

# CDP-CE545

## SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
E Model  
Australian Model



Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM59-5BD32A
Base Unit Name	BU-5BD32A
Optical Pick-Up Name	KSS-213BA/F-NP

### SPECIFICATIONS

#### Compact disc player

Laser	Semiconductor laser ( $\lambda = 780 \text{ nm}$ ) Emission duration: continuous
Laser output	Max 44.6 $\mu\text{W}$ * * This output is the value measured at a distance of 200 nm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.
Frequency response	2 Hz to 20 kHz $\pm 0.5 \text{ dB}$
Dynamic range	More than 93 dB
Harmonic distortion	Less than 0.0045%

#### Output

	Jack type	Maximum output level	Load impedance
ANALOG OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
PHONES	Stereo phone jack	10 mW	32 ohms

#### General

##### Power requirements

Where purchased	Power requirements
US and Canadian	120 V AC, 60 Hz
Australian	240 V AC, 50/60 Hz
AEP and Singapore	220 V - 230 V AC, 50/60 Hz
E and Saudi Arabia	110 V - 120 V or 220 V - 240 V AC, adjustable, 50/60 Hz

Power consumption 11 W

Dimensions (approx.) (w/h/d) 430 x 110 x 398 mm (17 x 4 3/8 x 15 3/4 in.) incl. projecting parts

Mass (approx.) 5.1 kg (11 lbs 4 oz.)

##### Supplied accessories

- Audio cord (1)
- Monaural (2P) mini-plug cord (1) (Connecting cord for CONTROL A1 II) (supplied for Canadian models only)
- Remote commander (remote) (RM-DC545) (1)
- R6 (size AA) batteries (2)

Design and specifications are subject to change without notice.

## COMPACT DISC PLAYER

# SONY®

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## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check 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 TEST

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 2 V AC range are suitable. (See Fig. A)

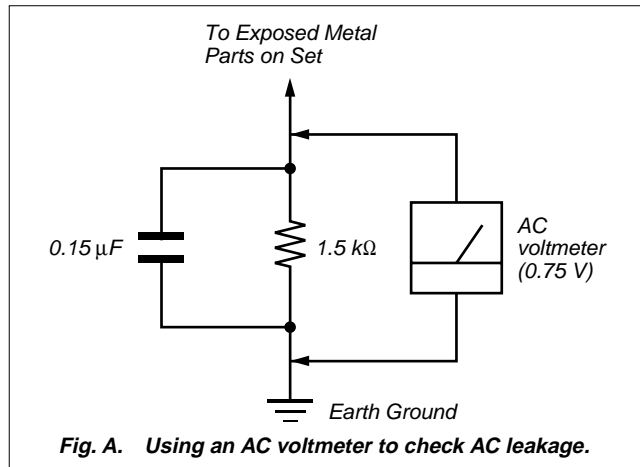


Fig. A. Using an AC voltmeter to check AC leakage.

### 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.

# SECTION 1 SERVICING NOTES

## 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

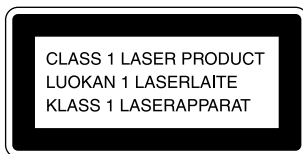
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

### CAUTION

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

## LASER DIODE AND FOCUS SEARCH OPERATION CHECK

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



Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveforms is output three times.

### Notes on chip component replacement

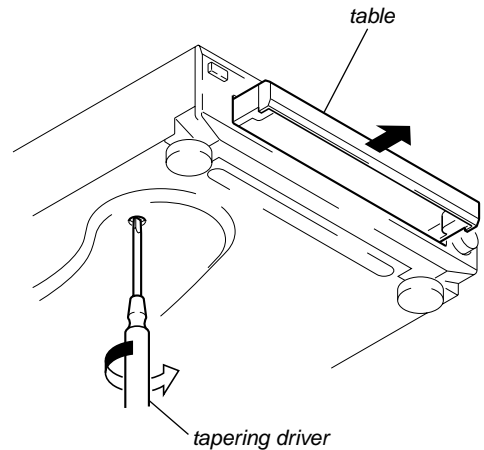
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

### Flexible Circuit Board Repairing

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

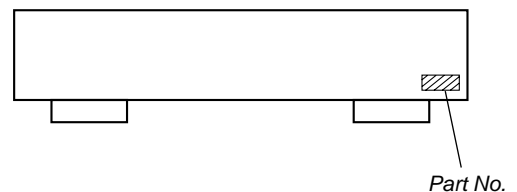
## HOW TO OPEN THE DISC TABLE WHEN POWER SWITCH TURNS OFF

Insert a tapering driver into the aperture of the unit bottom, and turn it in the direction of the arrow (to OUT direction).



*\* To close the disc table, turn the tapering driver in the reverse direction (to IN direction).*

## MODEL IDENTIFICATION – BACK PANEL –



Model	Part No.
US model	4-224-879-0□
Canadian model	4-224-879-1□
AEP model	4-224-879-2□
Australian model	4-224-879-3□
E model	4-224-879-4□
Singapore model	4-224-879-5□
Saudi Arabia model	4-224-879-6□

## SHIPMENT MODE

Performed when returning the unit to the customer.  
Custom File Erases all custom files and initializes settings.

### Procedure:

1. Remove the discs from all trays.
2. While pressing the [DISK SKIP] button and [PROGRAM] button, press the [POWER] button to turn ON the power.
3. "NO DISC" is displayed, indicating that the mode has ended.

**Note:** "NO DISC" may be displayed even if there are discs on the trays.

## 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-313:4-989-366-01) is used for checking the display.  
To check, perform the following procedure.

### Checking Method:

1. Set the test disc on a free tray, and chuck the disc.
2. Press the [▶] button and play back the disc.
3. The following will be displayed on the fluorescent indicator tube.  
Display : 1kHz/0 dB/ L&R
4. Rotate [◀◀ AMS ▶▶] 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.

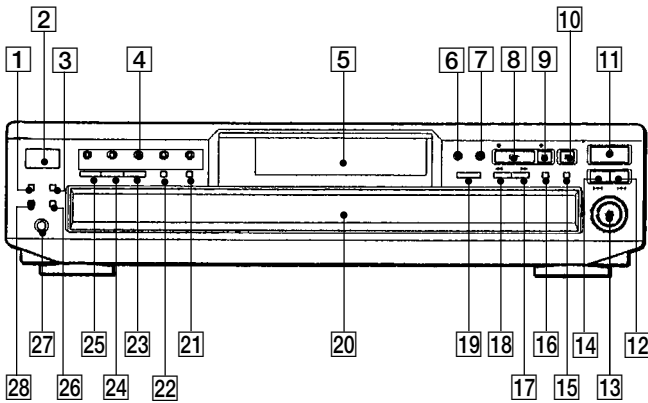
**Table 2:** CD-TEXT TEST DISC Recorded Contents and Display  
(In this unit, some special characters cannot be displayed. This is no a fault.)

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)	a b c d e f g (60....
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 ç £ ¤ ¥ ¦ § (A0h to A7h) 8859-1	i ¤ § (A0.... ▣ ç £ ¥ ¦ are 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	† † ° » ¼ ½ ¾ ¿ (B8h to BFh)	¿ (B8.... † † ° » ¼ ½ ¾ are not displayed
58	À Á Â Ã Ä Å Æ Ç (C0h to C7h)	à á â ã ä å æ ç (C0....
59	È É Ê Ë Ì Í Î Ï (C8h to CFh)	è é ê ë ì í î ï (C8....
60	Ð Ñ Ò Ó Ô Õ Ö × (D0h to C7h)	ð ñ ò ó ô õ ö × (D0....
61	Ø Ù Ú Û Ü Ý Þ ß (D8h to DFh)	ø ù ú û ü ý þ ß (D8....Þ is not displayed
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)	ñ ò ó ô o ö ÷ (F0....ð is not displayed
65	ø ù ú û ü ý þ ÿ (F8h to FFh)	ø ù ú û ü y y (F8....þ is not displayed
66	No.66	← All the same
67	No.67	← All the same
to	to	to
99	No.99	← All the same

## SECTION 2 GENERAL

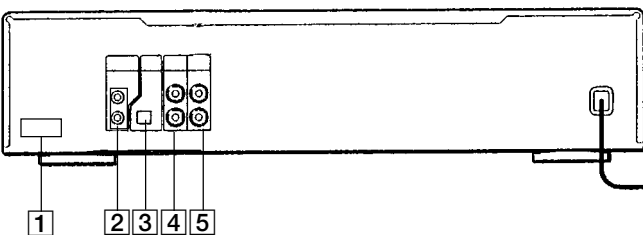
### • LOCATION OF CONTROLS

#### – Front panel –



- 1 EDIT/TIME FADE button
- 2 POWER button
- 3 PEAK SEARCH button
- 4 DISC1-DISC5 button
- 5 Fluorescent indicator tube display
- 6 NO DELAY button
- 7 X-FADE button
- 8 ▷ button
- 9 || button
- 10 ■ button
- 11 ≡ OPEN/CLOSE button
- 12 DISC SKIP button
- 13 ⏮ AMS ⏭ control
- 14 EX-CHANGE button
- 15 CLEAR button
- 16 CHECK button
- 17 ▶▶ button
- 18 ◀◀ button
- 19 MEGA CONTROL button
- 20 Disc table
- 21 TIME TEXT button
- 22 REPEAT button
- 23 PROGRAM button
- 24 SHUFFLE button
- 25 CONTINUE button
- 26 FADER button
- 27 PHONES jack
- 28 MENU button

#### – Rear panel –

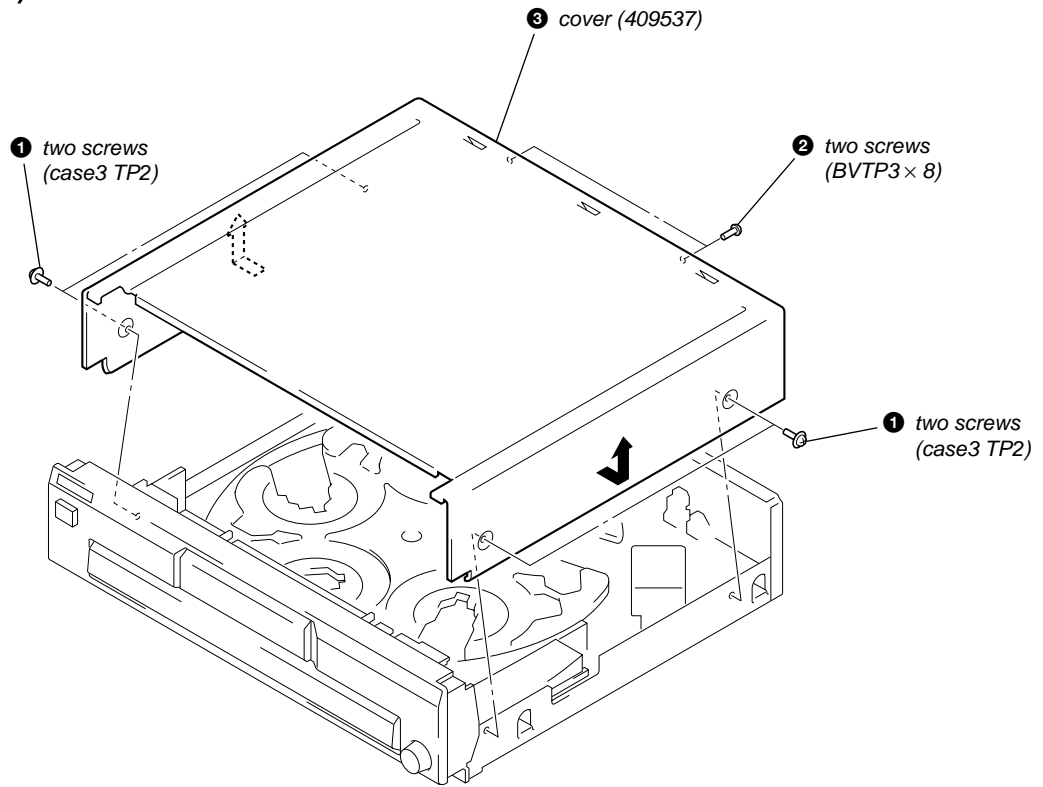


- 1 Voltage selector switch (E and Saudi Arabia models only)
- 2 CONTROL A1II jack
- 3 DIGITAL OUT OPTICAL connector
- 4 2ND CD jack
- 5 ANALOG OUT jack

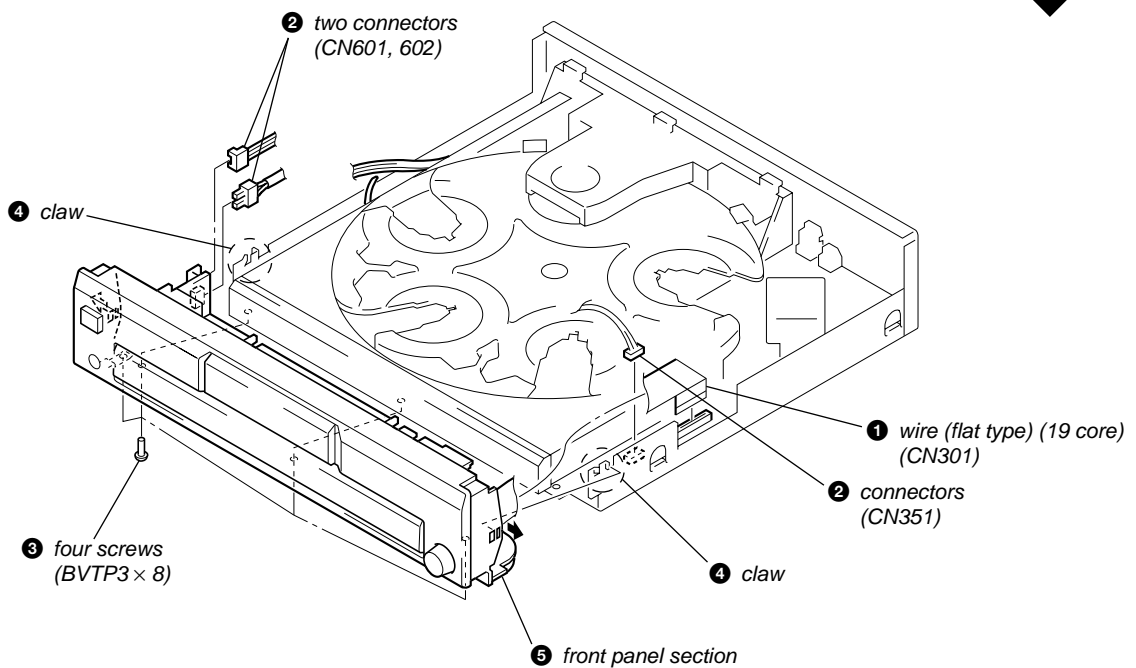
# SECTION 3 DISASSEMBLY

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

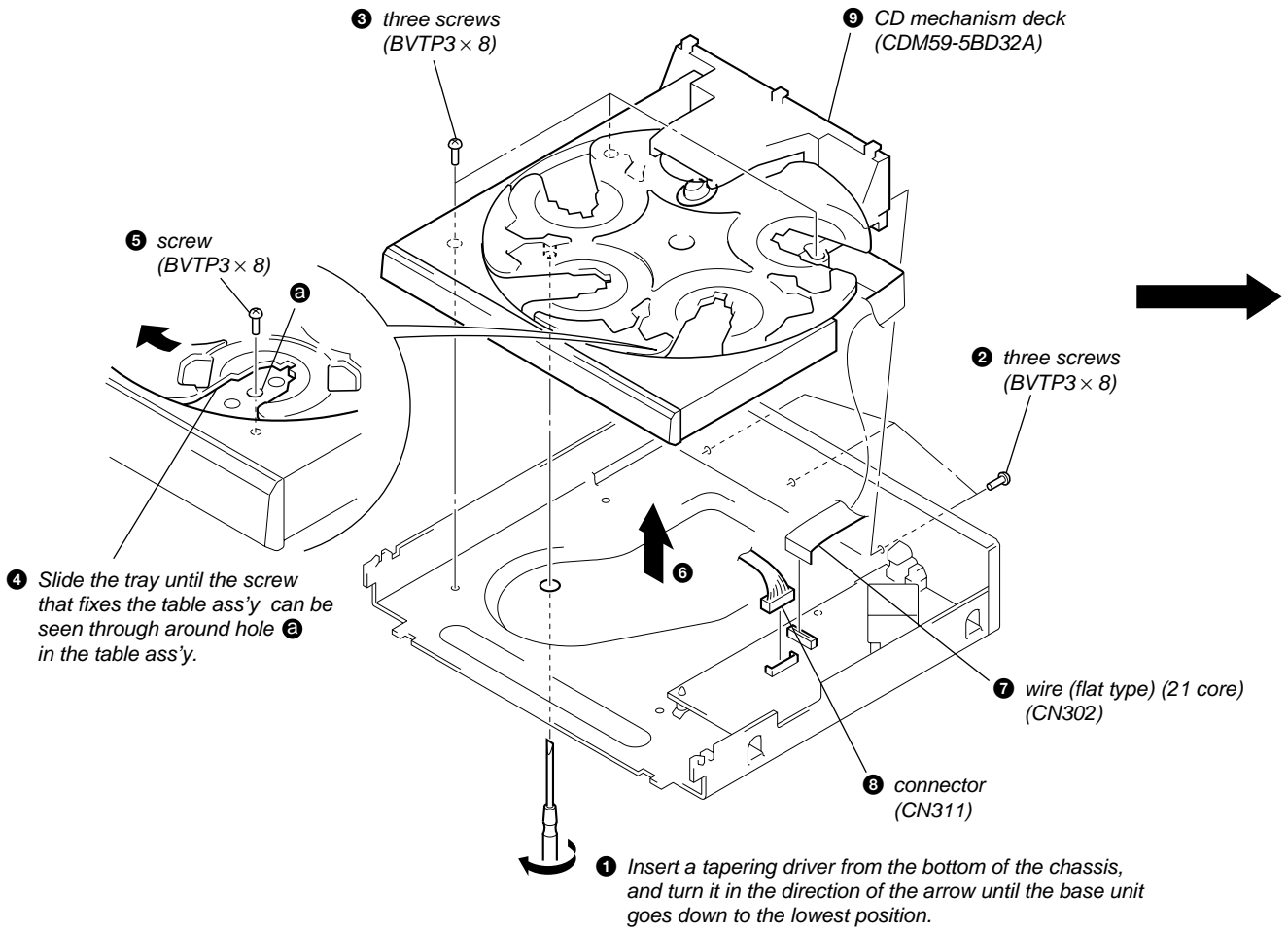
## COVER (409537)



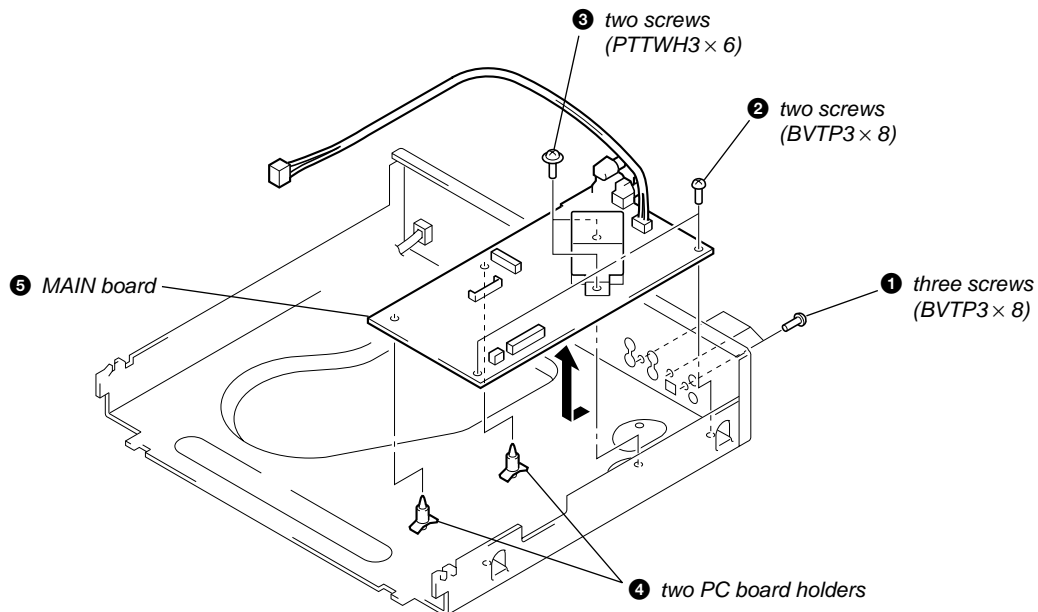
## FRONT PANEL SECTION



## CD MECHANISM DECK (CDM59-5BD32A)

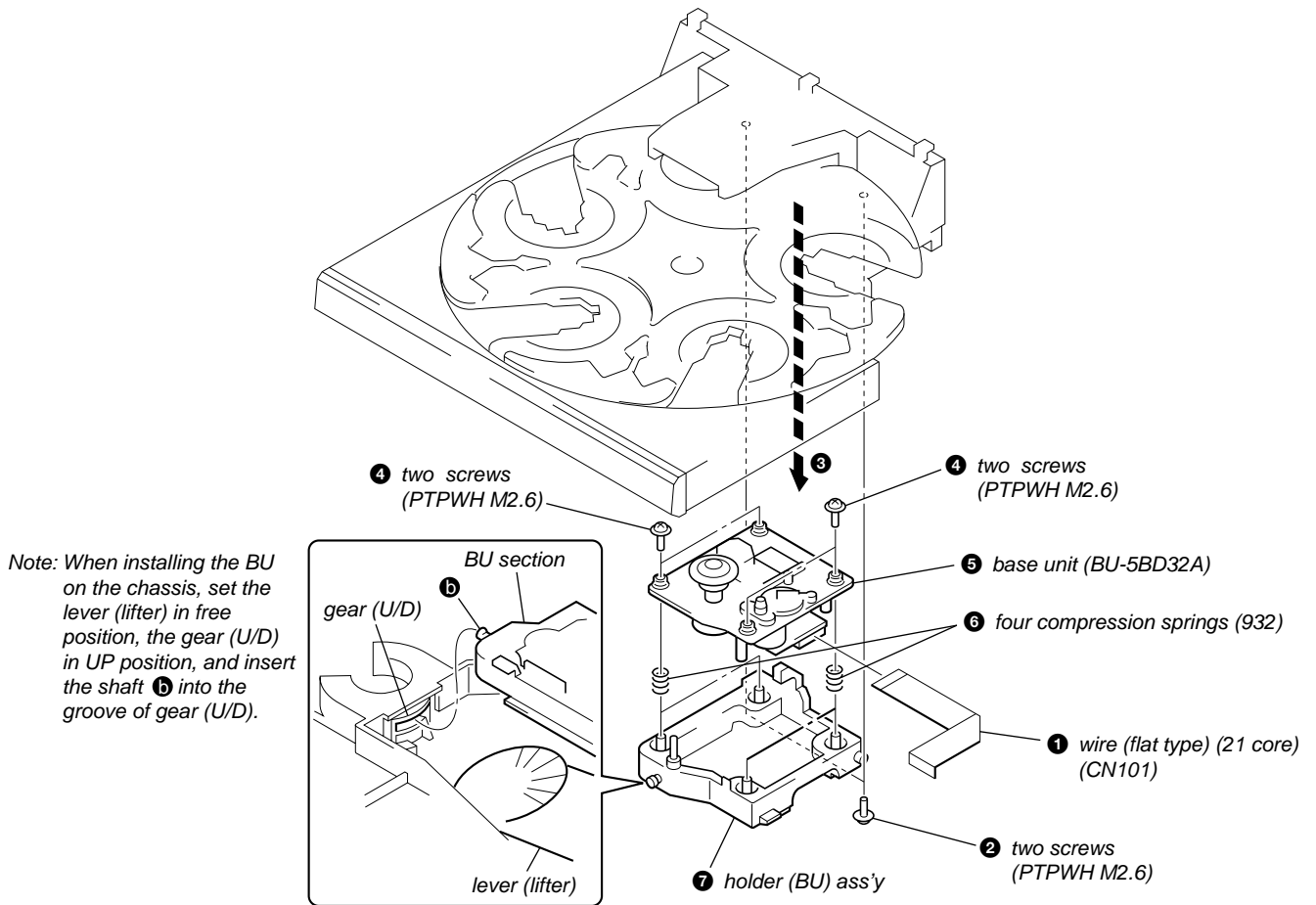


## MAIN BOARD

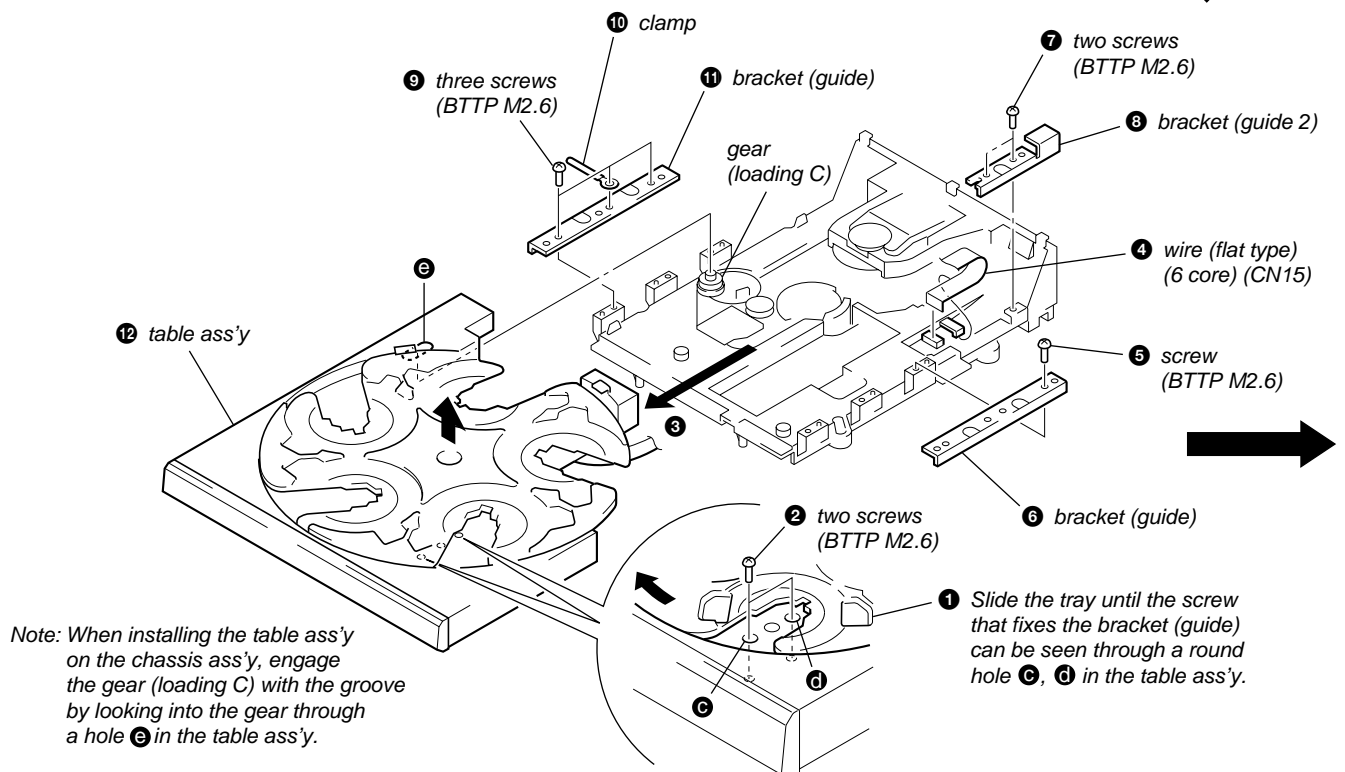




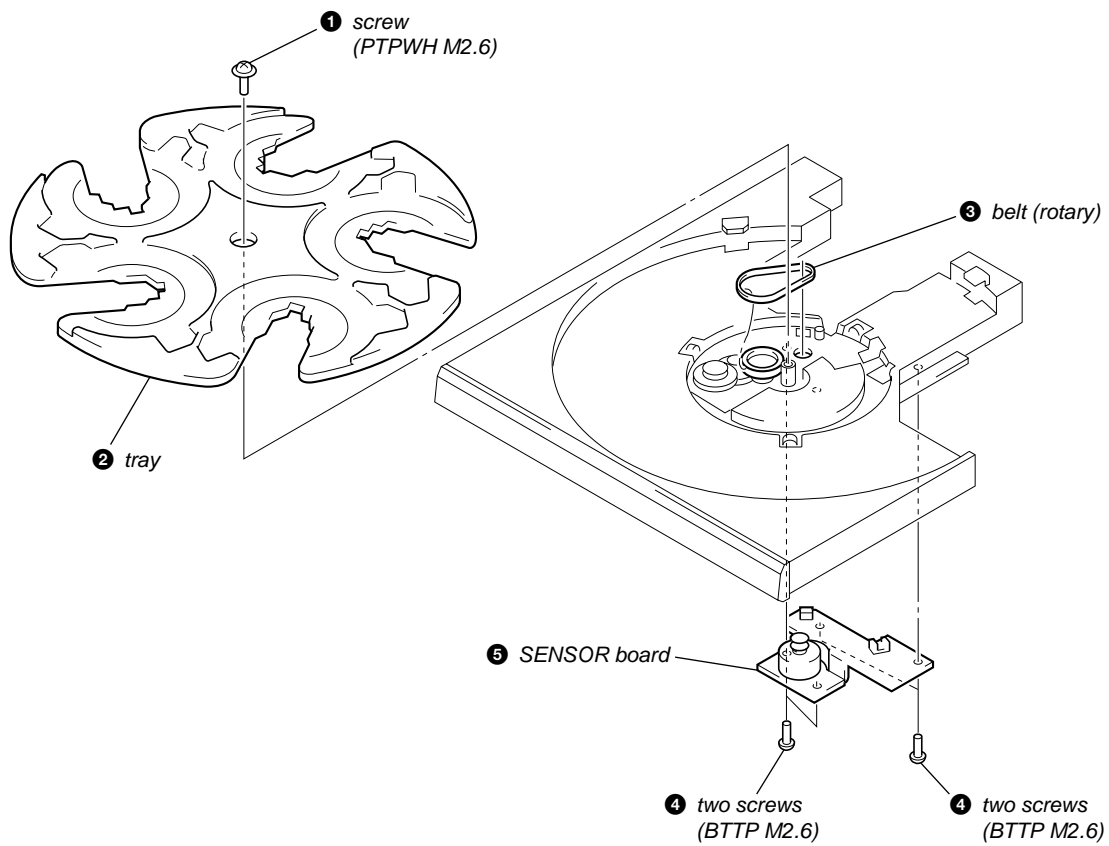
## BASE UNIT (BU-5BD32A)



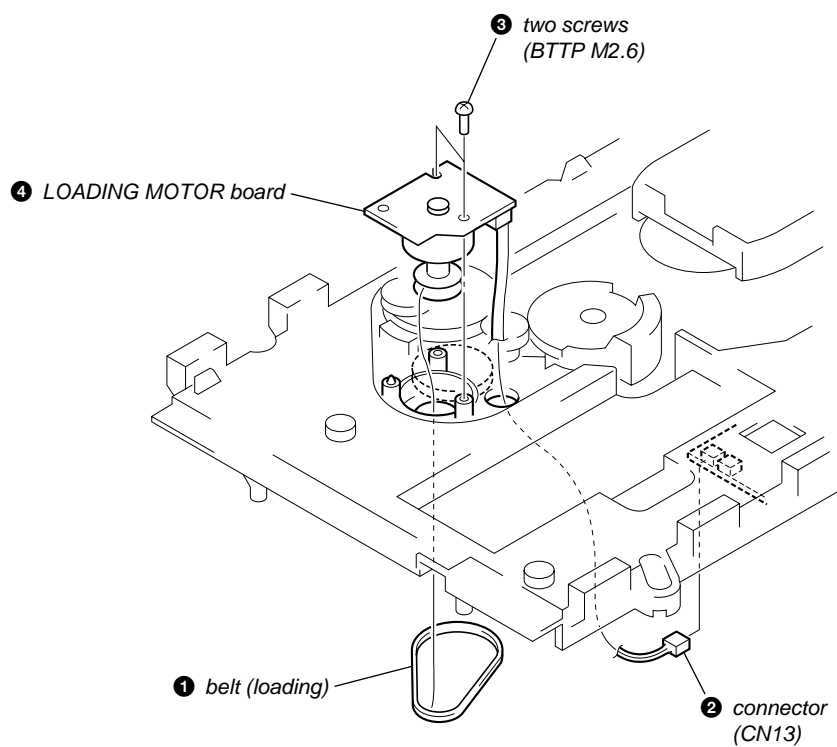
## TABLE ASS'Y



## TRAY, BELT (ROTARY), SENSOR BOARD

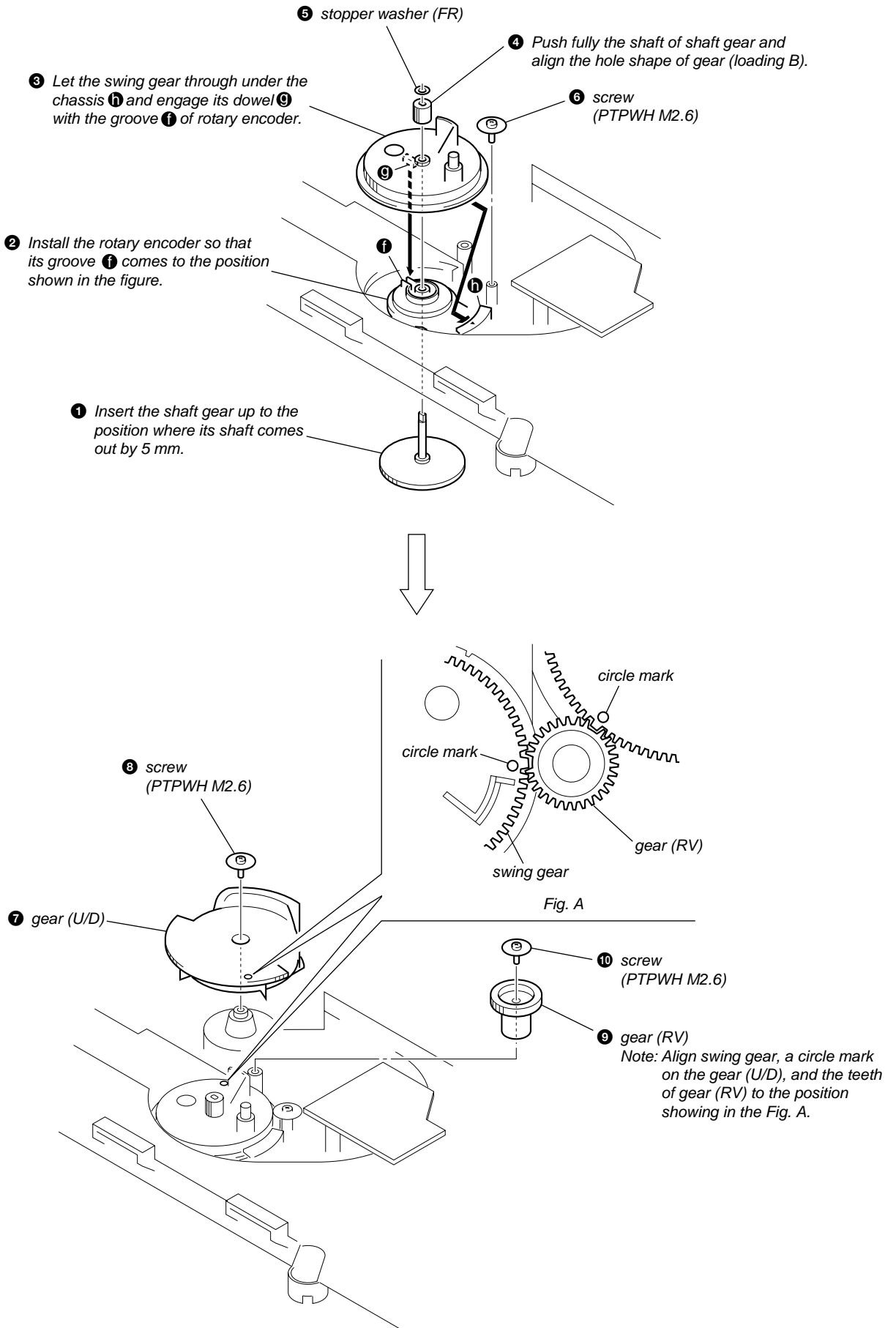


## BELT (LOADING ), LOADING MOTOR BOARD



## ADJUSTING PHASE OF SWING GEAR AND GEAR (U/D)

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



## SECTION 4 TEST MODE

### ADJ MODE

**NOTE:** This mode cannot be performed without a general remote commander.

1. Chuck the CD first, and then turn OFF the power.
2. Short-circuit the test point TP1 (ADJ) of the MAIN board and ground with a lead wire.
3. Press the **[POWER]** button to turn ON the power. The CD is playback automatically and the ADJ mode is set.
4. To exit the mode, press the **[POWER]** button to turn OFF the power.

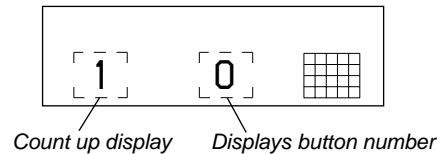
- Prohibits high speed search during accessing
- Ignores even if GFS becomes "L"

### ADJ Mode Special Function Table

Button	Function
PROGRAM	Auto gain display (Focus, Tracking and Sledding)
CONTINUE	Servo average display 1 (VC, FE and RF)
SHUFFLE	Servo average display 2 (TE and Traverse)
FADER	RFCK → GFS → Error rate display

### FLUORESCENT INDICATOR TUBE, LED ALL LIT, AND KEY CHECK MODE

1. Short-circuit the test TP2 (AFADJ) of the MAIN board and ground with a lead wire.
2. Press the **[POWER]** button to turn ON the power. The whole fluorescent indicator tube lights up. Nothing will be displayed when the S-RAM (IC302) is faulty or improperly soldered.
3. All buttons have individual button numbers. When a button is pressed, the button number is counted up and displayed.



When remote controller signals are received, "RM \*\*" will be displayed.

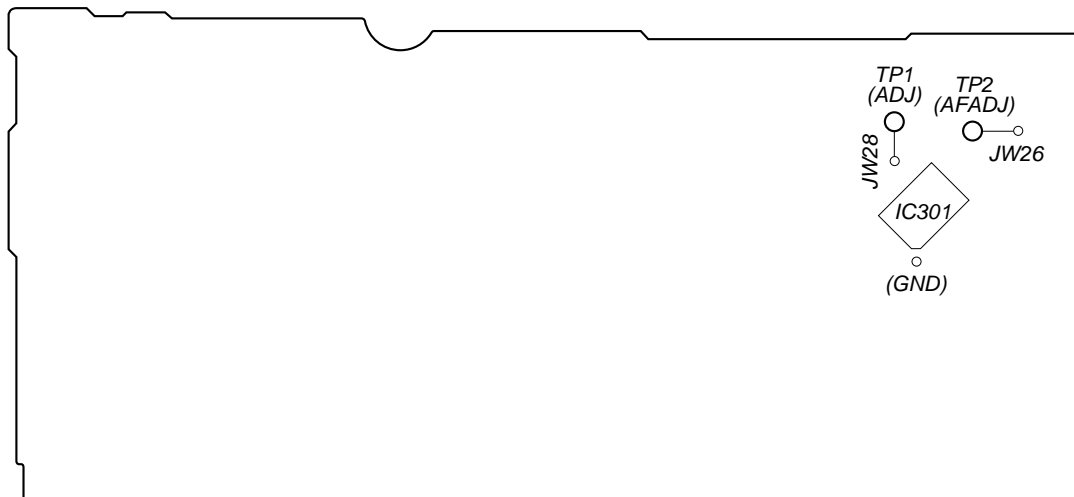
(\*\* are the numbers corresponding to the remote controller buttons.)

When using the remote controller, switch the **[CD1/2/3]** switch to CD1.

4. To exit the mode, press the **[POWER]** button to turn OFF the power.

### Checking Location:

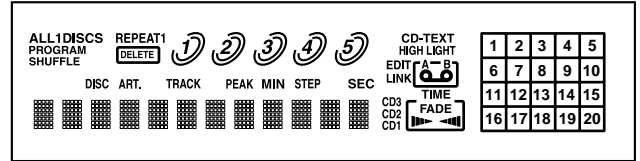
#### – MAIN BOARD (Conductor Side) –



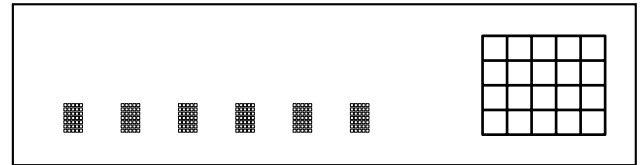
## Buttons and Corresponding Button Numbers

Button	Button Number or Display
CONTINUE	2
SHUFFLE	1
PROGRAM	0
REPEAT	9
MENU	5
DISC1	14
DISC2	13
DISC3	12
DISC4	11
DISC5	10
▷ (PLAY)	Partial lighting 1 (Grid check)
⏸ (PAUSE)	26
■ (STOP)	Partial lighting 2 (Segment check)
EX-CHANGE	17
DISC SKIP	16
⊞ OPEN/CLOSE	All lit (LED lighting)
AMS (button)	30
AMS (knob)	When rotated clockwise: The music calendar numerals light up in ascending order. When rotated counterclockwise: The music calendar numerals light up in descending order.
MEGA CONTROL	22
X-FADE	28
NO DELAY	29
CLEAR	18
CHECK	19
▶▶	20
◀◀	21
PEAK SEARCH	3
EDIT/TIME FADE	4
TIME/TEXT	8
FADER	6

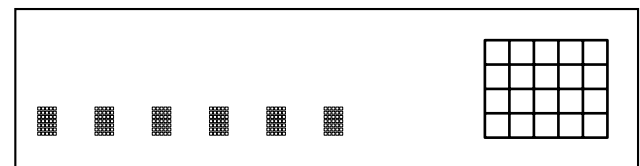
All lit



Partial lighting 1



Light alternately

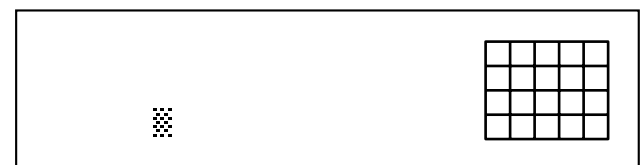


Partial lighting 2

Light alternately



Light alternately



## AGING MODE

For the aging mode, three modes of all mode, disc table mode, and loading mode are available.

This set has the Aging mode for operation check of the mechanism deck.

- If a failure occurred  
The aging operation stops and a faulty status is displayed on the fluorescent indicator tube.
- If no failure occurs  
The aging operation continues repeatedly.

**Note:** Do not use the test disc when performing aging.

Aging will not be performed properly if discs with tracks shorter than 4 seconds are used.

### Aging method 1

(When using the aging remote controller (J-2501-123-A):

1. Set the remote controller [CD1/2/3] switch to CD1.
2. Press the [POWER] button and turn ON the power.
3. Set discs on all trays.  
(More than two discs if five are not available.)
4. Press the [AGING START] button of the aging remote controller.
5. Aging starts and the fluorescent indicator tube will display the following.
6. To exit the mode, press the [POWER] button to turn OFF the power.

### Aging method 2

(When no aging remote controller):

1. Press the [POWER] button and turn ON the power.
2. Set discs on all trays.  
(More than two discs if five are not available.)
3. All mode:  
Press the [CONTINUE], [■] and [CHECK] buttons at the same time.  
Disc table mode:  
Press the [CONTINUE], [■] and [DISC SKIP] buttons at the same time.  
Loading mode:  
Press the [CONTINUE], [■] and [EX-CHANGE] buttons at the same time.
4. Aging starts, and the fluorescent indicator tube will display the following.
5. To exit the mode, press the [POWER] button to turn OFF the power.

Code No.	Status	All mode	Disc table mode	Loading mode	Display in Normal operation	Display in case of failure
0	CLOSE (Tray closed)	○	×	○	A-0	NG 0
1	TOC reading	○	○	○	A-1	NG 1
2	Access to last track	○	×	×	A-2	NG 2
3	Play of last track (3 sec)	○	×	×	Counter display	NG 3
4	EX OPEN (Tray opened while chucking)	○	×	○	A-4	NG 4
5	EX SKIP (Disc tray rotated)	○	×	×	A-5	NG 5
6	EX CLOSE (Tray closed)	○	×	○	A-6	NG 6
7	Access to first track	○	×	×	A-7	NG 7
8	Play of first track (3 sec)	○	×	×	Counter display	NG 8
9	OPEN (tray opened)	○	×	○	A-9	NG 9
A	DISC SKIP (Disc tray rotated, and next disc was selected)	○	○	×	A-A	NG A

The discs are selected in the order of DISC 1 → DISC 2 → DISC 3 → DISC 4 → DISC 5 → DISC 1....Empty trays are skipped.

## MECHANISM DECK CHECK MODE

For the mechanism deck check mode, two modes of disc table mode and loading mode are available.

In the mechanism deck check mode, the disc table turning time and the loading time in each section are measured and displayed.

### 1. Disc table mode:

Press the **POWER** switch while pressing **CHECK**, **OPEN/CLOSE** and **REPEAT** buttons simultaneously.

Loading mode:

Press the **POWER** switch while pressing **CHECK**, **OPEN/CLOSE** and **TIME** buttons simultaneously.

### Display contents

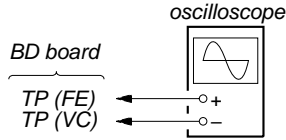
Mode	Check command	Display	
Disc table mode ( Table turning time measurement )	0: Right one turn	R 12.5	L --.-
	1: Left one Turn	R 12.5	L 10.2
	2: Measurement end	R12.5	L 10.2
	3: Undefined		
Table mode ( Loading time measuremnet )	4: Star position	START	--.-
	5: Open → Close	CLOSE	10.2
	6: Close → BU up	BU UP	0.7
	7: BU up → EX open	EX OPEN	6.2
	8: EX open → EX close	EX CLOSE	10.3
	9: EX close → BU down	BU DOWN	1.2
	A: BU down → Open	OPEN	9.3
	FF: Measurement end	CLOSE	10.2

## SECTION 5 ELECTRICAL CHECKING

**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 10 MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

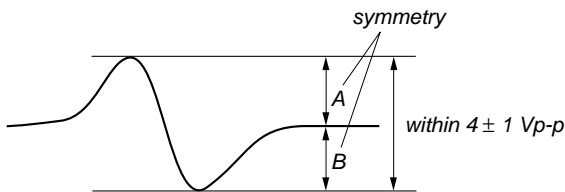
**S-Curve Check**



**Procedure:**

1. Connect oscilloscope to TP (FE) and TP (VC) on the BD board.
2. Connect between TP (FE1) and TP (VC) with lead wire.
3. Connect between TP (AGCCON) and TP (GND) with lead wire.
4. Turned power switch ([POWER] button) on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within  $4 \pm 1$  Vp-p.

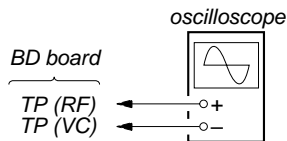
*S-curve waveform*



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

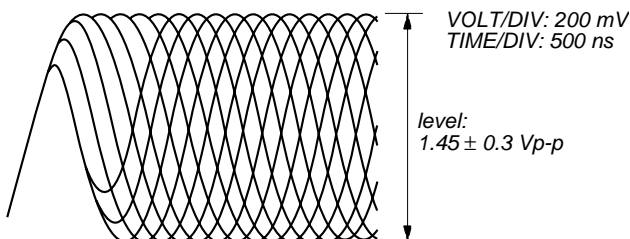
**RF Level Check**



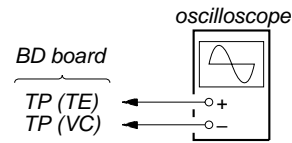
**Procedure:**

1. Connect oscilloscope to TP (RF) and TP (VC) on BD board.
2. Connect between TP (AGCCON) and TP (GND) with lead wire.
3. Turned power switch ([POWER] button) on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that the oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

**Note:** Clear RF signal waveform means that the shape "0" can be clearly distinguished at the center of the waveform.



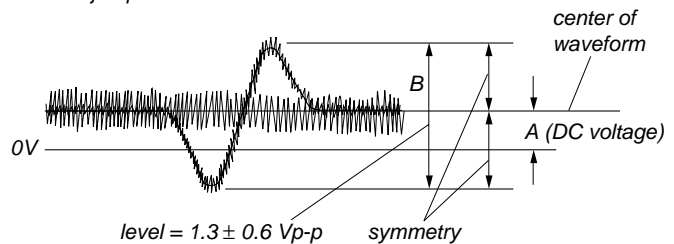
**E-F Balance (1 Track Jump) Check**



**Procedure :**

1. Connect oscilloscope to TP (TE) and TP (VC) on BD board.
2. Turned power switch ([POWER] button) on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the [▶] button. (Becomes the 1 track jump mode)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.

*1 track jump waveform*



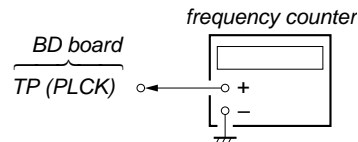
**Specified level:**  $\frac{A}{B} \times 100 = \text{less than } \pm 22\%$

6. After check, remove the lead wire connected in step 1.

**RF PLL Free-run Frequency Check**

**Procedure :**

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

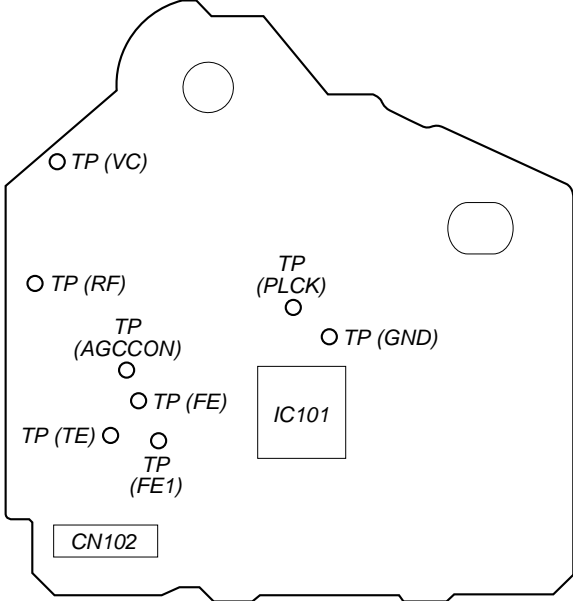


2. Turned power switch ([POWER] button) on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218 MHz.



**Checking Location:**

**- BD BOARD (Conductor Side) -**



# MEMO

## SECTION 5 DIAGRAMS

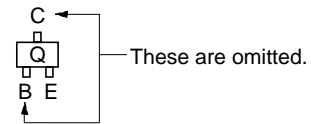
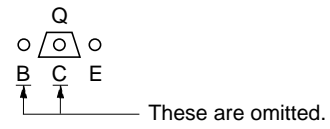
### 6-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

#### Note on Printed Wiring Board:

- — : parts extracted from the component side.
- : parts extracted from the conductor side.
- ▨ : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

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

- Indication of transistor



#### Note on Schematic Diagram:

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

#### Note:

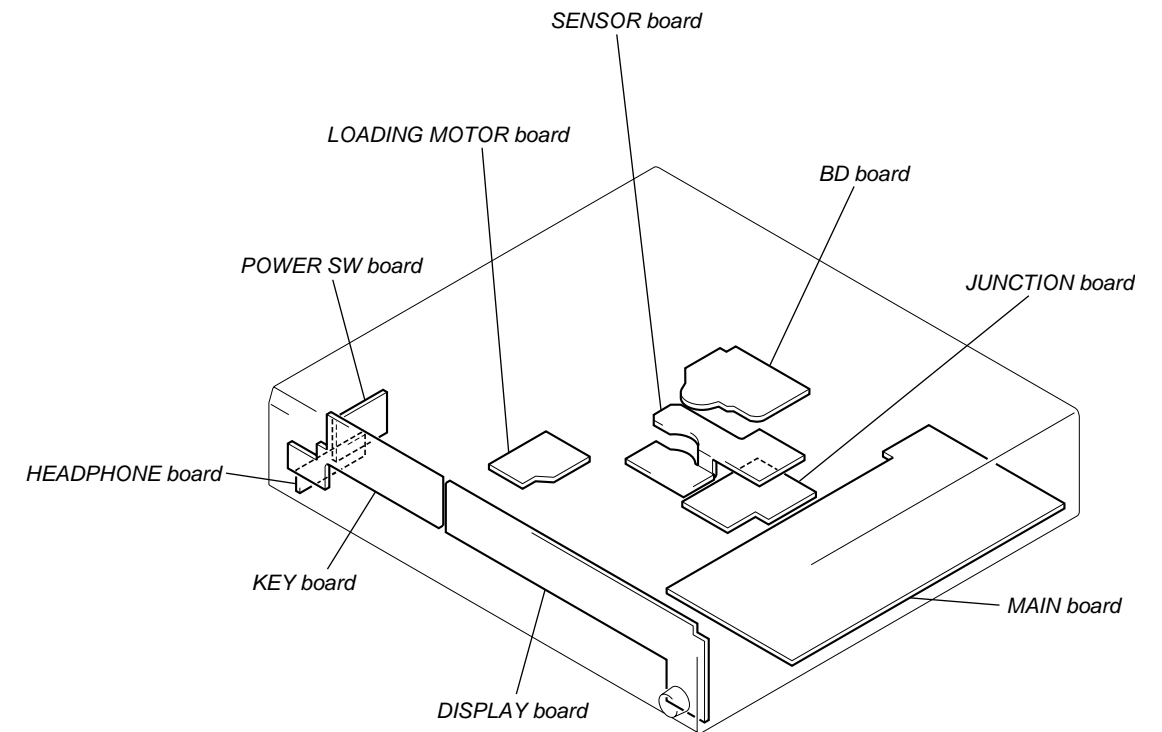
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

#### Note:

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

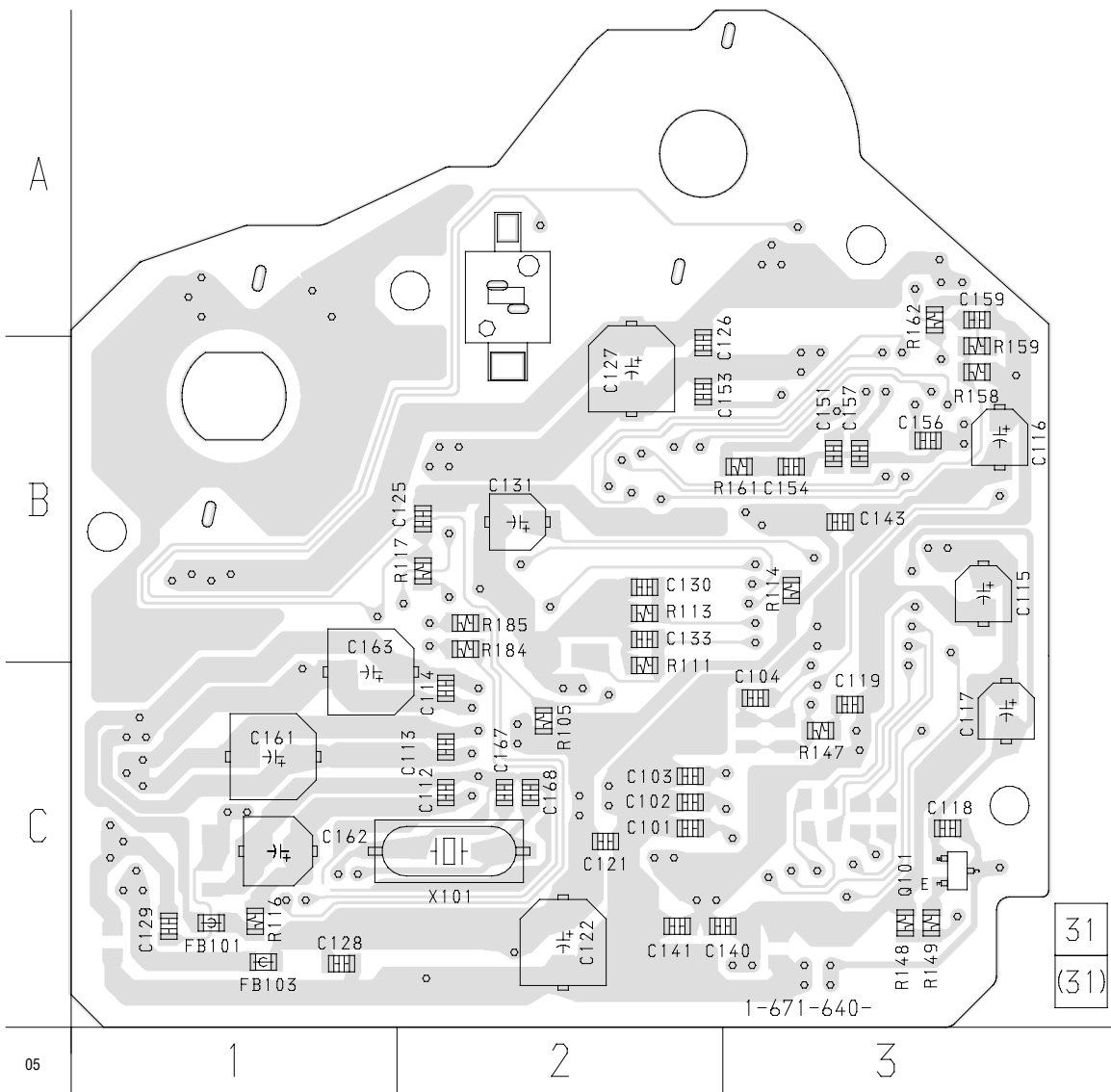
- B+ : B+ Line.
- B- : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- : CD PLAY
- : DIGITAL OUT

#### • Circuit Boards Location



6-2. PRINTED WIRING BOARD – BD Board – • See page 19 for Circuit Boards Location.

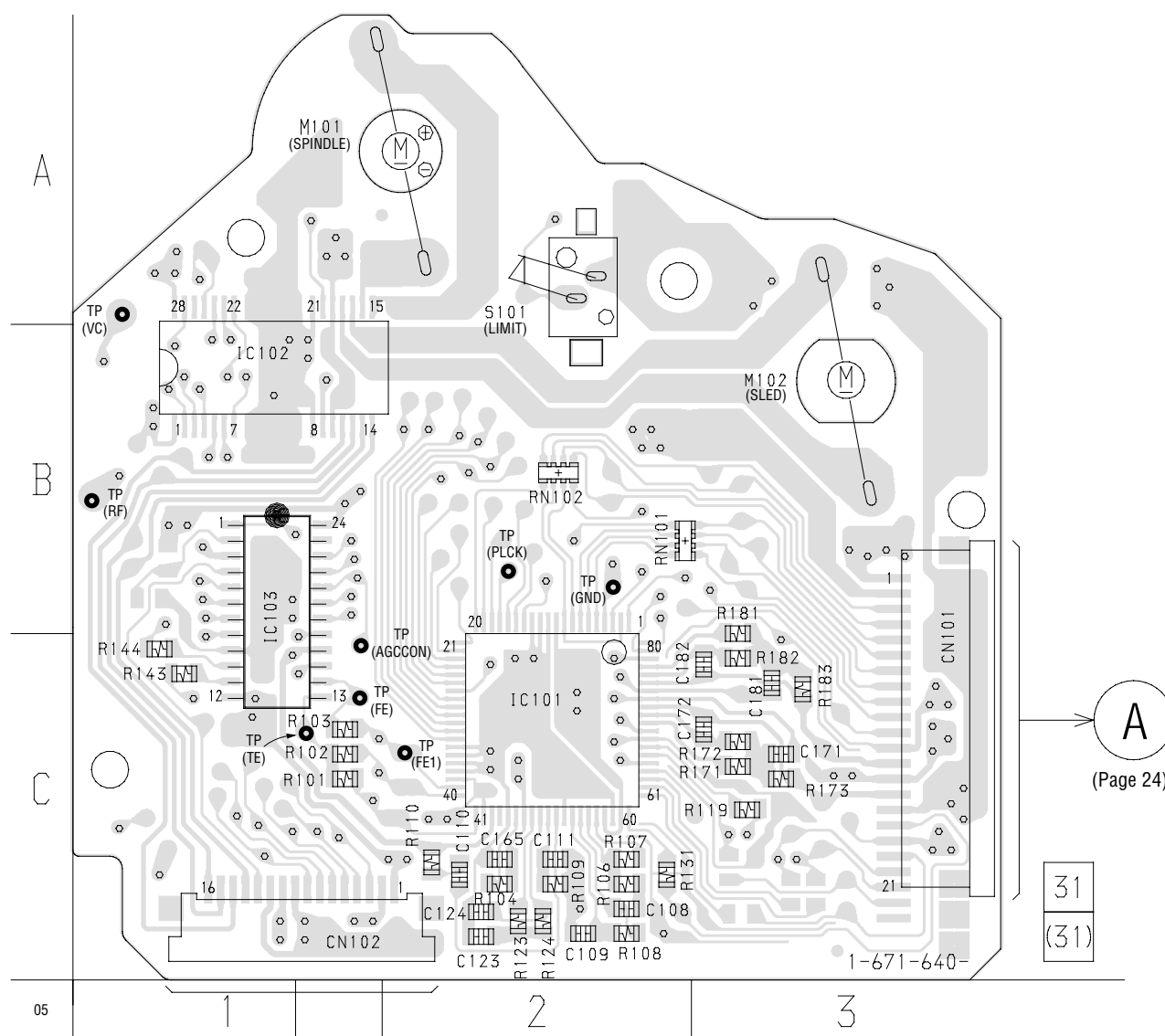
【 BD BOARD 】 (COMPONENT SIDE)



• Semiconductor Location

Ref. No.	Location
Q101	C-3

【 BD BOARD 】 (CONDUCTOR SIDE)

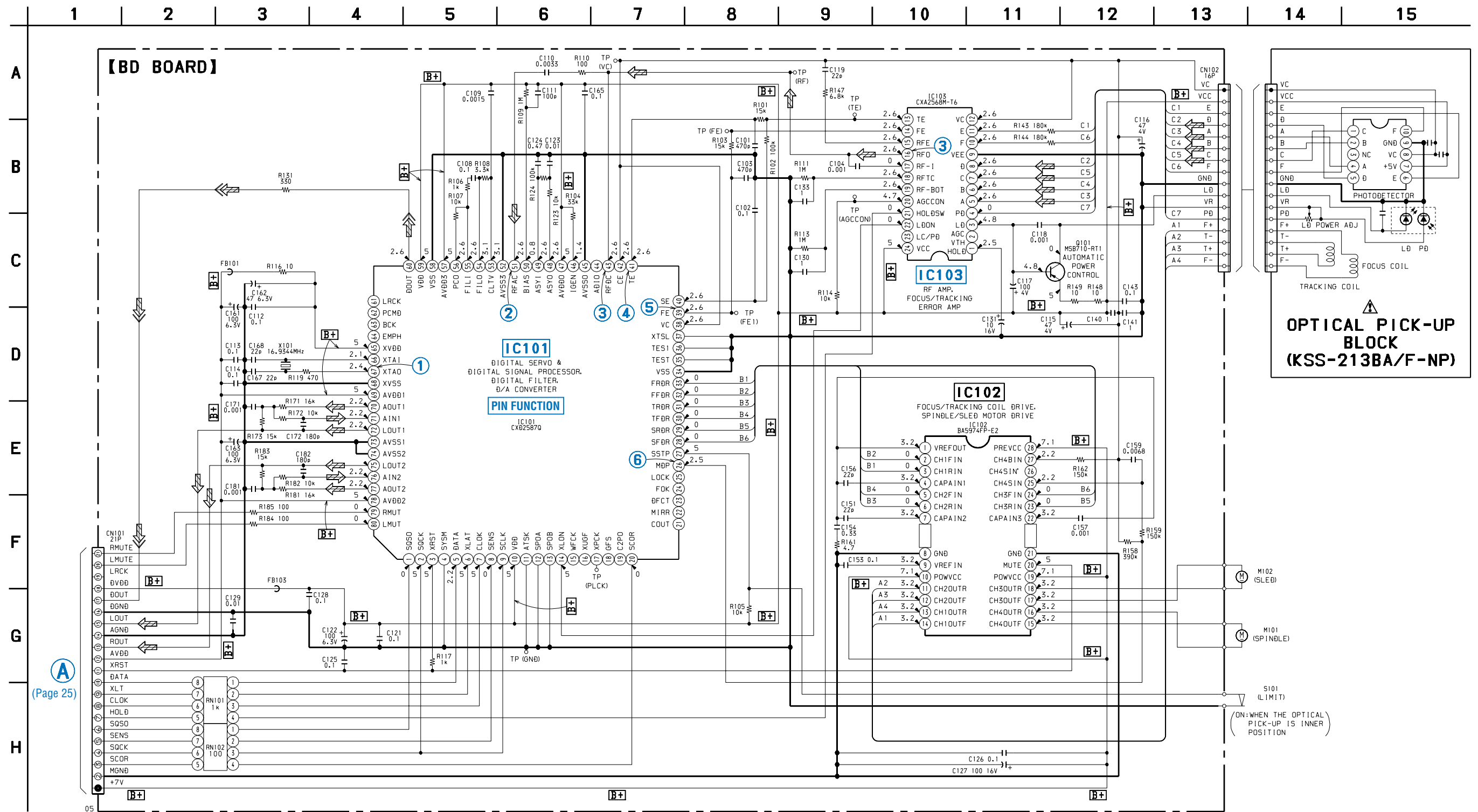


OPTICAL PICK-UP BLOCK  
KSS-213BA/F-NP

• Semiconductor Location

Ref. No.	Location
IC101	C-2
IC102	B-1
IC103	B-1

6-3. SCHEMATIC DIAGRAM – BD Board – • See page 28 for Waveforms. • See page 28 for IC Block Diagrams.

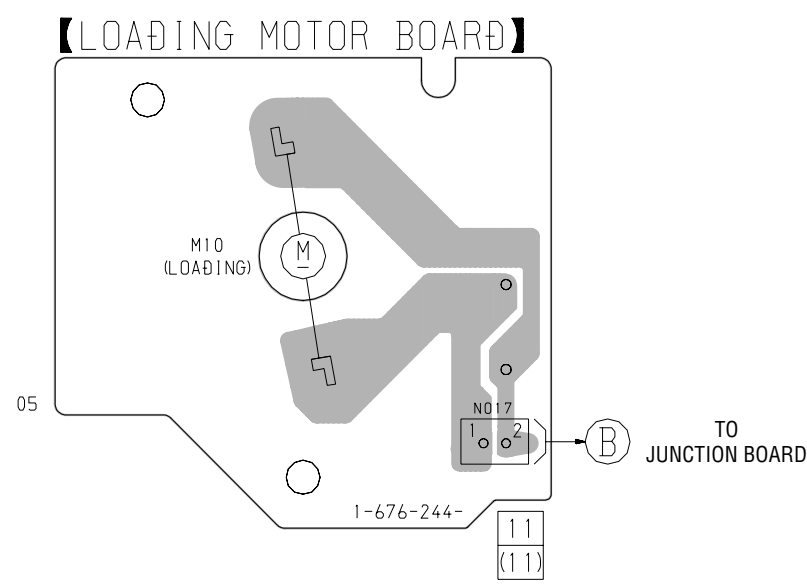
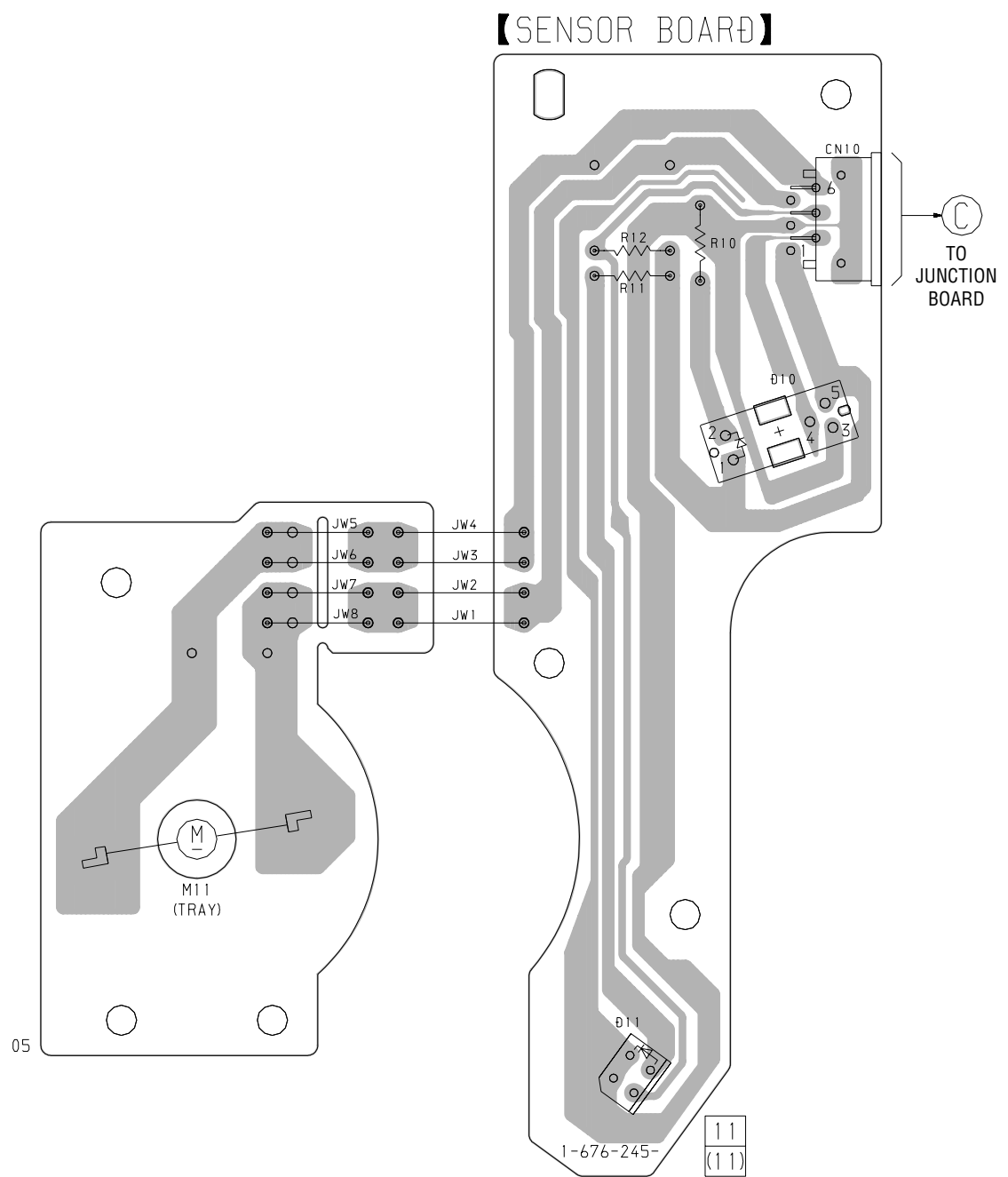
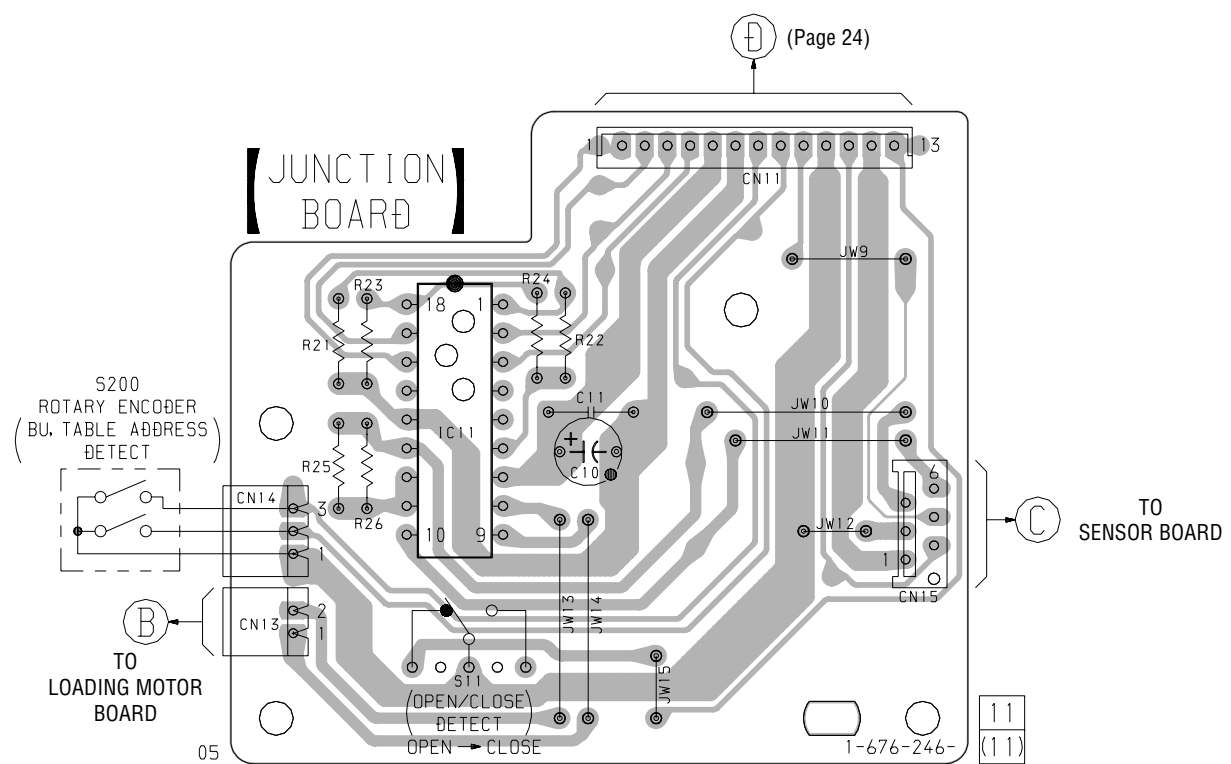


(Page 25)

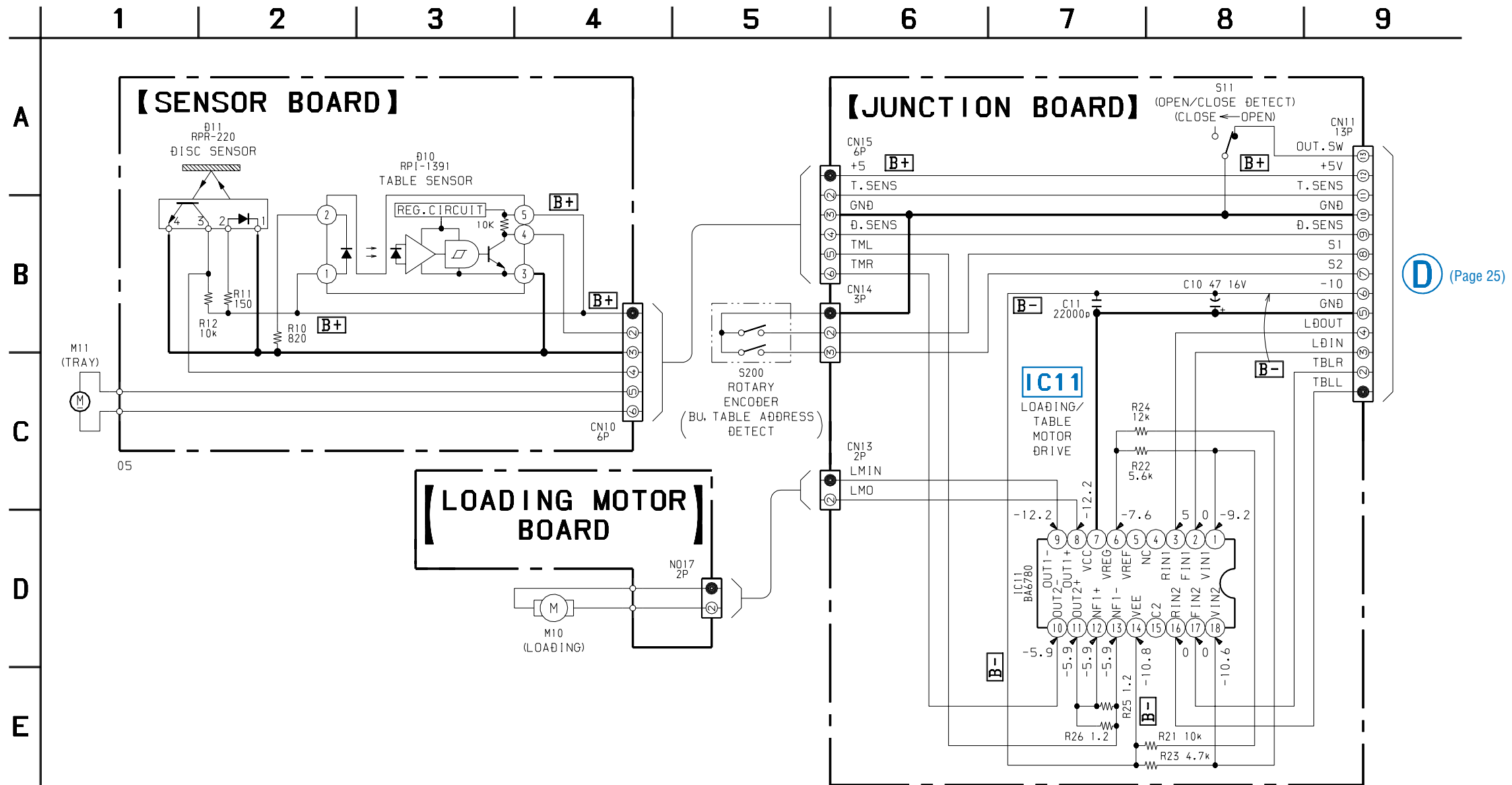
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

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

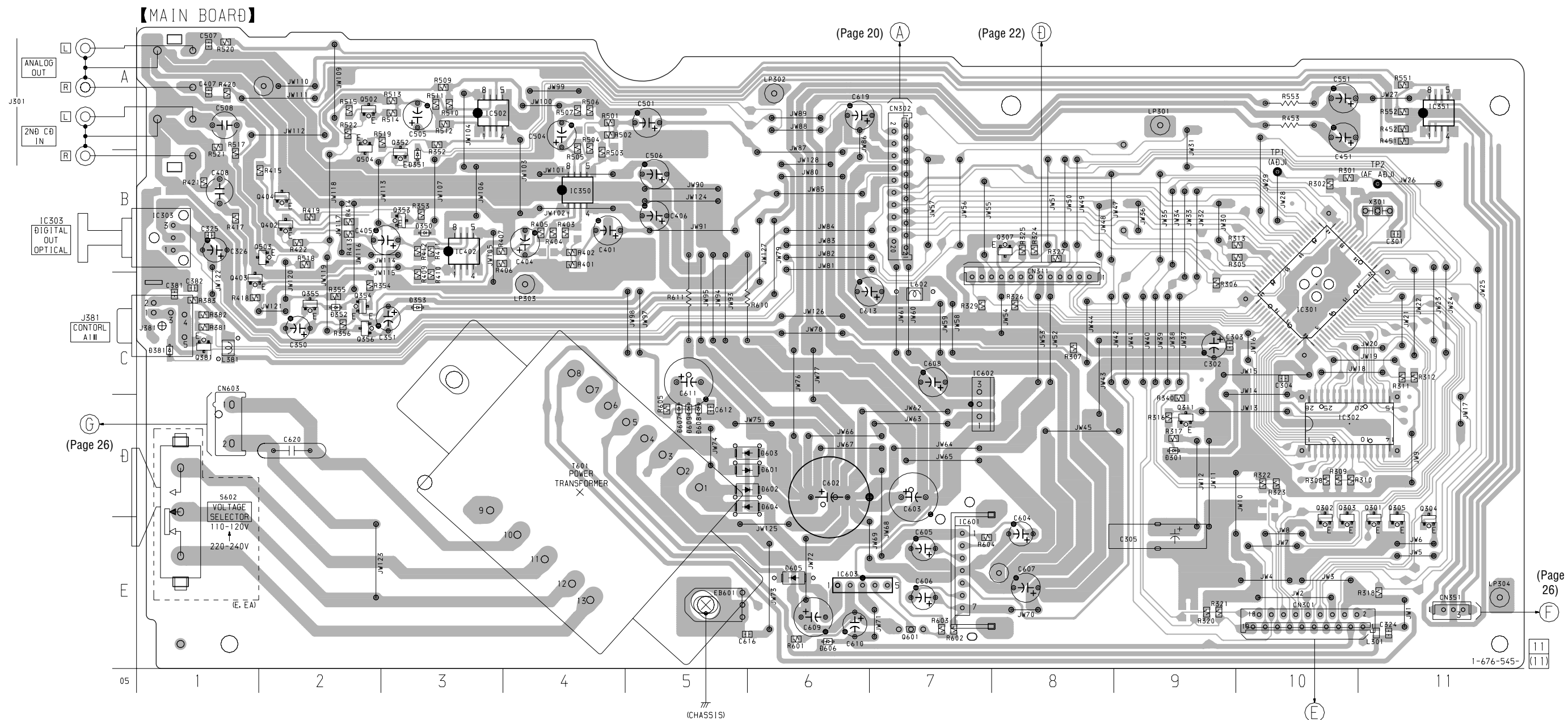
6-4. PRINTED WIRING BOARDS – JUNCTION/SENSOR/LOADING MOTOR Boards – • See page 19 for Circuit Boards Location.



6-5. SCHEMATIC DIAGRAM – JUNCTION/SENSOR/LOADING MOTOR Boards – • See page 28 for IC Block Diagrams.



D (Page 25)

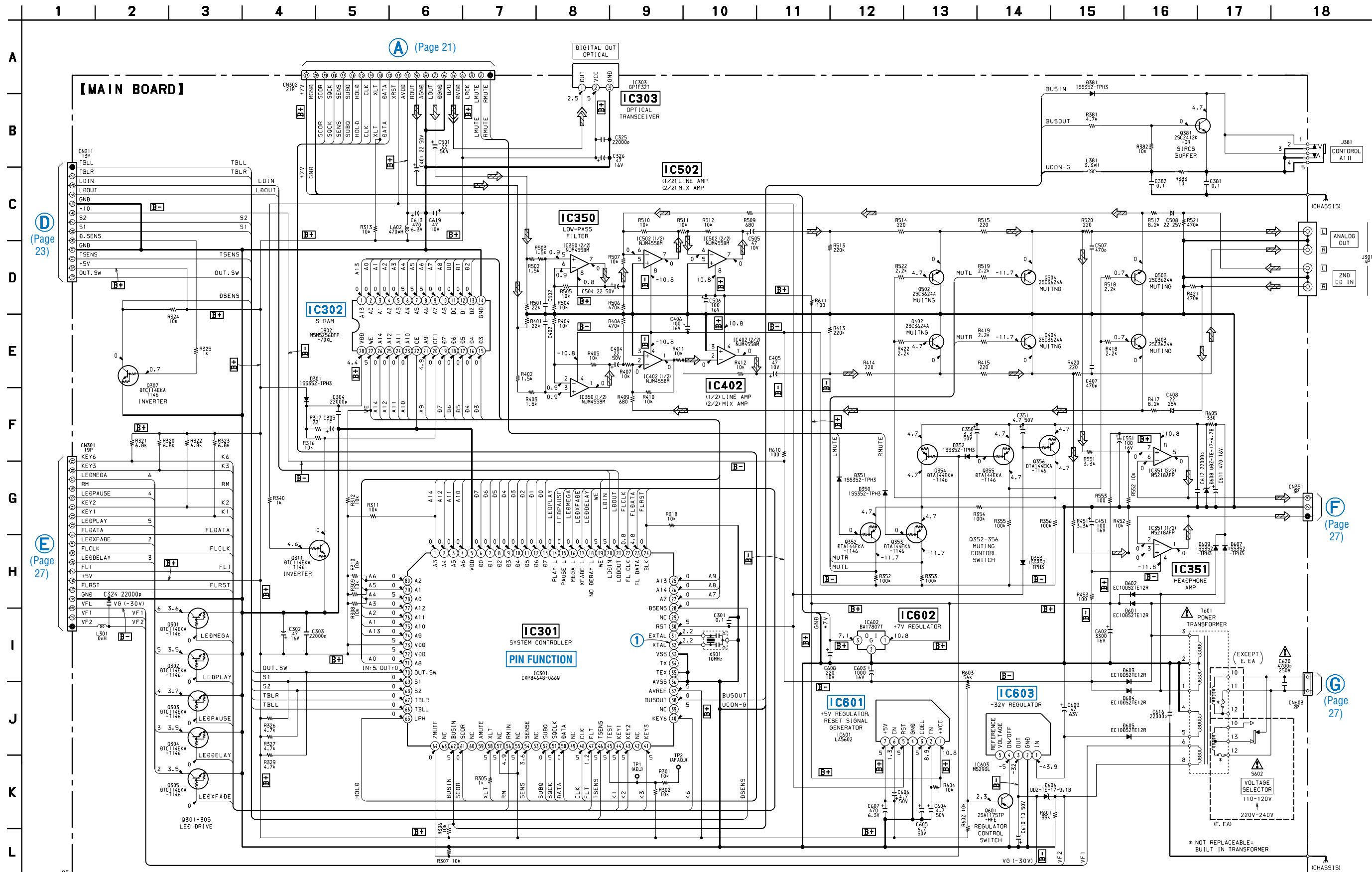


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	D-9	IC602	D-7
D350	B-3	IC603	E-6
D351	B-3		
D352	C-2	Q301	E-11
D353	C-3	Q302	E-10
D381	C-1	Q303	E-10
D601	D-6	Q304	E-11
D602	D-6	Q305	E-11
D603	D-6	Q307	B-8
D604	D-6	Q311	D-9
D605	E-6	Q352	B-3
D606	E-6	Q353	B-3
D607	D-5	Q354	C-2
D608	D-5	Q355	C-2
D609	D-5	Q356	C-2
		Q381	C-1
IC301	C-10	Q402	B-2
IC302	D-10	Q403	C-1
IC303	B-1	Q404	B-2
IC350	B-4	Q502	A-2
IC351	A-11	Q503	B-2
IC402	B-3	Q504	A-2
IC502	A-3	Q601	E-7
IC601	E-7		



6-7. SCHEMATIC DIAGRAM – MAIN Board – • See page 28 for Waveform. • See page 28 for IC Block Diagrams.



(Page 23)

(Page 27)

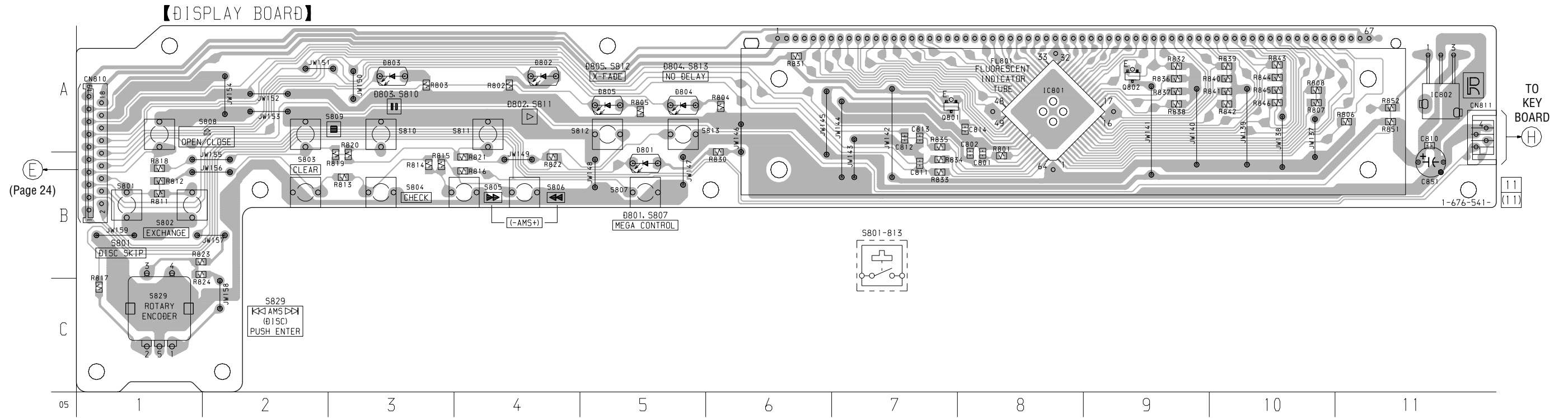
(Page 27)

(Page 27)

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

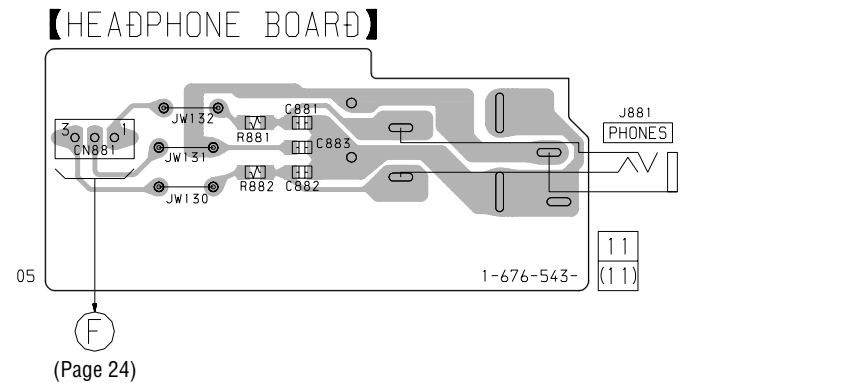
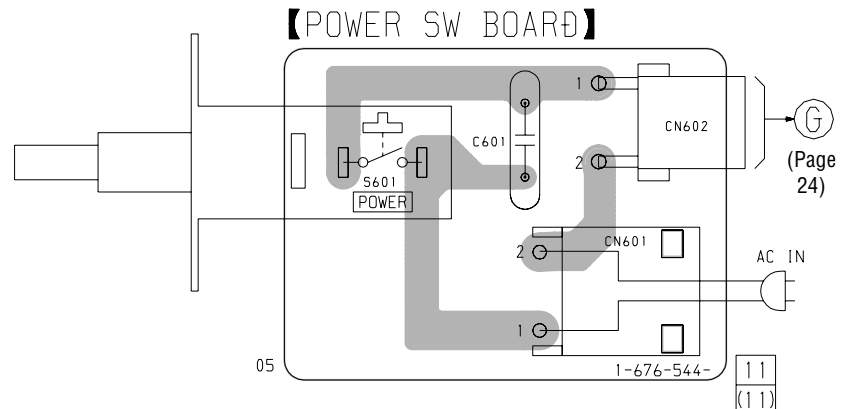
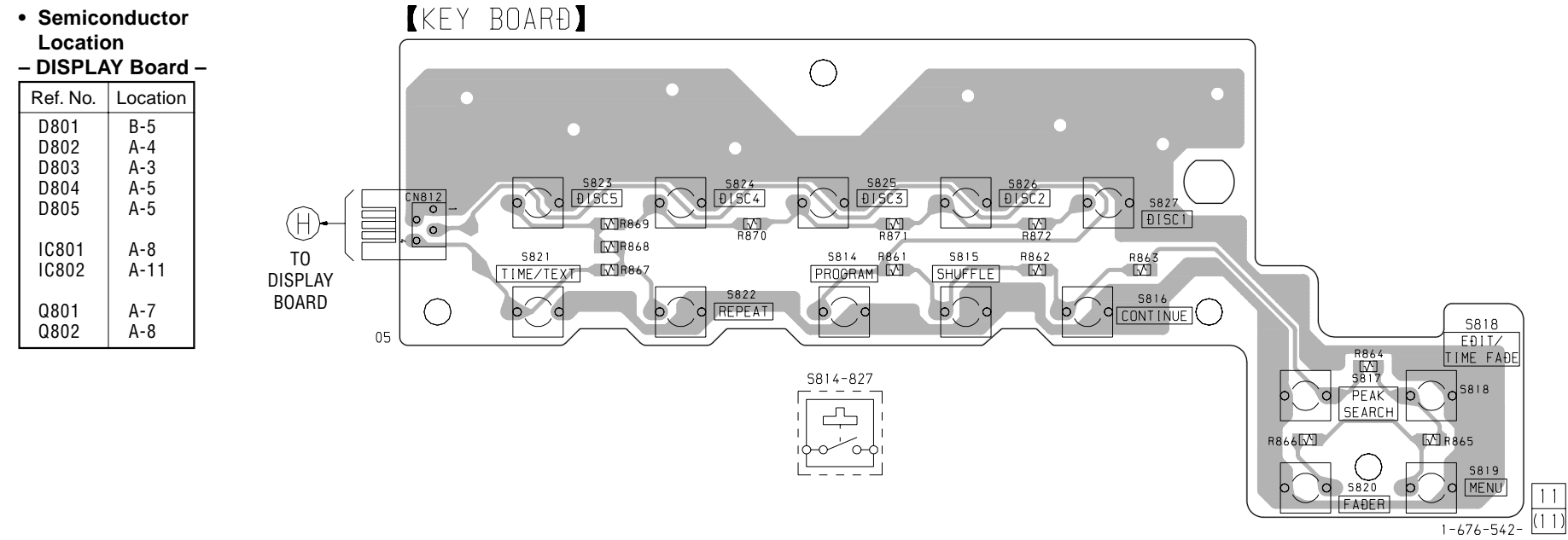
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-8. PRINTED WIRING BOARDS – PANEL Section – • See page 19 for Circuit Boards Location.

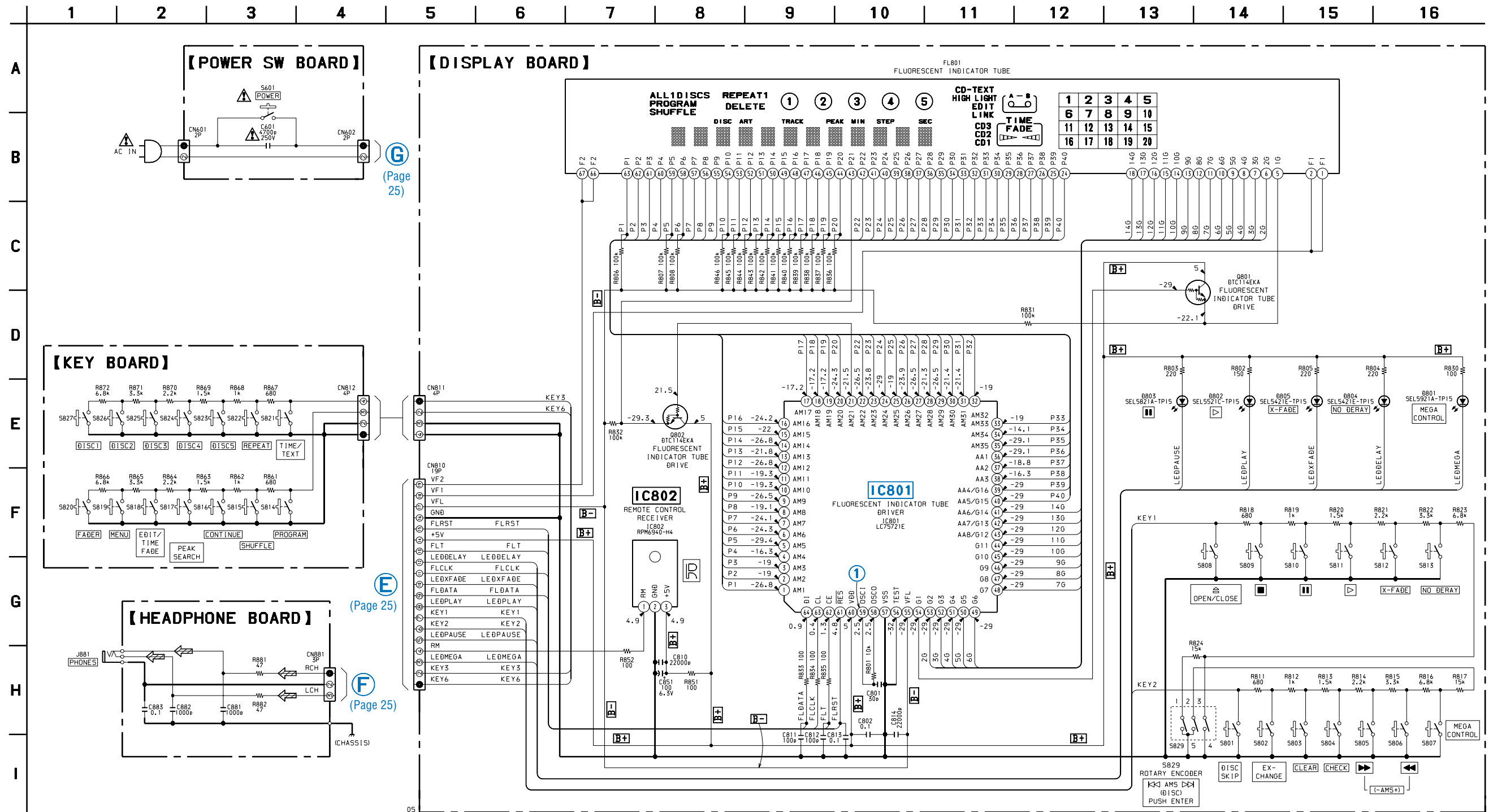


• Semiconductor Location  
– DISPLAY Board –

Ref. No.	Location
D801	B-5
D802	A-4
D803	A-3
D804	A-5
D805	A-5
IC801	A-8
IC802	A-11
Q801	A-7
Q802	A-8



6-9. SCHEMATIC DIAGRAM – PANEL Section – • See page 28 for Waveform.

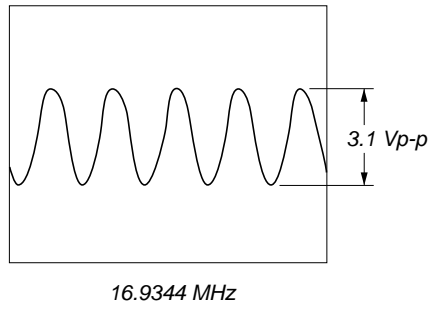


The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

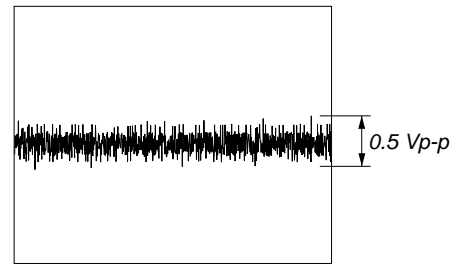
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

• Waveforms  
– BD Board –

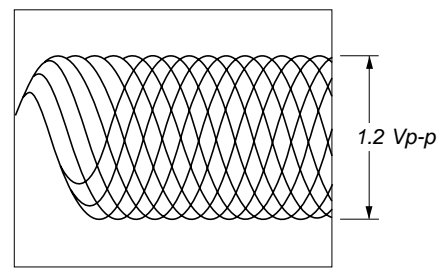
1 IC101 67 (XTAO)



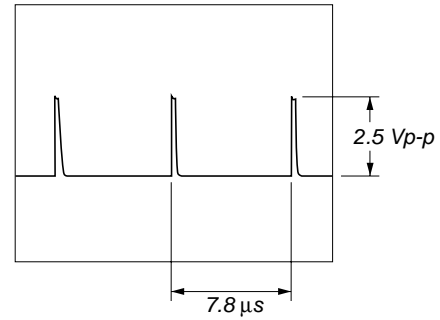
5 IC101 39 (FE) (CD Play Mode)



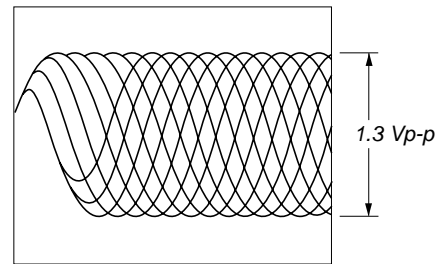
2 IC101 51 (RF AC) (CD Play Mode)



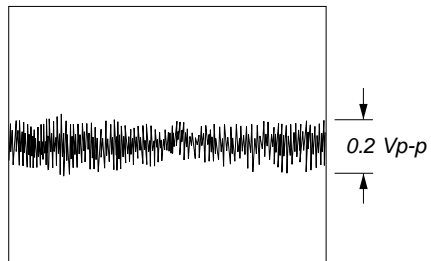
6 IC101 26 (MDP) (CD Play Mode)



3 IC101 43 (RF DC),  
IC103 16 (RF AC) (CD Play Mode)

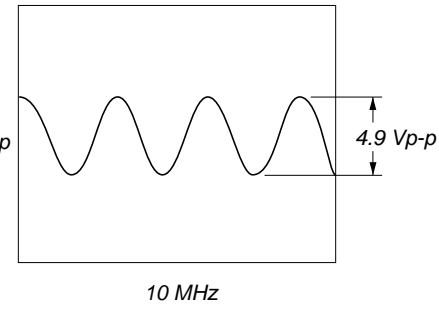


4 IC101 41 (TE) (CD Play Mode)



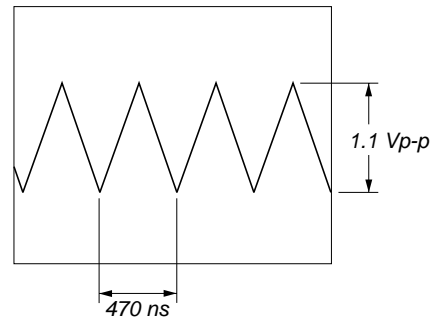
– MAIN Board –

1 IC301 32 (XTAL)



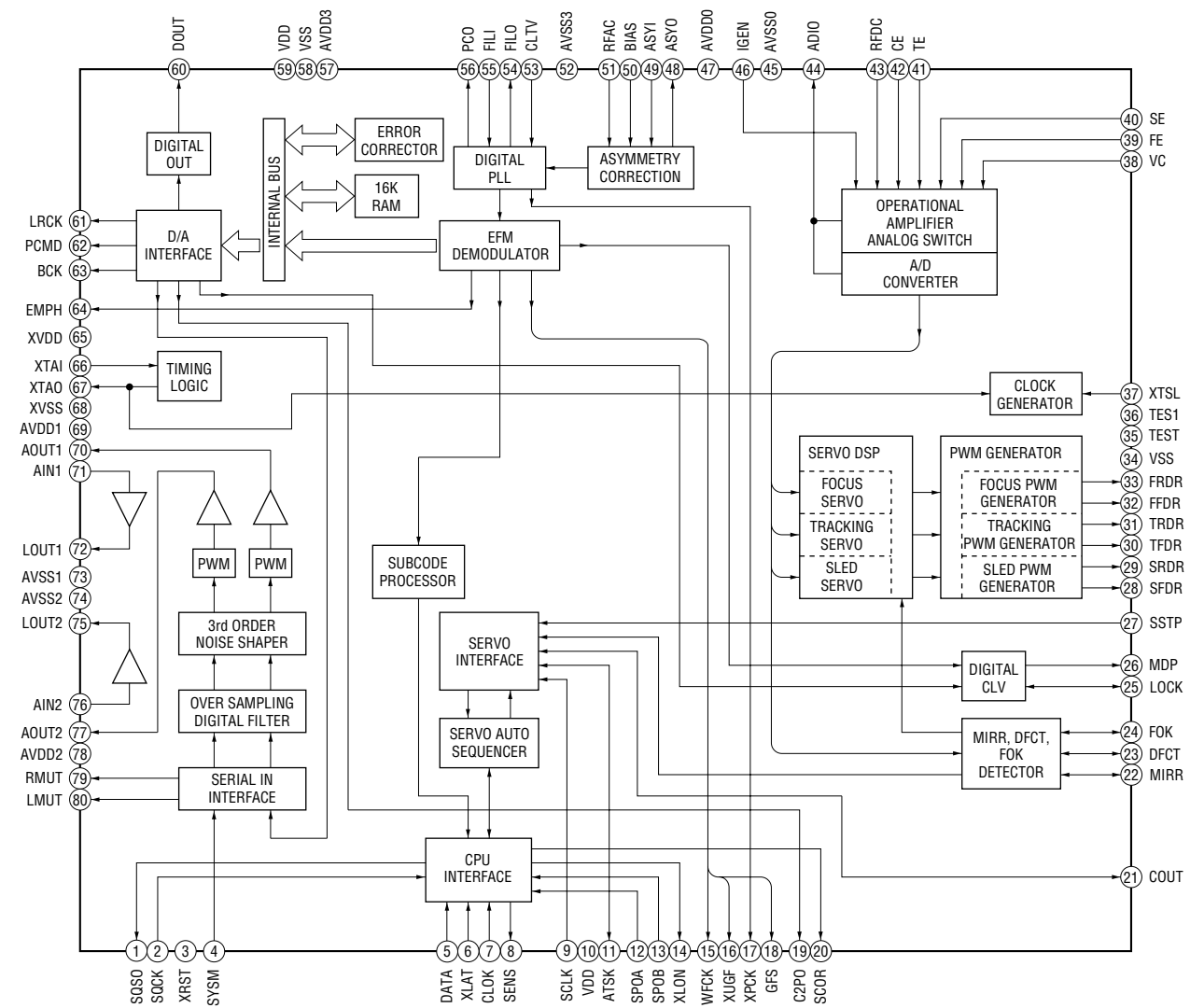
– DISPLAY Board –

1 IC801 59 (OSCI)

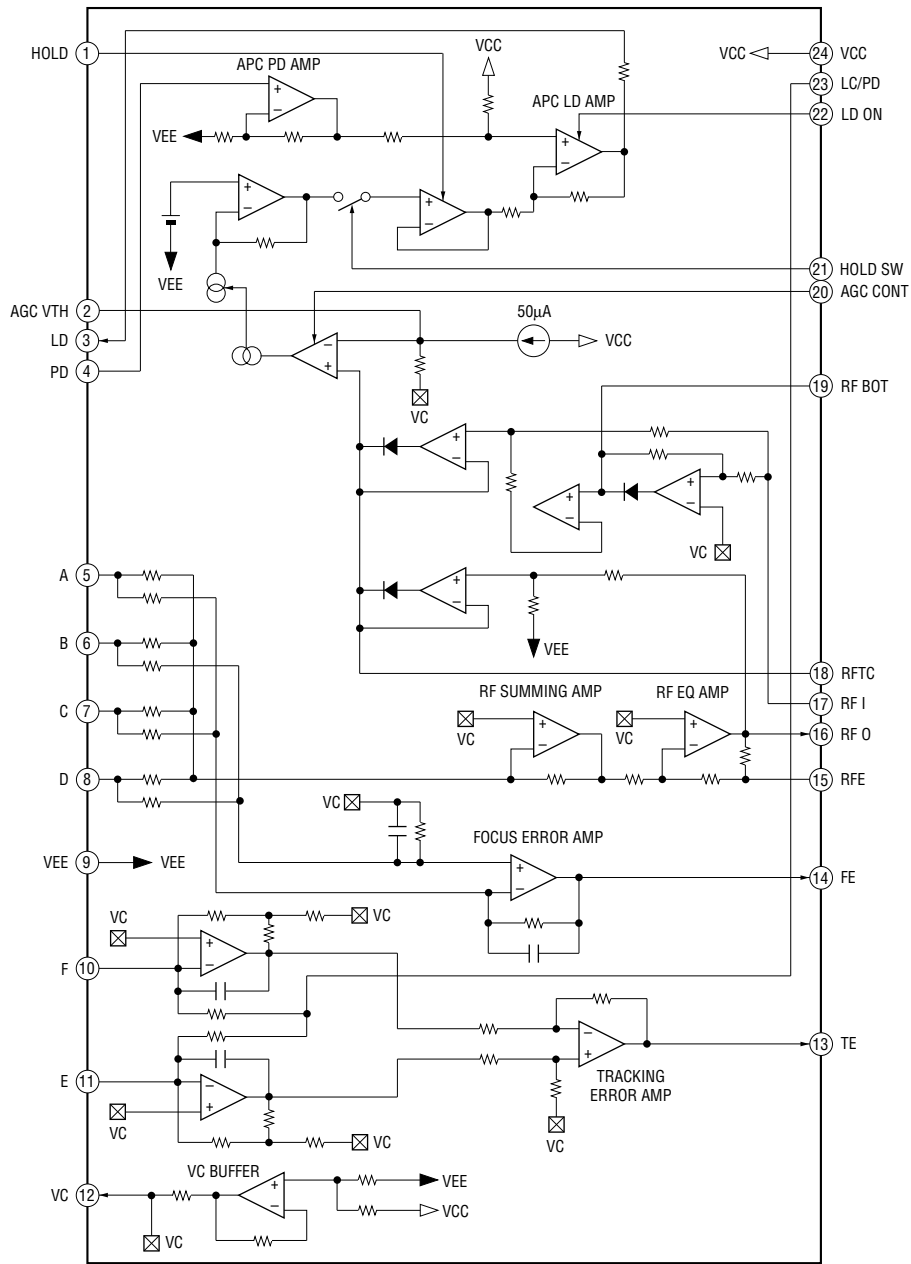


• IC Block Diagrams  
– BD BOARD –

IC101 CXD2587Q

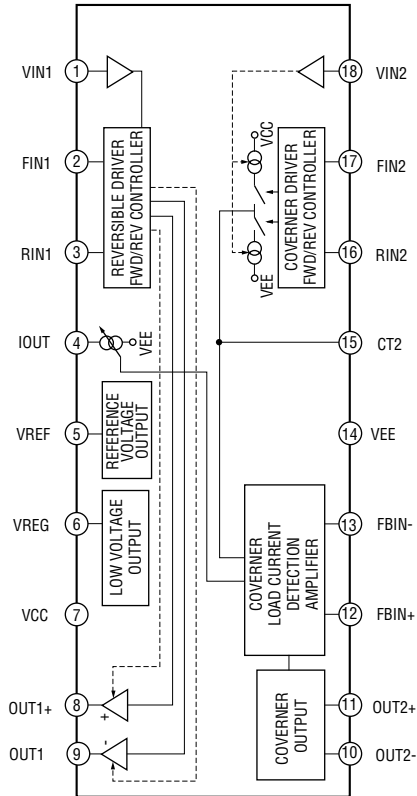


IC103 CXA2568M-T6



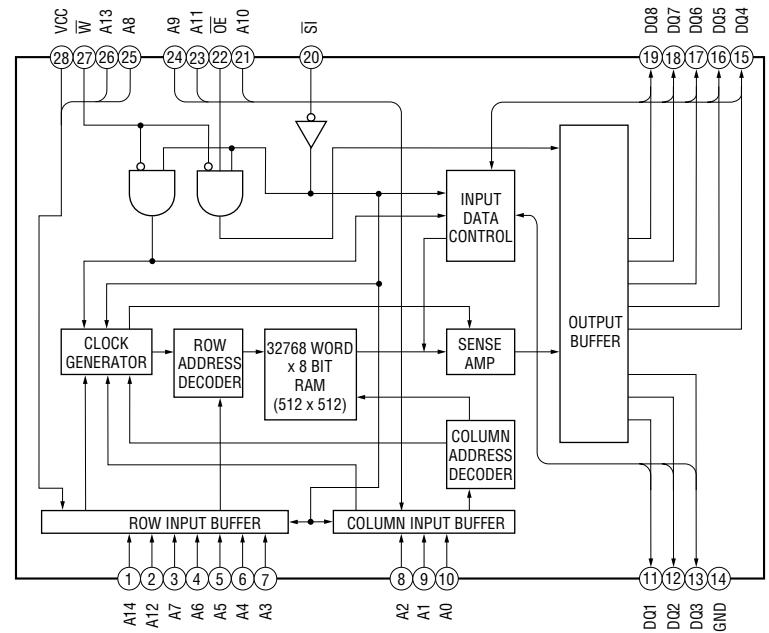
– JUNCTION Board –

IC11 BA6780

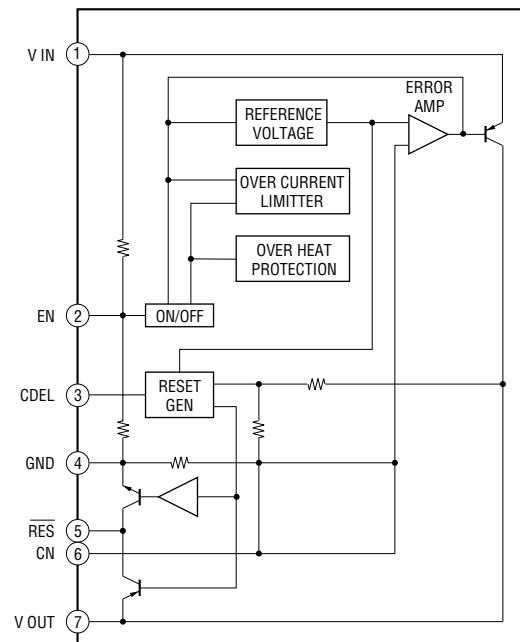


– MAIN Board –

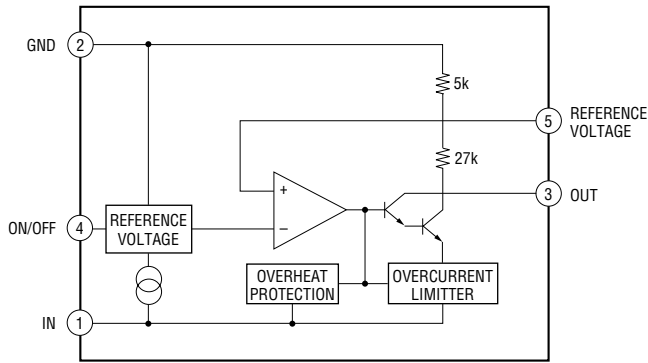
IC302 M5M5256DFP-70XL



IC601 LA5602

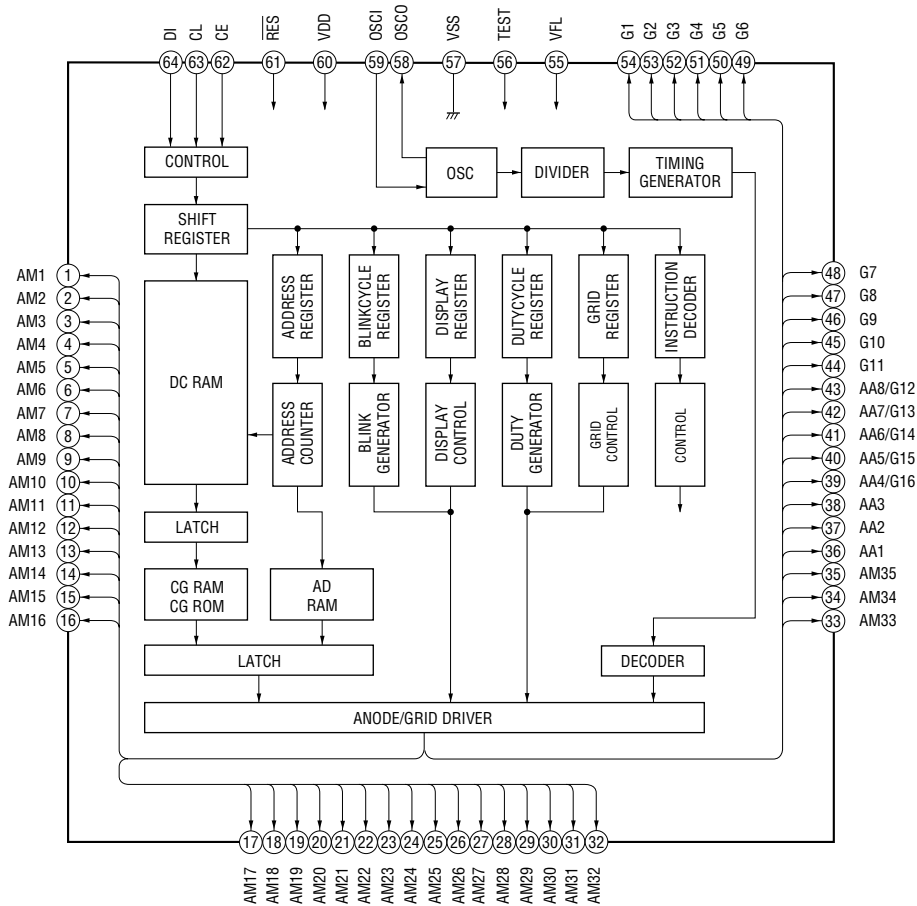


**IC603 M5293L**



**- DISPLAY Board -**

**IC801 LC75721E**



## 6-10. IC PIN FUNCTION DESCRIPTION

### • BD BOARD IC101 CXD2587Q

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, DIGITAL FILTER, D/A CONVERTER)

Pin No.	Pin Name	I/O	Description
1	SQSO	O	Subcode Q data output to the system controller (IC301)
2	SQCK	I	Subcode Q data reading clock signal input from the system controller (IC301)
3	$\overline{\text{XRST}}$	I	System reset signal input from the system controller (IC301) “L”: reset
4	YSM	I	Analog line muting on/off control signal input terminal “H”: line muting on Not used (fixed at “L”)
5	DATA	I	Command serial data input from the system controller (IC301)
6	XLAT	I	Command latch pulse input from the system controller (IC301)
7	CLOK	I	Command serial data transfer clock signal input from the system controller (IC301)
8	SENS	O	Internal status monitor output to the system controller (IC301)
9	SCLK	I	SENSE serial data reading clock input from the system controller (IC301)
10	VDD	—	Power supply terminal (+5V) (digital system)
11	ATSK	I/O	Input pin for anti-shock Not used (fixed at “L”)
12	SPOA	I	Microcomputer escape interface input A terminal Not used (fixed at “L”)
13	SPOB	I	Microcomputer escape interface input B terminal Not used (fixed at “L”)
14	XLON	O	Microcomputer escape interface output to the CXA2568M (IC103)
15	WFCK	O	WFCK output terminal Not used (open)
16	XUGF	O	Not used (open)
17	XPCK	O	Not used (open)
18	GFS	O	Not used (open)
19	C2PO	O	Not used (open)
20	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller (IC301)
21	COU	I/O	Numbers of track counted signal input/output terminal Not used (open)
22	MIRR	I/O	Mirror signal input/output terminal Not used (open)
23	DFCT	I/O	Defect signal input/output terminal Not used (open)
24	FOK	I/O	Focus OK input/output terminal Not used (open)
25	LOCK	I/O	GFS is sampled by 460 Hz “H” when GFS is “H” Not used (open)
26	MDP	O	Spindle motor (M101) servo drive signal output to the BA5974FP (IC102)
27	SSTP	I	Limit in detect switch (S101) input terminal
28	SFDR	O	Sled servo drive PWM signal (+) output to the BA5974FP (IC102)
29	SRDR	O	Sled servo drive PWM signal (-) output to the BA5974FP (IC102)
30	TFDR	O	Tracking servo drive PWM signal (+) output to the BA5974FP (IC102)
31	TRDR	O	Tracking servo drive PWM signal (-) output to the BA5974FP (IC102)
32	FFDR	O	Focus servo drive PWM signal (+) output to the BA5974FP (IC102)
33	FRDR	O	Focus servo drive PWM signal (-) output to the BA5974FP (IC102)
34	VSS	—	Ground terminal (digital system)
35	TEST	I	Input terminal for the test (fixed at “L”)
36	TES1	I	Input terminal for the test (fixed at “L”)
37	XTSL	I	Input terminal for the system clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “L” in this set)
38	VC	I	Middle point voltage (+2.5V) input from the CXA2568M (IC103)
39	FE	I	Focus error signal input from the CXA2568M (IC103)
40	SE	I	Sled error signal input from the CXA2568M (IC103)
41	TE	I	Tracking error signal input from the CXA2568M (IC103)
42	CE	I	Command chip enable signal input from the CXA2568M (IC103)



Pin No.	Pin Name	I/O	Description
43	RFDC	I	RF signal input from the CXA2568M (IC103)
44	ADIO	O	Monitor output of the A/D converter input signal Not used (open)
45	AVSS0	—	Ground terminal (digital system)
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	—	Power supply terminal (+5V) (digital system)
48	ASYO	O	Playback EFM full-swing output terminal
49	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
50	BIAS	I	Playback EFM asymmetry circuit constant current input terminal
51	RFAC	I	EFM signal input from the CXA2568M (IC103)
52	AVSS3	—	Ground terminal (digital system)
53	CLTV	I	Internal VCO control voltage input of the playback master PLL
54	FILO	O	Filter output for master clock of the playback master PLL
55	FILI	I	Filter input for master clock of the playback master PLL
56	PCO	O	Phase comparison output for master clock of the playback EFM master PLL
57	AVDD3	—	Power supply terminal (+5V) (digital system)
58	VSS	—	Ground terminal (digital system)
59	VDD	—	Power supply terminal (+5V) (digital system)
60	DOUT	O	Digital audio signal output to the DIGITAL OUT OPTICAL (IC303)
61	LRCK	O	L/R sampling clock signal (44.1 kHz) output terminal Not used (open)
62	PCMD	O	D/A interface serial data output terminal Not used (open)
63	BCK	O	Bit clock signal (2.8224 MHz) output terminal Not used (open)
64	EMPH	O	De-emphasis control signal output terminal Not used (open)
65	XVDD	—	Power supply terminal (+5V) (crystal oscillator system)
66	XTAI	I	System clock input terminal (16.9344 MHz)
67	XTAO	O	System clock output terminal (16.9344 MHz)
68	XVSS	—	Ground terminal (crystal oscillator system)
69	AVDD1	—	Power supply terminal (+5V) (analog system)
70	AOUT1	O	L-ch analog audio signal output terminal
71	AIN1	I	L-ch operational amplifiers input terminal
72	LOUT1	O	L-ch line output terminal
73	AVSS1	—	Ground terminal (analog system)
74	AVSS2	—	Ground terminal (analog system)
75	LOUT2	O	R-ch line output terminal
76	AIN2	I	R-ch operational amplifiers input terminal
77	AOUT2	O	R-ch analog audio signal output terminal
78	AVDD2	—	Power supply terminal (+5V) (analog system)
79	RMUT	O	R-ch line muting on/off control signal output terminal
80	LMUT	O	L-ch line muting on/off control signal output terminal

• MAIN BOARD IC301 CXP84648-066Q (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1 to 4	A3 to A6	O	Address signal output to the static RAM (IC302)
5	GND	—	Ground terminal
6 to 13	D0 to D7	I/O	Two-way data bus with the static RAM (IC302)
14	PLAY L	O	▷ LED (D802) drive signal output terminal “H”: LED on
15	PAUSE L	O	▬ LED (D803) drive signal output terminal “H”: LED on
16	MEGA L	O	MEGA CONTROL LED (D801) drive signal output terminal “H”: LED on
17	XFADE L	O	X-FADE LED (D805) drive signal output terminal “H”: LED on
18	NODELAY L	O	NO DELAY LED (D804) drive signal output terminal “H”: LED on
19	$\overline{\text{WE}}$	O	Write enable signal output to the static RAM (IC302)
20	LOAD IN	O	Loading motor (M11) drive signal output to the BA6780 (IC11) *1
21	LOAD OUT	O	Loading motor (M11) drive signal output to the BA6780 (IC11) *1
22	FL CLK	O	Serial data transfer clock signal output to the FL driver (IC801)
23	FL DATA	O	Serial data output to the FL driver (IC801)
24	BLK	O	Blank signal output to the FL driver (IC801)
25 to 27	A13, A14, A7	O	Address signal output to the static RAM (IC302)
28	DSSENS	I	Detect signal input from the disc sensor (D11)
29	NC	O	Not used (open)
30	$\overline{\text{RST}}$	I	System reset signal input from the reset signal generator (IC601) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
31	EXTAL	I	Main system clock input terminal (10 MHz)
32	XTAL	O	Main system clock output terminal (10 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal Not used (open)
35	TEX	I	Sub system clock input terminal Not used (fixed at “L”)
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage input terminal (+5V)
38	BUSOUT	O	Sircs remote control signal output to the CONTROL A111
39	NC	O	Not used (open)
40	KEY6	I	Key input terminal (A/D input) (S814 to S820) PROGRAM, SHUFFLE, CONTINUE, PEAK SEARCH, EDIT/TIME FADE, MENU, FADER keys input
41	KEY3	I	Key input terminal (A/D input) (S921 to S927) TIME/TEXT, REPEAT, DISC 5 to DISC 1 keys input
42	NC	O	Not used (open)
43	KEY2	I	Key input terminal (A/D input) (S901 to S907) DISC SKIP, EX-CHANGE, CLEAR, CHECK, ▶▶, ◀◀, MEGA CONTROL keys input
44	KEY1	I	Key input terminal (A/D input) (S808 to S813, S829) ⊕ OPEN/CLOSE, ■, ▬, ▷, X-FADE, NO DELAY, ◀◀ AMS ▶▶ keys input
45	TEST	I	Setting terminal for the test mode “L” active
46	TSSENS	I	Detect signal input from the table sensor (D10)
47	FLT	O	Serial data latch pulse output to the FL driver (IC801)
48	CLK	O	Serial data transfer clock signal output to the CXD2587Q (IC101)
49	NC	O	Not used (open)
50	DATA	O	Serial data output to the CXD2587Q (IC101)

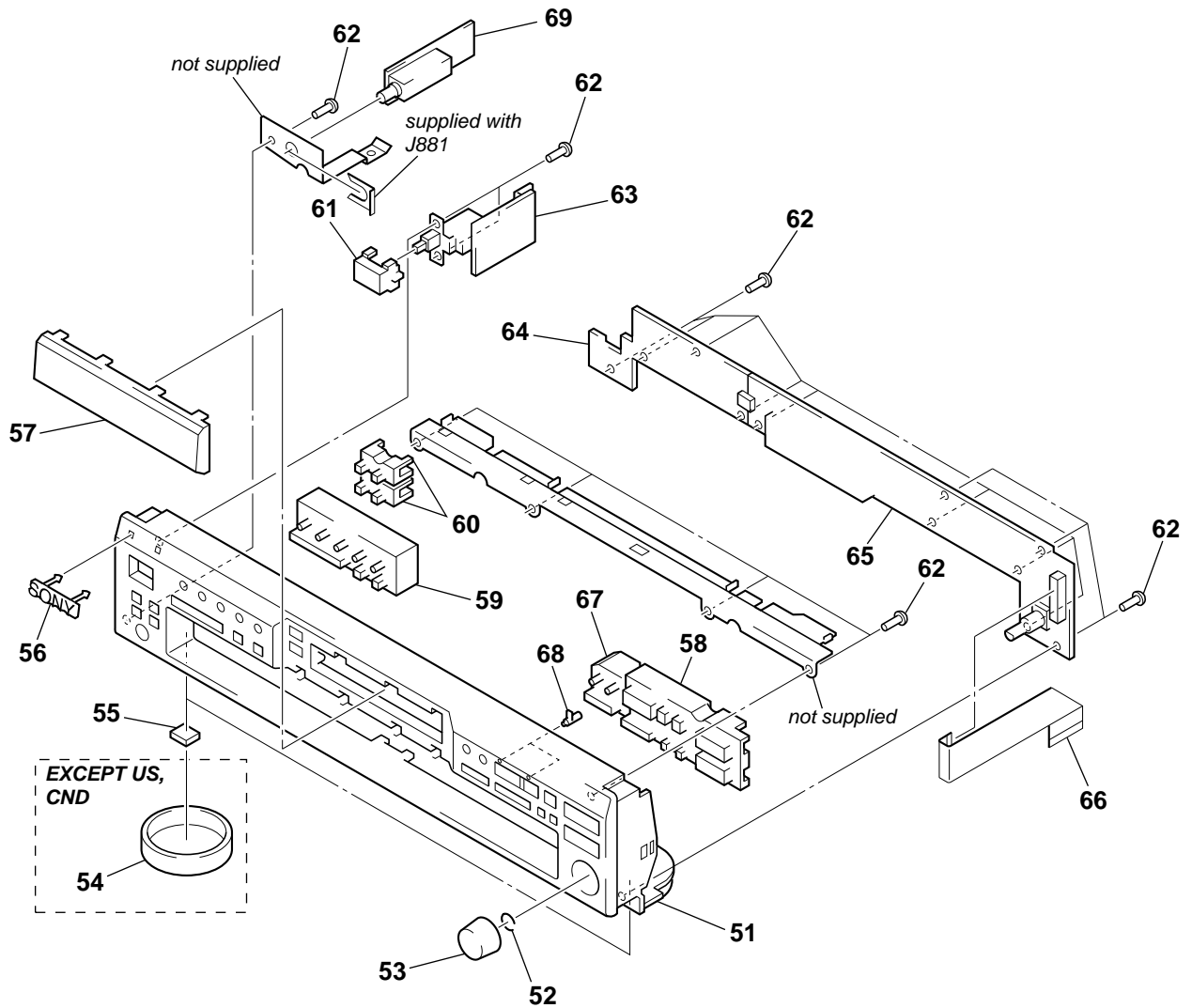
Pin No.	Pin Name	I/O	Description
51	SQCK	O	Sub-code Q data reading clock signal output to the CXD2587Q (IC101)
52	SUBQ	I	Sub-code Q data signal input from the CXD2587Q (IC101)
53	NC	O	Not used (open)
54	SENSE	I	Internal status (SENSE) signal input from the CXD2587Q (IC101)
55	NC	I	Not used (fixed at "L")
56	RMIN	I	Remote control signal input from the remote control receiver (IC802)
57	NC	I	Not used (fixed at "L")
58	XLT	O	Serial data latch pulse signal output to the CXD2587Q (IC101)
59	AMUTE	O	Muting control signal output terminal Not used (open)
60	NC	O	Not used (open)
61	SCOR	I	Sub-code sync (S0+S1) detection signal input from the CXD2587Q (IC101)
62	BUSIN	I	Sircs remote control signal input from the CONTROL AIII
63	NC	O	Not used (open)
64	ZMUTE	O	Muting on/off control signal output terminal "H" active
65	LPH	O	Laser power control signal output to the CXD2587Q (IC101) "H" active
66	TBLL	O	Table motor drive signal (counterclockwise) output to the BA6780 (IC11)
67	TBLR	O	Table motor drive signal (clockwise) output to the BA6780 (IC11)
68, 69	S1, S2	I	Detect signal input from the tray address detect switch (S200)
70	OUT.SW	I	Detect signal input from the open/close detect switch (S11)
71	A8	O	Address signal output to the static RAM (IC302)
72, 73	VDD	—	Power supply terminal (+5V)
74 to 80	A9 to A12, A0 to A2	O	Address signal output to the static RAM (IC302)

\*1 Loading motor (M11) control

Terminal \ Operation	OFF	OUT	IN	BRAKE
LOAD IN (pin ⑳)	"L"	"L"	"H"	"H"
LOAD OUT (pin ㉑)	"L"	"H"	"L"	"H"

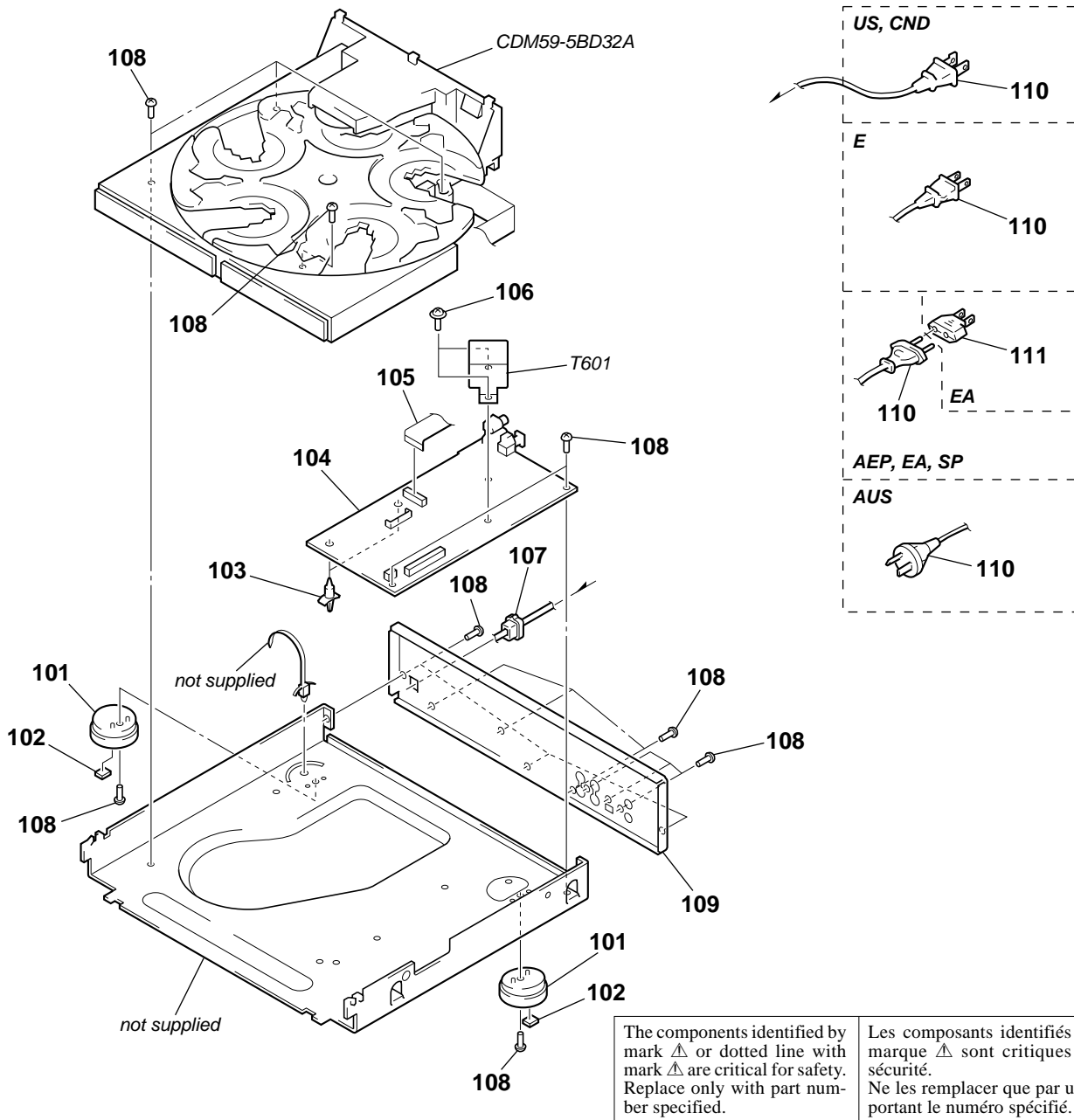


(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-224-861-21	PANEL, FRONT		60	4-224-863-01	BUTTON (MODE)	
52	3-354-981-01	SPRING (SUS), RING		61	3-931-429-21	BUTTON (POWER) (Ⓞ)	
53	4-224-868-01	KNOB (AMS)		62	4-951-620-01	SCREW (2.6X8), +BVTP	
54	4-977-593-01	RING (DIA. 50), ORNAMENTAL	(EXCEPT US, CND)	63	1-676-544-11	POWER SW BOARD	
* 55	4-978-398-21	CUSHION		64	1-676-542-11	KEY BOARD	
56	4-996-698-41	EMBLEM, SONY		65	A-4725-013-A	DISPLAY BOARD, COMPLETE	
57	4-224-866-11	WINDOW (FL)		66	1-792-487-11	WIRE (FLAT TYPE) (19 CORE)	
58	4-224-864-21	BUTTON (PLAY) (▷. ■. ■. ≡ OPEN/CLOSE. EX-CHANGE. DISC SKIP)		67	4-224-865-01	BUTTON (MEGA-CON)	
59	4-224-862-01	BUTTON (DISC)		68	4-224-869-01	INDICATOR (PLAY)	
				69	1-676-543-11	HEADPHONE BOARD	

### (3) CHASSIS SECTION

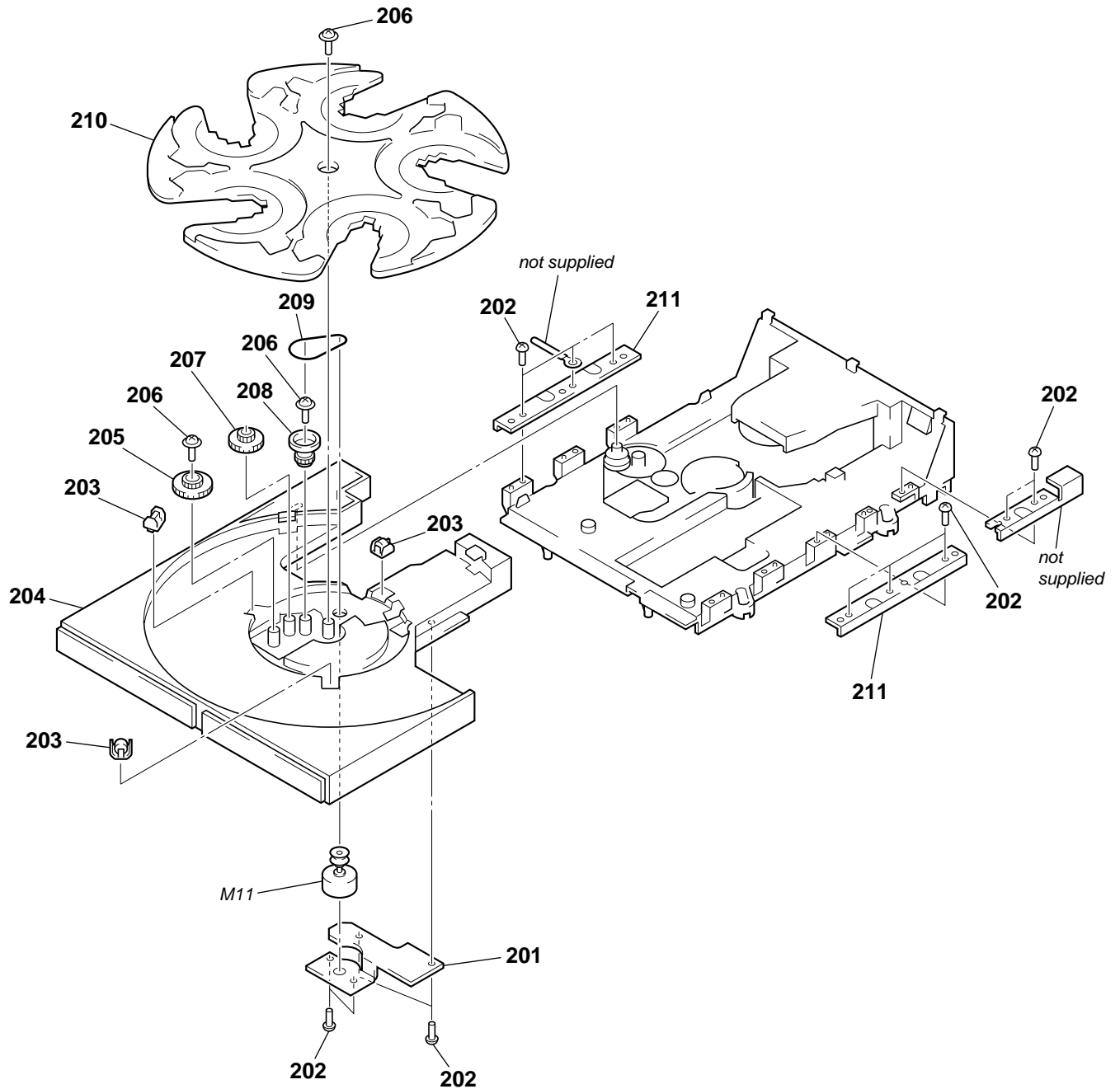


The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

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

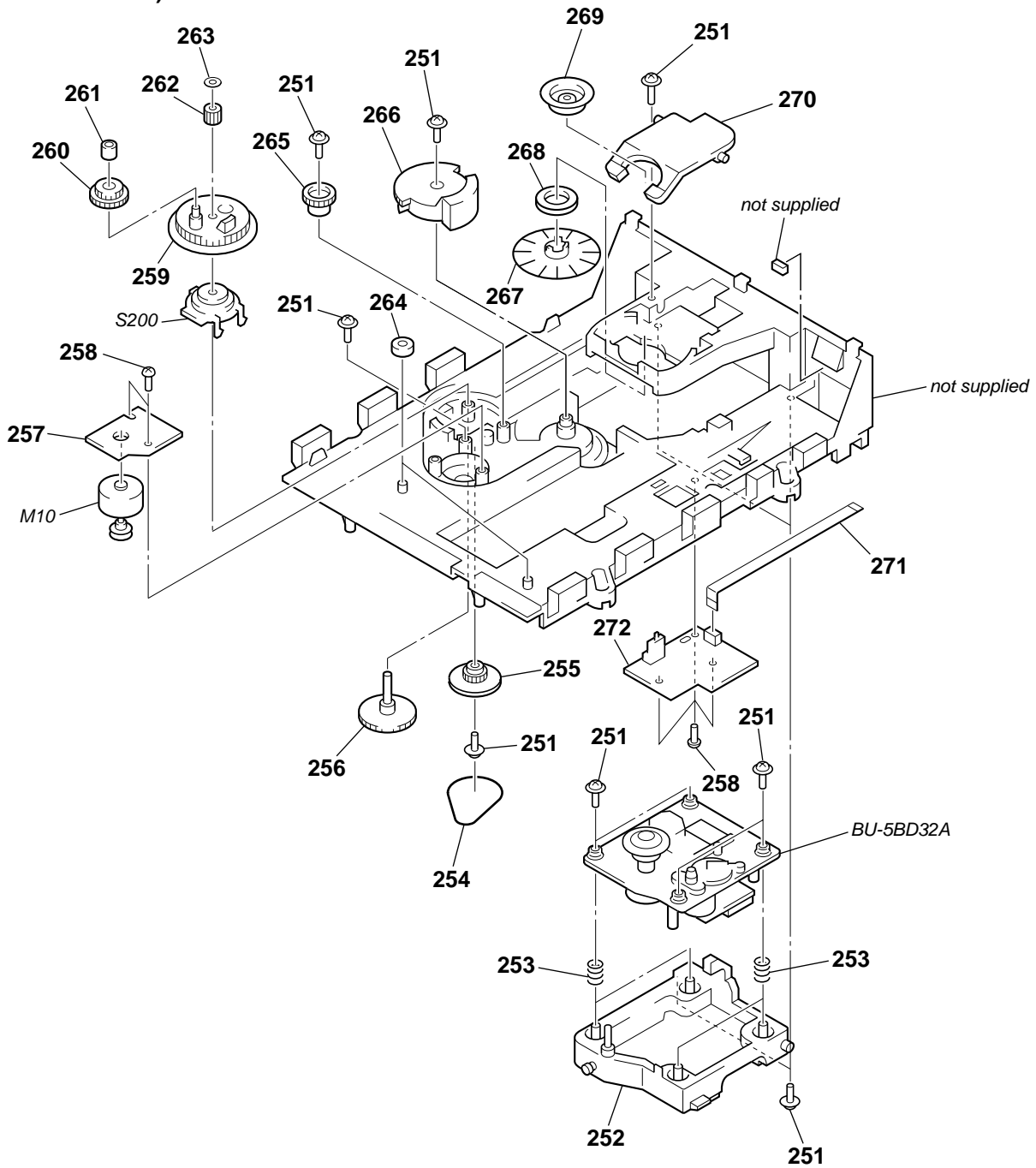
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-977-591-11	FOOT (F50150S)		109	4-224-879-31	PANEL, BACK (AUS)	
* 102	4-978-398-21	CUSHION		109	4-224-879-41	PANEL, BACK (E)	
103	4-943-687-01	HOLDER, PC BOARD		109	4-224-879-51	PANEL, BACK (SP)	
104	A-4725-011-A	MAIN BOARD, COMPLETE (US, CN)		109	4-224-879-61	PANEL, BACK (EA)	
104	A-4725-016-A	MAIN BOARD, COMPLETE (E, EA)		$\triangle$ 110	1-558-943-41	CORD, POWER (E)	
104	A-4725-017-A	MAIN BOARD, COMPLETE (AEP, SP, AUS)		$\triangle$ 110	1-575-651-21	CORD, POWER (AEP, EA, SP)	
105	1-792-130-11	WIRE (FLAT TYPE) (21 CORE)		$\triangle$ 110	1-590-926-11	CORD, POWER (CN)	
106	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		$\triangle$ 110	1-696-845-11	CORD, POWER (AUS)	
107	3-703-571-11	BUSHING (S) (FBS002), CORD (E)		$\triangle$ 110	1-783-531-31	CORD, POWER (US)	
107	4-966-267-11	BUSHING (FBS001), CORD (EXCEPT E)		$\triangle$ 111	1-569-008-31	ADAPTOR, CONVERSION (EA)	
108	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		$\triangle$ T601	1-435-342-11	TRANSFORMER, POWER (US, CN)	
109	4-224-879-01	PANEL, BACK (US)		$\triangle$ T601	1-435-343-11	TRANSFORMER, POWER (AEP, SP, AUS)	
109	4-224-879-11	PANEL, BACK (CN)		$\triangle$ T601	1-435-344-11	TRANSFORMER, POWER (E, EA)	
109	4-224-879-21	PANEL, BACK (AEP)					

(4) CD MECHANISM DECK SECTION-1  
(CDM59-5BD32A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	1-676-245-11	SENSOR BOARD		207	4-224-616-01	GEAR (RM-M)	
202	4-218-253-01	SCREW (M2.6), +BTTP		208	4-224-615-01	GEAR (RM-B)	
* 203	X-4947-960-1	ROLLER ASSY		209	4-225-328-01	BELT (ROTARY)	
204	4-224-602-01	TABLE		210	4-224-603-01	TRAY	
205	4-224-617-01	GEAR (RM-E)		211	4-224-619-01	BRACKET (GUIDE)	
206	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		M11	A-4672-867-A	MOTOR ASSY, ROTARY (TRAY)	

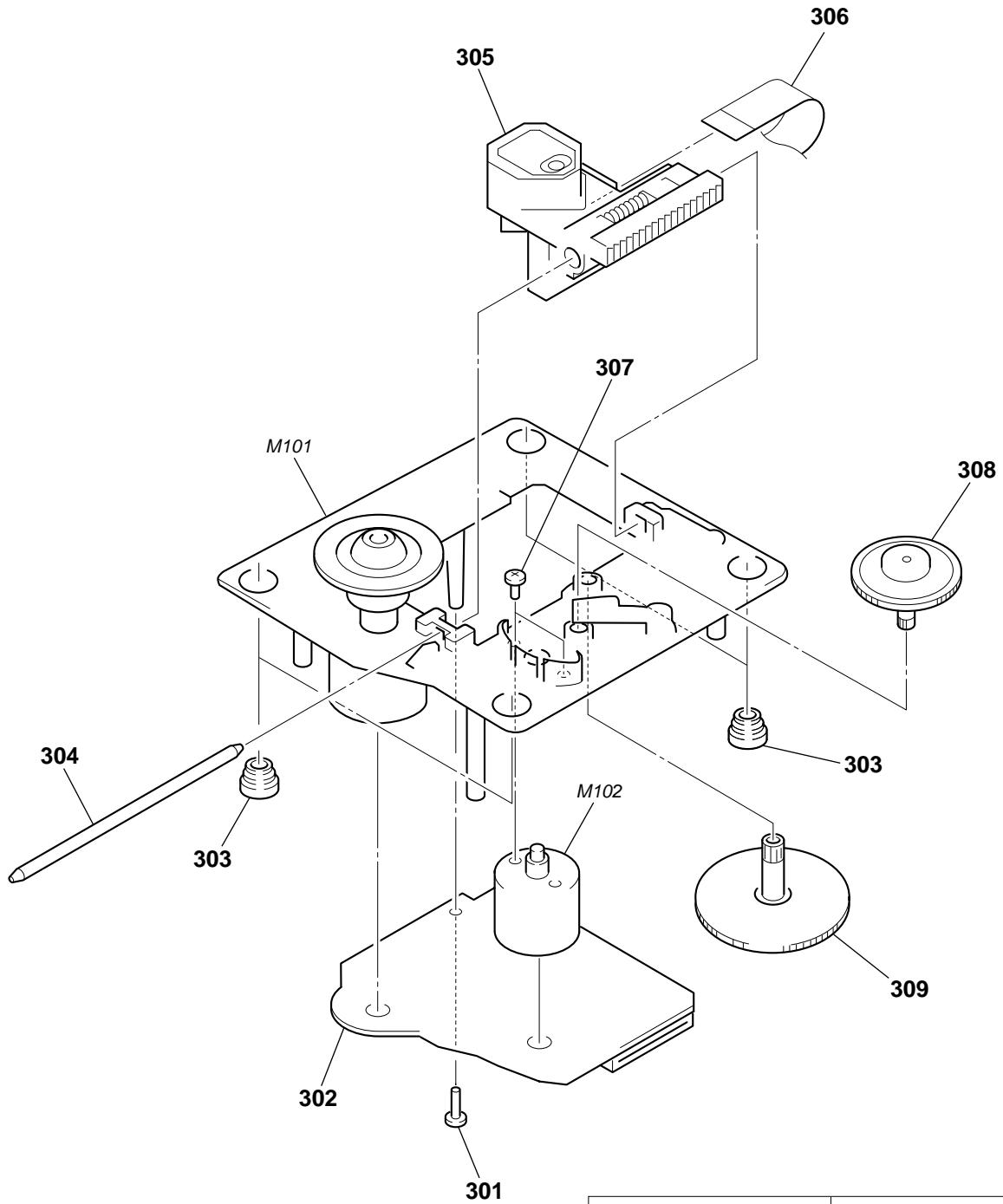
(5) CD MECHANISM DECK SECTION-2  
(CDM59-5BD32A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		* 264	4-951-619-21	CUSHION (A)	
252	X-4952-312-1	HOLDER (BU) ASSY		265	4-224-606-01	GEAR (RV)	
253	4-959-996-21	SPRING (932), COMPRESSION		266	4-224-605-01	GEAR (U/D)	
254	4-225-885-01	BELT (LOADING)		267	X-4952-019-1	PULLEY (A) ASSY, CHUCKING	
255	4-225-844-01	GEAR (LOADING A)		268	1-471-061-11	MAGNET ASSY	
256	4-224-613-01	GEAR (SHAFT)		269	4-221-688-01	PULLEY (B), CHUCKING	
257	1-676-244-11	LOADING MOTOR BOARD		270	4-224-618-01	LEVER (LIFTER)	
258	4-218-253-01	SCREW (M2.6), +BTTP		271	1-791-930-11	WIRE (FLAT TYPE) (6 CORE)	
259	4-224-607-01	GEAR, SWING		272	1-676-246-11	JUNCTION BOARD	
260	4-224-609-01	GEAR (LOADING C)		M10	A-4672-879-A	MOTOR ASSY, LOADING	
261	4-224-608-01	COLLAR, SWING		S200	1-418-746-11	ENCODER, ROTARY (BU, TABLE ADDRESS DETECT)	
262	4-224-611-01	GEAR (LOADING B)					
263	3-016-533-21	WASHER (FR), STOPPER					



**(6) BASE UNIT SECTION  
(BU-5BD32A)**



<p>The components identified by mark <math>\Delta</math> or dotted line with mark <math>\Delta</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\Delta</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	4-951-620-01	SCREW (2.6X8), +BVTP		307	3-713-786-51	SCREW +P 2X3	
* 302	A-4724-494-A	BD BOARD, COMPLETE		308	4-917-567-21	GEAR (M)	
303	4-951-940-41	INSULATOR (BU)		309	4-917-564-01	GEAR (P), FLATNESS	
304	4-917-565-01	SHAFT, SLED		M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
$\Delta$ 305	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP		M102	X-4917-504-1	MOTOR ASSY (SLED)	
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)					

# SECTION 8 ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable
- Abbreviation  
AUS : Australian model      EA : Saudi Arabia model  
CND : Canadian model      SP : Singapore model

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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

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

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4724-494-A	BD BOARD, COMPLETE *****					
		< CAPACITOR >					
C101	1-163-005-11	CERAMIC CHIP	470PF 10%	50V	C165	1-163-038-00	CERAMIC CHIP 0.1uF 25V
C102	1-164-004-11	CERAMIC CHIP	0.1uF 10%	25V	C167	1-163-235-11	CERAMIC CHIP 22PF 5% 50V
C103	1-163-005-11	CERAMIC CHIP	470PF 10%	50V	C168	1-163-235-11	CERAMIC CHIP 22PF 5% 50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF 10%	50V	C171	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V
C108	1-164-004-11	CERAMIC CHIP	0.1uF 10%	25V	C172	1-163-123-00	CERAMIC CHIP 180PF 5% 50V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF 10%	50V	C181	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF 10%	50V	C182	1-163-123-00	CERAMIC CHIP 180PF 5% 50V
C111	1-163-251-11	CERAMIC CHIP	100PF 5%	50V			< CONNECTOR >
C112	1-163-038-00	CERAMIC CHIP	0.1uF	25V	CN101	1-784-360-11	CONNECTOR, FFC (LIF (NON-ZIF)) 21P
C113	1-163-038-00	CERAMIC CHIP	0.1uF	25V	CN102	1-777-937-11	CONNECTOR, FFC/FFC 16P
C114	1-163-038-00	CERAMIC CHIP	0.1uF	25V			< FERRITE BEAD >
C115	1-126-607-11	ELECT CHIP	47uF 20%	4V	FB101	1-500-445-21	FERRITE 0uH
C116	1-126-607-11	ELECT CHIP	47uF 20%	4V	FB103	1-500-445-21	FERRITE 0uH
C117	1-126-209-11	ELECT CHIP	100uF 20%	4V			< IC >
C118	1-163-009-11	CERAMIC CHIP	0.001uF 10%	50V	IC101	8-752-386-85	IC CXD2587Q
C119	1-163-235-11	CERAMIC CHIP	22PF 5%	50V	IC102	8-759-549-28	IC BA5974FP-E2
C121	1-163-038-00	CERAMIC CHIP	0.1uF	25V	IC103	8-752-085-51	IC CXA2568M-T6
C122	1-126-206-11	ELECT CHIP	100uF 20%	6.3V			< TRANSISTOR >
C123	1-163-021-11	CERAMIC CHIP	0.01uF 10%	50V	Q101	8-729-010-08	TRANSISTOR MSB710-RT1
C124	1-107-823-11	CERAMIC CHIP	0.47uF 10%	16V			< RESISTOR >
C125	1-163-038-00	CERAMIC CHIP	0.1uF	25V	R101	1-216-077-00	RES-CHIP 15K 5% 1/10W
C126	1-163-038-00	CERAMIC CHIP	0.1uF	25V	R102	1-216-097-00	RES-CHIP 100K 5% 1/10W
C127	1-117-681-11	ELECT CHIP	100uF 20%	16V	R103	1-216-077-00	RES-CHIP 15K 5% 1/10W
C128	1-163-038-00	CERAMIC CHIP	0.1uF	25V	R104	1-216-085-00	METAL CHIP 33K 5% 1/10W
C129	1-163-031-11	CERAMIC CHIP	0.01uF	50V	R105	1-216-097-00	RES-CHIP 100K 5% 1/10W
C130	1-164-346-11	CERAMIC CHIP	1uF	16V	R106	1-216-049-11	RES-CHIP 1K 5% 1/10W
C131	1-124-779-00	ELECT CHIP	10uF 20%	16V	R107	1-216-073-00	METAL CHIP 10K 5% 1/10W
C133	1-164-346-11	CERAMIC CHIP	1uF	16V	R108	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
C140	1-164-346-11	CERAMIC CHIP	1uF	16V	R109	1-216-121-00	RES-CHIP 1M 5% 1/10W
C141	1-164-346-11	CERAMIC CHIP	1uF	16V	R110	1-216-025-00	RES-CHIP 100 5% 1/10W
C143	1-163-038-00	CERAMIC CHIP	0.1uF	25V	R111	1-216-121-00	RES-CHIP 1M 5% 1/10W
C151	1-163-235-11	CERAMIC CHIP	22PF 5%	50V	R113	1-216-121-00	RES-CHIP 1M 5% 1/10W
C153	1-163-038-00	CERAMIC CHIP	0.1uF	25V	R114	1-216-073-00	METAL CHIP 10K 5% 1/10W
C154	1-110-501-11	CERAMIC CHIP	0.33uF 10%	16V	R116	1-216-001-00	METAL CHIP 10 5% 1/10W
C156	1-163-235-11	CERAMIC CHIP	22PF 5%	50V	R117	1-216-049-11	RES-CHIP 1K 5% 1/10W
C157	1-163-009-11	CERAMIC CHIP	0.001uF 10%	50V	R119	1-216-041-00	METAL CHIP 470 5% 1/10W
C159	1-163-019-00	CERAMIC CHIP	0.0068uF 10%	50V	R123	1-216-073-00	METAL CHIP 10K 5% 1/10W
C161	1-126-206-11	ELECT CHIP	100uF 20%	6.3V			
C162	1-126-205-11	ELECT CHIP	47uF 20%	6.3V			
C163	1-126-206-11	ELECT CHIP	100uF 20%	6.3V			

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R124	1-216-097-00	RES-CHIP	100K 5% 1/10W			< FLUORESCENT INDICATOR >	
R131	1-216-037-00	METAL CHIP	330 5% 1/10W				
R143	1-216-103-00	METAL CHIP	180K 5% 1/10W	FL801	1-517-664-11	INDICATOR TUBE, FLUORESCENT	
R144	1-216-103-00	METAL CHIP	180K 5% 1/10W			< IC >	
R147	1-216-069-00	METAL CHIP	6.8K 5% 1/10W				
R148	1-216-001-00	METAL CHIP	10 5% 1/10W	IC801	8-759-337-52	IC LC75721E	
R149	1-216-001-00	METAL CHIP	10 5% 1/10W	IC802	8-759-648-23	IC RPM6940-H4	
R158	1-216-111-00	METAL CHIP	390K 5% 1/10W			< TRANSISTOR >	
R159	1-216-101-00	METAL CHIP	150K 5% 1/10W	Q801	8-729-900-53	TRANSISTOR DTC114EK	
R161	1-216-308-00	METAL CHIP	4.7 5% 1/10W	Q802	8-729-900-53	TRANSISTOR DTC114EK	
R162	1-216-101-00	METAL CHIP	150K 5% 1/10W			< RESISTOR >	
R171	1-216-680-11	METAL CHIP	16K 0.5% 1/10W				
R172	1-216-675-11	METAL CHIP	10K 0.5% 1/10W				
R173	1-216-679-11	METAL CHIP	15K 0.5% 1/10W	R801	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R181	1-216-680-11	METAL CHIP	16K 0.5% 1/10W	R802	1-216-029-00	METAL CHIP 150 5% 1/10W	
R182	1-216-675-11	METAL CHIP	10K 0.5% 1/10W	R803	1-216-033-00	METAL CHIP 220 5% 1/10W	
R183	1-216-679-11	METAL CHIP	15K 0.5% 1/10W	R804	1-216-033-00	METAL CHIP 220 5% 1/10W	
R184	1-216-025-00	RES-CHIP	100 5% 1/10W	R805	1-216-033-00	METAL CHIP 220 5% 1/10W	
R185	1-216-025-00	RES-CHIP	100 5% 1/10W	R806	1-216-097-00	RES-CHIP 100K 5% 1/10W	
		< NETWORK RESISTOR >		R807	1-216-097-00	RES-CHIP 100K 5% 1/10W	
RN101	1-233-412-11	RES, CHIP NETWORK 1.0K (3216)		R808	1-216-097-00	RES-CHIP 100K 5% 1/10W	
RN102	1-233-576-11	RES, CHIP NETWORK 100		R811	1-216-045-00	METAL CHIP 680 5% 1/10W	
		< SWITCH >		R812	1-216-049-11	RES-CHIP 1K 5% 1/10W	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		R813	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
		< VIBRATOR >		R814	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)		R815	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
		*****		R816	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
		A-4725-013-A DISPLAY BOARD, COMPLETE		R817	1-216-077-00	RES-CHIP 15K 5% 1/10W	
		*****		R818	1-216-045-00	METAL CHIP 680 5% 1/10W	
*	4-989-724-01	HOLDER (FL)		R819	1-216-049-11	RES-CHIP 1K 5% 1/10W	
		< CAPACITOR >		R820	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C801	1-163-104-00	CERAMIC CHIP	30PF 5% 50V	R821	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C802	1-165-319-11	CERAMIC CHIP	0.1uF 50V	R822	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C810	1-163-033-00	CERAMIC CHIP	0.022uF 50V	R823	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C811	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	R824	1-216-077-00	RES-CHIP 15K 5% 1/10W	
C812	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	R830	1-216-025-00	RES-CHIP 100 5% 1/10W	
C813	1-165-319-11	CERAMIC CHIP	0.1uF 50V	R831	1-216-097-00	RES-CHIP 100K 5% 1/10W	
C814	1-163-033-00	CERAMIC CHIP	0.022uF 50V	R832	1-216-097-00	RES-CHIP 100K 5% 1/10W	
C851	1-126-968-11	ELECT	100uF 20% 6.3V	R833	1-216-025-00	RES-CHIP 100 5% 1/10W	
		< CONNECTOR >		R834	1-216-025-00	RES-CHIP 100 5% 1/10W	
CN810	1-784-780-11	CONNECTOR, FFC 19P		R835	1-216-025-00	RES-CHIP 100 5% 1/10W	
CN811	1-750-194-11	CONNECTOR, BOARD TO BOARD 4P		R836	1-216-097-00	RES-CHIP 100K 5% 1/10W	
		< DIODE >		R837	1-216-097-00	RES-CHIP 100K 5% 1/10W	
D801	8-719-046-36	LED SEL5921A-TP15 (MEGA CONTROL)		R838	1-216-097-00	RES-CHIP 100K 5% 1/10W	
D802	8-719-046-41	LED SEL5521C-TP15 (>)		R839	1-216-097-00	RES-CHIP 100K 5% 1/10W	
D803	8-719-046-39	LED SEL5821A-TP15 (■)		R840	1-216-097-00	RES-CHIP 100K 5% 1/10W	
D804	8-719-046-43	LED SEL5421E-TP15 (NO DELAY)		R841	1-216-097-00	RES-CHIP 100K 5% 1/10W	
D805	8-719-046-43	LED SEL5421E-TP15 (X-FADE)		R842	1-216-097-00	RES-CHIP 100K 5% 1/10W	
		< SWITCH >		R843	1-216-097-00	RES-CHIP 100K 5% 1/10W	
				R844	1-216-097-00	RES-CHIP 100K 5% 1/10W	
				R845	1-216-097-00	RES-CHIP 100K 5% 1/10W	
				R846	1-216-097-00	RES-CHIP 100K 5% 1/10W	
				R851	1-216-025-00	RES-CHIP 100 5% 1/10W	
				R852	1-216-025-00	RES-CHIP 100 5% 1/10W	
						< SWITCH >	
				S801	1-771-349-21	SWITCH, KEYBOARD (DISC SKIP)	

<b>DISPLAY</b>	<b>HEADPHONE</b>	<b>JUNCTION</b>	<b>KEY</b>	<b>LOADING MOTOR</b>	<b>MAIN</b>
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Ref. No.	Part No.	Description	Remark
S802	1-771-349-21	SWITCH, KEYBOARD (EX-CHANGE)	
S803	1-771-349-21	SWITCH, KEYBOARD (CLEAR)	
S804	1-771-349-21	SWITCH, KEYBOARD (CHECK)	
S805	1-771-349-21	SWITCH, KEYBOARD (▶▶)	
S806	1-771-349-21	SWITCH, KEYBOARD (◀◀)	
S807	1-771-349-21	SWITCH, KEYBOARD (MEGA CONTROL)	
S808	1-771-349-21	SWITCH, KEYBOARD (⊆ OPEN/CLOSE)	
S809	1-771-349-21	SWITCH, KEYBOARD (■)	
S810	1-771-349-21	SWITCH, KEYBOARD (▣)	
S811	1-771-349-21	SWITCH, KEYBOARD (▷)	
S812	1-771-349-21	SWITCH, KEYBOARD (X-FADE)	
S813	1-771-349-21	SWITCH, KEYBOARD (NO DELAY)	
S829	1-475-543-11	ENCODER, ROTARY	
(◀◀ AMS (DISC) ▶▶ PUSH ENTER)			
*****			
	1-676-543-11	HEADPHONE BOARD	
*****			
< CAPACITOR >			
C881	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C882	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C883	1-165-319-11	CERAMIC CHIP 0.1uF	50V
< JACK >			
J881	1-568-519-41	JACK, LARGE TYPE (PHONES)	
< RESISTOR >			
R881	1-216-017-00	RES-CHIP 47 5%	1/10W
R882	1-216-017-00	RES-CHIP 47 5%	1/10W
*****			
	1-676-246-11	JUNCTION BOARD	
*****			
< CAPACITOR >			
C10	1-124-589-11	ELECT 47uF 20%	16V
C11	1-161-494-00	CERAMIC 0.022uF	25V
< CONNECTOR >			
CN11	1-573-911-11	PIN, CONNECTOR 13P	
CN13	1-506-481-11	PIN, CONNECTOR 2P	
* CN14	1-568-941-11	PIN, CONNECTOR 3P	
CN15	1-784-767-11	CONNECTOR, FFC 6P	
< IC >			
IC11	8-759-356-03	IC BA6780	
< RESISTOR >			
R21	1-249-429-11	CARBON 10K 5%	1/4W
R22	1-249-426-11	CARBON 5.6K 5%	1/4W
R23	1-249-425-11	CARBON 4.7K 5%	1/4W
R24	1-249-430-11	CARBON 12K 5%	1/4W
R25	1-249-382-11	CARBON 1.2 5%	1/6W
R26	1-249-382-11	CARBON 1.2 5%	1/6W

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S11	1-771-836-11	SWITCH, LEVER (SLIDE)	(OPEN/CLOSE DETECT)
*****			
	1-676-542-11	KEY BOARD	*****
< CONNECTOR >			
CN812	1-750-185-11	CONNECTOR, BOARD TO BOARD 4P	
< RESISTOR >			
R861	1-216-045-00	METAL CHIP 680 5%	1/10W
R862	1-216-049-11	RES-CHIP 1K 5%	1/10W
R863	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R864	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R865	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R866	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R867	1-216-045-00	METAL CHIP 680 5%	1/10W
R868	1-216-049-11	RES-CHIP 1K 5%	1/10W
R869	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R870	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R871	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R872	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
< SWITCH >			
S814	1-771-349-21	SWITCH, KEYBOARD (PROGRAM)	
S815	1-771-349-21	SWITCH, KEYBOARD (SHUFFLE)	
S816	1-771-349-21	SWITCH, KEYBOARD (CONTINUE)	
S817	1-771-349-21	SWITCH, KEYBOARD (PEAK SEARCH)	
S818	1-771-349-21	SWITCH, KEYBOARD (EDIT/TIME FADE)	
S819	1-771-349-21	SWITCH, KEYBOARD (MENU)	
S820	1-771-349-21	SWITCH, KEYBOARD (FADER)	
S821	1-771-349-21	SWITCH, KEYBOARD (TIME/TEXT)	
S822	1-771-349-21	SWITCH, KEYBOARD (REPEAT)	
S823	1-771-349-21	SWITCH, KEYBOARD (DISC5)	
S824	1-771-349-21	SWITCH, KEYBOARD (DISC4)	
S825	1-771-349-21	SWITCH, KEYBOARD (DISC3)	
S826	1-771-349-21	SWITCH, KEYBOARD (DISC2)	
S827	1-771-349-21	SWITCH, KEYBOARD (DISC1)	
*****			
	1-676-244-11	LOADING MOTOR BOARD	*****
*****			
A-4725-011-A		MAIN BOARD, COMPLETE (US, CND)	
A-4725-016-A		MAIN BOARD, COMPLETE (E, EA)	
A-4725-017-A		MAIN BOARD, COMPLETE (AEP, SP, AUS)	
*****			
7-685-871-01		SCREW +BVTT 3X6 (S)	
< CAPACITOR >			
C301	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C302	1-104-664-11	ELECT 47uF 20%	16V
C303	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C304	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C305	1-110-489-11	CAPACITOR 1F	5.5V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C324	1-163-033-00	CERAMIC CHIP	0.022uF	50V	D608	8-719-976-96	DIODE DTZ4.7C
C325	1-163-033-00	CERAMIC CHIP	0.022uF	50V	D609	8-719-016-74	DIODE 1SS352
C326	1-104-664-11	ELECT	47uF	20% 16V			< GROUND TERMINAL >
C350	1-126-962-11	ELECT	3.3uF	20% 50V	EB601	1-537-770-21	TERMINAL BOARD, GROUND
C351	1-126-963-11	ELECT	4.7uF	20% 50V			< IC >
C381	1-165-319-11	CERAMIC CHIP	0.1uF	50V	IC301	8-752-912-67	IC CXP84648-066Q
C382	1-165-319-11	CERAMIC CHIP	0.1uF	50V	IC302	8-759-463-99	IC M5M5256DFP-70XL
C401	1-128-131-11	ELECT	22uF	20% 50V	IC303	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)
C404	1-128-131-11	ELECT	22uF	20% 50V	IC350	8-759-100-96	IC NJM4558M-T1
C405	1-124-589-11	ELECT	47uF	20% 16V	IC351	8-759-636-55	IC M5218AFP-T1
C406	1-125-972-11	ELECT	100uF	20% 16V	IC402	8-759-100-96	IC NJM4558M-T1
C407	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	IC502	8-759-100-96	IC NJM4558M-T1
C408	1-124-282-00	ELECT	22uF	20% 25V	IC601	8-759-061-65	IC LA5602
C451	1-104-665-11	ELECT	100uF	20% 16V	IC602	8-749-011-78	IC BA17807T
C501	1-128-131-11	ELECT	22uF	20% 50V	IC603	8-759-633-42	IC M5293L
C504	1-128-131-11	ELECT	22uF	20% 50V			< JACK >
C505	1-124-589-11	ELECT	47uF	20% 16V	J301	1-784-429-11	JACK, PIN 4P (ANALOG OUT, 2ND CD IN)
C506	1-125-972-11	ELECT	100uF	20% 16V	J381	1-774-726-11	JACK (CONTROL A1II)
C507	1-163-005-11	CERAMIC CHIP	470PF	10% 50V			< COIL >
C508	1-124-282-00	ELECT	22uF	20% 25V	L301	1-414-234-22	INDUCTOR CHIP 0uH
C551	1-104-665-11	ELECT	100uF	20% 16V	L381	1-410-375-11	INDUCTOR CHIP 3.3uH
C602	1-126-944-11	ELECT	3300uF	20% 16V	L602	1-412-282-41	INDUCTOR 470uH
C603	1-126-942-61	ELECT	1000uF	20% 16V			< TRANSISTOR >
C604	1-126-963-11	ELECT	4.7uF	20% 50V	Q301	8-729-900-53	TRANSISTOR DTC114EK
C605	1-126-963-11	ELECT	4.7uF	20% 50V	Q302	8-729-900-53	TRANSISTOR DTC114EK
C606	1-126-963-11	ELECT	4.7uF	20% 50V	Q303	8-729-900-53	TRANSISTOR DTC114EK
C607	1-126-941-11	ELECT	470uF	20% 6.3V	Q304	8-729-900-53	TRANSISTOR DTC114EK
C608	1-104-666-11	ELECT	220uF	20% 10V	Q305	8-729-900-53	TRANSISTOR DTC114EK
C609	1-128-552-11	ELECT	47uF	20% 63V	Q307	8-729-900-53	TRANSISTOR DTC114EK
C610	1-126-964-11	ELECT	10uF	20% 50V	Q311	8-729-900-53	TRANSISTOR DTC114EK
C611	1-126-941-11	ELECT	470uF	20% 16V	Q352	8-729-027-38	TRANSISTOR DTA144EKA-T146
C612	1-163-033-00	CERAMIC CHIP	0.022uF	50V	Q353	8-729-027-38	TRANSISTOR DTA144EKA-T146
C613	1-126-941-11	ELECT	470uF	20% 6.3V	Q354	8-729-027-38	TRANSISTOR DTA144EKA-T146
C616	1-163-033-00	CERAMIC CHIP	0.022uF	50V	Q355	8-729-027-38	TRANSISTOR DTA144EKA-T146
C619	1-124-589-11	ELECT	47uF	20% 16V	Q356	8-729-027-38	TRANSISTOR DTA144EKA-T146
△C620	1-113-924-11	CERAMIC	0.0047uF	20% 250V	Q381	8-729-120-28	TRANSISTOR 2SC1623-L5L6
		< CONNECTOR >			Q402	8-729-422-29	TRANSISTOR 2SD601A-S
CN301	1-784-780-11	CONNECTOR, FFC 19P			Q403	8-729-422-29	TRANSISTOR 2SD601A-S
CN302	1-784-782-11	CONNECTOR, FFC 21P			Q404	8-729-422-29	TRANSISTOR 2SD601A-S
CN311	1-573-911-11	PIN, CONNECTOR 13P			Q502	8-729-422-29	TRANSISTOR 2SD601A-S
CN351	1-506-468-11	PIN, CONNECTOR 3P			Q503	8-729-422-29	TRANSISTOR 2SD601A-S
CN603	1-792-131-11	LEAD (WITH CONNECTOR)			Q504	8-729-422-29	TRANSISTOR 2SD601A-S
		< DIODE >			Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE
D301	8-719-016-74	DIODE 1SS352					< RESISTOR >
D350	8-719-016-74	DIODE 1SS352			R301	1-216-073-00	METAL CHIP 10K 5% 1/10W
D351	8-719-016-74	DIODE 1SS352			R302	1-216-073-00	METAL CHIP 10K 5% 1/10W
D352	8-719-016-74	DIODE 1SS352			R305	1-216-049-11	RES-CHIP 1K 5% 1/10W
D353	8-719-016-74	DIODE 1SS352			R306	1-216-073-00	METAL CHIP 10K 5% 1/10W
D381	8-719-016-74	DIODE 1SS352			R307	1-216-073-00	METAL CHIP 10K 5% 1/10W
D601	8-719-210-33	DIODE EC10DS2			R308	1-216-073-00	METAL CHIP 10K 5% 1/10W
D602	8-719-210-33	DIODE EC10DS2			R309	1-216-073-00	METAL CHIP 10K 5% 1/10W
D603	8-719-210-33	DIODE EC10DS2			R310	1-216-073-00	METAL CHIP 10K 5% 1/10W
D604	8-719-210-33	DIODE EC10DS2					
D605	8-719-210-33	DIODE EC10DS2					
D606	8-719-977-22	DIODE DTZ9.1					
D607	8-719-016-74	DIODE 1SS352					

<p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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**MAIN**

**POWER SW**

**SENSOR**

Ref. No.	Part No.	Description	Remark
R311	1-216-073-00	METAL CHIP	10K 5% 1/10W
R312	1-216-073-00	METAL CHIP	10K 5% 1/10W
R313	1-216-073-00	METAL CHIP	10K 5% 1/10W
R316	1-216-073-00	METAL CHIP	10K 5% 1/10W
R317	1-216-013-00	METAL CHIP	33 5% 1/10W
R318	1-216-073-00	METAL CHIP	10K 5% 1/10W
R320	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R321	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R322	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R323	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R324	1-216-073-00	METAL CHIP	10K 5% 1/10W
R325	1-216-049-11	RES-CHIP	1K 5% 1/10W
R326	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R327	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R329	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R340	1-216-049-11	RES-CHIP	1K 5% 1/10W
R352	1-216-097-00	RES-CHIP	100K 5% 1/10W
R353	1-216-097-00	RES-CHIP	100K 5% 1/10W
R354	1-216-097-00	RES-CHIP	100K 5% 1/10W
R355	1-216-097-00	RES-CHIP	100K 5% 1/10W
R356	1-216-097-00	RES-CHIP	100K 5% 1/10W
R381	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R382	1-216-073-00	METAL CHIP	10K 5% 1/10W
R383	1-216-001-00	METAL CHIP	10 5% 1/10W
R401	1-216-683-11	METAL CHIP	22K 0.5% 1/10W
R402	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R403	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R404	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R405	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R406	1-218-768-11	METAL CHIP	470K 0.5% 1/10W
R407	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R409	1-216-647-11	METAL CHIP	680 0.5% 1/10W
R410	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R411	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R412	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R413	1-218-760-11	METAL CHIP	220K 0.5% 1/10W
R414	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R415	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R417	1-216-673-11	METAL CHIP	8.2K 0.5% 1/10W
R418	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R419	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R420	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R421	1-218-768-11	METAL CHIP	470K 0.5% 1/10W
R422	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R451	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R452	1-216-073-00	METAL CHIP	10K 5% 1/10W
R453	1-247-807-31	CARBON	100 5% 1/4W
R501	1-216-683-11	METAL CHIP	22K 0.5% 1/10W
R502	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R503	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R504	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R505	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R506	1-218-768-11	METAL CHIP	470K 0.5% 1/10W
R507	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R509	1-216-647-11	METAL CHIP	680 0.5% 1/10W
R510	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R511	1-216-675-11	METAL CHIP	10K 0.5% 1/10W

Ref. No.	Part No.	Description	Remark
R512	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R513	1-218-760-11	METAL CHIP	220K 0.5% 1/10W
R514	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R515	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R517	1-216-673-11	METAL CHIP	8.2K 0.5% 1/10W
R518	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R519	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R520	1-216-635-11	METAL CHIP	220 0.5% 1/10W
R521	1-218-768-11	METAL CHIP	470K 0.5% 1/10W
R522	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R551	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R552	1-216-073-00	METAL CHIP	10K 5% 1/10W
R553	1-247-807-31	CARBON	100 5% 1/4W
R601	1-216-085-00	METAL CHIP	33K 5% 1/10W
R602	1-216-073-00	METAL CHIP	10K 5% 1/10W
R603	1-216-091-00	METAL CHIP	56K 5% 1/10W
R604	1-216-073-00	METAL CHIP	10K 5% 1/10W
R605	1-216-037-00	METAL CHIP	330 5% 1/10W
R610	1-247-807-31	CARBON	100 5% 1/4W
R611	1-247-807-31	CARBON	100 5% 1/4W
< SWITCH >			
△ S602	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (E, EA)	
< VIBRATOR >			
X301	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	
*****			
1-676-544-11 POWER SW BOARD *****			
< CAPACITOR >			
△ C601	1-113-924-11	CERAMIC 0.0047uF 20% 250V	
< CONNECTOR >			
* CN601	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P	
* CN602	1-568-226-11	PIN, CONNECTOR 2P	
< SWITCH >			
△ S601	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
*****			
1-676-245-11 SENSOR BOARD *****			
< CONNECTOR >			
CN10	1-750-243-11	SOCKET, CONNECTOR 6P	
< DIODE/IC >			
D10	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
D11	8-749-017-45	IC RPR-220CIN	
< RESISTOR >			
R10	1-249-416-11	CARBON 820 5% 1/4W	
R11	1-249-407-11	CARBON 150 5% 1/4W	

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.
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Ref. No.	Part No.	Description	Remark
R12	1-249-429-11	CARBON 10K 5%	1/4W

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MISCELLANEOUS  
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66	1-792-487-11	WIRE (FLAT TYPE) (19 CORE)	
105	1-792-130-11	WIRE (FLAT TYPE) (21 CORE)	
△ 110	1-558-943-41	CORD, POWER (E)	
△ 110	1-575-651-21	CORD, POWER (AEP, EA, SP)	
△ 110	1-590-926-11	CORD, POWER (CND)	
△ 110	1-696-845-11	CORD, POWER (AUS)	
△ 110	1-783-531-41	CORD, POWER (US)	
△ 111	1-569-008-31	ADAPTOR, CONVERSION (EA)	
268	1-471-061-11	MAGNET ASSY	
271	1-791-930-11	WIRE (FLAT TYPE) (6 CORE)	
△ 305	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
M10	A-4672-879-A	MOTOR ASSY, LOADING	
M11	A-4672-867-A	MOTOR ASSY, ROTARY (TRAY)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S200	1-418-746-11	ENCODER, ROTARY (BU, TABLE ADDRESS DETECT)	
△ T601	1-435-342-11	TRANSFORMER, POWER (US, CND)	
△ T601	1-435-343-11	TRANSFORMER, POWER (AEP, SP, AUS)	
△ T601	1-435-344-11	TRANSFORMER, POWER (E, EA)	

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ACCESSORIES & PACKING MATERIALS  
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1-418-857-11	REMOTE COMMANDER (RM-DC545)
1-558-271-11	CORD, CONNECTION
1-777-241-11	CORD, CONNECTION (CND)
3-866-671-11	MANUAL (ENGLISH) (US, AUS)
3-866-671-21	MANUAL (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, PORTUGUESE, SWEDISH, ITALIAN, CHINESE) (CND, AEP)
4-226-826-11	MANUAL, INSTRUCTION (ENGLISH) (US, AUS)
4-226-826-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH) (CND, AEP, E, EA, SP)
4-226-826-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH) (AEP)
4-226-826-41	MANUAL, INSTRUCTION (DANISH, FINNISH) (E, EA, SP)
4-226-826-51	MANUAL, INSTRUCTION (CHINESE) (E, SP)
4-226-826-61	MANUAL, INSTRUCTION (ARABIC) (EA)
4-981-643-01	COVER, BATTERY (for RM-DC545)

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