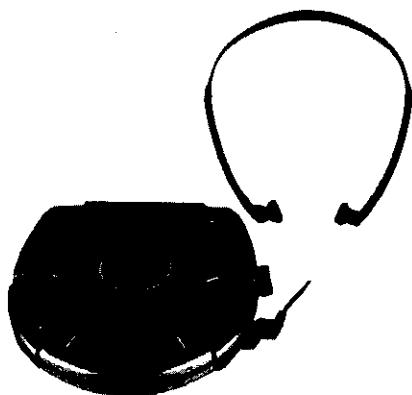


Service Manual

Portable CD Player



MASH
multi-stage noise shaping



SL-SW850

Traverse Deck: RAE0220Z Mechanism Series

Colour

(S).....Silver Type

Areas

EB.....Great Britain.

EG.....Europe and Russia.

GC.....Asia and Saudi Arabia.

GN.....Oceania.

Specification

Audio			
No. of channels:	2 channels (left and right, stereo)		
Frequency response:	20 to 20,000 Hz (+0.5dB, -1.5dB)		
Output voltage:	0.6 V (50k Ω)		
S/N:	more than 94 dB*		
Wow and flutter:	Below measurable limit		
DA converter:	1 bit, MASH		
Headphones output level:	Max. 9mW+9mW/16 Ω (adjustable)		
Pickup			
Light source:	Semiconductor laser		
Wavelength:	780 nm		
General			
Operational temperature range:	0°C - 40°C		
Rechargeable temperature range:	5°C - 40°C		
Power supply:	DC 4.5 V		
● Power consumption			
Power source	ANTI-SHOCK OFF/ON		
When Using AC adaptor	2.8W/3.0W		
When Using Battery (DC3V)		0.3W/0.35W	
When recharging:		Approx. 5.4W	
● Play time			
[When used in hold mode, at 25°C (77°F) temperature and on flat and stable surface]			
Batteries used		ANTI-SHOCK OFF/ON	
2 "AA"(LR6) alkaline batteries		About 20h/About 25h	
Ni-cd Rechargeable batteries(RFKFP3GAVABA)		About 10h/About 12h	
The play time may be less depending on the operating conditions.			
Recharging time:		About 3h	
Dimensions (WxHxD):		133x24.7x141.5mm	
Weight:		327g with batteries 282g without batteries	
*These specifications were measured in the ANTI-SHOCK off mode.			
Note:			
Specifications are subject to change without notice.			
Weight and dimensions are approximate.			

Panasonic®

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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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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: 780 nm

Maximum output radiation power from pickup: 100 µW/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 Laserdiode. Im eingeschalteten

Zustand wird unsichtbare Laserstrahlung von der Lasereinheit

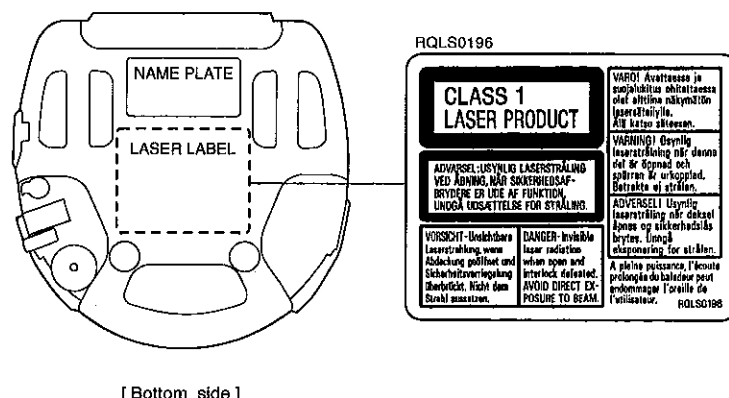
abgestrahlt.

Wellenlänge: 780 nm

Maximale Strahlungsleistung der Lasereinheit: 100 µW/VDE

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

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode 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.



2 Accessories

- Stereo headphones 1 pc.
(RFEV708P-HS)
- Hand grip 1 pc.
(RGQT0006-K)
- Ni-Cd rechargeable batteries
with carrying case..... 1 pc.
(RFKFP3GAVABA)

For EB area

- AC adaptor 1 pc.
(RFEA403B-S)

For EG area

- AC adaptor 1 pc.
(RFEA401E-3S)

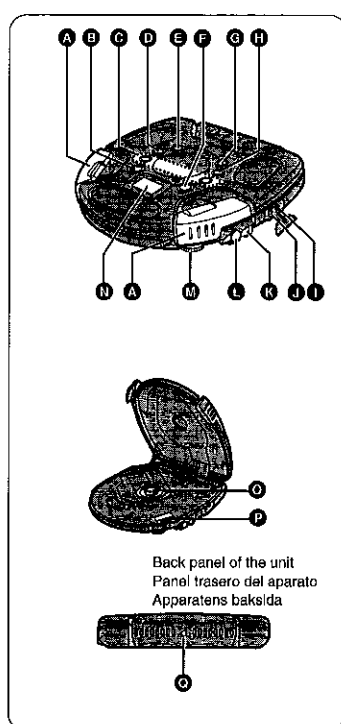
For GC area

- AC adaptor 1 pc.
(RFEA403Z-S)

For GN area

- AC adaptor 1 pc.
(RFEA403A-S)
- Plug adaptor..... 1 pc.
(SJP5213-2)

3 Operating Instructions



Location of Controls

- A Dual lock (OPEN)
- B Stop/operation off button (■, POWER OFF)
- C Skip/search buttons (◀◀, ▶▶, ◀◀, ▶▶)
- D Memory/recall button (MEMORY/RECALL)
- E EQ button (EQ)
- F Play/pause button (▶ ||)
- G Anti-shock button (A.SHOCK)
- H Repeat button (REPEAT)
- I DC In jack (DC IN 4.5 V ⚡)
- J Out jack (OUT)
- K Hold switch (HOLD)
- L Headphone jack (🎧)
- M Headphones volume control (VOLUME)
- N Display
- O CD release button (PUSH)
- P Play mode selector (MODE)
- Q Hole for car mounting base

HOLD Function

This function causes the unit to ignore short, accidental button presses. (The disc lid can still be opened and closed.)

The HOLD function prevents the following:

- Powering on the unit accidentally (which can cause the batteries to go dead).
- Play being cut off unexpectedly in the middle of a selection.

To use the HOLD function

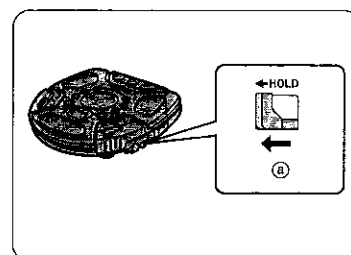
- Set [HOLD] to the HOLD position.
- ⓐ HOLD mode

"ho l d" Indication

When the unit is in hold status, pressing any button causes the indication "ho l d" to appear on the display.

When the unit is powered off

The "ho l d" indication appears only when [▶ ||] is pressed.



4 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).

4.1. 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.
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. 1)

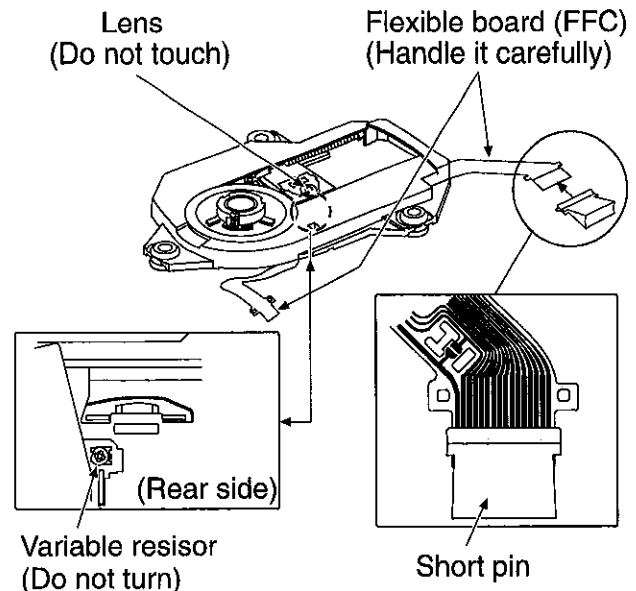


Fig. 1

4.2. 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. (as shown in Fig. 2)

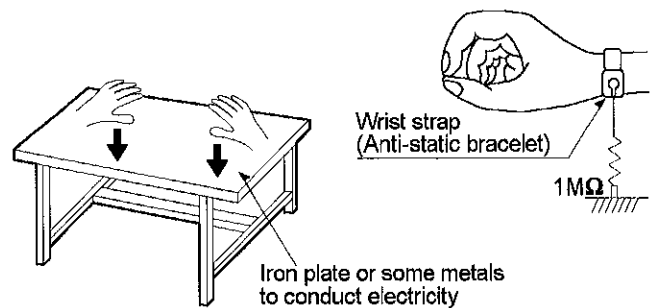


Fig. 2

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).

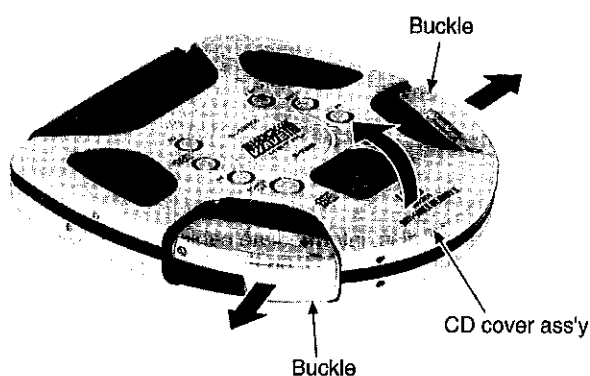
5 Operation Checks and Component Replacement Procedures

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. [] indicates parts No.

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

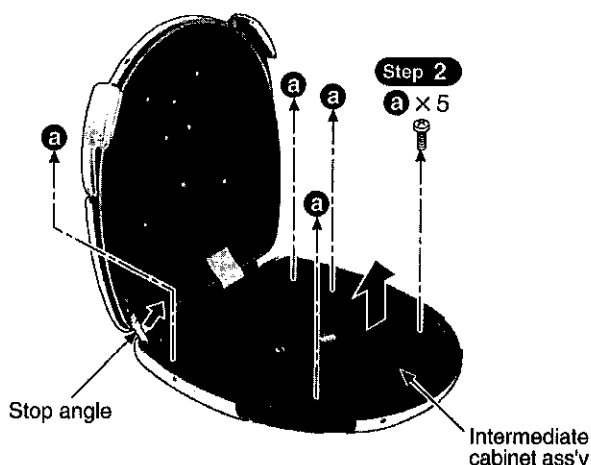
Step 1

Slide the buckle, and then open the CD cover ass'y.



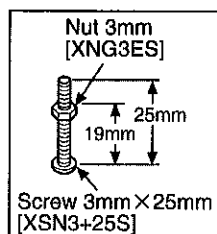
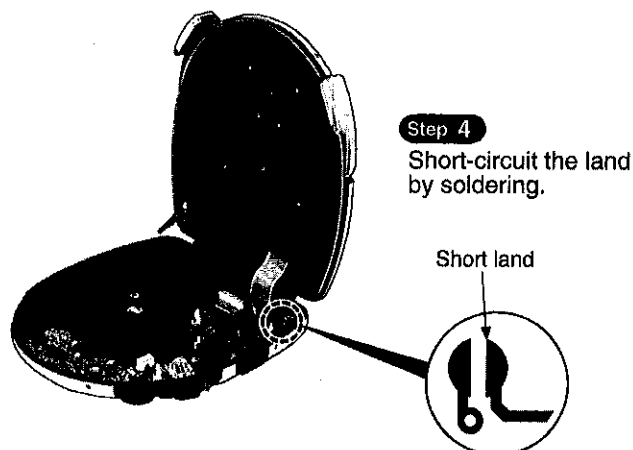
Step 2

a × 5



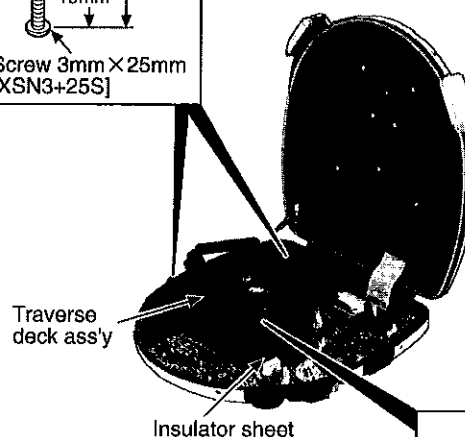
Step 3

Move the stop angle in the direction of arrow, and then remove the intermediate cabinet.



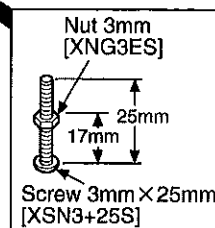
Step 5

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



NOTE

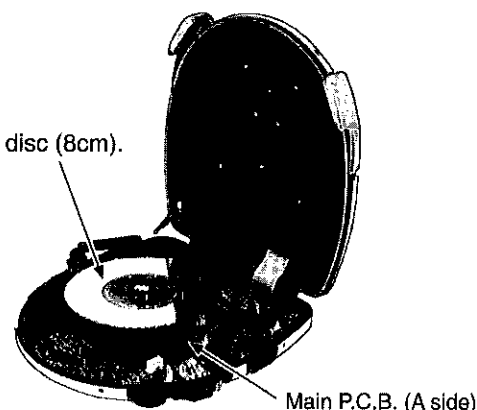
- The tip of screw must not protrude more than 2 mm above the floating rubber.
- To keep insulation, place the insulator sheet (paper etc.) between the P.C.B. and the head of screws.



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

Step 6

Put the disc (8cm).



NOTE

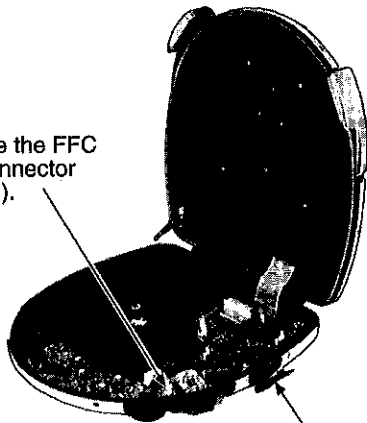
After checking, unsolder the short land to open circuit.

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

- Follow the **Step 1** ~ **Step 4** of the item 5.1 in checking for the main P.C.B. (A side).

Step 2

Remove the FFC from connector (CN701).

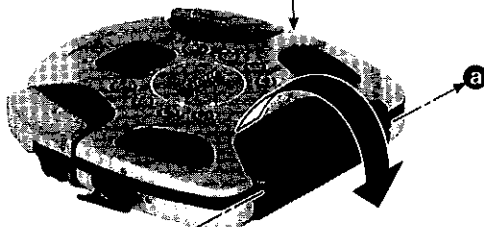


Step 1

Remove the jack cover.

Step 4

Remove the CD cover ass'y.

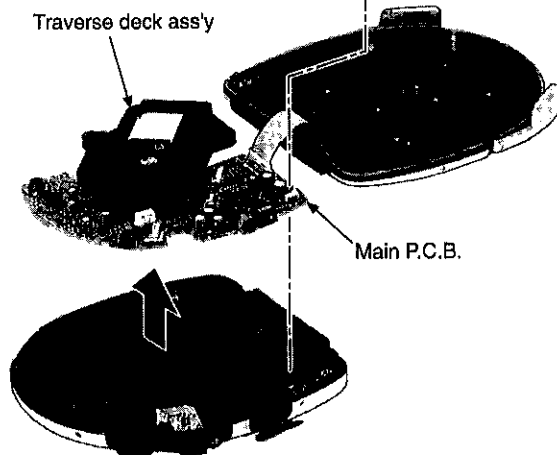


Step 3

a × 2

Step 6

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

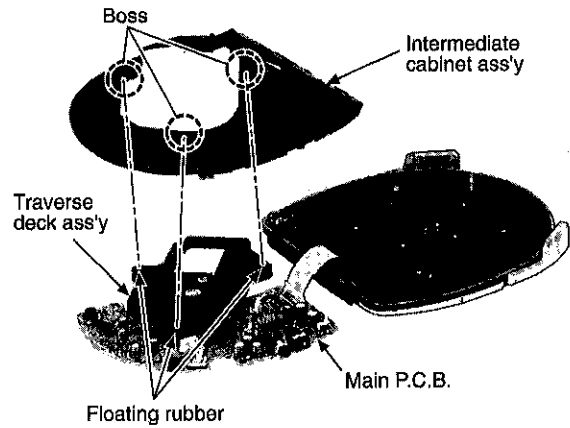


Step 5

b

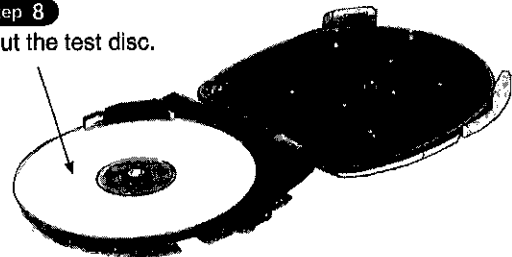
Step 7

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



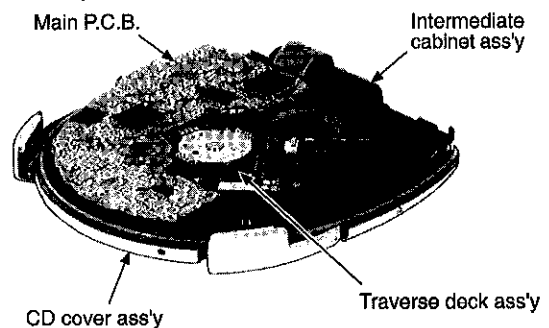
Step 8

Put the test disc.



Step 9

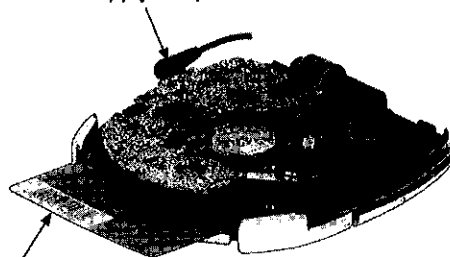
Locate the test disc, intermediate cabinet ass'y, traverse deck ass'y and main P.C.B. on the CD cover ass'y.



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

Step 11

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



Step 10

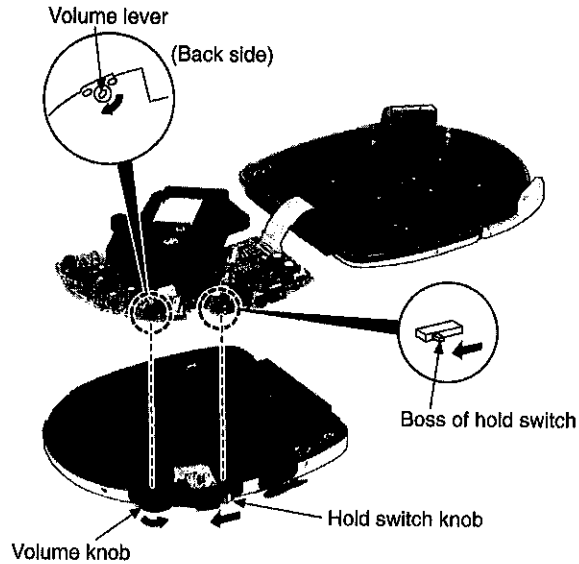
Insert a sheet material such as prepaid card between test disc and intermediate cabinet ass'y to prevent the test disc from rubbing.

NOTE

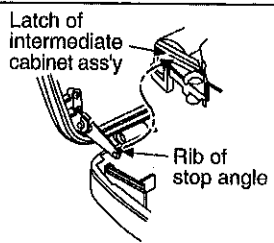
After checking, unsolder the short land to open circuit.

Notice for Installation of main P.C.B.

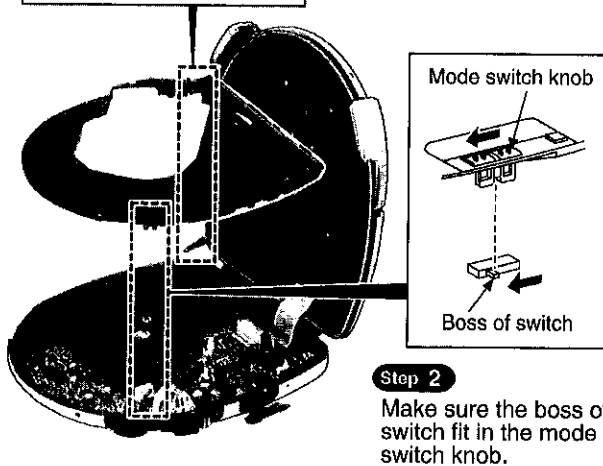
- Make sure the volume lever fit in the volume knob.
- Make sure the boss of hold switch fit in the hold switch knob.



Notice for Installation of intermediate cabinet ass'y

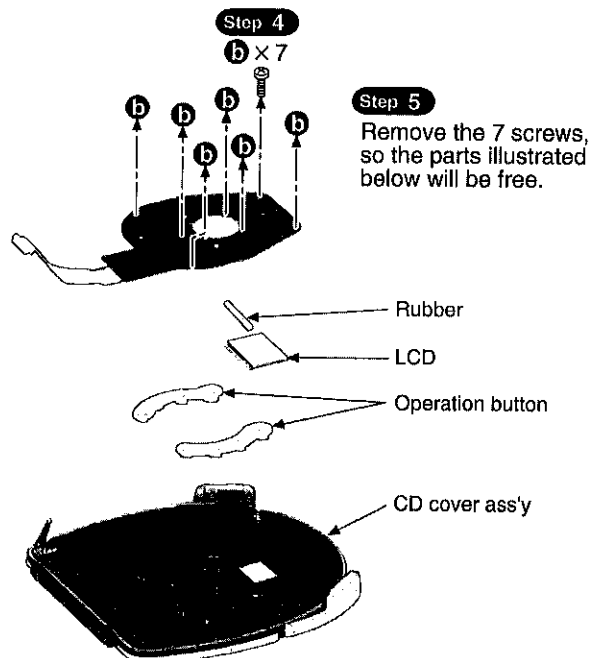
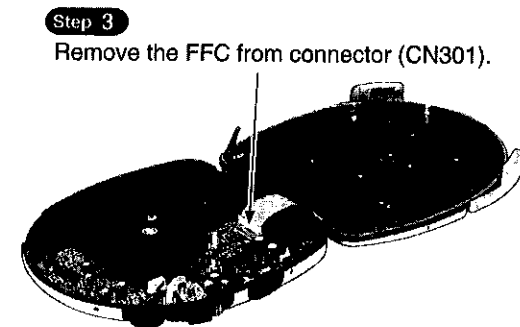
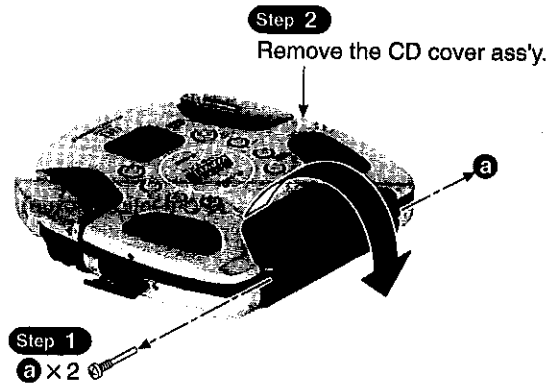


- Step 1**
Insert the rib of stop angle to latch of intermediate cabinet ass'y.



5.3 Replacement for the CD cover ass'y and LCD

- Follow the **Step 1** ~ **Step 3** of the item 5.1 in checking for the main P.C.B. (A side).

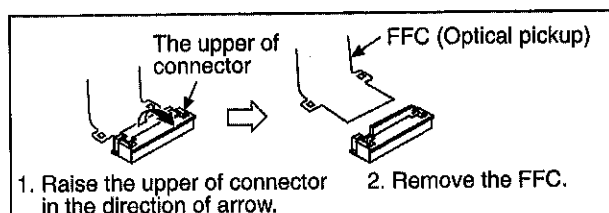


NOTE

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

5.4 Replacement for the traverse deck ass'y

- Follow the **Step 1** ~ **Step 3** of the item 5.1 in checking for the main P.C.B. (A side).



Step 1

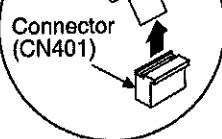
Pull out the FFC from connector (CN101).

Traverse deck ass'y

FFC (From the motor)

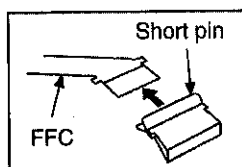
Step 2

Pull out the FFC from connector (CN401).



NOTE

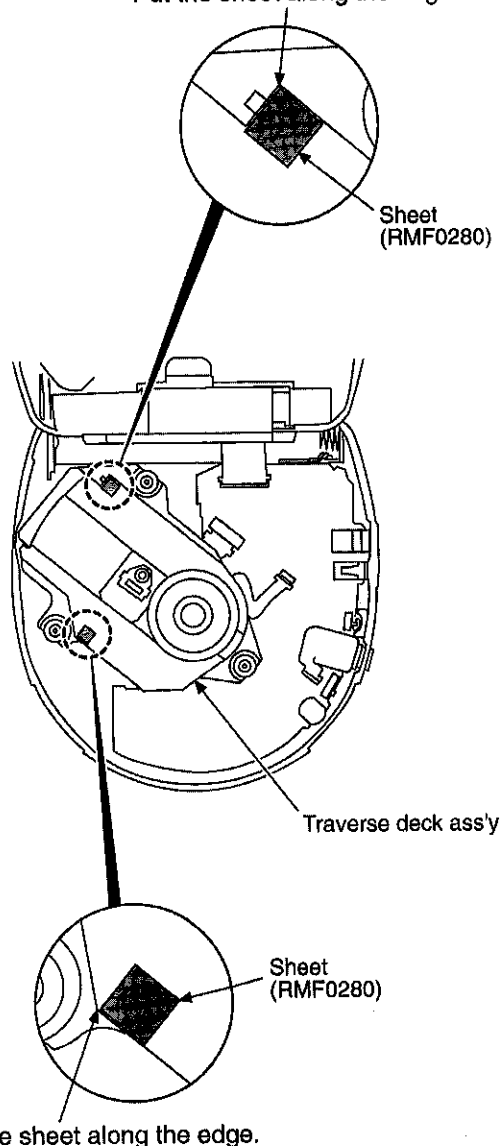
Insert a short pin into the traverse deck's FFC.
(Refer to "Handling Precautions for Traverse Deck".)



Notice for installation of traverse deck ass'y

- When replacing the traverse deck ass'y, put the sheet on the surface of traverse deck ass'y as shown below.

Put the sheet along the edge.



NOTE

When sticking the sheet on the traverse deck ass'y, take care that the sheet is not protruded from that edge or partially detached.

6 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

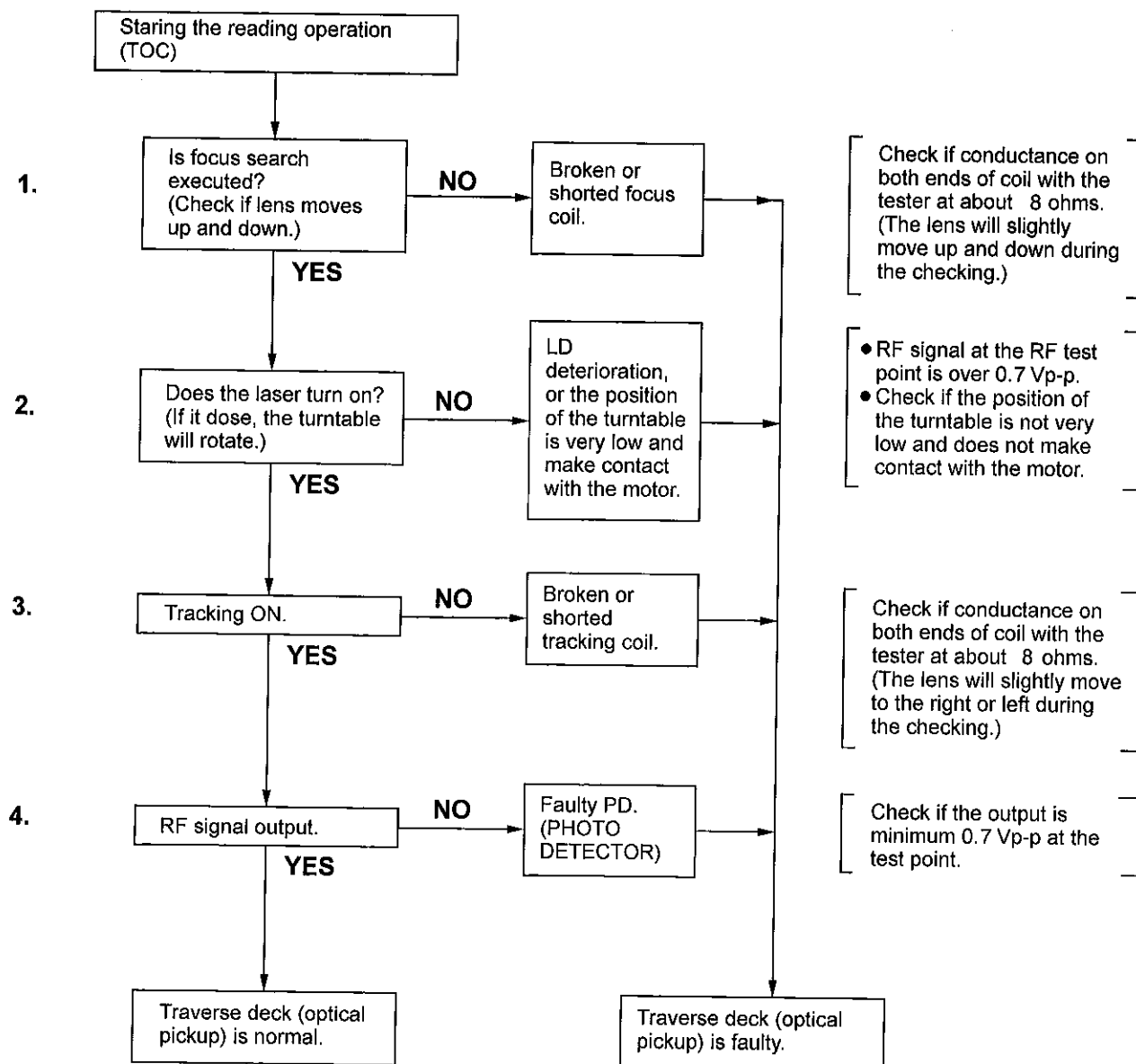
replacing it.

Replace the traverse deck only after the problem is identified.

(Procedure No.) (Checking Points)

(Cause)

(Testing Procedure)



※ 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.

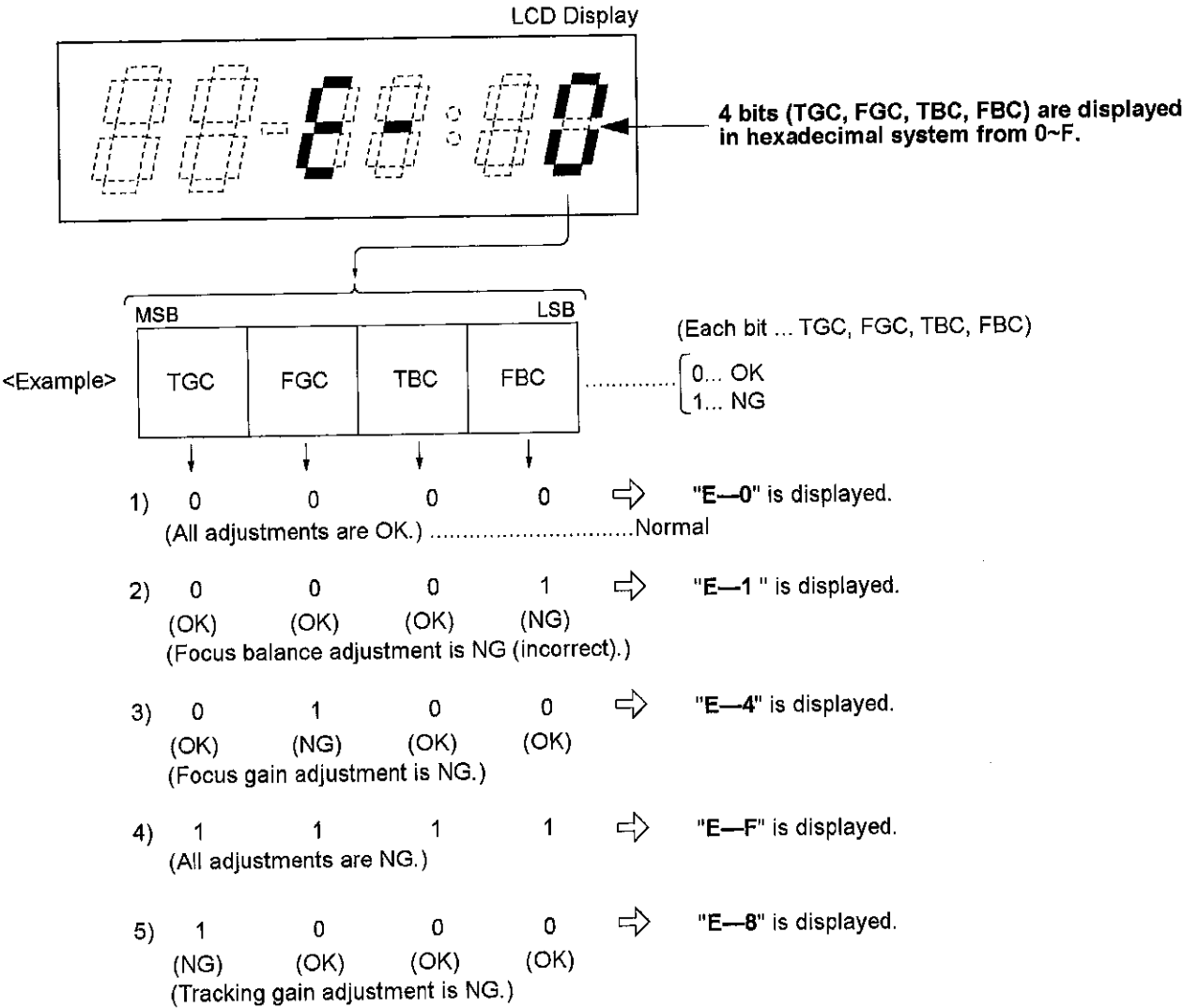
7 Automatic Adjustment Results Display Function (Self-check Function)

On this unit (SL-SW850), 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).

7.1. 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 (STOP/POWER OFF) Button once.
- 4. An automatic adjustment result is displayed on the LCD.

7.2. 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.

(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).

(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.

(2) the waveform or voltage of the servo IC's 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.

8 Measurements and Adjustments

Warning:

This product uses a laser diode. Refer to caution statements.

ACHTUNG:

- Die lasereinheit nicht zerlegen.
- Die lasereinheit darf nur gegen ein vom hersteller spezifizierte einheit ausgetauscht werden.

● **Measuring instruments and special tools**• **Test discs**

1. Playability test disc (SZZP1054C)

● **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 and CN401. (as shown in Fig. 3)

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 (SW201) by soldering them. It turns "ON" position. (Refer to below Fig. 3 or printed circuit board and wiring connection diagram for short land location on page 18.)

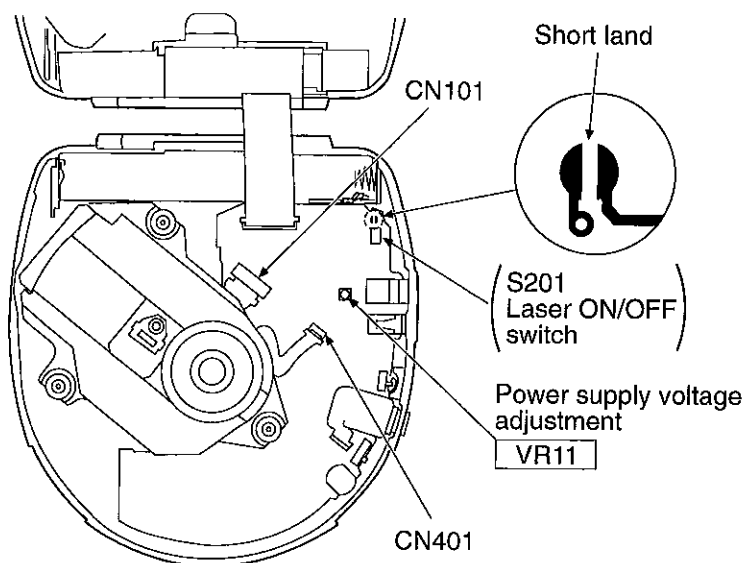
Note: Remove the solders from the lands after adjustment.

Fig. 3

8.1. POWER SUPPLY VOLTAGE ADJUSTMENT

1. Connect the DC voltmeter to VDD(+) and 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. Anti-shock is set in OFF 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 $2.45 \pm 0.02V$ (EQ switch in "Normal" position), as shown in Fig. 3.

8.2. 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 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.

9 Outline of 40-Second Sound Keeper Technique Used for Prevention of Sound from Skipping

9.1. Conventional Shockproofing 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 40 seconds.

9.2. Compression-shockproofing [Outline]

Fig. 4 is a block diagram showing the compression-shockproofing 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 normal speed to the D/A converter.

The data compression technique has conducted to reduction of required memory capacity from 4M bits to 1M bit for securing the accumulation time equivalent to the conventional.

All-inclusive Block Diagram

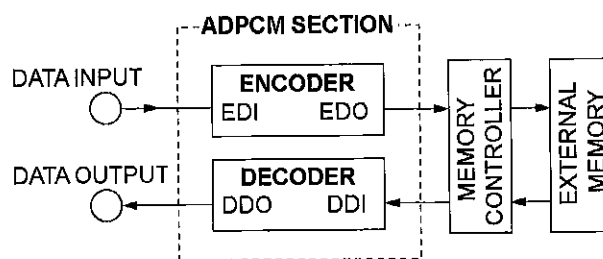


Fig. 4

10 Schematic Diagram Note

10.1. Schematic Diagram Notes

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.)
- S309 : Play mode selector (MODE) in "NORMAL" position.
(RANDOM $\leftrightarrow$ NORMAL $\leftrightarrow$ RESUME)
- S310 : Hold (HOLD) switch in "OFF" position.
- S801 : Play/pause ($\blacktriangleright/\blacksquare$) switch.
- S802 : Stop/power off ($\blacksquare/\blacksquare$ POWER OFF) switch.
- S803: Skip/search ($\blacktriangleright\blacktriangleright/\blacktriangleright\blacktriangleright$, $\blacktriangleleft\blacktriangleleft/\blacktriangleleft\blacktriangleleft$) switches.
- S804 [S803 : $\blacktriangleright\blacktriangleright/\blacktriangleright\blacktriangleright$, S804 : $\blacktriangleleft\blacktriangleleft/\blacktriangleleft\blacktriangleleft$]
- S805 : Repeat (REPEAT) switch.
- S806 : Memory/recall (MEMORY/RECALL) switch.
- S807 : EQ (EQ) switch.
- S808 : Anti-shock (A.SHOCK) switch.
- VR11 : Power supply voltage adjustment.
- VR701 : Headphones volume (VOLUME) control.
- 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.

- The supply part number is described alone in the replacement parts.
- $\blacktriangleright$: +B lines.
- $\Rightarrow$: CD playback signal lines.
- 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.

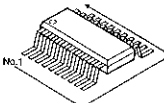
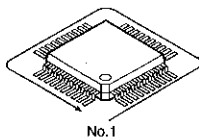
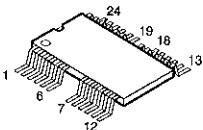
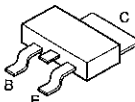
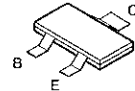
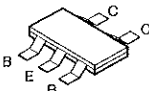
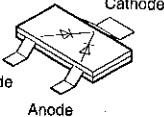
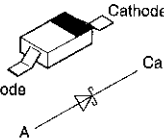
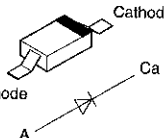
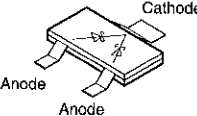
Measurement conditions:

- *AC adaptor is used for power supply.
- *Set the headphones VR(VR701) to center position(No.5).
- *Set the hold lock and ANTI-SHOCK switches to ON.
- *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.

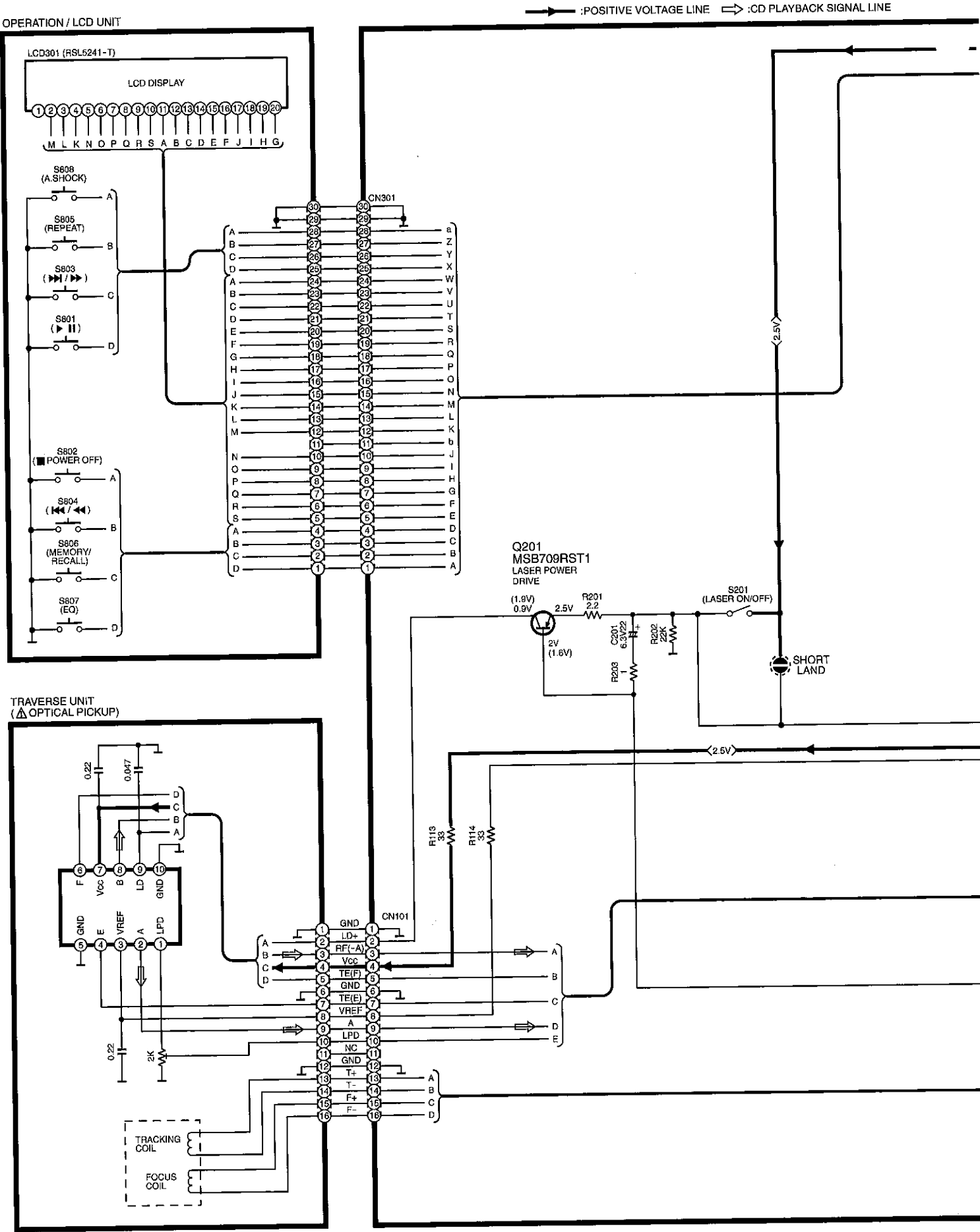
Caution!!

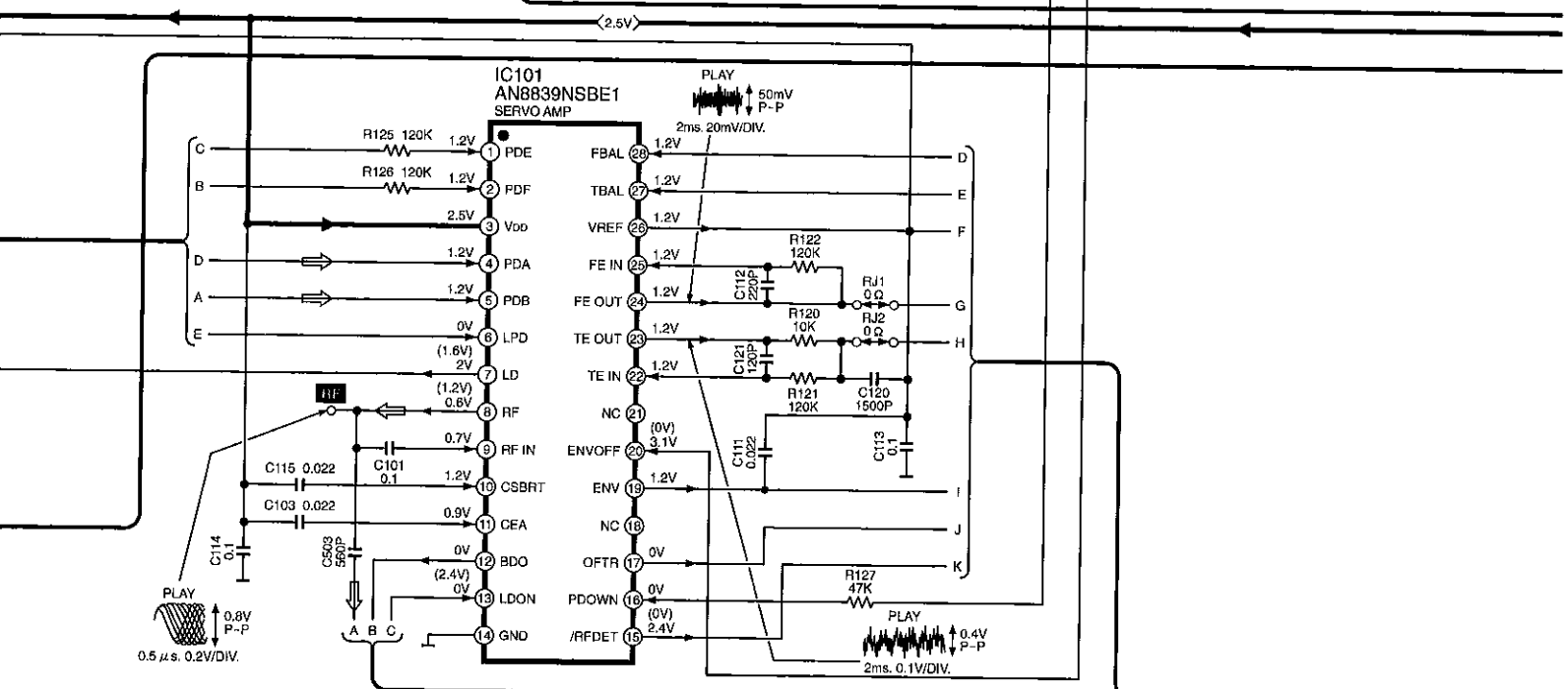
- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

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

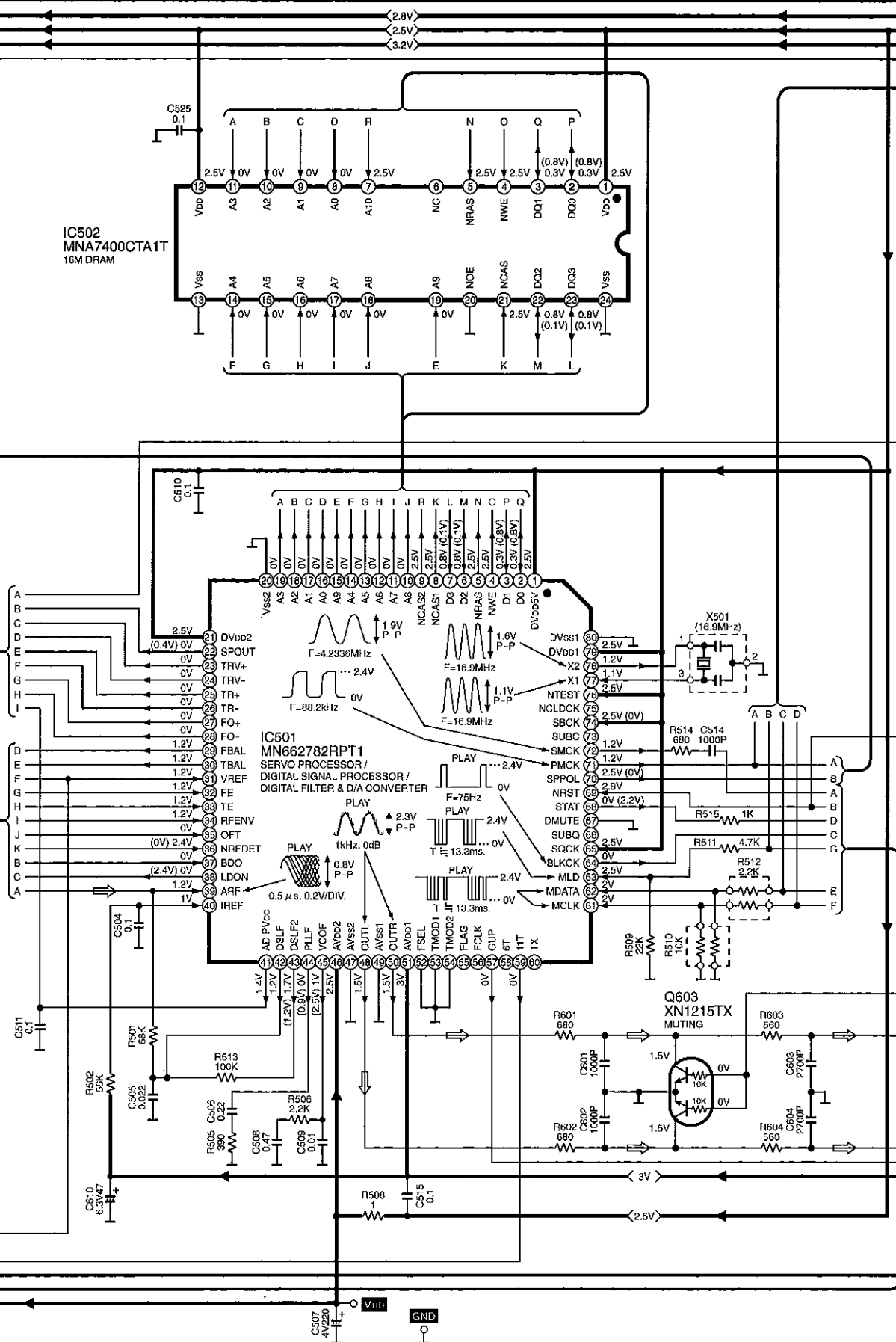
	<table><tr><td>AN8839NSBE1</td><td>28PIN</td></tr><tr><td>RS10003E2</td><td>40PIN</td></tr><tr><td>BH6522FVE2</td><td>40PIN</td></tr><tr><td>BA6966FVE2</td><td>20PIN</td></tr><tr><td>TA2120FNEL</td><td>24PIN</td></tr></table>	AN8839NSBE1	28PIN	RS10003E2	40PIN	BH6522FVE2	40PIN	BA6966FVE2	20PIN	TA2120FNEL	24PIN		<table><tr><td>SC440324CFU</td><td>64PIN</td></tr><tr><td>MN662782RPT1</td><td>80PIN</td></tr></table>	SC440324CFU	64PIN	MN662782RPT1	80PIN		
AN8839NSBE1	28PIN																		
RS10003E2	40PIN																		
BH6522FVE2	40PIN																		
BA6966FVE2	20PIN																		
TA2120FNEL	24PIN																		
SC440324CFU	64PIN																		
MN662782RPT1	80PIN																		
	MSB709RST1 2SD1328TX 2SD1819ATX DTA114YUA106 DTC144TUA106	XN1210TX XN1215TX 	MA142WKTIX 	MA1070400L 	MA1111TX 														
MA741WKTIX 																			

11 Schematic Diagram

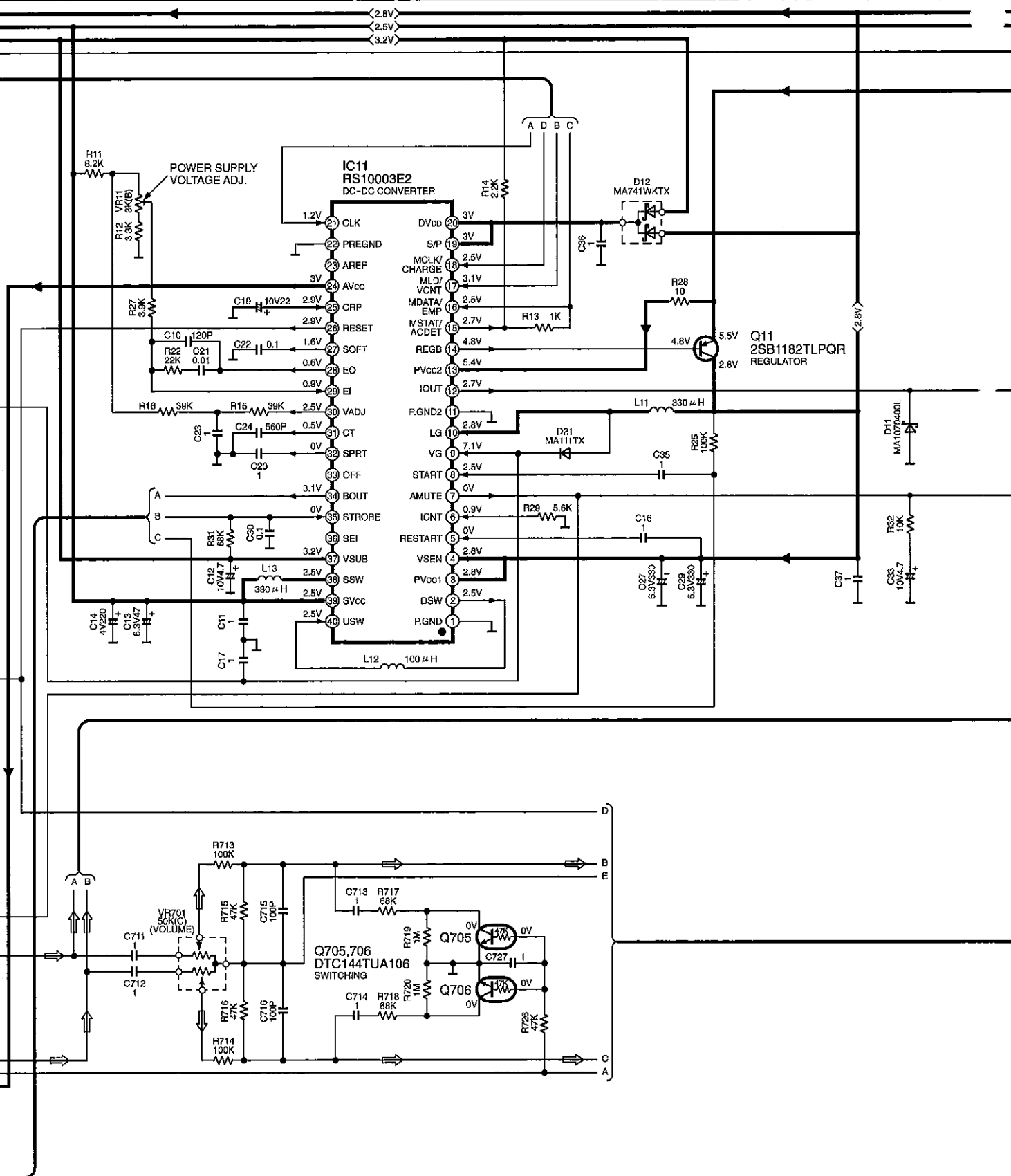


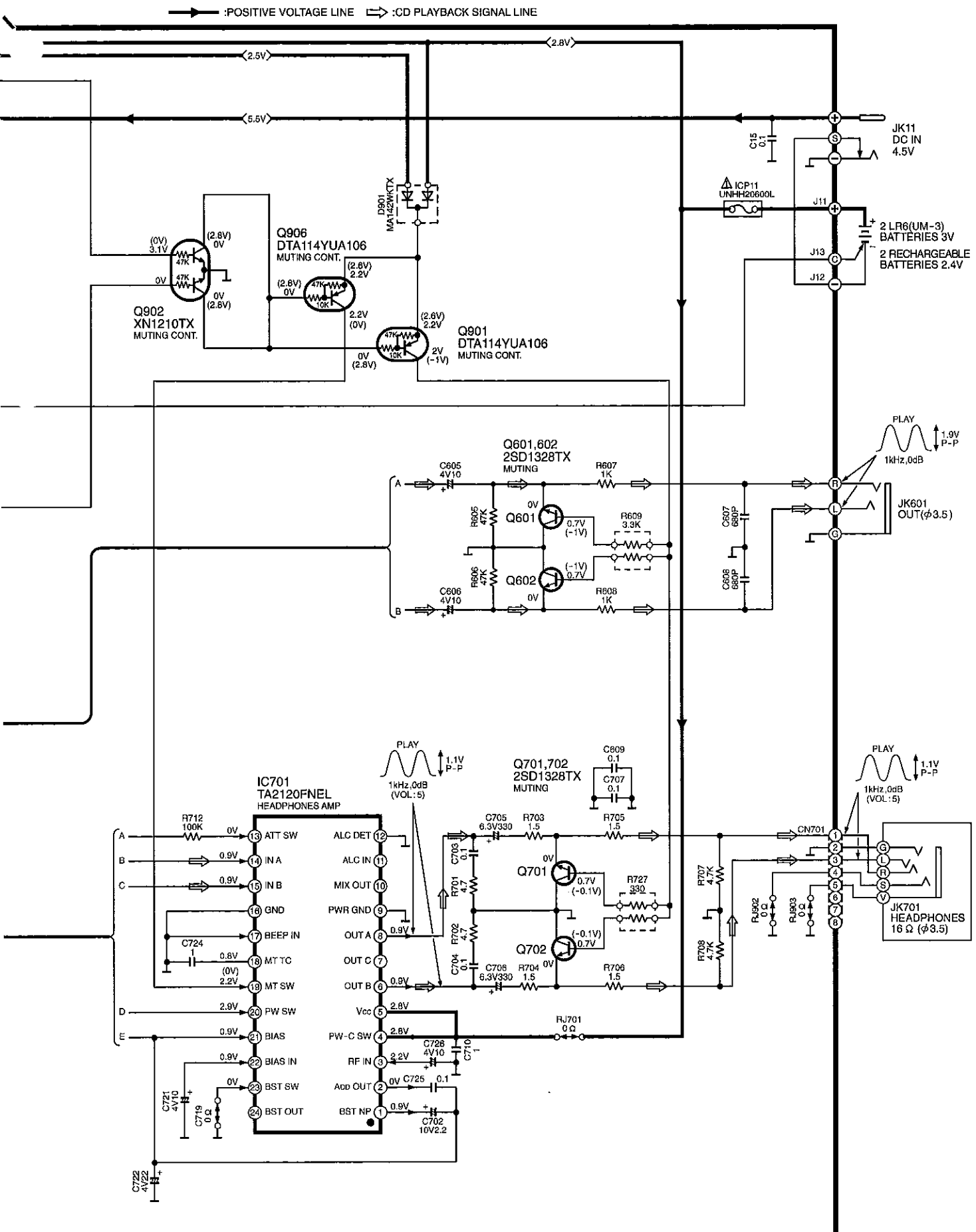


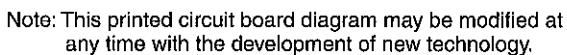




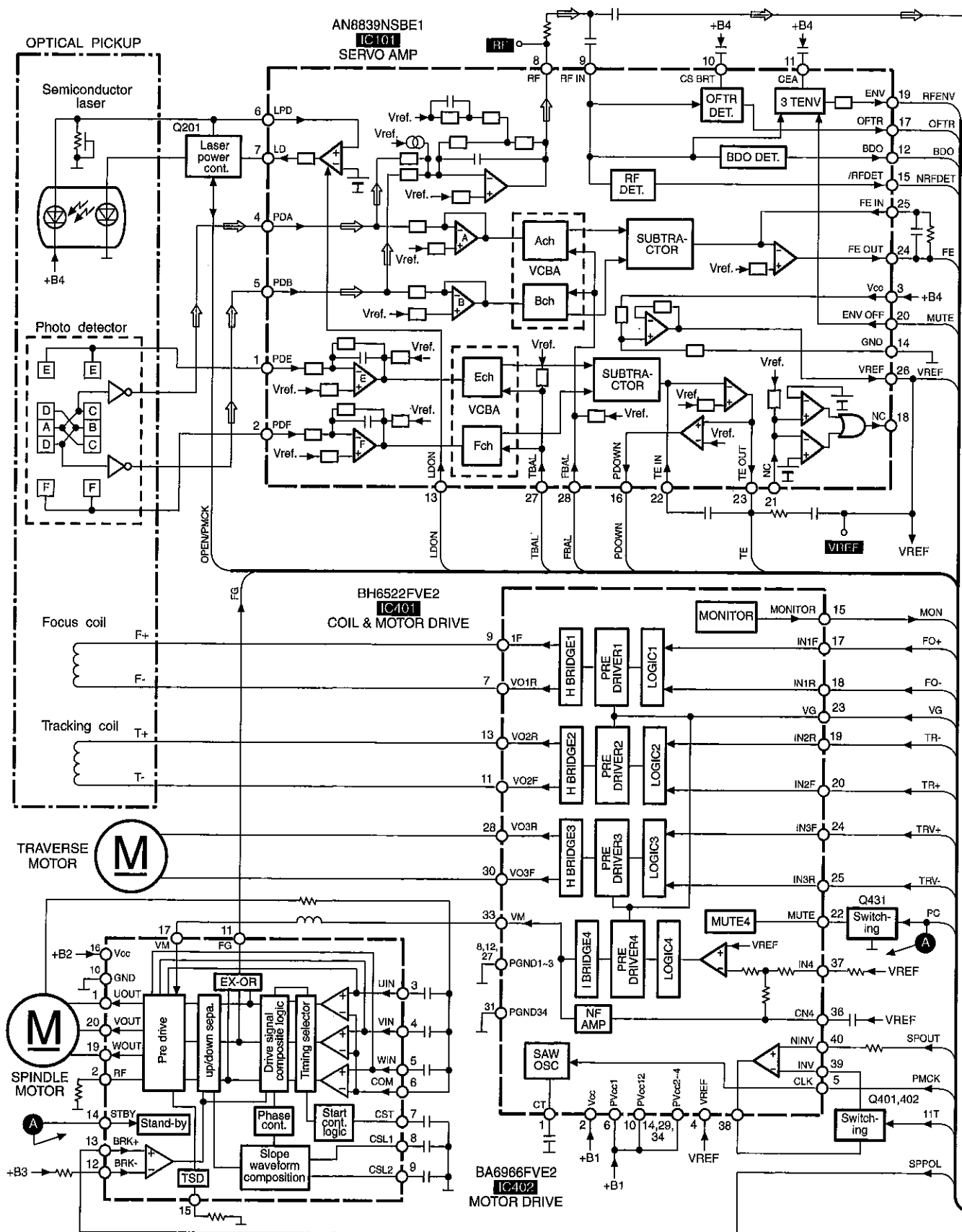
➔ : POSITIVE VOLTAGE LINE ➡ : CD PLAYBACK SIGNAL LINE



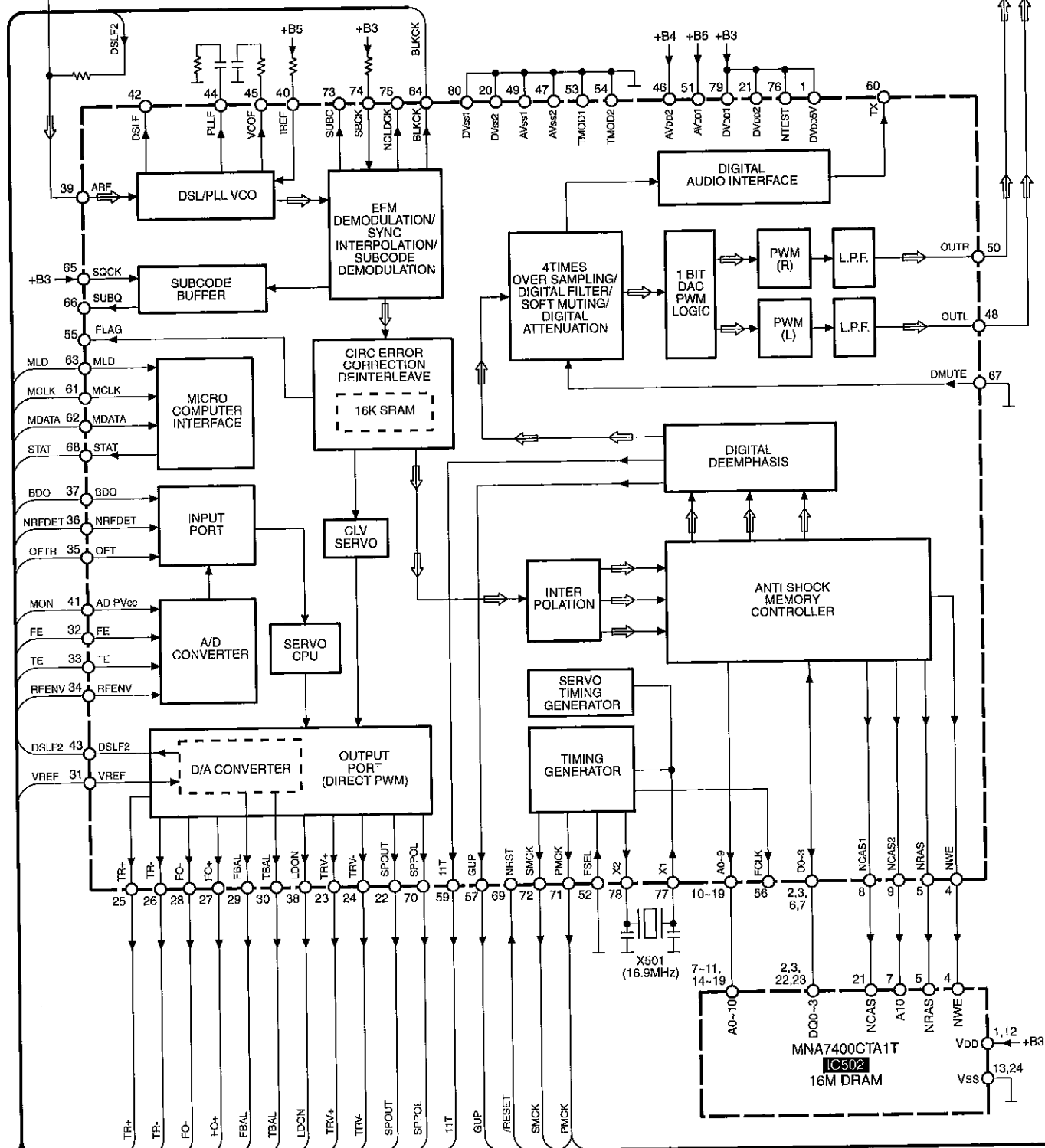


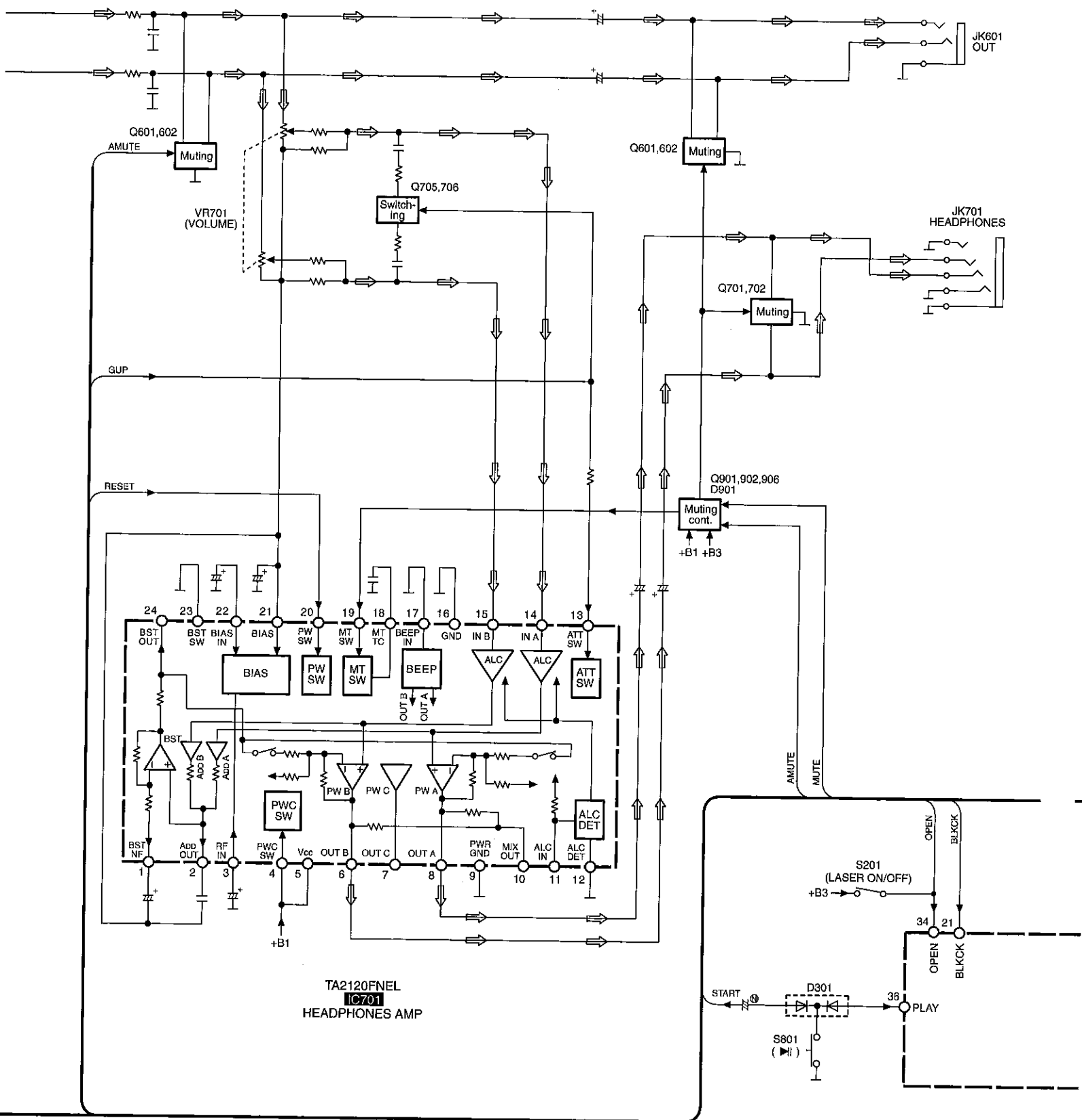


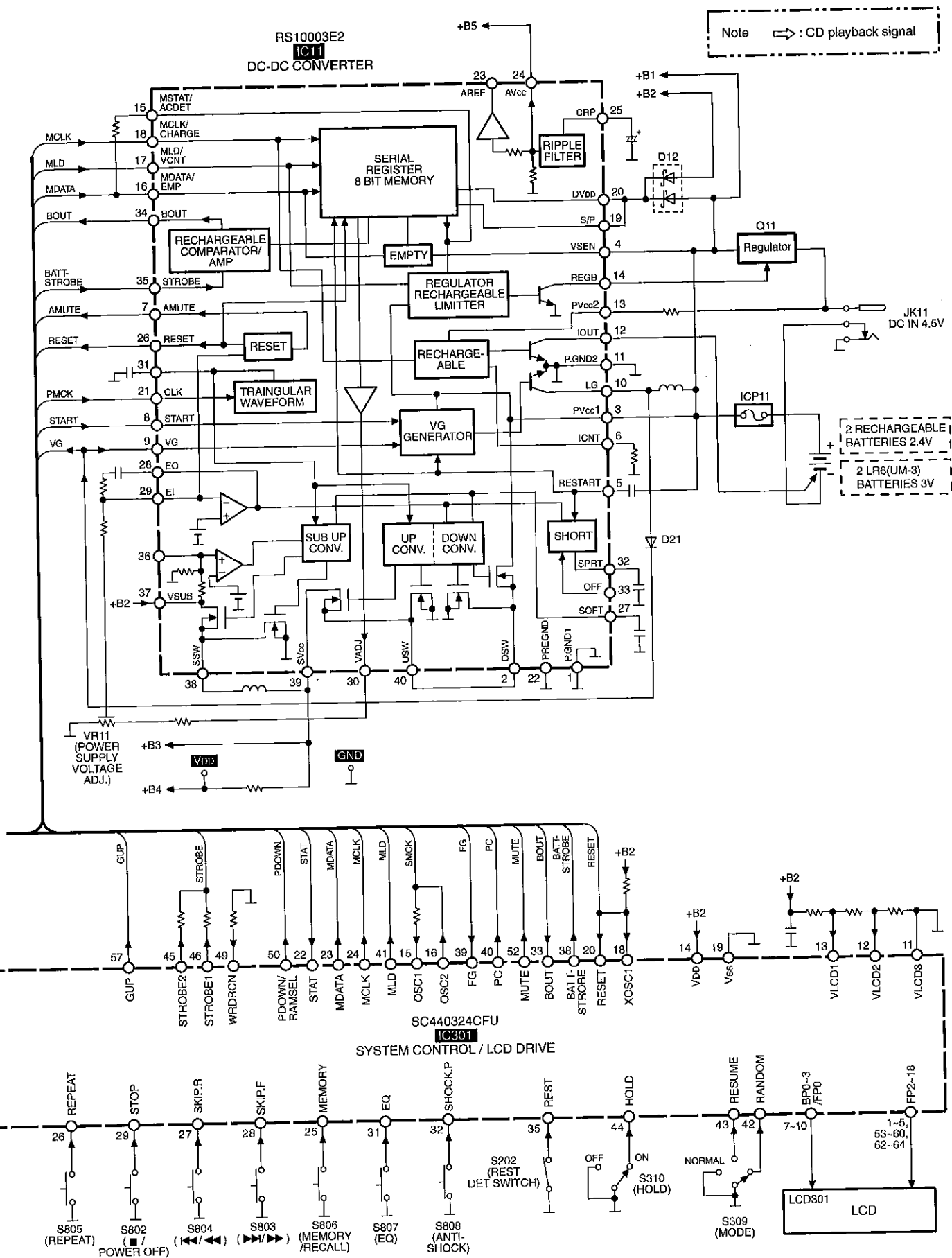
13 Block Diagram



MN662782RPT1
IC501
 SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
 DIGITAL FILTER & D/A CONVERTER







14 Terminal Function of IC's

14.1. IC101(AN8839NSBE1):SERVO AMP

Pin No.	Mark	I/O Division	Function
1	PDE	I	Tracking signal input (1)
2	PDF	I	Tracking signal input (2)
3	VDD	I	Power supply
4	PDA	I	Focus signal input (1)
5	PDB	I	Focus signal input (2)
6	LPD	I	APC amplifier input
7	LD	O	APC amplifier output
8	RF	O	RF addition output
9	RF IN	I	RF detection signal input
10	CSBRT	I	Capacitor connection for OFTR
11	CEA	I	HPF amplifier capacitor connection
12	BDO	O	Dropout signal output (H: dropout)
13	LDON	I	APC control input
14	GND	---	Ground connection
15	/RFDET	O	RF detection signal output (L: detection)
16	PDOWN	O	Reduced voltage detection signal input
17	OFTR	O	Off-track signal output (H: off-track)
18	NC	---	Unused and open
19	ENV	O	RF envelop signal output
20	ENVOFF	I	Envelop control input
21	NC	---	Unused and open
22	TE IN	I	Tracking error amplifier input
23	TE OUT	O	Tracking error amplifier output
24	FE OUT	O	Focus error amplifier output
25	FE IN	I	Focus error amplifier input
26	VREF	O	Reference voltage output
27	TBAL	I	Tracking balance signal input
28	FBAL	I	Focus balance signal input

14.2. IC301(SC440324CFU):SYSTEM CONTROL / LCD DRIVE

Pin No.	Mark	I/O Division	Function
1	FP6	O	LCD segment signal output
5	FP2		
6	FP1	---	Unused and open
7	BP3	O	LCD segment signal output
10	BP0		
11	VLCD3	---	Unused and connected to ground
12	VLCD2	I	Power supply (LCD drive bias)
13	VLCD1	I	Power supply
14	VDD		
15	OSC1	I	When MSEL from IC501 is H: Crystal oscillator 1/2 frequency-divided clock signal input (I SMCK = 8.4672 MHz) When MSEL from IC501 is L: Crystal oscillator 1/4 frequency-divided clock signal input (I SMCK = 4.2336 MHz)
16	OSC2	O	Crystal oscillator 1/2 frequency-divided clock signal output
17	XOSC2	---	Unused and open
18	XOSC1	I	Connected to reset detection
19	VSS	---	Ground connection
20	RESET	I	Reset detection input
21	BLKCK	I	Block clock input
22	STAT	I	IC501 data input

Pin No.	Mark	I/O Division	Function
23	MDATA	I/O	Command data input/output
24	MCLK	O	Output of serial command clock to peripheral IC's
25	MEMORY	I	MEMORY key input
26	REPEAT	I	REPEAT key input
27	SKIP.R	I	SKIP.R key input
28	SKIP.F	I	SKIP.F key input
29	STOP	I	STOP key input
30	BATTERY	---	Unused and open
31	EQ	I	EQ key input
32	SHOCK.P	I	SHOCK.P key input
33	BOUT	I	Input of battery charging voltage measurement from IC11 (L: end)
34	OPEN	I	Cover open detection input
35	REST	I	REST switch input
36	PLAY	I	PLAY key input
37	BUZ	---	Unused and open
38	BATT STROBE	O	Output for measurement of battery charging voltage (measured by Hi-Z)
39	FG	I	Spindle motor revolution cycle signal input
40	PC	O	Hard mute output
41	MLD	O	Output of serial command latch to peripheral IC's
42	RANDOM	I	RANDOM switch input
43	RESUME	I	RESUME switch input
44	HOLD	I	HOLD switch input
45	STROBE1	O	STROBE1 output
46	STROBE2	O	STROBE2 output
47	EQSEL1	I	EQ selection input1
48	EQSEL2	I	EQ selection input2
49	WRDRCN	I	Remote Control input
50	PDOWN/ RAMSEL	I/O	Headphones power OFF output/ RAM selection input
51	VMSS	---	Unused and open
52	MUTE	O	Hard mute output
53	FP18	O	LCD segment signal output
60	FP11		
61	FP10	---	Unused and open
62	FP9	O	LCD segment signal output
64	FP7		

14.3. IC401(BH6522FVE2):COIL & MOTOR DRIVE

Pin No.	Mark	I/O Division	Function
1	CT	O	Triangular wave output (connected to ground via a capacitor)
2	VCC	I	Power supply
3	NC	---	Unused and open
4	VREF	I	Reference voltage input
5	CLK	I	External clock input
6	PVCC1	I	Power supply
7	V01R	O	Focus coil drive signal output
8	PGND1	---	Ground connection
9	V01F	O	Focus coil drive signal output
10	PVCC12	I	Power supply
11	V02F	O	Tracking coil drive signal output
12	PGND2	---	Ground connection
13	V02R	O	Tracking coil drive signal output
14	PVCC2	I	Power supply
15	MONITOR	I	A/D reference voltage monitor

Pin No.	Mark	I/O Division	Function
16	NC	---	Unused and open
17	IN1F	I	Focus coil drive signal input
18	IN1R	I	Focus coil drive signal input
19	IN2R	I	Tracking coil drive signal input
20	IN2F	I	Tracking coil drive signal input
21	GND	---	Ground connection
22	MUTE(PC)	I	Hard mute input
23	VG	I	Power supply
24	IN3F	I	Traverse motor drive signal input
25	IN3R	I	Traverse motor drive signal input
26	NC	---	Unused and open
27	PGND3	---	Ground connection
28	V03R	O	Traverse motor drive signal output
29	PVCC3	I	Power supply
30	V03F	O	Traverse motor drive signal output
31	PGND34	---	Ground connection
32	NC	---	Unused and open
33	VM	O	For output of spindle motor output power supply
34	PVCC4	I	Power supply
35	VLIM	I	Spindle motor gain control signal input
36	CN4	I	Channel 4 filter (connected to VREF via a capacitor)
37	IN4	I	Reference voltage input
38	OP	O	Spindle motor control signal amplifier output
39	INV	I	Spindle motor control signal reverse input
40	NINV	I	Spindle motor drive input

14.4. IC402(BA6966FVE2):MOTOR DRIVE

Pin No.	Mark	I/O Division	Function
1	UOUT	O	Spindle motor drive signal output
2	RF	---	Output current detection (connected to ground via a resistance)
3	UIN	I	Rotor position detection input
4	VIN		
5	WIN		
6	COM	I	Motor coil midpoint input
7	CST	---	Starting oscillation capacitor connection
8	CSL1	---	Slope capacitor connections
9	CSL2		
10	GND	---	Ground connection
11	FG	O	Spindle motor revolution cycle signal output
12	BRK -	I	Brake signal input
13	BRK+		
14	STBY	I	Standby input
15	RIB	---	Output TR setting resistor connection
16	VCC	I	Power supply
17	VM	I	Input of spindle motor output power supply
18	NC	---	Unused and open
19	WOUT	O	Spindle motor drive signal output
20	VOUT		

14.5. IC11(RS10003E2):DC/DC CONVERTER

Pin No.	Mark	I/O Division	Function
1	P.GND	---	Ground connection

Pin No.	Mark	I/O Division	Function
2	DSW	O	DC/DC converter coil drive
3	PVCC1	I	Power supply
4	VSEN	I	Empty detection input (connected to power supply)
5	RESTART	I	DC/DC converter drive
6	ICNT	I	Setting of charging current
7	AMUTE	O	Muting signal output
8	START	I	Starting of DC/DC converter
9	VG	I	Power supply
10	LG	I	Coil drive for VG voltage increase (connected to power supply)
11	P.GND2	---	Ground connection
12	IOUT	O	Charging signal output and charging feedback
13	PVCC2	I	Power supply
14	REGB	O	Regulator drive signal output
15	MSTAT/ACDET	O	DC jack detection output
16	MDATA/EMP	I	Power drop detection input
17	MLD/VCNT	I	Regulator voltage switching input
18	MCLK/CHARGE	I	Charging ON/OFF
19	S/P	I	Serial/parallel switching (connected to power supply)
20	DVDD	I	Power supply
21	CLK	I	DC/DC converter external clock input
22	PREGND	---	Ground connection
23	AREF	---	Unused and open
24	AVCC	O	Ripple filter output
25	CRP	I	Ripple filter smoothing capacitor connection
26	RESET	O	Reset detection output
27	SOFT	O	Soft start setting (connected to ground via a capacitor)
28	EO	O	DC/DC converter error amplifier output
29	EI	I	DC/DC converter error amplifier input
30	VADJ	O	Output for varying DC/DC converter output
31	CT	O	Triangular wave output (connected to ground via a capacitor)
32	SPRT	O	For setting of constants at power OFF (connected to ground via a capacitor)
33	OFF	---	Unused and open
34	BOUT	O	Amplifier output
35	STROBE	I	Strobe input
36	SEI	---	Unused and open
37	VSUB	I	Power supply
38	SSW		
39	SVCC		
40	USW	I	DC/DC converter coil drive

14.6. IC501(MN662782RPT1):SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR / DIGITAL FILTER & D/A CONVERTER

Pin No.	Mark	I/O Division	Function
1	DVDD	---	Power supply for DRAM
2	D0	I/O	Data input/output for DRAM
3	D1		
4	NWE	O	Write enable output for DRAM
5	NRAS	O	RAS control signal output for DRAM
6	D2	I/O	Data 2/3 input/output for DRAM
7	D3		
8	NCAS1	O	CAS control 1 signal output for DRAM
9	NCAS2	---	CAS control 2 signal output for DRAM
10	A8		
14	A4	O	Addresses 8-4 output for DRAM
15	A9	O	Address 9 output for DRAM
16	A0		
19	A3	O	Addresses 0-3 output for DRAM
20	VSS2	---	Ground connection for digital circuits
21	DVDD2	---	Power supply for digital circuits
22	SPOUT	O	Spindle motor drive output
23	TRV+	O	Traverse motor drive output, positive polarity
24	TRV-	O	Traverse motor drive output, negative polarity
25	TR+	O	Tracking coil drive output, positive polarity
26	TR-	O	Tracking coil drive output, negative polarity
27	FO+	O	Focus coil drive output, positive polarity
28	FO-	O	Focus coil drive output, negative polarity
29	FBAL	O	Focus balance adjustment output
30	TBAL	O	Tracking balance adjustment output
31	VREF	I	D/A output reference voltage input
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input (analog input)
35	OFT	I	Off-track signal input (H: off-track)
36	NRFDET	I	RF detection signal input (L: detection)
37	BDO	I	Dropout signal input (H: dropout)
38	LDON	O	Laser ON signal output (H: ON)
39	ARF	I	RF signal input
40	IREF	I	Reference current input
41	AD PVCC	I	A/D reference voltage input
42	DSLIF	O	Loop filter output for DSL
43	DSLIF2	O	Unbalance current correction output for DSL
44	PLLIF	O	Loop filter output for PLL
45	VCOF	O	Loop filter output for jitter-free VCO
46	AVDD2	---	Power supply for analog circuits
47	AVSS2	---	Ground connection for analog circuits
48	OUTL	O	Left channel audio signal output
49	AVSS1	---	Ground connection for analog circuits (for audio output)
50	OUTR	O	Right channel audio signal output
51	AVDD1	---	Power supply for analog circuits
52	FSEL	I	Noise filter ON/OFF switching input (L: ON)
53	TMOD1	I	Terminal mode switching input 1 (L: normal)
54	TMOD2	I	Terminal mode switching input 2 (L: normal)

Pin No.	Mark	I/O Division	Function
55	FLAG	---	Unused and open
56	FCLK	---	Unused and open
57	GUP	O	Gain control output for during XBS operation (when ON: increased 6 dB)
58	6T	---	Unused and open
59	11T	O	Spindle motor gain control signal output
60	TX	---	Unused and open
61	MCLK	I	Microprocessor command clock signal input (detected at leading edge)
62	MDATA	I	Microprocessor command data signal input
63	MLD	I	Microprocessor command control signal input (L: load)
64	BLKCK	O	Sub-code block clock signal output (I = 75 Hz)
65	SQCK	I	External clock input for sub-code Q resistor
66	SUBQ	---	Unused and open
67	DMUTE	---	Mute Input (H: mute) (unused and connected to ground)
68	STAT	O	Status signal output
69	NRST	I	Reset signal input (H: reset)
70	SPPOL	O	Spindle motor drive signal output
71	PMCK	O	Clock signal output (I = 88.2 Hz)
72	SMCK	O	System clock signal output (I = 4.2336 MHz)
73	SUBC	---	Unused and open
74	SBCK	I	Clock input for sub-code output
75	NCLDCK	---	Unused and open
76	NTEST	I	Test terminal (normal: H)
77	X1	I	Crystal oscillator circuit input (I = 16.9344 MHz)
78	X2	O	Crystal oscillator circuit output (I = 16.9344 MHz)
79	DVDD1	---	Power supply for digital circuits
80	DVSS1	---	Ground connection for digital circuits

15 Replacement Parts List

Notes:

*Important safety notice:

*Components identified by Δ 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.

*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)

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

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

*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.

ACHTUNG:

Die Lasereinheit nicht zerlegen.

Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKK0130-K	BATT. COVER	1	
2	RYF0533-H	CD COVER	1	
3	RFKJLSW850EB	BOTTOM CABINET ASS'Y	1	
3-1	RKA0063-K	FOOT	2	
4	RGV0173-D	KNOB, HOLD	1	
5	RGW0289-K	KNOB, VOL	1	
6	RHE5079YA	SCREW	1	
7	RJC30031	BATT. TERMINAL (+)	1	
8	RJC70028	BATT. TERMINAL (-)	1	
9	RJH5303	BATT. CASE CONNECT. TERMINA	1	
10	RKS0313-H	BOTTOM CABINET	1	
11	RMG0516-H	COVER (A)	1	
12	RMG0517-H	COVER (B)	1	
13	RML0541	LEVER	1	
14	RML0558	LEVER, VOL	1	
15	RMX0122	WATER PROF RING	2	
16	RXQ0646	JACK ASS'Y	1	
17	RAE0220Z	TRAVERSE DECK	1	Δ
17-1	RMG0503-K	FLOATING GUM	3	
18	RGV0251-H	KNOB, MODE	1	
19	RMK0427	MID CHASSIS	1	
20	XTN17+6GFZ	SCREW	5	

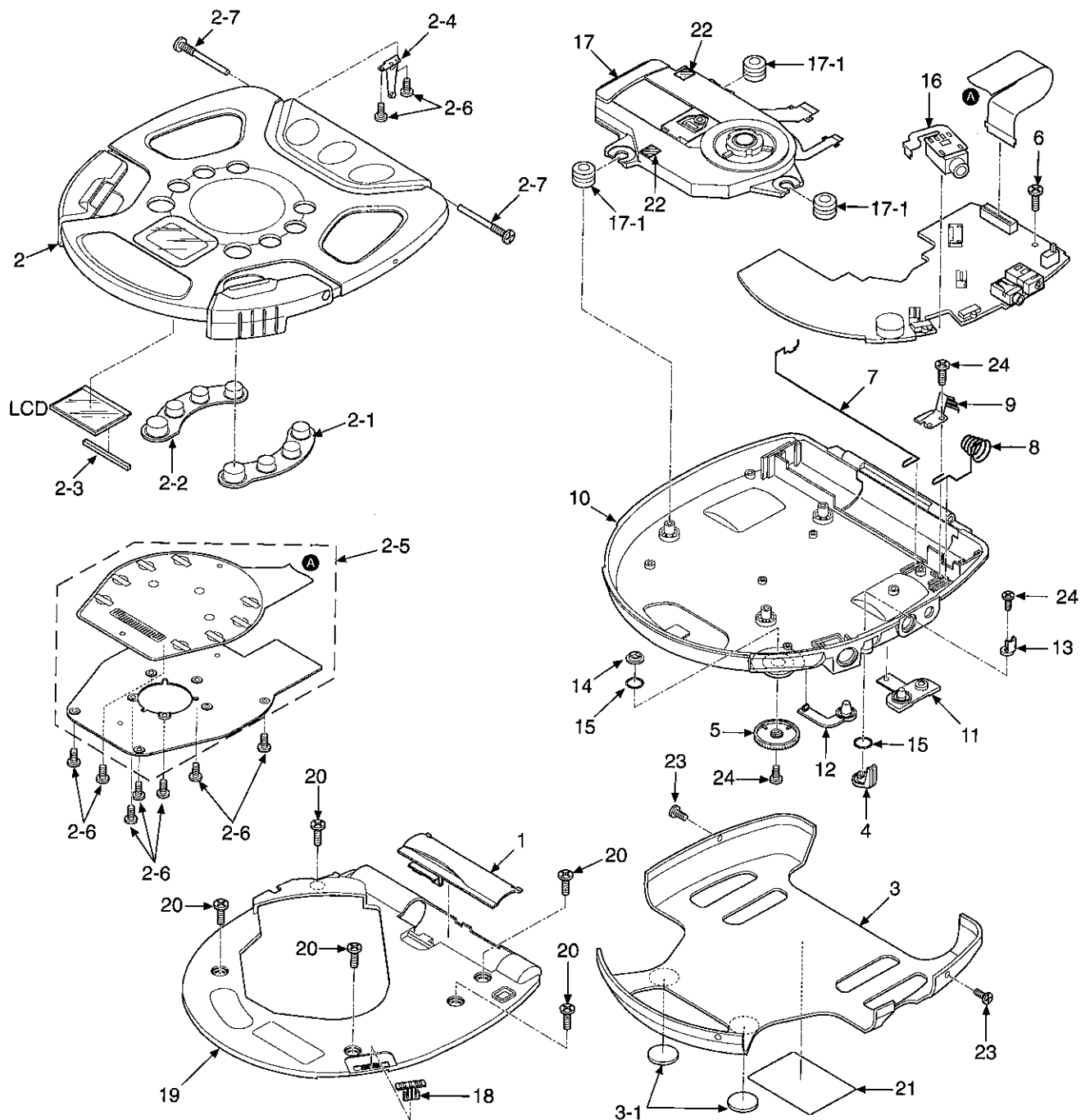
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
21	RGN1738-K	NAME PLATE	1	(EB)
21	RGN1737-K	NAME PLATE	1	(EG)
21	RGN1739-K	NAME PLATE	1	(GC)
21	RGN1740-K	NAME PLATE	1	(GN)
22	RMF0280	SHEET	2	
23	XQN14+BG4FC	SCREW	2	
24	XQN14+BG3FC	SCREW	12	
25	RGU1771-H	OPERATION KNOB (A)	1	
26	RGU1772-H	OPERATION KNOB (B)	1	
27	RSQ0061	ZEBRA RUBBER	1	
28	RXA0177	STOPPER ANGLE ASS'Y	1	
29	RXA0176	SW PCB	1	(S801-808)
31	RHD20039-K	SCREW	2	
32	RMG0518-D	LING	1	
A1	RFEA403B-S	AC ADAPTOR	1	(EB) Δ
A1	RFEA401E-3S	AC ADAPTOR	1	(EG) Δ
A1	RFEA403Z-S	AC ADAPTOR	1	(GC) Δ
A1	RFEA403A-S	AC ADAPTOR	1	(GN) Δ
A2	RFEV708F-HS	STEREO HEADPHONE	1	
A3	RGQT0006-K	HAND GRIP	1	
A4	RQA0117	WARRANTY CARD	1	(EB, EG)
A4	RQX7433ZA	WARRANTY CARD	1	(GN)
A5	RQCB0169	SERVICE CENTER LIST	1	
A6	RQT5082-B	INSTRUCTION MANUAL	1	(EB GN) <IA>
A6	RQT5080-E	INSTRUCTION MANUAL	1	(EG) <IB>
A6	RQT5081-H	INSTRUCTION MANUAL	1	(EG) <IC>
A6	RQT5083-G	INSTRUCTION MANUAL	1	(GC) <ID>
A7	REFFP3GAVABA	RECHARGEABLE BATT. ASS'Y	1	
A7-1	RXQ0449	BATTERY CASE	1	
A8	SJP5213-2	PLUG ADAPTOR	1	(GC) Δ
C10	ECUV1H121KCV	50V 120P	1	
C11	ECUVNA105ZFV	10V 1U	1	
C12	ECST1AY475RR	10V 4.7U	1	
C13	RCE0JSL470IX	6.3V 47U	1	
C14	RCE0GKS221IG	4V 220U	1	
C15	ECUZNC104ZFV	16V 0.1U	1	
C16, 17	ECUVNA105ZFV	10V 1U	2	
C19	ECEA1AKS220	10V 22U	1	
C20	ECUVNA105ZFV	10V 1U	1	
C21	ECUVNH103KBV	50V 0.01U	1	
C22	ECUZNC104ZFV	16V 0.1U	1	
C23	ECUVNA105ZFV	10V 1U	1	
C24	ECUV1H561KBV	50V 560P	1	
C27	ECEA0JKS331	6.3V 330U	1	
C28	RCE0GKS471IG	4V 470U	1	
C29	ECEA0JKS331	6.3V 330U	1	
C30	ECUVNC104KBV	16V 0.1U	1	
C33	ECST1AY475RR	10V 4.7U	1	
C35	ECUVNJ105KBV	63V 1U	1	
C36, 37	ECUVNA105ZFV	10V 1U	2	
C101	ECUVNC104KBV	16V 0.1U	1	
C103	ECUVNE223KBV	25V 0.022U	1	
C111	ECUVNE223KBV	25V 0.022U	1	
C112	ECUV1H221KBV	50V 220P	1	
C113	ECUZNC104ZFV	16V 0.1U	1	
C114	ECUZNC104ZFV	16V 0.1U	1	
C115	ECUVNE223KBV	25V 0.022U	1	
C120	ECUV1H152KBV	50V 1500P	1	
C121	ECUV1H121KCV	50V 120P	1	
C201	RCST0JY226RG	6.3 22U	1	
C301	ECUZNC104ZFV	16V 0.1U	1	
C302	ECUVNA105ZFV	10V 1U	1	
C401	ECUV1H102KBV	50V 1000P	1	
C402	ECUVNA105ZFV	10V 1U	1	
C404	RCST0JY226RG	6.3 22U	1	
C405	ECUV1E123KBV	25V 0.012U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C406	ECUVNE153KBV	25V 0.015U	1	
C408	ECUVNE223KBV	25V 0.022U	1	
C410	ECUV1H122KBV	50V 1200P	1	
C411	ECUVNA105ZEV	10V 1U	1	
C431-33	ECUV1H222KBV	50V 2200P	3	
C434	ECUV0J474KBV	6.3V 0.47U	1	
C435,36	ECUV1C333KBV	16V 0.033U	2	
C437	ECEA0JKS470	6.3V 47U	1	
C438	ECUV1H152KBV	50V 1500P	1	
C503	ECUV1H561KBV	50V 560P	1	
C504	ECUZNC104ZEV	16V 0.1U	1	
C505	ECUVNE223KBV	25V 0.022U	1	
C506	ECUVNA224KBV	10V 0.22U	1	
C507	RCE0GKS221IG	4V 220U	1	
C508	ECUV0J474KBV	6.3V 0.47U	1	
C509	ECUVNH103KBV	50V 0.01U	1	
C510,11	ECUZNC104ZEV	16V 0.1U	2	
C514	ECUV1H102KBV	50V 1000P	1	
C515	ECUZNC104ZEV	16V 0.1U	1	
C525	ECUZNC104ZEV	16V 0.1U	1	
C601,02	ECUV1H102KBV	50V 1000P	2	
C603,04	ECUV1H272KBV	50V 2700P	2	
C605,06	ECST0GY106RR	4V 10U	2	
C607,08	ECUV1H681KBV	50V 680U	2	
C609	ECUZNC104ZEV	16V 0.1U	1	
C610	ECEA0JKS470	6.3V 47U	1	
C702	ECST1AY225RR	10V 2.2U	1	
C703,04	ECUVNC104KBV	16V 0.1U	2	
C705,06	ECA0JAD331XI	6.3V 330U	2	
C707-09	ECUZNC104ZEV	16V 0.1U	3	
C710	ECUVNA105ZEV	10V 1U	1	
C711-14	ECUVNJ105KBV	63V 1U	4	
C715,16	ECUV1H101KCV	50V 100P	2	
C719	ERJ3GEY0R00V	CHIP JUMPER	1	
C721	ECST0GY106RR	4V 10U	1	
C722	ECST0GY226RR	4V 22U	1	
C724	ECUVNA105ZEV	10V 1U	1	
C725	ECUZNC104ZEV	16V 0.1U	1	
C726	ECST0GY106RR	4V 10U	1	
C727	ECUVNJ105KBV	63V 1U	1	
CN101	RJS2A4616T	CONECTOR	1	
CN301	RJS2A6130T	FPC CONECTOR	1	
CN401	RJS2A6108T	CONECTOR	1	
CN701	RJS2A6108T	CONECTOR	1	
D11	MA1070400L	DIODE	1	
D12	MA741WKT	DIODE	1	
D21	MA111TX	DIODE	1	
D301	MA142WKT	DIODE	1	
D901	MA142WKT	DIODE	1	
IC11	RS10003E2	IC	1	
IC101	AN8839NSBE1	IC	1	
IC301	SC440324CFU	IC	1	
IC401	BH6522FV	IC	1	
IC402	BA6966FV	IC	1	
IC501	MN662782RPT1	IC	1	
IC502	MNA7400CTA1T	IC	1	
IC701	TA2120FNEL	IC	1	
ICP11	UNHH20600L	ICP	1	△
JK11	RJJ43K09-C	JACK,DC IN	1	
JK601	RJJD3S52B-C	JACK,AUDIO OUT	1	
L11	RLQU331KT-W	COIL	1	
L12	RLQS101KT1-T	COIL	1	
L13	RLQU331KT-W	COIL	1	
L401	RLQS330KT1-T	COIL	1	
LCD301	RSL5241-T	LCD	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
P1	RPK1277	PACKING CASE	1	
P2	RPQ0856	PAD	1	
P3	RPQ0865	SPACER	1	(EB)
P3	RPQ0864	SPACER	1	(EG,GN)
P4	RPQ0867	PAD	1	
P5	RPQ0900	SPACER	1	
P6	RPF0111	PROTECTION BAG(UNIT)	1	
P7	RPF0046	PROTECTION BAG(F.B.)	1	(EG)
PCB1	REP2863A-M	PCB ASS'Y	1	(RTL)
Q11	2SB1182TLPQR	TRANSISTOR	1	
Q201	MSB709RST1	TRANSISTOR	1	
Q401	DTC144TUA106	TRANSISTOR	1	
Q402	2SD1819ATX	TRANSISTOR	1	
Q431	DTC144TUA106	TRANSISTOR	1	
Q601,02	2SD1328QRSTX	TRANSISTOR	2	
Q603	XN1215TX	TRANSISTOR	1	
Q701,02	2SD1328QRSTX	TRANSISTOR	2	
Q705,06	DTC144TUA106	TRANSISTOR	2	
Q901	DTA114YUA106	TRANSISTOR	1	
Q902	XN1210TX	TRANSISTOR	1	
Q906	DTA114YUA106	TRANSISTOR	1	
R11	ERJ3GEYJ822V	1/16W 8.2K	1	
R12	ERJ3GEYJ332V	1/16W 3.3K	1	
R13	ERJ3GEYJ102Z	1/16W 1K	1	
R14	ERJ3GEYJ222V	1/16W 2.2K	1	
R15,16	ERJ3GEYJ393V	1/16W 39K	2	
R22	ERJ3GEYJ223V	1/16W 22K	1	
R25	ERJ3GEYJ104Z	1/16W 100K	1	
R27	ERJ3GEYJ392V	1/16W 3.9K	1	
R28	ERJ3GEYJ100V	1/16W 10	1	
R29	ERJ3GEYJ562V	1/16W 5.6K	1	
R31	ERJ3GEYJ683V	1/16W 68K	1	
R32	ERJ3GEYJ103Z	1/16W 10K	1	
R113,14	ERJ3GEYJ330V	1/16W 33	2	
R120	ERJ3GEYJ103Z	1/16W 10K	1	
R121,22	ERJ3GEYJ124V	1/16W 120K	2	
R125,26	ERJ3GEYJ124V	1/16W 120K	2	
R127	ERJ3GEYJ473V	1/16W 47K	1	
R201	ERJ3GEYJ2R2V	1/16W 2.2	1	
R202	ERJ3GEYJ223V	1/16W 22K	1	
R203	ERJ3GEYJ1R0V	1/16W 1	1	
R301	ERJ3GEYJ392V	1/16W 3.9K	1	
R302	ERJ3GEYJ223V	1/16W 22K	1	
R303	ERJ3GEYJ102Z	1/16W 1K	1	
R304	ERJ3GEYJ105V	1/16W 1M	1	
R306	EXBV8V473JV	1/8W 47K	1	
R307	ERJ3GEYJ104Z	1/16W 100K	1	
R309	ERJ3GEYJ104Z	1/16W 100K	1	
R403	ERJ3GEYJ123V	1/16W 12K	1	
R404	ERJ3GEYJ273V	1/16W 27K	1	
R405	ERJ3GEYJ333V	1/16W 33K	1	
R406	ERJ3GEYJ104Z	1/16W 100K	1	
R410	ERJ3GEYJ822V	1/16W 8.2K	1	
R411	ERJ3GEYJ393V	1/16W 39K	1	
R431,32	ERJ3GEYJ1R0V	1/16W 1	2	
R433	ERJ3GEYJ333V	1/16W 33K	1	
R434	ERJ3GEYJ683V	1/16W 68K	1	
R435	ERJ3GEYJ473V	1/16W 47K	1	
R436	ERJ3GEYJ153V	1/16W 15K	1	
R437	ERJ3GEYJ391V	1/16W 390	1	
R439	ERJ3GEYJ222V	1/16W 2.2K	1	
R501	ERJ3GEYJ683V	1/16W 68K	1	
R502	ERJ3GEYJ563V	1/16W 56K	1	
R505	ERJ3GEYJ391V	1/16W 390	1	
R506	ERJ3GEYJ222V	1/16W 2.2K	1	
R508	ERJ3GEYJ1R0V	1/16W 1	1	
R509	ERJ3GEYJ223V	1/16W 22K	1	
R510	EXBV4V103JV	1/32W 10K	1	
R511	ERJ3GEYJ472V	1/16W 4.7K	1	
R512	EXBV4V222JV	1/32W 2.2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R513	ERJ3GEYJ104Z	1/16W 100K	1	
R514	ERJ3GEYJ681V	1/16W 680	1	
R515	ERJ3GEYJ102Z	1/16W 1K	1	
R601,02	ERJ3GEYJ681V	1/16W 680	2	
R603,04	MCR03PZHJ561	1/16W 560	2	
R605,06	ERJ3GEYJ473V	1/16W 47K	2	
R607,08	ERJ3GEYJ102Z	1/16W 1K	2	
R609	EXBV4V332JV	1/32W 3.3K	1	
R701,02	ERJ3GEYJ4R7V	1/16W 4.7	2	
R703-06	ERJ3GEYJ1R5V	1/16W 1.5	4	
R707,08	ERJ3GEYJ472V	1/16W 4.7K	2	
R712-14	ERJ3GEYJ104Z	1/16W 100K	3	
R715,16	ERJ3GEYJ473V	1/16W 47K	2	
R717,18	ERJ3GEYJ683V	1/16W 68K	2	
R719,20	ERJ3GEYJ105V	1/16W 1M	2	
R726	ERJ3GEYJ473V	1/16W 47K	1	
R727	EXBV4V331JV	1/32W 330	1	
R906	ERJ3GEYJ823V	1/16W 82K	1	
R907	ERJ3GEYJ123V	1/16W 12K	1	
R908	ERJ3GEYJ393V	1/16W 39K	1	
R909	ERJ3GEYJ473V	1/16W 47K	1	
RJ1-J3	ERJ3GEY0R00V	CHIP JUMPER	3	
RJ11-13	EYF8CU	TEST JUMPER	3	
RJ701	ERJ3GEY0R00V	CHIP JUMPER	1	
RJ902 03	ERJ3GEY0R00V	CHIP JUMPER	2	
S201	ESE11SV6	SW,LASER ON/OFF	1	
S202	RSP1A024-A	SW,REST DET.	1	
S309	RSS3A007-1A	SW,HOLD	1	
S310	RSS2A010-1A	SW,MODE	1	
VR11	RRN3A05B33WL	V.R.,P.SUPPLY VOL.	1	
VR701	RRV08B02C54A	V.R.,VOLUME	1	
X501	EF0EX1695X4	OSC	1	

16 Cabinet Parts Location



17 Packaging

