

# RCD-W50C

## SERVICE MANUAL

Ver 1.1 2003.12



US Model  
Canadian Model  
E Model



|                    |                                    |               |
|--------------------|------------------------------------|---------------|
| CD Section         | Model Name Using Similar Mechanism | NEW           |
|                    | CD Mechanism Type                  | CDM53L-30B61B |
|                    | Base Unit Type                     | BU-30BBD61B   |
|                    | Optical Pick-up Type               | A-MAX.3       |
| CD-R/CD-RW Section | Model Name Using Similar Mechanism | NEW           |
|                    | CD Mechanism Type                  | CDM65-RBD1    |
|                    | Base Unit Type                     | RBD1          |
|                    | Optical Pick-up Type               | KRM-220CAA    |

### SPECIFICATIONS

#### DECK A (the CD player section)

|                    |   |
|--------------------|---|
| System             | Compact disc digital audio system   |
| Laser              | Semiconductor laser ( $\lambda = 780 \text{ nm}$ )<br>Emission duration: continuous |
| Frequency response | 20 Hz - 20,000 Hz ( $\pm 0.5 \text{ dB}$ )  |

#### DECK B (the CD-R and CD-RW recording section)

|                    |   |
|--------------------|---|
| System             | Compact disc digital audio system   |
| Laser              | Semiconductor laser ( $\lambda = 780 \text{ nm}$ )<br>Emission duration: continuous |
| Playable discs     | CD, CD-R, CD-RW   |
| Recordable discs   | CD-R, CD-RW (for music use)   |
| Frequency response | 20 Hz - 20,000 Hz ( $\pm 0.5 \text{ dB}$ )  |

#### Inputs

|   |   |
|---|---|
| ANALOG IN<br>(Phono jacks)                            | Impedance: 47 kilohms<br>Rated input: 500 mVrms<br>Minimum input: 250 mVrms |
| DIGITAL OPTICAL IN<br>(Square optical connector jack) | Optical wavelength: 660 nm  |

#### Outputs

|  |  |
|--|--|
| ANALOG OUT<br>(Phono jacks)                            | Impedance: 47 kilohms<br>Rated output: 2 Vrms<br>Load impedance: over 10 kilohms |
| DIGITAL OPTICAL OUT<br>(Square optical connector jack) | Wavelength: 660 nm<br>Output level: -18 dBm                                      |
| PHONES<br>(Phono jack)                                 | Load impedance: 32 ohms<br>Output level: 12mW                                    |

#### General

|                       |   |
|-----------------------|---|
| Power requirements    | 120 V AC, 60 Hz   |
| North American model: | 110-120/220-240V AC, 50/60 Hz   |
| Other models:         | 25 W  |
| Power consumption     | Dimensions (approx.) (w/h/d) incl. projecting parts and control: 430 × 108 × 399 mm (17 × 4 3/8 × 15 3/4 inch)  |
| Mass (approx.)        | 6.8 kg (15 lbs)   |
| Supplied accessories  | <ul style="list-style-type: none"> <li>• Audio connecting cords</li> <li>• Phono jack × 2 (red/white) ↔</li> <li>• Phono jack × 2 (red/white) (2)</li> <li>• Remote commander (remote) (1)</li> <li>• Size AA (R6) batteries (2)</li> </ul> |

Design and specifications are subject to change without notice

## COMPACT DISC RECORDER

9-874-151-02  
2003L16-1  
© 2003.12

**Sony Corporation**  
Home Audio Company  
Published by Sony Engineering Corporation

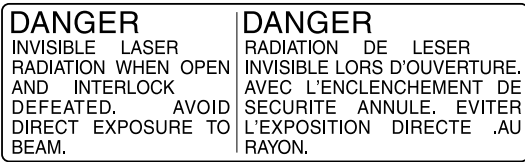
# SONY®

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



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

The following caution label is located inside the apparatus.



**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 IDENTIFÉS 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 PIÈSES 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)

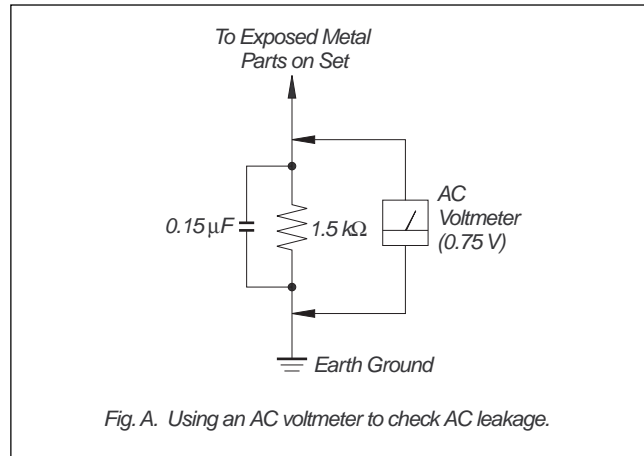


Fig. A. Using an AC voltmeter to check AC leakage.

**MODEL IDENTIFICATION**

— BACK PANEL —



| PARTS No.    | MODEL    |
|--------------|----------|
| 4-238-401-0π | US       |
| 4-238-401-1π | Canadian |
| 4-238-401-3π | E        |

## TABLE OF CONTENTS

**Unleaded solder**

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

**: LEAD FREE MARK**

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.

Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.

Soldering irons using a temperature regulator should be set to about 350°C.

Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!

- Strong viscosity

Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.

- Usable with ordinary solder

It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

|  |    |
|--|----|
| <b>1. SERVICING NOTE</b> .....   | 4  |
| <b>2. GENERAL</b> .....  | 5  |
| <b>3. DISASSEMBLY</b> .....  | 6  |
| 3-1. Case (409538) .....   | 7  |
| 3-2. Loading Panel (CDR) .....   | 7  |
| 3-3. Front Panel Section .....   | 8  |
| 3-4. CD-SW Board, LED Board, DISPLAY Board .....   | 8  |
| 3-5. CD Mechanism Deck (CDM65-RBD1) .....  | 9  |
| 3-6. Tray .....  | 9  |
| 3-7. CDR Board .....   | 10 |
| 3-8. Holder (MG) Sub Assembly, Dust Cover .....  | 10 |
| 3-9. Optical Pick-Up (KRM-220CAA) .....  | 11 |
| 3-10. Motor Assembly (Loading) (M201) .....  | 11 |
| 3-11. Cam (CH) .....   | 12 |
| 3-12. MAIN Board .....   | 12 |
| 3-13. CD Mechanism Deck (CDM53L-30B61B) .....  | 13 |
| 3-14. Fitting Base (Magnet) Assembly .....   | 13 |
| 3-15. CLAMP MOTOR Board,<br>Motor (Clamp) Assembly (M701) .....                              | 14 |
| 3-16. Fitting Base (Guide) Assembly, Bracket (Chassis) .....                                 | 14 |
| 3-17. Tray (Sub) .....   | 15 |
| 3-18. Chassis (Mold B) .....   | 15 |
| 3-19. LOAD MOTOR Board,<br>Motor (Loading) Assembly (M702) .....                             | 16 |
| 3-20. Stocker Section .....  | 16 |
| 3-21. Slider (Selection), Tension Spring (Shutter),<br>Slider (Shutter) .....                | 17 |
| 3-22. Gear (Gear A), Gear (Gear B), Gear (U/D Slider) .....                                  | 17 |
| Precaution During Gear (Gear U/D Slider),<br>Gear (Gear B), Gear (Gear A) Installation ..... | 18 |
| 3-23. Gear (Chucking) .....  | 18 |
| 3-24. BD Board .....   | 19 |
| 3-25. Optical Block Section .....  | 19 |
| <b>4. TEST MODE</b> .....  | 21 |
| <b>5. ELECTRICAL ADJUSTMENTS</b> .....   | 24 |
| CD SECTION .....   | 24 |
| CD-R/RW SECTION .....  | 25 |
| <b>6. DIAGRAMS</b> .....   | 55 |
| 6-1. Block Diagrams – CD-R Section – .....   | 56 |
| – CD Section – .....   | 57 |
| – POWER/DISPLAY Section – .....  | 58 |
| 6-2. Printed Wiring Board – BD Section – .....   | 59 |
| 6-3. Schematic Diagram – BD Section – .....  | 60 |
| 6-4. Printed Wiring Board<br>– SENSER/MOTOR/SW Section – .....                               | 61 |
| 6-5. Schematic Diagram<br>– SENSER/MOTOR/SW Section – .....                                  | 62 |
| 6-6. Printed Wiring Board – CD-R Section (Side A) – .....                                    | 63 |
| 6-7. Printed Wiring Board – CD-R Section (Side B) – .....                                    | 64 |
| 6-8. Schematic Diagram – CD-R Section (1/4) – .....  | 65 |
| 6-9. Schematic Diagram – CD-R Section (2/4) – .....  | 66 |
| 6-10. Schematic Diagram – CD-R Section (3/4) – .....   | 67 |
| 6-11. Schematic Diagram – CD-R Section (4/4) – .....   | 68 |
| 6-12. Printed Wiring Board – MAIN Section (Side A) – .....                                   | 69 |
| 6-13. Printed Wiring Board – MAIN Section (Side B) – .....                                   | 70 |
| 6-14. Schematic Diagram – MAIN Section (1/2) – .....   | 71 |
| 6-15. Schematic Diagram – MAIN Section (2/2) – .....   | 72 |
| 6-16. Printed Wiring Board – LED Section – .....   | 73 |
| 6-17. Schematic Diagram – LED Section – .....  | 74 |
| 6-18. Printed Wiring Board – DISPLAY Section – .....   | 75 |
| 6-19. Schematic Diagram – DISPLAY Section – .....  | 76 |
| 6-20. IC Block Diagrams .....  | 77 |
| 6-21. IC Pin Functions Description .....   | 80 |
| <b>7. EXPLODED VIEWS</b> .....   | 54 |
| 7-1. Case Section .....  | 90 |
| 7-2. Front Panel Section .....   | 91 |
| 7-3. Chassis Section .....   | 92 |
| 7-4. Overall Section (CDM53L-30B61B) .....   | 93 |
| 7-5. Chassis (Mold) Assembly Section (CDM53L-30B61B) .....                                   | 94 |
| 7-6. Chassis Section (CDM53L-30B61B) .....   | 95 |
| 7-7. Optical Block Section .....   | 96 |
| 7-8. CDM65-RBD1 .....  | 97 |
| <b>8. ELECTRICAL PARTS LIST</b> .....  | 98 |

## Self-diagnosis Function

When the self-diagnosis function is activated to prevent the player from malfunctioning, three character service numbers in a combination with a message appears in the display. In this case, check the following table.

| Message             | Explanation  |
|---------------------|--|
| C12/<br>Cannot Copy | <p>You are trying to record a disc that cannot be played back in DECK-A or with an external device, such as CD-ROM or VIDEO CD.</p> <ul style="list-style-type: none"> <li>Remove the disc, and then insert a music CD for playback.</li> </ul>  |
| C13/<br>Rec Error   | <p>Recording has not been completed successfully because of vibration.</p> <ul style="list-style-type: none"> <li>Relocate the unit in a place free of vibration and restart the recording again.</li> </ul> <p>The disc you try to record is excessively dirty (such as oil-stained or finger marked) or scratched. Or the disc is not normal.</p> <ul style="list-style-type: none"> <li>Replace the disc with another one and restart the recording again.</li> </ul> |
| C14/<br>TOC Error   | <p>The unit did not read the TOC information.</p> <ul style="list-style-type: none"> <li>Insert other discs.</li> </ul>  |
| C41/<br>Cannot Copy | <p>The sound source you are trying to record is a copy of a commercial music software. Or you are trying to record on a CD-R/CD-RW digitally.</p> <ul style="list-style-type: none"> <li>Because of the restriction of the Serial Copy Management System, you cannot record a copy of a commercial music software. Neither can you record a CD-R/CD-RW digitally.</li> </ul>   |
| C71/<br>Din Unlock  | <p>If this message is displayed momentarily, this is not an error. It is caused by the digital signal during recording.</p> <p>During recording of a digital sound source, the connecting cable has been disconnected or the player of the sound source has turned off.</p> <ul style="list-style-type: none"> <li>Connect the cable or turn on the digital player.</li> </ul>   |

### 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

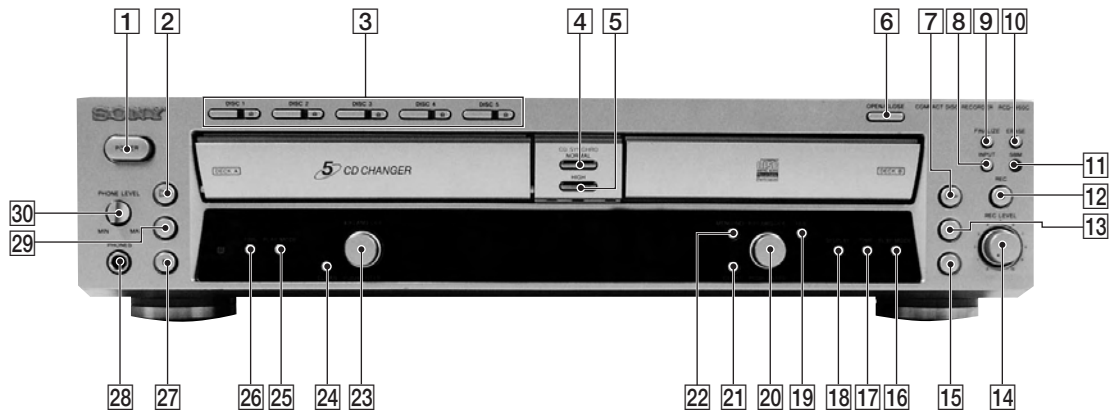
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens. The emission check enables continuous checking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



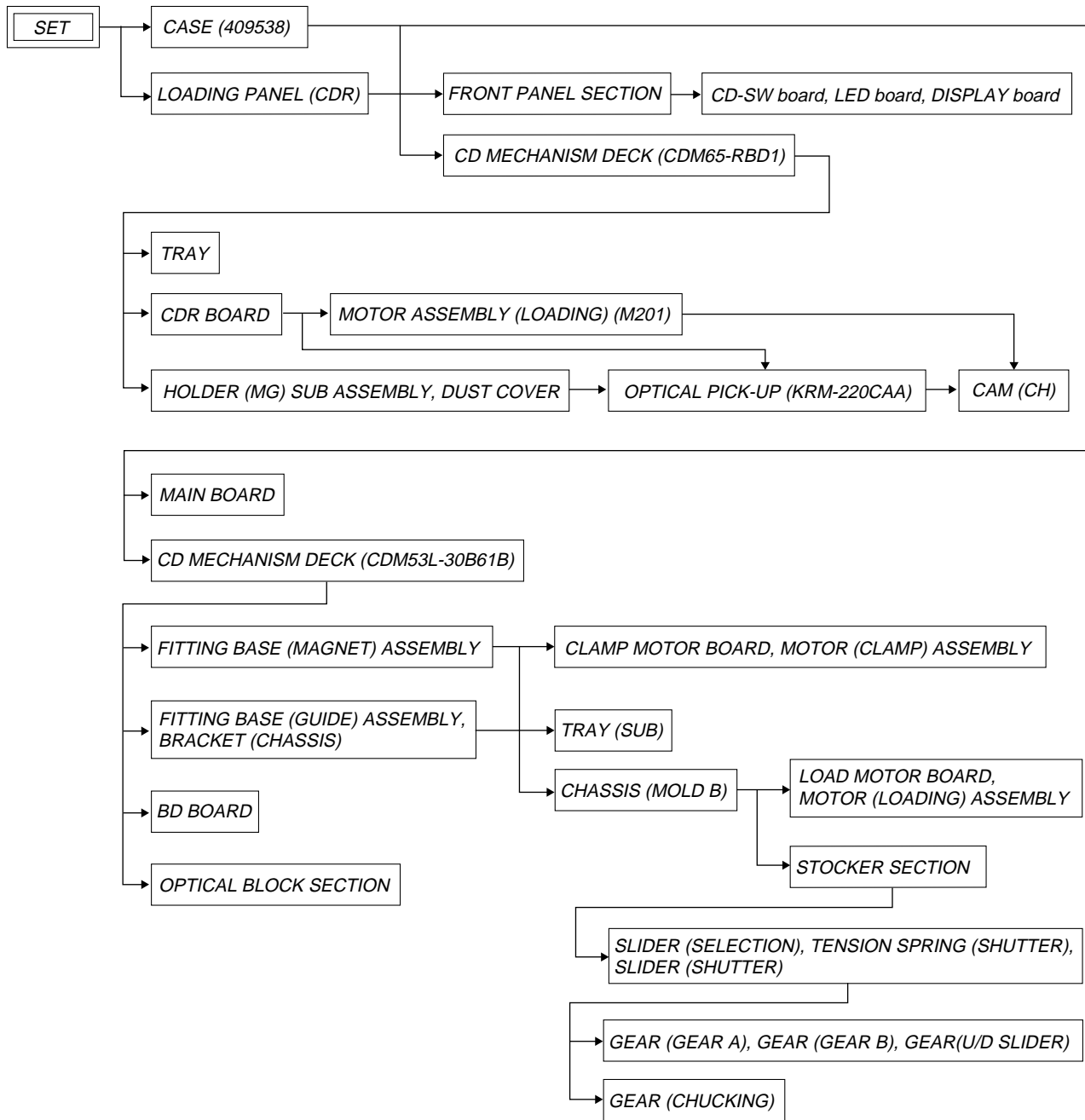
## SECTION 2 GENERAL



- |   |                            |
|---|----------------------------|
| <b>1</b> POWER button                             | <b>16</b> PLAY MODE button |
| <b>2</b> ▷ button                                 | <b>17</b> TIME button      |
| <b>3</b> DISC 1 to DISC 5 ≡ button and indicators | <b>18</b> DISPLAY button   |
| <b>4</b> CD SYNCHRO NORMAL button                 | <b>19</b> YES button       |
| <b>5</b> CD SYNCHRO HIGH button                   | <b>20</b>  ◀◀ AMS ▶▶  knob |
| <b>6</b> OPEN/CLOSE ≡ button                      | <b>21</b> CLEAR button     |
| <b>7</b> ▷ button                                 | <b>22</b> MENU/NO button   |
| <b>8</b> INPUT button                             | <b>23</b>  ◀◀ AMS ▶▶  knob |
| <b>9</b> FINALIZE button                          | <b>24</b> CLEAR button     |
| <b>10</b> ERASE button                            | <b>25</b> PLAY MODE button |
| <b>11</b> SBM button and indicator                | <b>26</b> TIME button      |
| <b>12</b> REC ● button                            | <b>27</b> ■ button         |
| <b>13</b>    button                               | <b>28</b> PHONES jack      |
| <b>14</b> REC LEVEL knob                          | <b>29</b>    button        |
| <b>15</b> ■ button                                | <b>30</b> PHONE LEVEL knob |

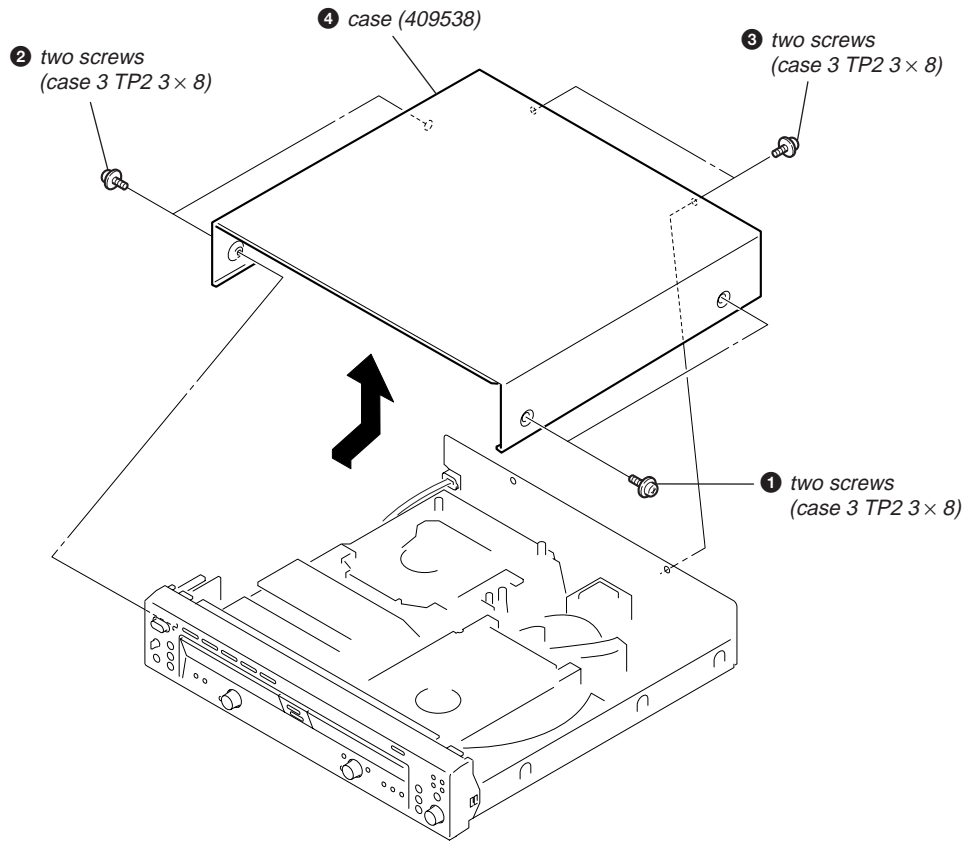
### SECTION 3 DISASSEMBLY

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

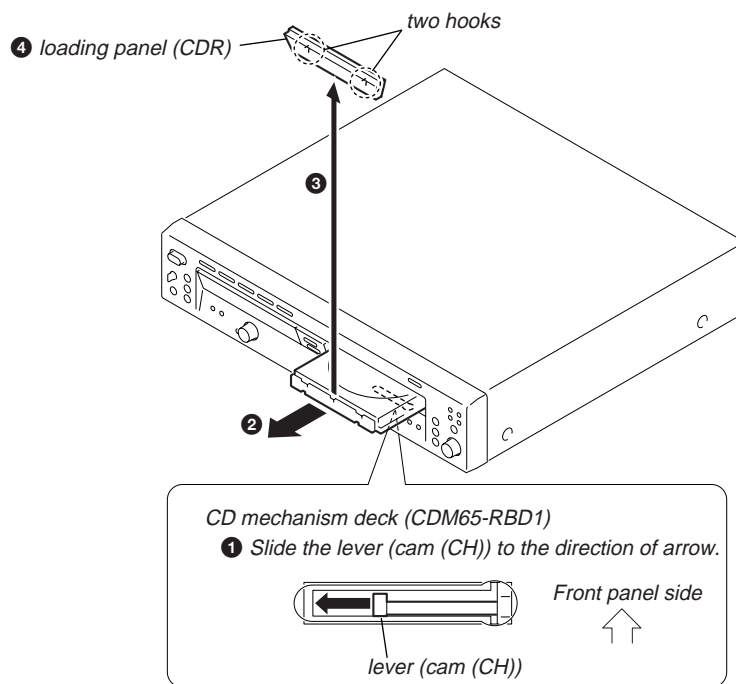


**Note :** Follow the disassembly procedure in the numerical order given.

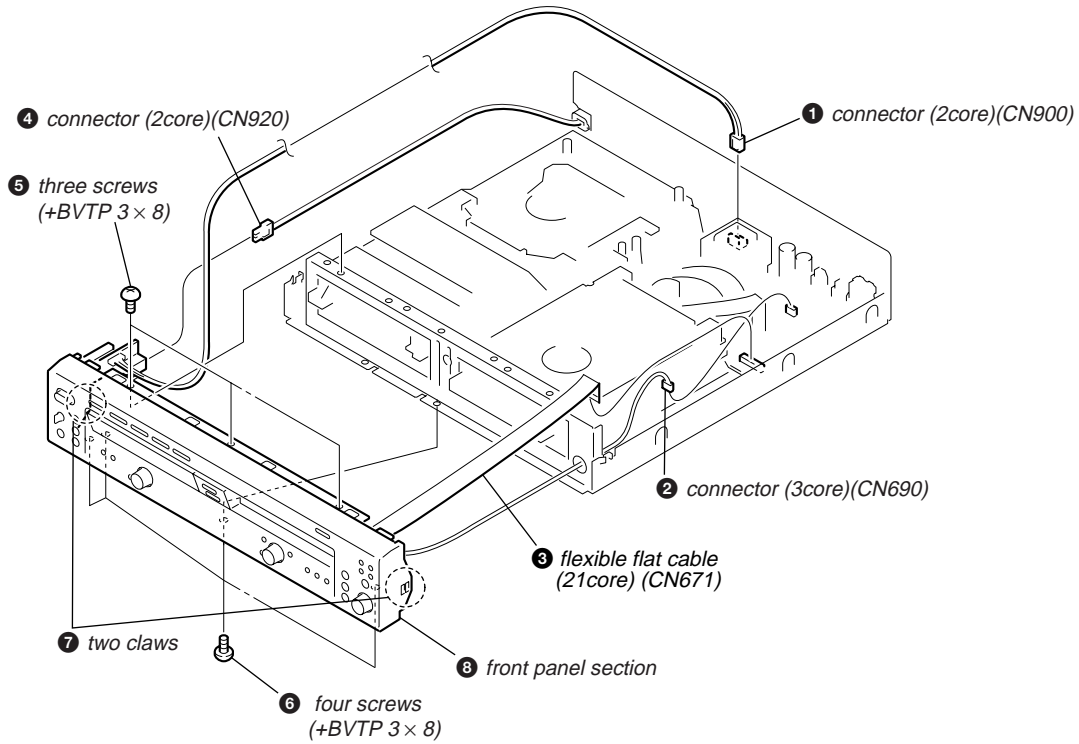
**3-1. Case (409538)**



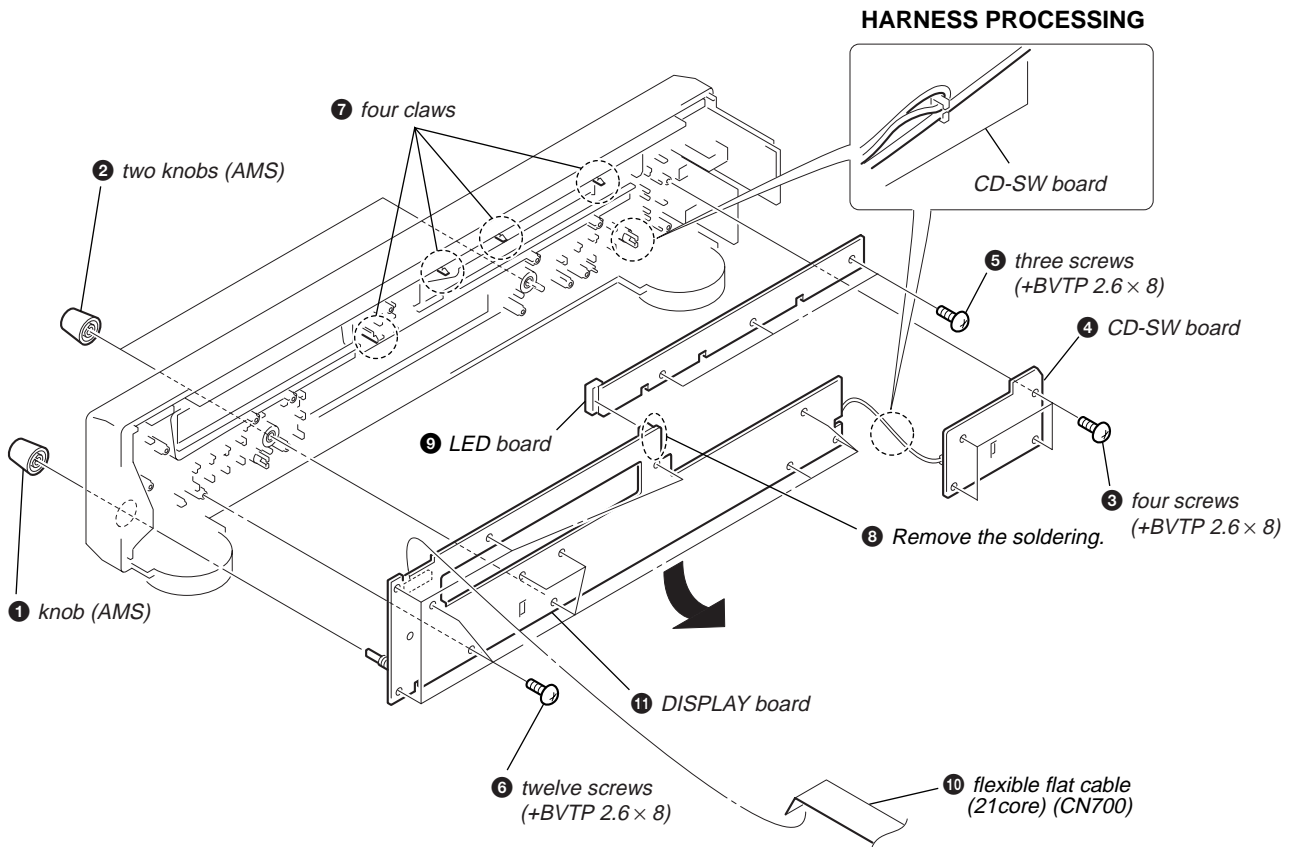
**3-2. Loading Panel (CDR)**



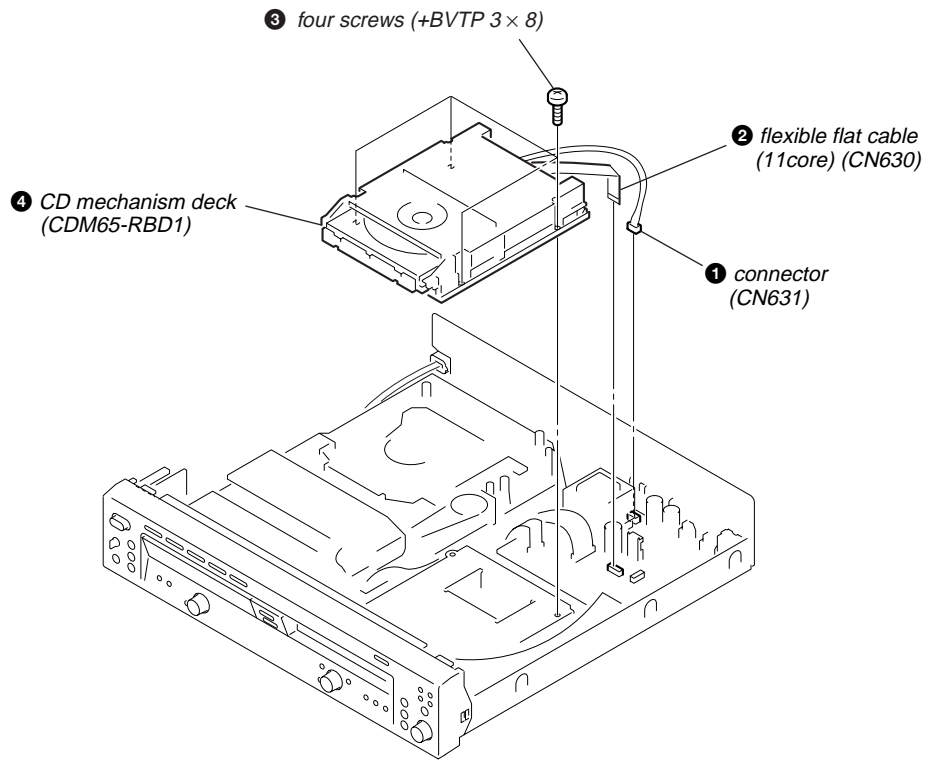
3-3. Front Panel Section



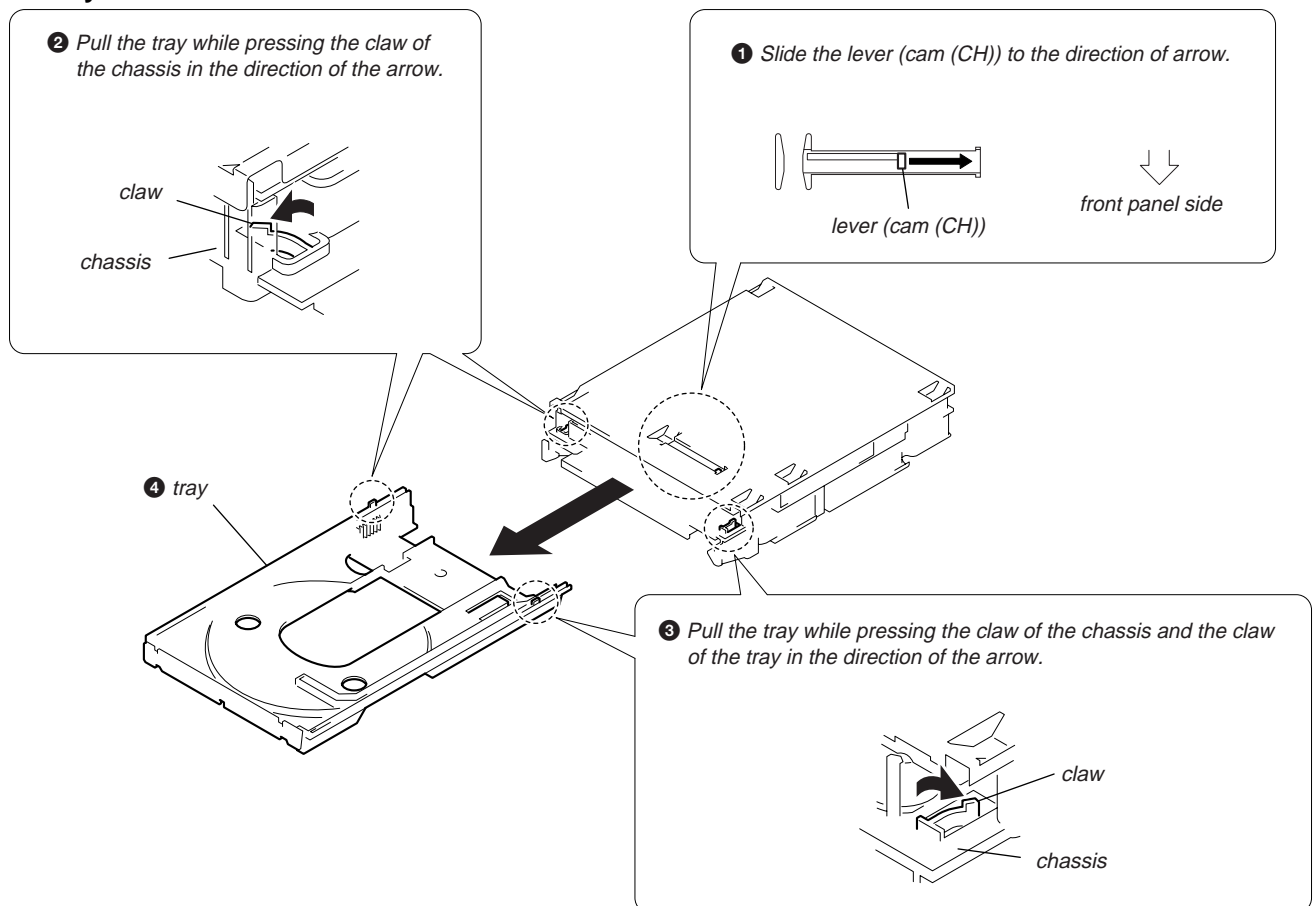
3-4. CD-SW Board, LED Board, DISPLAY Board



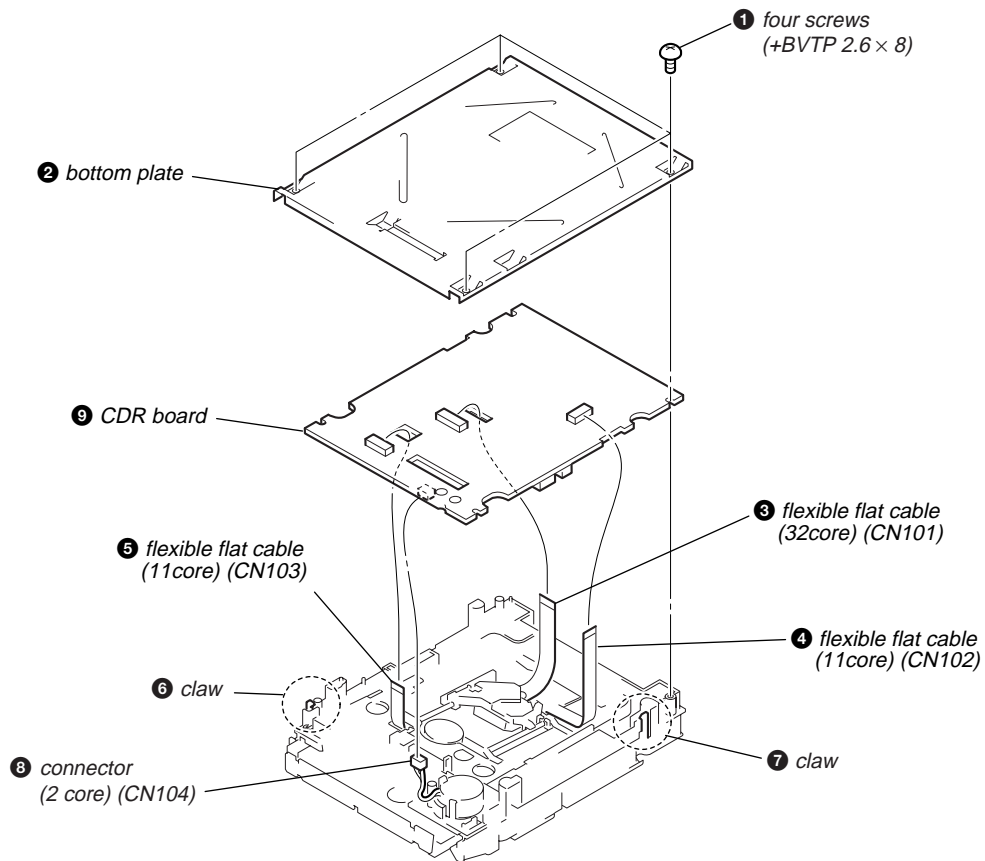
3-5. CD Mechanism Deck (CDM65-RBD1)



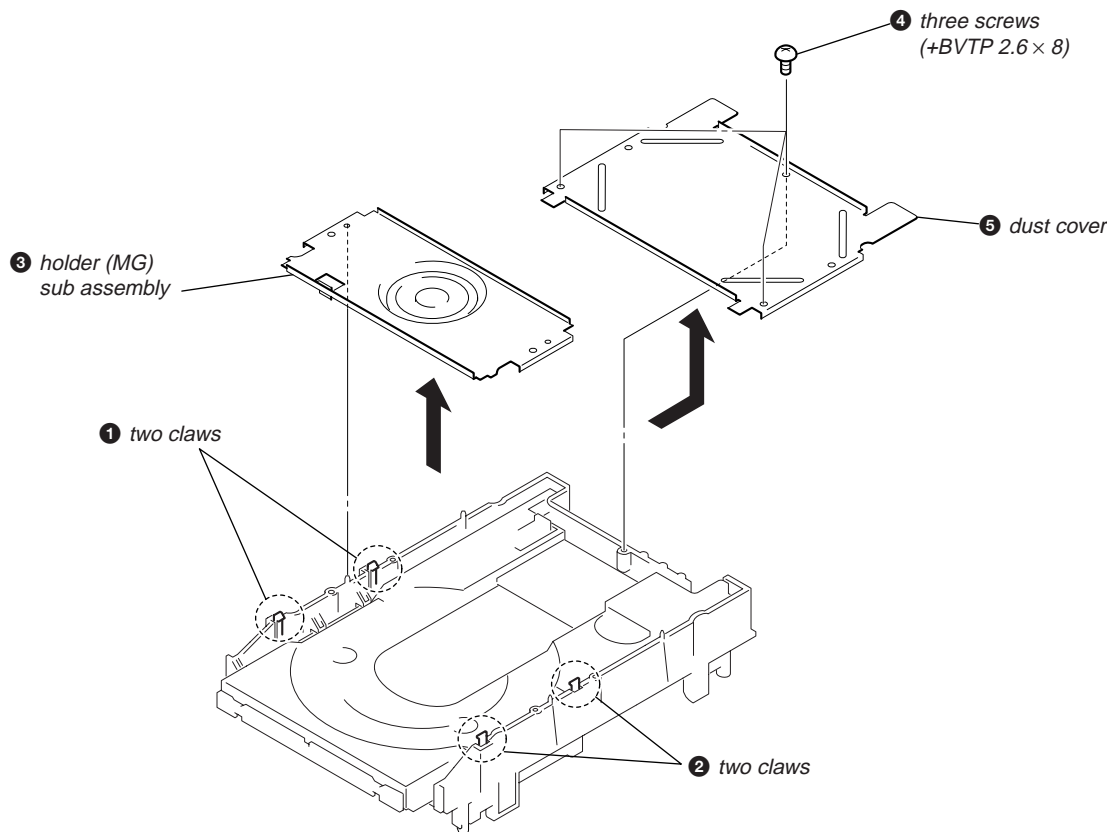
3-6. Tray



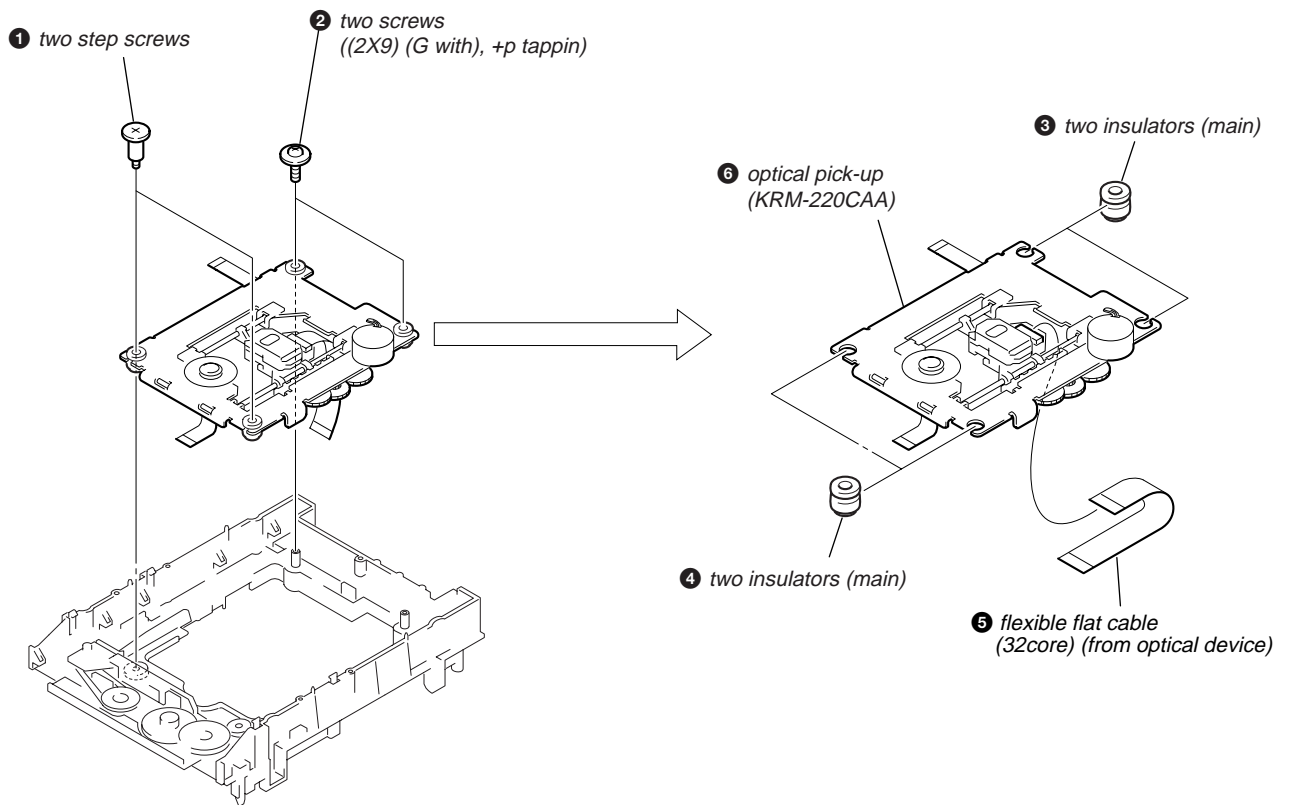
## 3-7. CDR Board



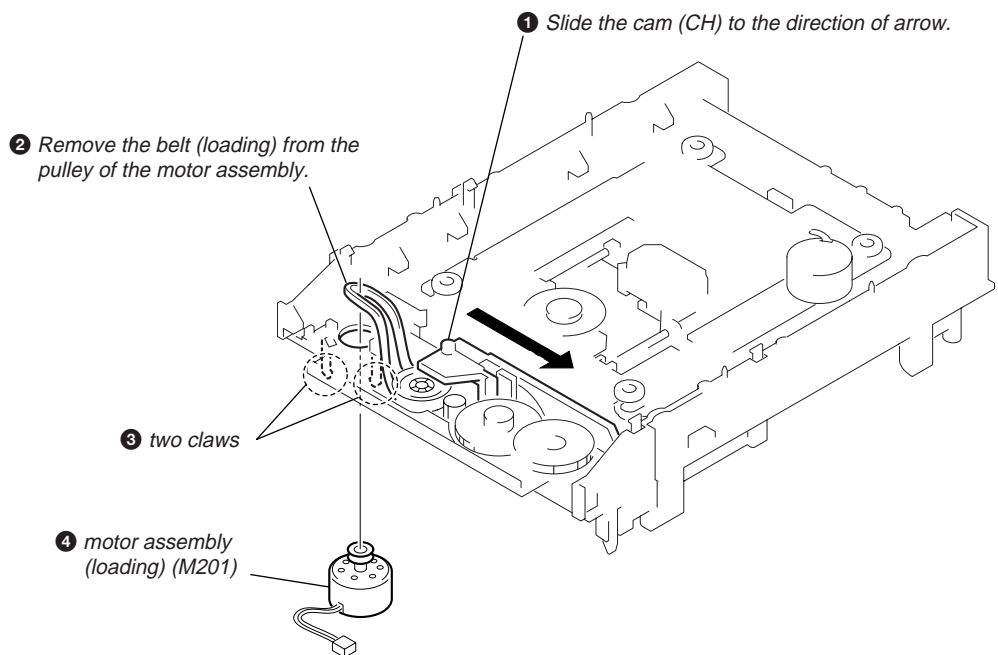
## 3-8. Holder (MG) Sub Assembly, Dust Cover



**3-9. Optical Pick-Up (KRM-220CAA)**

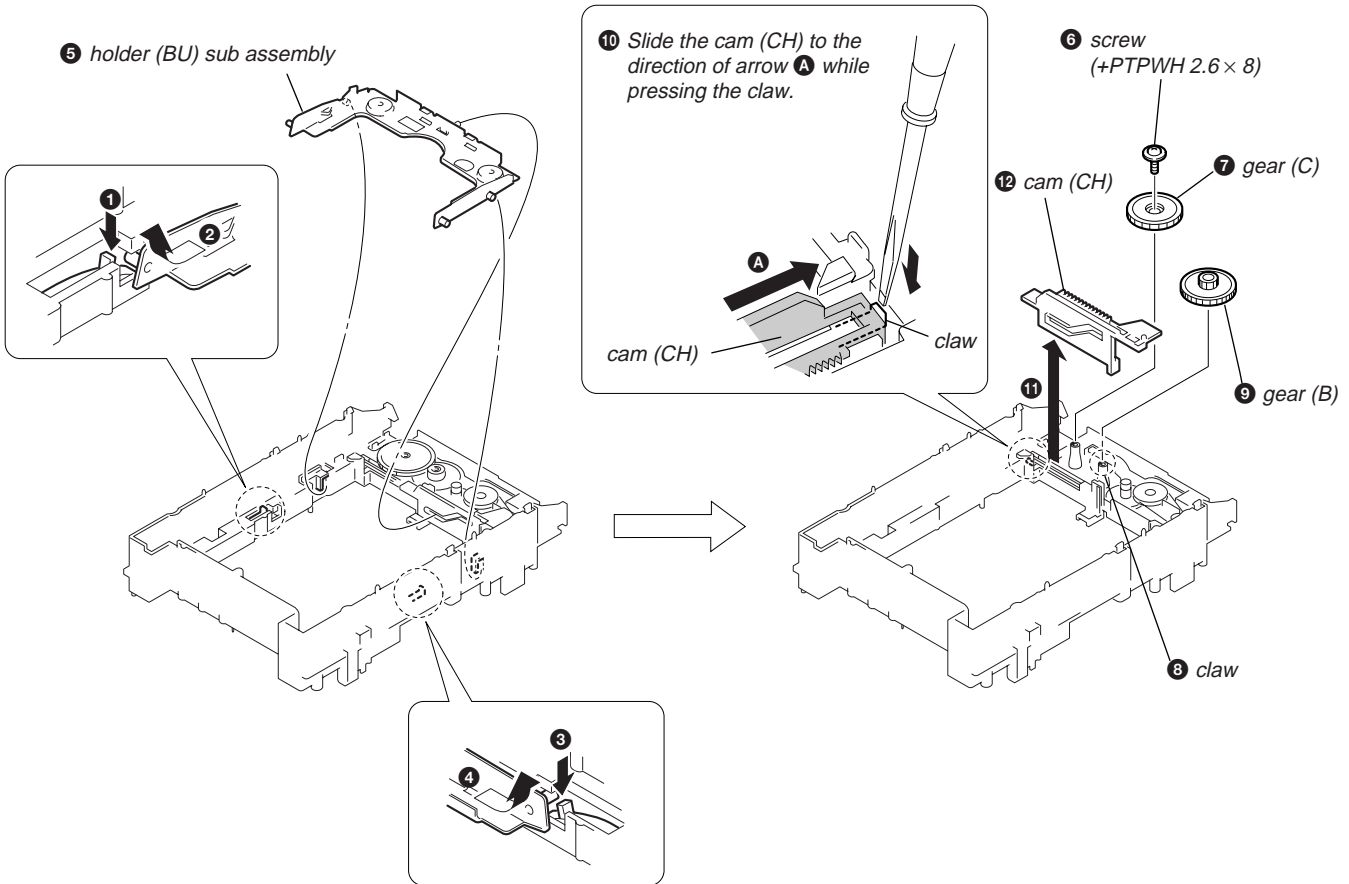


**3-10. Motor Assembly (Loading) (M201)**

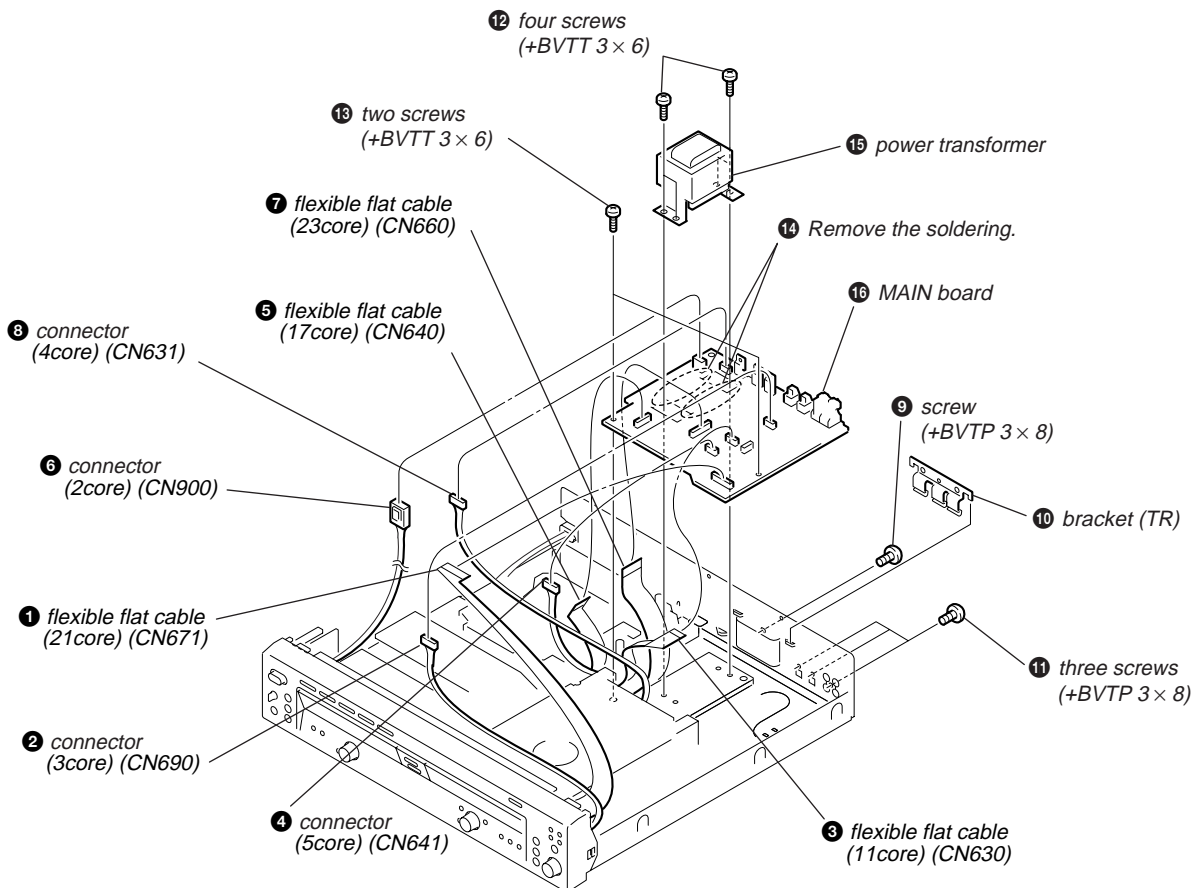




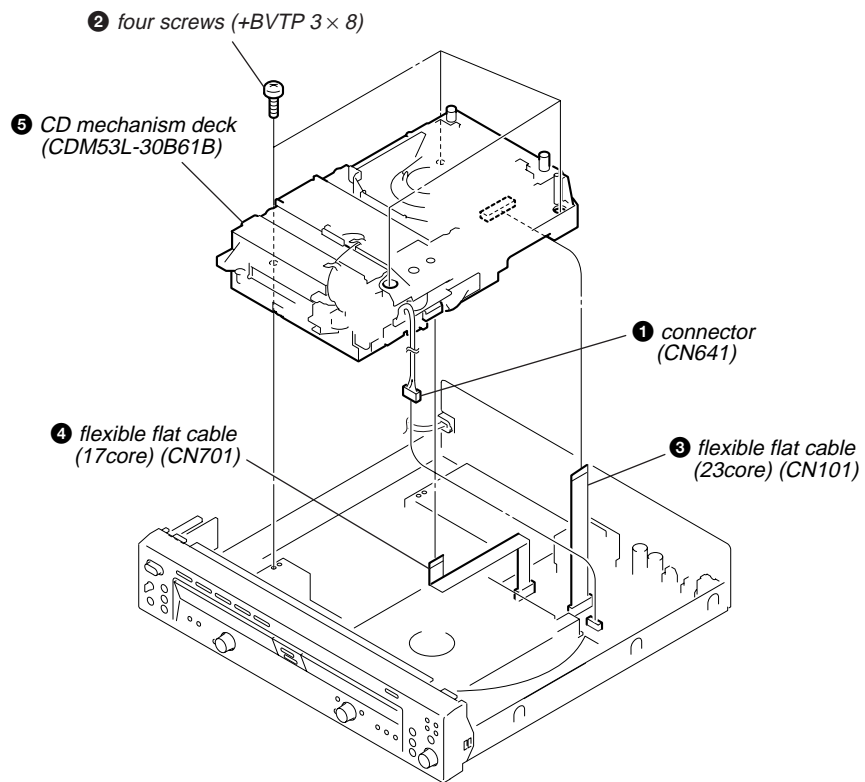
## 3-11. Cam (CH)



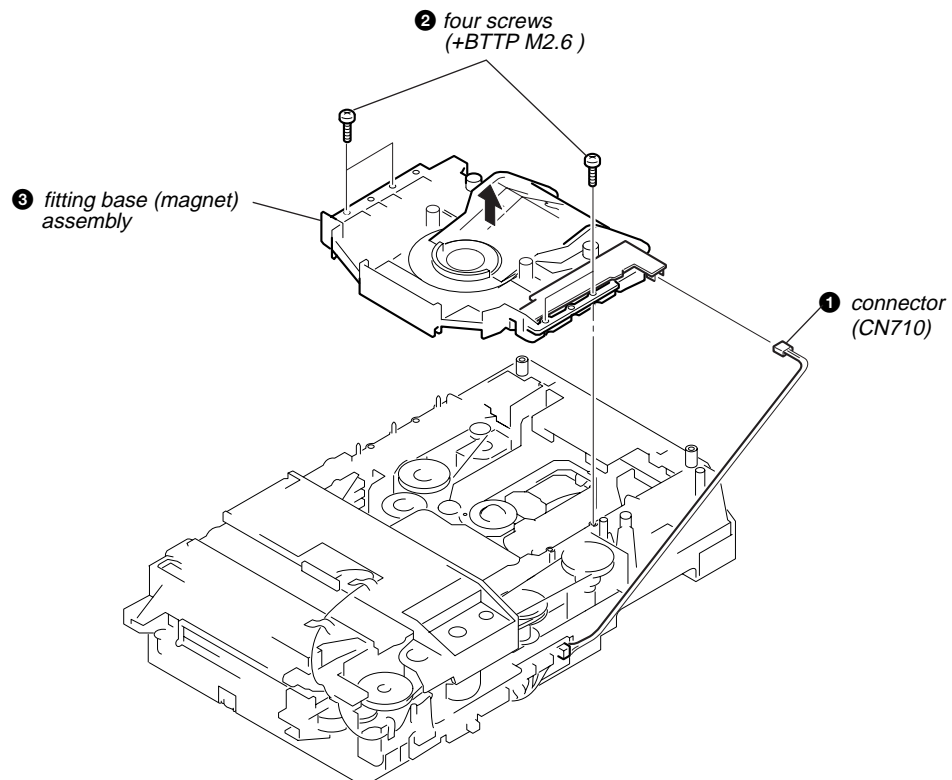
## 3-12. MAIN Board



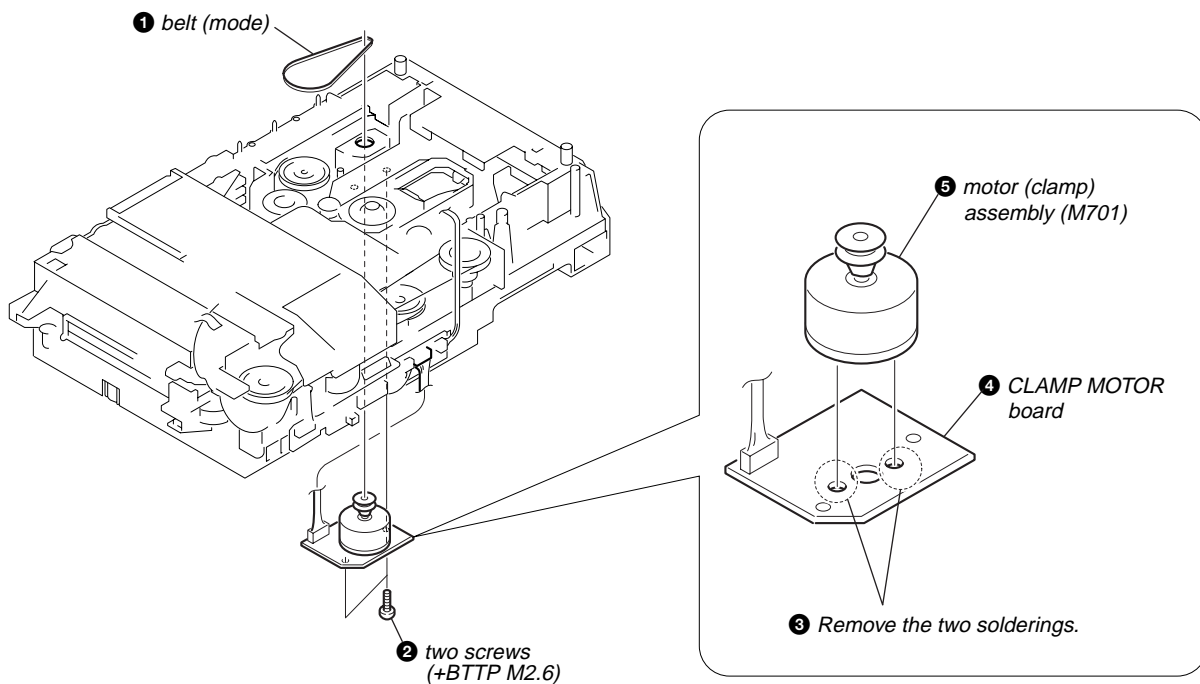
### 3-13. CD Mechanism Deck (CDM53L-30B61B)



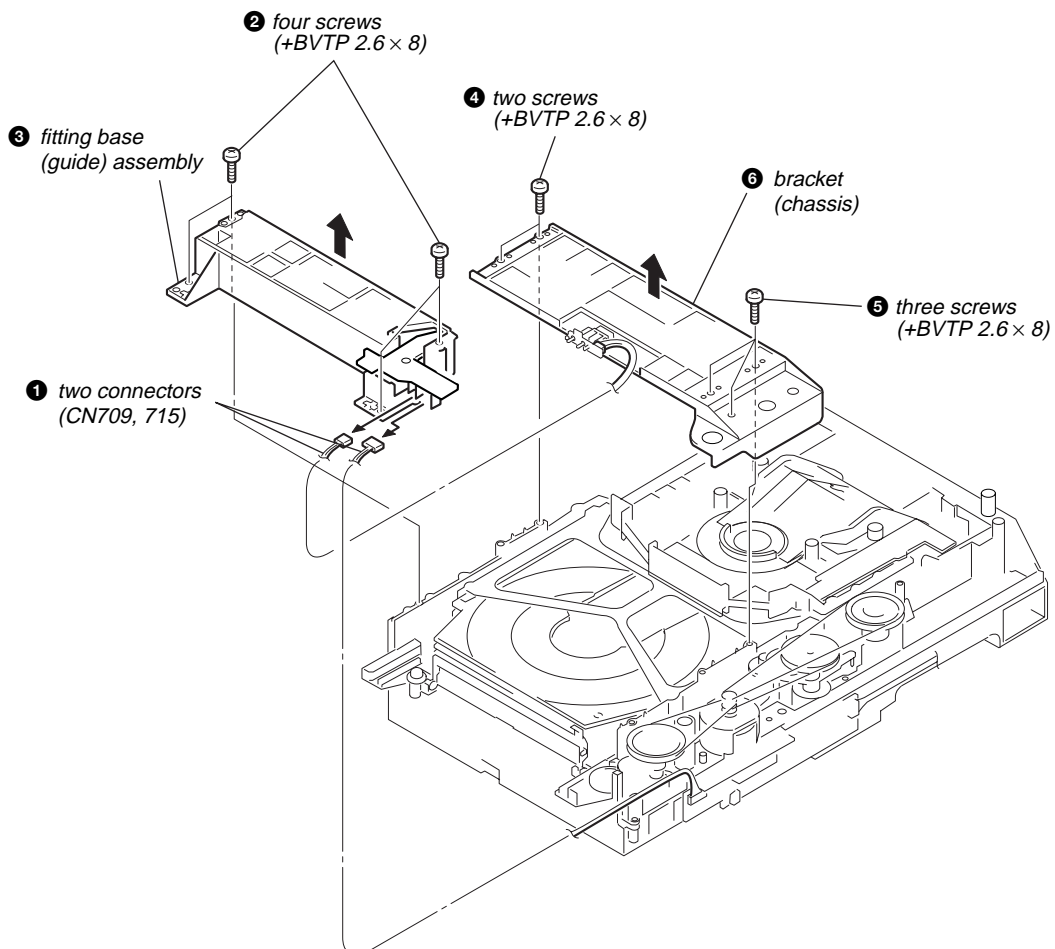
### 3-14. Fitting Base (Magnet) Assembly



3-15. CLAMP MOTOR Board, Motor (Clamp) Assembly (M701)

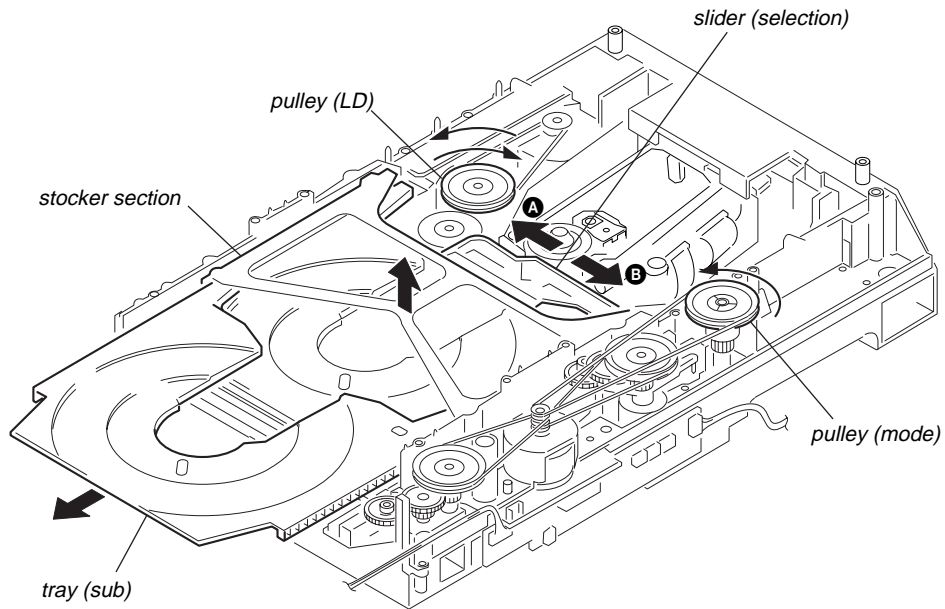


3-16. Fitting Base (Guide) Assembly, Bracket (Chassis)



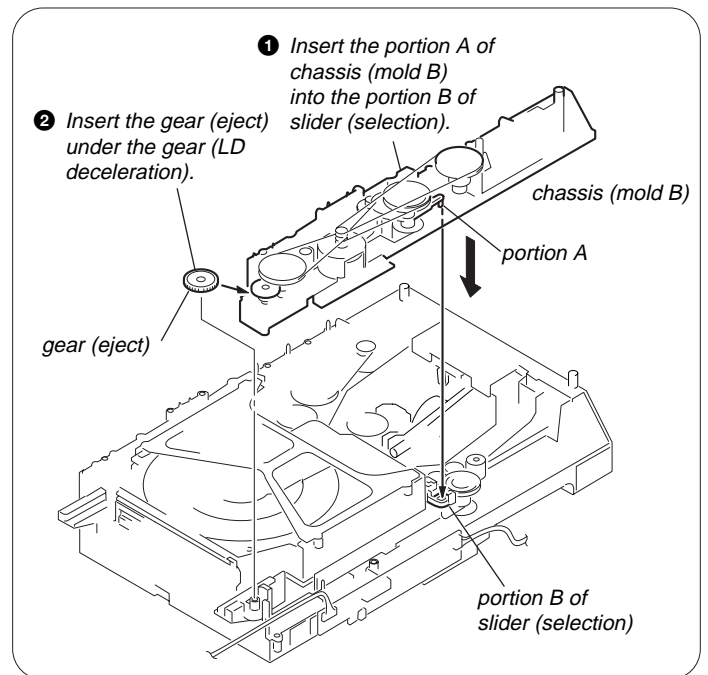
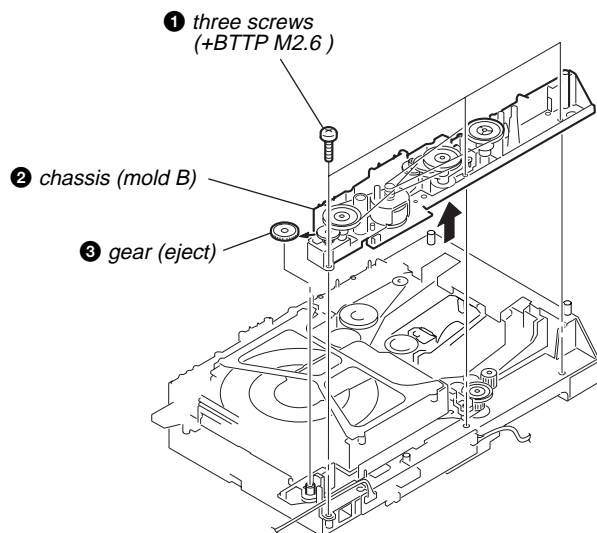
3-17. Tray (Sub)

- ❶ Rotating the pulley (LD), shift the slider (selection) in the arrow **A** direction.
- ❷ Rotating the pulley (mode) in the arrow direction, adjust the tray (sub) to be removed.
- ❸ Rotating the pulley (LD), shift the slider (selection) in the arrow **B** direction.
- ❹ Rotating the pulley (mode) in the arrow direction, remove the tray (sub) to be removed.

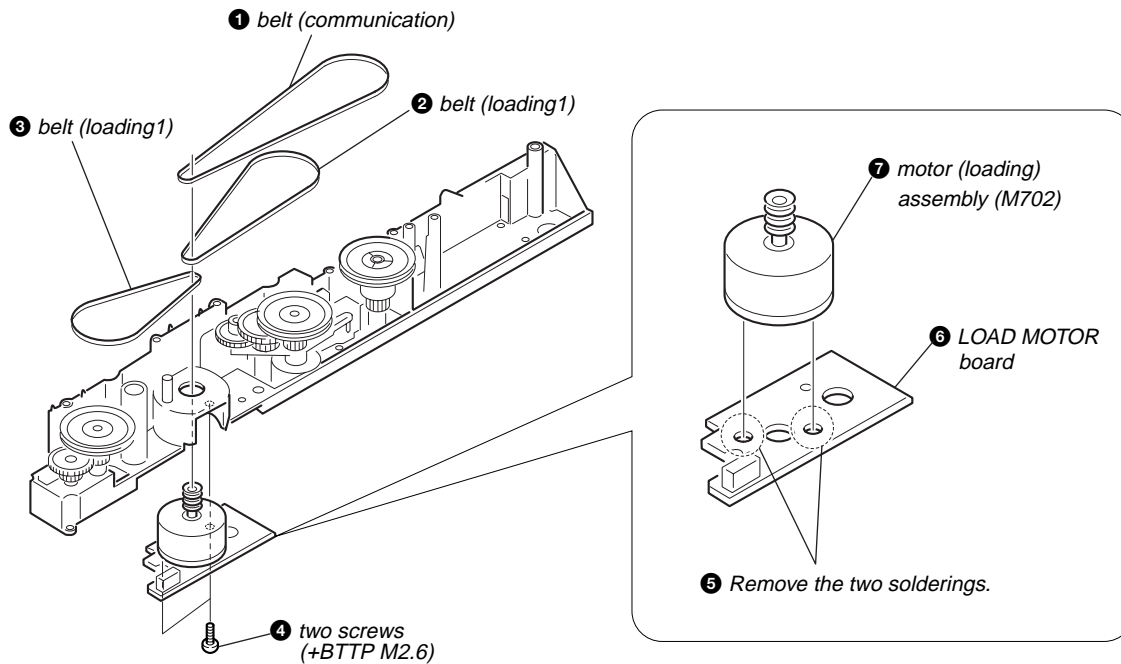


3-18. Chassis (Mold B)

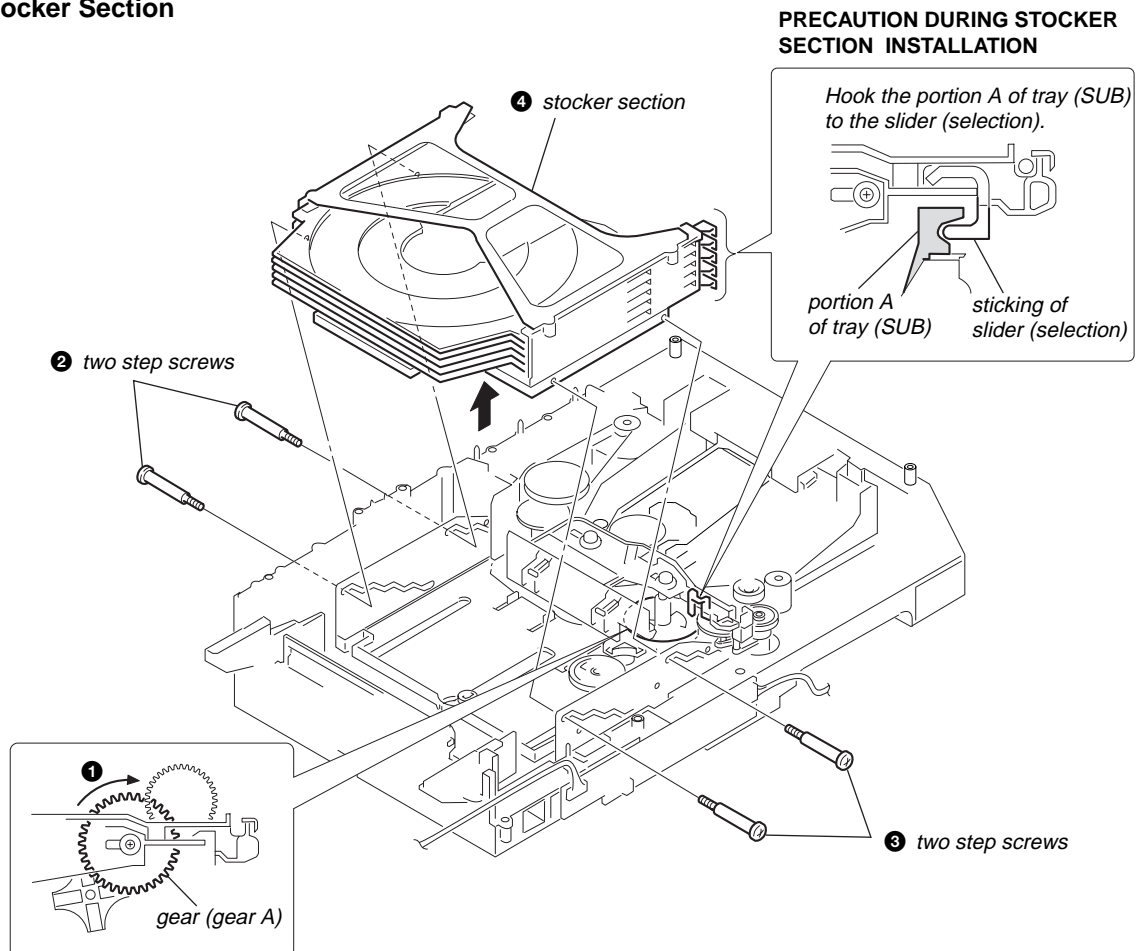
PRECAUTION DURING CHASSIS (MOLD B) INSTALLATION



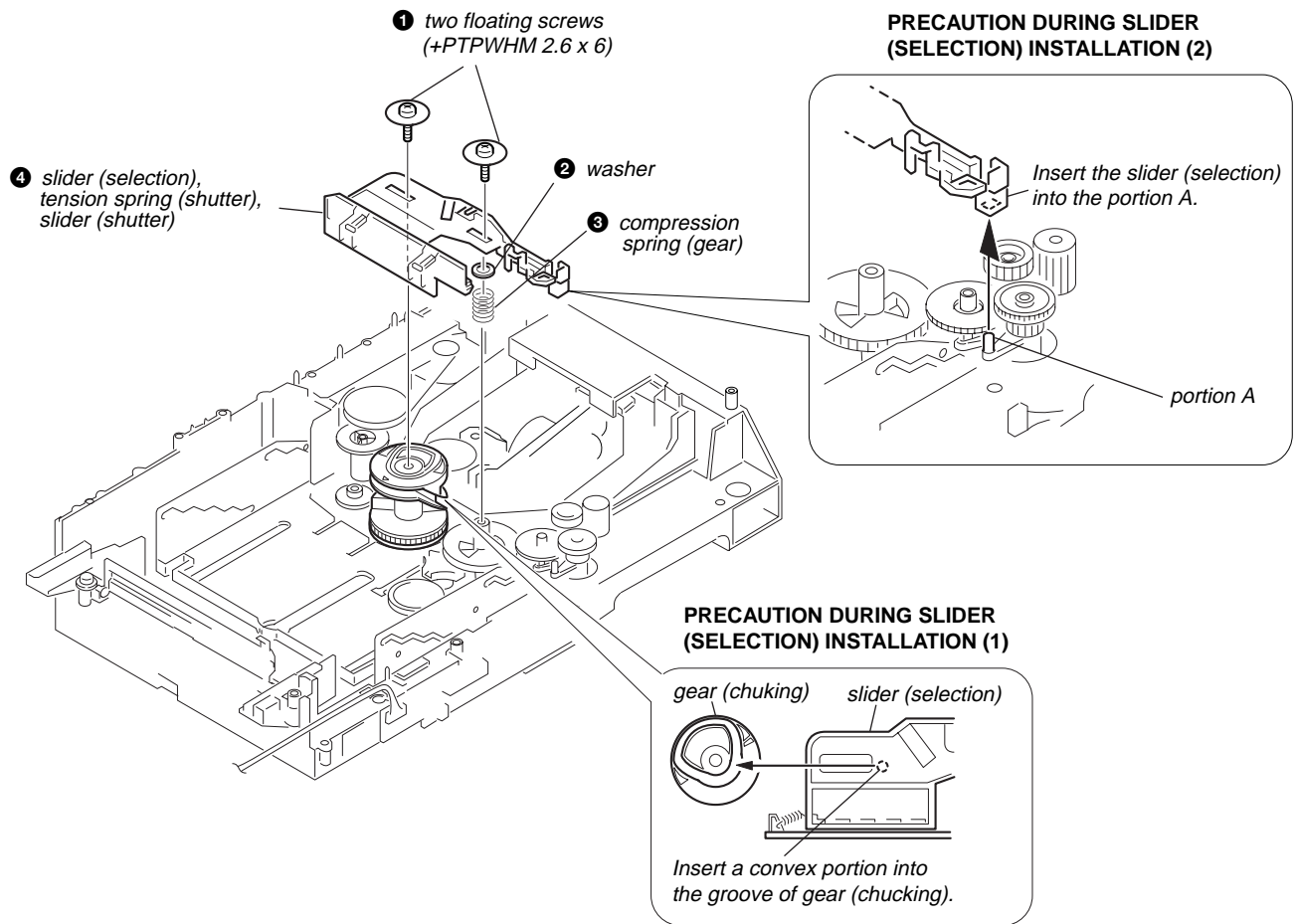
3-19. LOAD MOTOR Board, Motor (Loading) Assembly (M702)



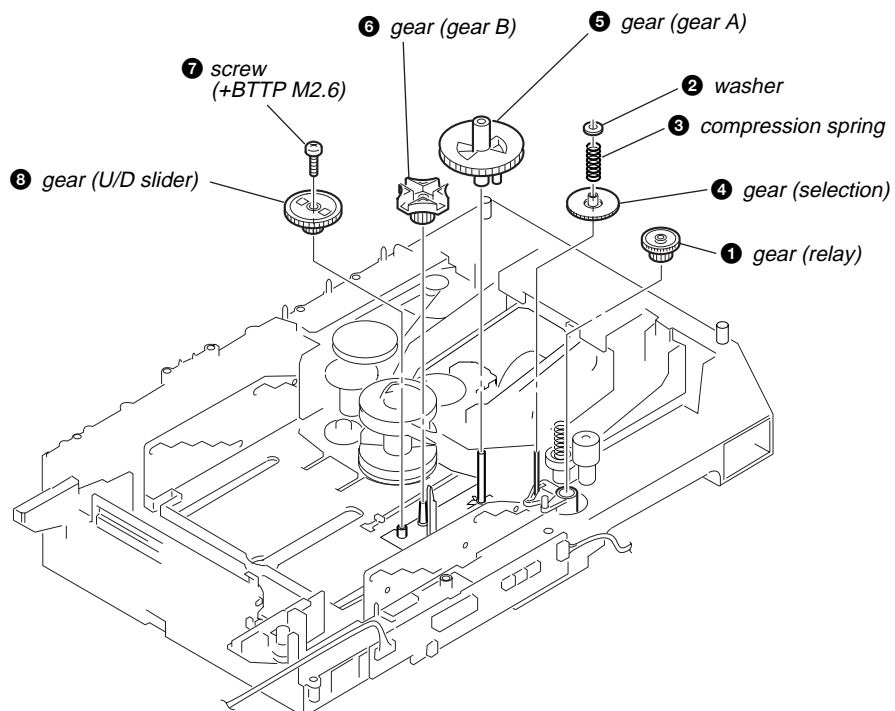
3-20. Stoker Section



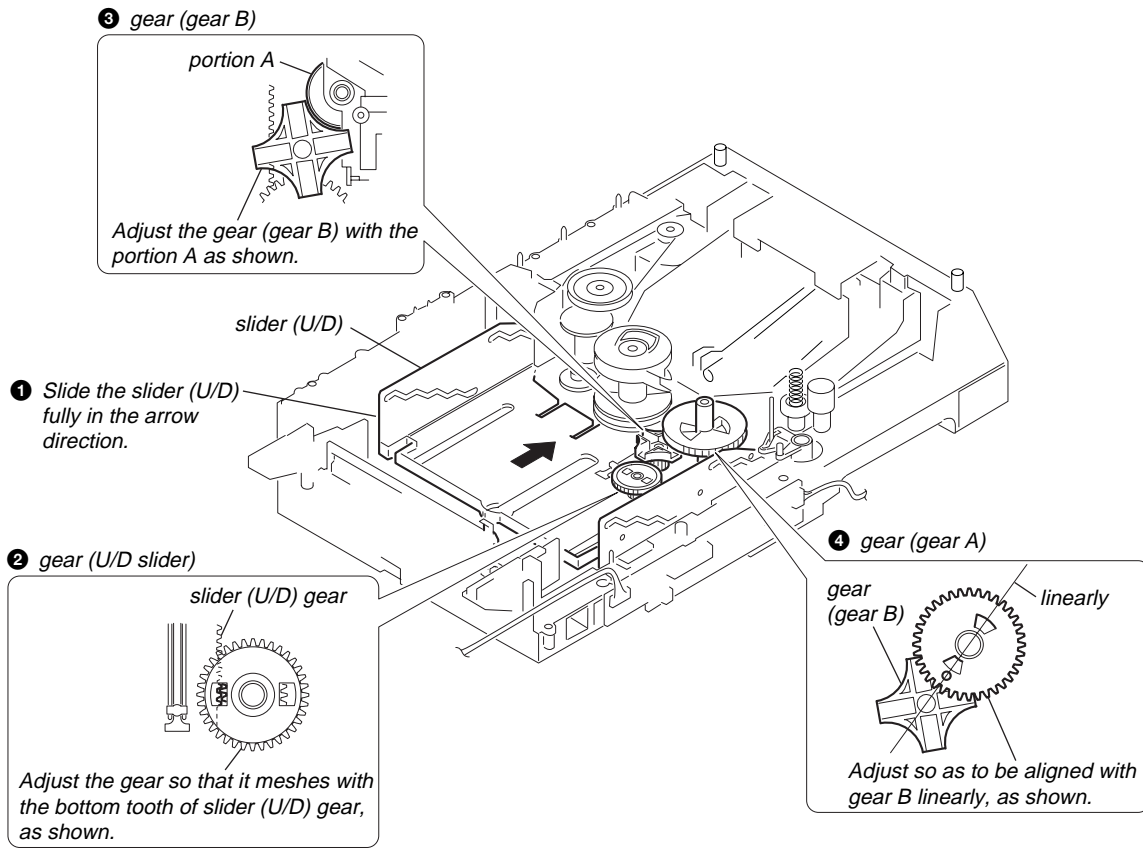
**3-21. Slider (Selection), Tension Spring (Shutter), Slider (Shutter)**



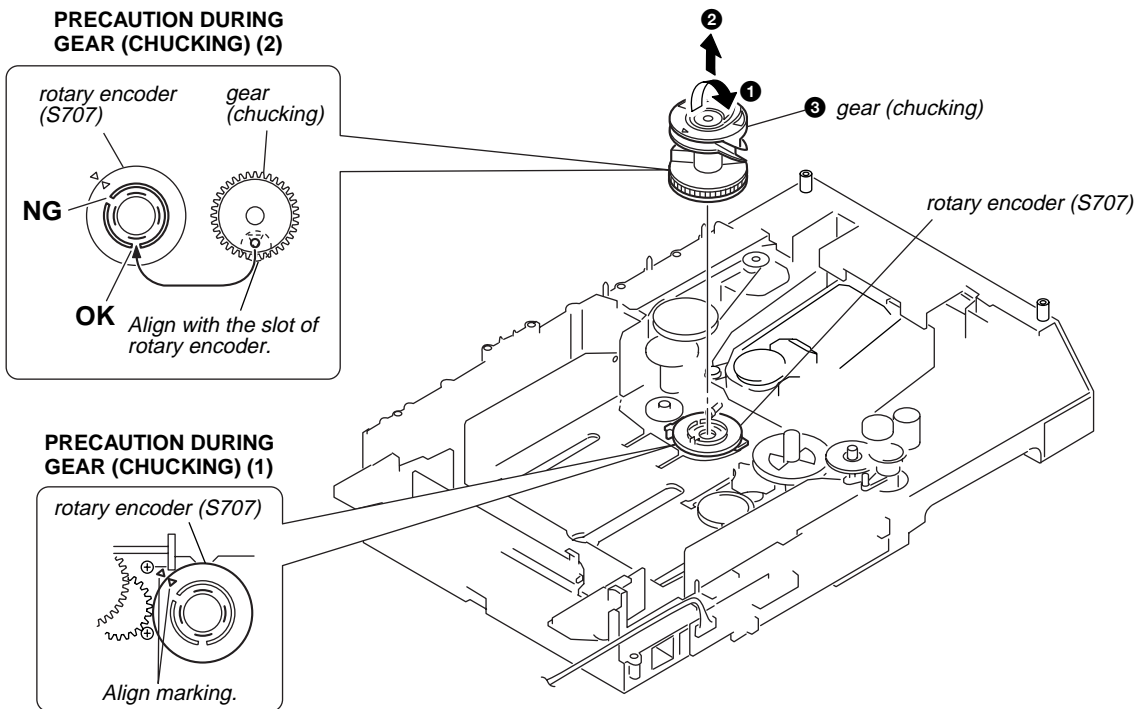
**3-22. Gear (Gear A), Gear (Gear B), Gear (U/D Slider)**



**Precaution During Gear (Gear U/D Slider), Gear (Gear B), Gear (Gear A) Installation**

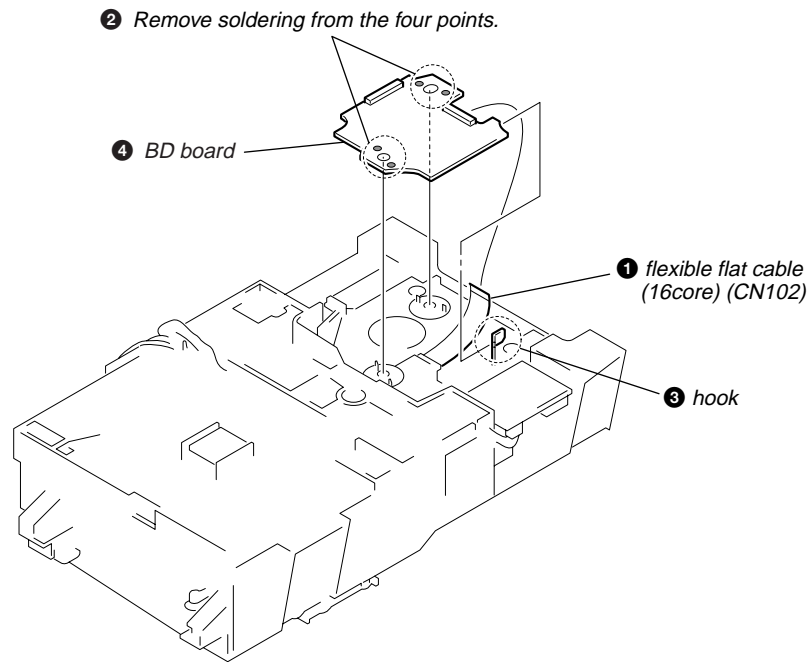


**3-23. Gear (Chucking)**

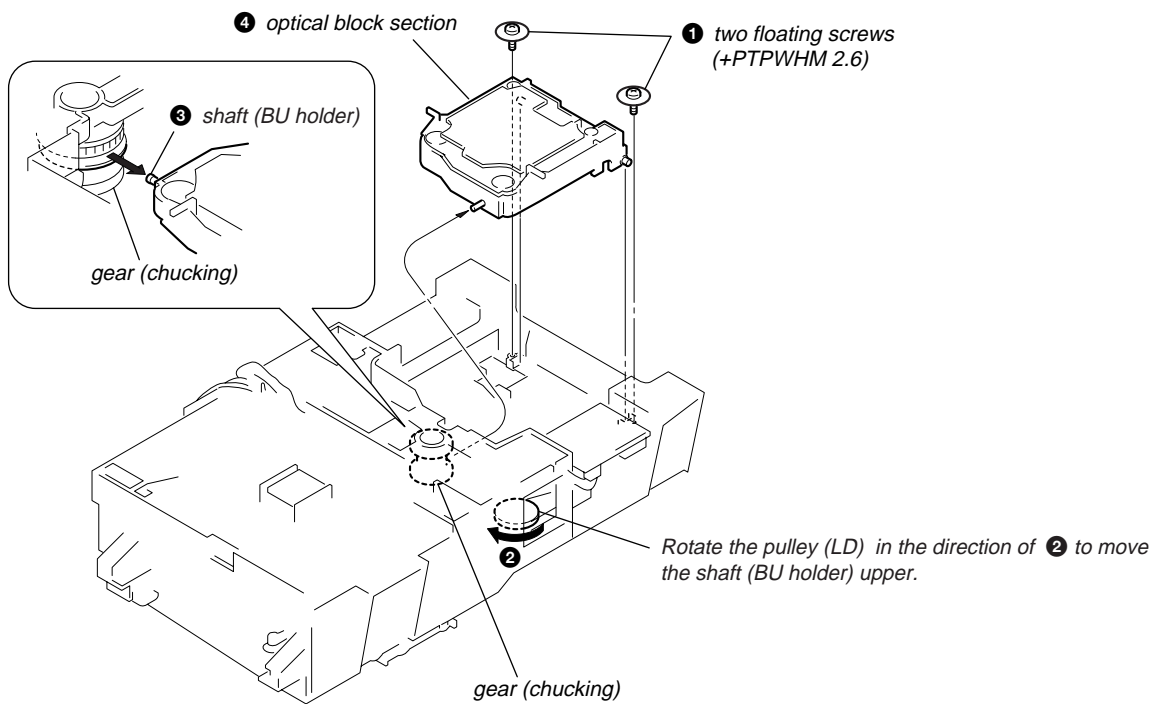




3-24. BD Board



3-25. Optical Block Section



MEMO

## SECTION 4 TEST MODE

### Setting the Test Mode

#### Procedure:

1. Press the **POWER** button to POWER on.
2. Press the **◀◀ AMS ▶▶** (DECK A), **SBM** and **◀◀ AMS ▶▶** (DECK B) buttons in order without releasing the button.
3. Turn the **◀◀ AMS ▶▶** (DECK B) knob to select the menu.
4. Press the **◀◀ AMS ▶▶** (DECK B) knob to execute the test mode.

### Releasing the Test Mode

#### Procedure 1:

1. Turn the **◀◀ AMS ▶▶** (DECK B) knob to select the Ship Mode.
2. Press the **◀◀ AMS ▶▶** (DECK B) knob to execute the Ship Mode.
3. Press the **POWER** button to POWER off.

#### Procedure 2:

1. Press the **◀◀ AMS ▶▶** (DECK A), **SBM** and **◀◀ AMS ▶▶** (DECK B) buttons in order without releasing the button.
2. Press the **POWER** button to POWER off.

### Contents of test mode

| No. | Display     | Function                        |
|-----|-------------|---------------------------------|
| 1   | SYS Version | System version display          |
| 2   | CDR Version | CDR version display             |
| 3   | BU Test     | Deck A BU test mode             |
| 4   | SERVICE     | Deck A Service mode             |
| 5   | Ship Mode   | CD Shipment mode                |
| 6   | FL ALL ON   | Fluorescent indicator tube test |
| 7   | FL ALL OFF  | Fluorescent indicator tube test |
| 8   | FL ITIMATSU | Fluorescent indicator tube test |
| 9   | LED CHECK   | LED check                       |
| 10  | KEY CHECK   | Keyboard check                  |
| 11  | RM CHECK    | Remote commander check          |
| 12  | CDR History | CDR error history display       |
| 13  | Play Speed  | Deck A x4 speed                 |

### System Version Display

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “SYS Version”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. The system version is displayed.
3. To exit from this mode, turn the **◀◀ AMS ▶▶** (DECK B) knob to display “Ship Mode”, and press the **◀◀ AMS ▶▶** (DECK B) knob to execute the Ship Mode.
4. Press the **POWER** button to POWER off.

### CDR Version Display

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “CDR Version”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. The CDR version is displayed.
3. To exit from this mode, turn the **◀◀ AMS ▶▶** (DECK B) knob to display “Ship Mode”, and press the **◀◀ AMS ▶▶** (DECK B) knob to execute the Ship Mode.
4. Press the **POWER** button to POWER off.

### BU Test Mode (Deck A)

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “BU Test”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. “bdt S CURVE” is displayed. This test mode is used in the Electrical Adjustment section.
3. Turn the **◀◀ AMS ▶▶** (DECK B) knob. “bdt RAM READ”, “bdt RAM WRITE”, “bdt COMOUT”, “bdt FB TUNE” and “bdt ERR RATE” are displayed.
4. To exit from this mode, press the **MENU/NO** button and turn the **◀◀ AMS ▶▶** (DECK B) knob to display “bdt ERR RATE”.
5. Press the **◀◀ AMS ▶▶** (DECK A), **SBM** and **◀◀ AMS ▶▶** (DECK B) buttons in order without releasing the button.
6. Press the **POWER** button to POWER off.

### Service Mode (Deck A)

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “SERVICE”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. “SERVICE MODE” is displayed.
3. Press the **ERASE** button, the “SLED OUT” is displayed and the sled moves to the outermost position.
4. Press the **FINALIZE** button, the “SLED IN” is displayed and the sled moves to the innermost position.
5. Press the **◀◀ AMS ▶▶** (DECK B) knob, then “SERVICE MODE” is displayed again.
6. To exit from this mode, press the **◀◀ AMS ▶▶** (DECK A), **SBM** and **◀◀ AMS ▶▶** (DECK B) buttons in order without releasing the button.
7. Press the **POWER** button to POWER off.

Note: Always move the pick-up to the most inside position when exiting from this mode.

### Ship Mode

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “Ship Mode”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. “Push POWER!” is displayed.
3. Press the **POWER** button to POWER off.







### FL ALL ON Mode

#### Procedure:

1. Enter the test mode, then turn the **◀◀ AMS ▶▶** (DECK B) knob to display “FL ALL ON”, and press the **◀◀ AMS ▶▶** (DECK B) knob.
2. All segments of fluorescent indicator tube and all LEDs turn on.
3. Press the **MENU/NO** button, then “FL ALL ON” is displayed again.
4. To exit from this mode, turn the **◀◀ AMS ▶▶** (DECK B) knob to display “Ship Mode”, and press the **◀◀ AMS ▶▶** (DECK B) knob to execute the Ship Mode.
5. Press the **POWER** button to POWER off.







## FL ALL OFF Mode

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "FL ALL OFF", and press the  (DECK B) knob.
2. All segments of fluorescent indicator tube and all LEDs turn off.
3. Press the  button, then "FL ALL OFF" is displayed again.
4. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
5. Press the  button to POWER off.








## FL ITIMATSU Mode

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "FL ITIMATSU", and press the  (DECK B) knob.
2. Checkered patterns of segments are displayed.
3. Press the  button, then "FL ITIMATSU" is displayed again.
4. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
5. Press the  button to POWER off.









## LED Check Mode

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "LED CHECK", and press the  (DECK B) knob.
2. Turn the  (DECK A) or (DECK B) knob clockwise. The green LED (DISC 1) turns on, then the orange LED (DISC 1) turns on. The each orange LED turns on after the green LED from DISC 1 to DISC 5. The LED (SBM) turns on at last. Counterclockwise rotation gives a performance in reverse order.
3. Press the  button, then "LED CHECK" is displayed again.
4. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
5. Press the  button to POWER off.








## KEY Check Mode

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "KEY CHECK", and press the  (DECK B) knob.
2. "Got  keys" is displayed.
3. Press the buttons, and when all the buttons are pressed (without the  button), "Got 36 keys" will be displayed.
4. To exit from this mode, press the  (DECK A),  and  (DECK B) buttons in order without releasing the button.
5. Press the  button to POWER off.








## Remote Commander Check

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "RM CHECK", and press the  (DECK B) knob.
2. Press the  key on the remote commander, then "Got PlayCom" is displayed.
3. Press the  button, then "RM CHECK" is displayed again.
4. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
5. Press the  button to POWER off.


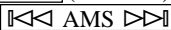






## CDR History Display

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "CDR History", and press the  (DECK B) knob.
2. "00 #####" is displayed as the first error history.
3. Turn the  (DECK B) knob to select the error history. The number of error histories is ten in all. (Refer to "Contents of CDR error history".)
4. Press the  button, then "CDR History" is displayed again.
5. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
6. Press the  button to POWER off.

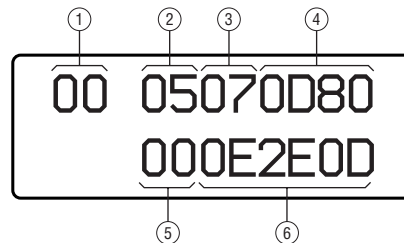
## Play Speed Selection Mode (Deck A)

### Procedure:

1. Enter the test mode, then turn the  (DECK B) knob to display "Play Speed", and press the  (DECK B) knob.
2. "x4 Play" is displayed. If a CD is in the deck A, pressing the  button executes the 4 times speed playback.
3. Press the  button to stop the playback.
4. Press the  button, then "Play Speed" is displayed again.
5. To exit from this mode, turn the  (DECK B) knob to display "Ship Mode", and press the  (DECK B) knob to execute the Ship Mode.
6. Press the  button to POWER off.

## Contents of CDR error history

display(example)



(hexadecimal)

- ① Order of the error history  
00 to 09: ten error histories in all
- ② Error contents  
01: unable to focus on  
02: Q code/ATIP discontinuous (several frames preceding)  
03: Q code/ATIP unreadable  
04: search taking more than sixteen seconds  
05: focus failure  
06: sled over run  
07: not passing by start time to write  
08: audio buffer over  
09: sync failure  
0A: Spindle lock taking more than 8 seconds

example : 05 is focus failure

③ Operation mode

bit 7: Speed

- 0: normal speed
- 1: x4 speed

bit 6 to bit 0: Number of inner condition

- 01: POWER off condition/during shift to POWER on
- 02: POWER off and shipment setting/during shift to POWER off and shipment setting
- 03: stop condition/during stop
- 04: during start up of servo
- 05: during TOC reading and others
- 06: during CD TEXT reading
- 07: during standby(waiting for command from the CD system)/during search
- 08: during playback
- 09: during manual search(playback)

- 0A: during pause
- 0B: during manual search(pause)
- 0C: during OPC
- 0D: recording standby/during recording pause (enable to shift to recording)
- 0E: during recording
- 0F: unable to record (waiting for shift to being recordable)
- 10: PMA updating
- 11: during operation of unfinalize
- 12: during operation of finalize
- 13: PMA erasing
- 14: emergency
- 15: recording preparation
- 16: recording end

⑤ Write POWER (integer of mW x 10, available during write processing)

examples: 00 means unavailable (when ③ operation mode is not recording)  
: A3 means 163(decimal), i.e. 16.3 mW

⑥ ATIME (min)/(sec)/(frame)

example: 0E, 2E, 0D means 14 : 46 : 13

Abbreviations:

- ATIP : Absolute Time In Pre-groove
- OPC : Optimum POWER Control
- PMA : Program Memory Area

examples :

| HEX | bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Operation mode   |
|-----|-----|---|---|---|---|---|---|---|---|--|
| 07  |     | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | normal speed, during standby(waiting for command from the CD system)/during search |
|     |     | 0 |   | 7 |   |   |   |   |   |  |
| 91  |     | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | x4 speed, during operation of unfinalize   |
|     |     | 1 | 1 |   | 1 |   |   |   |   |  |

④ Start time of read in(compression method)

bit 15 to bit 13 : (min)

- 0: 97 min
- 1: 96 min
- 2: 95 min
- 7: others

bit 12 to bit 7: (sec)

bit 6 to bit 0: (frame)

examples :

| HEX    | bit | 15      | 14 | 13 | 12      | 11 | 10 | 9 | 8         | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Start time of read in |
|--------|-----|---------|----|----|---------|----|----|---|-----------|---|---|---|---|---|---|---|---|-----------------------|
| 0D, 80 |     | 0       | 0  | 0  | 0       | 1  | 1  | 0 | 1         | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 : 27 : 00          |
|        |     | 97(min) |    |    | 27(sec) |    |    |   | 0(frame)  |   |   |   |   |   |   |   |   |                       |
| 11, 16 |     | 0       | 0  | 0  | 1       | 0  | 0  | 0 | 0         | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 97 : 34 : 22          |
|        |     | 97(min) |    |    | 34(sec) |    |    |   | 22(frame) |   |   |   |   |   |   |   |   |                       |

## SECTION 5 ELECTRICAL ADJUSTMENTS

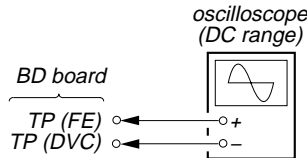
### CD SECTION (DECK A)

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 10MΩ 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.

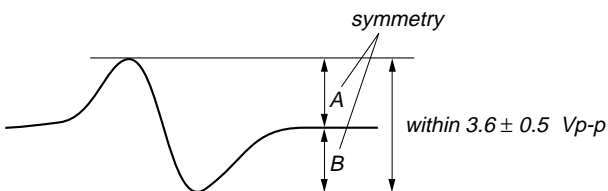
#### S Curve Check

Connection :



Procedure :

1. Connect an oscilloscope to test point TP (FE) and TP (DVC) on the BD board.
2. Turn the power on.
3. Load the disc (YEDS-18).
4. Enter the test mode, select the BU Test and press the  $\lll$  AMS  $\ggg$  (DECK B) knob to display “bdt S CURVE”.
5. Press the  $\lll$  AMS  $\ggg$  (DECK B) knob. “LD AL” is displayed and playback starts automatically.
6. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within  $3.6 \pm 0.5$  Vp-p.
7. Press the MENU/NO button to stop playback.
8. Exit from the test mode.  
(Refer to the TEST MODE Section)

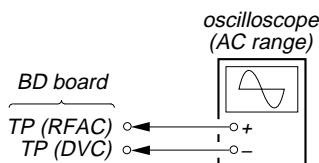


VOLT/DIV : 1V  
TIME/DIV : 2ms

**Note:** Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.

#### RF Level Check

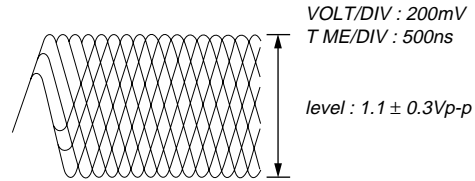
Connection :



Procedure :

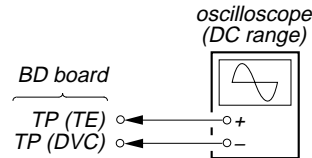
1. Connect an oscilloscope to TP (RFAC) and TP (DVC).
2. Turn the power on.
3. Load the disc (YEDS-18) and playback the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

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



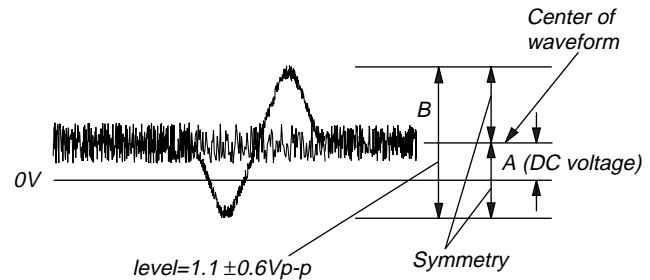
#### E-F Balance (1 Track jump) Check

Connection :



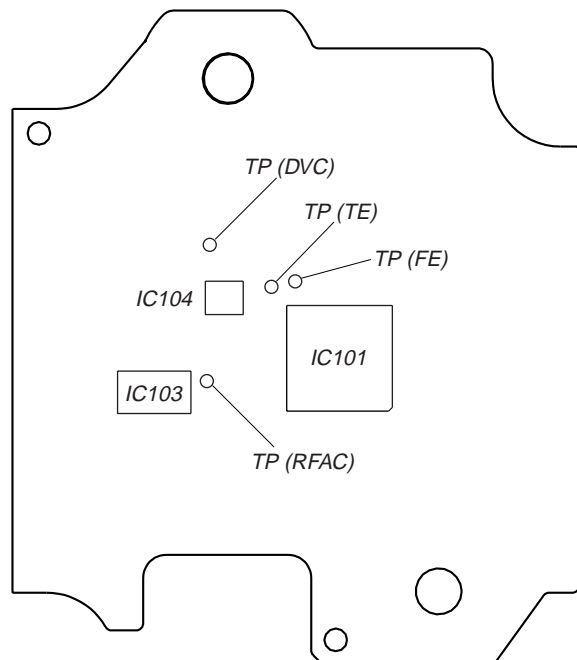
Procedure:

1. Connect an oscilloscope to TP (TE) and TP (DVC).
2. Turn the power on.
3. Load the disc (YEDS-18) and playback the number five track.
4. Press the  $\lll$  (DECK A) button.  
(Becomes the 1 track jump mode.)
5. Confirm the level B and A (DC voltage) on the oscilloscope waveform.



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

[BD BOARD] — SIDE A —

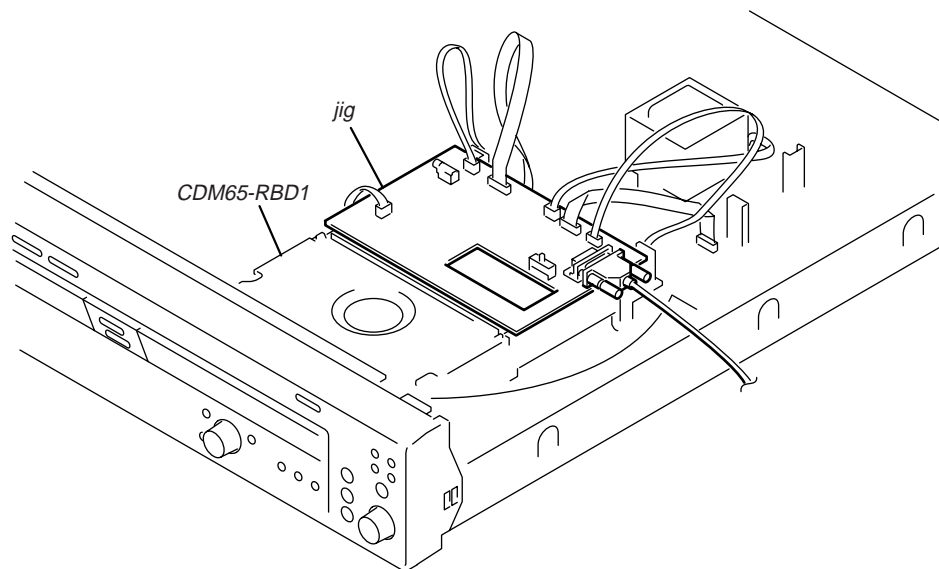
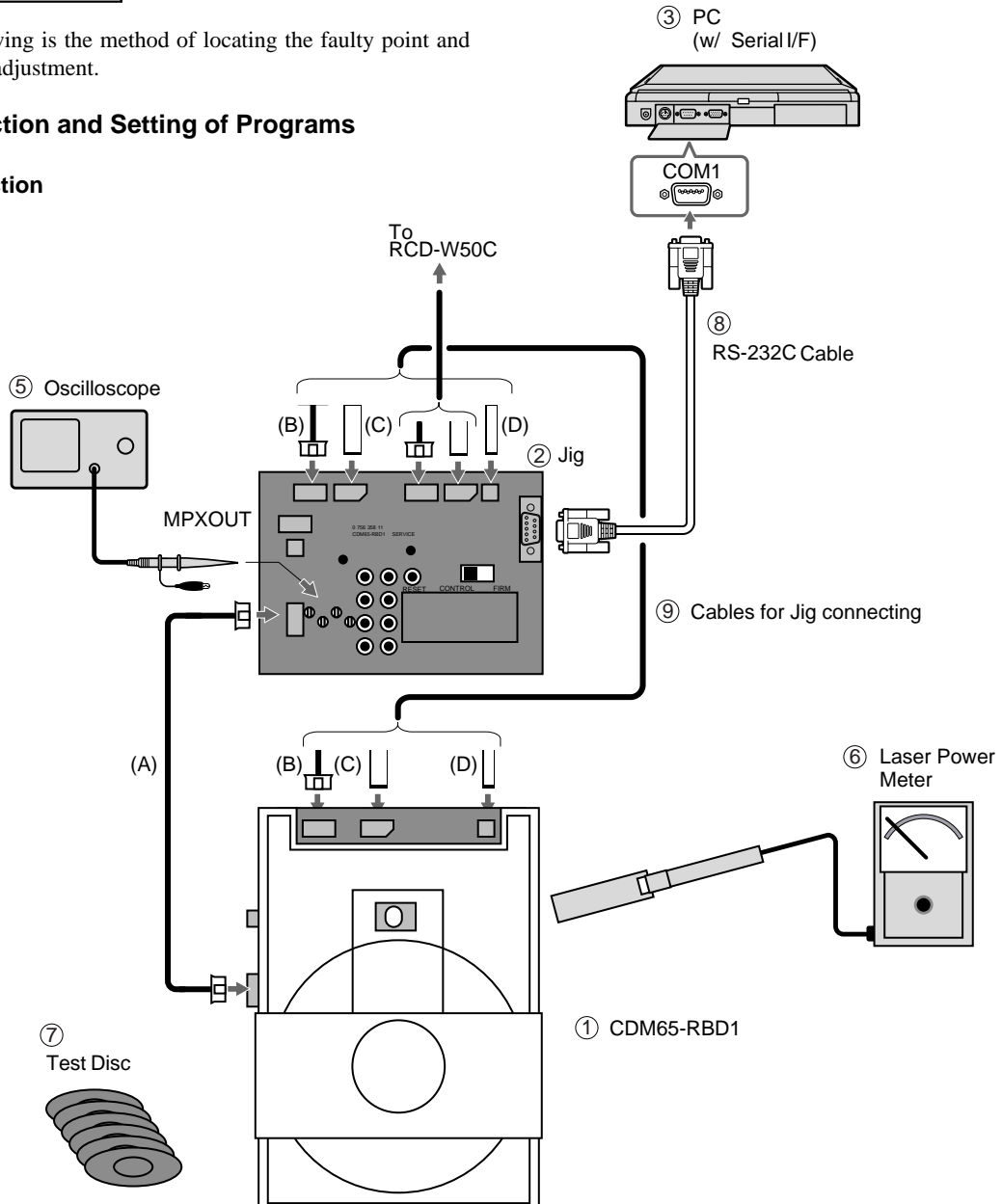


**CD-R/RW SECTION**

\* The following is the method of locating the faulty point and electrical adjustment.

**1. Connection and Setting of Programs**

**1-1. Connection**



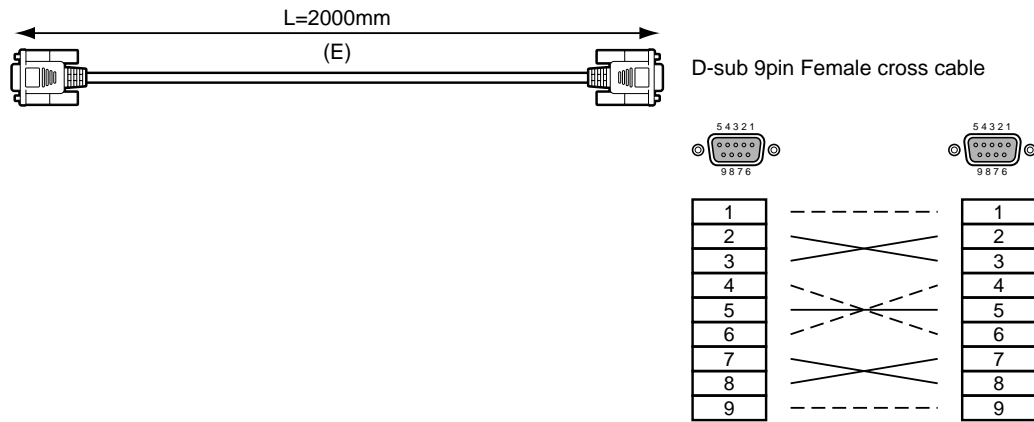
▲ Fig. Position of Jig (Set the jig after removing the cover of CDM65-RBD1)



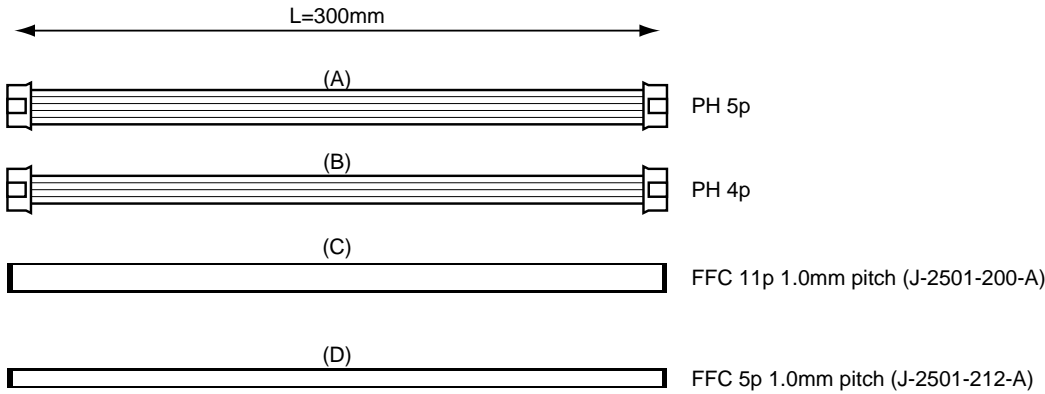
# RCD-W50C

## 1-2. Equipments to prepare

- |                     |   |  |
|---------------------|---|--|
| ① Test Object       | Both RBD1 and CDM65-RBD1 shall be tested.   |  |
|                     | RBD1 :                                      | Flash Memory Writing of of<br>Circuit Test by Self-diagnostics |
|                     | CDM65-RBD1 :                                | Electrical Adjustment<br>Performance Test                      |
| ② Jig               | (With ⑨ Cables, Parts No.J-2501-223-A)      |  |
| ③ PC                | Windows95/98/2000/Me with COMport (RS-232C) |  |
| ④ Programs          | TeraTerm Pro + Service macro                |  |
| ⑤ Oscilloscope      | More than 150MHz                            |  |
| ⑥ Laser Power Meter | LEADER LPM-8001 (Parts No.J-2501-046-A)     |  |
| ⑦ Test Disc         |   |  |
|                     | PATD-012 : (Parts No.4-225-203-1)           | Adjustment for Playback (CD,CD-R)                              |
|                     | TCD-W091W : (Parts No.J-2501-226-A)         | Adjustment for Playback (CD-RW)                                |
|                     | CRM74 (Blank CD-R) :                        | Adjustment and Check for Recording (CD-R)                      |
|                     | CWM74 (Blank CD-RW) :                       | Check for Recording (CD-RW)                                    |
|                     | TCD-W032W : (Parts No.J-2501-227-A)         | Defocus tolerance (CD-RW)                                      |
| ⑧ RS-232C Cable     |   |  |



### ⑨ Cables for Jig connecting



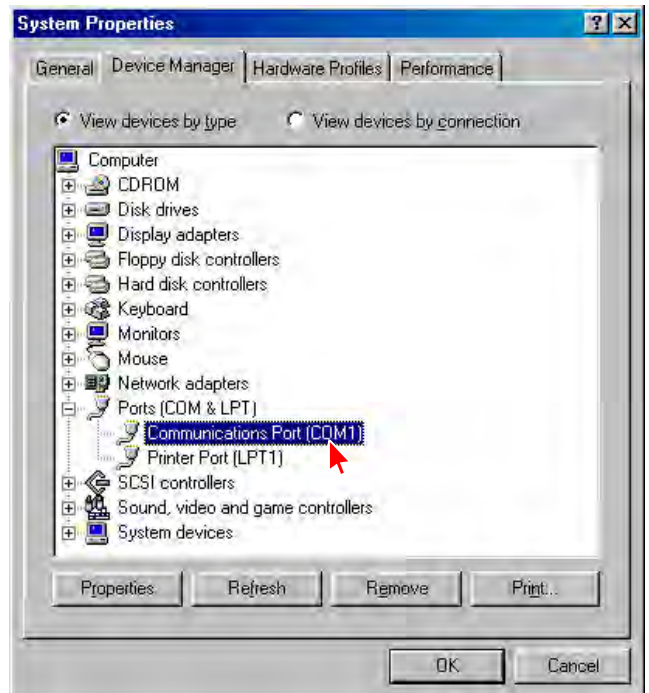
### 1-3. Setting of Programs (Tera Term Pro and Service macro)

\* Confirmation of System (Windows 98 is used in this explanation) Preparation for Terminal software

1) Set up the serial port from OS.

a) Select Start → Settings → Control Panel and select System → Device manager → Communication Port (COMn) (see Fig. 1-1)

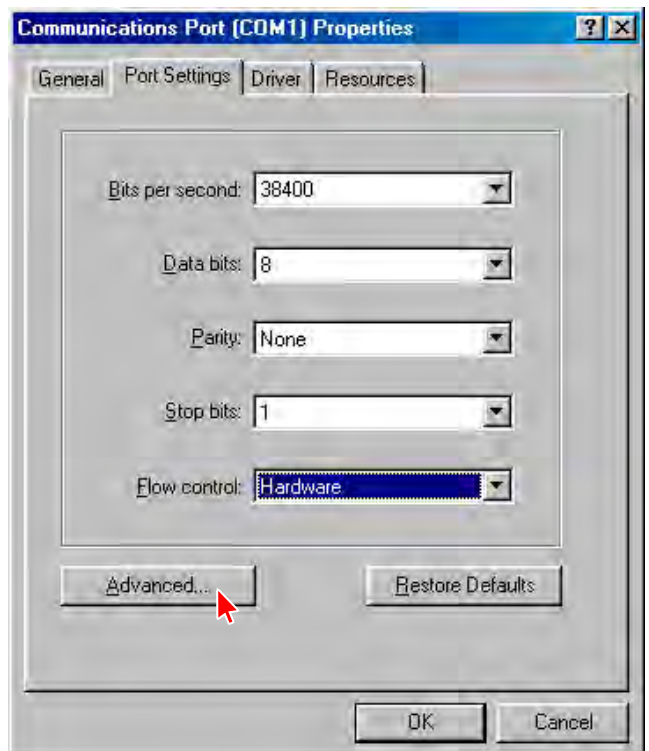
\* Specify the COM port that connected with JIG of CDM65.



▲ Fig. 1-1

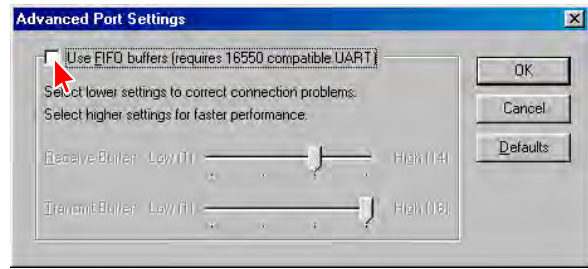
b) Double click COMn (as you connect to the Jig-CDM65)  
Set the parameters as below.

Bits per second : 38400  
Data bits : 8  
Parity : non  
Stop bits : 1  
Flow control : hardware  
(see Fig.1-2)



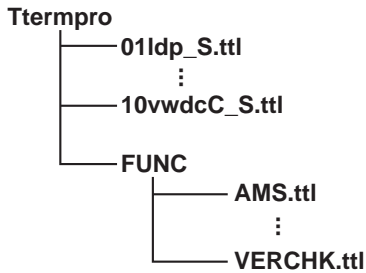
▲ Fig. 1-2

- c) Press “Advanced...” button (see Fig.1-2)  
Remove the check “Use FIFO buffers ...”  
(see Fig.1-3)



▲ Fig. 1-3

- 2) Unzip the file “ttermp23.zip” by PC.  
(The file “ttermp23.zip” is distributed together with the service manual.)
- 3) After unzip the files, you can find setup.exe.  
Double click the setup.exe.  
Please install as the installer is.  
Do not change the directory that files are installed. (use default)
- 4) Unzip the file “files-0208.zip” by PC.  
Copy all “.ttl” file and “FUNC” folder which are contained in “files-0208” and paste them in the “Ttermpro” file as below.  
(The file “files-0208.zip” is distributed together with the service manual.)



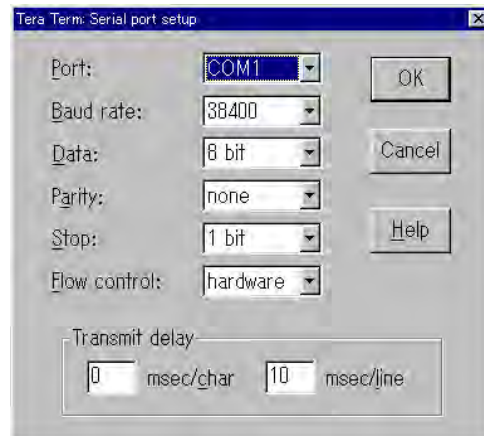
▲ Fig. 1-4

Note : Do not change the directory path.

- 5) Start-up the TeraTermPro  
Double click the ttermpro.exe.
- 6) Set up the TeraTermPro (IMPORTANT!!)  
a) Select Setup → Serial Port... and set the parameters as below.

Port : (As you connect to the Jig-CDM65)  
Baud rate : 38400  
Data : 8 bit  
Parity : none  
Stop : 1 bit  
Flow control : hardware  
Transmit delay : 0 msec/char 10 msec/line

After settings, press “OK” button. (see Fig.1-5)

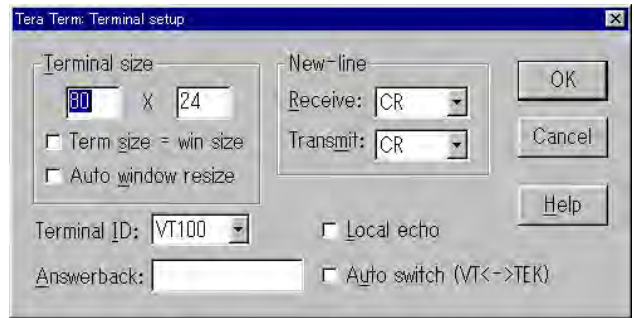


▲ Fig. 1-5

- b) Terminal setup  
Set the parameters as below.

New-line receive : CR  
transmit : CR

After settings, press “OK” button. (see Fig.1-6)



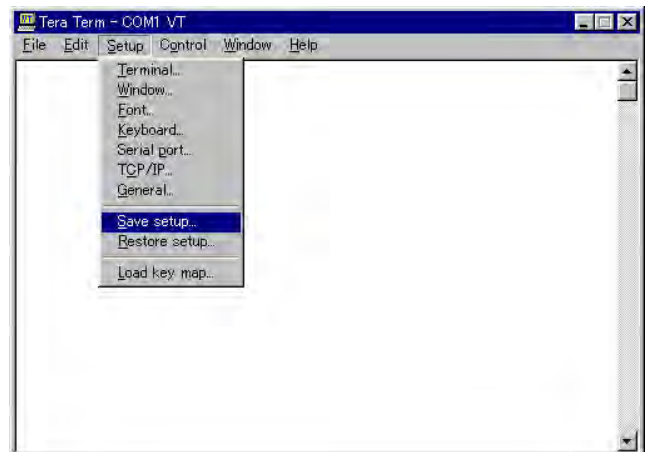
▲ Fig. 1-6

- c) General setup  
Select the language and press “OK” button. (see Fig.1-7)



▲ Fig. 1-7

- d) Saving the setup  
Select Setup → Save setup... and save as teraterm.ini in the Ttermpro directory. (see Fig.1-8)

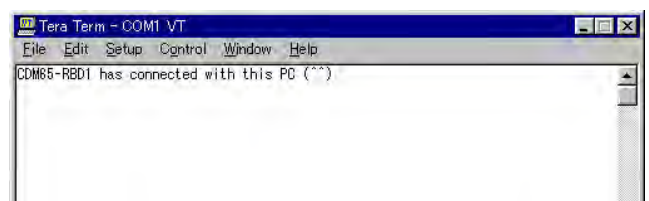


▲ Fig. 1-8

- 7) Connect the JIG and CDM65.  
8) Confirm the S510 on JIG is 'CONTROL'.  
9) Power on the CDM65 and press SW101(RESET) on JIG.

“CDM65-RBD1 has connected with this PC (^)” is displayed.  
(see Fig.1-9)

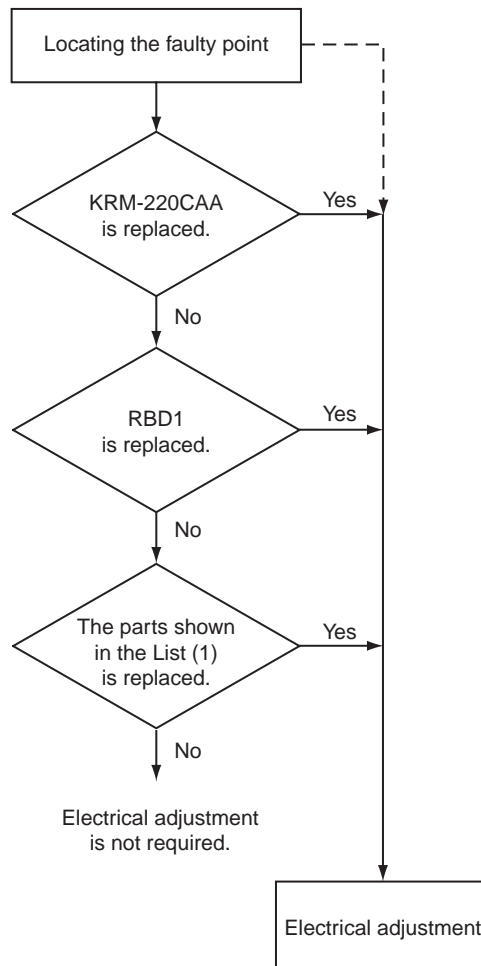
If above message is not displayed, you may have some mistakes.  
Please confirm previous setting procedures again.



▲ Fig. 1-9

## 2. Repair Works That Require Electrical Adjustment

In the case of repair works as shown below, electrical adjustment is required.

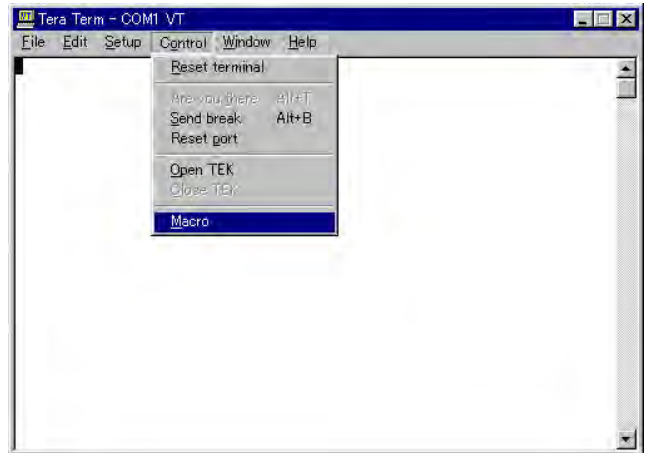


List (1) : IC101, IC103, IC171, IC201, IC502

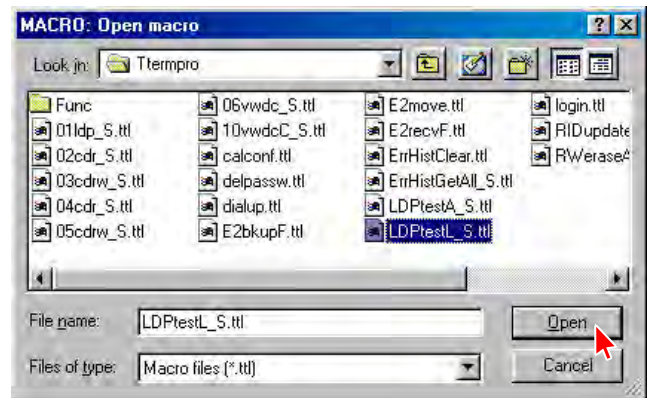
### 3. Locating the Faulty Point

#### 3-1. Laser Power Check

- 1) Select the menu as follows. Control → Macro, and select LDPtestL\_S.ttl.  
Press “Open”. (Fig. 3-1, 3-2)



▲ Fig. 3-1

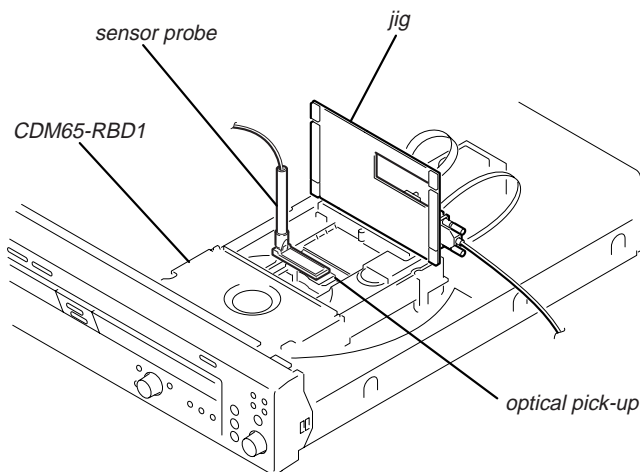


▲ Fig. 3-2

- 2) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 3) Place probe of a laser power meter in the specified position following the display as shown in Fig. 3-3. (See Fig. 3-3-a)



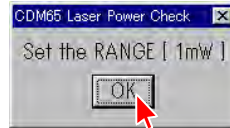
▲ Fig. 3-3



▲ Fig. 3-3-a

Note : Do not add stress to an optical pick-up.

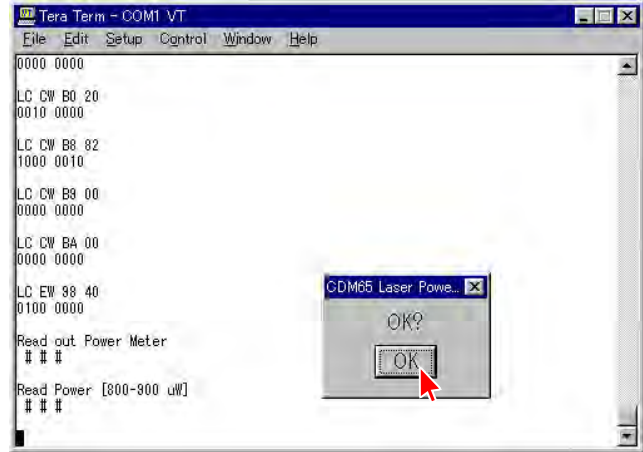
- 4) When the display shown in Fig. 3-4 appears, set the Range of a laser power meter to “1 mW” and press “OK”.



▲ Fig. 3-4

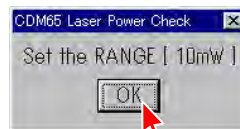
- 5) Check that the laser power meter reading satisfies the following requirement. When the laser power satisfies the required specification, press “OK”. (Fig. 3-5)

LEADER LPM-8001 : 0.76 to 0.86 mW



▲ Fig. 3-5

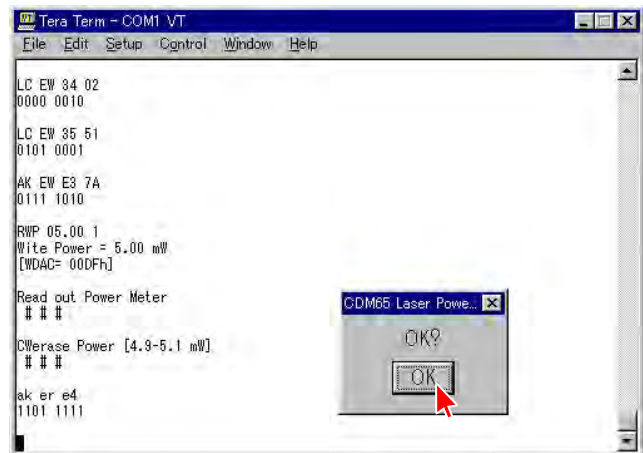
- 6) When the display shown in Fig. 3-6 appears, set the Range of a laser power meter to “10 mW” and press “OK”.



▲ Fig. 3-6

- 7) Check that the laser power meter reading satisfies the following requirement. When the laser power satisfies the required specification, press “OK”. (Fig. 3-7)

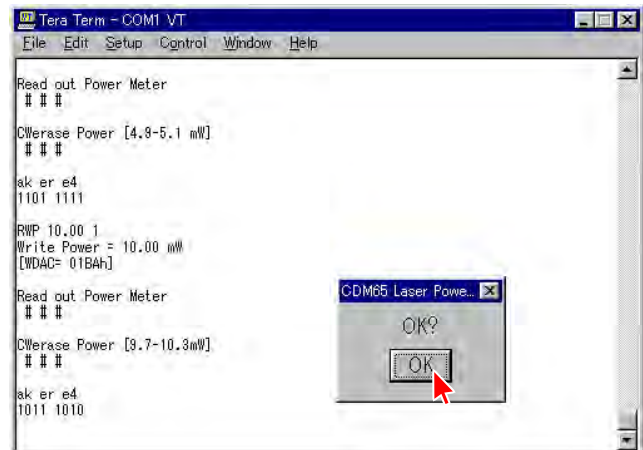
LEADER LPM-8001 : 4.5 to 4.7 mW



▲ Fig. 3-7

- 8) Check that the laser power meter reading satisfies the following requirement. When the laser power satisfies the required specification, press “OK”. (Fig. 3-8)

LEADER LPM-8001 : 9.2 to 9.6 mW

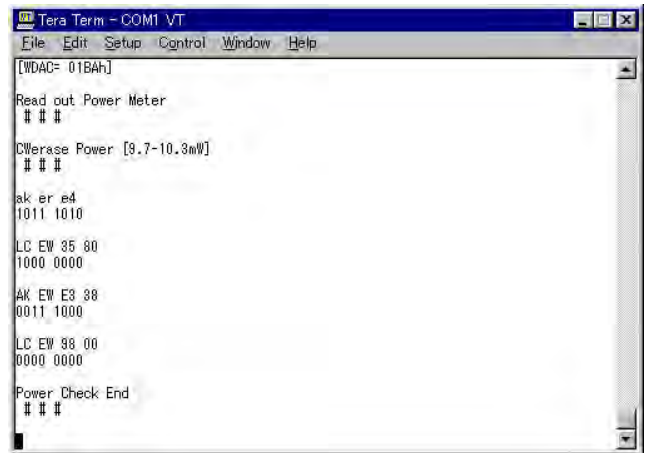


▲ Fig. 3-8



- 9) Check that the message “Power Check End” appears on display. (Fig. 3-9)

If the measurement result is outside the specification value, either perform section 4. CDM65-RBD1 Electrical Adjustment (see page 39), or locate the cause of the error by performing the Laser Deterioration Judgment.



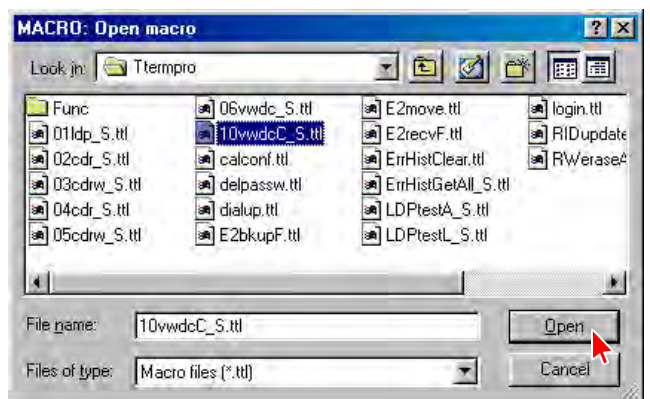
▲ Fig. 3-9

### 3-2. Laser Deterioration Judgment

- 1) Select the menu as follows. Control → Macro, and select 10vwdcC\_S.ttl. Press “Open”. (Fig. 3-10, 3-11)

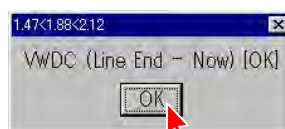


▲ Fig. 3-10



▲ Fig. 3-11

- 2) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 3) When the message [OK] appears as shown in Fig. 3-12, press the “OK” button. When the laser unit KRM-220CAA (Op) is normal without deterioration of laser, the message [OK] appears. If the laser unit is deteriorated, the message [NG] appears. Then, replace the laser unit KRM-220CAA (Op).



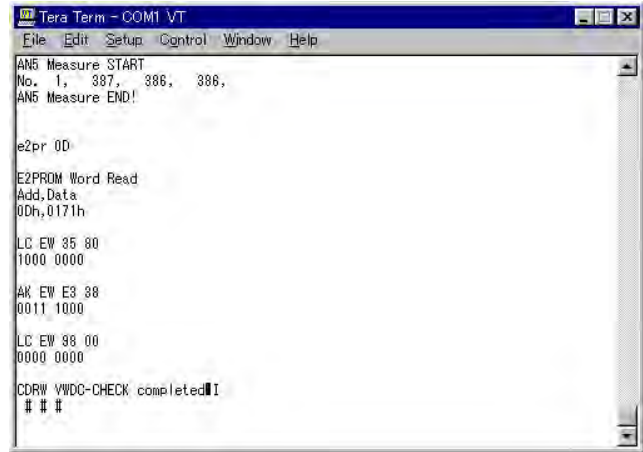
▲ Fig. 3-12

- 4) Check that the message “CDRW VWDC-CHECK completed!” appears. (Fig. 3-13)

## NG Judgment Result Indication

When the present VWDC value of the laser unit KRM-220CAA (Op) does not satisfy the required specification, the message “VWDC (Line End - Now) [NG]” appears.

Measure: Check the peripheral of CN101.  
Replace KRM-220CAA.

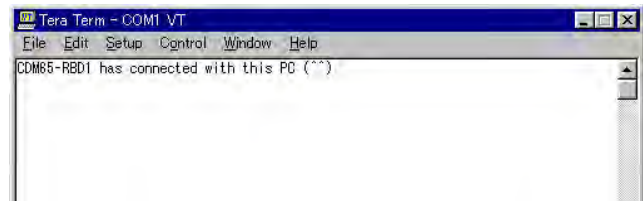


▲ Fig. 3-13

### 3-3. Use of Self Diagnosis Function-1 (In the case when result data of the past electrical adjustment, is not needed.)

Perform the self diagnosis as described below in the case when electrical adjustment is not performed yet, or when result data of the electrical adjustment in the past, is not needed and ready to be erased.)

- 1) Connect the CDM65-RBD1 (abbreviated as CDM65 hereafter) that is going to be repaired, the jig and a PC following the Connection Diagram as shown in section 1-1.
- 2) Turn on the power of the RCD-W50C in which the CDM65 is installed.
- 3) Start up the TeraTermPro that is installed in PC. Set the switch S510 on the jig to “CONTROL”.
- 4) Press the “RESET” button (SW101) of the jig. (Fig. 3-14)



▲ Fig. 3-14

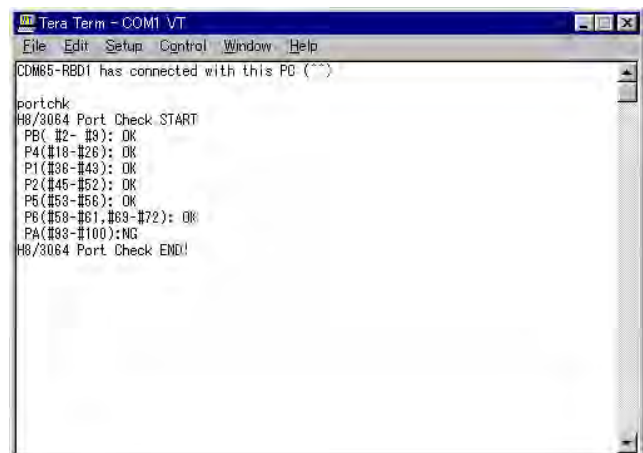
- 5) Type portchk [Enter] from keyboard of PC. (Fig. 3-15)

Note 5-1 : When the KRM-220CAA is connected, the spindle motor rotates at a high speed. If the message “H8/3064 Port Check END!” appears, press the “RESET” button and stop the spindle.

Note 5-2 : When the CDM65 (loading mechanism) is installed, ignore the message “PA (#93-100): NG”.

Confirm that “OK” is displayed in all items except for the cases as described above.

If “NG” is displayed in any item, it is assumed that the pin number of IC501 as shown in Fig. 3-15 is defective or its peripheral has abnormality. Perform the repair work again and repeat the self diagnosis. Repeat the repair work and self diagnosis until OK is displayed.



▲ Fig. 3-15

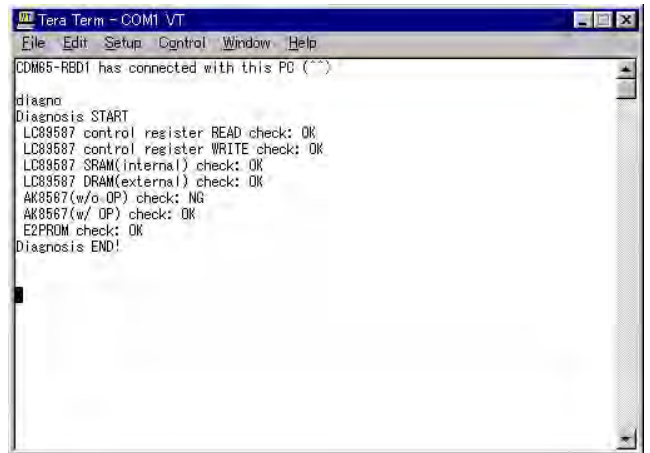
- 6) Type diagno [Enter] from keyboard of PC.

Note 6-1 : When the KRM-220CAA is connected, the spindle motor rotates at a high speed. If the message “Diagnosis END!” appears, press the “RESET” button and stop the spindle.

Note 6-2 : When the KRM-220CAA is connected (i.e. when the FFC for optical laser unit is connected to CN101 is connected), ignore the message “AK8567 (w/o OP) check: NG”.

Confirm that “OK” is displayed in all items except for the cases as described above.

If “NG” is displayed in any item, it is assumed that the point indicated by the item in Fig. 3-16 is defective or its peripheral has abnormality. Perform the repair work again and repeat the self diagnosis. Repeat the repair work and self diagnosis until “OK” is displayed.



▲ Fig. 3-16

- 7) Perform the operation check.

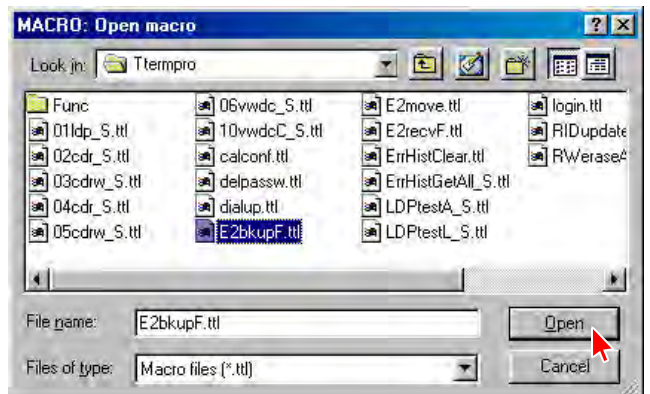
**3-4. Use of Self Diagnosis Function-2**  
**(In the case when result data of the past electrical adjustment, should be left saved.)**

Perform the self diagnosis as described below in the case when the faulty point could not be identified even after completion of the repair work that is defined as “The repair work in which electrical adjustment is not required” in section “2. Repair Works That Require Electrical Adjustment”.

- 1) Select the menu as follows. Control → Macro, and select E2bkupF.ttl. Press “Open”. (Fig. 3-17, 3-18)

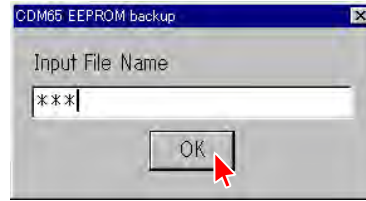


▲ Fig. 3-17



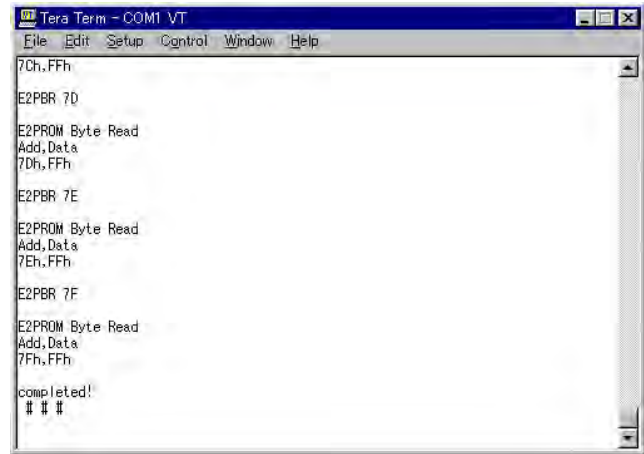
▲ Fig. 3-18

- 2) Type the filename in which result of electrical adjustment is going to be saved. Press "OK". (Fig. 3-19)



▲ Fig. 3-19

- 3) Confirm that the message "completed!" appears. The EEPROM data is backed up. (Fig. 3-20)



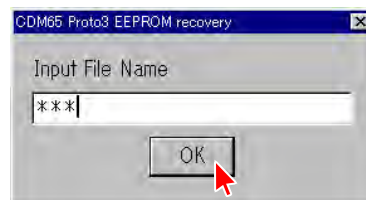
▲ Fig. 3-20

- 4) Perform step 1) through step 6) of section "3-3. Use of Self Diagnosis Function-1".
- 5) Select the menu as follows. Control → Macro, and select E2recvF.ttl. Press "Open".
- 6) Press the "RESET" button (SW101) of the jig as prompted by the display. (Fig. 3-21)



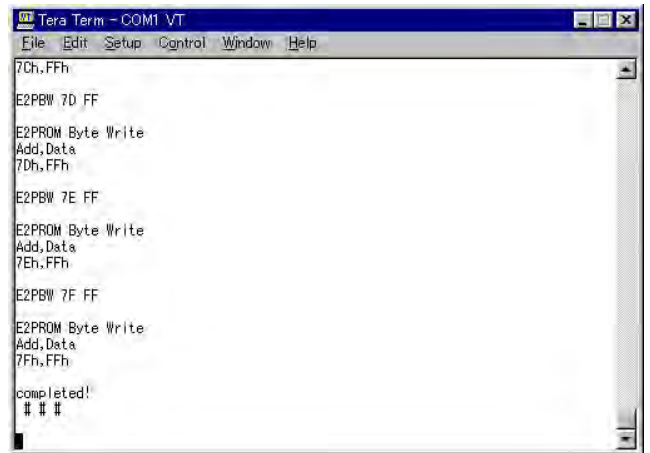
▲ Fig. 3-21

- 7) Type the filename in which result of electrical adjustment is saved. Press "OK". (Fig. 3-22)



▲ Fig. 3-22

- 8) Confirm that the message “completed!” appears. The EEPROM data is recovered. (Fig. 3-23)



▲ Fig. 3-23

- 9) Perform the operation check.

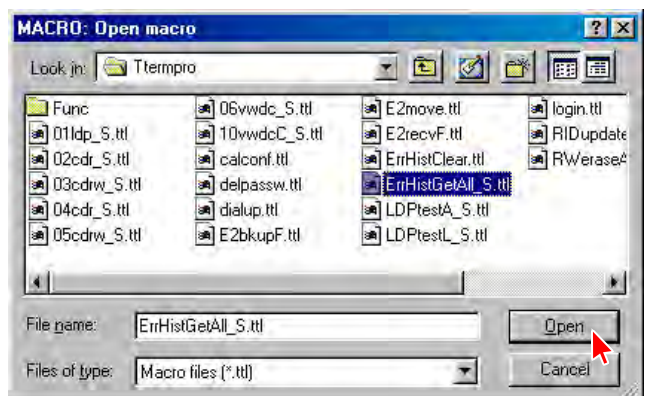
### 3-5. Acquisition of Error History and Acquisition of Elapsed Operating Hours

Check if error has occurred or not by performing the following steps. If error has occurred, it is interpreted and saved in the specific directory. Check contents of the error by viewing the specific directory as described below.

- 1) Select the menu as follows. Control → Macro, and select ErrHistGetAll\_S.ttl. Press “Open”. (Fig. 3-24, 3-25)

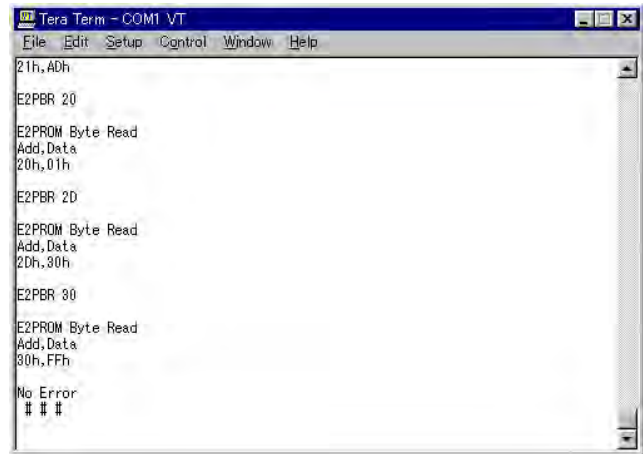


▲ Fig. 3-24



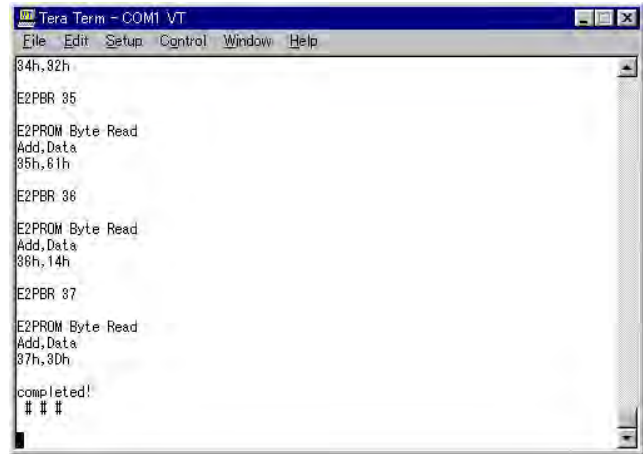
▲ Fig. 3-25

- 2) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 3) When there is no error, the display as shown in Fig. 3-26 appears.



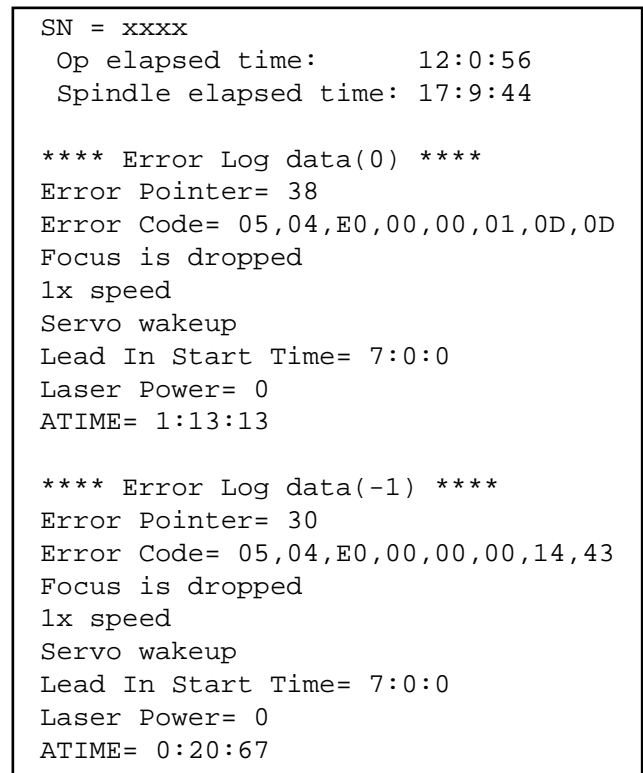
▲ Fig. 3-26

- 4) When error has occurred, the display as shown in Fig. 3-27 appears showing error history. Contents of the errors are displayed as shown in Fig. 3-28 after interpretation of the error log. Check the contents of the error by looking at the file “EEPROM\_Errorlog.txt” in the TeraTermPro directory



▲ Fig. 3-27

- 5) The elapsed operating hours is shown at the top of “EEPROM\_Errorlog.txt” regardless of presence/absence of the error history. Check the elapsed operating hours from the display as shown in Fig. 3-28.



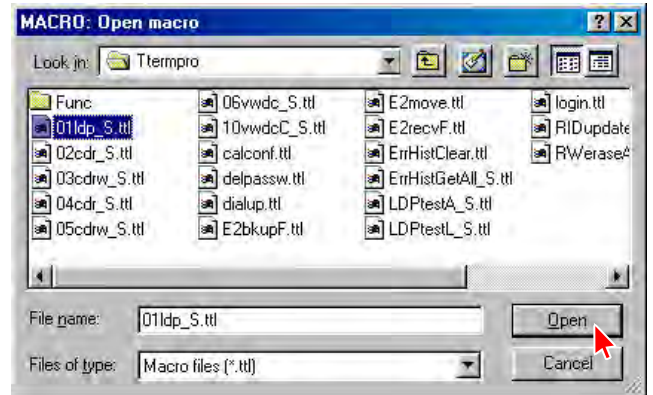
▲ Fig. 3-28 : Error log example



#### 4. CDM65-RBD1 Electrical Adjustment

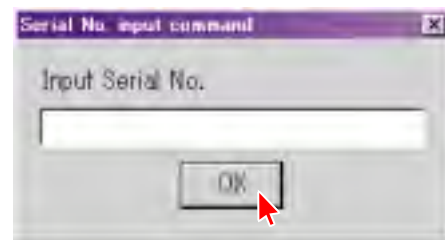
##### 4-1. Laser Power Adjustment

- 1) Start up the TeraTermPro and set the switch S510 on the jig to “CONTROL”.
- 2) Select the menu as follows. Control → Macro, and select 01ldp\_S.ttl. Press “Open”. (Fig. 4-1)



▲ Fig. 4-1

- 3) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 4) Press the “RESET” button (SW101) of the jig again as prompted by the display.
- 5) When the display as shown in Fig. 4-2 appears, type the serial number (see Fig. 4-3) that is printed on the label attached to the RBD1. (This dialog appears only when the EEPROM IC502 is replaced.)

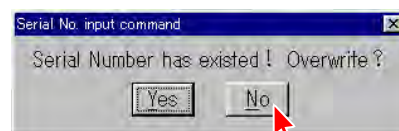


▲ Fig. 4-2



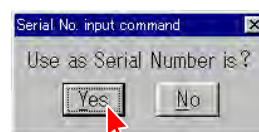
▲ Fig. 4-3

When the display as shown in Fig. 4-4 appears, press “No”.



▲ Fig. 4-4

When the display as shown in Fig. 4-5 appears after that, press “Yes”.



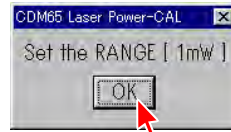
▲ Fig. 4-5

6) When the display as shown in Fig. 4-6 appears, place the probe of the laser power meter on top of the optical laser unit, and press “OK”. (See Fig. 3-3-a, page 31)



▲ Fig. 4-6

7) When the display as shown in Fig. 4-7 appears, set the Range of a laser power meter to “1 mW” and press “OK”.



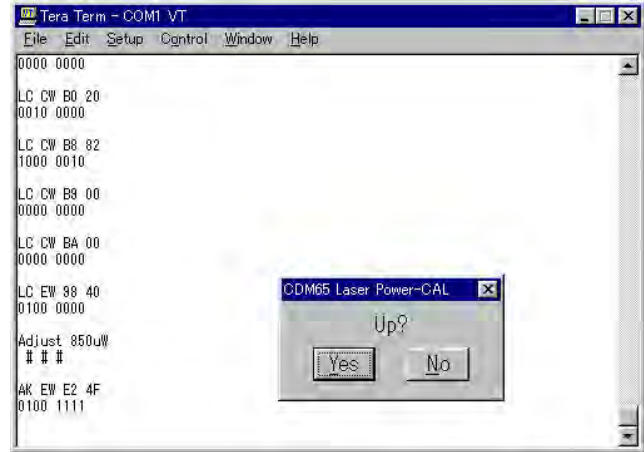
▲ Fig. 4-7

8) Adjust the laser output power as follows.  
The laser output power (i.e., laser power meter reading) should satisfy the specification shown below.

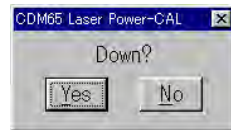
LEADER LPM-8001 : 0.81 +/- 0.05 mW (0.76 to 0.86 mW)

- \* To increase the laser output power  
Press [Yes] of the “Up?” dialog box.
- \* To decrease the laser output power  
Press [No] of the “Up?” dialog box and then press [Yes] of the “Down?” dialog box.

Repeat until the laser output power satisfies the specification.  
(Fig. 4-8, 4-9)

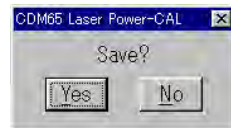


▲ Fig. 4-8



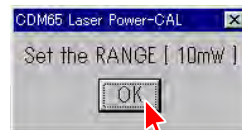
▲ Fig. 4-9

- \* When the setting value is determined  
Press [No] of the “Up?” dialog box  
and then press [No] of the “Down?” dialog box  
and press [Yes] of the “Save?” dialog box. (Fig. 4-10)



▲ Fig. 4-10

9) When the display shown in Fig. 4-11 appears, set the Range of a laser power meter to “10 mW” and press “OK”.



▲ Fig. 4-11

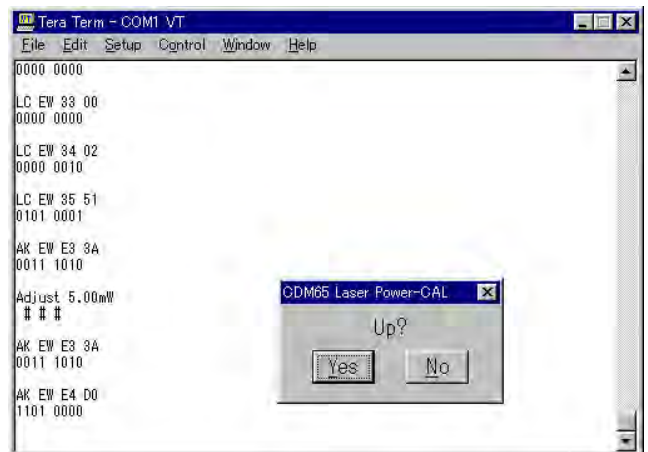


- 10) Adjust the laser output power as follows.  
The laser output power (i.e., laser power meter reading) should satisfy the specification shown below.

LEADER LPM-8001 : 4.6 +/- 0.1 mW (4.5 to 4.7 mW)

- \* To increase the laser output power  
Press [Yes] of the “Up?” dialog box.
- \* To decrease the laser output power  
Press [No] of the “Up?” dialog box  
and then press [Yes] of the “Down?” dialog box.

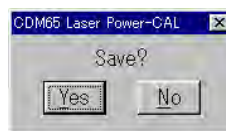
Repeat until the laser output power satisfies the specification.  
(Fig. 4-12, 4-13)



▲ Fig. 4-12



▲ Fig. 4-13



▲ Fig. 4-14

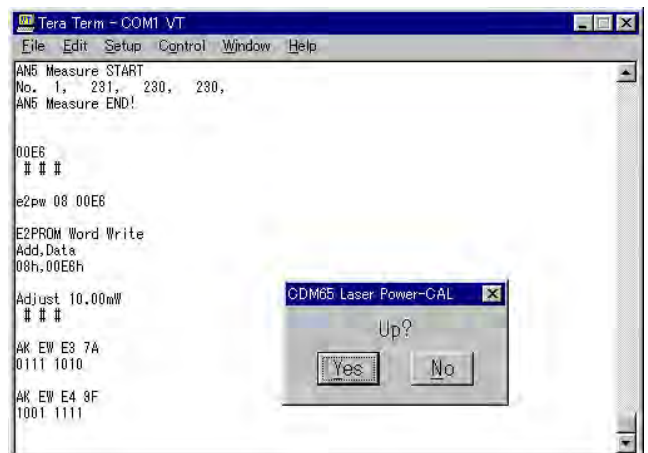
- \* When the setting value is determined  
Press [No] of the “Up?” dialog box  
and then press [No] of the “Down?” dialog box  
and press [Yes] of the “Save?” dialog box. (Fig. 4-14)

- 11) Adjust the laser output power as follows.  
The laser output power (i.e., laser power meter reading) should satisfy the specification shown below.

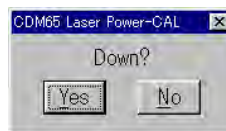
LEADER LPM-8001 : 9.4 +/- 0.2 mW (9.2 to 9.6 mW)

- \* To increase the laser output power  
Press [Yes] of the “Up?” dialog box.
- \* To decrease the laser output power  
Press [No] of the “Up?” dialog box  
and then press [Yes] of the “Down?” dialog box.

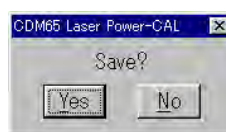
Repeat until the laser output power satisfies the specification.  
(Fig. 4-15, 4-16)



▲ Fig. 4-15



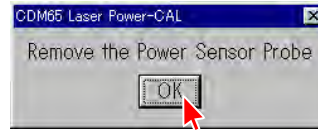
▲ Fig. 4-16



▲ Fig. 4-17

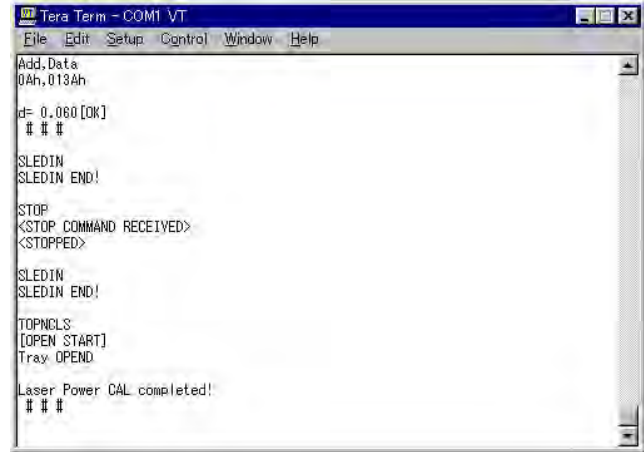
- \* When the setting value is determined  
Press [No] of the “Up?” dialog box  
and then press [No] of the “Down?” dialog box  
and press [Yes] of the “Save?” dialog box. (Fig. 4-17)

- When the display shown in Fig. 4-18 appears, remove probe of the laser power meter and press OK.



▲ Fig. 4-18

- Check that the message “Laser Power CAL completed!” appears. (Fig. 4-19)  
NG Judgment Result Indication



▲ Fig. 4-19

### 4-1-1. Sled Speed NG!

- Contents : This message appears when the movement performance of sled is outside the specification.
- Measure : Check if there is any abnormality in the sled drive circuit (IC171 peripheral) and the sled drive mechanism.

### 4-1-2. Power CAL NG!

- Contents : This message appears when the laser emission intensity is outside the specification.
- Measure : Check peripheral of CN101.  
Replace KRM-220CAA.

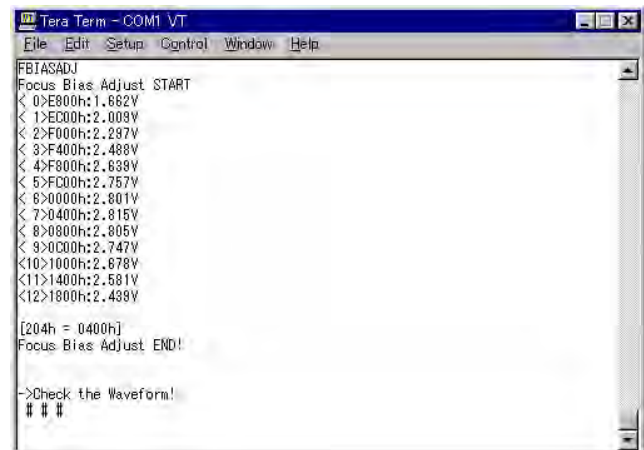
## 4-2. CD/CD-R Playback Adjustment

- Select the menu as follows. Control → Macro, and select 02cdr\_S.ttl. Press “Open”.
- Place the test CD disc PATD-012 on the tray as prompted by the display and press “OK”. (Fig. 4-20)



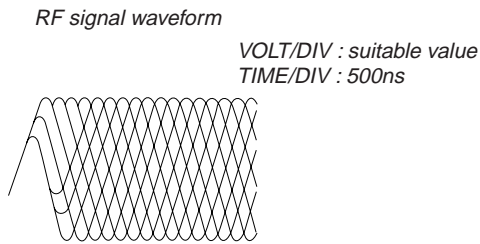
▲ Fig. 4-20

- Press the “RESET” button (SW101) of the jig as prompted by the display.
- As prompted by the message shown in Fig. 4-21, check that the waveform as shown in Fig. 4-22 appears on an oscilloscope.



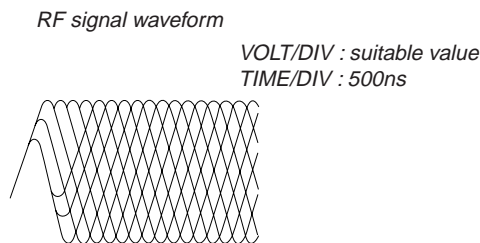
▲ Fig. 4-21

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

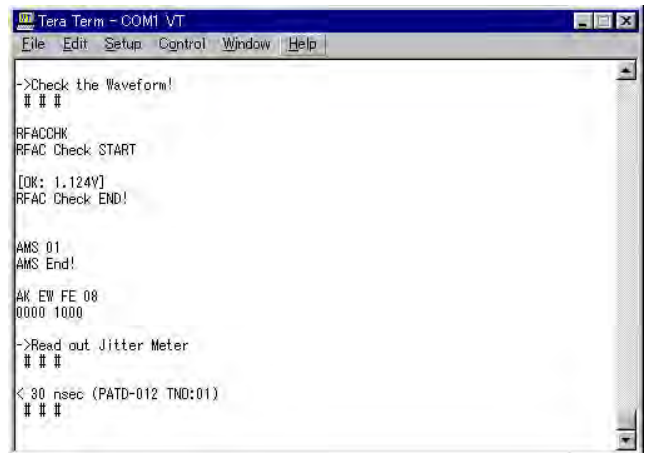


▲ Fig. 4-22

- 5) As prompted by the message shown in Fig. 4-24, check that the waveform as shown in Fig. 4-23 appears on an oscilloscope.

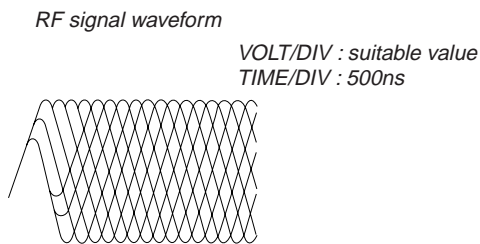


▲ Fig. 4-23

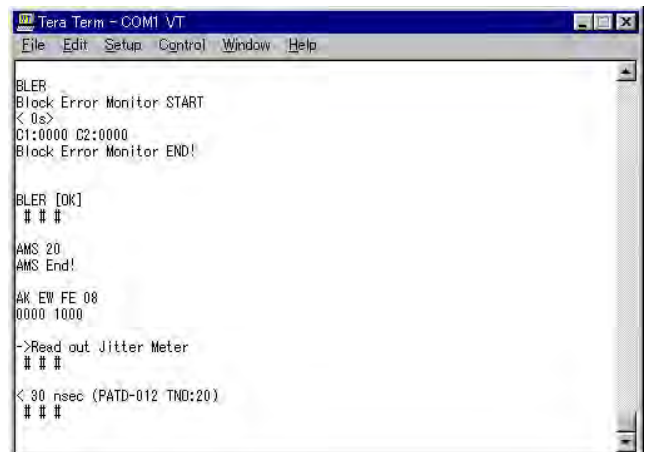


▲ Fig. 4-24

- 6) As prompted by the message shown in Fig. 4-26, check that the waveform as shown in Fig. 4-25 appears on an oscilloscope.



▲ Fig. 4-25



▲ Fig. 4-26

- 7) Check that the message “CDR PB-CAL completed!” appears.

NG Judgment Result Indication

**4-2-1. Playback Measurement NG!**

Contents : This message appears when the BLER (Block Error Rate) during playback is outside the specification.

Measure : Check if there is any abnormality in RBD1.

Replace KRM-220CAA.

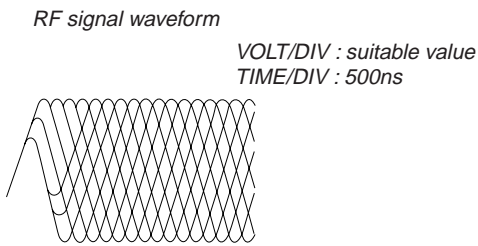
## 4-3. CD-RW Playback Adjustment

- 1) Select the menu as follows. Control → Macro, and select 03cdr\_S.ttl.  
Press “Open”.
- 2) Place the test CD TCD-W091W on the tray as prompted by the display and press “OK”. (Fig. 4-27)

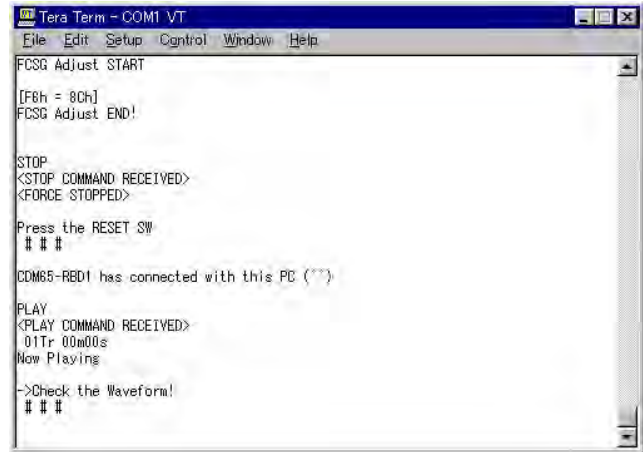


▲ Fig. 4-27

- 3) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 4) As prompted by the message shown in Fig. 4-29, check that the waveform as shown in Fig. 4-28 appears on an oscilloscope.

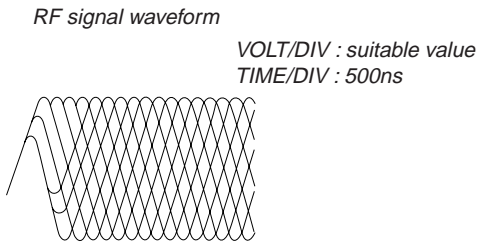


▲ Fig. 4-28

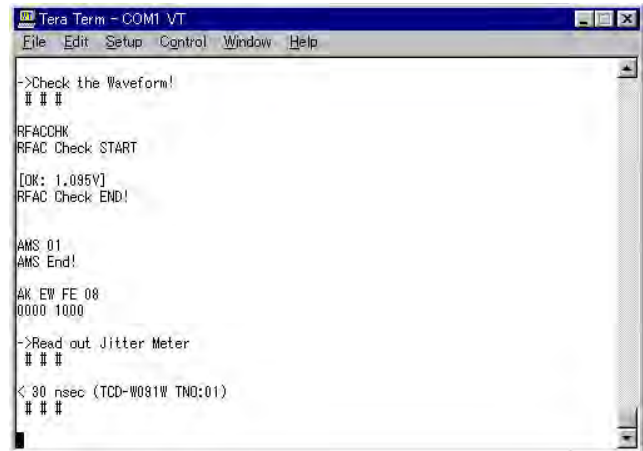


▲ Fig. 4-29

- 5) As prompted by the message shown in Fig. 4-31, check that the waveform as shown in Fig. 4-30 appears on an oscilloscope.

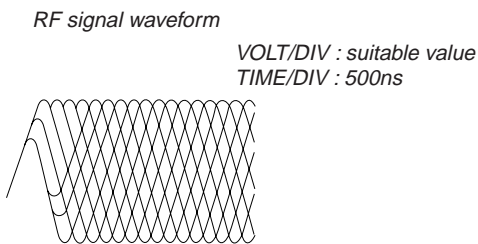


▲ Fig. 4-30

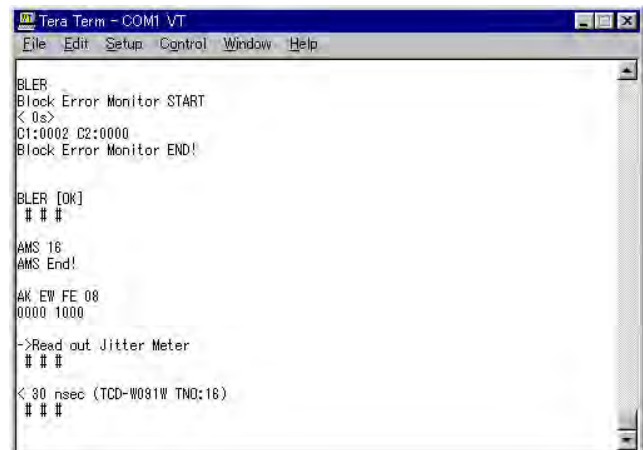


▲ Fig. 4-31

- 6) As prompted by the message shown in Fig. 4-33, check that the waveform as shown in Fig. 4-32 appears on an oscilloscope.

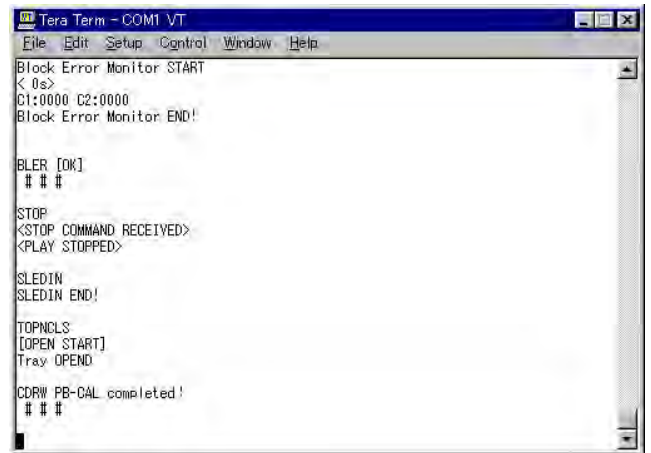


▲ Fig. 4-32



▲ Fig. 4-33

- 7) Check that the message “CDRW PB-CAL completed!” appears. (Fig. 4-34)



▲ Fig. 4-34

NG Judgment Result Indication

#### 4-3-1. Playback Measurement NG!

Contents: This message appears when the BLER (Block Error Rate) during playback is outside the specification.

Measure : Check if there is any abnormality in RBD1.

Replace KRM-220CAA.

#### 4-4. CD-R Recording Adjustment and Self Record/Playback Check

- 1) Select the menu as follows. Control → Macro, and select 04cdr\_S.ttl. Press “Open”.
- 2) Place the test CD disc PATD-012 on the Deck A. Place the recording CD-R disc (see Note: 4-4-1) on the tray (Deck B) as prompted by the display and press “OK”. (Fig. 4-35)

Note : 4-4-1

The disc to be used in this step.

- \* Use the CD-R disc CRM74 for audio, that is manufactured by Sony.
  - \* The disc that is used by this step cannot be used for the general purposes and for the purpose of operation check of the RCD series equipment. The disc that is used for the general purposes or for the purpose of operation check of the RCD series equipment, cannot be used in this step.
  - \* If the recording is interrupted by any reasons during the recording operation (i.e., the WRITE POWER ON LED of the jig is lighting), the disc cannot be used any more in the subsequent step. Use the un-used brand new disc and repeat this step from the very beginning again.
- 3) When the disc that is used in step 2) is the disc that has been used in the electrical adjustment in the past. .... Press “Yes”.

When the disc that is used in step 2) is a completely blank disc. .... Press “No”. (Fig. 4-36)

Note: The recording CD-R disc can be used only for the electrical adjustment. The recording CD-R disc must be controlled so that it must not be used for any other applications.

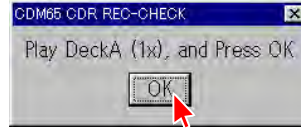


▲ Fig. 4-35




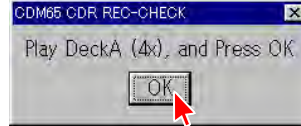
▲ Fig. 4-36

- 4) Press the  button of Deck A. After playback starts, press "OK". (Fig. 4-37)



▲ Fig. 4-37

- 5) When the message as shown in Fig. 4-38 appears some seconds later, select 4x of the test mode (refer to page 22, Play Speed Selection Mode (Deck A)) PLAYBACK SPEED. Then press the  button of Deck A. After playback starts, press "OK".

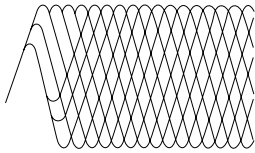


▲ Fig. 4-38

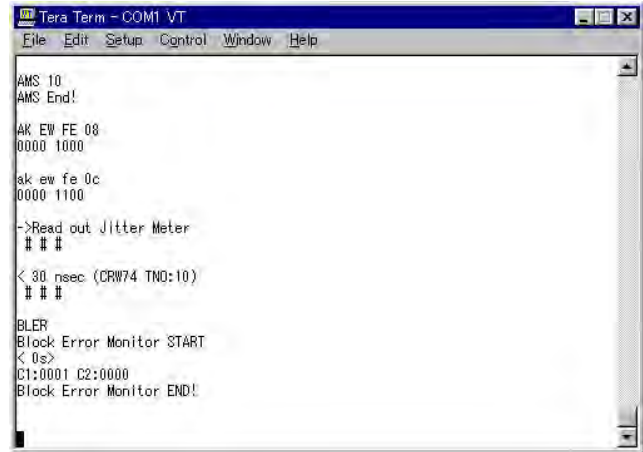
- 6) As prompted by the message shown in Fig. 4-40, check that the waveform as shown in Fig. 4-39 appears on an oscilloscope.

RF signal waveform

VOLT/DIV : suitable value  
TIME/DIV : 500ns



▲ Fig. 4-39

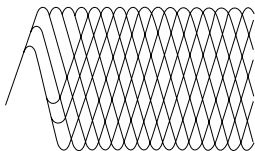


▲ Fig. 4-40

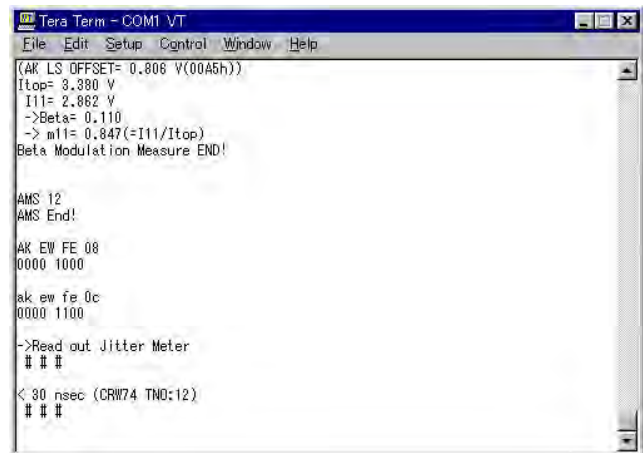
- 7) As prompted by the message shown in Fig. 4-42, check that the waveform as shown in Fig. 4-41 appears on an oscilloscope.

RF signal waveform

VOLT/DIV : suitable value  
TIME/DIV : 500ns



▲ Fig. 4-41



▲ Fig. 4-42

- 8) Check that the message "CDR REC-CHECK completed!" appears.  
NG Judgment Result Indication

**4-4-1. CD-R Playback Measurement NG!**

Contents : This message appears when the BLER (Block Error Rate) \*Beta/m11 of the track that is recorded and played back, is outside the specification.

Measure : Check if there is any abnormality in RBD1.

Replace KRM-220CAA.



#### 4-5. CD-RW Recording Adjustment and Self Record/Playback Check

- 1) Select the menu as follows. Control → Macro, and select 05cdrw\_S.ttl.  
Press “Open”.

- 2) Place the test CD disc PATD-012 on the Deck A. Place the recording CD-RW disc (see Note: 4-5-1) on the tray (Deck B) as prompted by the display and press “OK”. (Fig. 4-43)

Note : 4-5-1

The disc to be used in this step.


- \* Use the CD-RW disc CWM74 for audio, that is manufactured by Sony.
- \* The disc that is used by this step cannot be used for the general purposes and for the purpose of operation check of the RCD series equipment as it is. The disc that is used for the general purposes or for the purpose of operation check of the RCD series equipment, cannot be used in this step.  
When you want to use the CD-RW disc for other applications, erase the CD-RW disc.
- \* If the recording is interrupted by any reasons during the recording operation (i.e., the WRITE POWER ON LED of the jig is lighting), the disc cannot be used any more in the subsequent step. In such a case, erase the CD-RW disc and repeat this step from the very beginning again.

- 3) When the disc that is used in step 2) is the disc that has been used in the electrical adjustment in the past. .... Press “Yes”.

When the disc that is used in step 2) is a completely blank disc. .... Press “No”. (Fig. 4-44)

Note: The recording CD-RW disc can be used only for the electrical adjustment. The recording CD-RW disc must be controlled so that it must not be used for any other applications.

- 4) Press the  button of Deck A. After playback starts, press “OK”. (Fig. 4-45)

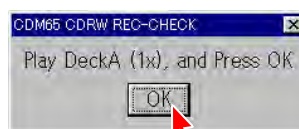
- 5) When the message as shown in Fig. 4-46 appears some seconds later, select 4x of the test mode (refer to page 22, Play Speed Selection Mode (Deck A)) PLAYBACK SPEED. Then press the  button of Deck A. After playback starts, press “OK”.



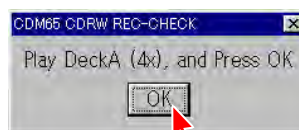
▲ Fig. 4-43



▲ Fig. 4-44

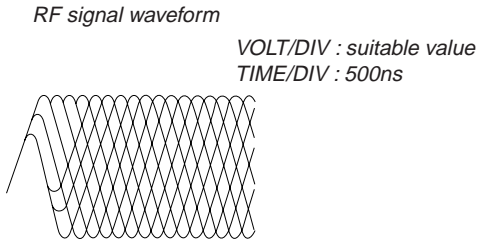


▲ Fig. 4-45

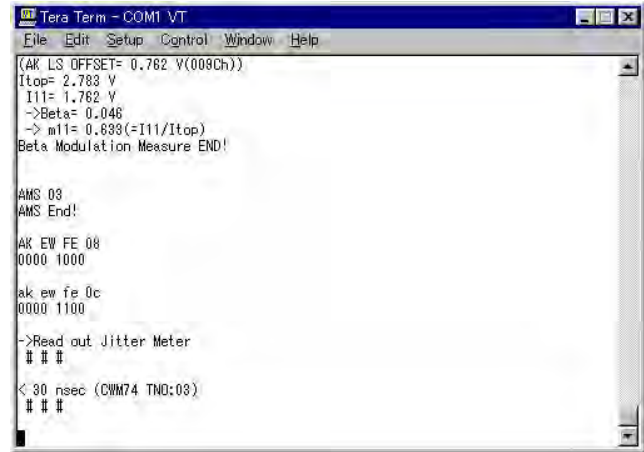


▲ Fig. 4-46

- 6) As prompted by the message shown in Fig. 4-48, check that the waveform as shown in Fig. 4-47 appears on an oscilloscope.

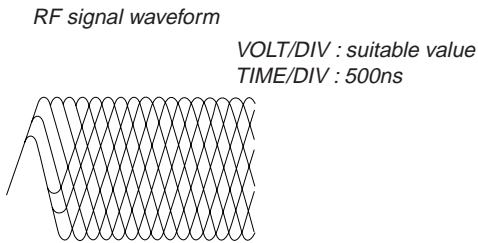


▲ Fig. 4-47



▲ Fig. 4-48

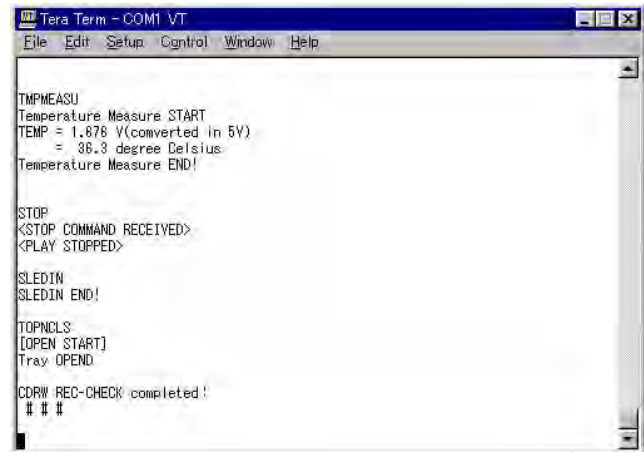
- 7) As prompted by the message shown on display, check that the waveform as shown in Fig. 4-49 appears on an oscilloscope.



▲ Fig. 4-49

- 8) Check that the message "CDRW REC-CHECK completed!" appears. (Fig. 4-50)

NG Judgment Result Indication



▲ Fig. 4-50

**4-5-1. CD-RW Playback Measurement NG!**

Contents : This message appears when the BLER (Block Error Rate) \*Beta/m11 of the track that is recorded and played back, is outside the specification.

Measure : Check if there is any abnormality in RBD1.

Replace KRM-220CAA.



#### 4-6. VWDC Check

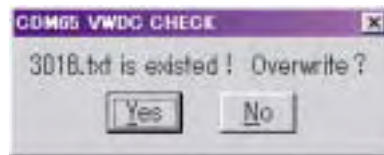
- 1) Select the menu as follows. Control → Macro, and select 06vwdc\_S.ttl. Press “Open”.
- 2) As prompted by the message shown in Fig. 4-51, remove the disc from the tray and press “OK”.



▲ Fig. 4-51

- 3) Because this step saves the result of electrical adjustment in a file, there can be a case that the dialog as shown in Fig. 4-52 appears.

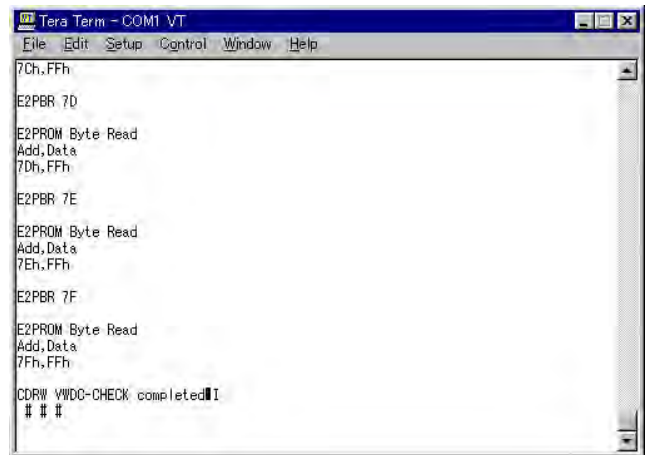
When you want to overwrite ..... Press “Yes”.  
When you want to create a new file ..... Press “No”.



▲ Fig. 4-52

- 4) Check that the message “CDRW VWDC-CHECK completed!” appears. (Fig. 4-53)

NG Judgment Result Indication



▲ Fig. 4-53

##### 4-6-1. EEPROM Write NG!

Contents : This message appears when writing data into EEPROM fails.

Measure : When the steps of 011dp\_S.ttl through 05cdrw\_S.ttl have no problem and the error occurs only in this step, it is assumed that an error has occurred momentarily in the interface between PC and CDM65. Therefore, repeat execution of 06vwdc\_S.ttl again.

##### 4-6-2. VWDC judge [Line Top - End] [NG]

Contents : This message appears when the VWDC value is outside the specification.

Measure : It is assumed that the optical laser unit has deteriorated. If this error occurs after the KRM-220CAA is replaced, the adjustment error in the step of 011dp\_S.ttl is assumed. Therefore, repeat execution of steps of 011dp\_S.ttl through 05cdrw\_S.ttl again. In the cases other than above, check if the laser power adjustment is correctly performed or not, using LDPtestL\_S.ttl.

## 4-7. NG Message List

| Message                           | Cause   |
|-----------------------------------|---|
| Tray OPEN NG!                     | The tray has not opened within the specified time.  |
| Tray Close NG!                    | The tray has not closed within the specified time.  |
| SLEDIN NG!                        | The sled has not moved toward inner circumference within the specified time.                  |
| SLEDOUT NG!                       | The sled has not moved toward outer circumference within the specified time.                  |
| RIDR NG!                          | The RID information could not be read out within the specified time.                          |
| SNread (1) NG!                    | The SN (1) information could not be read out within the specified time.                       |
| SNread (2) NG!                    | The SN (2) information could not be read out within the specified time.                       |
| SNread (3) NG!                    | The SN (3) information could not be read out within the specified time.                       |
|                                   |   |
| FBIASADJ NG!                      | The Focus Bias Adjustment has not completed within the specified time.                        |
| FEOSADJ NG!                       | The FE Offset Adjustment has not completed within the specified time.                         |
| FESAMPADJ NG!                     | The FE Amplitude Adjustment has not completed within the specified time.                      |
| RFACCHK NG!                       | The RFAC amplitude is abnormal or the adjustment has not completed within the specified time. |
| RPINWADJ1 NG!                     | The Read Power (during Write1) Adjustment has not completed within the specified time.        |
| RPINWADJ2 NG!                     | The Read Power (during Write2) Adjustment has not completed within the specified time.        |
| SERVOSET NG!                      | The Servo Setting has not completed within the specified time.                                |
| TSa NG!                           | The ATIME Search has not completed within the specified time.                                 |
| PLAYSW NG!                        | The Play operation has not started within the specified time.                                 |
| STOP NG!                          | The Stop operation has not completed within the specified time.                               |
| AMS NG!                           | The AMS operation has not completed within the specified time.                                |
|                                   |   |
| ATIPPLAY NG!                      | The ATIP Play operation has not started within the specified time.                            |
| END TNO get NG!                   | The record-end track information could not be obtained within the specified time.             |
| LEADOUT info.get NG!              | The record-end time information could not be obtained within the specified time.              |
| Invalid EndTrackNo./LeadoutTime ! | The illegal record-end track and its time information were obtained.                          |
| Use the Blank disc                | The disc exceeding the allowable limit is used.   |
| DIR unlock!                       | The equipment could not be synchronized with the signal connected to DIN2.                    |
| RWP NG!                           | The CD-R Write Power setting has not completed within the specified time.                     |
| RWWP NG!                          | The CD-RW Write Power setting has not completed within the specified time.                    |
| REC NG!                           | The record operation could not be started within the specified time.                          |

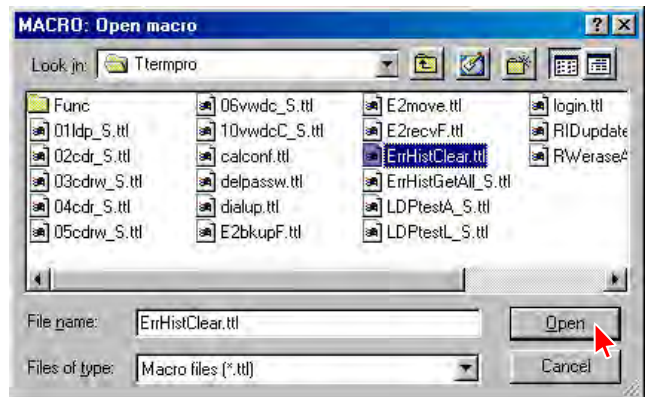
## 5. Operation Check

### 5-1. Erasing the Error History

- 1) Select the menu as follows. Control → Macro, and select ErrHistClear.ttl.  
Press “Open”. (Fig. 5-1, 5-2)

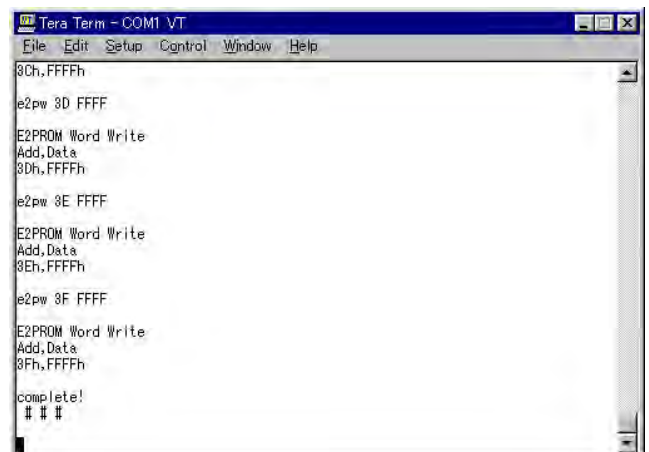


▲ Fig. 5-1





▲ Fig. 5-2

- 2) Press the “RESET” button (SW101) of the jig as prompted by the display.
- 3) Check that the message “completed!” appears. (Fig. 5-3)



▲ Fig. 5-3

## 5-2. Playback Check using TCD-W032W

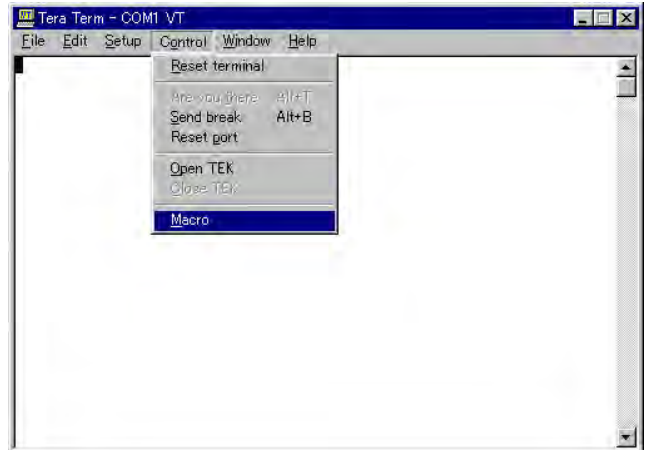
- 1) Install the CDM65 in the equipment and install the TCD-W032W in Deck B.
- 2) Rotate the  (Deck B) knob to select the track 16. Start playback by pressing the same knob or by pressing the  (Deck B) button.
- 3) Perform playback for 10 seconds or more and confirm that there is no abnormality such as sound skipping and others.

## Supplementary Information

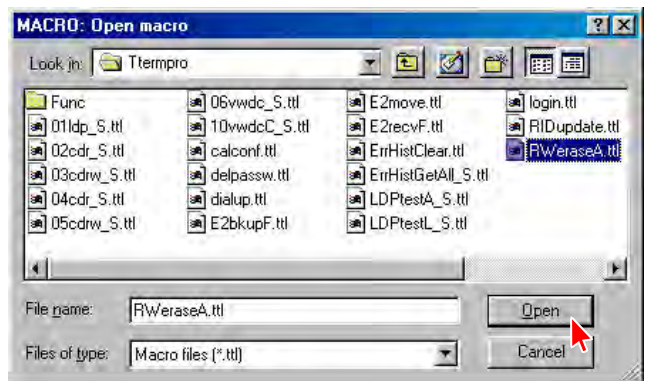
### Method to Erase the CD-RW Disc

- \* Erase it in the following procedure, to reuse the CD-RW disc to electrical adjustment, or to use a disc other than blank.
- \* Be sure to erase it in the following procedure, to use the disc used for electrical adjustment for other uses.

- 1) Select the menu as follows. Control → Macro, and select RWeraseA.ttl.  
Press “Open”. (Fig. A-1, A-2)

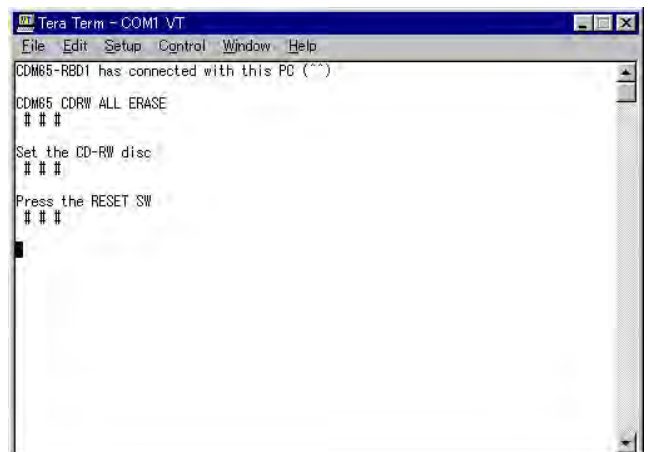


▲ Fig. A-1



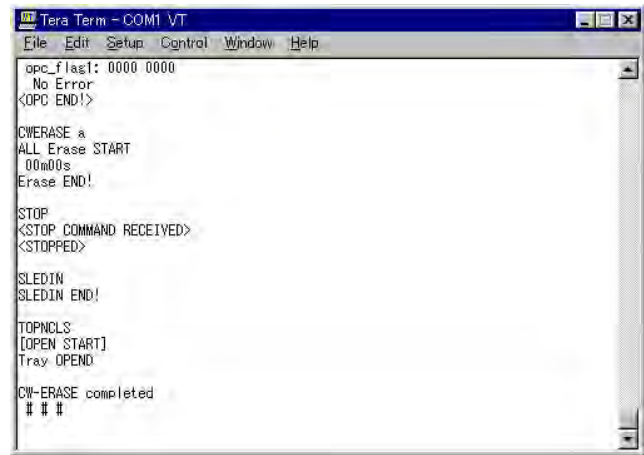
▲ Fig. A-2

- 2) Press the “RESET” button (SW101) of the jig as prompted by the display. (Fig. A-3)



▲ Fig. A-3

- 3) Check that the time display as shown by the arrow mark in Fig. A-4 is updated after a while.



```
Tera Term - COM1 VT
File Edit Setup Control Window Help
opc_flag1: 0000 0000
No Error
<OPC END!>

CW-ERASE a
ALL Erase START
00m00s
Erase END!

STOP
<STOP COMMAND RECEIVED>
<STOPPED>

SLEDIN
SLEDIN END!

TOPNCLS
[OPEN START]
Tray OPEND

CW-ERASE completed
# # #
```

▲ Fig. A-4

- 4) When update of time display is stopped and rotation of spindle is stopped, press the STOP button (SW501) of the Jig, and then press the EJECT button (SW508) of the jig to remove the disc.

## SECTION 6 DIAGRAMS

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

**For schematic diagrams.**

**Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. p : pF. 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.
- $\Delta$  : internal component.
- $\square$  : panel designation.

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

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

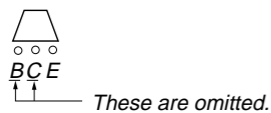
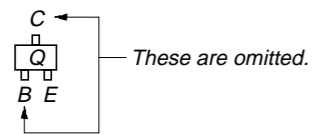
- — : B+ Line.
- - - - : B- Line.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
No mark : STOP
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ).  
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.  
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- **Signal path.**
  - ⇒ : CD PLAY
  - ⇒ : CD-R PLAY (ANALOG OUT)
  - ⇒ : CD-R REC (ANALOG IN)
  - ⇒ : CD-R REC (CD)

**For printed wiring boards.**

**Note:**

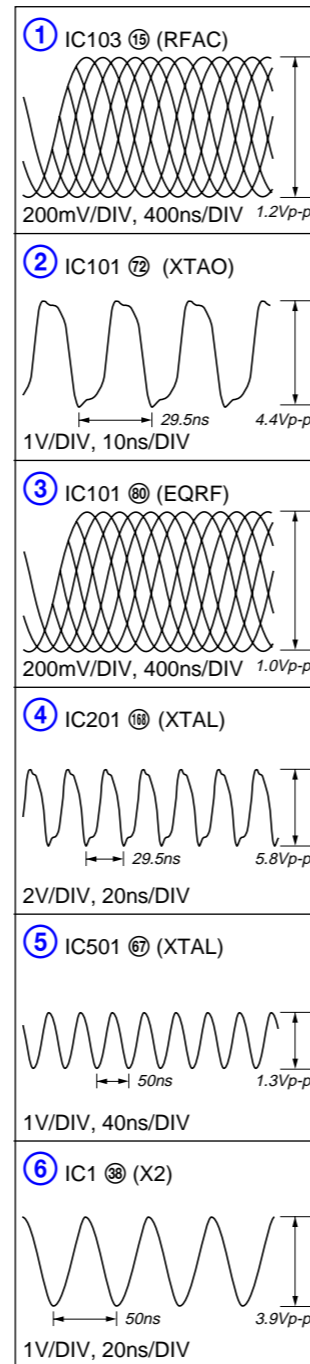
- $\circ$  : parts extracted from the component side.
- $\square$  : parts extracted from the conductor side.
- $\circ$  : Through hole.
- ■ : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

• **Indication of transistor**

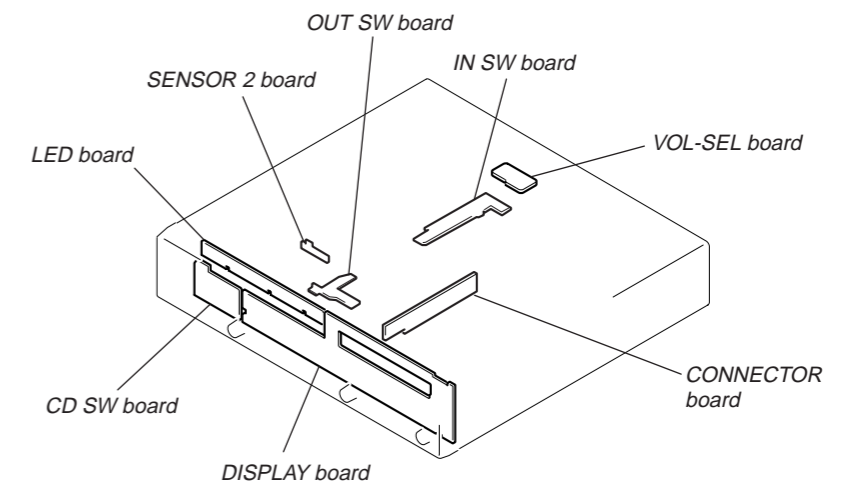
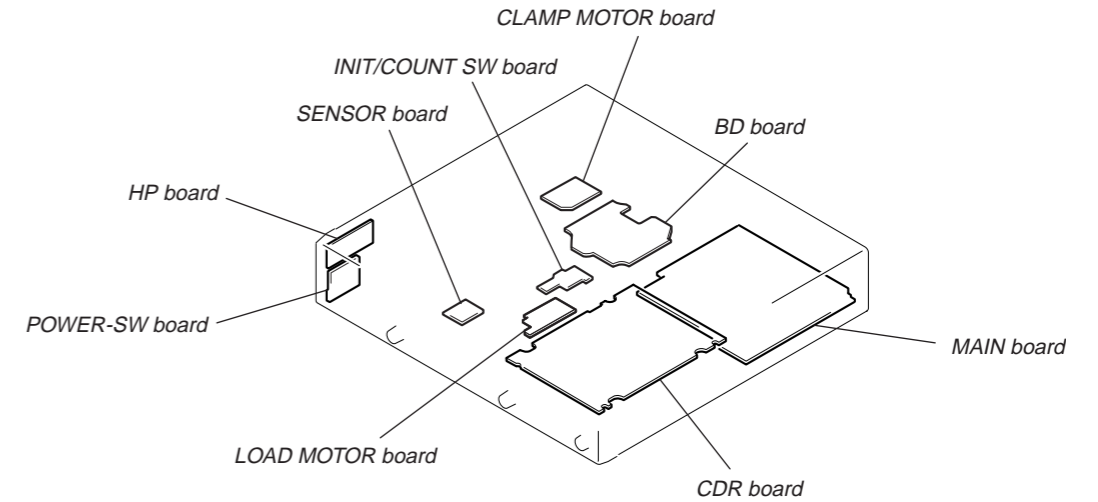


**Caution:**  
Pattern face side: Parts on the pattern face side seen from the conductor (B) are indicated.  
Parts face side: Parts on the parts face side seen from the component (A) are indicated.

• **Waveform**

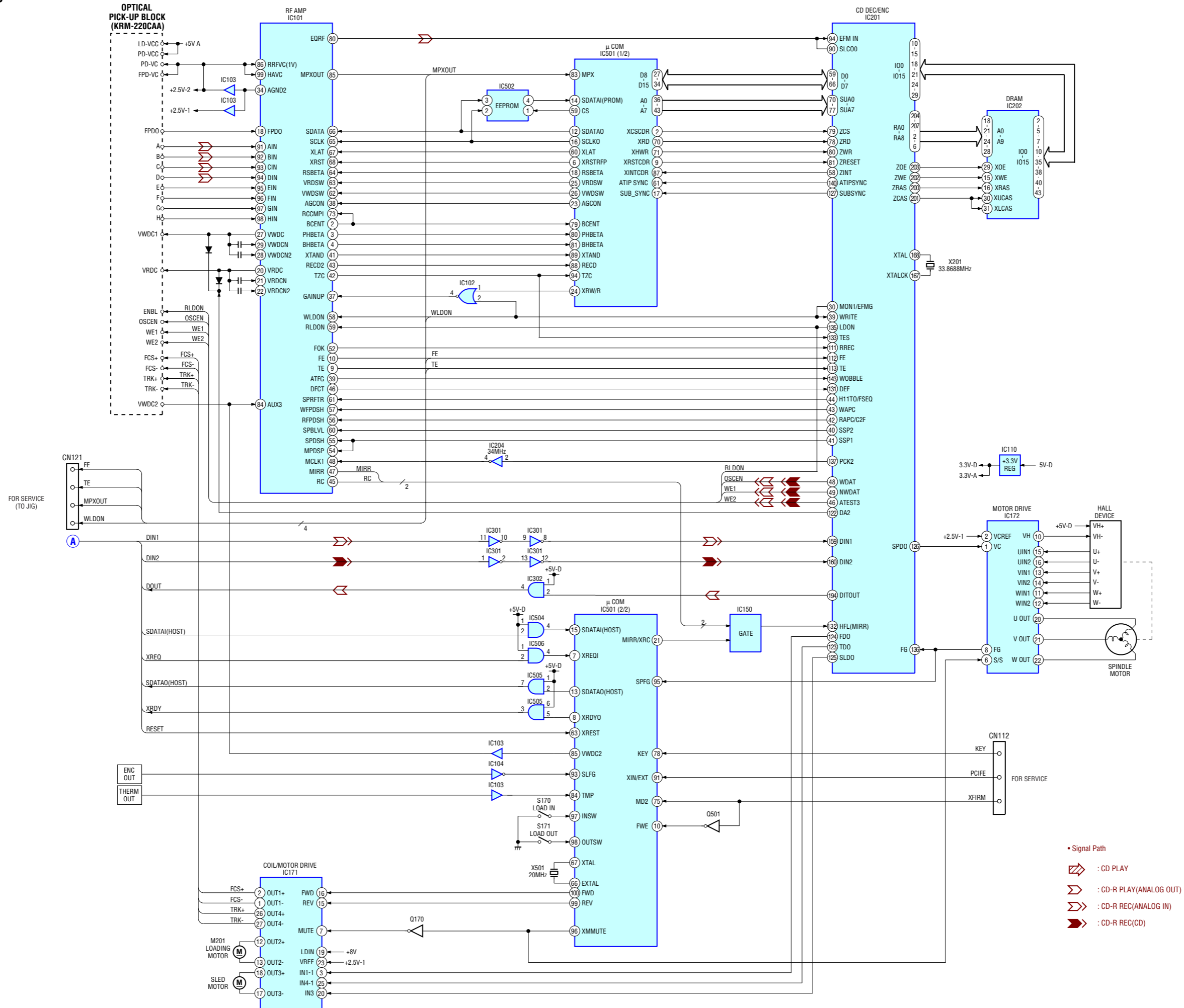


• **Circuit Board Location**



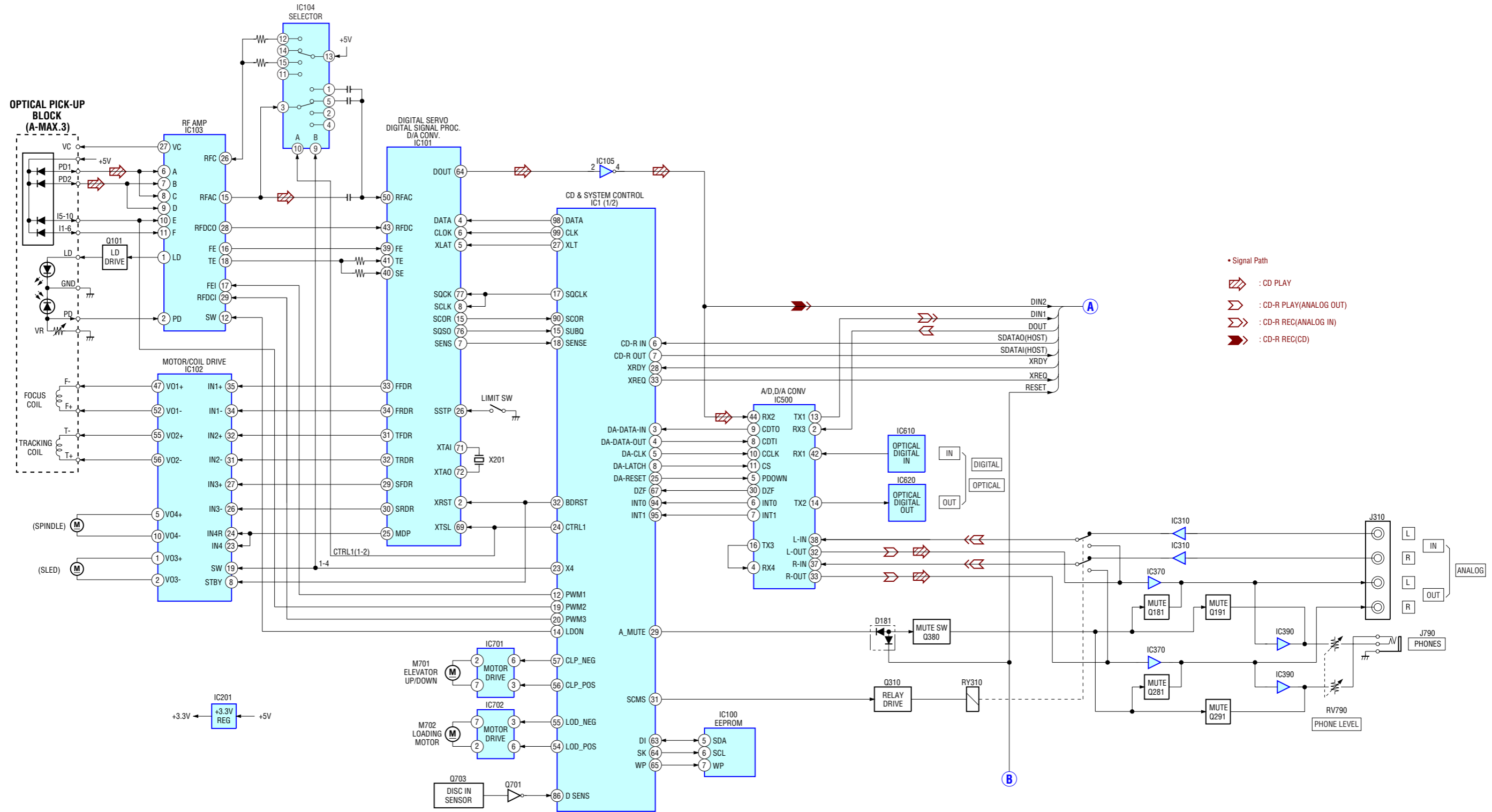
# RCD-W50C

## 6-1. Block Diagrams – CD-R Section –



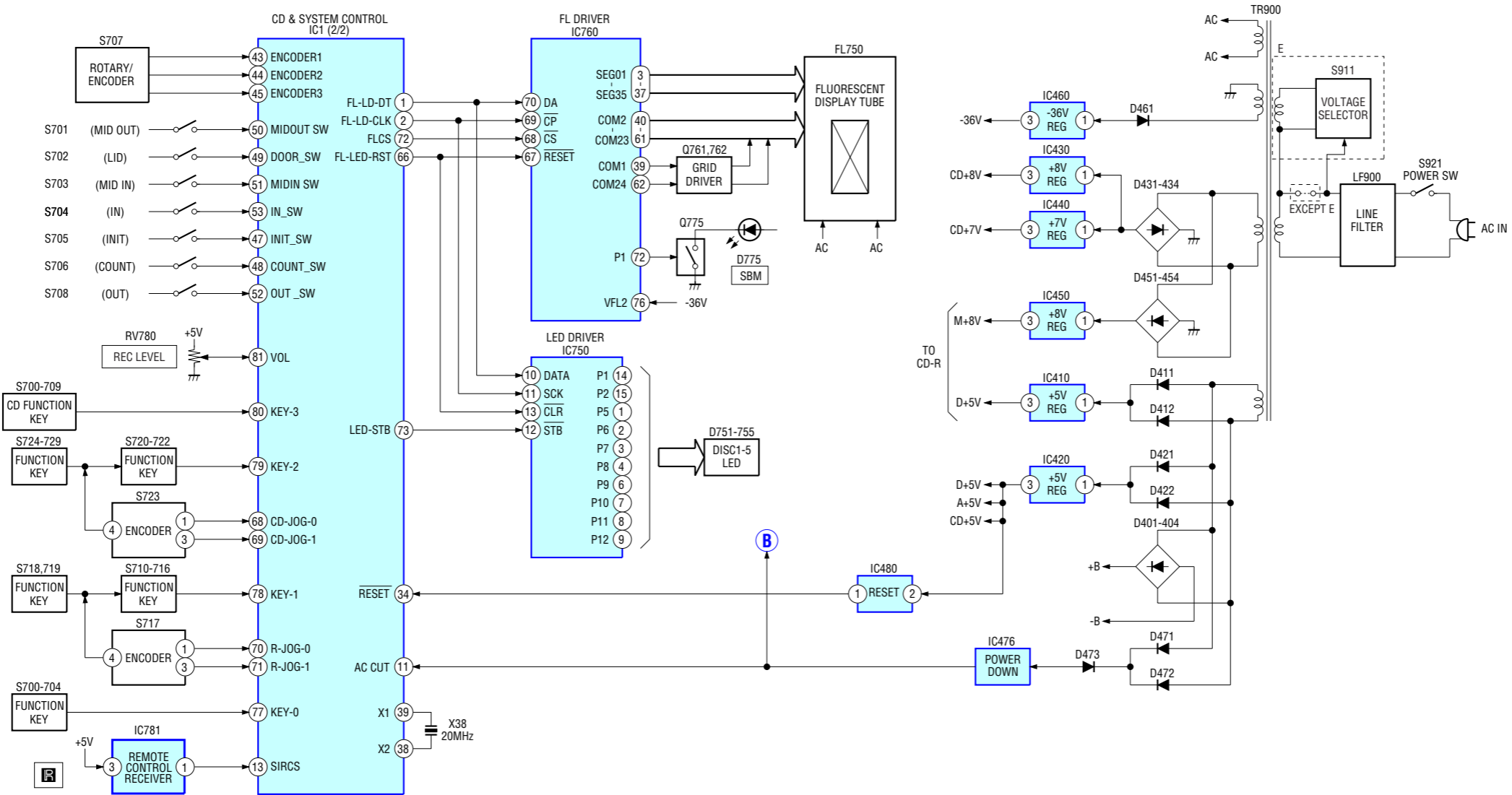



- CD Section -

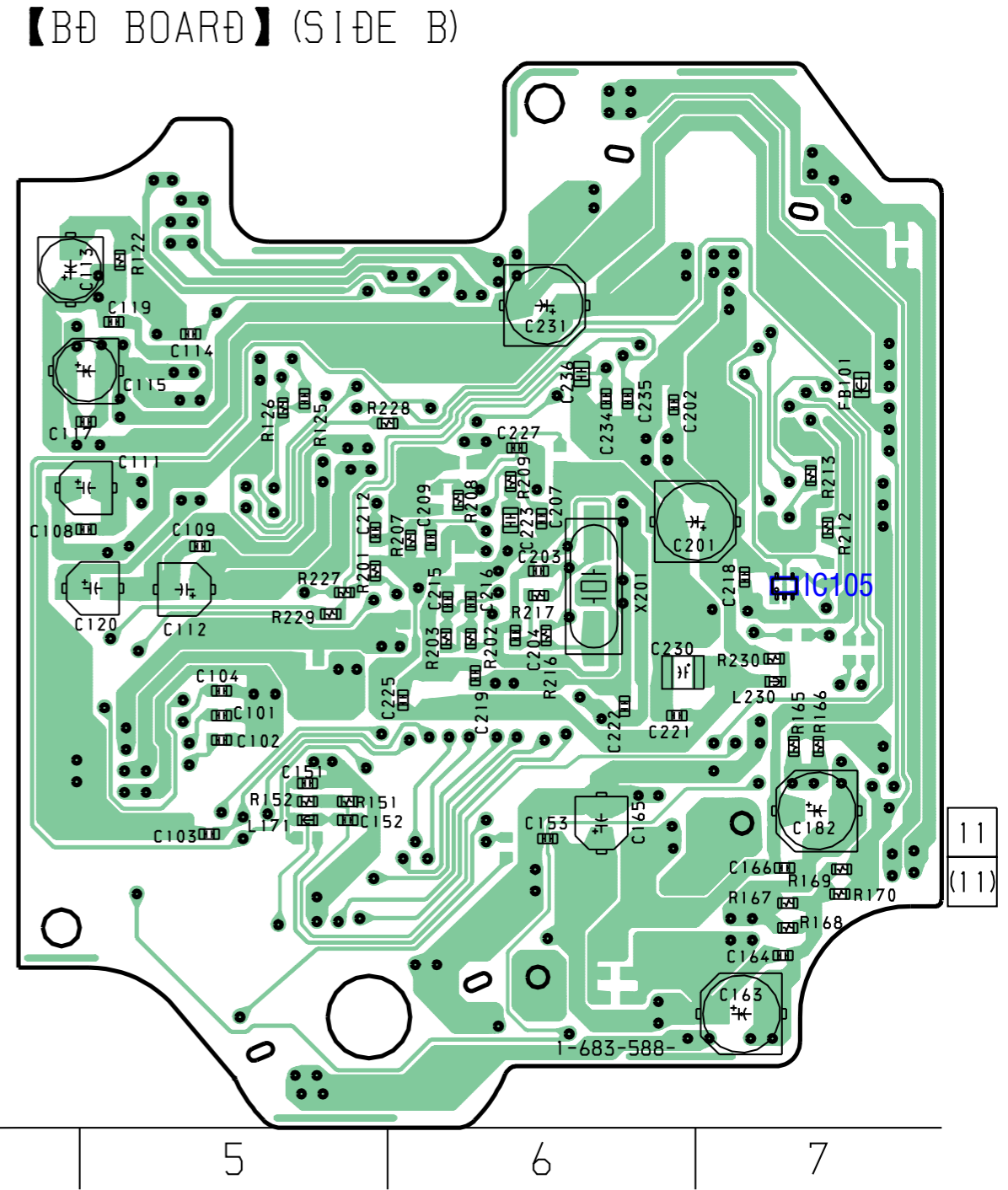
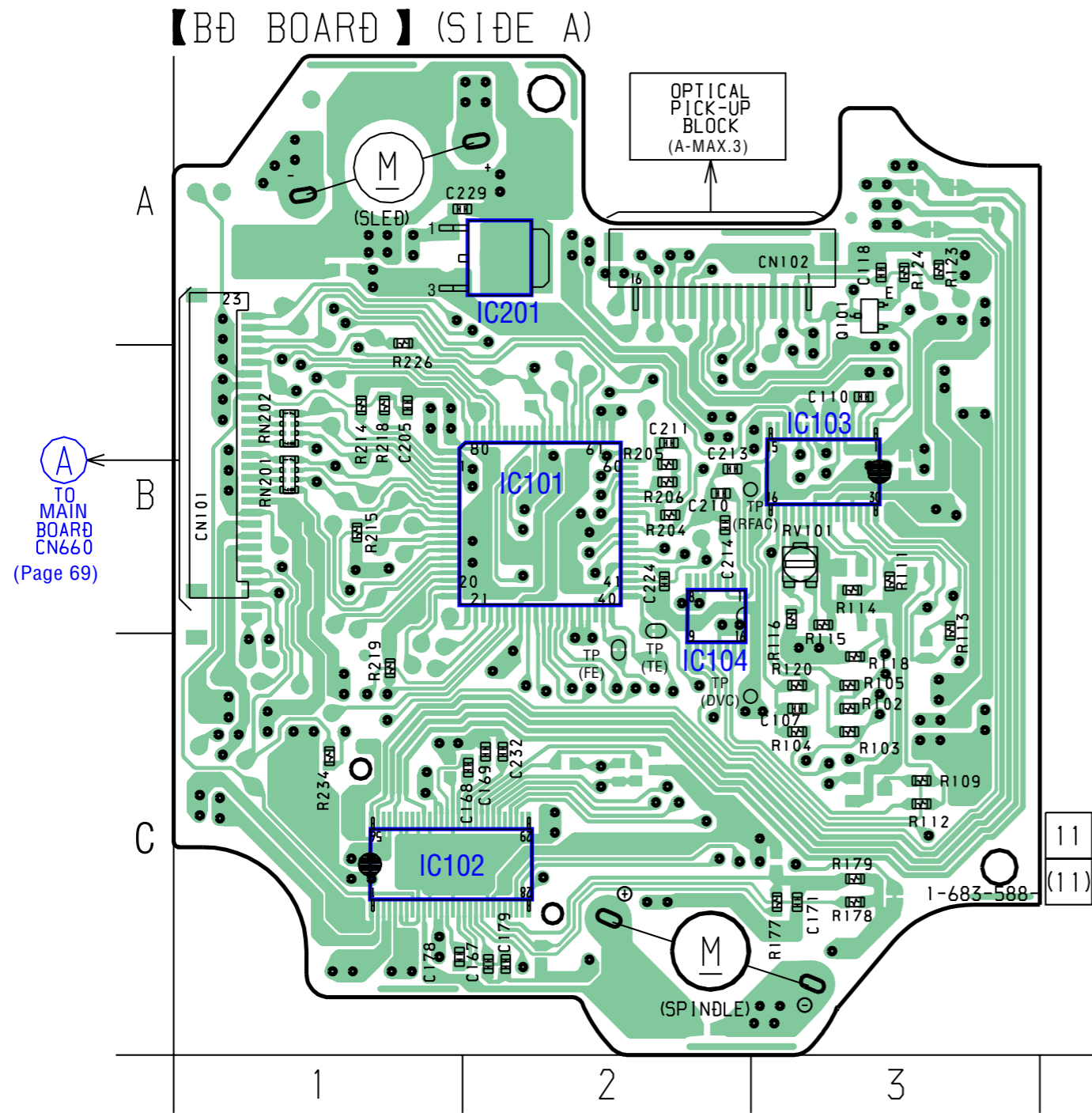


# RCD-W50C

## - POWER/DISPLAY Section -



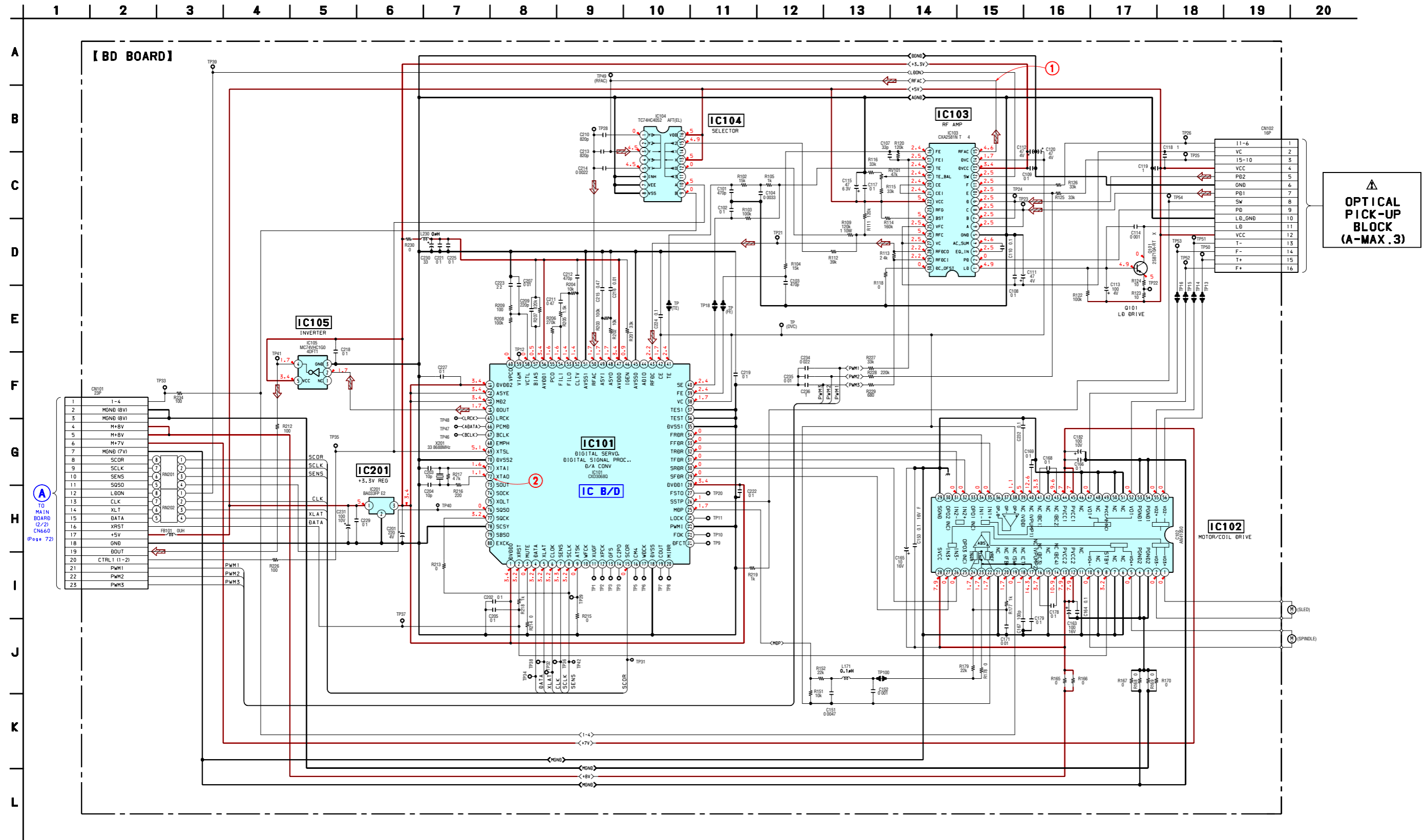
6-2. Printed Wiring Board – BD Section –  : Uses unleaded solder. • See page 55 for Circuit Boards Location.



• Semiconductor Location

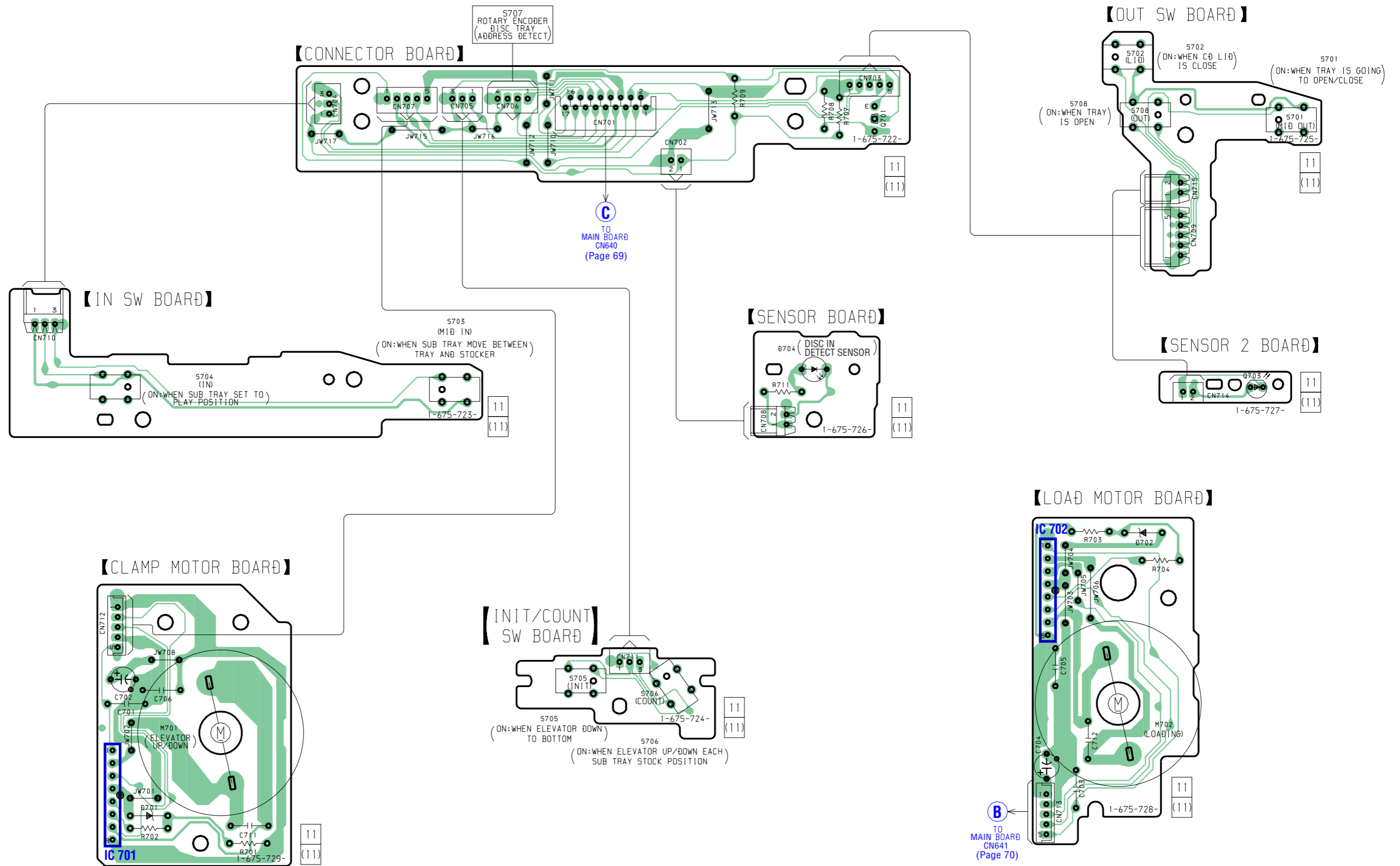
| Ref. No. | Location |
|----------|----------|
| IC101    | B-2      |
| IC102    | C-1      |
| IC103    | B-3      |
| IC104    | C-2      |
| IC105    | B-7      |
| IC201    | A-2      |
| Q101     | A-3      |

6-3. Schematic Diagram – BD Section – • See page 55 for Waveform. • See page 77 for IC Block Diagrams.

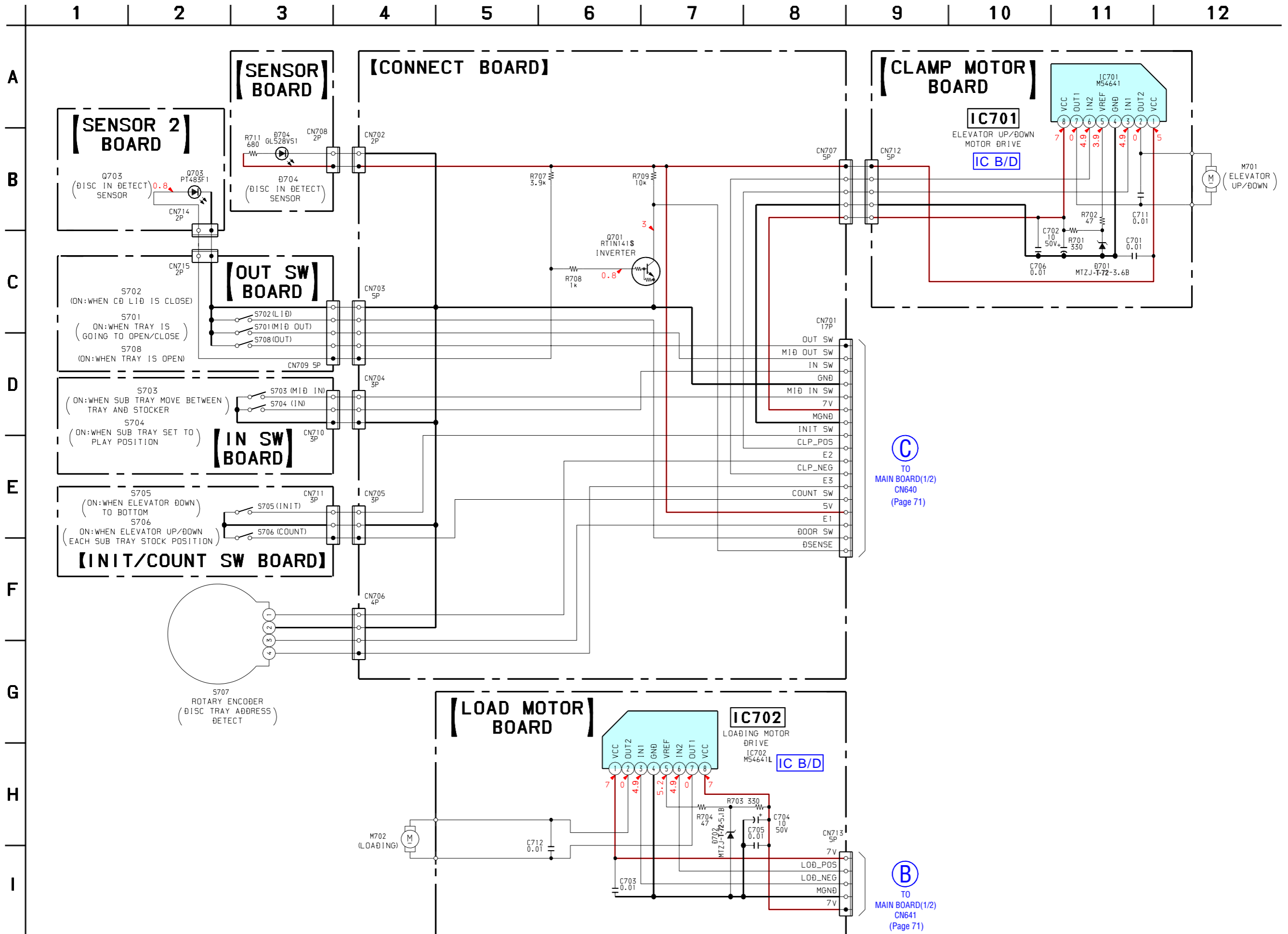


OPTICAL PICK-UP BLOCK (A-MAX .3)

6-4. Printed Wiring Board – SENSER/MOTOR/SW Section – • See page 55 for Circuit Boards Location.

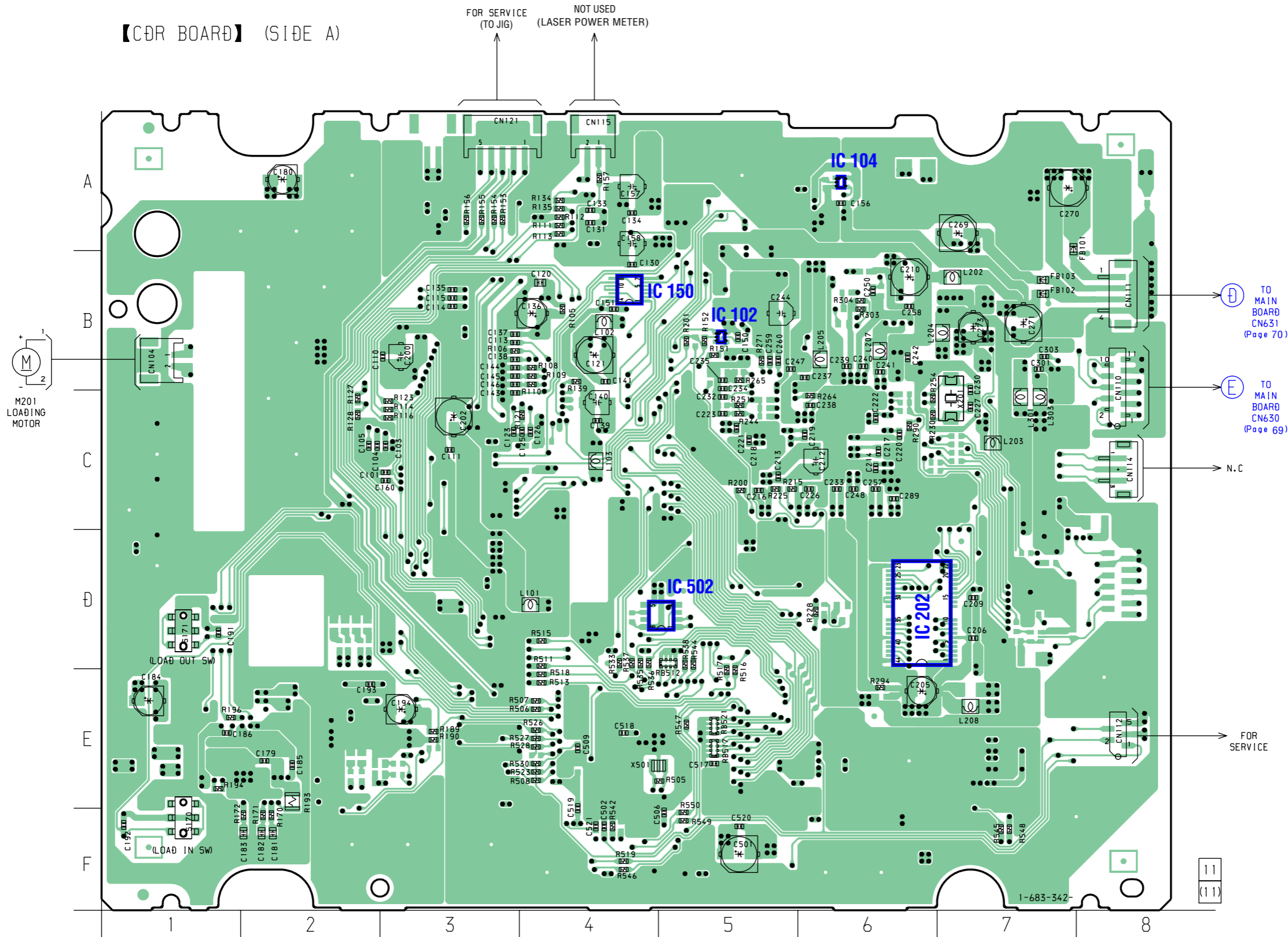


6-5. Schematic Diagram – SENSER/MOTOR/SW Section – • See page 55 for Waveform. • See page 77 for IC Block Diagrams.





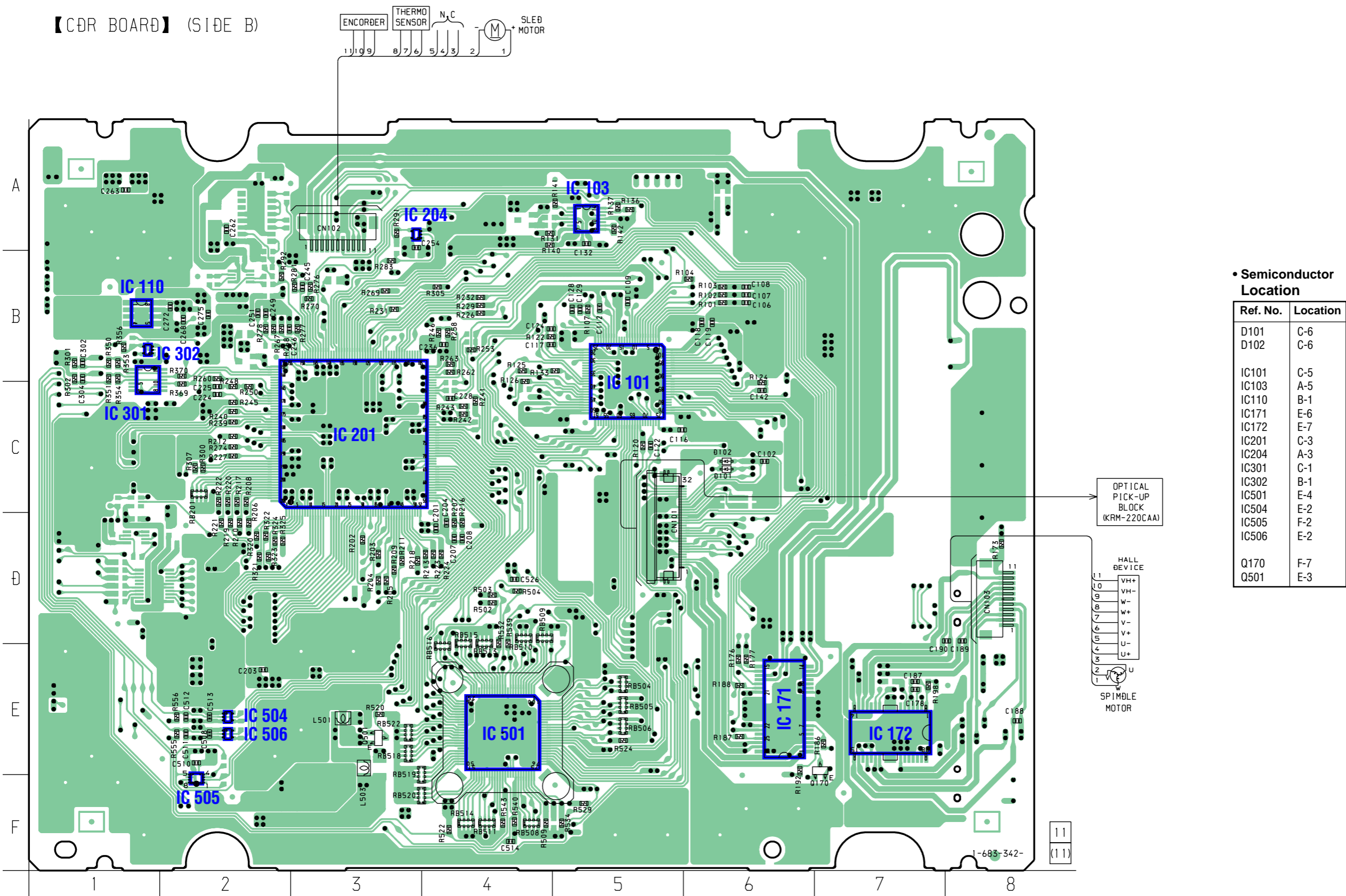
6-6. Printed Wiring Board – CD-R Section (Side A) – • See page 55 for Circuit Boards Location.



• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| IC102    | B-5      |
| IC104    | A-6      |
| IC150    | B-4      |
| IC202    | D-6      |
| IC502    | D-5      |

6-7. Printed Wiring Board – CD-R Section (Side B) – • See page 55 for Circuit Boards Location.

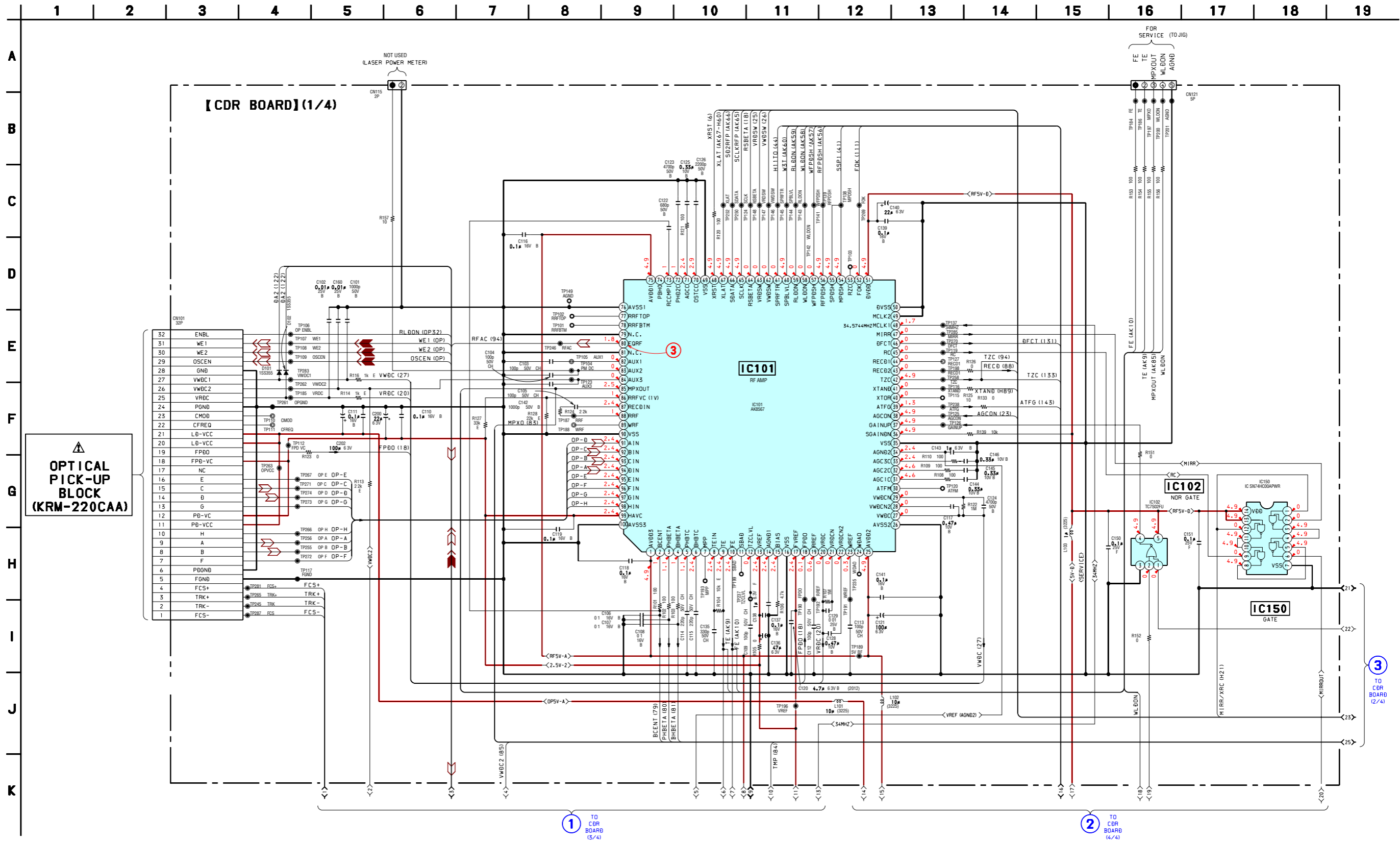


• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D101     | C-6      |
| D102     | C-6      |
| IC101    | C-5      |
| IC103    | A-5      |
| IC110    | B-1      |
| IC171    | E-6      |
| IC172    | E-7      |
| IC201    | C-3      |
| IC204    | A-3      |
| IC301    | B-1      |
| IC302    | C-1      |
| IC501    | E-4      |
| IC504    | E-2      |
| IC505    | F-2      |
| IC506    | E-2      |
| Q170     | F-7      |
| Q501     | E-3      |



6-8. Schematic Diagram – CD-R Section (1/4) – • See page 55 for Waveform. • See page 82 for IC Pin Function.

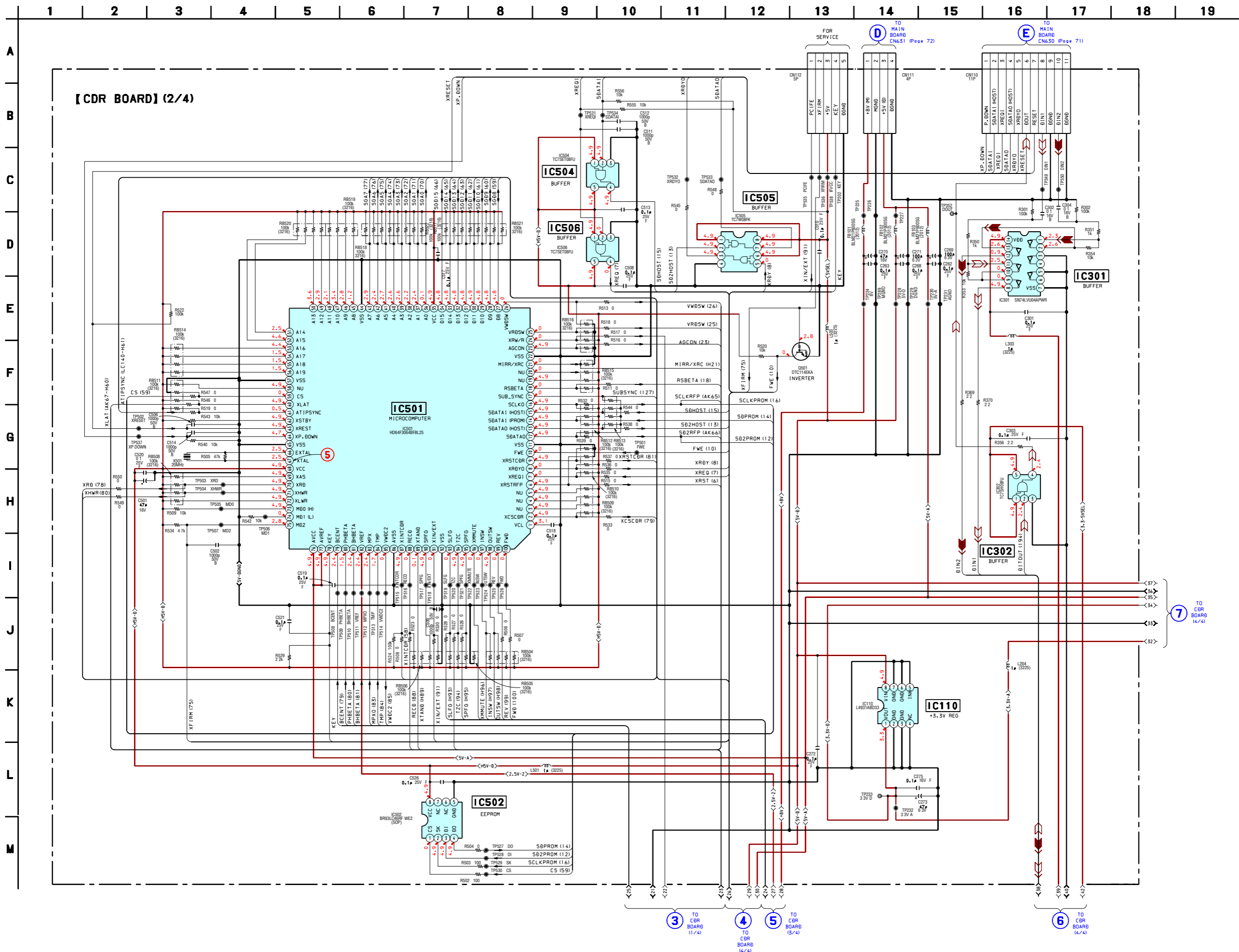


1 TO CDR BOARD (3/4)

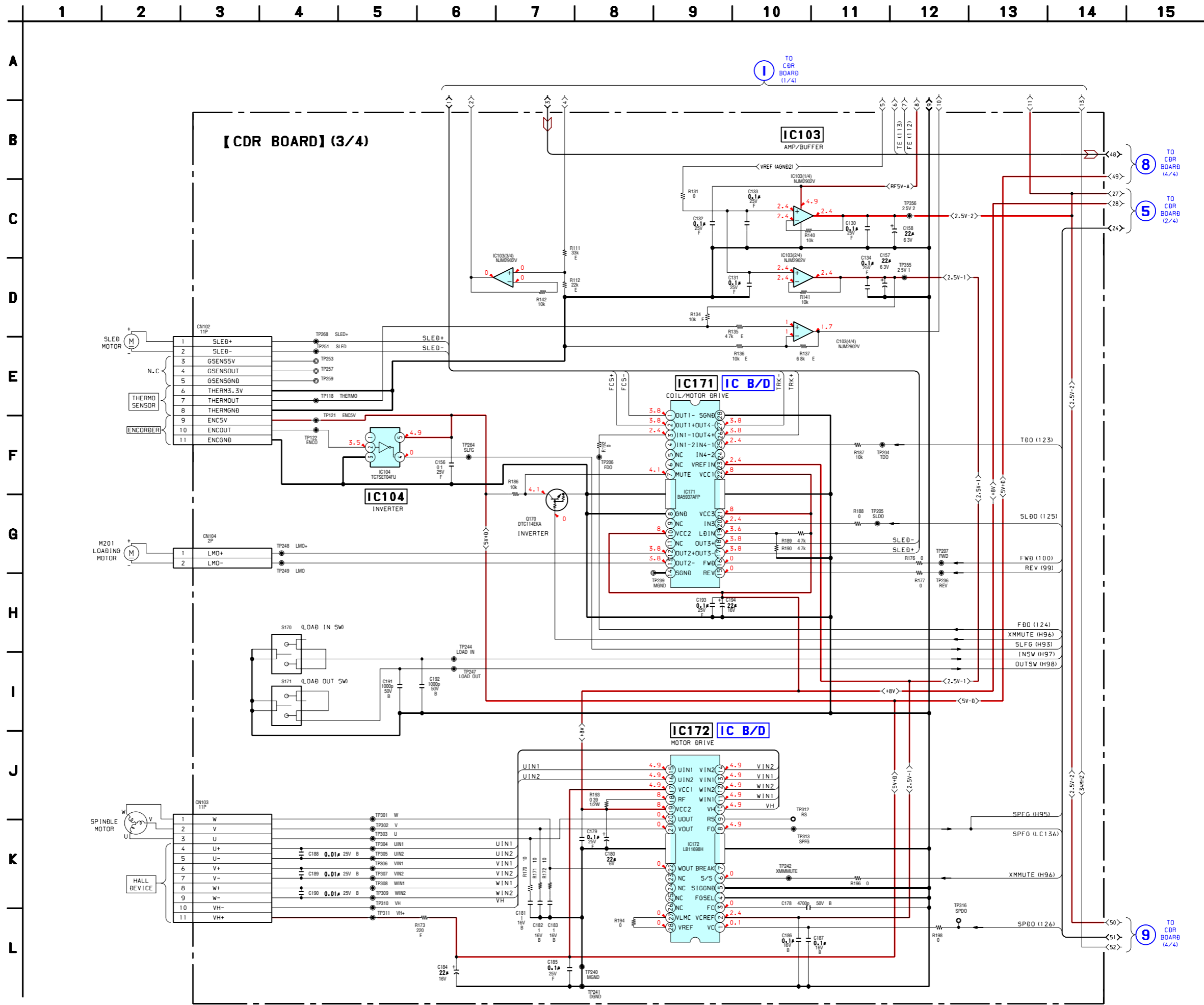
2 TO CDR BOARD (4/4)

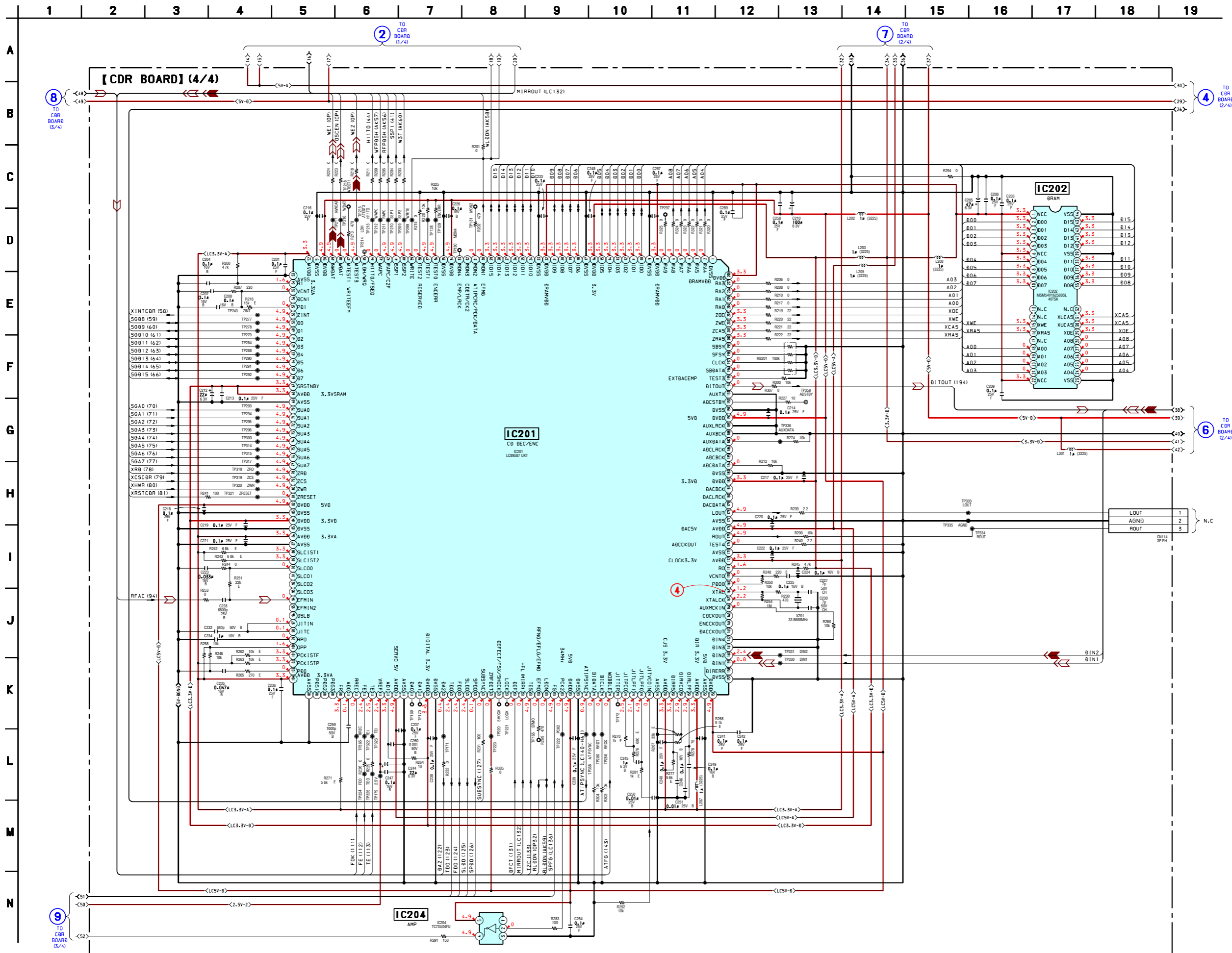
3 TO CDR BOARD (2/4)

6-9. Schematic Diagram – CD-R Section (2/4) – • See page 55 for Waveform. • See page 88 for IC Pin Function.

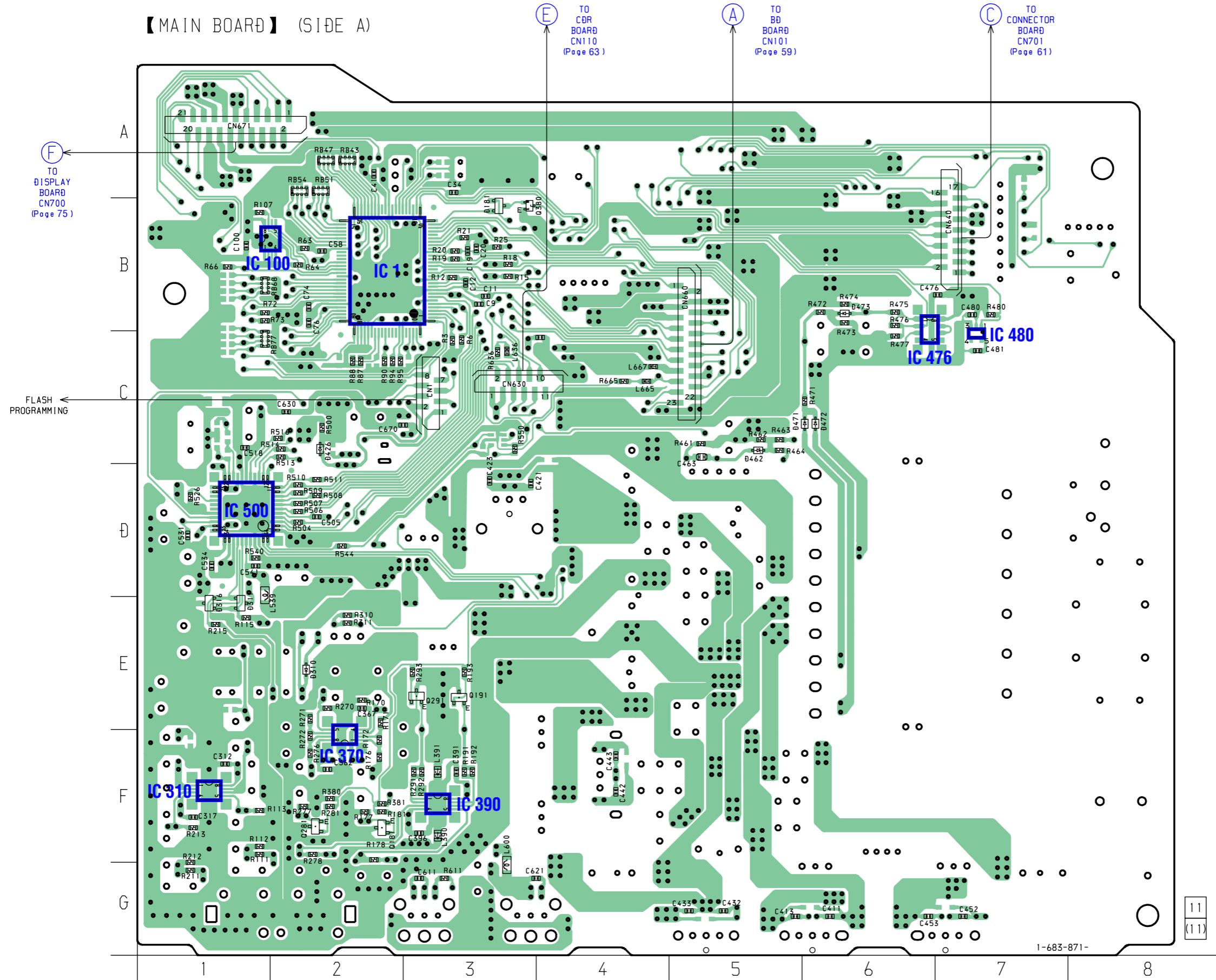


6-10. Schematic Diagram – CD-R Section (3/4) – • See page 78 for IC Block Diagrams.





6-12. Printed Wiring Board – MAIN Section (Side A) –  : Uses unleaded solder. • See page 55 for Circuit Boards Location.

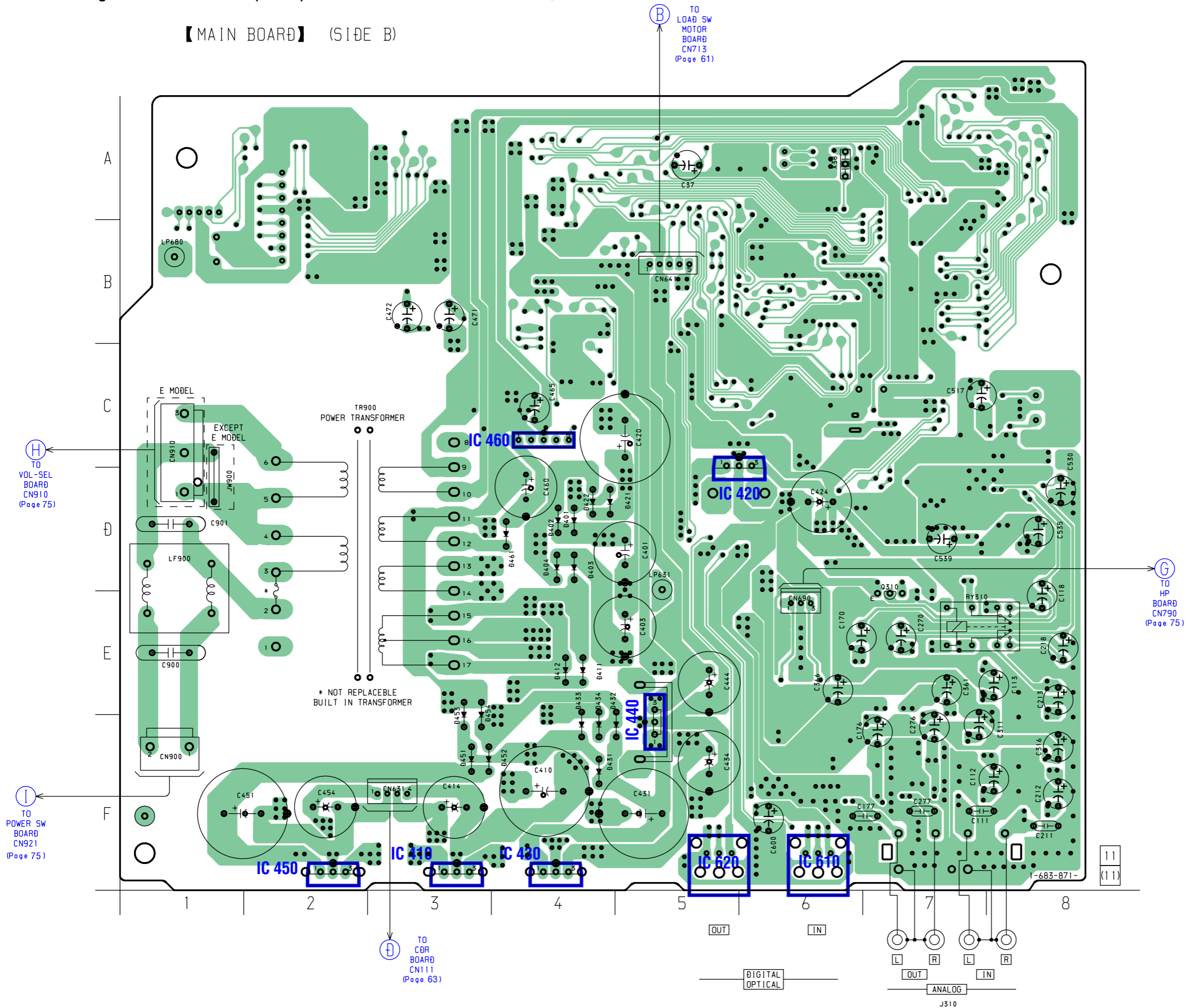


• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D181     | B-3      |
| D310     | E-2      |
| D311     | E-1      |
| D316     | E-1      |
| D426     | C-2      |
| D462     | C-5      |
| D471     | C-5      |
| D472     | C-6      |
| D473     | B-6      |
| IC1      | B-2      |
| IC100    | B-1      |
| IC310    | F-1      |
| IC370    | F-2      |
| IC390    | F-3      |
| IC476    | C-6      |
| IC480    | B-7      |
| IC500    | D-1      |
| Q181     | F-2      |
| Q191     | E-3      |
| Q281     | F-2      |
| Q291     | E-3      |
| Q380     | B-3      |



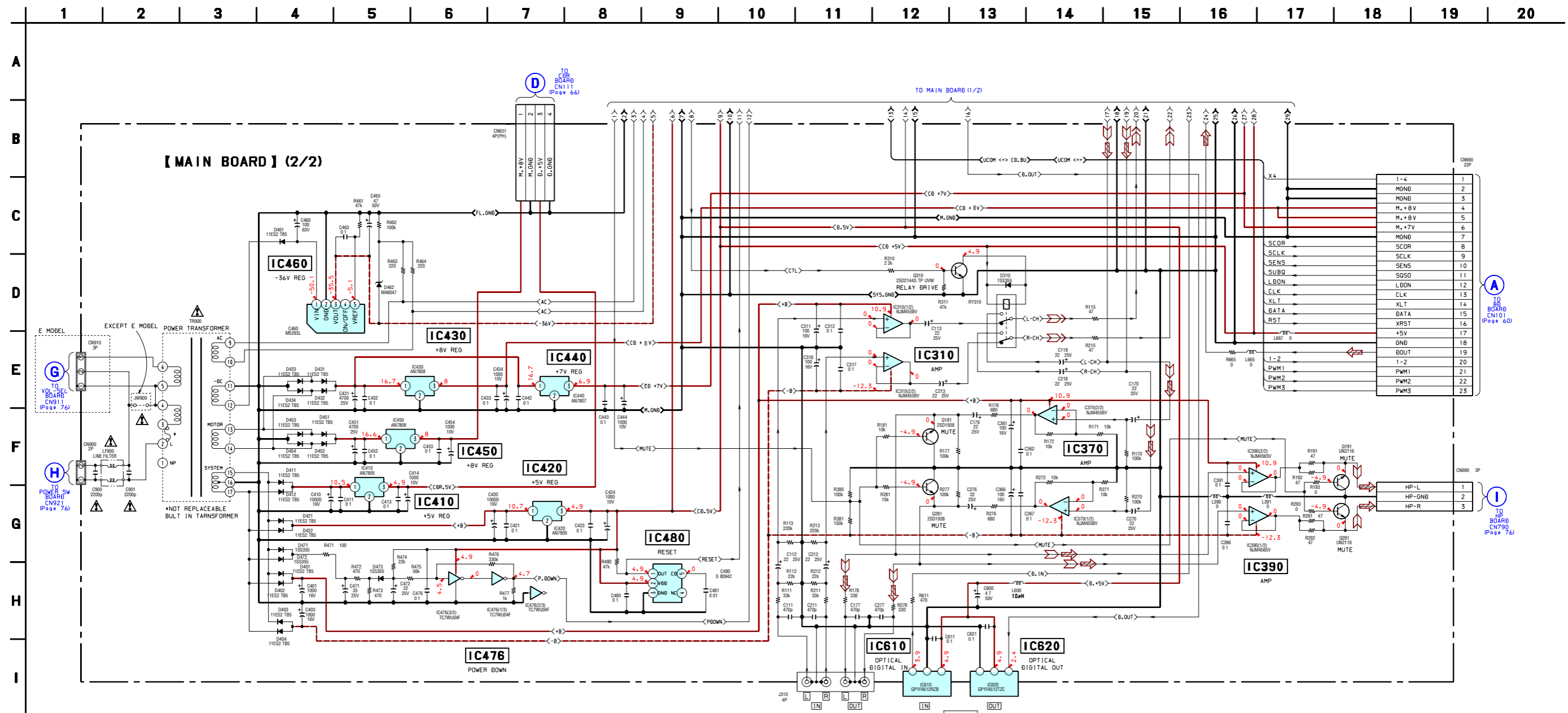
【MAIN BOARD】 (SIDE B)




• Semiconductor Location

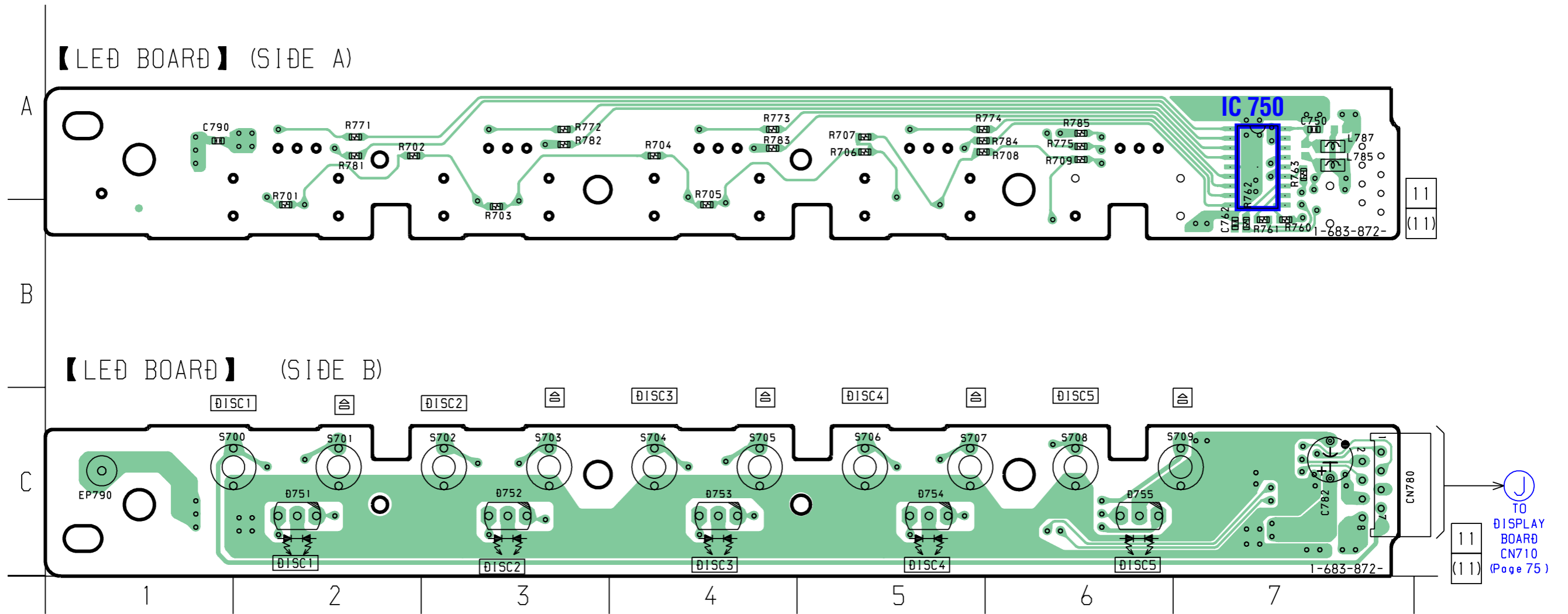
| Ref. No. | Location |
|----------|----------|
| D401     | D-4      |
| D402     | D-4      |
| D403     | D-4      |
| D404     | D-4      |
| D411     | E-4      |
| D412     | E-4      |
| D421     | D-4      |
| D422     | D-4      |
| D431     | F-4      |
| D432     | E-4      |
| D433     | E-4      |
| D434     | E-4      |
| D451     | F-3      |
| D452     | F-3      |
| D453     | F-3      |
| D454     | F-3      |
| D461     | D-4      |
| IC410    | F-3      |
| IC420    | D-5      |
| IC430    | F-4      |
| IC440    | F-5      |
| IC450    | F-2      |
| IC460    | C-4      |
| IC610    | F-6      |
| IC620    | F-5      |
| Q310     | E-7      |





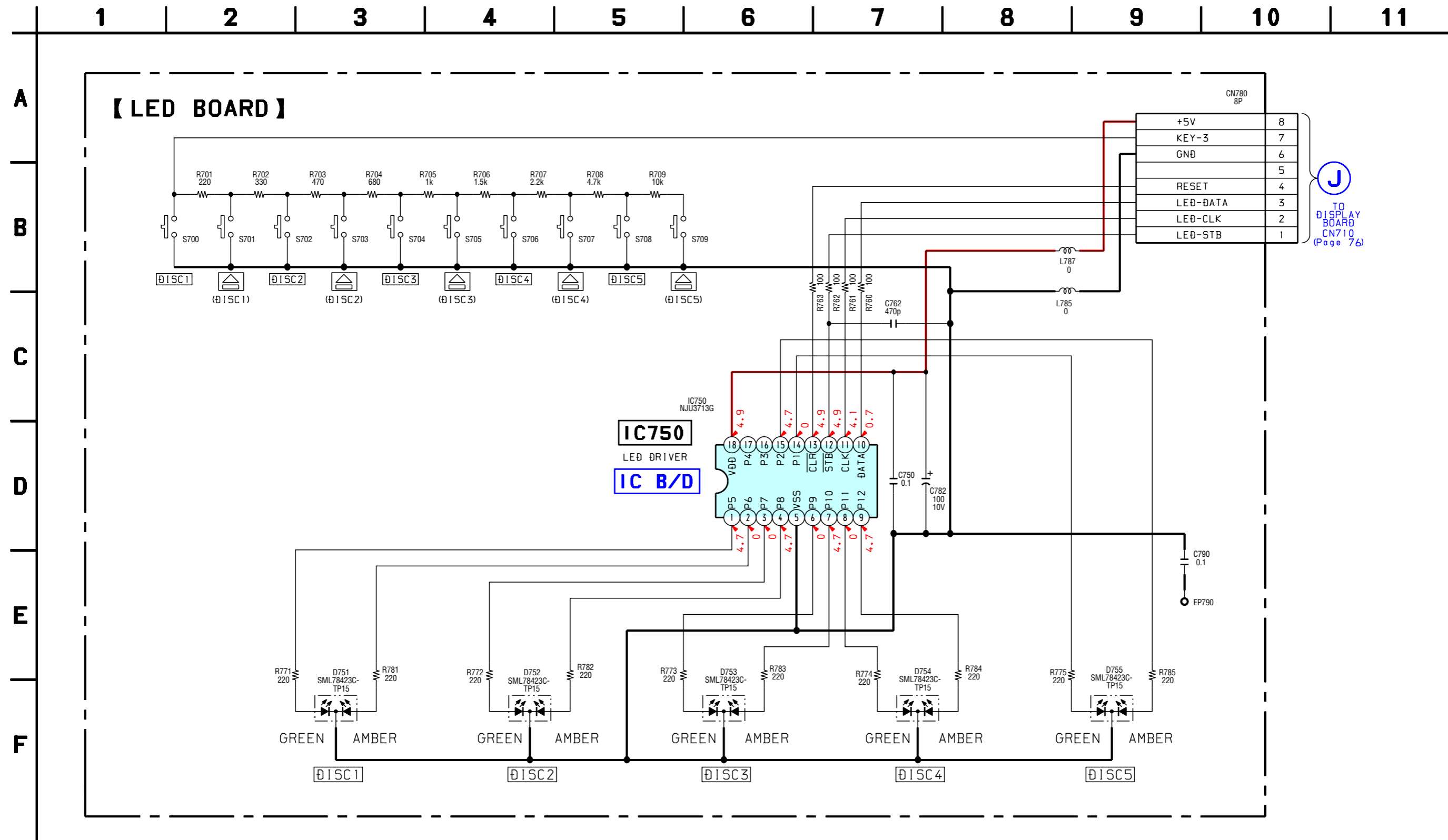


6-16. Printed Wiring Board – LED Section –  : Uses unleaded solder. • See page 55 for Circuit Boards Location.

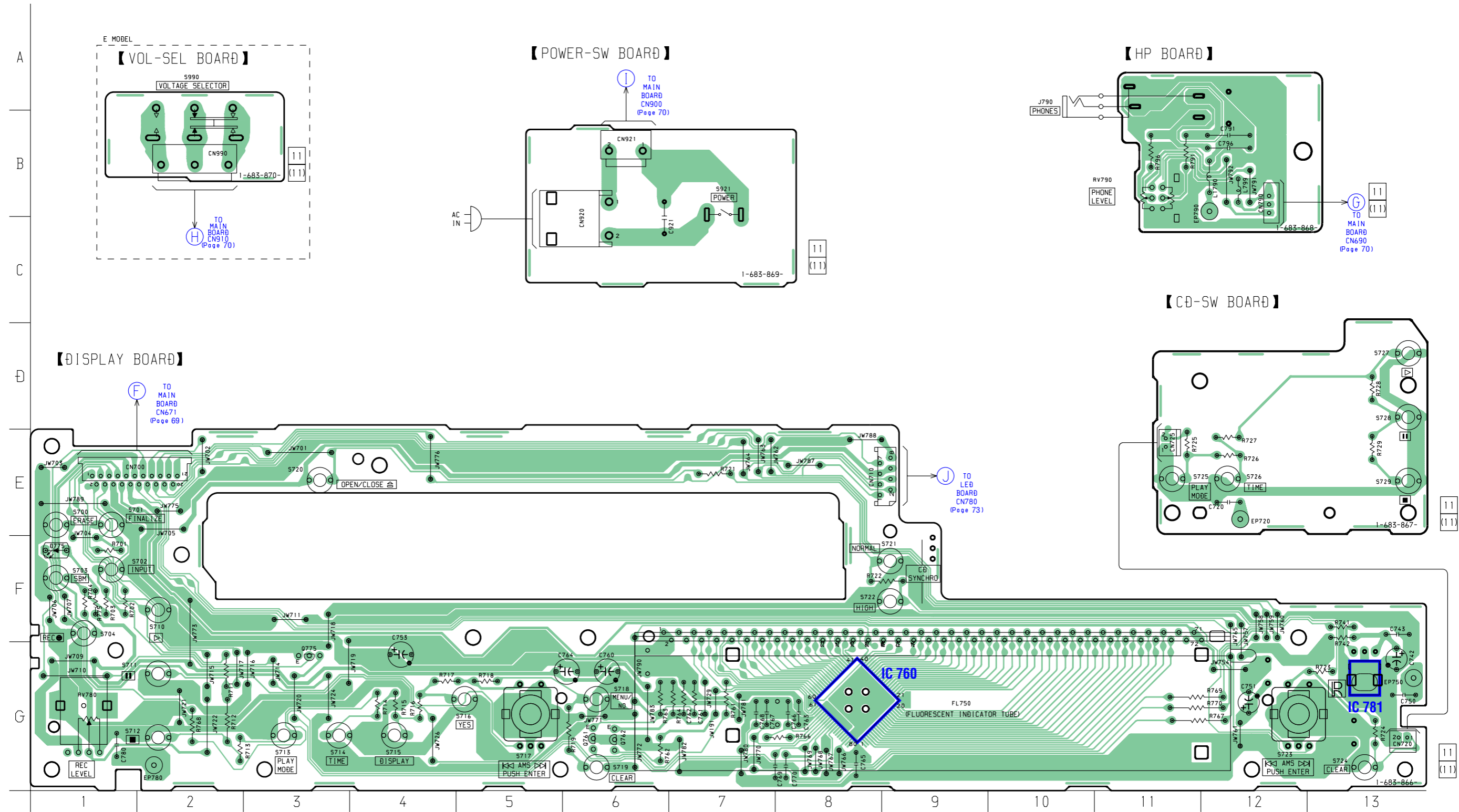


• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D751     | C-2      |
| D752     | C-3      |
| D753     | C-4      |
| D754     | C-5      |
| D755     | C-6      |
| IC750    | A-7      |

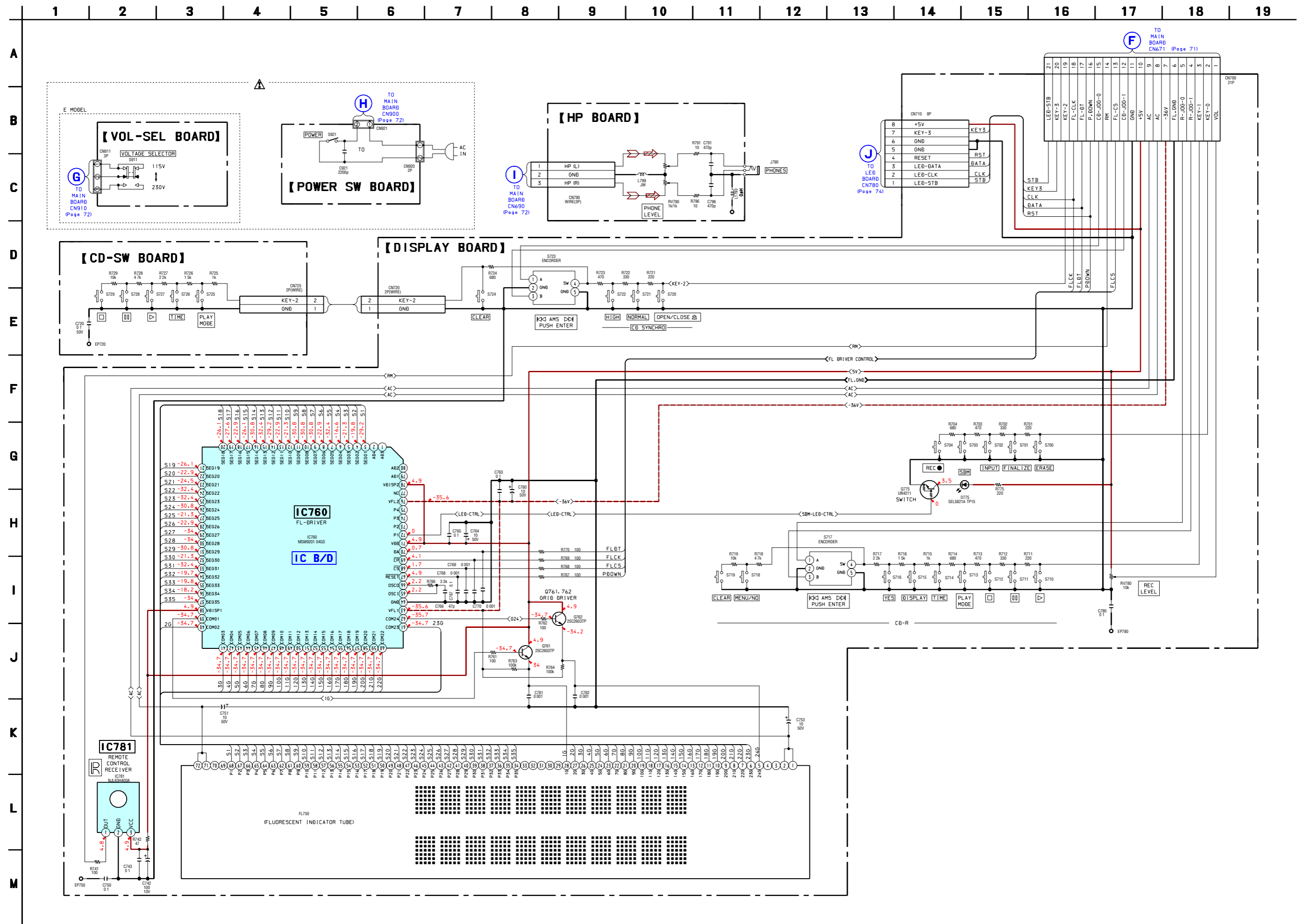


6-18. Printed Wiring Board – DISPLAY Section –  : Uses unleaded solder. • See page 55 for Circuit Boards Location.



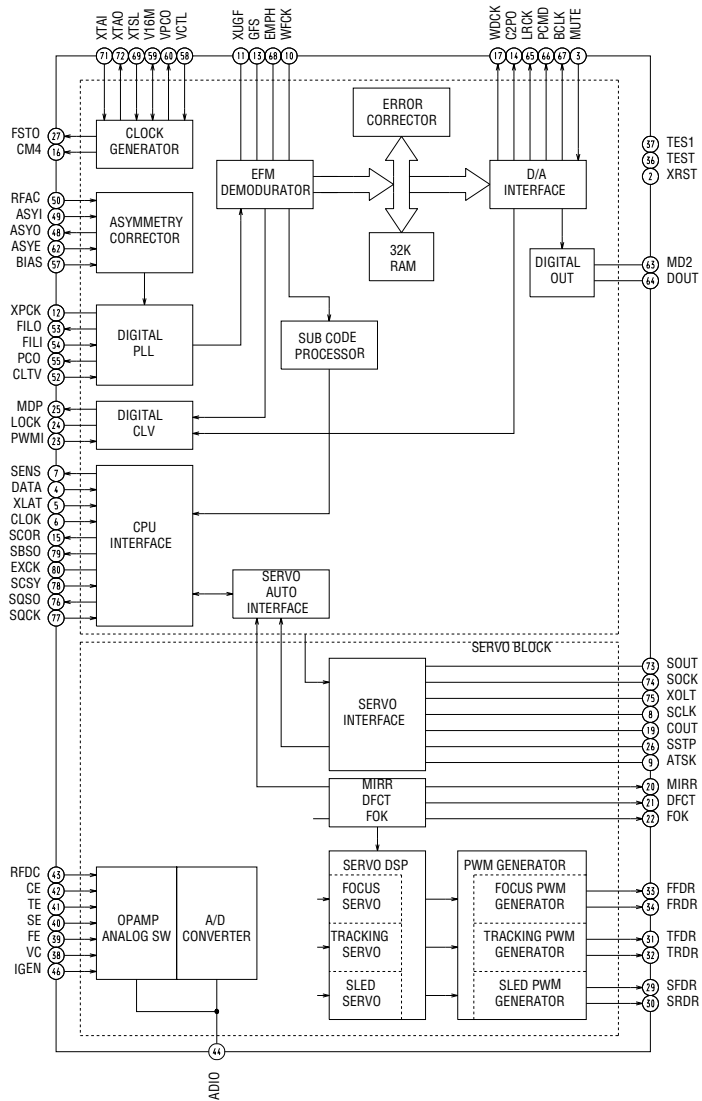
• Semiconductor Location

| Ref. No. | Location | Ref. No. | Location |
|----------|----------|----------|----------|
| D775     | F-1      | Q761     | G-6      |
| IC760    | G-9      | Q762     | G-6      |
| IC781    | G-13     | Q775     | G-3      |

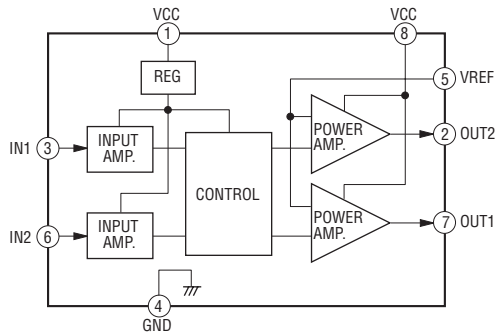


6-20. IC Block Diagrams

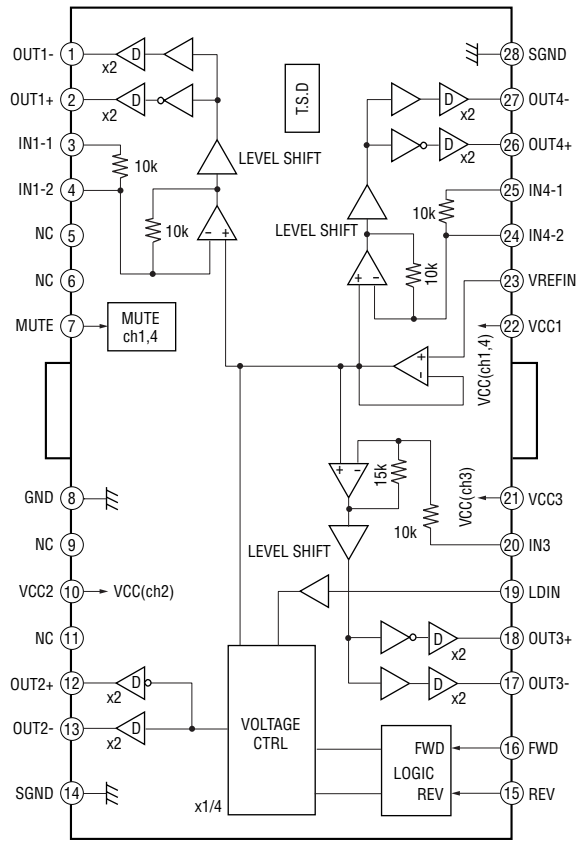
IC101 CXD3068Q (BD Board)



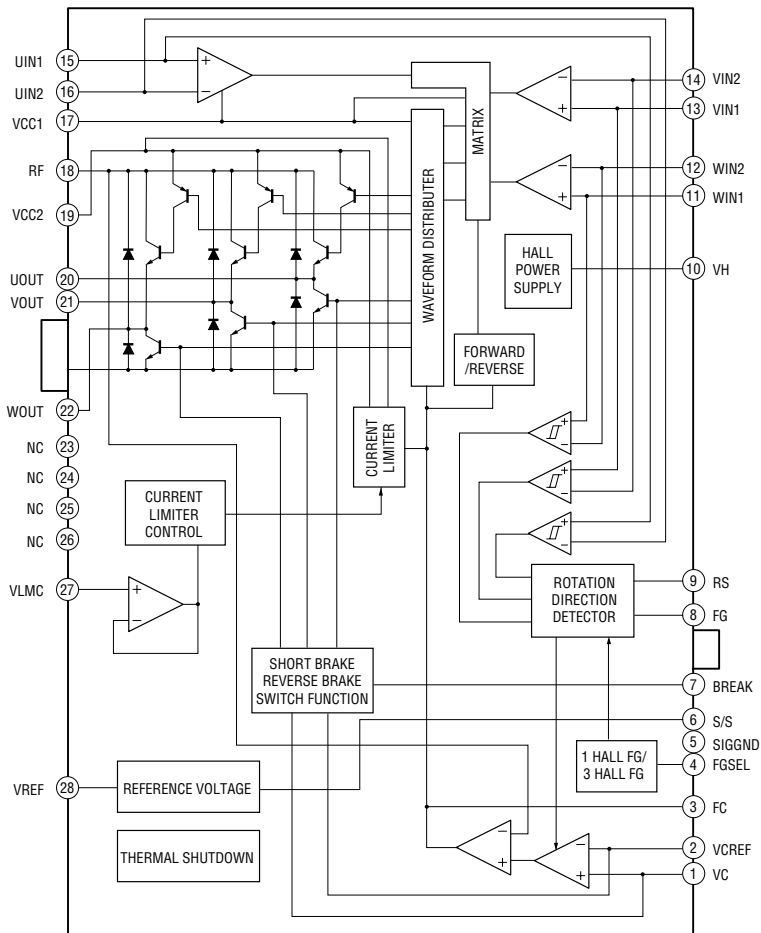
IC701 M54641L (CLAMP MOTOR Board)  
IC702 M54641L (LOAD MOTOR Board)



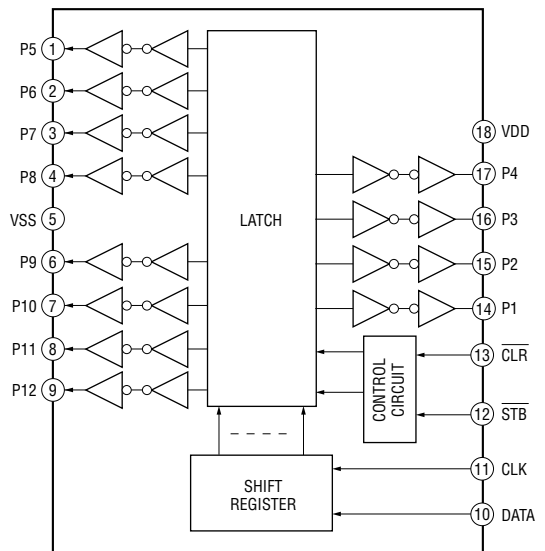
IC171 BA5937AFP-E2 (CDR Board)



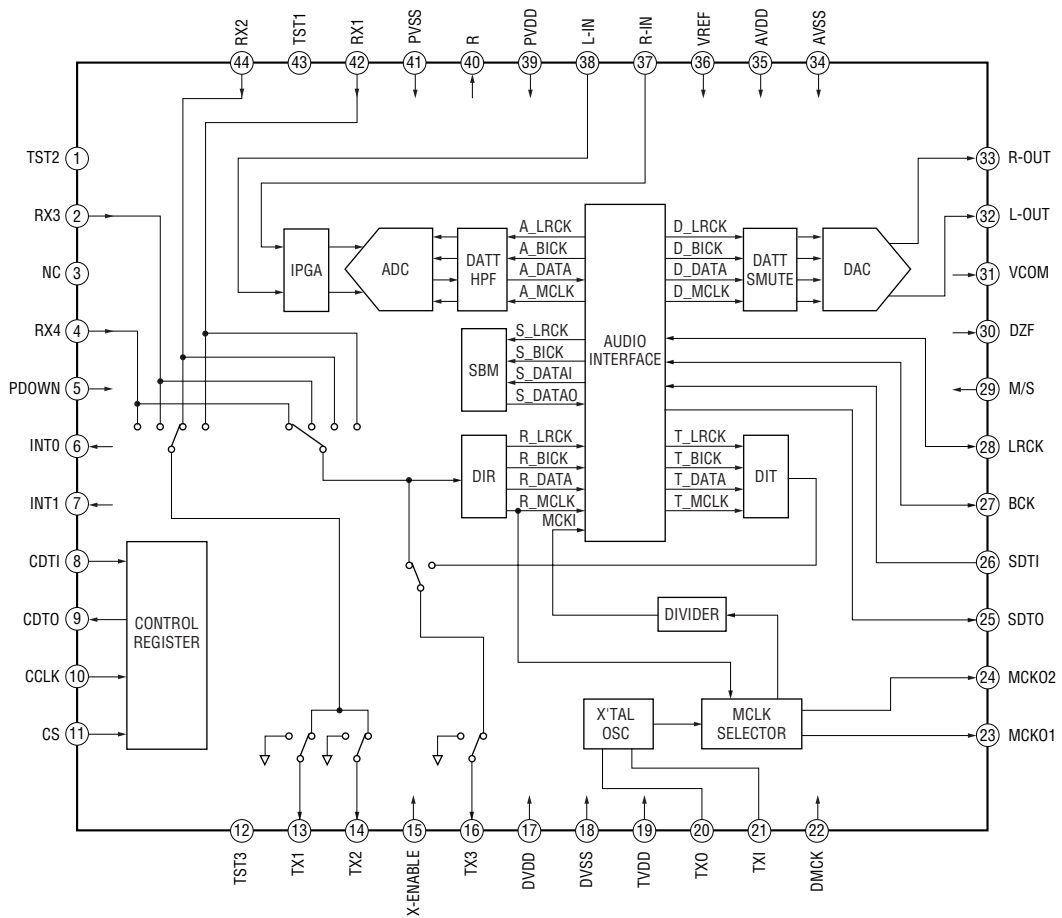
IC172 LB11698H-TE-L (CDR Board)



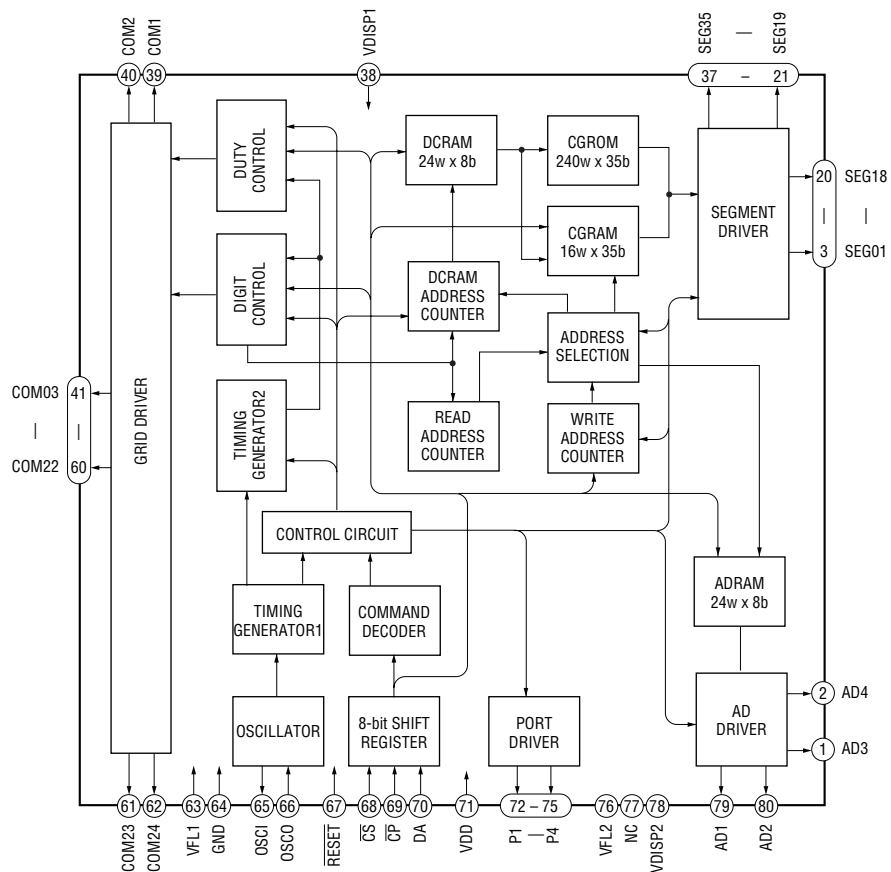
IC750 NJU3713G (TE2) (LED Board)



IC500 CXD9692R (MAIN Board)



IC760 MSM9201-04GS-K (DISPLAY Board)



## 6-21. IC Pin Function Description

• IC1  $\mu$ PD70F3033AYGF-3BA CD & SYSTEM CONTROL (MAIN Board)

| Pin No.  | Pin Name             | I/O | Description  |
|----------|----------------------|-----|--|
| 1        | FL-LD-DT             | O   | Data output to the FL and LED drivers                            |
| 2        | FL-LD-CLK            | O   | Clock output to the FL and LED drivers                           |
| 3        | DA-DATA-IN           | I   | Data input from the AD/DA converter (IC500)                      |
| 4        | DA-DATA-OUT          | O   | Data output to the AD/DA converter (IC500)                       |
| 5        | DA-CLK               | O   | Clock output to the AD/DA converter (IC500)                      |
| 6        | CD-R IN              | I   | Data input from the $\mu$ COM (IC501)                            |
| 7        | CD-R OUT             | O   | Data output to the $\mu$ COM (IC501)                             |
| 8        | DA-LATCH             | O   | Data latch signal output to the AD/DA converter (IC500)          |
| 9        | EVDD                 | —   | Power supply (+5V)   |
| 10       | EVSS                 | —   | Ground terminal  |
| 11       | AC CUT               | I   | AC CUT signal input "L" : AC CUT                                 |
| 12       | PWM1                 | O   | PWM signal output to FE  |
| 13       | SIRCS                | I   | SIRCS signal input from the remote control receiver              |
| 14       | LDON                 | O   | Laser ON signal output   |
| 15       | SUBQ                 | I   | Sub-code Q serial data input                                     |
| 16       | NC                   | —   | Not used (open)  |
| 17       | SQCLK                | O   | Sub-code Q output serial clock output                            |
| 18       | SENSE                | I   | SENSE signal input from the IC101                                |
| 19       | PWM2                 | O   | PWM signal output to TE  |
| 20       | PWM3                 | O   | PWM signal output to RFDC  |
| 21       | VPP                  | —   | Flash programming power supply                                   |
| 22       | NC                   | —   | Not used (open)  |
| 23       | X4                   | O   | Disc rotation speed selection signal output                      |
| 24       | CTRL1                | O   | Disc rotation speed selection signal output                      |
| 25       | DA-RESET             | O   | Reset signal output to the AD/DA converter (IC500)               |
| 26       | NC                   | —   | Not used (open)  |
| 27       | XLT                  | O   | Serial data latch signal output to the IC101                     |
| 28       | XRDY                 | I   | Data ready signal input from the $\mu$ COM (IC501)               |
| 29       | A_MUTE               | O   | Muting control signal output "L" : ON                            |
| 30       | NC                   | —   | Not used (open)  |
| 31       | SCMS                 | O   | Analog line selection signal output "H" : SCMS ON at SYNC mode   |
| 32       | BDRST                | O   | BD reset signal output "L" : reset                               |
| 33       | XREQ                 | O   | Data request signal output to the $\mu$ COM (IC501)              |
| 34       | RESET                | I   | Reset signal input   |
| 35       | XT1                  | I   | Sub-clock input  |
| 36       | XT2                  | O   | Sub-clock output   |
| 37       | REGC                 | —   | Electrolytic capacitor terminal for the regulator                |
| 38       | X2                   | O   | Ceramic resonator terminal                                       |
| 39       | X1                   | I   | Ceramic resonator terminal                                       |
| 40       | VSS                  | —   | Ground terminal  |
| 41       | VDD                  | —   | Power supply (+5V)   |
| 42       | CLKOUT               | O   | Clock output (open)  |
| 43 to 45 | ENCODER1 to ENCODER3 | I   | Disc tray address detection signal input from the rotary encoder |
| 46       | D-OUT ON/OFF         | O   | Not used (open)  |
| 47       | INIT_SW              | I   | INIT detection switch signal input                               |
| 48       | COUNT_SW             | I   | COUNT detection switch signal input                              |
| 49       | DOOR_SW              | I   | DOOR detection switch signal input                               |
| 50       | MIDOUT_SW            | I   | MIDOUT detection switch signal input                             |
| 51       | MIDIN_SW             | I   | MIDIN detection switch signal input                              |



| Pin No.  | Pin Name       | I/O | Description  |
|----------|----------------|-----|--|
| 52       | OUT_SW         | I   | Tray open/close detection switch signal input                  |
| 53       | IN_SW          | I   | Tray open/close detection switch signal input                  |
| 54       | LOD_POS        | O   | Loading motor control signal output                            |
| 55       | LOD_NEG        | O   | Loading motor control signal output                            |
| 56       | CLP_POS        | O   | Elevator up/down motor control signal output                   |
| 57       | CLP_NEG        | O   | Elevator up/down motor control signal output                   |
| 58       | BVDD           | —   | Power supply (+5V)   |
| 59       | BVSS           | —   | Ground terminal  |
| 60 to 62 | NC             | —   | Not used (open)  |
| 63       | DI             | I/O | EEPROM I2C data input/output                                   |
| 64       | SK             | O   | EEPROM I2C clock output  |
| 65       | WP             | O   | EEPROM write protect signal output                             |
| 66       | FL-LED-RST     | O   | Reset signal output to the FL and LED drivers                  |
| 67       | DZF            | I   | Zero data detect signal input from the AD/DA converter (IC500) |
| 68       | CD-JOG-0       | I   | CD jog signal input  |
| 69       | CD-JOG-1       | I   | CD jog signal input  |
| 70       | R-JOG-0        | I   | CD-R jog signal input  |
| 71       | R-JOG-1        | I   | CD-R jog signal input  |
| 72       | FLCS           | O   | Chip select signal output to the FL driver                     |
| 73       | LED-STB        | O   | Strobe signal output to the LED driver                         |
| 74       | AVDD           | —   | Power supply for analog circuit (+5V)                          |
| 75       | AVSS           | —   | Ground terminal for analog circuit                             |
| 76       | AVREF          | —   | Analog reference voltage input terminal                        |
| 77 to 80 | KEY-0 to KEY-3 | I   | Key data input   |
| 81       | VOL            | I   | Analog recording level signal input from the RV780             |
| 82 to 85 | AD-5 to AD-8   | —   | Not used (ground)  |
| 86       | DSENS          | I   | Disc in detection sensor signal input                          |
| 87       | MODEL          | I   | Model setting terminal   |
| 88       | DESTINATION    | I   | Destination setting terminal                                   |
| 89       | NC             | —   | Not used (open)  |
| 90       | SCOR           | I   | Sub-code sync (S0+S1) detection signal input from the IC101    |
| 91 to 93 | NC             | —   | Not used (open)  |
| 94, 95   | INT0, INT1     | I   | Interrupt signal input from the AD/DA converter (IC500)        |
| 96, 97   | NC             | —   | Not used (open)  |
| 98       | DATA           | O   | Data output to the IC101                                       |
| 99       | CLK            | O   | Clock output to the IC101                                      |
| 100      | ADJ            | I   | ADJ mode selection input terminal Not used (open)              |

• IC101 AK8567 S/H & MATRIX, MPX (CDR Board)

| Pin No. | Pin Name | I/O | Description   |
|---------|----------|-----|---|
| 1       | AVDD3    | —   | Power supply (analog)   |
| 2       | BCENT    | O   | Center signal output  |
| 3       | PHBETA   | O   | $\beta$ signal top level signal output  |
| 4       | BHBETA   | O   | $\beta$ signal bottom level signal output   |
| 5       | PHBTC    | O   | Extrenal capacitor teminal for PHBETA droop rate setting                                      |
| 6       | BHBTC    | O   | Extrenal capacitor teminal for BHBETA droop rate setting                                      |
| 7       | MPP      | O   | Main push-pull signal output Not used (open)  |
| 8       | TEIN     | I   | Tracking signal processing input  |
| 9       | TE       | O   | Tracking error signal output  |
| 10      | FE       | O   | Focus error signal output   |
| 11      | SBAD     | O   | SBAD signal output Not used (open)  |
| 12      | TZCLVL   | I   | Tracking zero cross comparate level input   |
| 13      | VREF     | I/O | Decoupling teminal for internal reference voltage / internal reference voltage input terminal |
| 14      | AGND1    | O   | Decoupling teminal for internal reference voltage   |
| 15      | BIAS     | O   | Bias resistor connection terminal BIAS = 4.7k $\Omega$  |
| 16      | VSS      | —   | Ground terminal (analog)  |
| 17      | FVREF    | I   | APC reference voltage input terminal  |
| 18      | FPDO     | I   | Laser monitor voltage input   |
| 19      | RREF     | I/O | Power setting voltage input for read APC / internal DAC setting voltage output                |
| 20      | VRDC     | O   | Read laser driver control signal output   |
| 21      | VRDCN    | I   | Read laser driver control amplifier (-) teminal   |
| 22      | VRDCN2   | I   | Read laser driver time constant setting terminal  |
| 23      | WREF     | I/O | Power setting voltage input for write APC / internal DAC setting voltage output               |
| 24      | WDAO     | O   | Power setting internal DAC voltage output for write APC Not used (open)                       |
| 25      | AVDD2    | —   | Power supply (analog)   |
| 26      | AVSS2    | —   | Ground terminal (analog)  |
| 27      | VWDC     | O   | Write laser driver control signal output  |
| 28      | VWDCN2   | I   | Write laser driver time constant setting terminal   |
| 29      | VWDCN    | I   | Write laser driver control amplifier (-) teminal  |
| 30      | ATFM     | O   | Wobble signal output  |
| 31      | AGC1C    | O   | External capacitor terminal for AGC response speed setting                                    |
| 32      | AGC2C    | O   | External capacitor terminal for AGC response speed setting                                    |
| 33      | AGC3C    | O   | External capacitor terminal for AGC response speed setting                                    |
| 34      | AGND2    | O   | Decoupling teminal for internal reference voltage   |
| 35      | VSS      | —   | Ground terminal (analog)  |
| 36      | SGAINDN  | I   | Gain selection signal input   |
| 37      | GAINUP   | I   | CD-RW selection control signal input  |
| 38      | AGCON    | I   | Wobble AGC enable signal input “H” : AGC ON, “L” : AGC reset                                  |
| 39      | ATFG     | O   | ATIP FG signal output (Wobble signal after formation of 2 values)                             |
| 40      | XTOR     | O   | Tracking amplitude detection signal output  |
| 41      | XTAND    | O   | Tracking failure detection signal output  |
| 42      | TZC      | O   | Tracking zero cross detection signal output   |
| 43      | RECD2    | O   | Recorded block detection signal output 2 “H” : recorded block, “L” : unrecorded block         |
| 44      | RECD1    | O   | Recorded block detection signal output 1 “H” : recorded block, “L” : unrecorded block         |
| 45      | RC       | O   | RC signal output  |
| 46      | DFCT     | O   | DFCT signal output  |
| 47      | MIRR     | O   | MIRR signal output  |
| 48      | MCLK1    | I   | Main clock input 1 (sine wave input) 34.5744MHz   |
| 49      | MCLK2    | I   | Main clock input 2 (sine wave input) fixed at “L”   |
| 50      | DVSS     | —   | Ground terminal (digital)   |

| Pin No. | Pin Name  | I/O | Description   |
|---------|-----------|-----|---|
| 51      | DVDD      | —   | Power supply (digital)  |
| 52      | FOK       | O   | FOK signal output   |
| 53      | RZC       | O   | RF zero cross detection signal output Not used (open)                                     |
| 54      | MPDSH     | I   | Sampling pulse input for main beam signal “H” : sample, “L” : hold                        |
| 55      | SPDSH     | I   | Sampling pulse input for side beam signal “H” : sample, “L” : hold                        |
| 56      | RFPDSH    | I   | Sampling pulse input for read APC “H” : sample, “L” : hold                                |
| 57      | WFPDSH    | I   | Sampling pulse input for write APC “H” : sample, “L” : hold                               |
| 58      | WLDON     | I   | Write LD control signal input “H” : set write APC value to zero, “L” :LD ON               |
| 59      | RLDON     | I   | Read LD control signal input “H” : set read APC value to zero, “L” :LD ON                 |
| 60      | SPBLVL    | I   | BLEVEL sampling pulse input “H” : sample, “L” : hold                                      |
| 61      | SPRFTR    | I   | WRFTR sampling pulse input “H” : sample, “L” : hold                                       |
| 62      | VWDSW     | I   | Write laser driver time constant setting switch control signal input “H” : ON, “L” : OFF  |
| 63      | VRDSW     | I   | Read laser driver time constant setting switch control signal input “H” : ON, “L” : OFF   |
| 64      | RSBETA    | I   | $\beta$ measuring circuit reset signal input “H” : reset the outputs of PHBETA and BHBETA |
| 65      | SCLK      | I   | Clock input for register setting  |
| 66      | SDATA     | I   | Serial data input for register setting  |
| 67      | XLAT      | I   | Latch signal input for register setting   |
| 68      | XRST      | I   | Register reset terminal “L” : reset   |
| 69      | VSS       | —   | Ground terminal (analog)  |
| 70      | OSTCC     | O   | Capacitor connection terminal for setting fc of the equalizer output offset canceller     |
| 71      | AGCC      | O   | External capacitor connection terminal for setting the RFAGC response speed               |
| 72      | PHD2C     | O   | External capacitor connection terminal for setting the P/H2 droop rate                    |
| 73      | RCCMPI    | I   | RC detection comparator input   |
| 74      | PBHO      | O   | Bottom/top level output of RRF signal   |
| 75      | AVDD1     | —   | Power supply (analog)   |
| 76      | AVSS1     | —   | Ground terminal (analog)  |
| 77      | RRFTOP    | O   | Peak level output of RRF signal Not used (open)   |
| 78      | RRFBTM    | O   | Bottom level output of RRF signal Not used (open)   |
| 79      | N.C.      | —   | Not used (ground)   |
| 80      | EQRF      | O   | Equalizer filter output   |
| 81      | N.C.      | —   | Not used (ground)   |
| 82      | AUX1      | I   | Auxiliary input terminal (1) for monitoring signal Not used                               |
| 83      | AUX2      | I   | Auxiliary input terminal (2) for monitoring signal from the CN115 Not used                |
| 84      | AUX3      | I   | Auxiliary input terminal (3) for monitoring VWDC2 signal from the optical pick-up         |
| 85      | MPXOUT    | O   | Multiplexer signal output for the signal monitoring                                       |
| 86      | RRFVC(1V) | I   | Level shift voltage input terminal for RRF signal   |
| 87      | RECDIN    | I   | RF signal input for the recorded block detection  |
| 88      | RRF       | O   | Read RF signal output   |
| 89      | WRF       | O   | Write RF signal output (open)   |
| 90      | VSS       | —   | Ground terminal (analog)  |
| 91      | AIN       | I   | Main beam signal (A) input  |
| 92      | BIN       | I   | Main beam signal (B) input  |
| 93      | CIN       | I   | Main beam signal (C) input  |
| 94      | DIN       | I   | Main beam signal (D) input  |
| 95      | EIN       | I   | Side beam signal (E) input  |
| 96      | FIN       | I   | Side beam signal (F) input  |
| 97      | GIN       | I   | Side beam signal (G) input  |
| 98      | HIN       | I   | Side beam signal (H) input  |
| 99      | HAVC      | I   | Main/side beam signal center voltage input  |
| 100     | AVSS3     | —   | Ground terminal (analog)  |

## • IC201 LC89587-UK1-E CD DEC/ENC (CDR Board)

| Pin No.  | Pin Name     | I/O | Description  |
|----------|--------------|-----|--|
| 1        | DVSS         | —   | Ground terminal (digital)  |
| 2 to 6   | RA4 to RA8   | O   | Address signal output to the buffer RAM for audio data delay                 |
| 7        | RA9          | O   | Address signal output to the buffer RAM for audio data delay Not used (open) |
| 8        | DVDD         | —   | Power supply +3.3V (DRAM I/F)  |
| 9        | DVSS         | —   | Ground terminal (digital)  |
| 10 to 15 | IO0 to IO5   | I/O | Data input/output to the buffer RAM for audio data delay                     |
| 16       | DVDD         | —   | Power supply +3.3V (digital)   |
| 17       | DVSS         | —   | Ground terminal (digital)  |
| 18 to 21 | IO6 to IO9   | I/O | Data input/output to the buffer RAM for audio data delay                     |
| 22       | DVDD         | —   | Power supply +3.3V (DRAM I/F)  |
| 23       | DVSS         | —   | Ground terminal (digital)  |
| 24 to 29 | IO10 to IO15 | I/O | Data input/output to the buffer RAM for audio data delay                     |
| 30       | MON1         | O   | Monitor output EFMG signal   |
| 31       | MON2         | O   | Monitor output ATIPCRC/PCK/DATA signal (open)                                |
| 32       | MON3         | O   | Monitor output CDETR/CK2 signal  |
| 33       | MON4         | O   | Monitor output EMP/LRCK signal (open)  |
| 34       | DVDD         | —   | Power supply +5V (digital)   |
| 35       | DVSS         | —   | Ground terminal (digital)  |
| 36       | TEST0        | I/O | ENCERR signal output (pull-up)   |
| 37       | TEST1        | I/O | TESTOUT signal output (pull-up)  |
| 38       | TEST2        | I/O | TESTIN signal input (ground)   |
| 39       | WRITE        | I   | Write strategy signal control terminal                                       |
| 40       | SSP2         | O   | Servo sampling pulse output  |
| 41       | SSP1         | O   | Servo sampling pulse output  |
| 42       | RAPC/C2F     | O   | Laser sampling pulse output  |
| 43       | WAPC         | O   | Laser sampling pulse output  |
| 44       | H11TO/FSQ    | O   | Running OPC sampling pulse output  |
| 45       | LDH/WRQ      | O   | LD control signal output for recording Not used (open)                       |
| 46       | ATEST3       | O   | Analog block test signal output (WE2)  |
| 47       | ATEST1       | O   | Analog block test signal output Not used (open)                              |
| 48       | WDAT         | O   | LD control signal output for recording                                       |
| 49       | NWDAT        | O   | LD control signal output for recording                                       |
| 50       | DVDD         | —   | Power supply +5V (digital)   |
| 51       | DVSS         | —   | Ground terminal (digital)  |
| 52       | AVDD         | —   | Power supply 3.3V (analog) for the write strategy                            |
| 53       | AVSS         | —   | Ground terminal (analog)   |
| 54       | R1           | I   | Analog terminal for the write strategy (fixed at "H")                        |
| 55       | VCNT1        | I   | Analog terminal for the write strategy                                       |
| 56       | DCNT1        | I   | Analog terminal for the write strategy Not used (open)                       |
| 57       | PD1          | O   | Analog terminal for the write strategy                                       |
| 58       | ZINT         | O   | Interrupt request signal output to the $\mu$ com (IC501)                     |
| 59 to 66 | D0 to D7     | I/O | Data input/output with the $\mu$ com (IC501)                                 |
| 67       | SRSTNBY      | I   | Back up control terminal for CD-TEXT SRAM                                    |
| 68       | AVDD         | —   | Power supply +3.3V (analog) for CD-TEXT SRAM                                 |
| 69       | AVSS         | —   | Ground terminal (analog)   |
| 70 to 77 | SUA0 to SUA7 | I   | Command register selection address signal input                              |
| 78       | ZRD          | I   | Data read out signal input from the $\mu$ com (IC501)                        |
| 79       | ZCS          | I   | Chip select signal input from the $\mu$ com (IC501)                          |
| 80       | ZWR          | I   | Data write signal input from the $\mu$ com (IC501)                           |
| 81       | ZRESET       | I   | Reset signal input   |

| Pin No.    | Pin Name         | I/O | Description  |
|------------|------------------|-----|--|
| 82         | DVDD             | —   | Power supply +5V (digital)   |
| 83         | DVSS             | —   | Ground terminal (digital)  |
| 84         | DVDD             | —   | Power supply +3.3V (digital)   |
| 85         | DVSS             | —   | Ground terminal (digital)  |
| 86         | AVDD             | —   | Power supply +3.3V (analog) for slice level setting                  |
| 87         | AVSS             | —   | Ground terminal (analog)   |
| 88, 89     | SLCIST1, SLCIST2 | I   | EFM slice level setting signal input                                 |
| 90 to 93   | SLCO0 to SLCO3   | O   | EFM slice level output   |
| 94         | EFMIN            | I   | EFM signal input   |
| 95         | EFMIN2           | I   | EFM signal input Not used (open)                                     |
| 96         | DSL B            | O   | PWM signal output for SLC Not used (open)                            |
| 97         | JITIN            | I   | Jitter judgement input   |
| 98         | JITC             | O   | Jitter output  |
| 99         | RPO              | O   | P/N balance adjustment terminal                                      |
| 100        | OPP              | I   | P/N balance adjustment terminal                                      |
| 101        | PCKISTF          | I   | Charge pump terminal for the frequency comparison                    |
| 102        | PCKISTP          | I   | Charge pump terminal for the phase comparison                        |
| 103        | PD0              | O   | Filter for the charge pump   |
| 104        | AVDD             | —   | Power supply +3.3V (analog) for the charge pump                      |
| 105        | AVSS             | —   | Ground terminal (analog)   |
| 106 to 108 | PDS1 to PDS3     | O   | Charge pump selection terminal Not used (open)                       |
| 109        | FR               | I   | VCO frequency setting input terminal                                 |
| 110        | AD0              | I   | AD input   |
| 111        | RREC             | I   | FOK signal input for optical judgement                               |
| 112        | FE               | I   | Focus error signal input   |
| 113        | TE               | I   | Tracking error signal input  |
| 114        | VREF             | I   | Servo system reference voltage input                                 |
| 115        | AD1              | I   | AD input   |
| 116        | AVDD             | —   | Power supply +5V (analog) for the servo block AD/DA                  |
| 117        | AVSS             | —   | Ground terminal (analog)   |
| 118, 119   | DA0, DA1         | O   | DA output Not used (open)  |
| 120        | DVDD             | —   | Power supply +3.3V (digital)   |
| 121        | DVSS             | —   | Ground terminal (digital)  |
| 122        | DA2              | O   | DA output  |
| 123        | TDO              | O   | Tracking signal output   |
| 124        | FDO              | O   | Focus signal output  |
| 125        | SLDO             | O   | Sled signal output   |
| 126        | SPDO             | O   | Spindle signal output  |
| 127        | SUBSYNC          | O   | Sub-code sync signal output  |
| 128        | ZRFDET           | I   | Judgement signal input for the existence of RF signal (fixed at "H") |
| 129        | SHOCK            | O   | Shock detection signal output Not used (open)                        |
| 130        | LOCK             | O   | PLL lock status signal output Not used (open)                        |
| 131        | DEF              | I   | Defect detection signal input  |
| 132        | HFL(MIRR)        | I   | MIRR detection signal input  |
| 133        | TES              | I   | Tracking zero cross signal input                                     |
| 134        | EFMO             | O   | EFM signal output after formation of 2 values (open)                 |
| 135        | LDON             | O   | Laser control signal output for play back                            |
| 136        | FG               | I   | Rotation monitor signal input from the spindle motor driver          |
| 137        | PCK2             | O   | Bit clock output for EFM playback                                    |
| 138        | DVDD             | —   | Power supply +5V (digital)   |

| Pin No.  | Pin Name   | I/O | Description   |
|----------|------------|-----|---|
| 139      | DVSS       | —   | Ground terminal (digital)                                   |
| 140      | ATIPSYNC   | O   | ATIP sync signal output                                     |
| 141      | BIDATA     | I/O | ATIP demodulator input/output (fixed at “L”)                |
| 142      | BICLK      | I/O | ATIP demodulator input/output (fixed at “L”)                |
| 143      | WOBBLE     | I   | ATIP demodulator input/output                               |
| 144      | JITERR     | O   | Clock jitter suppressor error signal output Not used (open) |
| 145      | JITPCO     | O   | PLL phase frequency comparator output                       |
| 146      | JITLPFI    | I   | PLL low-pass filter input terminal                          |
| 147      | JITLPFO    | O   | PLL low-pass filter output terminal                         |
| 148      | JITVCOIN   | I   | PLL, VCO clock input terminal                               |
| 149      | AVSS       | —   | Ground terminal (analog)                                    |
| 150      | AVDD       | —   | Power supply +3.3V (analog) for the clock jitter suppressor |
| 151      | DIRRS      | I   | VCO gain control signal input                               |
| 152      | DIRVCO     | I   | VCO free running oscillation frequency control signal input |
| 153      | DIRLPF     | O   | Loop filter setting terminal                                |
| 154      | AVDD       | —   | Power supply +3.3V (analog) for the DIR                     |
| 155      | AVSS       | —   | Ground terminal (analog)                                    |
| 156      | DVDD       | —   | Power supply +5V (digital)                                  |
| 157      | DVSS       | —   | Ground terminal (digital)                                   |
| 158      | DIRERR     | O   | PLL lock data error output                                  |
| 159      | DIN1       | I   | Digital data input from the IC500                           |
| 160      | DIN2       | I   | Digital data input from the IC101                           |
| 161, 162 | DIN3, DIN4 | I   | Digital data input Not used (open)                          |
| 163      | DACCKOUT   | O   | DAC clock output Not used (open)                            |
| 164      | ENCCKOUT   | O   | RF processor clock output Not used (open)                   |
| 165      | CDCKOUT    | O   | CD decoder clock output Not used (open)                     |
| 166      | AUXMCKIN   | I   | External clock input (fixed at “L”)                         |
| 167      | XTALCK     | I   | Crystal oscillation circuit input                           |
| 168      | XTAL       | O   | Crystal oscillation circuit output                          |
| 169      | PDO0       | O   | Charge pump output  |
| 170      | VCNT0      | I   | VCO control voltage input                                   |
| 171      | R0         | I   | VCO bias resistor terminal                                  |
| 172      | AVDD       | —   | Power supply +3.3V (analog) for the clock                   |
| 173      | AVSS       | —   | Ground terminal (analog)                                    |
| 174      | TEST4      | I/O | ADCKOUT clock output  |
| 175      | ROUT       | O   | DAC output Not used (open)                                  |
| 176      | AVDD       | —   | Power supply +5V (analog) for the internal DAC              |
| 177      | AVSS       | —   | Ground terminal (analog)                                    |
| 178      | LOUT       | O   | DAC output Not used (open)                                  |
| 179      | DACDATA    | O   | DAC serial data output Not used (open)                      |
| 180      | DACLCK     | O   | DAC LRCK output Not used (open)                             |
| 181      | DACBCK     | O   | DAC BCK output Not used (open)                              |
| 182      | DVDD       | —   | Power supply +3.3V (digital)                                |
| 183      | DVSS       | —   | Ground terminal (digital)                                   |
| 184      | ADCDATA    | I   | ADC serial data input Not used (fixed at “L”)               |
| 185      | ADCBCK     | O   | ADC BCK output Not used (open)                              |
| 186      | ADCLRCK    | O   | ADC LRCK output Not used (open)                             |
| 187      | AUXDATA    | I   | External serial data input Not used (open)                  |
| 188      | AUXBCK     | I   | External BCK input Not used (fixed at “L”)                  |
| 189      | AUXLRCK    | I   | External LRCK input Not used (fixed at “L”)                 |

| Pin No.    | Pin Name   | I/O | Description  |
|------------|------------|-----|--|
| 190        | DVDD       | —   | Power supply +5V (digital)   |
| 191        | DVSS       | —   | Ground terminal (digital)  |
| 192        | ADCSTBY    | O   | ADC standby signal output  |
| 193        | AUXTX      | I   | DIT data input Not used (fixed at “L”)                                     |
| 194        | DITOUT     | O   | DIT data output  |
| 195        | TEST3      | I/O | Used as EXTDACEMP input (fixed at “L”)                                     |
| 196        | SBDATA     | I/O | Sub-code I/F serial data input/output (fixed at “L”)                       |
| 197        | CLCK       | I/O | Sub-code I/F data shift clock input/output (fixed at “L”)                  |
| 198        | SFSY       | I/O | Sub-code I/F frame sync signal input/output (fixed at “L”)                 |
| 199        | SBSY       | I/O | Sub-code I/F block sync signal input/output (fixed at “L”)                 |
| 200        | ZRAS       | O   | Row address strobe signal output to the buffer RAM for audio data delay    |
| 201        | ZCAS       | O   | Column address strobe signal output to the buffer RAM for audio data delay |
| 202        | ZWE        | O   | Write enable signal output to the buffer RAM for audio data delay          |
| 203        | ZOE        | O   | Read enable signal output to the buffer RAM for audio data delay           |
| 204 to 207 | RA0 to RA3 | O   | Address signal output to the buffer RAM for audio data delay               |
| 208        | DVDD       | —   | Power supply +3.3V (DRAM I/F)  |

• IC501 HD64F3064BFBL25  $\mu$ COM (CDR Board)

| Pin No.  | Pin Name     | I/O | Description  |
|----------|--------------|-----|--|
| 1        | VCL          | —   | Capacitor connection terminal for the internal power supply                          |
| 2        | XCSCDR       | O   | Chip select signal output to the IC201   |
| 3 to 5   | NU           | —   | Not used (fixed at "H")  |
| 6        | XRSTRFP      | O   | Register reset signal output to the IC101  |
| 7        | XREQI        | I   | Data request signal from the IC1   |
| 8        | XRDYO        | O   | Data ready signal to the IC1   |
| 9        | XRSTCDR      | O   | Reset signal to the IC201  |
| 10       | FWE          | I   | Flash memory write enable signal input   |
| 11       | VSS          | —   | Ground terminal  |
| 12       | SDATAO       | O   | Serial data output to the IC101 and IC502  |
| 13       | SDATAO(HOST) | O   | Serial data output to the IC1  |
| 14       | SDATAI(PROM) | I   | Serial data input from the IC502   |
| 15       | SDATAI(HOST) | I   | Serial data input from the IC1   |
| 16       | SCLKO        | O   | Clock output to the IC101 and IC502  |
| 17       | SUB_SYNC     | I   | Sub-code sync signal input from the IC201  |
| 18       | RSBETA       | O   | $\beta$ measurement circuit reset signal output                                      |
| 19, 20   | NU           | —   | Not used (fixed at "H")  |
| 21       | MIRR/XRC     | O   | MIRR or RC selection signal output   |
| 22       | VSS          | —   | Ground terminal  |
| 23       | AGCON        | O   | AGC enable signal output to the IC101  |
| 24       | XRW/R        | O   | CD-RW selection signal output to the IC101   |
| 25       | VRDSW        | O   | Read laser driver time constant selection switch control signal output to the IC101  |
| 26       | VWDSW        | O   | Write laser driver time constant selection switch control signal output to the IC101 |
| 27 to 34 | D8 to D15    | I/O | Data bus with the IC201  |
| 35       | VCC          | —   | Power supply (+5V)   |
| 36 to 43 | A0 to A7     | O   | Command register selection address signal output to the IC201                        |
| 44       | VSS          | —   | Ground terminal  |
| 45 to 56 | A8 to A19    | O   | Not used (fixed at "H")  |
| 57       | VSS          | —   | Ground terminal  |
| 58       | NU           | —   | Not used terminal  |
| 59       | CS           | O   | Chip select signal output to the IC502   |
| 60       | XLAT         | O   | Data latch signal output to the IC101  |
| 61       | ATIPSYNC     | I   | ATIP SYNC signal input from the IC201  |
| 62       | XSTBY        | I   | Not used (fixed at "H")  |
| 63       | XREST        | I   | System reset signal input  |
| 64       | XP.DOWN      | I   | Not used   |
| 65       | VSS          | —   | Ground terminal  |
| 66       | EXTAL        | I   | Ceramic resonator connection terminal  |
| 67       | XTAL         | I   | Ceramic resonator connection terminal  |
| 68       | VCC          | —   | Power supply (+5V)   |
| 69       | XAS          | O   | Not used   |
| 70       | XRD          | O   | Data read signal output to the IC201   |
| 71       | XHWR         | O   | Data write signal output to the IC201  |
| 72       | XLWR         | O   | Not used   |
| 73       | MD0(H)       | I   | Mode selector (fixed at "H")   |
| 74       | MD1(L)       | I   | Mode selector (fixed at "L")   |
| 75       | MD2          | I   | Mode selector (normally fixed at "H")  |
| 76       | AVCC         | —   | Power supply (+5V) for the A/D converter   |
| 77       | AVREF        | —   | Reference voltage for the A/D converter  |
| 78       | KEY          | I   | Key scan signal input  |



| Pin No. | Pin Name | I/O | Description   |
|---------|----------|-----|---|
| 79      | BCENT    | I   | Center signal input from the IC101                        |
| 80      | PHBETA   | I   | $\beta$ signal top level signal input from the IC101      |
| 81      | BHBETA   | I   | $\beta$ signal bottom level signal input from the IC101   |
| 82      | VREF     | I   | Reference voltage input terminal                          |
| 83      | MPX      | I   | Monitor multiplexer signal input from the IC101           |
| 84      | TMP      | I   | THERMOUT signal input                                     |
| 85      | VWDC2    | O   | VWDC2 signal output to the optical pick-up                |
| 86      | AVSS     | —   | Ground terminal for the A/D converter                     |
| 87      | XINTCDR  | I   | Interrupt request signal input from the IC201             |
| 88      | RECD     | I   | Recorded block detection signal input from the IC101      |
| 89      | XTAND    | I   | Tracking failure detection signal input from the IC101    |
| 90      | SPFG     | I   | Not used  |
| 91      | XIN/EXT  | I   | RS-232C "H" detection signal input                        |
| 92      | VSS      | —   | Ground terminal   |
| 93      | SLFG     | I   | ENCOUT signal input                                       |
| 94      | TZC      | I   | Tracking zero cross detection signal input from the IC101 |
| 95      | SPFG     | I   | FG signal input from the motor driver (IC172)             |
| 96      | XMMUTE   | O   | Muting signal output to the IC171 and IC172               |
| 97      | INSW     | I   | LOAD IN switch (S170) signal input                        |
| 98      | OUTSW    | I   | LOAD OUT switch (S171) signal input                       |
| 99      | REV      | O   | Loading motor control signal output to the IC171          |
| 100     | FWD      | O   | Loading motor control signal output to the IC171          |

## SECTION 7 EXPLODED VIEWS

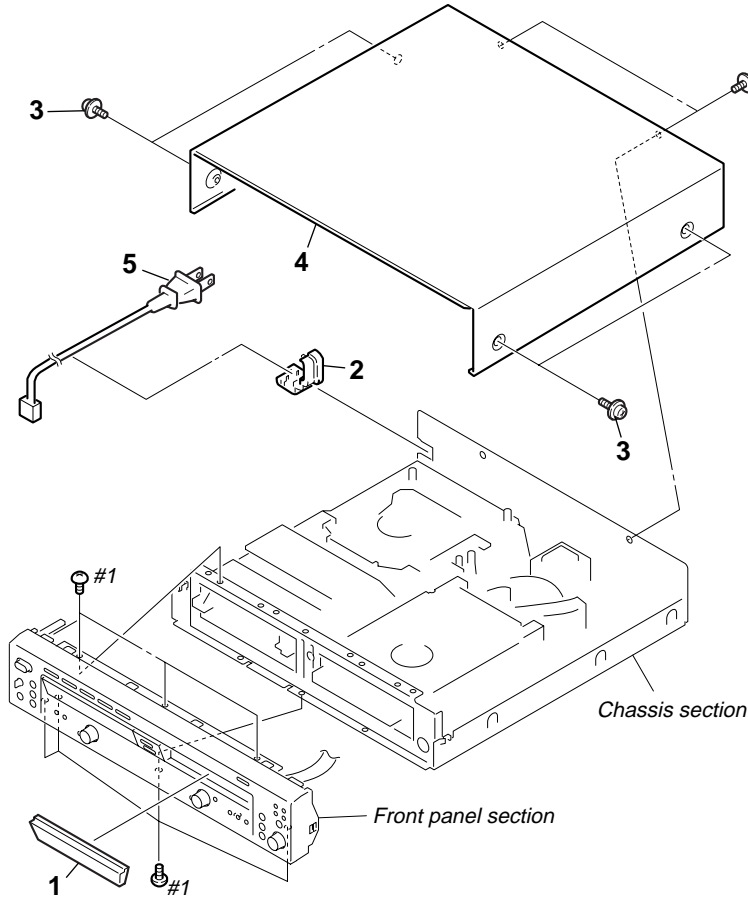
**NOTE:**

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of this parts list.
- Abbreviation  
CND : Canadian model

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

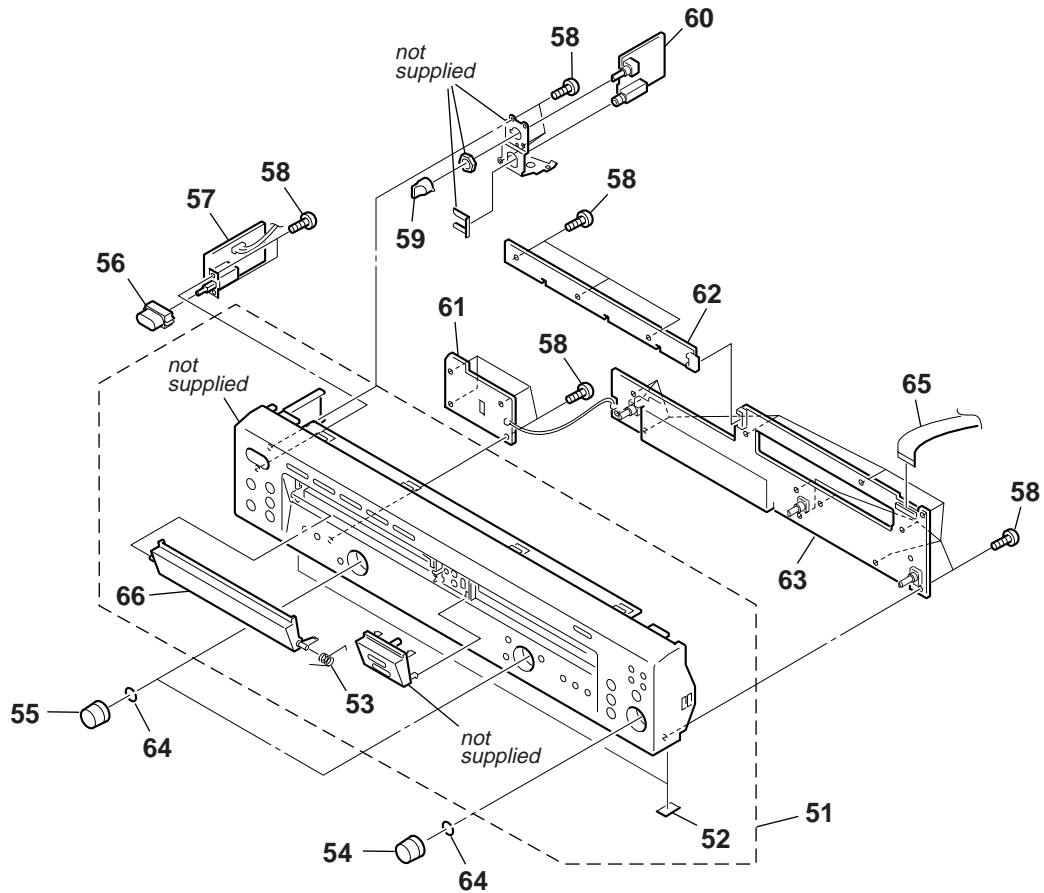
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**7-1. Case Section**



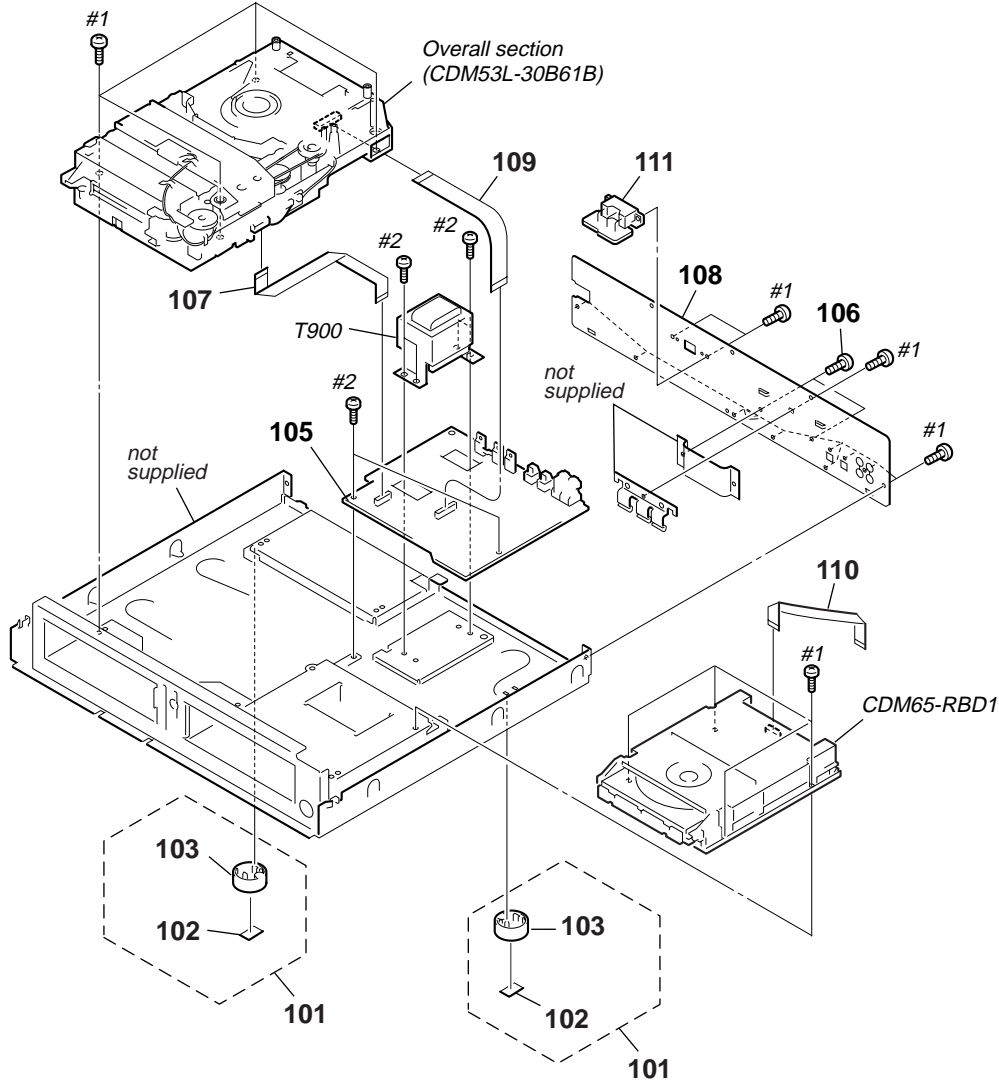
| Ref. No. | Part No.     | Description                   | Remarks | Ref. No.      | Part No.     | Description                 | Remarks |
|----------|--------------|-------------------------------|---------|---------------|--------------|-----------------------------|---------|
| 1        | 4-238-393-01 | PANEL (CDR), LOADING          |         | 4             | 4-231-686-11 | CASE (409538)               |         |
| 2        | 3-703-571-11 | BUSHING (S) (4516), CORD (E)  |         | $\triangle$ 5 | 1-783-525-21 | CORD, POWER (TRACKING) (E)  |         |
| * 2      | 3-703-244-00 | BUSHING (2104), CORD (US,CND) |         | $\triangle$ 5 | 1-783-531-31 | CORD, POWER (US,CND)        |         |
| 3        | 4-210-291-01 | SCREW (CASE 3 TP2)            |         | #1            | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 TT(B) |         |

7-2. Front Panel Section



| Ref. No. | Part No.     | Description                | Remarks | Ref. No. | Part No.     | Description                      | Remarks |
|----------|--------------|----------------------------|---------|----------|--------------|----------------------------------|---------|
| 51       | X-4954-476-1 | PANEL ASSY, FRONT (US,CND) |         | 59       | 3-931-378-51 | KNOB (F10)                       |         |
| 51       | X-4954-477-1 | PANEL ASSY, FRONT (E)      |         | 60       | 1-683-868-11 | HP BOARD                         |         |
| 52       | 4-977-358-11 | CUSHION                    |         | 61       | 1-683-867-11 | CD-SW BOARD                      |         |
| 53       | 4-241-393-01 | SPRING, TORSION            |         | 62       | 1-683-872-11 | LED BOARD                        |         |
| 54       | 4-238-396-11 | KNOB (AMS)                 |         | 63       | A-4727-910-A | DISPLAY BOARD, COMPLETE (US,CND) |         |
| 55       | 4-238-396-01 | KNOB (AMS)                 |         | 63       | A-4727-916-A | DISPLAY BOARD, COMPLETE (E)      |         |
| 56       | 4-231-973-01 | BUTTON (POWER)             |         | 64       | 3-354-981-11 | SPRING (SUS), RING               |         |
| 57       | 1-683-869-11 | POWER-SW BOARD             |         | 65       | 1-823-923-11 | WIRE (FLAT TYPE)(21 CORE)        |         |
| 58       | 4-951-620-01 | SCREW (2.6X8), +BVTP       |         | 66       | 4-238-392-01 | LID (5 CD)                       |         |

7-3. Chassis Section

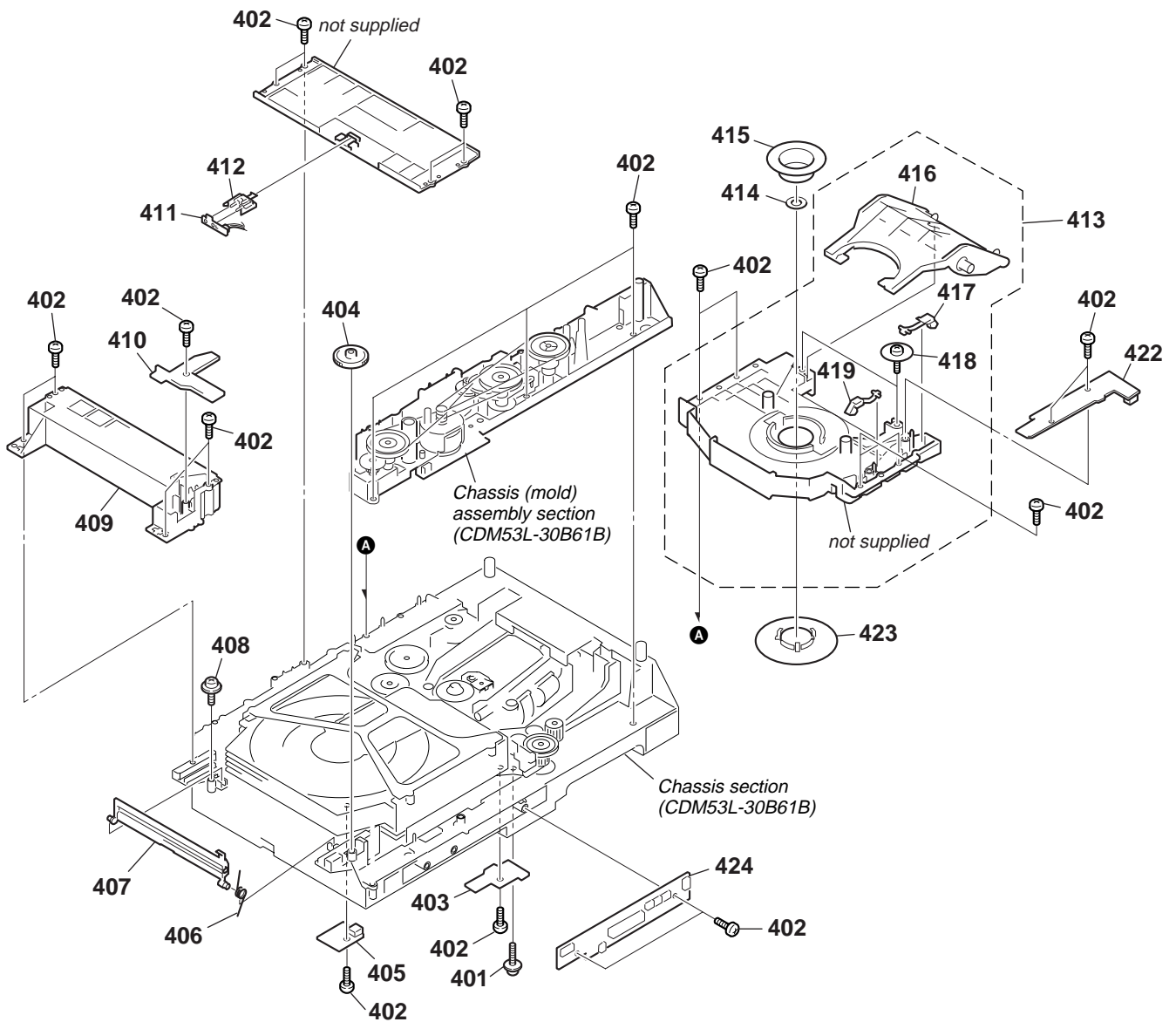


| Ref. No. | Part No.     | Description                   | Remarks |
|----------|--------------|-------------------------------|---------|
| 101      | X-4953-448-1 | FOOT ASSY                     |         |
| 102      | 4-977-358-11 | CUSHION                       |         |
| 103      | 4-232-237-01 | FOOT (DIA. 30)                |         |
| 105      | A-4727-907-A | MAIN BOARD, COMPLETE (US,CND) |         |
| 105      | A-4727-914-A | MAIN BOARD, COMPLETE (E)      |         |
| 106      | 3-703-249-01 | SCREW, S TIGHT, +PTTWH 3X6    |         |
| 107      | 1-823-925-11 | WIRE (FLAT TYPE)(17 CORE)     |         |
| 108      | 4-238-401-01 | PANEL, BACK (US)              |         |
| 108      | 4-238-401-11 | PANEL, BACK (CND)             |         |

| Ref. No. | Part No.     | Description                 | Remarks |
|----------|--------------|-----------------------------|---------|
| 108      | 4-238-401-31 | PANEL, BACK (E)             |         |
| 109      | 1-823-924-11 | WIRE (FLAT TYPE)(23 CORE)   |         |
| 110      | 1-823-922-11 | WIRE (FLAT TYPE)(11 CORE)   |         |
| 111      | A-4727-920-A | VOL-SEL BOARD               |         |
| △ T900   | 1-437-623-11 | TRANSFORMER, POWER (US,CND) |         |
| △ T900   | 1-437-624-11 | TRANSFORMER, POWER (E)      |         |
| #1       | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 TT(B) |         |
| #2       | 7-685-871-01 | SCREW +BVTT 3X6 (S)         |         |

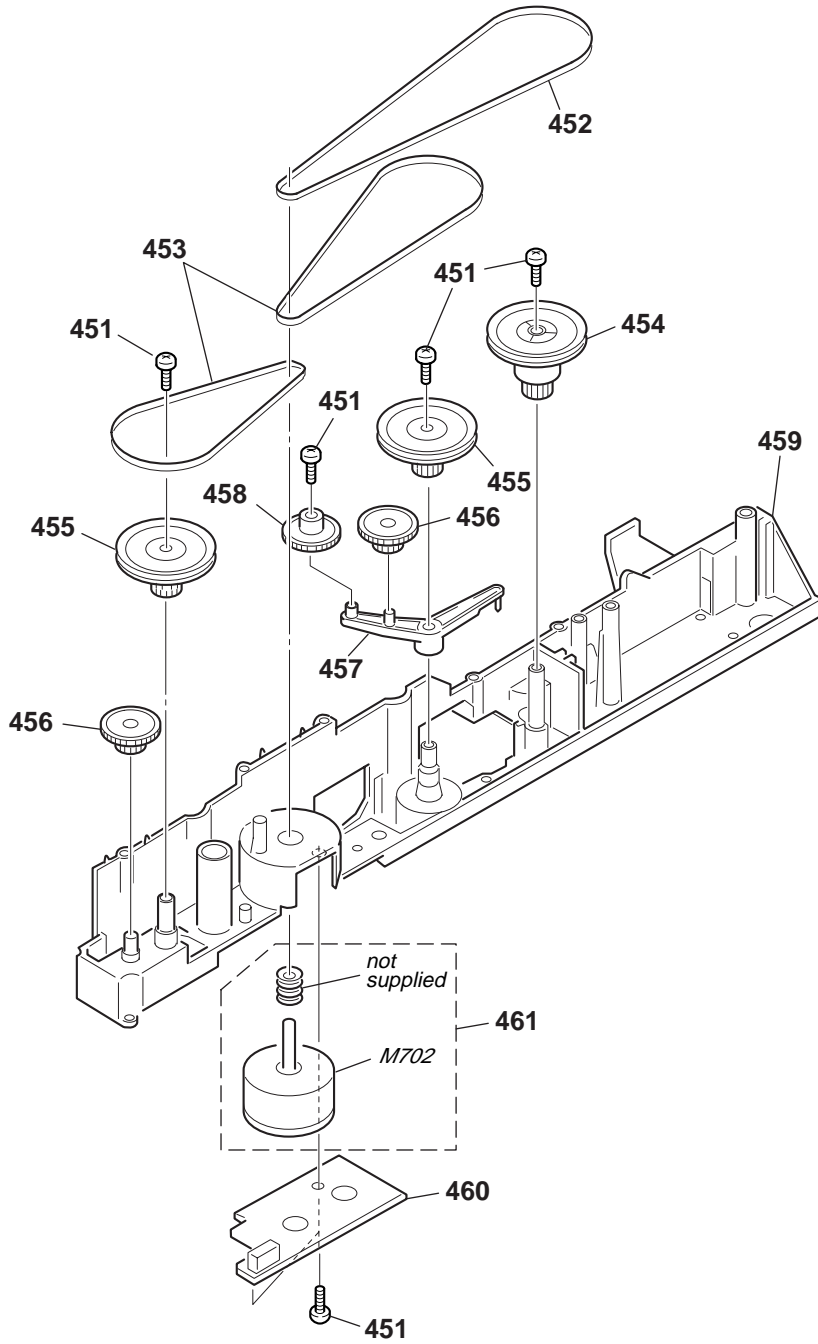
|   |   |
|---|---|
| <p>The components identified by mark <math>\Delta</math> or dotted line with mark <math>\Delta</math> are critical for safety. Replace only with part number specified.</p> | <p>Les composants identifiés par une marque <math>\Delta</math> sont critiques pour la sécurité. Ne les remplacer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

7-4. Overall Section (CDM53L-30B61B)



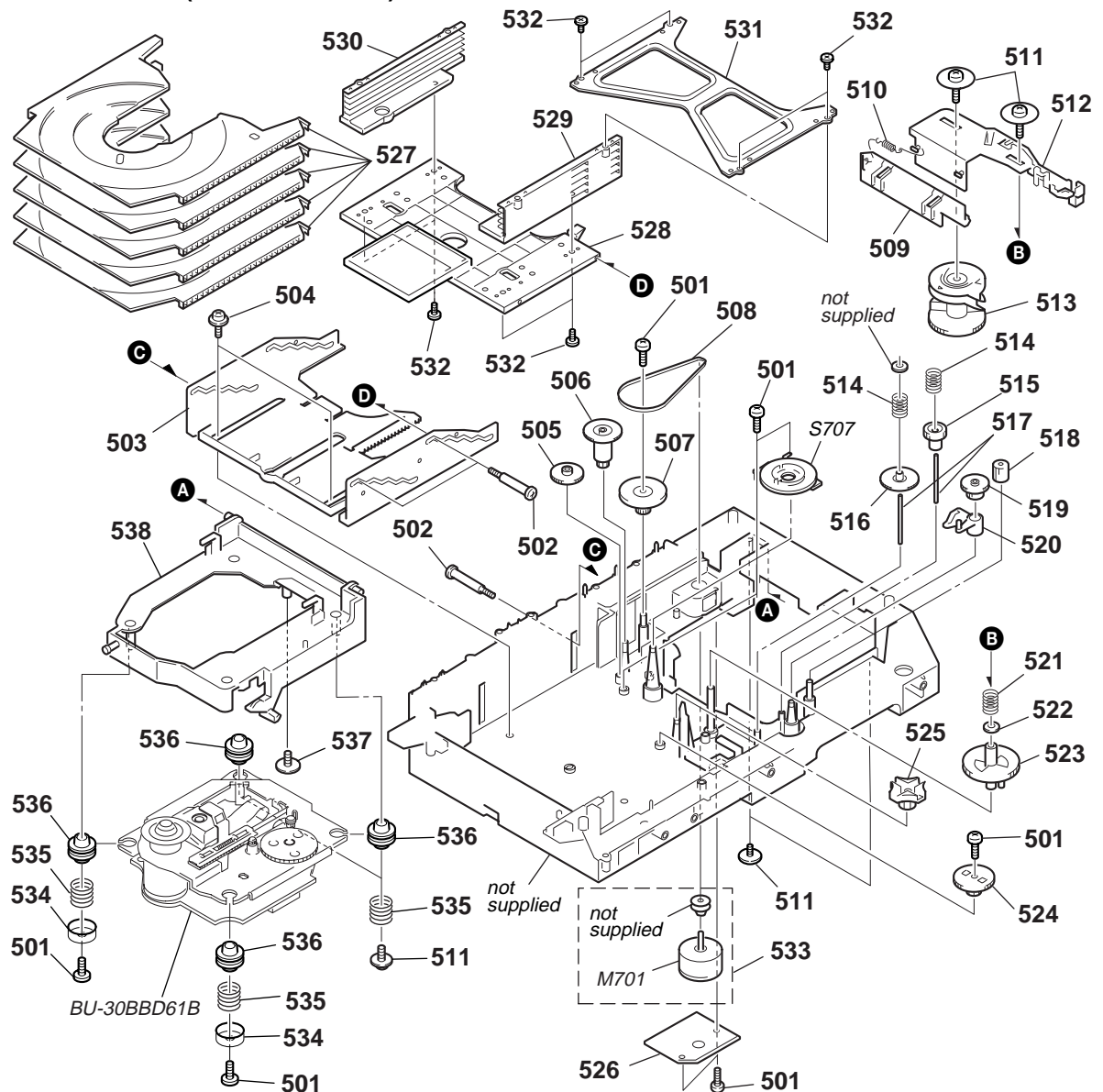
| Ref. No. | Part No.     | Description                    | Remarks | Ref. No. | Part No.     | Description                   | Remarks |
|----------|--------------|--------------------------------|---------|----------|--------------|-------------------------------|---------|
| 401      | 3-341-549-01 | SCREW(2.6X12)(DIA.7.5),+PTP WH |         | 412      | 4-964-461-02 | HOLDER (SENSOR)               |         |
| 402      | 4-218-253-11 | SCREW (M2.6), +BTTP            |         | 413      | A-4746-928-A | BASE (MAGNET) ASSY, FITTING   |         |
| 403      | 1-675-724-11 | INIT/COUNT SW BOARD            |         | 414      | 4-228-414-01 | BRACKET (YOKE)                |         |
| 404      | 4-211-215-01 | GEAR (EJECT)                   |         | 415      | 4-227-513-01 | PULLEY (4SB)                  |         |
| 405      | 1-675-726-11 | SENSOR BOARD                   |         | 416      | 4-222-783-01 | LEVER (LIFTER)                |         |
| 406      | 4-212-676-01 | SPRING (LID), TORSION          |         | 417      | 4-221-530-01 | LEVER (DETECTION C)           |         |
| 407      | 4-221-532-11 | LID (DISC)                     |         | 418      | 4-985-672-01 | SCREW (+PTPWH M2.6), FLOATING |         |
| 408      | 4-933-134-01 | SCREW (M2.6), +PTPWH           |         | 419      | 4-221-528-01 | LEVER (DETECTION A)           |         |
| 409      | A-4672-909-C | BASE (GUIDE) ASSY, FITTING     |         | 422      | 1-675-723-11 | IN SW BOARD                   |         |
| 410      | 1-675-725-11 | OUT SW BOARD                   |         | 423      | X-4952-916-1 | PULLEY (FK) ASSY, CHUCKING    |         |
| 411      | 1-675-727-11 | SENSOR 2 BOARD                 |         | 424      | 1-675-722-11 | CONNECTOR BOARD               |         |

7-5. Chassis (Mold) Assembly Section (CDM53L-30B61B)



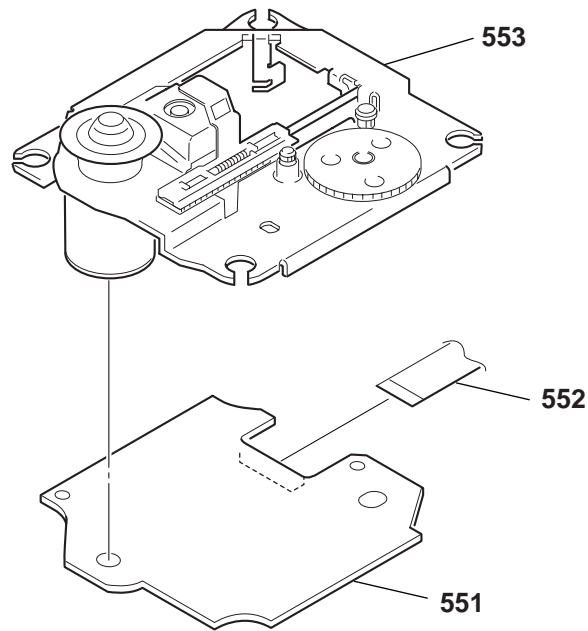
| Ref. No. | Part No.     | Description            | Remarks | Ref. No. | Part No.     | Description          | Remarks |
|----------|--------------|------------------------|---------|----------|--------------|----------------------|---------|
| 451      | 4-218-253-11 | SCREW (M2.6), +BTPP    |         | 457      | 4-211-228-01 | LEVER (GOOSENECK)    |         |
| 452      | 4-211-235-01 | BELT (COMMUNICATION)   |         | 458      | 4-214-130-01 | GEAR (TRAY)          |         |
| 453      | 4-241-745-01 | BELT (LOADING 1)       |         | 459      | 4-221-505-11 | CHASSIS (MOLD B)     |         |
| 454      | 4-211-231-01 | PULLEY (MODE)          |         | 460      | 1-675-728-11 | LOAD MOTOR BOARD     |         |
| 455      | 4-211-214-01 | PULLEY (LD)            |         | 461      | X-4950-342-1 | MOTOR (LOADING) ASSY |         |
| 456      | 4-211-232-01 | GEAR (LD DECELERATION) |         | M702     | 1-763-790-11 | MOTOR, DC (LOADING)  |         |

7-6. Chassis Section (CDM53L-30B61B)



| Ref. No. | Part No.     | Description                   | Remarks | Ref. No. | Part No.     | Description                | Remarks |
|----------|--------------|-------------------------------|---------|----------|--------------|----------------------------|---------|
| 501      | 4-218-253-11 | SCREW (M2.6), +BTTP           |         | 521      | 4-216-879-01 | SPRING (GEAR), COMPRESSION |         |
| 502      | 4-211-244-01 | SCREW, STEP                   |         | 522      | 3-701-446-21 | WASHER                     |         |
| 503      | 4-211-223-01 | SLIDER (U/D)                  |         | 523      | 4-211-218-01 | GEAR (GEAR A)              |         |
| 504      | 4-933-134-01 | SCREW (M2.6), +PTPWH          |         | 524      | 4-211-220-01 | GEAR (U/D SLIDER)          |         |
| 505      | 4-211-215-01 | GEAR (EJECT)                  |         | 525      | 4-211-219-01 | GEAR (GEAR B)              |         |
| 506      | 4-211-232-01 | GEAR (MODE DECELERATION)      |         | 526      | 1-675-729-11 | CLAMP MOTOR BOARD          |         |
| 507      | 4-211-214-01 | PULLEY (LD)                   |         | 527      | 4-211-212-51 | TRAY (SUB)                 |         |
| 508      | 4-211-237-01 | BELT (MODE)                   |         | 528      | 4-221-504-01 | BASE (STOCKER), FITTING    |         |
| 509      | 4-212-677-01 | SLIDER (SHUTTER)              |         | 529      | 4-211-211-01 | STOCKER (R)                |         |
| 510      | 4-212-678-01 | SPRING (SHUTTER), TENSION     |         | 530      | 4-211-210-01 | STOCKER (L)                |         |
| 511      | 4-985-672-01 | SCREW (+PTPWH M2.6), FLOATING |         | 531      | 4-211-234-01 | BRACKET (STOCKER T)        |         |
| 512      | 4-211-233-01 | SLIDER (SELECTION)            |         | 532      | 4-218-253-21 | SCREW (M2.6), +BTTP        |         |
| 513      | 4-211-230-01 | GEAR (CHUCKING)               |         | 533      | X-4950-341-1 | MOTOR (CLAMP) ASSY         |         |
| 514      | 4-211-245-01 | SPRING, COMPRESSION           |         | 534      | 4-231-151-01 | STOPPER (BU)               |         |
| 515      | 4-211-221-01 | GEAR (LD MOVABLE)             |         | 535      | 4-227-045-11 | SPRING (INSULATOR), COIL   |         |
| 516      | 4-211-217-01 | GEAR (SELECTION)              |         | 536      | 4-240-820-01 | INSULATOR (B)(BU-30B)      |         |
| 517      | 4-211-242-11 | SHAFT (SELECTION GEAR)        |         | 537      | 4-227-899-01 | SCREW (DIA.12), FROATING   |         |
| 518      | 4-211-240-01 | GEAR (LD DECELERATION B)      |         | 538      | X-4954-297-2 | HOLDER (BU30) ASSY         |         |
| 519      | 4-211-216-01 | GEAR (RELAY)                  |         | M701     | 1-763-790-11 | MOTOR, DC (ELEVATOR)       |         |
| 520      | 4-211-241-01 | LEVER (SELECTION)             |         | S707     | 1-418-045-01 | ENCODER, ROTARY            |         |

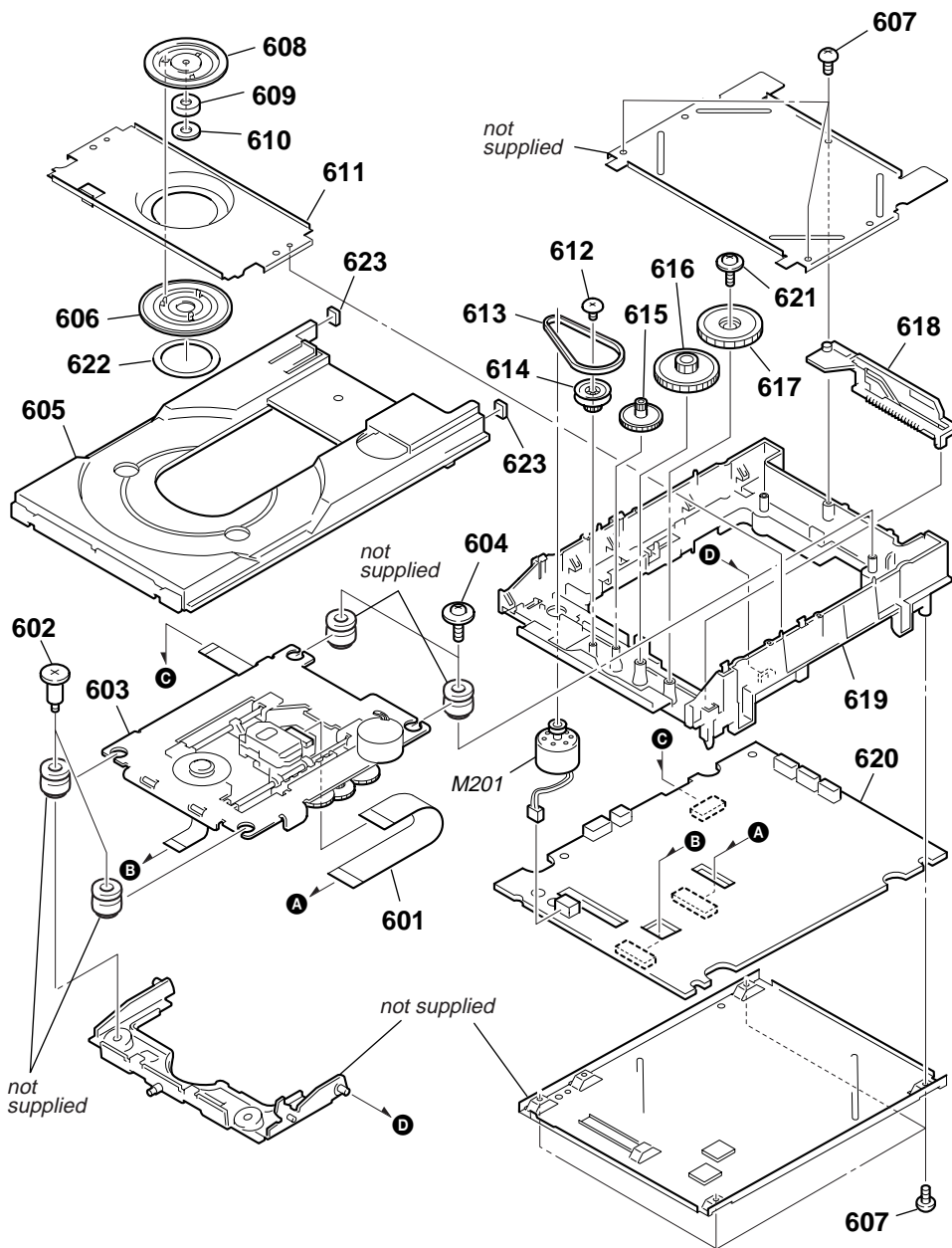
7-7. Optical Block Section



| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>        | <u>Remarks</u> | <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remarks</u> |
|-----------------|-----------------|---------------------------|----------------|-----------------|-----------------|--------------------|----------------|
| 551             | A-4727-463-A    | BD BOARD, COMPLETE        |                | 553             | A-4735-885-A    | BU-30B ASSY        |                |
| 552             | 1-782-817-11    | WIRE (FLAT TYPE)(16 CORE) |                |                 |                 |                    |                |



7-8. CDM65-RBD1



| Ref. No. | Part No.     | Description                    | Remarks | Ref. No. | Part No.     | Description                    | Remarks |
|----------|--------------|--------------------------------|---------|----------|--------------|--------------------------------|---------|
| 601      | 1-823-651-11 | CABLE, FLEXIBLE FLAT (32 CORE) |         | 615      | 4-237-177-01 | GEAR (A)                       |         |
| 602      | 4-237-168-01 | SCREW, STEP                    |         | 616      | 4-237-178-02 | GEAR (B)                       |         |
| △ 603    | 8-583-104-01 | OPTICAL PICK-UP (KRM-220CAA)   |         | 617      | 4-237-179-02 | GEAR (C)                       |         |
| 604      | 4-237-167-01 | SCREW (2X9) (G WITH),+P TAPPIN |         | 618      | 4-237-180-01 | CAM (CH)                       |         |
| 605      | 4-237-181-01 | TRAY                           |         | 619      | 4-237-182-01 | CHASSIS                        |         |
| 606      | 4-237-174-01 | PULLEY (MAG)                   |         | 620      | A-4727-459-A | CDR BOARD, COMPLETE            |         |
| 607      | 4-951-620-01 | SCREW (2.6X8), +BVTP           |         | 621      | 3-341-549-01 | SCREW(2.6X8)(DIA.7.5),+ PTP WH |         |
| 608      | 4-240-988-02 | PULLEY (UPPER), PRESS          |         | 622      | 4-240-987-01 | SHEET (DR)                     |         |
| * 609    | 1-452-958-11 | MAGNET (CHUCKING)              |         | 623      | 4-232-682-01 | CUSHION (66)                   |         |
| * 610    | 4-974-710-11 | YOKE, PULLEY                   |         | M201     | A-4735-557-A | MOTOR ASSY (LOADING)           |         |
| 611      | 4-237-172-01 | HOLDER (MG)                    |         |          |              |                                |         |
| 612      | 4-974-711-01 | SCREW (2X5)(P TYIGHT),(+)PTTWH |         |          |              |                                |         |
| 613      | 4-999-537-01 | BELT (LOADING)                 |         |          |              |                                |         |
| 614      | 4-237-176-02 | PULLEY (CG)                    |         |          |              |                                |         |

|   |   |
|---|---|
| <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> |
|---|---|

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, -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.
- CAPACITORS:  
uF: μF

- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- COILS  
uH: μH
- SEMICONDUCTORS  
In each case, u: μ, for example:  
uA...: μA... , uPA... , μPA... ,  
uPB... , μPB... , uPC... , μPC... ,  
uPD... , μPD...

- Abbreviation  
CND : Canadian model

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

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.

| Ref. No. | Part No.     | Description                 | Remarks     |
|----------|--------------|-----------------------------|-------------|
|          | A-4727-463-A | BD BOARD, COMPLETE<br>***** |             |
|          |              | < CAPACITOR >               |             |
| C101     | 1-164-315-11 | CERAMIC CHIP 470PF          | 5.00% 50V   |
| C102     | 1-107-826-11 | CERAMIC CHIP 0.1uF          | 10.00% 16V  |
| C103     | 1-164-315-11 | CERAMIC CHIP 470PF          | 5.00% 50V   |
| C104     | 1-162-967-11 | CERAMIC CHIP 0.0033uF       | 10% 50V     |
| C107     | 1-162-921-11 | CERAMIC CHIP 33PF           | 5% 50V      |
| C108     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C109     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C110     | 1-107-826-11 | CERAMIC CHIP 0.1uF          | 10.00% 16V  |
| C111     | 1-126-607-11 | ELECT CHIP 47uF             | 20% 4V      |
| C112     | 1-126-607-11 | ELECT CHIP 47uF             | 20% 4V      |
| C113     | 1-126-209-11 | ELECT CHIP 100uF            | 20.00% 4V   |
| C114     | 1-162-964-11 | CERAMIC CHIP 0.001uF        | 10% 50V     |
| C115     | 1-126-205-11 | ELECT CHIP 47uF             | 20% 6.3V    |
| C117     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C118     | 1-115-156-11 | CERAMIC CHIP 1uF            | 10V         |
| C119     | 1-115-156-11 | CERAMIC CHIP 1uF            | 10V         |
| C120     | 1-126-607-11 | ELECT CHIP 47uF             | 20% 4V      |
| C151     | 1-162-968-11 | CERAMIC CHIP 0.0047uF       | 10% 50V     |
| C152     | 1-115-416-11 | CERAMIC CHIP 0.001uF        | 5.00% 25V   |
| C153     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C163     | 1-117-681-11 | ELECT CHIP 100uF            | 20.00% 16V  |
| C164     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C165     | 1-124-779-00 | ELECT CHIP 10uF             | 20% 16V     |
| C166     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C167     | 1-162-927-11 | CERAMIC CHIP 100PF          | 5% 50V      |
| C168     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C169     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C171     | 1-162-970-11 | CERAMIC CHIP 0.01uF         | 10% 25V     |
| C178     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C179     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C182     | 1-128-995-21 | ELECT CHIP 100uF            | 20% 10V     |
| C201     | 1-126-246-11 | ELECT CHIP 220uF            | 20% 4V      |
| C202     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C203     | 1-162-915-11 | CERAMIC CHIP 10PF           | 0.5PF 50V   |
| C204     | 1-162-915-11 | CERAMIC CHIP 10PF           | 0.5PF 50V   |
| C205     | 1-164-360-11 | CERAMIC CHIP 0.1uF          | 16V         |
| C207     | 1-162-970-11 | CERAMIC CHIP 0.01uF         | 10% 25V     |
| C209     | 1-164-230-11 | CERAMIC CHIP 220PF          | 5.00% 50V   |
| C210     | 1-115-414-11 | CERAMIC CHIP 820PF          | 5.00% 25V   |
| C211     | 1-117-863-11 | CERAMIC CHIP 0.47uF         | 10.00% 6.3V |

| Ref. No. | Part No.     | Description                       | Remarks     |
|----------|--------------|-----------------------------------|-------------|
| C212     | 1-164-315-11 | CERAMIC CHIP 470PF                | 5.00% 50V   |
| C213     | 1-115-414-11 | CERAMIC CHIP 820PF                | 5.00% 25V   |
| C214     | 1-162-966-11 | CERAMIC CHIP 0.0022uF             | 10% 50V     |
| C215     | 1-117-863-11 | CERAMIC CHIP 0.47uF               | 10.00% 6.3V |
| C216     | 1-162-970-11 | CERAMIC CHIP 0.01uF               | 10% 25V     |
| C218     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C219     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C221     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C222     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C223     | 1-125-838-11 | CERAMIC CHIP 2.2uF                | 10% 6.3V    |
| C224     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C225     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C227     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C229     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C230     | 1-113-682-11 | TANTAL. CHIP 33uF                 | 20.00% 10V  |
| C231     | 1-128-995-21 | ELECT CHIP 100uF                  | 20% 10V     |
| C232     | 1-164-360-11 | CERAMIC CHIP 0.1uF                | 16V         |
| C234     | 1-164-227-11 | CERAMIC CHIP 0.022uF              | 10% 25V     |
| C235     | 1-162-970-11 | CERAMIC CHIP 0.01uF               | 10% 25V     |
| C236     | 1-109-982-11 | CERAMIC CHIP 1uF                  | 10.00% 10V  |
|          |              | < CONNECTOR >                     |             |
| CN101    | 1-784-834-21 | CONNECTOR,FCC (LIF (NON-ZIF)) 23P |             |
| CN102    | 1-794-424-11 | CONNECTOR, FCC/FPC 16P            |             |
|          |              | < FERRITE BEAD >                  |             |
| FB101    | 1-500-445-21 | FERRITE 0UH                       |             |
|          |              | < IC >                            |             |
| IC101    | 8-752-408-73 | IC CXD3068Q                       |             |
| IC102    | 8-759-713-71 | IC AN41050                        |             |
| IC103    | 8-752-089-74 | IC CXA2581N-T4                    |             |
| IC104    | 8-759-833-99 | IC TC74HC4052AFT (EL)             |             |
| IC105    | 8-759-834-29 | IC MC74VHC1G04DFT1                |             |
| IC201    | 8-759-460-72 | IC BA033FP-E2                     |             |
|          |              | < COIL >                          |             |
| L171     | 1-412-967-31 | INDUCTOR 0.1uH                    |             |
| L230     | 1-469-981-21 | FERRITE 0uH                       |             |
|          |              | < TRANSISTOR >                    |             |
| Q101     | 8-729-049-31 | TRANSISTOR 2SB710A-RTX            |             |

| Ref. No.             | Part No.     | Description           | Remarks       | Ref. No.              | Part No.            | Description                   | Remarks           |
|----------------------|--------------|-----------------------|---------------|-----------------------|---------------------|-------------------------------|-------------------|
| < RESISTOR >         |              |                       |               | < VARIABLE RESISTOR > |                     |                               |                   |
| R102                 | 1-216-835-11 | METAL CHIP            | 15K 5% 1/16W  | RV101                 | 1-223-997-21        | RES, CARBON ADJ VAR 47K       |                   |
| R103                 | 1-216-845-11 | METAL CHIP            | 100K 5% 1/16W | < VIBRATOR >          |                     |                               |                   |
| R104                 | 1-216-835-11 | METAL CHIP            | 15K 5% 1/16W  | X201                  | 1-767-518-11        | VIBRATOR, CRYSTAL 33.8688 MHz |                   |
| R105                 | 1-216-821-11 | METAL CHIP            | 1K 5% 1/16W   | *****                 |                     |                               |                   |
| R109                 | 1-216-846-11 | METAL CHIP            | 120K 5% 1/16W | A-4727-459-A          | CDR BOARD, COMPLETE |                               |                   |
| R111                 | 1-216-846-11 | METAL CHIP            | 120K 5% 1/16W | *****                 |                     |                               |                   |
| R112                 | 1-216-840-11 | METAL CHIP            | 39K 5% 1/16W  | < CAPACITOR >         |                     |                               |                   |
| R113                 | 1-218-701-11 | RES-CHIP              | 2.4K 5% 1/10W | C101                  | 1-162-964-11        | CERAMIC CHIP                  | 0.001uF 10% 50V   |
| R114                 | 1-218-745-11 | RES-CHIP              | 160K 5% 1/10W | C102                  | 1-162-970-11        | CERAMIC CHIP                  | 0.01uF 10% 25V    |
| R115                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C103                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R116                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C104                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R118                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C105                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R120                 | 1-216-846-11 | METAL CHIP            | 120K 5% 1/16W | C106                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R122                 | 1-216-845-11 | METAL CHIP            | 100K 5% 1/16W | C107                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R123                 | 1-216-797-11 | METAL CHIP            | 10 5% 1/16W   | C108                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R124                 | 1-216-797-11 | METAL CHIP            | 10 5% 1/16W   | C109                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R125                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C110                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R126                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C111                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R151                 | 1-216-833-11 | METAL CHIP            | 10K 5% 1/16W  | C112                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R152                 | 1-216-837-11 | METAL CHIP            | 22K 5% 1/16W  | C113                  | 1-162-927-11        | CERAMIC CHIP                  | 100PF 5% 50V      |
| R165                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C114                  | 1-164-230-11        | CERAMIC CHIP                  | 220PF 5.00% 50V   |
| R166                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C115                  | 1-164-230-11        | CERAMIC CHIP                  | 220PF 5.00% 50V   |
| R167                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C116                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R168                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C117                  | 1-125-891-11        | CERAMIC CHIP                  | 0.47uF 10.00% 10V |
| R169                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C118                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R170                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C119                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R177                 | 1-216-821-11 | METAL CHIP            | 1K 5% 1/16W   | C120                  | 1-127-760-11        | CERAMIC CHIP                  | 4.7uF 10% 6.3V    |
| R178                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C121                  | 1-126-392-11        | ELECT CHIP                    | 100uF 20.00% 6.3V |
| R179                 | 1-216-837-11 | METAL CHIP            | 22K 5% 1/16W  | C122                  | 1-162-963-11        | CERAMIC CHIP                  | 680PF 10% 50V     |
| R201                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C123                  | 1-162-968-11        | CERAMIC CHIP                  | 0.0047uF 10% 50V  |
| R202                 | 1-216-833-11 | METAL CHIP            | 10K 5% 1/16W  | C124                  | 1-162-968-11        | CERAMIC CHIP                  | 0.0047uF 10% 50V  |
| R203                 | 1-216-845-11 | METAL CHIP            | 100K 5% 1/16W | C125                  | 1-128-934-91        | CERAMIC CHIP                  | 0.33uF 20% 10V    |
| R204                 | 1-216-833-11 | METAL CHIP            | 10K 5% 1/16W  | C126                  | 1-162-966-11        | CERAMIC CHIP                  | 0.0022uF 10% 50V  |
| R205                 | 1-216-823-11 | METAL CHIP            | 1.5K 5% 1/16W | C128                  | 1-125-891-11        | CERAMIC CHIP                  | 0.47uF 10.00% 10V |
| R206                 | 1-216-850-11 | METAL CHIP            | 270K 5% 1/16W | C129                  | 1-162-970-11        | CERAMIC CHIP                  | 0.01uF 10% 25V    |
| R207                 | 1-218-917-11 | RES-CHIP              | 820K 5% 1/10W | C130                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| R208                 | 1-216-845-11 | METAL CHIP            | 100K 5% 1/16W | C131                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| R209                 | 1-216-809-11 | METAL CHIP            | 100 5% 1/16W  | C132                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| R212                 | 1-216-809-11 | METAL CHIP            | 100 5% 1/16W  | C133                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| R213                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C134                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| R214                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C135                  | 1-162-959-11        | CERAMIC CHIP                  | 330PF 5% 50V      |
| R215                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C136                  | 1-126-391-11        | ELECT CHIP                    | 47uF 20.00% 6.3V  |
| R216                 | 1-216-813-11 | METAL CHIP            | 220 5% 1/16W  | C137                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R217                 | 1-216-829-11 | METAL CHIP            | 4.7K 5% 1/16W | C138                  | 1-125-837-91        | CERAMIC CHIP                  | 1uF 10% 6.3V      |
| R218                 | 1-216-821-11 | METAL CHIP            | 1K 5% 1/16W   | C139                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R219                 | 1-216-821-11 | METAL CHIP            | 1K 5% 1/16W   | C140                  | 1-126-390-11        | ELECT CHIP                    | 22uF 20.00% 6.3V  |
| R226                 | 1-216-809-11 | METAL CHIP            | 100 5% 1/16W  | C141                  | 1-107-826-11        | CERAMIC CHIP                  | 0.1uF 10.00% 16V  |
| R227                 | 1-216-839-11 | METAL CHIP            | 33K 5% 1/16W  | C142                  | 1-162-964-11        | CERAMIC CHIP                  | 0.001uF 10% 50V   |
| R228                 | 1-216-849-11 | METAL CHIP            | 220K 5% 1/16W | C143                  | 1-125-837-91        | CERAMIC CHIP                  | 1uF 10% 6.3V      |
| R229                 | 1-216-819-11 | METAL CHIP            | 680 5% 1/16W  | C144                  | 1-128-934-91        | CERAMIC CHIP                  | 0.33uF 20% 10V    |
| R230                 | 1-216-864-11 | METAL CHIP            | 0 5% 1/16W    | C145                  | 1-128-934-91        | CERAMIC CHIP                  | 0.33uF 20% 10V    |
| R234                 | 1-216-809-11 | METAL CHIP            | 100 5% 1/16W  | C146                  | 1-128-934-91        | CERAMIC CHIP                  | 0.33uF 20% 10V    |
| < NETWORK RESISTOR > |              |                       |               | C150                  | 1-164-156-11        | CERAMIC CHIP                  | 0.1uF 25V         |
| RN201                | 1-233-576-11 | RES, CHIP NETWORK 100 |               |                       |                     |                               |                   |
| RN202                | 1-233-576-11 | RES, CHIP NETWORK 100 |               |                       |                     |                               |                   |

| Ref. No. | Part No.     | Description           | Remarks     |
|----------|--------------|-----------------------|-------------|
| C151     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C156     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C157     | 1-126-390-11 | ELECT CHIP 22uF       | 20.00% 6.3V |
| C158     | 1-126-390-11 | ELECT CHIP 22uF       | 20.00% 6.3V |
| C160     | 1-162-970-11 | CERAMIC CHIP 0.01uF   | 10% 25V     |
| C178     | 1-162-968-11 | CERAMIC CHIP 0.0047uF | 10% 50V     |
| C179     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C180     | 1-126-395-11 | ELECT 22uF            | 20% 16V     |
| C181     | 1-127-573-11 | CERAMIC CHIP 1uF      | 10% 16V     |
| C182     | 1-127-573-11 | CERAMIC CHIP 1uF      | 10% 16V     |
| C183     | 1-127-573-11 | CERAMIC CHIP 1uF      | 10% 16V     |
| C184     | 1-126-395-11 | ELECT 22uF            | 20% 16V     |
| C185     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C186     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C187     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C188     | 1-162-970-11 | CERAMIC CHIP 0.01uF   | 10% 25V     |
| C189     | 1-162-970-11 | CERAMIC CHIP 0.01uF   | 10% 25V     |
| C190     | 1-162-970-11 | CERAMIC CHIP 0.01uF   | 10% 25V     |
| C191     | 1-162-964-11 | CERAMIC CHIP 0.001uF  | 10% 50V     |
| C192     | 1-162-964-11 | CERAMIC CHIP 0.001uF  | 10% 50V     |
| C193     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C194     | 1-126-395-11 | ELECT 22uF            | 20% 16V     |
| C200     | 1-126-390-11 | ELECT CHIP 22uF       | 20.00% 6.3V |
| C201     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C202     | 1-126-392-11 | ELECT CHIP 100uF      | 20.00% 6.3V |
| C203     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C204     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C205     | 1-126-391-11 | ELECT CHIP 47uF       | 20.00% 6.3V |
| C206     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C207     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C208     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C209     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C210     | 1-126-392-11 | ELECT CHIP 100uF      | 20.00% 6.3V |
| C212     | 1-126-390-11 | ELECT CHIP 22uF       | 20.00% 6.3V |
| C213     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C214     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C216     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C217     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C218     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C219     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C220     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C221     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C222     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C223     | 1-164-677-11 | CERAMIC CHIP 0.033uF  | 10.00% 16V  |
| C224     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C225     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C226     | 1-107-826-11 | CERAMIC CHIP 0.1uF    | 10.00% 16V  |
| C227     | 1-162-912-11 | CERAMIC CHIP 7PF      | 0.5PF 50V   |
| C228     | 1-162-969-11 | CERAMIC CHIP 0.0068uF | 10% 25V     |
| C230     | 1-162-912-11 | CERAMIC CHIP 7PF      | 0.5PF 50V   |
| C232     | 1-162-963-11 | CERAMIC CHIP 680PF    | 10% 50V     |
| C233     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C234     | 1-165-908-91 | CERAMIC CHIP 1uF      | 10% 25V     |
| C235     | 1-165-176-11 | CERAMIC CHIP 0.047uF  | 10.00% 16V  |
| C236     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C237     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C238     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |
| C239     | 1-164-156-11 | CERAMIC CHIP 0.1uF    | 25V         |

| Ref. No.      | Part No.     | Description                  | Remarks     |
|---------------|--------------|------------------------------|-------------|
| C240          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C241          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C242          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C244          | 1-126-390-11 | ELECT CHIP 22uF              | 20.00% 6.3V |
| C245          | 1-125-837-91 | CERAMIC CHIP 1uF             | 10% 6.3V    |
| C246          | 1-107-826-11 | CERAMIC CHIP 0.1uF           | 10.00% 16V  |
| C247          | 1-107-826-11 | CERAMIC CHIP 0.1uF           | 10.00% 16V  |
| C248          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C249          | 1-107-826-11 | CERAMIC CHIP 0.1uF           | 10.00% 16V  |
| C250          | 1-162-970-11 | CERAMIC CHIP 0.01uF          | 10% 25V     |
| C251          | 1-162-970-11 | CERAMIC CHIP 0.01uF          | 10% 25V     |
| C254          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C257          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C258          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C259          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C260          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C262          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C263          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C268          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C269          | 1-126-392-11 | ELECT CHIP 100uF             | 20.00% 6.3V |
| C270          | 1-126-396-11 | ELECT CHIP 47uF              | 20.00% 16V  |
| C271          | 1-126-392-11 | ELECT CHIP 100uF             | 20.00% 6.3V |
| C272          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C273          | 1-126-391-11 | ELECT CHIP 47uF              | 20.00% 6.3V |
| C275          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C289          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C301          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C302          | 1-107-826-11 | CERAMIC CHIP 0.1uF           | 10.00% 16V  |
| C303          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C304          | 1-107-826-11 | CERAMIC CHIP 0.1uF           | 10.00% 16V  |
| C501          | 1-126-396-11 | ELECT CHIP 47uF              | 20.00% 16V  |
| C502          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C506          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C508          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C509          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C510          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C511          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C512          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C513          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C514          | 1-162-964-11 | CERAMIC CHIP 0.001uF         | 10% 50V     |
| C517          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C518          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C519          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C520          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C521          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| C526          | 1-164-156-11 | CERAMIC CHIP 0.1uF           | 25V         |
| < CONNECTOR > |              |                              |             |
| CN101         | 1-784-894-11 | CONNECTOR, FFC/FPC 32P       |             |
| CN102         | 1-816-220-21 | CONNECTOR, FFC/FPC 11P       |             |
| CN103         | 1-816-220-21 | CONNECTOR, FFC/FPC 11P       |             |
| CN104         | 1-770-160-21 | PIN, CONNECTOR (PC BOARD) 2P |             |
| CN110         | 1-784-370-21 | CONNECTOR, FFC/FPC 11P       |             |
| * CN111       | 1-764-250-11 | PIN, CONNECTOR (PC BOARD) 4P |             |
| CN112         | 1-784-365-21 | CONNECTOR, FFC/FPC 5P        |             |
| CN115         | 1-770-160-21 | PIN, CONNECTOR (PC BOARD) 2P |             |
| CN121         | 1-774-731-21 | PIN, CONNECTOR (PC BOARD) 5P |             |

| Ref. No. | Part No.     | Description               | Remarks        | Ref. No. | Part No.     | Description | Remarks         |
|----------|--------------|---------------------------|----------------|----------|--------------|-------------|-----------------|
|          |              | < DIODE >                 |                | R109     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| D101     | 8-719-988-61 | DIODE 1SS355TE-17         |                | R110     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| D102     | 8-719-988-61 | DIODE 1SS355TE-17         |                | R111     | 1-218-883-11 | METAL CHIP  | 33K 0.5% 1/10W  |
|          |              | < FERRITE BEAD >          |                | R112     | 1-218-879-11 | METAL CHIP  | 22K 0.5% 1/10W  |
| FB101    | 1-469-379-11 | FERRITE OUH               |                | R113     | 1-218-855-11 | METAL CHIP  | 2.2K 0.5% 1/10W |
| FB102    | 1-469-379-11 | FERRITE OUH               |                | R114     | 1-218-847-11 | METAL CHIP  | 1K 0.5% 1/10W   |
| FB103    | 1-469-379-11 | FERRITE OUH               |                | R116     | 1-218-847-11 | METAL CHIP  | 1K 0.5% 1/10W   |
|          |              | < IC >                    |                | R120     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| IC101    | 6-701-749-01 | IC AK8567                 |                | R121     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| IC102    | 8-759-058-56 | IC TC7S02FU (TE85R)       |                | R122     | 1-216-857-11 | METAL CHIP  | 1M 5% 1/16W     |
| IC103    | 8-759-337-41 | IC NJM2902V-TE2           |                | R123     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| IC104    | 8-759-478-92 | IC TC7SET04FU (TE85R)     |                | R124     | 1-216-825-11 | METAL CHIP  | 2.2K 5% 1/16W   |
| IC110    | 8-759-594-95 | IC L4931ABD33-TR          |                | R125     | 1-216-797-11 | METAL CHIP  | 10 5% 1/16W     |
| IC150    | 8-759-673-37 | IC SN74HC00APWR           |                | R126     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| IC171    | 6-701-746-01 | IC BA5937AFP-E2           |                | R127     | 1-218-883-11 | METAL CHIP  | 33K 0.5% 1/10W  |
| IC172    | 8-759-593-08 | IC LB11698H-TE-L          |                | R128     | 1-218-879-11 | METAL CHIP  | 22K 0.5% 1/10W  |
| IC201    | 6-701-747-01 | IC LC89587-UK1-E          |                | R131     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| IC202    | 8-759-597-78 | IC MSM54V16258BSL-40TSK   |                | R133     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| IC204    | 8-759-058-60 | IC TC7SU04FU (TE85R)      |                | R134     | 1-218-871-11 | METAL CHIP  | 10K 0.5% 1/10W  |
| IC301    | 8-759-549-25 | IC SN74LVU04APWR          |                | R135     | 1-218-863-11 | METAL CHIP  | 4.7K 0.5% 1/10W |
| IC302    | 8-759-196-96 | IC TC7SH08FU-TE85R        |                | R136     | 1-218-871-11 | METAL CHIP  | 10K 0.5% 1/10W  |
| IC501    | 6-701-748-01 | IC HD64F3064BFBL25        |                | R137     | 1-218-867-11 | METAL CHIP  | 6.8K 0.5% 1/10W |
| IC502    | 6-801-552-01 | IC BR93LC46RF-WE2         |                | R139     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
| IC504    | 8-759-485-79 | IC TC7SET08FU (TE85R)     |                | R140     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
| IC505    | 8-759-599-46 | IC TC7W08FK (TE85R)       |                | R141     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
| IC506    | 8-759-485-79 | IC TC7SET08FU (TE85R)     |                | R142     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
|          |              | < COIL >                  |                | R151     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| L101     | 1-414-398-11 | INDUCTOR 10uH             |                | R152     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| L102     | 1-414-398-11 | INDUCTOR 10uH             |                | R153     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| L103     | 1-414-392-41 | INDUCTOR 1uH              |                | R154     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| L202     | 1-414-392-41 | INDUCTOR 1uH              |                | R155     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| L203     | 1-414-392-41 | INDUCTOR 1uH              |                | R156     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W    |
| L204     | 1-414-392-41 | INDUCTOR 1uH              |                | R157     | 1-216-797-11 | METAL CHIP  | 10 5% 1/16W     |
| L205     | 1-414-392-41 | INDUCTOR 1uH              |                | R170     | 1-216-797-11 | METAL CHIP  | 10 5% 1/16W     |
| L207     | 1-414-392-41 | INDUCTOR 1uH              |                | R171     | 1-216-797-11 | METAL CHIP  | 10 5% 1/16W     |
| L208     | 1-414-392-41 | INDUCTOR 1uH              |                | R172     | 1-216-797-11 | METAL CHIP  | 10 5% 1/16W     |
| L301     | 1-414-392-41 | INDUCTOR 1uH              |                | R173     | 1-218-831-11 | METAL CHIP  | 220 0.5% 1/10W  |
| L303     | 1-414-392-41 | INDUCTOR 1uH              |                | R176     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| L501     | 1-414-392-41 | INDUCTOR 1uH              |                | R177     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| L503     | 1-414-392-41 | INDUCTOR 1uH              |                | R186     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
|          |              | < TRANSISTOR >            |                | R187     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W    |
| Q170     | 8-729-900-53 | TRANSISTOR DTC114EKA-T146 |                | R188     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| Q501     | 8-729-900-53 | TRANSISTOR DTC114EKA-T146 |                | R189     | 1-216-829-11 | METAL CHIP  | 4.7K 5% 1/16W   |
|          |              | < RESISTOR >              |                | R190     | 1-216-829-11 | METAL CHIP  | 4.7K 5% 1/16W   |
| R101     | 1-216-809-11 | METAL CHIP                | 100 5% 1/16W   | R192     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| R102     | 1-216-809-11 | METAL CHIP                | 100 5% 1/16W   | R193     | 1-220-810-11 | RES-CHIP    | 0.39 1% 1/2W    |
| R103     | 1-216-809-11 | METAL CHIP                | 100 5% 1/16W   | R194     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| R104     | 1-218-871-11 | METAL CHIP                | 10K 0.5% 1/10W | R196     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| R105     | 1-216-864-11 | METAL CHIP                | 0 5% 1/16W     | R198     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| R106     | 1-216-829-11 | METAL CHIP                | 4.7K 5% 1/16W  | R200     | 1-216-829-11 | METAL CHIP  | 4.7K 5% 1/16W   |
| R107     | 1-216-857-11 | METAL CHIP                | 1M 5% 1/16W    | R201     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
| R108     | 1-216-809-11 | METAL CHIP                | 100 5% 1/16W   | R202     | 1-216-817-11 | METAL CHIP  | 470 5% 1/16W    |
|          |              |                           |                | R203     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
|          |              |                           |                | R204     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
|          |              |                           |                | R205     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
|          |              |                           |                | R206     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W      |
|          |              |                           |                | R207     | 1-216-813-11 | METAL CHIP  | 220 5% 1/16W    |

# RCD-W50C

## CDR

| Ref. No. | Part No.     | Description | Quantity | Unit Price | Remarks | Ref. No. | Part No.     | Description | Quantity | Unit Price | Remarks |
|----------|--------------|-------------|----------|------------|---------|----------|--------------|-------------|----------|------------|---------|
| R208     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R300     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R209     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R301     | 1-216-845-11 | METAL CHIP  | 100K     | 5%         | 1/16W   |
| R210     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |          |              |             |          |            |         |
| R211     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R302     | 1-216-845-11 | METAL CHIP  | 100K     | 5%         | 1/16W   |
| R212     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R303     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
|          |              |             |          |            |         | R304     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R213     | 1-216-817-11 | METAL CHIP  | 470      | 5%         | 1/16W   | R305     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R215     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R307     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R216     | 1-218-875-11 | METAL CHIP  | 15K      | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R217     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R320     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R218     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R321     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
|          |              |             |          |            |         | R322     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R219     | 1-216-801-11 | METAL CHIP  | 22       | 5%         | 1/16W   | R323     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R220     | 1-216-801-11 | METAL CHIP  | 22       | 5%         | 1/16W   | R324     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R221     | 1-216-801-11 | METAL CHIP  | 22       | 5%         | 1/16W   |          |              |             |          |            |         |
| R222     | 1-216-801-11 | METAL CHIP  | 22       | 5%         | 1/16W   | R325     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R223     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R350     | 1-216-821-11 | METAL CHIP  | 1K       | 5%         | 1/16W   |
|          |              |             |          |            |         | R351     | 1-216-821-11 | METAL CHIP  | 1K       | 5%         | 1/16W   |
| R224     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R353     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R225     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R354     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R226     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |          |              |             |          |            |         |
| R227     | 1-216-797-11 | METAL CHIP  | 10       | 5%         | 1/16W   | R356     | 1-216-789-11 | METAL CHIP  | 2.2      | 5%         | 1/16W   |
| R228     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R369     | 1-216-789-11 | METAL CHIP  | 2.2      | 5%         | 1/16W   |
|          |              |             |          |            |         | R370     | 1-216-789-11 | METAL CHIP  | 2.2      | 5%         | 1/16W   |
| R229     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R502     | 1-216-809-11 | METAL CHIP  | 100      | 5%         | 1/16W   |
| R230     | 1-216-817-11 | METAL CHIP  | 470      | 5%         | 1/16W   | R503     | 1-216-809-11 | METAL CHIP  | 100      | 5%         | 1/16W   |
| R231     | 1-216-809-11 | METAL CHIP  | 100      | 5%         | 1/16W   |          |              |             |          |            |         |
| R232     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R504     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R239     | 1-216-789-11 | METAL CHIP  | 2.2      | 5%         | 1/16W   | R505     | 1-216-841-11 | METAL CHIP  | 47K      | 5%         | 1/16W   |
|          |              |             |          |            |         | R506     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R240     | 1-216-789-11 | METAL CHIP  | 2.2      | 5%         | 1/16W   | R507     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R241     | 1-216-809-11 | METAL CHIP  | 100      | 5%         | 1/16W   | R508     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R242     | 1-218-867-11 | METAL CHIP  | 6.8K     | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R243     | 1-218-867-11 | METAL CHIP  | 6.8K     | 0.5%       | 1/10W   | R509     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R244     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R511     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
|          |              |             |          |            |         | R513     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R245     | 1-216-829-11 | METAL CHIP  | 4.7K     | 5%         | 1/16W   | R515     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R246     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R516     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R248     | 1-218-831-11 | METAL CHIP  | 220      | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R250     | 1-218-871-11 | METAL CHIP  | 10K      | 0.5%       | 1/10W   | R517     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R251     | 1-218-879-11 | METAL CHIP  | 22K      | 0.5%       | 1/10W   | R518     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
|          |              |             |          |            |         | R519     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R253     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   | R520     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R254     | 1-216-857-11 | METAL CHIP  | 1M       | 5%         | 1/16W   | R522     | 1-216-845-11 | METAL CHIP  | 100K     | 5%         | 1/16W   |
| R258     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |          |              |             |          |            |         |
| R260     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R523     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R262     | 1-218-871-11 | METAL CHIP  | 10K      | 0.5%       | 1/10W   | R524     | 1-216-845-11 | METAL CHIP  | 100K     | 5%         | 1/16W   |
|          |              |             |          |            |         | R526     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R263     | 1-218-871-11 | METAL CHIP  | 10K      | 0.5%       | 1/10W   | R527     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R264     | 1-216-797-11 | METAL CHIP  | 10       | 5%         | 1/16W   | R528     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R265     | 1-218-833-11 | METAL CHIP  | 270      | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R267     | 1-218-883-11 | METAL CHIP  | 33K      | 0.5%       | 1/10W   | R529     | 1-216-825-11 | METAL CHIP  | 2.2K     | 5%         | 1/16W   |
| R268     | 1-218-864-11 | METAL CHIP  | 5.1K     | 0.5%       | 1/10W   | R530     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
|          |              |             |          |            |         | R532     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R269     | 1-216-817-11 | METAL CHIP  | 470      | 5%         | 1/16W   | R533     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R270     | 1-218-847-11 | METAL CHIP  | 1K       | 0.5%       | 1/10W   | R534     | 1-216-829-11 | METAL CHIP  | 4.7K     | 5%         | 1/16W   |
| R271     | 1-218-865-11 | METAL CHIP  | 5.6K     | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R274     | 1-218-871-11 | METAL CHIP  | 10K      | 0.5%       | 1/10W   | R535     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R276     | 1-218-843-11 | METAL CHIP  | 680      | 0.5%       | 1/10W   | R536     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
|          |              |             |          |            |         | R537     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R277     | 1-218-865-11 | METAL CHIP  | 5.6K     | 0.5%       | 1/10W   | R538     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R278     | 1-218-285-11 | RES-CHIP    | 75       | 5%         | 1/10W   | R539     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R281     | 1-218-847-11 | METAL CHIP  | 1K       | 0.5%       | 1/10W   |          |              |             |          |            |         |
| R283     | 1-216-809-11 | METAL CHIP  | 100      | 5%         | 1/16W   | R540     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R290     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R542     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
|          |              |             |          |            |         | R543     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   |
| R291     | 1-216-811-11 | METAL CHIP  | 150      | 5%         | 1/16W   | R544     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R292     | 1-216-833-11 | METAL CHIP  | 10K      | 5%         | 1/16W   | R545     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |
| R294     | 1-216-864-11 | METAL CHIP  | 0        | 5%         | 1/16W   |          |              |             |          |            |         |

|            |              |                    |                  |                |
|------------|--------------|--------------------|------------------|----------------|
| <b>CDR</b> | <b>CD-SW</b> | <b>CLAMP MOTOR</b> | <b>CONNECTOR</b> | <b>DISPLAY</b> |
|------------|--------------|--------------------|------------------|----------------|

| Ref. No. | Part No.     | Description                                      |         |     | Remarks | Ref. No.    | Part No.     | Description       |  |  | Remarks |
|----------|--------------|--|---------|-----|---------|-------------|--------------|-------------------|--|--|---------|
| R546     | 1-216-864-11 | METAL CHIP                                       | 0       | 5%  | 1/16W   |             | 1-675-729-11 | CLAMP MOTOR BOARD |  |  |         |
| R547     | 1-216-864-11 | METAL CHIP                                       | 0       | 5%  | 1/16W   |             |              | *****             |  |  |         |
| R548     | 1-216-864-11 | METAL CHIP                                       | 0       | 5%  | 1/16W   |             |              | < CAPACITOR >     |  |  |         |
| R549     | 1-216-864-11 | METAL CHIP                                       | 0       | 5%  | 1/16W   |             |              |                   |  |  |         |
| R550     | 1-216-864-11 | METAL CHIP                                       | 0       | 5%  | 1/16W   |             |              |                   |  |  |         |
| R555     | 1-216-833-11 | METAL CHIP                                       | 10K     | 5%  | 1/16W   |             |              |                   |  |  |         |
| R556     | 1-216-833-11 | METAL CHIP                                       | 10K     | 5%  | 1/16W   |             |              |                   |  |  |         |
|          |              | < COMPOSITION CIRCUIT BLOCK >                    |         |     |         |             |              |                   |  |  |         |
| RB201    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB504    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB505    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB506    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB508    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB509    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB510    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB511    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB512    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB513    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB514    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB515    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB516    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB517    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB518    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB519    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB520    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB521    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
| RB522    | 1-233-810-21 | RES, NETWORK 100K (3216)                         |         |     |         |             |              |                   |  |  |         |
|          |              | < SWITCH >                                       |         |     |         |             |              |                   |  |  |         |
| S170     | 1-786-288-11 | SWITCH, DETECTION (LOAD IN SW)                   |         |     |         |             |              |                   |  |  |         |
| S171     | 1-786-288-11 | SWITCH, DETECTION (LOAD OUT SW)                  |         |     |         |             |              |                   |  |  |         |
|          |              | < VIBRATOR >                                     |         |     |         |             |              |                   |  |  |         |
| X201     | 1-795-519-11 | VIBRATOR, CRYSTAL 33.8688MHZ                     |         |     |         |             |              |                   |  |  |         |
| X501     | 1-795-622-21 | VIBRATOR, CERAMIC 20MHZ                          |         |     |         |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          | 1-683-867-11 | CD-SW BOARD                                      |         |     |         |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          |              | < CAPACITOR >                                    |         |     |         |             |              |                   |  |  |         |
| C720     | 1-164-159-11 | CERAMIC  | 0.1uF   |     | 50V     |             |              |                   |  |  |         |
|          |              | < RESISTOR >                                     |         |     |         |             |              |                   |  |  |         |
| R725     | 1-249-417-11 | CARBON   | 1K      | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R726     | 1-249-419-11 | CARBON   | 1.5K    | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R727     | 1-249-421-11 | CARBON   | 2.2K    | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R728     | 1-249-425-11 | CARBON   | 4.7K    | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R729     | 1-249-429-11 | CARBON   | 10K     | 5%  | 1/4W    |             |              |                   |  |  |         |
|          |              | < SWITCH >                                       |         |     |         |             |              |                   |  |  |         |
| S725     | 1-762-875-21 | SWITCH, KEYBOARD (PLAY MODE)                     |         |     |         |             |              |                   |  |  |         |
| S726     | 1-762-875-21 | SWITCH, KEYBOARD (TIME)                          |         |     |         |             |              |                   |  |  |         |
| S727     | 1-762-875-21 | SWITCH, KEYBOARD (▷)                             |         |     |         |             |              |                   |  |  |         |
| S728     | 1-762-875-21 | SWITCH, KEYBOARD (■)                             |         |     |         |             |              |                   |  |  |         |
| S729     | 1-762-875-21 | SWITCH, KEYBOARD (■)                             |         |     |         |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          |              | 1-675-722-11 CONNECTOR BOARD                     |         |     |         |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          |              | < CONNECTOR >                                    |         |     |         |             |              |                   |  |  |         |
| CN701    | 1-770-169-11 | CONNECTOR, FFC/FPC 17P                           |         |     |         |             |              |                   |  |  |         |
|          |              | < TRANSISTOR >                                   |         |     |         |             |              |                   |  |  |         |
| Q701     | 8-729-029-66 | TRANSISTOR                                       |         |     |         | RT1N141S-TP |              |                   |  |  |         |
|          |              | < RESISTOR >                                     |         |     |         |             |              |                   |  |  |         |
| R707     | 1-249-424-11 | CARBON   | 3.9K    | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R708     | 1-249-417-11 | CARBON   | 1K      | 5%  | 1/4W    | F           |              |                   |  |  |         |
| R709     | 1-249-429-11 | CARBON   | 10K     | 5%  | 1/4W    |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          |              | A-4727-910-A DISPLAY BOARD, COMPLETE (US,CND,MX) |         |     |         |             |              |                   |  |  |         |
|          |              | A-4727-916-A DISPLAY BOARD, COMPLETE (E)         |         |     |         |             |              |                   |  |  |         |
|          |              | *****  |         |     |         |             |              |                   |  |  |         |
|          |              | 4-949-935-41 CUSHION (FL)                        |         |     |         |             |              |                   |  |  |         |
|          |              | * 4-996-686-03 HOLDER (FL)                       |         |     |         |             |              |                   |  |  |         |
|          |              | < CAPACITOR >                                    |         |     |         |             |              |                   |  |  |         |
| C742     | 1-124-584-00 | ELECT  | 100uF   | 20% | 10V     |             |              |                   |  |  |         |
| C743     | 1-164-159-11 | CERAMIC  | 0.1uF   |     | 50V     |             |              |                   |  |  |         |
| C750     | 1-164-159-11 | CERAMIC  | 0.1uF   |     | 50V     |             |              |                   |  |  |         |
| C751     | 1-124-261-00 | ELECT  | 10uF    | 20% | 50V     |             |              |                   |  |  |         |
| C753     | 1-124-261-00 | ELECT  | 10uF    | 20% | 50V     |             |              |                   |  |  |         |
| C760     | 1-124-261-00 | ELECT  | 10uF    | 20% | 50V     |             |              |                   |  |  |         |
| C761     | 1-162-294-31 | CERAMIC  | 0.001uF | 10% | 50V     |             |              |                   |  |  |         |
| C762     | 1-162-294-31 | CERAMIC  | 0.001uF | 10% | 50V     |             |              |                   |  |  |         |
| C763     | 1-164-159-11 | CERAMIC  | 0.1uF   |     | 50V     |             |              |                   |  |  |         |
| C764     | 1-124-261-00 | ELECT  | 10uF    | 20% | 50V     |             |              |                   |  |  |         |
| C765     | 1-164-159-11 | CERAMIC  | 0.1uF   |     | 50V     |             |              |                   |  |  |         |
| C766     | 1-162-215-31 | CERAMIC  | 47PF    | 5%  | 50V     |             |              |                   |  |  |         |



# RCD-W50C

|                |           |                      |
|----------------|-----------|----------------------|
| <b>DISPLAY</b> | <b>HP</b> | <b>INIT/COUNT SW</b> |
|----------------|-----------|----------------------|

| Ref. No.       | Part No.     | Description                    | Remarks |
|----------------|--------------|--------------------------------|---------|
| C767           | 1-164-159-11 | CERAMIC 0.1uF                  | 50V     |
| C768           | 1-162-294-31 | CERAMIC 0.001uF 10%            | 50V     |
| C769           | 1-162-294-31 | CERAMIC 0.001uF 10%            | 50V     |
| < CONNECTOR >  |              |                                |         |
| C770           | 1-162-294-31 | CERAMIC 0.001uF 10%            | 50V     |
| C780           | 1-164-159-11 | CERAMIC 0.1uF                  | 50V     |
| < DIODE >      |              |                                |         |
| CN700          | 1-779-558-21 | CONNECTOR,FFC(LIF(NON-ZIF))21P |         |
| * CN710        | 1-695-823-11 | CONNECTOR, BOARD TO BOARD 8P   |         |
| < FILTER >     |              |                                |         |
| D775           | 8-719-046-39 | DIODE SEL5821A-TP15 (SBM)      |         |
| < IC >         |              |                                |         |
| IC760          | 8-759-680-17 | IC MSM9201-04GS-K              |         |
| IC781          | 8-759-827-69 | IC NJL63H400A-1 (■)            |         |
| < TRANSISTOR > |              |                                |         |
| Q761           | 8-729-620-05 | TRANSISTOR 2SC2603TP-EF        |         |
| Q762           | 8-729-620-05 | TRANSISTOR 2SC2603TP-EF        |         |
| Q775           | 8-729-900-80 | TRANSISTOR UN4211-TA           |         |
| < RESISTOR >   |              |                                |         |
| R701           | 1-249-409-11 | CARBON 220 5%                  | 1/4W F  |
| R702           | 1-249-411-11 | CARBON 330 5%                  | 1/4W    |
| R703           | 1-249-413-11 | CARBON 470 5%                  | 1/4W F  |
| R704           | 1-249-415-11 | CARBON 680 5%                  | 1/4W F  |
| R711           | 1-249-409-11 | CARBON 220 5%                  | 1/4W F  |
| R712           | 1-249-411-11 | CARBON 330 5%                  | 1/4W    |
| R713           | 1-249-413-11 | CARBON 470 5%                  | 1/4W F  |
| R714           | 1-249-415-11 | CARBON 680 5%                  | 1/4W F  |
| R715           | 1-249-417-11 | CARBON 1K 5%                   | 1/4W F  |
| R716           | 1-249-419-11 | CARBON 1.5K 5%                 | 1/4W F  |
| R717           | 1-249-421-11 | CARBON 2.2K 5%                 | 1/4W F  |
| R718           | 1-249-425-11 | CARBON 4.7K 5%                 | 1/4W F  |
| R719           | 1-249-429-11 | CARBON 10K 5%                  | 1/4W    |
| R721           | 1-249-409-11 | CARBON 220 5%                  | 1/4W F  |
| R722           | 1-249-411-11 | CARBON 330 5%                  | 1/4W    |
| R723           | 1-249-413-11 | CARBON 470 5%                  | 1/4W F  |
| R724           | 1-249-415-11 | CARBON 680 5%                  | 1/4W F  |
| R741           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R742           | 1-249-401-11 | CARBON 47 5%                   | 1/4W F  |
| R761           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R762           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R763           | 1-249-441-11 | CARBON 100K 5%                 | 1/4W    |
| R764           | 1-249-441-11 | CARBON 100K 5%                 | 1/4W    |
| R766           | 1-247-843-11 | CARBON 3.3K 5%                 | 1/4W    |
| R767           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R768           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R769           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R770           | 1-247-807-31 | CARBON 100 5%                  | 1/4W    |
| R775           | 1-249-409-11 | CARBON 220 5%                  | 1/4W F  |

| Ref. No.              | Part No.     | Description                               | Remarks |
|-----------------------|--------------|---|---------|
| < VARIABLE RESISTOR > |              |   |         |
| RV780                 | 1-223-673-11 | RES, VAR, CARBON 10K (REC LEVEL)          |         |
| < SWITCH >            |              |   |         |
| S700                  | 1-762-875-21 | SWITCH, KEYBOARD (ERASE)                  |         |
| S701                  | 1-762-875-21 | SWITCH, KEYBOARD (FINALISE)               |         |
| S702                  | 1-762-875-21 | SWITCH, KEYBOARD (INPUT)                  |         |
| S703                  | 1-762-875-21 | SWITCH, KEYBOARD (SBM)                    |         |
| S704                  | 1-762-875-21 | SWITCH, KEYBOARD (REC ●)                  |         |
| S710                  | 1-762-875-21 | SWITCH, KEYBOARD (▷)                      |         |
| S711                  | 1-762-875-21 | SWITCH, KEYBOARD (■)                      |         |
| S712                  | 1-762-875-21 | SWITCH, KEYBOARD (■)                      |         |
| S713                  | 1-762-875-21 | SWITCH, KEYBOARD (PLAY MODE)              |         |
| S714                  | 1-762-875-21 | SWITCH, KEYBOARD (TIME)                   |         |
| S715                  | 1-762-875-21 | SWITCH, KEYBOARD (DISPLAY)                |         |
| S716                  | 1-762-875-21 | SWITCH, KEYBOARD (YES)                    |         |
| S717                  | 1-475-235-21 | ENCODER, ROTARY<br>(◀◀ AMS ▶▶ PUSH ENTER) |         |
| S718                  | 1-762-875-21 | SWITCH, KEYBOARD (MENU/NO)                |         |
| S719                  | 1-762-875-21 | SWITCH, KEYBOARD (CLEAR)                  |         |
| S720                  | 1-762-875-21 | SWITCH, KEYBOARD (OPEN/CLOSE ⇄)           |         |
| S721                  | 1-762-875-21 | SWITCH, KEYBOARD (NORMAL)                 |         |
| S722                  | 1-762-875-21 | SWITCH, KEYBOARD (HIGH)                   |         |
| S723                  | 1-475-235-21 | ENCODER, ROTARY<br>(◀◀ AMS ▶▶ PUSH ENTER) |         |
| S724                  | 1-762-875-21 | SWITCH, KEYBOARD (CLEAR)                  |         |
| *****                 |              |   |         |
|                       | 1-683-868-11 | HP BOARD<br>*****                         |         |
| < CAPACITOR >         |              |   |         |
| C791                  | 1-162-290-31 | CERAMIC 470PF 10%                         | 50V     |
| C796                  | 1-162-290-31 | CERAMIC 470PF 10%                         | 50V     |
| < JACK >              |              |   |         |
| J790                  | 1-770-306-11 | JACK (LARGE TYPE) (PHONES)                |         |
| < COIL >              |              |   |         |
| L1790                 | 1-412-473-21 | INDUCTOR 0uH                              |         |
| < RESISTOR >          |              |   |         |
| R791                  | 1-249-393-11 | CARBON 10 5%                              | 1/4W F  |
| R796                  | 1-249-393-11 | CARBON 10 5%                              | 1/4W F  |
| < VARIABLE RESISTOR > |              |   |         |
| RV790                 | 1-225-741-11 | RES, VAR, CARBON 20K/20K (PHONE LEVEL)    |         |
| *****                 |              |   |         |
|                       | 1-675-724-11 | INIT/COUNT SW BOARD<br>*****              |         |
| < SWITCH >            |              |   |         |
| S705                  | 1-771-264-11 | SWITCH, PUSH (DETECTION) (1 KEY) (INIT)   |         |
| S706                  | 1-771-264-11 | SWITCH, PUSH (DETECTION) (1 KEY) (COUNT)  |         |
| *****                 |              |   |         |

|       |     |            |      |
|-------|-----|------------|------|
| IN SW | LED | LOAD MOTOR | MAIN |
|-------|-----|------------|------|

| Ref. No. | Part No.     | Description            | Remarks                 | Ref. No.     | Part No.                  | Description                | Remarks                          |
|----------|--------------|------------------------|-------------------------|--------------|---------------------------|----------------------------|----------------------------------|
|          | 1-675-723-11 | IN SW BOARD<br>*****   |                         |              |                           | < SWITCH >                 |                                  |
|          |              | < CONNECTOR >          |                         | S700         | 1-762-875-21              | SWITCH, KEYBOARD (DISC 1)  |                                  |
|          |              |                        |                         | S701         | 1-762-875-21              | SWITCH, KEYBOARD (△)       |                                  |
|          |              |                        |                         | S702         | 1-762-875-21              | SWITCH, KEYBOARD (DISC 2)  |                                  |
|          |              |                        |                         | S703         | 1-762-875-21              | SWITCH, KEYBOARD (△)       |                                  |
|          |              |                        |                         | S704         | 1-762-875-21              | SWITCH, KEYBOARD (DISC 3)  |                                  |
| * CN710  | 1-568-941-11 | PIN, CONNECTOR 3P      |                         | S705         | 1-762-875-21              | SWITCH, KEYBOARD (△)       |                                  |
|          |              | < SWITCH >             |                         | S706         | 1-762-875-21              | SWITCH, KEYBOARD (DISC 4)  |                                  |
| S703     | 1-771-218-11 | SWITCH, MICRO (MID IN) |                         | S707         | 1-762-875-21              | SWITCH, KEYBOARD (△)       |                                  |
| S704     | 1-771-218-11 | SWITCH, MICRO (IN)     |                         | S708         | 1-762-875-21              | SWITCH, KEYBOARD (DISC 5)  |                                  |
| *****    |              |                        |                         | S709         | 1-762-875-21              | SWITCH, KEYBOARD (△)       |                                  |
|          | 1-683-872-11 | LED BOARD<br>*****     |                         | *****        |                           |                            |                                  |
|          |              | < CAPACITOR >          |                         | 1-675-728-11 | LOAD MOTOR BOARD<br>***** |                            |                                  |
| C750     | 1-164-156-11 | CERAMIC CHIP           | 0.1uF                   | 25V          |                           | < CAPACITOR >              |                                  |
| C762     | 1-162-962-11 | CERAMIC CHIP           | 470PF                   | 10%          | 50V                       |                            |                                  |
| C782     | 1-124-584-00 | ELECT                  | 100uF                   | 20%          | 10V                       |                            |                                  |
| C790     | 1-164-156-11 | CERAMIC CHIP           | 0.1uF                   | 25V          |                           |                            |                                  |
|          |              | < DIODE >              |                         | C703         | 1-162-306-11              | CERAMIC                    | 0.01uF 30.00% 16V                |
| D751     | 8-719-057-29 | DIODE                  | SML78423C-TP15 (DISC 1) | C704         | 1-126-964-11              | ELECT                      | 10uF 20.00% 50V                  |
| D752     | 8-719-057-29 | DIODE                  | SML78423C-TP15 (DISC 2) | C705         | 1-162-306-11              | CERAMIC                    | 0.01uF 30.00% 16V                |
| D753     | 8-719-057-29 | DIODE                  | SML78423C-TP15 (DISC 3) | C712         | 1-162-306-11              | CERAMIC                    | 0.01uF 30.00% 16V                |
| D754     | 8-719-057-29 | DIODE                  | SML78423C-TP15 (DISC 4) |              |                           | < CONNECTOR >              |                                  |
| D755     | 8-719-057-29 | DIODE                  | SML78423C-TP15 (DISC 5) | * CN713      | 1-568-954-11              | PIN, CONNECTOR 5P          |                                  |
|          |              | < IC >                 |                         |              |                           | < DIODE >                  |                                  |
| IC750    | 8-759-366-45 | IC                     | NJU3713G(TE2)           | D702         | 8-719-109-85              | DIODE                      | MTZJ-T-72-5.1B                   |
|          |              | < COIL >               |                         |              |                           | < IC >                     |                                  |
| L785     | 1-216-296-11 | SHORT CHIP             | 0                       | IC702        | 8-759-633-65              | IC                         | M54641L                          |
| L787     | 1-216-296-11 | SHORT CHIP             | 0                       |              |                           | < RESISTOR >               |                                  |
|          |              | < RESISTOR >           |                         | R703         | 1-249-411-11              | CARBON                     | 330 5% 1/4W                      |
| R701     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R702     | 1-216-815-11 | METAL CHIP             | 330                     | 5%           | 1/16W                     |                            |                                  |
| R703     | 1-216-817-11 | METAL CHIP             | 470                     | 5%           | 1/16W                     |                            |                                  |
| R704     | 1-216-819-11 | METAL CHIP             | 680                     | 5%           | 1/16W                     |                            |                                  |
| R705     | 1-216-821-11 | METAL CHIP             | 1K                      | 5%           | 1/16W                     |                            |                                  |
| R706     | 1-216-823-11 | METAL CHIP             | 1.5K                    | 5%           | 1/16W                     |                            |                                  |
| R707     | 1-216-825-11 | METAL CHIP             | 2.2K                    | 5%           | 1/16W                     |                            |                                  |
| R708     | 1-216-829-11 | METAL CHIP             | 4.7K                    | 5%           | 1/16W                     |                            |                                  |
| R709     | 1-216-833-11 | METAL CHIP             | 10K                     | 5%           | 1/16W                     |                            |                                  |
| R760     | 1-216-809-11 | METAL CHIP             | 100                     | 5%           | 1/16W                     |                            |                                  |
| R761     | 1-216-809-11 | METAL CHIP             | 100                     | 5%           | 1/16W                     |                            |                                  |
| R762     | 1-216-809-11 | METAL CHIP             | 100                     | 5%           | 1/16W                     |                            |                                  |
| R763     | 1-216-809-11 | METAL CHIP             | 100                     | 5%           | 1/16W                     |                            |                                  |
| R771     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R772     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R773     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R774     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R775     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R781     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R782     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R783     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R784     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
| R785     | 1-216-813-11 | METAL CHIP             | 220                     | 5%           | 1/16W                     |                            |                                  |
|          |              |                        |                         |              |                           | A-4727-914-A               | MAIN BOARD, COMPLETE (E)         |
|          |              |                        |                         |              |                           | A-4727-907-A               | MAIN BOARD, COMPLETE (US,CND,MX) |
|          |              |                        |                         |              |                           | *****                      |                                  |
|          |              |                        |                         | *            | 3-923-762-11              | HOLDER (TR)                |                                  |
|          |              |                        |                         |              | 7-685-646-79              | SCREW +BVTP 3X8 TYPE2 IT-3 |                                  |
|          |              |                        |                         |              |                           | < CAPACITOR >              |                                  |
|          |              |                        |                         | C9           | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C11          | 1-162-971-11              | CERAMIC CHIP               | 0.001uF 10.00% 50V               |
|          |              |                        |                         | C12          | 1-162-974-11              | CERAMIC CHIP               | 0.01uF 50V                       |
|          |              |                        |                         | C19          | 1-162-968-11              | CERAMIC CHIP               | 0.0047uF 10% 50V                 |
|          |              |                        |                         | C20          | 1-117-863-11              | CERAMIC CHIP               | 0.47uF 10.00% 6.3V               |
|          |              |                        |                         | C34          | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C37          | 1-126-960-11              | ELECT                      | 1uF 20.00% 50V                   |
|          |              |                        |                         | C41          | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C58          | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C74          | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C76          | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C100         | 1-164-156-11              | CERAMIC CHIP               | 0.1uF 25V                        |
|          |              |                        |                         | C111         | 1-136-356-11              | MYLAR                      | 470PF 5.00% 50V                  |
|          |              |                        |                         | C112         | 1-128-551-11              | ELECT                      | 22uF 20.00% 25V                  |
|          |              |                        |                         | C113         | 1-128-551-11              | ELECT                      | 22uF 20.00% 25V                  |

MAIN

| Ref. No. | Part No.     | Description         | Remarks    |
|----------|--------------|---------------------|------------|
| C118     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C170     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C176     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C177     | 1-136-356-11 | MYLAR 470PF         | 5.00% 50V  |
| C211     | 1-136-356-11 | MYLAR 470PF         | 5.00% 50V  |
| C212     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C213     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C218     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C270     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C276     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C277     | 1-136-356-11 | MYLAR 470PF         | 5.00% 50V  |
| C311     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C312     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C316     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C317     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C361     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C362     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C366     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C367     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C391     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C396     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C401     | 1-126-767-11 | ELECT 1000uF        | 20.00% 16V |
| C403     | 1-126-767-11 | ELECT 1000uF        | 20.00% 16V |
| C410     | 1-126-939-11 | ELECT 10000uF       | 20.00% 16V |
| C411     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C413     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C414     | 1-126-926-11 | ELECT 1000uF        | 20.00% 10V |
| C420     | 1-126-939-11 | ELECT 10000uF       | 20.00% 16V |
| C421     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C423     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C424     | 1-126-926-11 | ELECT 1000uF        | 20.00% 10V |
| C431     | 1-128-548-11 | ELECT 4700uF        | 20.00% 25V |
| C432     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C433     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C434     | 1-126-926-11 | ELECT 1000uF        | 20.00% 10V |
| C442     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C443     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C444     | 1-126-926-11 | ELECT 1000uF        | 20.00% 10V |
| C451     | 1-128-548-11 | ELECT 4700uF        | 20.00% 25V |
| C452     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C453     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C454     | 1-126-926-11 | ELECT 1000uF        | 20.00% 10V |
| C460     | 1-128-576-11 | ELECT 100uF         | 20.00% 63V |
| C463     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C465     | 1-126-967-11 | ELECT 47uF          | 20.00% 50V |
| C471     | 1-104-663-11 | ELECT 33uF          | 20.00% 25V |
| C472     | 1-128-551-11 | ELECT 22uF          | 20.00% 25V |
| C476     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C480     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C481     | 1-162-974-11 | CERAMIC CHIP 0.01uF | 50V        |
| C505     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C517     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C518     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C530     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C531     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C534     | 1-164-156-11 | CERAMIC CHIP 0.1uF  | 25V        |
| C535     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |
| C539     | 1-126-933-11 | ELECT 100uF         | 20.00% 16V |

| Ref. No.      | Part No.     | Description                    | Remarks     |
|---------------|--------------|--------------------------------|-------------|
| C541          | 1-164-156-11 | CERAMIC CHIP 0.1uF             | 25V         |
| C600          | 1-126-963-11 | ELECT 4.7uF                    | 20.00% 50V  |
| C611          | 1-164-156-11 | CERAMIC CHIP 0.1uF             | 25V         |
| C621          | 1-164-156-11 | CERAMIC CHIP 0.1uF             | 25V         |
| C630          | 1-216-864-11 | METAL CHIP 0                   | 5% 1/16W    |
| C670          | 1-164-156-11 | CERAMIC CHIP 0.1uF             | 25V         |
| △C900         | 1-113-920-11 | CERAMIC 0.0022uF               | 20.00% 250V |
| △C901         | 1-113-920-11 | CERAMIC 0.0022uF               | 20.00% 250V |
| < CONNECTOR > |              |                                |             |
| CN1           | 1-784-367-11 | CONNECTOR, FFC/FPC 8P          |             |
| CN630         | 1-784-370-21 | CONNECTOR, FFC/FPC 11P         |             |
| * CN631       | 1-564-706-11 | PIN, CONNECTOR (SMALL TYPE) 4P |             |
| CN640         | 1-784-376-11 | CONNECTOR, FFC/FPC 17P         |             |
| * CN641       | 1-568-954-11 | PIN, CONNECTOR 5P              |             |
| CN660         | 1-793-991-11 | CONNECTOR, FFC/FPC 23P         |             |
| CN671         | 1-778-692-11 | CONNECTOR, FFC/FPC 21P         |             |
| CN690         | 1-506-468-11 | PIN, CONNECTOR 3P              |             |
| * CN780       | 1-695-822-11 | CONNECTOR, BOARD TO BOARD 8P   |             |
| CN900         | 1-564-321-00 | PIN, CONNECTOR 2P              |             |
| △CN910        | 1-564-687-11 | PIN, CONNECTOR 3P (E)          |             |
| < DIODE >     |              |                                |             |
| D181          | 8-719-820-05 | DIODE 1SS181-TE85L             |             |
| D310          | 8-719-988-61 | DIODE 1SS355TE-17              |             |
| D311          | 8-719-801-78 | DIODE 1SS184-TE85L             |             |
| D316          | 8-719-820-05 | DIODE 1SS181-TE85L             |             |
| D401          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D402          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D403          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D404          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D411          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D412          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D421          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D422          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D426          | 1-216-295-91 | SHORT CHIP 0                   |             |
| D431          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D432          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D433          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D434          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D451          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D452          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D453          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D454          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D461          | 8-719-200-82 | DIODE 11ES2-TB5                |             |
| D462          | 8-719-422-23 | DIODE MA8047-TX                |             |
| D471          | 8-719-988-61 | DIODE 1SS355TE-17              |             |
| D472          | 8-719-988-61 | DIODE 1SS355TE-17              |             |
| D473          | 8-719-988-61 | DIODE 1SS355TE-17              |             |

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

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

| Ref. No. | Part No.     | Description                          | Remarks             | Ref. No. | Part No.     | Description | Remarks       |
|----------|--------------|--------------------------------------|---------------------|----------|--------------|-------------|---------------|
|          |              | < IC >                               |                     | R87      | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W    |
| IC1      | 6-701-853-01 | IC uPD70F3033AYGF-3BA                |                     | R88      | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W    |
| IC100    | 8-759-643-31 | IC BR24C02FV-WE2                     |                     | R90      | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC310    | 8-759-278-58 | IC NJM4558V-TE2                      |                     | R94      | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC370    | 8-759-278-58 | IC NJM4558V-TE2                      |                     | R95      | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC390    | 8-759-697-21 | IC NJM4565V(TE2)                     |                     | R107     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC410    | 8-759-231-53 | IC AN7805                            |                     | R111     | 1-216-839-11 | METAL CHIP  | 33K 5% 1/16W  |
| IC420    | 8-759-231-53 | IC AN7805                            |                     | R112     | 1-216-837-11 | METAL CHIP  | 22K 5% 1/16W  |
| IC430    | 8-759-400-66 | IC AN7808                            |                     | R113     | 1-216-849-11 | METAL CHIP  | 220K 5% 1/16W |
| IC440    | 8-759-605-00 | IC AN7807                            |                     | R115     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
| IC450    | 8-759-400-66 | IC AN7808                            |                     | R170     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
| IC460    | 8-759-633-42 | IC M5293L                            |                     | R171     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC476    | 8-759-387-77 | IC TC7WU04F-TE12L                    |                     | R172     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| IC480    | 8-759-598-06 | IC S-80942ANMP-DD6-T2                |                     | R176     | 1-216-819-11 | METAL CHIP  | 680 5% 1/16W  |
| IC500    | 6-701-843-01 | IC CXD9692R                          |                     | R177     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
| IC610    | 6-600-000-01 | IC GP1FA512RZB (DIGITAL OPTICAL IN)  |                     | R178     | 1-216-815-11 | METAL CHIP  | 330 5% 1/16W  |
| IC620    | 6-600-001-01 | IC GP1FA512TZC (DIGITAL OPTICAL OUT) |                     | R181     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
|          |              | < JACK >                             |                     | R191     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
| J310     | 1-784-429-11 | JACK, PIN 4P (ANALOG IN/OUT)         |                     | R192     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
|          |              | < COIL >                             |                     | R193     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W    |
| L390     | 1-216-295-91 | SHORT CHIP                           | 0                   | R211     | 1-216-839-11 | METAL CHIP  | 33K 5% 1/16W  |
| L391     | 1-216-295-91 | SHORT CHIP                           | 0                   | R212     | 1-216-837-11 | METAL CHIP  | 22K 5% 1/16W  |
| L539     | 1-216-296-11 | SHORT CHIP                           | 0                   | R213     | 1-216-849-11 | METAL CHIP  | 220K 5% 1/16W |
| L600     | 1-414-267-21 | INDUCTOR                             | 10uH                | R215     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
| L636     | 1-216-295-91 | SHORT CHIP                           | 0                   | R270     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
| L665     | 1-216-295-91 | SHORT CHIP                           | 0                   | R271     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| L667     | 1-469-670-21 | FERRITE                              | 0uH                 | R272     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
|          |              | < LINE FILTER >                      |                     | R276     | 1-216-819-11 | METAL CHIP  | 680 5% 1/16W  |
| △ LF900  | 1-419-625-11 | COIL, LINE FILTER                    |                     | R277     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
|          |              | < TRANSISTOR >                       |                     | R278     | 1-216-815-11 | METAL CHIP  | 330 5% 1/16W  |
| Q181     | 8-729-046-97 | TRANSISTOR                           | 2SD1938(F)-T(TX).SO | R281     | 1-216-833-11 | METAL CHIP  | 10K 5% 1/16W  |
| Q191     | 8-729-424-67 | TRANSISTOR                           | UN2216-TX           | R291     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
| Q281     | 8-729-046-97 | TRANSISTOR                           | 2SD1938(F)-T(TX).SO | R292     | 1-216-805-11 | METAL CHIP  | 47 5% 1/16W   |
| Q291     | 8-729-424-67 | TRANSISTOR                           | UN2216-TX           | R293     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W    |
| Q310     | 8-729-922-37 | TRANSISTOR                           | 2SD2144S-TP-UVW     | R310     | 1-216-825-11 | METAL CHIP  | 2.2K 5% 1/16W |
| Q380     | 8-729-015-74 | TRANSISTOR                           | UN5111-TX           | R311     | 1-216-841-11 | METAL CHIP  | 47K 5% 1/16W  |
|          |              | < RESISTOR >                         |                     | R380     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
| R3       | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R381     | 1-216-847-11 | METAL CHIP  | 150K 5% 1/16W |
| R6       | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R461     | 1-216-841-11 | METAL CHIP  | 47K 5% 1/16W  |
| R12      | 1-216-845-11 | METAL CHIP                           | 100K 5% 1/16W       | R462     | 1-216-845-11 | METAL CHIP  | 100K 5% 1/16W |
| R15      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R463     | 1-216-813-11 | METAL CHIP  | 220 5% 1/16W  |
| R18      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R464     | 1-216-813-11 | METAL CHIP  | 220 5% 1/16W  |
| R19      | 1-216-849-11 | METAL CHIP                           | 220K 5% 1/16W       | R471     | 1-216-809-11 | METAL CHIP  | 100 5% 1/16W  |
| R20      | 1-216-825-11 | METAL CHIP                           | 2.2K 5% 1/16W       | R472     | 1-216-817-11 | METAL CHIP  | 470 5% 1/16W  |
| R21      | 1-216-829-11 | METAL CHIP                           | 4.7K 5% 1/16W       | R473     | 1-216-817-11 | METAL CHIP  | 470 5% 1/16W  |
| R25      | 1-216-845-11 | METAL CHIP                           | 100K 5% 1/16W       | R474     | 1-216-837-11 | METAL CHIP  | 22K 5% 1/16W  |
| R63      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R475     | 1-216-842-11 | METAL CHIP  | 56K 5% 1/16W  |
| R64      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R476     | 1-216-851-11 | METAL CHIP  | 330K 5% 1/16W |
| R66      | 1-216-845-11 | METAL CHIP                           | 100K 5% 1/16W       | R477     | 1-216-821-11 | METAL CHIP  | 1K 5% 1/16W   |
| R72      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R480     | 1-216-841-11 | METAL CHIP  | 47K 5% 1/16W  |
| R73      | 1-216-833-11 | METAL CHIP                           | 10K 5% 1/16W        | R500     | 1-216-864-11 | METAL CHIP  | 0 5% 1/16W    |

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.

# RCD-W50C

|             |               |                 |               |                 |                |
|-------------|---------------|-----------------|---------------|-----------------|----------------|
| <b>MAIN</b> | <b>OUT SW</b> | <b>POWER-SW</b> | <b>SENSOR</b> | <b>SENSOR 2</b> | <b>VOL-SEL</b> |
|-------------|---------------|-----------------|---------------|-----------------|----------------|

| Ref. No.                      | Part No.     | Description                            | Quantity | Power  | Remarks |
|-------------------------------|--------------|--|----------|--------|---------|
| R504                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| R506                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
| R507                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
| R508                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
| R509                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
|                               |              |  |          |        |         |
| R510                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
| R511                          | 1-216-809-11 | METAL CHIP                             | 100      | 5%     | 1/16W   |
| R513                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/10W   |
| R514                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| R516                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
|                               |              |  |          |        |         |
| R526                          | 1-216-833-11 | METAL CHIP                             | 10K      | 5%     | 1/16W   |
| R540                          | 1-216-834-11 | METAL CHIP                             | 12K      | 5%     | 1/16W   |
| R544                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| R550                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| R611                          | 1-216-817-11 | METAL CHIP                             | 470      | 5%     | 1/16W   |
|                               |              |  |          |        |         |
| R636                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| R665                          | 1-216-864-11 | METAL CHIP                             | 0        | 5%     | 1/16W   |
| < COMPOSITION CIRCUIT BLOCK > |              |  |          |        |         |
| RB43                          | 1-236-908-11 | RES, CHIP NETWORK 10K (3216)           |          |        |         |
| RB47                          | 1-236-908-11 | RES, CHIP NETWORK 10K (3216)           |          |        |         |
| RB51                          | 1-236-908-11 | RES, CHIP NETWORK 10K (3216)           |          |        |         |
| RB54                          | 1-236-908-11 | RES, CHIP NETWORK 10K (3216)           |          |        |         |
| RB68                          | 1-236-908-11 | RES, CHIP NETWORK 10K (3216)           |          |        |         |
|                               |              |  |          |        |         |
| RB77                          | 1-233-418-11 | RES, CHIP NETWORK 3.3K (3216)          |          |        |         |
| < RELAY >                     |              |  |          |        |         |
| RY310                         | 1-515-622-11 | RELAY                                  |          |        |         |
| < VIBRATOR >                  |              |  |          |        |         |
| X38                           | 1-760-014-11 | VIBRATOR, CERAMIC 20MHz                |          |        |         |
| *****                         |              |  |          |        |         |
| 1-675-725-11 OUT SW BOARD     |              |  |          |        |         |
| *****                         |              |  |          |        |         |
| < CONNECTOR >                 |              |  |          |        |         |
| * CN709                       | 1-568-943-11 | PIN, CONNECTOR 5P                      |          |        |         |
| < SWITCH >                    |              |  |          |        |         |
| S701                          | 1-771-218-11 | SWITCH, MICRO (MID OUT)                |          |        |         |
| S702                          | 1-771-218-11 | SWITCH, MICRO (LID)                    |          |        |         |
| S708                          | 1-771-218-11 | SWITCH, MICRO (OUT)                    |          |        |         |
| *****                         |              |  |          |        |         |
| 1-683-869-11 POWER-SW BOARD   |              |  |          |        |         |
| *****                         |              |  |          |        |         |
| < CAPACITOR >                 |              |  |          |        |         |
| △C921                         | 1-113-920-11 | CERAMIC                                | 0.0022uF | 20.00% | 250V    |
| < CONNECTOR >                 |              |  |          |        |         |
| *△CN920                       | 1-580-230-31 | PIN, CONNECTOR (PC BOARD) 2P           |          |        |         |
| < SWITCH >                    |              |  |          |        |         |
| △S921                         | 1-572-267-51 | SWITCH, PUSH (AC POWER)(1 KEY) (POWER) |          |        |         |
| *****                         |              |  |          |        |         |

| Ref. No.                       | Part No.     | Description                         | Quantity      | Power | Remarks                |
|--------------------------------|--------------|-------------------------------------|---------------|-------|------------------------|
|                                | 1-675-726-11 | SENSOR BOARD                        |               |       | *****                  |
|                                |              |                                     |               |       |                        |
|                                | 4-964-461-02 | HOLDER (SENSOR)                     |               |       |                        |
| < CONNECTOR >                  |              |                                     |               |       |                        |
| CN708                          | 1-506-481-11 | PIN, CONNECTOR 2P                   |               |       |                        |
| < DIODE >                      |              |                                     |               |       |                        |
| D704                           | 8-719-055-84 | DIODE GL528VS1 (DISC IN DET SENSOR) |               |       |                        |
| < RESISTOR >                   |              |                                     |               |       |                        |
| R711                           | 1-249-415-11 | CARBON                              | 680           | 5%    | 1/4W F                 |
| *****                          |              |                                     |               |       |                        |
| 1-675-727-11 SENSOR 2 BOARD    |              |                                     |               |       |                        |
| *****                          |              |                                     |               |       |                        |
| < TRANSISTOR >                 |              |                                     |               |       |                        |
| Q703                           | 8-729-921-53 | PHOTO TRAN                          | ISTOR PT483F1 |       | (DISC IN DET SENSOR)   |
| *****                          |              |                                     |               |       |                        |
| 1-683-870-11 VOL-SEL BOARD (E) |              |                                     |               |       |                        |
| *****                          |              |                                     |               |       |                        |
| < CONNECTOR >                  |              |                                     |               |       |                        |
| △CN911                         | 1-564-321-00 | PIN, CONNECTOR (3.96mm PITCH)2P (E) |               |       |                        |
| < SWITCH >                     |              |                                     |               |       |                        |
| △S911                          | 1-771-474-11 | SWITCH, POWER (VOLTAGE CHANGE)      |               |       | (VOLTAGE SELECTOR) (E) |
| *****                          |              |                                     |               |       |                        |
| MISCELLANEOUS                  |              |                                     |               |       |                        |
| *****                          |              |                                     |               |       |                        |
| △5                             | 1-783-525-21 | CORD, POWER (TRACKING) (E)          |               |       |                        |
| △5                             | 1-783-531-31 | CORD, POWER (US,CND)                |               |       |                        |
| 65                             | 1-823-923-11 | WIRE (FLAT TYPE) (21 CORE)          |               |       |                        |
| 107                            | 1-823-925-11 | WIRE (FLAT TYPE) (17 CORE)          |               |       |                        |
| 109                            | 1-823-924-11 | WIRE (FLAT TYPE) (23 CORE)          |               |       |                        |
|                                |              |                                     |               |       |                        |
| 110                            | 1-823-922-11 | WIRE (FLAT TYPE) (11 CORE)          |               |       |                        |
| 562                            | 1-782-817-11 | WIRE (FLAT TYPE) (16 CORE)          |               |       |                        |
| △558                           | A-4735-189-A | OP ASSY (A-MAX.3)                   |               |       |                        |
| 601                            | 1-823-651-11 | CABLE, FLEXIBLE FLAT (32 CORE)      |               |       |                        |
| △603                           | 8-583-104-01 | OPTICAL PICK-UP (KRM-220CAA)        |               |       |                        |
|                                |              |                                     |               |       |                        |
| * 609                          | 1-452-958-11 | MAGNET (CHUCKING)                   |               |       |                        |
| M201                           | A-4735-557-A | MOTOR ASSY (LOADING)                |               |       |                        |
| M701                           | 1-763-790-11 | MOTOR, DC (ELEVATOR)                |               |       |                        |
| M702                           | 1-763-790-11 | MOTOR, DC (LOADING)                 |               |       |                        |
| S707                           | 1-418-045-01 | ENCODER, ROTARY                     |               |       |                        |
|                                |              |                                     |               |       |                        |
| △T900                          | 1-437-623-11 | TRANSFORMER, POWER (US,CND)         |               |       |                        |
| △T900                          | 1-437-624-11 | TRANSFORMER, POWER (E)              |               |       |                        |
| *****                          |              |                                     |               |       |                        |

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

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>                      | <u>Remarks</u> |
|-----------------|-----------------|---|----------------|
|                 |                 | ACCESSORIES<br>*****                    |                |
|                 | 1-477-038-11    | REMOTE COMMANDER (RM-R51)               |                |
|                 | 1-558-271-11    | CORD, CONNECTION                        |                |
|                 | 1-776-263-51    | CORD, CONNECTION (US,CND)               |                |
|                 | 4-981-643-01    | COVER, BATTERY (FOR RM-R51)             |                |
|                 | 4-242-051-11    | MANUAL, INSTRUCTION (ENGLISH)(US,CND,E) |                |
|                 | 4-242-051-21    | MANUAL, INSTRUCTION (FRENCH)(CND)       |                |
|                 | 4-242-051-31    | MANUAL, INSTRUCTION (SPANISH)(E)        |                |

