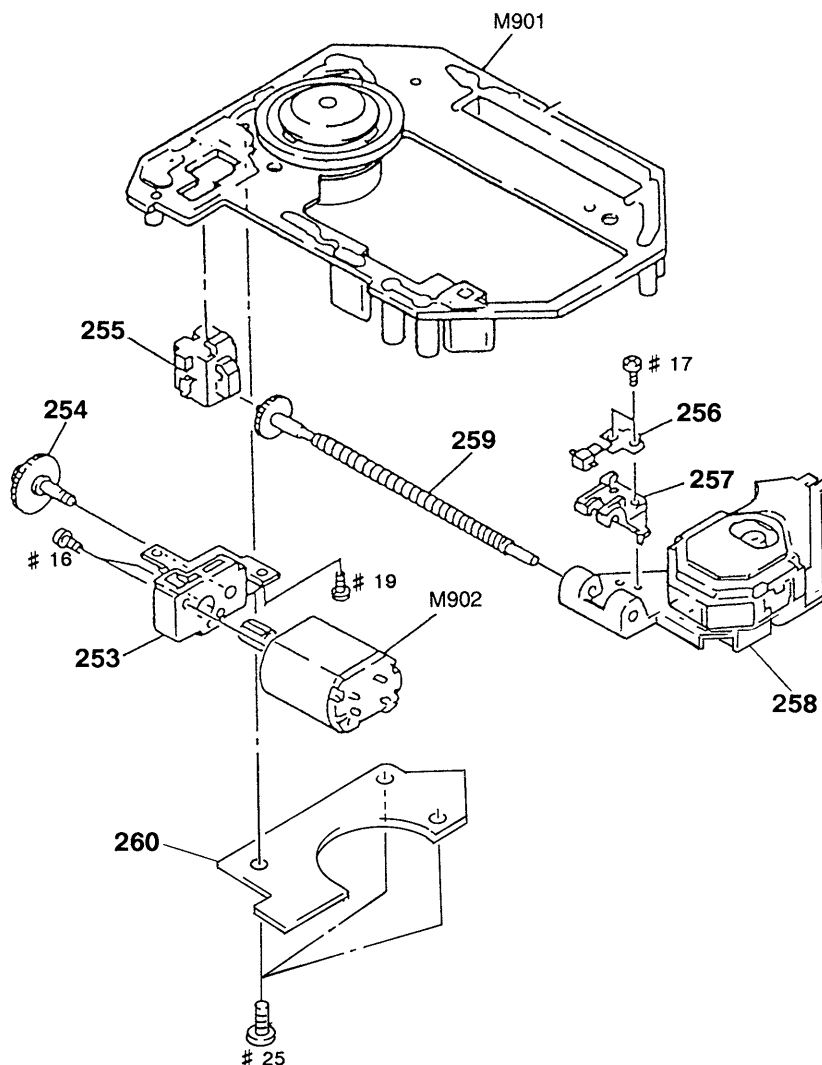
6-5. BU COMPLETE ASSY SECTION (2)



Ref. No.	Part No.	Description
* 201	A-4673-638-A	BD BOARD, COMPLETE
* 202	X-4946-327-1	HOLDER (BU) ASSY
203	4-976-460-01	HOLDER (DAMPER)
204	4-960-618-01	SPRING (F), COMPRESSION
205	4-976-486-01	DAMPER (VIB)

Ref. No.	Part No.	Description
206	4-976-461-01	DAMPER
207	4-976-865-01	SPRING (F-WB), TENSION
208	4-960-617-01	CAP (F)
209	1-657-462-11	PC BOARD, FLEXIBLE
210	4-976-486-01	DAMPER (VIB)

6-6. BASE UNIT SECTION (KSM-410ABM)



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.

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
* 253	2-625-513-01	BASE, DRIVING		 258	8-848-327-11	OPTICAL PICK-UP BLOCK KSS-410A	
254	2-625-507-01	GEAR (B2)		259	X-2625-209-1	SCREW ASSY, SLED	
* 255	A-4910-348-B	RETAINER ASSY, THRUST		* 260	A-4910-737-A	PC BOARD ASSY, MOTOR (SLED)	
256	2-625-516-01	SPRING (A), FEED		M901	X-2626-016-1	CHASSIS ASSY (AU), TURN TABLE (SPINDLE)	
257	2-625-515-01	RACK (AT)		M902	X-2625-210-1	GEAR ASSY, SLED MOTOR (SLED)	

SECTION 7

ELECTRICAL PARTS LIST

NOTE:

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

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

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference 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.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
CND : Canadian model
AUS : Australian model
CH : Chinese model
For detailed Singapore model, refer to CH model.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4673-638-A	BD BOARD, COMPLETE *****		IC102	8-759-176-09	IC BA6392FP	
				IC103	8-752-072-45	IC CXA1821M-T6	
		< CAPACITOR >				< TRANSISTOR >	
C101	1-163-005-11	CERAMIC CHIP 470PF 10%	50V	Q101	8-729-010-08	TRANSISTOR MSB710-R	
C102	1-163-038-91	CERAMIC CHIP 0.1uF	25V			< RESISTOR >	
C103	1-163-005-11	CERAMIC CHIP 470PF 10%	50V	R101	1-216-077-00	METAL CHIP 15K 5%	1/10W
C105	1-135-155-21	TANTALUM CHIP 4.7uF 10%	16V	R102	1-216-097-91	METAL GLAZE 100K 5%	1/10W
C106	1-164-346-11	CERAMIC CHIP 1uF	16V	R103	1-216-077-00	METAL CHIP 15K 5%	1/10W
C107	1-164-346-11	CERAMIC CHIP 1uF	16V	R104	1-216-085-00	METAL CHIP 33K 5%	1/10W
C108	1-163-035-00	CERAMIC CHIP 0.047uF	50V	R105	1-216-097-91	METAL GLAZE 100K 5%	1/10W
C109	1-163-145-00	CERAMIC CHIP 0.0015uF 5%	50V	R106	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C110	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V	R107	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C111	1-163-251-11	CERAMIC CHIP 100PF 5%	50V	R108	1-216-073-00	METAL CHIP 10K 5%	1/10W
C112	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R109	1-216-121-91	METAL GLAZE 1M 5%	1/10W
C113	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R110	1-216-025-91	METAL GLAZE 100 5%	1/10W
C115	1-126-607-11	ELECT CHIP 47uF 20%	4V	R112	1-216-049-91	METAL GLAZE 1K 5%	1/10W
C116	1-126-607-11	ELECT CHIP 47uF 20%	4V	R123	1-216-073-00	METAL CHIP 10K 5%	1/10W
C117	1-126-209-11	ELECT 100uF 20%	4V	R124	1-216-097-91	METAL GLAZE 100K 5%	1/10W
C118	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V	R125	1-216-049-91	METAL GLAZE 1K 5%	1/10W
C119	1-163-235-11	CERAMIC CHIP 22PF 5%	50V	R126	1-216-049-91	METAL GLAZE 1K 5%	1/10W
C120	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R127	1-216-049-91	METAL GLAZE 1K 5%	1/10W
C121	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R131	1-216-037-00	METAL CHIP 330 5%	1/10W
C123	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R135	1-216-295-91	CONDUCTOR, CHIP (2012)	
C124	1-164-005-11	CERAMIC CHIP 0.47uF	25V	R136	1-216-295-91	CONDUCTOR, CHIP (2012)	
C126	1-163-085-00	CERAMIC CHIP 2PF	50V	R137	1-216-295-91	CONDUCTOR, CHIP (2012)	
C151	1-163-237-11	CERAMIC CHIP 27PF 5%	50V	R138	1-216-295-91	CONDUCTOR, CHIP (2012)	
C153	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R139	1-216-295-91	CONDUCTOR, CHIP (2012)	
C154	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R140	1-216-024-00	METAL GLAZE 91 5%	1/10W
C156	1-163-237-11	CERAMIC CHIP 27PF 5%	50V	R141	1-216-089-91	METAL GLAZE 47K 5%	1/10W
C157	1-163-145-00	CERAMIC CHIP 0.0015uF 5%	50V	R142	1-216-081-00	METAL CHIP 22K 5%	1/10W
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V	R143	1-216-107-00	METAL CHIP 270K 5%	1/10W
C161	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R144	1-216-107-00	METAL CHIP 270K 5%	1/10W
		< CONNECTOR >		R146	1-216-073-00	METAL CHIP 10K 5%	1/10W
CN101	1-770-072-11	CONNECTOR (FFC) 23P		R147	1-216-081-00	METAL CHIP 22K 5%	1/10W
CN102	1-774-179-11	CONNECTOR (FFC) 15P		R148	1-216-001-00	METAL CHIP 10 5%	1/10W
CN103	1-774-180-11	PIN, CONNECTOR (PC BOARD) 6P		R149	1-216-003-11	METAL GLAZE 12 5%	1/10W
		< IC >		R150	1-216-099-00	METAL CHIP 120K 5%	1/10W
IC101	8-752-369-78	IC CXD2545Q		R158	1-216-109-00	METAL CHIP 330K 5%	1/10W
				R159	1-216-101-00	METAL CHIP 150K 5%	1/10W

BD

DISPLAY

DOOR SW

FUNCTION

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R160	1-216-295-91	CONDUCTOR, CHIP (2012)		R842	1-249-434-11	CARBON 27K 5% 1/4W	
R161	1-216-308-00	METAL CHIP 4.7 5% 1/10W		R843	1-249-429-11	CARBON 10K 5% 1/4W	
R162	1-216-101-00	METAL CHIP 150K 5% 1/10W		R844	1-247-807-31	CARBON 100 5% 1/4W	
*****				R845	1-247-807-31	CARBON 100 5% 1/4W	
*	A-4673-640-A	DISPLAY BOARD, COMPLETE		R846	1-247-807-31	CARBON 100 5% 1/4W	
*****				R847	1-247-807-31	CARBON 100 5% 1/4W	
*	3-362-478-01	HOLDER (T), LED		R854	1-249-406-11	CARBON 120 5% 1/4W F	
*	4-976-367-01	HOLDER (FL)		< SWITCH >			
< CAPACITOR >				S818	1-554-303-21	SWITCH, TACTILE (4)	
C840	1-124-584-00	ELECT 100uF 20% 10V		S819	1-554-303-21	SWITCH, TACTILE (3)	
C841	1-162-306-11	CERAMIC 0.01uF 20% 16V		S820	1-554-303-21	SWITCH, TACTILE (2)	
C842	1-164-159-11	CERAMIC 0.1uF 50V		S821	1-554-303-21	SWITCH, TACTILE (1)	
C843	1-124-584-00	ELECT 100uF 20% 10V		S822	1-554-303-21	SWITCH, TACTILE (5)	
C844	1-162-282-31	CERAMIC 100PF 10% 50V		S823	1-554-303-21	SWITCH, TACTILE (6)	
C845	1-164-159-11	CERAMIC 0.1uF 50V		S824	1-554-303-21	SWITCH, TACTILE (7)	
C846	1-162-294-31	CERAMIC 0.001uF 10% 50V		S825	1-554-303-21	SWITCH, TACTILE (8)	
< CONNECTOR >				S826	1-554-303-21	SWITCH, TACTILE (GROUP FILE)	
CN803	1-750-198-11	CONNECTOR, BOARD TO BOARD 16P		*****			
* CN806	1-568-943-11	PIN, CONNECTOR 5P		*	1-657-567-11	DOOR SW BOARD	
< DIODE >				*****			
D803	8-719-303-02	DIODE SEL2510C-D (GROUP)		< SWITCH >			
< FLUORESCENT INDICATOR >				S827	1-762-576-11	SWITCH LEVER (DOOR SW DET)	
FL801	1-517-449-11	INDICATOR TUBE, FLUORESCENT		*****			
< IC >				*	1-657-564-11	FUNCTION BOARD	
IC801	8-759-183-27	IC M66004M5SP		*****			
IC802	8-749-010-21	IC TFMT5400 (R)		*	3-362-478-11	HOLDER (T), LED	
< TRANSISTOR >				< CONNECTOR >			
Q803	8-729-900-65	TRANSISTOR DTA144ES		CN801	1-695-384-31	PIN, CONNECTOR (PC BOARD) 23P	
Q840	8-729-900-80	TRANSISTOR DTC114ES		CN802	1-750-189-11	CONNECTOR, BOARD TO BOARD 16P	
< RESISTOR >				< DIODE >			
R820	1-249-415-11	CARBON 680 5% 1/4W F		D801	8-719-303-02	DIODE SEL2510C-D (▷)	
R821	1-249-417-11	CARBON 1K 5% 1/4W F		D802	8-719-301-52	LED SEL2810A-C (■)	
R822	1-249-419-11	CARBON 1.5K 5% 1/4W F		< TRANSISTOR >			
R823	1-249-421-11	CARBON 2.2K 5% 1/4W F		Q801	8-729-900-89	TRANSISTOR DTC144ES	
R824	1-249-423-11	CARBON 3.3K 5% 1/4W F		< RESISTOR >			
R825	1-249-427-11	CARBON 6.8K 5% 1/4W F		R801	1-249-415-11	CARBON 680 5% 1/4W F	
R826	1-249-431-11	CARBON 15K 5% 1/4W		R802	1-249-417-11	CARBON 1K 5% 1/4W F	
R827	1-249-437-11	CARBON 47K 5% 1/4W		R803	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R840	1-247-807-31	CARBON 100 5% 1/4W		R804	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R841	1-249-417-11	CARBON 1K 5% 1/4W F		R805	1-249-423-11	CARBON 3.3K 5% 1/4W F	

FUNCTION

JACK

JOG

Ref.No.	Part No.	Description	Remark
R806	1-249-427-11	CARBON 6.8K 5%	1/4W F
R807	1-249-431-11	CARBON 15K 5%	1/4W F
R808	1-249-437-11	CARBON 47K 5%	1/4W F
R811	1-249-415-11	CARBON 680 5%	1/4W F
R812	1-249-417-11	CARBON 1K 5%	1/4W F
R813	1-249-419-11	CARBON 1.5K 5%	1/4W F
R814	1-249-421-11	CARBON 2.2K 5%	1/4W F
R815	1-249-423-11	CARBON 3.3K 5%	1/4W F
R816	1-249-427-11	CARBON 6.8K 5%	1/4W F
R817	1-249-431-11	CARBON 15K 5%	1/4W F
R818	1-249-437-11	CARBON 47K 5%	1/4W F
R852	1-249-406-11	CARBON 120 5%	1/4W F
R853	1-249-410-11	CARBON 270 5%	1/4W F

< SWITCH >

S801	1-554-303-21	SWITCH, TACTILE (CHECK)
S802	1-554-303-21	SWITCH, TACTILE (PROGRAM)
S803	1-554-303-21	SWITCH, TACTILE (SHUFFLE)
S804	1-554-303-21	SWITCH, TACTILE (CONTINUE)
S805	1-554-303-21	SWITCH, TACTILE (MEMO SCAN)
S806	1-554-303-21	SWITCH, TACTILE (MEMO SEARCH)
S807	1-554-303-21	SWITCH, TACTILE (MEMO INPUT)
S808	1-554-303-21	SWITCH, TACTILE (FILE)
S809	1-554-303-21	SWITCH, TACTILE (ERASE)
S810	1-554-303-21	SWITCH, TACTILE (CLEAR)
S811	1-554-303-21	SWITCH, TACTILE (▶▶▶)
S812	1-554-303-21	SWITCH, TACTILE (◀◀◀)
S813	1-554-303-21	SWITCH, TACTILE (REPEAT)
S814	1-554-303-21	SWITCH, TACTILE (DISPLAY)
S815	1-554-303-21	SWITCH, TACTILE (▶)
S816	1-554-303-21	SWITCH, TACTILE (■)
S817	1-554-303-21	SWITCH, TACTILE (■)

* 1-657-569-11 JACK BOARD

< CAPACITOR >

C2	1-164-159-11	CERAMIC 0.1uF	50V
C113	1-130-467-00	MYLAR 470PF	5%
C213	1-130-467-00	MYLAR 470PF	5%
C503	1-164-159-11	CERAMIC 0.1uF	50V
C504	1-126-022-11	ELECT 47uF	20%
C505	1-164-159-11	CERAMIC 0.1uF	50V

< CONNECTOR >

* CN302 1-695-821-11 CONNECTOR, BOARD TO BOARD 12P
CN702 1-506-481-11 PIN, CONNECTOR 2P

Ref.No.	Part No.	Description	Remark
		< DIODE >	
D401	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC501	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
		< JACK >	
J301	1-770-989-11	JACK, PIN 2P (LINE OUT)	
J401	1-766-728-11	JACK (DIA. 3.5) (CONTROL A)	
J402	1-766-728-11	JACK (DIA. 3.5) (CONTROL B)	

< COIL >

L403	1-412-297-11	INDUCTOR 3.3uH
L404	1-412-297-11	INDUCTOR 3.3uH

< TRANSISTOR >

Q481	8-729-620-05	TRANSISTOR 2SC2603-EF
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< RESISTOR >

R116	1-249-409-11	CARBON 220 5%	1/4W F
R216	1-249-409-11	CARBON 220 5%	1/4W F
R470	1-249-429-11	CARBON 10K 5%	1/4W F
R471	1-249-429-11	CARBON 10K 5%	1/4W F
R480	1-249-393-11	CARBON 10 5%	1/4W F
R483	1-249-429-11	CARBON 10K 5%	1/4W F
R484	1-249-425-11	CARBON 4.7K 5%	1/4W F

< SWITCH >

S401	1-762-151-11	SWITCH, SLIDE (COMMAND MODE)
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* 1-657-565-11 JOG BOARD

* 3-362-478-01 HOLDER (T), LED

< DIODE >

D804	8-719-301-72	DIODE SEL2810A-D-TP (DELETE)
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< RESISTOR >

R850	1-249-429-11	CARBON 10K 5%	1/4W
R851	1-249-429-11	CARBON 10K 5%	1/4W
R855	1-249-410-11	CARBON 270 5%	1/4W F

< SWITCH >

RE801	1-692-615-11	SWITCH, JOG (DISC/CHARACTER, ENTER)
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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	1-658-738-11	LED BOARD *****		C210	1-124-994-11	ELECT 100uF 20%	10V
				C301	1-126-022-11	ELECT 47uF 20%	16V
*	4-978-545-01	HOLDER (LED)		C302	1-164-159-11	CERAMIC 0.1uF	50V
		< DIODE >		C303	1-164-159-11	CERAMIC 0.1uF	50V
D701	8-719-045-38	DIODE TLYA180AP(SONY)		C304	1-162-207-31	CERAMIC 22PF 5%	50V
D702	8-719-045-38	DIODE TLYA180AP(SONY)		C305	1-161-494-00	CERAMIC 0.022uF	25V
D703	8-719-045-38	DIODE TLYA180AP(SONY)		C306	1-162-207-31	CERAMIC 22PF 5%	50V
		< RESISTOR >		C307	1-164-159-11	CERAMIC 0.1uF	50V
R701	1-249-407-11	CARBON 150 5% 1/4W F		C308	1-162-196-31	CERAMIC 5.6PF 10%	50V
R702	1-249-407-11	CARBON 150 5% 1/4W F		C309	1-162-196-31	CERAMIC 5.6PF 10%	50V
R703	1-249-407-11	CARBON 150 5% 1/4W F		C310	1-164-159-11	CERAMIC 0.1uF	50V
*****				C311	1-126-022-11	ELECT 47uF 20%	16V
*	1-657-964-11	LUMINOUS BOARD *****		C312	1-161-494-00	CERAMIC 0.022uF	25V
				C314	1-164-159-11	CERAMIC 0.1uF	50V
*	4-976-473-01	HOLDER (LED-S)		C315	1-126-025-11	ELECT 330uF 20%	16V
		< DIODE >		C316	1-126-025-11	ELECT 330uF 20%	16V
D601	8-719-055-84	DIODE GL-528VS1		C317	1-126-022-11	ELECT 47uF 20%	16V
*****				C318	1-126-022-11	ELECT 47uF 20%	16V
*	A-4673-645-A	MAIN BOARD, COMPLETE (US, CND) *****		C319	1-126-049-11	ELECT 22uF 20%	25V
				C320	1-124-994-11	ELECT 100uF 20%	10V
*	A-4673-653-A	MAIN BOARD, COMPLETE (AEP, UK, AUS) *****		C321	1-124-994-11	ELECT 100uF 20%	10V
				C401	1-126-022-11	ELECT 47uF 20%	16V
*	A-4673-654-A	MAIN BOARD, COMPLETE (CH) *****		C402	1-164-159-11	CERAMIC 0.1uF	50V
				C403	1-164-159-11	CERAMIC 0.1uF	50V
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		C410	1-162-294-31	CERAMIC 0.001uF 10%	50V
		< CAPACITOR >		C411	1-162-294-31	CERAMIC 0.001uF 10%	50V
C101	1-164-159-11	CERAMIC 0.1uF	50V	C412	1-162-294-31	CERAMIC 0.001uF 10%	50V
C102	1-162-282-31	CERAMIC 100PF 10%	50V	C430	1-164-159-11	CERAMIC 0.1uF	50V
C103	1-162-215-31	CERAMIC 47PF 5%	50V	C431	1-164-159-11	CERAMIC 0.1uF	50V
C104	1-162-215-31	CERAMIC 47PF 5%	50V	C432	1-104-905-11	DOUBLE LAYERS 0.22F	5.5V
C105	1-124-994-11	ELECT 100uF 20%	10V	C433	1-162-306-11	CERAMIC 0.01uF 20%	16V
C106	1-130-472-00	MYLAR 0.0012uF 5%	50V	C450	1-126-022-11	ELECT 47uF 20%	16V
C107	1-106-359-00	MYLAR 4700PF 5%	200V	C451	1-126-022-11	ELECT 47uF 20%	16V
C110	1-124-994-11	ELECT 100uF 20%	10V	C452	1-136-165-00	FILM 0.1uF 5%	50V
C201	1-164-159-11	CERAMIC 0.1uF	50V	C461	1-164-159-11	CERAMIC 0.1uF	50V
C202	1-162-282-31	CERAMIC 100PF 10%	50V	C462	1-164-159-11	CERAMIC 0.1uF	50V
C203	1-162-215-31	CERAMIC 47PF 5%	50V	C501	1-126-022-11	ELECT 47uF 20%	16V
C204	1-162-215-31	CERAMIC 47PF 5%	50V	C502	1-164-159-11	CERAMIC 0.1uF	50V
C205	1-124-994-11	ELECT 100uF 20%	10V	C901	1-161-494-00	CERAMIC 0.022uF	25V
C206	1-130-472-00	MYLAR 0.0012uF 5%	50V	C902	1-128-489-11	ELECT 3300uF 20%	16V
C207	1-106-359-00	MYLAR 4700PF 5%	200V	C903	1-124-360-00	ELECT 1000uF 20%	16V
				C904	1-126-059-11	ELECT 10uF 20%	50V
				C905	1-126-163-11	ELECT 4.7uF 20%	50V
				C906	1-126-163-11	ELECT 4.7uF 20%	50V
				C907	1-124-997-11	ELECT 470uF 20%	10V
				C908	1-126-101-11	ELECT 100uF 20%	16V
				C909	1-124-572-11	ELECT 100uF 20%	63V
				C910	1-126-059-11	ELECT 10uF 20%	50V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CONNECTOR >				Q903	8-729-900-80	TRANSISTOR DTC114ES	
* CN301	1-695-820-11	CONNECTOR, BOARD TO BOARD 12P		Q904	8-729-900-89	TRANSISTOR DTC144ES	
CN401	1-695-346-21	PIN, CONNECTOR (PC BOARD) 23P		Q905	8-729-900-61	TRANSISTOR DTA114ES	
CN402	1-695-334-11	PIN, CONNECTOR (PC BOARD) 11P		< RESISTOR >			
CN501	1-695-346-21	PIN, CONNECTOR (PC BOARD) 23P		R101	1-249-436-11	CARBON 39K 5% 1/4W	
* CN606	1-568-951-11	PIN, CONNECTOR 2P		R102	1-249-436-11	CARBON 39K 5% 1/4W	
CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P		R103	1-249-431-11	CARBON 15K 5% 1/4W	
CN902	1-564-687-11	PIN, CONNECTOR 3P (CH)		R104	1-249-431-11	CARBON 15K 5% 1/4W	
CN903	1-765-061-11	LEAD (WITH CONNECTOR) (3 CORE) (CH)		R105	1-249-437-11	CARBON 47K 5% 1/4W	
< DIODE >				R106	1-249-437-11	CARBON 47K 5% 1/4W	
D301	8-719-987-63	DIODE 1N4148M		R107	1-249-429-11	CARBON 10K 5% 1/4W	
D431	8-719-987-63	DIODE 1N4148M		R108	1-249-419-11	CARBON 1.5K 5% 1/4W	F
D405	8-719-987-63	DIODE 1N4148M		R109	1-249-419-11	CARBON 1.5K 5% 1/4W	F
D406	8-719-987-63	DIODE 1N4148M		R117	1-249-441-11	CARBON 100K 5% 1/4W	
D901	8-719-210-21	DIODE 11EQS04		R201	1-249-436-11	CARBON 39K 5% 1/4W	
D902	8-719-210-21	DIODE 11EQS04		R202	1-249-436-11	CARBON 39K 5% 1/4W	
D903	8-719-210-21	DIODE 11EQS04		R203	1-249-431-11	CARBON 15K 5% 1/4W	
D904	8-719-210-21	DIODE 11EQS04		R204	1-249-431-11	CARBON 15K 5% 1/4W	
D905	8-719-200-82	DIODE 11ES2		R205	1-249-437-11	CARBON 47K 5% 1/4W	
D906	8-719-110-13	DIODE RD9.1ESB2		R206	1-249-437-11	CARBON 47K 5% 1/4W	
D907	8-719-987-63	DIODE 1N4148M		R207	1-249-429-11	CARBON 10K 5% 1/4W	
< IC >				R208	1-249-419-11	CARBON 1.5K 5% 1/4W	F
IC301	8-752-360-60	IC CXD2565M-1		R209	1-249-419-11	CARBON 1.5K 5% 1/4W	F
IC302	8-759-175-88	IC LA9215-ST		R217	1-249-441-11	CARBON 100K 5% 1/4W	
IC401	8-752-869-08	IC CXP84124-034Q		R301	1-249-417-11	CARBON 1K 5% 1/4W	F
IC402	8-759-336-84	IC LC3564SM-10		R302	1-249-417-11	CARBON 1K 5% 1/4W	F
IC403	8-759-821-32	IC CXA1291P		R303	1-249-417-11	CARBON 1K 5% 1/4W	F
IC901	8-759-330-29	IC LA5616		R304	1-249-413-11	CARBON 470 5% 1/4W	F
IC903	8-759-633-42	IC M5293L		R305	1-249-425-11	CARBON 4.7K 5% 1/4W	F
< COIL >				R306	1-247-807-31	CARBON 100 5% 1/4W	
L301	1-412-297-11	INDUCTOR 3.3uH		R307	1-249-429-11	CARBON 10K 5% 1/4W	
L302	1-412-473-21	INDUCTOR 0uH		R309	1-247-807-31	CARBON 100 5% 1/4W	
L303	1-410-397-21	INDUCTOR 1.1uH		R400	1-249-429-11	CARBON 10K 5% 1/4W	
L304	1-412-297-11	INDUCTOR 3.3uH		R401	1-249-417-11	CARBON 1K 5% 1/4W	F
L307	1-412-473-21	INDUCTOR 0uH		R402	1-249-429-11	CARBON 10K 5% 1/4W	
L308	1-412-473-21	INDUCTOR 0uH		R403	1-249-429-11	CARBON 10K 5% 1/4W	
L401	1-412-473-21	INDUCTOR 0uH		R404	1-249-429-11	CARBON 10K 5% 1/4W	
L402	1-412-473-21	INDUCTOR 0uH		R410	1-249-427-11	CARBON 6.8K 5% 1/4W	F
L501	1-412-297-11	INDUCTOR 3.3uH		R411	1-249-427-11	CARBON 6.8K 5% 1/4W	F
L502	1-412-473-21	INDUCTOR 0uH		R412	1-249-427-11	CARBON 6.8K 5% 1/4W	F
L503	1-412-473-21	INDUCTOR 0uH		R413	1-249-427-11	CARBON 6.8K 5% 1/4W	F
△L901	1-424-485-11	FILTER, LINE		R414	1-249-429-11	CARBON 10K 5% 1/4W	
< TRANSISTOR >				R423	1-249-425-11	CARBON 4.7K 5% 1/4W	F
Q901	8-729-119-76	TRANSISTOR 2SA1175-HFE		R424	1-249-425-11	CARBON 4.7K 5% 1/4W	F
Q902	8-729-900-61	TRANSISTOR DTA114ES		R426	1-249-425-11	CARBON 4.7K 5% 1/4W	F
				R427	1-249-433-11	CARBON 22K 5% 1/4W	
				R428	1-249-417-11	CARBON 1K 5% 1/4W	
				R431	1-249-399-11	CARBON 33 5% 1/4W	F
				R432	1-249-417-11	CARBON 1K 5% 1/4W	F

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.

MAIN	MOTOR	POWER SW	RAY CATCHER	SENSOR	SWITCH
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Ref.No.	Part No.	Description	Remark			Ref.No.	Part No.	Description	Remark				
R433	1-249-429-11	CARBON	10K	5%	1/4W	*****							
R440	1-249-417-11	CARBON	1K	5%	1/4W	F	*	1-657-566-11	POWER SW BOARD	*****			
R441	1-249-417-11	CARBON	1K	5%	1/4W	F							
R442	1-249-417-11	CARBON	1K	5%	1/4W	F							
R450	1-249-441-11	CARBON	100K	5%	1/4W								
R451	1-249-441-11	CARBON	100K	5%	1/4W	< SWITCH >							
R452	1-249-441-11	CARBON	100K	5%	1/4W	S828	1-570-157-51	SWITCH, SLIDE (TIMER)					
R453	1-249-441-11	CARBON	100K	5%	1/4W	S829	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)					
R454	1-247-885-00	CARBON	180K	5%	1/4W	*****							
R455	1-247-885-00	CARBON	180K	5%	1/4W	*	1-657-965-11	RAY CATCHER BOARD	*****				
R456	1-247-883-00	CARBON	150K	5%	1/4W								
R457	1-249-431-11	CARBON	15K	5%	1/4W								
R458	1-247-860-11	CARBON	16K	5%	1/4W								
R459	1-249-382-11	CARBON	1.2	5%	1/6W			F					
R460	1-249-382-11	CARBON	1.2	5%	1/6W	F		< TRANSISTOR >					
R461	1-249-393-11	CARBON	10	5%	1/4W	F	Q601	8-729-926-31	TRANSISTOR	PT483F1S			
R462	1-249-393-11	CARBON	10	5%	1/4W	F							
R901	1-249-435-11	CARBON	33K	5%	1/4W								
R902	1-249-429-11	CARBON	10K	5%	1/4W								
R903	1-249-438-11	CARBON	56K	5%	1/4W								
< SWITCH >						*****							
△S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE	(VOLTAGE SELECTOR) (CH)			*	1-657-962-11	SENSOR BOARD	*****				
< TRANSFORMER >													
△T901	1-429-165-11	TRANSFORMER, POWER (US, CND)											
△T901	1-429-166-11	TRANSFORMER, POWER (AEP, UK, AUS)											
△T901	1-429-167-11	TRANSFORMER, POWER (CH)											
< VIBRATOR >						< IC >							
X301	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)				IC601	8-749-924-18	IC	PHOTO INTERRUPTER RPI-1391				
X401	1-579-175-11	VIBRATOR, CERAMIC (10MHz)				IC602	8-749-924-18	IC	PHOTO INTERRUPTER RPI-1391				
*****						IC603	8-749-924-18	IC	PHOTO INTERRUPTER RPI-1391				
*	1-657-963-11	MOTOR BOARD	*****			< RESISTOR >							
						R602	1-249-416-11	CARBON	820	5%	1/4W	F	
						R603	1-249-416-11	CARBON	820	5%	1/4W	F	
						R604	1-249-416-11	CARBON	820	5%	1/4W	F	

*	1-657-966-11	SWITCH BOARD	*****			*	1-571-300-21	SWITCH, ROTARY (LOADING DET)	*****				
CN601	1-695-334-11	PIN, CONNECTOR (PC BOARD) 11P				MISCELLANEOUS							
* CN602	1-568-951-11	PIN, CONNECTOR 2P				*****							
* CN604	1-568-954-11	PIN, CONNECTOR 5P				△8	1-575-651-21	CORD, POWER (AEP)					
CN608	1-506-468-11	PIN, CONNECTOR 3P				△8	1-590-836-11	CORD, POWER (US, CND)					
< MOTOR >						△8	1-696-027-11	CORD, POWER (CH)					
M601	A-4604-834-A	MOTOR ASSY (TABLE)				△8	1-696-571-11	CORD, POWER (UK)					
M602	A-4604-834-A	MOTOR ASSY (LOADING)				△8	1-696-845-11	CORD, POWER (AUS)					
< RESISTOR >						△9	1-569-007-11	ADAPTER, CONVERSION 2P (CH)					
R601	1-249-415-11	CARBON	680	5%	1/4W	F	15	1-775-431-11	WIRE (FLAT TYPE) (23 CORE)				

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
16	1-775-432-11	WIRE (FLAT TYPE) (23 CORE)		#6	7-621-775-00	SCREW +B 2.6X3	
114	1-775-430-11	WIRE (FLAT TYPE) (11 CORE)		#7	7-624-111-04	STOP RING 7.0, TYPE -E	
209	1-657-462-11	PC BOARD, FLEXIBLE		#8	7-621-775-20	SCREW +B 2.6X5	
△258	8-848-327-11	OPTICAL PICK-UP BLOCK KSS-410A		#9	7-627-552-28	SCREW, PRECISION +P 1.7X2	
D601	8-719-055-84	DIODE GL528VS1		#10	7-685-645-79	SCREW +BVTP 3X6 TYPE2 SLIT	
FL801	1-517-449-11	INDICATOR TUBE, FLUORESCENT		#11	7-682-552-09	SCREW +B 3X16	
IC802	8-749-010-21	IC TFMT5400 (E)		#12	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
M601	A-4604-834-A	MOTOR ASSY (TABLE)		#13	7-621-772-30	SCREW +B 2X6	
M602	A-4604-834-A	MOTOR ASSY (LOADING)		#14	7-621-255-25	SCREW +P 2X4	
M901	X-2626-016-1	CHASSIS ASSY (AU), TURN TABLE (SPINDLE)		#15	7-682-545-09	SCREW +B 3X4	
M902	X-2625-210-1	GEAR ASSY, SLED MOTOR (SLED)		#16	7-627-552-47	SCREW, PRECISION +P 1.7X4	
Q601	8-729-926-31	TRANSISTOR PT483F1S		#17	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
RE801	1-692-615-11	SWITCH, JOG (DISC/CHARACTER, ENTER)		#18	7-628-253-15	SCREW +PS 2X5	
S601	1-571-300-21	SWITCH, ROTARY (LOADING DET)		#19	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	
S827	1-762-576-11	SWITCH LEVER (DOOR SW DET)		#20	7-682-548-09	SCREW +BVTP 3X8 (S) BZN-N	
△T901	1-429-165-11	TRANSFORMER, POWER (US, CND)		#21	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
△T901	1-429-166-11	TRANSFORMER, POWER (AEP, UK, AUS)					
△T901	1-429-167-11	TRANSFORMER, POWER (CH)					

ACCESSORIES & PACKING MATERIALS							

1-473-299-11 REMOTE COMMANDER (RM-DX153)							
1-558-271-11 CORD, CONNECTION (AUDIO) (108cm)							
3-707-584-21 COVER, BATTERY (For RM-DX153)							
3-800-931-11 MANUAL, INSTRUCTION							
(ENGLISH, FRENCH, SPANISH, DANISH) (CND, AEP, UK, CH)							
3-800-931-21 MANUAL, INSTRUCTION (ENGLISH) (US, AUS)							
3-800-931-31 MANUAL, INSTRUCTION (CHINESE) (CH)							
3-800-931-41 MANUAL, INSTRUCTION							
(GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)							
4-977-607-01 CUSHION							
4-977-809-01 INDIVIDUAL CARTON (US, CND, AEP, CH)							
4-978-755-01 INDIVIDUAL CARTON (UK, AUS)							

HARDWARE LIST							

#1	7-685-871-01	SCREW +BVTT 3X6 (S)					
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S					
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S					
#4	7-682-947-01	SCREW +PSW 3X6					
#5	7-624-106-04	STOP RING 3.0, TYPE -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.