

Service Manual

COMPACT
disc
DIGITAL AUDIO

DIGITAL

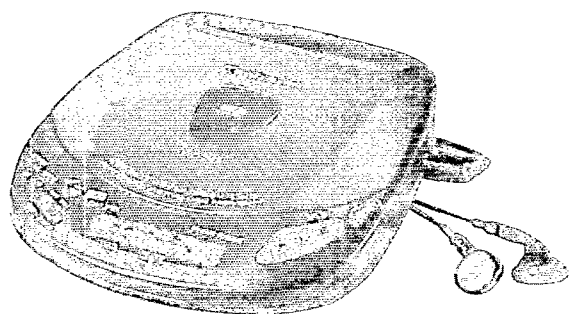
MASH[®]
multi-stage noise shaping

Portable CD Player

SL-XP370

Colour

(K)... Black Type



TRAVERSE DECK: RAE0132Z MECHANISM SERIES

SPECIFICATIONS

Audio

No. of channels: 2 channels (left and right, stereo)
Output voltage: 0.65V (50k Ω) ϕ 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
Digital filter: 8 times over sampling
DA converter: MASH* (1 bit, 4 DAC)
Headphone output level: max. 5mW+5mW/16 Ω (variable)
 stereo mini jack ϕ 3.5

Signal Format

Correction system: Technics New
 Super Decoding Algorithm

Pickup

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

Playing time;

(When the unit is used
 at 25°C on a flat and
 stable surface.)

Batteries used	Anti-shock memory OFF/ON
Rechargeable batteries	About 3 hours/ About 2 hours 30 minutes
Panasonic alkaline dry cell batteries	About 8 hours/ About 6 hours

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

Recharging time;

About 3 hours

Technics[®]

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany and Italy.	
(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.

- ※※ These specifications were measured in the anti-shock memory OFF state.

General

Power requirement: AC; with an included panasonic AC adaptor
 (RFEA401E-1S): (E, EG)
 (RFEA404B-W): (EB)
 (RFEA402Z-W): (GC)
 (RFEA404A-W): (GN)
 Batteries; 3V (two "AA" size batteries, not included)
 (Panasonic R6P/LR6 or equivalent, not included)
 Rechargeable Batteries; DC 2.4V with an optional Panasonic Rechargeable Batteries (SH-CDB8D) $\times$ 2
 Car Battery; with an optional panasonic car adaptor (SH-CDC9)
 4.5V

DC IN:

Power consumption:

Power source	Anti-shock memory OFF/ON
AC adaptor	4.5W/4.9W
Batteries	0.6W/1.0W

Dimensions (W $\times$ H $\times$ D): 130.1 $\times$ 28.7 $\times$ 155.5mm
Weight: 265g without batteries
 305g with batteries

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

Weight and dimensions are approximate.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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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.

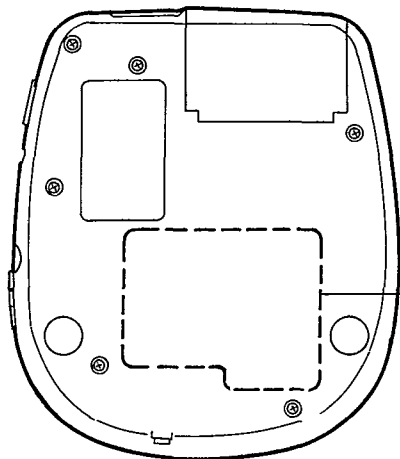
Wellenlänge: 780nm

Maximale Strahlungsleistung der Lasereinheit: 100μW/VDE

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

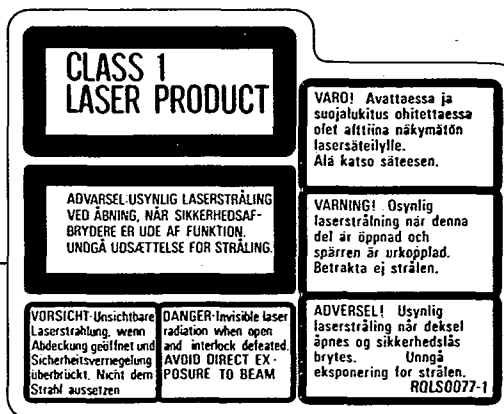
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Lasereinheit gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.

ADVARSEL: I dette a apparat anvendes laser.

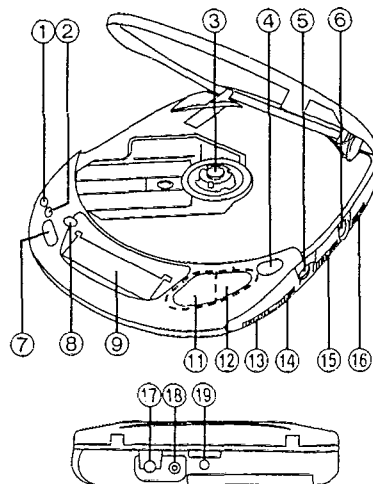


(Bottom side)

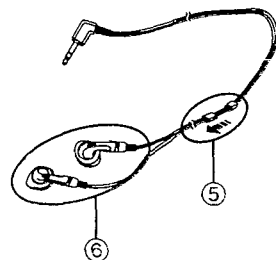
RQLS0077-1



LOCATION OF CONTROLS



[For (GC, GN) areas.]



Stereo earphones

⑤ Slider

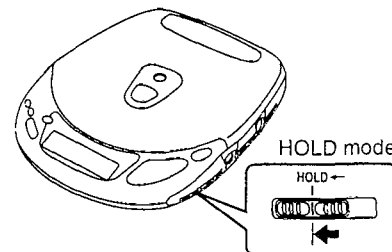
Slide up to prevent entangling of the cord when the stereo earphones are not in use.

⑥ Ear piece

Portable CD Player

- ① Memory/recall button (MEMORY/RECALL)
- ② Repeat button (REPEAT)
- ③ Push button (PUSH)
- ④ Open button (OPEN)
- ⑤ Headphones volume control (VOLUME)
- ⑥ Headphones jack () 16Ω φ3.5
- ⑦ Skip/search buttons (◀◀-SKIP/-SEARCH▶▶)
- ⑧ Sound quality/field selector button (DSP)
- ⑨ Display
- ⑪ Play/pause button (▶||)
- ⑫ Stop/Operation off button (■/OPR OFF)
- ⑬ Hold switch (HOLD)
- ⑭ High filter switch (HIGH FILTER)
- ⑮ Play mode selector (MODE)
- ⑯ Anti-shock memory switch (ANTI-SHOCK MEMORY)
- ⑰ Out jack (OUT)
- ⑱ DC in jack (DC IN 4.5V)
- ⑲ Hole for car mounting base

ACCIDENTAL OPERATION PREVENTION FUNCTION



To use the accidental operation prevention function

Set HOLD to the HOLD position.

Before operating the buttons

Be absolutely sure to move HOLD to release the unit from the hold mode.

HOLD indicator

If the unit is in the hold mode, the "hold" indicator appears when any of the unit's control buttons is pressed.

When the unit is turned off

The display appears only when ▶|| is pressed.

This function prevents the unit from operating even if a control button is pressed in error. (The disc lid can still be opened and closed.) Use the function to prevent the following situation:

Example 1:

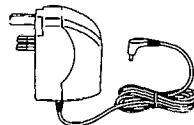
While the unit is not in use, the power is inadvertently turned on and the batteries run down.

Example 2:

Play is interrupted while the unit is in use.

ACCESSORIES

①-a

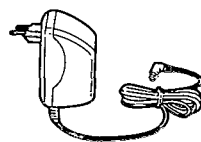


① AC adaptor 1 pc.

① [For (EB) area.]

RFEA404B-W

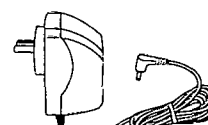
①-b



①-b [For (E, EG) areas.]

RFEA401E-1S

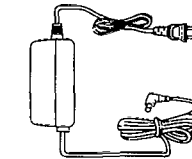
①-c



①-c [For (GN) area.]

RFEA404A-W

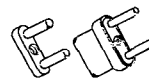
①-d



①-d [For (GC) area.]

RFEA402Z-W

②



② Power plug adaptor 1 pc.

(RJP120ZDS-K)

[For (GC) area.]

③-1



③-1 Stereo headphones 1 pc.

(RP-HT103DTYS)

[For (E, EB, EG) areas.]

③-2



③-2 Stereo earphones 1 pc.

(RFEV307A-KA)

[For (GC, GN) areas.]

④



④ Stereo connection cable 1 pc.

(RJL2P001X10)

[For (GC, GN) areas.]

POWER SOURCE

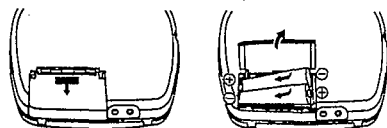
Using rechargeable batteries

Make sure that the rechargeable batteries have been recharged before use.

Recharging procedure

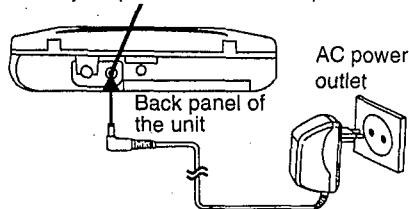
- 1 Place the rechargeable batteries inside the unit.

(No batteries other than RP-BP60/SH-CDB8D can be recharged.)



- 2 Connect the AC adaptor.

DC IN jack (DC IN 4.5V $\oplus \ominus$)

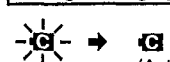


It takes about 3 hours to fully recharge the batteries.

- A 2-tier recharging system is used under which the batteries can be used for about 2 hours (Anti-shock memory off.) with an hour or so of recharging.

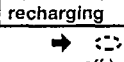
Recharging Indicator (this lights on the display)

During recharging



Flashes. Provides about 2 hours of play.

Upon completion of recharging



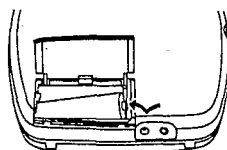
(Anti-shock memory off.)

Provides about 3 hours of play in the hold mode.

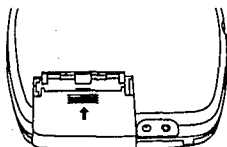
- 3 Upon completion of the recharging, disconnect the AC adaptor from the DC IN jack and power outlet.

Removing the batteries

Push the batteries upward in the direction of the arrow to remove them.



If the battery compartment lid becomes disengaged, position it horizontally and press it back into position.



- The batteries can be used for about 10 months (300 times) if they are used every day. They will need to be replaced if the duration of their operation drops drastically.
- The batteries cannot be recharged during play or in the standby mode.
- Recharging should be performed at 0°C~40°C.
- While recharging, the AC adaptor and rechargeable batteries may get warm. This is normal.

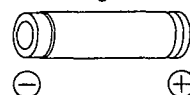
As a safety precaution, the portable CD players made by Panasonic have a construction designed to make it impossible to recharge ordinary batteries.

To use rechargeable batteries, be absolutely sure to purchase the rechargeable Ni-Cd batteries designed especially for this unit.

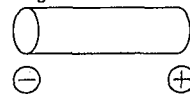
Special rechargeable Ni-Cd batteries: SC-CDB8D (set of 2)

For details, check with your dealer.

Special rechargeable batteries



Ordinary dry cell batteries/ rechargeable batteries



Using dry cell batteries (not included)

Disconnect the AC adaptor and then install two LR6 (UM-3) type alkaline batteries.

The batteries are inserted and removed in the same way as for the rechargeable batteries.

To prevent damage to the batteries and electrolyte leakage, heed the following points.

- Align the $\oplus$ and $\ominus$ polarities properly when inserting the batteries.
- Do not mix different types or makes of batteries or old and new batteries.
- Remove the batteries if you do not plan to use the unit for a long period of time.
- Do not throw batteries into a fire, and do not short-circuit, disassemble or subject them to excessive heat.
- Do not attempt to recharge dry cell batteries.
- Do not peel off the plastic covering on the rechargeable batteries. Short-circuiting may occur which is dangerous.

Using the AC adaptor

Connect the AC adaptor supplied.

Refer to the section on "Using rechargeable batteries" for details on the connections.

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.

- Handle the AC adaptor carefully. Improper handling is dangerous.
 - Do not touch it with wet hands.
 - Do not place heavy objects on top of it.
 - Do not forcibly bend it.
- Be sure to connect only the AC adaptor provided with the unit.
- Disconnect the AC adaptor from the power outlet if the unit is not going to be used for a long time.

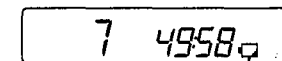
Battery indicator

This starts flashing when the batteries have run down, and after a short while the power is automatically cut off.

(The amount of time during which play continues after the indicator has started flashing differs slightly depending on the type of batteries used.)

Type of battery	Action
Rechargeable batteries	Recharge the batteries again.
Dry cell batteries	Replace with new batteries.

(The battery indicator may not flash if rechargeable batteries other than those designated by our company are used.)



Battery indicator

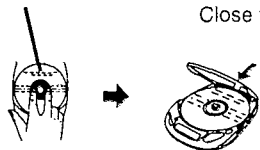
■ SEQUENTIAL PLAY

1 Press OPEN to open the lid, and insert the disc.

Press the area near the center hole of the disc until it clicks into position.

Label must face upward.

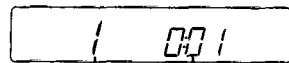
Close the lid.



• SKIP/SEARCH

5 Press ► II.

Play now starts.



Track number in play

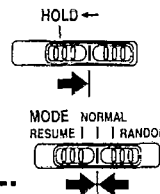
Elapsed playing time of each track in play

Play stops automatically when all the tracks have been played.

6 Adjust the volume level.

(If the unit has been connected to the car audio system, adjust the volume level on the system.)

2 Release the hold mode.

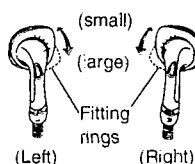


3 Set MODE to NORMAL.

4 Connect the stereo earphones/headphones to the jack.

(Plug in firmly)

• For (GC, GN) areas.



Ear piece

Adjust the size to your ears.

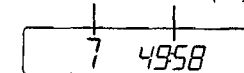
Slide the fitting rings to the "large" position if the earphones jiggle about inside your ears; slide them to the "small" position if they fit too tightly for comfort.

Operation	Button
Stopping play	■
Pause: press again to resume play.	► II
Skip forward/backward (skip function): tap during play.	►►: Forward direction ◄◄: Backward direction
Rapid forward/backward (search function): keep depressed during play.	

Standby mode

Press ■/OPR OFF during play. Standby is a mode during which the disc stops rotating and the total number of tracks and the total playing time are displayed.

Total number of tracks Total playing time



Automatic Shut-OFF function

When the unit is left for about 10 minutes in the standby or pause mode, this function automatically shuts off the power in order to prevent the rechargeable batteries, etc. from discharging needlessly.

For your reference:

"no disc" display

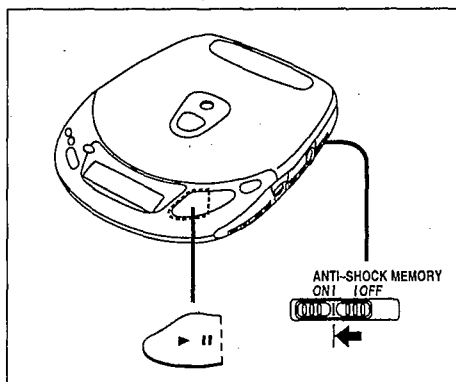
This appears for about 30 seconds when a disc has not been inserted or when a disc has not been inserted properly and then ► II is pressed.

"OPEN" display

This appears for about 10 minutes after the lid is opened. (It does not appear when the unit is turned off.)

■ ANTI-SHOCK MEMORY FUNCTION

This function minimizes sound interruptions due to vibration when listening to a disc while walking about or in a moving vehicle or train.



Once the anti-shock memory function has been activated, play data of up to 3 seconds can be stored in the memory.

Therefore, even if the unit sustains an external impact, the data stored in the memory is sent to minimize sound interruptions during play.

1 Set ANTI-SHOCK MEMORY to ON.

2 Press ► II.

The function starts to store the play data, and the MEMORY RESERVE indicator on the display shows how much data is stored.

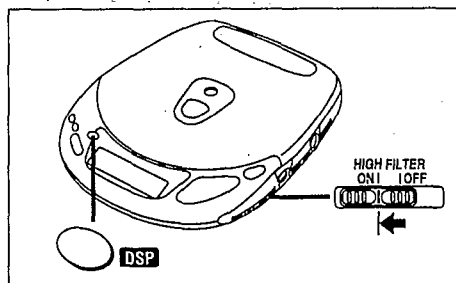
Notes

- The ANTI-SHOCK MEMORY switch can be set during play but doing so will produce a slight gap in the sound due to a change in the disc speed.
- While the anti-shock memory function is on, the life span of the batteries is shortened and sound made by the rotation of the disc increases somewhat because the disc rotates faster and the play data is stored.

MEMORY RESERVE indicator

Unit mode	Play mode (play data mode)	MEMORY RESERVE mode
Stable	Sound is heard (sufficient data has been stored).	
Unit sustains a shock.	Sound is heard (stored data is used).	
Shock subsides.	Sound is heard (data storage commences).	
Unit sustains a continuous shock.	Sound is interrupted (no more data is stored).	

■ CHANGING THE TONE



To change to the HIGH FILTER position

Set HIGH FILTER to ON.

This reduces noise leakage which is unpleasant to other passengers on trains or other public transport and fatigue to the ears when the unit is used for long periods of time.

Changing the sound quality/sound field setting

DSP: Digital signal processor

When **DSP** is used after the setting, the present DSP mode is displayed for 2 seconds.

Press **DSP**.

Each time this button is pressed, the setting changes in the sequence given below:

OFF → HALL → LIVE → Church → S-XBS

For your reference:

- When the unit is turned off, DSP mode becomes off.

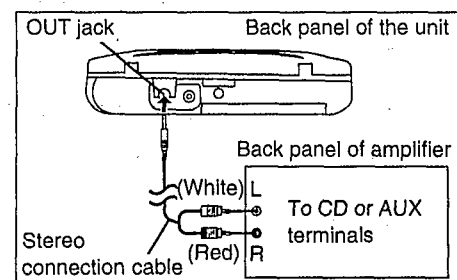
OFF	Releases the DSP.	
HALL	Extends the sound so as to give the atmosphere of a large hall.	
LIVE	Sets the kind of atmosphere generated when sound is heard in a concert hall.	
Church	Provides the sound with ample reverberation which is reminiscent of a church.	
S-XBS	Lends an extra "punch" to the deep bass.	

■ USING THE UNIT WITH OPTIONAL ACCESSORIES

Using the unit with an audio system

Using the stereo connection cable (RP-CA119A), you can hear CDs on your audio system.

- Connect the cable to the amplifier after turning off its power.
- Do not connect the cable to the PHONO jacks on the amplifier.
- Obtain the optional connecting cable (RP-CA102A) if the amplifier comes with mini-phone jacks.



Using the unit with a car stereo

Items to be purchased

For connection to the car audio system:

Car stereo cassette adaptor (SH-CDM9/SH-CDM9D)

For securing the unit and connecting the power supply:

- Car adaptor (SH-CDC9)
- Car mounting kit (SH-CDF20)
- Car mounting arm, Car mounting base

Note

It may not be possible to use the unit with some types of car stereos owing to restrictions imposed by the construction of the car stereo cassette adaptor.

For further details, refer to the instructions of the part concerned.

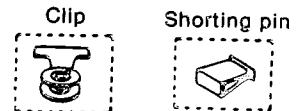
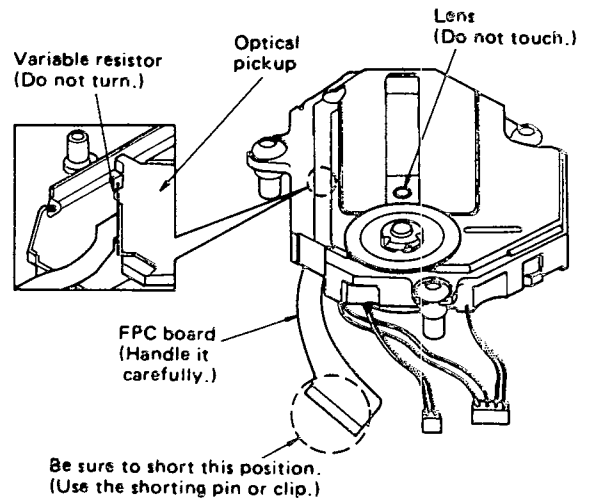
HANDLING PRECAUTIONS FOR TRAVERSE DECK

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).

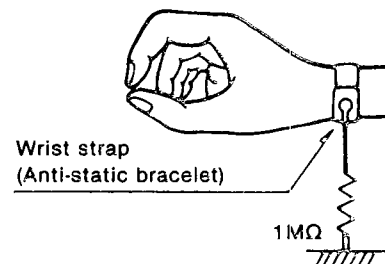
• Handling of traverse deck (optical pickup)

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.



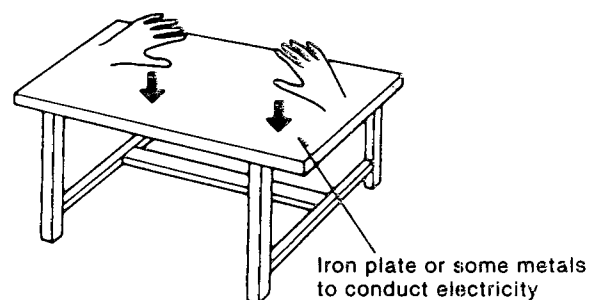
• Grounding for electrostatic breakdown prevention

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).



■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES

Warning: This product uses a laser diode. Refer to caution statements on page 2.

ACHTUNG: •Die lasereinheit nicht zerlegen.

•Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

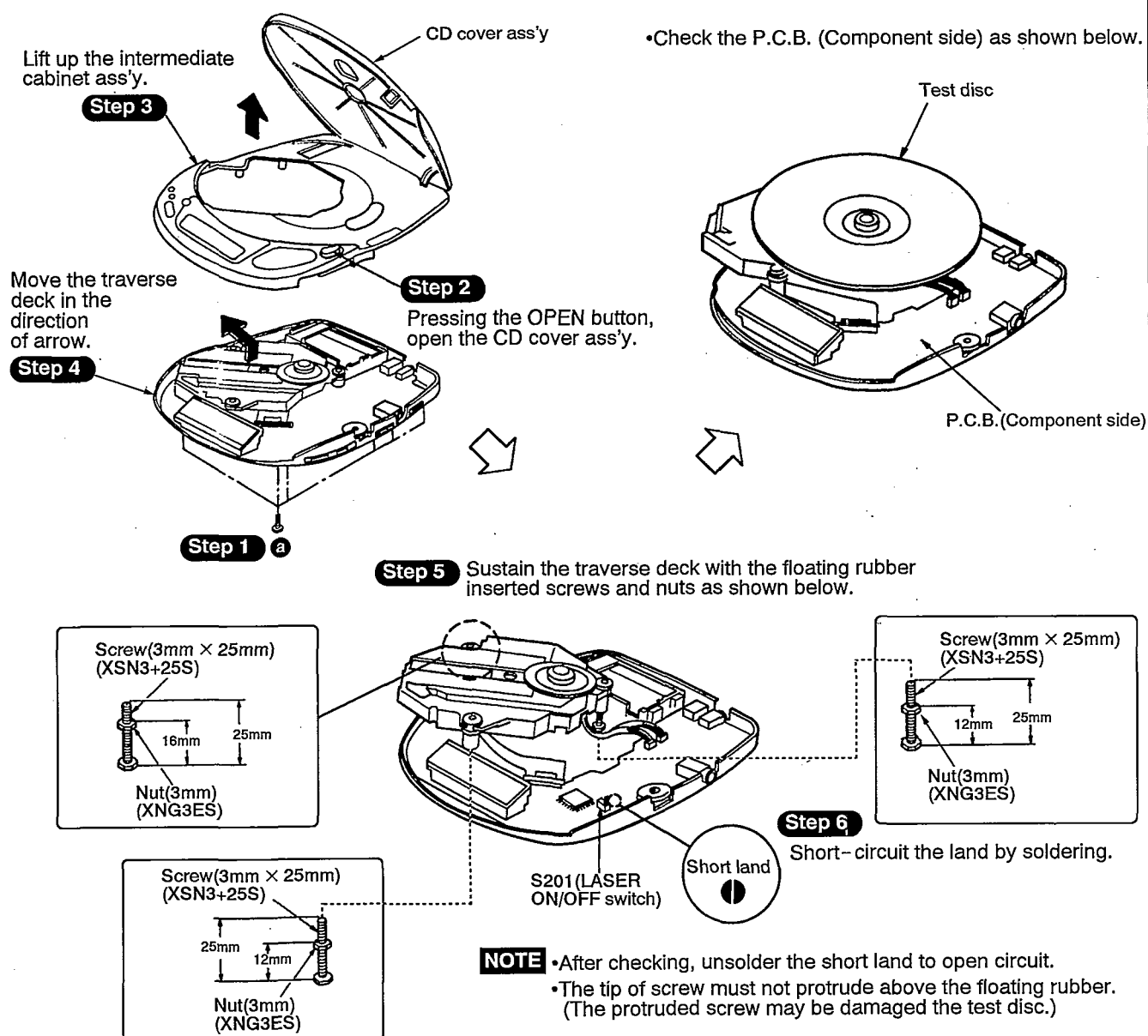
- NOTE**
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
 2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
 3. Illustrated screws are equivalent to actual size.
 4. [] indicates parts No.

1. Checking for the P.C.B.



[XTN17+6GFZ] (Black)

Operation check for the main P.C.B.(Component side)



2. Replacement of the traverse deck

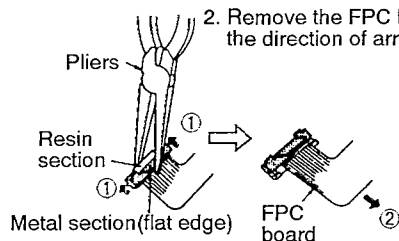
•Follow the **Step 1** ~ **Step 4** in item 1.

How to remove the FPC board.

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 ①.

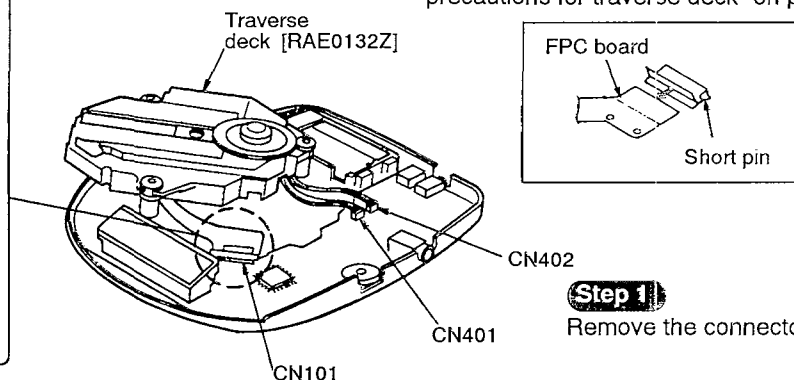
Note: The flat edge of the metal section must be nipped.

2. Remove the FPC board in the direction of arrow ②.



Caution:

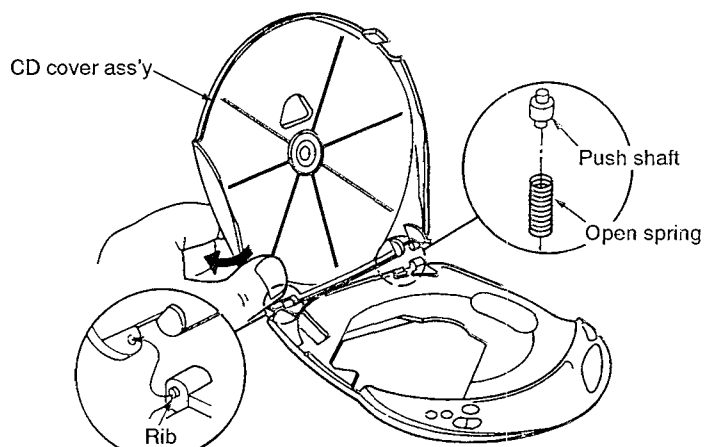
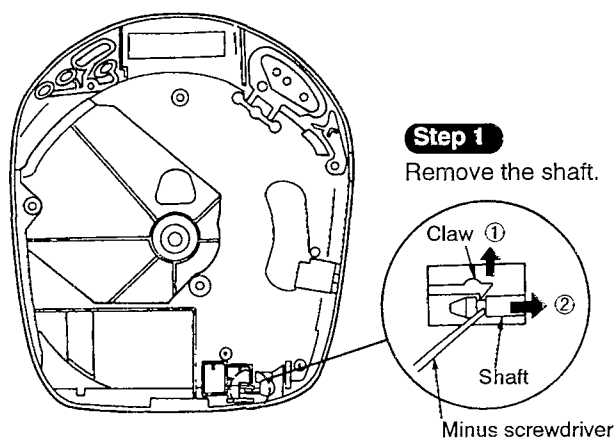
Insert a short pin into the traverse deck's FPC board. (Refer to "handling precautions for traverse deck" on page 7.)



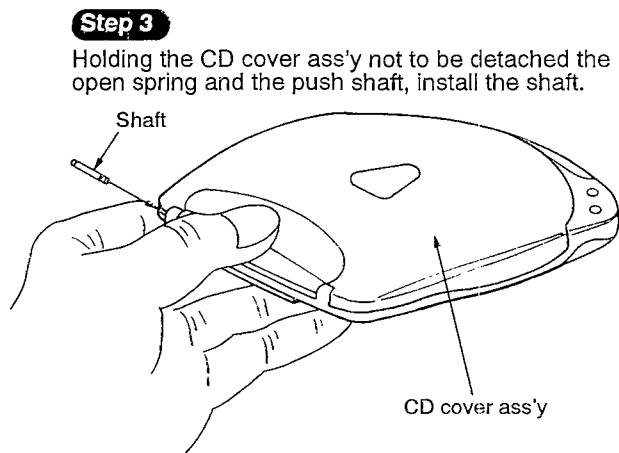
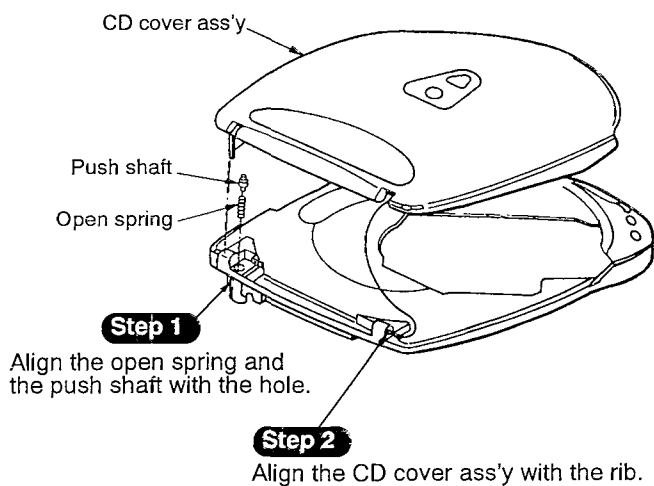
3. Replacement of the traverse deck

•Follow the **Step 1** ~ **Step 3** in item 1.

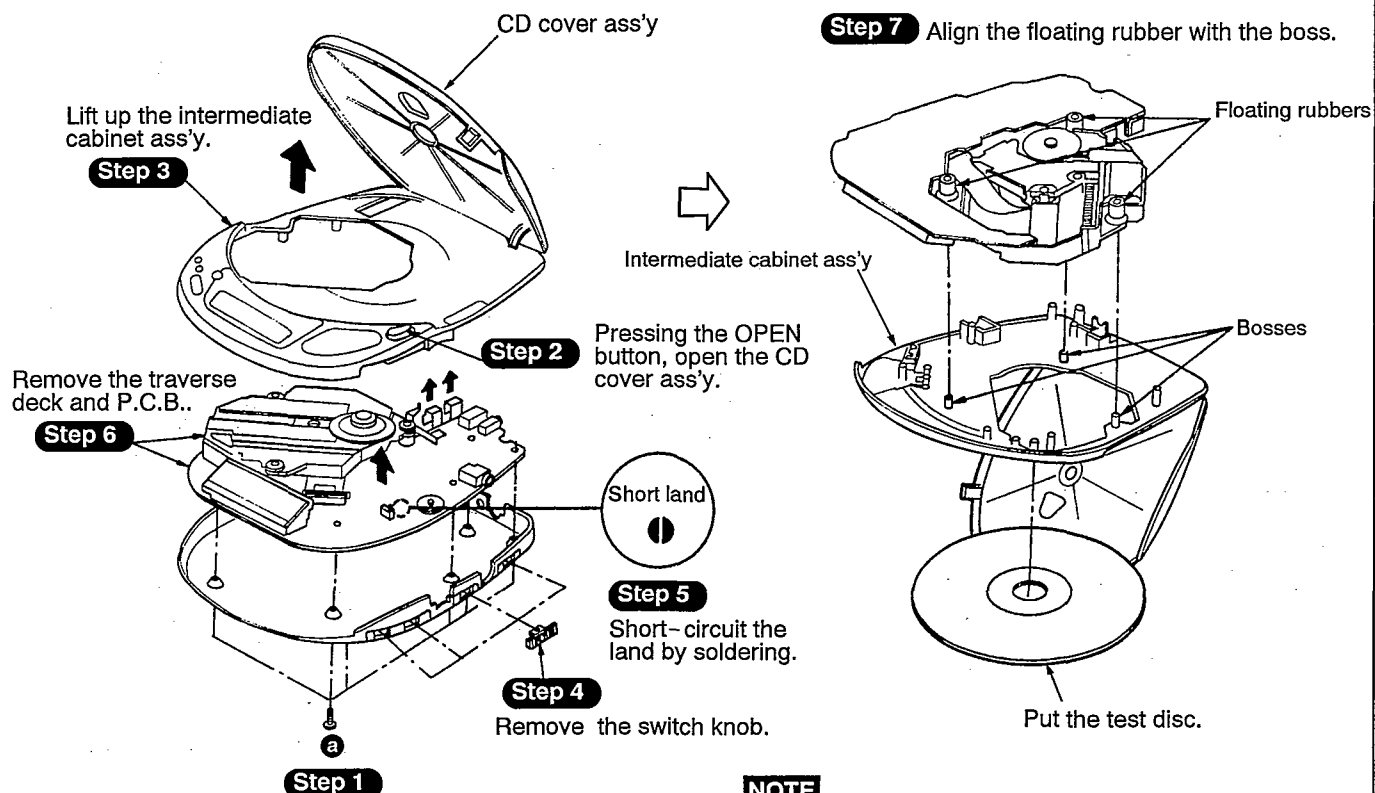
NOTE When the CD cover ass'y is removed, the push shaft and the open spring will also be removed. Be careful not to loose them.



Reassembly procedures of CD cover ass'y



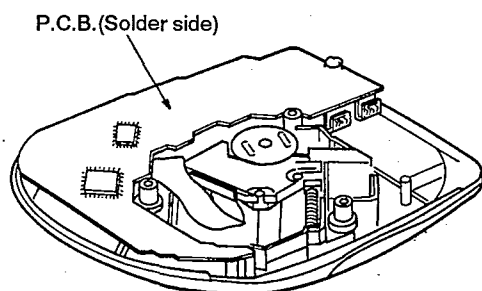
Operation check for the P.C.B.(solder side)



NOTE

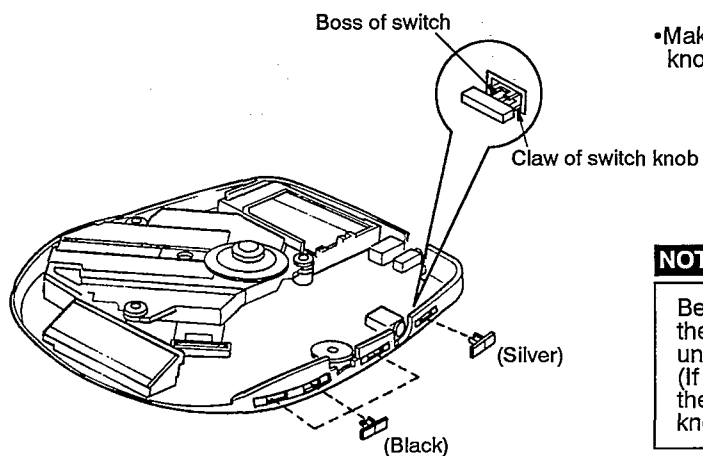
After checking, unsolder the short land to open circuit.

•Check the P.C.B. (Solder side) as shown below.



a
[XTN17+6GFZ] (Black)

Notice for Installation of switch knobs



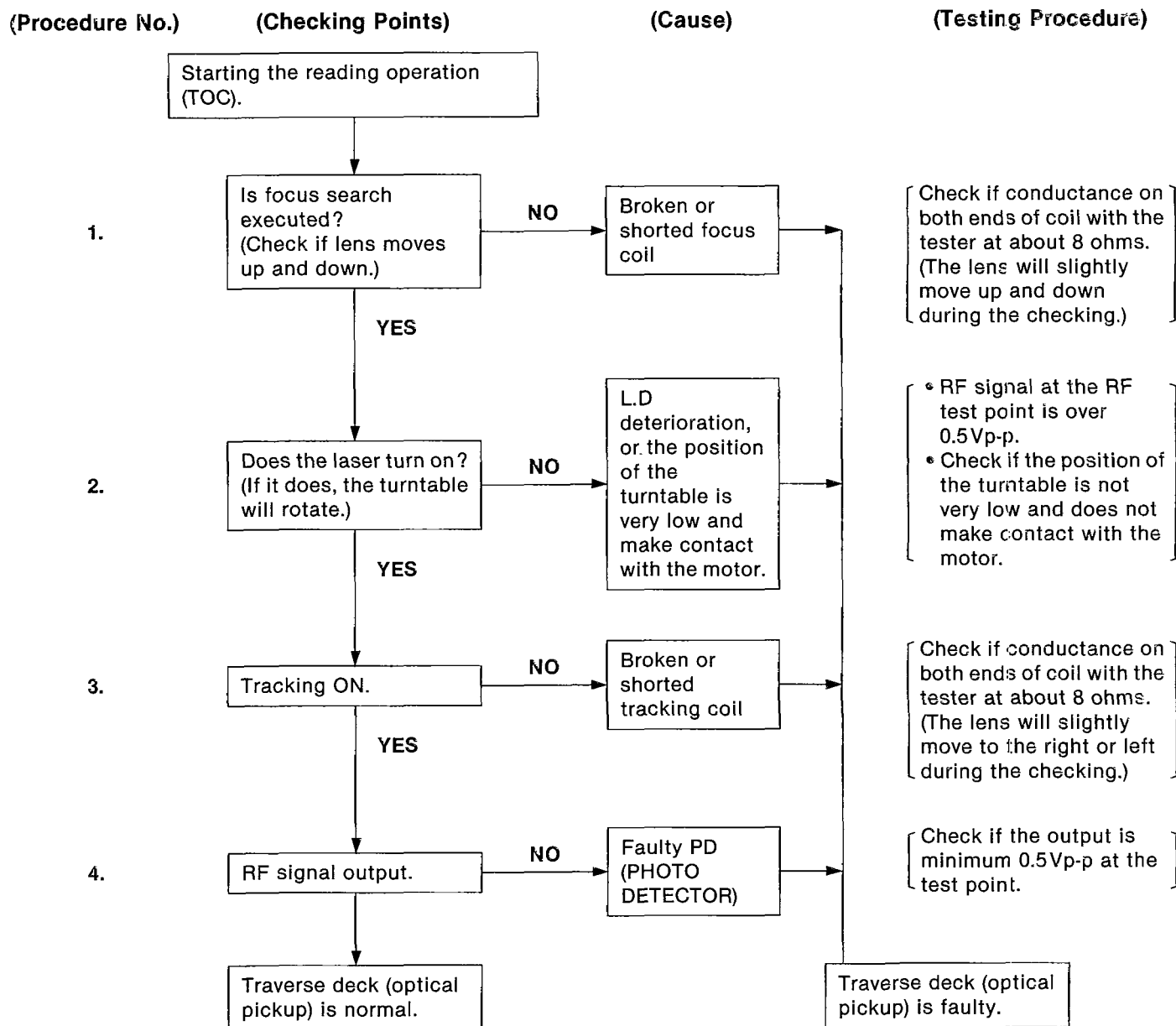
•Make sure the bosses of switch are fit in the knobs of switch.

NOTE

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.)

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.

MEASUREMENTS AND ADJUSTMENTS

Warning: This product uses a laser diode. Refer to caution statements on page 2.

ACHTUNG: • Die lasereinheit nicht zerlegen.

• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

• Measuring instruments and special tools

• Test discs

1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)

- Musical program disc (ordinary)
- DC voltmeter
- Lead wire (for test points)

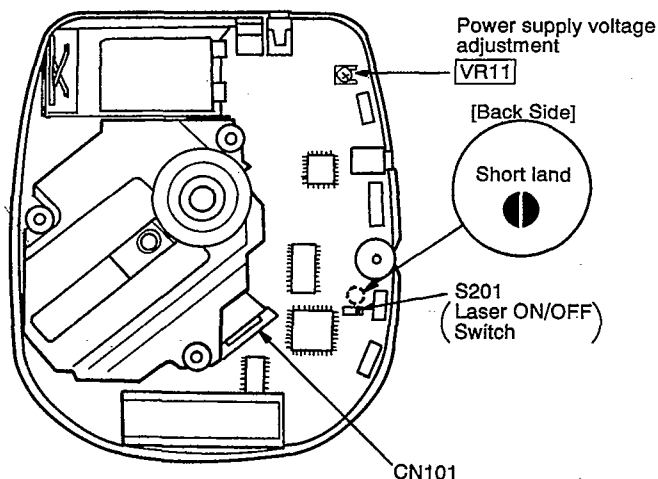
• Test short land

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 23~25.)

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 **TP103** (VCC) (+) and **TP104** (GND) on the P.C.B.
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.)
3. Insert the test disc, and switch the player power ON.
4. Adjust **VR11** on the P.C.B. at $3.54 \pm 0.02V$.

(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-XP370 servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-XP370.

On conventional portable CD player
Use for Old Servo IC (AN8373SE2, AN8374SE2)

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-XP370
Use for New Servo IC (AN8832SBE1, MN662740RE)

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-XP370 automatically controls the servo circuit to obtain optimum performance according to any disc's characteristics. Therefore, no malfunction occurs because of mis-adjustment.

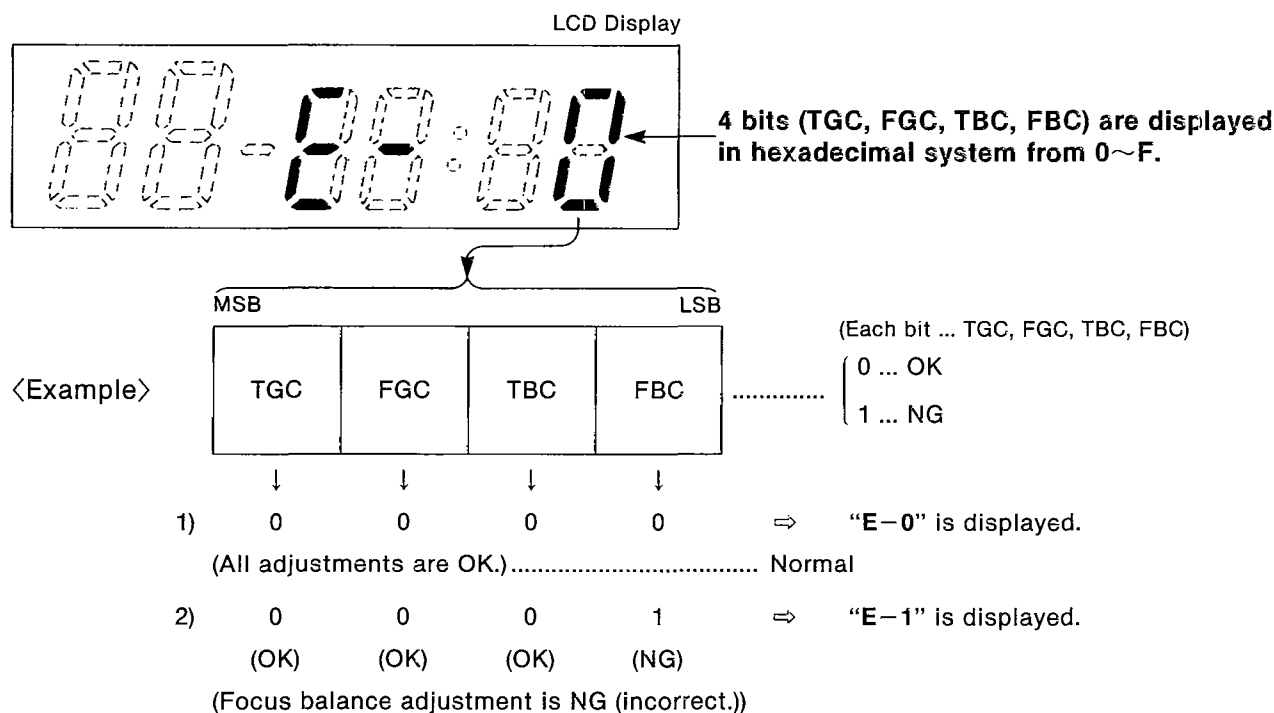
■ DISPLAY FUNCTION OF AUTOMATICALLY-ADJUSTED RESULTS (SELF-CHECK FUNCTION)

On this unit (SL-XP370), 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 ▶/II (PLAY/PAUSE) Button.
3. Press the ■ (STOP/OPR OFF) Button once.
4. An automatically-adjusted result is displayed on the LCD.

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



- 3) 0 1 0 0 ⇒ “E-4” is displayed.
 (OK) (NG) (OK) (OK)
 (Focus gain adjustment is NG.)
- 4) 1 1 1 1 ⇒ “E-F” is displayed.
 (All adjustments are NG.)

◁Example▷ Follow the below steps when “E-1” is displayed.

- (Cause: Focus balance (TBC) 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.

Follow the below steps when “E-4” is displayed.

- (Cause: Focus gain (FGC) 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.

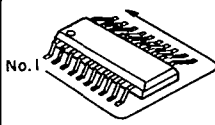
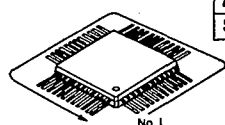
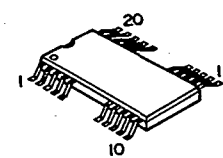
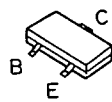
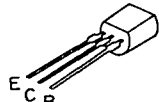
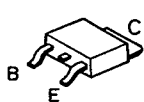
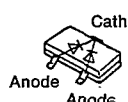
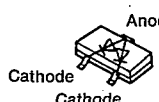
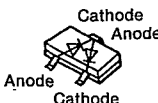
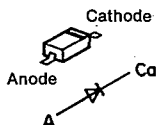
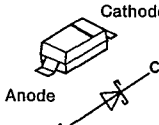
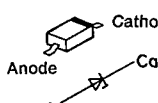
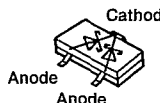
Follow the below steps when “E-F” is displayed.

- (Cause: All adjustments (TGC, FGC, TBC, FBC) are set beyond the limit.)
- Check if
 - (1) the optical pickup returns to the normal state by exchanging the traverse deck, and
 - (2) the waveform or voltage of the servo IC’s (IC101, 501) are correct.

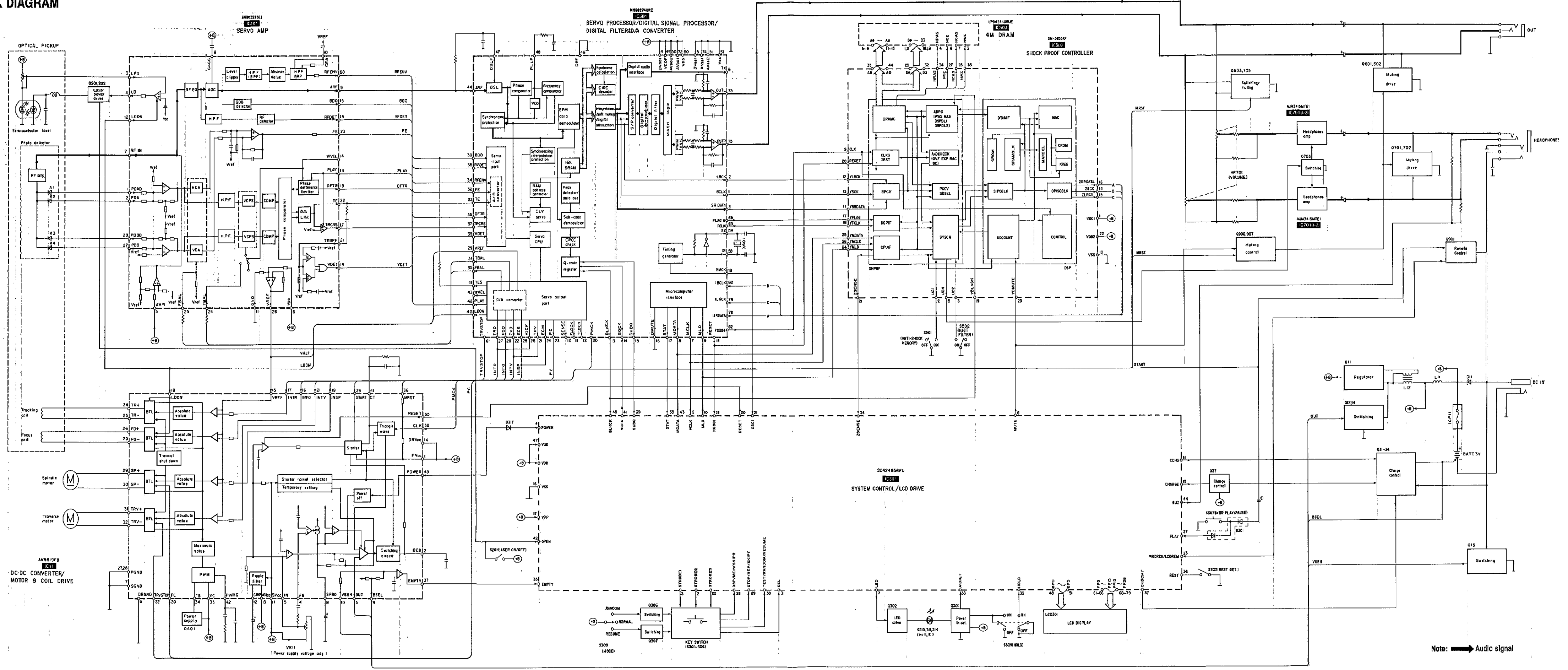
Note:
It is not always necessary to exchange the traverse deck when an error message is displayed. Be sure to check if the circuit is defective or not before exchanging the traverse deck.

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

■ TERMINAL GUIDE OF IC’S, TRANSISTORS AND DIODES

NJM3415MTE1 8Pin AN8832SBE1 28Pin 		AN8819FB 44Pin SM-5855AF 44Pin MN662740RE 80Pin SC424656FU 80Pin 		UPD4244GIRJE 		FMG4T148 FMG6T148 FMG8T99 			
 2SB970RSTX 2SB1218QRSTX 2SD1328RSTTX 2SD1819QRSTX UN5114TX UN5213TX UN5215TX DTA143TUT107		2SD1302STTA 		2SD1758TLPQR 		MA141WKTX 		MA141WATX 	
MA143TX 		MA110TX 		D1FS4 		MA8039TX 		RB411DT147 	

BLOCK DIAGRAM





■ SCHEMATIC DIAGRAM

(Parts list on pages 31, 32, 34, 35)

(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 : DSP selector.
(OFF → HALL → LIVE → Church → S-XBS)
- S302 : Memory/recall (MEMORY/RECALL) switch.
- S303, S306 : Skip/search (◀◀ -SKIP/-SEARCH ▶▶) switches.
(S303: ◀◀, S306: ▶▶)
- S304 : Stop/OPR off (■/OPR OFF) switch.
- S305 : Repeat (REPEAT) switch.
- S307 : Play/pause (▶||) switch.
- S308 : Play mode selector (MODE) in "NORMAL" position.
(RESUME ↔ NORMAL ↔ RANDOM)
- S309 : Hold (HOLD) switch in "OFF" position.
- S501 : Anti-shock memory (ANTI-SHOCK MEMORY) switch in "OFF" position.
- S502 : High filter (HIGH FILTER) switch in "OFF" position.
- 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 Δ 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.

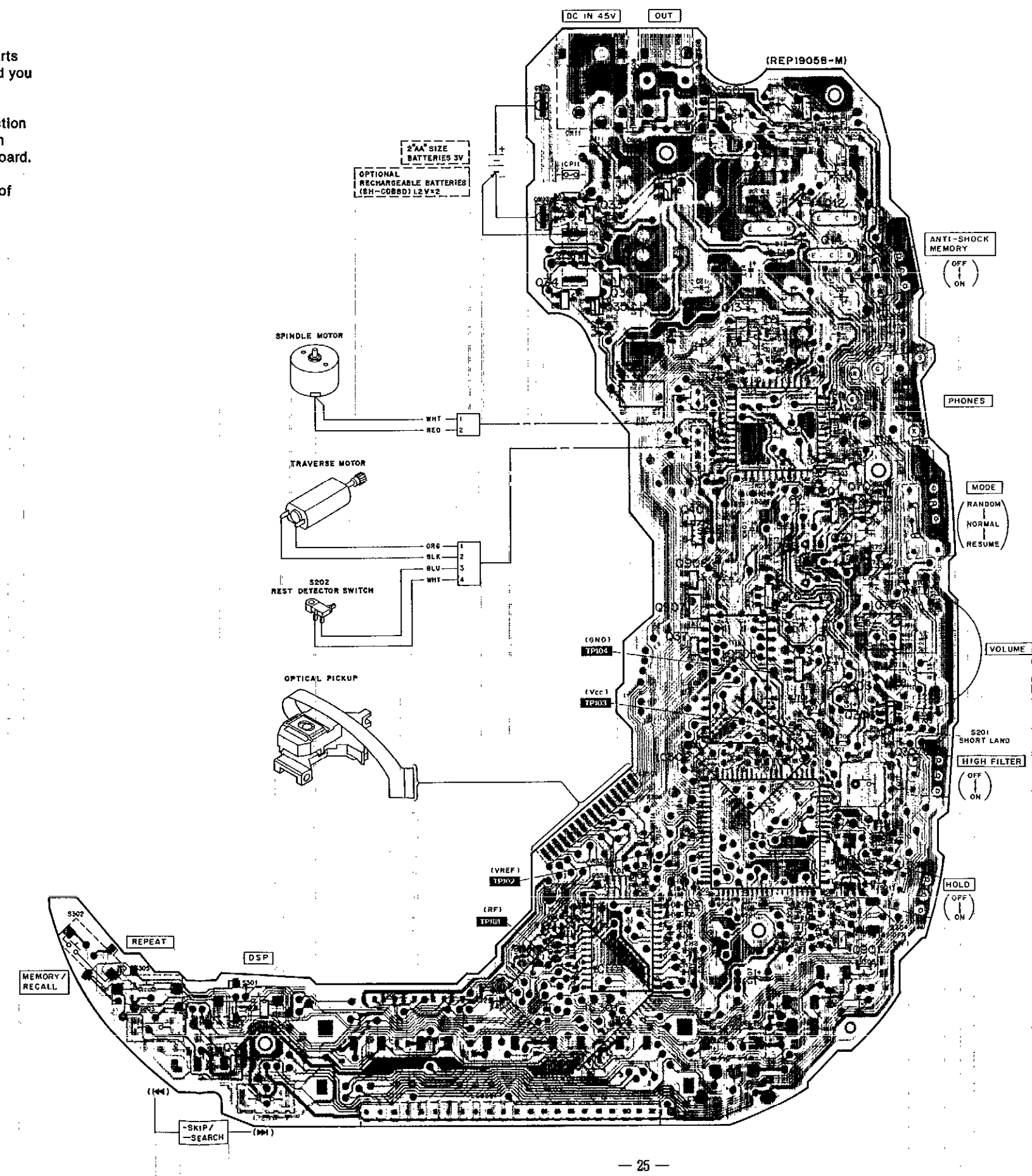
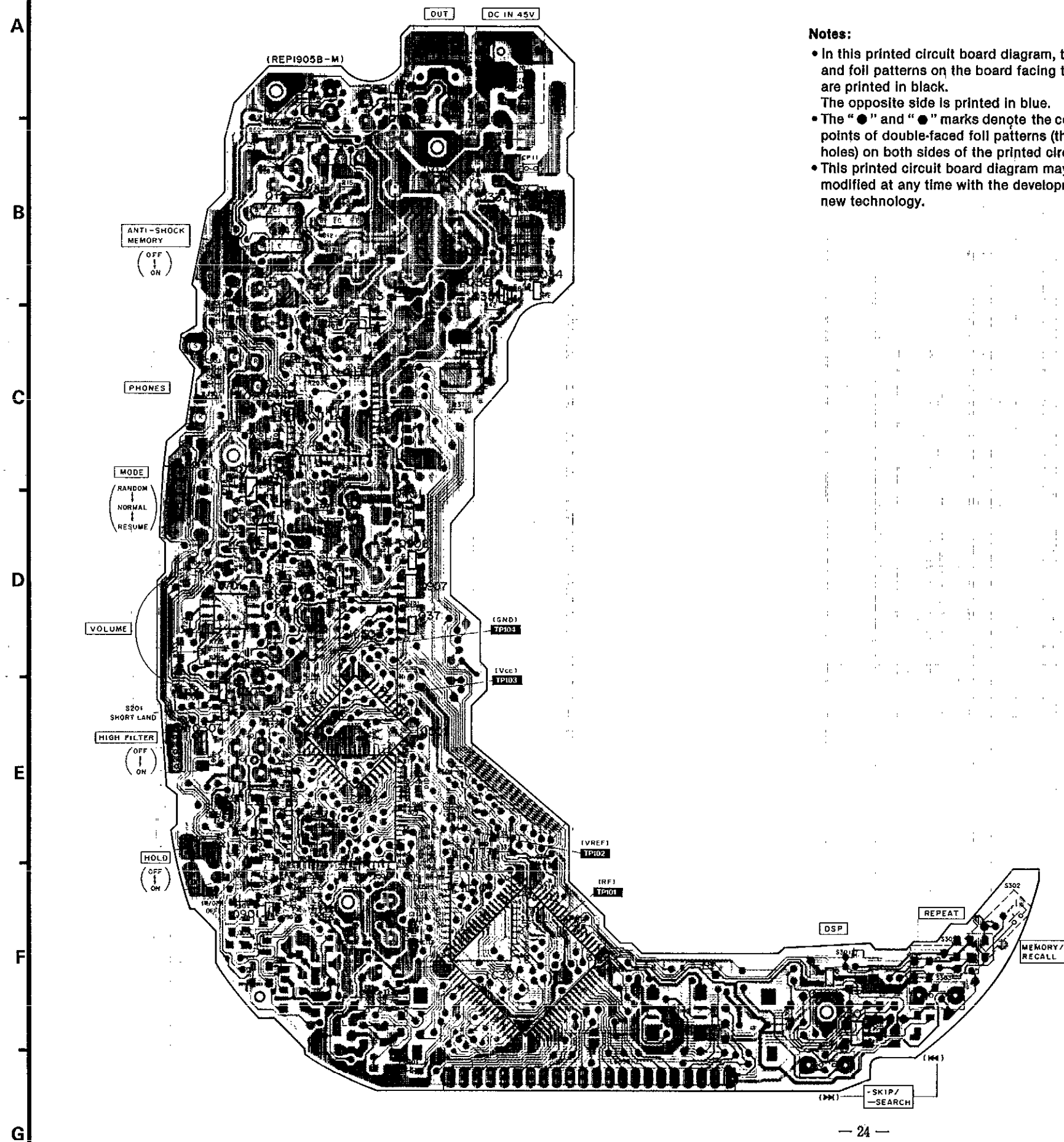
Caution!

- 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 aluminium 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.

■ PRINTED CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

Notes:

- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
The opposite side is printed in blue.
- The "●" and "●" marks denote the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.
- This printed circuit board diagram may be modified at any time with the development of new technology.



■ TERMINAL FUNCTION OF IC'S

• IC11 (AN8819FB): DC-DC converter control/coil & motor drive

Pin No.	Mark	I/O Division	Function
1	PV _{CC}	I	Power supply terminal
2	DED	I	Dead time input
3	OUT	O	Switching output
4	FB	O	Error amp output
5	IN	I	Error amp input
6	DRGND	—	Ground terminal
7	SGND	—	Ground terminal
8	SPRO	I	Short protect circuit
9	BSEL	I	Battery select terminal
10	VSEN	I	Empty detect terminal
11	SV _{CC}	I	Power supply terminal
12	CRIP	I	Ripple filter terminal
13	AV _{DD}	O	Power supply terminal
14	DRV _{CC}	I	Power supply terminal
15	VREF	I	Reference voltage input
16	INFO	I	Focus coil control signal input
17	INTR	I	Tracking coil control signal input
18	LDON	I	Laser ON/OFF control signal input
19	INSP	I	Spindle motor control signal input
20	PC	I	Phase control terminal
21	INTV	I	Traverse motor control signal input
22	TRVSTOP	I	Traverse motor stopping signal input

• IC101 (AN8832SBE1): Servo amp

Pin No.	Mark	I/O Division	Function
1	PDAD	I	Photo detector current input
2	PDA	I	Photo detector current input
3	LPD	I	Non-inverting laser power input
4	LD	O	Laser power auto control output
5	AMPI	I	RF signal input Not used, connected to V _{CC}
6	V _{CC}	I	Power supply terminal
7	RFIN	I	RF signal input
8	CAGC	I	AGC detecting capacitor terminal
9	ARF	O	RF signal output
10	CEA	I	HPF-amp. terminal
11	GND	—	Ground terminal
12	LDON	I	Laser ON/OFF control input
13	PLAY	I	Play control terminal
14	WVEL	—	WVEL control terminal Not used, open

Pin No.	Mark	I/O Division	Function
23	TR—	O	Tracking coil drive signal output
24	TR+		
25	FO—	O	Focus coil drive signal output
26	FO+		
27	P. GND	—	Ground terminal
28	P. GND	—	Ground terminal
29	SP+	O	Spindle motor drive signal output
30	SP—		
31	TRV+	O	Traverse motor drive signal output
32	TRV—		
33	VC	I	PWM control terminal
34	TB	I	PWM control terminal
35	RESET	I	Reset signal input
36	MRST	O	Muting signal output
37	EMPTY	O	Empty signal output
38	CLK	I	Clock signal input (f=88.2kHz)
39	START	I	Start detection input
40	POWER	I	Power ON/OFF detection terminal
41	CT	I	Triangular wave oscillator capacitor input
42	PWMG	I	PWM control terminal
43	COMPO	O	Laser power drive terminal
44	COMPI	I	

Pin No.	Mark	I/O Division	Function
15	BDO	O	Dropout detection output
16	RFDET	O	NRFDET signal output
17	TRCRS	O	CROSS signal output
18	OFTR	O	OFTR signal output
19	VDET	O	VDET signal output
20	RFENV	O	Envelope signal output
21	TEBPF	I	Shock detection signal input
22	TE	O	Tracking error signal output
23	FE	O	Focus error signal output
24	TBAL	I	Tracking balance signal input
25	FBAL	I	Focus balance signal input
26	VREF	O	Reference voltage output
27	PDB	I	Photo detector current input
28	PDBD	I	Photo detector current input

• IC301 (SC424656FU): SYSTEM CTL & LCD DRIVE

Pin No.	Mark	I/O Division	Function
1	V _{DD}	I	Power supply terminal
2	STROBE2	O	Key scan signal output
3	STROBE1		
4	POWER	O	Power ON/OFF signal output
5	LIGHT	O	LCD backlight control signal output
6	MUTE	O	Muting signal output ("H": MUTE)
7	LED	O	LED drive command signal
8	NC	—	Not used, open
9	MCLK	O	Command clock output
10	MLD	O	Command load signal output
11	CCHG	O	Voltage control terminal
12	CHARGE		
13	LCD3	—	Not used, connected to GND
14	LCD2	I	Power supply terminal
15	LCD1		
16	V _{SS}	—	GND terminal
17	V _{DD}	I	Power supply terminal
18	XOCS1	I	Reset signal input terminal
19	XOCS2	—	Not used, open
20	RESET	I	Reset detect terminal
21	OSC1	I	Main-system clock input
22	OSC2	—	Not used, open
23	WRDRCN /LCDREM	I	Remote control signal input
24	—KEY /RDATA	O	Remote control data output
25	+KEY /RCLK	O	Remote control clock output
26	DSPKEY	O	DSP control terminal
27	PLAY	I	Key Input terminal (PLAY/PAUSE)
28	DSP/MEM /SKIPR	I	Key input terminal (DSP/MEMORY/SKIP. R)
29	STOP/REP /SKIPF	I	Key input terminal (STOP/REPEAT/SKIP. F)

Pin No.	Mark	I/O Division	Function
30	TEST/ RANDOM /RESUME	I	Key input terminal (TEST/RANDOM/RESUME)
31	SEL	I	Key input selector terminal
32	HOLD	I	Key input terminal (HOLD)
33	STAT	I	Processing condition (CRC, CUE, CLVS, FCLV, TTSTOP) input
34	ZSENSE	I	Sense signal input
35	EMPTY	I	Empty detection input terminal
36	REST	I	Rest detection terminal
37	CHGCMP	I	Voltage control input terminal
38	ACDET	I	Power supply detection signal input
39	SUBQ	I	Sub-code (Q data) input
40	CS	—	Not used, open
41	SQCK	O	Sub-code Q resistor clock output
42	OPEN	I	Disc holder open detection terminal
43	MDATA	O	Command data signal
44	BUZ	O	Beep control output
45	BLKCK	I	Sub-code block (Q data) clock (75Hz) input
46	WLSRCN	I	Remote control signal input
47	V _{DD}	I	Power supply terminal
48 } 51 }	BP3 } BP0 }	O	LCD segment signal output
52 } 59 }	FP0 } FP7 }	—	
60	V _{SS}	—	GND terminal
61 } 66 }	FP8 } FP13 }	O	LCD segment signal output
67	FP14	—	
68 } 79 }	FP15 } FP26 }	O	LCD segment signal output
80	STROBE3	O	

• IC501 (MN662740RE): Servo processor/digital signal processor/digital filter/D/A converter

Pin No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock output
2	LACK	O	L/R discriminating signal output
3	SRDATA	O	Serial data signal output
4	DV _{DD} 1	I	Power supply (digital circuit) terminal
5	DV _{SS} 1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal (Not used, open)
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L": LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)
11	FLOCK	O	Optical servo condition (focus) ("L": lead-in) (Not used, open)
12	TLOCK	O	Optical servo condition (tracking) ("L": lead-in) (Not used, open)
13	BLKCK	O	Sub-code block clock (f=75Hz) (Not used, open)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	I	Muting input ("H": MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	RESET	I	Reset signal ("L": reset)
19	SMCK	O	System clock (f=4.2336MHz)
20	PMCK	O	Frequency division clock signal (f= $\frac{1}{1.92} \times \text{ck}$ =88.2kHz)
21	TRV	O	Traverse servo control

Pin No.	Mark	I/O Division	Function
22	TVD	O	Traverse drive signal
23	PC	O	Turntable motor drive signal ("L": ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output (Not used, open)
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H": det.)
36	OFTR	I	Off track signal ("H": Off track)
37	TRCRS	I	Track cross signal input
38	RFDET	I	RF detection signal ("L": detection)
39	BDO	I	Dropout detection signal ("H": dropout)
40	LDON	O	Laser power control ("H": ON)
41	TES	O	Tracking error shunt output ("H": dropout)
42	PLAY	O	Play signal ("H": play)

REPLACEMENT PARTS LIST

Notes: *Important safety notice:

 Components identified by Δ 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.

*Warning: This product uses a laser diode. Refer to caution statements on page 2.

*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)		D301	MA141WKT	DIODE	
				D316	MA141WAT	DIODE	
				D317	MA110TX	DIODE	
IC11	AN8819FB	DC-DC CONV.		D401	D1FS4	DIODE	
IC101	AN8832SBE1	SERVO AMP		D402	RB411DT147	DIODE	
IC301	SC424656FU	SYSTEM CTL&LCD DRIVE		D901	MA141WKT	DIODE	
IC501	MN662740RE	SERVO PROCESSOR		D902	MA143TX	DIODE	
IC502	SM-5855AF	SHOCK PROOF CONTROLLER					
IC503	UPD4244G1RJE	4M DRAM				IC PROTECTOR(S)	
IC701	NJM3415MTE1	HEADPHONES AMP					
		TRANSISTOR(S)		ICP11	SRUN50T25	IC PROTECTOR	Δ
						VARIABLE RESISTOR(S)	
Q11, 12	2SD1302STTA	TRANSISTOR		VR11	EVNDXAA00B33	POWER SUPPLY VOLTAGE ADJ.	
Q13	FMG6T148	TRANSISTOR		VR701	EVUAMAT43C54	VOLUME	
Q14	2SD1302STTA	TRANSISTOR					
Q15	UN5215TX	TRANSISTOR				COIL(S)	
Q31	2SD1758TLPQR	TRANSISTOR					
Q32	2SD1819QRSTX	TRANSISTOR		L11	RLQB330KT-M	COIL	
Q33	2SB1218QRSTX	TRANSISTOR		L12	RLZ0028T-M	COIL	
Q34	UN5213TX	TRANSISTOR		L201	RLQB471KT-K	COIL	
Q35, 36	2SD1819QRSTX	TRANSISTOR		L401	RLQB330KT-M	COIL	
Q37	UN5114TX	TRANSISTOR		L601-603	RLBN102V-Y	COIL	
Q201	2SB970RSTX	TRANSISTOR					
Q202	2SB1218QRSTX	TRANSISTOR				OSCILLATOR(S)	
Q301	FMG8T99	TRANSISTOR					
Q302	DTA143TUT107	TRANSISTOR		X501	RSXZ33M8M01T	OSCILLATOR (33.868MHz)	
Q306, 307	2SD1819QRSTX	TRANSISTOR					
Q401	2SB970RSTX	TRANSISTOR				LCD(S)	
Q601, 602	2SD1328QRSTX	TRANSISTOR					
Q603	FMG4T148	TRANSISTOR		LCD301	RSL5112-L	LCD	
Q701, 702	2SD1328QRSTX	TRANSISTOR					
Q703	FMG6T148	TRANSISTOR				SWITCH(ES)	
Q705	FMG4T148	TRANSISTOR					
Q901	2SD1819QRSTX	TRANSISTOR		S201	RSH1A91ZA-A	LASER ON/OFF	
Q906	UN5114TX	TRANSISTOR		S202	SSHD5	REST DETECTOR	
Q907	FMG6T148	TRANSISTOR		S301	RSG0027-A	DSP	
		DIODE(S)		S302	RSG0027-A	MEMORY/RECALL	
				S303	EVQPJH05K	SKIP/SEARCH(B)	
D11	D1FS4	DIODE		S304	RSG0024-A	STOP/OPR OFF	
D12	MA8039TX	DIODE		S305	RSG0027-A	REPEAT	
D31	MA143TX	DIODE		S306	EVQPJH05K	SKIP/SEARCH(F)	
D101	MA110TX	DIODE		S307	RSG0024-A	PLAY/PAUSE	
D201	RB411DT147	DIODE		S308	ESD11H230	MODE	
D202	MA110TX	DIODE		S309	ESD11H220	HOLD	

Ref. No.	Part No.	Part Name & Description	Remarks
S501	ESD11H220	ANTI-SHOCK MEMORY	
S502	ESD11H220	HIGH FILTER	
		CONNECTOR(S) AND JACK(S)	
CN11	RJJ4303-1	DC IN JACK	
CN12, 13	RJC93015	BATTERY TERMINAL (+/-)	
CN14	RJH5102-1	RECHARGEABLE BATT. TERMINAL	
CN101	RJS1A6116	CONNECTOR (16P)	
CN401	RJT068W04V	CONNECTOR (4P)	
CN402	RJT068W02V	CONNECTOR (2P)	
CN601	RJJD3S5ZB-C	OUT JACK	
CN701	RJJ36T02-C	HEADPHONES JACK	
		<PRINATED CIRCUIT BOARD	
		ASS' Y>	
PCB1	REP1905B-M	MAIN P. C. B.	(RTL)

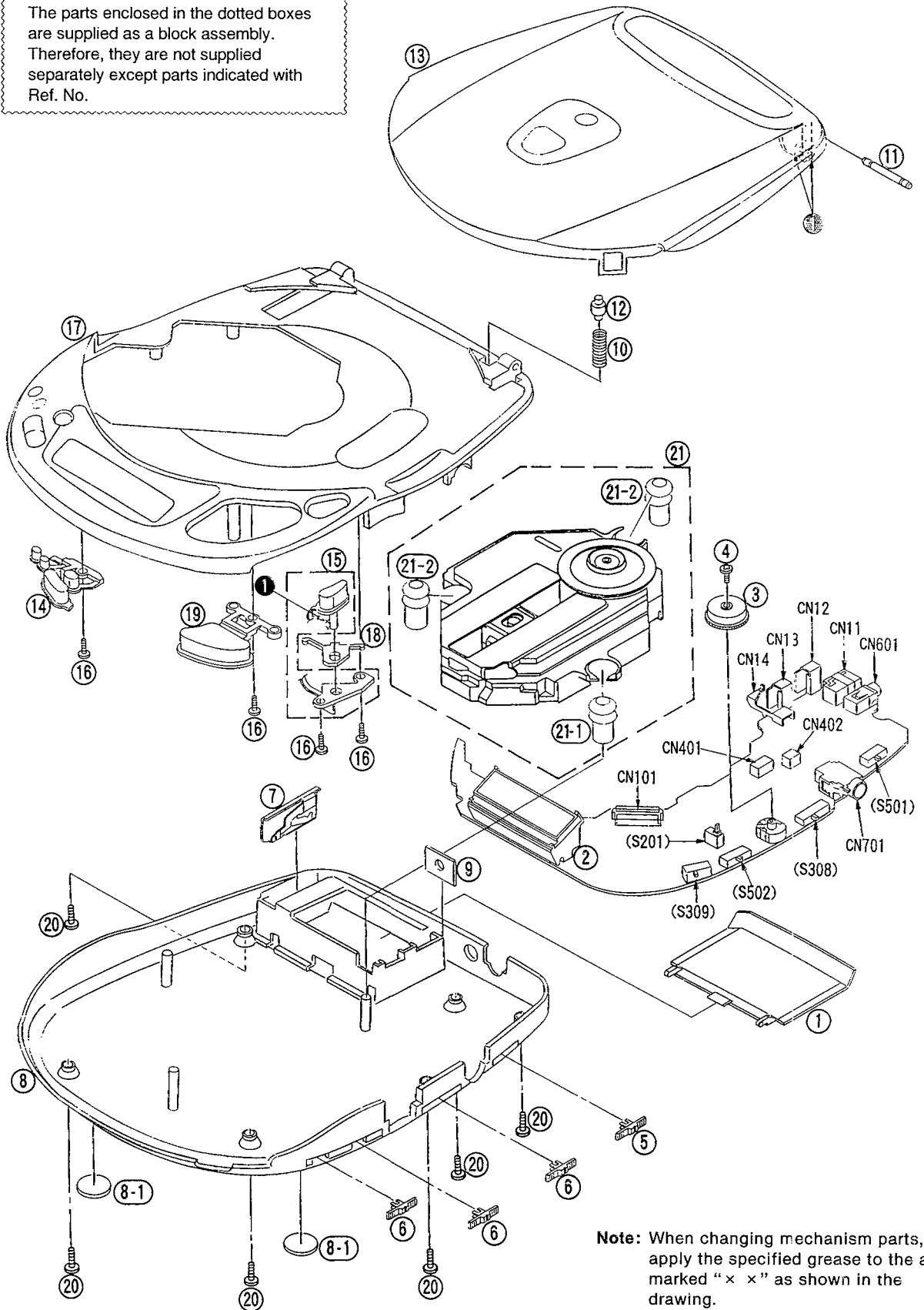
Note:

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.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKK0065-K	BATTERY COVER	
2	RJF0020	LCD HOLDER	
3	SBND90ZK0A	VOLUME KNOB	
4	XQN17+C3FZ	SCREW	
5	RGV0120-K	ANTI-SHOCK MEMORY KNOB	
6	RGV0120-1K	MODE/H.FILTER/HOLD KNOB	
7	RJC93020	COMMON BATTERY TERMINAL	
8	RFKJLXP370E	BOTTOM CABINET ASS' Y	(E)
8	RFKJLXP370EB	BOTTOM CABINET ASS' Y	(EB, GC, GN)
8	RFKJLXP370EG	BOTTOM CABINET ASS' Y	(EG)
8-1	RKA0063-K	FOOT	
9	RMA0677	REAR ORNAMENT	
10	RMB0351	OPEN SPRING	
11	RMS0105-1	SHAFT	
12	RMS0462	PUSH SHAFT	
13	RYF0284G-K	CD COVER ASS' Y	
14	RGU1073-H	OPERATION BUTTON (2)	
15	RGU1074-H	OPEN BUTTON	
16	RHE5079YA	SCREW	
17	RFKKLXP370E	INTERMEDIATE CABINET ASS' Y	
18	RML0344	LOCK LEVER	
19	RYQ0126A-K	OPERATION BUTTON (1) ASS' Y	
20	XTN17+6GFZ	SCREW	
21	RAE0132Z	TRAVERSE DECK	
21-1	SHGD157	FLOATING RUBBER (1)	
21-2	SHGD165	FLOATING RUBBER (2)	

CABINET PARTS LOCATION

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



Note: When changing mechanism parts, apply the specified grease to the areas marked "x x" as shown in the drawing.

Ref. No.	Part No.
①	RFKXPG671

RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) 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	R304	ERJ6GEYJ103V	1/10W 10K	R723, 724	ERJ6GEYJ333V	1/10W 33K
			R307	ERJ6GEYJ182V	1/10W 1.8K	R725, 726	ERJ6GEYJ180V	1/10W 18
			R308	ERJ6GEYJ223V	1/10W 22K	R727, 728	ERJ6GEYJ1R5V	1/10W 1.5
R10	ERJ6GEYJ102V	1/10W 1K	R309	ERJ6GEYJ102V	1/10W 1K	R729, 730	ERJ6GEYJ104V	1/10W 100K
R11	ERJ3GEYJ153V	1/16W 15K	R310	ERJ3GEYJ102V	1/16W 1K	R731, 732	MCR03PZHJ561	1/16W 560
R12	ERJ6GEYJ562V	1/10W 5.6K	R326	ERJ6GEYJ224V	1/10W 220K	R739	ERJ3GEYJ181V	1/16W 180
R16	ERJ6GEYJ100	1/10W 10	R327	ERJ6GEYJ180V	1/10W 18	R901	ERJ6GEYJ274V	1/10W 270K
R17	ERJ6GEYJ152V	1/10W 1.5K	R329	ERJ3GEYJ473V	1/16W 47K	R907-909	ERJ6GEYJ224V	1/10W 220K
R18	ERJ3GEYJ101V	1/16W 100	R330	ERJ3GEYJ683V	1/16W 68K	R910	ERJ6GEYJ334V	1/10W 330K
R21	ERJ6GEYJ221V	1/10W 220	R331	ERJ6GEYJ102V	1/10W 1K	R917, 918	ERJ6GEYJ821V	1/10W 820
R22	ERJ3GEYJ822V	1/16W 8.2K	R332	ERJ6GEYJ103V	1/10W 10K	R919	ERJ6GEYJ221V	1/10W 220
R23	ERJ6GEYJ223V	1/10W 22K	R333-336	ERJ6GEYJ104V	1/10W 100K	R920	ERJ6GEYJ101V	1/10W 100
R24	ERJ6GEYJ474V	1/10W 470K	R400	ERJ3GEYJ392V	1/16W 3.9K			CHIP JUMPERS
R25	ERJ6GEYJ473V	1/10W 47K	R401	ERJ6GEYJ224V	1/10W 220K			
R26	ERJ6GEYJ104V	1/10W 100K	R402	ERJ3GEYJ103V	1/16W 10K	RJ10	ERJ6GEYOR00V	CHIP JUMPER
R27	ERJ6GEYJ473V	1/10W 47K	R403	ERJ3GEYJ823V	1/16W 82K	RJ31	ERJ6GEYOR00V	CHIP JUMPER
R28, 29	ERJ6GEYJ220	1/10W 22	R404, 405	ERJ3GEYJ682V	1/16W 6.8K	RJ32	ERJ3GEYOR00V	CHIP JUMPER
R31	ERJ3GEYJ102V	1/16W 1K	R406	ERJ3GEYJ473V	1/16W 47K	RJ201	ERJ6GEYOR00V	CHIP JUMPER
R32	ERJ3GEYJ154V	1/16W 150K	R407	ERJ3GEYJ272V	1/16W 2.7K	RJ304	ERJ6GEYOR00V	CHIP JUMPER
R33	ERJ3GEYJ104V	1/16W 100K	R408	ERJ3GEYJ393V	1/16W 39K	RJ305	ERJ3GEYOR00V	CHIP JUMPER
R34	ERJ12YJ1R2H	1/2W 1.2	R409	ERJ6GEYJ470V	1/10W 47	RJ501	ERJ6GEYOR00V	CHIP JUMPER
R35	ERJ3GEYJ151V	1/16W 150	R502	ERJ3GEYJ103V	1/16W 10K	RJ602, 603	ERJ6GEYOR00V	CHIP JUMPER
R36	ERJ6GEYJ392V	1/10W 3.9K	R503	ERJ6GEYJ473V	1/10W 47K	RJ701	ERJ3GEYOR00V	CHIP JUMPER
R37	ERJ6GEYJ332V	1/10W 3.3K	R504	ERJ6GEYJ683V	1/10W 68K	RJ901, 902	ERJ3GEYOR00V	CHIP JUMPER
R38	ERJ3GEYJ102V	1/16W 1K	R505	ERJ6GEYJ471V	1/10W 470	RJ903	ERJ6GEYOR00V	CHIP JUMPER
R39	ERJ3GEYJ333V	1/16W 33K	R506	ERJ6GEYJ821V	1/10W 820	RJ907	ERJ6GEYOR00V	CHIP JUMPER
R40	ERJ3GEYJ681V	1/16W 680	R507	ERJ6GEYJ100	1/10W 10			CAPACITORS
R41, 42	ERJ6GEYJ103V	1/10W 10K	R510	ERJ3GEYJ220V	1/16W 22			
R101	EXBV8V223J	1/8W 22K	R516	ERJ6GEYJ561V	1/10W 560			
R105	ERJ3GEYJ333V	1/16W 33K	R518	ERJ6GEYJ683V	1/10W 68K	C11	ECEA1AKA470I	10V 47U
R106	ERJ3GEYJ153V	1/16W 15K	R519	ERJ6GEYJ5R6V	1/10W 5.6	C12	ECEA1AKS470	10V 47U
R109	ERJ3GEYJ223V	1/16W 22K	R520	ERJ3GEYJ102V	1/16W 1K	C13	RCE1ASC470IX	10V 47U
R110	ERJ3GEYJ124V	1/16W 120K	R521	ERJ6GEYJ102V	1/10W 1K	C14	ECEA0JKA101I	6.3V 100U
R111	ERJ6GEYJ103V	1/10W 10K	R522	ERJ3GEYJ474V	1/16W 470K	C15	ECUV1C104ZFN	16V 0.1U
R112	ERJ3GEYJ103V	1/16W 10K	R601, 602	ERJ3GEYJ681V	1/16W 680	C16	ECUVNC105ZFM	16V 1U
R113	ERJ3GEYJ101V	1/16W 100	R603, 604	MCR03PZHJ561	1/16W 560	C17	ECUV1H470KCN	50V 47P
R114	ERJ3GEYJ330V	1/16W 33	R605	ERJ3GEYJ473V	1/16W 47K	C18	ECUV1E103KBV	25V 0.01U
R201	ERJ3GEYJ102V	1/16W 1K	R606	ERJ6GEYJ473V	1/10W 47K	C19	ECEA0JKA220	6.3V 22U
R202	ERJ3GEYJ122V	1/16W 1.2K	R607, 608	ERJ3GEYJ102V	1/16W 1K	C20	ECEA1EKA4R7I	25V 4.7U
R203, 204	ERJ6GEYJ224V	1/10W 220K	R609, 610	ERJ3GEYJ332V	1/16W 3.3K	C21	ECUV1E223KBV	25V 0.022U
R205	ERJ6GEYJ222V	1/10W 2.2K	R611	ERJ3GEYJ471V	1/16W 470	C22	ECUV1C104KBN	16V 0.1U
R206	ERJ6GEYJ333V	1/10W 33K	R700	ERJ3GEYJ100V	1/16W 10	C23	ECUV1E103KBN	25V 0.01U
R207	ERJ6GEYJ473V	1/10W 47K	R701, 702	ERJ3GEYJ122V	1/16W 1.2K	C24	ECUV1H391KBN	50V 390P
R208	ERJ3GEYJ223V	1/16W 22K	R703	ERJ6GEYJ102V	1/10W 1K	C25	ECEA1VKN2R2I	35V 2.2U
R209	ERJ6GEYJ223V	1/10W 22K	R704	ERJ3GEYJ102V	1/16W 1K	C26	ECEA1HKN010I	50V 1U
R212	ERJ3GEYJ104V	1/16W 100K	R705	ERJ6GEYJ473V	1/10W 47K	C27	ECEA1EKA4R7I	25V 4.7U
R213	ERJ3GEYJ474V	1/16W 470K	R706	ERJ3GEYJ473V	1/16W 47K	C28-31	ECEA08KA271I	8V 270U
R214	ERJ3GEYJ124V	1/16W 120K	R707, 708	ERJ3GEYJ682V	1/16W 6.8K	C34	ECUV1H470KCN	50V 47P
R301-303	ERJ3GEYJ473V	1/16W 47K	R715, 716	ERJ6GEYJ822V	1/10W 8.2K			

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C101, 102	ECUV1C104KBN	16V 0.1U	C307	ECUV1C104KBN	16V 0.1U	C600	ECUV1C104ZFN	16V 0.1U
C103	ECUV1E183KBN	25V 0.018U	C401	ECEA1AKA470I	10V 47U	C601	ECUV1H102KBN	50V 1000P
C104	ECUV1E223KBV	25V 0.022U	C402	RCE1ASA330IX	10V 33U	C602	ECUV1H102KBV	50V 1000P
C105	ECUV1C333KBV	16V 0.033U	C403	ECUV1C104ZFN	16V 0.1U	C603, 604	ECUV1H272KBV	50V 2700P
C106	ECUV1H222KBV	50V 2200P	C404	ECUVNC105ZFN	16V 1U	C605, 606	ECEA1CPK100I	16V 10U
C107	ECUV1H152KBV	50V 1500P	C405	ECUV1C333KBV	16V 0.033U	C607	ECUV1H681KBV	50V 680P
C108	ECUV1C473KBN	16V 0.047U	C501, 502	ECUV1H070DCV	50V 7P	C608	ECUV1H681KBN	50V 680P
C109	ECUV1C333KBV	16V 0.033U	C503	ECUV1H561KBV	50V 560P	C609	ECUV1C104ZFN	16V 0.1U
C110	ECUV1E103KBV	25V 0.01U	C504	ECUV1C104KBN	16V 0.1U	C610	ECEA0JPK101I	6.3V 100U
C111	ECUV1C333KBV	16V 0.033U	C505	ECUV1E223KBV	25V 0.022U	C611	ECUV1C104ZFN	16V 0.1U
C112	ECUV1H331KBV	50V 330P	C506	ECUV1C224KBN	16V 0.22U	C706	ECEA0JKA221I	6.3V 220U
C113, 114	ECUV1C104ZFN	16V 0.1U	C507	RCE1ASL330IX	10V 33U	C709, 710	ECEA0GPK221I	4V 220U
C201	RCE0JSA470IX	6.3V 47U	C508	ECUV1C104ZFN	16V 0.1U	C711, 712	ECST0JY106RR	6.3V 10U
C202	ECUVNC105ZFN	16V 1U	C512	ECUV1C104ZFN	16V 0.1U	C713	ECEA0JPK101I	6.3V 100U
C203	ECEA1HKA2R2I	50V 2.2U	C513	ECUV1H070DCN	50V 7P	C901, 902	ECUV1H332ZFN	50V 3300P
C206	ECUV1H332KBV	50V 3300P	C514	ECUV1H102KBN	50V 1000P	C903	ECUV1C104ZFN	16V 0.1U
C301	ECUV1C104ZFN	16V 0.1U	C515	ECUV1H332ZFN	50V 3300P			
C302, 303	ECUVNC105ZFN	16V 1U	C516, 517	ECUV1C104ZFN	16V 0.1U			

REPLACEMENT PARTS LIST

1039

Notes: *Important safety notice:

 Components identified by Δ 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.)

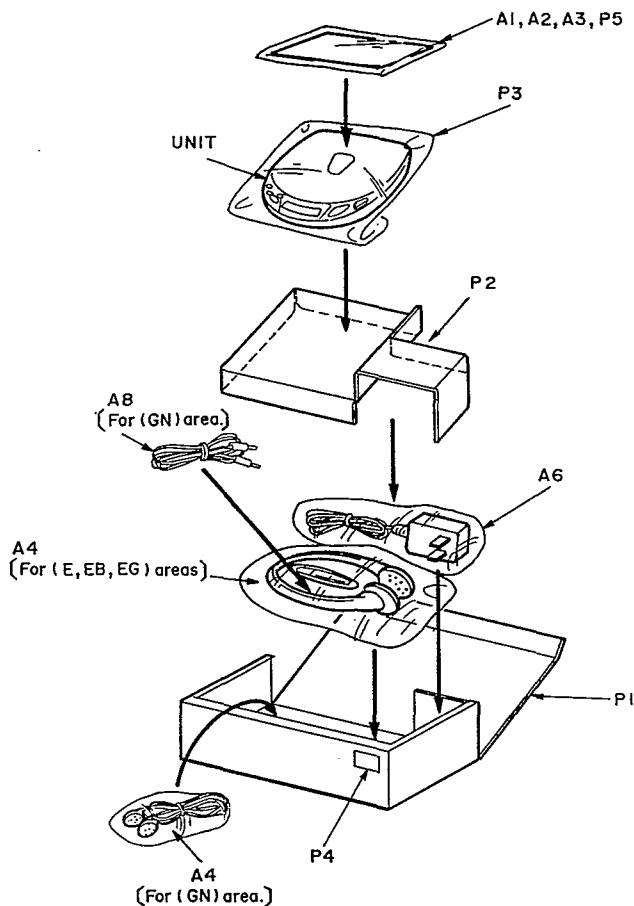
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL		A1	RQT2570-B	INSTRUCTION MANUAL	(EB)
				A1	RFKSLXP370EG	INSTRUCTION MANUAL ASS'Y	(EG)
				A1	RFKSLXP370GC	INSTRUCTION MANUAL ASS'Y	(GC)
P1	RPK0506	PACKING CASE		A1	RFKSLXP370GN	INSTRUCTION MANUAL ASS'Y	(GN)
P2	RPQ0448-1	PAD		A2	RQA0013	WARRANTY CARD	(E, EB, EG)
P3	RPF0111	PROTECTION BAG (UNIT)		A2	RQX7433ZA	WARRANTY CARD	(GN)
P4	SQZD3	AREA LABEL	(E)	A3	RQCB0169	SERVICENTER LIST	
P4	SQZD6	AREA LABEL	(EG)	A4	RP-HT103DTYS	STEREO HEADPHONES	(E, EB, EG)
P4	SQZD7	AREA LABEL	(EB)	A4	RFEV307A-KA	STEREO EARPHONES	(GC, GN)
P4	RQLA0066	AREA LABEL	(GC)	A5 ※	RKB2052A-0	EAR PADS	(GC, GN)
P4	RQLA0067	AREA LABEL	(GN)	A6	RFEA401E-1S	AC ADAPTOR	(E, EG) Δ
P5	RPF0046	PROTECTION BAG (F. B.)		A6	RFEA404B-W	AC ADAPTOR	(EB) Δ
		ACCESSORIES		A6	RFEA402Z-W	AC ADAPTOR	(GC) Δ
				A6	RFEA404A-W	AC ADAPTOR	(GN) Δ
A1	RFKSLXP370E	INSTRUCTION MANUAL ASS'Y	(E)	A7	RJP120ZDS-K	POWER PLUG ADAPTOR	(GC) Δ
				A8	RJL2P001X10	STEREO CONNECTION CABLE	(GC, GN)

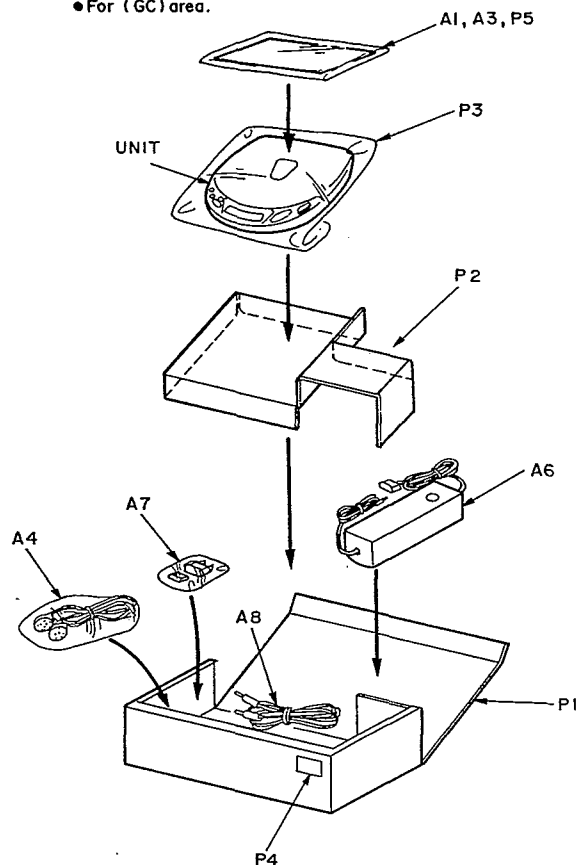
※ This parts is supplied only with replacement parts list.

PACKAGING

● For (E, EB, EG, GN) areas.



● For (GC) area.


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