

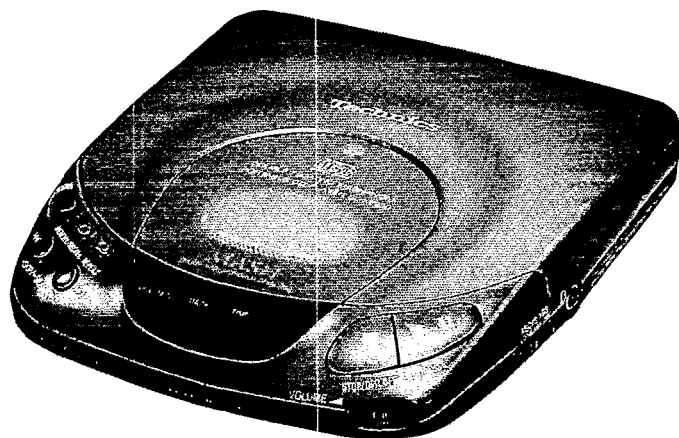
# Service Manual

**COMPACT**  
**disc**  
**DIGITAL AUDIO**

**DIGITAL**

**MASH**<sup>※</sup>  
multi-stage noise shaping

Portable CD Player  
**SL-XP350**



## Colour

(K)...Black Type

## Area

Suffix for Model No.	Area	Colour
(EB)	Great Britain.	(K)
(EG)	Europe.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	

- ※
- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
  - MASH is a trademark of NTT.

## TRAVERSE DECK: RAE0132Z MECHANISM SERIES

## SPECIFICATIONS

### Audio

**No. of channels:** 2 channels (left and right, stereo)  
**Output voltage:** 0.7V (50k $\Omega$ )  $\phi$ 3.5 stereo mini jack  
**Frequency response:** 20~20,000Hz (+0.5dB, -1.5dB)  
**S/N:** more than 96dB  
**Wow and flutter:** Below measurable limit  
**DA converter:** 1 bit, MASH  
**Headphones output level:** max. 5mW+5mW/16 $\Omega$   $\phi$ 3.5 stereo mini jack (variable)

### Signal Format

**Correction system:** Technics New Super Decoding Algorithm

### Pickup

**Type:** One beam  
**Light source:** Semiconductor laser  
**Wavelength:** 780nm  
**Lens:** Glass pressed lens

### General

**Power requirement:** AC; with an included panasonic AC adaptor  
 (RFEA404B-W): (EB)  
 (RFEA401E-1S): (EG)  
 (RFEA402Z-W): (GC)  
 (RFEA401A-W): (GN)  
 Batteries; 3V (two "AA" size batteries, not included)  
 (Panasonic UM-3/R6P, AM3/LR6 or equivalent, not included)  
 Rechargeable Batteries; DC 2.4V with an included Panasonic Rechargeable Batteries (RP-BP60EY)  $\times$  2  
 Car Battery; with an optional panasonic car adaptor (SH-CDC9)  
**DC IN:** 4.5V  $\diamond$   $\ominus$   $\diamond$   
**Power consumption:**  
**AC adaptor;** 3.5W  
**Battery;** 0.6W  
**Dimensions (W  $\times$  H  $\times$  D):** 128  $\times$  26.8  $\times$  148mm  
**Weight:** 277g without batteries  
 317g with batteries

**Note:** Design and specifications are subject to change without notice.

Weight and dimensions are approximate.

# Technics

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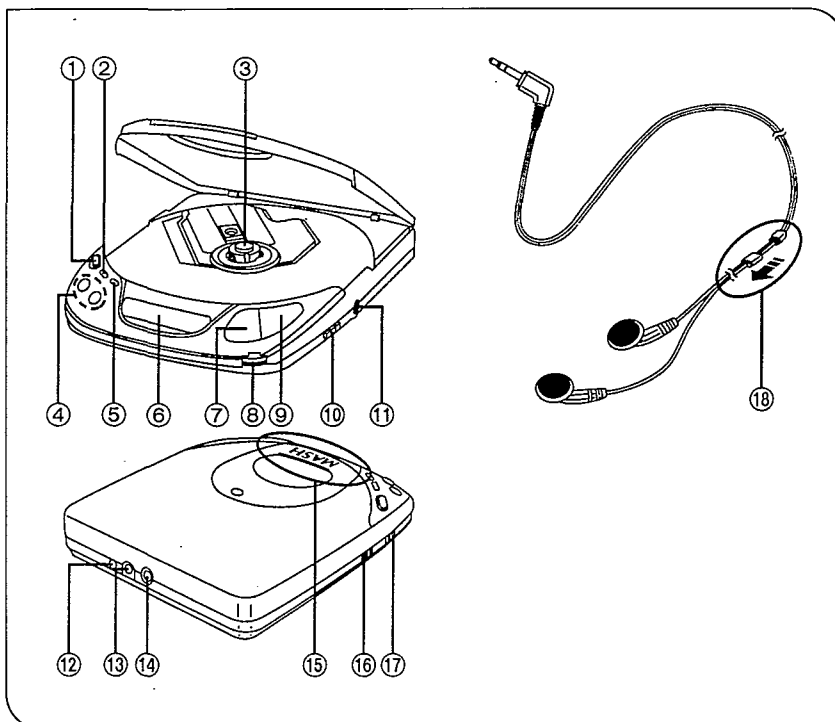
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## LOCATION OF CONTROLS

- ① Open button (OPEN)
- ② Memory/recall button (MEMORY/RECALL)
- ③ Push button (PUSH)
- ④ Skip/search buttons (◀◀-SKIP/-SEARCH▶▶)
- ⑤ Repeat button (REPEAT)
- ⑥ Display
- ⑦ Stop/operation off button (■ STOP/OPR OFF)
- ⑧ Earphones/headphones' volume control (VOLUME)
- ⑨ Play/pause button (▶ || PLAY/PAUSE)
- ⑩ ASC/S-XBS selector (ASC/S-XBS)
- ⑪ Earphones/headphones jack (🎧) 16Ω φ3.5
- ⑫ Out jack (OUT)
- ⑬ DC in jack (DC IN 4.5 V ⚡)
- ⑭ Hole for car insulator mounting screw
- ⑮ Operation indicator (MASH)
- ⑯ Play mode selector (PLAY MODE)
- ⑰ Hold switch (HOLD)
- ⑱ Slider

Slide up to prevent entangling of the cord when the stereo earphones are not in use.



## ACCIDENTAL OPERATION PREVENTION FUNCTION

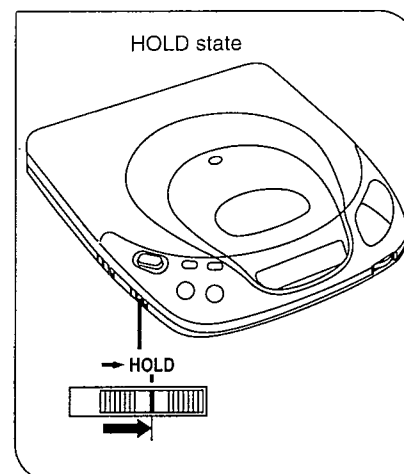
This function prevents the player from operating even if its function buttons are pressed accidentally. (However, the disc lid can be opened or closed.)

After operating any of the buttons, it is a good idea to keep the switch at the HOLD position.

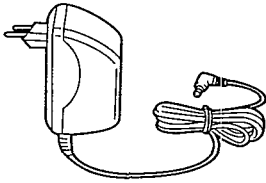
Before operation, release the player from the hold state.

### ■ HOLD display

When a function button is pressed with the switch at the HOLD position, the "hold" indicator appears on the display. (In the OFF mode, it appears only when the PLAY/PAUSE button is pressed.)



## ACCESSORIES



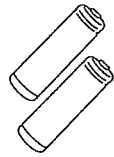
AC adaptor..... 1 pc.  
 [ (RFEA404B-W): (EB) (RFEA402Z-W): (GC) ]  
 [ (RFEA401E-1S): (EG) (RFEA401A-W): (GN) ]

### Note:

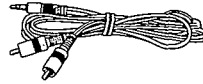
The configuration of the AC adaptor differs according to area.



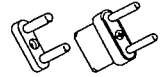
Stereo earphones..... 1 pc.  
 [ (RFEV306A-KS): (EG, EB) ]  
 [ (RP-HV135GY): (GC, GN) ]



Rechargeable batteries..... 2 pcs.  
 (RP-BP60EY)



Stereo connection cable .... 1 pc.  
 (RJL2P001X10)



Power plug adaptor..... 1 pc.  
 (RJP120ZDS-K): (GC)

## PRECAUTION OF LASER DIODE

**CAUTION:** This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.  
 Wave length: 780nm  
 Maximum output radiation power from pickup: 100µW/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

**ACHTUNG:** Dieses Produkt enthält eine Lasereinheit. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

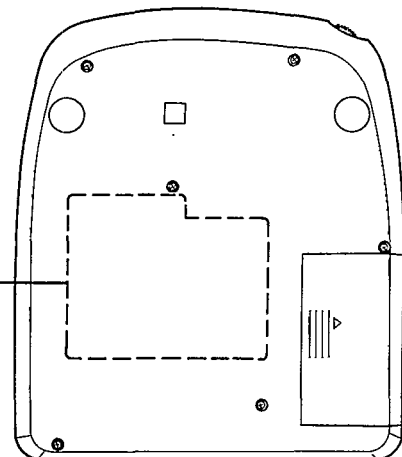
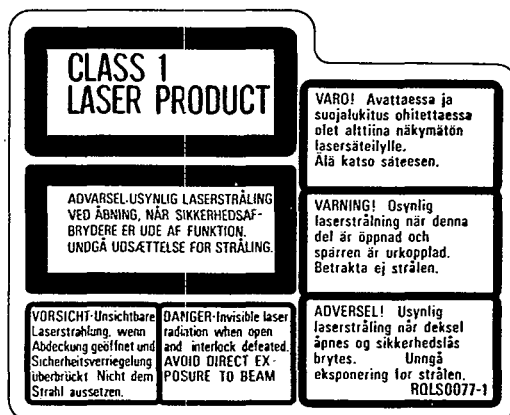
Wellenlänge: 780nm  
 Maximale Strahlungsleistung der Lasereinheit: 100µW/VDE

Die Strahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Lasereinheit gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

**ADVARSEL:** I dette a apparat anvendes laser.

RQLS0077-1



(Bottom side)

## POWER SOURCE

### Rechargeable batteries

Make sure that the batteries have been charged before use. It takes about 3 hours to fully recharge them.

- The player can be used for about 2 hours 30 minutes when it has been fully recharged. (When the player is used at 25°C on a flat and stable surface in the hold mode)

The play time may be shorter depending on the operating conditions.

- You can continue to recharge the same batteries for about 10 months (300 times). After that, their operating time will be shortened, and you will need to replace them.

Obtain new rechargeable batteries (RP-BP60) designed exclusively for the player.

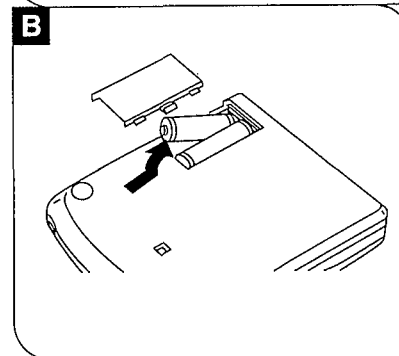
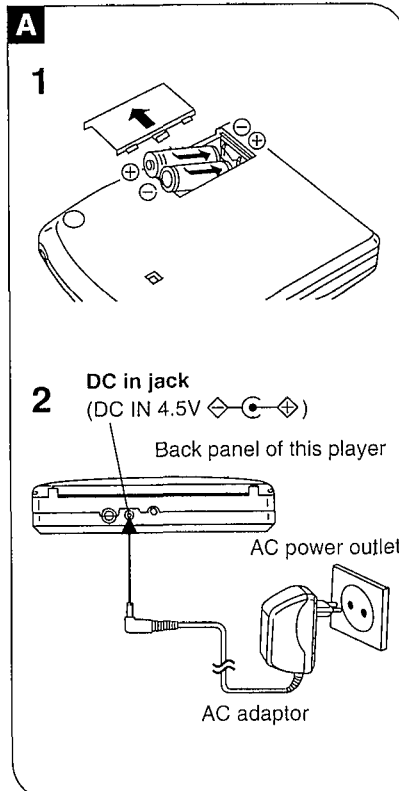
You can operate the player with the AC adaptor while recharging the batteries, but it will lengthen the recharging time.

#### Recharging batteries **A**

- 1 Install two rechargeable batteries.
- 2 Connect the AC adaptor. While recharging, the AC adaptor and rechargeable batteries may get warm. This is normal.
- 3 After completing recharging the batteries, disconnect the AC adaptor from the DC in jack and the AC power outlet.

#### Battery removal **B**

Press and push up batteries in the direction of the arrow to remove them.



#### For (GC) area only.

If the power supply in your area is 110 V or 220 V, the time for complete recharging takes 5 hours, which is different from the time described in this booklet.

### Dry cell batteries (not included)

Install two LR6 (UM-3) type alkaline batteries as shown in the figure. **A**

Make sure that the AC adaptor is disconnected from the AC power outlet and the player.

Using two LR6 type alkaline dry cell batteries provides about 8 hours of playing time. (When the player is used at 25°C on a flat and stable surface in the hold mode) The play time may be shorter depending on the operating conditions.

#### Battery removal **B**

Press and push up batteries in the direction of the arrow to remove them.

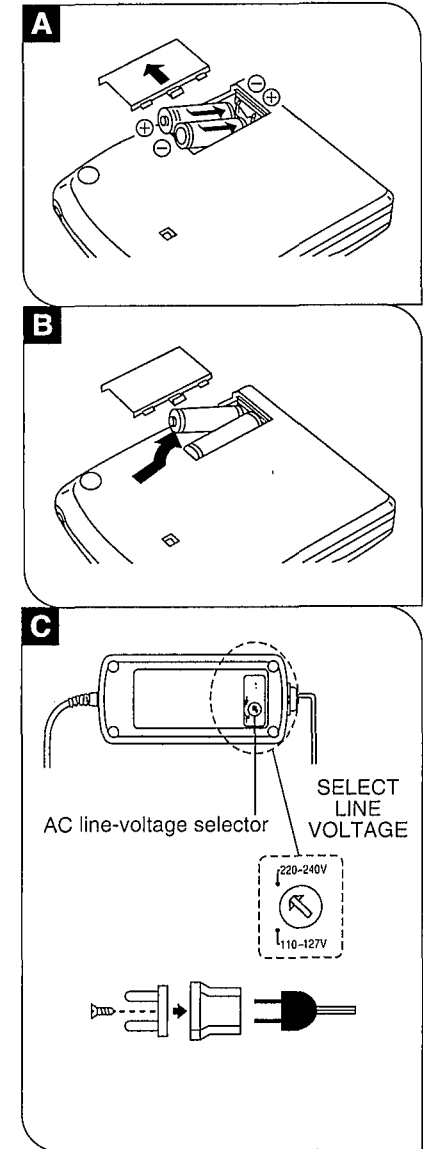
### AC adaptor

#### Before use **C**

##### [For (GC) area only.]

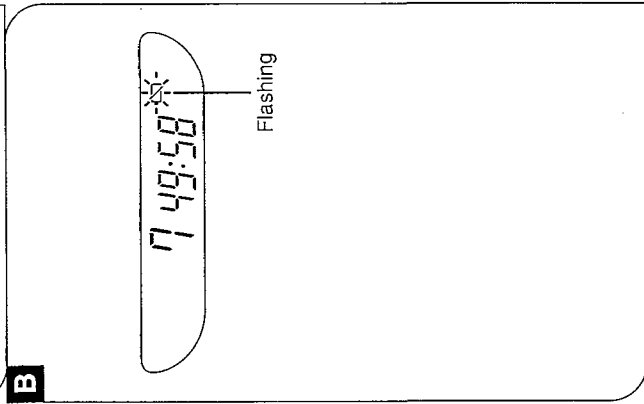
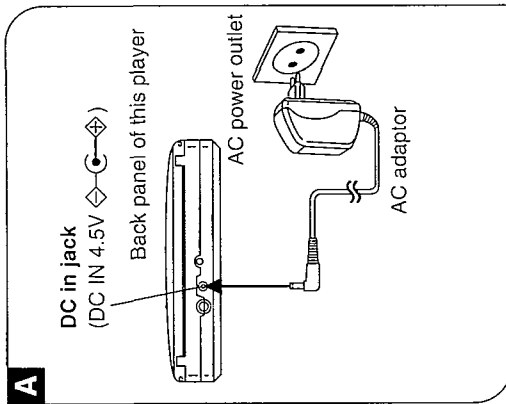
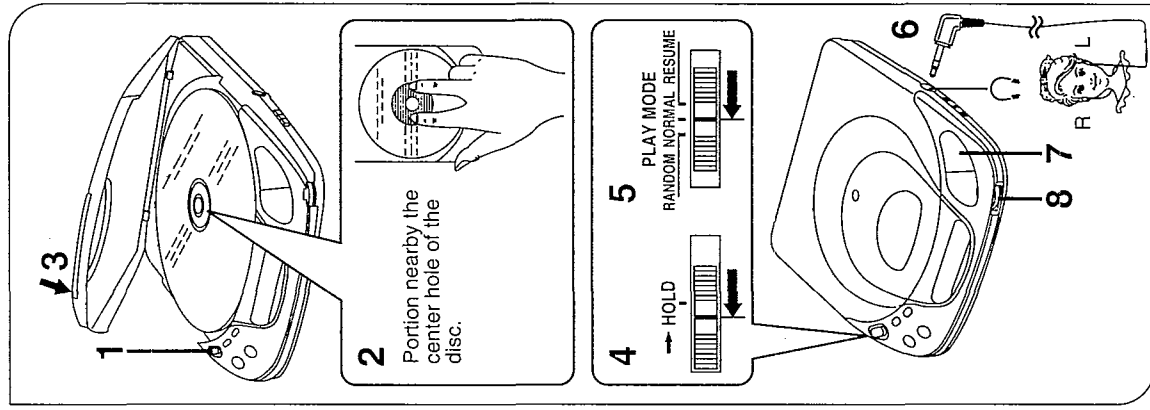
Make sure the preset voltage of your AC adaptor fits to your local voltage before plugging it into the AC power outlet. If it doesn't, turn the AC line-voltage selector with a screwdriver so that it corresponds to your local voltage.

If the power plug will not fit your socket, use the power plug adaptor.



# ■ LISTENING TO CD TRACKS IN THEIR ORIGINAL SEQUENCE (Normal Play)

- 1 Press OPEN** to open the disc lid.
- 2 Insert the disc.** Press the portion nearby the center hole of the disc until a "click" sound can be heard.
- 3 Close the disc lid.**
- 4 Release the player from the hold state.**
- 5 Set the play mode selector to NORMAL.**
- 6 Connect the plug of the stereo earphones (included) to the earphones/headphones jack.** (Plug in firmly.)
- 7 Press PLAY/PAUSE.** This turns on the player and begins the first track.
- 8 Adjust the volume level.**



Use only the AC adaptor provided with this player. **A**

**CAUTION**  
Do not use the AC adaptor provided with this player for other products.

**Note:**  
The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

**Car adaptor (not included)**

**CAUTION**  
Use only car adaptor, Model: SH-CDC9, manufactured by Matsushita Electric Industrial Co., Ltd.

The rechargeable battery can be recharged with the car adaptor. (See page 7.)

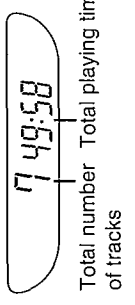
When the car adaptor or AC adaptor is used, the backlight of the display comes on.

**Battery indicator **B****

Type of battery	When the indicator flashes	Remedial action
Rechargeable batteries	When the battery is full-used	In a short while the player is automatically turned off. Recharge the batteries.
Dry cell batteries	When the battery is half-used	Play is possible while the indicator is flashing.

■ To stop play **A**

Press **STOP/OPR OFF** in the play mode.



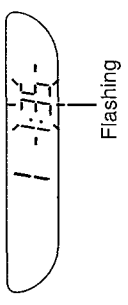
The disc will stop rotating, and the display will show the total number of tracks and total playing time on the disc.

To turn off the player  
Press **STOP/OPR OFF** again.

If you leave the player in the stop mode, it will automatically shut off after 4 minutes.

■ To temporarily stop disc play

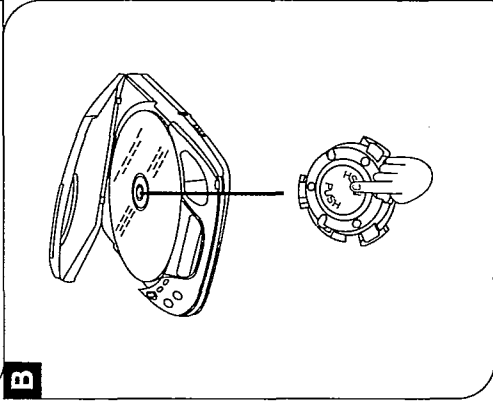
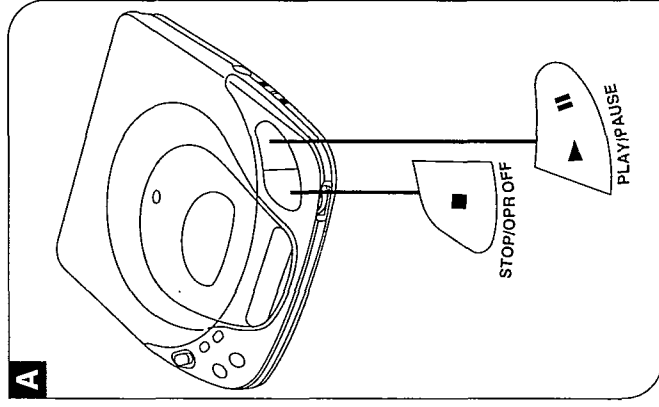
Press **PLAY/PAUSE** in the play mode.



To resume play  
Press **PLAY/PAUSE** again.

To release the fixed state of the disc **B**

After the disc has stopped rotating, press **OPEN** to open the disc lid and press **PUSH**.  
(Do not open the disc lid during play.)



To skip tracks forward or backward (Skip function)

Press either skip/search button **▶▶** or **◀◀** in the play mode.  
**▶▶** : The pickup skips forward as many tracks as the number of times you press the button.  
**◀◀** : When the button is pressed once, the pickup skips to the beginning of the track being played. If the button is pressed again quickly, the pickup skips backward as many tracks as the number of times you press the button.

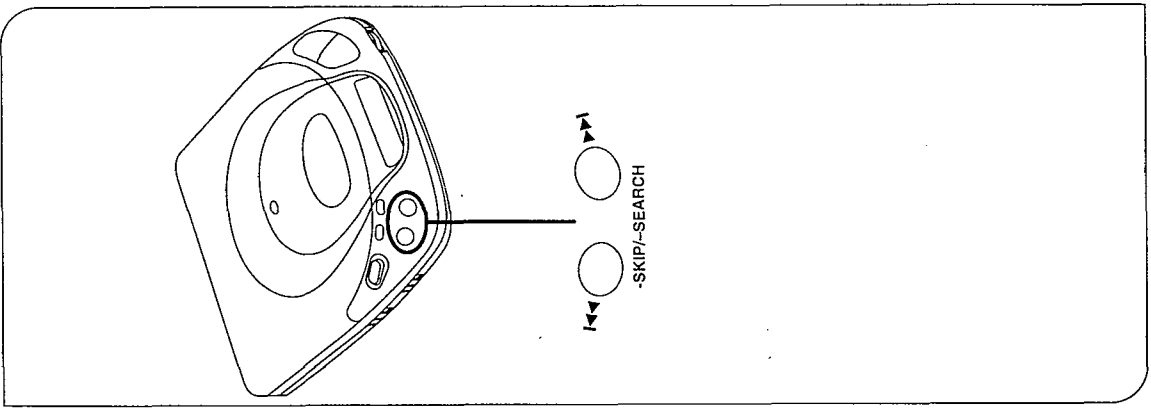
During program play, the pickup skips forward or backward in the programmed track sequence.

To search forward or backward (Search function)

Press and hold **▶▶▶** or **◀◀◀** in the play mode.  
**▶▶▶** : To search forward  
**◀◀◀** : To search backward

Release the button when you reach the desired point.

- You can search slowly when either button is first pressed and quickly when it is then kept depressed.
- In the program, random and one track repeat play mode, you can search forward or backward only within the current track.



### To change the tone quality **A**

(When listening through the stereo ear-phones)

#### ■ For extra bass sound (S-XBS)

Set the ASC/S-XBS selector to S-XBS.

#### ■ For a more dynamic and mellow sound

(Smoothed treble response and more dynamic bass)

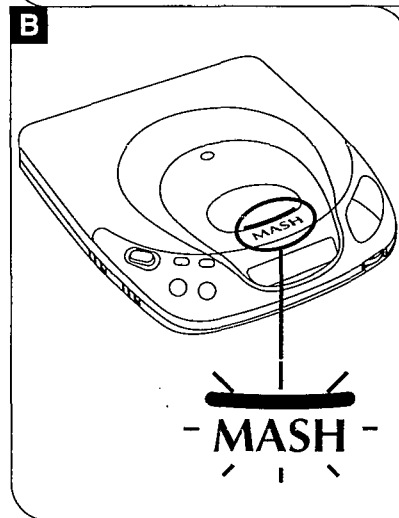
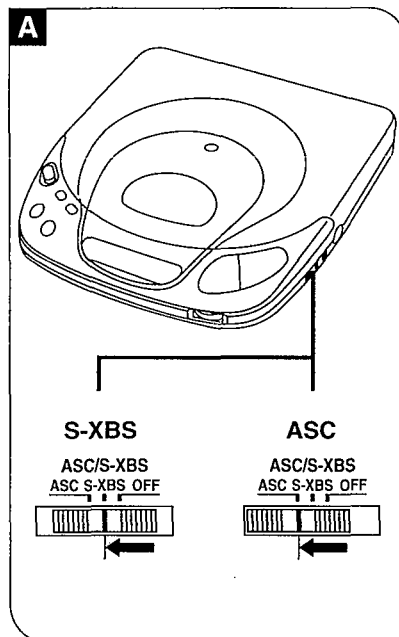
Set the ASC/S-XBS selector to ASC.

### Operation indicator **B**

Indicator status	Operating status
Off	Switched off
Rapid flashing	<ul style="list-style-type: none"> <li>•The PLAY/PAUSE button was pressed when the player was switched off.</li> <li>•The skip function was used during play.</li> </ul>
On	Play in progress
Slow flashing	Pause/stop

#### ■ To reduce the battery discharge

Set the player to the HOLD state when rechargeable or dry batteries are used. (The operation indicator goes off.)

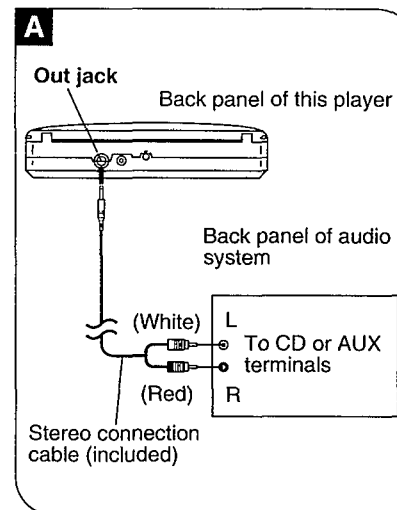


## ■ USING THE PLAYER WITH OPTIONAL ACCESSORIES

### Listening through an audio system **A**

Discs can be played as part of an audio system by connecting the player to the system using the stereo connection cable (included).

- Before connecting the player to your audio system, make sure to turn off the power on all other system components.
- Do not connect the cable to the turntable (PHONO) connectors on the amplifier.
- Obtain the optional connecting cable (RP-CA102A) when the amplifier is equipped with mini phone jacks.



### Using the player together with the car audio system **B**

The car kit, available as an optional accessory, makes it possible to listen to CDs in a car.

The construction of the cassette adaptor does not allow connection to some car stereo systems.

#### ■ What should be purchased

**For connection to the car audio system:**

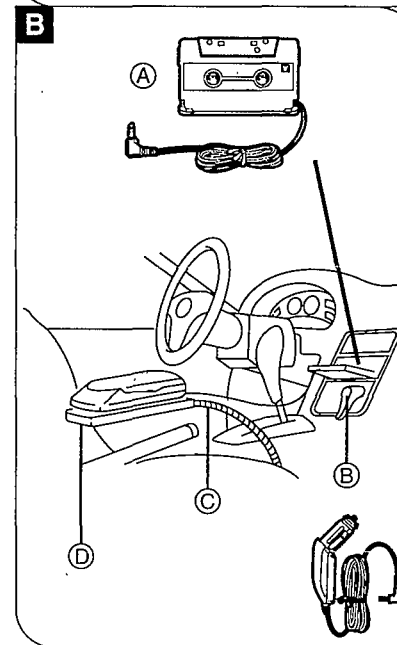
Car stereo cassette adaptor (SH-CDM7 or SH-CDM9) **A**

**For securing the player and connecting the power supply:**

•Car adaptor (SH-CDC9) **B**

•Car mounting arm **C**, Car insulator **D** (SH-CDF7)

For further details, refer to the Operating Instructions of the respective products.



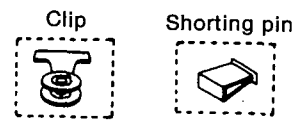
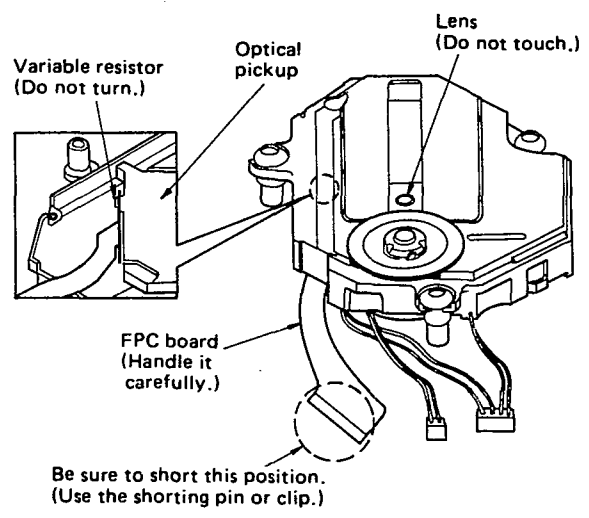
# HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

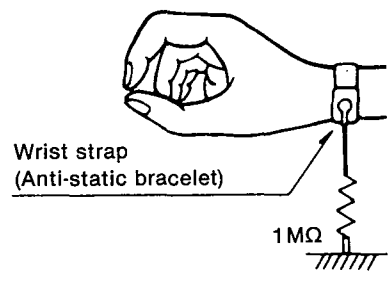
### • Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).  
When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.



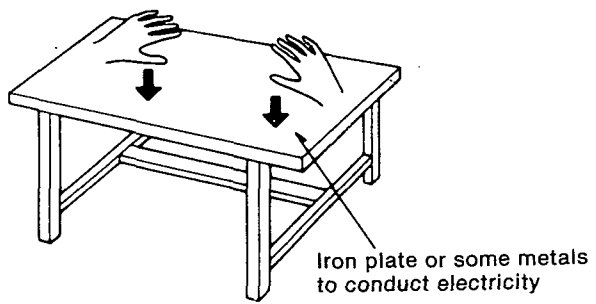
### • Grounding for electrostatic breakdown prevention

1. Human body grounding.  
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding  
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.



### Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



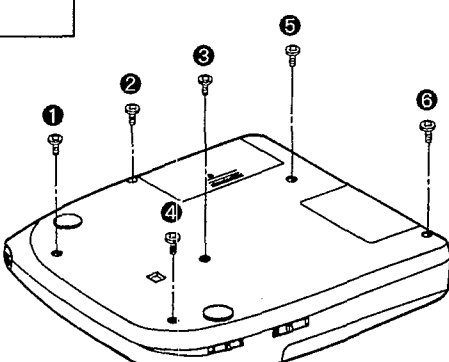
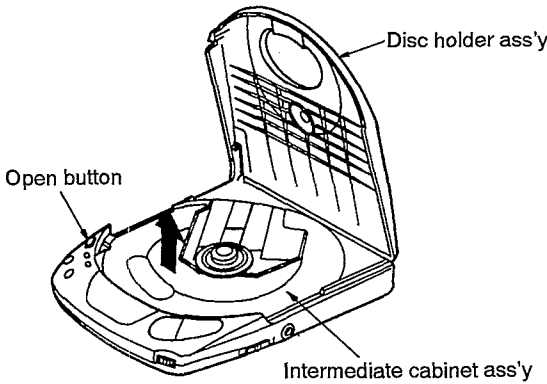
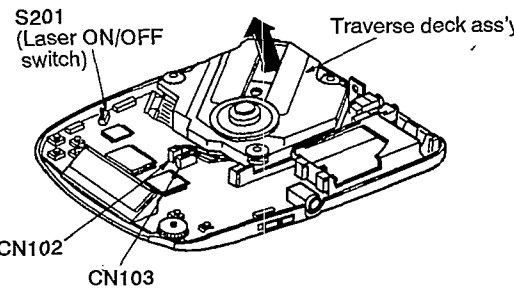
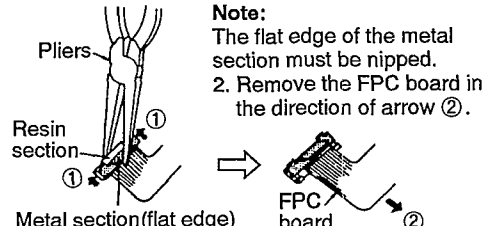
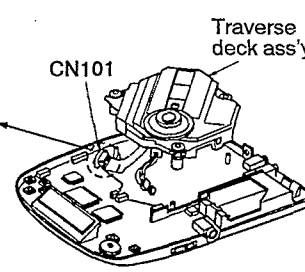
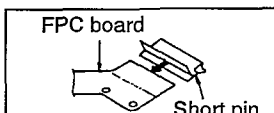
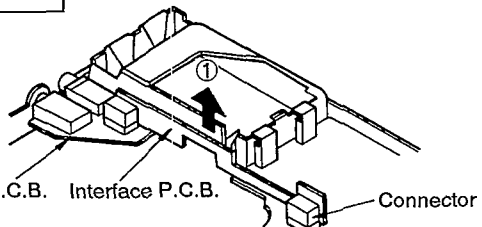
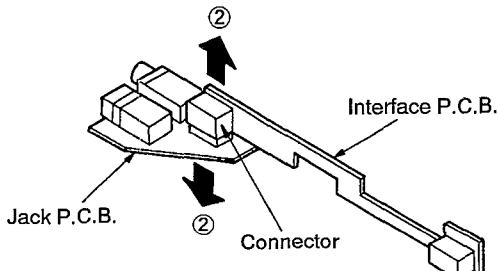


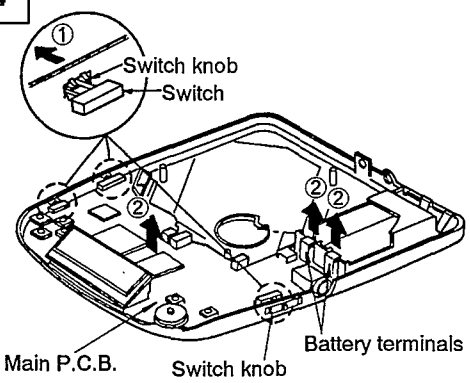
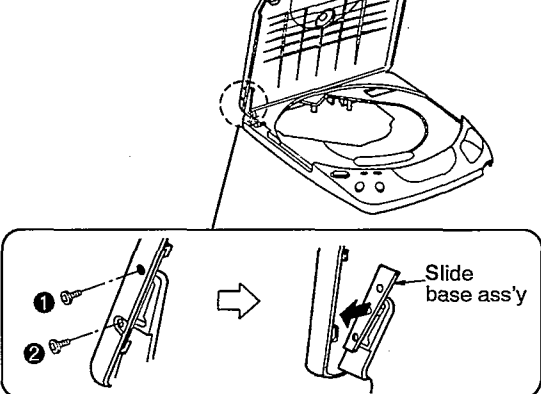
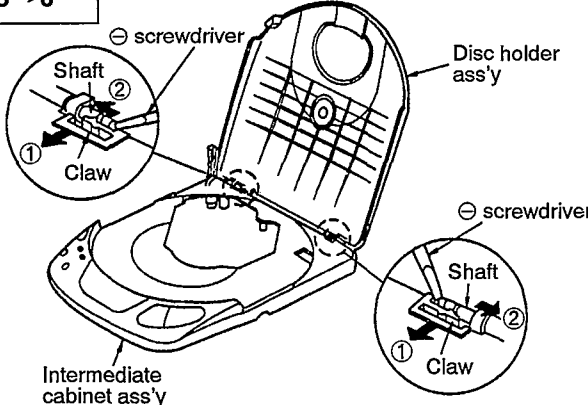
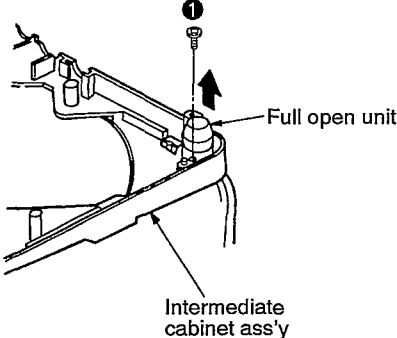
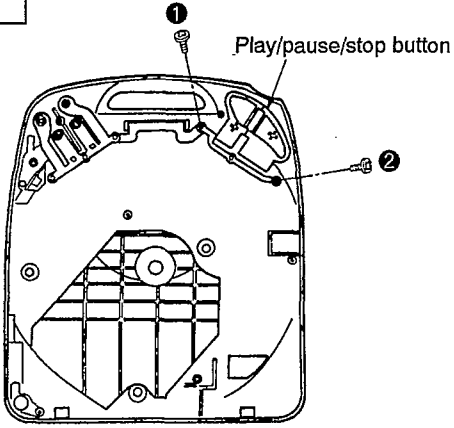
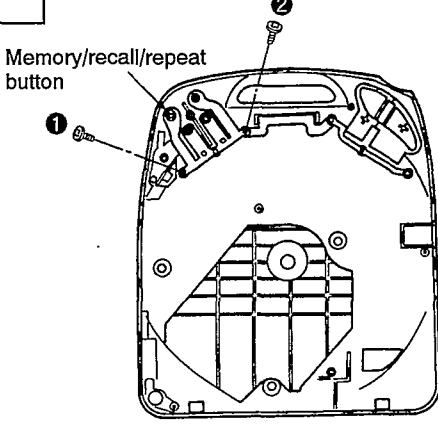
# DISASSEMBLY INSTRUCTIONS

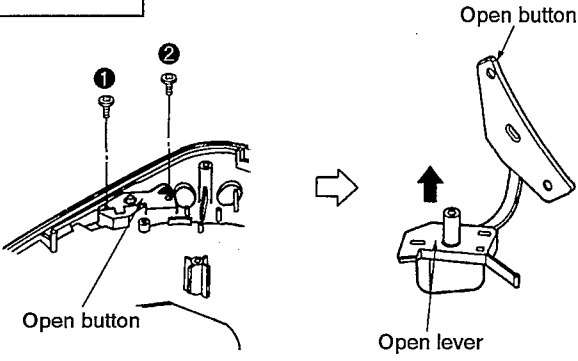
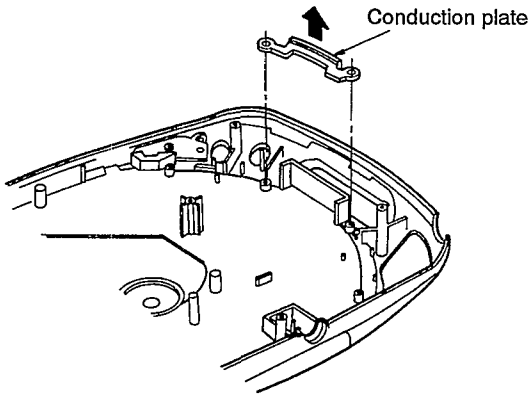
**Warning:** This product uses a laser diode. Refer to caution statements on page 3.

**ACHTUNG:** • Die lasereinheit nicht zerlegen.  
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

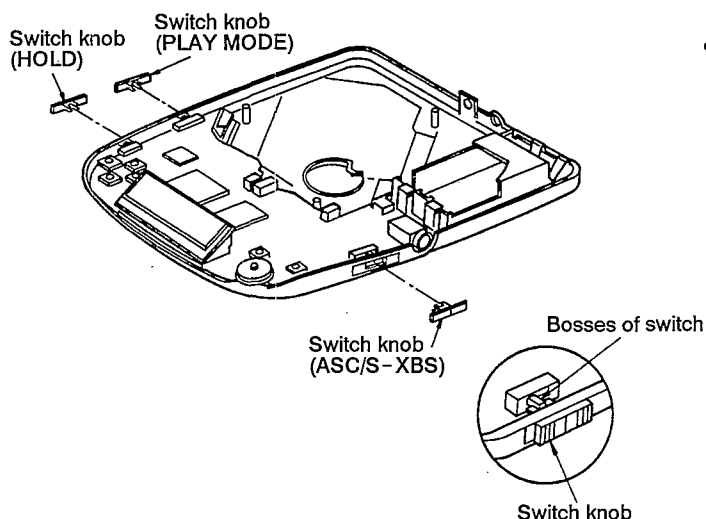
※ This CD player is equipped with FPC boards, so handle them with care during disassembly and reassembly.

<p><b>Ref.No.</b> 1</p>	<p><b>Removal of the intermediate cabinet ass'y</b></p>
<p><b>Procedure</b> 1</p>	<div style="display: flex; justify-content: space-around;">   </div> <p>1. Remove the 6 screws( ❶ ~ ❺ ).</p> <p>2. Push the open button and open the disc holder ass'y. 3. Remove the intermediate cabinet ass'y in the direction of arrow.</p>
<p><b>Ref.No.</b> 2</p>	<p><b>Removal of the traverse deck ass'y</b></p>
<p><b>Procedure</b> 1 → 2</p>	<div style="display: flex;"> <div style="flex: 1;">  <p>1. Disconnect the 2 connectors(CN102, CN103). 2. Pull out the traverse deck ass'y in the direction of arrow.</p> </div> <div style="flex: 1; border: 1px solid black; padding: 5px;"> <p><b>How to remove the FPC board.</b></p> <p>1. Nip the metal and resin sections of the connector with a pair of pliers and then move the metal section in the direction of arrows ❶.</p> <p><b>Note:</b> The flat edge of the metal section must be nipped. 2. Remove the FPC board in the direction of arrow ❷.</p>  </div> <div style="flex: 1;">  <p>3. Remove the FPC board(CN101).</p> <p><b>Caution:</b> Insert a short pin into the traverse deck's FPC board. (Refer to "handling precautions for traverse deck" on page 8.)</p>  </div> </div>
<p><b>Ref.No.</b> 3</p>	<p><b>Removal of the interface P.C.B. and jack P.C.B.</b></p>
<p><b>Procedure</b> 1 → 2 → 3</p>	<div style="display: flex; justify-content: space-around;">   </div> <p>1. Remove the interface P.C.B. in the direction of arrow ❶ with care.</p> <p>2. Separate the interface P.C.B. from jack P.C.B. in the direction of arrow ❷.</p>

<p><b>Ref.No.</b> 4</p>	<p><b>Removal of the main P.C.B.</b></p>	<p><b>Ref.No.</b> 5</p>	<p><b>Removal of the slide base ass'y</b></p>
<p><b>Procedure</b> 1 → 2 → 3 → 4</p>	 <p>1. Put out the switch knob from the inboard sides with a tweezers in the direction of arrow ①.</p> <p>2. Remove the main P.C.B. and battery terminals in the direction of arrow ②.</p>	<p><b>Procedure</b> 1 → 5</p>	 <p>1. Remove the 2 screws (①, ②).</p> <p>2. Pull out the slide base ass'y in the direction of arrow.</p>
<p><b>Ref.No.</b> 6</p>	<p><b>Removal of the disc holder ass'y</b></p>	<p><b>Ref.No.</b> 7</p>	<p><b>Removal of the full open unit</b></p>
<p><b>Procedure</b> 1 → 5 → 6</p>	 <p>• Release the claws in the direction of arrow ①, and then remove the shafts in the direction of arrow ② with ⊖ screwdriver.</p>	<p><b>Procedure</b> 1 → 5 → 7</p>	 <p>1. Remove the 1 screw (①).</p> <p>2. Remove the full open unit in the direction of arrow.</p>
<p><b>Ref.No.</b> 8</p>	<p><b>Removal of the play/pause/stop button</b></p>	<p><b>Ref.No.</b> 9</p>	<p><b>Removal of the memory/recall/repeat button</b></p>
<p><b>Procedure</b> 1 → 8</p>	 <p>• Remove the 2 screws (①, ②).</p>	<p><b>Procedure</b> 1 → 9</p>	 <p>• Remove the 2 screws (①, ②).</p>

Ref.No. 10	Removal of the open button and open lever	Ref.No. 11	Removal of the conduction plate
Procedure 1 → 9 → 10		Procedure 1 → 8 → 9 → 11	
 <p data-bbox="134 663 778 745">1. Remove the 2 screws (①, ②), and then remove the open button. 2. Remove the open lever in the direction of arrow.</p>		 <p data-bbox="847 719 1445 745">• Remove the conduction plate in the direction of arrow.</p>	

## ■ HOW TO INSTALL THE SWITCH KNOB (HOLD, PLAY MODE, ASC/S-XBS)



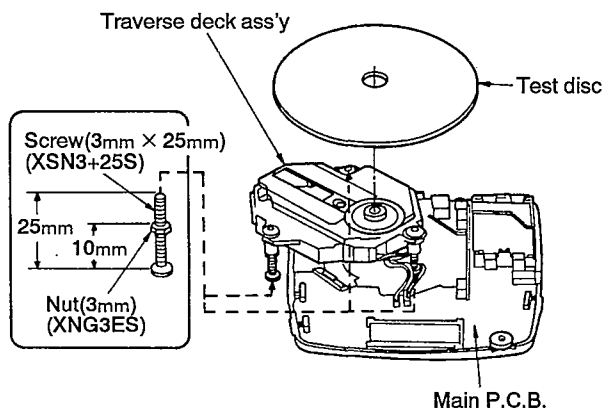
- Make sure the bosses of the switch are fit in the claws of switch knobs when inserting the switch knob.

※ Before installing the switch knob, be sure to check the claws for defects that would render the claws unserviceable. (If a white line like white wax on a claw is found, the claw may be broken when installing the switch knob.)

## ■ HOW TO CHECK THE MAIN P.C.B. (Component Side)

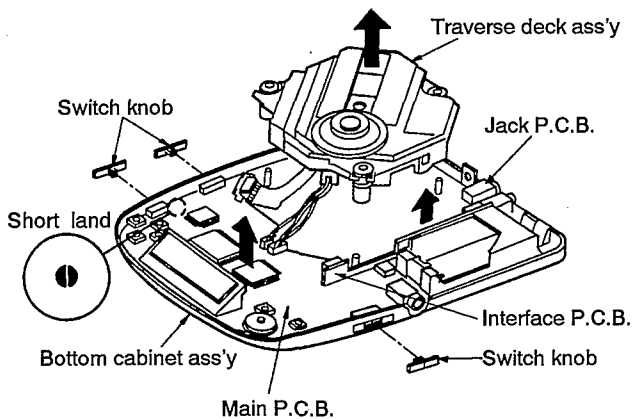
1. Remove the intermediate cabinet according to the disassembly instructions, procedure 1 "Removal of the intermediate cabinet ass'y" on page 9.
2. Lift up the traverse deck ass'y and keep it with 3 screws as shown right.
3. Put the test disc on the traverse deck ass'y.
4. Short-circuit the short lands of the laser ON/OFF SW(S201) by soldering them. (See page 15.)

**Note:** After checking the P.C.B., remove the solders from the short lands.

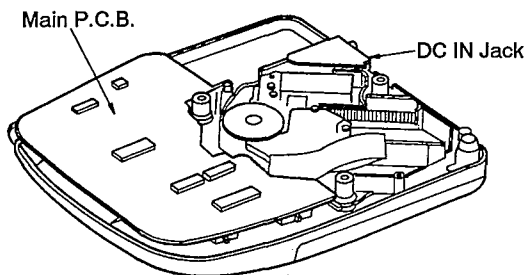


## ■ HOW TO CHECK THE MAIN P.C.B. (Solder Side)

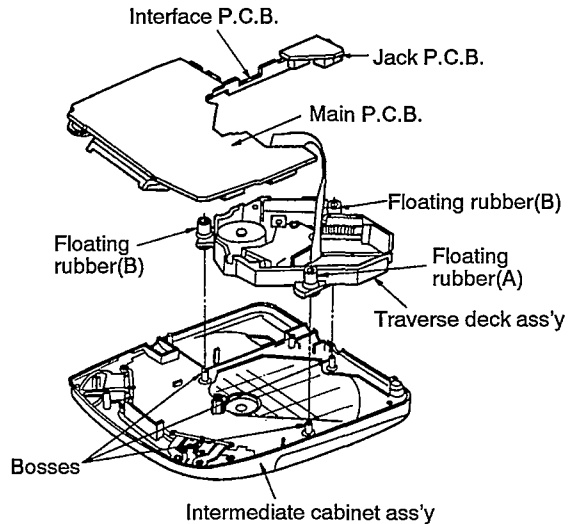
1. Remove the intermediate cabinet ass'y according to the disassembly instructions, procedure 1 " Removal of the intermediate cabinet ass'y " on page 9.



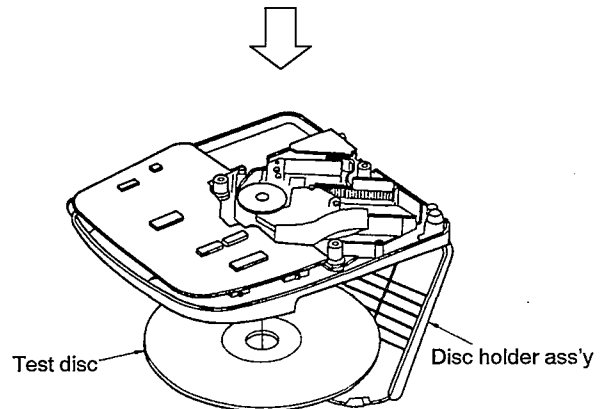
2. Remove the 3 switch knobs.  
 3. Remove the main P.C.B., interface P.C.B., jack P.C.B., traverse deck ass'y from the bottom cabinet ass'y.  
 4. Short-circuit the lands of the laser ON/OFF SW(S201) by soldering them. (See page 15.)  
**Note:** After checking the P.C.B., remove the solders from the short lands.



9. With the P.C.B. in place as shown in the figure above, connect the AC adapter to the DC IN Jack, and then check the voltage and waveform in play mode.



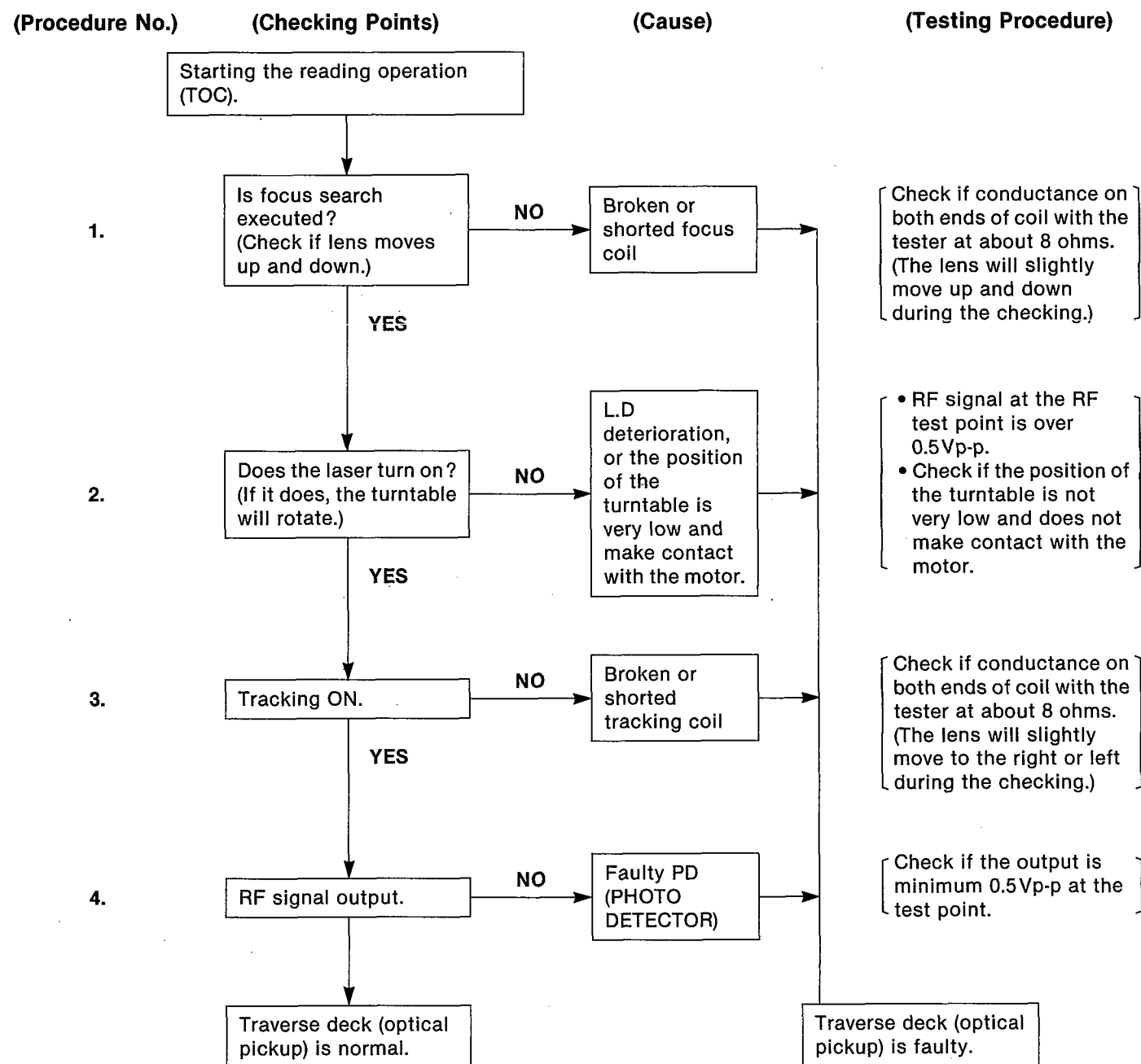
5. Place the traverse deck ass'y, main P.C.B., interface P.C.B. and jack P.C.B. on the intermediate cabinet ass'y.  
**Note:** Engage the rubber sections of the traverse deck ass'y in the bosses on the intermediate cabinet ass'y.



6. Open the disc holder ass'y.  
 7. Install the unit in place by holding the traverse deck ass'y and main P.C.B. firmly, and then install the test disc.  
 8. Close the disc holder ass'y.

## ■ CHECKING THE OPERATION PROBLEMS ON THE TRAVERSE DECK (OPTICAL PICKUP)

Make sure to follow the procedures below to check the operation problems of the traverse deck (optical pickup) before replacing it. Replace the traverse deck only after the problem is identified.



※ Replace traverse deck.

- Check electrical circuit.
- Check for flaws on disc or if it is warped or not centered.

• Check the operations described below on the traverse deck after replacing it.

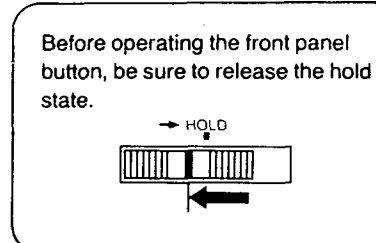
- \* Checking Skip Search
  1. Play an ordinary musical program disc.
  2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).
- \* Checking Manual Search
  1. Play an ordinary musical program disc.
  2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

- \* Checking Playability
  1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
  2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

### ■ NOTE FOR SERVICE

• About hold switch

Before checking the operation problems and adjustments, be sure to release the hold state.



• Connection of the FPC board of the optical pickup

Before you put the power supply to work from the AC adaptor or batteries to check the set's operations and voltage, be sure to connect the FPC board of the optical pickup to the connector CN101 on the main P.C.B. If you disconnected the FPC board from the connector CN101, the protection circuitry may be operated when the PLAY/PAUSE button is pressed with the FPC board disconnected.

## MEASUREMENTS AND ADJUSTMENTS

**Warning:** This product uses a laser diode. Refer to caution statements on page 3.

### Measuring instruments and special tools

#### Test discs

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| 1. Playability test disc (SZZP1054C) | • Musical program disc (ordinary) |
| 2. Uneven test disc (SZZP1056C)      | • DC voltmeter                    |
|                                      | • Lead wire (for test points)     |

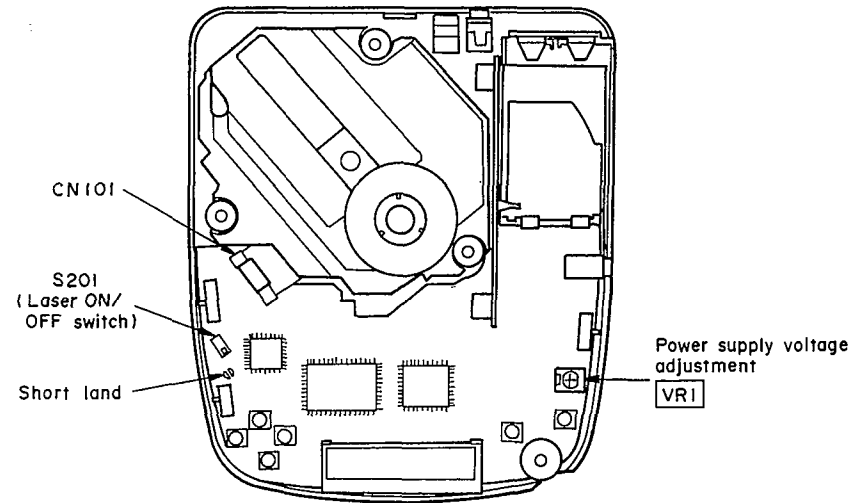
#### Test short land

Short-circuit the lands of the laser ON/OFF switch (S201) by soldering them. It turns "ON" position. (Refer to below figure or printed circuit board and wiring connection diagram for short land location on pages 26~28.)

**Note:** Remove the solders from the lands after adjustment.

#### Adjustment point

**Notes:** 1. Please refer to the printed circuit board and wiring connection diagram for test point locations.  
2. Take care to connect CN101.



### Adjustment procedure

#### (1) POWER SUPPLY VOLTAGE ADJUSTMENT

- |  |  |
|--|--|
| 1. Connect the DC voltmeter to <b>TP103</b> (VCC) (+) and <b>TP104</b> (GND) on the P.C.B.   | 3. Insert the test disc, and switch the player power ON. |
| 2. Connect the AC adaptor cord to the DC (IN) port and move the PLAY switch to the ON position. (Use a new dry cell battery or a rechargeable battery that is full charged.) | 4. Adjust <b>VR1</b> on the P.C.B. at $3.45 \pm 0.05V$ . |

#### (2) CHECK OF PLAY OPERATION

##### \*Checking Skip Search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and backward directions).

##### \*Checking Manual Search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and backward directions).

##### \*Checking Playability

1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

### Automatic adjustment

On our conventional type portable CD player, there were mounted 6 semi-fixed controls for each adjustment. Since the SL-XP350 servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-XP350.

**On conventional portable CD player**  
Use for Old Servo IC (AN8373, AN8374)

1. Tracking Offset Adjustment VR (TOC)
2. Focus Offset Adjustment VR (FOC)
3. Tracking Gain Adjustment VR (TGC)
4. Focus Gain Adjustment VR (FGC)
5. Tracking Balance Adjustment VR (TBC)
6. Focus Balance Adjustment VR (FBC)

Total 6 Adjustment VRs

**On SL-XP350**  
Use for New Servo IC (AN8383, AN8384)

Non Adjustment

Automatic Adjusting Circuit

No Adjustment VR

Although all discs are manufactured according to the same specifications, their characteristics are not always precisely the same because they are produced by different manufacturers in various lots, or have different warp etc. SL-XP350 automatically controls the servo circuit to obtain optimum performance according to any disc's characteristics. Therefore, no malfunction occurs because of mis-adjustment.

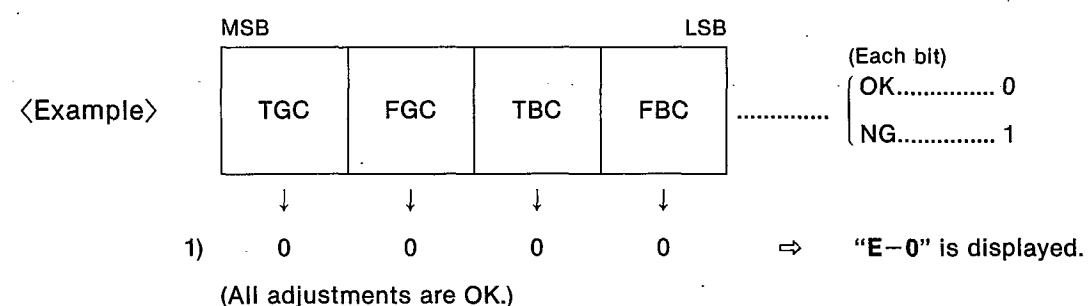
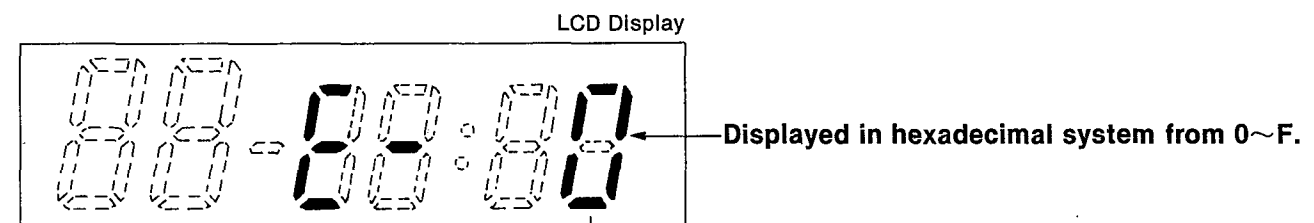
## DISPLAY FUNCTION OF AUTOMATICALLY-ADJUSTED RESULTS (SELF-CHECK FUNCTION)

On this unit (SL-XP350), each automatically-adjusted result are displayed on the LCD. This function is convenient to check or identify which automatic adjustment circuit is incorrect. The followings are the contents of the automatically-adjusted result displays (self-check function).

### How to display automatically-adjusted results

1. Load the test disc (SZZP1054C).
2. Press the **◀◀** (SKIP/SEARCH) and **▶▶** (SKIP/SEARCH) Buttons simultaneously and hold them, and additionally press the **▶/||** (PLAY/PAUSE) Button.
3. Press the **■** (STOP/POWER OFF) Button once.
4. An automatically-adjusted result is displayed on the LCD. (Refer to the next page.)

### Display of automatically-adjusted results (self-check function)



- 2) 0 1 0 0 ⇒ "E-4" is displayed.  
(OK) (NG) (OK) (OK)  
(Focus gain adjustment is NG (Incorrect).)
- 3) 1 0 1 0 ⇒ "E-A" is displayed.  
(NG) (OK) (NG) (OK)  
(Tracking gain and tracking balance adjustments are NG.)
- 4) 1 1 1 1 ⇒ "E-F" is displayed.  
(All adjustments are NG.)

**(Example) Follow the below steps when "E-4" is displayed.**  
(Cause: Focus gain is set beyond the limit.)

- Check if
  - (1) the waveform or voltage of the focus servo circuit is correct,
  - (2) the focus coil of the optical pickup is correct (around 8 ohms), and
  - (3) the optical pickup returns to the normal state by exchanging the traverse deck.

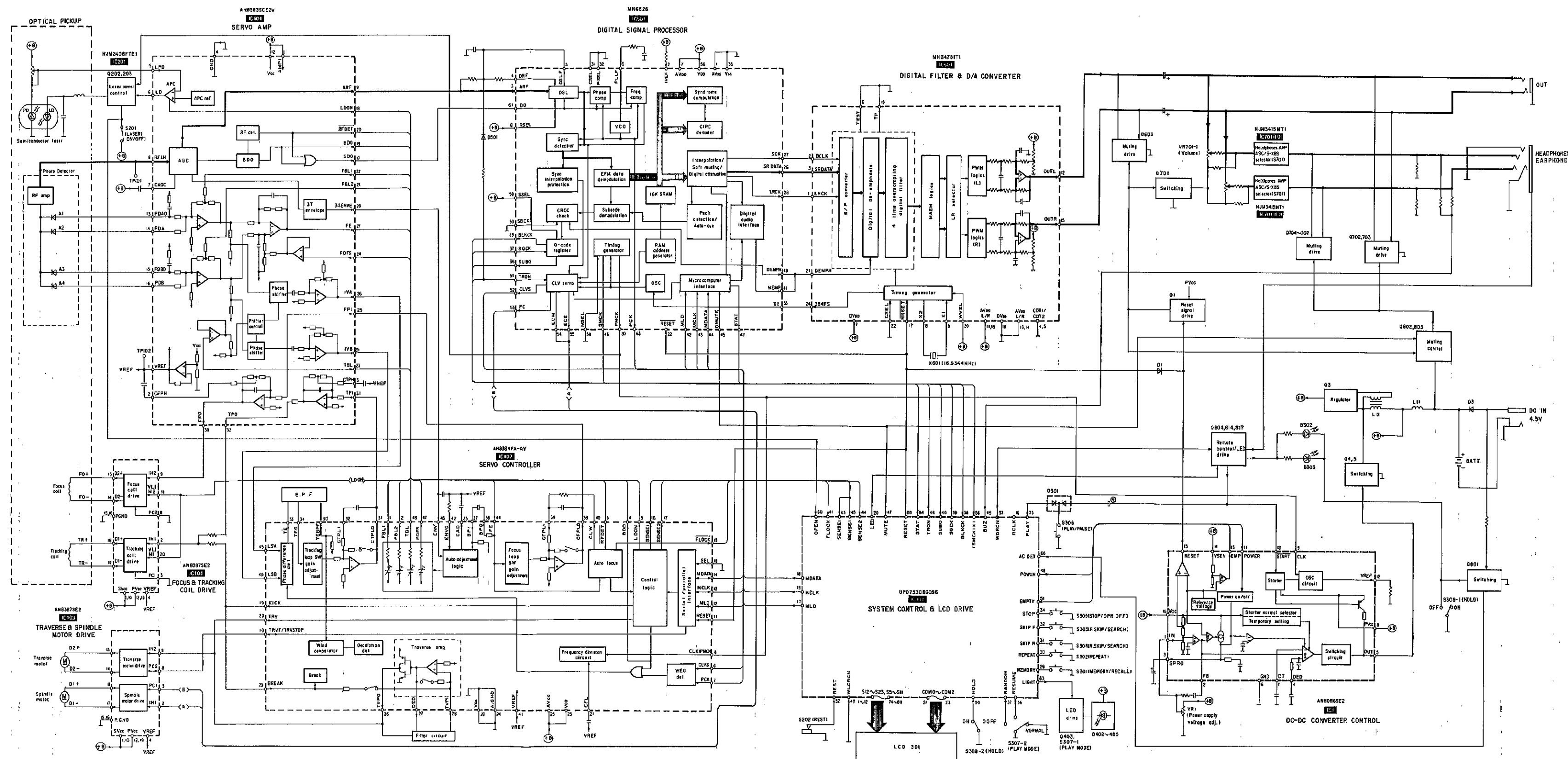
**Follow the below steps when "E-1" is displayed.**  
(Cause: Focus balance is set beyond the limit.)

- Check if
  - (1) R101 (4 resistors) is not defective by measuring the value,
  - (2) the waveform or voltage of the focus servo circuit is correct, and
  - (3) the optical pickup returns to the normal state by exchanging the traverse deck.

**Note:**  
It is not always necessary to exchange the traverse deck when an error message is displayed. Be sure to check if the circuit is defective or not before exchanging the traverse deck.

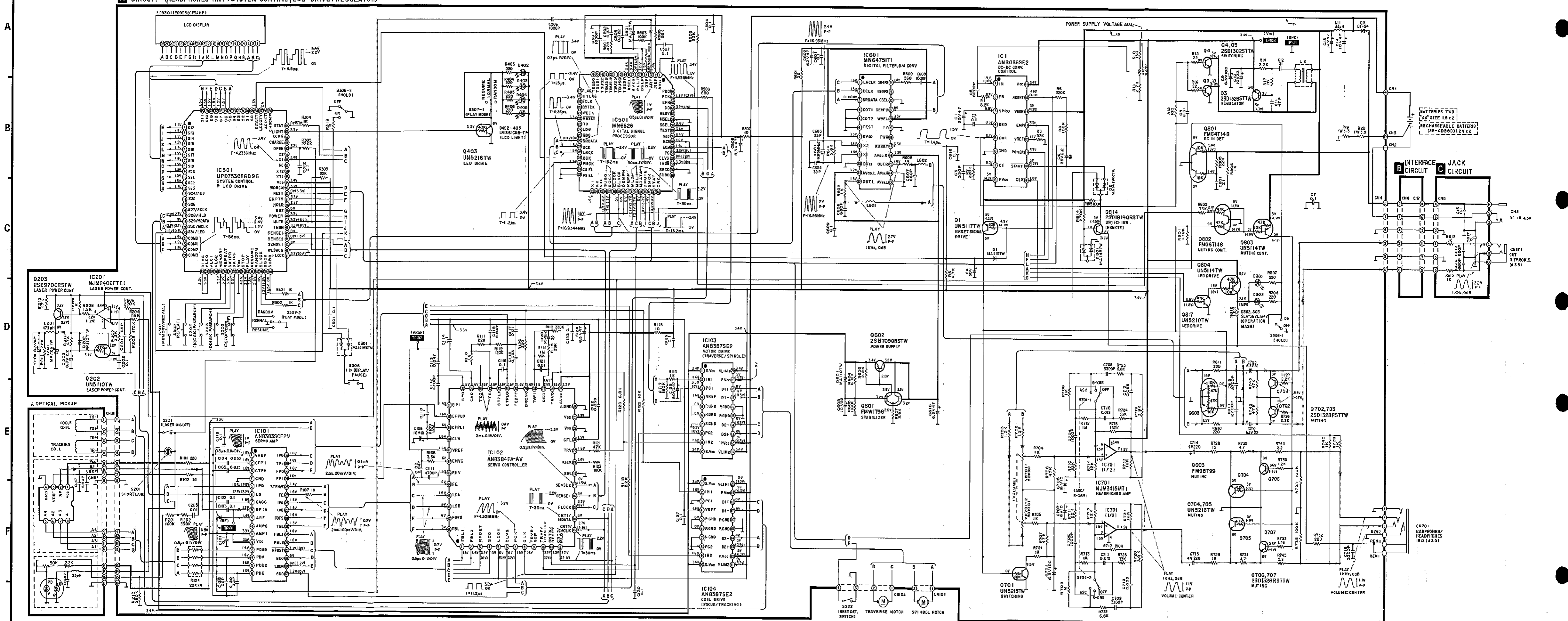
**Note:**  
If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed. This is not a malfunction.

**BLOCK DIAGRAM**



**Note:**  
→ Audio signal

MAIN CIRCUIT (SERVO AMP/DSP/DIGITAL FILTER,D/A CONVERTER HEADPHONES AMP/SYSTEM CONTROL,LCD DRIVE/REGULATOR)





**SCHEMATIC DIAGRAM** (Parts list on pages 34, 35, 37, 38.)

(This schematic diagram may be modified at any time with development of new technology.)

- Notes:**
- S201 : Laser ON/OFF switch in "OFF" position. (It turns "ON" with disc holder closed.)
  - S202 : Rest detector in "OFF" position. (It turns "ON" when optical pickup comes to innermost periphery.)
  - S301 : Memory/recall (MEMORY/RECALL) switch.
  - S302 : Repeat (REPEAT) switch.
  - S303, S304 : Skip/search (◀◀ -SKIP/-SEARCH ▶▶) switches. (S303: Backward, S304: Forward)
  - S305 : Stop/Operation off (STOP/OPR OFF) switch.
  - S306 : Play/pause (▶▶ PLAY/PAUSE) switch.
  - S307 : Play mode selector (PLAY MODE) switch in "NORMAL" position. (RESUME ↔ NORMAL ↔ RANDOM)
  - S308 : Hold (HOLD) switch in "OFF" position.
  - S701 : ASC/S-XBS selector (ASC/S-XBS) switch in "OFF" position. (OFF ↔ S-XBS ↔ ASC)
- The voltage value and waveforms are the reference voltage of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN Jack). Accordingly, there may arise some errors in the voltage values and waveforms depending upon the internal impedance of the tester or measuring unit. \* The parenthesized is the voltage for test disc (1 kHz, L+R, 0dB) in play mode, and the other, for no disc in stop mode.
- \* AC adaptor is used for power supply.

- ——— : Positive voltage lines.
  - ——— : Audio signal lines.
- **Important safety notice:** Components identified by  $\Delta$  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- The supply part number is described alone in the replacement parts.

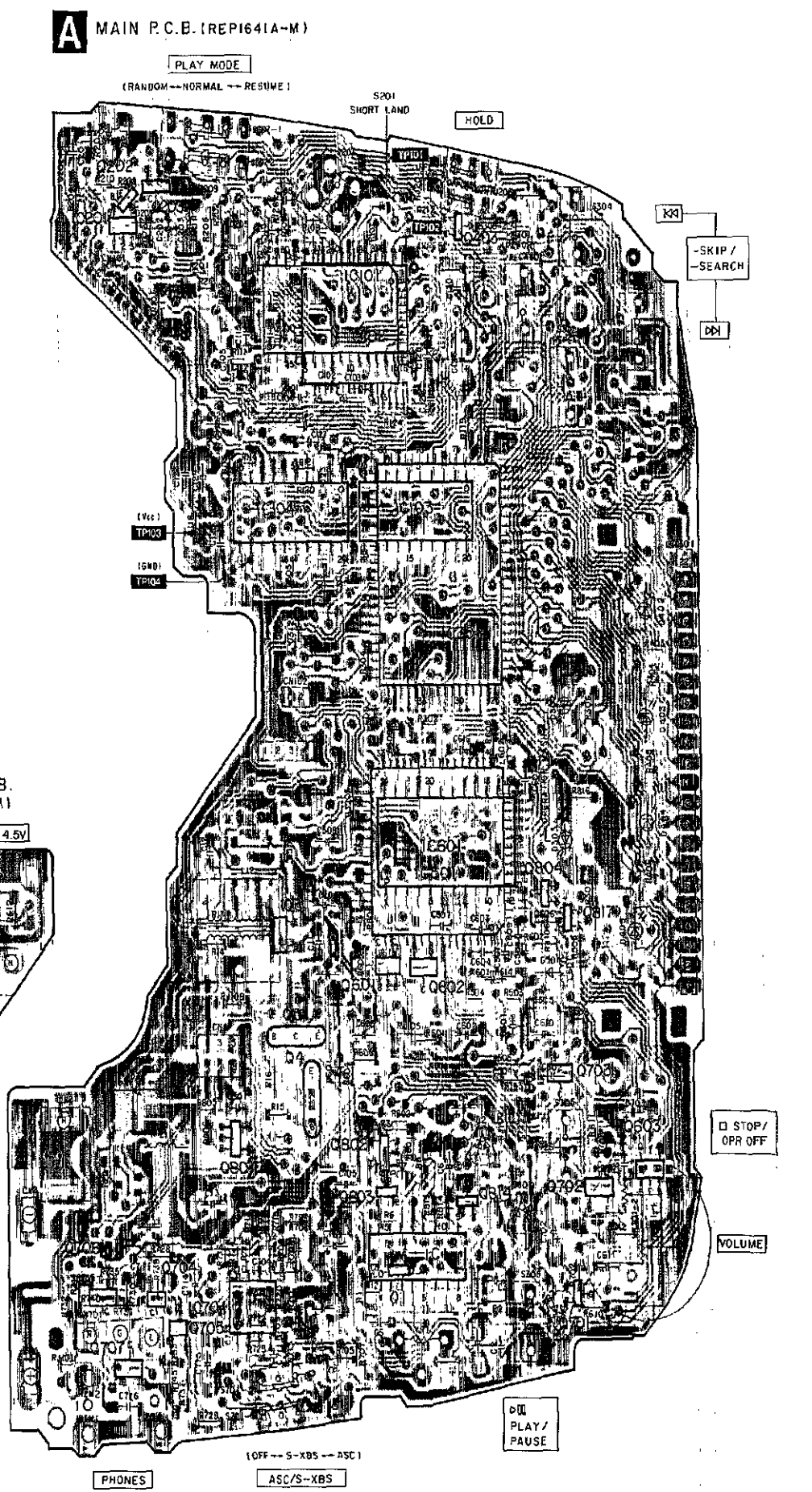
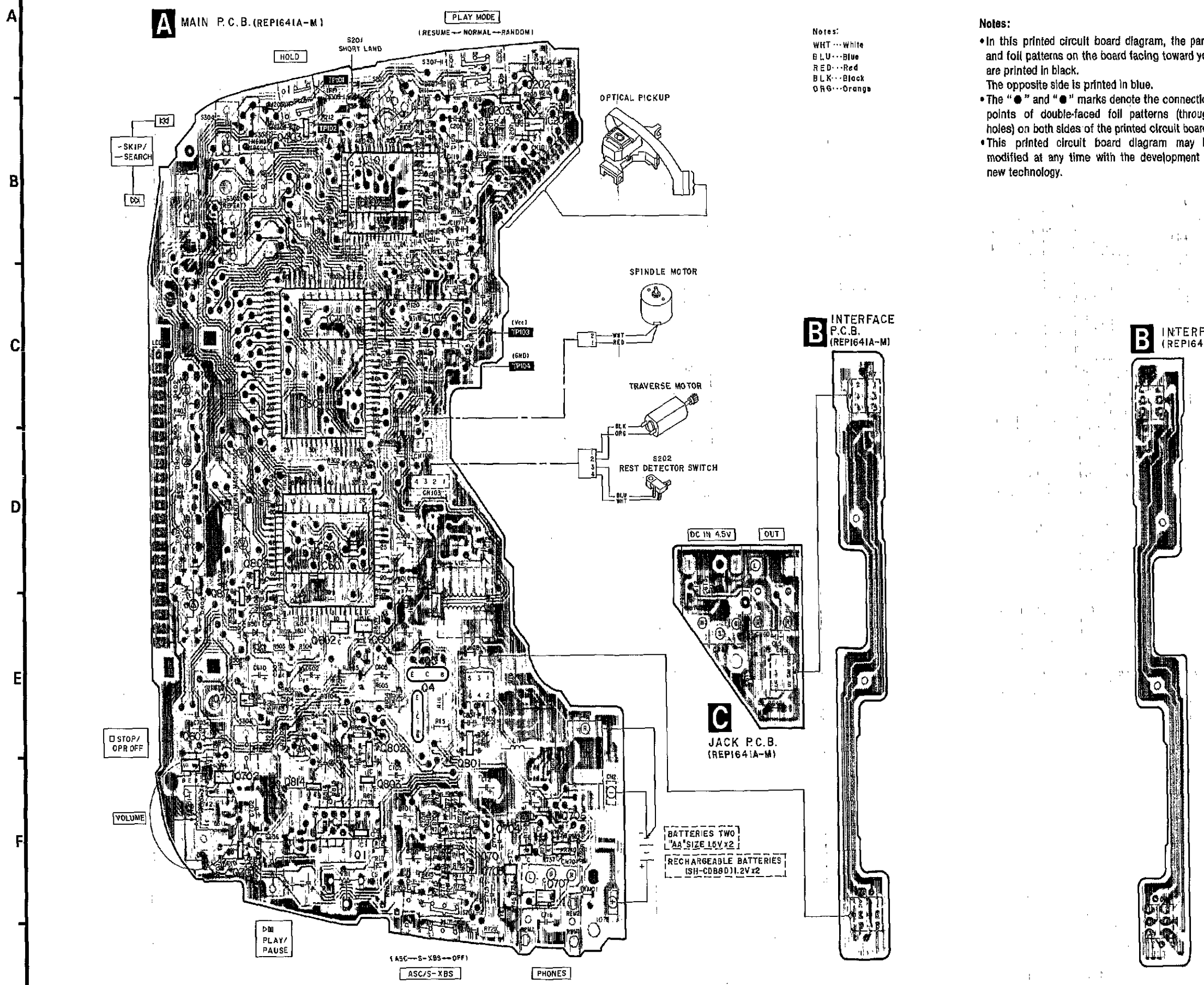
Part No.	Production Part No.	Supply part No.
IC701	NJM3415MT1	NJM3415M

- Caution!**  
IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
  - Ground the soldering iron.
  - Put a conductive mat on the work table.
  - Do not touch the pins of IC or LSI with fingers directly.

• Terminal guide of IC's, transistors and diodes

<p>NJM3415MT1 8 Pin AN8086SE2 16 Pin AN8367SE2 20 Pin MN64751T1 24 Pin AN8383SCE2V 32 Pin</p>	<p>NJM2406FTE1</p>	<p>AN8384FA-AV 48 Pin MN8626 64 Pin</p>	<p>UPD7508G096</p>
<p>UN5110TW UN5114TW UN5117TW UN5210TW UN5215TW UN5216TW 2SB700QRSTW</p>	<p>2SB970QRSTW 2SD1328RSTW 2SD1328STTW 2SD1819QRSTW</p>	<p>FMG4T148 FMG6T148 FMG8T98 FMW1T98</p>	<p>2SD1302STTA</p>
<p>MA141WKTW</p>	<p>MA143TW</p>	<p>MA110TW D1FS4</p>	<p>MA728TW</p>
<p>LN1361CUY-TR</p>	<p>SLA-362LTA47</p>		

**PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM**



**TERMINAL FUNCTION OF IC'S**

**• IC1 (AN8086SE2): DC-DC converter control**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	IN	I	Error amp input	9	CLK	I	Clock signal input (f=88.2kHz)
2	FB	O	Error amp output	10	START	I	Start detection input
3	SPRO	I	Short protect input	11	POWER	I	Power ON/OFF detection terminal
4	DED	I	Dead time input	12	VREF	O	Reference voltage output
5	OUT	O	Switching output	13	EMP	O	Empty detection output
6	GND	—	Ground terminal	14	VSEN	I	Empty detection input
7	CT	I	Triangular wave oscillator capacitor input	15	RESET	O	Reset signal output
8	PVCC	I	Power supply terminal	16	VCC	I	Power supply terminal

**• IC101 (AN8383SCE2V): Servo amp**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	VREF	O	Reference voltage output	19	BDO	O	Dropout detection output
2	CFPH	I	Focus phase compensating capacitor terminal	20	RFDET	O	RF detection signal output
3	CTPH	I	Tracking phase compensating capacitor terminal	21	FBL2	I	PD balance adjustment terminal (PDB)
4	GND	—	Ground terminal	22	FBL1	I	PD balance adjustment terminal (PDA)
5	LPD	I	Non-inverting laser power input	23	TBL	I	Tracking balance adjustment terminal
6	LD	O	Laser power auto control output	24	FOFS	I	Focus offset adjustment terminal
7	CAGC	I	AGC detecting capacitor terminal	25	IVB	O	Current/voltage conversion output (B)
8	RFIN	I	RF signal input	26	IVA	O	Current/voltage conversion output (A)
9	ARF	O	RF signal output	27	FE	O	Focus error signal output
10	AMPO	O	RF signal output (Not used, open)	28	3TENVE	O	3T envelope signal output
11	AMP1	I	RF signal input (×30 amp)	29	FPI	I	Focus phase compensating amp input
12	VCC	I	Power supply terminal	30	FPO	O	Focus phase compensating output
13	PDAD	I	Photo detector current input	31	TPI	I	Tracking phase compensating input
14	PDA	I	Photo detector current input	32	TPO	O	Tracking phase compensating output
15	PDB	I	Photo detector current input				
16	PDB	I	Photo detector current input				
17	SDO	O	Dropout detection pulse output				
18	LDON	I	Laser ON/OFF control input				

**• IC102 (AN8384FA-AV): Servo controller**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	FBL1	O	PD balance adjustment (PDA) terminal	27	DED	O	Traverse amp. output terminal (1)
2	FBL2	O	PD balance adjustment (PDB) terminal	28	TVPI	I	Traverse amp. input terminal
3	RFDET	I	RF detection signal input	29	BREAK	I	Break input terminal
4	BDO	I	Dropout detection input	30	TEBPF	I	Tracking error gain detecting filter
5	LDON	O	Laser ON/OFF control output	31	CTPLO	O	Tracking low level compensation amp. output terminal
6	CLVS	I	Spindle servo condition det. terminal ("H": CLV, "L": Rough servo)	32	CTPLI	I	Tracking low level compensation amp. input terminal
7	PCK	I	PLL extract clock (f=4.3218MHz)	33	TE	O	Tracking error output
8	CLK	I	Frequency division clock signal (f=88.2kHz) input	34	TEG	I	Tracking SW amp. input
9	TRVR/GUP	I/O	Traverse backward input/gain up output (Not used, open)	35	CAD	O	Auto adjustment multiplier output terminal
10	TRVF/TRV STOP	I/O	Traverse forward input/stop output terminal	36	BPO	O	Focus error for B.P.F. output terminal
11	CNT4/RESET	I/O	CNT4 input/reset signal output terminal	37	BPI	I	Focus error for B.P.F. input terminal
12	CNT3/MLD	I/O	CNT3 input/command load signal output terminal	38	CFPLO	O	Focus low level compensation amp. output terminal
13	CNT2/MCLK	I/O	CNT2 input/command clock signal output terminal	39	CFPLI	I	Focus low level compensation amp. input terminal
14	CNT1/MDATA	I/O	CNT1 input/command data signal output terminal	40	CLW	O	Triangular wave oscillator output
15	FLOCK	O	Focus lock signal output	41	VREF	I	Reference voltage input
16	SENSE1	O	Selector output (1) terminal	42	ENVG	I	Envelope amp. gain adjustment terminal
17	SENSE2	O	Selector output (2) terminal	43	ENV	I	Envelope amp. input terminal
18	SEL	I	Parallel/serial select terminal (Not used, connected to GND)	44	FE	I	Focus SW amp. input terminal
19	KICK	O	Track kick F/B control terminal	45	LSA	I	Current/voltage conversion input (A)
20	TRV	O	Traverse F/B control terminal	46	LSB	I	Current/voltage conversion input (B)
21	CFL	I	Capacitor connection terminal	47	FOFS	O	Focus offset adjustment output terminal
22	VSS	—	Ground terminal	48	TBL	O	Tracking balance adjustment output terminal
23	VDD	I	Power supply terminal				
24	A. GND	—	Ground terminal				
25	A. VCC	I	Power supply terminal				
26	TRVO	O	Traverse amp. output terminal (2)				

**• IC103, 104 (AN8387SE2): Motor/coil drive**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	S. VCC	I	Power supply terminal	10	S. VCC	I	Power supply terminal
2	IN1	I	Spindle motor drive signal input and tracking coil drive signal input	11	VLM2	I	Voltage limit terminal
3	PC1	I	Spindle motor power control signal input	12	P. VCC	I	Power supply terminal
4	VREF	I	Reference voltage input	13	D2+	O	Traverse motor drive signal output and focus coil drive signal output
5	P. GND	—	Ground terminal	14	D2-	O	Traverse motor drive signal output and focus coil drive signal output
6	S. GND	—	Ground terminal	15	P. GND	—	Ground terminal
7	S. GND	—	Ground terminal	16	P. GND	—	Ground terminal
8	PC2	I	Traverse motor power control input (Not used, connected to GND)	17	D1-	O	Spindle motor drive signal output and tracking coil drive signal output
9	IN2	I	Traverse motor drive signal input and focus coil drive signal input	18	D1+	O	Spindle motor drive signal output and tracking coil drive signal output
				19	P. VCC	I	Power supply terminal
				20	VLM1	I	Voltage limit terminal

**• IC601 (MN64751T1): Digital filter & D/A converter**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	LRCLK	I	L/R discriminating signal	16	AV <sub>DD</sub> R	I	Analog power supply terminal 2
2	BCLK	I	Serial bit clock input	17	RESET	I	Reset signal input (Active: L)
3	SRDATA	I	Serial data input (MSB first)	18	PWM	O	PWM output (TP... "H": output "L": High impedance) (Not used, open)
4	COT 1	I	Test terminal (Ordinary: L)	19	TP	I	Test terminal (ordinary: L)
5	COT 2	I		20	WVEL	I	Double velocity ("H": double, "L": single)
6	TEST	I		21	DEMPPH	I	Digital de-emphasis ON/OFF ("H": ON)
7	DV <sub>DD</sub>	I	Digital power supply terminal	22	CSEL	I	Clock frequency select of CK 192 (Not used, connected to GND)
8	X2	O	Clock terminal (f=33.8688 MHz)	23	192FS	O	192fs (8.4672MHz) signal output (Not used, open)
9	X1	O		24	384FS	O	Clock output terminal (384 FS = 16.9344 MHz)
10	DV <sub>SS</sub>	—	Digital GND terminal				
11	AV <sub>DD</sub> L	I	Analog power supply terminal 1				
12	OUT. L	O	Analog signal output 1				
13	AV <sub>SS</sub> L	—	Analog GND terminal				
14	AV <sub>SS</sub> R	—	Analog GND terminal				
15	OUT. R	O	Analog signal output 2				

**• IC301 (UPD75308G096): System control & LCD drive**

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function		
1	S12	O	Segment signal output	43	SENSE 1	I	Selector input (1) terminal		
12	S23	O		44	SENSE 2	I	Selector input (2) terminal		
13	S24	—	Segment signal output (Not used, open)	45	SENSE 1	I	Selector input (1) terminal		
18	S27	—		46	TRON	O	Tracking servo ON signal (Tracking servo ON at "L")		
17	S29/MLD	O	Command load signal output	47	MUTE	O	Muting signal output ("H": MUTE)		
18	S29/MDATA	O	Command data signal output	48	POWER	O	Power ON/OFF output terminal		
19	S30/MCLK	O	Command clock signal output	49	BUZ	O	Beep control output terminal		
20	S31/LED	O	Remote control detection	50	HOLD	I	Hold ON/OFF detection terminal		
21	COM0	O	LCD common signal output	51	EMPTY	I	Empty detection input terminal		
24	COM3	O		52	REST	I	Rest detection terminal		
25	BIAS	O		Power supply terminal for LCD drive (Not used, connected to each other)	53	WDRGN	O	Remote control signal output	
26	VLC0	I	Power supply terminal for LCD drive (Not used, open)	54	VDD	I	Power supply terminal		
27	VLC1	—		55	XT1	—	Sub-system clock crystal terminal (Not used, open)		
28	VLC2	—	56	XT2	—	57		NC	—
29	MEMORY	I	Key switch (MEMORY/RECALL) detection terminal	58	X1	I	Main-system clock crystal terminal (f=4.2336 MHz)		
30	REPEAT	I	Key switch (REPEAT) detection terminal	59	X2	—	Main-system clock crystal terminal (Not used, open)		
31	SKIP R	I	Key switch (SKIP/SEARCH: Backward) detection terminal	60	OPEN	I	Disc holder open detection terminal		
32	SKIP F	I	Key switch (SKIP/SEARCH: Forward) detection terminal	61	CHARGE	—	Not connected		
33	VSS	—	GND terminal	62	CCHG	—		LED drive command signal	
34	STOP	I	Key switch (STOP/POWER OFF) detection terminal	63	LIGHT	O	LED drive command signal		
35	PLAY	I	Key switch (PLAY/PAUSE) detection terminal	64	STAT	I	Processing condition (CRC, CUE, CLVS, FCLV, TTSTOP) input		
36	RESUME	I	Key switch (PLAY MODE: RESUME) detection terminal	65	CHGCMP	—	Not connected		
37	RANDOM	I	Key switch (PLAY MODE: RANDOM) detection terminal	66	ACDET	I	Power supply detection signal input		
38	BLKCK	I	Sub-code block (Q data) clock (75Hz) output	67	LCDDTY	I	LED drive detect terminal		
39	SQCK	O	Sub-code Q register clock output	68	RESET	I	Reset detection terminal		
40	SUBQ	O	Sub-code (Q data) output	69	S0	O	Segment signal output (Not used, open)		
41	FLOCK	I	Focus lock signal input	73	S4	O		Segment signal output	
42	WLSRCN	I	Selector input (1) terminal (Not used, connected to GND)	74	S5	O	Segment signal output		
				80	S11	O		Segment signal output	

## • IC501 (MN6626): Digital signal processor

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	AVSS	—	GND terminal	38	CLDCK	O	Sub-code frame clock (f=7.35kHz) (Not used, open)
2	IREF	I	Reference current input	39	BLKCK	O	Sub-code block clock (f=75Hz)
3	ARF	I	RF signal input	40	DEMPH	O	De-emphasis ON signal ("H": ON)
4	DRF	I	DSL bias terminal (Not used, open)	41	MEMP	I	Emphasis signal
5	DSLIF	I/O	DSL loop filter terminal	42	MLD	I	Command load signal ("L": LOAD)
6	PLLIF	I/O	PLL loop filter terminal	43	MCLK	I	Command clock signal
7	AVDD	I	Power supply terminal	44	MDATA	I	Command data signal
8	RSEL	I	RF signal polarity setting terminal (Not used, connected to VDD)	45	D MUTE	I	Muting Input ("H": MUTE)
9 16	TBUS7 TBUS0	O	Test terminal	46	SMCK	O	System clock (f=4.2336MHz)
17	FLAG	O	Flag terminal (Not used, open)	47	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
18	IPFLAG	O	Interpolation flag terminal (Not used, open)	48	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG)
19	FCLK	O	Crystal frame clock (Not used, open)	49	SUBC	O	Sub-code serial output data (Not used, open)
20	BYTCK	O	Byte clock (Not used, open)	50	SBCK	I	Sub-code serial input clock (Not used, connected to GND)
21	WDCK	O	Word clock (Not used, open)	51	TRON	I	Tracking servo ON signal ("L": ON)
22	RESET	I	Reset terminal	52	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo)
23	TX	O	Digital audio signal	53	PC	O	Turntable motor ON signal ("L": ON)
24	LDG	O	Lch deglitch signal (Not used, open)	54	ECM	O	Turntable motor drive signal (Forced mode)
25	RDG	O	Rch deglitch signal (Not used, open)	55	ECS	O	Turntable motor drive signal (Servo error signal)
26	SRDATA	O	Serial data output (MSB first)	56	VDD	I	Power supply terminal
27	SCK	O	Serial bit clock output	57	TEST	I	Test terminal (Normal: "H")
28	LRCK	O	L/R discriminating signal	58	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)
29	XCK	O	Crystal OSC terminal (f=16.9344MHz) (Not used, open)	59	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz) (Connected to GND)
30	PMCK	O	Frequency division clock signal (f= $\frac{1}{192} \times CK=88.2kHz$ )	60	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
31	CSEL	I	Test terminal (Connected to GND)	61	DO	I	Drop-out detection signal ("H": Drop-out)
32	PSEL	I	Test terminal (Connected to GND)	62	EFM	O	EFM signal (Not used, open)
33	X1	I	Crystal OSC terminal (f=16.9344MHz)	63	PCK	O	PLL extract clock (f=4.3218MHz)
34	X2	O	Crystal OSC terminal (f=16.9344MHz) (Not used, open)	64	PDO	O	Phase compared signal of EFM and PCK (Not used, open)
35	VSS	—	GND terminal				
36	SUBQ	O	Sub-code Q data				
37	SQCK	I	Sub-code Q register clock				

## ■ REPLACEMENT PARTS LIST

Notes: \*Important safety notice:  
Components identified by  $\Delta$  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.  
\*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)  
Parts without these indications can be used for all areas.  
\*Warning: This product uses a laser diode. Refer to caution statements on page 3.  
\*ACHTUNG: Die Lasereinheit nicht zerlegen.  
Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D601	MA110TX	DIODE	
				D801	MA143TX	DIODE	
						VARIABLE RESISTOR(S)	
IC1	AN8086SE2	DC-DC CONV. CONTROL					
IC101	AN8383SCE2V	SERVO AMP		VR1	EVNDXAA00B33	POWER SUPPLY VOLT. ADJ.	
IC102	AN8384FA-AV	SERVO CONTROLLER		VR701	EVJAMAT43C54	VOLUME	
IC103, 104	AN8387SE2	MOTOR/COIL DRIVE				COIL(S)	
IC201	NJM2406FTE1	LASER POWER CONTROL					
IC301	UPD75308G096	SYSTEM CONTROL&LCD DRIVE		L11	RLQ330KT-K	COIL	
IC501	MN6626	DIGITAL SIGNAL PROCESSOR		L12	RLZ0007-0	COIL	
IC601	MN64751T1	DIGITAL FILTER&A CONV.		L201	RLQS471KT-K	COIL	
IC701	NJM3415M	HEADPHONES AMP		L601, 602	RLB0003	COIL	
		TRANSISTOR(S)					
Q1	UN5117TX	TRANSISTOR				OSCILLATOR(S)	
Q3	2SD1328-S	TRANSISTOR					
Q4, 5	2SD1302STTA	TRANSISTOR		X601	RSXZ16M9M01T	OSCILLATOR (16.9344MHz)	
Q202	UN5110TX	TRANSISTOR				LCD(S)	
Q203	2SB970QRSTX	TRANSISTOR					
Q403	UN5216TX	TRANSISTOR		LC301	EDD052CF3AHP	LCD	
Q601	FMW1T98	TRANSISTOR				SWITCH(ES)	
Q602	2SB709QRSTX	TRANSISTOR					
Q603	FMG8T99	TRANSISTOR		S201	RSH1A91ZA-A	LASER ON/OFF	
Q701	UN5215TX	TRANSISTOR		S202	SSH5	REST DETECTOR	
Q702, 703	2SD1328QRSTX	TRANSISTOR		S301	EVQ21405R	MEMORY/RECALL	
Q704, 705	UN5216TX	TRANSISTOR		S302	EVQ21405R	REPEAT	
Q706, 707	2SD1328QRSTX	TRANSISTOR		S303	EVQ21405R	SKIP/SEARCH(B)	
Q801	FMG4T148	TRANSISTOR		S304	EVQ21405R	SKIP/SEARCH(F)	
Q802	FMG6T148	TRANSISTOR		S305	EVQ21405R	STOP/OPR OFF	
Q803, 804	UN5114TX	TRANSISTOR		S306	EVQ21405R	PLAY/PAUSE	
Q814	2SD1819QRSTX	TRANSISTOR		S307	ESD11H230	PLAY MODE	
Q817	UN5210TX	TRANSISTOR		S308	ESD11H220	HOLD	
		DIODE(S)		S701	ESD11H230	ASC/S-XBS	
D1	MA110TX	DIODE				CONNECTOR(S) AND JACK(S)	
D2	MA141WKT	DIODE					
D3	D1FS4	DIODE		CN1	RJC93015	BATTERY TERMINAL(+)	
D201	MA729TX	DIODE		CN2	RJC93015	BATTERY TERMINAL(-)	
D202	MA110TX	DIODE		CN3	RJH5102-1	RECHARGEABLE BATT. TERMINAL	
D301	MA141WKT	DIODE		CN4, 5	RJT059W006	CONNECTOR(6P)	
D302, 303	SLA-362LT447	L. E. D.		CN6, 7	RJU059W006	CONNECTOR(6P)	
D402-405	LN1361CUIY-TR	L. E. D.		CN8	RJJ4303	DC IN JACK	
D501	MA110TX	DIODE					

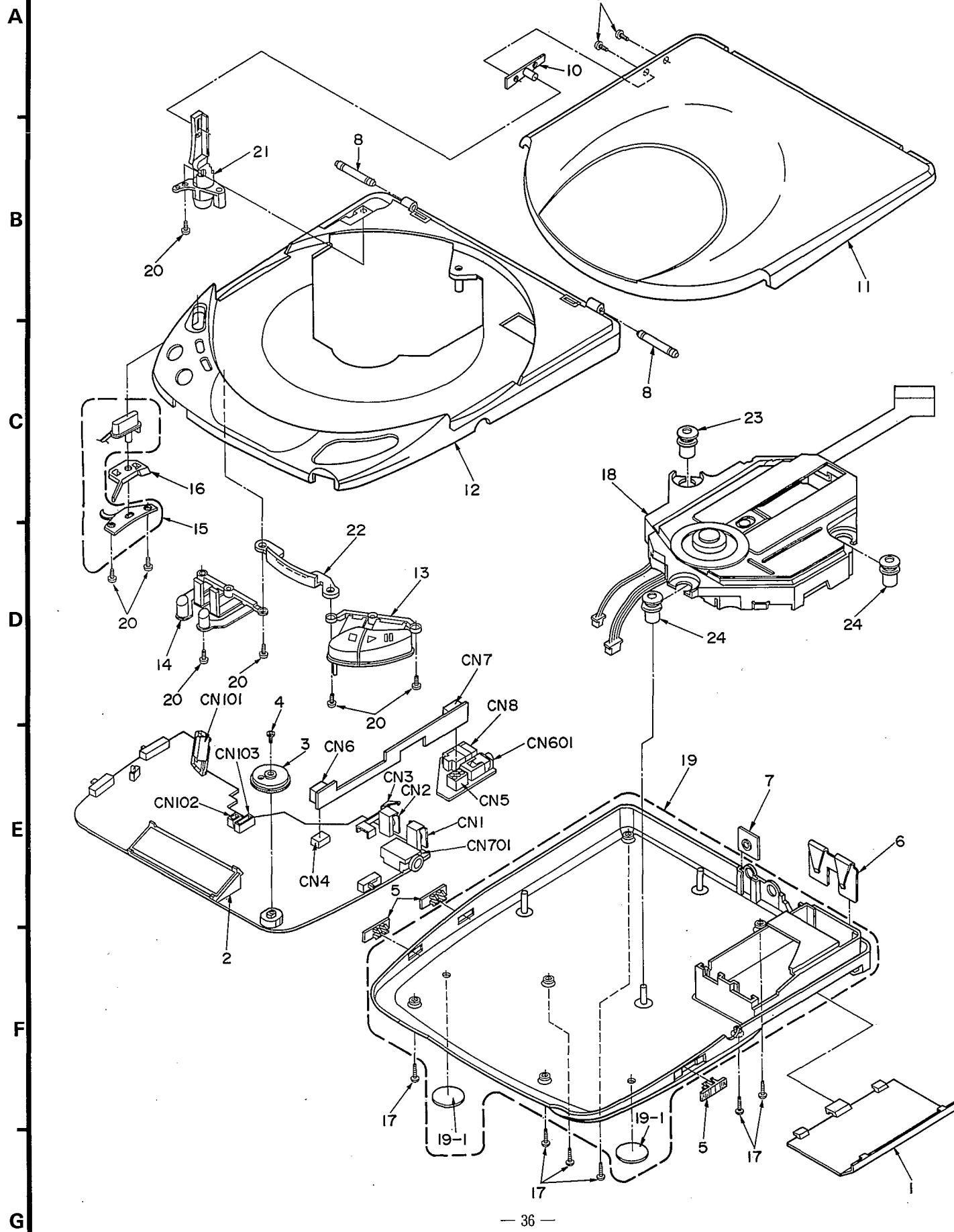
Ref. No.	Part No.	Part Name & Description	Remarks
CN101	RJS1A6116	FPC CONNECTOR(16P)	
CN102	RJT068W02V	CONNECTOR (2P)	
CN103	RJT068W04V	CONNECTOR (4P)	
CN601	RJD3S5ZA-C	OUT JACK	
CN701	RJD5S3MZA-C	HEADPHONES JACK	
		CABINET AND CHASSIS	
1	RKK0048-1K	BATTERY COVER	
2	RJF0014	LCD HOLDER	
3	SBND90ZK0A	VOLUME KNOB	
4	XQN17+C3FZ	SCREW	
5	RGV0052-K	ASC/HOLD/PLAY MODE KNOB	
6	RJC93007	COMMON BATTERY TERMINAL	
7	RMA0110	REAR ORNAMENT	
8	RMS0105-1	SHAFT	
9	RHE5097ZA	SCREW	
10	RXA0131	SLIDE BASE UNIT	
11	RYF0222C-K	DISC HOLDER ASS'Y	
12	RFKJLP350EG	INTERMEDIATE CABINET ASS'Y	
13	RGU0903-H	PLAY/PAUSE/STOP BUTTON	
14	RGU0904-H	MEMORY/RECALL/REPEAT BUTTON	
15	RGU0905-A	OPEN BUTTON	
16	RML0310	OPEN LEVER	
17	XTN17+6GFZ	SCREW	
18	RFKNLS350-K	TRAVERSE DECK ASS'Y	
19	RFKJLP350EG	BOTTOM CABINET ASS'Y	(EG)
19	RFKJLP350EB	BOTTOM CABINET ASS'Y	(EB, GC, GN)
19-1	SHGD54-1	FOOT	
20	RHE5079YA	SCREW	
21	RKC0012	FULL OPEN UNIT	
22	RKW0280-Q	CONDUCTION PLATE	
23	RXQ0321	FLOATING RUBBER(A)	
24	RXQ0322	FLOATING RUBBER(B)	
		PACKING MATERIAL	
P1	RPK0412	PACKING CASE	(EG)
P1	RPK0413	PACKING CASE	(EB, GC, GN)
P2	RPN0609	CUSHION (LOWER)	
P3	RPN0610	CUSHION (UPPER)	
P4	RPQF0092	ACCESSORIES BOX	
P5	RPQ0059	SPACER	(EG, EB, GN)
P6	RPQ0072	PAD	(EG)
P6	RPQ0341	PAD	(EB)
P6	RPQ0069	PAD	(GC)
P6	RPQ0070	PAD	(GN)
P7	SQZD6	AREA LABEL	(EG)
P7	SQZD7	AREA LABEL	(EB)
P7	RQLA0066	AREA LABEL	(GC)
P7	RQLA0067	AREA LABEL	(GN)
P8	SPPD1	PROTECTION BAG	

Ref. No.	Part No.	Part Name & Description	Remarks
		ACCESSORIES	
A1	RQT2096-B	INSTRUCTION MANUAL	(EB, GN)
A1	RFKSLXP350EG	INSTRUCTION MANUAL ASS'Y	(EG)
A1	RFKSLXP350GC	INSTRUCTION MANUAL ASS'Y	(GC)
A2	RQCA0276	SUPPLEMENTARY INST. MANUAL	
A3	RFEA401E-1S	AC ADAPTOR	(EG) △
A3	RFEA404B-W	AC ADAPTOR	(EB) △
A3	RFEA402Z-W	AC ADAPTOR	(GC) △
A3	RFEA401A-W	AC ADAPTOR	(GN) △
A4	RFEV306A-KS	STEREO EARPHONES	(EG, EB)
A4	RP-HV135GY	STEREO EARPHONES	(GC, GN)
A5	RJL2P001X10	STEREO CONNECTION CABLE	
A6	RP-BP60EY	RECHARGEABLE BATTERIES	
A7	RQA0013	WARRANTY CARD	(EG, EB)
A7	RQX7433ZA	WARRANTY CARD	(GN)
A8	RQC80169	SERVICENTER LIST	
A9	RJP120ZDS-K	POWER PLUG ADAPTOR	(GC)
A10 ※	RKB205ZA-0	EAR PADS	
		<PRINTED CIRCUIT BOARDS ASS'Y>	
PCB1	REP1641A-M	MAIN AND JACK P. C. B.	(RTL)

※ This parts is supplied only with replacement parts list.

**Note:**  
The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

### ■ CABINET PARTS LOCATION



# RESISTORS AND CAPACITORS

Notes : \* Capacity values are in microfarads ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)  
\* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R213	ERJ3GEYJ394V	1/16W 390K	R742, 743	ERJ6GEYJ473V	1/10W 47K
			R301, 302	ERJ3GEYJ102V	1/16W 1K	R744, 745	ERJ6GEYJ2R2V	1/10W 2.2
			R303	ERJ8GEYJ223V	1/8W 22K	R801	ERJ3GEYJ474V	1/16W 470K
R1	ERJ6GEYJ822V	1/10W 8.2K	R304	ERJ6GEYJ102V	1/10W 1K	R802	ERJ3GEYJ333V	1/16W 33K
R2	ERJ6GEYJ224V	1/10W 220K	R305	ERJ3GEYJ224V	1/16W 220K	R805	ERJ3GEYJ223V	1/16W 22K
R3	ERJ6GEYJ333V	1/10W 33K	R306, 307	ERJ6GEYJ221V	1/10W 220	R806	ERJ3GEYJ102V	1/16W 1K
R5	ERJ6GEYJ472V	1/10W 4.7K	R313	ERJ6GEYJ102V	1/10W 1K	R814	ERJ3GEYJ274V	1/16W 270K
R6	ERJ3GEYJ224V	1/16W 220K	R403-406	ERJ3GEYJ221V	1/16W 220	R815	ERJ3GEYJ104V	1/16W 100K
R8	ERJ6GEYJ104V	1/10W 100K	R501	ERJ3GEYJ471V	1/16W 470	R816	ERJ6GEYJ182V	1/10W 1.8K
R10	ERJ3GEYJ153V	1/16W 15K	R502	ERJ3GEYJ333V	1/16W 33K			
R11	ERJ6GEYJ272V	1/10W 2.7K	R503, 504	ERJ3GEYJ104V	1/16W 100K			CHIP JUMPERS
R12	ERJ3GEYJ101V	1/16W 100	R505	ERJ3GEYJ563V	1/16W 56K			
R14	ERJ6GEYJ222V	1/10W 2.2K	R506	ERJ3GEYJ681V	1/16W 680	RJ101	ERJ3GEYOR00V	CHIP JUMPER
R15, 16	ERJ6GEYJ220	1/10W 22	R507	ERJ6GEYJ100	1/10W 10	RJ102	ERJ8GEYOR00V	CHIP JUMPER
R17	ERJ6GEYJ100	1/10W 10	R601	ERJ6GEYJ220	1/10W 22	RJ103	ERJ6GEYOR00V	CHIP JUMPER
R19	ERJ1WYK3R3H	1W 3.3	R602	ERJ6GEYJ102V	1/10W 1K	RJ104-106	ERJ8GEYOR00V	CHIP JUMPER
R20	ERJ1WYK3R9H	1W 3.9	R604	ERJ3GEYJ682V	1/16W 6.8K	RJ108	ERJ3GEYOR00V	CHIP JUMPER
R101	ERJ6GEYJ221V	1/10W 220	R605	ERJ6GEYJ104V	1/10W 100K	RJ109, 110	ERJ8GEYOR00V	CHIP JUMPER
R102	ERJ3GEYJ330V	1/16W 33	R606	ERJ6GEYJ222V	1/10W 2.2K	RJ201	ERJ6GEYOR00V	CHIP JUMPER
R107	ERJ3GEYJ102V	1/16W 1K	R607	ERJ6GEYJ392V	1/10W 3.9K	RJ203, 204	ERJ6GEYOR00V	CHIP JUMPER
R108	ERJ3GEYJ332V	1/16W 3.3K	R608	ERJ6GEYJ102V	1/10W 1K	RJ205	ERJ8GEYOR00V	CHIP JUMPER
R109	ERJ3GEYJ125V	1/16W 1.2M	R609	ERJ6GEYJ561V	1/10W 560			
R110	ERJ3GEYJ102V	1/16W 1K	R610, 611	ERJ6GEYJ221V	1/10W 220			CAPACITORS
R111	ERJ3GEYJ223V	1/16W 22K	R612, 613	ERJ6GEYJ102V	1/10W 1K			
R112	ERJ3GEYJ124V	1/16W 120K	R614	ERJ6GEYJ562V	1/10W 5.6K	C1	ECEA1EKS4R7I	25V 4.7U
R113	ERJ3GEYJ334V	1/16W 330K	R701	ERJ3GEYJ102V	1/16W 1K	C2	ECUV1C104KBN	16V 0.1U
R114	ERJ3GEYJ105V	1/16W 1M	R702	ERJ6GEYJ122V	1/10W 1.2K	C3	ECUV1H331KBN	50V 330P
R115	ERJ3GEYJ333V	1/16W 33K	R703	ERJ3GEYJ122V	1/16W 1.2K	C4	ECEA1HKS010	50V 1U
R116	ERJ6GEYJ100	1/10W 10	R704	ERJ6GEYJ102V	1/10W 1K	C5	ECUV1E822KBN	25V 8200P
R117	ERJ6GEYJ184V	1/10W 180K	R705	ERJ3GEYJ102V	1/16W 1K	C6	ECEA1VSN2R2	35V 2.2U
R118	ERJ3GEYJ822V	1/16W 8.2K	R706, 707	ERJ6GEYJ473V	1/10W 47K	C7	ECUV1C104ZFV	16V 0.1U
R119	ERJ6GEYJ102V	1/10W 1K	R708, 709	ERJ3GEYJ105V	1/16W 1M	C8	ECUV1E103KBV	25V 0.01U
R120	ERJ3GEYJ682V	1/16W 6.8K	R710, 711	ERJ3GEYJ223V	1/16W 22K	C9	ECEA0JKA101I	6.3V 100U
R121	ERJ3GEYJ473V	1/16W 47K	R712, 713	ERJ3GEYJ105V	1/16W 1M	C10	RCE1ASD330IX	10V 33U
R122	ERJ3GEYJ103V	1/16W 10K	R714, 715	ERJ3GEYJ123V	1/16W 12K	C11	ECUV1H470KCN	50V 47P
R123	ERJ3GEYJ104V	1/16W 100K	R716, 717	ERJ3GEYJ154V	1/16W 150K	C12	ECUVNC105ZFN	16V 1U
R124	EXBV8V223J	1/16W 22K	R718	ERJ3GEYJ103V	1/16W 10K	C13, 14	ECEA1AKA470I	10V 47U
R126	ERJ6GEYJ331V	1/10W 330	R719, 720	ERJ3GEYJ392V	1/16W 3.9K	C15	ECUV1C104ZFN	16V 0.1U
R201	ERJ3GEYJ104V	1/16W 100K	R721	ERJ3GEYJ103V	1/16W 10K	C101	ECUV1C104ZFV	16V 0.1U
R202	ERJ3GEYJ334V	1/16W 330K	R722, 723	ERJ3GEYJ682V	1/16W 6.8K	C102, 103	ECUV1C104KBN	16V 0.1U
R203	ERJ6GEYJ474V	1/10W 470K	R724, 725	ERJ3GEYJ333V	1/16W 33K	C104, 105	ECUV1C333KBN	16V 0.033U
R204	ERJ6GEYJ563V	1/10W 56K	R726, 727	ERJ6GEYJ222V	1/10W 2.2K	C108	ECUV1C473KBN	16V 0.047U
R206	ERJ6GEYJ224V	1/10W 220K	R728, 729	ERJ6GEYJ150V	1/10W 15	C109	ECEA1CKA100I	16V 10U
R207	ERJ6GEYJ222V	1/10W 2.2K	R730, 731	ERJ6GEYJ4R7V	1/10W 4.7	C110	ECUV1C104KBN	16V 0.1U
R208	ERJ6GEYJ122V	1/10W 1.2K	R732	ERJ3GEYJ221V	1/16W 220	C111, 112	ECUV1H472KBV	50V 4700P
R209	ERJ3GEYJ102V	1/16W 1K	R733	ERJ3GEYJ122V	1/16W 1.2K	C113	ECUV1C473KBN	16V 0.047U
R210	ERJ3GEYJ473V	1/16W 47K	R735	ERJ3GEYJ122V	1/16W 1.2K	C114	ECUV1C104KBN	16V 0.1U
R211	ERJ6GEYJ223V	1/10W 22K	R737, 738	ERJ3GEYJ104V	1/16W 100K	C115	ECUV1C473KBN	16V 0.047U
R212	ERJ3GEYJ473V	1/16W 47K	R739, 740	ERJ3GEYJ102V	1/16W 1K	C116	ECUV1C104KBN	16V 0.1U

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C117	ECUV1E103KBV	25V 0.01U	C301	ECUV1C104ZFB	16V 0.1U	C611, 612	ECUV1H272KBN	50V 2700P
C118	ECUV1C333KBV	16V 0.033U	C312	ECUV1C104KBN	16V 0.1U	C613, 614	ECUV1H681KBN	50V 680P
C119	ECUV1C104ZFB	16V 0.1U	C501	ECUV1H102KBV	50V 1000P	C615	ECUV1H120JCN	50V 12P
C120	ECEA1VKNR2I	35V 2.2U	C502	ECUV1C474KBM	16V 0.47U	C616, 617	ECUV1C104ZFN	16V 0.1U
C121	ECUV1E103KBV	25V 0.01U	C504	ECUV1C104ZFB	16V 0.1U	C701	ECEAOJKA101I	6.3V 100U
C122	ECUV1C393KBN	16V 0.039U	C505	ECUV1E223KBV	25V 0.022U	C702, 703	ECEAOJKA220	6.3V 22U
C123	ECUV1C104ZFN	16V 0.1U	C506	ECUV1H102KBV	50V 1000P	C704	ECUV1H102KBV	50V 1000P
C124	ECEAOJKA470I	6.3V 47U	C507	ECUV1C104KBN	16V 0.1U	C705	ECEA1CKA100I	16V 10U
C125	ECUV1C104ZFN	16V 0.1U	C508	ECEAOJKA470I	6.3V 47U	C706	ECUV1H102KBV	50V 1000P
C126	ECEA1HKS47I	50V 0.47	C601	ECUV1C104ZFN	16V 0.1U	C707	ECEA1CKA100I	16V 10U
C127	ECUV1C104ZFN	16V 0.1U	C602	ECEAOJKA470I	6.3V 47U	C708, 709	ECUV1H332KBV	50V 3300P
C128, 129	ECUV1H220KCN	50V 22P	C603	ECUV1H330KCN	50V 33P	C710, 711	ECUV1C123MBV	16V 0.012U
C130	ECUV1C104ZFB	16V 0.1U	C604	ECUV1H390KCN	50V 39P	C712, 713	ECUV1C333KBV	16V 0.033U
C201	ECUV1H680KCN	50V 68P	C605	ECEA1AKA220I	10V 22U	C714, 715	ECEA0GPK221I	4V 220U
C202	ECUV1C104KBN	16V 0.1U	C606, 607	ECUV1H681KBN	50V 680P	C716	ECUV1H332ZFN	50V 3300P
C203	RCSTOJY225LE	6.3V 2.2U	C608	ECUV1H102KBV	50V 1000P	C801	ECUV1C105ZFN	16V 1U
C204	RCEOJSA470IX	6.3V 47U	C609	ECUV1C104ZFN	16V 0.1U			
C205	ECUV1E103KBV	25V 0.01U	C610	ECEAOJKA470I	6.3V 47U			

PACKAGING

