

# CDP-CX400/CX450

## SERVICE MANUAL

Ver 1.1 2001.10



Photo; CDP-CX400

*US Model  
Canadian Model*

*CDP-CX400/CX450*

*AEP Model*

*UK Model*

*E Model*

*Australian Model*

*CDP-CX450*

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM62-K1BD35A
Base Unit Type	BU-K1BD35A
Optical Pick-up Type	KSM-213BFN

### SPECIFICATIONS

#### Compact disc player

Laser	Semiconductor laser ( $\lambda = 780$ nm) Emission duration: continuous
Laser output	Max 44.6 $\mu$ 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	2 Hz to 20 kHz $\pm 0.5$ dB
Dynamic range	More than 93 dB
Harmonic distortion	Less than 0.0045%

#### Output

	Jack type	Maximum output level	Load impedance
LINE OUT	Phono jacks	2 V (at 50 k $\Omega$ )	Over 10 k $\Omega$
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
MONITOR OUT	Phono jacks	1 Vp-p	75 $\Omega$ , unbalanced sync negative

#### General

##### Power requirements

Where purchased	Power requirements
USA, Canadian	120 V AC, 60 Hz
Australia	240 V AC, 50/60 Hz
European	230 V AC, 50/60 Hz

Power consumption	16 W (CX400) 18 W (CX450)
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Dimensions (approx.) (w/h/d)	430 $\times$ 189 $\times$ 537 mm (17 $\times$ 7 1/2 $\times$ 21 1/4 in.) incl. projecting parts
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Mass (approx.)	8.8 kg (19 lbs 7 oz.)
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##### Supplied accessories

- Audio cord (1)
- Video cord (1) (CX450)
- Remote commander (remote) (1)
- Size AA (LR6) batteries (3)

Design and specifications are subject to change without notice.

## COMPACT DISC PLAYER

# SONY®

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT  
LUOKAN 1 LASERLAITE  
KLASS 1 LASERAPPARAT

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

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED, AVOID EXPOSURE TO BEAM.  
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGA UDSÆTTELSE FOR STRÅLING.  
VORSICHT : UNSICHTBARE LASERSTRALUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT, NICHT DEM STRAHL AUSSETZEN.  
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTASSA OLET ALT-TINA NÄKYMÄTTÖMÄLLE LASERSÄTEYLLÄ, ÄLÄ KATSO SÄTEESEEN.  
VARNING : OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD, BETRÄKTA EJ STRÅLEN.  
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES, UNNGÅ EKSPONERING FOR STRÅLEN.  
VIGYÁZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATIAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

The following caution label is located inside of 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 SUPPLÉMENTS 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)

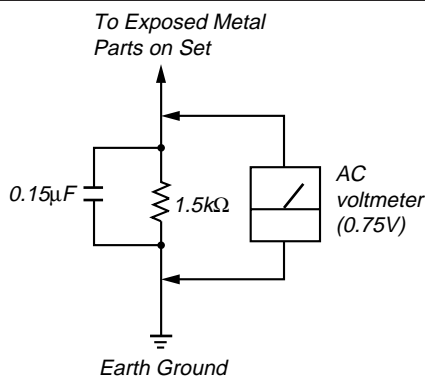
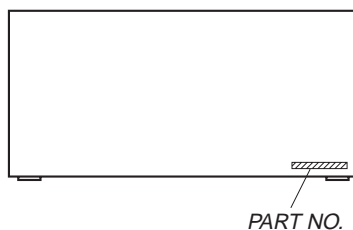


Fig. A. Using an AC voltmeter to check AC leakage.

#### MODEL IDENTIFICATION

— BACK PANEL —



PARTS No.	MODEL
4-226-838-0□	CX400 : US
4-226-838-1□	CX400 : CND
4-226-838-2□	CX450 : US
4-226-838-3□	CX450 : CND
4-226-838-4□	CX450 : AEP, UK
4-226-838-5□	CX450 : AUS
4-226-838-6□	CX450 : SP, MY

#### • Abbreviation

CND : Canadian model  
AUS : Australian model  
SP : Singapore model.  
MY : Malaysia model.

# SECTION 1

## SERVICE NOTE

### TABLE OF CONTENTS

<b>1. SERVICING NOTE</b>	3
<b>2. GENERAL</b>	6
<b>3. DISASSEMBLY</b>	
3-1. Upper Case Assembly	7
3-2. Main Board Assembly	7
3-3. Front Panel Assembly	8
3-4. Table (400) Assembly	8
3-5. Base (Door, Driving) Assembly	9
3-6. Pop-up Assembly	9
3-7. Back Panel Assembly	10
3-8. CDM Assembly	10
<b>4. SERVICE MODE</b>	11
<b>5. TEST MODE</b>	15
5-1. ADJ Mode	15
5-2. Key and Display Check Mode	15
<b>6. ADJUSTMENTS</b>	
6-1. Mechanical Adjustments	16
6-2. Electrical Adjustment	18
<b>7. DIAGRAMS</b>	
7-1. Circuit Boards Location	20
7-2. Block Diagrams	
• BD Section	21
• Main Section	22
7-3. Schematic Diagram – BD Section –	24
7-4. Printed Wiring Board – BD Section –	25
7-5. Printed Wiring Board – Main Section –	26
7-6. Schematic Diagram – Main (1/2) Section –	27
7-7. Schematic Diagram – Main (2/2) Section –	28
7-8. Printed Wiring Board – T. Sens Section –	29
7-9. Schematic Diagram – Sensor Section –	29
7-10. Schematic Diagram – Display Section –	30
7-11. Printed Wiring Board – Display Section –	31
7-12. Schematic Diagram – Jog Section –	32
7-13. Printed Wiring Board – Jog Section –	33
7-14. Schematic Diagram – Power Section –	34
7-15. Printed Wiring Board – Power Section –	35
7-16. IC Block Diagrams	36
7-17. IC Pin Functions	37
<b>8. EXPLODED VIEWS</b>	
8-1. Case Section	42
8-2. Chassis Section	43
8-3. Front Panel Section	44
8-4. Mechanism Section 1 (CDM54-K1BD35E)	45
8-5. Mechanism Section 2 (CDM54-K1BD35E)	46
8-6. Mechanism Section 3 (CDM54-K1BD35E)	47
8-7. Optical Pick-up Section (KSM-213BFN/M-NP)	48
<b>9. ELECTRICAL PARTS LIST</b>	49

### 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 67h)	← 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 « ¬ ® ¯ (A8h to AFh)	♪ (A8.... © ª « ¬ ® ¯ are not displayed
56	• ± ² ³ ´ µ ¶ • (B0h to B7h)	´ µ • (B0.... • ± ² ³ ¶ are not displayed
57	† º » ¼ ½ ¾ ¿ (B8h to BFh)	† ¿ (B8.... º » ¼ ½ ¾ 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 Õ Ö × (D0h to D7h)	← All the same
61	Ø Ù Ú Û Ü Ý Þ ß (D8h to DFh)	Ø 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 õ ö ÷ (F0h to F7h)	ð ñ ò ó ô õ ö ÷ (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

### Front Panel

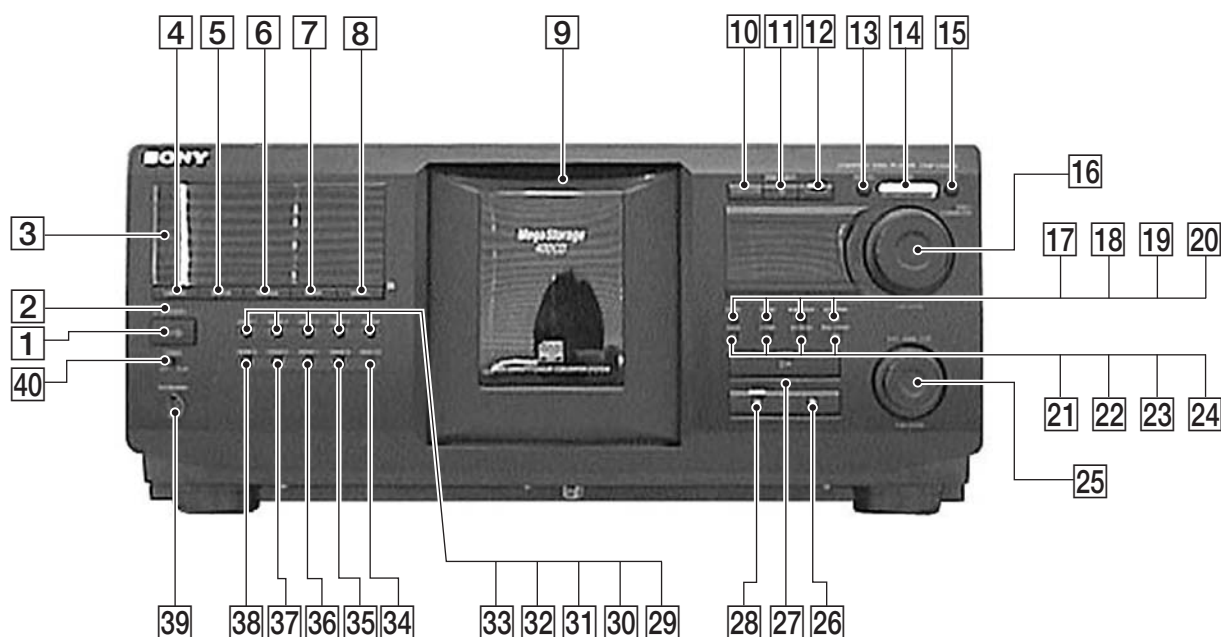


Photo: CDP-CX400

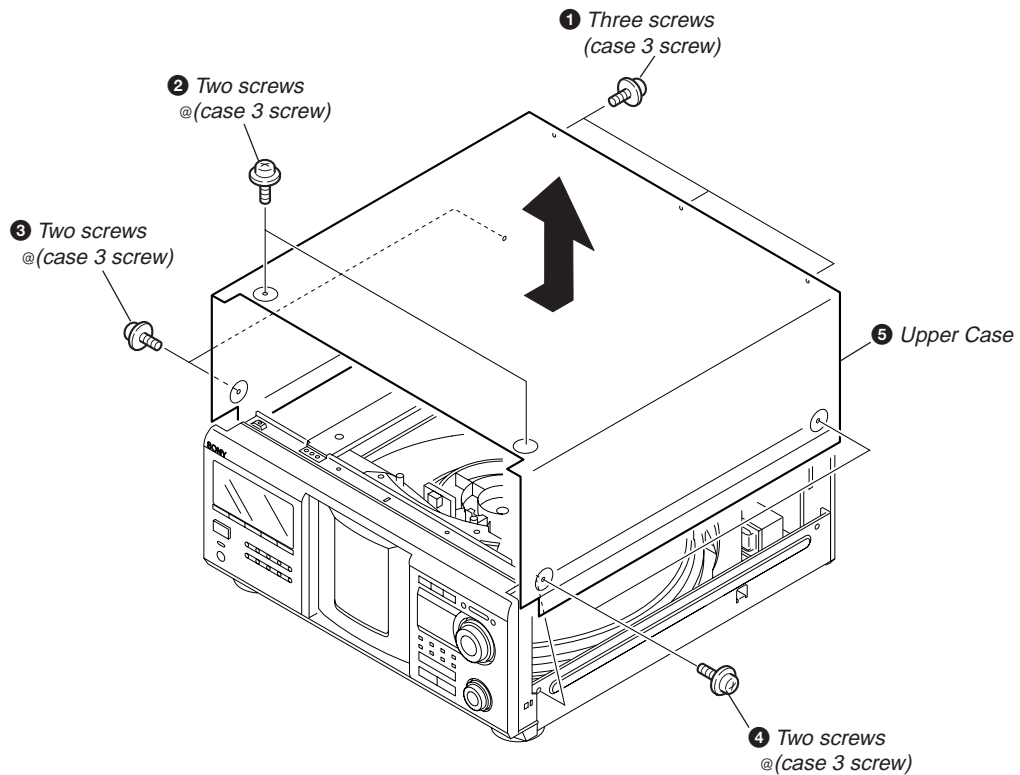
### LOCATION OF PARTS AND CONTROLS

- |   |  |
|---|--|
| <b>1</b> I/⏻ (power) button                         | <b>21</b> FADER button                         |
| <b>2</b> STANDBY indicator                          | <b>22</b> X-FADE button                        |
| <b>3</b> Display window                             | <b>23</b> NO DELAY button                      |
| <b>4</b> CONTINUE button                            | <b>24</b> MEGA CONTROL button and indicator    |
| <b>5</b> SHUFFLE button                             | <b>25</b> ⏮⏪ AMS ⏩⏭/PUSH ENTER knob and button |
| <b>6</b> PROGRAM button                             | <b>26</b> ■ (stop) button                      |
| <b>7</b> REPEAT button                              | <b>27</b> ▷ (play) button and indicator        |
| <b>8</b> SCROLL button                              | <b>28</b> ⏸ (pause) button and indicator       |
| <b>9</b> Front cover                                | <b>29</b> HIT LIST button and indicator        |
| <b>10</b> OPEN/CLOSE button                         | <b>30</b> GROUP 4 button and indicator         |
| <b>11</b> DISC EJECT button                         | <b>31</b> GROUP 3 button and indicator         |
| <b>12</b> EASY PLAY button and indicator            | <b>32</b> GROUP 2 button and indicator         |
| <b>13</b> MENU/NO button                            | <b>33</b> GROUP 1 button and indicator         |
| <b>14</b> +100 button                               | <b>34</b> GROUP FILE button                    |
| <b>15</b> YES button                                | <b>35</b> GROUP 8 button and indicator         |
| <b>16</b> DISC/CHARACTER/PUSH ENTER knob and button | <b>36</b> GROUP 7 button and indicator         |
| <b>17</b> CHECK button                              | <b>37</b> GROUP 6 button and indicator         |
| <b>18</b> CLEAR button                              | <b>38</b> GROUP 5 button and indicator         |
| <b>19</b> NAME SEARCH button                        | <b>39</b> KEYBOARD jack                        |
| <b>20</b> ARTIST MODE button and indicator          | <b>40</b> TIMER OFF/PLAY switch                |

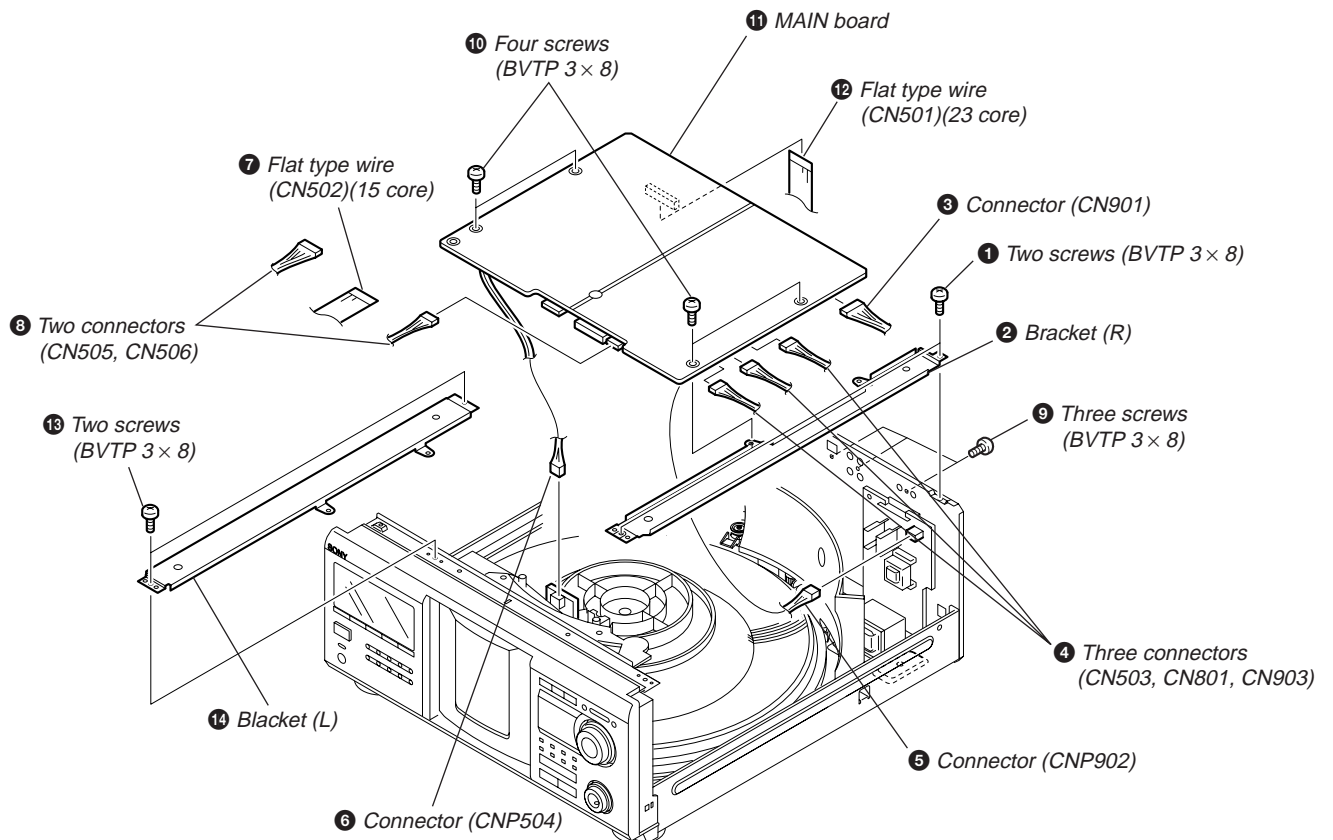
## SECTION 3 DISASSEMBLY

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

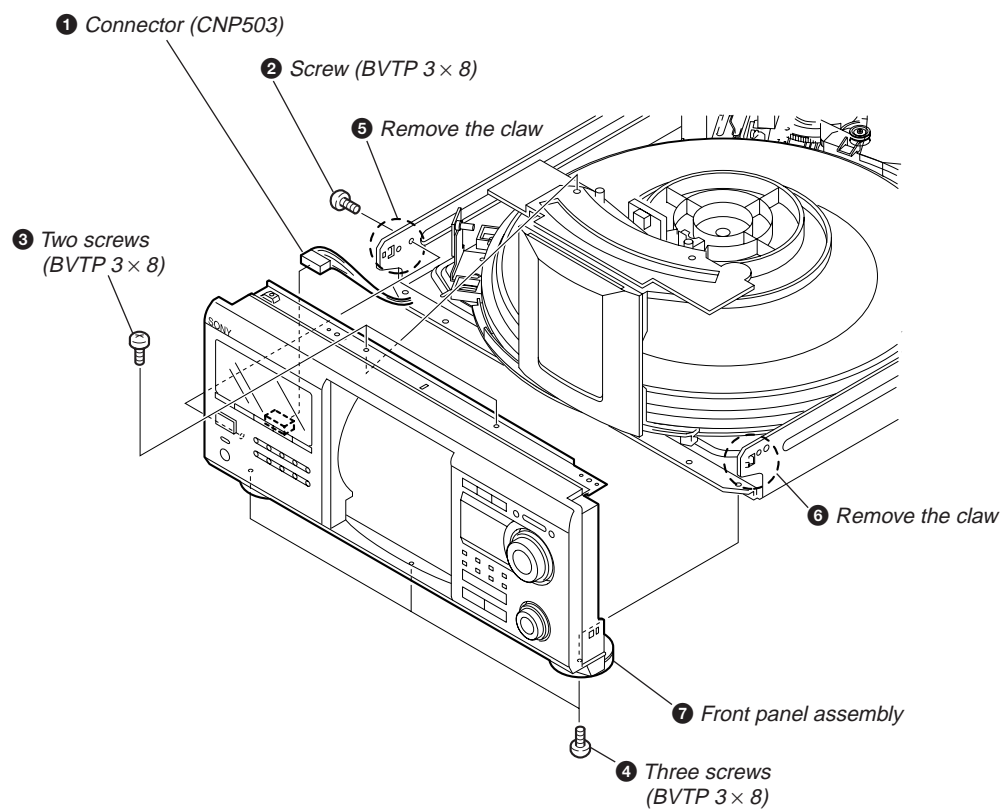
### 3-1. UPPER CASE



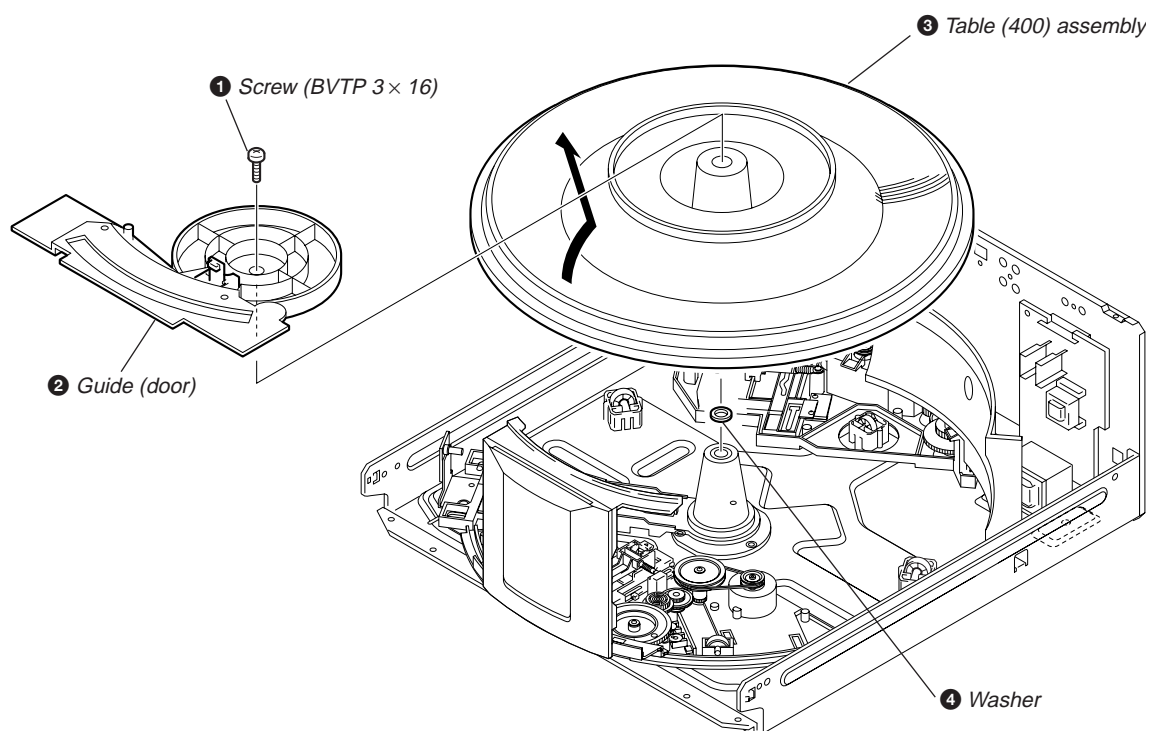
### 3-2. MAIN BOARD



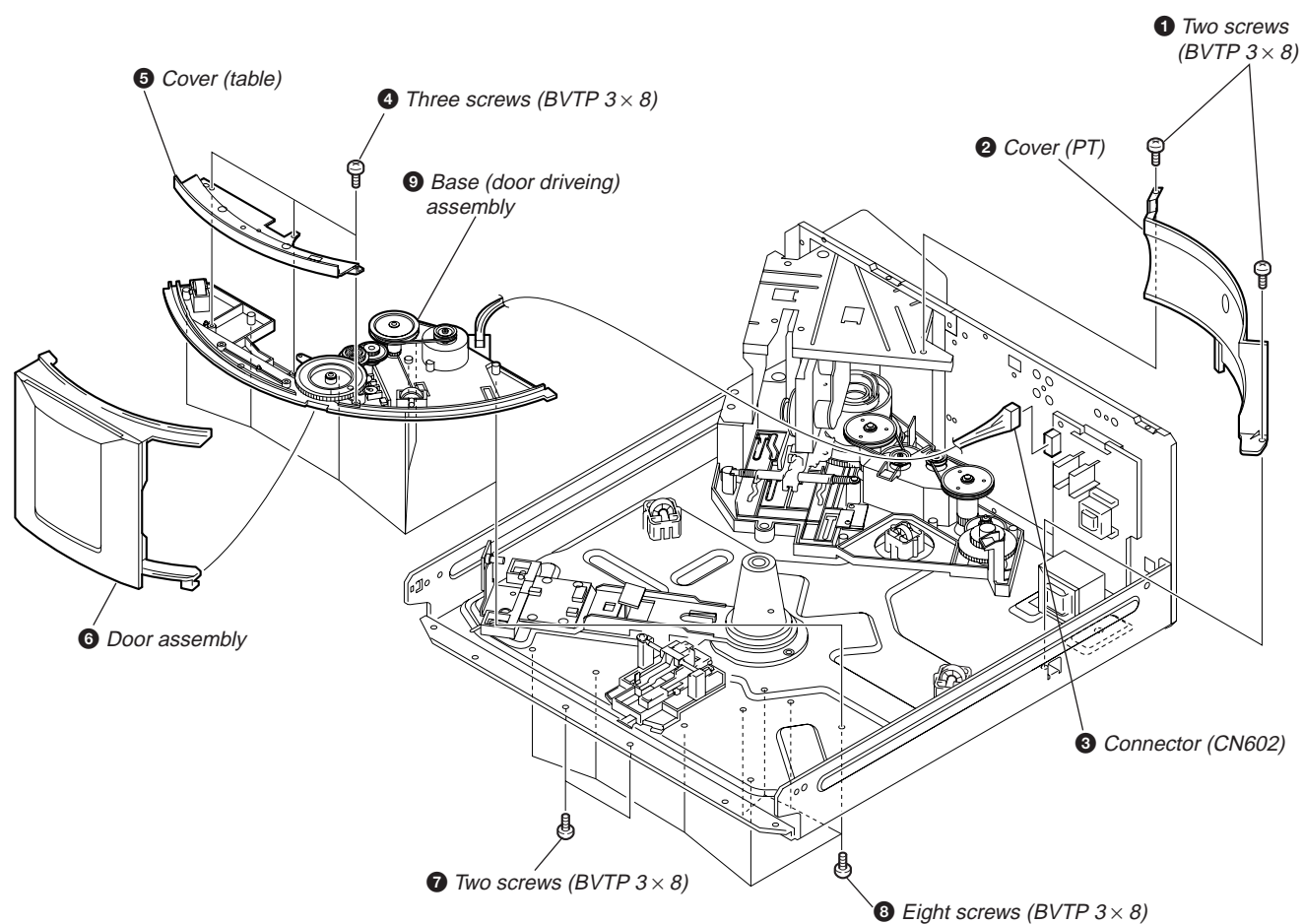
### 3-3. FRONT PANEL ASSEMBLY



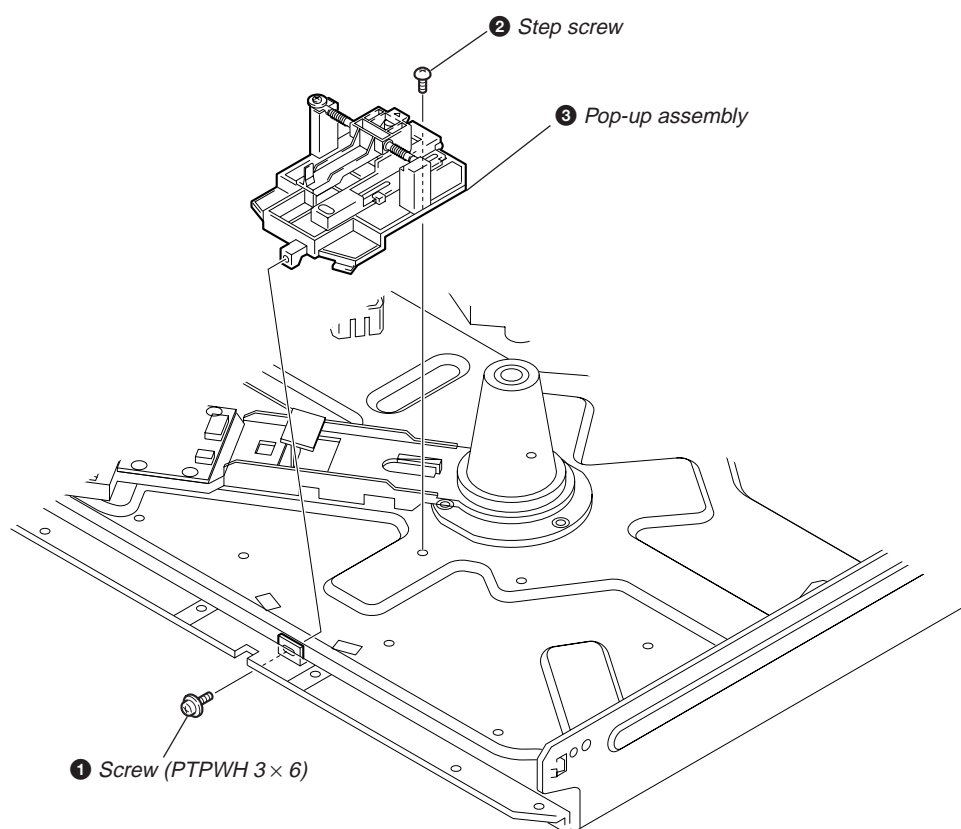
### 3-4. TABLE (400) ASSEMBLY



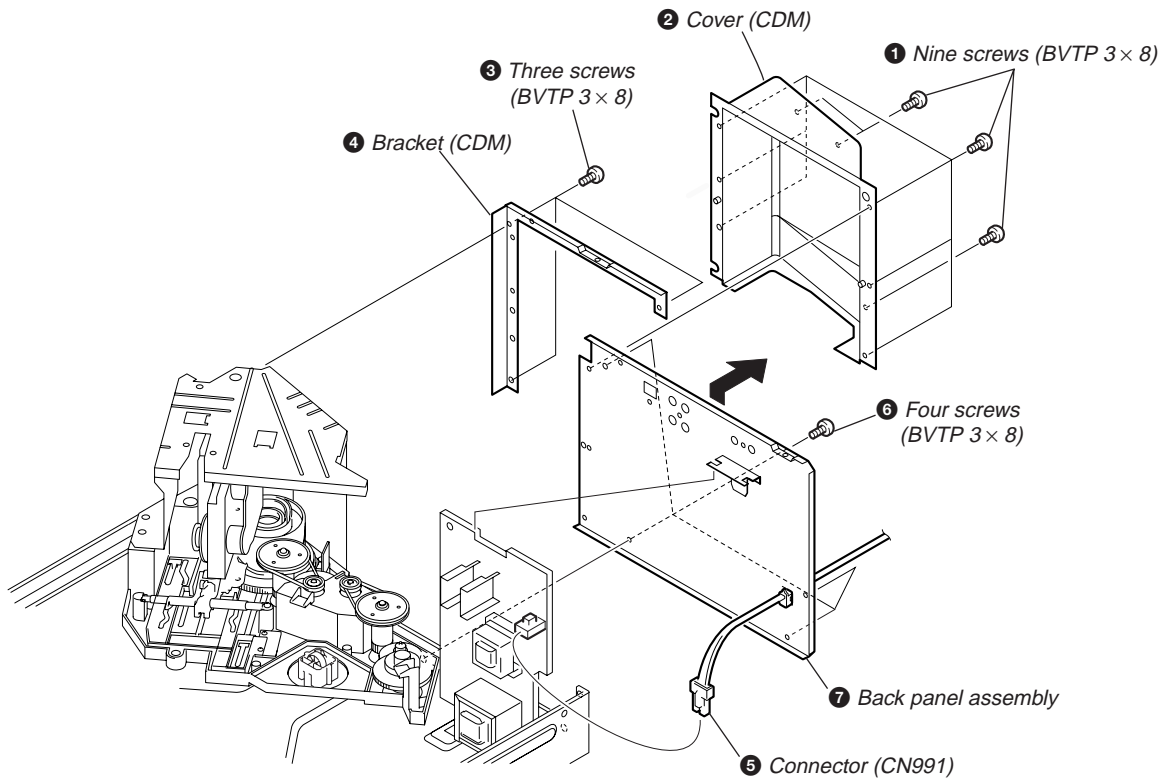
### 3-5. BASE (DOOR DRIVING) ASSEMBLY



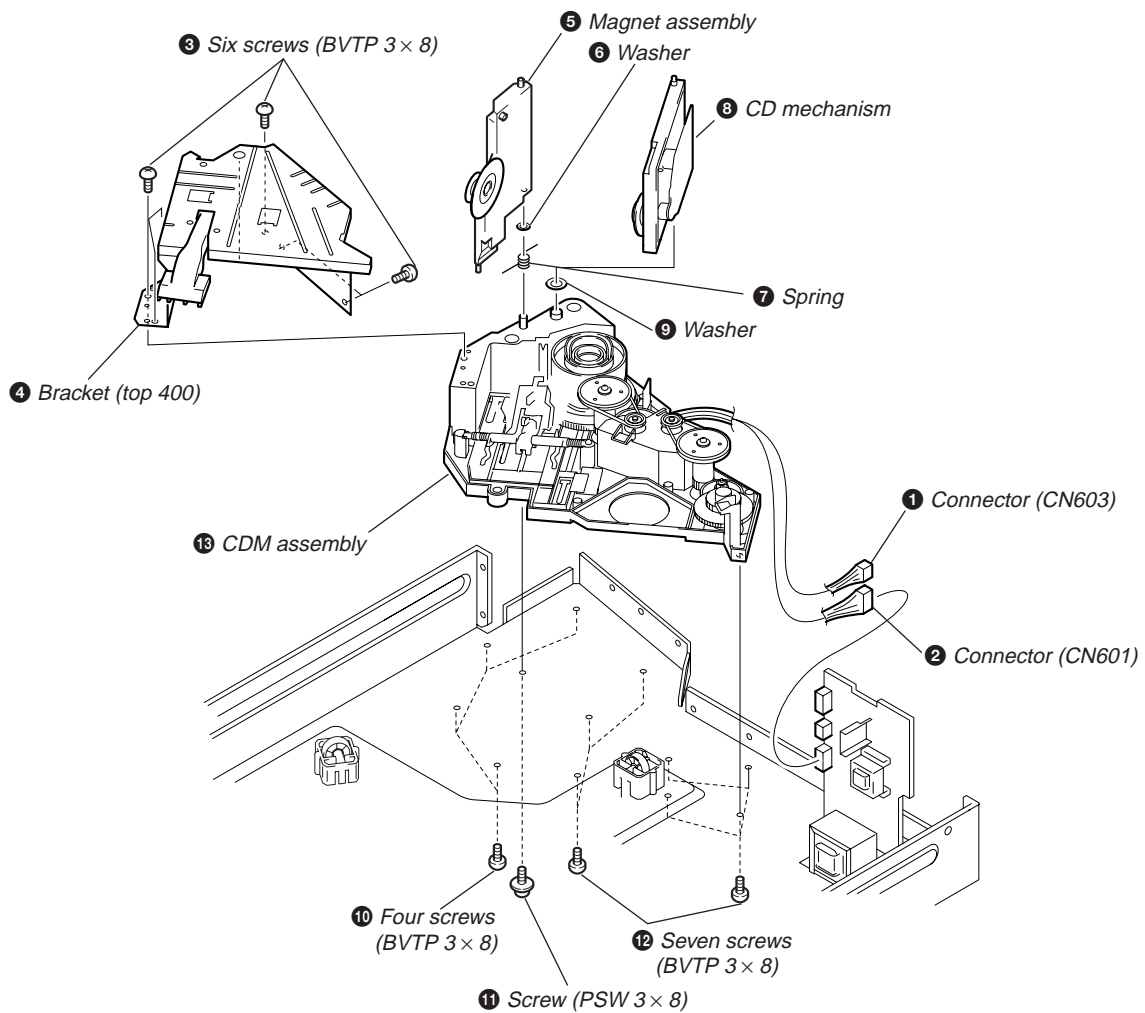
### 3-6. POP-UP ASSEMBLY



### 3-7. BACK PANEL ASSEMBLY



### 3-8. CDM ASSEMBLY



## SECTION 4 SERVICE MODE

### SPECIAL FUNCTION

This unit is provided with several service modes.  
Details are shown in the following table.

Turn on the power and press **GROUP FILE**, **MEGA CONTROL** and **I/⏻** buttons.  
Rotate the **DISC/CHARACTER** dial to enter any of the following modes.

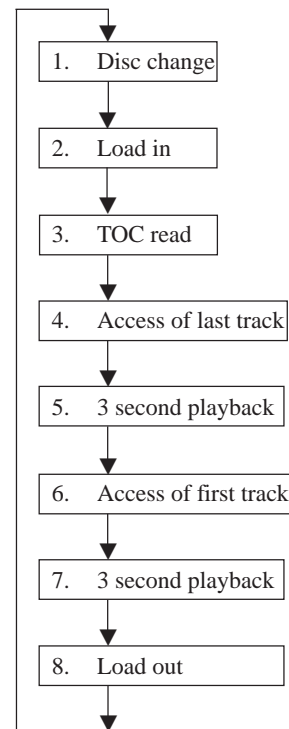
Display	
Mech Adjust	Mechanism adjustment mode
Table Roatation	Mode in which table keeps rotating
All Lit Mode	All lights ON mode
Ship Mode	Default mode
Normal Aging	Normal aging mode
Table Aging	Table aging mode
Door Popup Aging	Door/popup aging mode
Color Bar (OSD)	Color bar on OSD
Test Disp (OSD)	TEST DISPLAY for OSD
Memo Copy Mode	Memo copy mode
Model Name	Model name display
Show Mcom Ver.	Software version display
Demo	400-memo writing mode
BUS Check	Bus check
M kentou	Loading aging

To exit the mode, press **I/⏻** button to enter the standby state.  
(When selecting the Ship mode, the standby mode is automatically entered.)

### AGING MODE

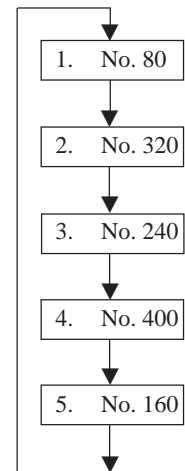
- Mode which repeatedly changes and plays back discs automatically in the unit.
  - It will repeat aging as long as no errors occur.
  - If an error occurs during aging, it will stop all servos, motors, etc. instantaneously, display the error number, and stop operations. However, the stopping conditions 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 and press the **GROUP FILE**, **MEGA CONTROL** and **I/O** buttons.
2. Rotate **DISC/CHARACTER** dial, select "Normal Aging" and press the dial to start the aging mode.
3. When the disc set mode is set, the **▶** and **■** LEDs blink.
4. Rotate the **DISC/CHARACTER** dial. The slits (No. 80, 160, 400, 240, 320) for setting the discs will come forward. Insert the discs into these slits. Do not set the discs in other slits.
5. 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.
6. Press the **▶** button.
7. The **▶** LED blinks, the aging mode is set, and aging is started.
8. 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.)
9. Aging will be repeated as long as no errors occur.
10. After each aging cycle, the number displayed on the Fluorescent indicator tube will increase.
11. To end aging, to end aging, press the **I/O** button to enter the standby mode.

## 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 08		Table is not stopped within the specified time.
#Err 09		Stopped while both T.SENS 1 and 2 are "LOW".
#Err *1	BU related check 1	Access timeover
#Err *2	BU related check 2	During high speed playback, COUNT timeout
#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

The \* numbers mean the following 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

# : DISC No.

### 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. Turn on the power and press the **GROUP FILE**, **MEGA CONTROL** and **I/O** buttons.  
Rotate the **DISC/CHARACTER** dial, select “Table Rotation” and press the dial.
3. When the mode is set, both the  and  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. Turn on the power and press the **GROUP FILE**, **MEGA CONTROL** and **I/O** buttons.  
Rotate the **DISC/CHARACTER** dial, select “Table Aging” and press the dial.  
Rotate the **DISC/CHARACTER** dial and set the disk in the slit whose number is being displayed (150, 149, 300, 1, 2)
2. When the mode is set, both the  and  indicators will start to blink.
3. When the  button is pressed, only the  indicator will blink and aging starts.
4. 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. 150, No. 149, and No. 300 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. Turn on the power and press the **GROUP FILE**, **MEGA CONTROL** and **I/O** buttons.  
Rotate the **DISC/CHARACTER** dial, select “Door Popup Aging” and press the dial.
2. Aging starts, and door open/close and up/down operations of the pop up part are performed continuously.
3. To end the mode, press the **I/O** button.

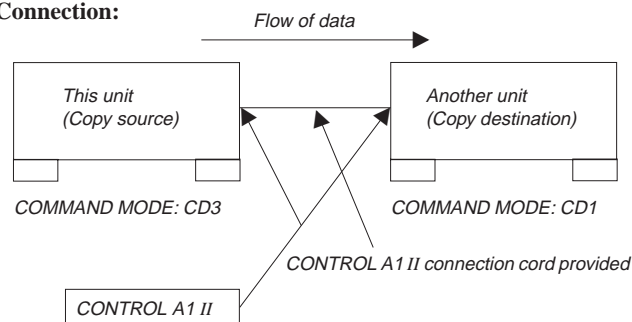
### TABLE ROTATION MODE

- 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 FILE** and **MEGA CONTROL** buttons, press the **I/O** button.  
Rotate the **DISC/CHARACTER** dial, select “Model Name” and press the dial.  
The model name is displayed on the fluorescent indicator tube.  
Let the model name be displayed for three seconds and exit the mode.

### MICROPROCESSOR VERSION DISPLAY

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

#### Procedure:

With the power ON, while pressing the **GROUP FILE** and **MEGA CONTROL** buttons, press the **I/O** button.  
Rotate the **DISC/CHARACTER** dial, select “Show Mcom Ver.” and press the dial.  
The microprocessor version is displayed on the fluorescent indicator tube.  
Let the model name be displayed for three seconds and exit the mode.

### 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 FILE** and **MEGA CONTROL** buttons, press the **I/O** button.  
Rotate the **DISC/CHARACTER** dial, select “All Lit Mode” and press the dial.  
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 **TIMER** switch to **OFF**. Next, with the power ON, while pressing the **GROUP FILE** button and **MEGA CONTROL** button, press the **I/C** 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 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

1. Turn ON the power of the unit, set disc to disc table, and perform chucking.
2. Disconnect the power supply plug from the outlet.
3. 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) +:Upper aliasing bias    -: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-JI mode. (Exits this mode when the  button is pressed.)

To end the ADJ mode

1. Press the  button and disconnect the plug.
2. Remove the wire between ADJ and GND.



### 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 lights up simultaneously.

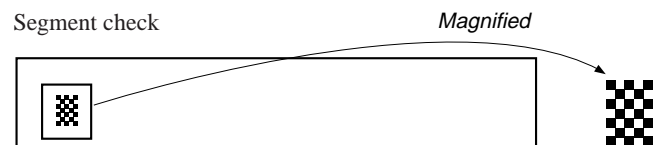
 (play) button: All FL segment and grid will light up.  
The  LED also lights up simultaneously.

TIMER switch: When the switch position is **PLAY**, the **STANDBY** LED lights 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 and AMS is rotated to the right, the GROUP LEDs light up in the order of 1→2..8→HIT LIST→EASY PLAY ARTIST MODE →MEGA CONTROL→1.
- When the jog dial and AMS is rotated to the left, the GROUP LEDs light up in the order of 8→7..1 →MEGA CONTROL ARTIST MODE →EASY PLAY→HIT LIST→8.

#### • Abbreviation

FL: Fluorescent Indicator Tube

To end the ADJ mode

1. Disconnect the plug.
2. Remove the wire between AFADJ and GND.

**Adjustment Location:** MIAN board (See page 26)

## SECTION 6 ADJUSTMENTS

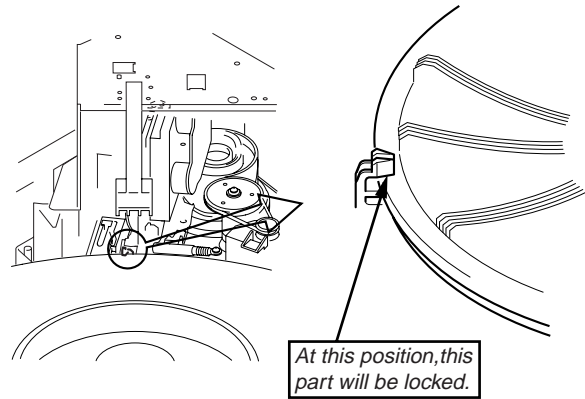
### 6-1. MechanICAL Adjustments

#### Pop Up Mechanism Adjustment

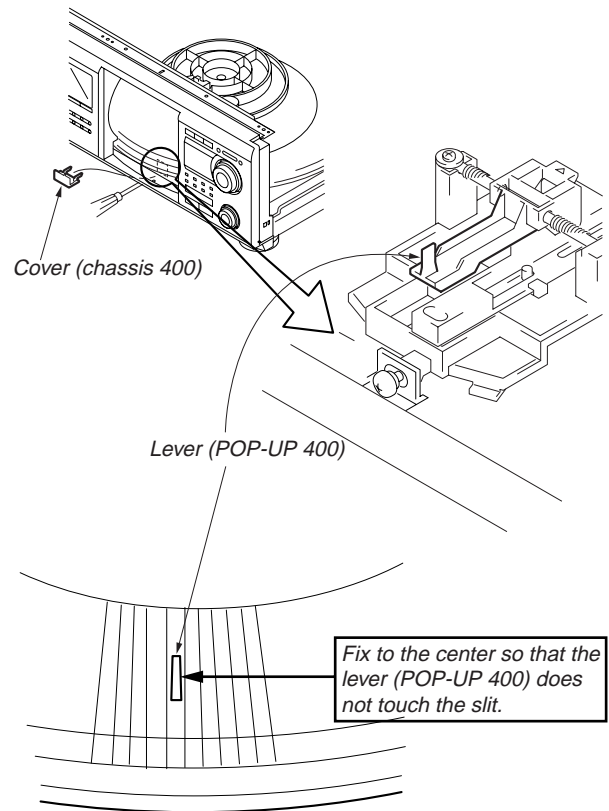
1. Turn on the power and set the disk to number 24.
2. With the power ON, while pressing the **GROUP FILE** and **MEGA CONTROL** buttons, press the **I/O** button to enter the Adjustment mode.
3. Rotate the JOG dial and select the mechanism adjustment mode. ("Mech Adjust" is displayed.)  
Press the JOG dial.
4. Keep pressing the **GROUP 1** button to operate the loading mechanism, and continue pressing until the disc table locks. (Fig-1)
5. Keep pressing the **GROUP 2** button to raise the pop up part.
6. 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.

<b>GROUP 1</b>	button: Loading mechanism IN operation
<b>GROUP 5</b>	button: Loading mechanism OUT operation
<b>GROUP 2</b>	button: Pop up part UP operation
<b>GROUP 6</b>	button: Pop up part DOWN operation



**Fig-1**



**Fig-2**

### Sensor Adjustment

1. Enter the adjustment mode and select “Mech Adjust” with the JOG dial, and press the dial.
2. Press the **GROUP 1** button to operate the loading mechanism, and continue pressing until the disc table locks. (Fig-3)
3. Loosen the fixing screw and move the holder so that both PLAY button LED (green) and the ARTIST MODE button LED (green) light.  
If the holder is not in the correct position, the MEGA CONTROL button LED (orange) or the PAUSE button LED (orange) lights.
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)

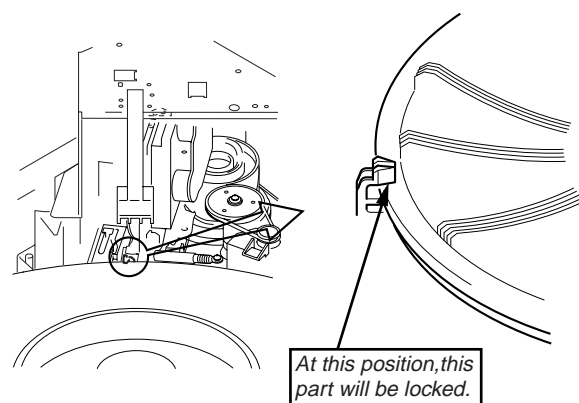
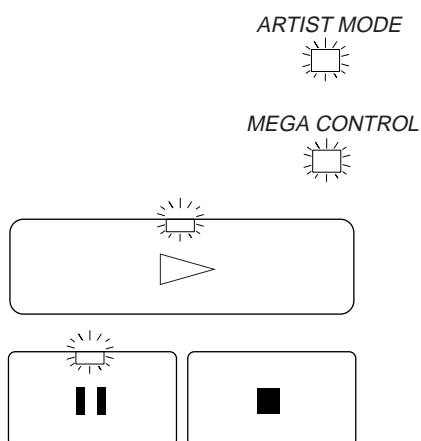


Fig-3

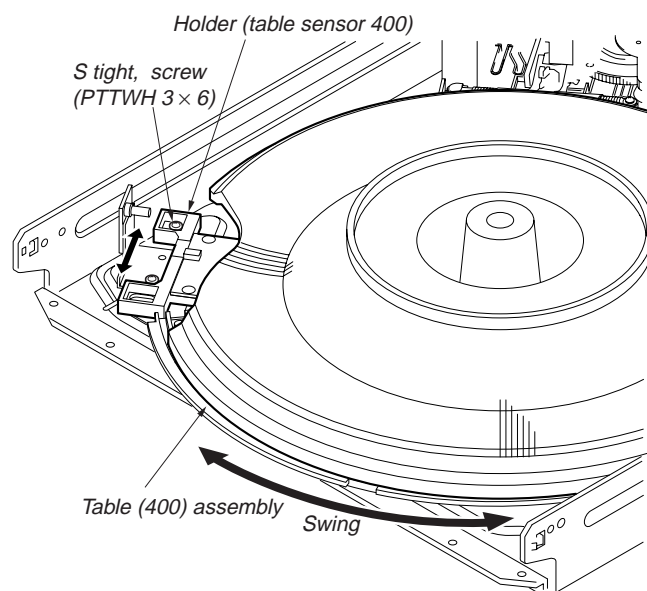


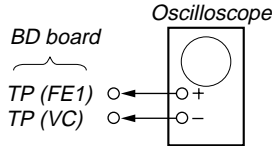
Fig-4

## 6-2. ELECTRICAL ADJUSTMENT

### Note:

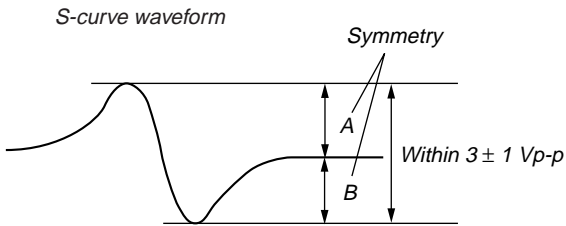
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10M $\Omega$  impedance.
4. Clean the object lens by an applicator with neutral detergent when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

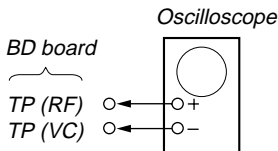


8. Pressing the **I/⏻** button stops the output of the waveform (s curve).
9. After check, remove the lead wire connected in step 3.

**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 19)

### RF Level Check

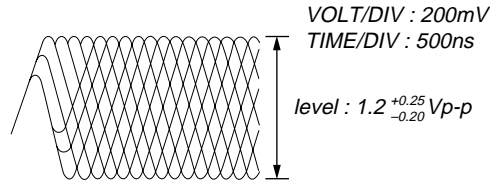


### Procedure :

1. Connect oscilloscope to test point TP (RF) 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.

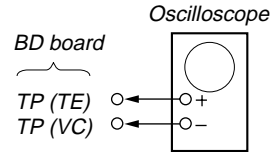
**Note:** A clear RF signal waveform means that the shape “ $\diamond$ ” can be clearly distinguished at the center of the waveform.

RF signal waveform



**Adjustment Location:** BD board (See page 19)

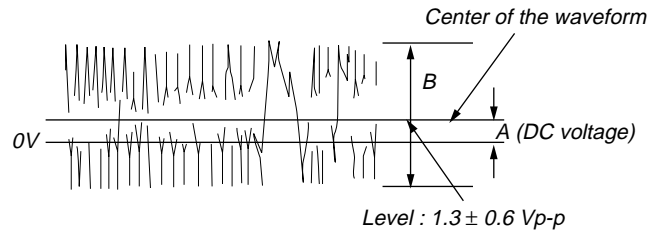
### E-F Balance Check



### Procedure :

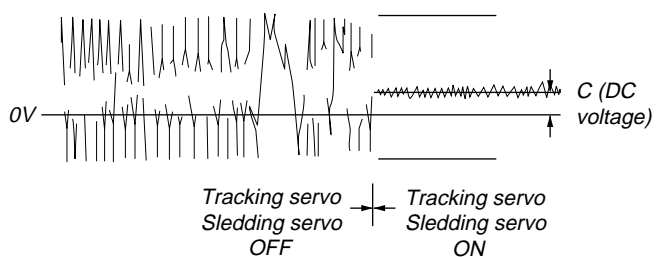
1. Chuck the disc (YEDS-18) beforehand, and disconnect the power cord from the outlet.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Connect test point (ADJ) on MAIN board to ground with lead wire.
4. The ADJ mode is set when the power cord is inserted into the outlet and power is supplied.
5. The fifth track is played automatically.
6. Press the **GROUP 3** button. (The tracking servo and the sledding servo are turned OFF.)
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 :  
 $A/B \times 100 = \text{less than } \pm 22\%$

Traverse waveform



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

Traverse waveform



9. Disconnect the lead wire of TP1 (ADJ) connected in step 2.

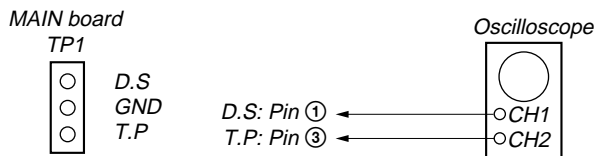
**Adjustment Location:** BD board (See page 19)



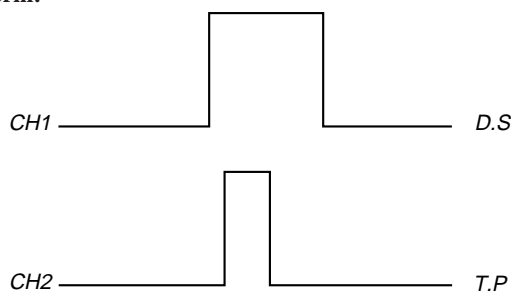
## Disc Sensor Adjustment

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

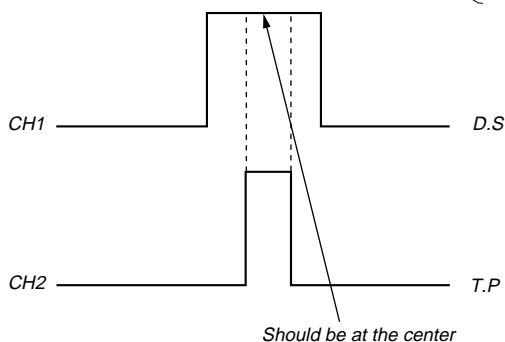
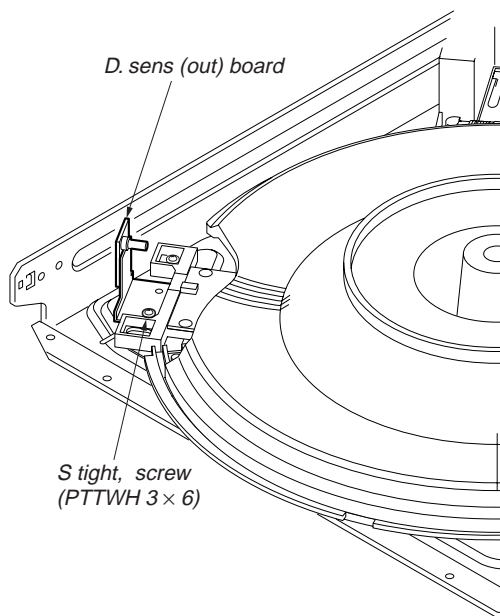
### Connection:



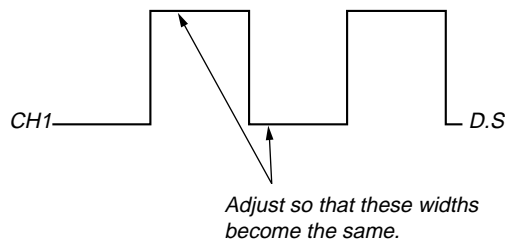
### Waveform:



1. Connect the oscilloscope to Pins ①, ②, and ③ of TP1 of the MAIN board.
2. Check that no discs are loaded in the unit.
3. With the power ON, while pressing the **GROUP FILE** and **MEGA CONTROL** buttons, press the **I/O** button. Rotate the **DISC/CHARACTER** dial, select "Table Rotation" and press the dial.  
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 T.P waveform comes the center of the H portion of the D.S waveform.

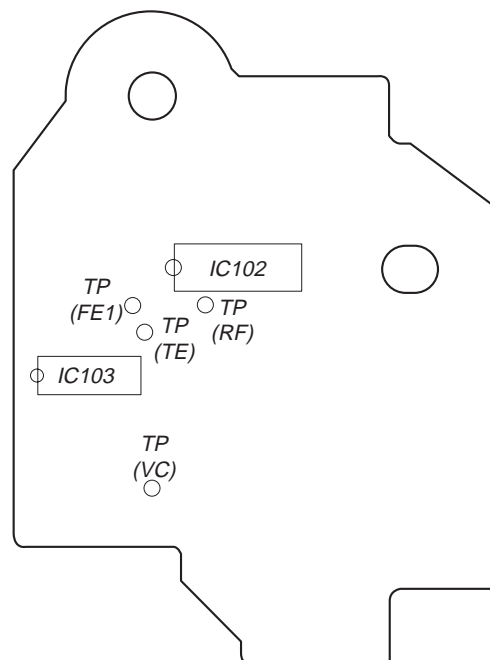


5. Rotate the **DISC/CHARACTER** knob in the counterclockwise direction and the disc table starts to rotate in the same direction. Check that the waveform at this time is the same as that in step 4. If larger by a considerable extent, rotate the **DISC/CHARACTER** knob in the clockwise direction and 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.



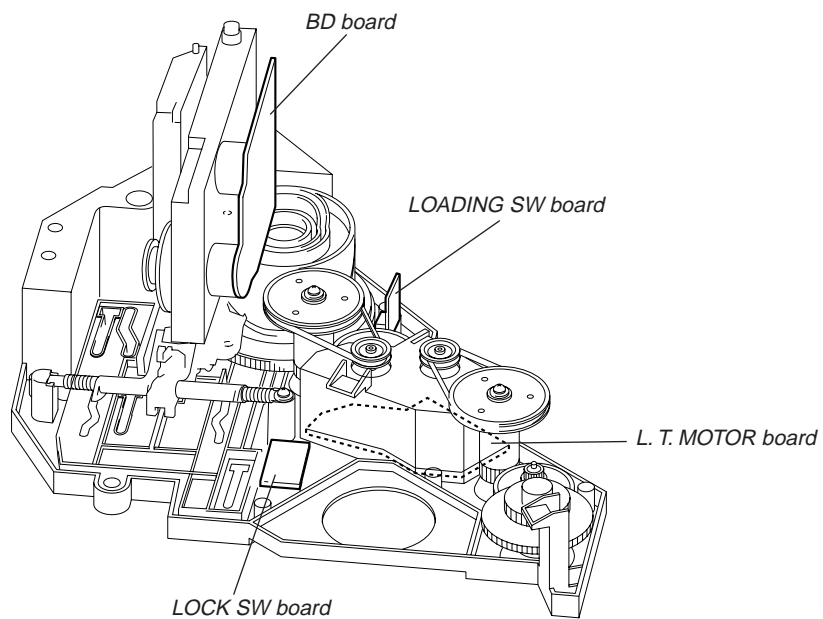
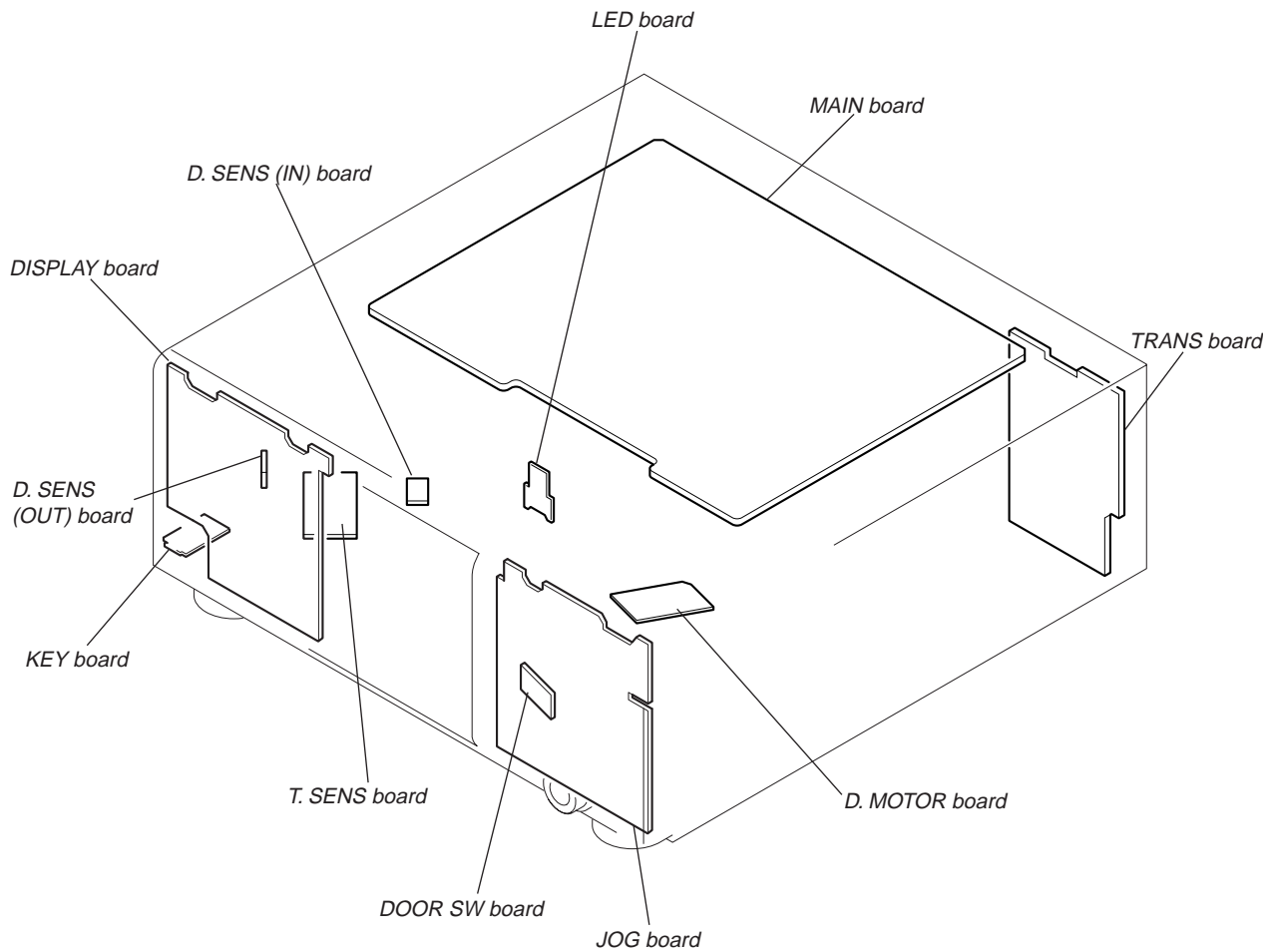
### Adjustment Location

[ BD BOARD ] – Side B –

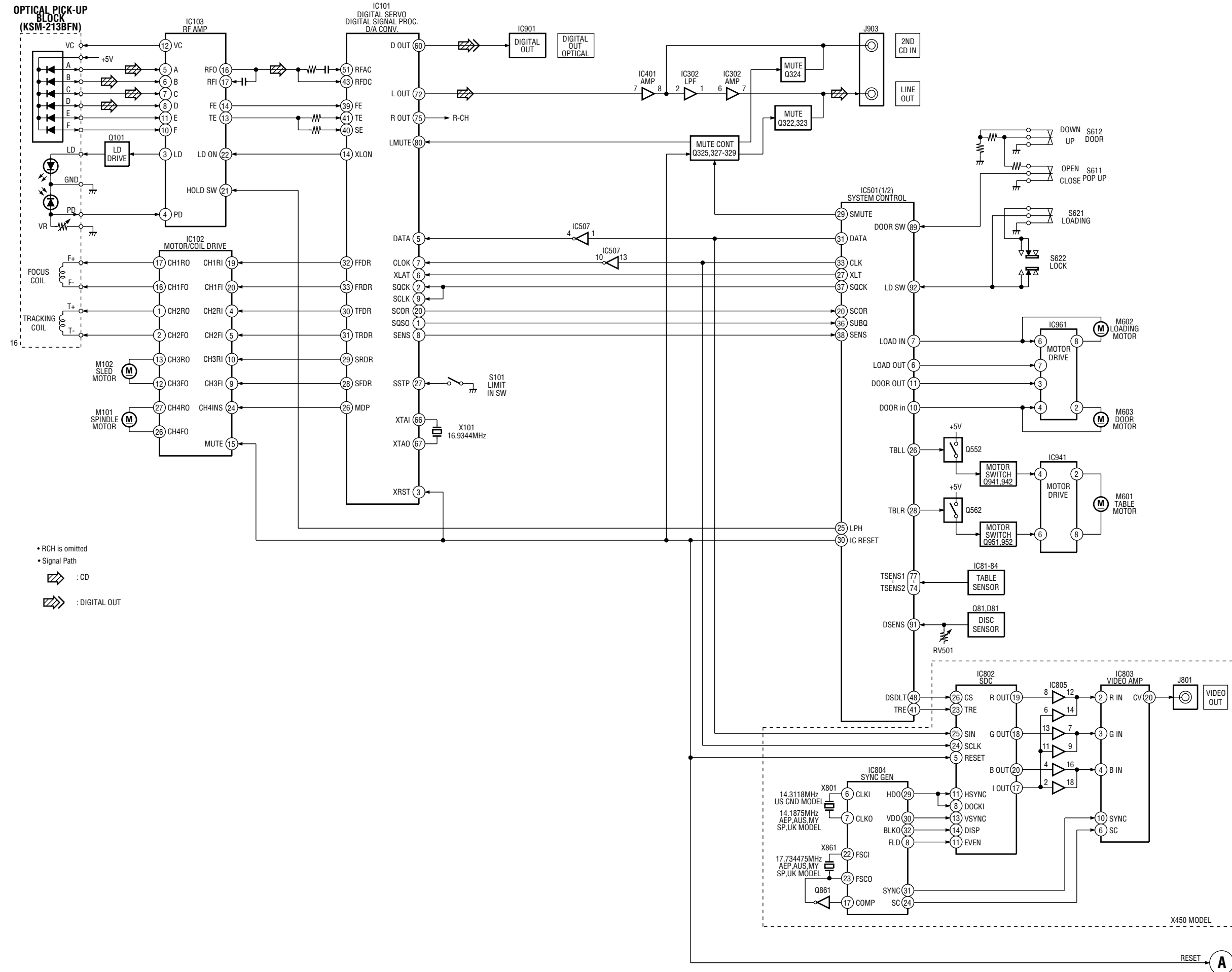


## SECTION 7 DIAGRAMS

### 7-1. CIRCUIT BOARDS LOCATION

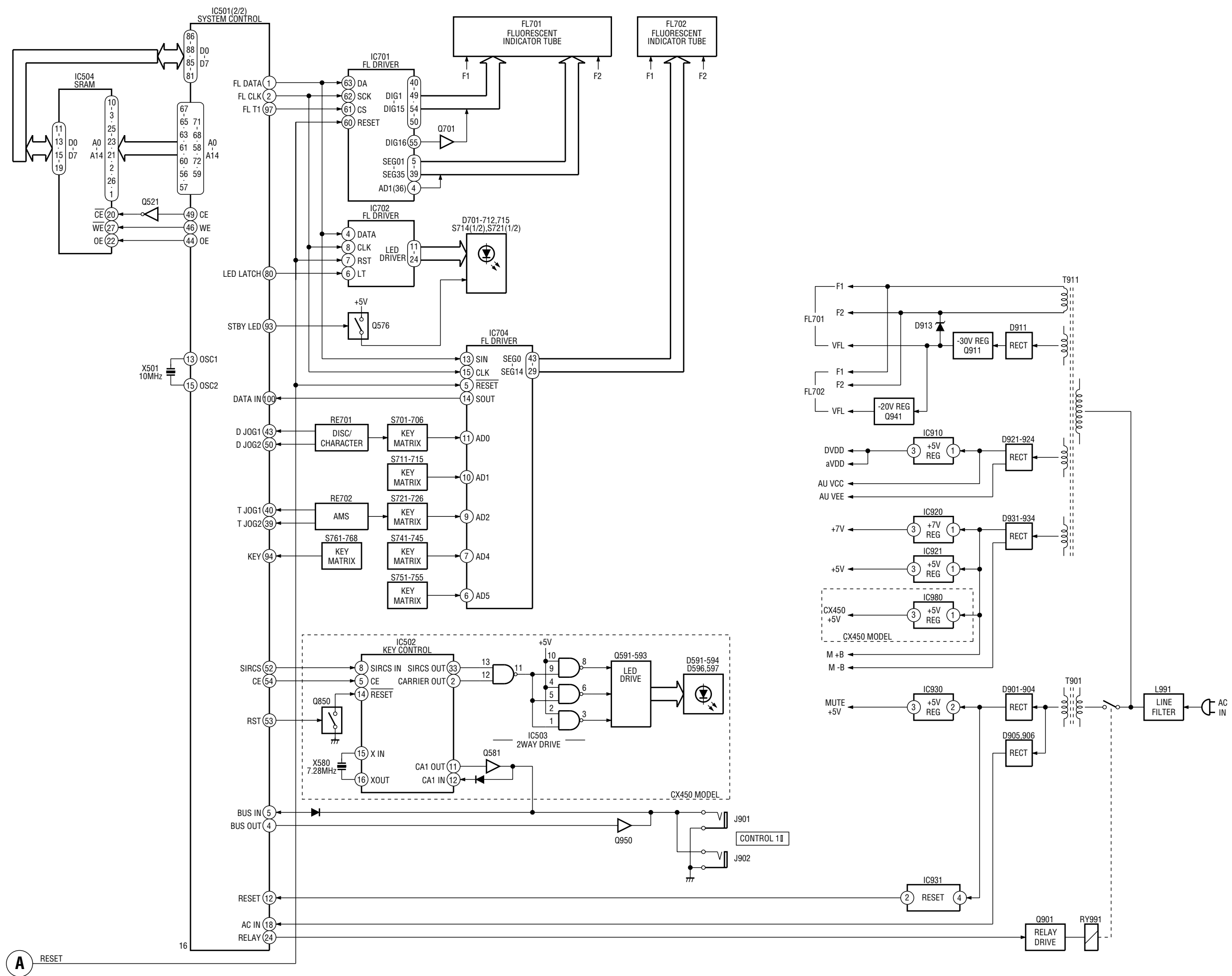


## 7-2. BLOCK DIAGRAMS – BD SECTION –



CDP-CX400/CX450

– MAIN SECTION –



**A** RESET

**THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.**  
(In addition to this, the necessary note is printed in each block.)

**For schematic diagrams.**

- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - $\triangle$  : internal component.
  - $\square$  : panel designation.

<b>Note:</b> The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.	<b>Note:</b> Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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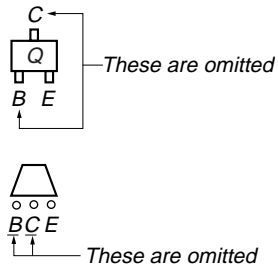
- $\boxed{\text{B}+}$  : B+ Line.
- $\boxed{\text{B}-}$  : B- Line.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark : STOP
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ).  
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.  
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.  
 $\Rightarrow$  : CD  
 $\Rightarrow$  : digital out
- Abbreviation  
CND : Canadian model  
AUS : Australian model  
SP : Singapore model.  
MY : Malaysia model.

**For printed wiring boards.**

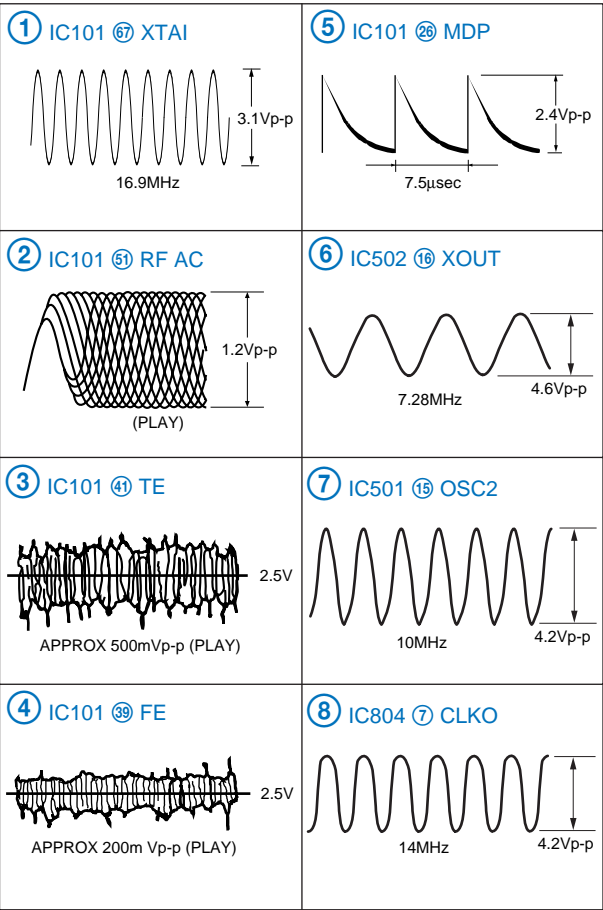
- Note:**
- $\circ$  — : parts extracted from the component side.
  - — : parts extracted from the conductor side.
  - $\circ$  : Through hole.
  - $\square$  : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

Caution:  
Pattern face side: Parts on the pattern face side seen from the (Side B) pattern face are indicated.  
Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

**• Indication of transistor**

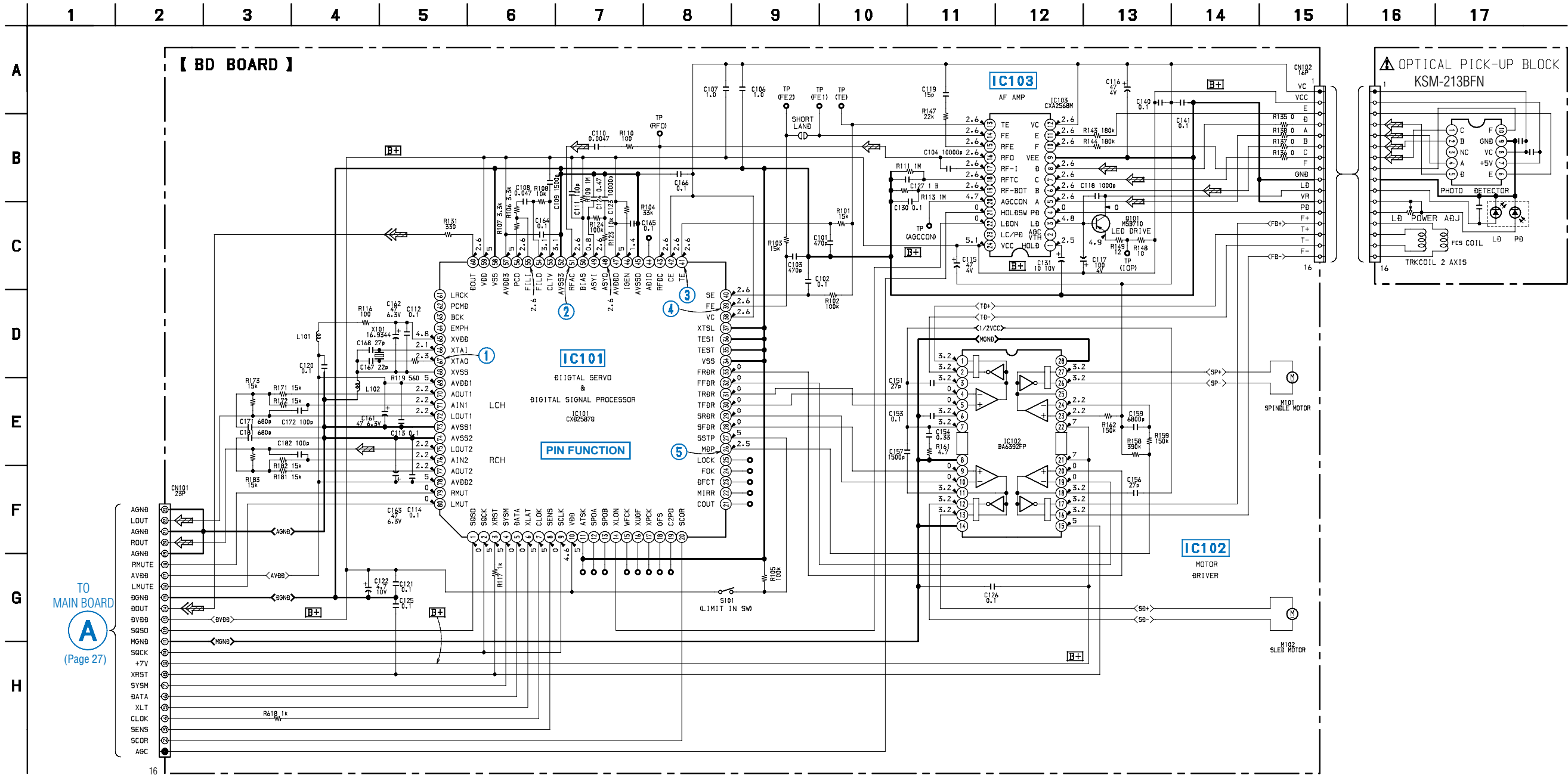


**Waveforms**



7-3. Schematic Diagram – BD Section –

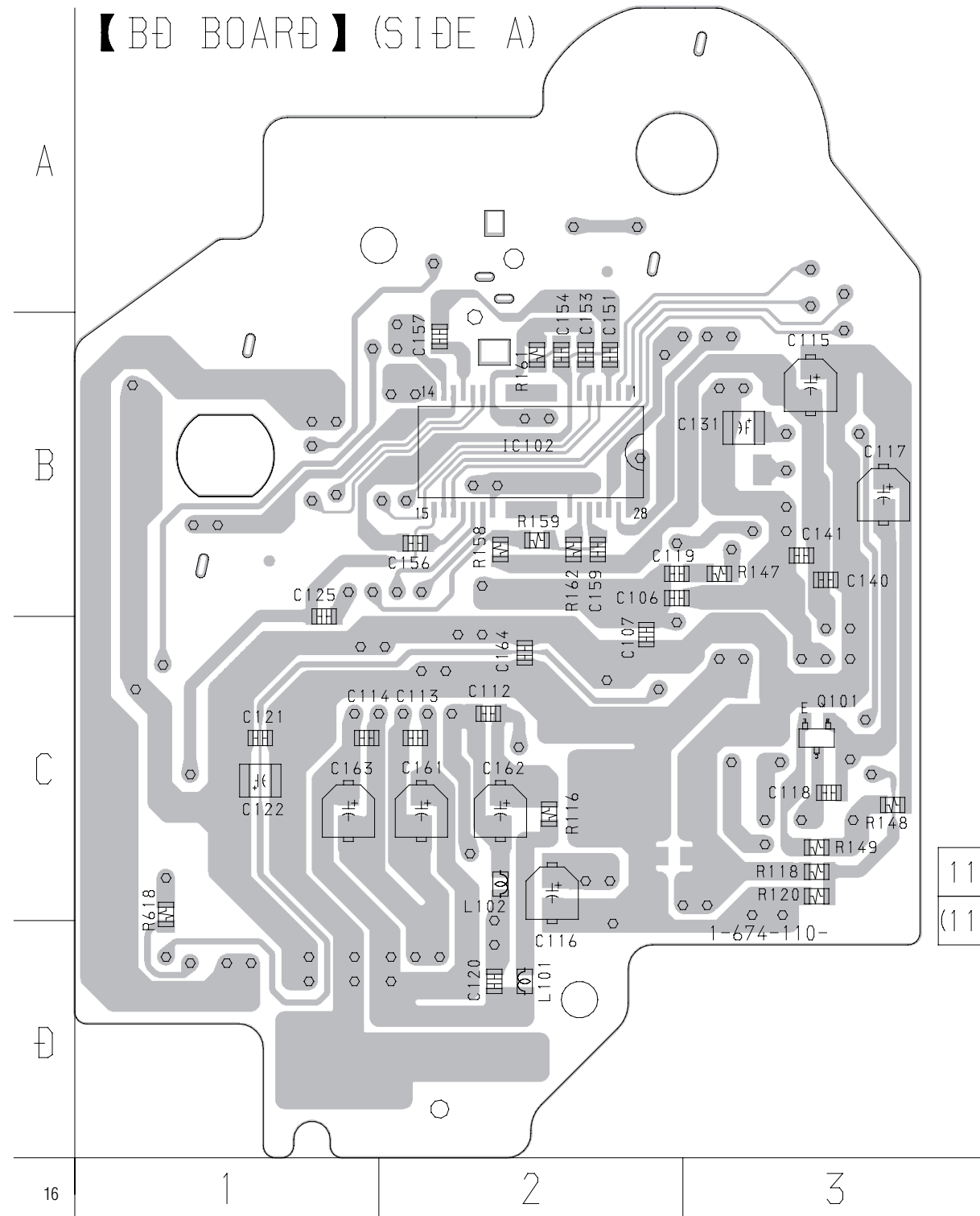
- See page 23 for Waveforms.
- See page 36 for IC Block Diagrams.
- See page 38 for IC Pin Functions.



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 D BOARD 】 (SIDE A)

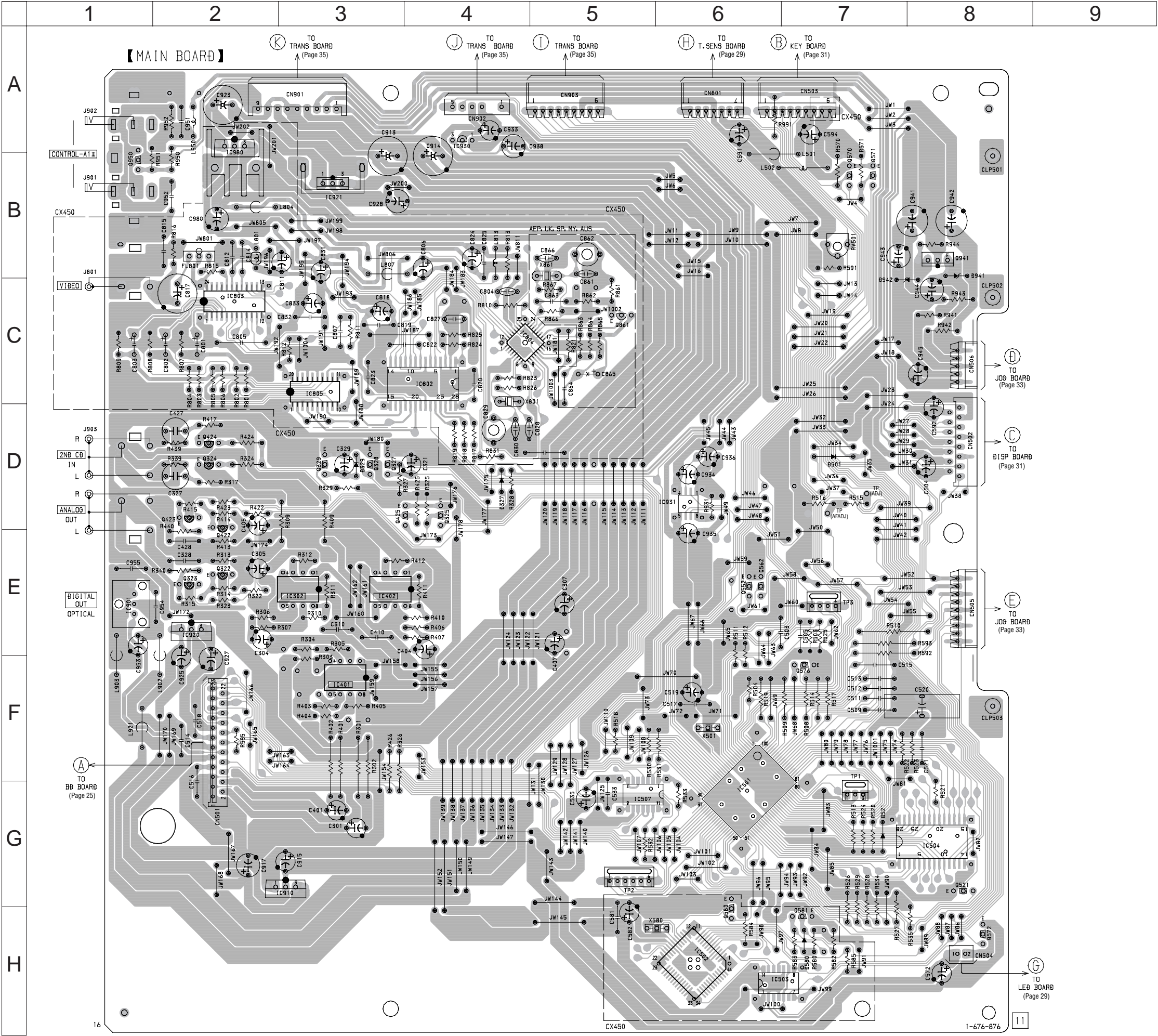


A detailed schematic diagram of a circuit board, likely a motor control board. The board is populated with various electronic components including integrated circuits (IC101, IC103), resistors (R101-R183), capacitors (C101-C181), and two motors (M101 SPINDLE MOTOR, M102 SLED MOTOR). It also features a limit switch (S101), a PIC-up block (KSM-213BFN), and several test points (TP). The board is connected to a main board via a connector (CN101) and a cable (A). The diagram includes a coordinate grid with letters A, B, C, D and numbers 1, 2, 3, 4, 5, 6.

Ref. No.	Location
IC101	C-5
IC102	B-2
IC103	C-4
Q101	C-3



7-5. Printed Wiring Board – MAIN Section –  
• See page 20 for Circuit Boards Location.

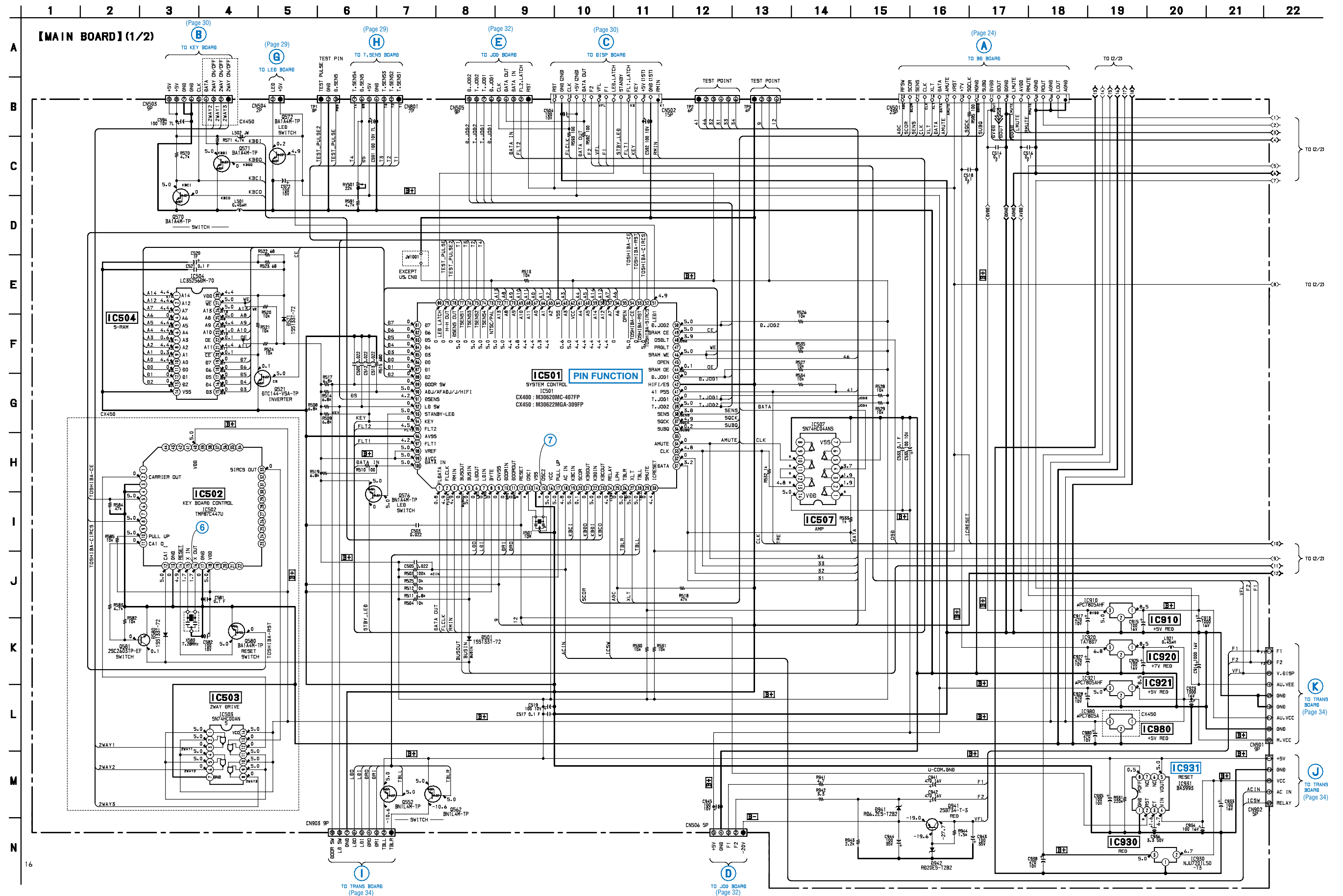


• Semiconductor  
Location

Ref. No.	Location
D327	D-4
D329	D-3
D501	D-7
D521	G-7
D580	H-7
D941	C-8
D942	C-8
IC302	E-3
IC401	F-3
IC402	E-3
IC501	F-6
IC502	H-6
IC503	H-7
IC504	G-8
IC507	G-5
IC802	C-4
IC803	C-2
IC804	C-5
IC805	C-3
IC901	E-1
IC910	G-3
IC920	E-2
IC921	B-3
IC930	A-4
IC931	D-6
IC980	A-2
Q322	E-2
Q323	E-2
Q324	D-2
Q325	D-4
Q327	D-3
Q328	D-3
Q329	D-3
Q422	D-2
Q423	D-2
Q424	D-2
Q425	D-3
Q521	G-8
Q552	E-6
Q562	E-6
Q570	B-7
Q571	B-7
Q572	H-8
Q576	E-7
Q580	G-6
Q581	G-7
Q861	C-5
Q941	B-8
Q950	B-1

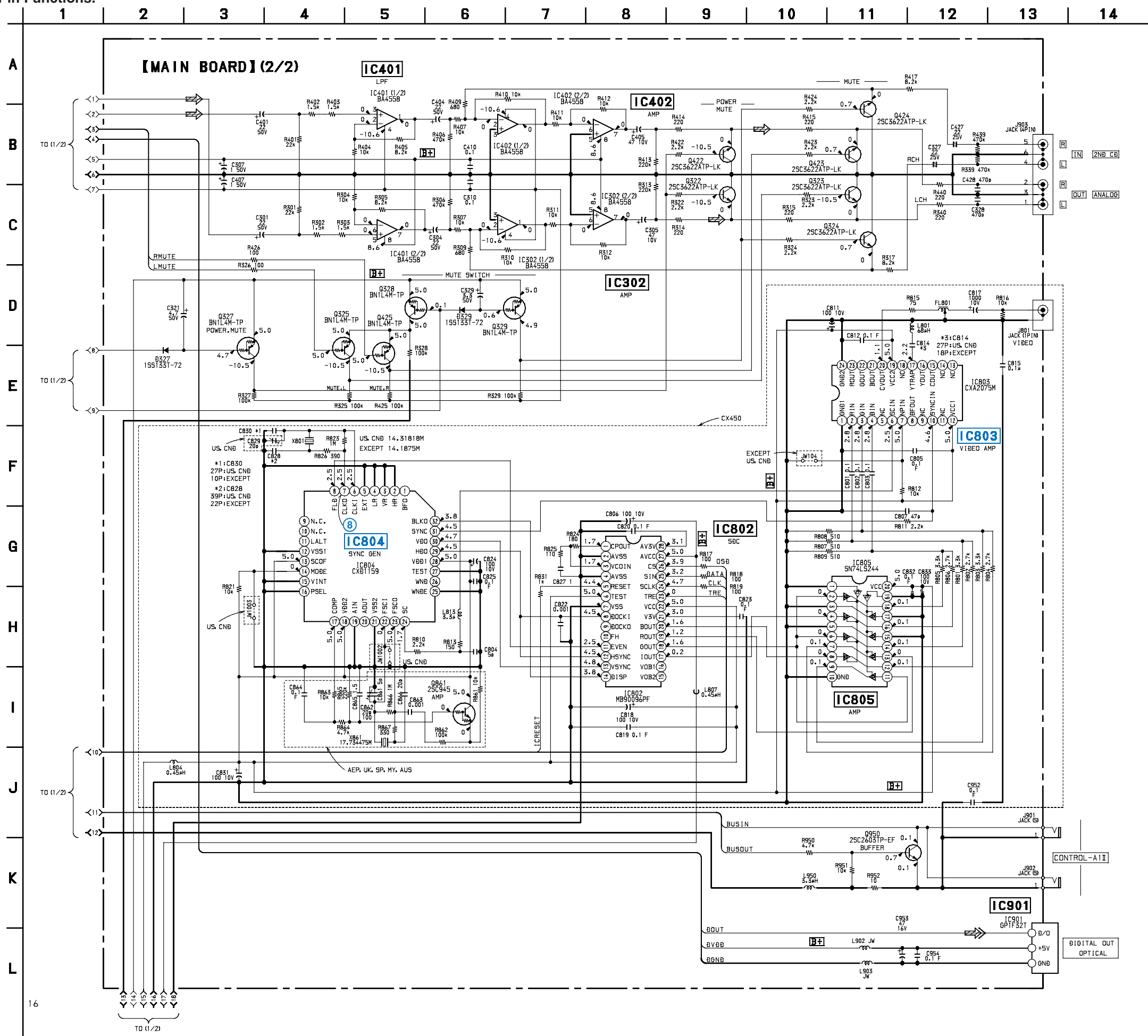
7-6. Schematic Diagram – MAIN (1/2) Section –

- See page 23 for Waveforms.
- See page 36, 37 for IC Block Diagrams.



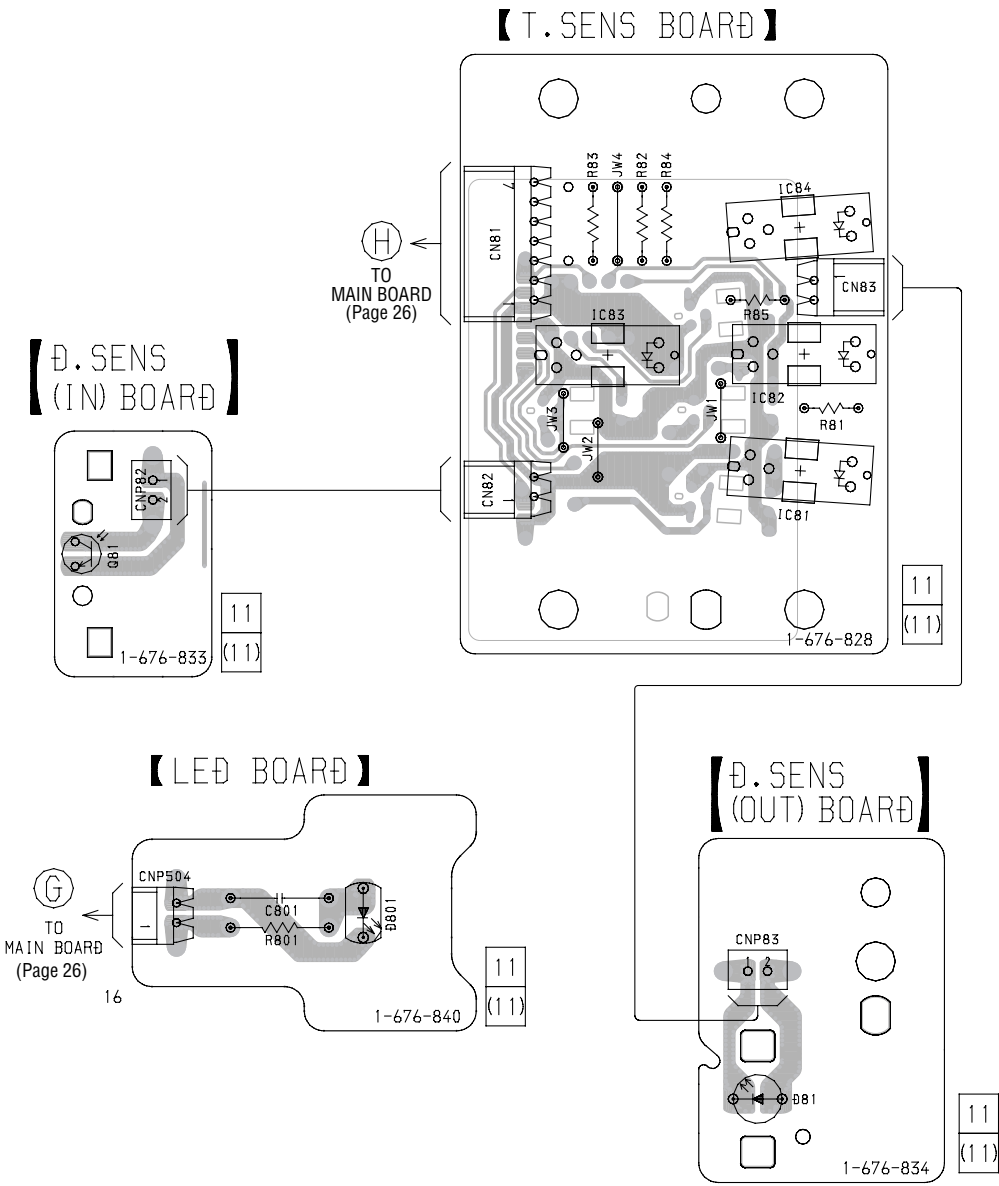
7-7. Schematic Diagram – MAIN (2/2) Section –

- See page 23 for Waveforms.
- See page 36 for IC Block Diagrams.
- See page 40 for IC Pin Functions.

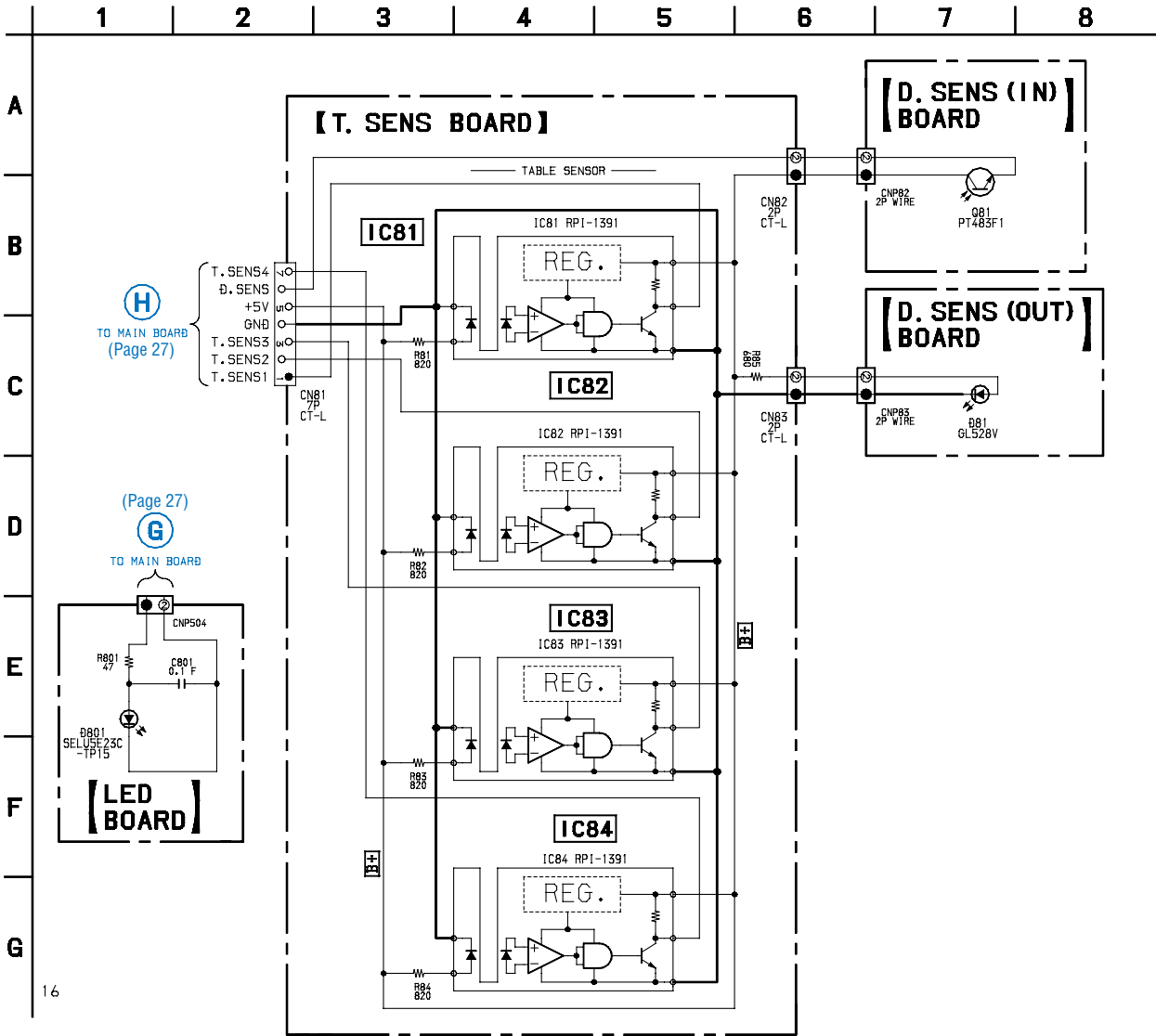




7-8. Printed Wiring Board – SENSOR Section –  
• See page 20 for Circuit Boards Location.

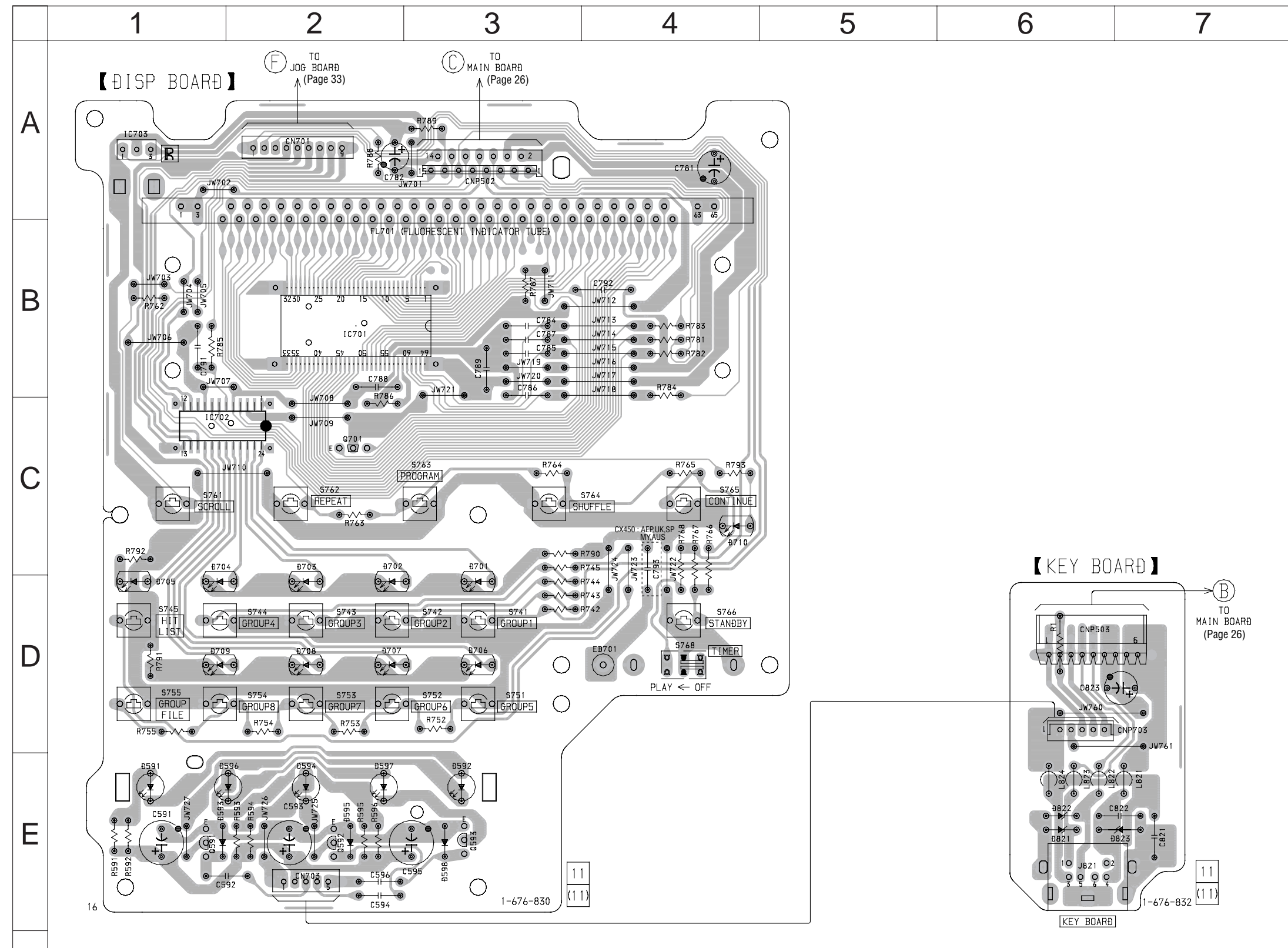


7-9. Schematic Diagram – SENSOR Section –





**7-11. Printed Wiring Board – DISPLAY Section –**  
 • See page 20 for Circuit Boards Location.



Ref. No.	Location
D591	E-1
D592	E-3
D593	E-1
D594	E-2
D595	E-2
D596	E-1
D597	E-2
D598	E-3
D701	D-3
D702	D-2
D703	D-2
D704	D-1
D705	D-1
D706	D-3
D707	D-2
D708	D-2
D709	D-1
D710	C-4
IC701	B-2
IC702	C-1
IC703	A-1
Q591	E-1
Q592	E-2
Q593	E-3
Q701	C-2

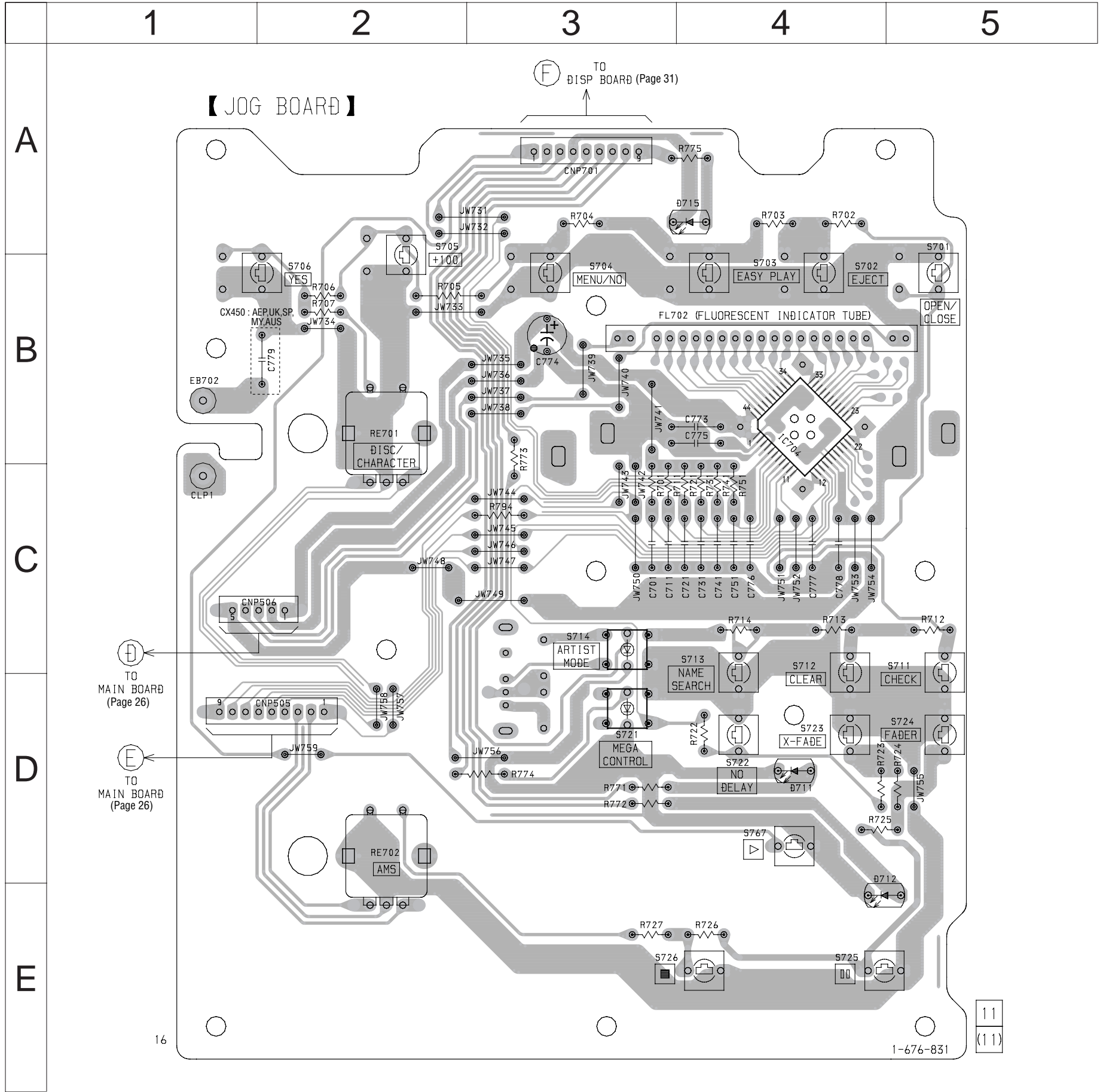


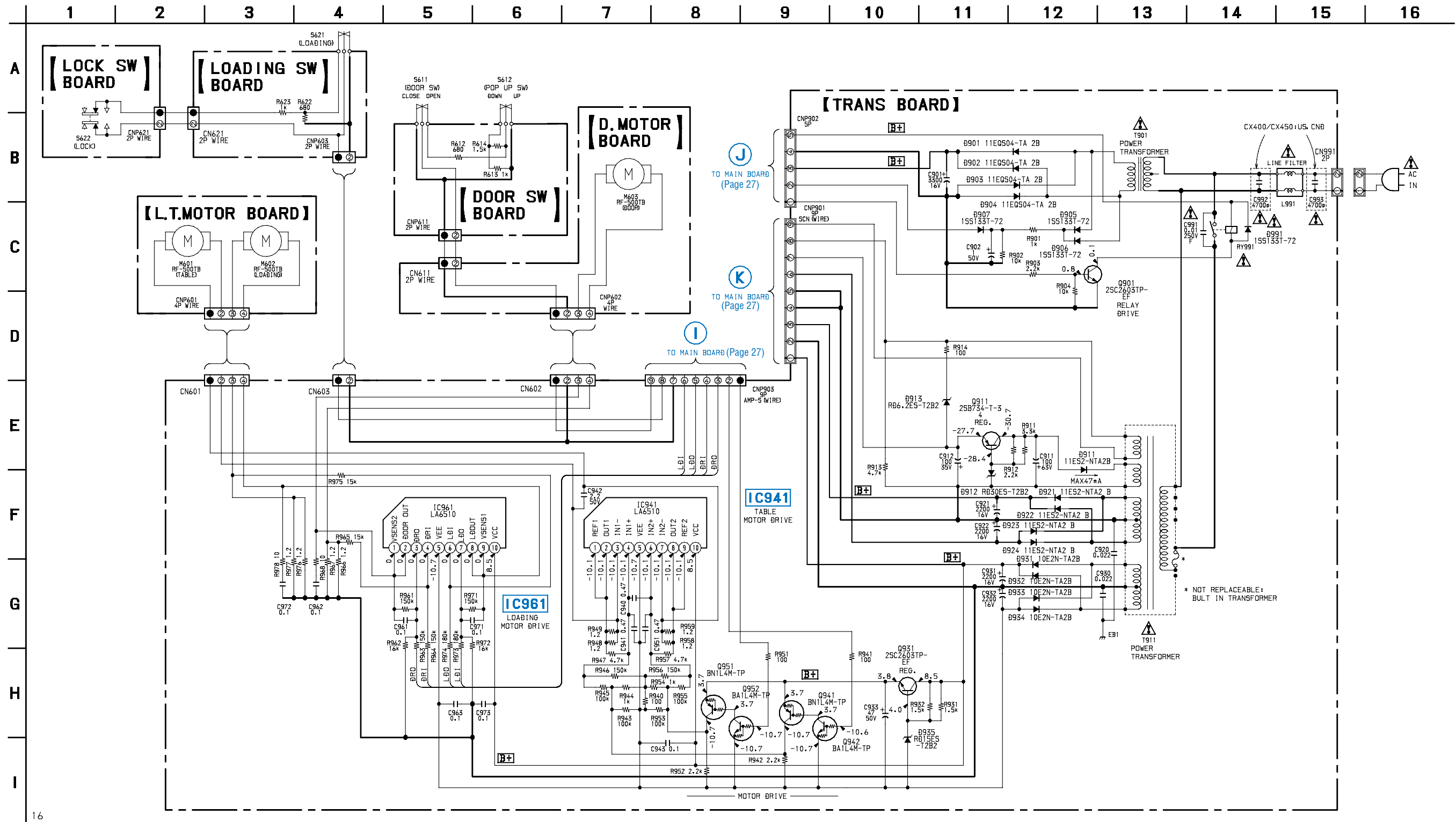


7-13. Printed Wiring Board – JOG Section –  
• See page 20 for Circuit Boards Location.

• Semiconductor  
Location

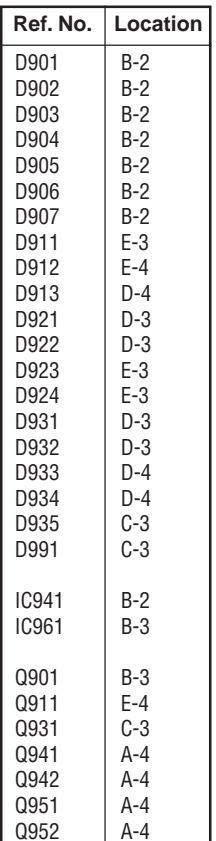
Ref. No.	Location
D711	D-4
D712	E-5
D715	A-4
IC704	B-4





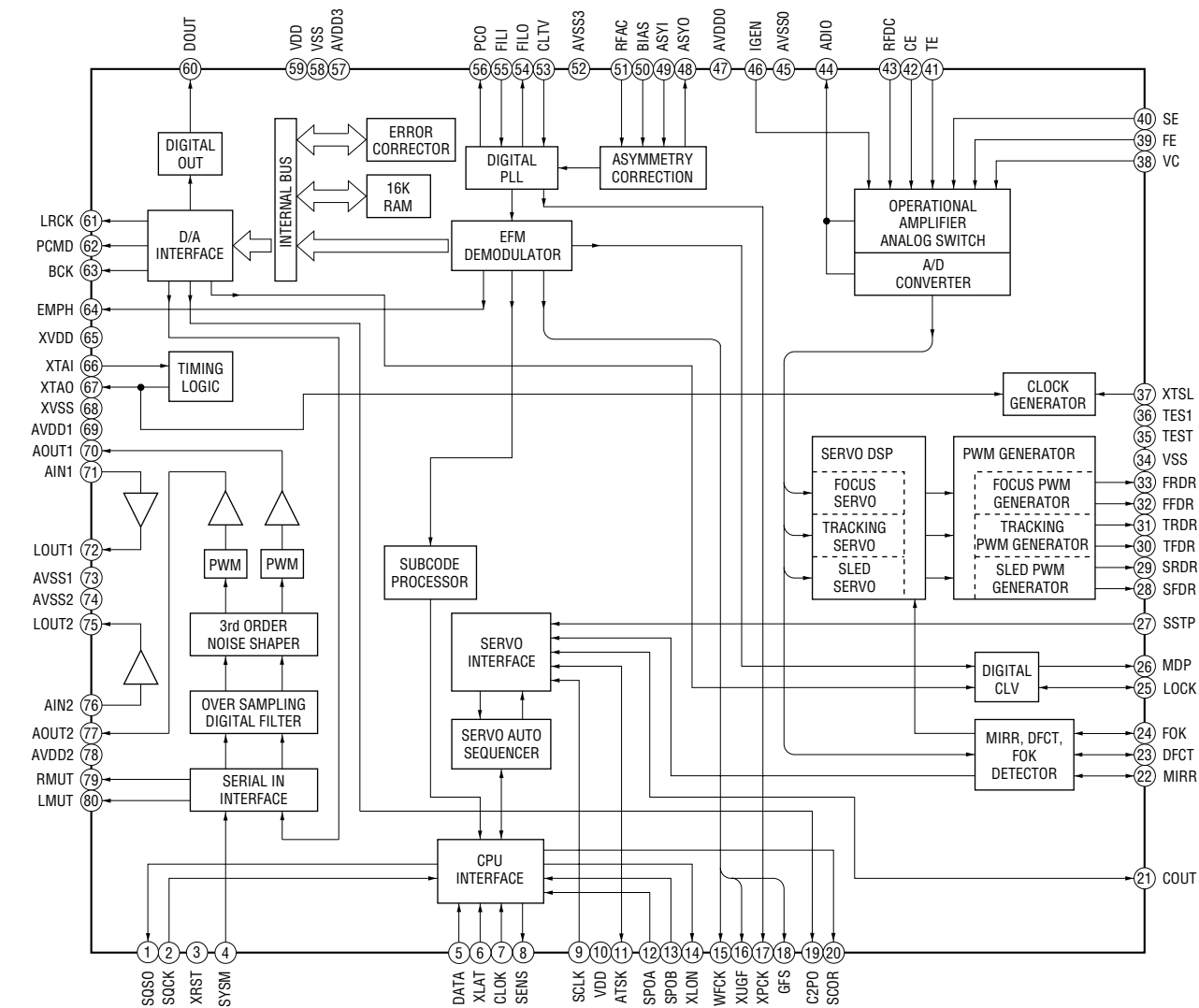
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

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

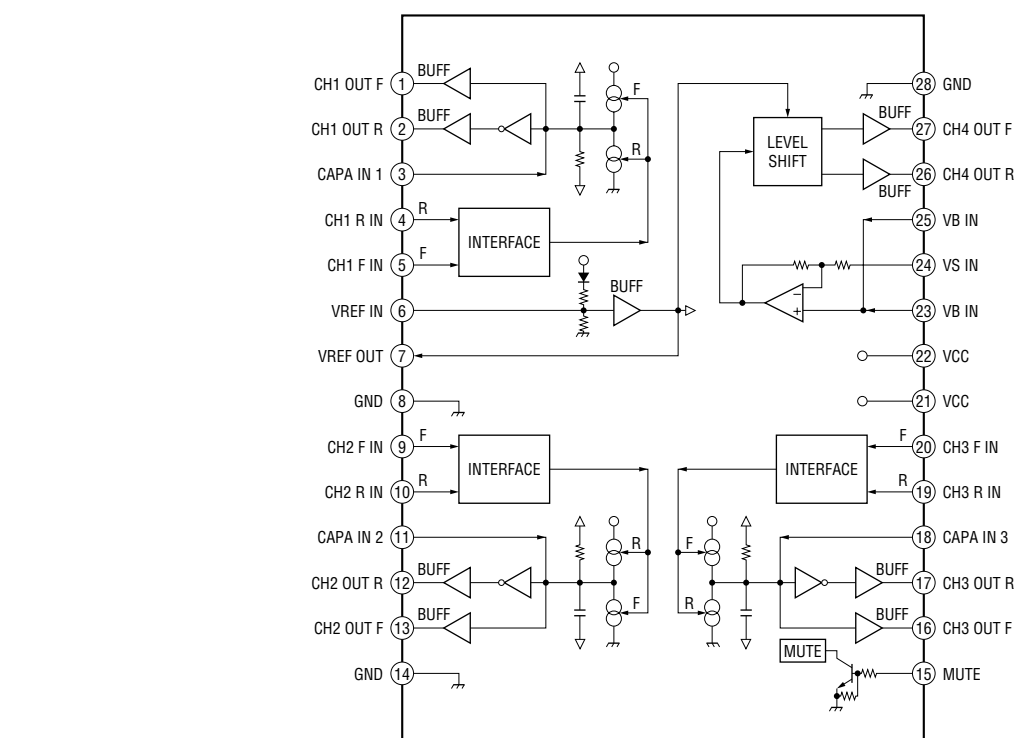


## 7-16. IC BLOCK DIAGRAMS

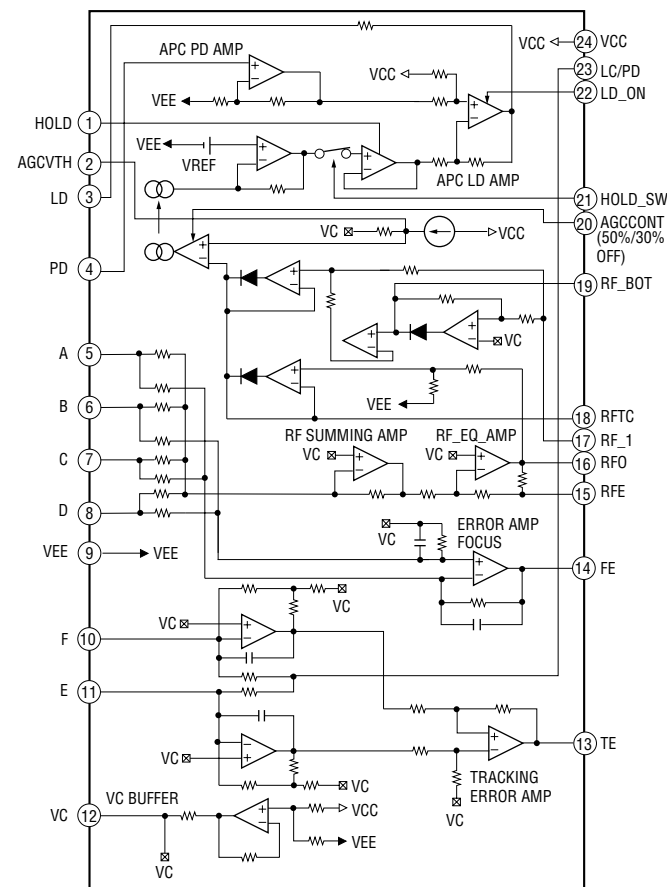
## IC101 CXD2587Q (BD BOARD)



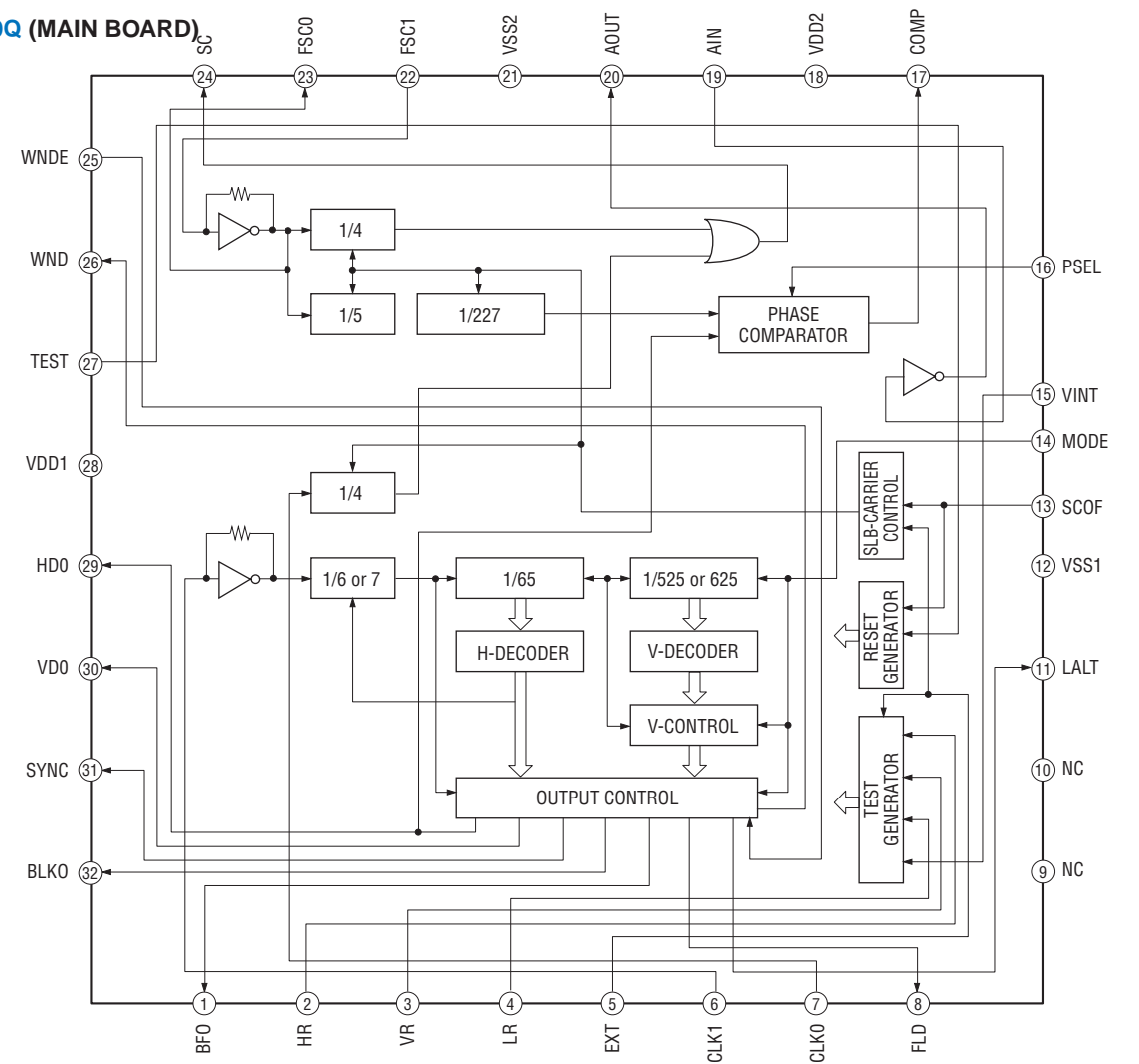
### IC102 BA6392FP-E2 (BD BOARD)



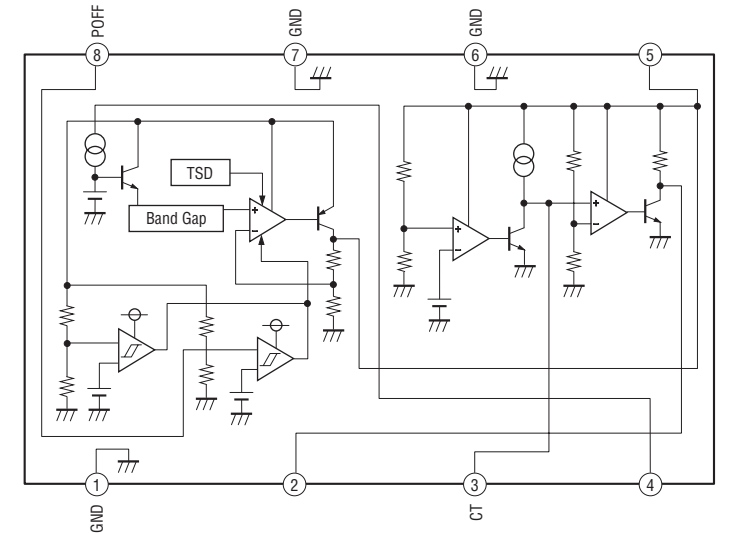
**IC103 CXA2568M-T6 (BD BOARD)**



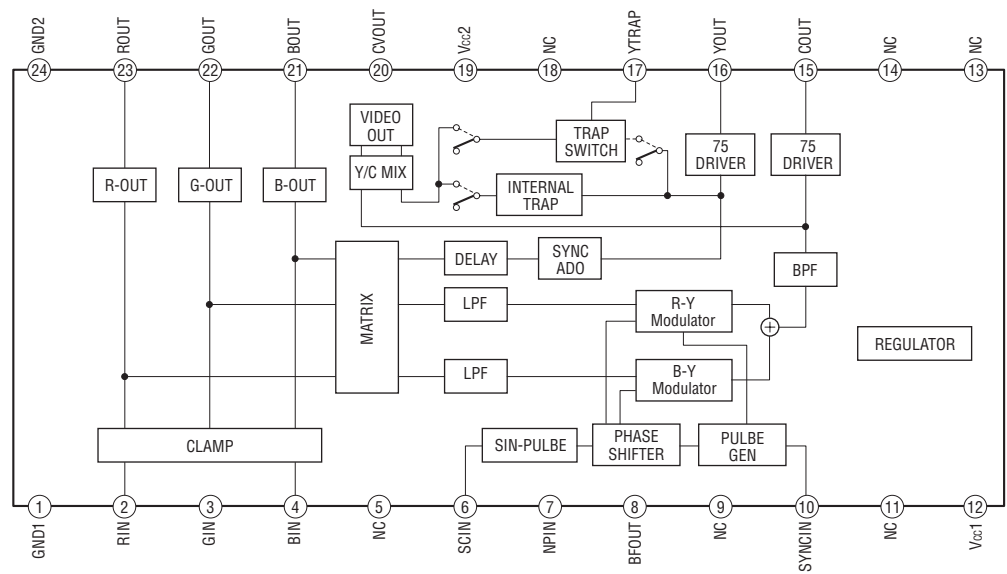
**IC804 CXD1159Q (MAIN BOARD)**



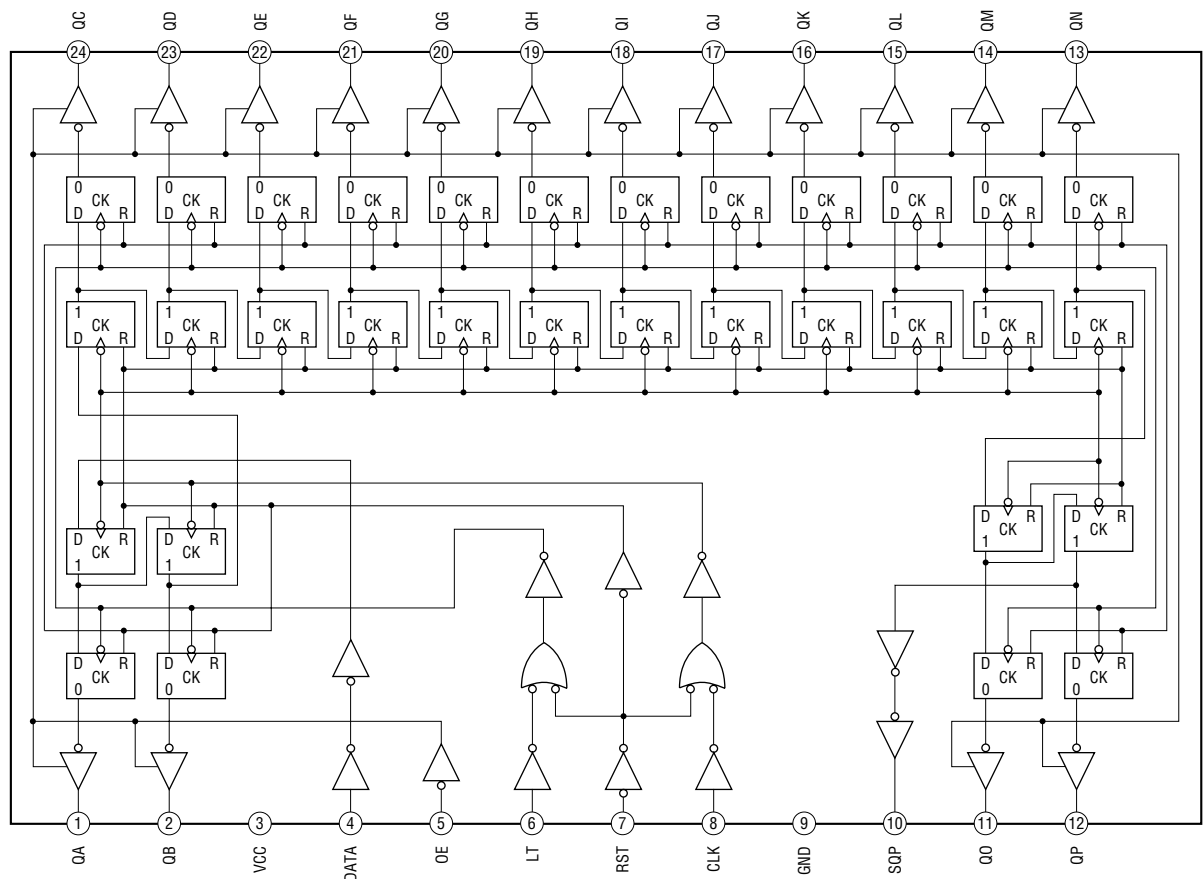
## IC931 BA3993F (MAIN BOARD)



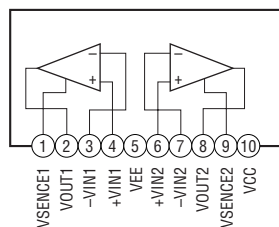
IC803 CXA2075M (MAIN BOARD)



IC702 M66310FP (DISP BOARD)



IC941, IC961 LA6510 (TRANS BOARD)



## 7-17. IC PIN FUNCTIONS

### • IC101 DIGITAL SIGNAL PROCESSOR (CXD2587Q) (BD board)

Pin No.	Pin Name	I/O	Function
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
15	WFKC	O	WFKC 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

- Abbreviation  
GFS : Guarded Frame Sync



Pin No.	Pin Name	I/O	Function
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
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry compare 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	—	
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 (M30620MC-407FP) (CX400) (MAIN board)
- IC501 SYSTEM CONTROL (M30622MGA-309FP) (CX450) (MAIN board)

Pin No.	Pin Name	I/O	Function
1	FLDATA	O	Data output to fluorescent indicator driver
2	FLCLK	O	Clock output to fluorescent indicator driver
3	RM_IN	I	SIRCS input
4	BUSOUT	O	Ctrl-A1 output
5	BUSIN	I	Ctrl-A1 input
6	LODOUT	O	Loading motor OUT direction signal
7	LODIN	O	Loading motor IN direction signal
8	GND	—	Data bus width selection input
9	GND	—	Chip operation mode selection
10	P_DOOR_OUT	O	Door motor "open" direction
11	P_DOOR_IN	O	Door motor "close" direction
12	RESET	I	Reset input
13	10MHz	I	Oscillator output
14	GND	—	Power supply input
15	10MHz	I	External oscillator is connected to this input.
16	Vcc	—	Power supply input
17	PULL-UP	I	Non-maskable interrupt port. Pulled-up.
18	ACIN	I	AC input
19	KBCIN	I	Keyboard clock input
20	SCOR	I	CXD2587 synchronous signal input
21	KBDOUT	O	Keyboard data output
22	KBDIN	I	Keyboard data input
23	KBCOUT	O	Keyboard clock output
24	ICSW	O	Terminal to supply power to peripheral ICs
25	LPH	O	CXD2587 LPH output
26	TBLR	O	Table motor clockwise direction
27	XLT	O	CXD2587 XLY output
28	TBLL	O	Table motor counterclockwise direction
29	SMUTE	O	2nd audio input, mute output
30	ICRESET	O	Peripheral IC reset output
31	DATA	O	CXD2587/OSD/DF data output
32	OPEN	—	Use is prohibited. Not used
33	CLK	O	CXD2587/OSD/DF clock output
34	AMUTE	O	CXD2587 mute output
35	OPEN	—	Not used.
36	SUBQ	I	Q data input port
37	SQCK	O	Q data read clock output
38	SENS	I	Sense input from CXD2587
39	TJOGB	I	AMS JOG input
40	TJOGA	I	AMS JOG input
41	TRE	I	OSD busy input (CX450)
42	SEL_ES	I	HiFi/ES select input
43	JOGA	I	Disc JOG input
44	OE	O	SRAM output enable
45	OPEN	—	Not used.
46	WE	O	SRAM write enable
47	PRGLT	O	Not used.
48	OSDLT	O	OSD latch output (CX450)
49	CS	O	SRAM CS output

Pin No.	Pin Name	I/O	Function
50	JOGB	O	Disc JOG input
51	LED	O	Internal illumination LED output
52	TOSHIBA_SIRCS	O	Bidirectional microprocessor 455 kHz output enable output (CX450)
53	TOSHIBA_RST	O	Bidirectional microprocessor reset output (C450)
54	TOSHIBA/CE	O	Bidirectional microprocessor bidirectional function ON/OFF(CX450)
55	OPEN	—	Not used.
56	A14	O	SRAM address output
57	A13	O	
58	A12	O	
59	A11	O	
60	A10	O	
61	A9	O	
62	Vcc	—	Power supply terminal
63	A8	O	
64	Vcc	—	SRAM address output
65	A7	O	
66	A6	O	
67	A5	O	
68	A4	O	
69	A3	O	
70	A2	O	
71	A1	O	
72	A0	O	
73	NTSC	I	OSD NTSC output (CX450)
74	TSENS4	I	Table sensor input
75	TSENS2	I	
76	TSENS3	I	
77	TSENS1	I	
78	DSOUT	I	Disc sensor read result output
79	HHOUT	O	OR output of TSENS1/2
80	LEDLT	O	LED driver latch output
81	D7	I	SRAM data
82	D6	I	
83	D5	I	
84	D4	I	
85	D3	I	
86	D2	I	
87	D1	I	
88	D0	I	
89	DOORSW	I	Door switch input (A/D)
90	SELECT	I	Selector (ADJ/AFADJ)
91	DSSENS	I	Disc sensor input (A/D)
92	LOADINGSW	I	Loading switch input (A/D)
93	STNBY_L	O	Standby LED output
94	KEY	I	Key input (A/D)
95	FLT2	O	Fluorescent indicator driver (M35500) latch output
96	Avss	—	Analog power supply input
97	FLT	O	Fluorescent indicator driver (MSM9202) latch output
98	Vref	I	Standard voltage input
99	Avss	I	Analog power supply input
100	FLDATA_I	—	Data input from fluorescent indicator driver (M35500)

## SECTION 8



### 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)

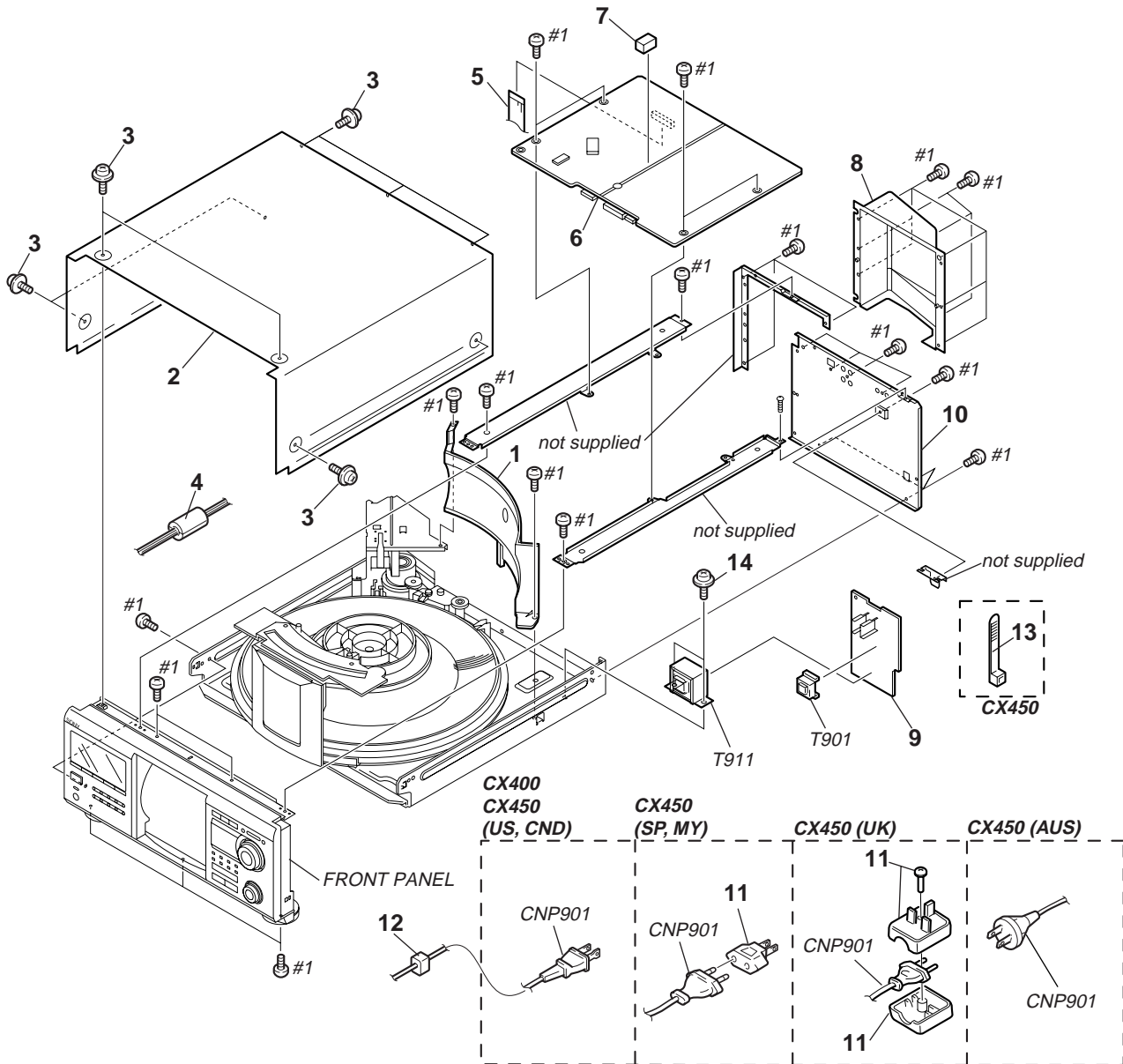
↑                      ↑  
Parts color   Cabinets color

- 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  
SP : Singapore model.  
MY : Malaysia model.

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

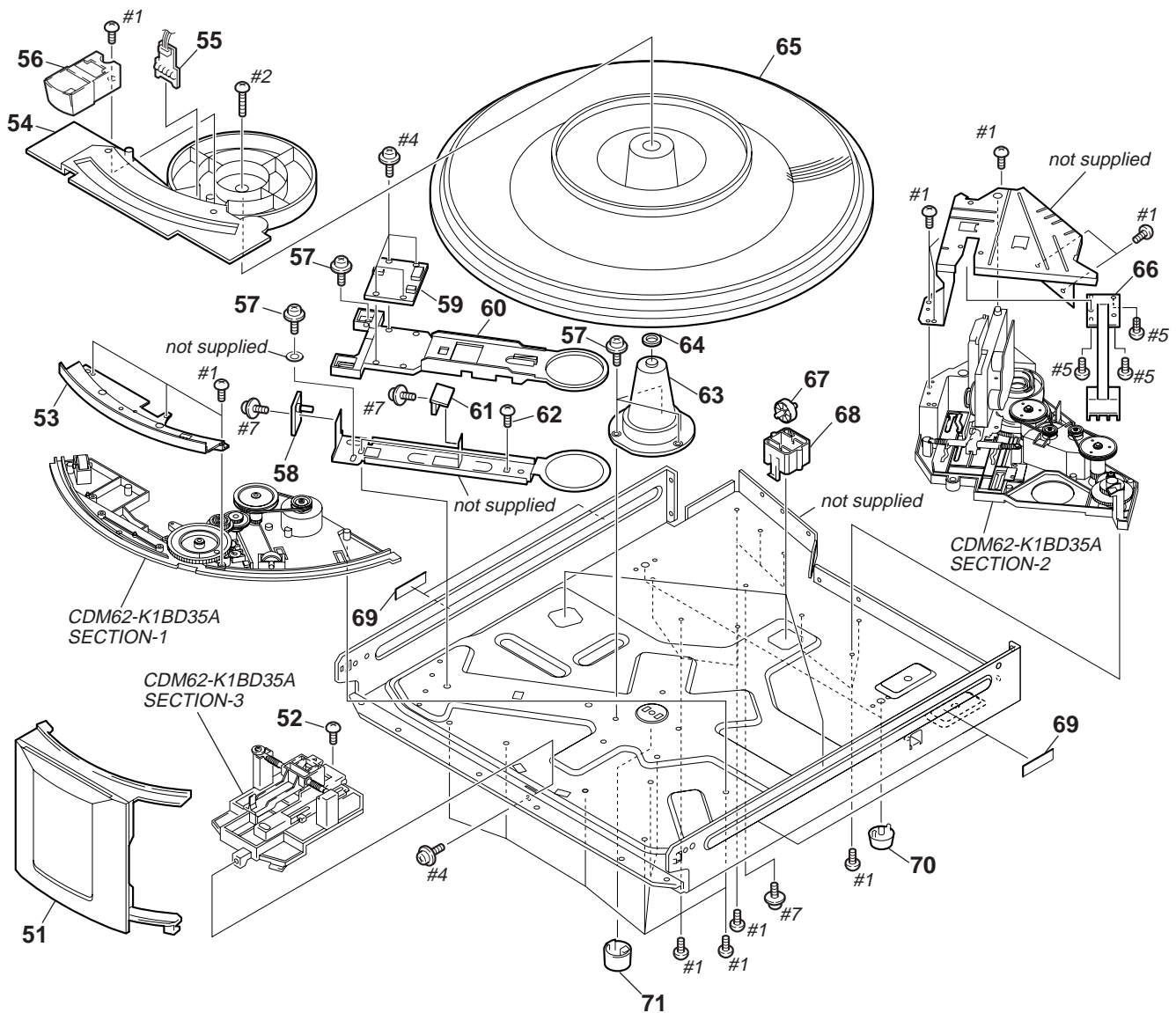
Les composants identifiés par une  
marque  sont critiques pour la  
sécurité.  
Ne les remplacer que par une  
pièce portant le numéro spécifié.

## 8-1. CASE SECTION



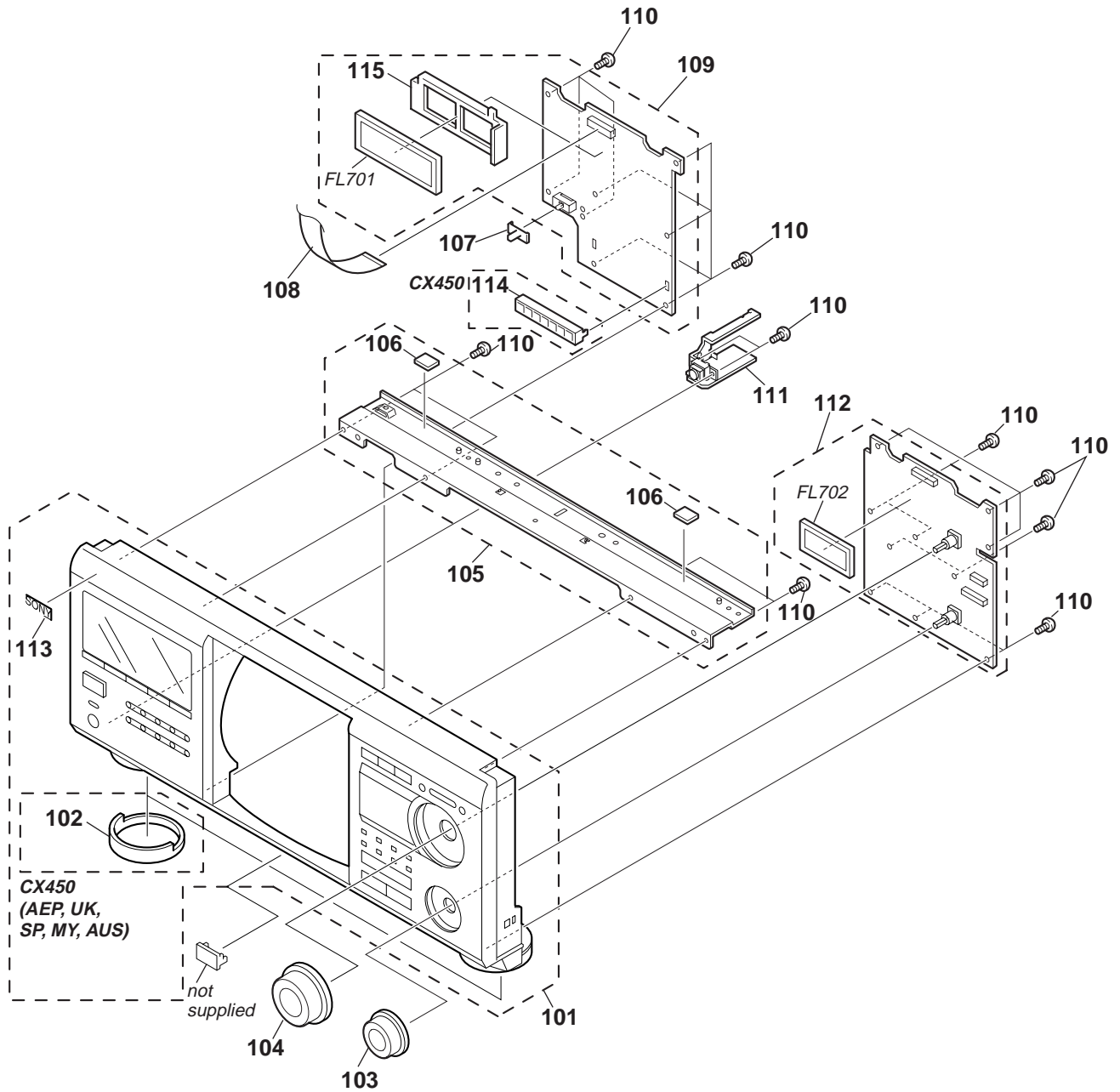
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	4-226-841-01	COVER(PT)		10	4-226-838-31	PANEL, BACK (CX450:CND)	
2	4-226-855-11	UPPER CASE		10	4-226-838-41	PANEL, BACK (CX450:AEP,UK)	
3	4-210-291-01	SCREW(CASE 3 TP2)		10	4-226-838-51	PANEL, BACK (CX450:AUS)	
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE)		10	4-226-838-61	PANEL, BACK (CX450:SP,MY)	
		(CX450:US,CND)					
5	1-792-466-11	WIRE(FLAT TYPE) (23 CORE)		11	1-569-008-21	ADAPTOR, CONVERSION (CX450:SP,MY)	
				11	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (CX450:UK)	
6	A-4725-033-A	MAIN BOARD, COMPLETE (CX450:US,CND)		* 12	3-703-244-00	BUSHING (2104), CORD	
6	A-4725-038-A	MAIN BOARD, COMPLETE		14	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
		(CX450:AEP,UK,SP,MY,AUS)		△ CNP901	1-696-845-11	CORD, POWER (CX450:AUS)	
6	A-4725-053-A	MAIN BOARD, COMPLETE (CX400)					
7	4-985-553-11	CUSHION		△ CNP901	1-777-071-31	CORD, POWER (CX450:AEP,UK,SP,MY)	
8	4-226-876-01	COVER(CDM)		△ CNP901	1-783-531-41	CORD, POWER (CX400/CX450:US,CND)	
				△ T901	1-433-666-11	TRANSFORMER, POWER (CX400/	
9	A-4725-034-A	TRANS BOARD, COMPLETE (CX450:AUS)				CX450:US,CND)	
9	A-4725-039-A	TRANS BOARD, COMPLETE		△ T901	1-433-668-11	TRANSFORMER, POWER	
		(CX450:AEP,UK,SP,MY)				(CX450:AEP,UK,SP,MY)	
9	A-4725-051-A	TRANS BOARD, COMPLETE (CX400/		△ T901	1-433-877-11	TRANSFORMER, POWER (CX450:AUS)	
		CX450:US,CND)					
10	4-226-838-01	PANEL, BACK (CX400:US)		△ T911	1-435-327-11	TRANSFORMER, POWER (CX400/	
10	4-226-838-11	PANEL, BACK (CX400:CND)				CX450:US,CND)	
10	4-226-838-21	PANEL, BACK (CX450:US)		△ T911	1-435-328-11	TRANSFORMER, POWER	
						(CX450:AEP,UK,SP,MY,AUS)	

## 8-2. CHASSIS SECTION



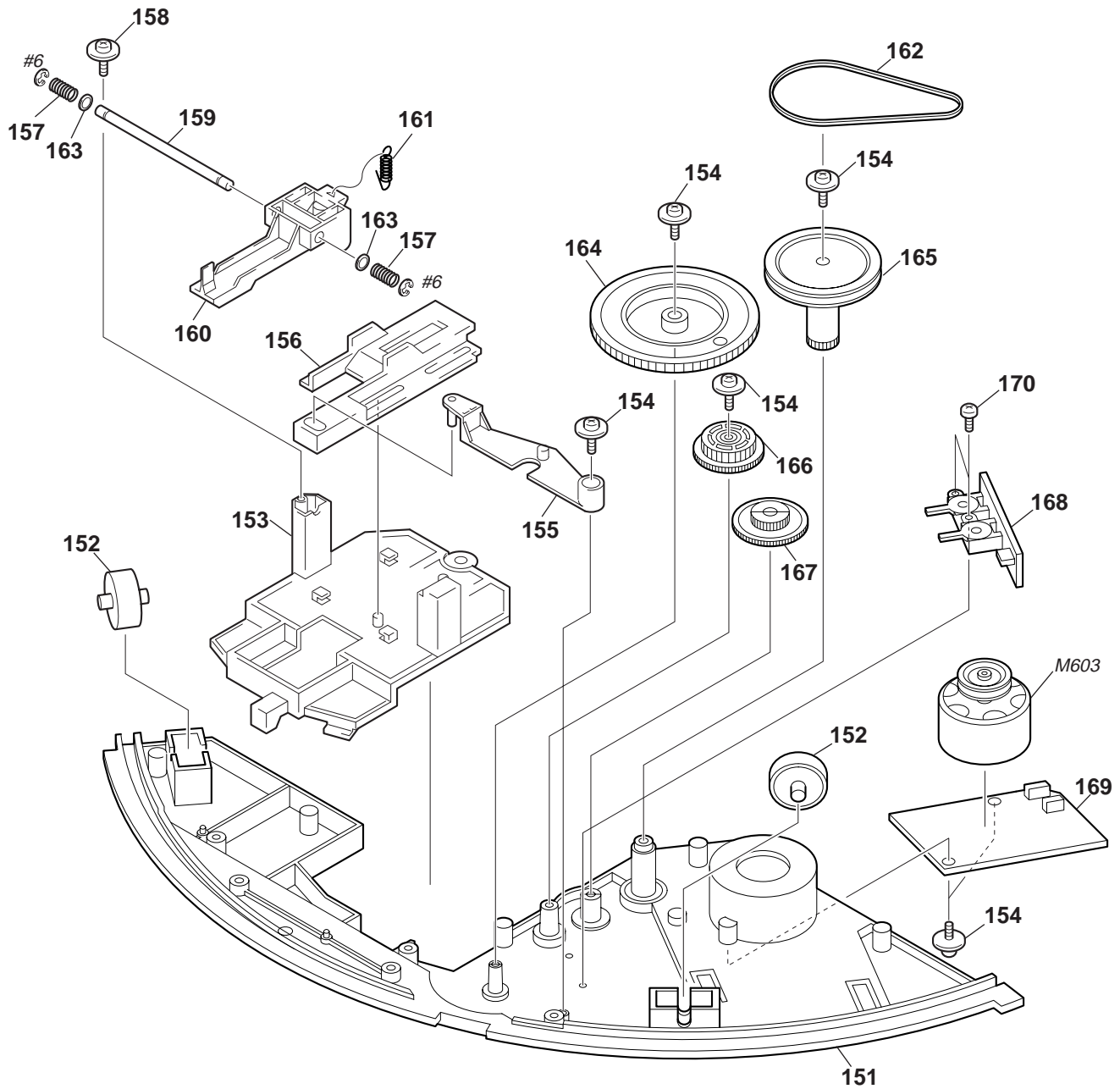
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4952-641-1	DOOR ASSY		61	1-676-833-11	D.SENS (IN) BOARD	
52	3-356-601-11	SCREW, STEP		62	4-216-096-01	SCREW (T1), STEP	
53	4-226-834-01	COVER (TABLE)		63	4-216-089-01	SHAFT (CENTER)	
54	4-226-833-01	GUIDE (DOOR)		64	3-701-447-21	WASHER, 10	
55	1-676-840-11	LED BOARD		65	X-4952-500-1	TABLE (400) ASSY	
56	4-215-968-01	WINDOW (INTERNAL ILLUMINATION)		66	4-216-088-02	GUIDE (DISC)	
57	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		67	4-216-093-01	ROLLER	
58	1-676-834-11	D.SENS (OUT) BOARD		68	4-216-092-02	HOLDER (ROLLER)	
59	1-676-828-11	T.SENS BOARD		* 69	3-378-400-01	CUSHION, SARANET	
60	4-225-873-01	HOLDER (TABLE SENSOR 400)		70	4-965-822-12	FOOT	
				71	4-931-169-01	FOOT	

### 8-3. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-4952-636-1	PANEL ASSY, FRONT (CX400)		109	A-4725-036-A	DISP BOARD, COMPLETE	
101	X-4952-637-1	PANEL ASSY, FRONT (CX450:US,CND)				(CX450:AEP,UK,SP,MY,AUS)	
101	X-4952-638-1	PANEL ASSY, FRONT		109	A-4725-049-A	DISP BOARD, COMPLETE (CX400)	
		(CX450:AEP,UK,SP,MY,AUS)		110	4-951-620-01	SCREW (2.6X8), +BVTP	
102	4-219-323-01	RING (DIA. 50-CX300)		111	1-676-832-11	KEY BOARD	
		(CX450:AEP,UK,SP,MY,AUS)		112	A-4725-030-A	JOG BOARD, COMPLETE (CX450:US,CND)	
103	4-226-847-01	KNOB (AMS)					
104	4-226-846-01	KNOB (DISC)		112	A-4725-035-A	JOG BOARD, COMPLETE	
105	X-4952-642-1	BRACKET (CASE) ASSY				(CX450:AEP,UK,SP,MY,AUS)	
106	4-985-553-21	CUSHION		112	A-4725-048-A	JOG BOARD, COMPLETE (CX400)	
107	3-917-216-21	KNOB (TIMER)		114	4-215-969-01	HOLDER (LED.RM) (CX450)	
108	1-792-465-11	WIRE (FLAT TYPE) (15 CORE)		* 115	4-929-709-31	GUIDE (FL TUBE)	
				FL701	1-517-959-11	INDICATOR TUBE, FLUORESCENT	
109	A-4725-031-A	DISP BOARD, COMPLETE (CX450:US,CND)		FL702	1-517-960-11	INDICATOR TUBE, FLUORESCENT	

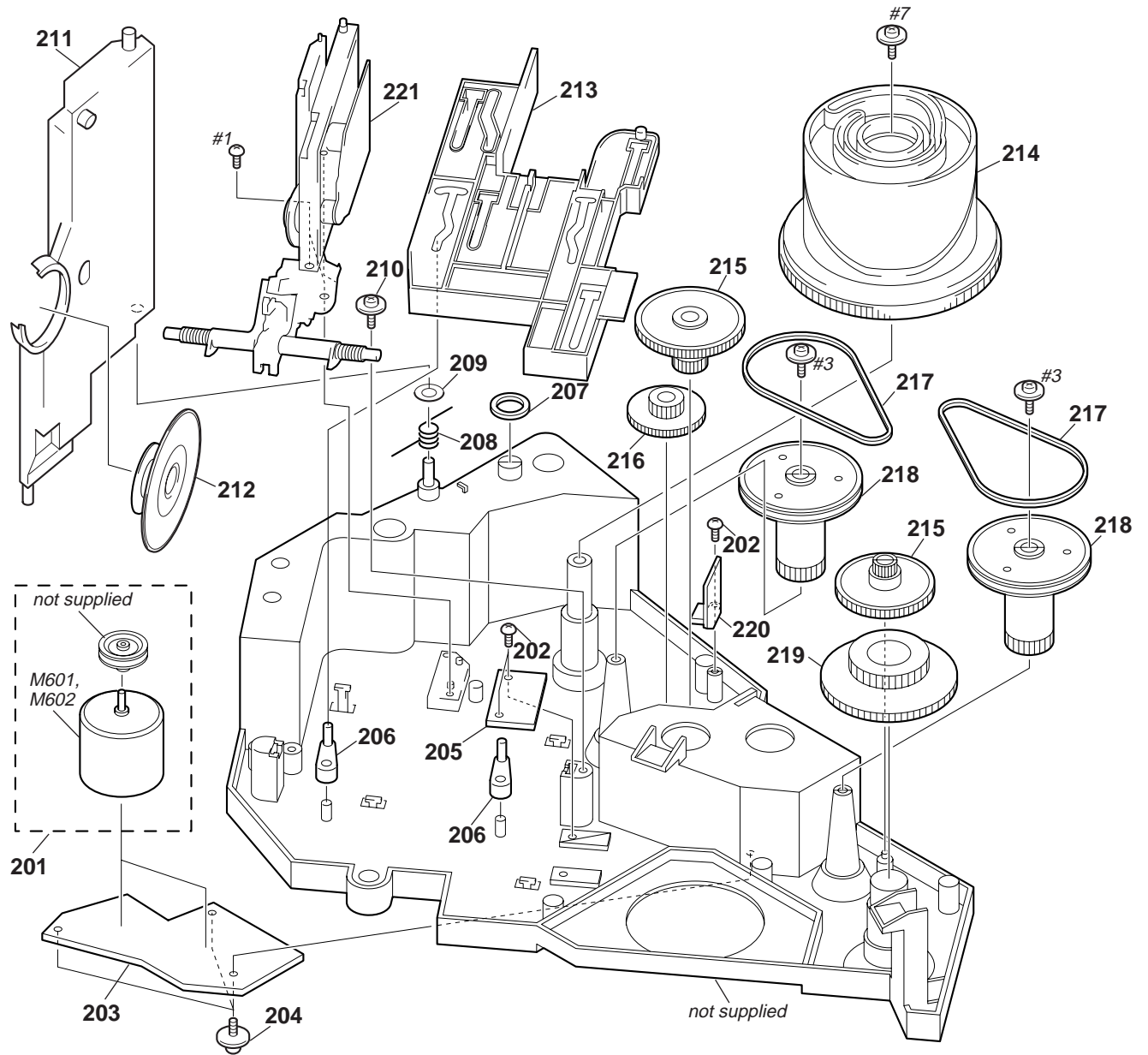
## 8-4. MECHANISM SECTION 1 (CDM62-K1BD35A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	4-226-827-01	BASE (DOOR DRIVING)		161	4-216-104-01	SPRING (POP-UP), TENSION	
152	4-216-093-01	ROLLER		162	4-219-326-01	BELT (DIA. 42X1.2)	
153	4-216-100-01	HOLDER (POP-UP)		163	3-701-441-21	WASHER	
154	4-933-134-11	SCREW (+PTPWH M2.6X8)		164	4-226-828-01	GEAR (CAM)	
155	4-226-832-01	LEVER (PU JOINT)		165	4-226-829-01	GEAR (PULLEY)	
156	4-216-099-01	SLIDER (POP-UP)		166	4-226-831-01	GEAR (B)	
157	4-216-103-01	SPRING (POP-UP), COMPRESSION		167	4-226-830-01	GEAR (A)	
158	4-998-716-01	SCREW, BU FITTING		168	1-676-838-11	DOOR SW BOARD	
159	4-216-102-01	SHAFT (POP-UP FULCRUM)		169	1-676-839-11	D.MOTOR BOARD	
160	4-228-352-01	LEVER (POP-UP 400)		170	4-951-620-01	SCREW (2.6X8), +BVTP	
				M603	1-541-632-11	MOTOR, DC (DOOR)	

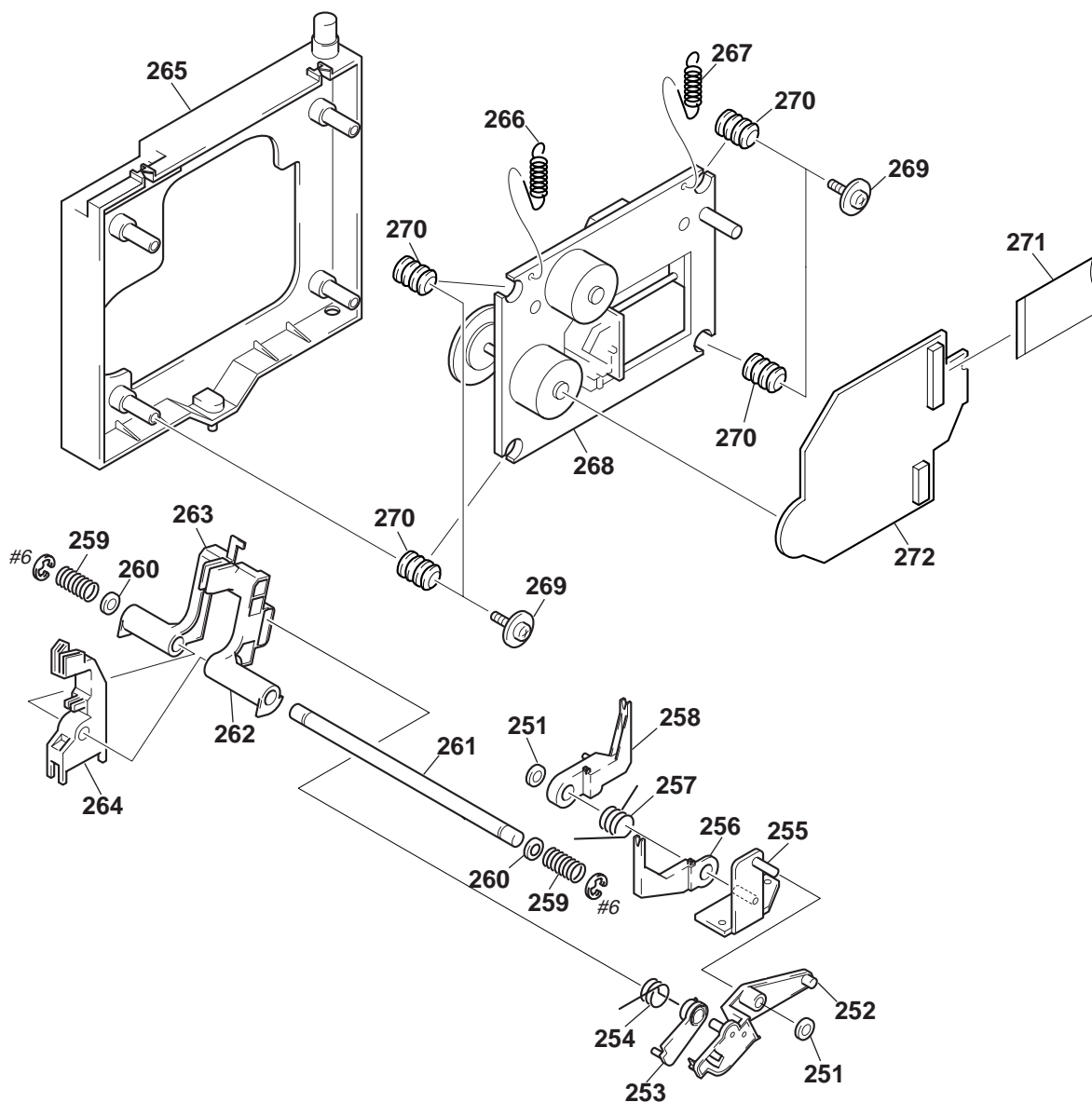


## 8-5. MECHANISM SECTION 2 (CDM62-K1BD35A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	A-4672-895-A	MOTOR (400) ASSY		213	4-225-865-01	SLIDER (400)	
202	4-951-620-01	SCREW (2.6X8), +BVTP		214	A-4672-676-B	CAMASSY	
203	1-676-837-11	L.T.MOTOR BOARD		215	4-216-058-01	GEAR (CENTER)	
204	4-933-134-11	SCREW (+PTPWH M2.6X8)		216	4-216-057-01	GEAR (CENTER 2)	
205	1-676-835-11	LOCK SW BOARD		217	4-225-876-01	BELT (400)	
206	X-4952-503-1	LEVER (FULCRUM 400) ASSY		218	4-225-870-01	PULLEY (400)	
207	3-701-446-21	WASHER, 8		219	4-225-869-01	GEAR (TABLE 400)	
208	4-216-081-01	SPRING (MG), TORSION		220	1-676-836-11	LOADING SW BOARD	
209	3-701-441-21	WASHER		221	X-4950-901-5	HOLDER ASSY, BU	
210	4-998-716-01	SCREW, BU FITTING		M601	1-541-309-11	MOTOR, L (RF-370C)(TABLE)	
211	4-216-082-01	HOLDER (MAGNET), TORSION		M602	1-541-309-11	MOTOR, L (RF-370C)(LOADING)	
212	A-4672-768-A	MAGNET ASSY					

## 8-6. MECHANISM SECTION 3 (CDM62-K1BD35A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	3-325-697-21	WASHER		262	X-4952-502-1	HOLDER (DISC R400) ASSY	
252	4-216-078-01	LEVER (LOADING)		263	X-4952-501-1	HOLDER (DISC L400) ASSY	
253	4-216-079-02	LIMITTER (LEVER)		264	X-4952-499-1	LEVER (LOCK 400) ASSY	
254	4-216-080-01	SPRING (LIMITTER), TORSION		265	X-4950-901-5	HOLDER ASSY, BU	
255	X-4950-900-1	BRACKET (LEVER) ASSY		266	4-216-085-01	SPRING (F-1), TENSION	
256	4-225-871-01	HOLDER (F400)		267	4-216-086-01	SPRING (F-2), TENSION	
257	4-216-077-01	SPRING (HOLDER FR), TORSION		△ 268	8-820-026-03	OPTICAL PICK-UP BLOCK KSM-213BFN	
258	4-216-076-01	HOLDER (R)		269	4-957-577-01	SCREW PTP WH (2.6X8) (DIA. 10)	
259	4-216-067-01	SPRING (CLAMP), COMPRESSION		* 270	4-992-054-01	RUBBER, VIBRATION PROOF	
260	3-701-441-21	WASHER		271	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
261	4-225-868-01	SHAFT (CLAMP 400)		* 272	A-4724-761-A	BD BOARD, COMPLETE	

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.

## BD

- SEMICONDUCTORS  
In each case,  $u: \mu$ , for example:  
 $uA...: \mu A...$ ,  $uPA...: \mu PA...$ ,  $uPB...: \mu PB...$ ,  
 $uPC...: \mu PC...$ ,  $uPD...: \mu PD...$
- CAPACITORS  
 $uF: \mu F$
- COILS  
 $uH: \mu H$
- Abbreviation  
CND : Canadian model  
AUS : Australian model  
SP : Singapore model.  
MY : Malaysia model.

49

Ref. No.	Part No.	Description			Remarks
R111	1-216-121-91	RES-CHIP	1M	5%	1/10W
R113	1-216-121-91	RES-CHIP	1M	5%	1/10W
R116	1-216-025-91	RES-CHIP	100	5%	1/10W
R117	1-216-049-91	RES-CHIP	1K	5%	1/10W
R119	1-216-043-91	RES-CHIP	560	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	RES-CHIP	100K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135	1-216-295-91	SHORT	0		
R136	1-216-295-91	SHORT	0		
R137	1-216-295-91	SHORT	0		
R138	1-216-295-91	SHORT	0		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	RES-CHIP	12	5%	1/10W
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-077-91	RES-CHIP	15K	5%	1/10W
R172	1-216-077-91	RES-CHIP	15K	5%	1/10W
R173	1-216-077-91	RES-CHIP	15K	5%	1/10W
R181	1-216-077-91	RES-CHIP	15K	5%	1/10W
R182	1-216-077-91	RES-CHIP	15K	5%	1/10W
R183	1-216-077-91	RES-CHIP	15K	5%	1/10W
R618	1-216-049-91	RES-CHIP	1K	5%	1/10W
<SWITCH>					
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN SW)			
<VIBRATOR>					
X101	1-767-408-21	VIBRATOR, CRYSTAL 16.9344MHz			
*****					
A-4725-049-A	DISP BOARD, COMPLETE (CX400)				
*****					
A-4725-031-A	DISP BOARD, COMPLETE (CX450:US,CND)				
*****					
A-4725-036-A	DISP BOARD, COMPLETE				
*****					
(CX450:AEP,UK,SP,MY,AUS)					
4-982-811-21	HOLDER(FL)				
< CAPACITOR >					
C591	1-126-924-11	ELECT	330uF	20.00%	6.3V (CX450)
C592	1-162-306-11	CERAMIC	0.01uF	20.00%	16V (CX450)
C593	1-126-924-11	ELECT	330uF	20.00%	6.3V (CX450)
C594	1-162-306-11	CERAMIC	0.01uF	20.00%	16V (CX450)
C595	1-126-924-11	ELECT	330uF	20.00%	6.3V (CX450)

Ref. No.	Part No.	Description	Remarks		
C596	1-162-306-11	CERAMIC	0.01uF	20.00%	16V (CX450)
C781	1-104-665-11	ELECT	100uF	20.00%	10V
C782	1-104-665-11	ELECT	100uF	20.00%	10V
C784	1-162-282-31	CERAMIC	100PF	10%	50V
C785	1-162-282-31	CERAMIC	100PF	10%	50V
C786	1-162-282-31	CERAMIC	100PF	10%	50V
C787	1-162-306-11	CERAMIC	0.01uF	20.00%	16V
C788	1-162-215-31	CERAMIC	47PF	5%	50V
C789	1-164-159-11	CERAMIC	0.1uF		50V
C791	1-162-288-31	CERAMIC	330PF	10%	50V
C792	1-162-294-31	CERAMIC	0.001uF	10%	50V
C793	1-164-159-11	CERAMIC	0.1uF		50V (CX450:AEP,UK,SP,MY,AUS)
< CONNECTOR >					
CNP502	1-784-776-11	CONNECTOR, FFC 15P			
< DIODE >					
D591	8-719-059-14	DIODE	SID313BP-TP19		(CX450)
D592	8-719-059-14	DIODE	SID313BP-TP19		(CX450)
D593	8-719-911-19	DIODE	1SS133T-72		(CX450)
D594	8-719-059-14	DIODE	SID313BP-TP19		(CX450)
D595	8-719-911-19	DIODE	1SS133T-72		(CX450)
D596	8-719-059-14	DIODE	SID313BP-TP19		(CX450)
D597	8-719-059-14	DIODE	SID313BP-TP19		(CX450)
D598	8-719-911-19	DIODE	1SS133T-72		(CX450)
D701	8-719-046-39	DIODE	SEL5821A-TP15		
D702	8-719-046-39	DIODE	SEL5821A-TP15		
D703	8-719-046-39	DIODE	SEL5821A-TP15		
D704	8-719-046-39	DIODE	SEL5821A-TP15		
D705	8-719-046-39	DIODE	SEL5821A-TP15		
D706	8-719-046-39	DIODE	SEL5821A-TP15		
D707	8-719-046-39	DIODE	SEL5821A-TP15		
D708	8-719-046-39	DIODE	SEL5821A-TP15		
D709	8-719-046-39	DIODE	SEL5821A-TP15		
D710	8-719-046-44	DIODE	SEL5221S-TP15		
< FILTER >					
FL701	1-517-959-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC701	8-759-498-92	IC	MSM9202-03GS-K		
IC702	8-759-183-47	IC	M66310FP		
IC703	8-759-459-86	IC	NJL64H400A		
< TRANSISTOR >					
Q591	8-729-801-93	TRANSISTOR	2SD1387-34-TP		(CX450)
Q592	8-729-801-93	TRANSISTOR	2SD1387-34-TP		(CX450)
Q593	8-729-801-93	TRANSISTOR	2SD1387-34-TP		(CX450)
Q701	8-729-900-80	TRANSISTOR	BA1A4M-TP		

51

Ref. No.	Part No.	Description	Remarks		
C751	1-161-494-00	CERAMIC	0.022uF	25V	
C773	1-164-159-11	CERAMIC	0.1uF	50V	
C774	1-124-584-00	ELECT	100uF	20%	10V
C775	1-162-207-31	CERAMIC	22PF	5%	50V
C776	1-164-159-11	CERAMIC	0.1uF	50V	
C777	1-162-282-31	CERAMIC	100PF	10%	50V
C778	1-164-159-11	CERAMIC	0.1uF	50V	
C779	1-164-159-11	CERAMIC	0.1uF	50V	
(CX450:AEP,UK,SP,MY,AUS)					
< DIODE >					
D711	8-719-046-41	DIODE	SEL5521C-TP15		
D712	8-719-046-39	DIODE	SEL5821A-TP15		
D715	8-719-046-41	DIODE	SEL5521C-TP15		
< FILTER >					
FL702	1-517-960-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC704	8-759-547-59	IC	M35500BGP		
< RESISTOR >					
R701	1-249-427-11	CARBON	6.8K	5%	1/4W F
R702	1-249-415-11	CARBON	680	5%	1/4W F
R703	1-249-417-11	CARBON	1K	5%	1/4W F
R704	1-249-419-11	CARBON	1.5K	5%	1/4W F
R705	1-249-421-11	CARBON	2.2K	5%	1/4W F
R706	1-247-843-11	CARBON	3.3K	5%	1/4W
R707	1-249-427-11	CARBON	6.8K	5%	1/4W F
R711	1-249-427-11	CARBON	6.8K	5%	1/4W F
R712	1-249-415-11	CARBON	680	5%	1/4W F
R713	1-249-417-11	CARBON	1K	5%	1/4W F
R714	1-249-419-11	CARBON	1.5K	5%	1/4W F
R721	1-249-427-11	CARBON	6.8K	5%	1/4W F
R722	1-249-415-11	CARBON	680	5%	1/4W F
R723	1-249-417-11	CARBON	1K	5%	1/4W F
R724	1-249-419-11	CARBON	1.5K	5%	1/4W F
R725	1-249-421-11	CARBON	2.2K	5%	1/4W F
R726	1-247-843-11	CARBON	3.3K	5%	1/4W
R727	1-249-427-11	CARBON	6.8K	5%	1/4W F
R731	1-249-427-11	CARBON	6.8K	5%	1/4W F
R741	1-249-427-11	CARBON	6.8K	5%	1/4W F
R751	1-249-427-11	CARBON	6.8K	5%	1/4W F
R771	1-247-807-31	CARBON	100	5%	1/4W
R772	1-249-407-11	CARBON	150	5%	1/4W F
R773	1-249-407-11	CARBON	150	5%	1/4W F
R774	1-247-807-31	CARBON	100	5%	1/4W
R775	1-247-807-31	CARBON	100	5%	1/4W
R794	1-247-807-31	CARBON	100	5%	1/4W
< ENCODER >					
RE701	1-475-543-11	ENCODER, ROTARY (DISC/CHARACTER)			
RE702	1-475-543-11	ENCODER, ROTARY (AMS)			

Ref. No.	Part No.	Description	Remarks		
< SWITCH >					
S701	1-771-349-21	SWITCH, KEYBOARD (OPEN/CLOSE)			
S702	1-771-349-21	SWITCH, KEYBOARD (EJECT)			
S703	1-771-349-21	SWITCH, KEYBOARD (EASY PLAY)			
S704	1-771-349-21	SWITCH, KEYBOARD (MENU/NO)			
S705	1-771-349-21	SWITCH, KEYBOARD (+100)			
S706	1-771-349-21	SWITCH, KEYBOARD (YES)			
S711	1-771-349-21	SWITCH, KEYBOARD (CHECK)			
S712	1-771-349-21	SWITCH, KEYBOARD (CLEAR)			
S713	1-771-349-21	SWITCH, KEYBOARD (NAME)			
S714	1-692-537-21	SWITCH, TACTILE (WITH LIGHT)(ARTIST MODE)			
S721	1-692-537-11	SWITCH, TACTILE (WITH LIGHT)(MEGA CONTROL)			
S722	1-771-349-21	SWITCH, KEYBOARD (NO DELAY)			
S723	1-771-349-21	SWITCH, KEYBOARD (X-FADE)			
S724	1-771-349-21	SWITCH, KEYBOARD (FADER)			
S725	1-771-349-21	SWITCH, KEYBOARD (PAUSE)			
S726	1-771-349-21	SWITCH, KEYBOARD (STOP)			
S767	1-771-349-21	SWITCH, KEYBOARD (PLAY)			
*****					
	1-676-832-11	KEY BOARD			
*****					
< CAPACITOR >					
C821	1-164-159-11	CERAMIC	0.1uF		50V
C822	1-164-159-11	CERAMIC	0.1uF		50V
C823	1-126-925-11	ELECT	470uF	20.00%	10V
< CONNECTOR >					
* CNP503	1-568-947-11	PIN, CONNECTOR 9P (CX450)			
* CNP503	1-568-944-11	PIN, CONNECTOR 6P (CX400)			
* CNP703	1-568-954-11	PIN, CONNECTOR 5P (CX450)			
< DIODE >					
D821	8-719-109-85	DIODE RD5.1ES-T2B2			
D822	8-719-109-85	DIODE RD5.1ES-T2B2			
D823	8-719-109-85	DIODE RD5.1ES-T2B2			
< JACK >					
J821	1-785-945-11	CONNECTOR, DIN (KEYBOARD)			
< COIL >					
L821	1-424-122-11	FILTER, NOISE			
L822	1-424-122-11	FILTER, NOISE			
L823	1-424-122-11	FILTER, NOISE			
L824	1-424-122-11	FILTER, NOISE			
< RESISTOR >					
R1	1-249-429-11	CARBON	10K	5%	1/4W (CX400)
*****					



LED

LOADING SW

LOCK SW

L.T.MOTOR

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	1-676-840-11	LED BOARD *****		C321	1-126-963-11	ELECT 4.7uF	20.00% 50V
*	4-976-473-01	HOLDER (LED-S)  < CAPACITOR >		C327	1-124-282-00	ELECT 22uF	20.00% 25V
C801	1-164-159-11	CERAMIC 0.1uF	50V	C328	1-162-290-31	CERAMIC 470PF	10% 50V
		< CONNECTOR >		C329	1-126-962-11	ELECT 3.3uF	20.00% 50V
CNP504	1-506-481-11	PIN, CONNECTOR 2P  < DIODE >		C401	1-126-965-11	ELECT 22uF	20.00% 50V
D801	8-719-072-81	DIODE SELU5E23C-STP15  < RESISTOR >		C404	1-126-965-11	ELECT 22uF	20.00% 50V
R801	1-249-401-11	CARBON 47 5% 1/4W F *****		C405	1-104-664-11	ELECT 47uF	20.00% 10V
	1-676-836-11	LOADING SW BOARD *****		C407	1-126-960-11	ELECT 1uF	20.00% 50V
R622	1-249-415-11	CARBON 680 5% 1/4W F		C410	1-164-159-11	CERAMIC 0.1uF	50V
R623	1-249-417-11	CARBON 1K 5% 1/4W F  < SWITCH >		C427	1-124-282-00	ELECT 22uF	20.00% 25V
S621	1-571-300-21	SWITCH, ROTARY (LOADING) *****		C428	1-162-290-31	CERAMIC 470PF	10% 50V
	1-676-835-11	LOCK SW BOARD *****		C503	1-161-494-00	CERAMIC 0.022uF	25V
S622	1-771-604-11	SWITCH, DETECTION (LOCK) *****		C504	1-104-665-11	ELECT 100uF	20.00% 10V
	1-676-837-11	L.T.MOTOR BOARD *****		C505	1-161-494-00	CERAMIC 0.022uF	25V
		< MOTOR >		C509	1-161-494-00	CERAMIC 0.022uF	25V
M601	A-4672-895-A	MOTOR (400) ASSY (TABLE)		C512	1-161-494-00	CERAMIC 0.022uF	25V
M602	A-4672-895-A	MOTOR (400) ASSY (LOADING) *****		C513	1-161-494-00	CERAMIC 0.022uF	25V
	A-4725-053-A	MAIN BOARD, COMPLETE (CX400) *****		C514	1-164-159-11	CERAMIC 0.1uF	50V
	A-4725-033-A	MAIN BOARD, COMPLETE (CX450:US,CND) *****		C516	1-164-159-11	CERAMIC 0.1uF	50V
	A-4725-038-A	MAIN BOARD, COMPLETE ***** (CX450:AEP,UK,SP,MY,AUS)		C517	1-164-159-11	CERAMIC 0.1uF	50V
*	4-363-146-21	HEATSINK, V.OUT (CX450)		C518	1-164-159-11	CERAMIC 0.1uF	50V
	7-685-871-01	SCREW+BVTT 3X6 (S)  < CAPACITOR >		C519	1-104-665-11	ELECT 100uF	20.00% 10V
C301	1-126-965-11	ELECT 22uF	20.00% 50V	C520	1-110-489-11	CAPACITOR 1F	5.5V
C304	1-126-965-11	ELECT 22uF	20.00% 50V	C521	1-164-159-11	CERAMIC 0.1uF	50V
C305	1-104-664-11	ELECT 47uF	20.00% 10V	C533	1-164-159-11	CERAMIC 0.1uF	50V
C307	1-126-960-11	ELECT 1uF	20.00% 50V	C535	1-104-665-11	ELECT 100uF	20.00% 10V
C310	1-164-159-11	CERAMIC 0.1uF	50V	C572	1-104-665-11	ELECT 100uF	20.00% 10V
				C581	1-164-159-11	CERAMIC 0.1uF	50V (CX450)
				C582	1-104-665-11	ELECT 100uF	20.00% 10V (CX450)
				C591	1-126-382-11	ELECT 100uF	20.00% 10V
				C592	1-104-665-11	ELECT 100uF	20.00% 10V
				C594	1-126-382-11	ELECT 100uF	20.00% 10V
				C801	1-131-341-00	TANTALUM 0.1uF	10% 35V (CX450)
				C802	1-131-341-00	TANTALUM 0.1uF	10% 35V (CX450)
				C803	1-131-341-00	TANTALUM 0.1uF	10% 35V (CX450)
				C804	1-102-942-00	CERAMIC 5.0PF	+0.5PF 50V (CX450)
				C805	1-164-159-11	CERAMIC 0.1uF	50V (CX450)
				C806	1-104-665-11	ELECT 100uF	20.00% 10V (CX450)
				C807	1-162-215-31	CERAMIC 47PF	5% 50V (CX450)
				C811	1-104-665-11	ELECT 100uF	20.00% 10V (CX450)
				C812	1-164-159-11	CERAMIC 0.1uF	50V (CX450)
				C814	1-162-205-31	CERAMIC 18PF	5% 50V (CX450:AEP,UK,SP,MY,AUS)
				C814	1-162-209-31	CERAMIC 27PF	5.00% 50V (CX450:US,CND)
				C815	1-164-159-11	CERAMIC 0.1uF	50V (CX450)
				C817	1-126-926-11	ELECT 1000uF	20.00% 10V (CX450)



## MAIN

Ref. No.	Part No.	Description	Remarks		Ref. No.	Part No.	Description	Remarks	
C818	1-104-665-11	ELECT	100uF	20.00% 10V (CX450)	C951	1-164-159-11	CERAMIC	0.1uF	50V
C819	1-164-159-11	CERAMIC	0.1uF	50V (CX450)	C952	1-164-159-11	CERAMIC	0.1uF	50V
C820	1-164-159-11	CERAMIC	0.1uF	50V (CX450)	C953	1-104-664-11	ELECT	47uF	20.00% 16V
C822	1-162-294-31	CERAMIC	0.001uF	10% 50V (CX450)	C954	1-164-159-11	CERAMIC	0.1uF	50V
C823	1-164-159-11	CERAMIC	0.1uF	50V (CX450)	C980	1-126-925-11	ELECT	470uF	20.00% 10V (CX450)
C824	1-104-665-11	ELECT	100uF	20.00% 10V (CX450)	< CONNECTOR >				
C825	1-164-159-11	CERAMIC	0.1uF	50V (CX450)	* CN501	1-568-839-11	SOCKET, CONNECTOR 23P		
C827	1-136-177-00	MYLAR	1uF	5.00% 50V (CX450)	CN502	1-784-737-11	CONNECTOR, FFC 15P		
C828	1-102-959-91	CERAMIC	22PF	5.00% 50V (CX450:AEP,UK,SP,MY,AUS)	* CN503	1-568-944-11	PIN, CONNECTOR 6P (CX400)		
C828	1-102-965-00	CERAMIC	39PF	5% 50V (CX450:US,CND)	CN503	1-568-947-41	PIN, CONNECTOR 9P (CX450)		
C829	1-141-318-11	CAP, TRIMMER	20PF	(CX450:US,CND)	* CN505	1-568-947-11	PIN, CONNECTOR 9P		
C830	1-102-947-00	CERAMIC	10PF	5% 50V (CX450:AEP,UK,SP,MY,AUS)	* CN506	1-568-943-11	PIN, CONNECTOR 5P		
C830	1-102-961-00	CERAMIC	27PF	5% 50V (CX450:US,CND)	* CN801	1-506-486-11	PIN, CONNECTOR 7P		
C831	1-104-665-11	ELECT	100uF	20.00% 10V (CX450)	* CN901	1-564-524-11	PLUG, CONNECTOR 9P		
C832	1-164-159-11	CERAMIC	0.1uF	50V (CX450)	* CN903	1-568-947-11	PIN, CONNECTOR 9P		
C833	1-104-665-11	ELECT	100uF	20.00% 10V (CX450)	< DIODE >				
C861	1-102-942-00	CERAMIC	5.0PF	+0.5PF 50V (CX450:AEP,UK,SP,MY,AUS)	D327	8-719-911-19	DIODE 1SS133T-72		
C862	1-141-354-21	CAP, TRIMMER	10PF	(CX450:AEP,UK,SP,MY,AUS)	D329	8-719-911-19	DIODE 1SS133T-72		
C863	1-162-294-31	CERAMIC	0.001uF	10% 50V (CX450:AEP,UK,SP,MY,AUS)	D501	8-719-911-19	DIODE 1SS133T-72		
C864	1-164-159-11	CERAMIC	0.1uF	50V (CX450:AEP,UK,SP,MY,AUS)	D521	8-719-911-19	DIODE 1SS133T-72		
C865	1-131-348-00	TANTALUM	1.5uF	10% 35V (CX450:AEP,UK,SP,MY,AUS)	D580	8-719-911-19	DIODE 1SS133T-72 (CX450)		
C866	1-102-958-00	CERAMIC	20PF	5.00% 50V (CX450:AEP,UK,SP,MY,AUS)	D941	8-719-109-93	DIODE RD6.2ES-T2B2		
C913	1-126-767-11	ELECT	1000uF	20.00% 16V	D942	8-719-110-53	DIODE RD20ES-T2B2		
C914	1-126-767-11	ELECT	1000uF	20.00% 16V	< FILTER >				
C915	1-126-933-11	ELECT	100uF	20.00% 16V	FL801	1-236-164-11	ENCAPSULATED COMPONENT (CX450)		
C917	1-126-925-11	ELECT	470uF	20.00% 10V	< IC >				
C923	1-126-767-11	ELECT	1000uF	20.00% 16V	IC302	8-749-015-59	IC BA4558-HT		
C925	1-126-933-11	ELECT	100uF	20.00% 16V	IC401	8-749-015-59	IC BA4558-HT		
C927	1-126-925-11	ELECT	470uF	20.00% 10V	IC402	8-749-015-59	IC BA4558-HT		
C928	1-126-925-11	ELECT	470uF	20.00% 10V	IC501	8-759-655-10	IC M30620MC-407FP (CX400)		
C933	1-126-933-11	ELECT	100uF	20.00% 16V	IC501	8-759-688-16	IC M30622MGA-309FP (CX450)		
C934	1-126-933-11	ELECT	100uF	20.00% 16V	IC502	8-759-666-99	IC TMP87C447U-1B23 (CX450)		
C935	1-104-665-11	ELECT	100uF	20.00% 10V	IC503	8-759-267-86	IC SN74HC00ANS (CX450)		
C936	1-126-962-11	ELECT	3.3uF	20.00% 50V	IC504	8-759-641-01	IC LC35256DM-70		
C938	1-126-925-11	ELECT	470uF	20.00% 10V	IC507	8-759-925-74	IC SN74HC04ANS		
C941	1-126-935-11	ELECT	470uF	20.00% 16V	IC802	8-759-665-94	IC MB90096PF-G-203-BND (CX450)		
C942	1-126-935-11	ELECT	470uF	20.00% 16V	IC803	8-752-080-00	IC CXA2075M (CX450)		
C943	1-126-948-11	ELECT	100uF	20.00% 35V	IC804	8-752-326-08	IC CXD1159Q (CX450)		
C944	1-126-948-11	ELECT	100uF	20.00% 35V	IC805	8-759-933-65	IC SN74LS244NS (CX450)		
C945	1-104-665-11	ELECT	100uF	20.00% 10V	IC901	8-749-921-12	IC GP1F32T		
					IC910	8-759-039-69	IC uPC7805AHF		
					IC920	8-759-605-00	IC TA7807S(LBSONY)		
					IC921	8-759-039-69	IC uPC7805AHF		
					IC930	8-759-173-39	IC NJU7201L50-T3		
					IC931	8-759-658-02	IC BA3993F		
					IC980	8-759-039-69	IC uPC7805AHF (CX450)		
					< JACK >				
					J801	1-774-227-11	JACK, PIN 1P (VIDEO)(CX450)		
					* J901	1-764-188-11	JACK (SMALL TYPE) (DIA. 3.5) (CONTOROL		A1II)
					* J902	1-764-188-11	JACK (SMALL TYPE) (DIA. 3.5)		
					J903	1-794-012-11	JACK, PIN 4P (2ND CD/ANALOG)		

Ref. No.	Part No.	Description	Remarks				Ref. No.	Part No.	Description	Remarks			
< COIL >							R327	1-249-441-11	CARBON	100K	5%	1/4W	
							R328	1-249-441-11	CARBON	100K	5%	1/4W	
L501	1-410-396-41	INDUCTOR	0.45uH				R329	1-249-441-11	CARBON	100K	5%	1/4W	
L801	1-408-613-31	INDUCTOR	68uH (CX450)				R339	1-215-485-00	METAL	470K	1%	1/4W	
L804	1-410-396-41	INDUCTOR	0.45uH (CX450)				R340	1-215-405-00	METAL	220	1%	1/4W	
L807	1-410-396-41	INDUCTOR	0.45uH (CX450)										
L813	1-410-503-11	INDUCTOR	3.3uH (CX450)				R401	1-215-453-00	METAL	22K	1%	1/4W	
							R402	1-215-425-00	METAL	1.5K	1%	1/4W	
L921	1-410-396-41	INDUCTOR	0.45uH				R403	1-215-425-00	METAL	1.5K	1%	1/4W	
L950	1-410-503-11	INDUCTOR	3.3uH				R404	1-215-445-00	METAL	10K	1%	1/4W	
< TRANSISTOR >							R405	1-215-443-00	METAL	8.2K	1%	1/4W	
							R406	1-215-485-00	METAL	470K	1%	1/4W	
Q322	8-729-141-26	TRANSISTOR	2SC3622ATP-LK				R407	1-215-445-00	METAL	10K	1%	1/4W	
Q323	8-729-141-26	TRANSISTOR	2SC3622ATP-LK				R409	1-215-417-00	METAL	680	1%	1/4W	
Q324	8-729-141-26	TRANSISTOR	2SC3622ATP-LK				R410	1-215-445-00	METAL	10K	1%	1/4W	
Q325	8-729-900-65	TRANSISTOR	BN1L4M-TP				R411	1-215-445-00	METAL	10K	1%	1/4W	
Q327	8-729-900-65	TRANSISTOR	BN1L4M-TP										
							R412	1-215-445-00	METAL	10K	1%	1/4W	
Q328	8-729-900-65	TRANSISTOR	BN1L4M-TP				R413	1-215-477-00	METAL	220K	1%	1/4W	
Q329	8-729-900-65	TRANSISTOR	BN1L4M-TP				R414	1-215-405-00	METAL	220	1%	1/4W	
Q422	8-729-141-26	TRANSISTOR	2SC3622ATP-LK				R415	1-215-405-00	METAL	220	1%	1/4W	
Q423	8-729-141-26	TRANSISTOR	2SC3622ATP-LK				R417	1-215-443-00	METAL	8.2K	1%	1/4W	
Q424	8-729-141-26	TRANSISTOR	2SC3622ATP-LK										
							R422	1-249-421-11	CARBON	2.2K	5%	1/4W	F
Q425	8-729-900-65	TRANSISTOR	BN1L4M-TP				R423	1-249-421-11	CARBON	2.2K	5%	1/4W	F
Q521	8-729-030-08	TRANSISTOR	DTC144VSA-TP				R424	1-249-421-11	CARBON	2.2K	5%	1/4W	F
Q552	8-729-900-65	TRANSISTOR	BN1L4M-TP				R425	1-249-441-11	CARBON	100K	5%	1/4W	
Q562	8-729-900-65	TRANSISTOR	BN1L4M-TP				R426	1-247-807-31	CARBON	100	5%	1/4W	
Q570	8-729-900-80	TRANSISTOR	BA1A4M-TP										
							R439	1-215-485-00	METAL	470K	1%	1/4W	
Q571	8-729-900-80	TRANSISTOR	BA1A4M-TP				R440	1-215-405-00	METAL	220	1%	1/4W	
Q572	8-729-900-80	TRANSISTOR	BA1A4M-TP				R503	1-249-441-11	CARBON	100K	5%	1/4W	
Q576	8-729-422-57	TRANSISTOR	BN1A4M-TP				R504	1-249-429-11	CARBON	10K	5%	1/4W	
Q580	8-729-900-80	TRANSISTOR	BA1A4M-TP (CX450)				R508	1-249-427-11	CARBON	6.8K	5%	1/4W	F
Q581	8-729-620-05	TRANSISTOR	2SC2603TP-EF (CX450)										
							R509	1-249-427-11	CARBON	6.8K	5%	1/4W	F
Q861	8-729-194-57	TRANSISTOR	2SC945TP-QP (CX450:AEP,UK,SP,MY,AUS)				R510	1-247-807-31	CARBON	100	5%	1/4W	
							R511	1-249-427-11	CARBON	6.8K	5%	1/4W	F
Q941	8-729-140-97	TRANSISTOR	2SB734-T-34				R512	1-249-429-11	CARBON	10K	5%	1/4W	
Q950	8-729-620-05	TRANSISTOR	2SC2603TP-EF				R513	1-249-429-11	CARBON	10K	5%	1/4W	
< RESISTOR >							R514	1-249-427-11	CARBON	6.8K	5%	1/4W	F
							R515	1-249-415-11	CARBON	680	5%	1/4W	F
R301	1-215-453-00	METAL	22K	1%	1/4W		R517	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R302	1-215-425-00	METAL	1.5K	1%	1/4W		R518	1-249-437-11	CARBON	47K	5%	1/4W	
R303	1-215-425-00	METAL	1.5K	1%	1/4W		R519	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R304	1-215-445-00	METAL	10K	1%	1/4W								
R305	1-215-443-00	METAL	8.2K	1%	1/4W		R520	1-249-429-11	CARBON	10K	5%	1/4W	
							R521	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-215-485-00	METAL	470K	1%	1/4W		R522	1-249-403-11	CARBON	68	5%	1/4W	F
R307	1-215-445-00	METAL	10K	1%	1/4W		R523	1-249-403-11	CARBON	68	5%	1/4W	F
R309	1-215-417-00	METAL	680	1%	1/4W		R524	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-215-445-00	METAL	10K	1%	1/4W								
R311	1-215-445-00	METAL	10K	1%	1/4W		R525	1-249-429-11	CARBON	10K	5%	1/4W	
							R526	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-215-445-00	METAL	10K	1%	1/4W		R527	1-249-429-11	CARBON	10K	5%	1/4W	
R313	1-215-477-00	METAL	220K	1%	1/4W		R528	1-249-429-11	CARBON	10K	5%	1/4W	
R314	1-215-405-00	METAL	220	1%	1/4W		R529	1-249-429-11	CARBON	10K	5%	1/4W	
R315	1-215-405-00	METAL	220	1%	1/4W								
R317	1-215-443-00	METAL	8.2K	1%	1/4W		R530	1-249-429-11	CARBON	10K	5%	1/4W	
							R531	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R532	1-249-417-11	CARBON	1K	5%	1/4W	F
R323	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R533	1-249-417-11	CARBON	1K	5%	1/4W	F
R324	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R534	1-249-429-11	CARBON	10K	5%	1/4W	
R325	1-249-441-11	CARBON	100K	5%	1/4W								
R326	1-247-807-31	CARBON	100	5%	1/4W								

## MAIN

## TRANS

Ref. No.	Part No.	Description			Remarks
R535	1-249-429-11	CARBON	10K	5%	1/4W
R570	1-249-425-11	CARBON	4.7K	5%	1/4W F
R571	1-249-425-11	CARBON	4.7K	5%	1/4W F
R580	1-249-429-11	CARBON	10K	5%	1/4W (CX450)
R582	1-249-429-11	CARBON	10K	5%	1/4W (CX450)
R583	1-249-425-11	CARBON	4.7K	5%	1/4W F (CX450)
R584	1-249-437-11	CARBON	47K	5%	1/4W (CX450)
R585	1-249-429-11	CARBON	10K	5%	1/4W (CX450)
R591	1-249-425-11	CARBON	4.7K	5%	1/4W F
R592	1-247-807-31	CARBON	100	5%	1/4W
R593	1-247-807-31	CARBON	100	5%	1/4W
R595	1-247-807-31	CARBON	100	5%	1/4W
R801	1-215-433-00	METAL	3.3K	1%	1/4W (CX450)
R802	1-215-431-00	METAL	2.7K	1%	1/4W (CX450)
R803	1-215-433-00	METAL	3.3K	1%	1/4W (CX450)
R804	1-215-431-00	METAL	2.7K	1%	1/4W (CX450)
R805	1-215-433-00	METAL	3.3K	1%	1/4W (CX450)
R806	1-215-431-00	METAL	2.7K	1%	1/4W (CX450)
R807	1-215-414-00	METAL	510	1%	1/4W (CX450)
R808	1-215-414-00	METAL	510	1%	1/4W (CX450)
R809	1-215-414-00	METAL	510	1%	1/4W (CX450)
R810	1-215-429-00	METAL	2.2K	1%	1/4W (CX450)
R811	1-215-429-00	METAL	2.2K	1%	1/4W (CX450)
R812	1-215-445-00	METAL	10K	1%	1/4W (CX450)
R813	1-215-401-11	METAL	150	1%	1/4W (CX450)
R815	1-215-394-00	METAL	75	1%	1/4W (CX450)
R816	1-215-445-00	METAL	10K	1%	1/4W (CX450)
R817	1-215-397-00	METAL	100	1%	1/4W (CX450)
R818	1-215-397-00	METAL	100	1%	1/4W (CX450)
R819	1-215-397-00	METAL	100	1%	1/4W (CX450)
R821	1-215-445-00	METAL	10K	1%	1/4W (CX450)
R823	1-247-903-00	CARBON	1M	5%	1/4W (CX450)
R824	1-215-403-00	METAL	180	1%	1/4W (CX450)
R825	1-215-398-81	METAL	110	1%	1/4W (CX450)
R826	1-215-411-00	METAL	390	1%	1/4W (CX450)

Ref. No.	Part No.	Description			Remarks
R831	1-215-421-00	METAL	1K	1%	1/4W (CX450)
R861	1-215-445-00	METAL	10K	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R862	1-215-469-00	METAL	100K	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R863	1-215-445-00	METAL	10K	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R864	1-215-437-00	METAL	4.7K	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R865	1-215-477-00	METAL	220K	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R866	1-247-903-00	CARBON	1M	5%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R867	1-215-409-00	METAL	330	1%	1/4W (CX450:AEP,UK,SP,MY,AUS)
R931	1-247-887-00	CARBON	220K	5%	1/4W
R941	1-249-389-11	CARBON	4.7	5%	1/4W F
R942	1-249-387-11	CARBON	3.3	5%	1/4W F
R943	1-249-421-11	CARBON	2.2K	5%	1/4W F
R944	1-249-419-11	CARBON	1.5K	5%	1/4W F
R950	1-249-425-11	CARBON	4.7K	5%	1/4W F
R951	1-249-429-11	CARBON	10K	5%	1/4W
R952	1-249-393-11	CARBON	10	5%	1/4W F
R991	1-249-429-11	CARBON	10K	5%	1/4W
< VARIABLE RESISTOR >					
RV501	1-241-765-11	RES, ADJ, CARBON 22K			
< TEST PIN >					
* TP1	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			
* TP2	1-566-968-11	HOUSING, CONNECTOR(PC BOARD)6P			
* TP3	1-568-450-11	HOUSING, CONNECTOR(PC BOARD)4P			
< VIBRATOR >					
X501	1-579-175-11	VIBRATOR, CERAMIC 10MHz			
X580	1-767-938-21	VIBRATOR, CERAMIC 7.28MHz			(CX450)
X801	1-577-663-11	VIBRATOR, CRYSTAL 14.1875MHz			(CX450:AEP,UK,SP,MY,AUS)
X801	1-567-878-11	OSCILLATOR, CRYSTAL 14.31818MHz			(CX450:US,CND)
X861	1-760-500-21	VIBRATOR, CRYSTAL 17.734MHz			(CX450:AEP,UK,SP,MY,AUS)
*****					
A-4725-051-A	TRANS BOARD, COMPLETE				
*****					
(CX400/CX450:US,CND)					
A-4725-039-A	TRANS BOARD, COMPLETE				
*****					
(CX450:AEP,UK,SP,MY)					
A-4725-034-A	TRANS BOARD, COMPLETE				
*****					
(CX450:AUS)					
7-685-871-01	SCREW+BVT	3X6 (S)			
< CAPACITOR >					
C901	1-126-936-11	ELECT	3300uF	20.00%	16V
C902	1-126-960-11	ELECT	1uF	20.00%	50V
C911	1-128-576-11	ELECT	100uF	20.00%	63V
C912	1-126-948-11	ELECT	100uF	20.00%	35V
C920	1-161-494-00	CERAMIC	0.022uF	25V	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C921	1-126-768-11	ELECT	2200uF 20.00% 16V			< COIL >	
C922	1-126-768-11	ELECT	2200uF 20.00% 16V				
C930	1-161-494-00	CERAMIC	0.022uF 25V	△ L991	1-424-485-11	FILTER, LINE	
C931	1-126-768-11	ELECT	2200uF 20.00% 16V			< TRANSISTOR >	
C932	1-126-768-11	ELECT	2200uF 20.00% 16V				
C933	1-126-967-11	ELECT	47uF 20.00% 50V	Q901	8-729-620-05	TRANSISTOR	2SC2603TP-EF
C940	1-136-173-00	MYLAR	0.47uF 5.00% 50V	Q911	8-729-140-97	TRANSISTOR	2SB734-T-34
C941	1-136-173-00	MYLAR	0.47uF 5.00% 50V	Q931	8-729-620-05	TRANSISTOR	2SC2603TP-EF
C942	1-109-953-11	ELECT	2.2uF 20.00% 50V	Q941	8-729-900-65	TRANSISTOR	BN1L4M-TP
C943	1-164-159-11	CERAMIC	0.1uF 50V	Q942	8-729-900-89	TRANSISTOR	BA1L4M-TP
C951	1-136-173-00	MYLAR	0.47uF 5.00% 50V	Q951	8-729-900-65	TRANSISTOR	BN1L4M-T
C961	1-136-165-00	MYLAR	0.1uF 5.00% 50V	Q952	8-729-900-89	TRANSISTOR	BA1L4M-TP
C962	1-164-159-11	CERAMIC	0.1uF 50V			< RESISTOR >	
C963	1-164-159-11	CERAMIC	0.1uF 50V				
C971	1-136-165-00	MYLAR	0.1uF 5.00% 50V	R901	1-249-417-11	CARBON	1K 5% 1/4W F
C972	1-164-159-11	CERAMIC	0.1uF 50V	R902	1-249-429-11	CARBON	10K 5% 1/4W
C973	1-164-159-11	CERAMIC	0.1uF 50V	R903	1-249-421-11	CARBON	2.2K 5% 1/4W F
△ C991	1-113-925-11	CERAMIC	0.01uF 20.00% 250V	R904	1-249-429-11	CARBON	10K 5% 1/4W
△ C992	1-113-924-11	CERAMIC	0.0047uF 20.00% 250V (CX400/CX450:US,CND)	R911	1-247-843-11	CARBON	3.3K 5% 1/4W
△ C993	1-113-924-11	CERAMIC	0.0047uF 20.00% 250V (CX400/CX450:US,CND)	R912	1-249-421-11	CARBON	2.2K 5% 1/4W F
		< CONNECTOR >		R913	1-249-425-11	CARBON	4.7K 5% 1/4W F
CN601	1-506-469-11	PIN, CONNECTOR 4P		R914	1-247-807-31	CARBON	100 5% 1/4W
* CN602	1-506-469-11	PIN, CONNECTOR 4P		R931	1-249-419-11	CARBON	1.5K 5% 1/4W F
* CN603	1-568-951-11	PIN, CONNECTOR 2P		R932	1-249-419-11	CARBON	1.5K 5% 1/4W F
* CN991	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P					
		< CONNECTOR >		R940	1-247-807-31	CARBON	100 5% 1/4W
CNP902	1-691-767-11	PLUG (MICRO CONNECTOR) 5P		R941	1-247-807-31	CARBON	100 5% 1/4W
		< DIODE >		R942	1-249-421-11	CARBON	2.2K 5% 1/4W F
D901	8-719-210-21	DIODE 11EQS04-TA2B		R943	1-249-441-11	CARBON	100K 5% 1/4W
D902	8-719-210-21	DIODE 11EQS04-TA2B		R944	1-249-417-11	CARBON	1K 5% 1/4W F
D903	8-719-210-21	DIODE 11EQS04-TA2B					
D904	8-719-210-21	DIODE 11EQS04-TA2B		R945	1-249-441-11	CARBON	100K 5% 1/4W
D905	8-719-911-19	DIODE 1SS133T-72		R946	1-247-883-00	CARBON	150K 5% 1/4W
D906	8-719-911-19	DIODE 1SS133T-72		R947	1-249-425-11	CARBON	4.7K 5% 1/4W F
D907	8-719-911-19	DIODE 1SS133T-72		R948	1-249-382-11	CARBON	1.2 5% 1/6W F
D911	8-719-024-99	DIODE 11ES2-NTA2B		R949	1-249-382-11	CARBON	1.2 5% 1/6W F
D912	8-719-150-92	DIODE RD33ES-T2B1					
D913	8-719-109-93	DIODE RD6.2ES-T2B2		R951	1-247-807-31	CARBON	100 5% 1/4W
D921	8-719-024-99	DIODE 11ES2-NTA2B		R952	1-249-421-11	CARBON	2.2K 5% 1/4W F
D922	8-719-024-99	DIODE 11ES2-NTA2B		R953	1-249-441-11	CARBON	100K 5% 1/4W
D923	8-719-024-99	DIODE 11ES2-NTA2B		R954	1-249-417-11	CARBON	1K 5% 1/4W F
D924	8-719-024-99	DIODE 11ES2-NTA2B		R955	1-249-441-11	CARBON	100K 5% 1/4W
D931	8-719-200-77	DIODE 10E2N-TA2B					
D932	8-719-200-77	DIODE 10E2N-TA2B		R956	1-247-883-00	CARBON	150K 5% 1/4W
D933	8-719-200-77	DIODE 10E2N-TA2B		R957	1-249-425-11	CARBON	4.7K 5% 1/4W F
D934	8-719-200-77	DIODE 10E2N-TA2B		R958	1-249-382-11	CARBON	1.2 5% 1/6W F
D935	8-719-110-41	DIODE RD15ES-T2B2		R959	1-249-382-11	CARBON	1.2 5% 1/6W F
△ D991	8-719-911-19	DIODE 1SS133T-72		R961	1-247-883-00	CARBON	150K 5% 1/4W
		< IC >					
IC941	8-759-822-38	IC LA6510		R962	1-247-860-11	CARBON	16K 5% 1/4W
IC961	8-759-822-38	IC LA6510		R963	1-247-883-00	CARBON	150K 5% 1/4W
				R964	1-247-883-00	CARBON	150K 5% 1/4W
				R965	1-249-431-11	CARBON	15K 5% 1/4W
				R966	1-249-382-11	CARBON	1.2 5% 1/6W F
				R967	1-249-382-11	CARBON	1.2 5% 1/6W F
				R968	1-249-393-11	CARBON	10 5% 1/4W F
				R971	1-247-883-00	CARBON	150K 5% 1/4W
				R972	1-247-860-11	CARBON	16K 5% 1/4W
				R973	1-247-885-00	CARBON	180K 5% 1/4W
				R974	1-247-885-00	CARBON	180K 5% 1/4W
				R975	1-249-431-11	CARBON	15K 5% 1/4W
				R976	1-249-382-11	CARBON	1.2 5% 1/6W F
				R977	1-249-382-11	CARBON	1.2 5% 1/6W F
				R978	1-249-393-11	CARBON	10 5% 1/4W F

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CDP-CX400/CX450

TRANS

T.SENS

Ref. No.	Part No.	Description	Remarks
		< RELAY >	
△ RY991	1-755-299-11	RELAY	
		< TRANSFORMER >	
△ T901	1-433-666-11	TRANSFORMER, POWER (CX400/ CX450:US,CND)	
△ T901	1-433-668-11	TRANSFORMER, POWER (CX450:AEP,UK,SP,MY)	
△ T901	1-433-877-11	TRANSFORMER, POWER (CX450:AUS)	
△ T911	1-435-327-11	TRANSFORMER, POWER (CX400/ CX450:US,CND)	
△ T911	1-435-328-11	TRANSFORMER, POWER (CX450:AEP,UK,SP,MY,AUS)	
*****			
	1-676-828-11	T.SENS BOARD *****	
		< CONNECTOR >	
* CN81	1-506-486-11	PIN, CONNECTOR 7P	
CN82	1-506-481-11	PIN, CONNECTOR 2P	
CN83	1-506-481-11	PIN, CONNECTOR 2P	
		< IC >	
IC81	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
IC82	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
IC83	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
IC84	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
		< RESISTOR >	
R81	1-249-416-11	CARBON 820 5% 1/4W F	
R82	1-249-416-11	CARBON 820 5% 1/4W F	
R83	1-249-416-11	CARBON 820 5% 1/4W F	
R84	1-249-416-11	CARBON 820 5% 1/4W F	
R85	1-249-415-11	CARBON 680 5% 1/4W F	
*****			
		MISCELLANEOUS *****	
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE) (CX400/ CX450:US,CND)	
5	1-792-466-11	WIRE(FLAT TYPE) (23 CORE)	
11	1-569-008-21	ADAPTOR, CONVERSION (CX450:SP,MY)	
11	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (CX450:UK)	
108	1-792-465-11	WIRE (FLAT TYPE) (15 CORE)	
△ 268	8-820-026-03	OPTICAL PICK-UP BLOCK KSM-213BFN	
271	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
△ CNP901	1-696-845-11	CORD, POWER (CX450:AUS)	
△ CNP901	1-777-071-31	CORD, POWER (CX450:AEP,UK,SP,MY)	
△ CNP901	1-783-531-41	CORD, POWER (CX400/CX450:US,CND)	
M601	1-541-309-11	MOTOR, L (RF-370C)(TABLE)	
M602	1-541-309-11	MOTOR, L (RF-370C)(LOADING)	
M603	1-541-632-11	MOTOR, DC (DOOR)	
△ T901	1-433-666-11	TRANSFORMER, POWER (CX400/ CX450:US,CND)	
△ T901	1-433-668-11	TRANSFORMER, POWER (CX450:AEP,UK,SP,MY)	

Ref. No.	Part No.	Description	Remarks
△ T901	1-433-877-11	TRANSFORMER, POWER (CX450:AUS)	
△ T911	1-435-327-11	TRANSFORMER, POWER (CX400/ CX450:US,CND)	
△ T911	1-435-328-11	TRANSFORMER, POWER (CX450:AEP,UK,SP,MY,AUS)	
*****			
		***** HARDWARE LIST *****	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
#3	7-685-648-79	SCREW, TAPPING	
#4	7-685-903-11	SCREW +PTPWH 3X6 (TYPE2)	
#5	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#6	7-624-106-04	STOPRING 3.0, TYPE -E	
#7	7-682-948-01	SCREW +PSW 3X8	
*****			
		ACCESSORIES *****	
1-418-828-11		REMOTECOMMANDER (RM-DX400) (CX400)	
1-418-829-11		REMOTECOMMANDER (RM-DX450) (CX450)	
1-551-734-11		CORD,CONNECTION (RK-74A)	
1-558-271-11		CORD,CONNECTION (RK-601)	
1-751-619-11		CORD,CONNECTION (VIDEO)(CX450)	
1-776-263-11		CORD,CONNECTION (AUDIO)	
1-777-172-11		CORD,CONNECTION (CONTOROL A1) (CX400:CND/CX450:CND)	
3-866-363-23		MANUAL, INSTRUCTION (ENGILISH/FRENCH) (CX450:AEP)	
3-866-670-11		MANUAL,COMMONNESS INSTRUCTION (CONTROL A1II)(ENGLISH) (CX400:US/CX450:US,UK,AUS)	
3-866-670-21		MANUAL,COMMONNESS INSTRUCTION (CONTROL A1II)(ENGILSH/FRENCH/GERMAN/ SPANISH/DUTCH/PORTUGUESE/SWEDISH/ ITALIAN/CHINESE)(CX400:CND/ CX450:CND,AEP,SP,MY)	
4-210-990-01		LID(RM-LJ301), BATTERY CASE (FOR RM-DX450)(CX450)	
4-229-365-11		MANUAL, INSTRUCTION (ENGKISH)(CX400)	
4-229-365-21		MANUAL, INSTRUCTION (FRENCH) (CX400:CND)	
4-229-367-11		MANUAL, INSTRUCTION (ENGLISH) (CX450:US,AUS)	
4-229-367-21		MANUAL, INSTRUCTION (ENGLISH/FRENCH) (CX450:CND,AEP,UK,SP,MY)	
4-229-367-31		MANUAL, INSTRUCTION (SPANISH/GERMAN/DUTCH)(CX450:AEP)	
4-229-367-41		MANUAL, INSTRUCTION (SWEDISH/ITALIAN/PORTUGUESE)(CX450:AEP)	
4-229-367-51		MANUAL, INSTRUCTION (SPANISH/CHINESE)(CX450:SP,MY)	
4-981-643-01		COVER,BATTERY (FOR RM-DX400)(CX400)	

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MEMO

## REVISION HISTORY

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

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