ORDER NO. AD9602034C1
A6

Service Manual

Portable CD Player

SL-S600C

Colour

(K)...Black Type

Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada.	

※ • MASH is a trademark of NTT.

TRAVERSE DECK: RAE0140Z MECHANISM SERIES

■SPECIFICATIONS

■Audio

No. of channels: 2 channels (left and right, stereo)
Output voltage: 0.6 V (50 kΩ) φ3.5 stereo mini jack
Frequency response: 20～20,000 Hz (+0.5 dB, −1.5 dB)
S/N: more than 96 dB※※
Wow and flutter: Below measurable limit
DA converter: 1 bit, MASH※
Headphone output level: max. 9 mW+9 mW/16Ω (variable) stereo mini jack φ3.5
Digital filter: 8 times over sampling

■Signal Format

Correction system: Technics New Super Decoding Algorithm

■Pickup

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

■Playing time;

[When used in hold mode at 25°C (77°F) temperature and on falt and stable surface.]

Batteries used	Extra anti-shock OFF/ON
Rechargeable batteries	About 4 hours/ About 3 hours
Panasonic alkaline dry cell batteries	About 17 hours/ About 11 hours

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

Recharging time: About 1 hour 30 minutes

※※ These specifications were measured in the extra anti-shock OFF mode.

■General

Power requirement: AC; with an included Panasonic AC adaptor
RFEA403C-S
Batteries; DC 3 V (two "AA" size batteries, not included)
(Panasonic R6P/LR6 or equivalent, not included)
Rechargeable Batteries; DC 2.4 V with an optional Panasonic Rechargeable Batteries (SH-CDB8D)
Car Battery; with an included Panasonic car adaptor (SH-CDC2PPY)
DC IN: DC 4.5 V ◇—●—◇
Operational temperature range: 0°C−40°C (32°F−104°F)
Rechargeable temperature renge: 5°C−40°C (41°F−104°F)
Power supply: DC 4.5 V
Power consumption:

Power source	Extra anti-shock OFF/ON
Using AC adaptor	2.8 W/3.0 W

When recharging the batteries: Approx. 5.1 W
Dimensions (W×H×D): 128.0×30.8×136 mm (5 1/16″ ×1 3/16″ ×5 3/8″)
Weight: 300 g (10.6 oz.) (with batteries)
260 g (9.2 oz.) (without batteries)

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

Panasonic®

⚠ 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.

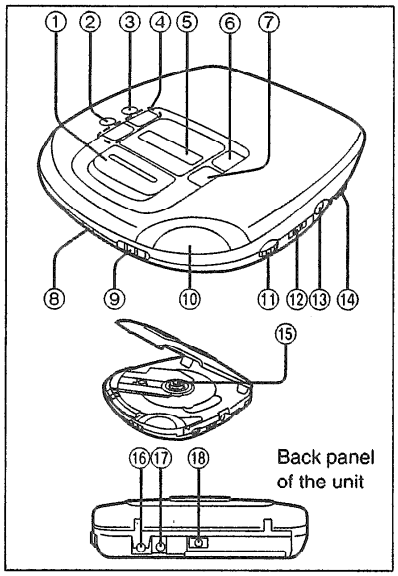
CONTENTS

PRECAUTION OF LASER DIODE

CAUTION: This unit utilizes a class 1 laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on :

1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufactures specified replacement pickup only.
6. Use of control or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

LOCATION OF CONTROLS



Function buttons and display ②–⑦ light up, when the unit is turned on.

① **Hold lock switch (HOLD-LOCK)**
② **Repeat button (REPEAT)**
③ **Memory/recall button (MEMORY/RECALL)**
④ **Skip/search buttons (|◀◀, ▶▶| •SKIP/ ▬ SEARCH)**
⑤ **Display**
⑥ **Play/pause button (▶ ❚❚)**
⑦ **Stop/power off button (■/POWER OFF)**
⑧ **Remote sensor (SENSOR)**
⑨ **Extra anti-shock switch (EXTRA ANTI-SHOCK)**
⑩ **Open button (OPEN)**
⑪ **Headphones volume control (VOLUME)**
⑫ **High filter, XBS selector (HIGH FILTER, XBS, OFF)**
⑬ **Headphones jack (∩)16Ω ϕ3.5**
⑭ **Play mode selector (MODE)**
⑮ **Push button (PUSH)**
⑯ **Out jack (OUT)**
⑰ **DC in jack (DC IN 4.5 V ⟐⊙⟐)**
⑱ **Hole for car mounting base**

BATTERY SERVICE LIFE

Approx. 4 (Anti-shock memory OFF) hours/3 (Anti-shock memory ON) hours (EIAJ) with rechargeable batteries.
Approx. 17 (Anti-shock memory OFF) hours/11 (Anti-shock memory ON) hours (EIAJ) with Panasonic AM-3/LR6 alkaline (AA-size) batteries.
The above battery service life is measured according to the conditions set forth by EIAJ (Electronic Industries Association of Japan). As the battery service life varies with the method of operation and envirommental conditions, use these values as reference.

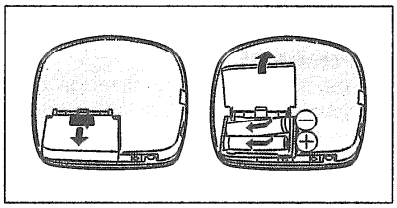
■POWER SUPPLY PREPARATIONS

Using the rechargeable batteries (not included)

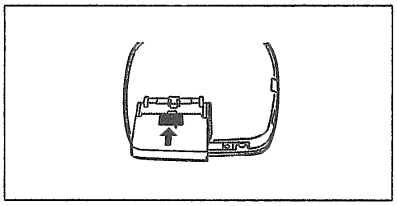
Obtain the optional rechargeable batteries (SH-CDB8D).
Make sure that the rechargeable batteries have been recharged before use.

Recharging procedure

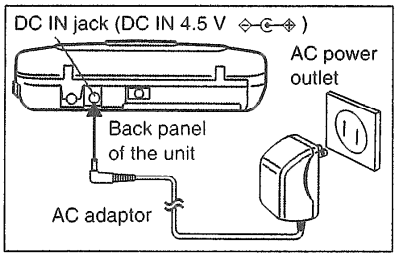
1 Place the rechargeable batteries inside the unit.
(No batteries other than SH-CDB8D can be recharged.)



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



2 Connect the AC adaptor.

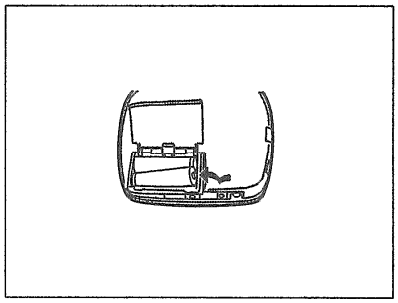


When charging is commenced, the recharging indicator "⊡" flashes on the display panel. Recharge the batteries fully at which point the recharging indicator will go off.

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.



- 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.
- Recharging should be performed at 5°C–40°C (41°F–104°F).
- While recharging, the AC adaptor and rechargeable batteries may get warm. This is normal.

Note

The batteries can be recharged only during off mode (see page 5).

Using dry cell batteries (not included)

Disconnect the AC adaptor and then install two "AA" size (LR6) alkaline batteries.
The batteries are inserted and removed in the same way as for the rechargeable batteries.

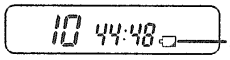
Using the AC adaptor

Connect the AC adaptor supplied.
Refer to the section on "Using rechargeable batteries" for details on the connections.

Using the car adaptor

For details, refer to the attached sheet, "Installation Instructions".
The batteries can be recharged inside the car using the car adaptor.

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.

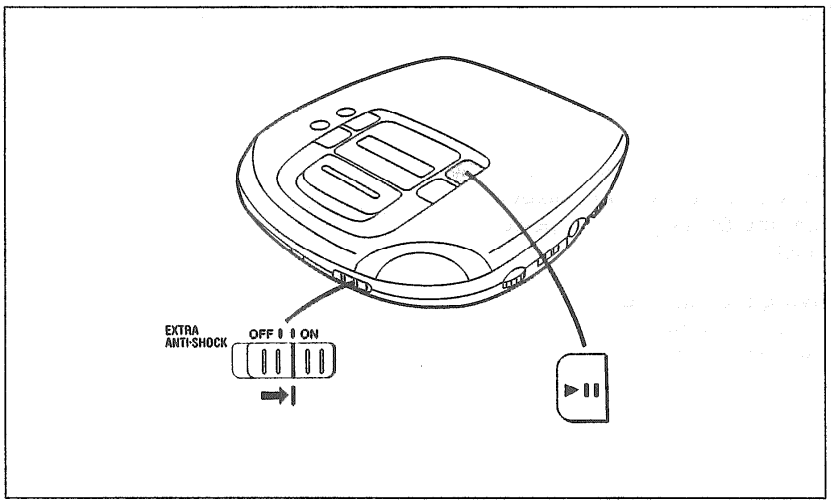
(The battery indicator may not flash if rechargeable batteries, other than those designated by Panasonic, are used.)

■ACCESSORIES

- AC adaptor (RFEA403C-S) ..... 1 pc.
- Stereo headphones (for U.S.A.) (RPHT103DPYS1) ..... 1 pc.
- Stereo earphones (for Canada.) (RFEV317P-KS) ..... 1 pc.
- Wireless remote controller (EURNTR1026P) ..... 1 pc.
- Car adaptor (SH-CDC2PPY) ..... 1 pc.
- Car stereo cassette adaptor (SH-CDM8ASY-K) ..... 1 pc.
- Dry cell batteries for wireless remote controller (R03BPA/2ST) ..... 1 pc.

Note: These are available on sales route.

■EXTRA ANTI-SHOCK 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 extra anti-shock function has been activated, play data of up to 10 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 EXTRA ANTI-SHOCK to ON.

2 Press ► II.
The function starts to store the play data, and the M. RESERVE indicator on the display shows how much data is stored.

M. RESERVE indicator

M. RESERVE mode	Unit mode	Play mode (play data 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).
Sorry.	Unit sustains continuous shocks.	Sound is interrupted (no more data is stored).

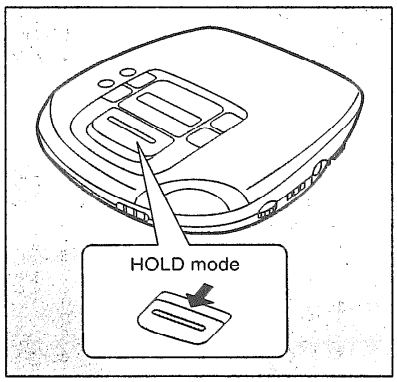
Notes

- EXTRA ANTI-SHOCK 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 extra anti-shock 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.

Listening to sound with the unit connected to an audio system

The extra anti-shock function incorporates digital signal compression technology. When listening to sound with the unit connected to an system at home, it is recommended that the extra anti-shock switch be set to the OFF position.

■ACCIDENTAL OPERATION PREVENTION FUNCTION



This function prevents the unit from operating even if a control button is pressed in error. (When the unit is in the hold mode, the disc lid can not be opened.)
Use the function to prevent the following situations:

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.

Example 3:
The disc lid is opened accidentally during play.

To use the accidental operation prevention function

Set HOLD-LOCK to the HOLD position.

"hold" indicator

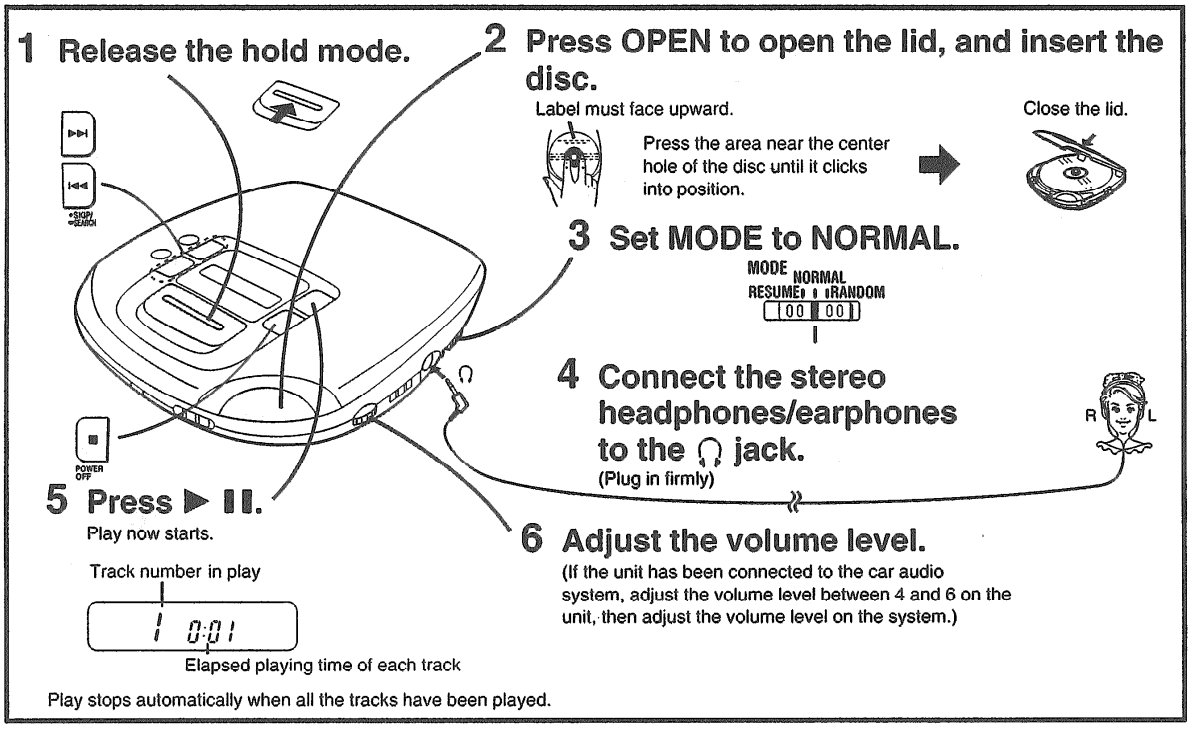
If the unit is in the hold mode, the "hold" indicator appears when any of the unit's function buttons (except OPEN) is pressed.

When the unit is turned off

The "hold" indicator appears only when ► II is pressed.

Before operating the buttons
Be absolutely sure to move HOLD-LOCK to release the unit from the hold mode.

■SEQUENTIAL PLAY



Skip and search functions

- During program play the tracks are skipped in the forward or backward direction in the programmed sequence.
- During program play, random play or 1-track repeat play, only the track being played is searched.
- During random play, it is not possible to skip to the track which has already been played.

For your reference:

"no dISC" display

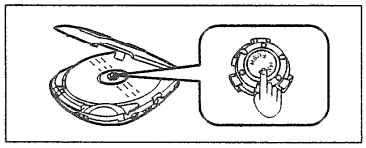
This appears for about 30 seconds when a disc has not been inserted or when a disc has not been inserted properly and then ▶ II is pressed.

"OPEn" display

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

Removing the disc

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



Note

Do not put anything inside the unit.

Automatic Shut-OFF function

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

Operation	Button	Display
Pause: Press during play/press again to resume play	▶ II	5 2:18
To stop play: Press during play [Stop mode]	■	Total number of tracks: 10 44:48 (Total playing time)
To turn off the unit: Press during stop mode [Off mode]	■	
Skip forward/backward (skip function): Press during play **Rapid forward/backward (search function):** Keep depressed during play.	▶▶I: Forward direction I◀◀: Backward direction	—

Lighting of the function buttons and backlight

Function button/backlight \ Type of power supply	When car adaptor or AC adaptor is used	When batteries are used (HOLD mode released)
-SKIP/–SEARCH	On	On for approx. 5 sec. when any function button (except OPEN) is pressed. ↓ Off
MEMORY/RECALL		
REPEAT		
■/POWER OFF		
Display panel		
▶II	On: During play Flashes rapidly: ●When play is started from the POWER OFF (or stop) mode ●When the skip function has been used Flashes slowly: Pause/stop mode **For your reference:** If the HOLD mode is established when batteries are used to operate the unit, the function buttons light off in order to conserve the batteries' charge.	

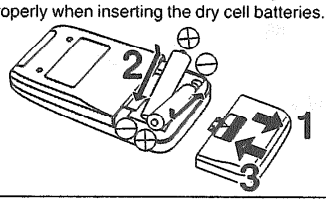
■USING THE WIRELESS REMOTE CONTROLLER

The wireless remote controller can be operated regardless of the hold mode of the unit.

Preparation:

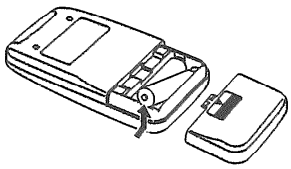
Insert the dry cell batteries into the wireless remote controller.

Check the ⊕ and ⊖ polarities and align them properly when inserting the dry cell batteries.



Removing the batteries

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



Notes

- Do not place any object which will block the path of the signals between the remote controller and the unit.
- Do not allow the remote sensor or transmitter to become dusty.
- Do not leave the remote controller standing in direct sunlight or in high temperature locations in a car.
- In the interest of traffic safety, do not operate the remote controller while driving.

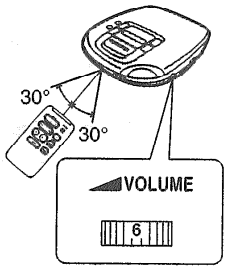
Operation

Preparation

When the unit is to be operated using rechargeable batteries or dry cell batteries, first press ▶ ❚❚ on the unit and then use the remote controller. (The unit cannot be operated by the remote controller while the unit is turned off.)

Adjust volume level of speaker and stereo earphones/ headphones. ●The level can be adjusted from 0 dB to −21 dB. (LEVEL) ●The 0 dB level is restored when the unit is turned off. **To adjust the volume** When adjusting the volume using the wireless remote controller, position the volume control on the unit to 4–6.	LEVEL
●Blinks when a button on the remote control is pressed. ●Failure to flash indicates that the batteries have worn out.	OPR/BATT
Skips tracks (tap). Rapidly searches forward or backward during play (keep depressed).	SKIP/SEARCH
Repeats the section to be heard (A-B repeat).	A-B REPEAT
Stops play/turns the unit off when kept depressed.	■
Initiates play/establishes pause mode when pressed again.	▶ ❚❚
Repeat all track or single track.	REPEAT
When pressed once, the buttons on the remote control lights up for about five seconds.	LIGHT
Listen to the beginning portion (intro) of each track in order (Music scan).	M.SCAN

Point the transmitter on the remote controller at the remote sensor on the unit.



Use the remote controller within a 7-meter range of the remote sensor on the unit.
(Depending on the angle of the controller, the signals may not reach the sensor.)

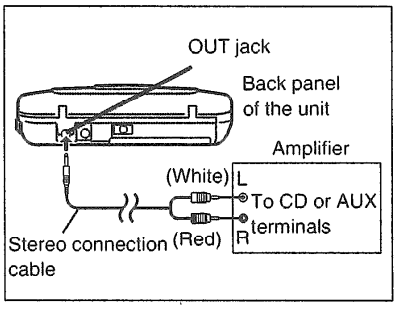
■USING THE UNIT WITH OPTIONAL ACCESSORIES

Using the unit with an audio system

Using the stereo connection cable (not included), 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 if the amplifier comes with mini-phone jacks.
- Adjust the volume level on the amplifier.

When using active speakers or other speakers, ensure that they have an input impedance of 1 kΩ or less.



Using the unit with a car audio system

For connection to the car audio system, refer to the attached sheet "Installation Instructions".

Items to be purchased for securing the unit in a car,

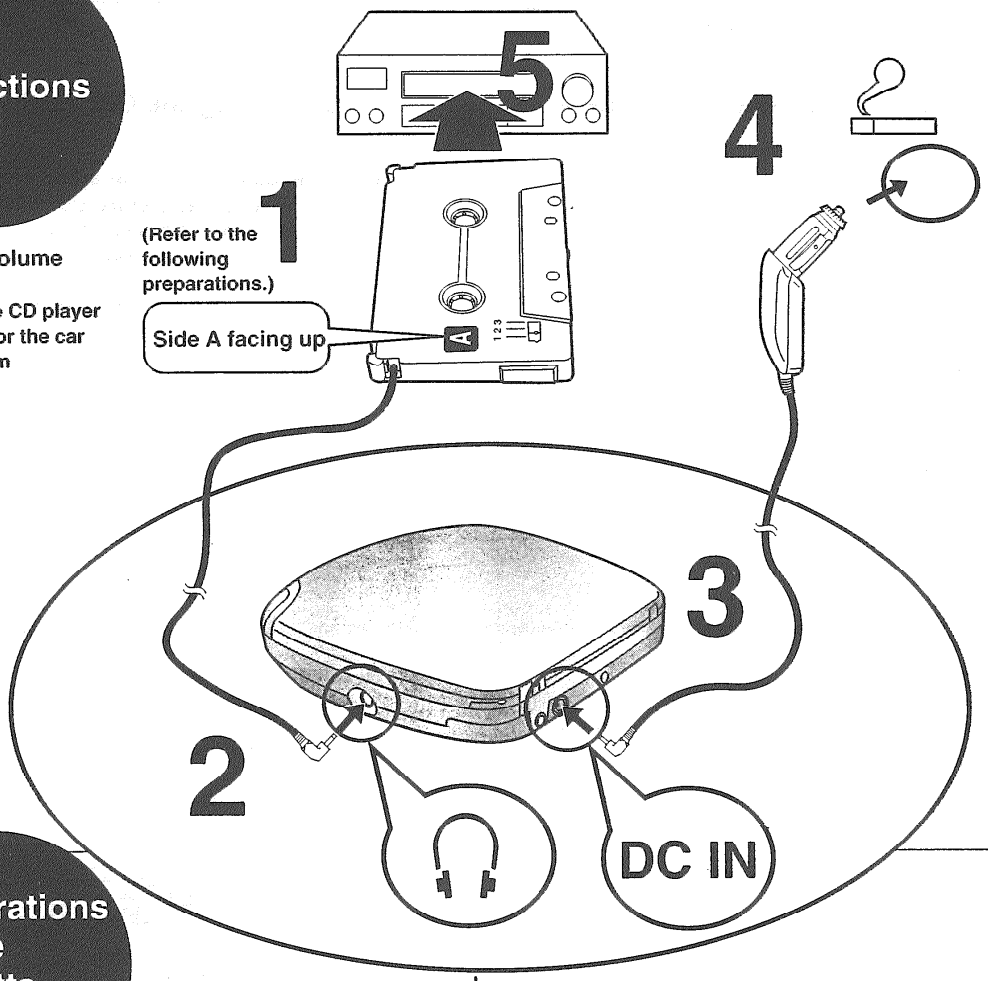
- Car mounting kit (SH-CDF20)
  Car mounting arm
  Car mounting base

Car mounting kit makes it easy to secure product inside your car.

■CAR KIT INSTALLATION

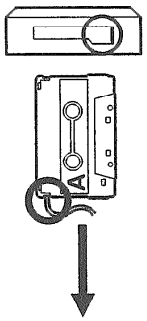
Connections

Adjust the volume level:
- 4 to 6 for the CD player
- as desired for the car audio system



Preparations for the cassette adaptor

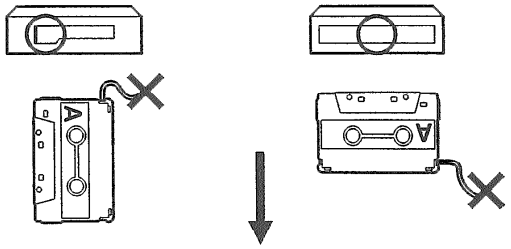
For a car audio system with the head at the right side



It can be used as it is.

For a car audio system with the head at the left side

For a car audio system in which the head is in the center at the rear



Change the direction in which the cord is led out.

Refer to the back side "To change the cord direction" for details.

• For securing the portable CD player in a car

Optional Car Mount Kit (the car mounting arm/car insulator or car mounting base) make it easy to secure the product inside your car.
There are two types of car mounting kits: the SH-CDF7 and SH-CDF20. Therefore, be sure to check "Using the Unit with Optional Accessories" in the Operating Instructions to determine the correct car mounting kit.

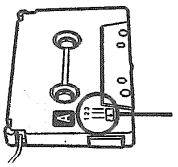
• When the sound volume is extremely low

① Set the play direction for the car audio system to the forward (FWD) direction.

If the sound volume is still low:

② Adjust the cassette adaptor's head position selector.

Set the cassette adaptor's head position selector to 1, 2 or 3, whichever yields the highest volume level.



• Concerning the Car Audio System

■ For an auto-reverse car audio system

Position the cassette adaptor with side A facing up and set the play direction for the car audio system to the forward (FWD) direction.
The head positions of the cassette adaptor and the car audio system do not match in the reverse direction, causing the sound volume from the speakers to be extremely low.

• Cautions

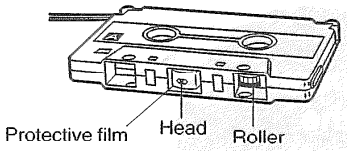
Please understand that we cannot take responsibility for the unit falling or any other damage that may occur as a result of faulty installation.

■ Car adaptor

- The provided car adaptor is made specifically for use with DC 4.5 V Panasonic portable CD players. Do not use it with other devices.
- Do not use the adaptor for a long period with the batteries left in the unit because this may shorten the life of the batteries.
- Pay attention to the car battery capacity when using this adaptor for a long period.
- Do not expose this adaptor to strong sunlight or very high temperatures.
- Be sure to remove this adaptor from the cigarette lighter socket when not using this adaptor or before leaving the automobile.
- The power source polarities of this unit are ⟡⊖⟡, check the DC IN jack.

■ Cassette adaptor

- Bunch the excess cord together or place it so that it will not interfere with operation.
- Do not touch the head or roller.
- A protective film has been placed over the heads to prevent them from being damaged. Do not remove this film.



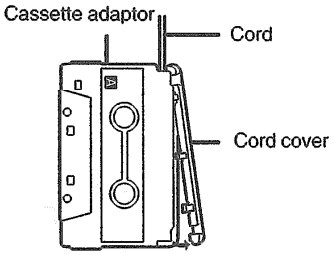
- After use, remove the cassette adaptor and keep it so that no dust will adhere to the head section.
- After installing the cassette adaptor in the car audio system, do not allow its cord to make contact with the control section.

- The sound quality deteriorates when the head section of the car audio system becomes dirty. It is, therefore, a good idea to clean it periodically.
- If the rollers or car audio capstan are dirty, it may not longer be possible to install the cassette adaptor in the car audio system. Clean the rollers and capstan using a cotton swab.
- Do not leave this adaptor in a vehicle which is exposed to direct sunlight.
- Do not bring any magnetized objects near this adaptor's head position.
- Because of the nature of its construction, the sound of something rotating can be heard in this adaptor. This is normal and not indicative of a malfunction.
- During the winter months when the temperature inside the vehicle falls to an extremerly low level, there may be times when the unit cannot be used because the cord is too stiff to allow the adaptor to be installed in its proper position.

• To change the cord direction

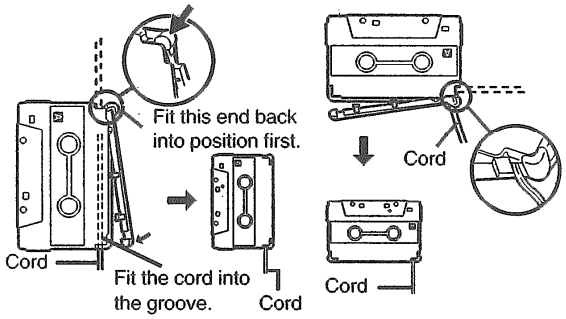
With some car audio systems it is necessary to change the direction in which the cord is led out.

1 Remove the cover of the cassette adaptor.



2 Pull out the cord, align it with the head section of the car audio system, and change the position from which it extends.

For a car audio system with the head at the left side	For a car audio system in which the head is in the center at the rear



• Car adaptor

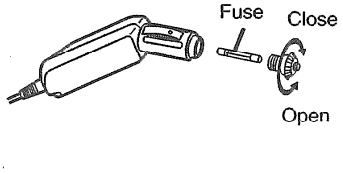
The provided car adaptor must be connected.

- This car adaptor can be used in an automobile which has a 12 V or 24 V battery. You can use it in a truck or other large vehicle. (This is a special-purpose negative ground car adaptor.)
- Do not connect the adaptor immediately after using the cigarette lighter.
- Leave a little slack in the car adaptor's cord, making sure that it does not run underneath the unit.

■ To replace the fuse

1 Remove the plug cap by rotating it in the direction shown by the arrow, and take out the old fuse.

2 Insert the new fuse (125 V, 500 mA type) into the fuse receptacle and reinstall the plug cap.



If the fuse blows frequently, there may be something wrong with the adaptor. Consult your dealer.

• Car audio system

■ When the car audio system has a blank skip function

The blank skip function may operate when the CD player stops. Therefore, be sure to set the blank skip function to off.

Note:

Depending on the type of vehicle, static may be heard if the unit is connected via line cord to the car audio system's CD IN jack or AUX IN jack. If this occurs, it is recommended that you use the provided cassette adaptor.

When you leave the car

Push the eject button to remove the cassette adaptor.

• Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

(In U.S.A. consult MSC Authorized Servicenters for detailed instructions or call 1-800-545-2672 for the address of an authorized factory servicenter.)

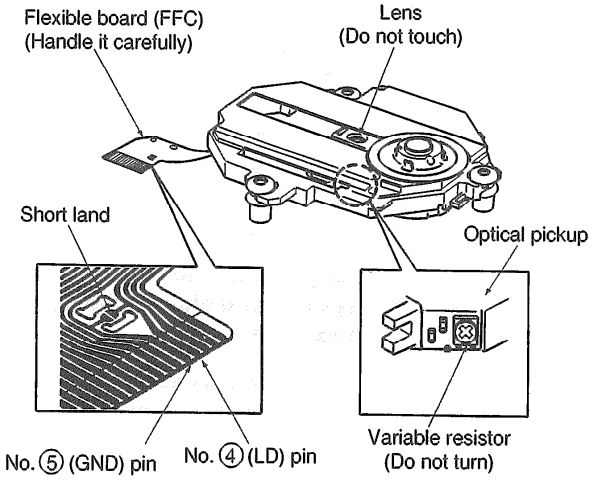
Problem	Checkpoint	Remedy
The sound volume is extremely low.	Did you adjust the volume level of the unit?	Adjust the volume level of the unit to 4–6.
	Did you adjust the volume level of the car audio system.	Adjust the volume level of the car audio system to the desired level.
	Did you adjust the cassette adaptor's head position selector?	Set the sound to the highest volume level.
	Have you removed the cord cover of the cassette adaptor?	Install the cord cover properly.
	Does the car audio system have an auto-reverse function?	Set the play direction for the car audio system to the forward (FWD) direction. [The forward (FWD) direction is the side which produces sound or which has the greatest sound volume.]
The cassette adaptor cannot be inserted into the car audio system.	Did you check the position of the head?	Check the position of the head in relation to the car audio system to ensure the cassette adaptor is installed correctly.
	Have you inserted the side with the cord in first?	Remove the cord cover, and change the position from which the cord extends.
The unit cannot be turned on.	Is the fuse for the car adaptor blon?	Insert a new fuse (0.5 A).

■ 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. The short land between the No. ④ (LD) and No. ⑤ (GND) pins on the flexible board (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
   To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

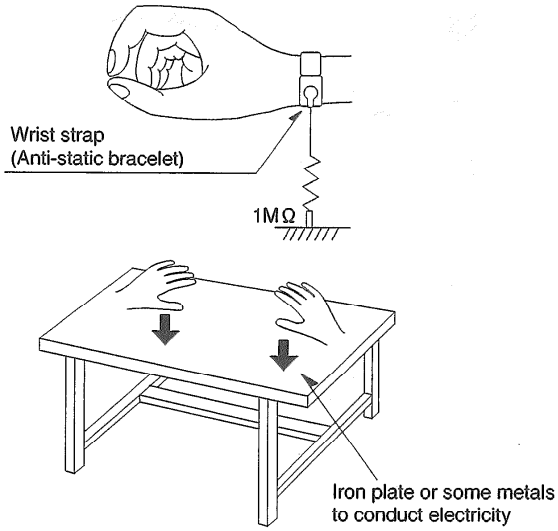


● Grounding for electrostatic breakdown prevention

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 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

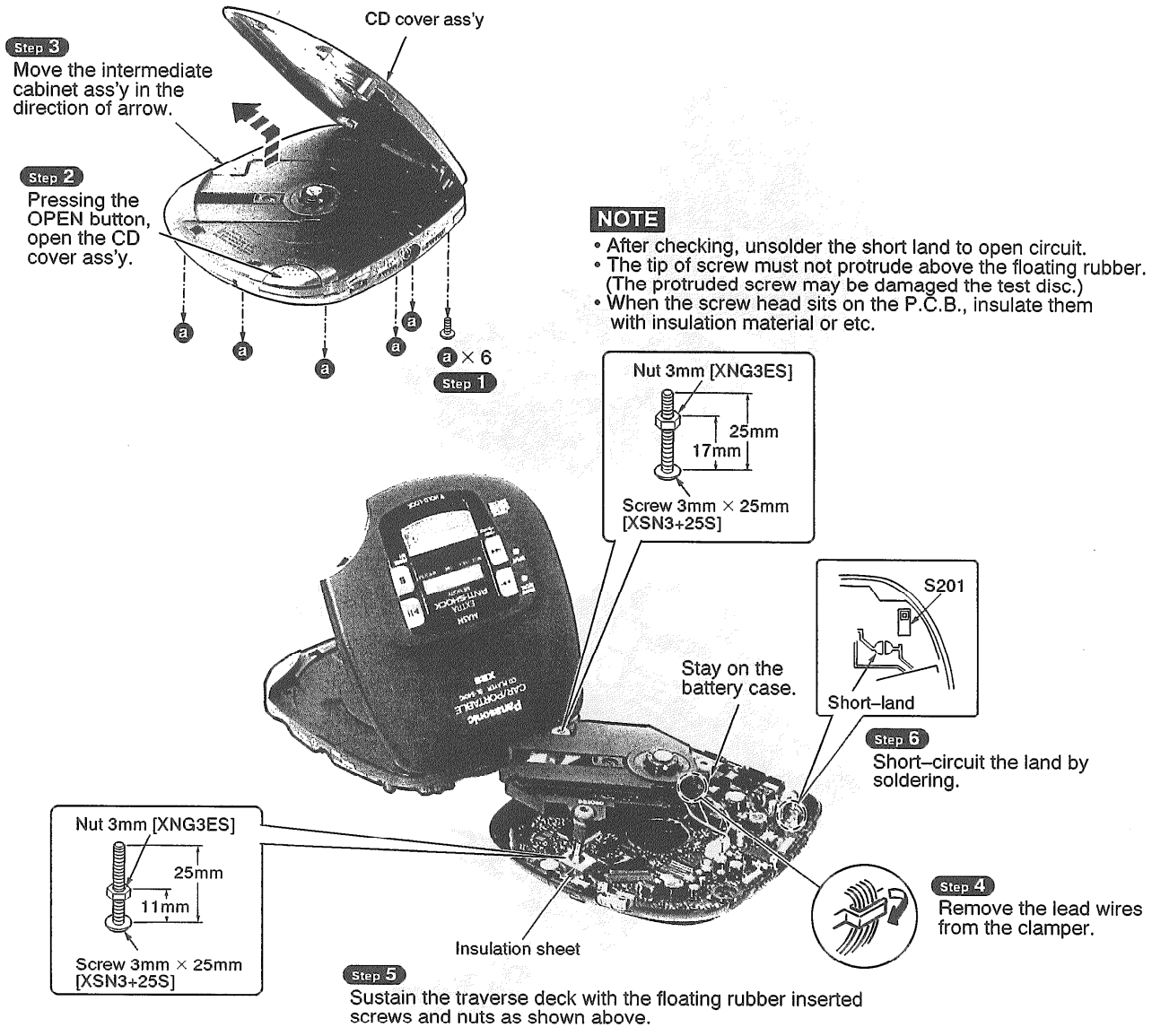
Warning: This product uses a laser diode. Refer to caution statements on page 2.

NOTE

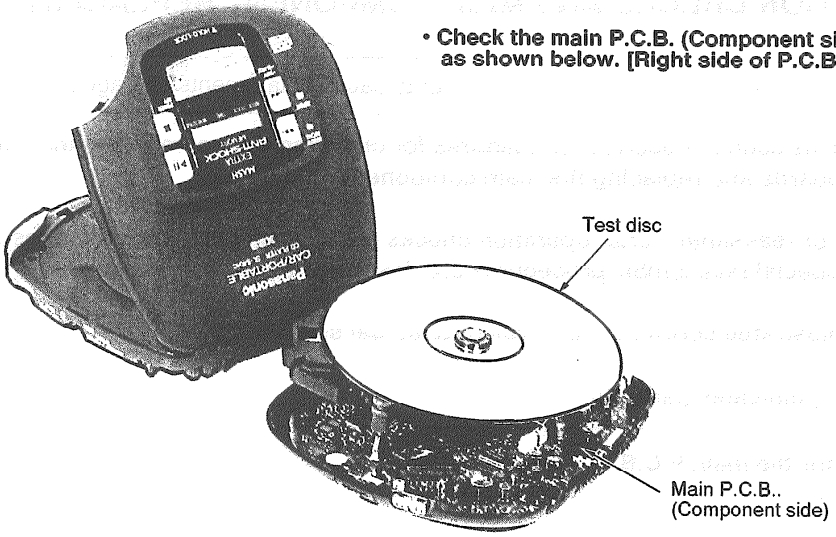
1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3.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

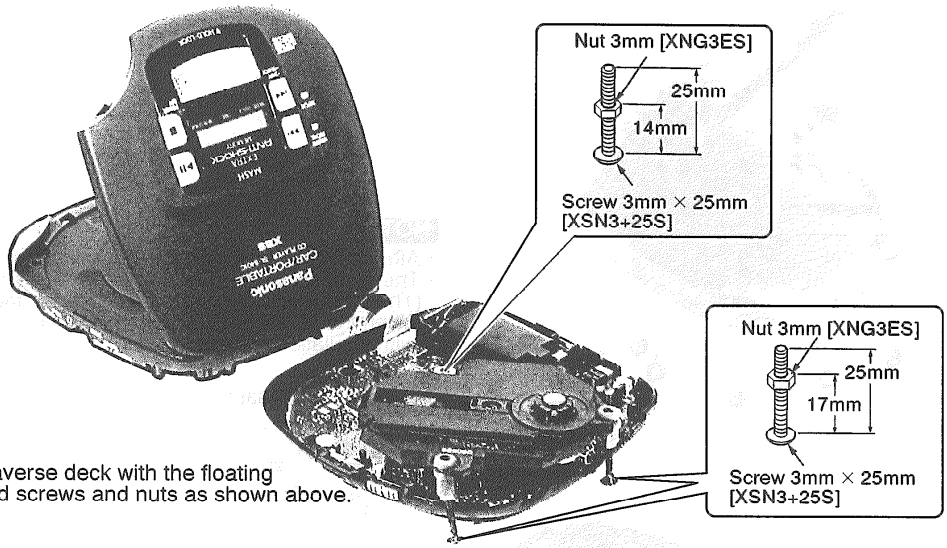
1. Checking for the main P.C.B.

ⓐ [XTN17+6GFZ]



• **Check the main P.C.B. (Component side as shown below. [Right side of P.C.B..]**

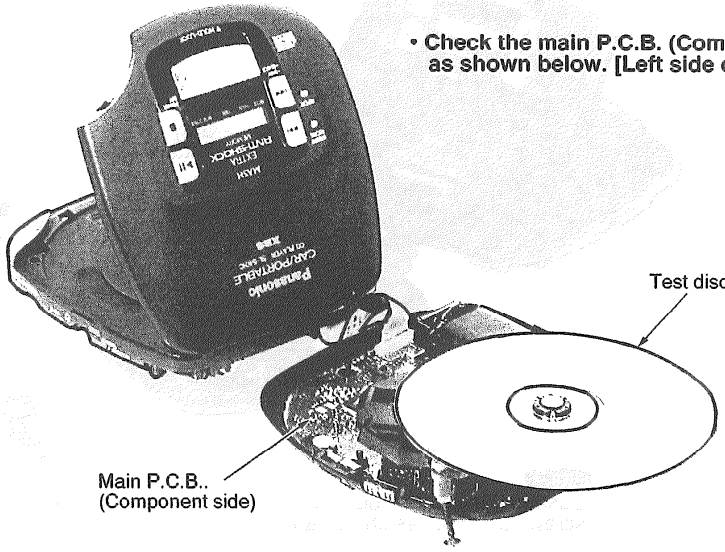




Step 7

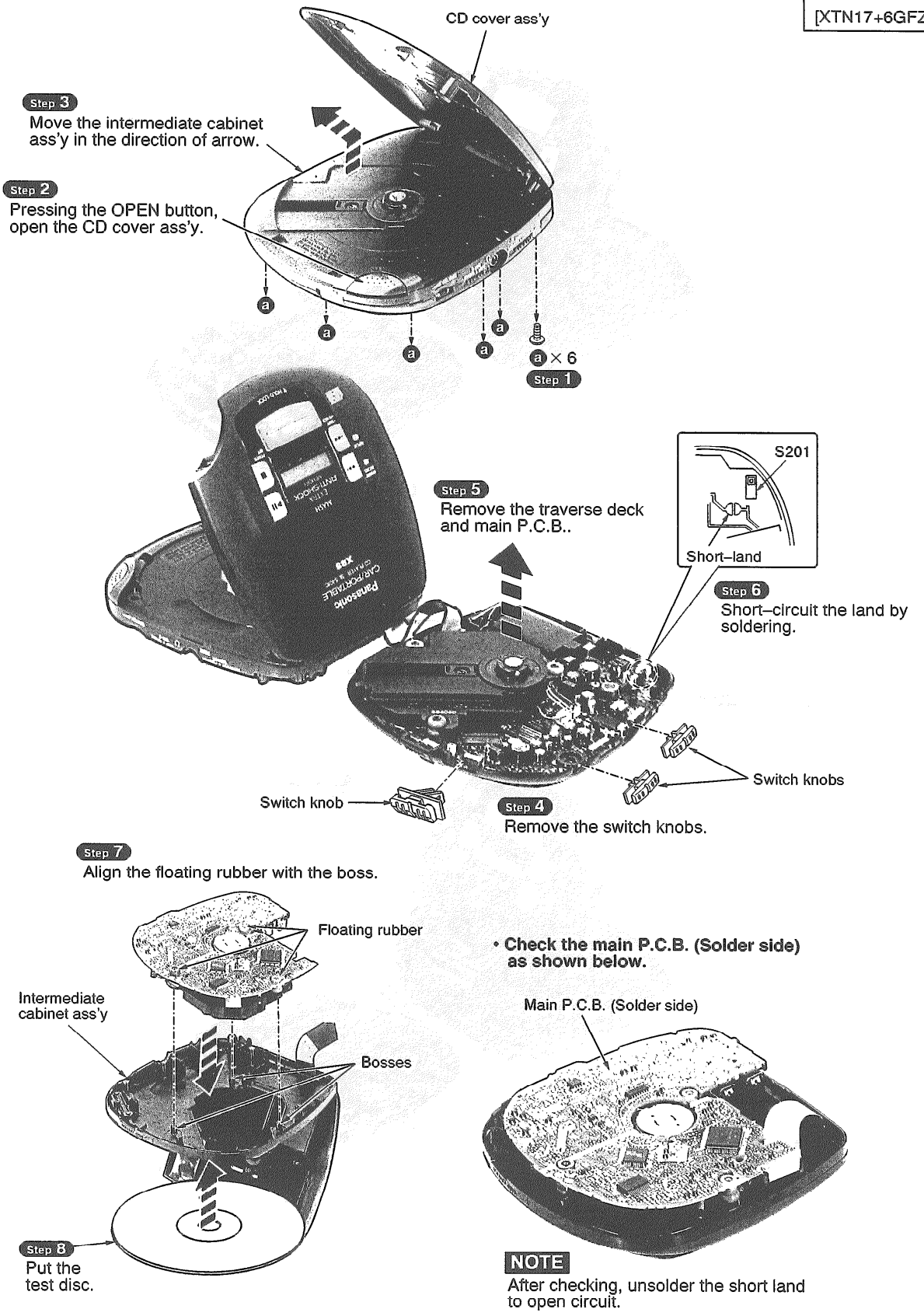
Sustain the traverse deck with the floating rubber inserted screws and nuts as shown above.

• **Check the main P.C.B. (Component side as shown below. [Left side of P.C.B..]**



• Checking for the P.C.B. (Solder side).

[XTN17+6GFZ]

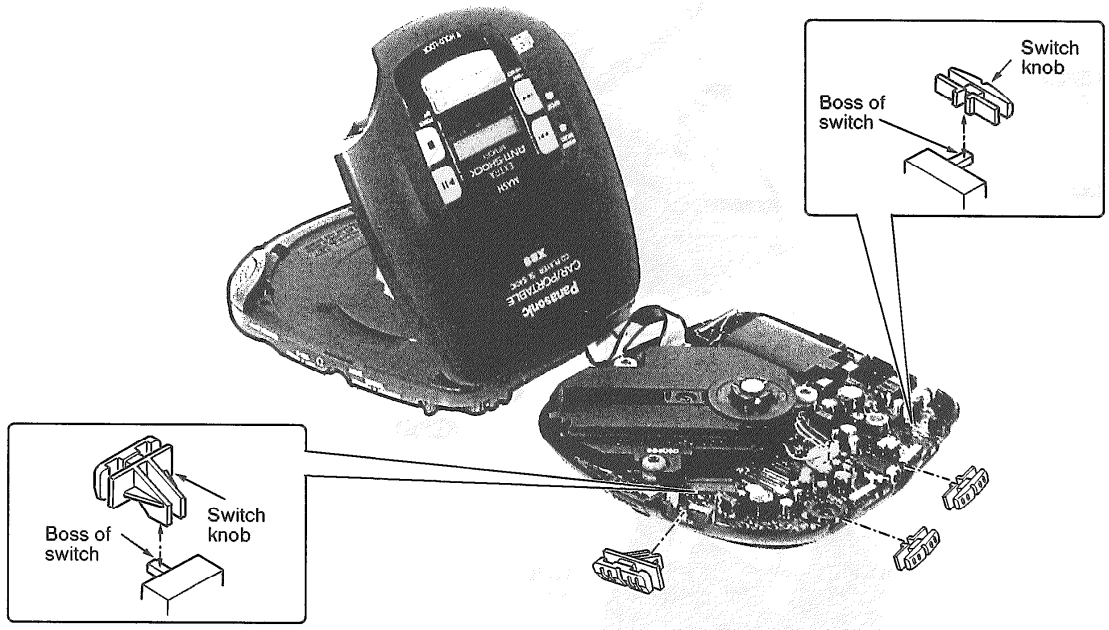


• Check the main P.C.B. (Solder side) as shown below.

NOTE

After checking, unsolder the short land to open circuit.

Notice for installation of switch knobs



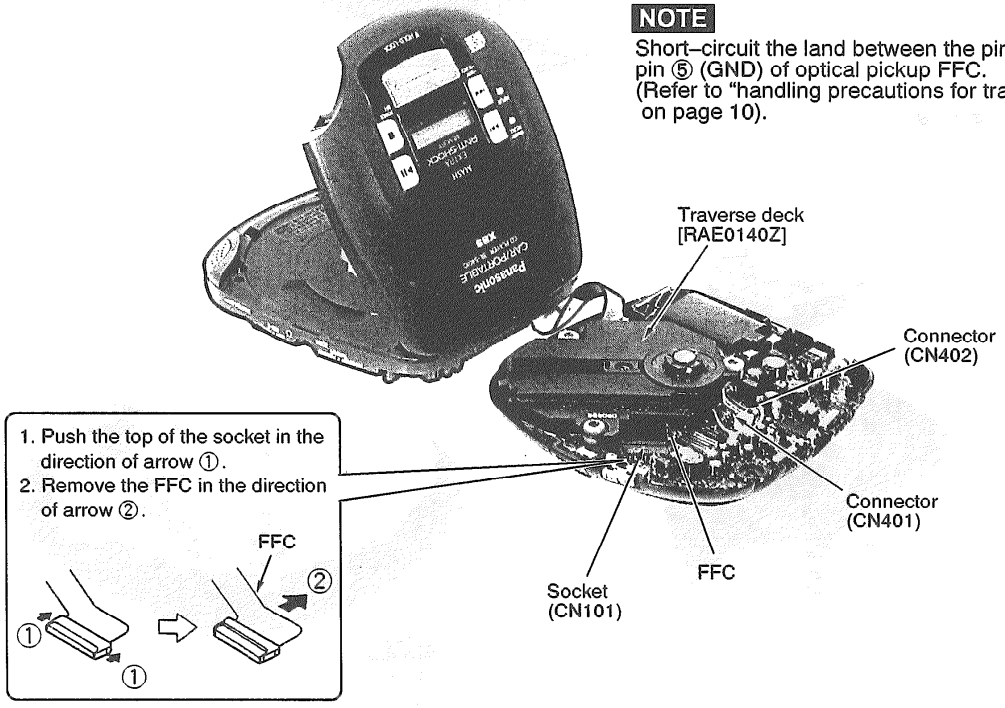
• Make sure the bosses of switch are fit in the knobs of switch.

2. Replacement for the traverse deck

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

NOTE

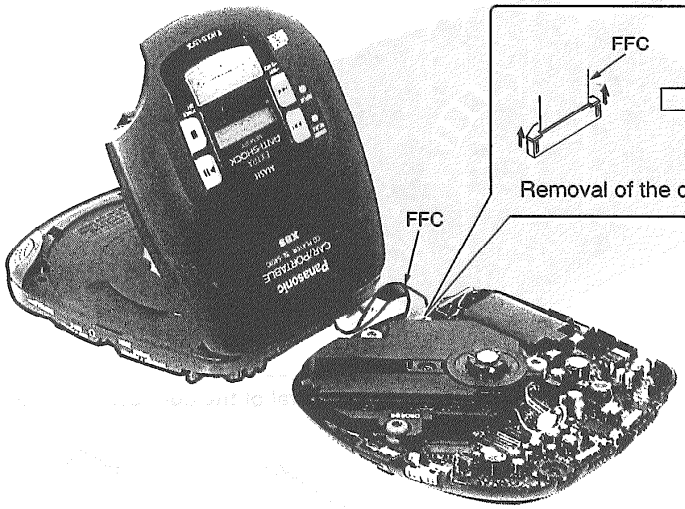
Short–circuit the land between the pin ④ (LD) and pin ⑤ (GND) of optical pickup FFC.
(Refer to "handling precautions for traverse deck" on page 10).

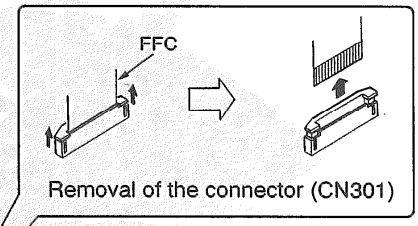


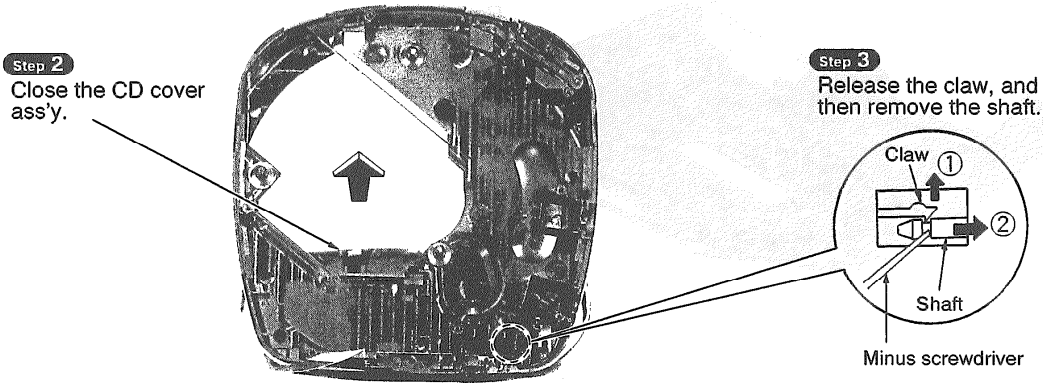
3. Replacement for the LCD and CD cover

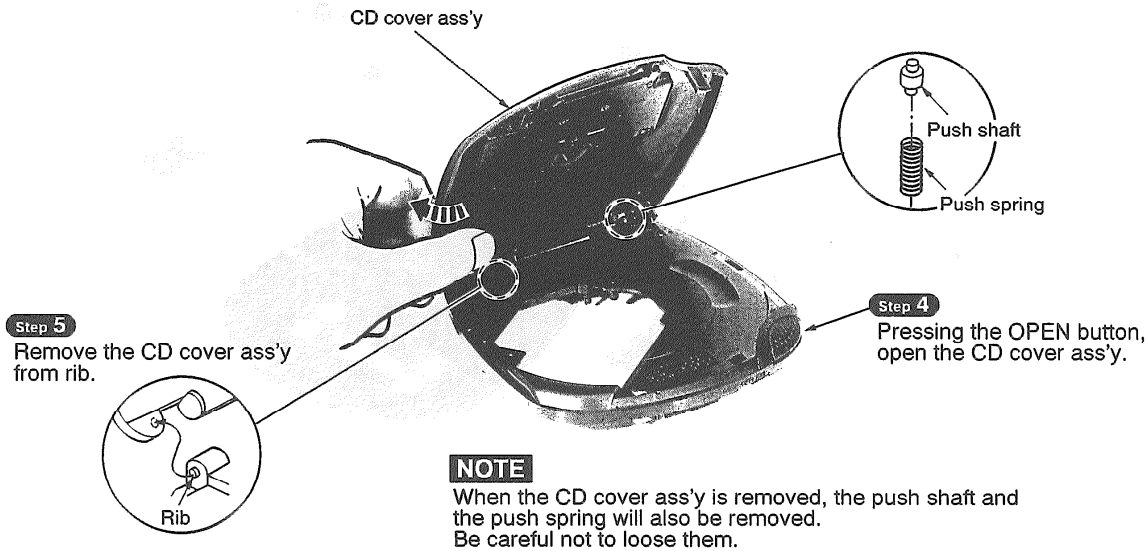
• Follow the Step 1 ~ Step 3 in item 1.

Step 1 Remove the FFC.







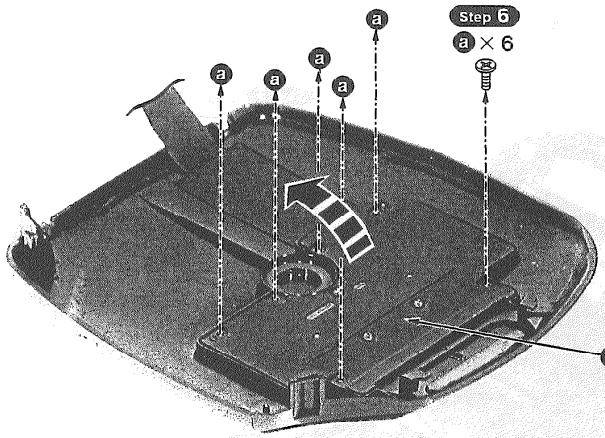


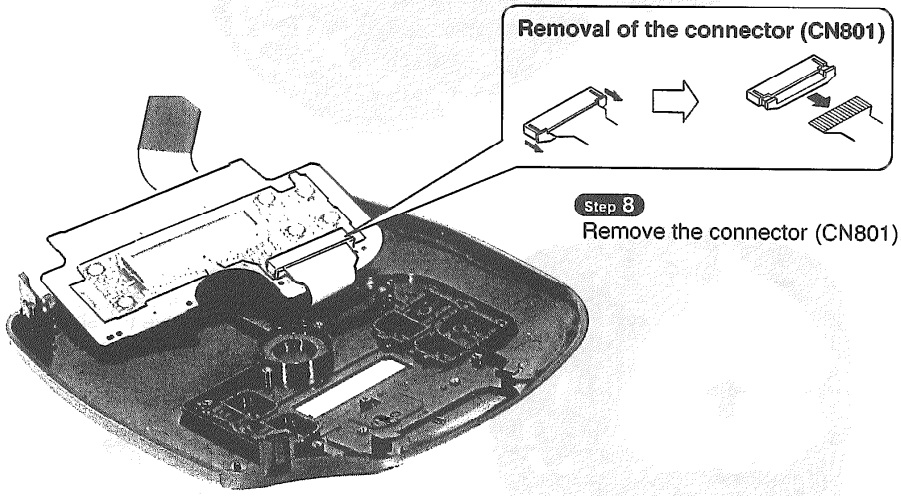
NOTE

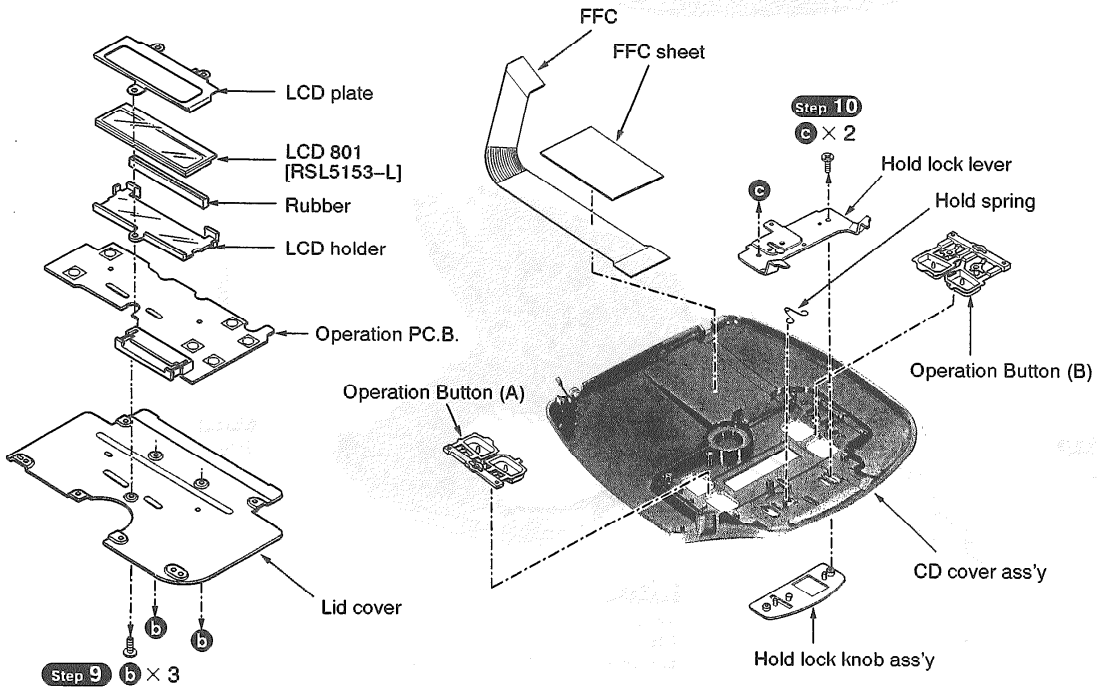
When the CD cover ass'y is removed, the push shaft and the push spring will also be removed.
Be careful not to loose them.

[RHE5119YA]

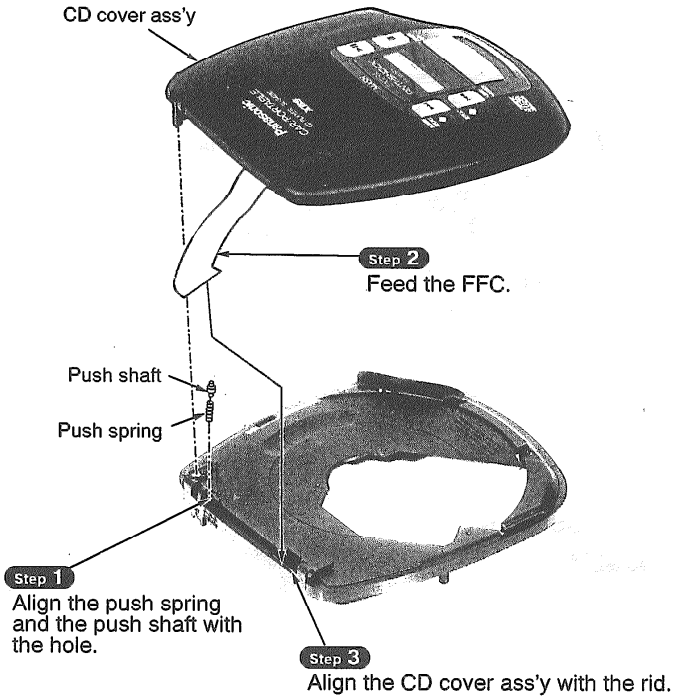
[RHE5155YA]



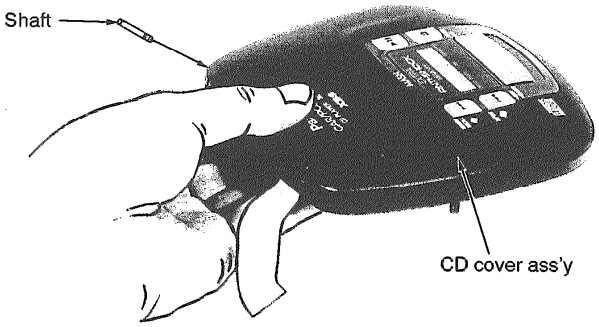




Reassembly procedures of CD cover ass'y



Step 4
Holding the CD cover ass'y not to be detached the push spring and the push shaft, install the shaft.



■ MEASUREMENTS AND ADJUSTMENTS

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

• 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)

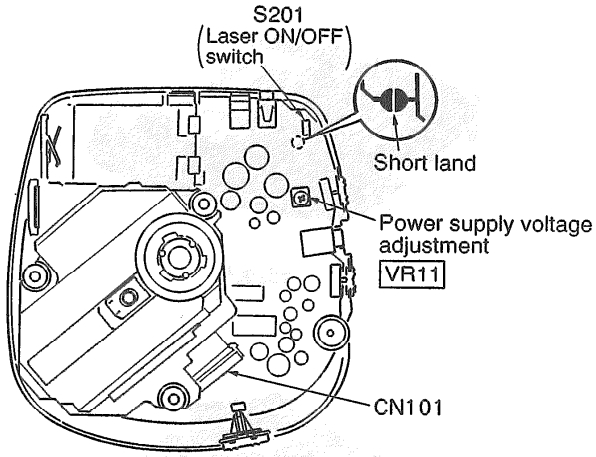
• Test short land

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 32, 33.)

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 **3.35±0.05 V.**

(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 0.7 mm black dot and the 0.7 mm 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

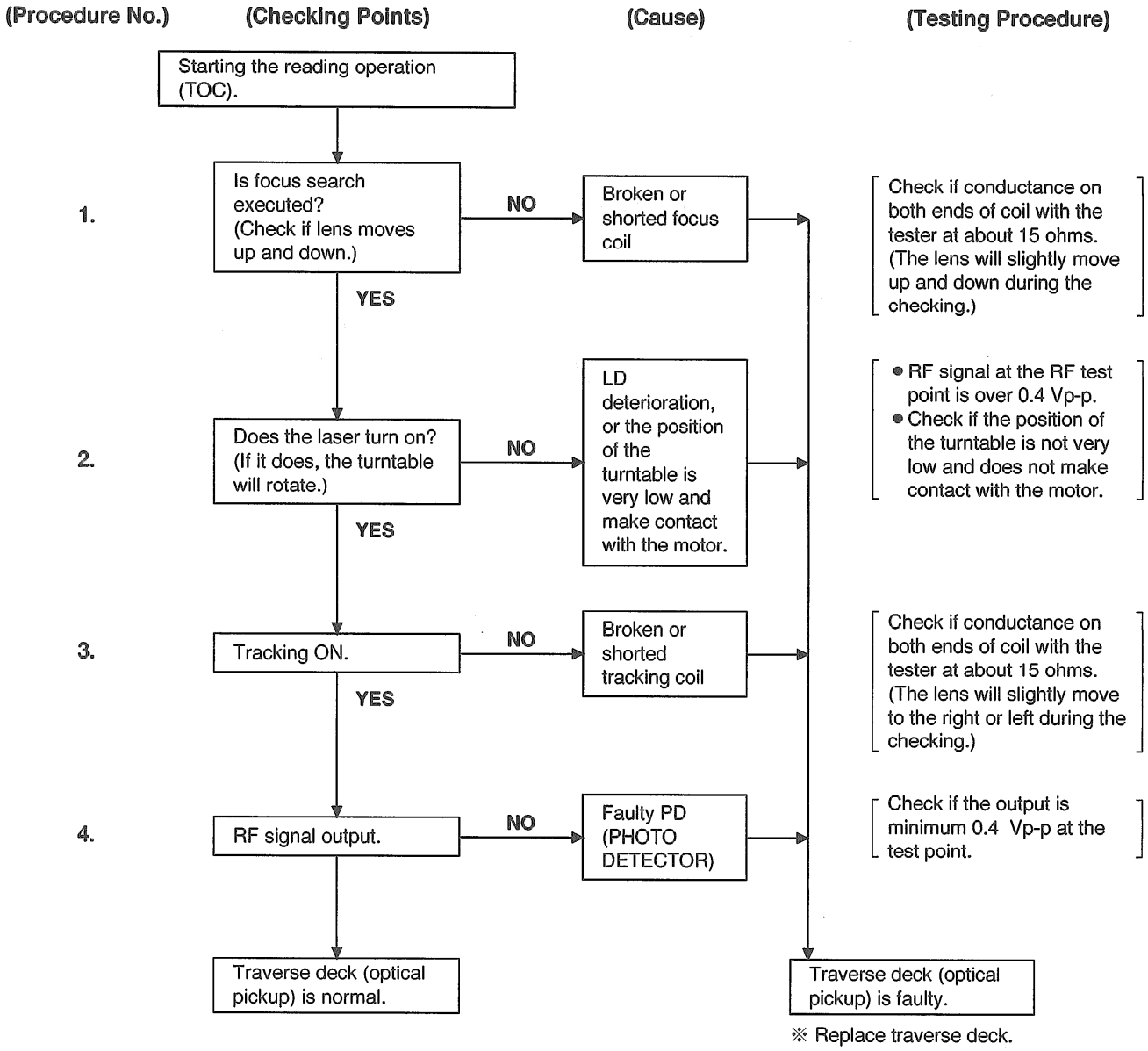
On our conventional type portable CD player, there were mounted 6 semi-fixed controls for each adjustment. Since the SL-S600C servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-S600C.

On conventional portable CD player Use for Old Servo IC (AN8373SE2, AN8374SE2)		**On SL-S600C** Use for New Servo IC (AN8834SBE1, MN662745RPC)
1. Tracking Offset Adjustment VR (TOC)	➡	Non Adjustment
2. Focus Offset Adjustment VR (FOC)		
3. Tracking Gain Adjustment VR (TGC)	➡	Automatic Adjusting Circuit
4. Focus Gain Adjustment VR (FGC)		
5. Tracking Balance Adjustment VR (TBC)		
6. Focus Balance Adjustment VR (FBC)		
Total 6 Adjustment VRs	➡	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-S600C automatically controls the servo circuit to obtain optimum performance according to any disc's characteristics. Therefore, no malfunction occurs because of mis-adjustment.

■ 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.



- 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 0.7 mm black dot and the 0.7 mm 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.

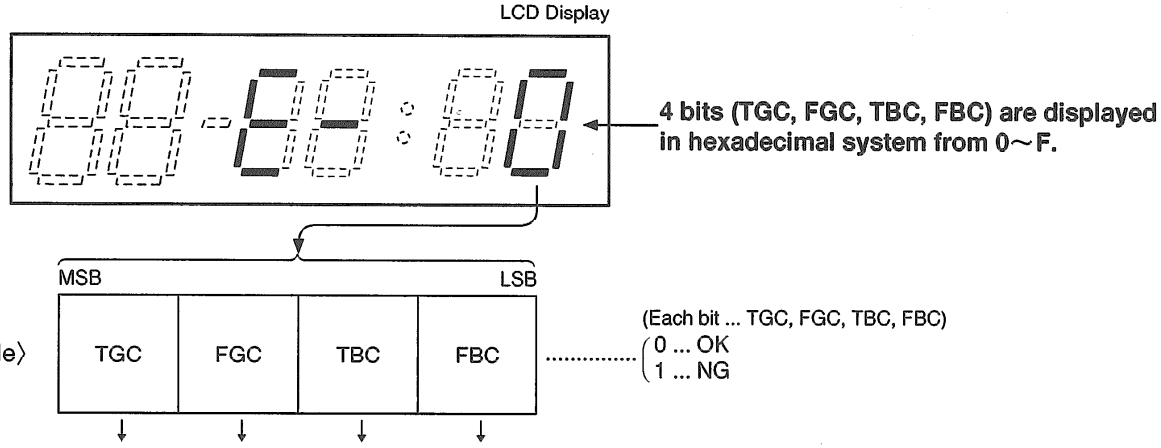
■ AUTOMATIC ADJUSTMENT RESULTS DISPLAY FUNCTION (SELF-CHECK FUNCTION)

On this unit (SL-S401C), each automatic adjustment 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 automatic adjustment result displays (self-check function).

• How to display automatic adjustment 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 automatic adjustment result is displayed on the LCD.

• Display of automatic adjustment results (self-check function)



1) 0 0 0 0 ⇨ "E−0" is displayed.
(All adjustments are OK.) ..... Normal

2) 0 0 0 1 ⇨ "E−1" is displayed.
(OK) (OK) (OK) (NG)
(Focus balance adjustment is NG (incorrect.))

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.)

5) 1 0 0 0 ⇨ "E−8" is displayed.
(NG) (OK) (OK) (OK)
(Tracking gain adjustment is NG.)

Note: If any other disc than the test disc (SZZP1054C) is used, an "E−8" may be displayed.

〈Example〉 **Follow the below steps when "E—1" is displayed.**

(Cause: Focus balance (FBC) is set beyond the limit.)
- Check if

(1) the waveform or voltage of the focus servo circuit is correct, and
(2) 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 15 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.

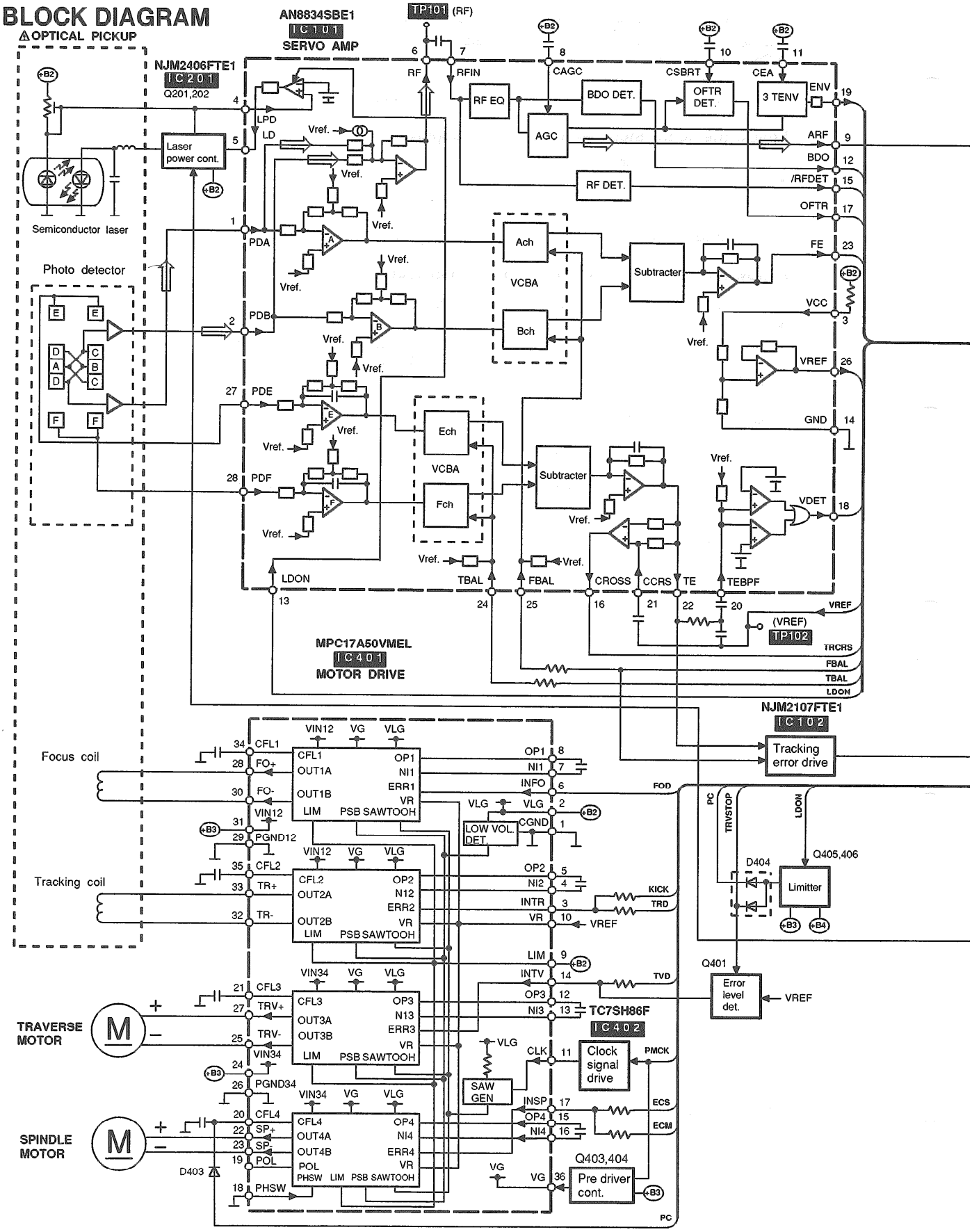
(Cause : All adjustments (TGC, FGC, TBC, FBC) are set beyond the limit.)
- Check if

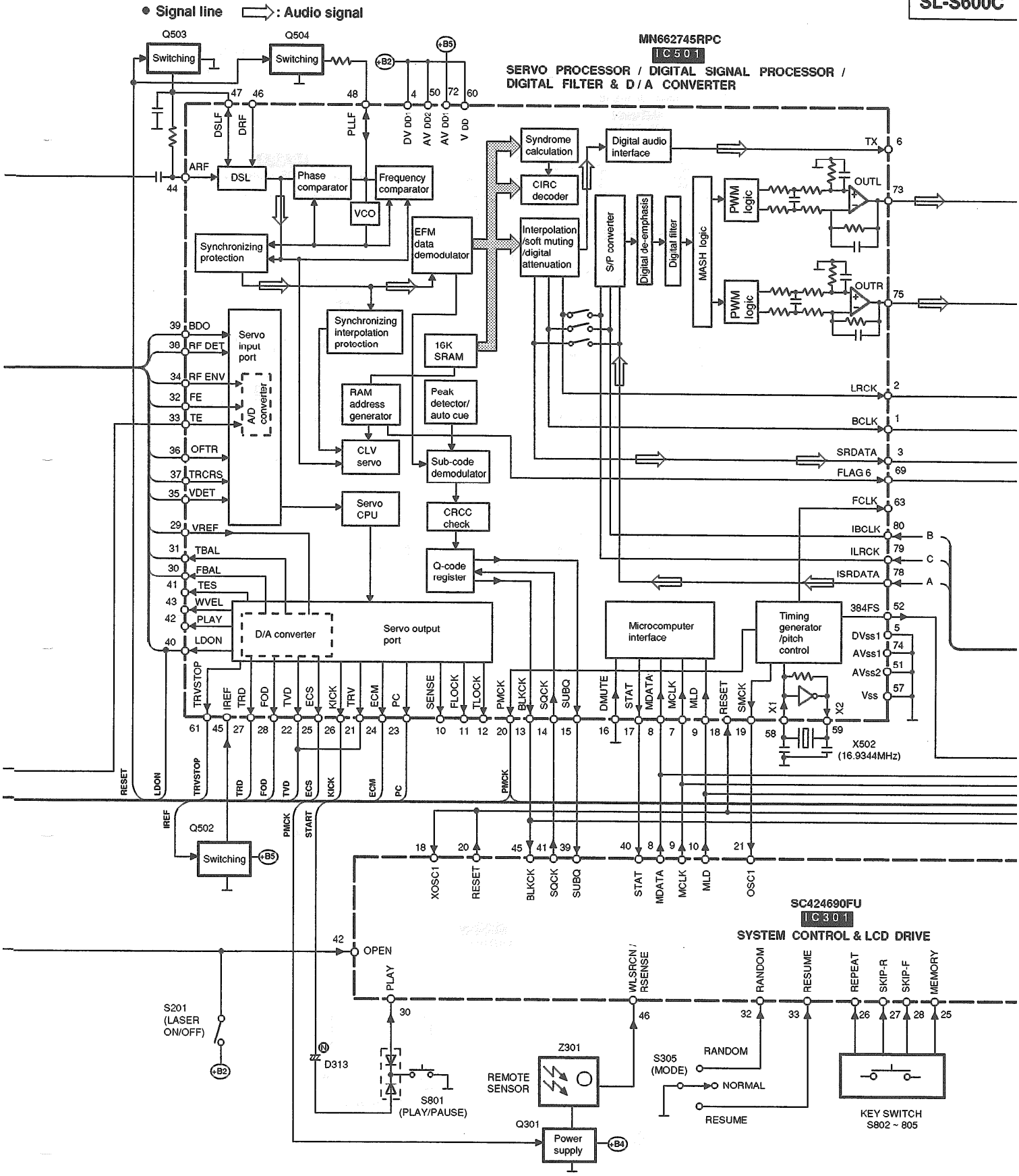
(1) the optical pickup returns to the normal state by exchanging the traverse deck, and
(2) the waveform or voltage of the servo IC's (IC101, 501) are correct.

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.

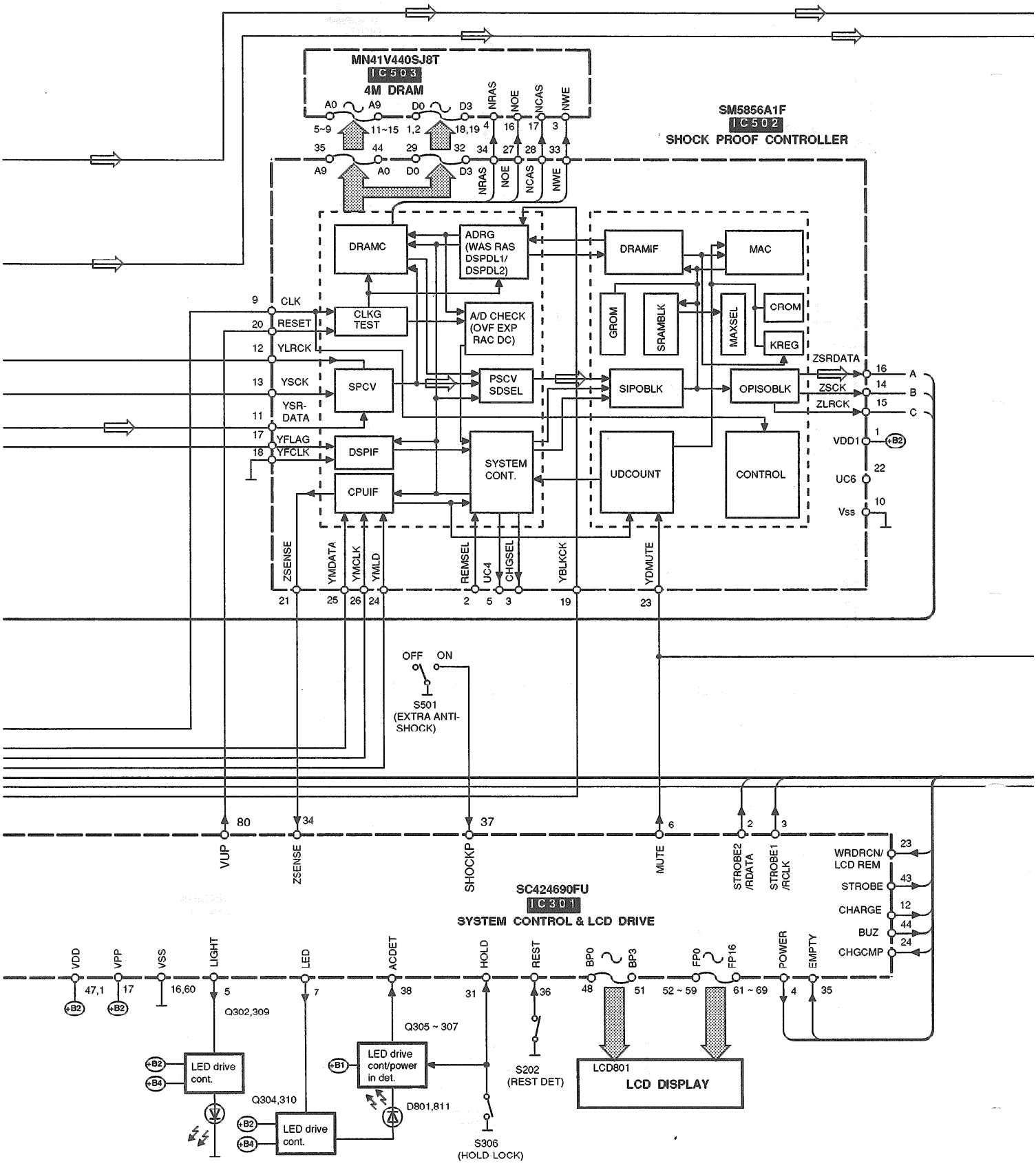
Note:
If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed. This is not a malfunction.

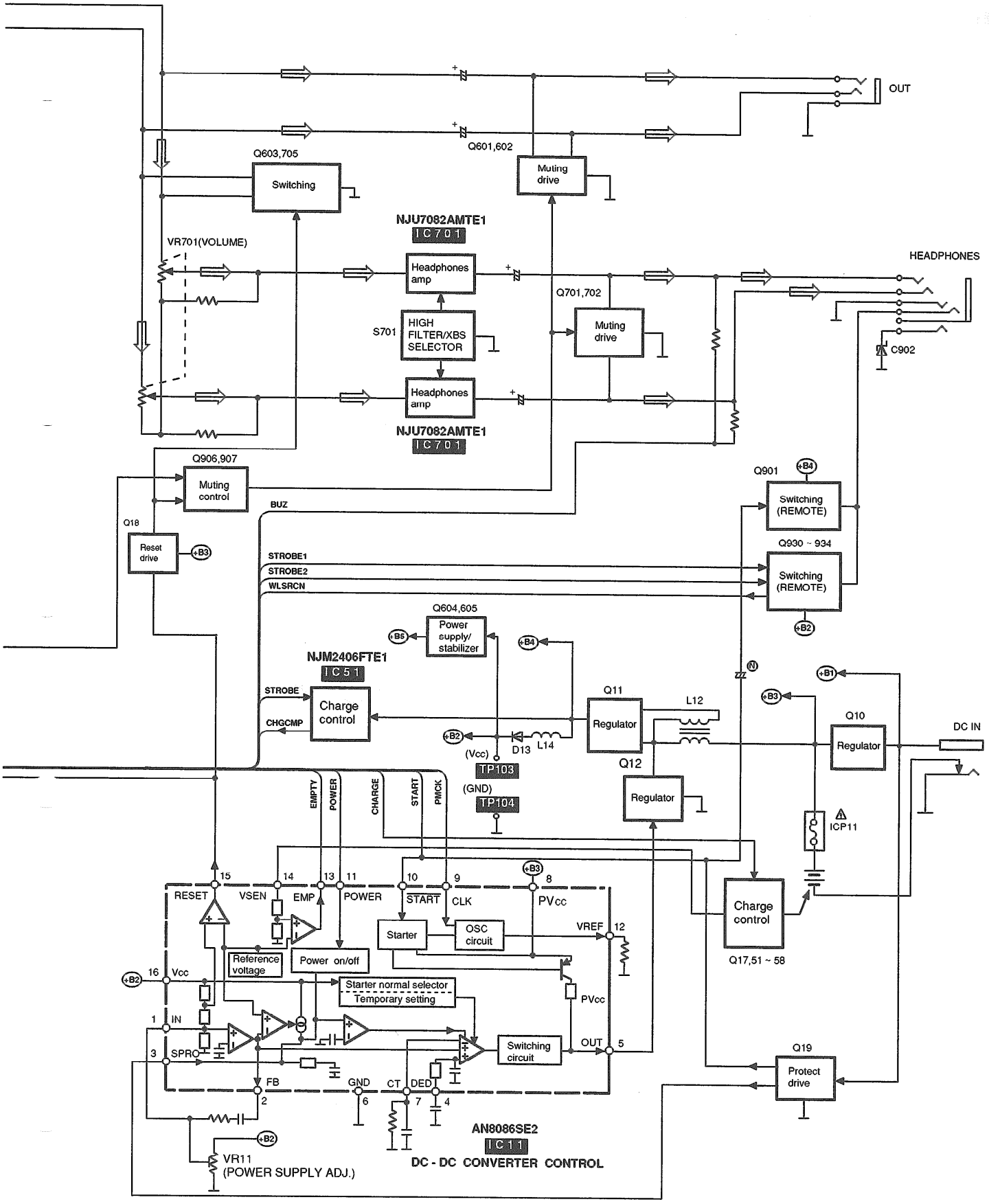
BLOCK DIAGRAM




● Signal line ⇨: Audio signal
MN662745RPC
IC501
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR / DIGITAL FILTER & D/A CONVERTER
Q503 Switching
Q504 Switching
+B5
+B2
DSLF
DRF
PLLF
DV DD1
AV DD2
AV DD1
V DD
ARF
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
EFM data demodulator
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation
Digital audio interface
S/P converter
Digital de-emphasis
Digital filter
MASH logic
PWM logic
OUTL
OUTR
TX
LRCK
BCLK
SRDATA
FLAG 6
FCLK
IBCLK
ILRCK
ISRDATA
Synchronizing interpolation protection
16K SRAM
RAM address generator
Peak detector/ auto cue
CLV servo
Sub-code demodulator
CRCC check
Q-code register
Servo CPU
Servo input port
A/D converter
BDO
RF DET
RF ENV
FE
TE
OFTR
TRCRS
VDET
VREF
TBAL
FBAL
TES
WVEL
PLAY
LDON
D/A converter
Servo output port
Microcomputer interface
Timing generator /pitch control
384FS
DVss1
AVss1
AVss2
Vss
X1
X2
X502
(16.9344MHz)
TRVSTOP
IREF
TRD
FOD
TVD
ECS
KICK
TRV
ECM
PC
SENSE
FLOCK
TLOCK
PMCK
BLKCK
SQCK
SUBQ
DMUTE
STAT
MDATA
MCLK
MLD
RESET
SMCK
Q502 Switching
START
XOSC1
OSC1
SC424690FU
IC301
SYSTEM CONTROL & LCD DRIVE
OPEN
PLAY
WLSRCN / RSENSE
RANDOM
RESUME
REPEAT
SKIP-R
SKIP-F
MEMORY
S201 (LASER ON/OFF)
D313
S801 (PLAY/PAUSE)
Z301
REMOTE SENSOR
Q301
Power supply
+B4
S305 (MODE)
NORMAL
KEY SWITCH S802 ~ 805

● Signal line ⇨: Audio signal




OUT
Q601,602
Q603,705
Switching
Muting drive
NJU7082AMTE1
IC701
VR701(VOLUME)
Headphones amp
HEADPHONES
Q701,702
S701
HIGH FILTER/XBS SELECTOR
Muting drive
C902
Headphones amp
NJU7082AMTE1
IC701
Q906,907
Muting control
Q901
+B4
Switching (REMOTE)
BUZ
Q18
Reset drive
+B3
STROBE1
STROBE2
WLSRCN
Q930 ~ 934
Switching (REMOTE)
+B2
Q604,605
+B5
Power supply/ stabilizer
+B4
NJM2406FTE1
IC51
STROBE
CHGCMP
Charge control
Q11
Regulator
L12
+B2
D13
L14
(Vcc)
TP103
(GND)
TP104
Q12
Regulator
+B1
+B3
Q10
Regulator
DC IN
ICP11
EMPTY
POWER
CHARGE
START
PMCK
15
14
13
11
10
9
+B3
8
RESET
VSEN
EMP
POWER
START
CLK
PVcc
Starter
OSC circuit
VREF
12
Charge control
Q17,51 ~ 58
Reference voltage
Power on/off
+B2
16
Vcc
Starter normal selector
Temporary setting
PVcc
1
IN
3
SPRO
Switching circuit
OUT
5
Q19
Protect drive
FB
GND
CT
DED
2
6
7
4
AN8086SE2
IC11
+B2
VR11
(POWER SUPPLY ADJ.)
DC - DC CONVERTER CONTROL

■SCHEMATIC DIAGRAM (Parts list on pages 39, 40, 42, 43.)

(This schematic diagram may be modified at any time with the 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.)
- **S305**: Play mode selector (MODE) switch in "RANDOM" position. (RANDOM←→NORMAL←→RESUME)
- **S306**: Hold lock (HOLD-LOCK) switch in "OFF" position.
- **S501**: Extra anti-shock (EXTRA ANTI-SHOCK) switch.
- **S701**: High filter/XBS selector (HIGH FILTER, XBS, OFF) switch in "OFF" position.
- **S801**: Play/pause (▶ ▮▮) switch.
- **S802, 803**: Skip/search (⏮ -SKIP/--SEARCH ⏭) switches. (S802: ⏮, S803 : ⏭)
- **S804**: Repeat (REPEAT) switch.
- **S805**: Memory/recall (MEMORY/RECALL) switch.
- **S806**: Stop/power off (■ /POWER OFF) switch.
- 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, 0 dB) 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 ⚠ 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 manufacture's specified parts shown in the parts list.

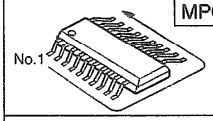
Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

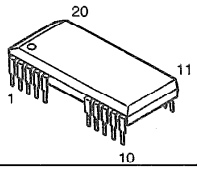
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

● Terminal guide of IC's, transistors and diodes

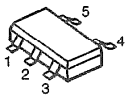
NJU7082AMTE1	8PIN
AN8086SE2	16PIN
AN8834SBE1	28PIN
MPC17A50VMEL	36PIN



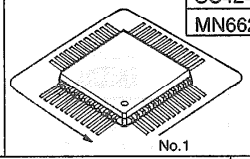
MN41V440SJ8T



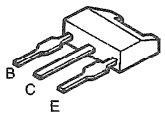
NJM2107FTE1
NJM2406FTE1
TC7SH86F



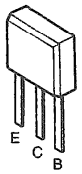
SM5856A1F	44PIN
SC424690FU	80PIN
MN662745RPC	80PIN



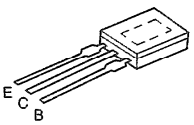
2SD2074HWSTT



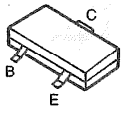
2SD1450STTA



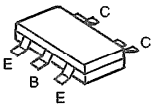
2SD2005PQRTA

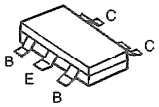


2SB709QRSTX UN5210TX
2SB970RSTX UN5211TX
2SD1328RSTTX UN5213TX
2SD1819QRSTX UN5215TX
UN5113TX
UN5114TX
UN5115TX
UN5117TX



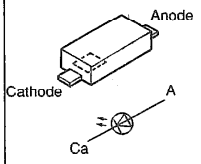
FMS2AT148



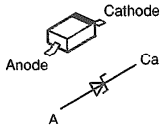


FMG2T148
FMG4T148
FMG6T148
FMG8T99
FMW1T98

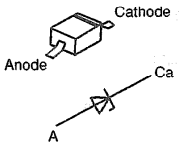
LNJ308G8LRA



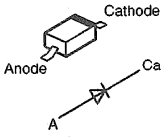
MA8051MTX



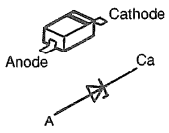
MA8082MTX



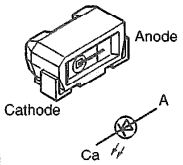
MA110TX



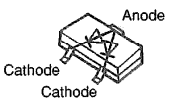
MA8033LTX



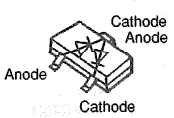
LNJ310M6URA



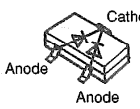
MA142WATX



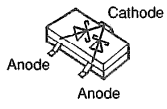
MA143TX

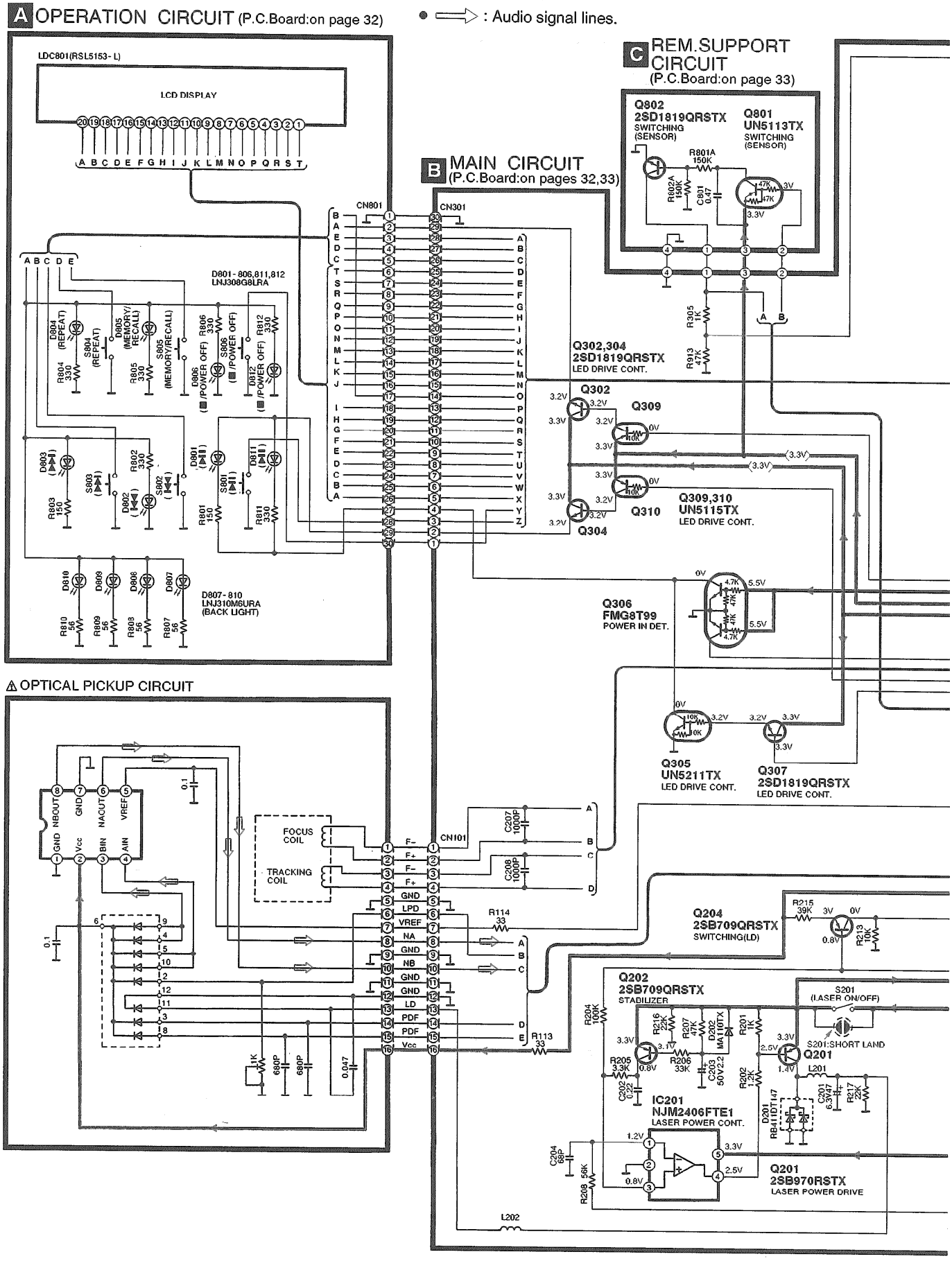


MA141WKTX

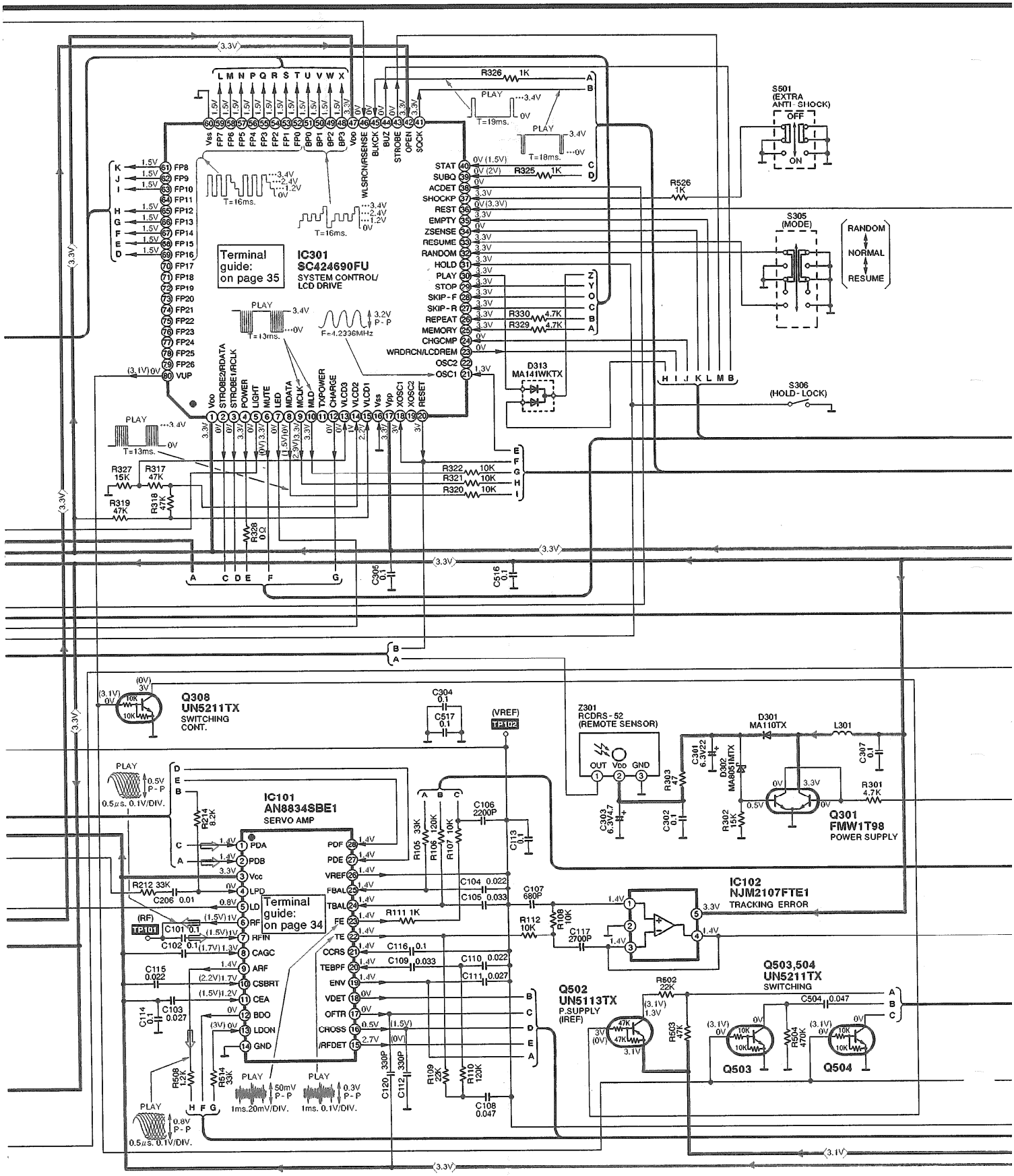


RB411DT147

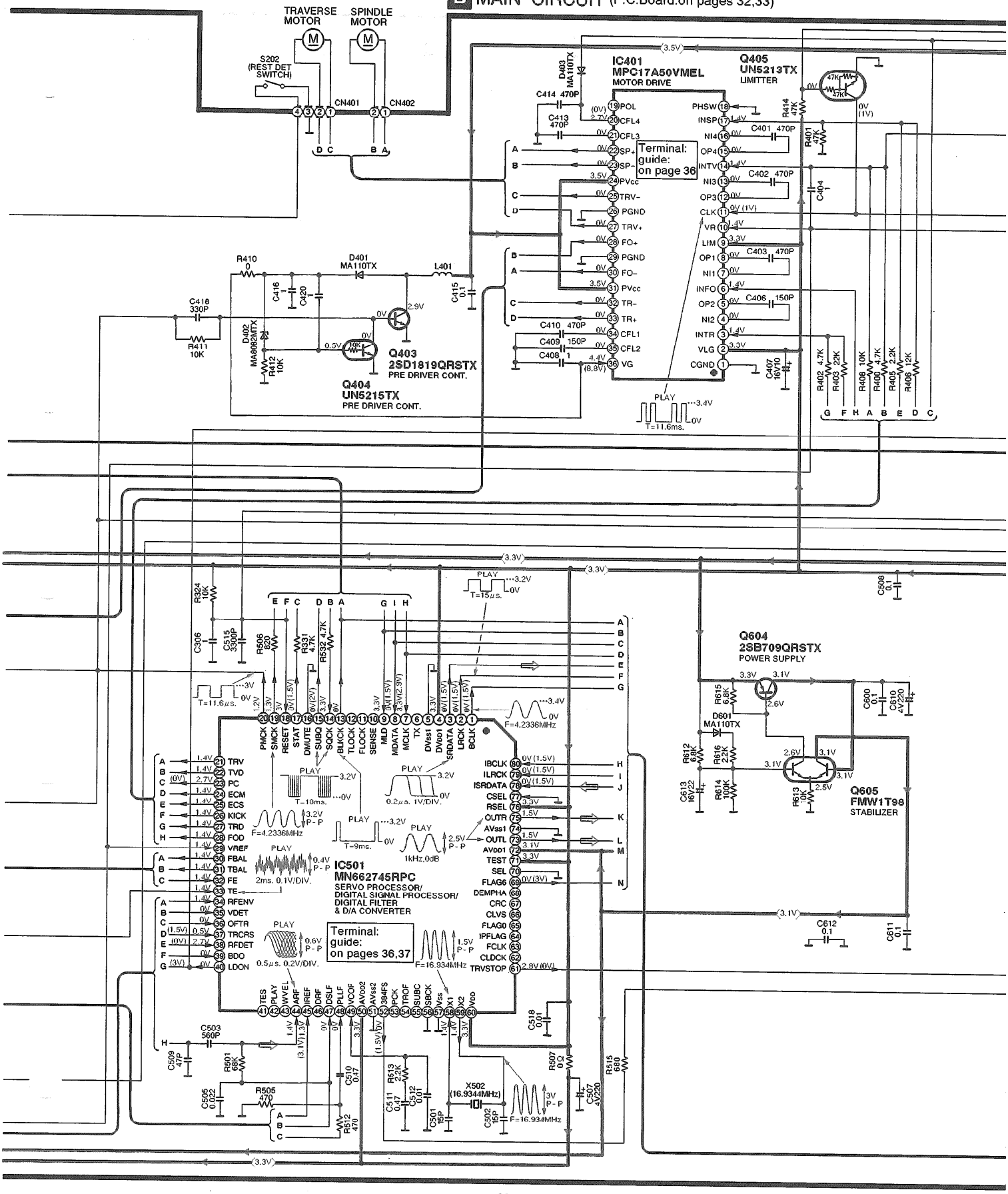



A OPERATION CIRCUIT (P.C.Board:on page 32)
● ⟹ : Audio signal lines.
C REM.SUPPORT CIRCUIT (P.C.Board:on page 33)
B MAIN CIRCUIT (P.C.Board:on pages 32,33)
LDC801(RSL5153- L)
LCD DISPLAY
D801- 806,811,812 LNJ308G8LRA
D807- 810 LNJ310M6URA (BACK LIGHT)
Q802 2SD1819QRSTX SWITCHING (SENSOR)
Q801 UN5113TX SWITCHING (SENSOR)
Q302,304 2SD1819QRSTX LED DRIVE CONT.
Q309,310 UN5115TX LED DRIVE CONT.
Q306 FMG8T99 POWER IN DET.
Q305 UN5211TX LED DRIVE CONT.
Q307 2SD1819QRSTX LED DRIVE CONT.
⚠ OPTICAL PICKUP CIRCUIT
FOCUS COIL
TRACKING COIL
Q204 2SB709QRSTX SWITCHING(LD)
Q202 2SB709QRSTX STABILIZER
S201 (LASER ON/OFF)
S201:SHORT LAND
Q201
IC201 NJM2406FTE1 LASER POWER CONT.
Q201 2SB970RSTX LASER POWER DRIVE
CN801
CN301
CN101
L202

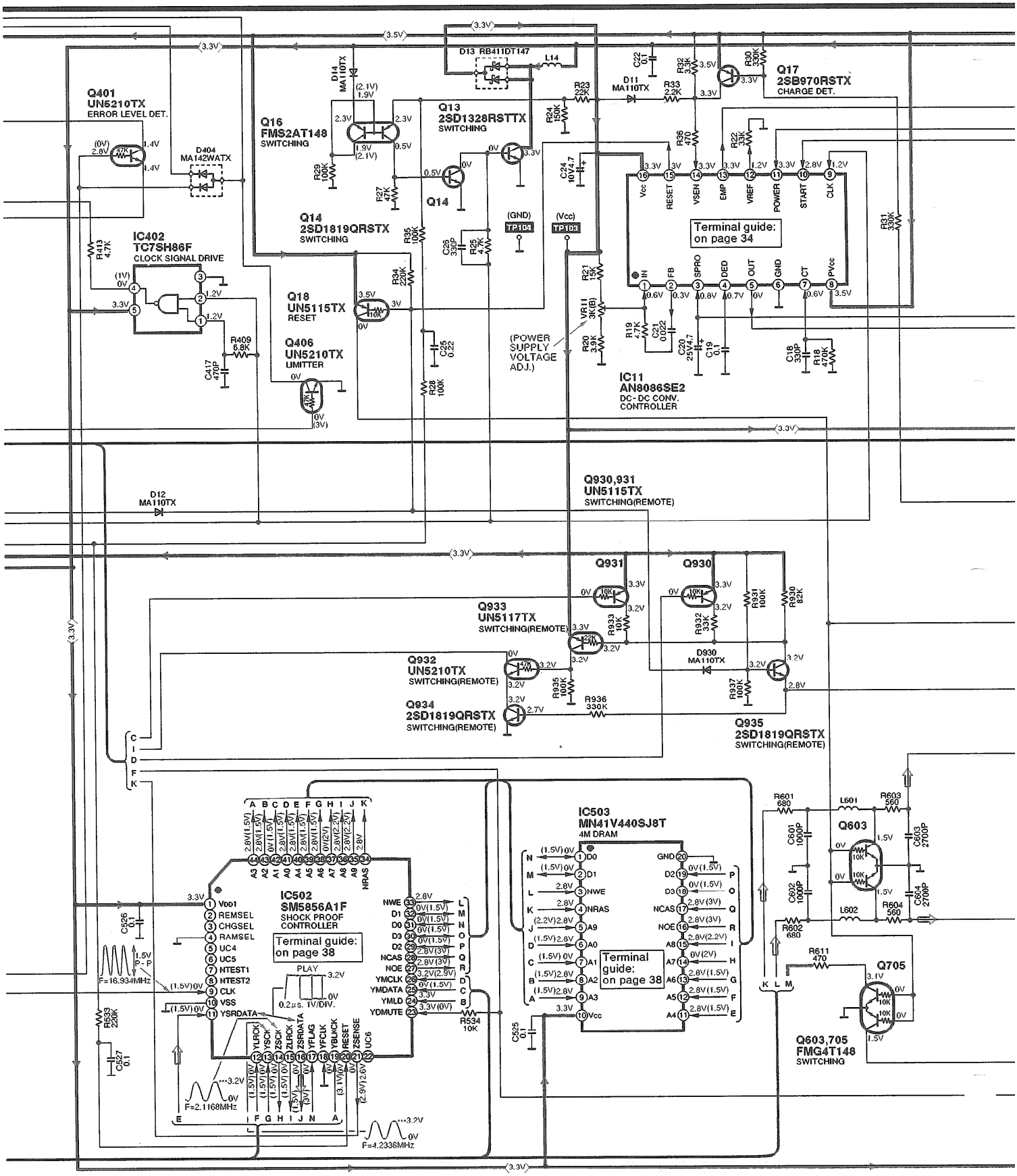
● ⟹ : Audio signal lines.



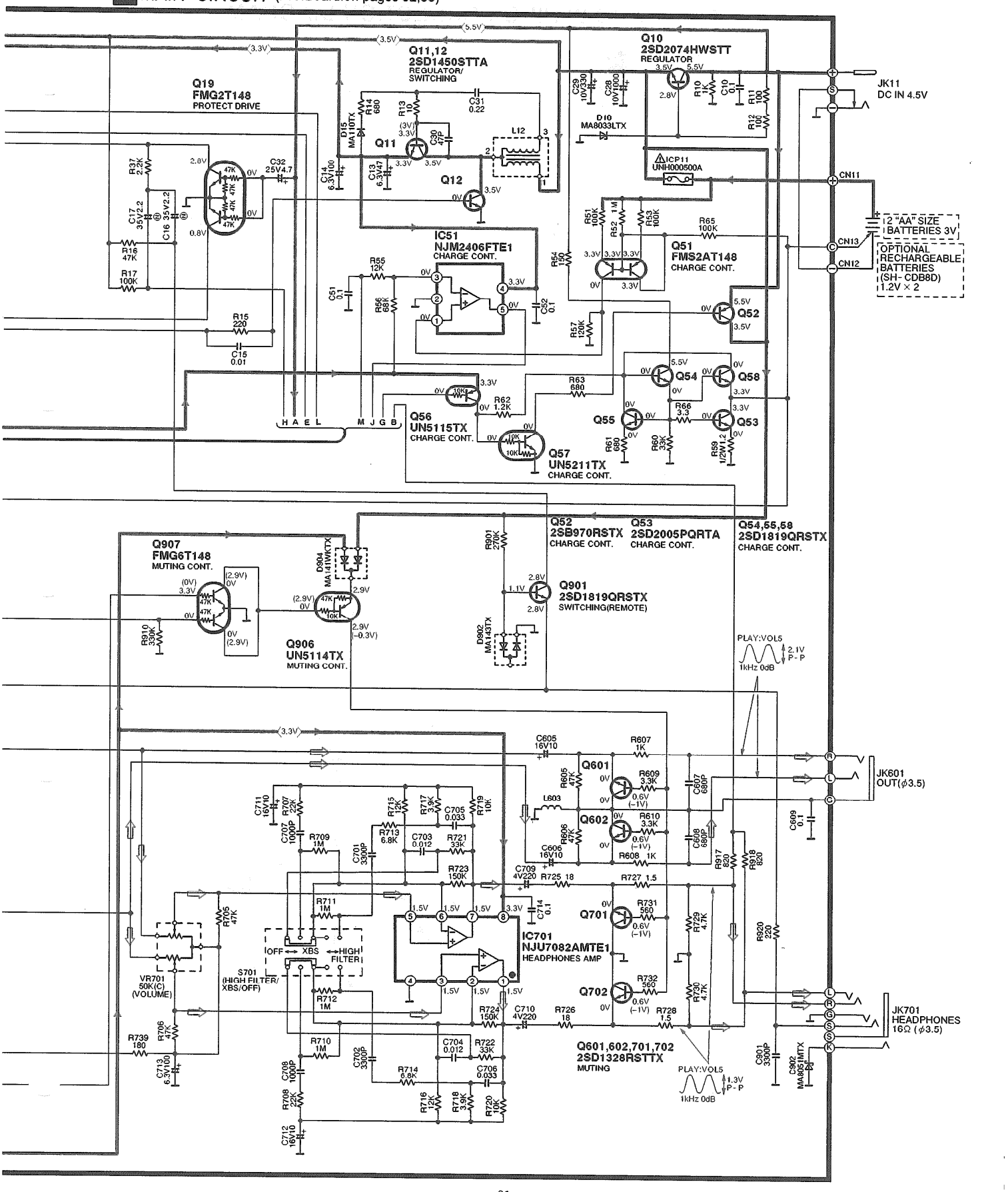
B MAIN CIRCUIT (P.C.Board:on pages 32,33)



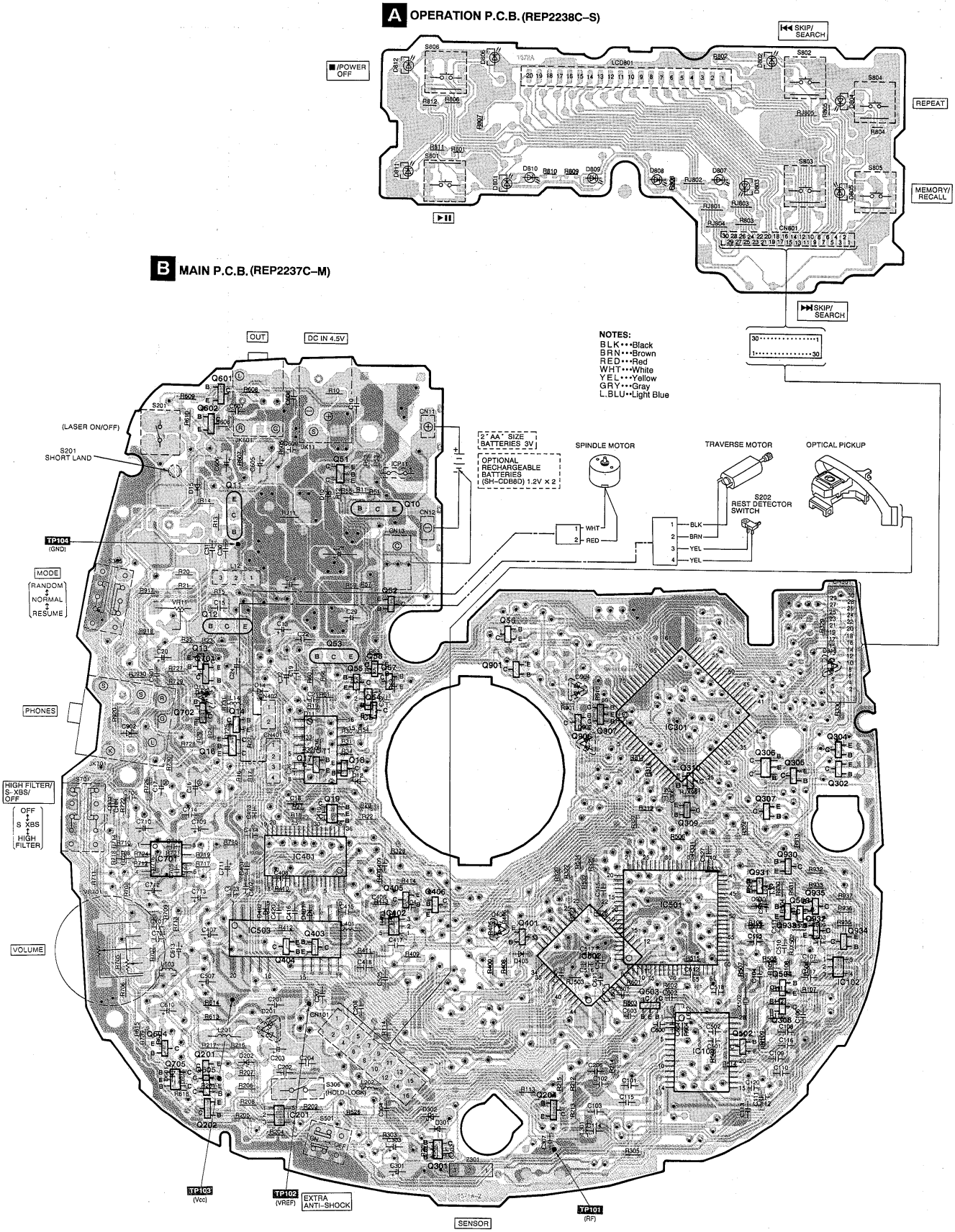
● ⟹ : Audio signal lines.



B MAIN CIRCUIT (P.C.Board:on pages 32,33)



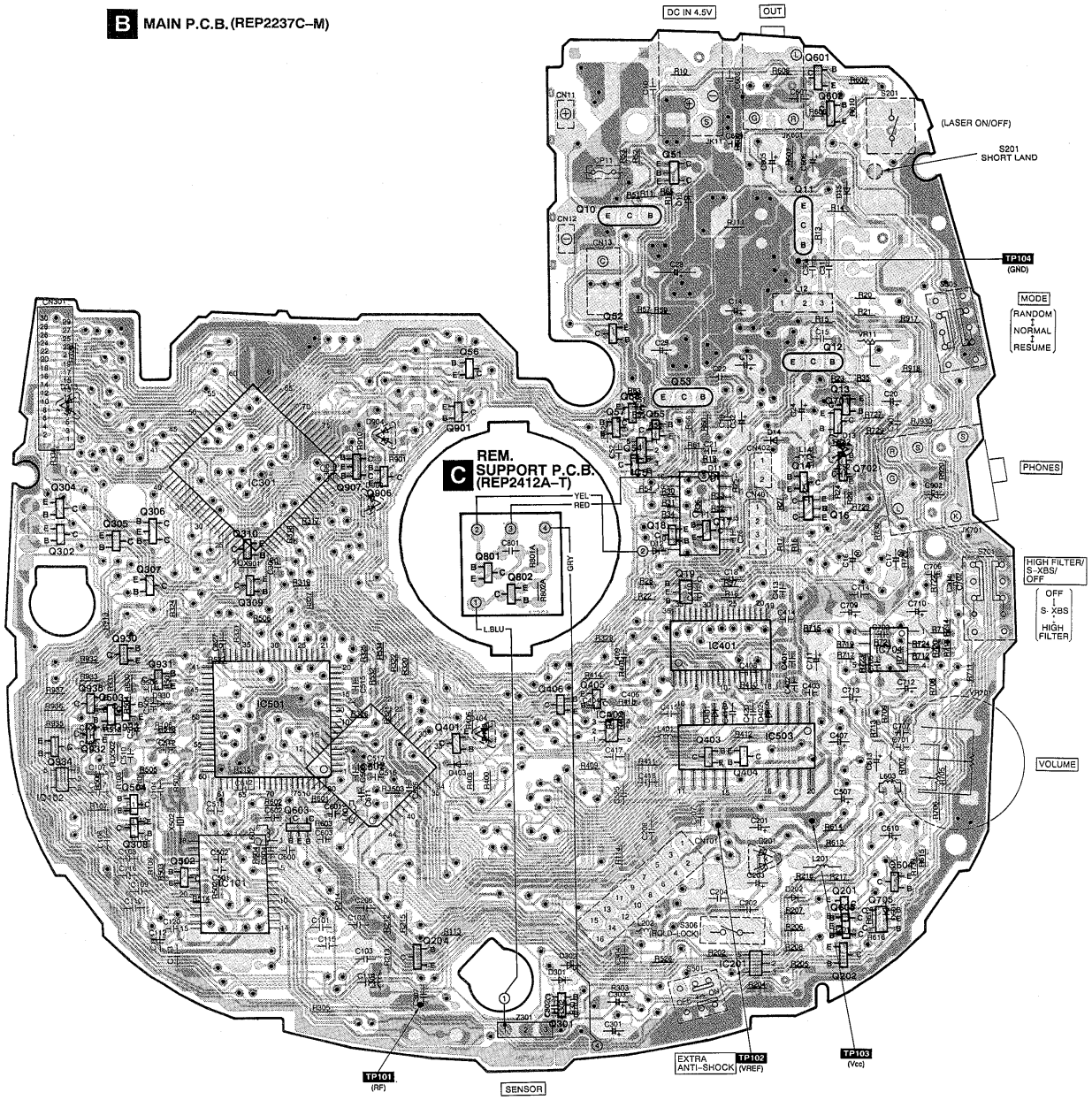
■PRINTED CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



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.

B MAIN P.C.B. (REP2237C–M)



■TERMINAL GUIDE

• IC11 (AN8086SE2) : DC-DC converter controller

Pin No.	Mark	I/O Division	Function
1	IN	I	Error amp input
2	FB	O	Error amp output
3	SPRO	I	Short protect circuit
4	DED	I	Dead time input
5	OUT	O	Switching output
6	GND	—	GND terminal
7	CT	I	Triangular wave oscillator capacitor input
8	PVCC	I	Power supply terminal

Pin No.	Mark	I/O Division	Function
9	CLK	I	Clock signal input (f=88.2kHz)
10	START	I	Start detection input
11	POWER	I	Power ON/OFF detection terminal
12	VREF	O	Reference voltage input
13	EMP	O	Empty signal output
14	VSEN	I	Empty detect terminal
15	RESET	O	Reset signal input
16	VCC	I	Power supply terminal

• IC101 (AN8834SBE1) : Servo amp.

Pin No.	Mark	I/O Division	Function
1	PDA	I	Focus signal input terminal
2	PDB	I	Focus signal input terminal
3	Vcc	I	Power supply terminal
4	LPD	I	Non-inverting laser power input
5	LD	O	Laser power auto control output
6	RF	O	RF summing output terminal
7	RFIN	I	RF (AGC) signal input
8	CAGC	I	AGC detecting capacitor terminal
9	ARF	O	RF (AGC) signal output
10	CSBRT	I	Capacitor connection terminal for OFTR
11	CEA	I	HPF-amp. terminal
12	BDO	O	Dropout detection output
13	LDON	I	Laser ON/OFF control input
14	GND	—	Ground terminal

Pin No.	Mark	I/O Division	Function
15	/RFDET	O	RFDET output terminal
16	CROSS	O	CROSS signal output
17	OFTR	O	OFTR signal output
18	VDET	O	VDET signal output
19	ENV	O	Envelope signal output
20	TEBPF	I	VDET input terminal
21	CCRS	I	Capacitor connection terminal for CROSS
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	PDE	I	Tracking signal input terminal
28	PDF	I	Tracking signal input terminal

• IC301 (SC424690FU) : System control/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 (Not used, open)
8	MDATE	O	Command data signal output
9	MCLK	O	Command clock output
10	MLD	O	Command load signal output
11	TX POWER	—	Voltage control terminal
12	CHARGE	O	Voltage control terminal
13	VLCD3	I	Power supply terminal
14	VLCD2	I	Power supply terminal
15	VLCD1		
16	Vss	—	GND terminal
17	V_{DD}	I	Power supply terminal
18	XOSC1	I	Reset signal input terminal
19	XOSC2	—	Not used, open
20	RESET	O	Reset detect terminal
21	OSC1	I	Main-system clock input
22	OSC2	—	Not used, open
23	WRDRCN/ LCDREM	O	Remote control signal output
24	CHGCMP	I	Voltage control terminal
25	MEMORY	I	Key input terminal (MEMORY/RECALL)
26	REPEAT	I	Key input terminal (REPEAT)
27	SKIPR	I	Key input terminal (SKIP. R)
28	SKIPF	I	Key input terminal (SKIP. F)
29	STOP	I	Key input terminal (■ / POWER OFF)

Pin No.	Mark	I/O Division	Function
30	PLAY	I	Key input terminal (PLAY/PAUSE)
31	HOLD	I	Key input terminal (HOLD)
32	RANDOM	I	Key input selector terminal
33	RESUME	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	Reset detection terminal
37	SHOCKP	I	
38	ACDET	I	Power supply detection signal input
39	SUBQ	I	Sub-code (Q data) input
40	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK) input
41	SQCK	O	Sub-code Q resistor clock output
42	OPEN	I	Disc holder open detection terminal
43	STROBE	O	Voltage control output terminal
44	BUZ	O	Beep control output
45	BLKCK	I	Sub-code block (Q data) clock (75Hz) input
46	WLSRCN/ RSENSE	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	O	LCD segment signal output
60	Vss	—	GND terminal
61 ∫ 63	FP8 ∫ FP10	O	LCD segment signal output
64	FP11	—	Not used, open
65 ∫ 69	FP12 ∫ FP16	O	LCD segment signal output
70 ∫ 79	FP17 ∫ FP26	—	LCD segment signal output (Not used, open)
80	VUP	O	Loop filter control output terminal

• IC401 (MPC17A50VMEL) : Motor drive

Pin No.	Mark	I/O Division	Function
1	CGND	—	GND terminal (control circuit)
2	VLG	I	Power supply terminal (control circuit)
3	INTR	I	Tracking coil control signal input
4	NI2	—	Connected to capacitor filter
5	OP2		
6	INFO	I	Focus coil control signal input
7	NI1	—	Connected to capacitor filter
8	OP1		
9	LIM	I	Limit control level signal input
10	VR	I	Voltage control terminal
11	CLK	I	Clock signal input
12	OP3	—	Connected to capacitor filter
13	NI3		
14	INTV	I	Traverse motor control signal input
15	OP4	—	Connected to capacitor filter
16	NI4		
17	INSP	I	Spindle motor control signal input
18	PHSW	I	CH4 mode input terminal
19	POL	—	CH4 monitor output terminal (Not used, open)

Pin No.	Mark	I/O Division	Function
20	CFL4	—	Connected to capacitor filter
21	CFL3		
22	SP+	O	Spindle motor drive signal output
23	SP−		
24	PVCC	I	(CH3, CH4 output) Power supply terminal
25	TRV−	O	Traverse motor drive signal output
26	PGND	—	GND terminal (CH3, CH4 output)
27	TRV+	O	Traverse motor drive signal output
28	FO+	O	Focus coil drive signal output
29	PGND	—	GND terminal (CH1, CH2 output)
30	FO−	O	Focus coil drive signal output
31	PVCC	I	(CH1, CH2 output) Power supply terminal
32	TR−	O	Tracking coil drive signal output
33	TR+		
34	CFL1	—	Connected to capacitor filter
35	CFL2		
36	VG	I	Power supply terminal (Print driver circuit)

• IC501 (MN662745RPC) : 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	LRCK	O	L/R discriminating signal output
3	SRDATA	O	Serial data signal output
4	$DV_{DD}1$	I	Power supply (digital circuit) terminal
5	DVss1	—	GND (digital circuit) terminal
6	TX	—	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	—	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)
11	FLOCK	—	Optical servo condition (focus) ("L" : lead-in) (Not used, open)
12	TLOCK	—	Optical servo condition (tracking) ("L" : lead-in) (Not used, open)

Pin No.	Mark	I/O Division	Function
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	—	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=1/1.92×ck=88.2kHz)
21	TRV	O	Traverse servo control
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)

Pin No.	Mark	I/O Division	Function
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
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	—	Tracking error shunt output ("H" : dropout)
42	PLAY	—	Play signal ("H" : play)
43	WVEL	—	Double velocity status signal ("H" : double)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	—	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I	VCO loop filter terminal (Not used, connected to $AV_{DD}2$)
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal (2)
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	FS384	O	384fs (16.9344MHz) output
53	PCK	—	PLL extract clock (f=4.3218MHz) (Not used, open)
54	TROF	—	Tracking servo OFF signal (Not used, open)

Pin No.	Mark	I/O Division	Function
55	SUBC	—	Sub-code serial output data (Not used, open)
56	SBCK	—	Sub-code serial input clock (Not used, connected to GND)
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	V_{DD}	I	Power supply terminal
61	TRVSTOP	O	Traverse motor stop control terminal
62	CLDCK	—	Sub-code frame clock signal (f CLDCK=7.35kHz: Normal) (Not used, open)
63	FCLK	—	Crystal frame clock
64	IPFLAG	—	Interpolation flag terminal (Not used, open)
65	FLAG0	—	Flag terminal (Not used, open)
66	CLVS	—	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	—	Sub-code CRC check terminal ("H": OK, "L": NG) (Not used, open)
68	DEMPHA	—	De-emphasis ON signal ("H": ON) (Not used, open)
69	FLAG6	O	Flag terminal
70	SEL	—	Not used, connected to GND
71	TEST	I	Test terminal (Normal : "H")
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	$AV_{DD}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	CSEL	I	Frequency control terminal of crystal oscillator
78	ISRDATA	I	Serial data signal input
79	ILRCK	I	L/R discriminating signal input
80	IBCLK	I	Serial bit clock input

• IC502 (SM5856A1F) : Shock proof controller

Pin No.	Mark	I/O Division	Function
1	$V_{DD}1$	I	Power supply terminal
2	REMSEL	—	Key input terminal (ANTI-SHOCK MEMORY)
3	CHGSEL	—	Key input terminal (Not used, open)
4	RAMSEL	—	Not used, open
5	UC4	—	Not used, open
6	UC5	—	Sound quality/sound field control terminal
7	NTEST1	—	Test terminal (Not used, open)
8	NTEST2		
9	CLK	I	Clock signal input (f=16.9344MHz)
10	V_{SS}	—	GND terminal
11	YSRDATA	I	Serial data input terminal
12	YLRCK	I	L/R clock input terminal
13	YSCK	I	Serial bit clock input terminal
14	ZSCK	O	Serial bit clock output terminal
15	ZLRCK	O	L/R clock output terminal
16	ZSRDATA	O	Serial data output terminal
17	YFLAG	I	RAM over-flow flag terminal
18	YFCLK	I	Crystal frame clock input

Pin No.	Mark	I/O Division	Function
19	YBLKCK	I	Sub-code block clock input terminal
20	RESET	I	Reset input terminal
21	ZSENSE	O	Microcomputer states output terminal
22	UC6	—	Not used, open
23	YDMUTE	I	Mute input terminal
24	YMLD	I	Microcomputer latch clock input terminal
25	YMDATA	I	Microcomputer serial data input terminal
26	YMCLK	I	Microcomputer shift clock input terminal
27	NOE	O	D-RAM output enable terminal
28	NCAS	O	D-RAM column address strobe terminal
29 ∫ 32	D0 ∫ D3	I/O	D-RAM data input/output terminal
33	NWE	O	D-RAM write enable terminal
34	NRAS	O	D-RAM low address strobe terminal
35 ∫ 44	A0 ∫ A9	O	D-RAM address output terminal

• IC503 (MN41V440SJ8T) : 4M DRAM

Pin No.	Mark	I/O Division	Function
1	D0	I/O	Data input/output terminal
2	D1	I/O	Data input/output terminal
3	NWE	I	Write enable terminal
4	NRAS	I	Low address strobe terminal
5	A9	I	Address input terminal
6	A0	I	Address input terminal
7 ∫ 9	A1 ∫ A3	I	Address input terminal

Pin No.	Mark	I/O Division	Function
10	VCC	I	Power supply terminal
11 ∫ 15	A4 ∫ A8	I	Address input terminal
16	NOE	I	Output enable terminal
17	NCAS	I	Column address strobe terminal
18	D3	I	Data input terminal
19	D2	I	Data input terminal
20	GND	—	GND terminal

■REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ 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.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	AN8086SE2	DC-DC CONV. CONTROLLER	
IC51	NJM2406FTE1	CHARGE CONT.	
IC101	AN8834SBE1	SERVO AMP	
IC102	NJM2107FTE1	TRACKING ERROR	
IC201	NJM2406FTE1	LASER POWER CONT.	
IC301	SC424690FU	SYSTEM CONTORL/LCD DRIVE	
IC401	MPC17A50VMEL	MOTOR DRIVE	
IC402	TC7SH86F	CLOCK SIGNAL DRIVE	
IC501	MN662745RPC	SERVO PROCESSOR	
IC502	SM5856A1F	SHOCK PROOF CONTROLLER	
IC503	MN41V440SJ8T	4M DRAM	
IC701	NJU7082AMTE1	HEADPHONES AMP	
		TRANSISTOR(S)	
Q10	2SD2074HWSTT	TRANSISTOR	
Q11, 12	2SD1450STTA	TRANSISTOR	
Q13	2SD1328QRSTX	TRANSISTOR	
Q14	2SD1819QRSTX	TRANSISTOR	
Q16	FMS2AT148	TRANSISTOR	
Q17	2SB970RSTX	TRANSISTOR	
Q18	UN5115TX	TRANSISTOR	
Q19	FMG2T148	TRANSISTOR	
Q51	FMS2AT148	TRANSISTOR	
Q52	2SB970RSTX	TRANSISTOR	
Q53	2SD2005PQRTA	TRANSISTOR	
Q54, 55	2SD1819QRSTX	TRANSISTOR	
Q56	UN5115TX	TRANSISTOR	
Q57	UN5211TX	TRANSISTOR	
Q58	2SD1819QRSTX	TRANSISTOR	
Q201	2SB970RSTX	TRANSISTOR	
Q202	2SB709QRSTX	TRANSISTOR	
Q204	2SB709QRSTX	TRANSISTOR	
Q301	FMW1T98	TRANSISTOR	
Q302	2SD1819QRSTX	TRANSISTOR	
Q304	2SD1819QRSTX	TRANSISTOR	
Q305	UN5211TX	TRANSISTOR	
Q306	FMG8T99	TRANSISTOR	
Q307	2SD1819QRSTX	TRANSISTOR	
Q308	UN5211TX	TRANSISTOR	
Q309, 310	UN5115TX	TRANSISTOR	
Q401	UN5210TX	TRANSISTOR	
Q403	2SD1819QRSTX	TRANSISTOR	
Q404	UN5215TX	TRANSISTOR	
Q405	UN5213TX	TRANSISTOR	
Q406	UN5210TX	TRANSISTOR	
Q502	UN5113TX	TRANSISTOR	
Q503, 504	UN5211TX	TRANSISTOR	
Q601, 602	2SD1328QRSTX	TRANSISTOR	
Q603	FMG4T148	TRANSISTOR	
Q604	2SB709QRSTX	TRANSISTOR	
Q605	FMW1T98	TRANSISTOR	
Q701, 702	2SD1328QRSTX	TRANSISTOR	
Q705	FMG4T148	TRANSISTOR	
Q801	UN5113TX	TRANSISTOR	
Q802	2SD1819QRSTX	TRANSISTOR	
Q901	2SD1819QRSTX	TRANSISTOR	
Q906	UN5114TX	TRANSISTOR	
Q907	FMG6T148	TRANSISTOR	
Q930, 931	UN5115TX	TRANSISTOR	
Q932	UN5210TX	TRANSISTOR	
Q933	UN5117TX	TRANSISTOR	
Q934, 935	2SD1819QRSTX	TRANSISTOR	
		DIODE(S)	
D10	MA8033LTX	DIODE	
D11, 12	MA110TX	DIODE	
D13	RB411DT147	DIODE	
D14, 15	MA110TX	DIODE	
D201	RB411DT147	DIODE	
D202	MA110TX	DIODE	
D301	MA110TX	DIODE	
D302	MA8051MTX	DIODE	
D313	MA141WKTX	DIODE	
D401	MA110TX	DIODE	
D402	MA8082MTX	DIODE	
D403	MA110TX	DIODE	
D404	MA142WATX	DIODE	
D601	MA110TX	DIODE	
D801-806	LNJ308G8LRA	L. E. D.	
D807-810	LNJ310M6URA	L. E. D.	
D811, 812	LNJ308G8LRA	L. E. D.	
D902	MA143TX	DIODE	
D904	MA141WKTX	DIODE	
D930	MA110TX	DIODE	
C902	MA8051MTX	DIODE	
		IC PROTECTOR(S)	
ICP11	UNH000500A	IC PROTECTOR	⚠

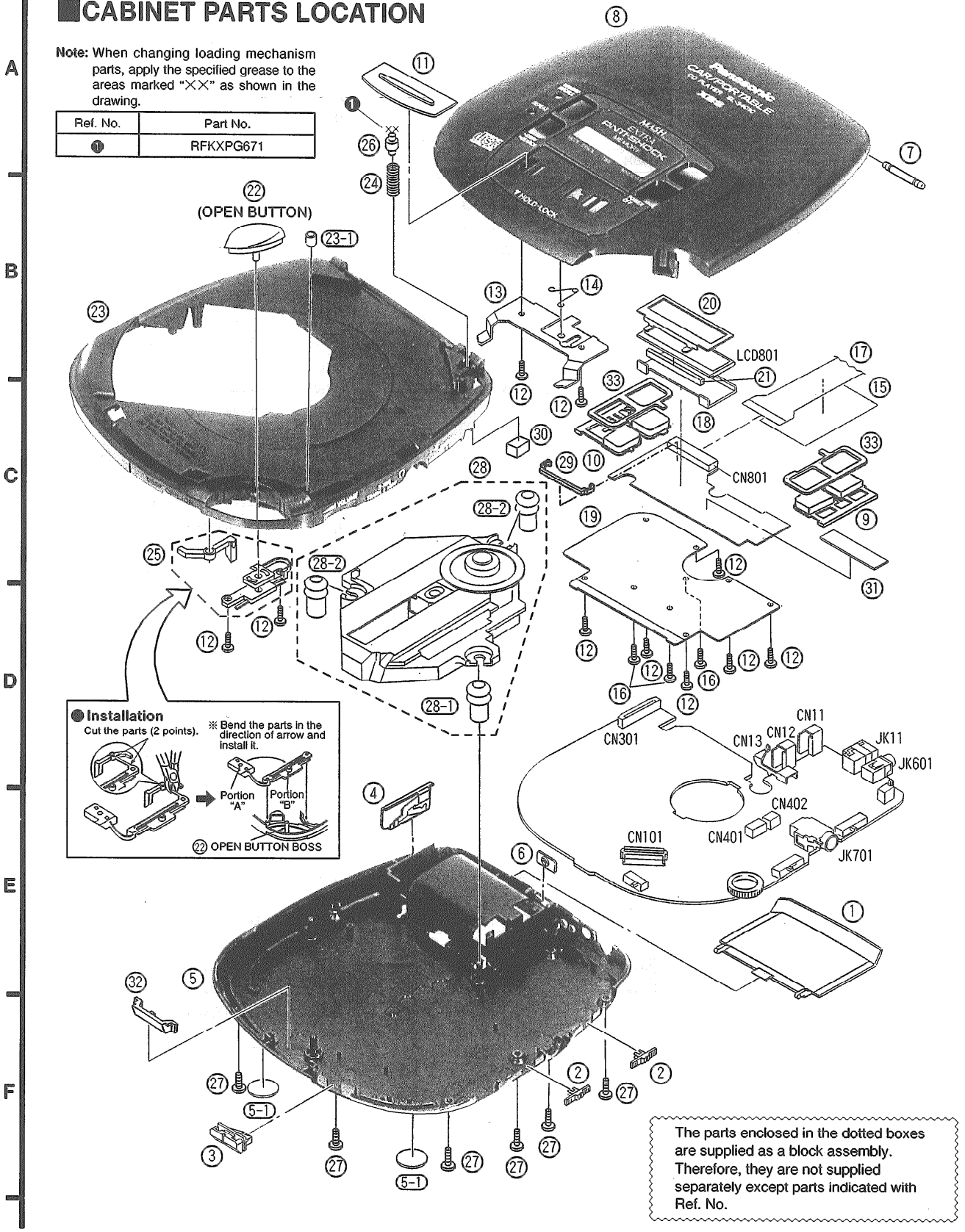
Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)	
VR11	EVNDXAA00B33	POWER SUPPLY VOLTAGE ADJ.	
VR701	EVUT2EA25C54	VOLUME	
		COMPONENT COMBINATION(S)	
Z301	RCDRS-52	REMOTE SENSOR	
		COIL(S)	
L12	RLZ0028T-M	COIL	
L14	RLQU331KT-W	COIL	
L201	RLQB471KT-K	COIL	
L202	ELJPC330KF	COIL	
L301	RLQU331KT-W	COIL	
L401	RLQU331KT-W	COIL	
L601-603	RLBV102V-Y	COIL	
		OSCILLATOR(S)	
X502	RSXZ16M9M03T	OSCILLATOR(16.9344MHz)	
		LCD(S)	
LCD801	RSL5153-L	LCD	
		SWITCH(ES)	
S201	ESE11SV1	LASER ON/OFF	
S202	SSHD1-2	REST DETECTOR	
S305	ESD11H230	MODE(RANDOM/NORMAL/RESUME)	
S306	RSM0006-P	HOLD-LOCK	
S501	ESD11H220	EXTRA ANTI-SHOCK	
S701	ESD11H230	HIGH FILTER/XBS/OFF	
S801	RSG0030-P	PLAY/PAUSE	
S802	RSG0030-P	SKIP/SEARCH(B)	
S803	RSG0030-P	SKIP/SEARCH(F)	
S804	RSG0030-P	REPEAT	
S805	RSG0030-P	MEMORY/RECALL	
S806	RSG0030-P	STOP/POWER OFF	
		CONNECTOR(S)	
CN11	RJC93015-1	BATTERY TERMINAL(+)	
CN12	RJC93015-1	BATTERY TERMINAL(-)	
CN13	RJH5102-1	RECHARGEABLE BATT. TERMINAL	
CN101	RJU035T016-1	SOCKET(16P)	
CN301	RJS1A8830T	CONNECTOR(30P)	
CN401	RJT068W04V	CONNECTOR(4P)	
CN402	RJT068W02V	CONNECTOR(2P)	

Ref. No.	Part No.	Part Name & Description	Remarks
CN801	RJS2A2230T	CONNECTOR(30P)	
		JACK(S)	
JK11	RJJ43K09-C	DC IN JACK	
JK601	RJJD3S5ZB-C	OUT JACK	
JK701	RJJ36T02-C	HEADPHONES JACK	
		CABINET AND CHASSIS	
1	RKK0065-KJ	BATTERY COVER	
2	RGV0145-K	MODE/TRAIN,S-XBS KNOB	
3	RGV0171-H	OPT OUT/X-DSSP KNOB	
4	RJC93020	COMMON BATTERY TERMINAL	
5	RFKJLS600CPK	BOTTOM CABINET ASS'Y	
5-1	RKA0063-K	FOOT	
6	RMA0677	REAR ORNAMENT	
7	RMS0105-1	SHAFT	
8	RFKLLS600CPK	CD COVER ASS'Y	
9	RGU1375-C	OPERATION BUTTON(A)	
10	RGU1376-C	OPERATION BUTTON(B)	
11	RFKNLS400-A	HOLD LOCK KNOB ASS'Y	
12	RHE5119YA	SCREW	
13	RMA0935	HOLD LOCK LEVER	
14	RME0163	HOLD SPRING	
15	RMZ0366	FPC SHEET	
16	RHE5155YA	SCREW	
17	RJB1582A	FFC(30P)	
18	RJF0027	LCD HOLDER	
19	RMA0936	LID COVER	
20	RMA0937	LCD PLATE	
21	RSQ0048	RUBBER	
22	RGU1377-H	OPEN BUTTON	
23	RFKKLS600CPK	INTERMEDIATE CABINET ASS'Y	
23-1	RMG0397-K	CUSHON RUBBER	
24	RMB0390	PUSH SPRING	
25	RML0441	OPEN LEVER	
26	RMS0462	PUSH SHAFT	
27	XTN17+6GFZ	SCREW	
28	RAE0140Z	TRAVERSE DECK	⚠
28-1	SHGD157	FLOATING RUBBER(1)	
28-2	SHGD165	FLOATING RUBBER(2)	
29	RMA0987	EARTH PLATE	
30	RMG0443-K	STOPPER RUBBER	
31	RMZ0365	LCD SHEET	
32	RKW0441-K	FILTER	
33	RMZ0396	SHIELD SHEET	

■CABINET PARTS LOCATION

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

Ref. No.	Part No.
❶	RFKXPG671



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.

■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
		RESISTORS
R10	ERJ6GEYJ102V	1/10W 1K
R11, 12	ERJ6GEYJ101V	1/10W 100
R13	ERJ6GEYJ100	1/10W 10
R14	ERJ6GEYJ681V	1/10W 680
R15	ERJ6GEYJ221V	1/10W 220
R16	ERJ3GEYJ473V	1/16W 47K
R17	ERJ3GEYJ104V	1/16W 100K
R18	ERJ6GEYJ474V	1/10W 470K
R19	ERJ3GEYJ472V	1/16W 4.7K
R20	ERJ6GEYJ392V	1/10W 3.9K
R21	ERJ6GEYJ153V	1/10W 15K
R22	ERJ6GEYJ333V	1/10W 33K
R23	ERJ3GEYJ223V	1/16W 22K
R24	ERJ3GEYJ154V	1/16W 150K
R25	ERJ3GEYJ472V	1/16W 4.7K
R27	ERJ3GEYJ473V	1/16W 47K
R28, 29	ERJ3GEYJ104V	1/16W 100K
R30, 31	ERJ3GEYJ334V	1/16W 330K
R32	ERJ3GEYJ332V	1/16W 3.3K
R33	ERJ3GEYJ222V	1/16W 2.2K
R34	ERJ3GEYJ224V	1/16W 220K
R35	ERJ3GEYJ104V	1/16W 100K
R36	ERJ3GEYJ471V	1/16W 470
R37	ERJ3GEYJ222V	1/16W 2.2K
R51	ERJ3GEYJ104V	1/16W 100K
R52	ERJ3GEYJ105V	1/16W 1M
R53	ERJ3GEYJ104V	1/16W 100K
R54	ERJ6GEYJ151V	1/10W 150
R55	ERJ3GEYJ123V	1/16W 12K
R56	ERJ3GEYJ683V	1/16W 68K
R57	ERJ3GEYJ124V	1/16W 120K
R59	ERJ12YJ1R2H	1/2W 1.2
R60	ERJ6GEYJ333V	1/10W 33K
R61	ERJ6GEYJ681V	1/10W 680
R62	ERJ6GEYJ122V	1/10W 1.2K
R63	ERJ3GEYJ681V	1/16W 680
R65	ERJ3GEYJ104V	1/16W 100K
R66	ERJ6GEYJ3R3V	1/10W 3.3
R105	ERJ6GEYJ333V	1/10W 33K
R106	ERJ6GEYJ124V	1/10W 120K
R107, 108	ERJ6GEYJ103V	1/10W 10K
R109	ERJ6GEYJ223V	1/10W 22K
R110	ERJ6GEYJ124V	1/10W 120K
R111	ERJ6GEYJ102V	1/10W 1K
R112	ERJ6GEYJ103V	1/10W 10K
R113, 114	ERJ6GEYJ330V	1/10W 33
R201	ERJ6GEYJ102V	1/10W 1K
R202	ERJ6GEYJ122V	1/10W 1.2K
R204	ERJ6GEYJ104V	1/10W 100K
R205	ERJ6GEYJ332V	1/10W 3.3K
R206	ERJ6GEYJ333V	1/10W 33K
R207	ERJ6GEYJ473V	1/10W 47K
R208	ERJ6GEYJ563V	1/10W 56K
R212	ERJ6GEYJ333V	1/10W 33K
R213	ERJ6GEYJ103V	1/10W 10K
R214	ERJ6GEYJ822V	1/10W 8.2K
R215	ERJ6GEYJ393V	1/10W 39K
R216, 217	ERJ6GEYJ223V	1/10W 22K
R301	ERJ3GEYJ472V	1/16W 4.7K
R302	ERJ3GEYJ153V	1/16W 15K
R303	ERJ6GEYJ470V	1/10W 47
R305	ERJ6GEYJ102V	1/10W 1K
R317-319	ERJ3GEYJ473V	1/16W 47K
R320-322	ERJ3GEYJ103V	1/16W 10K
R324	ERJ3GEYJ103V	1/16W 10K
R325, 326	ERJ3GEYJ102V	1/16W 1K
R327	ERJ3GEYJ153V	1/16W 15K
R329-331	ERJ6GEYJ472V	1/10W 4.7K
R400	ERJ6GEYJ472V	1/10W 4.7K
R401	ERJ6GEYJ473V	1/10W 47K
R402	ERJ3GEYJ472V	1/16W 4.7K
R403	ERJ3GEYJ223V	1/16W 22K
R405	ERJ6GEYJ222V	1/10W 2.2K
R406	ERJ6GEYJ123V	1/10W 12K
R408	ERJ6GEYJ103V	1/10W 10K
R409	ERJ6GEYJ682V	1/10W 6.8K
R411, 412	ERJ6GEYJ103V	1/10W 10K
R413	ERJ6GEYJ472V	1/10W 4.7K
R414	ERJ6GEYJ473V	1/10W 47K
R501	ERJ3GEYJ683V	1/16W 68K
R502	ERJ3GEYJ223V	1/16W 22K
R503	ERJ3GEYJ473V	1/16W 47K
R504	ERJ3GEYJ474V	1/16W 470K
R505	ERJ6GEYJ471V	1/10W 470
R506	ERJ3GEYJ821V	1/16W 820
R508	ERJ3GEYJ122V	1/16W 1.2K
R512	ERJ6GEYJ471V	1/10W 470
R513	ERJ3GEYJ222V	1/16W 2.2K
R514	ERJ3GEYJ333V	1/16W 33K
R515	ERJ6GEYJ681V	1/10W 680
R526	ERJ6GEYJ102V	1/10W 1K
R532	ERJ3GEYJ472V	1/16W 4.7K
R533	ERJ6GEYJ224V	1/10W 220K
R534	ERJ3GEYJ103V	1/16W 10K
R601, 602	ERJ3GEYJ681V	1/16W 680
R603, 604	MCR03PZHJ561	1/16W 560
R605	ERJ6GEYJ473V	1/10W 47K
R606	ERJ3GEYJ473V	1/16W 47K
R607, 608	ERJ6GEYJ102V	1/10W 1K
R609, 610	ERJ6GEYJ332V	1/10W 3.3K
R611	ERJ6GEYJ471V	1/10W 470
R612	ERJ3GEYJ682V	1/16W 6.8K
R613	ERJ6GEYJ103V	1/10W 10K
R614	ERJ6GEYJ104V	1/10W 100K
R615	ERJ3GEYJ682V	1/16W 6.8K
R616	ERJ3GEYJ222V	1/16W 2.2K
R705, 706	ERJ6GEYJ473V	1/10W 47K
R707, 708	ERJ3GEYJ223V	1/16W 22K
R709	ERJ3GEYJ105V	1/16W 1M
R710, 711	ERJ6GEYJ105	1/10W 1M
R712	ERJ3GEYJ105V	1/16W 1M
R713, 714	ERJ3GEYJ682V	1/16W 6.8K
R715, 716	ERJ3GEYJ123V	1/16W 12K
R717, 718	ERJ3GEYJ392V	1/16W 3.9K
R719, 720	ERJ3GEYJ103V	1/16W 10K
R721	ERJ3GEYJ333V	1/16W 33K
R722	ERJ6GEYJ333V	1/10W 33K
R723, 724	ERJ3GEYJ154V	1/16W 150K
R725, 726	ERJ6GEYJ180V	1/10W 18
R727, 728	ERJ6GEYJ1R5V	1/10W 1.5
R729, 730	ERJ6GEYJ472V	1/10W 4.7K
R731, 732	ERJ6GEYJ561V	1/10W 560
R739	ERJ6GEYJ181V	1/10W 180
R801	ERJ3GEYJ151V	1/16W 150
R801A	ERJ6GEYJ154V	1/10W 150K
R802	ERJ3GEYJ331V	1/16W 330
R802A	ERJ6GEYJ154V	1/10W 150K
R803	ERJ8GEYJ151V	1/8W 150
R804, 805	ERJ3GEYJ331V	1/16W 330
R806	ERJ6GEYJ331V	1/10W 330
R807-810	ERJ3GEYJ560V	1/16W 56
R811, 812	ERJ6GEYJ331V	1/10W 330
R901	ERJ3GEYJ274V	1/16W 270K
R910	ERJ3GEYJ334V	1/16W 330K
R913	ERJ6GEYJ473V	1/10W 47K
R917, 918	ERJ6GEYJ821V	1/10W 820
R920	ERJ6GEYJ221V	1/10W 220
R930	ERJ6GEYJ823	1/10W 82K
R931	ERJ6GEYJ104V	1/10W 100K
R932	ERJ6GEYJ333V	1/10W 33K
R933	ERJ6GEYJ103V	1/10W 10K
R935	ERJ6GEYJ104V	1/10W 100K
R936	ERJ6GEYJ334V	1/10W 330K
R937	ERJ6GEYJ104V	1/10W 100K

Ref. No.	Part No.	Values & Remarks
		CHIP JUMPERS
R328	ERJ6GEY0R00V	CHIP JUMPER
R410	ERJ6GEY0R00V	CHIP JUMPER
R507	ERJ6GEY0R00V	CHIP JUMPER
RJ11	ERJ8GEY0R00V	CHIP JUMPER
RJ503	ERJ3GEY0R00V	CHIP JUMPER
RJ801-805	ERJ8GEY0R00V	CHIP JUMPER
RJ930	ERJ6GEY0R00V	CHIP JUMPER
RJX502	ERJ3GEY0R00V	CHIP JUMPER
RJX901	ERJ3GEY0R00V	CHIP JUMPER
		CAPACITORS
C10	ECUVNE104ZFN	25V 0.1U
C13	RCE0JSL470IX	6.3V 47U
C14	ECEA0JKA101I	6.3V 100U
C15	ECUV1E103KBN	25V 0.01U
C16, 17	ECEA1VKN2R2I	35V 2.2U
C18	ECUV1H331KBN	50V 330P
C19	ECUVNE104KBN	25V 0.1U
C20	ECEA1EKA4R7I	25V 4.7U
C21	ECUV1E223KBV	25V 0.022U
C22	ECUVNE104ZFN	25V 0.1U
C24	RCE1ASC4R7IX	10V 4.7U
C25	ECUVNC224KBN	16V 0.22U
C26	ECUV1H331KBV	50V 330P
C28	RCE1AMT102BV	10V 1000P
C29	ECA1AM331I	10V 330U
C30	ECUV1H470KCN	50V 47P
C31	ECUVNC224KBN	16V 0.22U
C32	ECEA1EKA4R7I	25V 4.7U
C51	ECUV1C104KBV	16V 0.1U
C52	ECUVNC104ZFV	16V 0.1U
C101, 102	ECUVNE104KBN	25V 0.1U
C103	ECUV1E273KBN	25V 0.027U
C104	ECUV1E223KBN	25V 0.022U
C105	ECUV1C333KBN	16V 0.033U
C106	ECUV1H222KBN	50V 2200P
C107	ECUV1H681KBN	50V 680P
C108	ECUV1C473KBN	16V 0.047U
C109	ECUV1C333KBN	16V 0.033U
C110	ECUV1E223KBN	25V 0.022U
C111	ECUV1E273KBN	25V 0.027U
C112	ECUV1H331KBV	50V 330P
C113, 114	ECUVNE104ZFN	25V 0.1U
C115	ECUV1E223KBN	25V 0.022U
C116	ECUVNE104KBN	25V 0.1U
C117	ECUV1H272KBN	50V 2700P
C120	ECUV1H331KBV	50V 330P
C201	RCE0JSL470IX	6.3V 47U

Ref. No.	Part No.	Values & Remarks
C202	ECUVNC224KBN	16V 0.22U
C203	ECEA1HKA2R2I	50V 2.2U
C204	ECUV1H680KCN	50V 68P
C206	ECUV1E103KBN	25V 0.01U
C207, 208	ECUV1H102KBN	50V 1000P
C301	RCE0JKA220IG	6.3V 22U
C302	ECUVNC104ZFV	16V 0.1U
C303	RCST0JY475LE	6.3V 4.7U
C304, 305	ECUVNE104ZFN	25V 0.1U
C306	ECUVNC105ZFN	16V 1U
C307	ECUVNE104ZFN	25V 0.1U
C401-403	ECUV1H471KBV	50V 470P
C404	ECUVNC105ZFN	16V 1U
C406	ECUV1H151JCV	50V 150P
C407	ECEA1CKA100I	16V 10U
C408	ECUVNC105ZFN	16V 1U
C409	ECUV1H151JCV	50V 150P
C410	ECUV1H471KBV	50V 470P
C413, 414	ECUV1H471KBV	50V 470P
C415	ECUVNE104ZFN	25V 0.1U
C416	ECUVNC105ZFN	16V 1U
C417	ECUV1H471KBN	50V 470P
C418	ECUV1H331KBN	50V 330P
C420	ECUVNC105ZFN	16V 1U
C501, 502	ECUV1H150JCV	50V 15P
C503	ECUV1H561KBV	50V 560P
C504	ECUVNC473KBV	16V 0.047U
C505	ECUV1E223KBV	25V 0.022U
C507	ECEA0GKA221	4V 220U
C508	ECUVNC104ZFV	16V 0.1U
C509	ECUV1H470KCV	50V 47P
C510, 511	ECUVNC474KBN	16V 0.47U
C512	ECUV1E103KBV	25V 0.01U
C515	ECUV1H332KBV	50V 3300P
C516, 517	ECUVNC104ZFV	16V 0.1U
C518	ECUV1E103KBV	25V 0.01U
C525	ECUVNE104ZFN	25V 0.1U
C526	ECUVNC104ZFV	16V 0.1U
C527	ECUVNE104ZFN	25V 0.1U
C600	ECUVNC104ZFV	16V 0.1U
C601, 602	ECUV1H102KBV	50V 1000P
C603, 604	ECUV1H272KBV	50V 2700P
C605, 606	ECEA1CPK100I	16V 10U
C607, 608	ECUV1H681KBN	50V 680P
C609	ECUVNC104ZFV	16V 0.1U
C610	ECEA0GKA221	4V 220U
C611	ECUVNC104ZFV	16V 0.1U
C612	ECUVNE104ZFN	25V 0.1U
C613	ECEA1CKA220I	16V 22U
C701, 702	ECUV1H332KBV	50V 3300P
C703	ECUV1E123KBV	25V 0.012U
C704	ECUV1E123KBN	25V 0.012U

Ref. No.	Part No.	Values & Remarks
C705, 706	ECUV1C333KBV	16V 0.033U
C707	ECUV1H102KBV	50V 1000P
C708	ECUV1H102KBN	50V 1000P
C709, 710	ECEA0GPK221I	4V 220U
C711, 712	ECEA1CPK100I	16V 10U
C713	ECEA0JPK101I	6.3V 100U
C714	ECUVNE104ZFN	25V 0.1U
C801	ECUVNC474KBN	16V 0.47U
C901	ECUV1H332KBN	50V 3300P

REPLACEMENT PARTS LIST

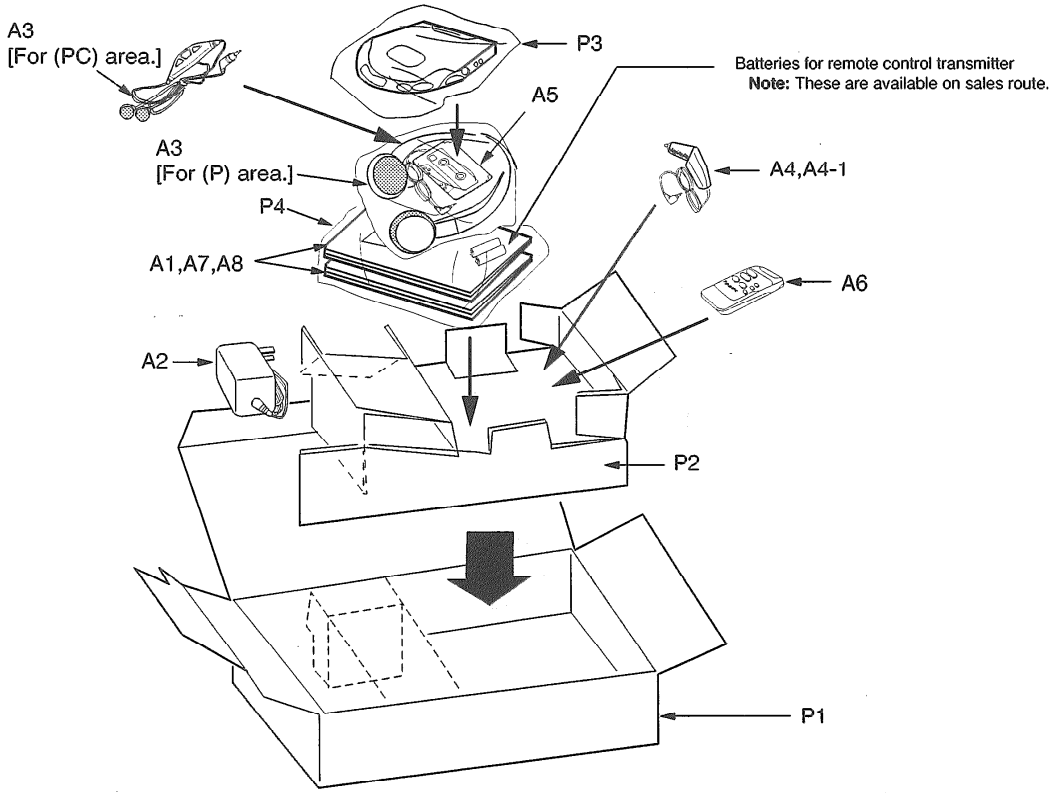
Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be 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 2.

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL	
P1	RPK0757	PACKING CASE	(P)
P1	RPK0798	PACKING CASE	(PC)
P2	RPQ0593	PAD	
P3	RPF0111	PROTECTION BAG(UNIT)	
P4	RPF0046	PROTECTION BAG(F.B.)	
		ACCESSORIES	
A1	RFKSLS600CPK	INSTRUCTION MANUAL ASS'Y	(P)
A1	RFKSLS600CPC	INSTRUCTION MANUAL ASS'Y	(PC)
A2	RFEA403C-S	AC ADAPTOR	⚠
A3	RPHT103DPYS1	STEREO HEADPHONES	(P)
A3	RFEV317P-KS	STEREO EARPHONES	(PC)
A4	SH-CDC2PPY	CAR ADAPTOR	⚠
A4-1	XBA2C05TB0	FUSE, 500mA(IN CAR ADAPTOR)	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
A5	SH-CDM8ASY-K	CAR STEREO CASSETTE ADAPTOR	
A6	EURNTR1026P	REMOTE CONTORL	
A7	RQA0113	WARRANTY CARD	(P)
A7	SQX7185	WARRANTY CARD	(PC)
A8	RQX9028ZD	SERVICENTER LIST	(P)
A8	SQX9131	SERVICENTER LIST	(PC)
A9 *	RKB205ZA-0	EAR PADS	(PC)
		<GREASE OR JIG/TOOL>	
		TEST DISC	
SA1	SZZP1054C	PLAYABILITY TEST DISC	
SA2	SZZP1056C	UNEVEN TEST DISC	
		GREASE	
SA3	RFKXPG671	MOLYCOAT GREASE PG671	

*This item is not attached merchandise, but it is supplied as a replacement part.

PACKAGING



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