

Service Manual

Portable CD Player

COMPACT
disc
DIGITAL AUDIO
DIGITAL
MASH
 multi-stage noise shaping

SL-XP600

※ • MASH is a trademark of NTT.

Colour

(K)...Black Type


Area

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

TRAVERSE DECK: RAE0140Z MECHANISM SERIES

SPECIFICATIONS

Audio

No. of channels: 2 channels (left and right, stereo)
Output voltage: 0.6 V (50 kΩ) ϕ 3.5 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 ϕ 3.5
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 flat 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 minute

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

General

Power requirement:

AC; with an included Panasonic AC adaptor
 RFEA406B-1W (EB)
 RFEA401E-2S (EG)
 RFEA403Z-S (GC)
 RFEA403A-S (GN)
 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 included Panasonic Rechargeable Batteries [RP-BP60EYS1 (EB, EG)/RP-BP60SYS2 (GC, GN)]×2
 Car Battery; with an optional Panasonic car adaptor (SH-CDC9)
 DC 4.5 V $\diamond$ $\ominus$ $\diamond$

DC IN:

Operational temperature range:

0°C—40°C (32°F—104°F)

Rechargeable temperature range:

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	5.5 W/5.7 W

When recharging the batteries:

Approx. 7.7 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.

Technics®

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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: 780 nm

Maximum output radiation power from pickup: 100 μ W/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 Laserdioden. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

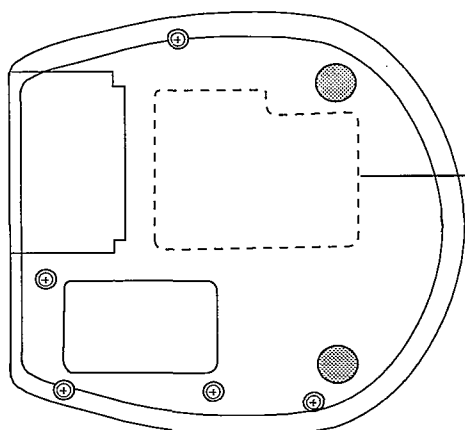
Wellenlänge: 780 nm

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

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

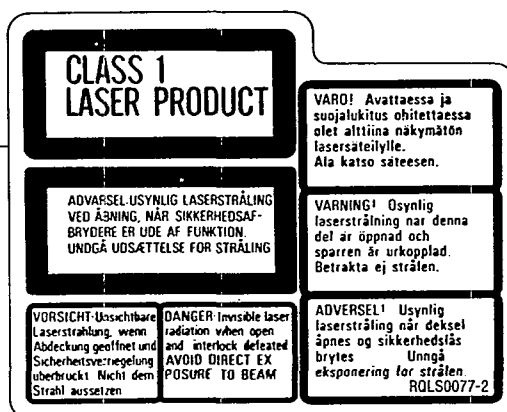
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdioden gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.

ADVARSEL: I dette a apparat anvendes laser.

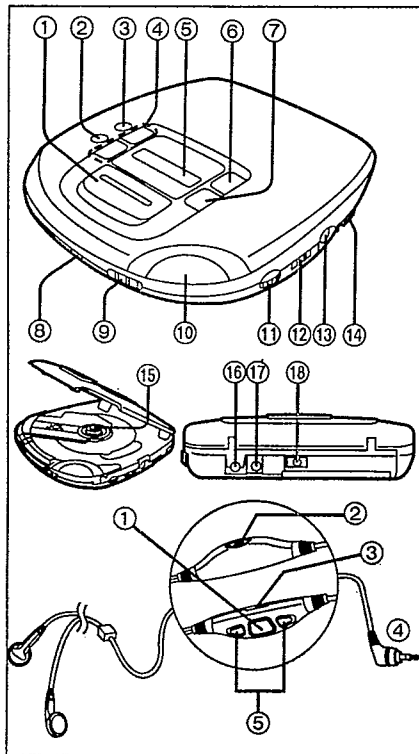


(Bottom side)

RQLS0077-2



LOCATION OF CONTROLS



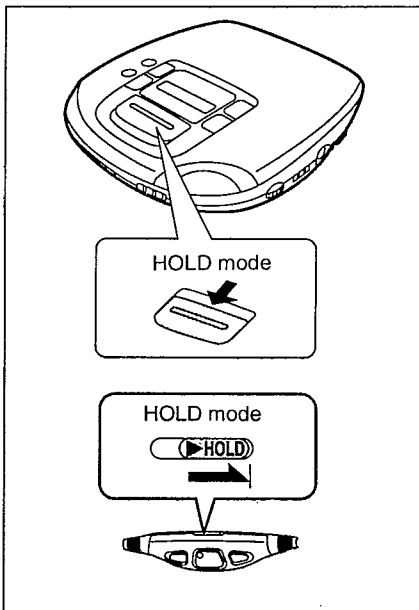
Portable CD Player

- 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 (▶ II)
- 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 ϕ 3.5
- 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

Stereo earphones

- ① Play/stop/off button
- ② Volume control (VOLUME)
- ③ Hold switch (HOLD)
- ④ Plug
- ⑤ Skip/search buttons (◀, ▶)

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:

(Available only from the unit)

The disc lid is opened accidentally during play.

To use the accidental operation prevention function

Both the unit and stereo earphones with remote controller have a HOLD-LOCK switch and a HOLD switch, each of them works individually.

[Using the unit]

Set HOLD-LOCK to the HOLD position.

[Using the stereo earphones with remote controller]

Set HOLD 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.

ACCESSORIES

- AC adaptor 1 pc.
(RFEA406B-1W [for (EB) area])
(RFEA401E-2S [for (EG) area])
(RFEA403Z-S [for (GC) area])
(RFEA403A-S [for (GN) area])
- Stereo earphones with remote controller 1 pc.
(RFEV133A-KS)

- Rechargeable Ni-Cd batteries 2 pcs.
(RP-BP60EYS1 [for (EB, EG) areas])
(RP-BP60SYS2 [for (GC, GN) areas])
- Battery carrying case 1 pc.
(RFKNLS370-K)
- Wireless remote controller 1 pc.
(RAK-SL923WK)

- Stereo connection cable 1 pc.
(RJL2P001X10 [for (EB, EG) areas])
- Power plug adaptor 1 pc.
(SJP5213-2 [for (GC) area])
- Dry cell batteries for wireless remote controller 2 pcs.
(R03UPE/2ST [for (EB, EG) areas])
(R03NP/2ST [for (GC, GN) areas])

Note: These are available on sale route.

POWER SUPPLY PREPARATIONS

Refer to the specifications for the duration of the play time provided when rechargeable or dry cell batteries are used.

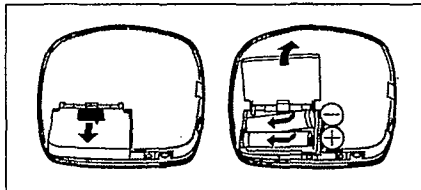
Using rechargeable batteries

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

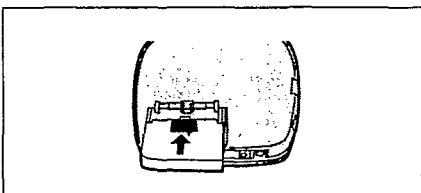
Recharging procedure

1 Place the rechargeable batteries inside the unit.

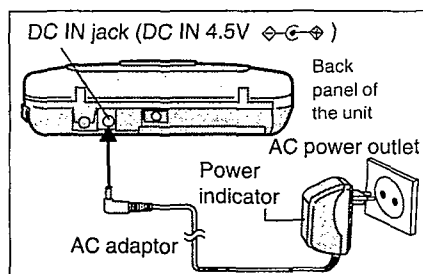
(No batteries other than RP-BP60/SH-CDB8D can be recharged.)



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



2 Connect the AC adaptor.



The power indicator is provided only for United Kingdom.

Note

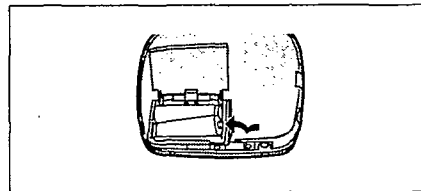
The configuration of the AC adaptor differs according to the area.

- When charging is commenced, the recharging indicator "CH" flashes on the display panel.
- It takes about one and a half hours to 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.
- 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 LR6 (UM-3) type 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.

Notes

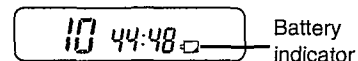
- The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

Using the car adaptor (not included)

Be sure to obtain the car adaptor (SH-CDC9), available as an optional accessory.

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.)

SEQUENTIAL PLAY

- 1 Release the hold mode.
- 2 Press OPEN to open the lid, and insert the disc.
Label must face upward.
Press the area near the center hole of the disc until it clicks into position.
- 3 Set MODE to NORMAL.
Close the lid.
- 4 Connect the stereo earphones with remote controller to the jack.
(Plug in firmly)
- 5 Press ►||. Play now starts.
Track number in play
Elapsed playing time of each track
- 6 Adjust the volume level.
(If the unit has been connected to the car audio system, then adjust the volume level on the system.)

Play stops automatically when all the tracks have been played.

Operation	Button	Display
Pause: Press during play/press again to resume play	►	5 2:16
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	►►: Forward direction ◄◄: Backward direction	—

For your reference:

Backlight

The backlight comes on to illuminate the display panel when the unit is used with the AC adaptor or a car adaptor (not included). The backlight will also come to illuminate the display panel for about 5 seconds if any function button (except OPEN) is pressed when the HOLD mode has been released and the unit is being operated with its batteries.

"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 ►|| is pressed.

"OPEN" display

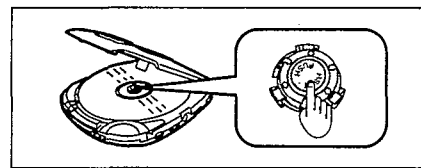
This appears for about 10 minutes after the lid is opened. (It does not appear when the unit is turned off.)

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.

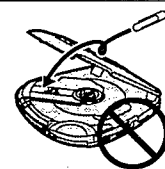
Removing the disc

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



Note

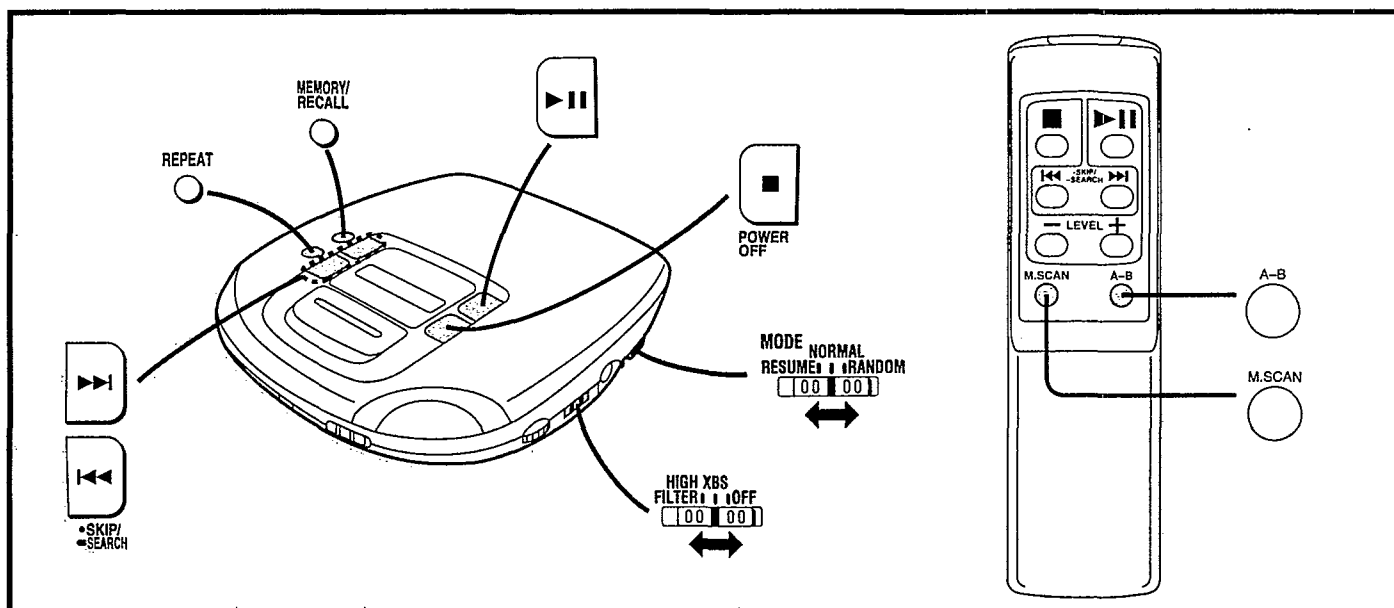
Do not put anything inside the unit.



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.

OTHER PLAY METHODS



Skip play

Preparation:

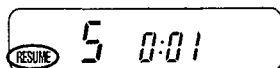
Set the unit to the stop mode. (See page 5).

- 1 Set MODE to NORMAL.
- 2 Press **•SKIP/SEARCH** to select the desired track number.
- 3 Press **▶ II**.

The tracks are played in sequence starting with the selected track until the last track, after which play is automatically stopped.

Resume play

Set MODE to RESUME.



Play can be resumed from the start of the track which was playing when the stop mode was last selected or when the power was last turned off.

This is useful when playing discs inside a car.

To cancel the resume mode

Set MODE to NORMAL.

For your reference:

If MODE is set to RESUME while the unit is turned off, the all repeat function is automatically activated when play is started.

Notes

- If play is stopped near the end of a track, it may be resumed from the next track.
- When a track is being played, if the unit is turned off and another disc is inserted, the position of the last track played is still in the memory, and play will start at the same position among the tracks on the newly inserted disc.

Program play

Up to 24 tracks can be programmed.

Preparation:

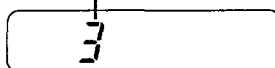
Set the unit to the stop mode. (See page 5).

- 1 Set MODE to NORMAL.
- 2 Press **•SKIP/SEARCH** to select the desired track number.

For example:

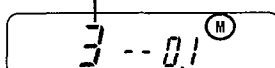
To select track 3, press **▶▶** 3 times.

Track number



- 3 Press **MEMORY/RECALL** to store the number in the memory.

Track number



Program order

- 4 Repeat steps 2 and 3 to program all the desired tracks.
- 5 Press **▶ II**.

To program the same track repeatedly

Press **MEMORY/RECALL** repeatedly after step 3.

When "f" appears

No more tracks can be programmed.

To check what has been programmed

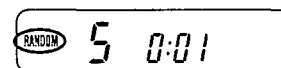
Press **MEMORY/RECALL** during play. (The display shows the programmed track numbers in the sequence you have entered.)

To cancel all the programming

Press **■/POWER OFF**.

Random play

- 1 Set MODE to RANDOM.
- 2 Press **▶ II**.



To cancel the random mode

Set MODE to NORMAL.

For your reference:

The first track to be played can be changed by pressing **▶▶** in the stop mode. (All the tracks are played regardless of the track first played.)

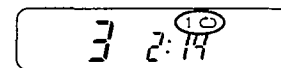
Note

Program play is not possible in the RANDOM mode.

Repeat function

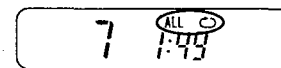
To repeat one track

Press **REPEAT** once in the stop mode or during play.



To repeat all the tracks

Press **REPEAT** twice in the stop mode or during play.



[In the program play mode, only all the programmed tracks will be repeated. ("ALL" will not be appeared.)]

To cancel the repeat function

Press **REPEAT** once in the all repeat mode.

To change the tone quality

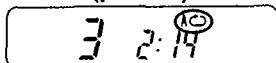
(Available except when using the OUT jack.)

HIGH FILTER: For a more dynamic and mellow sound
XBS: For extra bass sound
OFF: To cancel the HIGH FILTER, XBS mode

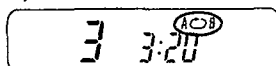
To repeat a particular section (A-B repeat)

(Available only from the wireless remote controller)

- 1 Press A-B during play at the point where repeat play is to be started (point A).



- 2 Press A-B at the point where repeat play is to be ended (point B).



To cancel the A-B repeat

Normal play is restored when A-B is pressed again.

Note

A-B repeat play is not possible during program play or random play.

Music scan play

(Available only from the wireless remote controller)

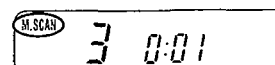
Allows you to listen to the beginning portion (intro) of the tracks of a CD for 15 seconds each, in order.

This is useful when playing discs inside a car.

Preparation:

Set the unit to the stop mode. (See page 4.)

Press M.SCAN.



After the beginning portion (15 seconds) of every tracks has been played, normal playback begins starting with the first track.

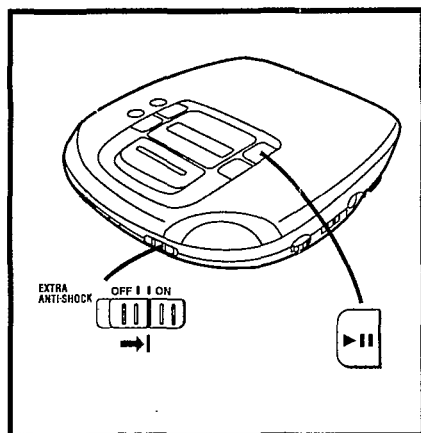
To return to normal playback during intro playback

During playback of the intro of the desired track, press ►II.

(The unit returns to normal playback.)

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.

Notes

- The 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.

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).
	Unit sustains continuous shocks.	Sound is interrupted (no more data is stored).

Listening to sound with the unit connected to an audio system

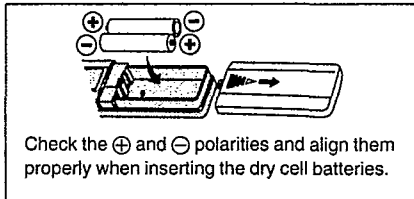
The extra anti-shock function incorporates digital signal compression technology. When listening to sound with the unit connected to an audio system at home, it is recommended that the extra anti-shock switch be set to the OFF position.

■ USING THE WIRELESS REMOTE CONTROLLER

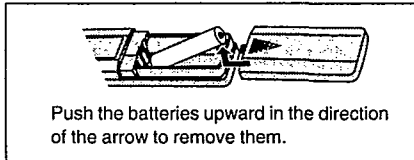
The wireless remote controller can be operated regardless of the hold mode of the unit.

Preparation:

Insert the dry cell batteries into the wireless remote controller.



Removing the batteries



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 ► II on the unit and then use the remote controller. (The unit cannot be operated by the remote controller while the unit is turned off.)

Initiates play/establishes pause mode when pressed again.	► II	Point the transmitter on the remote controller at the remote sensor on the unit. 30° 30° VOLUME
Stops play/turns the unit off when kept depressed.	■	
Skips tracks (tap). Rapidly searches forward or backward during play (keep depressed).	⏮ -SKIP/SEARCH- ⏭	
Adjust volume level of speaker and stereo earphones.	LEVEL	
• The level can be adjusted from 0 dB to -21 dB. • The 0 dB level is restored when the unit is turned off.	— LEVEL +	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.)
Listen to the beginning portion (intro) of each track in order (Music scan).	M-SCAN	
Repeats the section to be heard (A-B repeat).	A-B	

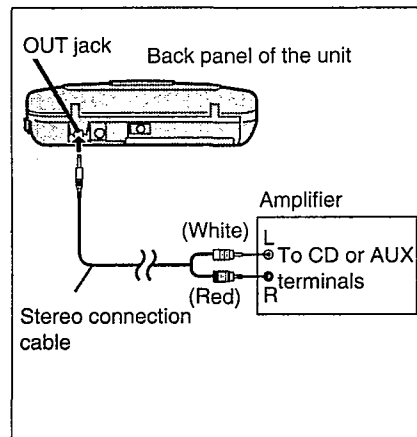
■ USING THE UNIT WITH OPTIONAL ACCESSORIES

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

Items to be purchased

For connection to the car audio system:
Car stereo cassette adaptor (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 or car mounting kit.

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

CAUTIONS

AC adaptor

- 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.

Unit

No altering or remodeling

This can cause malfunctioning.

No dropping or strong impacts

This may damage the unit.

Locations to be avoided

Avoid using the unit in the following locations since they can cause malfunctioning.

1. Bathrooms and other moisture-prone places
2. Warehouses and other dusty places
3. Very hot places near heating appliances, etc.

Do not leave the unit exposed to direct sunlight for long periods of time

This may deform or discolor the cabinet and may also cause malfunctioning.

Rechargeable batteries

- Only the RP-BP60 (SH-CDB8D) batteries can be recharged.
- If the power delivered by the batteries lasts for a very short time after recharging, it means that the batteries' service life is over. Do not use them any more.
- Recharging already charged batteries will shorten their service life.
- When recharging batteries for the first time or when they have not been used for a long period of time, the play time may be shorter than usual. In a case like this, repeatedly recharge and discharge the batteries. This will restore them to their regular state.
- Do not allow any metal objects to touch the terminals of rechargeable batteries since this may cause short-circuiting which is dangerous.

Dry cell batteries/rechargeable batteries

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

- Align the ⊕ and ⊖ 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.

Carrying dry cell batteries/rechargeable batteries around

When putting dry cell or rechargeable batteries in a pocket or bag, ensure that no other metal objects such as a necklace are placed together with them. Contact with metal may cause short-circuiting which, in turn, may cause a fire.

Be absolutely sure to carry the rechargeable batteries in the battery carrying case.

When driving a car

In the interest of traffic safety, do not operate the unit while driving.

Precautions for Listening with the Headphones

- Do not play your headset at a high volume. Hearing experts advise against continuous extended play.
- If you experience a ringing in your ears, reduce volume or discontinue use.
- Do not use while operating a motorized vehicle. It may create a traffic hazard and is illegal in many areas.
- You should use extreme caution or temporarily discontinue use in potentially hazardous situations.
- Even if your headset is an open-air type designed to let you hear outside sounds, don't turn up the volume so high that you can't hear what's around you.

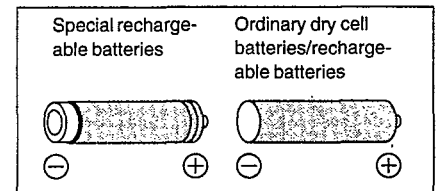
When purchasing rechargeable batteries

As a safety precaution, the portable CD players made by our company 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: SH-CDB8D (set of 2)

For details, check with your dealer.



[For (EB, EG) areas]

Notice about the rechargeable battery

The battery is designated recyclable. Please follow your local recycling regulations.

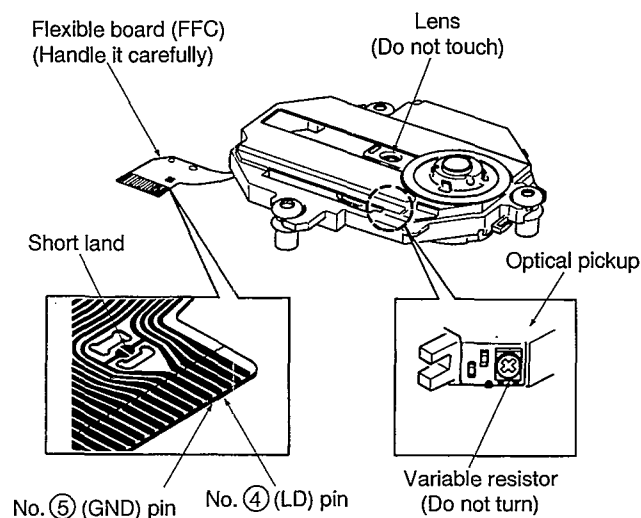
HANDLING PRECAUTIONS FOR TRAVERSE DECK

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.

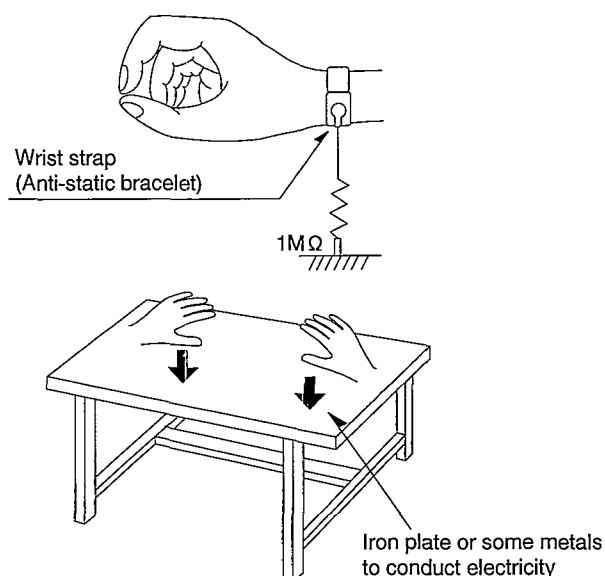


● Grounding for electrostatic breakdown prevention

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.

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 main P.C.B.

 a

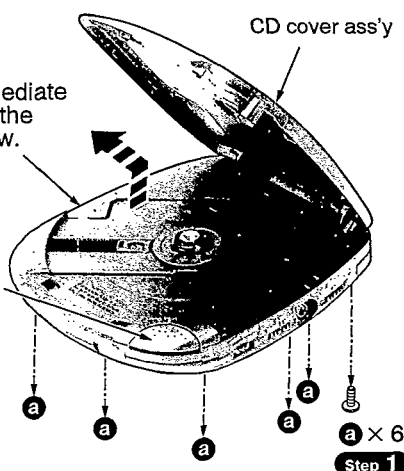
[XTN17+6GFZ]

Step 3

Move the intermediate cabinet ass'y in the direction of arrow.

Step 2

Pressing the OPEN button, open the CD cover ass'y.

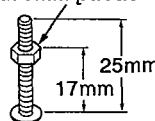


Step 1

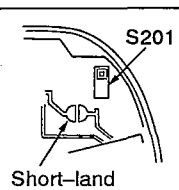
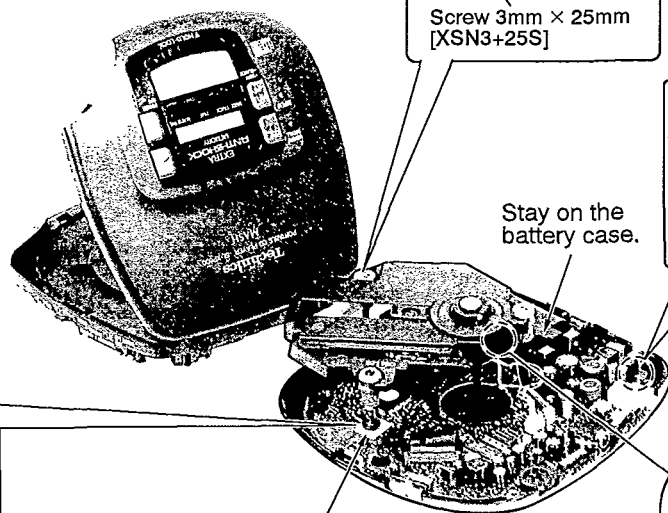
NOTE

- After checking, unsolder the short land to open circuit.
- The tip of screw must not protrude above the floating rubber. (The protruded screw may be damaged the test disc.)
- When the screw head sits on the P.C.B., insulate them with insulation material or etc.

Nut 3mm [XNG3ES]



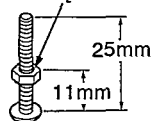
Screw 3mm x 25mm [XSN3+25S]



Step 6

Short-circuit the land by soldering.

Nut 3mm [XNG3ES]



Screw 3mm x 25mm [XSN3+25S]

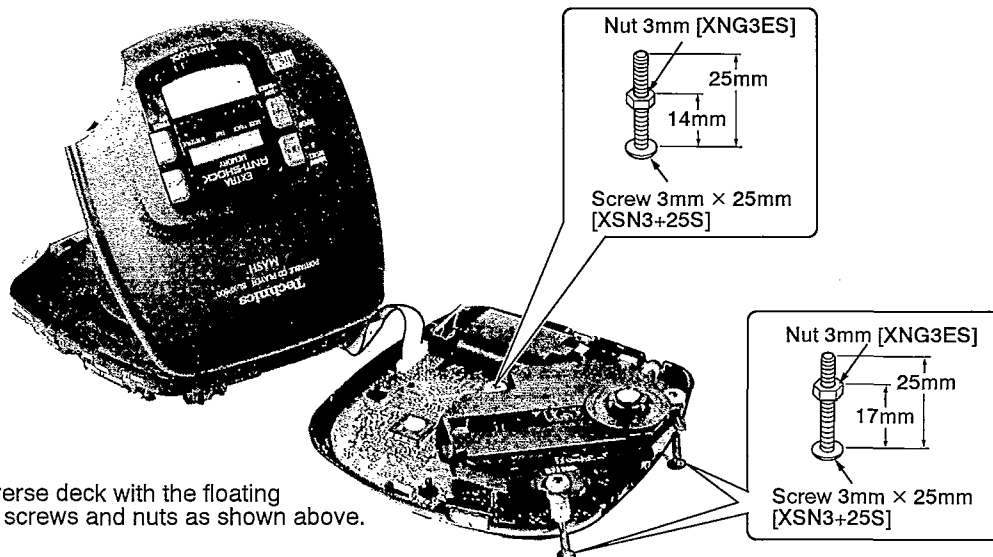
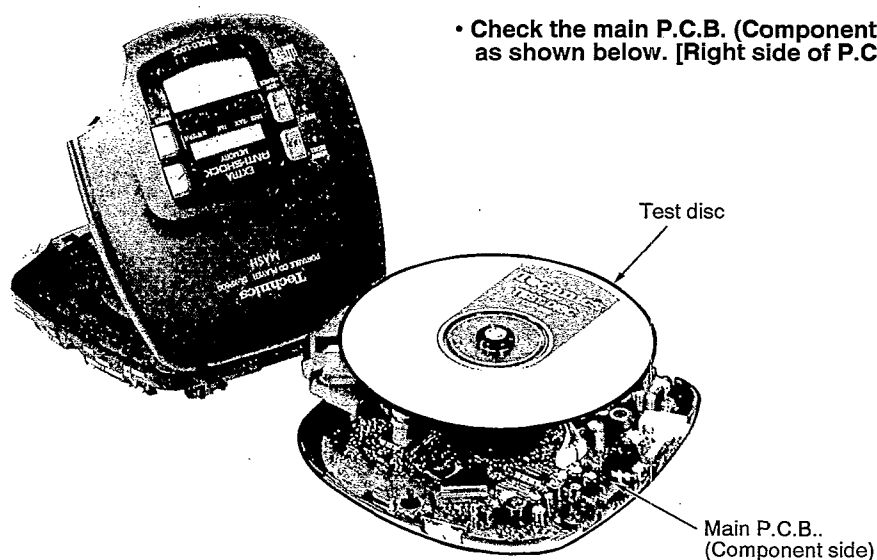
Step 5

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

Step 4

Remove the lead wires from the clasper.

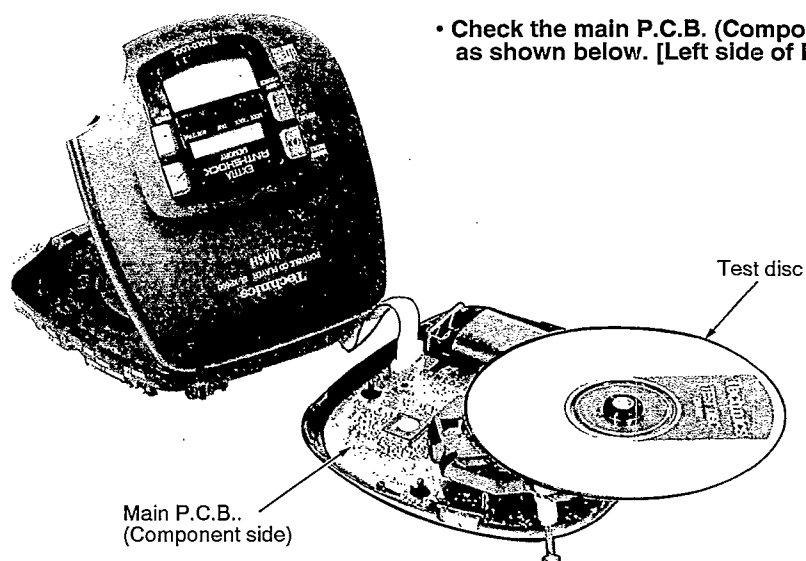
- Check the main P.C.B. (Component side as shown below. [Right side of P.C.B..])



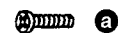
Step 7

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..])



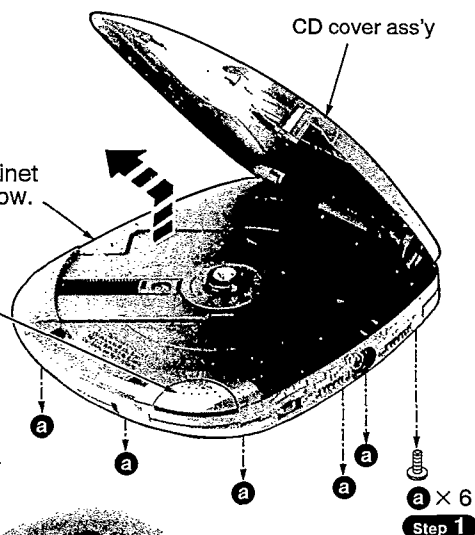
• Checking for the P.C.B. (Solder side).



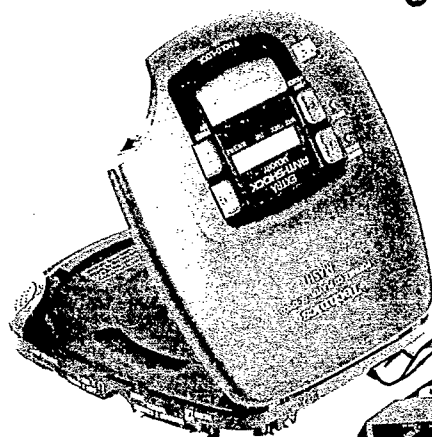
[XTN17+6GFZ]

Step 3
Move the intermediate cabinet
ass'y in the direction of arrow.

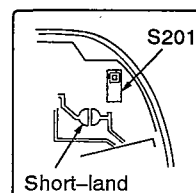
Step 2
Pressing the OPEN button,
open the CD cover ass'y.



Step 1



Step 5
Remove the traverse deck
and main P.C.B..

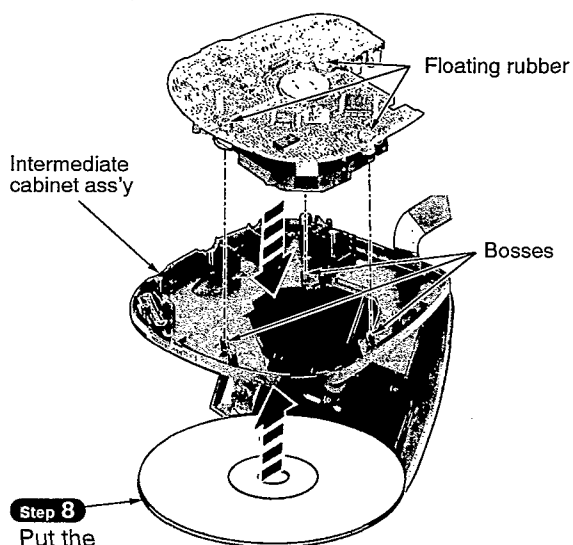


Step 6
Short-circuit the land by
soldering.

Switch knob

Step 4
Remove the switch knobs.

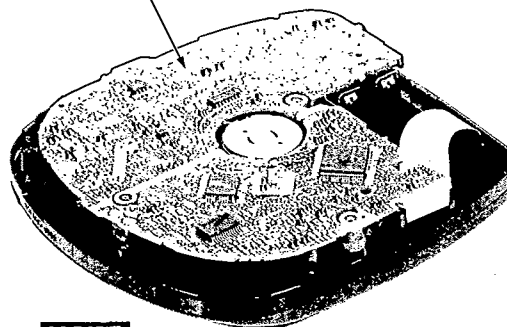
Step 7
Align the floating rubber with the boss.



Step 8
Put the
test disc.

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

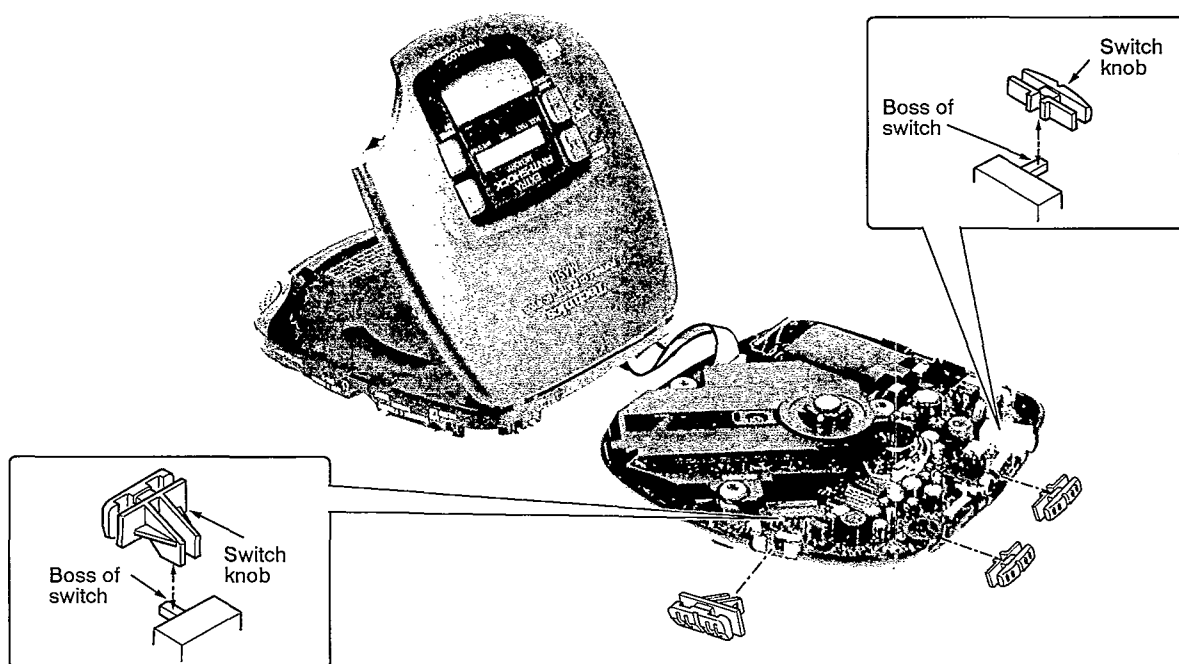
Main P.C.B. (Solder side)



NOTE

After checking, unsolder the short land
to open circuit.

Notice for installation of switch knobs



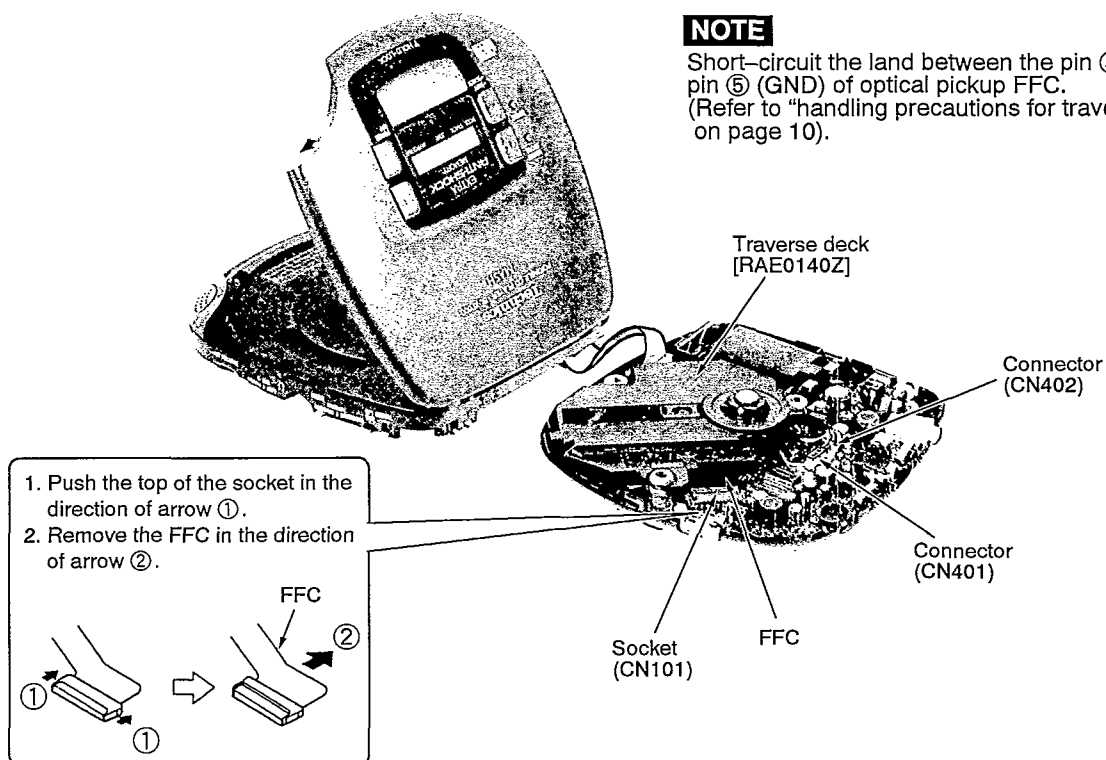
- Make sure the bosses of switch are fit in the knobs of switch.

2. Replacement for the traverse deck

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

NOTE

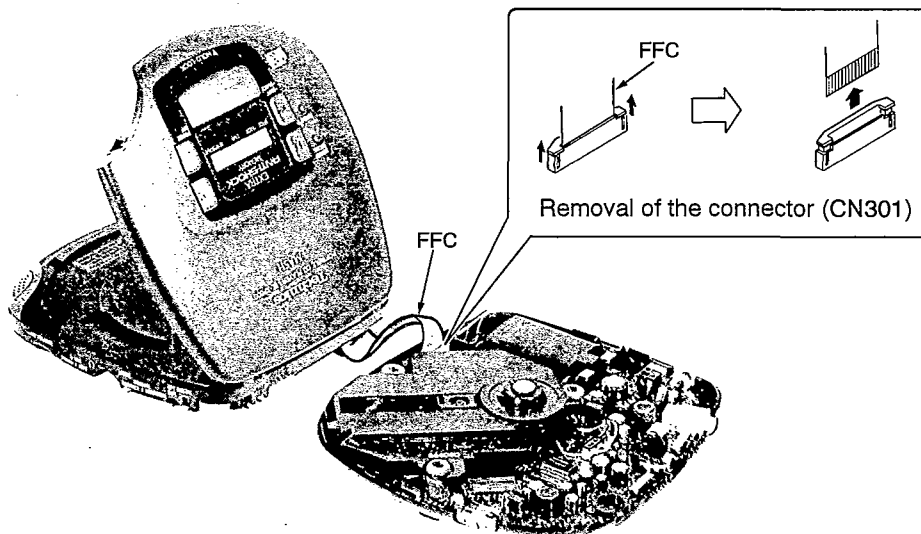
Short-circuit the land between the pin ④ (LD) and pin ⑤ (GND) of optical pickup FFC.
(Refer to "handling precautions for traverse deck" on page 10).



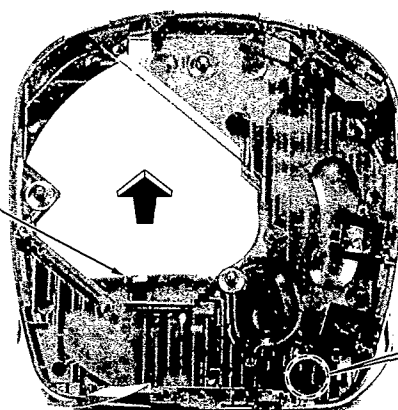
3. Replacement for the LCD and CD cover

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

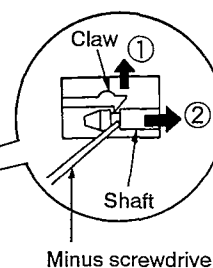
Step 1 Remove the FFC.



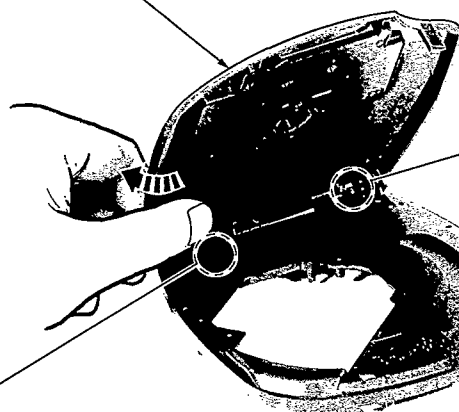
Step 2 Close the CD cover ass'y.



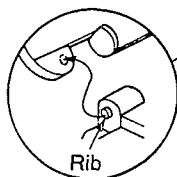
Step 3 Release the claw, and then remove the shaft.



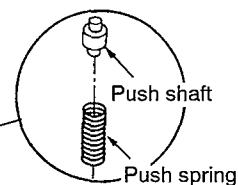
CD cover ass'y



Step 5 Remove the CD cover ass'y from rib.

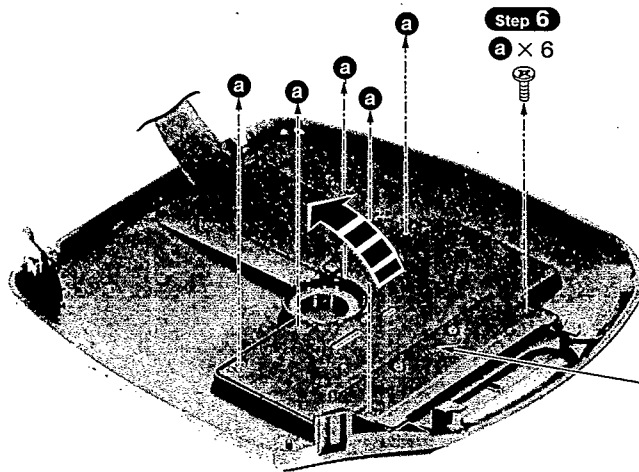


Step 4 Pressing the OPEN button, open the CD cover ass'y.



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.



Step 6
a × 6

a, c

[RHE5119YA]

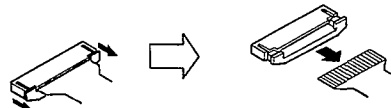
b

[RHE5155YA]

Step 7

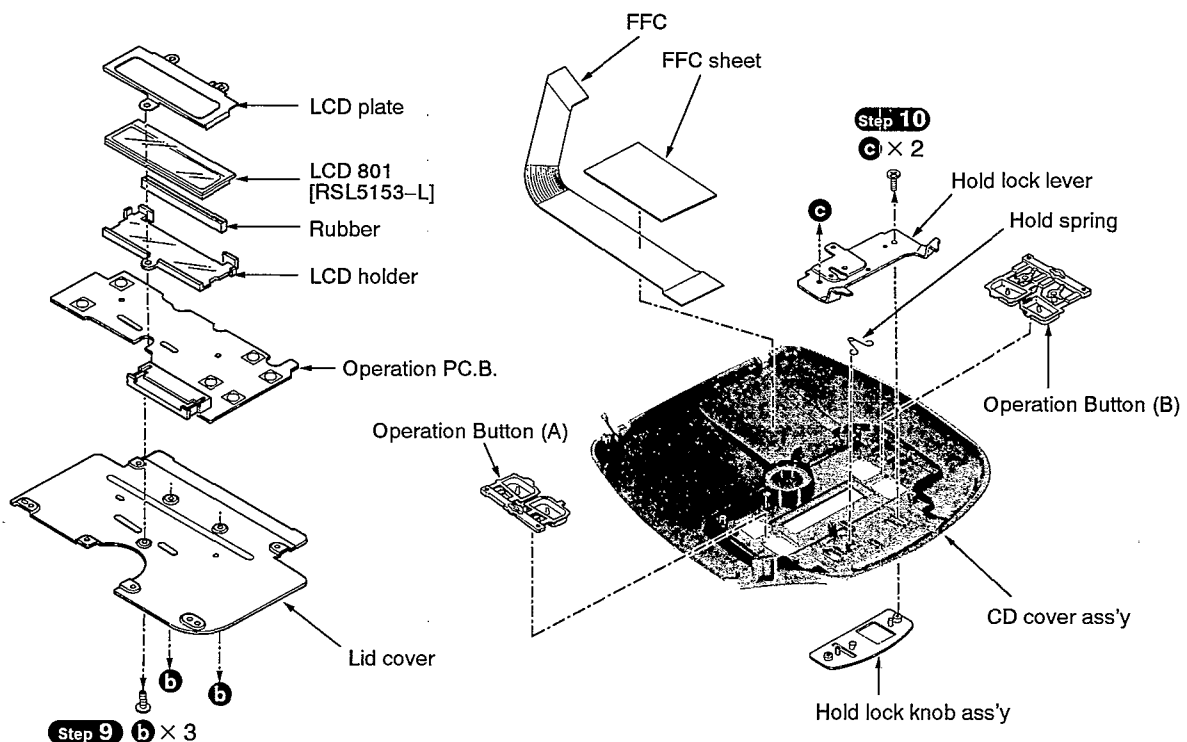
Pick up the lid cover in the direction of arrow.

Removal of the connector (CN801)



Step 8

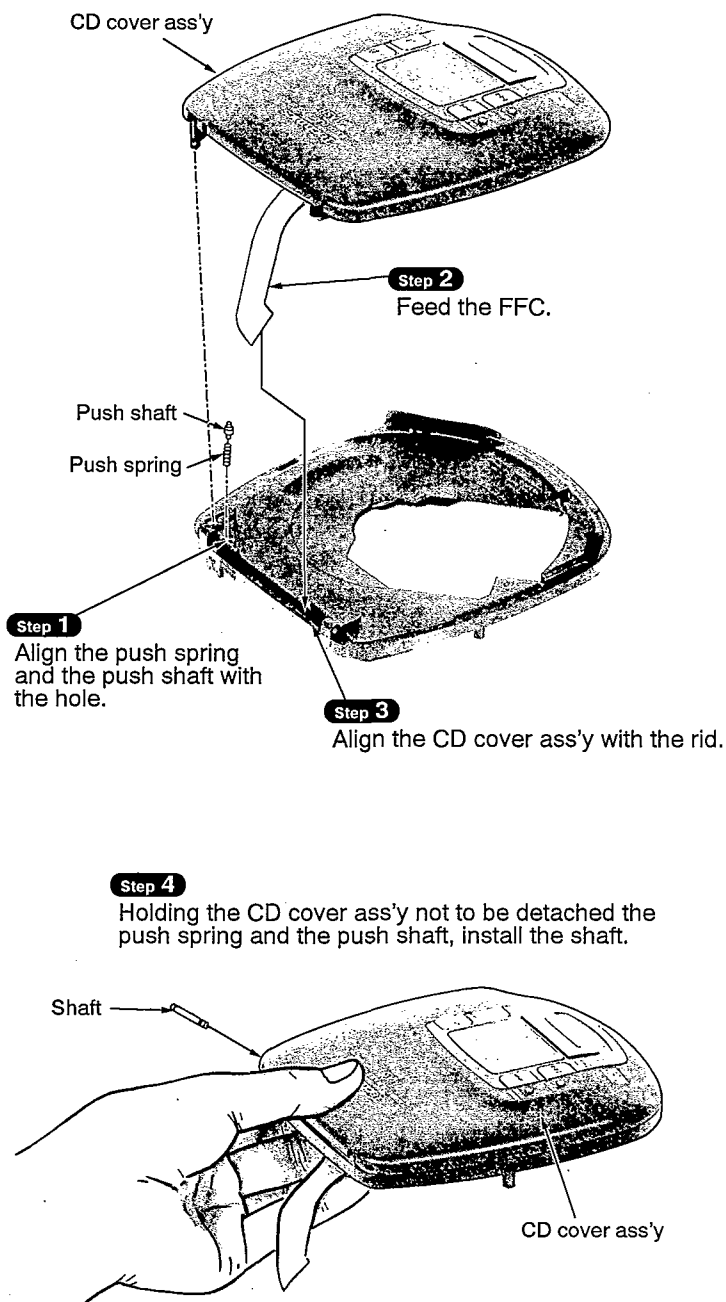
Remove the connector (CN801).



Step 9 b × 3

Step 10
c × 2

Reassembly procedures of CD cover ass'y



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 spezifizizierte 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)

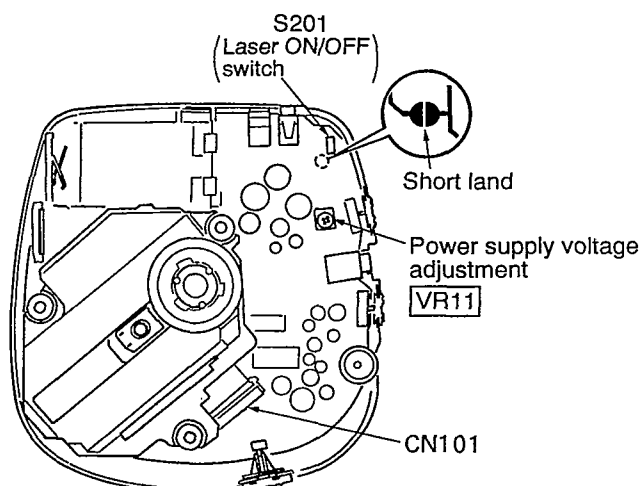
• Test short land

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 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-XP600 servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-XP600.

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) ☐

On SL-XP600

Use for New Servo IC (AN8834SBE1, MN662745RPC)

- ➡ Non Adjustment
- ➡ Automatic Adjusting Circuit

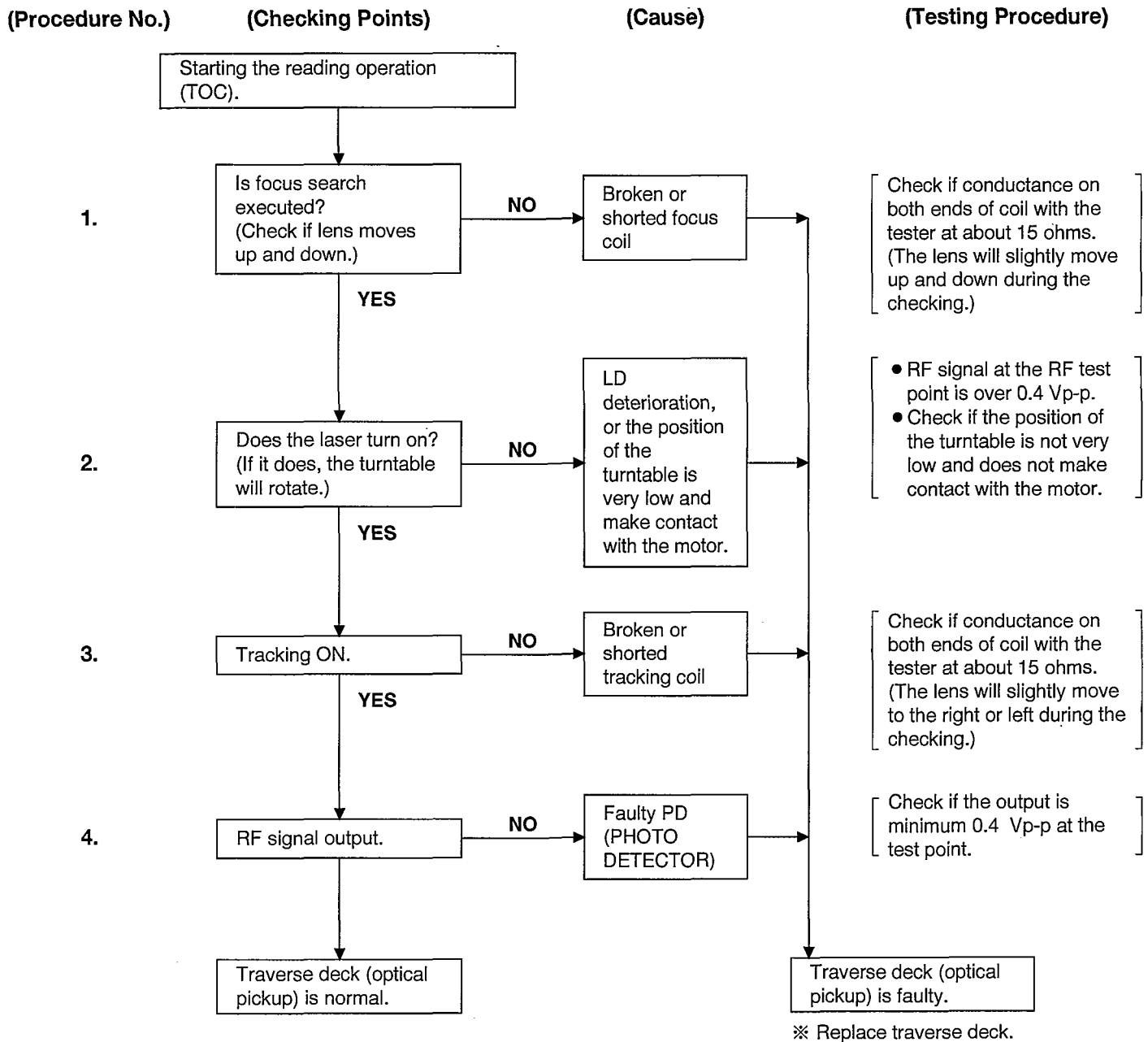
Total 6 Adjustment VRs

➡ 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-XP600 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.

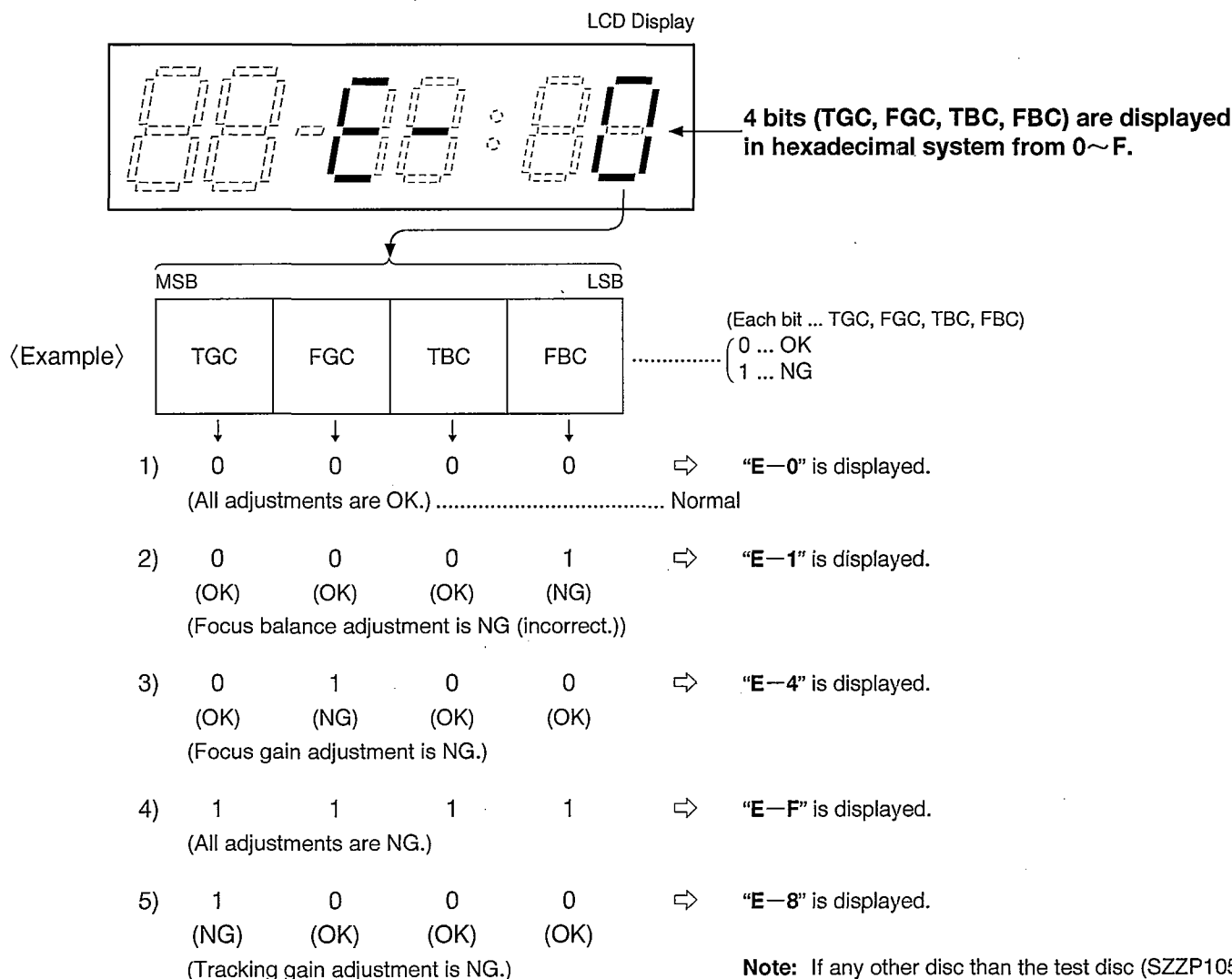
AUTOMATIC ADJUSTMENT RESULTS DISPLAY FUNCTION (SELF-CHECK FUNCTION)

On this unit, 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)



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.

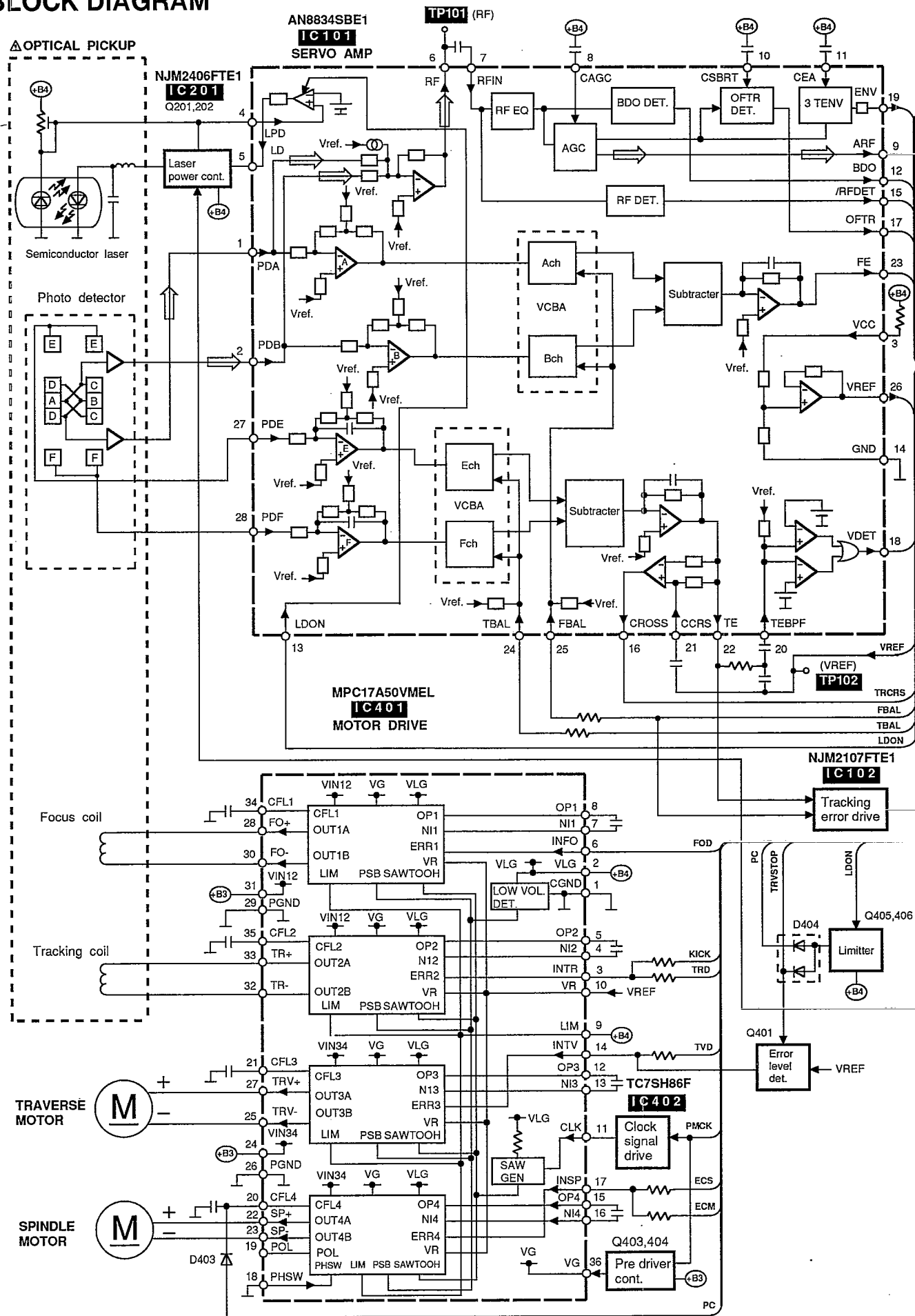
Note:

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.

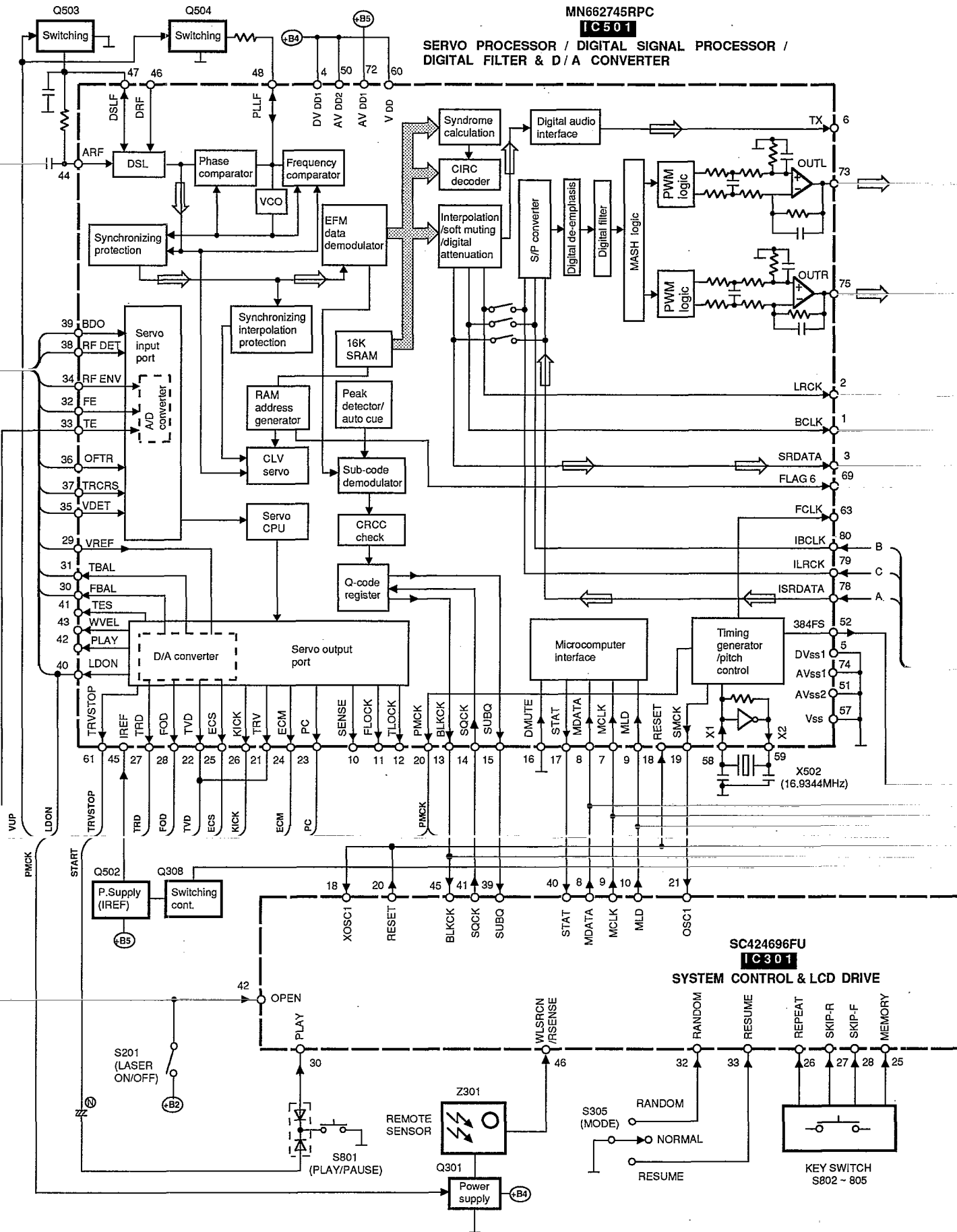
Note:

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

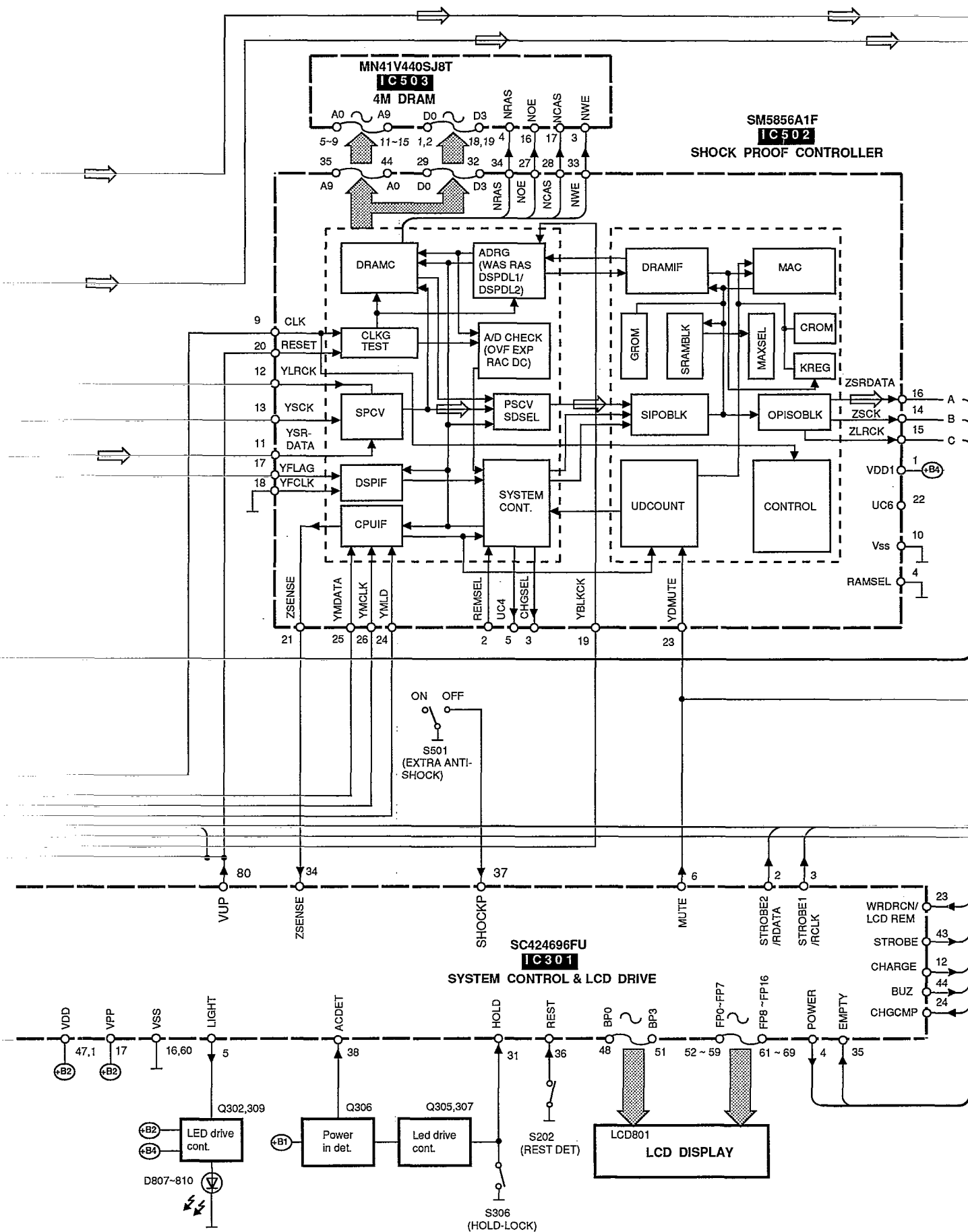
BLOCK DIAGRAM

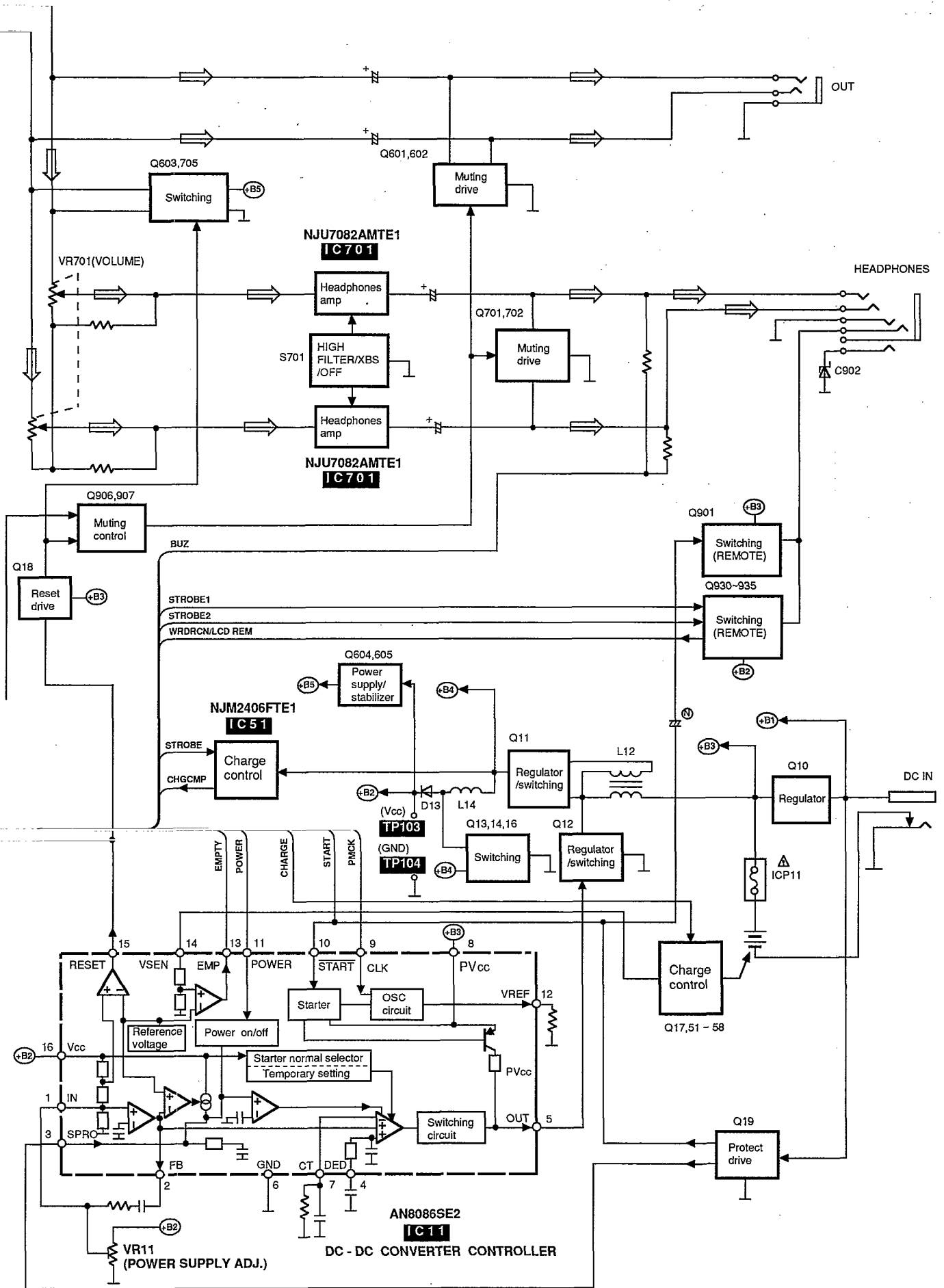


• Signal line ➡ : Audio signal



● Signal line ➡ : Audio signal





■ 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.

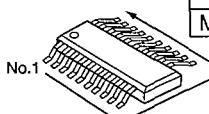
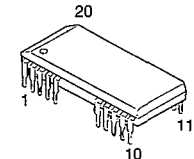
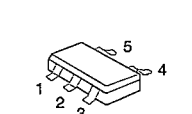
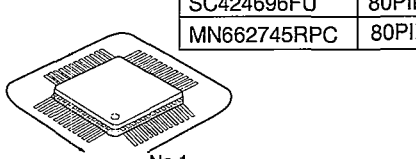
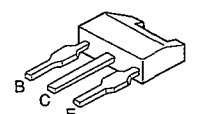
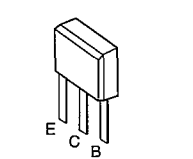
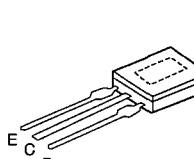
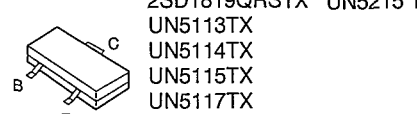
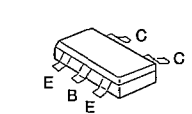
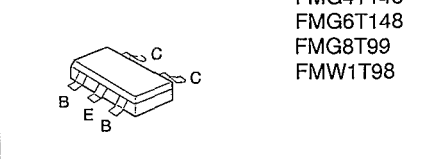
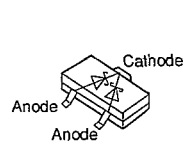
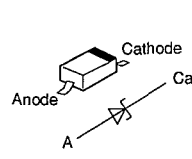
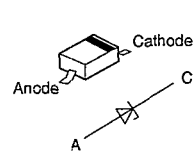
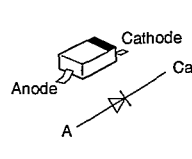
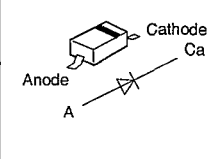
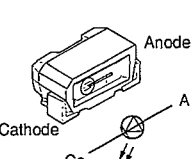
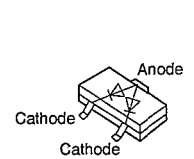
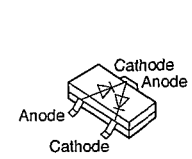
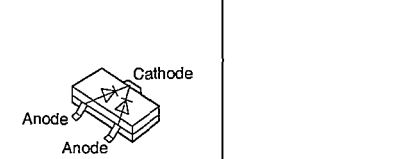
- Important safety notice:

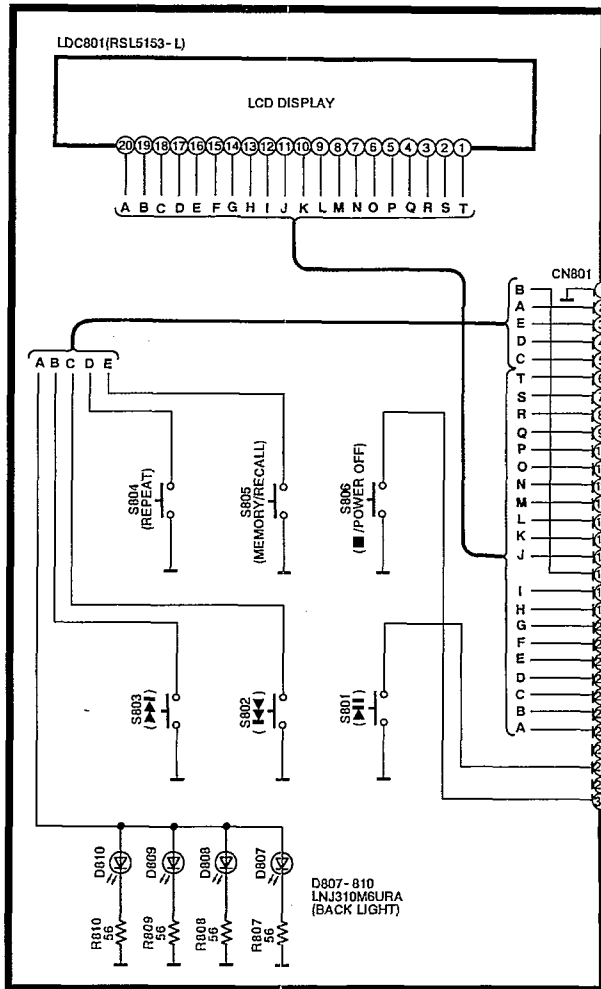
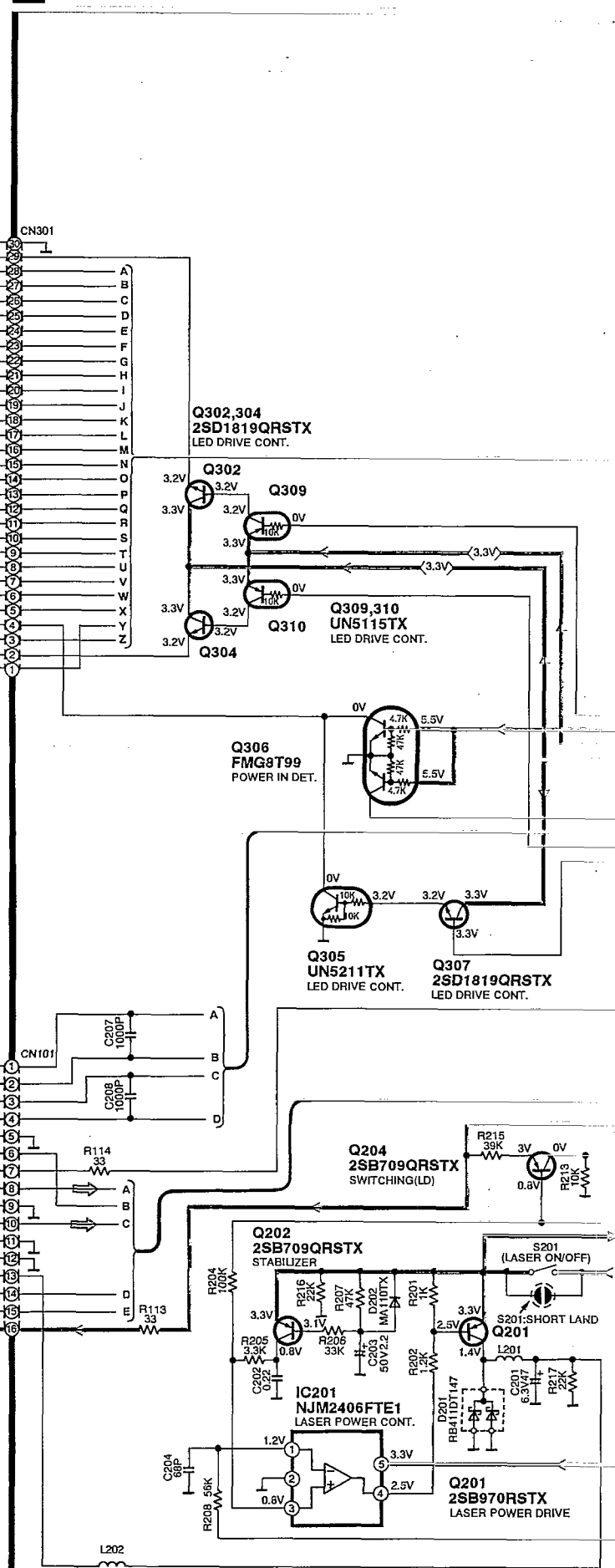
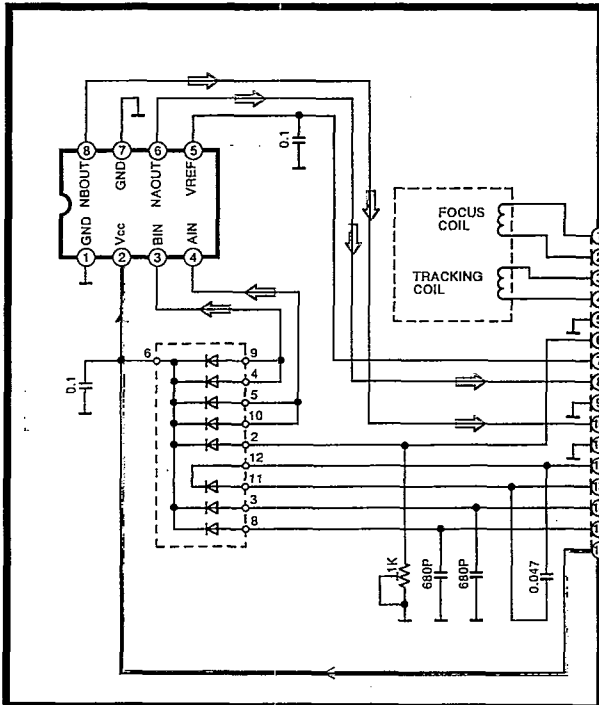
Components identified by Δ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Caution!

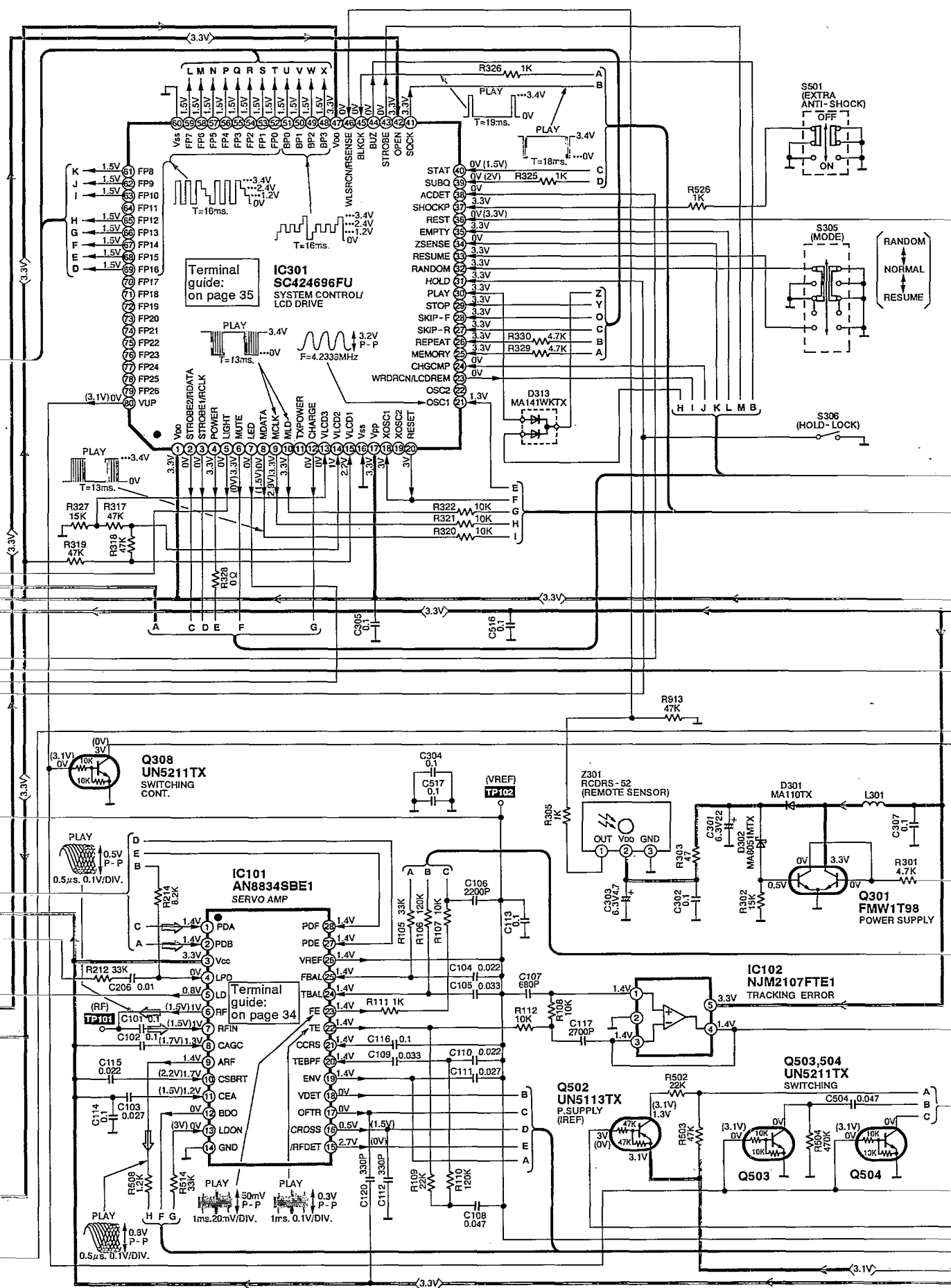
- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

● Terminal guide of IC's, transistors and diodes

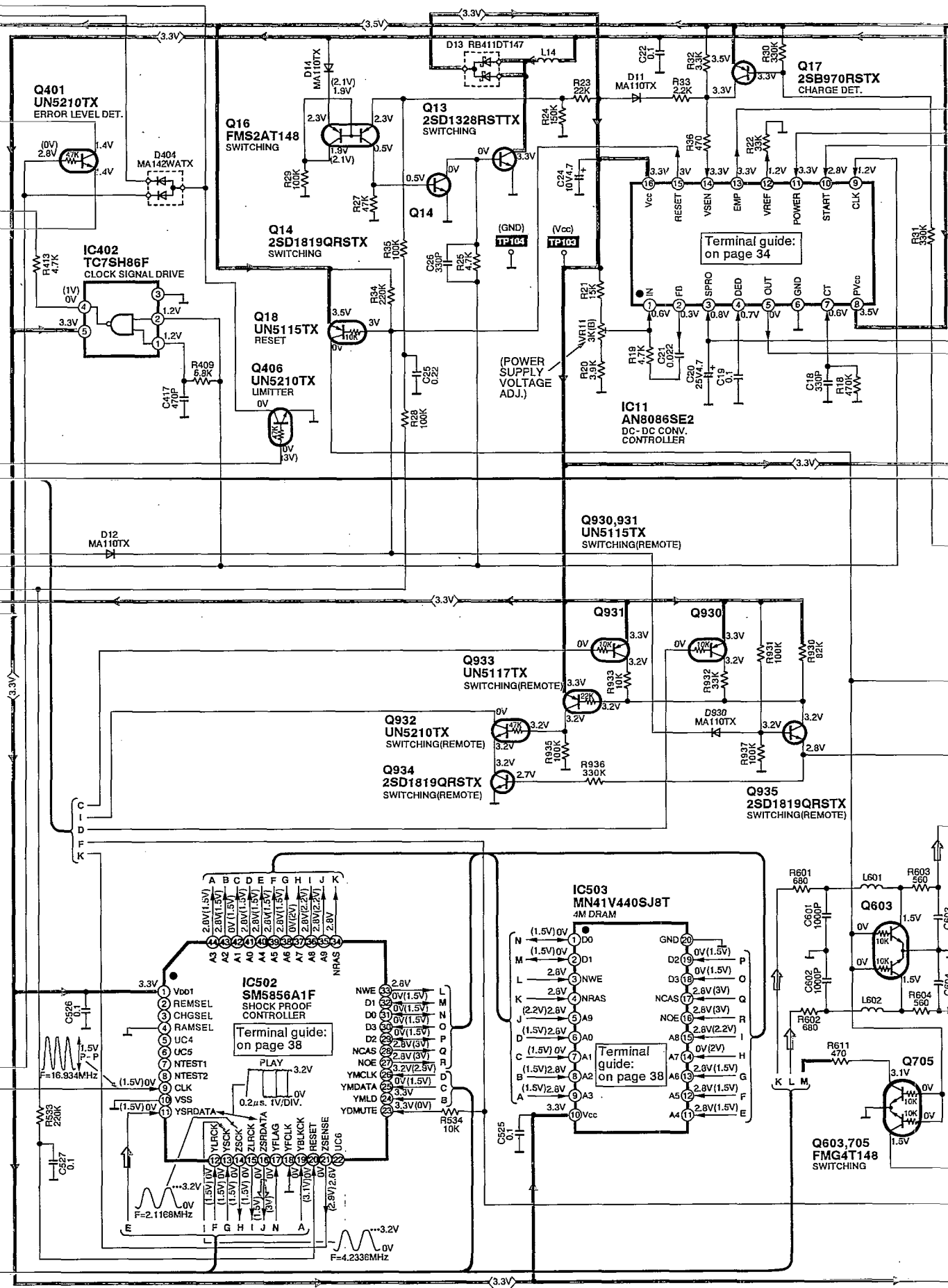
 No.1 <table><tr><td>NJU7082AMTE1</td><td>8PIN</td></tr><tr><td>AN8086SE2</td><td>16PIN</td></tr><tr><td>AN8834SBE1</td><td>28PIN</td></tr><tr><td>MPC17A50VMEL</td><td>36PIN</td></tr></table>	NJU7082AMTE1	8PIN	AN8086SE2	16PIN	AN8834SBE1	28PIN	MPC17A50VMEL	36PIN	 20 1 11 10 MN41V440SJ8T	 5 4 1 2 3 NJM2107FTE1 NJM2406FTE1 TC7SH86F	 No.1 <table><tr><td>SM5856A1F</td><td>44PIN</td></tr><tr><td>SC424696FU</td><td>80PIN</td></tr><tr><td>MN662745RPC</td><td>80PIN</td></tr></table>	SM5856A1F	44PIN	SC424696FU	80PIN	MN662745RPC	80PIN
NJU7082AMTE1	8PIN																
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MN662745RPC	80PIN																
 B C E 2SD2074HWSTT	 E C B 2SD1450STTA	 E C B 2SD2005PQRTA	 C B E 2SB709QRSTX 2SB970RSTX 2SD1328RSTTX 2SD1819QRSTX UN5113TX UN5114TX UN5115TX UN5117TX UN5210TX UN5211TX UN5213TX UN5215TX	 C B E FMS2AT148													
 C B E B FMG2T148 FMG4T148 FMG6T148 FMG8T99 FMW1T98	 Cathode Anode Anode RB411DT147	 Cathode Anode A MA8051MTX	 Cathode Anode A MA8082MTX	 Cathode Anode A MA110TX													
 Cathode Anode A MA8033LTX	 Anode Cathode Ca LNJ310M6URA	 Anode Cathode Cathode MA142WATX	 Cathode Anode Cathode MA143TX	 Cathode Anode Anode MA141WKTX													

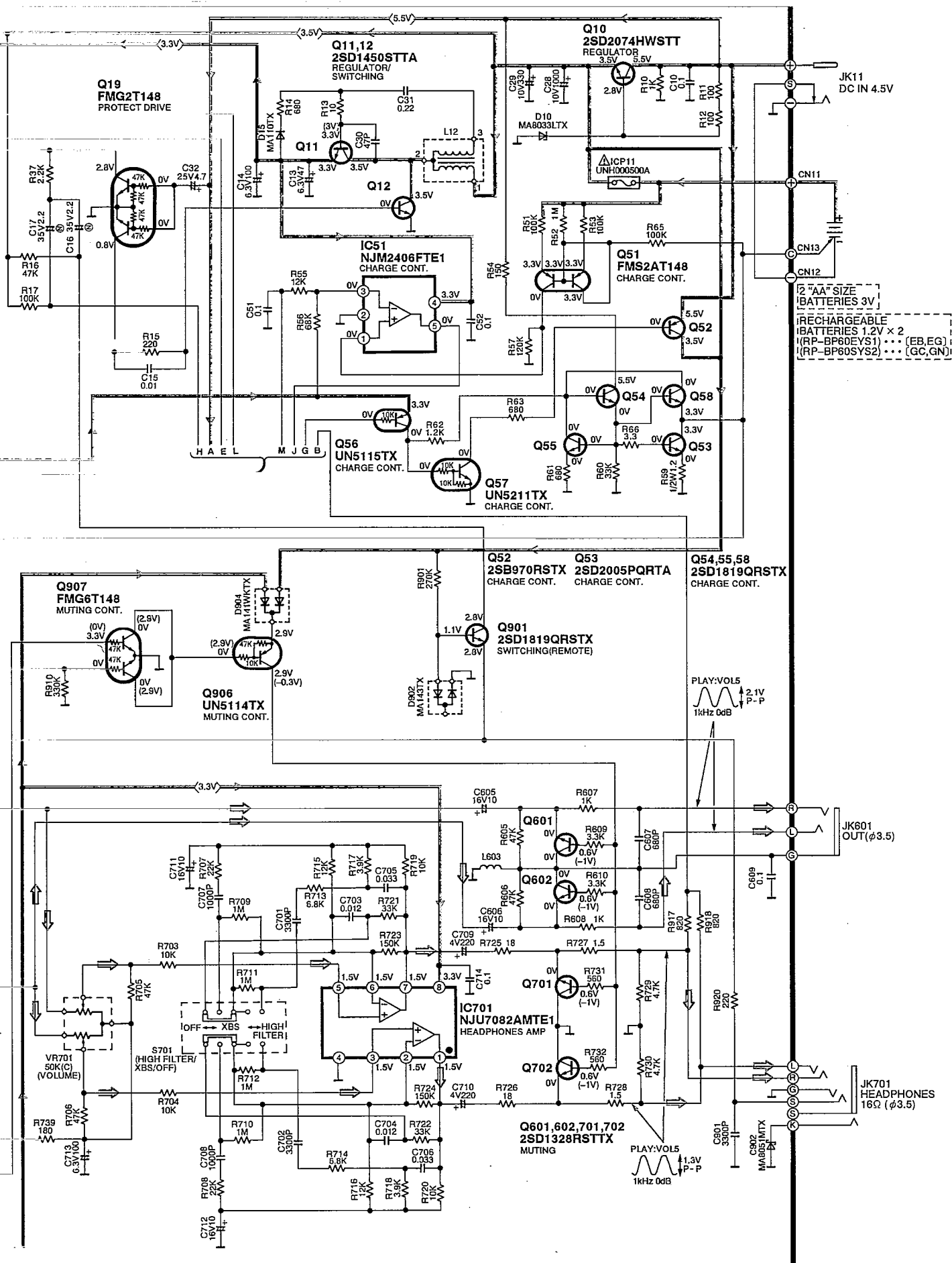
A OPERATION CIRCUIT (P.C.Board: on page 32)**B MAIN CIRCUIT** (P.C.Board: on page 32,33)**Δ OPTICAL PICKUP CIRCUIT**

• → : Audio signal lines.

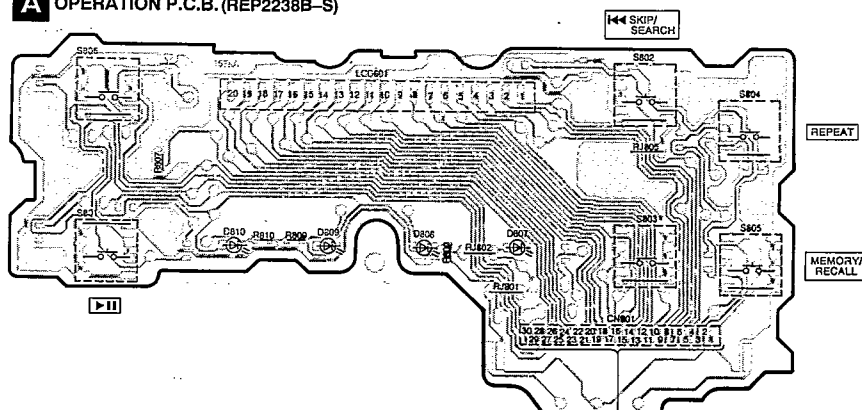


• → : Audio signal lines.

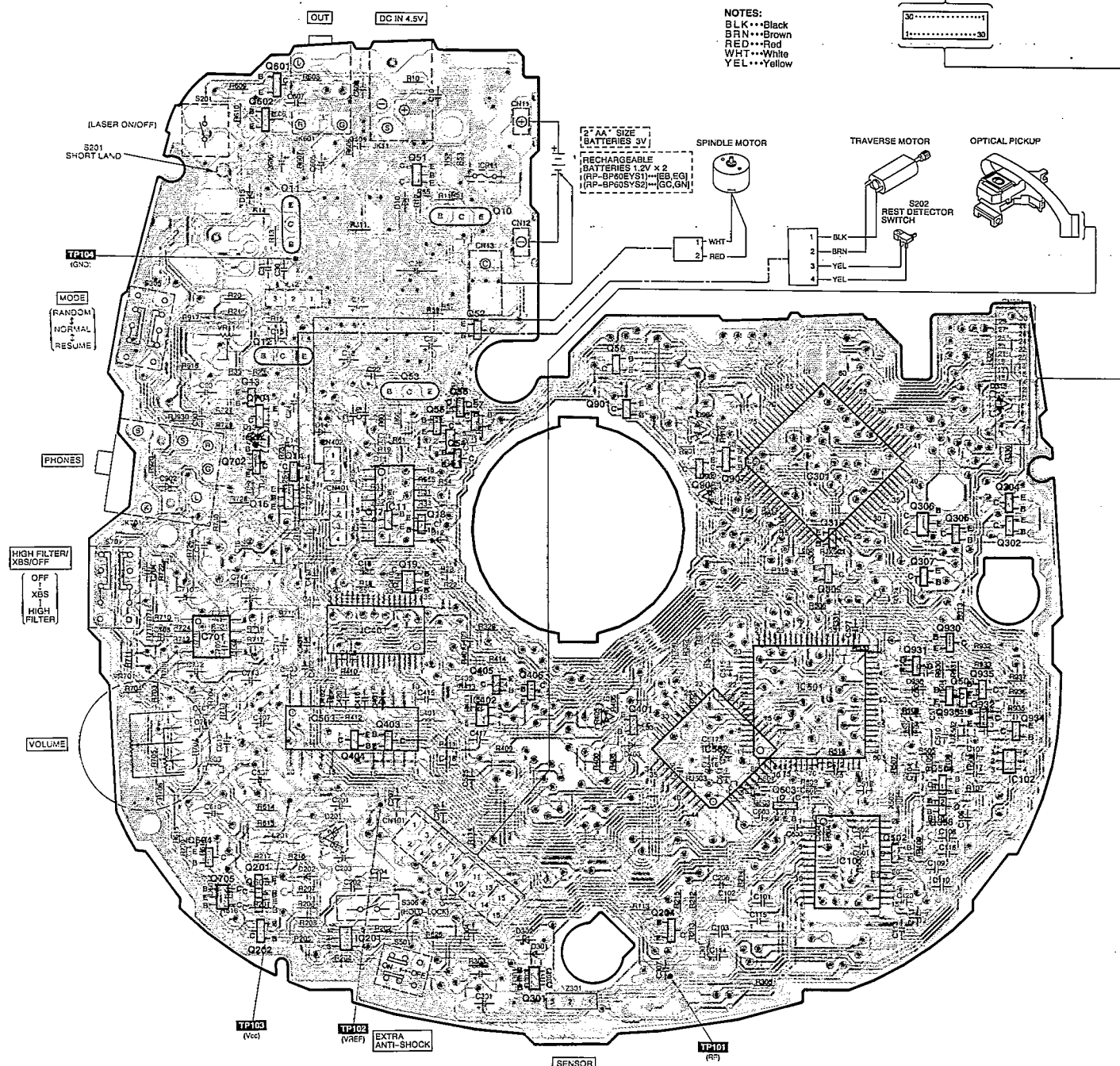


B MAIN CIRCUIT (P.C.Board: on pages 32,33)

■ /POWER
OFF

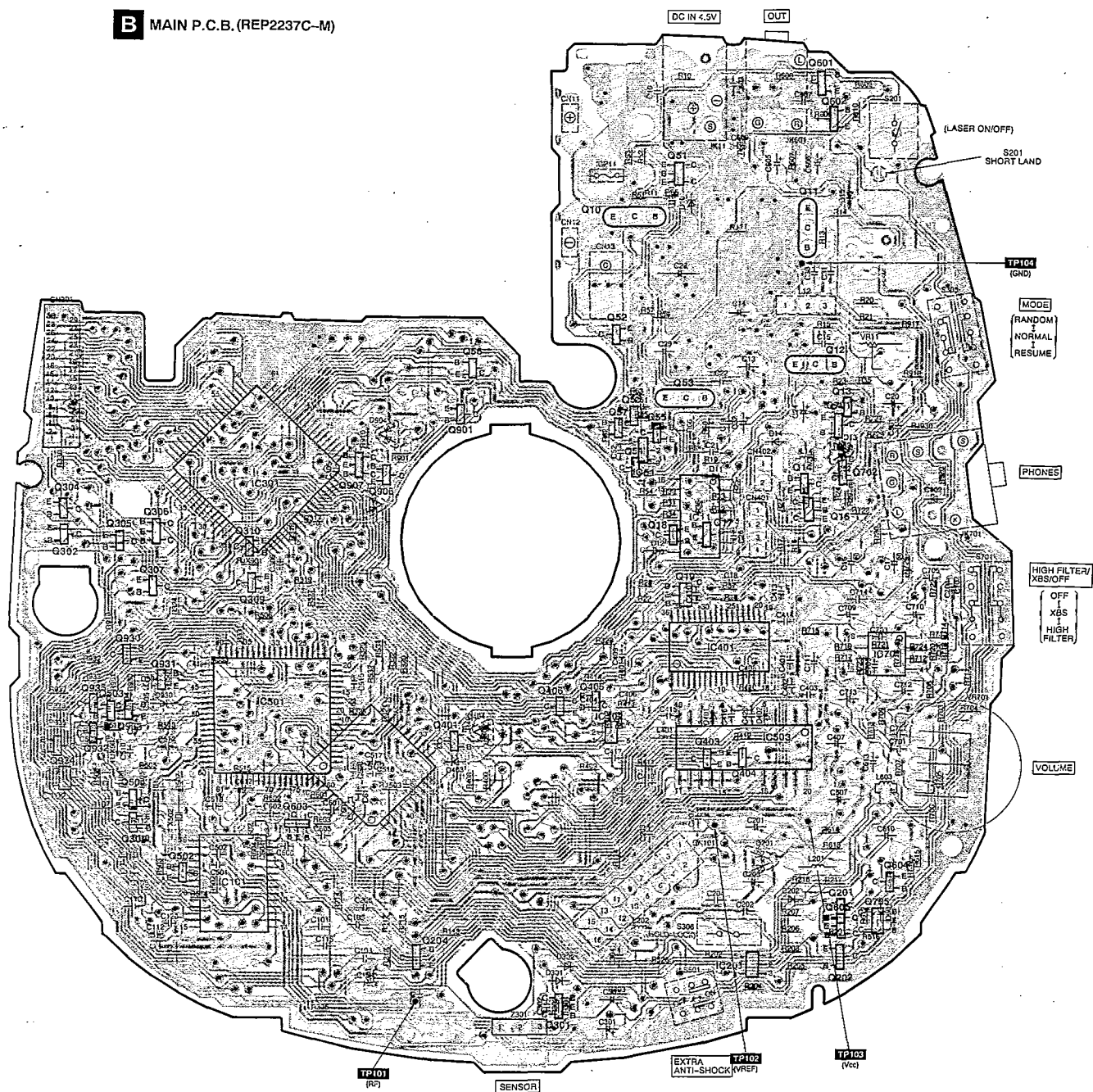


▶▶ SKIP/
SEARCH



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 (SC424696FU) : 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	V _{SS}	—	GND terminal
17	V _{PP}	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	V _{SS}	—	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	DV _{SS} 1	—	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	DSLIF	I	DSL loop filter terminal
48	PLLIF	I	PLL loop filter terminal
49	VCOF	I	VCO loop filter terminal (Not used, connected to AV _{DD2})
50	AV _{DD2}	I	Power supply (analog circuit) terminal (2)
51	AV _{SS2}	—	GND (analog circuit) terminal
52	384FS	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 _{DD1}	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	AV _{DD1}	—	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, connected to GND
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	YLCK	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 3 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 3 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 8 9	A1 3 A3	I	Address input terminal

Pin No.	Mark	I/O Division	Function
10	VCC	I	Power supply terminal
11 15	A4 3 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 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.
 * Warning: This product uses a laser diode. Refer to caution statements on page 3.
 * ACHTUNG: Die Lasereinheit nicht zerlegen.
 Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

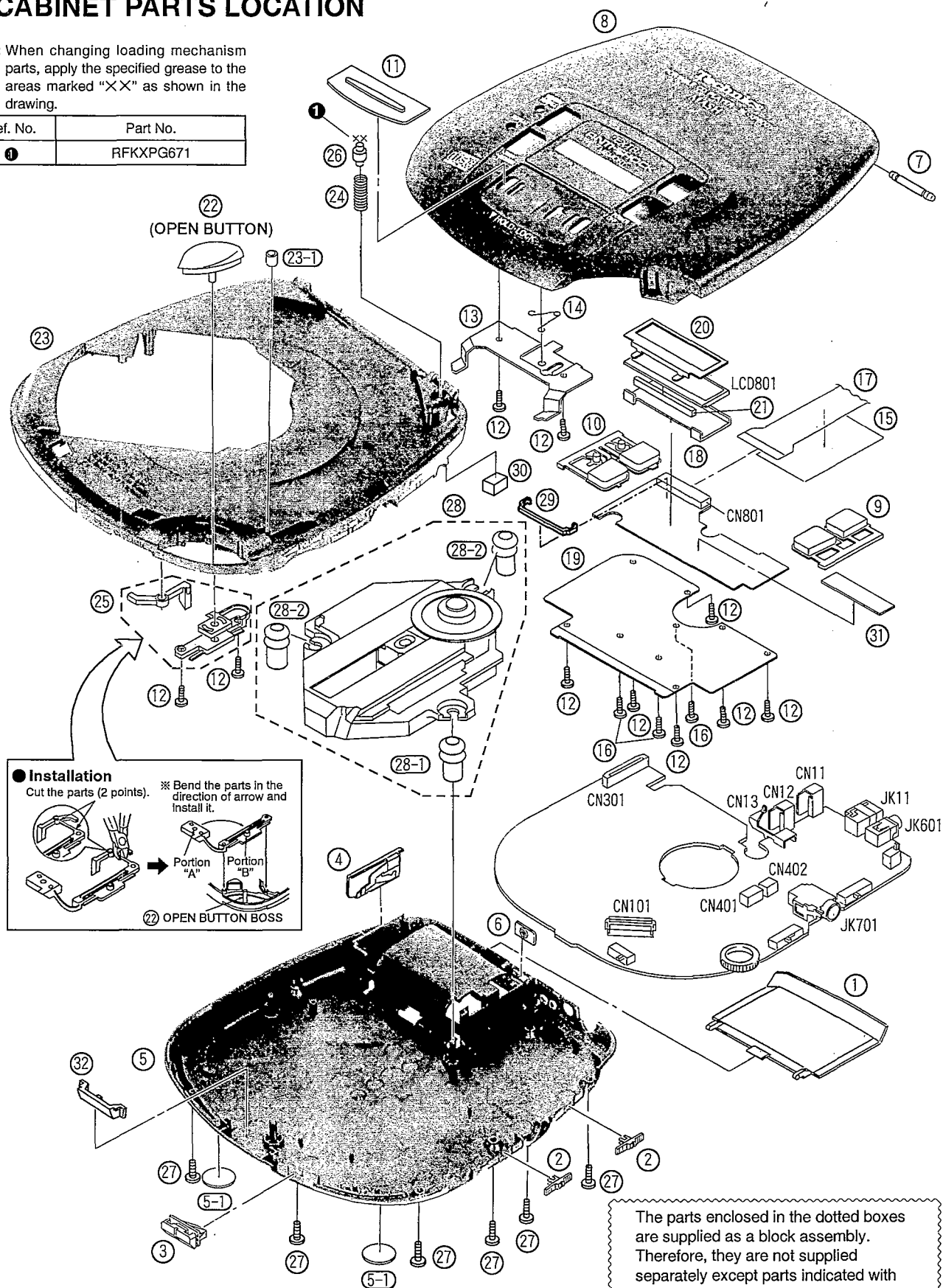
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				Q404	UN5215TX	TRANSISTOR	
				Q405	UN5213TX	TRANSISTOR	
IC11	AN8086SE2	DC-DC CONV. CONTROLLER		Q406	UN5210TX	TRANSISTOR	
IC51	NJM2406FTE1	CHARGE CONT.		Q502	UN5113TX	TRANSISTOR	
IC101	AN8834SBE1	SERVO AMP		Q503, 504	UN5211TX	TRANSISTOR	
IC102	NJM2107FTE1	TRACKING ERROR		Q601, 602	2SD1328QRSTX	TRANSISTOR	
IC201	NJM2406FTE1	LASER POWER CONT.		Q603	FMG4T148	TRANSISTOR	
IC301	SC424696FU	SYSTEM CONTROL/LCD DRIVE		Q604	2SB709QRSTX	TRANSISTOR	
IC401	MPC17A50VMEL	MOTOR DRIVE		Q605	FMW1T98	TRANSISTOR	
IC402	TC7SH86F	CLOCK SIGNAL DRIVE		Q701, 702	2SD1328QRSTX	TRANSISTOR	
IC501	MN662745RPC	SERVO PROCESSOR		Q705	FMG4T148	TRANSISTOR	
IC502	SM5856A1F	SHOCK PROOF CONTROLLER		Q901	2SD1819QRSTX	TRANSISTOR	
IC503	MN41V440SJ8T	4M DRAM		Q906	UN5114TX	TRANSISTOR	
IC701	NJU7082AMTE1	HEADPHONES AMP		Q907	FMG6T148	TRANSISTOR	
		TRANSISTOR(S)		Q930, 931	UN5115TX	TRANSISTOR	
				Q932	UN5210TX	TRANSISTOR	
				Q933	UN5117TX	TRANSISTOR	
Q10	2SD2074HWSTT	TRANSISTOR		Q934, 935	2SD1819QRSTX	TRANSISTOR	
Q11, 12	2SD1450STTA	TRANSISTOR				DIODE (S)	
Q13	2SD1328QRSTX	TRANSISTOR					
Q14	2SD1819QRSTX	TRANSISTOR		D10	MA8033LTX	DIODE	
Q16	FMS2AT148	TRANSISTOR		D11, 12	MA110TX	DIODE	
Q17	2SB970RSTX	TRANSISTOR		D13	RB411DT147	DIODE	
Q18	UN5115TX	TRANSISTOR		D14, 15	MA110TX	DIODE	
Q19	FMG2T148	TRANSISTOR		D201	RB411DT147	DIODE	
Q51	FMS2AT148	TRANSISTOR		D202	MA110TX	DIODE	
Q52	2SB970RSTX	TRANSISTOR		D301	MA110TX	DIODE	
Q53	2SD2005PQRTA	TRANSISTOR		D302	MA8051MTX	DIODE	
Q54, 55	2SD1819QRSTX	TRANSISTOR		D313	MA141WRTX	DIODE	
Q56	UN5115TX	TRANSISTOR		D401	MA110TX	DIODE	
Q57	UN5211TX	TRANSISTOR		D402	MA8082MTX	DIODE	
Q58	2SD1819QRSTX	TRANSISTOR		D403	MA110TX	DIODE	
Q201	2SB970RSTX	TRANSISTOR		D404	MA142WATX	DIODE	
Q202	2SB709QRSTX	TRANSISTOR		D601	MA110TX	DIODE	
Q204	2SB709QRSTX	TRANSISTOR		D807-810	LNJ310M6URA	L. E. D.	
Q301	FMW1T98	TRANSISTOR		D902	MA143TX	DIODE	
Q302	2SD1819QRSTX	TRANSISTOR		D904	MA141WRTX	DIODE	
Q304	2SD1819QRSTX	TRANSISTOR		D930	MA110TX	DIODE	
Q305	UN5211TX	TRANSISTOR		C902	MA8051MTX	DIODE	
Q306	FMG8T99	TRANSISTOR				IC PROTECTOR(S)	
Q307	2SD1819QRSTX	TRANSISTOR					
Q308	UN5211TX	TRANSISTOR					
Q309, 310	UN5115TX	TRANSISTOR					
Q401	UN5210TX	TRANSISTOR		ICP11	UNH00500A	IC PROTECTOR	Δ

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)		CN801	RJS2A2230T	CONNECTOR(30P)	
						JACK(S)	
VR11	EVNDXAA00B33	POWER SUPPLY VOLTAGE ADJ.		JK11	RJJ43K09-C	DC IN JACK	
VR701	EVUT2EA25C54	VOLUME		JK601	RJJD3S5ZB-C	OUT JACK	
		COMPONENT COMBINATION(S)		JK701	RJJ36T02-C	HEADPHONES JACK	
						CABINET AND CHASSIS	
Z301	RCDRS-52	REMOTE SENSOR		1	RKK0065-KJ	BATTERY COVER	
		COIL (S)		2	RGV0145-K	MODE/TRAIN, XBS KNOB	
				3	RGV0171-H	OPT OUT/X-DSSP KNOB	
L12	RLZ0028T-M	COIL		4	RJC93020	COMMON BATTERY TERMINAL	
L14	RLQU331KT-W	COIL		5	RFKJLXP600EB	BOTTOM CABINET ASS'Y	(EB)
L201	RLQB471KT-K	COIL		5	RFKJLXP600EG	BOTTOM CABINET ASS'Y	(EG)
L202	ELJPC330KF	COIL		5	RFKJLXP600GC	BOTTOM CABINET ASS'Y	(GC, GN)
L301	RLQU331KT-W	COIL		5-1	RKA0063-K	FOOT	
L401	RLQU331KT-W	COIL		6	RMA0677	REAR ORNAMENT	
L601-603	RLBV102V-Y	COIL		7	RMS0105-1	SHAFT	
		OSCILLATOR(S)		8	RFKLLXP600EB	CD COVER ASS'Y	
				9	RGU1375B-K	OPERATION BUTTON(A)	
X502	RSXZ16M9M03T	OSCILLATOR(16.9344MHz)		10	RGU1376B-K	OPERATION BUTTON(B)	
		LCD(S)		11	RFKNLS600GKK	HOLD LOCK KNOB ASS'Y	
				12	RHE5119YA	SCREW	
LCD801	RSL5153-L	LCD		13	RMA0935	HOLD LOCK LEVER	
		SWITCH(ES)		14	RME0163	HOLD SPRING	
				15	RMZ0366	FFC SHEET	
S201	ESE11SV1	LASER ON/OFF		16	RHE5155YA	SCREW	
S202	SSH1-2	REST DETECTOR		17	RJB1582A	FFC(30P)	
S305	ESD11H230	MODE (RANDOM/NORMAL/RESUME)		18	RJF0027	LCD HOLDER	
S306	RSM0006-P	HOLD-LOCK		19	RMA0936	LID COVER	
S501	ESD11H220	EXTRA ANTI-SHOCK		20	RMA0937	LCD PLATE	
S701	ESD11H230	HIGH FILTER/XBS/OFF		21	RSQ0048	RUBBER	
S801	RSG0030-P	PLAY/PAUSE		22	RGU1377-K	OPEN BUTTON	
S802	RSG0030-P	SKIP/SEARCH(B)		23	RFKLS401CPK	INTERMEDIATE CABINET ASS'Y	
S803	RSG0030-P	SKIP/SEARCH(F)		23-1	RMG0397-K	CUSHION RUBBER	
S804	RSG0030-P	REPEAT		24	RMB0390	PUSH SPRING	
S805	RSG0030-P	MEMORY/RECALL		25	RML0441	OPEN LEVER	
S806	RSG0030-P	6STOP/POWER OFF		26	RMS0462	PUSH SHAFT	
		CONNECTOR(S) AND SOCKET(S)		27	XTN17+6GFZ	SCREW	
				28	RAE0140Z	TRAVERSE DECK	△
CN11	RJC93015-1	BATTERY TERMINAL(+)		28-1	SHGD157	FLOATING RUBBER(1)	
CN12	RJC93015-1	BATTERY TERMINAL(-)		28-2	SHGD165	FLOATING RUBBER(2)	
CN13	RJH5102-1	RECHARGEABLE BATT. TERMINAL		29	RMA0987	EARTH PLATE	
CN101	RJU035T016-1	SOCKET(16P)		30	RMG0443-K	STOPPER RUBBER	
CN301	RJS1A8830T	CONNECTOR(30P)		31	RMZ0365	LCD SHEET	
CN401	RJT068WD4V	CONNECTOR(4P)		32	RKW0441-K	FILTER	
CN402	RJT068WD2V	CONNECTOR(2P)					

CABINET PARTS LOCATION

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

Ref. No.	Part No.
1	RFKXPG671



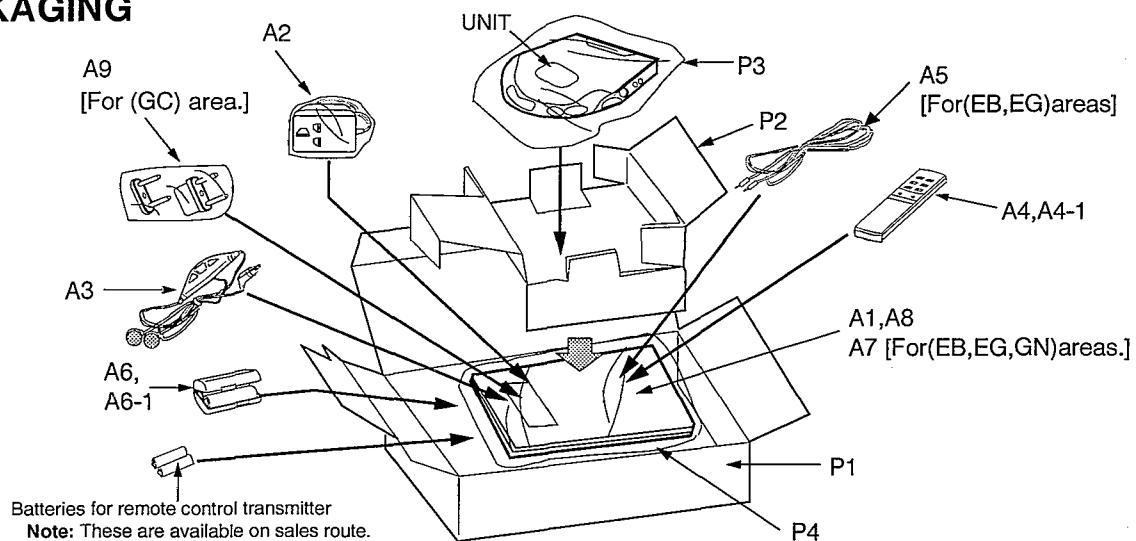
RESISTORS AND CAPACITORS

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	R201	ERJ6GEYJ102V	1/10W 1K	R603, 604	MCR03PZHJ561	1/16W 560
			R202	ERJ6GEYJ122V	1/10W 1.2K	R605	ERJ6GEYJ473V	1/10W 47K
			R204	ERJ6GEYJ104V	1/10W 100K	R606	ERJ3GEYJ473V	1/16W 47K
R10	ERJ6GEYJ102V	1/10W 1K	R205	ERJ6GEYJ332V	1/10W 3.3K	R607, 608	ERJ6GEYJ102V	1/10W 1K
R11, 12	ERJ6GEYJ101V	1/10W 100	R206	ERJ6GEYJ333V	1/10W 33K	R609, 610	ERJ6GEYJ332V	1/10W 3.3K
R13	ERJ6GEYJ100	1/10W 10	R207	ERJ6GEYJ473V	1/10W 47K	R611	ERJ6GEYJ471V	1/10W 470
R14	ERJ6GEYJ681V	1/10W 680	R208	ERJ6GEYJ563V	1/10W 56K	R612	ERJ3GEYJ682V	1/16W 6.8K
R15	ERJ6GEYJ221V	1/10W 220	R212	ERJ6GEYJ333V	1/10W 33K	R613	ERJ6GEYJ103V	1/10W 10K
R16	ERJ3GEYJ473V	1/16W 47K	R213	ERJ6GEYJ103V	1/10W 10K	R614	ERJ6GEYJ104V	1/10W 100K
R17	ERJ3GEYJ104V	1/16W 100K	R214	ERJ6GEYJ822V	1/10W 8.2K	R615	ERJ3GEYJ682V	1/16W 6.8K
R18	ERJ6GEYJ474V	1/10W 470K	R215	ERJ6GEYJ393V	1/10W 39K	R616	ERJ3GEYJ222V	1/16W 2.2K
R19	ERJ3GEYJ472V	1/16W 4.7K	R216, 217	ERJ6GEYJ223V	1/10W 22K	R703, 704	ERJ6GEYJ103V	1/10W 10K
R20	ERJ6GEYJ392V	1/10W 3.9K	R301	ERJ3GEYJ472V	1/16W 4.7K	R705, 706	ERJ6GEYJ473V	1/10W 47K
R21	ERJ6GEYJ153V	1/10W 15K	R302	ERJ3GEYJ153V	1/16W 15K	R707, 708	ERJ3GEYJ223V	1/16W 22K
R22	ERJ6GEYJ333V	1/10W 33K	R303	ERJ6GEYJ470V	1/10W 47	R709	ERJ3GEYJ105V	1/10W 1M
R23	ERJ3GEYJ223V	1/16W 22K	R305	ERJ6GEYJ102V	1/10W 1K	R710, 711	ERJ6GEYJ105	1/10W 1M
R24	ERJ3GEYJ154V	1/16W 150K	R317-319	ERJ3GEYJ473V	1/16W 47K	R712	ERJ3GEYJ105V	1/16W 1M
R25	ERJ3GEYJ472V	1/16W 4.7K	R320-322	ERJ3GEYJ103V	1/16W 10K	R713, 714	ERJ3GEYJ682V	1/16W 6.8K
R27	ERJ3GEYJ473V	1/16W 47K	R324	ERJ3GEYJ103V	1/16W 10K	R715, 716	ERJ3GEYJ123V	1/16W 12K
R28, 29	ERJ3GEYJ104V	1/16W 100K	R325, 326	ERJ3GEYJ102V	1/16W 1K	R717, 718	ERJ3GEYJ392V	1/16W 3.9K
R30, 31	ERJ3GEYJ334V	1/16W 330K	R327	ERJ3GEYJ153V	1/16W 15K	R719, 720	ERJ3GEYJ103V	1/16W 10K
R32	ERJ3GEYJ332V	1/16W 3.3K	R329-331	ERJ6GEYJ472V	1/10W 4.7K	R721	ERJ3GEYJ333V	1/16W 33K
R33	ERJ3GEYJ222V	1/16W 2.2K	R400	ERJ6GEYJ472V	1/10W 4.7K	R722	ERJ6GEYJ333V	1/10W 33K
R34	ERJ3GEYJ224V	1/16W 220K	R401	ERJ6GEYJ473V	1/10W 47K	R723, 724	ERJ3GEYJ154V	1/16W 150K
R35	ERJ3GEYJ104V	1/16W 100K	R402	ERJ3GEYJ472V	1/16W 4.7K	R725, 726	ERJ6GEYJ180V	1/10W 18
R36	ERJ3GEYJ471V	1/16W 470	R403	ERJ3GEYJ223V	1/16W 22K	R727, 728	ERJ6GEYJ185V	1/10W 1.5
R37	ERJ3GEYJ222V	1/16W 2.2K	R405	ERJ6GEYJ222V	1/10W 2.2K	R729, 730	ERJ6GEYJ472V	1/10W 4.7K
R51	ERJ3GEYJ104V	1/16W 100K	R406	ERJ6GEYJ123V	1/10W 12K	R731, 732	ERJ6GEYJ561V	1/10W 560
R52	ERJ3GEYJ105V	1/16W 1M	R408	ERJ6GEYJ103V	1/10W 10K	R739	ERJ6GEYJ181V	1/10W 180
R53	ERJ3GEYJ104V	1/16W 100K	R409	ERJ6GEYJ682V	1/10W 6.8K	R807-810	ERJ3GEYJ560V	1/16W 56
R54	ERJ6GEYJ151V	1/10W 150	R411, 412	ERJ6GEYJ103V	1/10W 10K	R901	ERJ3GEYJ274V	1/16W 270K
R55	ERJ3GEYJ123V	1/16W 12K	R413	ERJ6GEYJ472V	1/10W 4.7K	R910	ERJ3GEYJ334V	1/16W 330K
R56	ERJ3GEYJ683V	1/16W 68K	R414	ERJ6GEYJ473V	1/10W 47K	R913	ERJ6GEYJ473V	1/10W 47K
R57	ERJ3GEYJ124V	1/16W 120K	R501	ERJ3GEYJ683V	1/16W 68K	R917, 918	ERJ6GEYJ821V	1/10W 820
R59	ERJ12YJ1R2H	1/2W 1.2	R502	ERJ3GEYJ223V	1/16W 22K	R920	ERJ6GEYJ221V	1/10W 220
R60	ERJ6GEYJ333V	1/10W 33K	R503	ERJ3GEYJ473V	1/16W 47K	R930	ERJ6GEYJ823	1/10W 82K
R61	ERJ6GEYJ681V	1/10W 680	R504	ERJ3GEYJ474V	1/16W 470K	R931	ERJ6GEYJ104V	1/10W 100K
R62	ERJ6GEYJ122V	1/10W 1.2K	R505	ERJ6GEYJ471V	1/10W 470	R932	ERJ6GEYJ333V	1/10W 33K
R63	ERJ3GEYJ681V	1/16W 680	R506	ERJ3GEYJ821V	1/16W 820	R933	ERJ6GEYJ103V	1/10W 10K
R65	ERJ3GEYJ104V	1/16W 100K	R508	ERJ3GEYJ122V	1/16W 1.2K	R935	ERJ6GEYJ104V	1/10W 100K
R66	ERJ6GEYJ3R3V	1/10W 3.3	R512	ERJ6GEYJ471V	1/10W 470	R936	ERJ6GEYJ334V	1/10W 330K
R105	ERJ6GEYJ333V	1/10W 33K	R513	ERJ3GEYJ222V	1/16W 2.2K	R937	ERJ6GEYJ104V	1/10W 100K
R106	ERJ6GEYJ124V	1/10W 120K	R514	ERJ3GEYJ333V	1/16W 33K			
R107, 108	ERJ6GEYJ103V	1/10W 10K	R515	ERJ6GEYJ681V	1/10W 680			CHIP JUMPERS
R109	ERJ6GEYJ223V	1/10W 22K	R526	ERJ6GEYJ102V	1/10W 1K			
R110	ERJ6GEYJ124V	1/10W 120K	R532	ERJ3GEYJ472V	1/16W 4.7K	RJ11	ERJ8GEYOR00V	CHIP JUMPER
R111	ERJ6GEYJ102V	1/10W 1K	R533	ERJ6GEYJ224V	1/10W 220K	RJ503	ERJ3GEYOR00V	CHIP JUMPER
R112	ERJ6GEYJ103V	1/10W 10K	R534	ERJ3GEYJ103V	1/16W 10K	RJ801, 802	ERJ8GEYOR00V	CHIP JUMPER
R113, 114	ERJ6GEYJ330V	1/10W 33	R601, 602	ERJ3GEYJ681V	1/16W 680	RJ805	ERJ8GEYOR00V	CHIP JUMPER

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
RJ930	ERJ6GEY0R00V	CHIP JUMPER	C109	ECUV1C333KBN	16V 0.033U	C504	ECUVNC473KBV	16V 0.047U
R328	ERJ6GEY0R00V	CHIP JUMPER	C110	ECUV1E223KBN	25V 0.022U	C505	ECUV1E223KBV	25V 0.022U
R410	ERJ6GEY0R00V	CHIP JUMPER	C111	ECUV1E273KBN	25V 0.027U	C507	ECEA0GKA221	4V 220U
R507	ERJ6GEY0R00V	CHIP JUMPER	C112	ECUV1H331KBV	50V 330P	C508	ECUVNC104ZFN	16V 0.1U
RJX502	ERJ3GEY0R00V	CHIP JUMPER	C113, 114	ECUVNE104ZFN	25V 0.1U	C509	ECUV1H470KCV	50V 47P
RJX901	ERJ3GEY0R00V	CHIP JUMPER	C115	ECUV1E223KBN	25V 0.022U	C510, 511	ECUVNC474KBN	16V 0.47U
			C116	ECUVNE104KBN	25V 0.1U	C512	ECUV1E103KBV	25V 0.01U
		CAPACITORS	C117	ECUV1H272KBN	50V 2700P	C515	ECUV1H332KBV	50V 3300P
			C120	ECUV1H331KBV	50V 330P	C516, 517	ECUVNC104ZFN	16V 0.1U
C10	ECUVNE104ZFN	25V 0.1U	C201	RCE0JSL470IX	6.3V 47U	C518	ECUV1E103KBV	25V 0.01U
C13	RCE0JSL470IX	6.3V 47U	C202	ECUVNC224KBN	16V 0.22U	C525	ECUVNE104ZFN	25V 0.1U
C14	ECEA0JKA101I	6.3V 100U	C203	ECEA1HKA2R2I	50V 2.2U	C526	ECUVNC104ZFN	16V 0.1U
C15	ECUV1E103KBN	25V 0.01U	C204	ECUV1H680KCN	50V 68P	C527	ECUVNE104ZFN	25V 0.1U
C16, 17	ECEA1VKN2R2I	35V 2.2U	C206	ECUV1E103KBN	25V 0.01U	C600	ECUVNC104ZFN	16V 0.1U
C18	ECUV1H331KBN	50V 330P	C207, 208	ECUV1H102KBN	50V 1000P	C601, 602	ECUV1H102KBV	50V 1000P
C19	ECUVNE104KBN	25V 0.1U	C301	RCE0JKA220IG	6.3V 22U	C603, 604	ECUV1H272KBV	50V 2700P
C20	ECEA1EKA4R7I	25V 4.7U	C302	ECUVNC104ZFN	16V 0.1U	C605, 606	ECEA1CPK100I	16V 10U
C21	ECUV1E223KBV	25V 0.022U	C303	RCST0JY475LE	6.3V 4.7U	C607, 608	ECUV1H681KBN	50V 680P
C22	ECUVNE104ZFN	25V 0.1U	C304, 305	ECUVNE104ZFN	25V 0.1U	C609	ECUVNC104ZFN	16V 0.1U
C24	RCE1ASC4R7IX	10V 4.7U	C306	ECUVNC105ZFN	16V 1U	C610	ECEA0GKA221	4V 220U
C25	ECUVNC224KBN	16V 0.22U	C307	ECUVNE104ZFN	25V 0.1U	C611	ECUVNC104ZFN	16V 0.1U
C26	ECUV1H331KBV	50V 330P	C401-403	ECUV1H471KBV	50V 470P	C612	ECUVNE104ZFN	25V 0.1U
C28	RCE1AMT102BV	10V 1000U	C404	ECUVNC105ZFN	16V 1U	C613	ECEA1CKA220I	16V 22U
C29	ECA1AM331I	10V 330U	C406	ECUV1H151JCV	50V 150P	C701, 702	ECUV1H332KBV	50V 3300P
C30	ECUV1H470KCN	50V 47P	C407	ECEA1CKA100I	16V 10U	C703	ECUV1E123KBV	25V 0.012U
C31	ECUVNC224KBN	16V 0.22U	C408	ECUVNC105ZFN	16V 1U	C704	ECUV1E123KBN	25V 0.012U
C32	ECEA1EKA4R7I	25V 4.7U	C409	ECUV1H151JCV	50V 150P	C705, 706	ECUV1C333KBV	16V 0.033U
C51	ECUV1C104KBV	16V 0.1U	C410	ECUV1H471KBV	50V 470P	C707	ECUV1H102KBV	50V 1000P
C52	ECUVNC104ZFN	16V 0.1U	C413, 414	ECUV1H471KBV	50V 470P	C708	ECUV1H102KBN	50V 1000P
C101, 102	ECUVNE104KBN	25V 0.1U	C415	ECUVNE104ZFN	25V 0.1U	C709, 710	ECEA0GPK221I	4V 220U
C103	ECUV1E273KBN	25V 0.027U	C416	ECUVNC105ZFN	16V 1U	C711, 712	ECEA1CPK100I	16V 10U
C104	ECUV1E223KBN	25V 0.022U	C417	ECUV1H471KBN	50V 470P	C713	ECEA0JPK101I	6.3V 100U
C105	ECUV1C333KBN	16V 0.033U	C418	ECUV1H331KBN	50V 330P	C714	ECUVNE104ZFN	25V 0.1U
C106	ECUV1H222KBN	50V 2200P	C420	ECUVNC105ZFN	16V 1U	C901	ECUV1H332KBN	50V 3300P
C107	ECUV1H681KBN	50V 680P	C501, 502	ECUV1H150JCV	50V 15P			
C108	ECUV1C473KBN	16V 0.047U	C503	ECUV1H561KBV	50V 560P			

PACKAGING



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.

* 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		A6	RP-BP60SYS2	RECHARGEABLE BATTERIES	(GC, GN)
				A6-1	RFKNLS370-K	BATTERY CARRING CASE	
P1	RPK0762	PACKING CASE		A7	RQA0117	WARRANTY CARD	(EB, EG)
P2	RPQ0597	PAD		A7	RQX7433ZA	WARRANTY CARD	(GN)
P3	RPF0111	PROTECTION BAG (UNIT)		A8	RQCB0169	SERVICENTER LIST	
P4	RPF0046	PROTECTION BAG (F. B.)		A9	SJP5213-2	POWER PLUG ADAPTOR	(GC) Δ
		ACCESSORIES		A10*	RKB205ZA-0	EAR PADS	
						<PRINTED CIRCUIT BOARDS ASS' Y>	
A1	RFKSLXP600EB	INSTRUCTION MANUAL ASS' Y	(EB)	PCB1	REP2237C-M	MAIN P. C. B. ASS' Y	(RTL)
A1	RFKSLXP600EG	INSTRUCTION MANUAL ASS' Y	(EG)	PCB2	REP2238B-S	OPERATION P. C. B. ASS' Y	(RTL)
A1	RFKSLXP600GC	INSTRUCTION MANUAL ASS' Y	(GC)				
A1	RQT3420-B	INSTRUCTION MANUAL	(GN)			<GREASE OR JIG/TOOL>	
A2	RFEA406B-1W	AC ADAPTOR	(EB) Δ			TEST DISC	
A2	RFEA401E-2S	AC ADAPTOR	(EG)				
A2	RFEA403Z-S	AC ADAPTOR	(GC)	SA1	SZZP1054C	PLAYABILITY TEST DISC	
A2	RFEA403A-S	AC ADAPTOR	(GN) Δ	SA2	SZZP1056C	UNEVEN TEST DISC	
A3	RFEV133A-KS	STEREO EARPHONES WITH R. C.					
A4	RAK-SL923WK	WIRELESS REMOTE CONTROLLER				GREASE	
A4-1	NTR102172002	BATT. COVER FOR WIRE R. C.					
A5	RJL2P001X10	STEREO CONNECTION CABLE	(EB, EG)	SA3	RFKXPG671	MOLYCOAT GREASE PG671	
A6	RP-BP60EYS1	RECHARGEABLE BATTERIES	(EB, EG)				

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

- 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.

SUPPLY OF RECHARGEABLE BATTERY AS REPLACEMENT PARTS

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

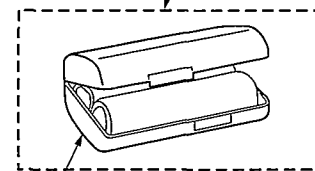
Replacement Parts:

- Rechargeable Batteries (RP-BP60EYS1/RP-BP60SYS2) to be supplied will be provided with Carrying Case (RFKNLS370-K).
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFKNLS370-K) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

CAUTION IN USE OF RECHARGEABLE BATTERY

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case. If not, it may either heat or ignite by shorting with a metal.

RP-BP60EYS1: (EB, EG)
RP-BP60SYS2: (GC, GN)
(Rechargeable Battery with Carrying Case)...A6



RFKNLS370-K
(Battery Carrying Case)...A6-1

