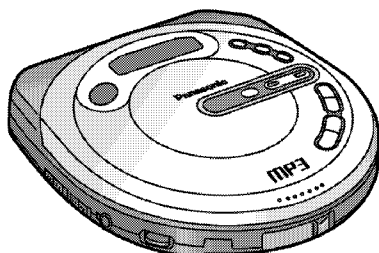


Service Manual

Portable CD Player



SL-MP50

Traverse Deck: RAE0145Z Mechanism Series

Colour

(S).....Silver Type

Areas

EB.....Europe, East Europe and Russia.

EG.....Great Britain.

GK.....China.

Specifications

IAudio

No. of channels: 2 channels (left and right, stereo)

Frequency response: 20 ~ 20,000 Hz (+0dB ~ -7dB)

Headphones output level: RMS Max. 8mW+8mW/ 16Ω (adjustable)

D/A converter: 1bit, MASH

IPickup

Light source: Semiconductor laser

Wavelength: 780 nm

IMP3

Max. number of tracks (files): 999

Max. number of albums (folders): 999

Max. album levels: 999

Supported bit-rates: 32kbps to 320kbps
(128kbps is recommended)

IGeneral

Operational temperature range: 0°C-40°C

Rechargeable temperature range: 5°C-40°C

Power supply: DC 4.5V

IPlay time

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

Batteries used	CD-DA disc	MP3 disc
2 alkaline batteries	35h	14h
2 optional rechargeable batteries (P-3GAVA/2B))	12h	5h

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

• Play time will be considerably reduced when playing CD-RW.

Recharging time: 5h

Dimensions (WxHxD) 128x27x131.5mm

Weight: 259g (with batteries)
213g(without batteries)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

⚠ 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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1 Precaution of Laser Diode

CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

Wave length: 780nm

Maximum output wadiation 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:

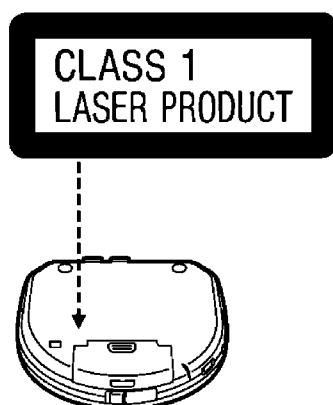
Dieses Produkt enthält eine Lasereinheit. Im eingeschalteten Zustand Wird unsichtbare Leserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge: 780nm

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

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

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



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLAS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSIHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

2 Accessories

For EB area

- Stereo earphones.....1pc.
(L0BAB0000123)
- AC adaptor.....1pc.
(RFEA403B-S)

For EG area

- Stereo earphones.....1pc.
(L0BAB0000123)
- AC adaptor.....1pc.

(RFEA418A-S)

For GK area

- Stereo earphones.....1pc.
(L0BAB0000124)
- AC adaptor.....1pc.
(RFEA403T-1S)
- Wired remote control.....1pc.
(RFEV033P-SS)

3 Playing MP3 Files

What is MP3 ?

A method of compressing audio, MPEG Audio Layer 3 (MP3) allows audio to be reduced to up to one tenth its original size when a compression rate of 128 kbps is used, without overtly hurting audio quality.

When creating MP3 files to play on this unit

- **Disc formats:** ISO9660 level 1 and level 2 (except for extended formats)

Files: MP3 files with the suffix ".mp3" or ".MP3"

- MP3 files may not be played in the order you recorded them. Note the following if you want the files to play in the order you recorded them.

- 1 Use software that records the files to the disc in file name order.
- 2 Prefix folder and file names with 3-digit numbers in the order you want to play them.
- 3 Give the files and folders names with 8 characters or less, including the 3-digit prefix.
- 4 It is better not to create folders (albums) within folders (such as shown in example 2).

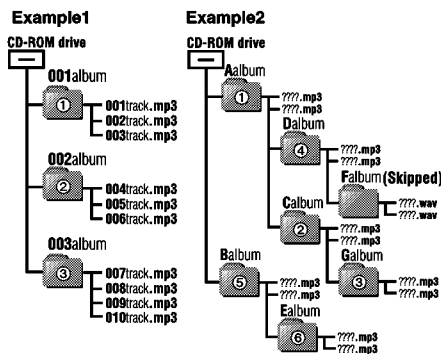
This unit plays MP3 files in the following order.

Numbers such as ① show the order folders (albums) and files (tracks) within them are played.

Example1: Recommended method when creating MP3 discs.

Example2: A disc not created in the recommended way.
• Play will be in the order shown in the below diagram, irrespective of folder and track names, so the order of play in this example will be A→C→G→D, not A→B→C→D. Folders and files in the same level will be played in order according to their names.

• Folders that do not contain MP3 files ("Falbum" in the example) are skipped.



Limitations on MP3

- This unit cannot play files if they have a suffix other than ".mp3" or ".MP3".
- This unit cannot play files that have the suffix ".mp3" or ".MP3" if they are not MP3 files.
- This unit is not compatible with ID3 tags.
- This unit is compatible with multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- This unit cannot play files recorded using packet write.

Frequently asked questions

Q. Can I play a disc if it has both audio data and MP3 data?

No. Only the data type used for the first track is played.

Q. Is there a limit on the number of albums and tracks?

This unit can play a maximum of 999 albums and 999 tracks. The unit cannot play albums or tracks beyond these limits.

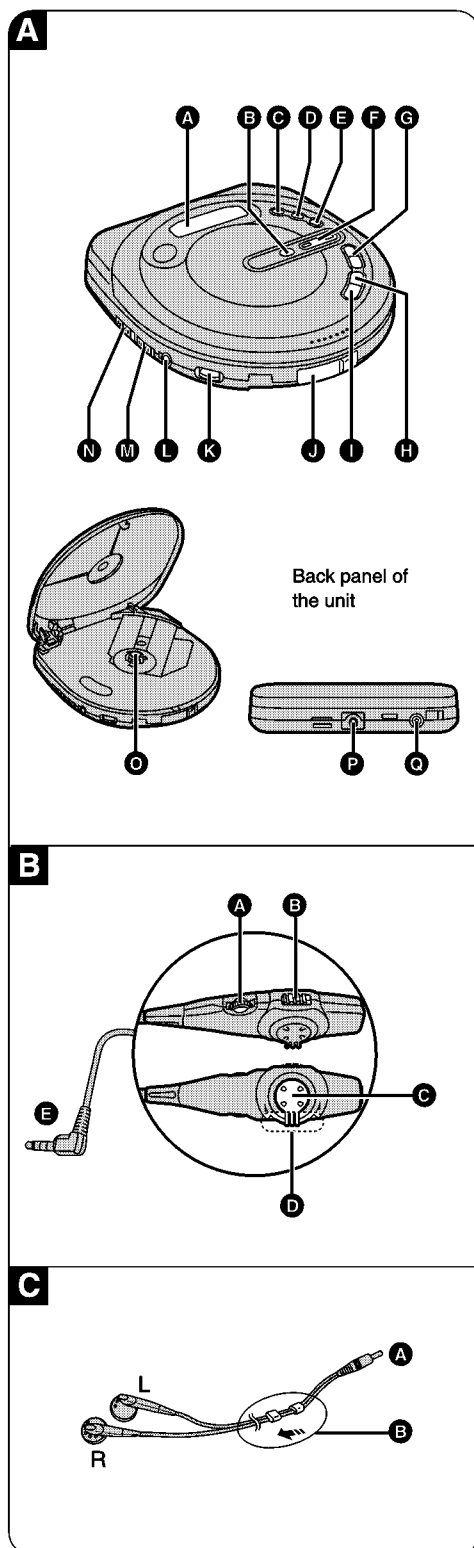
Q. Why is sound interrupted between tracks?

The pick-up lens has to move to find the next track so a few seconds of silence is normal.

Q. Can I use 700-MB data?

Yes, you can.

4 Operating Instructions



Main unit

- A** Display
- B** Album mode button (ALBUM MODE)
- C** Memory/recall button (MEMORY/RECALL)
- D** Repeat button (REPEAT)
- E** S-XBS button (S-XBS)
- F** Album skip button (← ALBUM →)
- G** Skip/search buttons (|◀, ▶|)
- H** Play/pause button (▶/||)
- I** Stop/operation off button (■, OPR OFF)
- J** Open switch (OPEN ▲)
- K** Headphone volume control (VOLUME)
- L** Headphone jack (📶)
- M** Hold switch (HOLD)
- N** Play mode selector (NOR, RANDOM, RESUME)
- O** CD release button (PUSH)
- P** Hole for car mounting base
- Q** DC IN jack (DC IN 4.5 V )

Wired remote control

- A** Volume control (VOLUME)
- B** Hold switch (HOLD)
- C** Play/stop/off button (PUSH)
- D** Skip/search selector (+, -)
- E** Plug

Stereo earphones

- A** Plug
- B** Slider

5 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).

5.1. Handling the traverse deck (optical pickup)

1. The traverse deck (optical pickup) is an extremely high-precision construction and must not be subjected to impact, excessive vibration, or other types of rough handling.
2. In order to prevent static electricity damage to the laser diode, use a short pin or similar tool to short the optical pickup's flexible circuit boards after they have been disconnected from the main circuit board. (as shown in **Fig. 1**)
3. Handle the flexible circuit boards with care; excessive force could cause them to be broken.
4. Do not turn the pre-set variable resistor (for adjustment of the laser power); it has been adjusted at the factory. (as shown in **Fig. 2**)

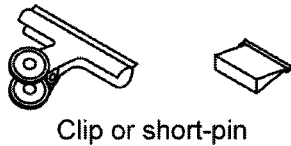


Fig. 1

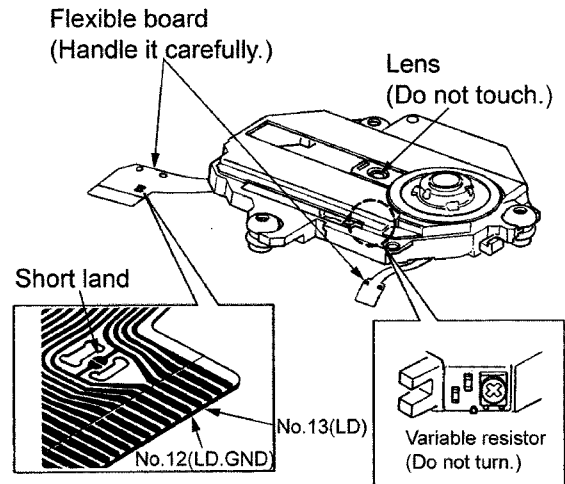


Fig. 2

5.2. Grounding for electrostatic breakdown prevention

1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body. (as shown in **Fig. 3**)
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. (as shown in **Fig. 4**)

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).

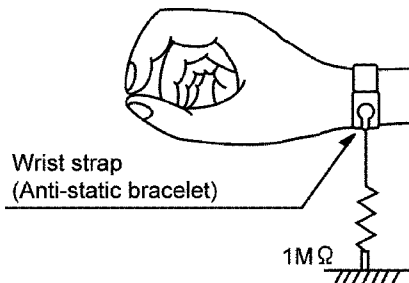


Fig. 3

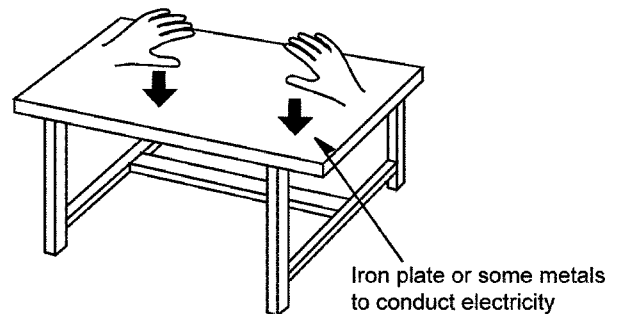


Fig. 4

6 Operation Checks and Component Replacement Procedures

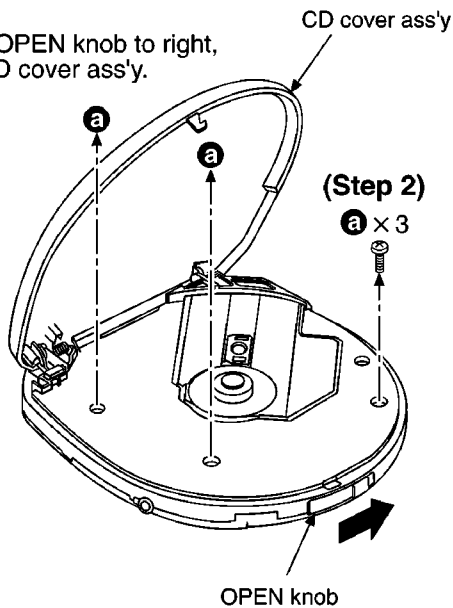
- This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
- For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

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

6.1.1. Checking for the main P.C.B. (A side)

(Step 1)

Sliding the OPEN knob to right, open the CD cover ass'y.

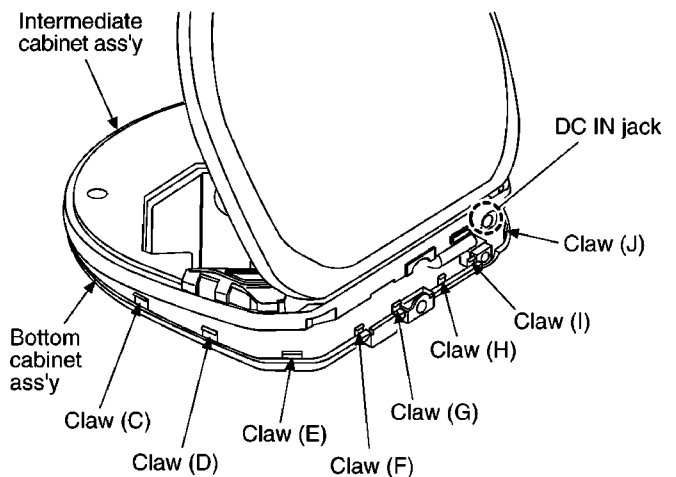
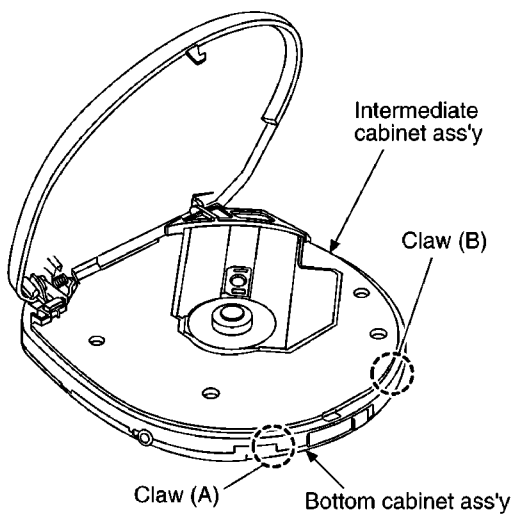


(Step 2)

a × 3

(Step 3)

Spread the clearance between the bottom cabinet ass'y and intermediate cabinet ass'y manually.

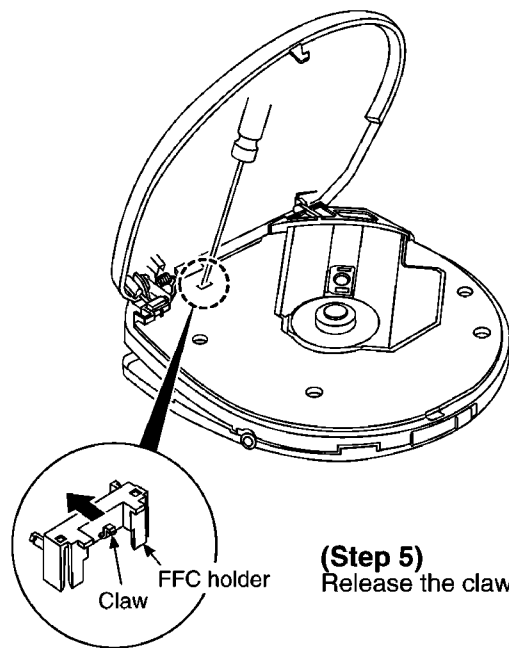


(Step 4)

Open the clearance between the bottom cabinet ass'y and intermediate cabinet ass'y, and then release the claw (C) to claw (J) in turn.

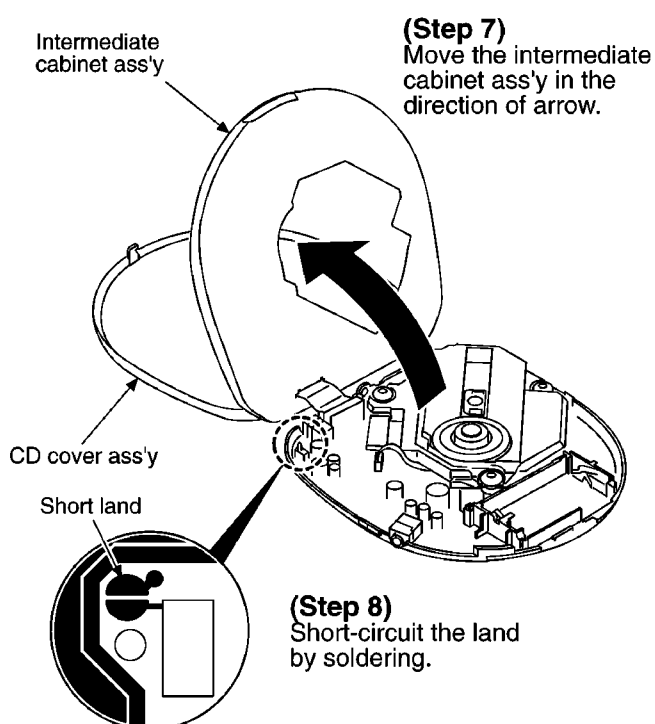
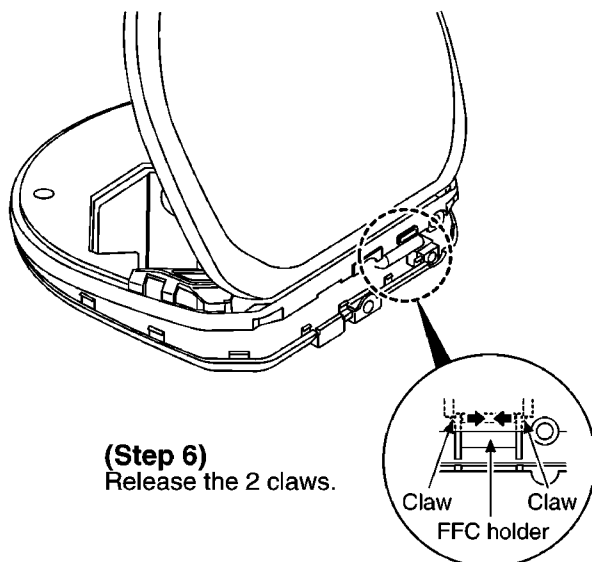
NOTE:

Take care not to break the DC IN Jack provided with intermediate cabinet.

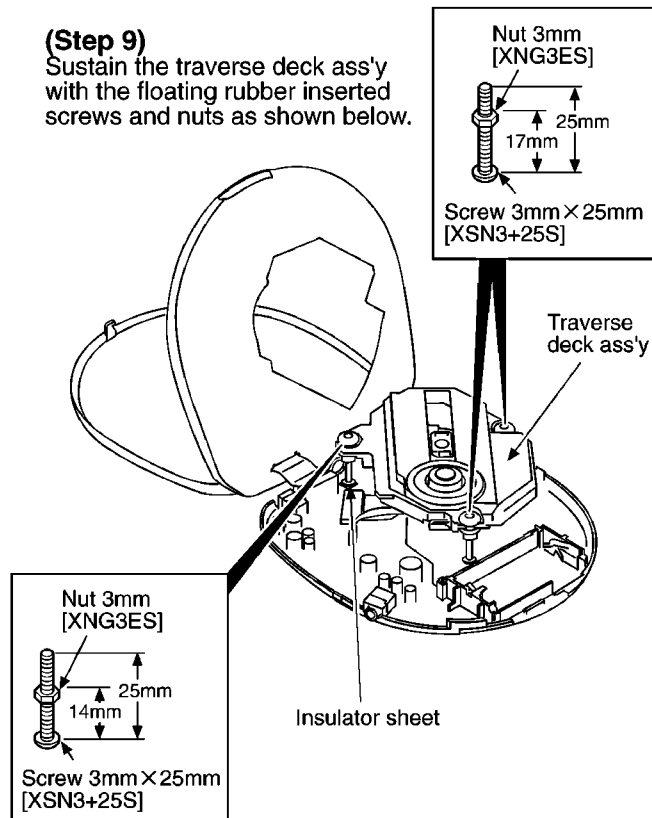


(Step 5)

Release the claw.



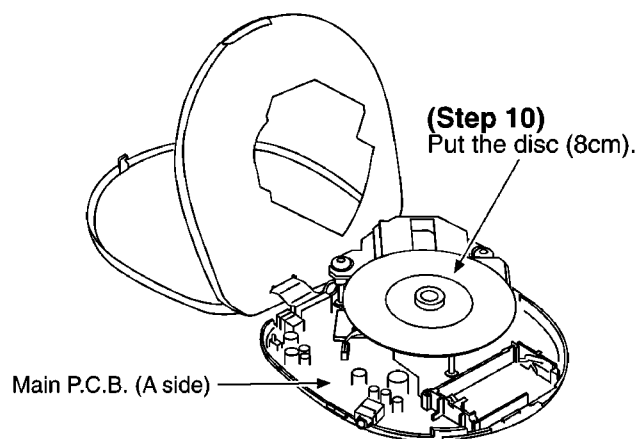
(Step 9)
Sustain the traverse deck ass'y with the floating rubber inserted screws and nuts as shown below.



NOTE:

- The tip of screw must not protrude above the floating rubber.
- To keep insulation, place the insulator sheet (paper etc.) between the P.C.B. and the head of screws.

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



NOTE:

After checking, unsolder the short land to open circuit.

6.1.2. Checking for the main P.C.B. (B side)

- Follow the (Step 1) - (Step 8) of item 6.1.1.

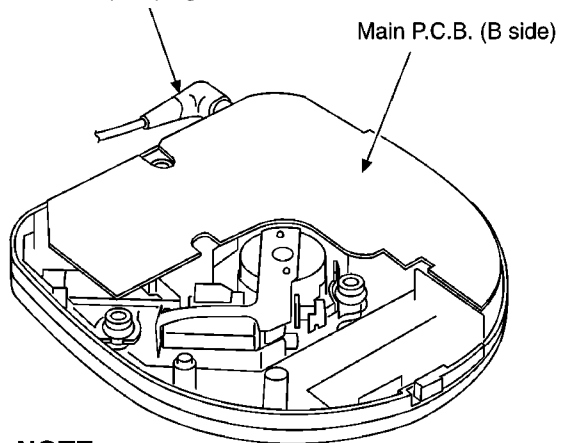
- Check the main P.C.B. (B side) as shown below.

(Step 7)

Insert the AC adaptor plug into the DC IN jack, and then apply the power.

AC adaptor plug

Main P.C.B. (B side)

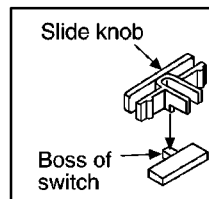


NOTE:

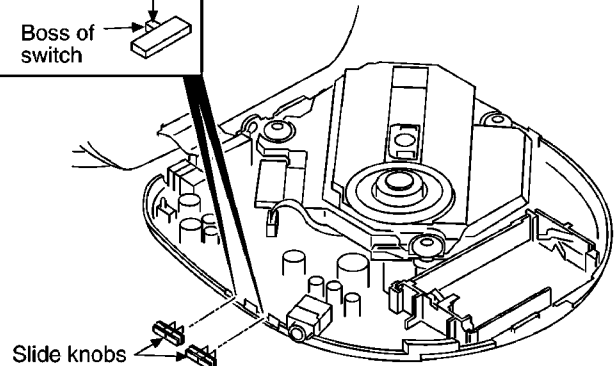
After checking, unsolder the short land to open circuit.

Notice for installation of slide knobs

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

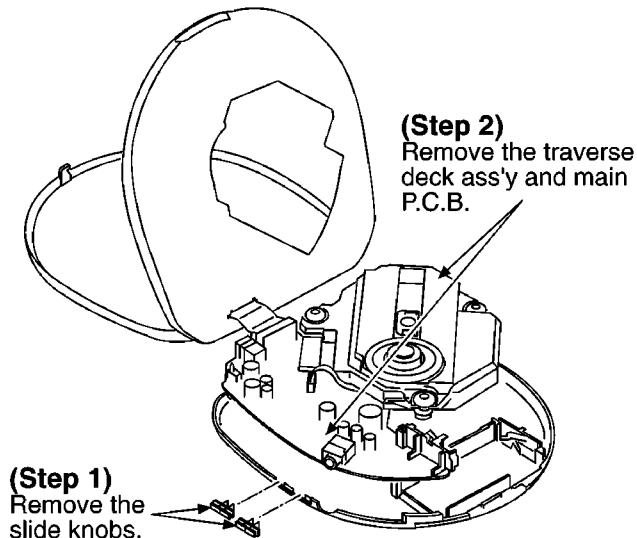


Slide knobs



(Step 2)

Remove the traverse deck ass'y and main P.C.B.

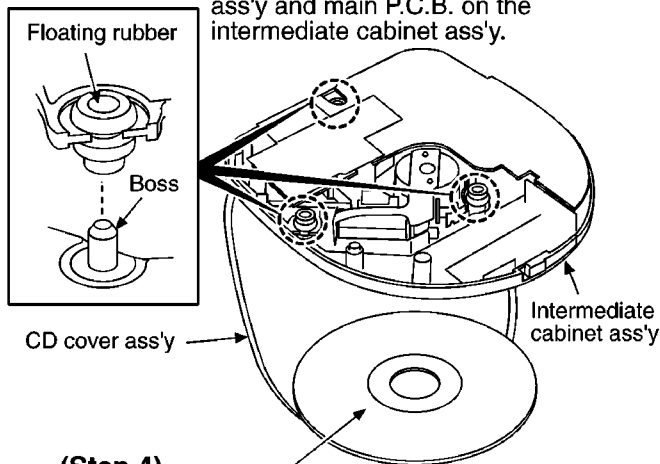


(Step 1)

Remove the slide knobs.

(Step 3)

Align the floating rubbers with bosses, and then locate the traverse deck ass'y and main P.C.B. on the intermediate cabinet ass'y.

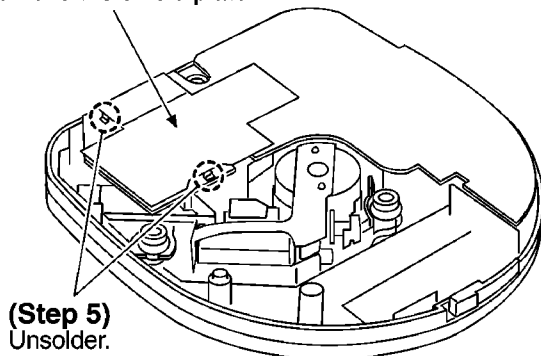


(Step 4)

Put the test disc, and then close the CD cover ass'y.

(Step 6)

Remove the shield plate.

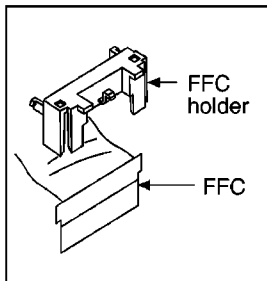
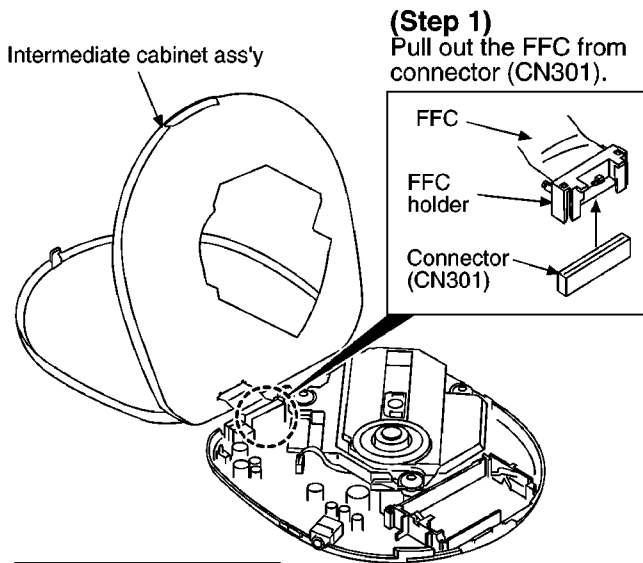


(Step 5)

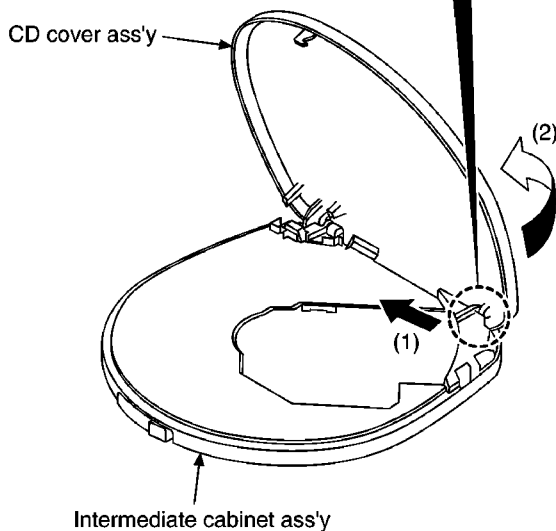
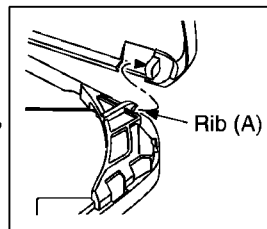
Unsolder.

6.2. Replacement for the CD cover ass'y and LCD

• Follow the (Step 1) - (Step 7) of item 6.1.1.

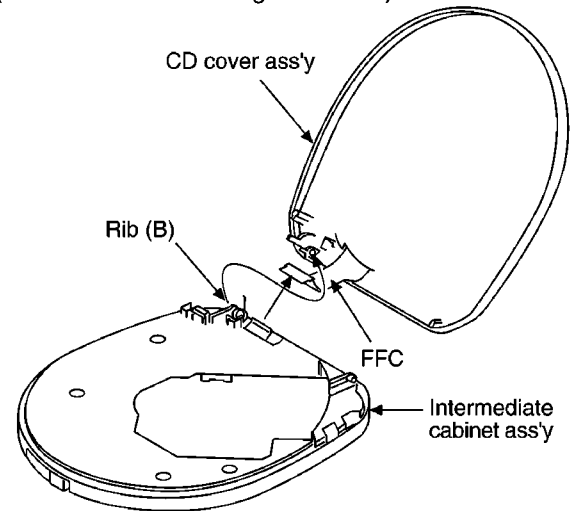


(Step 3)
Bend the intermediate cabinet ass'y in the direction of arrow (1), and then release the CD cover ass'y from the rib (A).

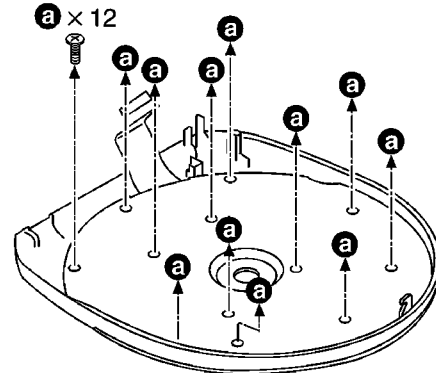


(Step 4)
Remove the CD cover ass'y from the rib (B).

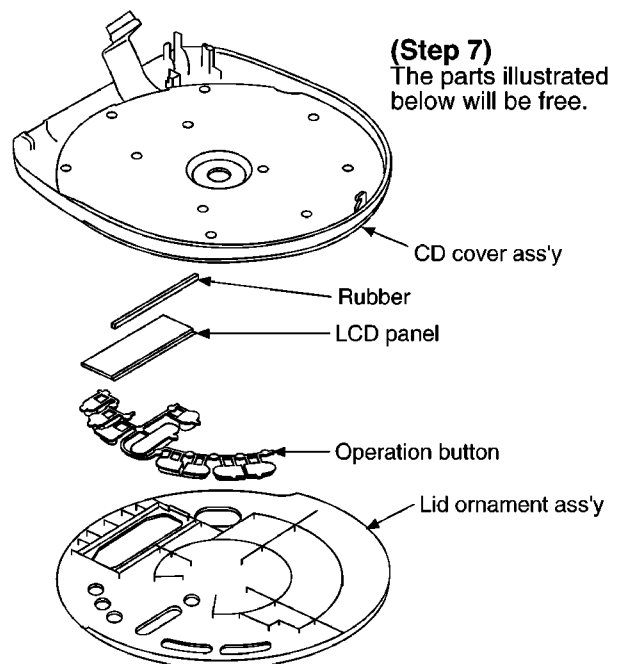
(Step 5)
Draw the FFC from the intermediate cabinet ass'y. (Take care not to damage the FFC.)



(Step 6)



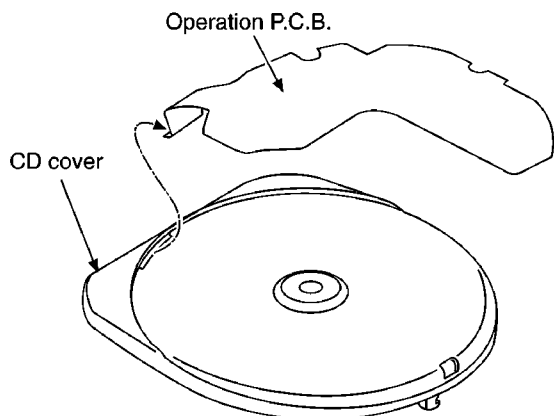
(Step 7)
The parts illustrated below will be free.



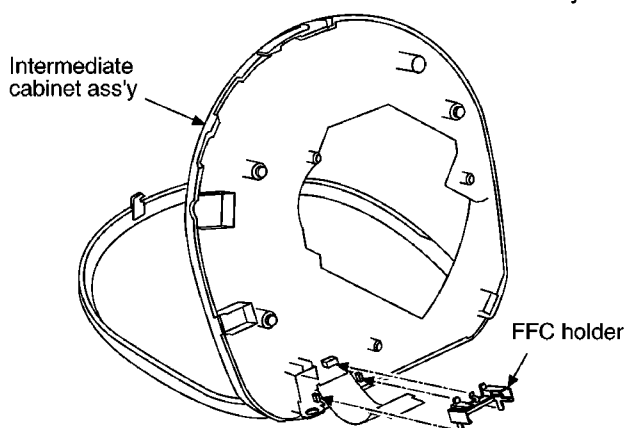
NOTE:
Be careful not to be applied the dust or smudge on the surface rubber.

(Step 8)

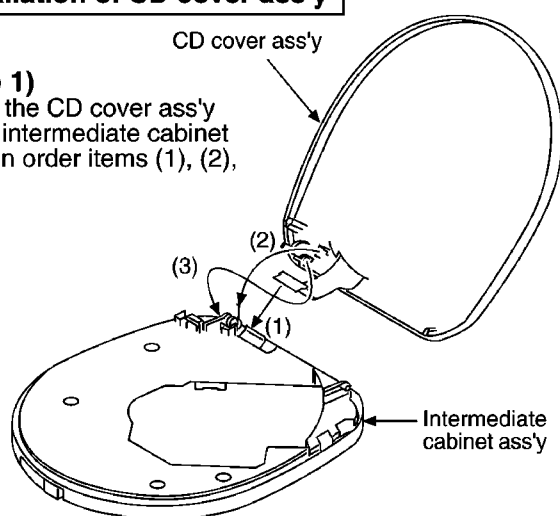
Remove the operation P.C.B. from CD cover.

**Installation of intermediate cabinet ass'y****(Step 1)**

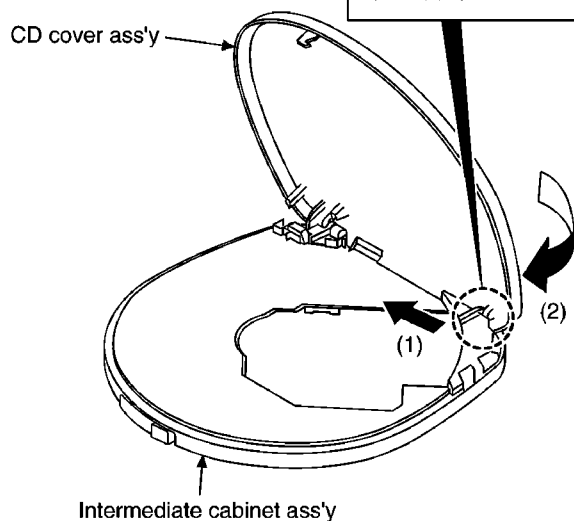
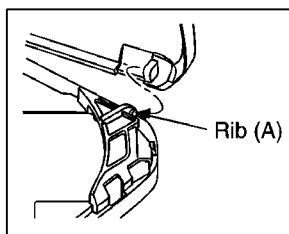
Install the FFC holder to intermediate cabinet ass'y.

**Installation of CD cover ass'y****(Step 1)**

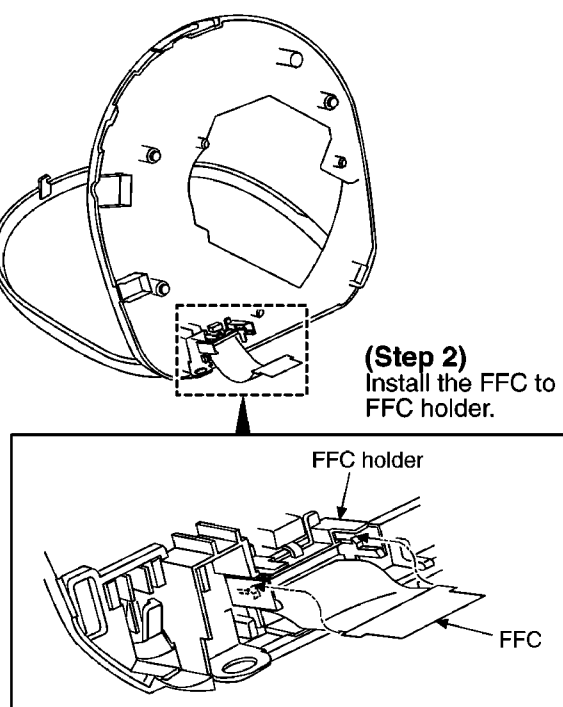
Install the CD cover ass'y to the intermediate cabinet ass'y in order items (1), (2), (3).

**(Step 2)**

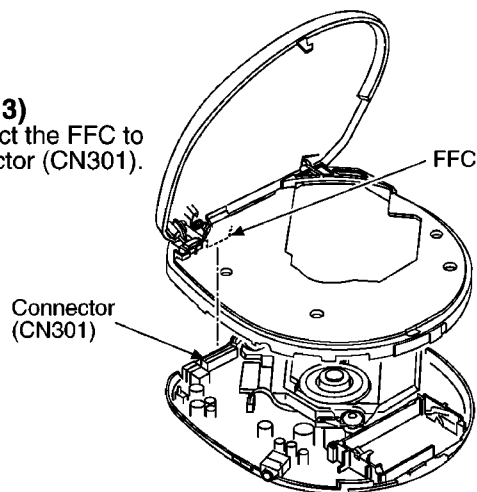
Bend the intermediate cabinet ass'y in the direction of arrow (1), and then align the CD cover ass'y with the rib (A).

**(Step 2)**

Install the FFC to FFC holder.

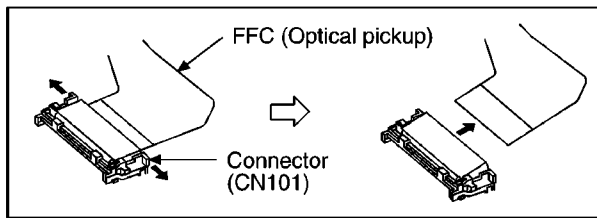
**(Step 3)**

Connect the FFC to connector (CN301).



6.3. Replacement for the traverse motor

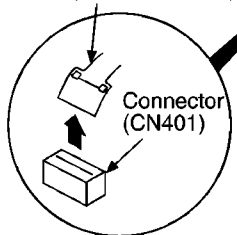
- Follow the (Step 1) - (Step 7) of item 6.1.1.



(Step 1)
Pull out the FFC from connector (CN101).

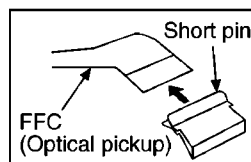
(Step 3)
Remove the traverse deck.

FFC (From the motor)

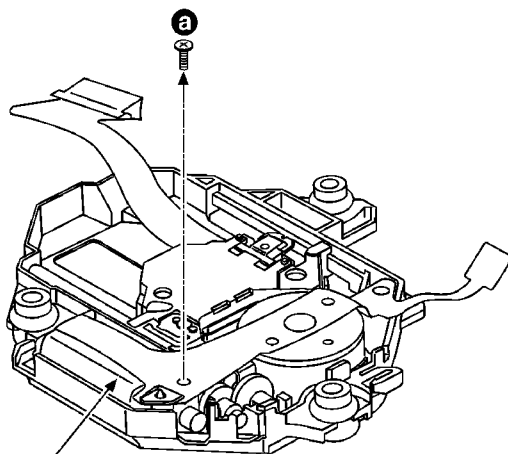


(Step 2)
Pull out the FFC from connector (CN401), and then remove the traverse deck ass'y.

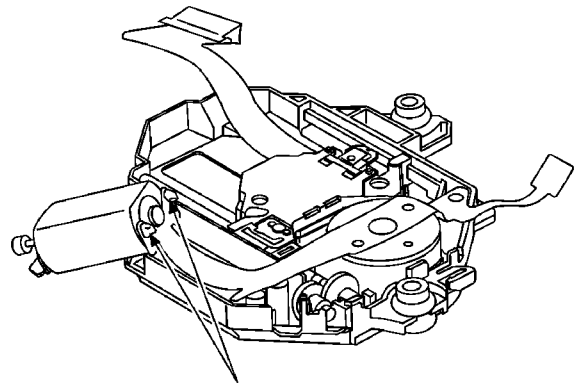
NOTE:
Insert a short pin into the traverse deck's FFC.
(Refer to "Handling Precautions for Traverse Deck".)



(Step 4)



(Step 5)
Remove the traverse motor.

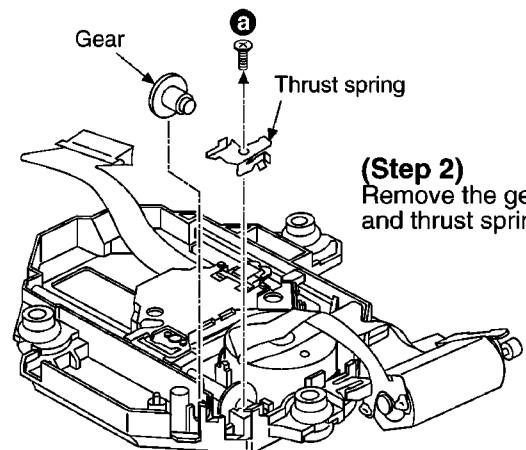


(Step 6)
Unsolder the motor terminals.
(2 points)

6.4. Replacement for the optical pickup

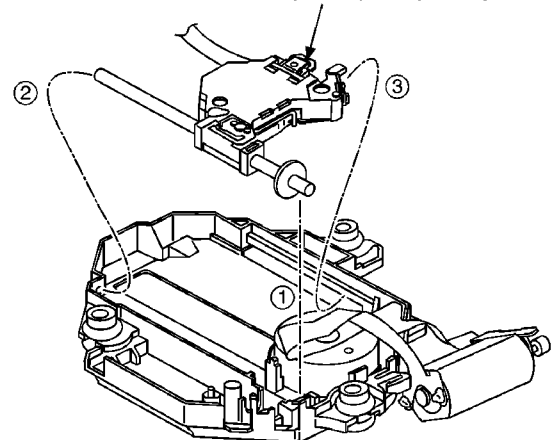
- Follow the (Step 1) - (Step 7) of item 6.1.1.
- Follow the (Step 1) - (Step 5) of item 6.3.

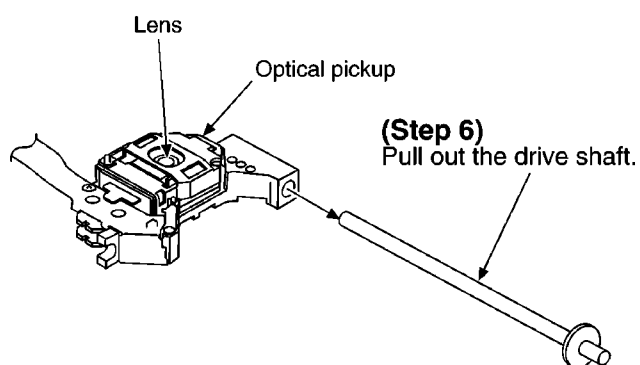
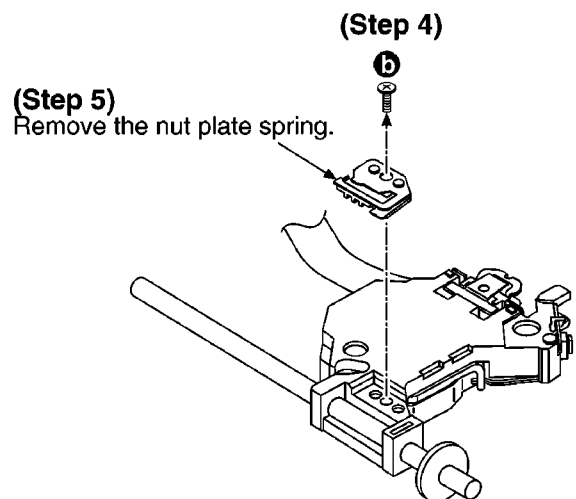
(Step 1)



(Step 2)
Remove the gear and thrust spring.

(Step 3)
Remove the optical pickup ass'y.



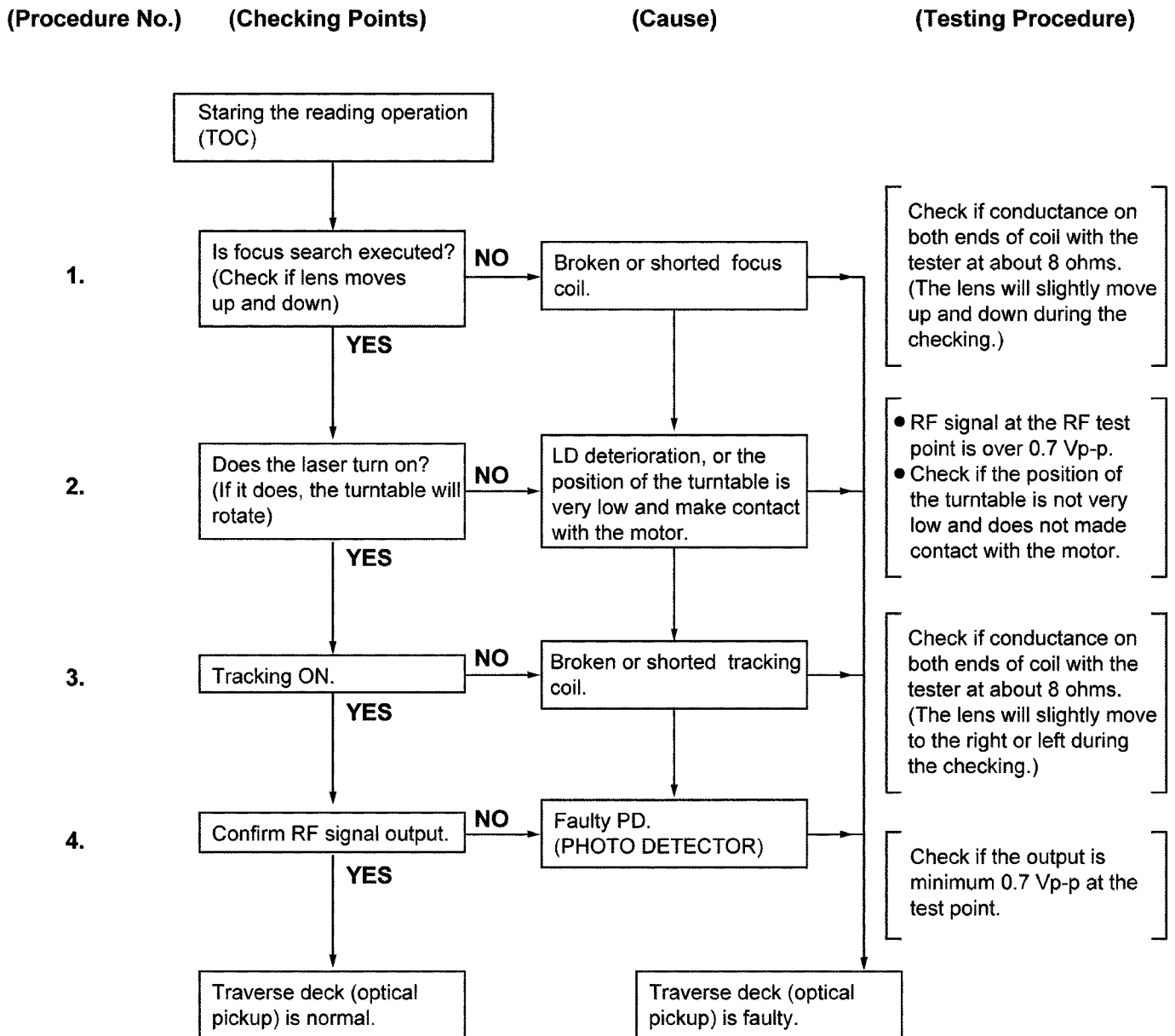
**NOTE:**

1. Use care to prevent damage the optical pickup, due to the precision construction.
2. Do not apply the grease on the lens of optical pickup.
3. Do not touch the lens of the optical pickup.

7 Checking the Operation Problems on the Traverse Deck (Optical Pickup)

Make sure to follow the procedures below to check the operation problems of the traverse deck (optical pickup) before replacing it.

Replace the traverse deck only after the problem is identified.



※ Replace the traverse deck.

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

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

*Checking Skip Search

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

*Checking Manual Search

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

*Checking Playability

1. Play the 0.7 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.

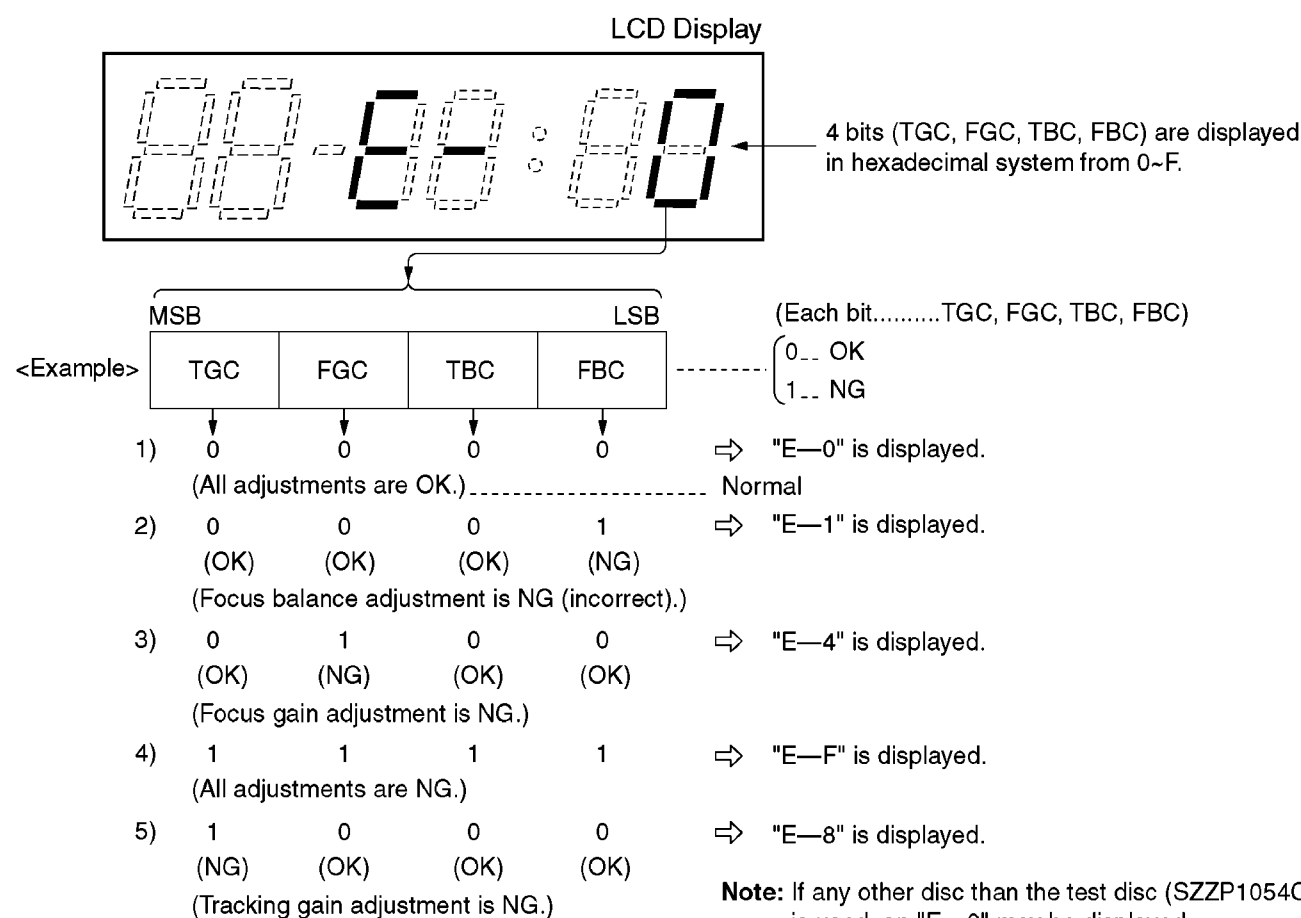
8 Automatic Adjustment Results Display Function (Self-check Function)

On this unit (SL-MP50), each automatic adjustment results 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). (Using the new Servo IC: MN662786SB)

8.1. 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 ■ (OPR OFF) Button once.
4. An automatic adjustment result is displayed on the LCD.

8.2. Display of automatic adjustment results (self-check function)



<Example>

Follow the below steps when "E-1" is displayed.

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

1 Check if

1. the waveform or voltage of the focus servo circuit is correct. (check the waveform or voltage.)
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.)

1 Check if

1. the waveform or voltage of the focus servo circuit is

correct. (check the waveform or voltage.)

2. the focus coil of the optical pickup is correct (around 15 ohms).
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.)

1 Check if

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

(check the waveform or voltage.)

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.

9 Outline of 48-Second Sound Keeper Technique Used for Prevention of Sound from Skipping

9.1. Conventional Shock proofing Technique

Input information read out of the CD at double speed is demodulated, stored in the memory, and while sound-marking signal is supplied at normal speed from the memory to the D/A converter, the residual data is accumulated in the memory.

If reaccess to the break point is accomplished before the memory becomes empty, apparent playback sound is entirely kept free from breaking even when information pauses due to vibration, etc. It was necessary to use the 16M bit memory for securing the accumulation time of about 48 seconds.

9.2. Compression-shock proofing [Outline]

Fig. 8 is a block diagram showing the compression-shock proofing mechanism, the difference of which from the conventional mechanism is as follows: Input information read out at double speed undergoes data compression (16 bits -- 4

bits) by the encoder in the ADPCM (Adaptive Difference PCM) and stored in the external memory; the stored memory information undergoes data elongation (4 bits -- 16 bits) by the decoder in the ADPCM and supplied at normalspeed to the D/A converter.

The data compression technique has conducted to reduction of required memory capacity from 16M bits to 4M bits for securing the accumulation time equivalent to the conventional.

All-inclusive Block Diagram

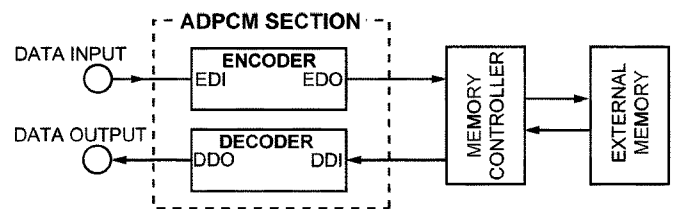
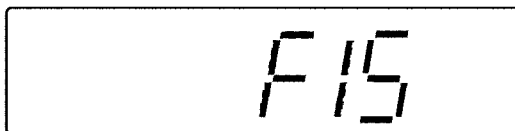


Fig. 8

10 Display of Self-Diagnostic Function

This model is equipped with a self-diagnosis function and shows, when necessary, the following indication in the LCD section of the set.

LCD display



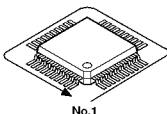
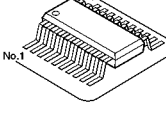
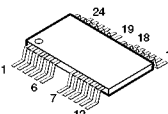
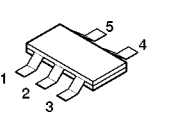
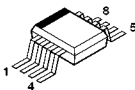
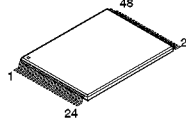
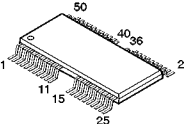
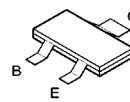
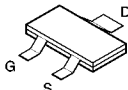
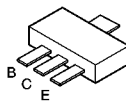
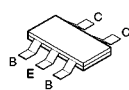
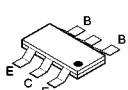
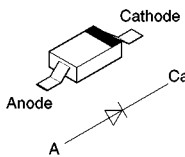
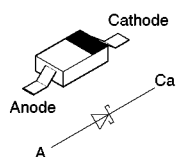
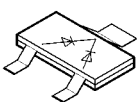
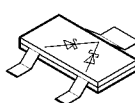
(Press PLAY and STOP button. After 15 seconds, it is displayed for 2 seconds.)

"F15"---This indication appears when the Down switch fails to turn ON since the magnetic head fails to move up/down normally (Due to trouble of the magnetic head or trouble of the magnetic head up/down motor) or the magnetic head P.C.B. is out of position or a foreign matter has mixed in or for some other reason.

In such a case, check the peripheral parts of the magnetic head, repair or replace defective parts with normal ones.

11 Schematic Diagram Notes

11.1. Type Illustration of IC's, Transistors and Diodes

 No.1	<table><tr><td>MN662786SB</td><td>80PIN</td></tr><tr><td>C1BB00000641</td><td>144PIN</td></tr><tr><td>C2CBYF000026</td><td>100PIN</td></tr><tr><td>C2BBGE000598</td><td>80PIN</td></tr></table>	MN662786SB	80PIN	C1BB00000641	144PIN	C2CBYF000026	100PIN	C2BBGE000598	80PIN	 No.1	<table><tr><td>AN8885SBE1V</td><td>28PIN</td></tr><tr><td>C0JBCF000152</td><td>14PIN</td></tr><tr><td>NJU7082BVAE1</td><td>8PIN</td></tr><tr><td>RS10003E2</td><td>40PIN</td></tr><tr><td>AN8746SAE1</td><td>32PIN</td></tr><tr><td>C0JBCN000046</td><td>16PIN</td></tr></table>	AN8885SBE1V	28PIN	C0JBCF000152	14PIN	NJU7082BVAE1	8PIN	RS10003E2	40PIN	AN8746SAE1	32PIN	C0JBCN000046	16PIN	C3ABMB000027 	C0DBAFZ00024 
MN662786SB	80PIN																								
C1BB00000641	144PIN																								
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RS10003E2	40PIN																								
AN8746SAE1	32PIN																								
C0JBCN000046	16PIN																								
AK93C45BH-L 	C3FBKD000188 	C3ABMG000099 	2SB709ATX 2SD1819ATX DTA114YUA106 DTA144EUA106 UN5213TX 		2SK1958T1 XP152A12C0MR B1CDGD000001 																				
B1ADMD000007 	FMG6AT148 	XN0F26200L 	MA111TX 	MA729TX MA1070400L 	MA142WKT DAN202UT106 																				
MA741WKT 																									

11.2. Schematic Diagram Notes

Notes:

- S201: Laser ON / OFF switch.
 S202: Rest detection switch.
 S301: Hold switch (HOLD) in "OFF" position.
 S302: Mode switch (MODE) in "NORMAL" position
 VR701: Volume V.R. (VOLUME).

- Components identified by $\triangle$ mark have special characteristics important for safety.
- When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
- The supply part number is described alone in the replacement parts.
- Signal line
 -  : Positive voltage line.
 -  : Playback signal line.
- 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.

Measurement conditions:

* ()CD playback mode (Test disc 1kHz, L+R, 0dB)

* No markCD stop mode

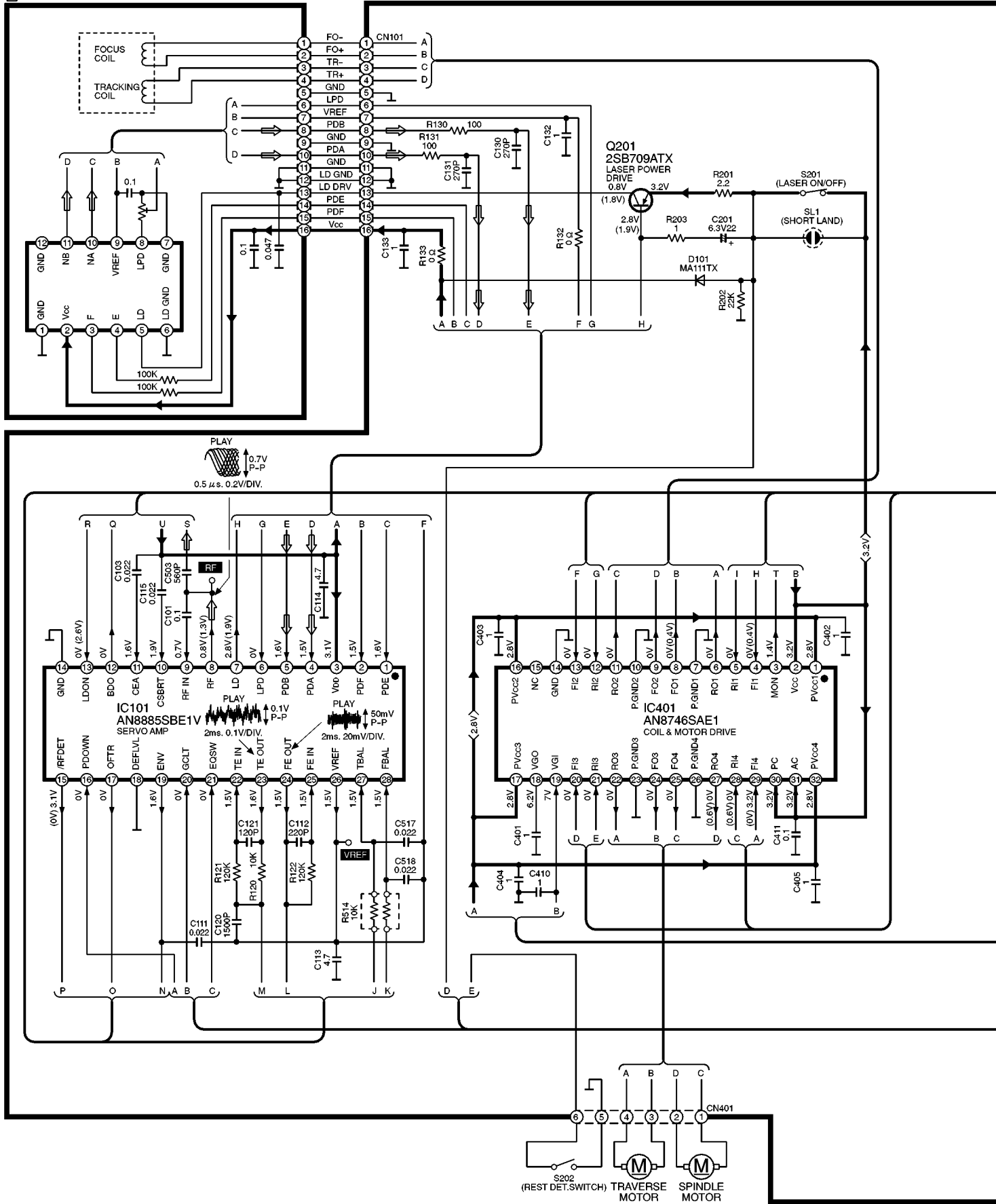
Caution!!

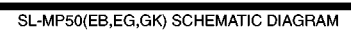
- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

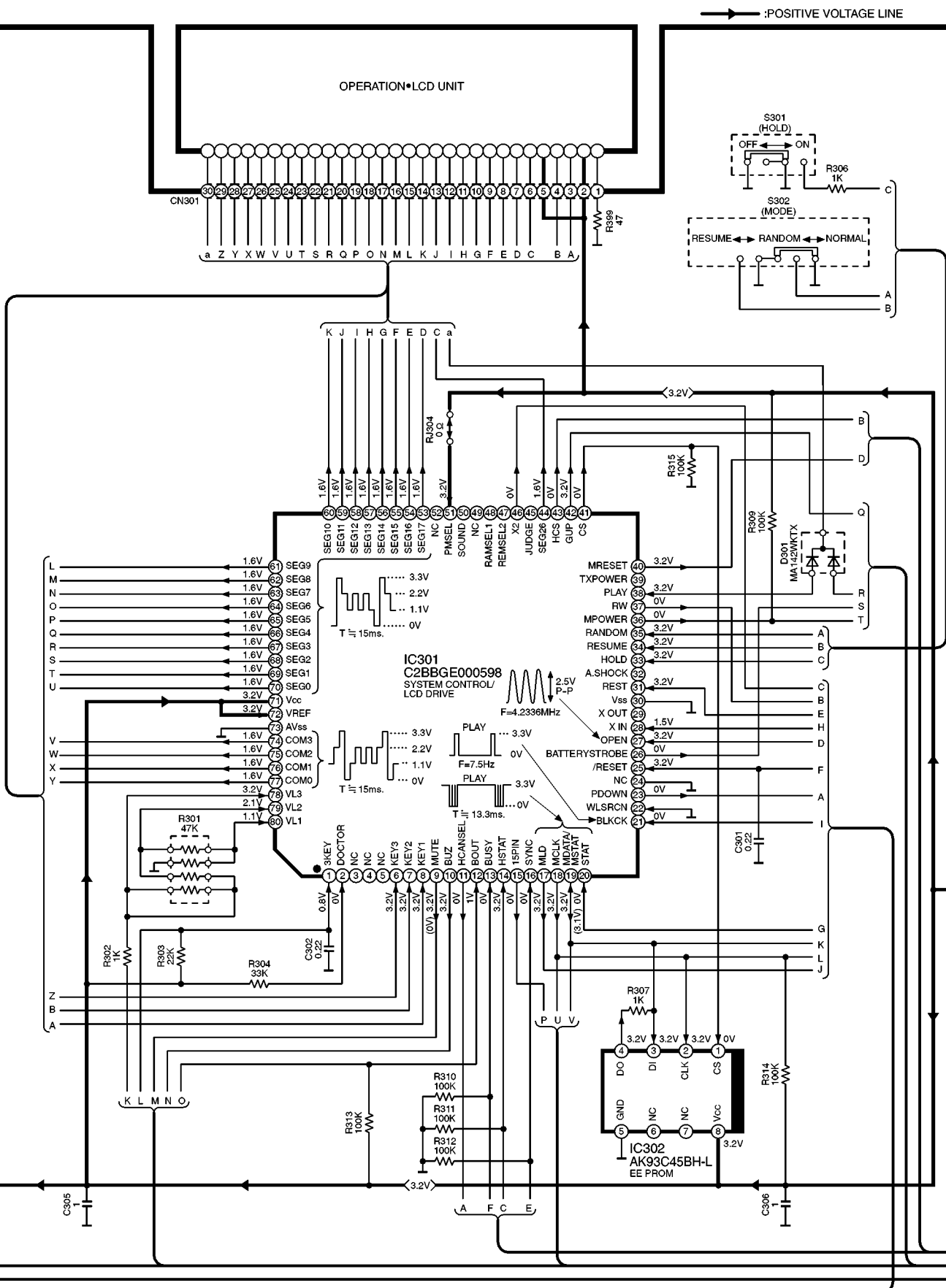
12 Schematic Diagram

△ OPTICAL PICKUP

→ : POSITIVE VOLTAGE LINE ⇨ : PLAYBACK SIGNAL LINE

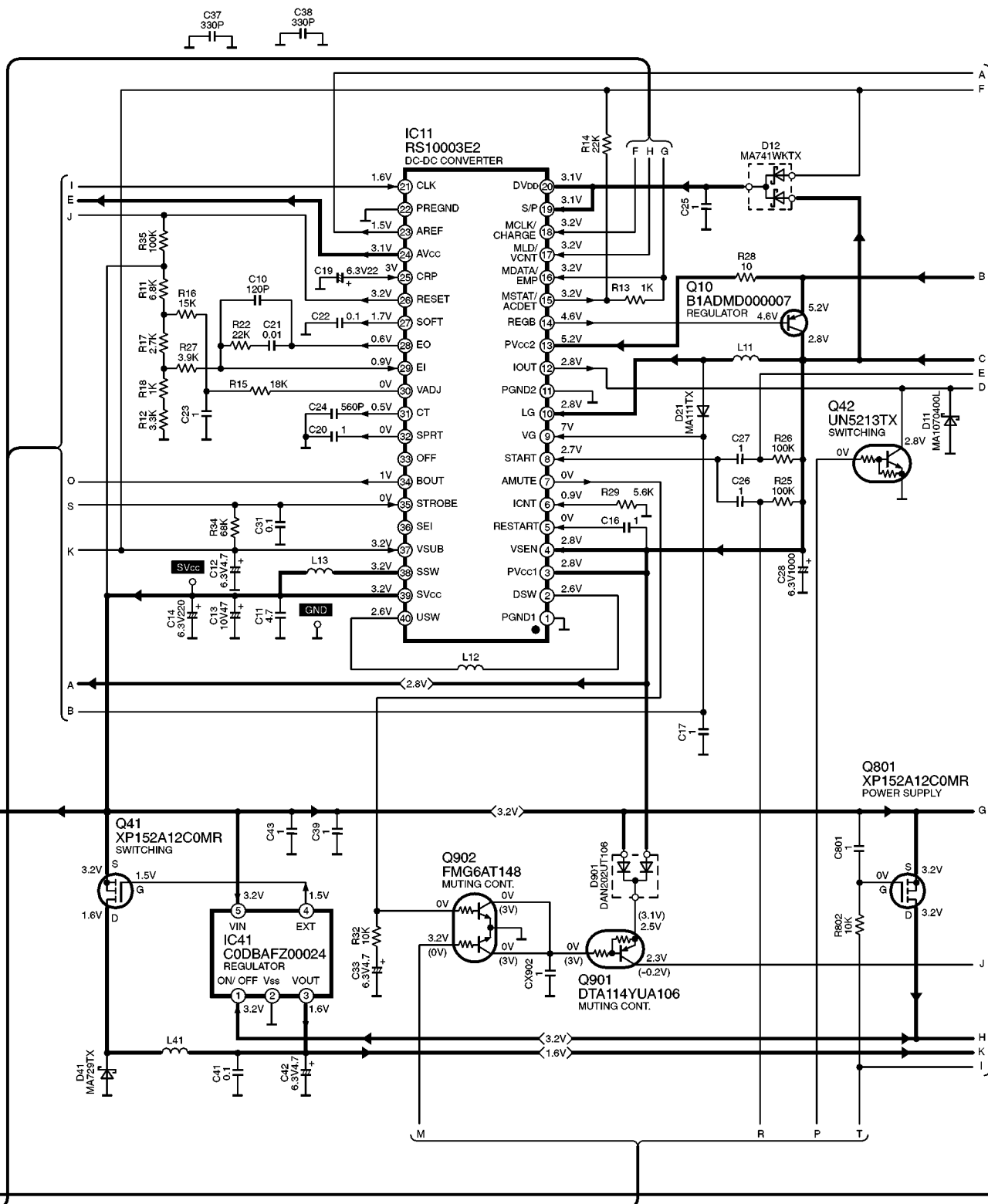






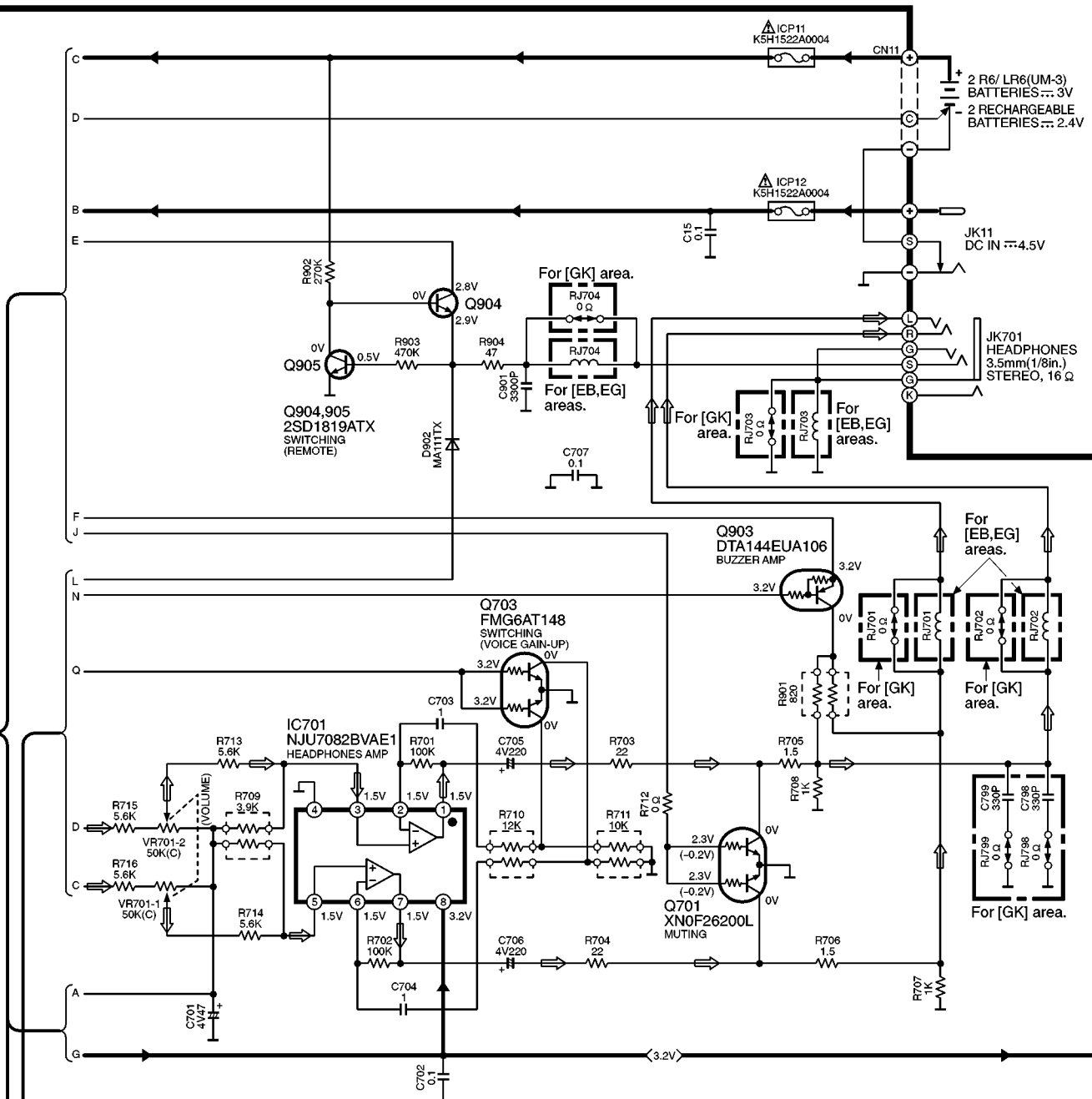
SL-MP50(EB,EG,GK) SCHEMATIC DIAGRAM

→ : POSITIVE VOLTAGE LINE

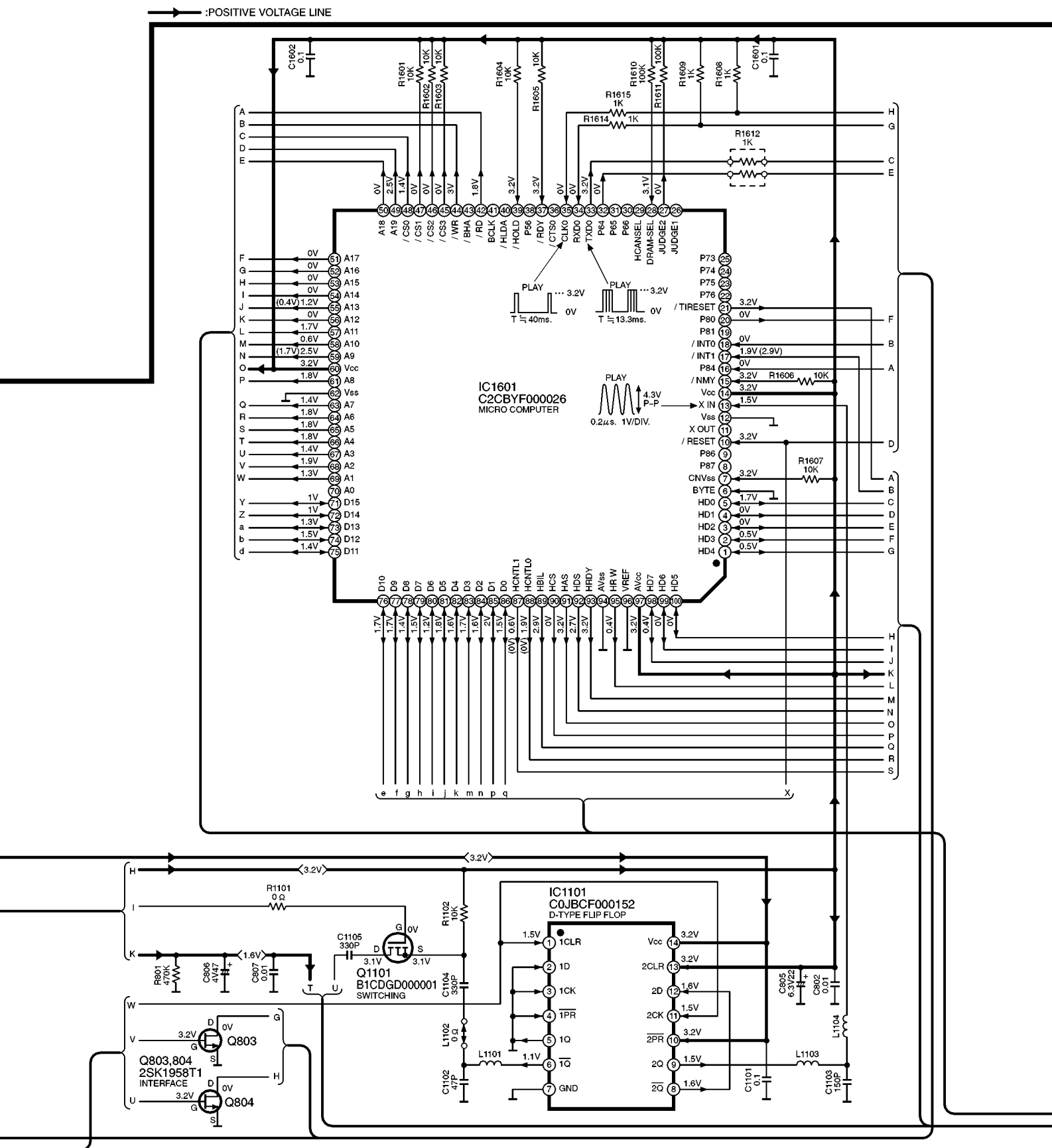


SL-MP50(EB,EG,GK) SCHEMATIC DIAGRAM

→ : POSITIVE VOLTAGE LINE ⇨ : PLAYBACK SIGNAL LINE

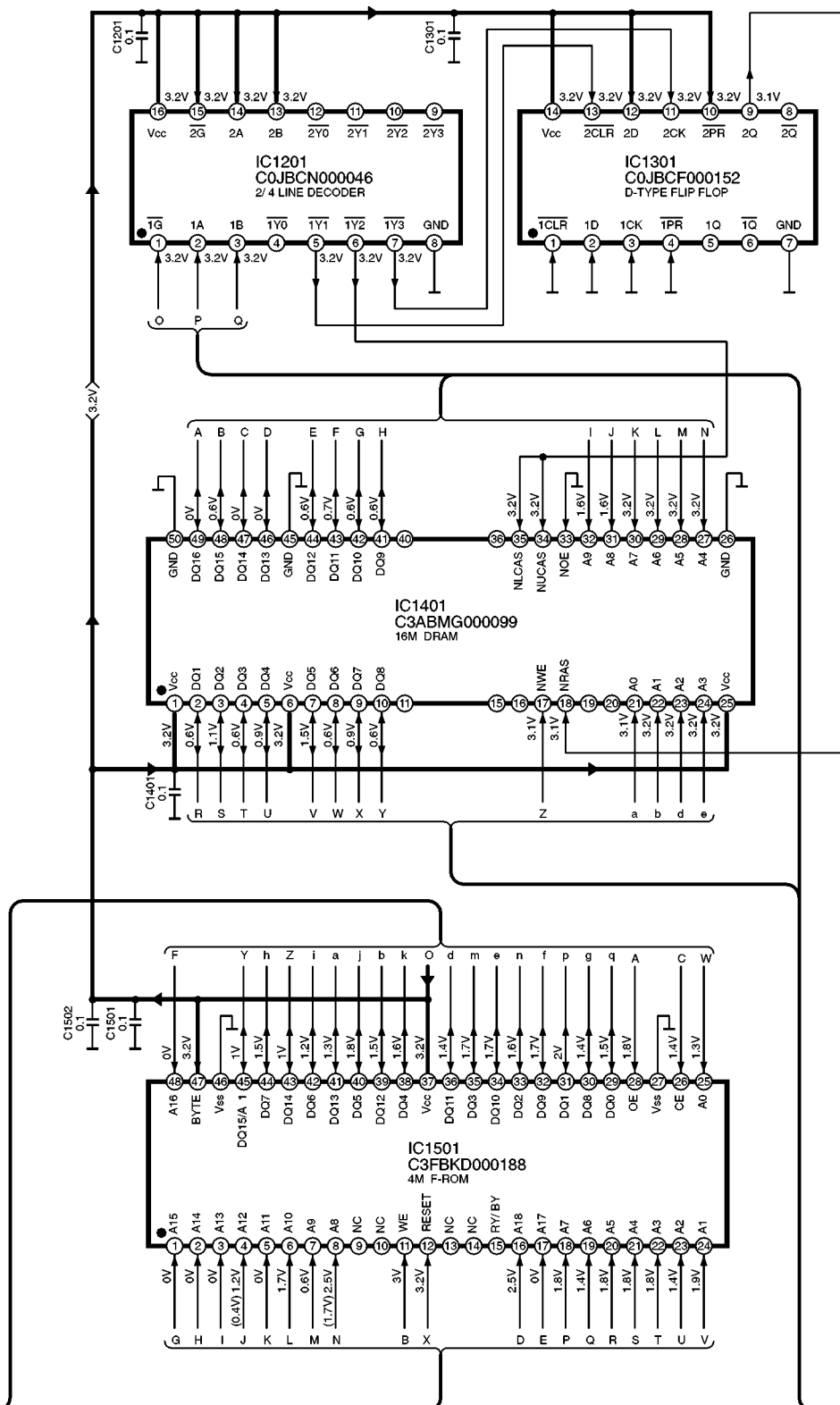


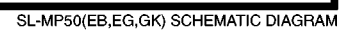
SL-MP50(EB,EG,GK) SCHEMATIC DIAGRAM



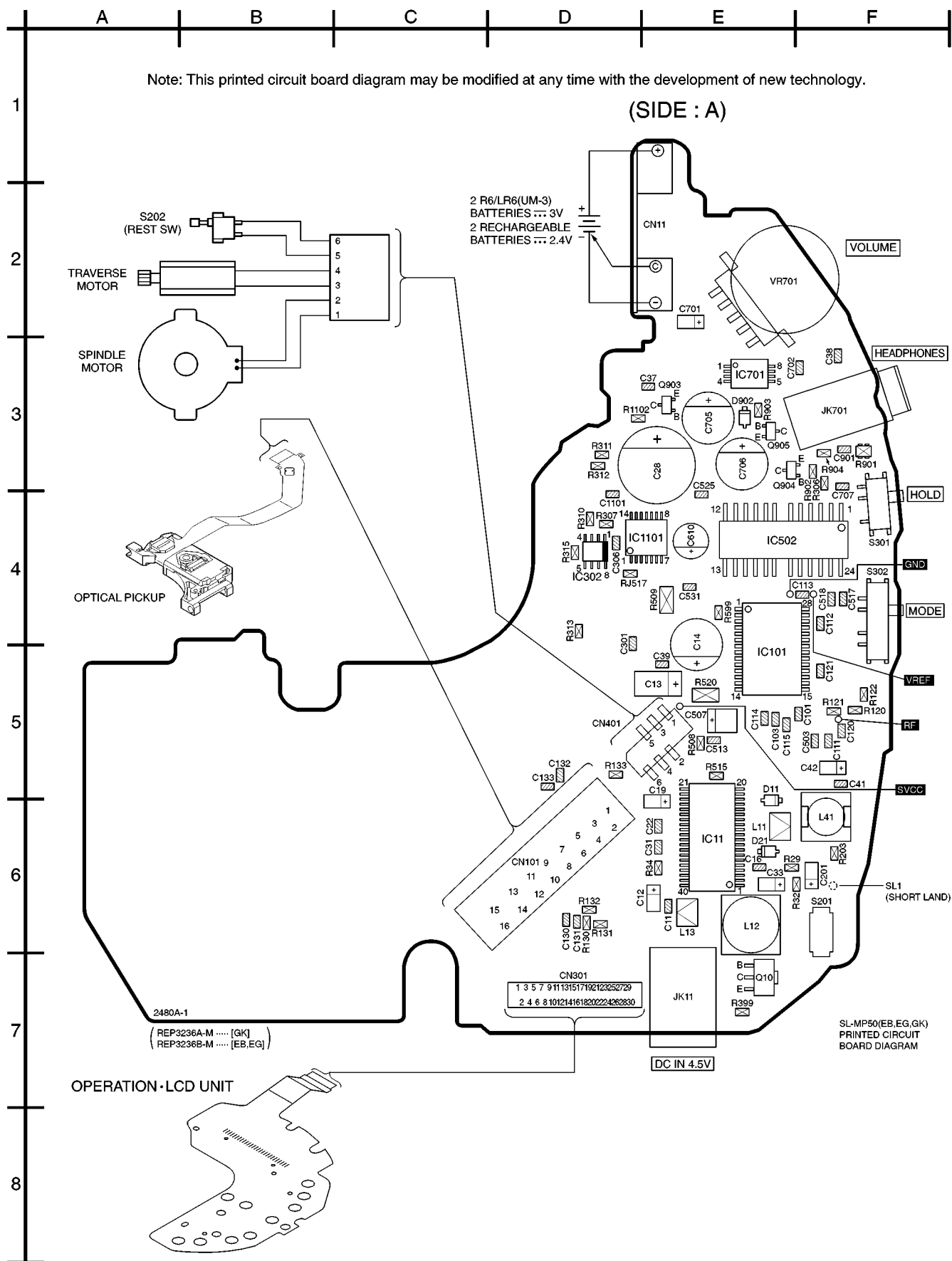
SL-MP50(EB,EG,GK) SCHEMATIC DIAGRAM

→ : POSITIVE VOLTAGE LINE





13 Printed Circuit Board and Wiring Connection Diagram



G

H

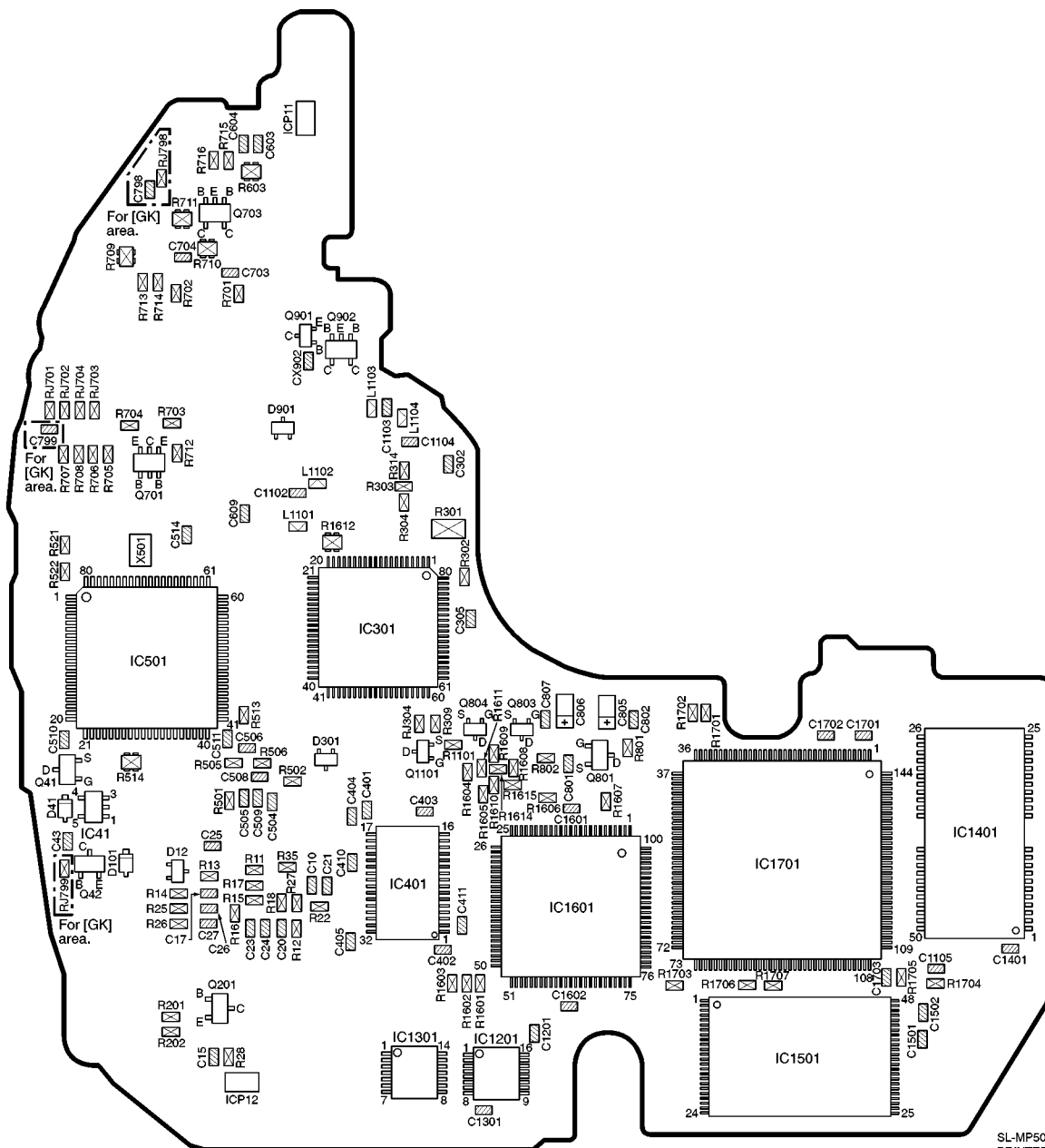
I

J

K

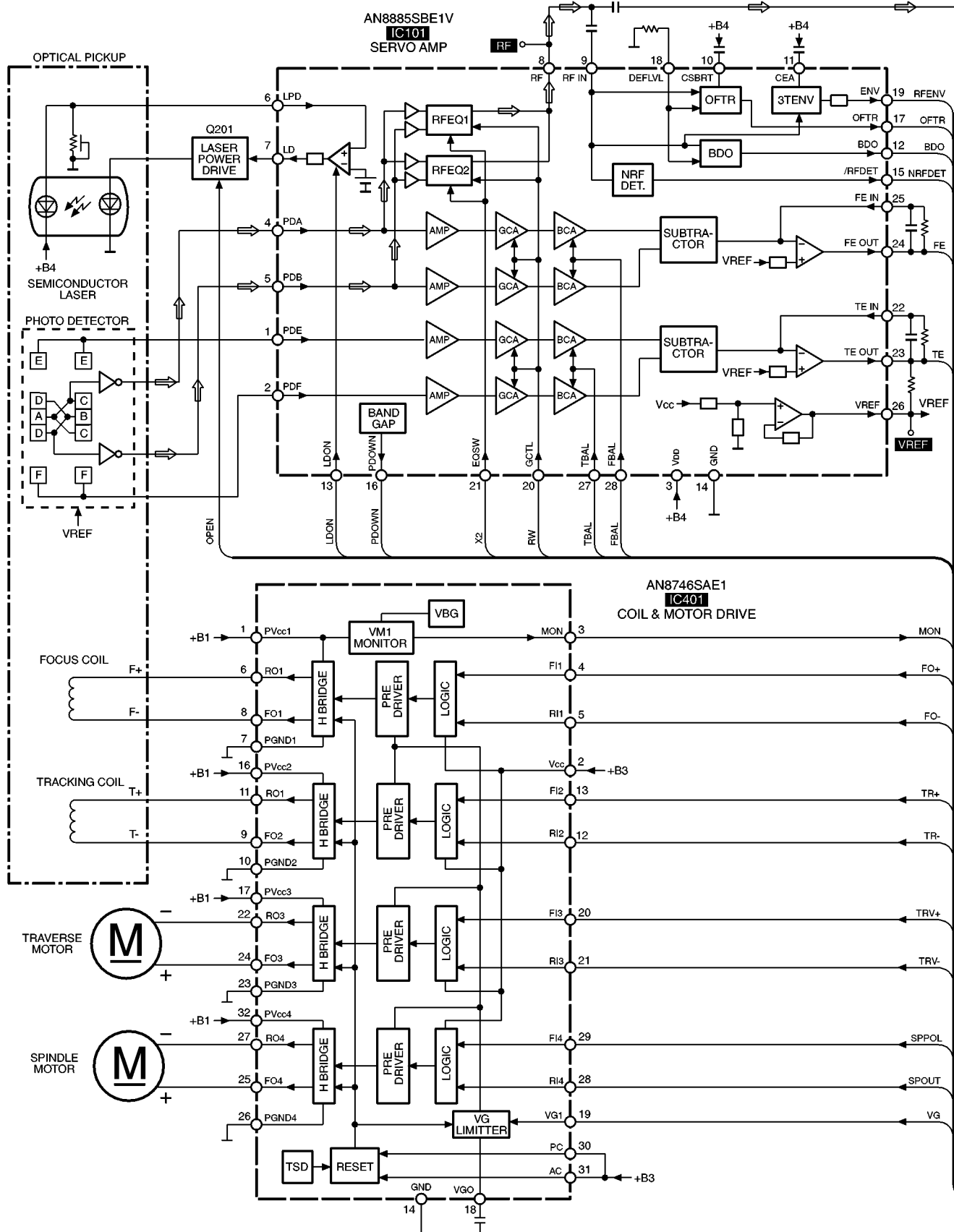
L

(SIDE : B)

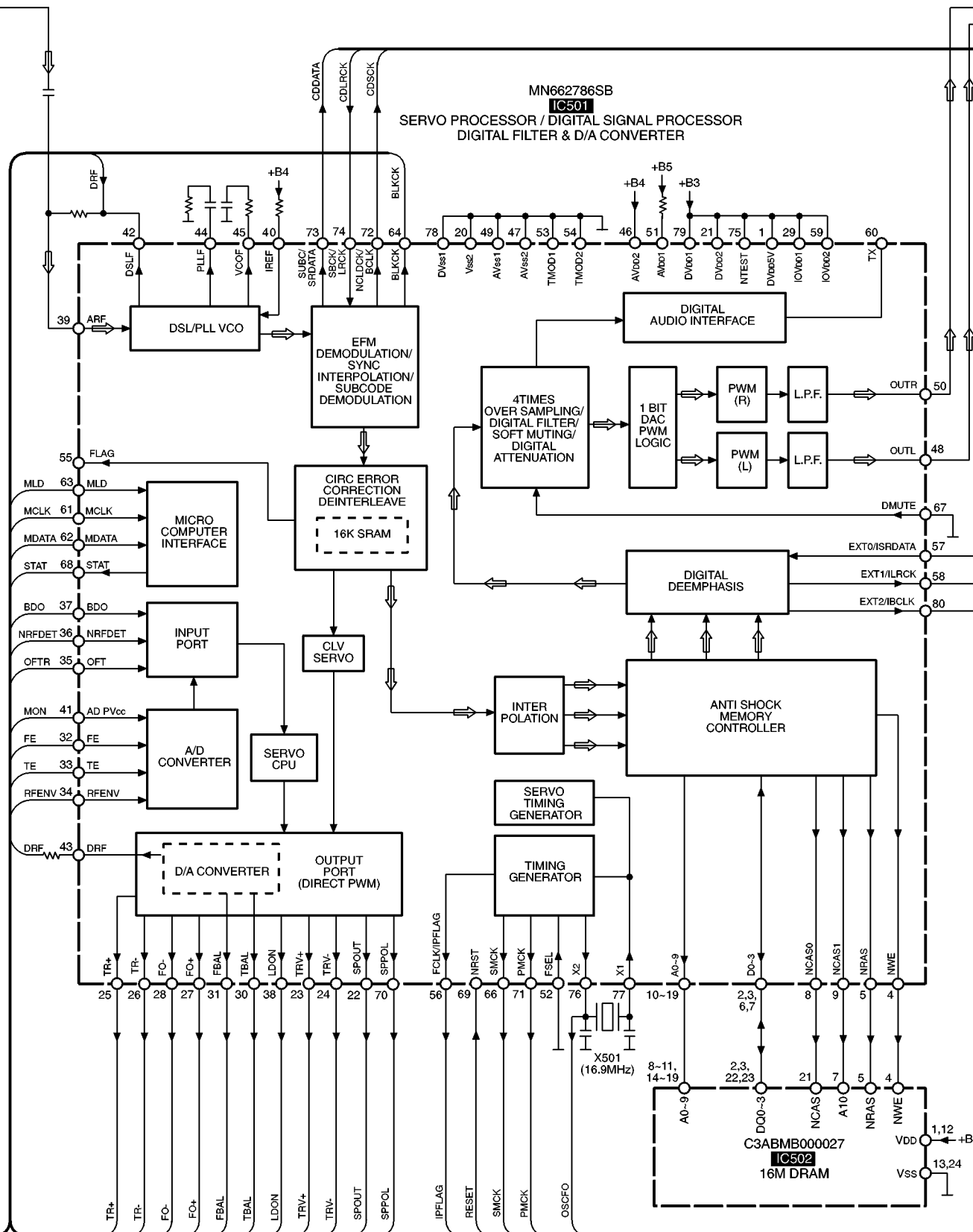


SL-MP50(EB,EG,GK)
PRINTED CIRCUIT
BOARD DIAGRAM

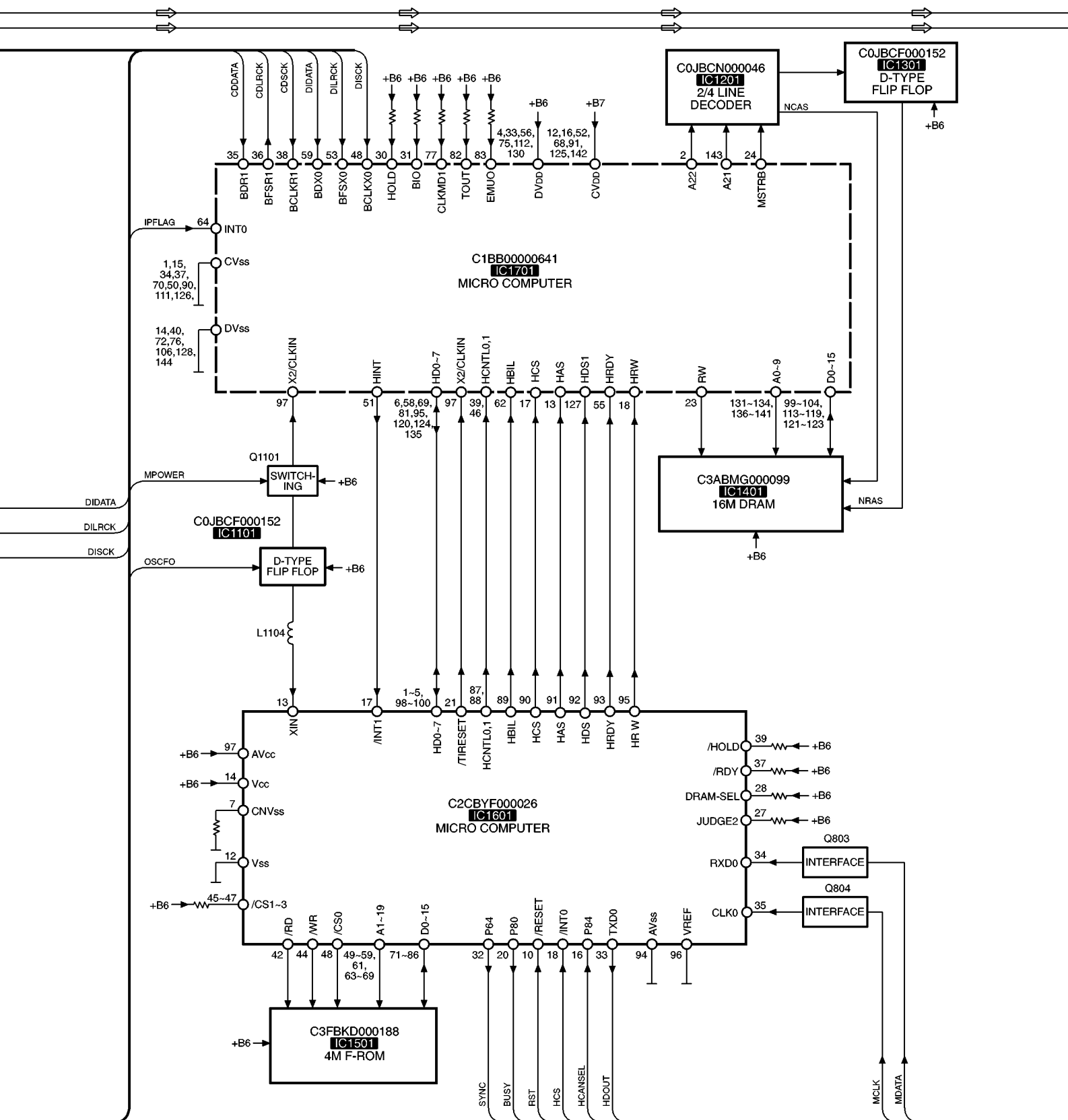
14 Block Diagram



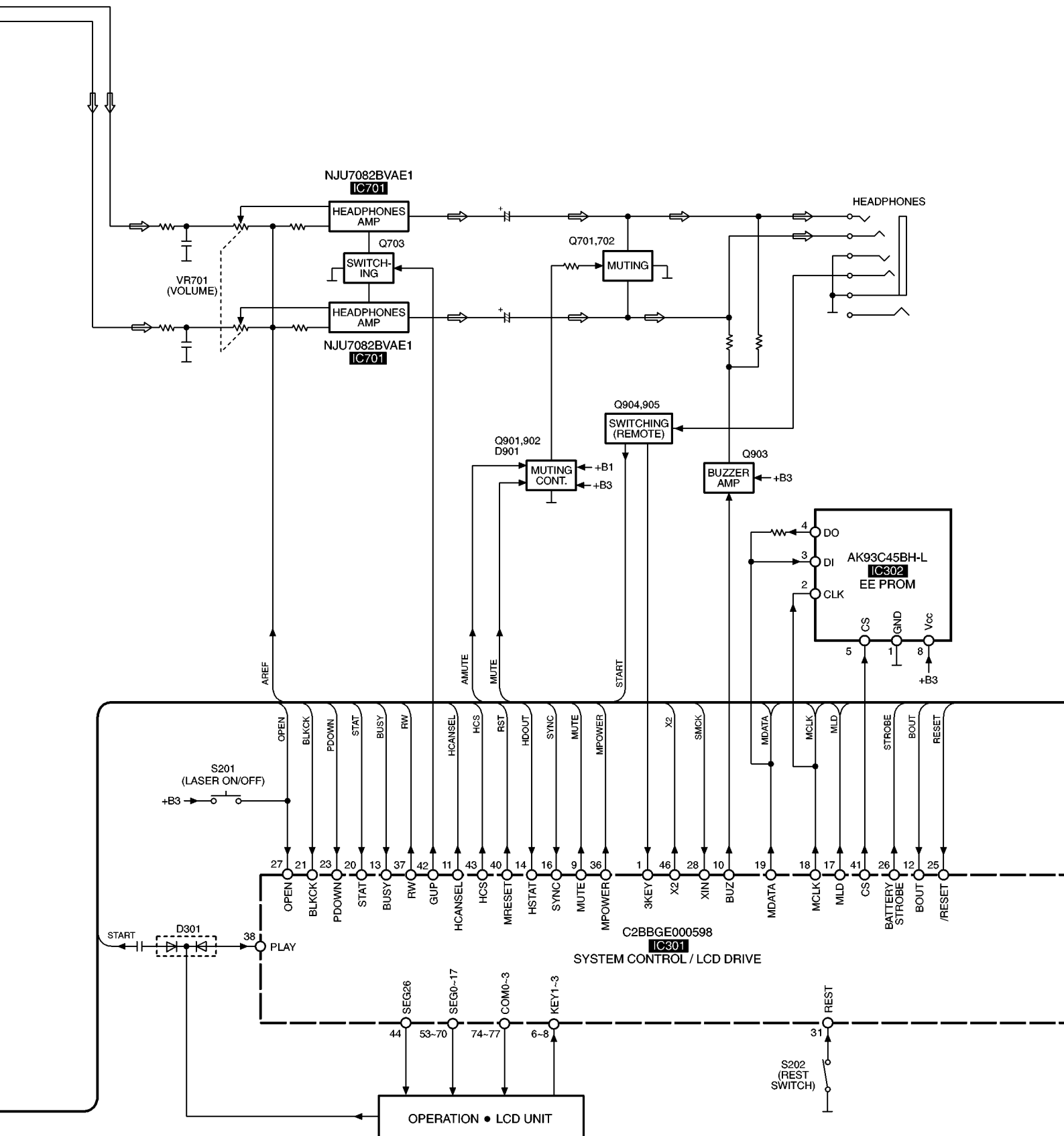
SL-MP50(EB,EG,GK) BLOCK DIAGRAM



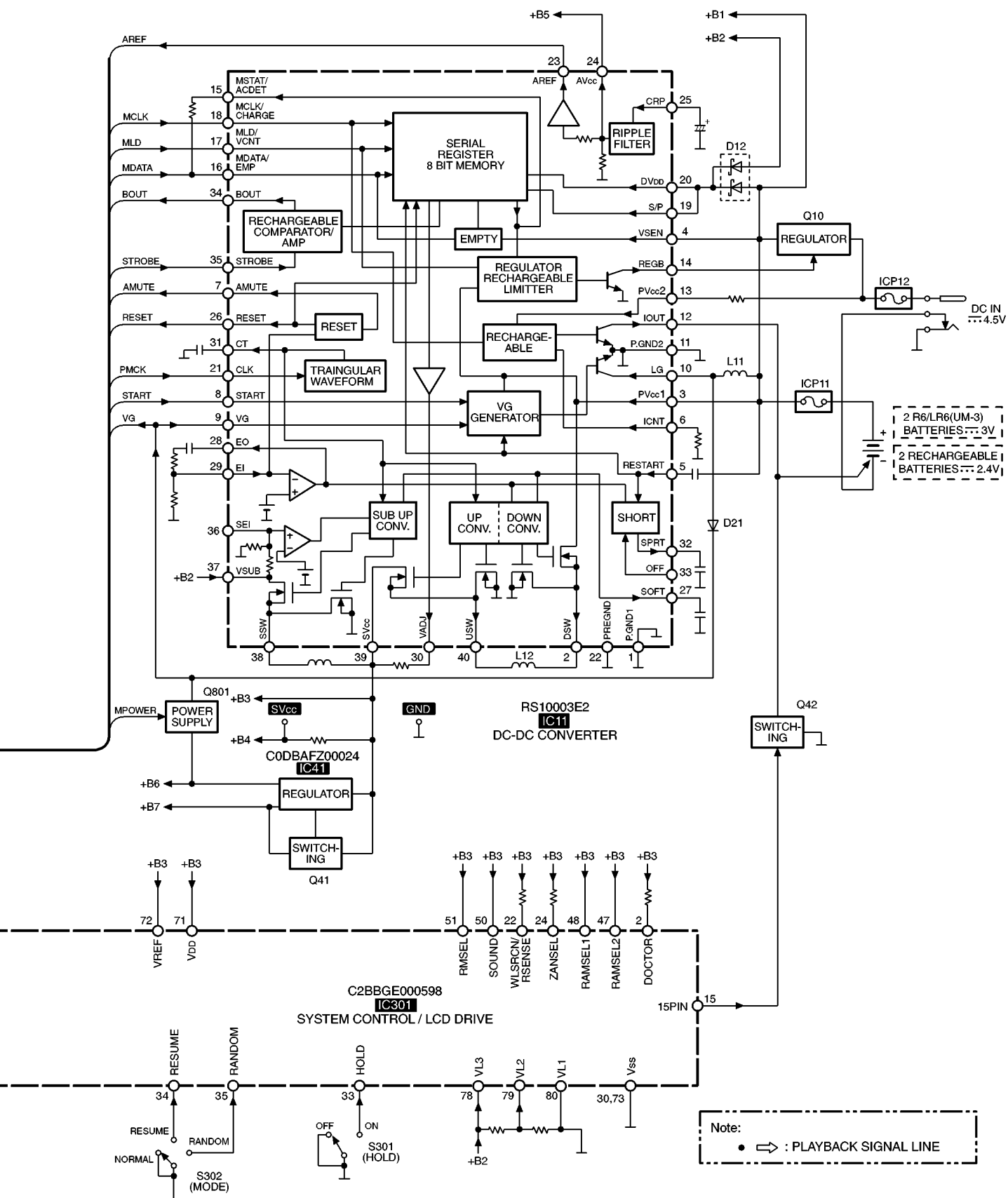
SL-MP50(EB,EG,GK) BLOCK DIAGRAM



SL-MP50(EB,EG,GK) BLOCK DIAGRAM



SL-MP50(EB,EG,GK) BLOCK DIAGRAM



SL-MP50(EB,EG,GK) BLOCK DIAGRAM

15 Terminal Function of IC's

15.1. IC101(AN8885SBE1): Servo Amplifier

Pin No.	Mark	I/O Division	Function
1	PDE	I	Tracking signal input (1) terminal
2	PDF	I	Tracking signal input (2) terminal
3	V _{DD}	I	Power supply input terminal
4	PDA	I	Focus signal input (1) terminal
5	PDB	I	Focus signal input (2) terminal
6	LPD	I	APC amplifier input terminal
7	LD	O	APC amplifier output terminal
8	RF	O	RF addition output terminal
9	RF IN	I	RF detection signal input terminal
10	CSBRT	I	Capacitor connection terminal for detection of RF envelope signal (connected to power supply through capacitor)
11	CEA	I	Capacitor connection terminal for H.P.F. amplifier (connected to power supply through capacitor)
12	BDO	O	BDO output terminal
13	LDON	I	APC control terminal
14	GND	—	GND terminal
15	/RFDET	O	NRFDET output terminal
16	PDOWN	I	Power down mode control input terminal
17	OFTR	O	Off-track signal output terminal (H:off-track)
18	DEFLVL	—	OFTR/BD0 detection level control terminal (connected to GND)
19	ENV	O	3TENV output terminal
20	GCLT	I	RF/FE/TE gain control input terminal
21	EQSW	I	EQ characteristic control input terminal
22	TE IN	I	TE amplifier reverse input terminal
23	TE OUT	O	TE amplifier output terminal
24	FE OUT	O	FE amplifier output terminal
25	FE IN	I	FE amplifier reverse input terminal
26	VREF	O	VREF output terminal
27	TBAL	I	TBAL control terminal
28	FBAL	I	FBAL control terminal

15.2. IC301(C2BBGE000596): System Control

Pin No.	Mark	I/O Division	Function
1	3KEY	I	3key remote control input terminal
2	DOCTOR	I	Doctor mode input terminal
3~5	NC	—	Not used, open
6	KEY3	I	Key3 input terminal
7	KEY2	I	Key2 input terminal
8	KEY1	I	Key1 input terminal
9	MUTE	O	Hard mute signal output terminal
10	BUZ	O	Buzzer output terminal (2.0045kHz)
11	HCANCEL	O	Module cancel output terminal
12	BOUT	O	Charge comparator output terminal
13	BUSY	I	Busy signal input terminal
14	HSTAT	I	Status signal input terminal
15	15PIN	O	Switching signal output terminal
16	SYNC	I	SYNC signal input terminal
17	MLD	O	Serial command latch signal output terminal
18	MCLK	O	Serial clock signal output terminal

Pin No.	Mark	I/O Division	Function
19	MDATA /MSTAT	I/O	Serial command data signal input/output terminal
20	STAT	I	Serial command status signal input terminal
21	BLKCK	I	Block clock signal input terminal
22	WLSRCN	—	Wireless remote control signal input terminal (connected to GND)
23	PDOWN	O	Head amp. power OFF output terminal
24	NC	—	Connected to GND
25	/RESET	I	Reset signal input terminal
26	BATTS TROBE	O	Charge comparator (-) output terminal
27	OPEN	I	Disc cover open detect signal input terminal
28	XIN	I	Crystal oscillator input terminal
29	XOUT	O	Crystal oscillator output terminal (Not used, open)
30	V _{SS}	—	GND terminal
31	REST	I	REST switch input terminal
32	A.SHOCK	—	SHOCK P key input terminal (Not used, open)
33	HOLD	I	HOLD switch input terminal
34	RESUME	I	RESUME switch input terminal
35	RANDAM	I	RANDAM switch input terminal
36	MPOWER	O	MP3 module power ON output terminal
37	RW	O	CD-RW equivalence output terminal
38	PLAY	I	PLAY key input terminal
39	TXPO WER	O	Digital out ON output terminal (Not used, open)
40	MRESET	O	Module reset output terminal
41	CS	O	EEPROM communication select output terminal
42	GUP	O	Volume gain up output terminal
43	HCS	O	Module communication select output terminal
44	SEG26	O	Segment output terminal
45	JUDGE	—	Doctor mode check OK output terminal (Not used, open)
46	X2	O	RF equalizer velocity output terminal
47	RAMSEL2	I	DRAM select input terminal for MP3 (Not used, open)
48	RAMSEL1	I	DRAM select input terminal for CD-DA (Not used, open)
49	NC	—	Not used, open
50	SOUND	I	Equalizer mode select input terminal (Not used, open)
51	PMSEL	I	Power management select input terminal (connected to power supply)
52	NC	—	Not used, open
53	SEG17	O	Segment output terminal
~	~		
70	SEG0		
71	V _{CC}	I	Power supply input terminal
72	VREF	I	
73	AV _{SS}	—	GND terminal
74	COM3	O	LCD common signal output terminal
~	~		
77	COM0		
78	VL3	I	LCD drive bias3 input terminal
79	VL2	I	LCD drive bias2 input terminal
80	VL1	I	LCD drive bias1 input terminal

15.3. IC501(MN662786SB): Servo processor, Digital Signal Processing, Digital Filter, and D/A Converter

Pin No.	Mark	I/O Division	Function
1	DV _{DD} 5V	I	Power supply input terminal for 16M DRAM interface
2	D0	I/O	Data input/output terminal for 16M DRAM
3	D1		
4	NWE	O	Write enable output terminal for 16M DRAM
5	NRAS	O	RAS control signal output terminal for 16M DRAM
6	D2	I/O	Data 2/3 input /output terminal for 16M DRAM
7	D3		
8	NCAS1	O	CAS control 1 signal output terminal for 16M DRAM
9	NCAS2	O	CAS control 2 signal output terminal for 16M DRAM
10~14	A8~A4	O	Addresses 8~4 output terminal for 16M DRAM
15	A9	O	Address 9 output terminal for 16M DRAM
16~19	A0~A3	O	Addresses 0~3 output terminal for 16M DRAM
20	DV _{SS} 2	I	Connected to GND
21	DV _{DD} 2	I	Power supply input terminal for digital circuit (Not used, open)
22	SPOUT	O	Spindle motor drive output terminal (absolute value)
23	TRV+	O	Traverse motor drive (+) output terminal
24	TRV-	O	Traverse motor drive (-) output terminal
25	TR+	O	Tracking motor drive (+) output terminal
26	TR-	O	Tracking motor drive (-) output terminal
27	FO+	O	Focus motor drive (+) output terminal
28	FO-	O	Focus motor drive (-) output terminal
29	IOVDD	I/O	Power supply for input/output terminal
30	TBAL	O	Tracking balance adjustment output terminal
31	FBAL	O	Focus balance adjustment output terminal
32	FE	I	Focus error signal input terminal (Analog input)
33	TE	I	Tracking error signal input terminal (Analog input)
34	RFENV	I	RF envelope signal input terminal (Analog input)
35	OFT	I	Off-track signal input terminal (H:off-track)
36	NRFDET	I	RF detection signal input terminal (L:detection)
37	BD0	I	Dropout signal input terminal (H:dropout)
38	LDON	O	Laser ON signal output terminal (H:ON)
39	ARF	I	RF signal input terminal
40	IREF	I	Reference current input terminal
41	ADPV _{CC}	I	A/D reference voltage input terminal (Analog input)
42	DSL	O	Loop filter output terminal for DSL
43	DRF	O	Bias output terminal for DSL
44	PLLF	O	Loop filter output terminal for PLL
45	VCOF	O	Loop filter output terminal for jitter-free VCO

Pin No.	Mark	I/O Division	Function
46	AV _{DD} 2	I	Power supply input terminal for analog circuit (DSL,PLL,VCOF,AD,DA)
47	AV _{SS} 2	—	Connected to GND
48	OUTL	O	Left channel audio signal output terminal
49	AV _{SS} 1	—	Connected to GND
50	OUTR	O	Right channel audio signal output terminal
51	AV _{DD} 1	I	Power supply input terminal for analog circuit
52	FSEL	I	Noise filter ON/OFF switching input terminal (L:ON/H:OFF) (Connected to GND)
53	TMOD1	—	Test terminal (L:normal) (Connected to GND)
54	TMOD2		
55	FLAG	—	Flag signal output terminal (Not used, open)
56	FCLK/ IPFLAG	O	Interpolation flag output terminal (H:interpolation)
57	ISRDAT A/EXT0	I	Extension input terminal
58	EXT1	O	Extension output terminal
59	IOV _{DD} 2	I	Power supply input terminal
60	TX	O	Digital audio interface signal output terminal (Not used, open)
61	MCLK	I	Microprocessor command clock signal input terminal
62	MDATA	I	Microprocessor command data signal input terminal
63	MLD	I	Microprocessor command load signal input terminal (L:load)
64	BLKCK	O	Sub-code block clock signal output terminal (f=75Hz:during normal speed playback)
65	PWMSEL	I/O	PWM output mode select input terminal (L:direct, H:3 value) (Connected to GND)
66	SMCK	O	System clock signal output terminal (f=4.236/8.4672MHz)
67	DMUTE	—	Mute input terminal (H:mute) (Connected to GND)
68	STAT	O	Status signal output terminal
69	NRST	I	Reset signal input terminal (H:reset)
70	SPPOL	O	Spindle motor drive signal output terminal (polarity output)
71	PMCK	O	Clock signal output terminal (f=88.2KHz)
72	NCLDCK /BCLK	O	Frame clock signal output terminal (f=7.35KHz:during normal speed playback)
73	SUBC/S RDATA	O	Sub-code serial output terminal
74	SBCK/ LRCK	I	Clock input terminal for sub-code output terminal
75	NTEST	I	Test input terminal (H:normal)
76	X2	O	Crystal oscillator circuit output terminal (f=16.9344MHz)
77	X1	I	Crystal oscillator circuit input terminal (f=16.9344MHz)
78	DV _{SS} 1	—	Connected to GND
79	DV _{DD} 1	I	Power supply input terminal for digital circuits
80	EXT2/ IBCLK	I	Extension input terminal

15.4. IC1601(C2CBYF000026): Micro computer

Pin No.	Mark	I/O Division	Function
1 ~ 5	HD4 ~ HD0	I/O	TI DSP data bus input/output terminal
6	BYTE	I	Connected to GND
7	CNVSS	I	Processor mode select input terminal (Connected to power supply through resistor)
8	P87	—	Not used, open
9	P86	—	not used, open
10	RESET	I	Reset signal input terminal
11	XOUT	O	Main clock output terminal (Not used, open)
12	VSS	—	GND terminal
13	XIN	I	Main clock input terminal
14	VCC	I	Power supply input terminal
15	NMY	I	Connected to power supply through resistor
16	P84	I	Module cancel input terminal
17	INT1	I	Interrupt signal input terminal from TI DSP
18	INT0	I	Chip select input terminal
19	P81	—	Not used, open
20	P80	O	Busy signal output terminal
21	TIRESET	O	TI DSP reset signal output terminal
22 ~ 25	P76 ~ P73	—	Not used, open
26	JUDGE1	—	Not used, open
27	JUDGE2	O	Connected to power supply through resistor
28	DRAM-SEL	I	DRAM 16M/4M select input terminal ("H": 16M, "L": 4M) (connected to power supply through resistor)
29	HCANCEL	—	Not used, open
30	P66	—	Not used, open
31	P65	—	Not used, open
32	P64	O	SYNC signal output terminal
33	TXD0	O	Serial data output terminal
34	RXD0	I	Serial data input terminal
35	CLK0	I	Serial clock input terminal
36	CTS0	—	Not used, open
37	RDY	I	Connected to power supply through resistor
38	P56	—	Not used, open
39	HOLD	I	Connected to power supply through resistor
40	HLDA	—	Not used, open
41	BCLK	—	Not used, open
42	RD	O	Expansion memory reading signal output terminal
43	BHA	—	Not used, open
44	WR	—	Not used, open
45 ~ 47	CS3 ~ CS1	O	Connected to power supply through resistor
48	CS0	O	Expansion memory chip select output terminal
49 ~ 59	A19 ~ A9	O	Address bus signal output terminal
60	VCC	I	Power supply terminal
61	A8	O	Address bus signal output terminal
62	VSS	—	GND terminal
63 ~ 70	A7 ~ A0	O	Address bus signal output terminal (A0 is not used, open)

Pin No.	Mark	I/O Division	Function
71 ~ 86	D15 ~ D0	I/O	Data bus signal input/output terminal
87	HCNTL1	O	Communication control signal output terminal
88	HCNTL0	O	Communication control signal output terminal
89	HBIL	O	Communication control signal output terminal
90	HCS	O	Communication control signal output terminal
91	HAS	O	Communication control signal output terminal
92	HDS	O	Communication control signal output terminal
93	HRDY	O	Communication control signal output terminal
94	AVSS	—	GND terminal
95	HR_W	O	Communication control signal output terminal
96	VREF	—	GND terminal
97	AVCC	I	Power supply input terminal
98 ~ 100	HD7 ~ HD5	I/O	TI DSP data bus input/output terminal

15.5. IC1701(C1BB00000641): Micro computer

Pin No.	Mark	I/O Division	Function
1	CVSS	—	Connected to GND
2	A22	O	Pararell address bus output terminal
3	CVSS	—	Connected to GND
4	DVDD	I	Power supply input terminal
5	A10	—	Not used, open
6	HD7	I/O	Parallel bidirectional data bus input/output terminal
7	A11	—	Not used, open
8	A12	—	Not used, open
9	A13	—	Not used, open
10	A14	—	Not used, open
11	A15	—	Not used, open
12	CVDD	I	Power supply input terminal
13	HAS	I	Address strobe input terminal
14	DVSS	—	Connected to GND
15	CVSS	—	Connected to GND
16	CVDD	I	Power supply input terminal
17	HCS	I	Chip select input terminal
18	HR/W	I	Read/write control input terminal
19	READY	I	Power supply input terminal
20	PS	—	Not used, open
21	DS	—	Not used, open
22	IS	—	Not used, open
23	R/W	O	Read/write signal output terminal ("H": read mode)
24	MSTRB	O	Memory strobe signal output terminal
25	IOSTRB	—	Not used, open
26	MSC	—	Not used, open
27	XF	—	Not used, open
28	HOLDA	—	Not used, open
29	IAQ	—	Not used, open
30	HOLD	I	Hold input terminal (connected to power supply through resistor)
31	BIO	I	Blank control signal input terminal (connected to power supply through resistor)
32	MP/MC	I	Connected to GND
33	DVDD	I	Power supply input terminal

Pin No.	Mark	I/O Division	Function
34	CVSS	—	Connected to GND
35	BDR1	I	Serial data receive input terminal
36	BFSR1	O	Frame synchronization pulse output terminal
37	CVSS	—	Connected to GND
38	BCLKR1	I	Receive clock input terminal
39	HCNTL0	I	Control input terminal
40	DVSS	—	GND terminal
41	BCLKR0	—	Not used, open
42	BCLKR2	—	Not used, open
43	BFSR0	—	Not used, open
44	BFSR2	—	Not used, open
45	BDR0	—	Not used, open
46	HCNTL1	I	Control input terminal
47	BDR2	—	Not used, open
48	BCLKX0	I	Transmit clock input terminal
49	BCLKX2	—	Not used, open
50	CVSS	—	GND terminal
51	HINT	O	Host interrupt signal output terminal
52	CVDD	I	Power supply input terminal
53	BFSX0	I	Frame synchronization pulse for transmit input terminal
54	BFSX2	—	Not used, open
55	HRDY	I	Ready signal input terminal
56	DVDD	I	Power supply terminal
57	DVSS	—	Connected to GND
58	HD0	I/O	Parallel bidirection data input/output terminal
59	BDX0	O	Serial data transmit output terminal
60	BDX2	—	Not used, open
61	IACK	—	Not used, open
62	HBIL	I	Byte identification signal input terminal
63	NMI	I	Connected to GND
64	INT0	I	External user interrupt input terminal
65	INT1	I	Connected to GND
66	INT2	I	External user interrupt input terminal
67	INT3	I	Connected to GND
68	CVDD	I	Power supply input terminal
69	HD1	I/O	Parallel bidirection data bus input/output terminal
70	CVSS	—	Connected to GND
71	BCLKX1	—	Not used, open
72	DVSS	—	Connected to GND
73	BFSX1	—	Not used, open
74	BDX1	—	Not used, open
75	DVDD	I	Power supply input terminal
76	DVSS	—	Connected to GND
77	CLKMD1	I	Clock mode select signal input terminal
78	CLKMD2	I	Connected to GND
79	CLKMD3	I	Connected to GND
80	HPI16	I	Connected to GND
81	HD2	I/O	Parallel bidirection data bus input/output terminal
82	TOUT	O	Timer output terminal (Connected to power supply through resistor)
83	EMU0	I	Connected to power supply through resistor
84	EMU1/OFF	—	Not used, open
85	TDO	—	Not used, open
86	TDI	—	Not used, open
87	TRST	—	Not used, open
88	TCK	—	Not used, open
89	TMS	—	Not used, open
90	CVSS	—	Connected to GND
91	CVDD	I	Power supply input terminal
92	HPIENA	I	Power supply input terminal
93	DVSS	—	Connected to GND

Pin No.	Mark	I/O Division	Function
94	CLKOUT	—	Not used, open
95	HD3	I/O	Parallel bidirection data bus input/output terminal
96	X1	—	Not used, open
97	X2/CLKIN	I	Clock input terminal
98	RS	I	Reset signal input terminal
99	D0	I/O	Parallel data bus input/output terminal
~	~		
104	D5		
105	A16	—	Not used, open
106	DVSS	—	Connected to GND
107	A17	—	Not used, open
~	~		
110	A20		
111	CVSS	—	Connected to GND
112	DVDD	I	Power supply input terminal
113	D6	I/O	Parallel data bus input/output terminal
~	~		
119	D12		
120	HD4	I/O	Parallel bidirection data bus input/output terminal
121	HD13	I/O	Parallel bidirection data bus input/output terminal
~	~		
123	HD15		
124	HD5	I/O	Parallel bidirection data bus input/output terminal
125	CVDD	I	Power supply input terminal
126	CVSS	—	Connected to GND
127	HDS1	I	Data strobe input terminal
128	DVSS	—	Connected to GND
129	HDS2	I	Data strobe input terminal
130	DVDD	I	Power supply input terminal
131	A0	O	Parallel data bus output terminal
~	~		
134	A3		
135	HD6	I/O	Parallel bidirection data bus input/output terminal
136	A4	O	Parallel data bus output terminal
~	~		
141	A9		
142	CVDD	I	Power supply input terminal
143	A21	O	Parallel data bus output terminal
144	DVSS	—	Connected to GND

16 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 manufactures 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.

*The parenthesized indications in the Remarks columns specify the colours. (Refer to the cover page for colour.)

Parts without these indications can be used for all colours.

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

*Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).

*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

*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.

**<IA>-<ID>" marks in Remarks indicate languages of instruction manuals.

[<IA>:English/Spanish/Swedish/German/Italian/French,<IB>:English,<IC>:English/Chinese,<ID>:Netherlands/Danish/Russian/Polish/Czech/Portuguese]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RAE0145Z	TRAVERSE DECK	1	Δ
1-1	RAF0142A	OPTICAL PICKUP	1	
1-2	RDG0305	GEAR	1	
1-3	RDG0306	GEAR	1	
1-4	RJB2106A	TRAVERSE FPC	1	
1-5	RMG0449-H	FLOATING RUBBER	3	
1-6	RMC0264	THRUST SPRING	1	
1-7	RXQ0482	NUT PLATE SPRING	1	
1-8	RXQ0525	TRAVERSE MOTOR	1	
1-9	SNSD38	SCREW	1	
1-10	XQN17+BG45	SCREW	1	
1-11	XQN17+CG45	SCREW	1	
1-12	XQN2+BG55	SCREW	1	
2	RGV0200-H1	SLIDE KNOB	2	
3	RJC93020-1	BATTERY TERMINAL	1	
6	RMQ1080	WASHER	2	
7	RKS0322F-H	BOTTOM CABINET ASS'Y	1	
7-1	RKA0112-K	FOOT	2	
8	RME0365	OPEN SPRING	1	
9	RML0578	FPC HOLDER	1	
10	KORE01000002	OPERATION P.C.B.	1	
11	RGD0080-A	CD LID	1	
12	RHE5119YA	SCREW	12	

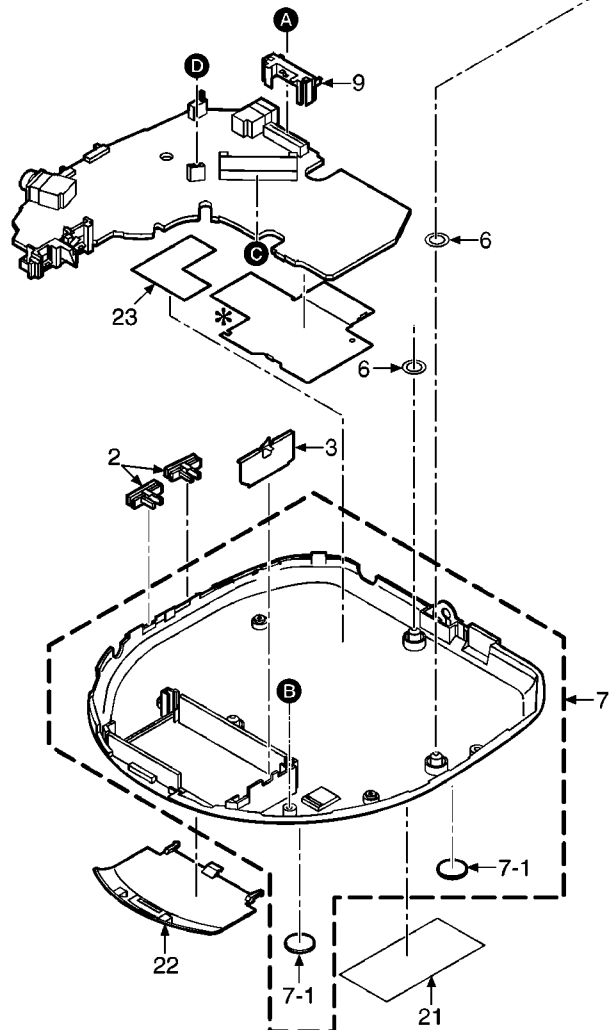
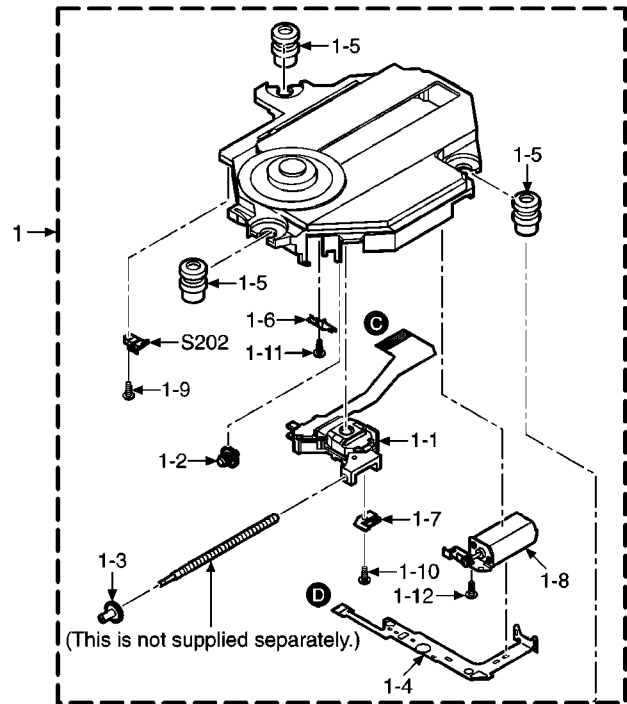
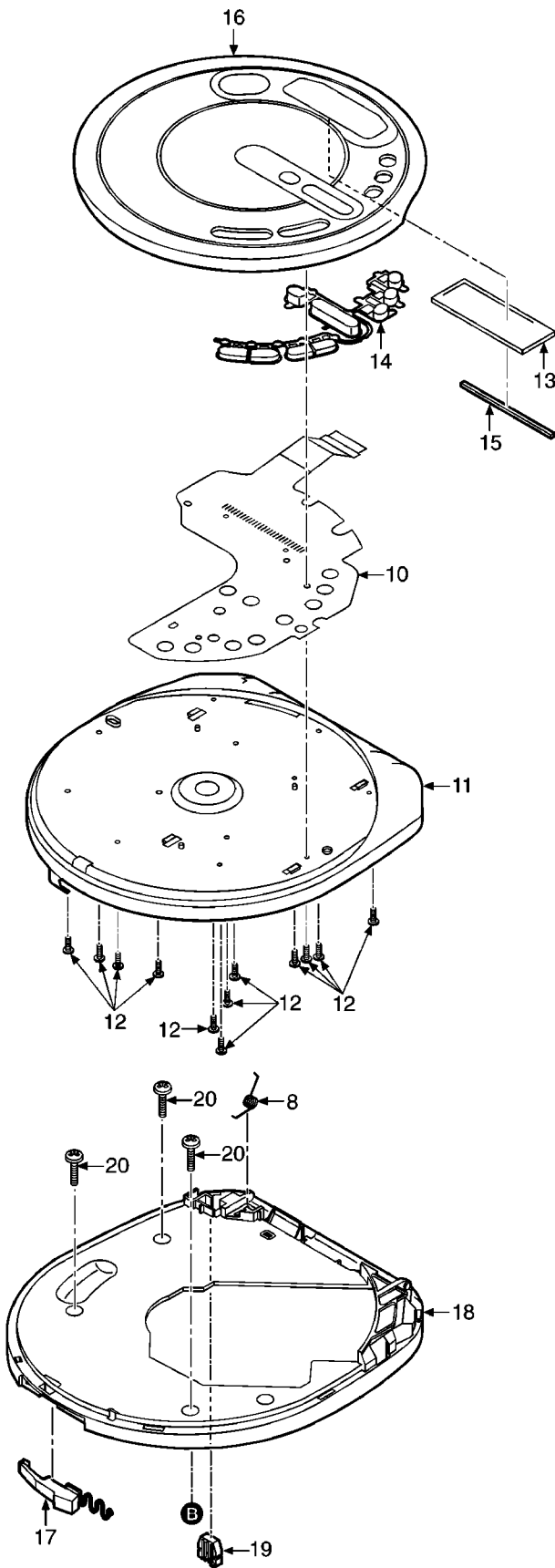
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
13	L5AABEB00001	LCD PANEL	1	
14	RGU2033-1S	OPERATION BUTTON	1	(EB) (EG)
14	RGU2033-S	OPERATION BUTTON	1	(GK)
15	RSQ0081	RUBBER	1	
16	RYF0608-S	LID ORNAMENT ASS'Y	1	
17	RGU1838-H	OPEN KNOB	1	
18	RKM0411B-H	INTERMEDIATE CABINET	1	
19	RML0580	STOPPER	1	
20	XTN17+6GFZ	SCREW	3	
21	RGN2160-H	NAME PLATE	1	(EB)
21	RGN2159-H	NAME PLATE	1	(EG)
21	RGN2162-H	NAME PLATE	1	(GK)
22	RKK0135-H	BATTERY COVER	1	
23	RMZ0612	SHEET	1	
A1	L0BAB0000123	STEREO EARPHONES	1	(EB) (EG)
A1	L0BAB0000124	STEREO EARPHONES	1	(GK)
A2	RFEA403B-S	AC ADAPTOR	1	(EB) Δ
A2	RFEA418E-S	AC ADAPTOR	1	(EG) Δ
A2	RFEA403T-1S	AC ADAPTOR	1	(GK) Δ
A3	RFEV033P-SS	WIRED REMOTE CONTROL	1	(GK)
A4	RQT6138-E	INSTRUCTION MANUAL	1	(EG) <IA>
A4	RQT6139-B	INSTRUCTION MANUAL	1	(EB) <IB>
A4	RQT6141-K	INSTRUCTION MANUAL	1	(GK) <IC>
A4	RQT6140-H	INSTRUCTION MANUAL	1	(EG) <ID>
C10	ECUV1H121JCV	50V 120P	1	
C11	ECUVNJ475MBN	6.3V 4.7U	1	F1J0J4750002
C12	ECST0JY475RR	6.3V 4.7U	1	ECST0JY475R
C13	F3H1A476A001	10V 47U	1	
C14	RCE0JKA221IG	6.3V 220U	1	F2A0J2210012
C15	ECUZNC104ZFY	16V 0.1U	1	F1H1C1040008
C16,17	ECUVNA105ZFY	10V 1U	2	F1H1A105A030
C19	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C20	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C21	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C22	ECUZNC104ZFY	16V 0.1U	1	F1H1C1040008
C23	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C24	ECUV1H561KBV	50V 560P	1	F1H1H561A013
C25-27	ECUVNA105ZFY	10V 1U	3	F1H1A105A030
C28	RCE0JRS102BJ	6.3V 1000U	1	F2A0J102A130
C31	ECUVNC104KBV	16V 0.1U	1	ECJ1VB1C104K
C33	ECST0JY475RR	6.3V 4.7U	1	ECST0JY475R
C37,38	ECUV1H331JCV	50V 330P	2	F1H1H331A004
C39	ECUVNA105KBV	10V 1U	1	F1H1A105A028
C41	ECUVNC104KBV	16V 0.1U	1	ECJ1VB1C104K
C42	ECST0JY475RR	6.3V 4.7U	1	ECST0JY475R
C43	ECUVNA105KBV	10V 1U	1	F1H1A105A028
C101	ECUVNC104KBV	16V 0.1U	1	ECJ1VB1C104K
C103	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C111	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C112	ECUV1H221KBV	50V 220P	1	F1H1H2210001
C113,14	ECUVNJ475MBN	6.3V 4.7U	2	F1J0J4750002
C115	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C120	ECUV1H152KBV	50V 1500P	1	F1H1H152A013
C121	ECUV1H121KCV	50V 120P	1	
C130,31	ECUV1H271KCV	50V 270P	2	
C132,33	ECUVNA105KBV	10V 1U	2	F1H1A105A028
C201	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C301,02	ECUVNA224KBV	10V 0.22U	2	F1H1A224A028
C305,06	ECUVNA105ZFY	10V 1U	2	F1H1A105A030
C401-05	ECUVNA105KBV	10V 1U	5	F1H1A105A028
C410,11	ECUVNA105KBV	10V 1U	2	F1H1A105A028
C503	ECUV1H561KBV	50V 560P	1	F1H1H561A013
C504	ECUZNC104ZFY	16V 0.1U	1	F1H1C1040008
C505	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C506	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002
C507	RCST0GX107RG	4V 100U	1	F3G0G1070001
C508	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C509	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C510	ECUVNA105KBV	10V 1U	1	F1H1A105A028
C511	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C513	ECUVNA105ZFB	10V 1U	1	F1H1A105A030
C514	ECUV1H102KBV	50V 1000P	1	ECJ1VB1H102K
C517,18	ECUVNE223KBV	25V 0.022U	2	F1H1E223A050
C525	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C531	ERJ3GEY0R00V	1/16W 0	1	
C603,04	ECUV1H272KBV	50V 2700P	2	
C609	ECUVNA105ZFB	10V 1U	1	F1H1A105A030
C610	RCST0GX476RE	4V 47U	1	F3F0G476A003
C701	RCST0GY476RG	4V 47U	1	F3F0G4760001
C702	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C703,04	ECUVNJ105KBV	6.3V 1U	2	F1H0J105A002
C705,06	ECBA0GKS221	4V 220U	2	
C707	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C798,99	ECUV1H331JCV	50V 330P	2	F1H1H331A004 (GK)
C801	ECUVNA105KBV	10V 1U	1	F1H1A105A028
C802	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C805	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C806	RCST0GY476RG	4V 47U	1	F3F0G4760001
C807	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C901	ECUV1H332KBV	50V 3300P	1	F1H1H332A013
C1101	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C1102	ECUV1H470JCV	50V 47P	1	
C1103	ECUV1H151JCV	50V 150P	1	F1H1H151A230
C1104,05	ECUV1H331JCV	50V 330P	2	F1H1H331A004
C1201	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C1301	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C1401	ECUZN104ZFB	16V 0.1U	1	F1H1C1040008
C1501,02	ECUZN104ZFB	16V 0.1U	2	F1H1C1040008
C1601,02	ECUZN104ZFB	16V 0.1U	2	F1H1C1040008
C1701-03	ECUZN104ZFB	16V 0.1U	3	F1H1C1040008
CN11	RJH8303-3	BATTERY TERMINAL	1	K4BC03B00014
CN101	RJS2A6216T	CONNECTOR (16P)	1	K1MN16B00027
CN301	RJS2A6130T	CONNECTOR (30P)	1	K1MN30A00023
CN401	RJS2A5106T1	CONNECTOR (6P)	1	K1MN06A00021
CX902	ECUVNA105KBV	10V 1U	1	F1H1A105A028
D11	MA1070400L	DIODE	1	MA2J70400L
D12	MA741WKT	DIODE	1	MA3J741E0L
D21	MA111TX	DIODE	1	MA2J11100L
D41	MA729TX	DIODE	1	MA2J72900L
D101	MA111TX	DIODE	1	MA2J11100L
D301	MA142WKT	DIODE	1	MA3J142E0L
D901	DAN202UT106	DIODE	1	B0ADCJ000012
D902	MA111TX	DIODE	1	MA2J11100L
IC11	RS10003E2	IC	1	C0DBZZH00007
IC41	C0DBAFZ000024	IC	1	
IC101	AN8885SBE1	IC	1	
IC301	C2BBGE0000598	IC	1	
IC302	AK93C45BH-L	IC	1	C3EBCG0000028
IC401	AN8746SAE1	IC	1	AN8746SA-E1
IC501	MN662786SB	IC	1	
IC502	C3ABMB0000027	IC	1	
IC701	NJU7082BVAE1	IC	1	
IC1101	C0JBCF0000152	IC	1	
IC1201	C0JBCN0000046	IC	1	
IC1301	C0JBCF0000152	IC	1	
IC1401	C3ABMG0000099	IC	1	
IC1501	C3FBKD0000191	IC	1	
IC1601	C2CBYF0000026	IC	1	
IC1701	C1BB00000641	IC	1	
ICP11,12	K5H1522A0004	IC PROTECTOR	2	△

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
JK11	RJJ43K09-C	JACK,DC IN	1	K2EB2B000006
JK701	VJJ0627	JACK,HEADPHONE	1	K2HC104B0013
L11	RLQU331KT-W	COIL	1	G1C331K00004
L12	RLQS101KT1-T	COIL	1	G1C101M00011
L13	RLQU331KT-W	COIL	1	G1C331K00004
L41	G1C101MA0035	COIL	1	
L1101	RLBV102V-Y	COIL	1	J0JBC0000014
L1102	ERJ3GEY0R00V	CHIP JUMPER	1	
L1103,04	RLBV102V-Y	COIL	2	J0JBC0000014
P1	RPF0111-2	PROTECTION BAG (UNIT)	1	
P2	RPK1668	PACKING CASE	1	(EB) (EG)
P2	RPK1670	PACKING CASE	1	(GK)
P3	RPQ0836-1	PAD	1	
P4	RPQ0924	PAD	1	(EB) (EG)
P4	RPQ0993	PAD	1	(GK)
P5	RPQ0966	PAD	1	
PCB1	REP3236B-M	MAIN P.C.B.	1	(EB) (EG) (RTL)
PCB1	REP3236A-M	MAIN P.C.B.	1	(GK) (RTL)
Q10	2SB1132T100	TRANSISTOR	1	B1ADMD000007
Q41	XP152A12C0MR	FET	1	B1DHAC000002
Q42	UN5213TX	TRANSISTOR	1	UNR521300L
Q201	2SB709ASTX	TRANSISTOR	1	2SB709ASL
Q701	XN0F26200L	TRANSISTOR	1	
Q703	FMG6AT148	TRANSISTOR	1	B1GBCEJA0001
Q801	XP152A12C0MR	FET	1	B1DHAC000002
Q803,04	2SK1958T1	FET	2	B1CFHA000001
Q901	DTA114YUA106	TRANSISTOR	1	B1GDCFJN0011
Q902	FMG6AT148	TRANSISTOR	1	B1GBCEJA0001
Q903	DTA144EUA106	TRANSISTOR	1	B1GDCFNN0007
Q904,05	2SD1819ATX	TRANSISTOR	2	2SD1819A0L
Q1101	B1CDGD0000001	TRANSISTOR	1	
R11	ERA3YED682V	1/16W 6.8K	1	
R12	ERA3YED332	1/16W 3.3K	1	ERA3YED332V
R13	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R14	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R15	ERJ3GEYJ183V	1/16W 18K	1	D0GB183JA002
R16	ERJ3GEYJ153V	1/16W 15K	1	
R17	ERA3YED272V	1/16W 2.7K	1	
R18	ERA3YED102V	1/16W 1K	1	
R22	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R25,26	ERJ3GEYJ104Z	1/16W 100K	2	
R27	ERJ3GEYJ392V	1/16W 3.9K	1	
R28	ERJ3GEYJ100V	1/16W 10	1	
R29	ERJ3GEYJ562V	1/16W 5.6K	1	D0GB562JA002
R32	ERJ3GEYJ103Z	1/16W 10K	1	
R34	ERJ3GEYJ683V	1/16W 68K	1	D0GB683JA002
R35	ERJ3GEYJ104Z	1/16W 100K	1	
R120	ERJ3GEYJ103Z	1/16W 10K	1	
R121,22	ERJ3GEYJ124V	1/16W 120K	2	D0GB124JA002
R130,31	ERJ3GEYJ101V	1/16W 100	2	
R132,33	ERJ3GEY0R00V	1/16W 0	2	
R201	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R202	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R203	ERJ3GEYJ1R0V	1/16W 1	1	
R301	EXBV8V473JV	47K×4	1	
R302	ERJ3GEYJ102V	1/16W 1K	1	ERJ3GEYJ102Z
R303	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R304	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R306,07	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R309-15	ERJ3GEYJ104Z	1/16W 100K	7	
R399	ERJ3GEYJ470V	1/16W 47	1	
R501	ERJ3GEYJ683V	1/16W 68K	1	D0GB683JA002
R502	ERJ3GEYJ563V	1/16W 56K	1	
R505	ERJ3GEYJ151V	1/16W 150	1	
R506	ERJ3GEYJ222V	1/16W 2.2	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R508	ERJ3GEYJ100V	1/16W 10	1	
R509	EXBV8V102JV	1Kx4	1	
R513	ERJ3GEYJ104Z	1/16W 100K	1	
R514	EXBV4V103JV	1/32W 10K	1	
R515	ERJ3GEYJ150V	1/16W 15	1	
R520	EXBV8V104JV	1/16W 100K	1	
R521	ERJ3GEYJ104Z	1/16W 100K	1	
R522	ERJ3GEYJ101V	1/16W 100	1	
R599	ERJ3GEYJ103Z	1/16W 10K	1	
R603	EXBV4V561JV	1/32W 560	1	
R701,02	ERJ3GEYJ104Z	1/16W 100K	2	
R703,04	ERJ3GEYJ220V	1/16W 22	2	
R705,06	ERJ3GEYJ1R5V	1/16W 1.5	2	
R707,08	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R709	EXBV4V392JV	1/16W 3.9K	1	
R710	EXBV4V123J	1/32W 12K	1	D1H412320001
R711	EXBV4V103JV	1/32W 10K	1	
R712	ERJ3GEY0R00V	1/16W 0	1	
R713-16	ERJ3GEYJ562V	1/16W 5.6K	4	D0GB562JA002
R801	ERJ3GEYJ474V	1/16W 470K	1	
R802	ERJ3GEYJ103Z	1/16W 10K	1	
R901	EXBV4V821JV	1/32W 820	1	
R902	ERJ3GEYJ274V	1/16W 270K	1	
R903	ERJ3GEYJ474V	1/16W 470K	1	
R904	ERJ3GEYJ470V	1/16W 47	1	
R1101	ERJ3GEY0R00V	1/16W 0	1	
R1102	ERJ3GEYJ103Z	1/16W 10K	1	
R1601-07	ERJ3GEYJ103Z	1/16W 10K	7	
R1608,09	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R1610,11	ERJ3GEYJ104Z	1/16W 100K	2	
R1612	EXBV4V102JV	1/32W 1K	1	
R1614,15	ERJ3GEYJ102V	1/16W 1K	2	ERJ3GEYJ102Z
R1701,02	ERJ3GEYJ104Z	1/16W 100K	2	
R1703	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R1704	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R1705	ERJ3GEYJ124V	1/16W 120K	1	D0GB124JA002
R1706,07	ERJ3GEYJ473V	1/16W 47K	2	D0GB473JA002
RJ304	ERJ3GEY0R00V	1/16W 0	1	
RJ517	ERJ3GEY0R00V	1/16W 0	1	
RJ701	ERJ3GEY0R00V	1/16W 0	1	(GK)
RJ701	RLEBV102V-Y	COIL	1	J0JBC0000014 (EB) (EG)
RJ702	ERJ3GEY0R00V	1/16W 0	1	(GK)
RJ702	RLEBV102V-Y	COIL	1	J0JBC0000014 (EB) (EG)
RJ703	ERJ3GEY0R00V	1/16W 0	1	(GK)
RJ703	RLEBV102V-Y	COIL	1	J0JBC0000014 (EB) (EG)
RJ704	ERJ3GEY0R00V	1/16W 0	1	(GK)
RJ704	RLEBV102V-Y	COIL	1	J0JBC0000014 (EB) (EG)
RJ798,99	ERJ3GEY0R00V	1/16W 0	2	(GK)
S201	ESE11SV6	SW,LASER ON/OFF	1	
S301	RSS2A010-1A	SW,HOLD	1	K0D112B00071
S302	RSS3A007-1A	SW,MODE	1	K0D113B00037
VR701	EVUTUFB11C54	V.R.,VOLUME	1	
X501	H2D169500015	OSCILLATOR	1	

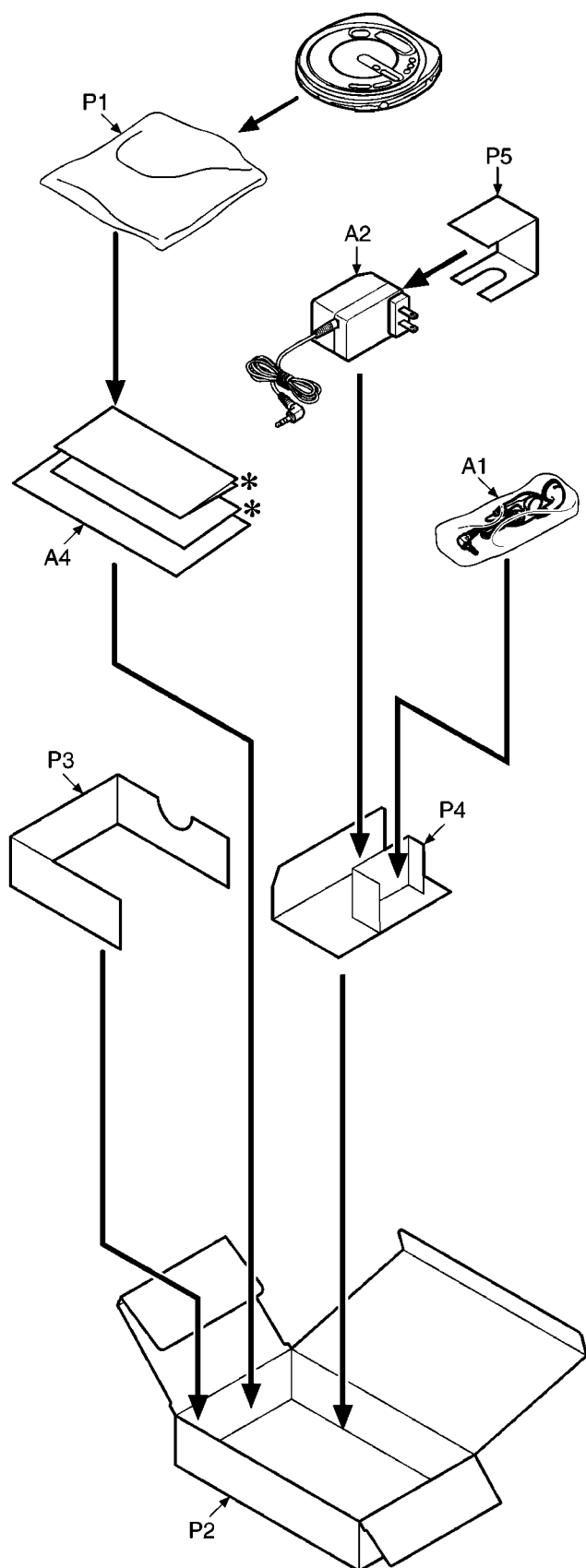
17 Cabinet Parts Location



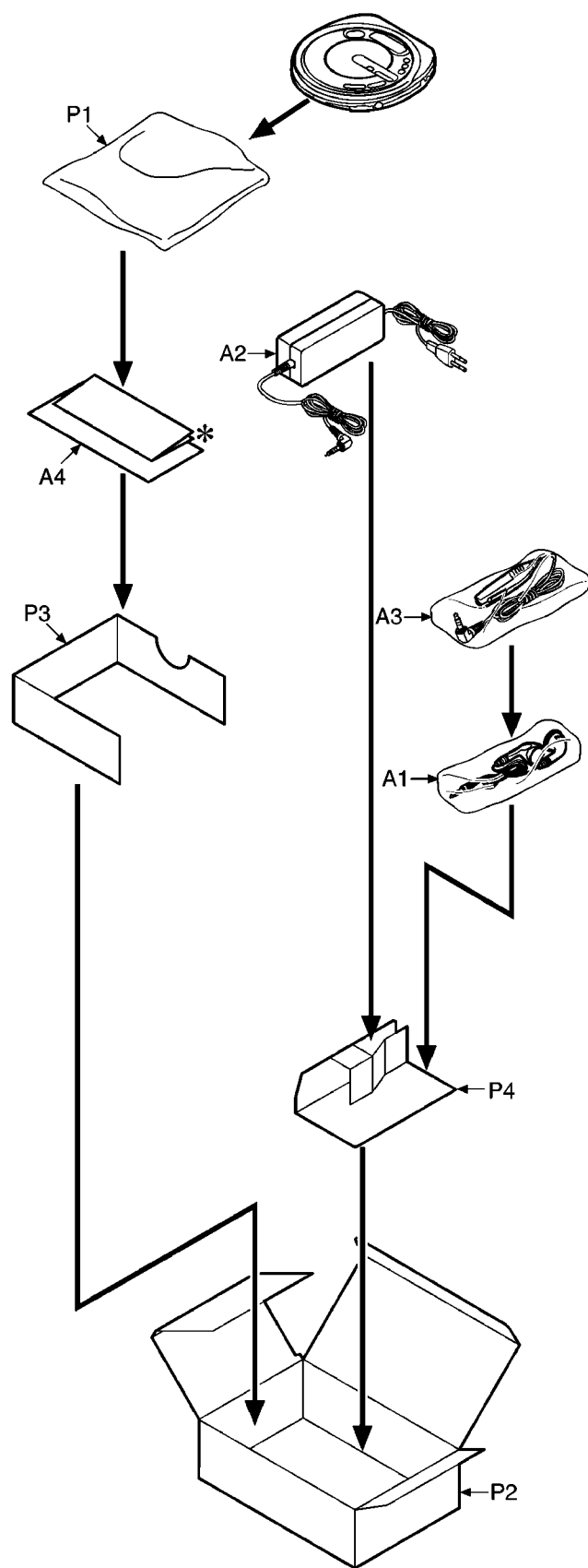
Note : We do not supply those items of parts marked *.

18 Packaging

(EB/EG)



(GK)



Note : We do not supply those items of parts marked *.