

Service Manual

Compact Disc Changer

Compact Disc Player

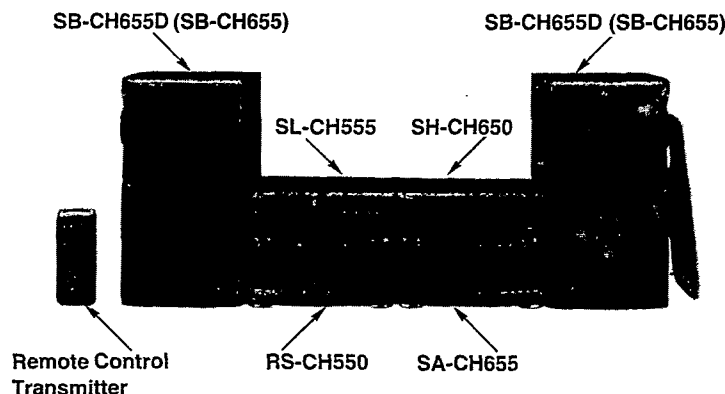
SL-CH555

COMPACT
disc
DIGITAL AUDIO

MASH*
multi-stage noise shaping

Colour

(K) Black Type



Area

Suffix for Model No.	Area	Colour
(E)	Europe, Asia, Latin America, Middle Near East, Africa and Oceania	(K)

System: SC-CH655

Note:

On the above picture, Model No. SB-CH655D is printed as the system speaker.
The surround speakers are not supplied with model No. SB-CH655.

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

SL-CH550 TRAVERSE DECK SERIES (RAE0111Z)

SPECIFICATIONS (DIN 45 500)

■ **AUDIO**
DA converter

1 bit 2 DAC MASH

■ **PICKUP**
Wavelength
Laser power

780 nm

No hazardous radiation is emitted
(with safety protection)

■ **GENERAL**
Dimensions (W×H×D)
Weight

270×89.5×315 mm
2.9 kg

Notes:

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

*

- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
- MASH is a trademark of NTT.

System	Sound Processor	Tuner Amplifier	Compact Disc Changer	Cassette Deck	Speakers
SC-CH655	SH-CH650	SA-CH655	SL-CH555	RS-CH550	SB-CH655...Europe (Made in PAES)
					SB-CH655D...Asia, Latin America, Middle Near East, Africa and Oceania

Technics

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■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

●Handling of traverse deck (optical pickup)

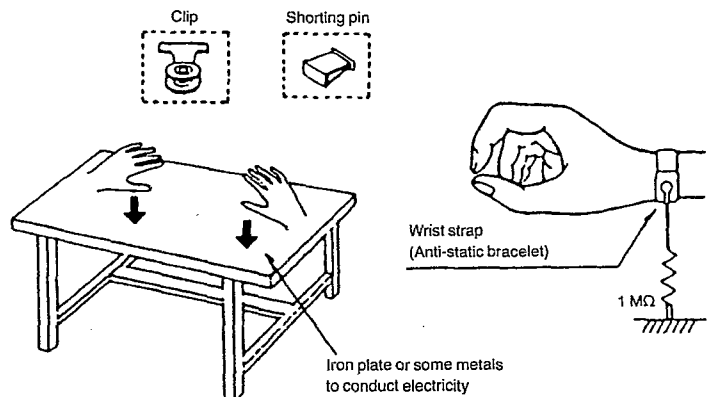
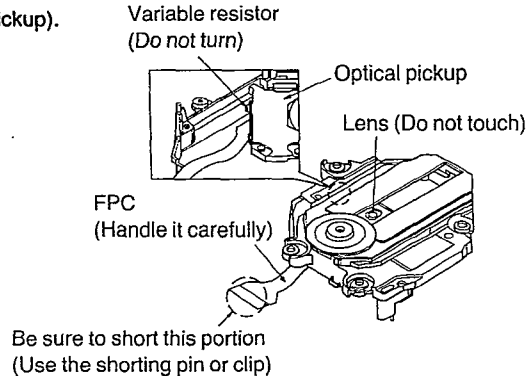
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

●Grounding for electrostatic breakdown prevention

1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ PRECAUTION OF LASER DIODE

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

Wave length: 780 nm

Maximum output radiation power from pick up: 100 μW/VDE

Laser radiation from the pick up unit is safety level, but be sure the followings:

1. Do not disassemble the optical pick up 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 pick up lens for a long time.

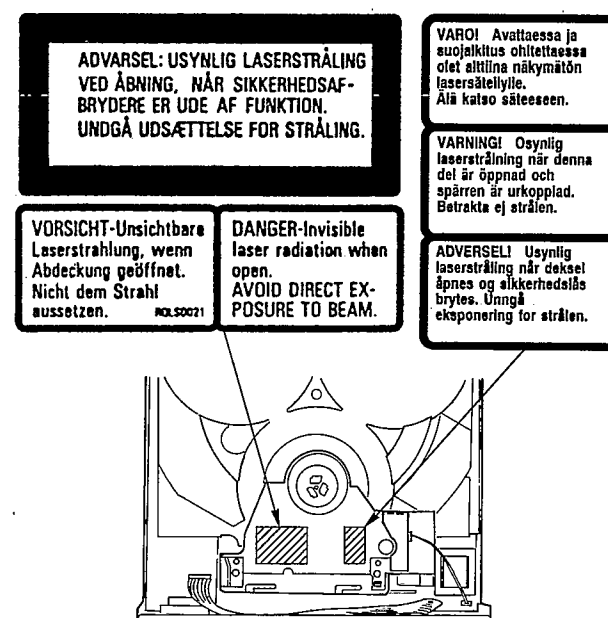
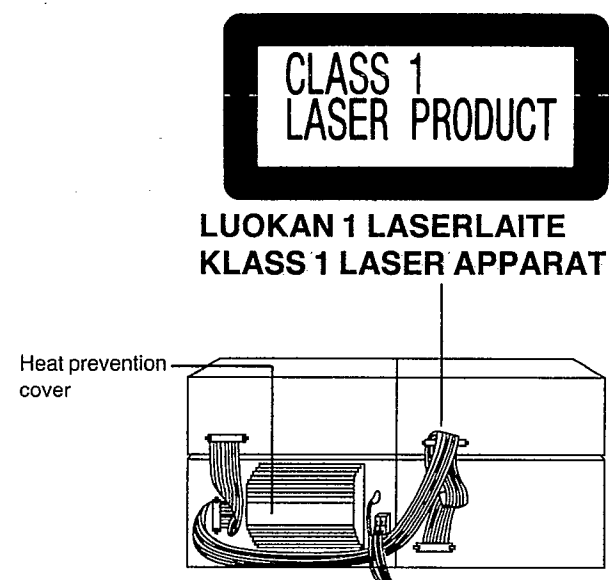
ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge: 780 nm

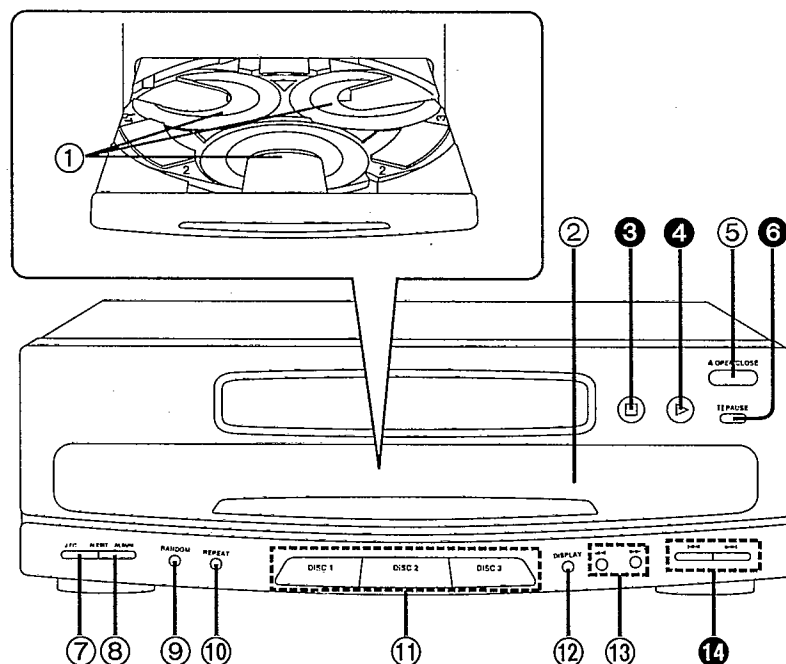
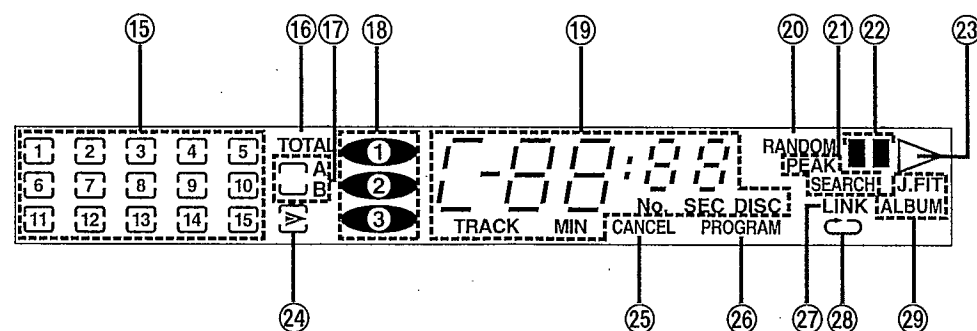
Maximale strahlungsleistung der lasereinheit: 100 μW/VDE

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 werksseitig justierten einstellregler der lasereinheit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

**NOTE:**

Refer to the service manual for Model No. SA-CH655 (Order No. AD9302059C8) for information on "ACCESSORIES", "STACKING THE COMPONENTS", "CONNECTIONS" and "PACKAGING".

LOCATION OF CONTROLS**Display section****Note:**

The functions indicated by the numbers with black background (for example 9) can also be activated from the remote control.

- ① **Disc trays (1-3)**
You can load up to three discs; one disc per one tray.
- ② **Loading drawer**
You can load and unload discs when this drawer is open.
- ③ **Stop button (■)**
Press to stop the disc play.
- ④ **Play button (▶)**
Press to start the disc play.
- ⑤ **Loading drawer open/close button (▲ OPEN/CLOSE)**
Press to open or close the loading drawer.
If you press this button while the play indicator is lit, the drawer will open to half position.
- ⑥ **Pause button (⏸ PAUSE)**
Press to stop the disc play temporarily.
- ⑦ **Fit edit button (J.FIT)**
Press to activate the fit edit mode of the edit-recording.
- ⑧ **Sequential CD recording button (ALBUM)**
Press to activate the sequential CD recording mode of the edit-recording.
- ⑨ **Random play button (RANDOM)**
Press to play the disc's tracks in random order.
- ⑩ **Repeat button (REPEAT)**
Press to activate the repeat mode.
- ⑪ **Disc buttons (DISC 1-3)**
Press to select the desired disc.
- ⑫ **Display button (DISPLAY)**
Press to change the display.
- ⑬ **Search buttons (◀◀, ▶▶)**
Press to hear disc sound at high speed while searching in the play mode.
- ⑭ **Skip buttons (◀◀, ▶▶)**
Press to move forward or backward through the tracks on a disc.

Display section

- ⑮ **Matrix display**
Shows the total number of tracks on a disc, the current playing track to flash and the tracks edited on side A and B.
- ⑯ **Total track indicator (TOTAL)**
Lights to show the total number of tracks edited on side A and B when you use the edit-recording function of compact disc.
- ⑰ **Tape side indicator (A, B)**
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording function of compact disc.
- ⑱ **Disc indicators (① ~ ③)**
Flashes to show which disc is in play.
- ⑲ **Multi-display**
Shows the total playing time on the disc, elapsed play time of the current track, the number of tracks, current playing or recording track number, the number of programmed tracks and disc number.
- ⑳ **Random play indicator (RANDOM)**
Lights during the random play mode of the compact disc.
- ㉑ **Peak search indicator (PEAK SEARCH)**
In the edit-recording mode, lights when the compact disc changer is automatically scanning the peak level on a disc. When peak search ends, "PEAK" flashes to indicate the peak level of the compact disc.
- ㉒ **Pause indicator (⏸)**
Lights when you press the pause button to stop the disc play temporarily.
- ㉓ **Play indicator (▶)**
Lights when compact disc is in play.
- ㉔ **Over indicator (▶▶)**
Lights if there are 16 or more tracks on the disc.
- ㉕ **Program cancel indicator (CANCEL)**
Lights when you cancel the programmed tracks.
- ㉖ **Program indicator (PROGRAM)**
Lights during the program play mode of compact disc.
- ㉗ **Link indicator (LINK)**
Flashes to show the disc link is possible when you use the edit-recording function of compact disc.
- ㉘ **Repeat play indicator (◀▶)**
Lights during the repeat play mode of the compact disc.
- ㉙ **Edit mode indicators (J.FIT, ALBUM)**
J.FIT: Lights when you activate the fit edit mode.
ALBUM: Lights when you activate the sequential CD recording edit mode.

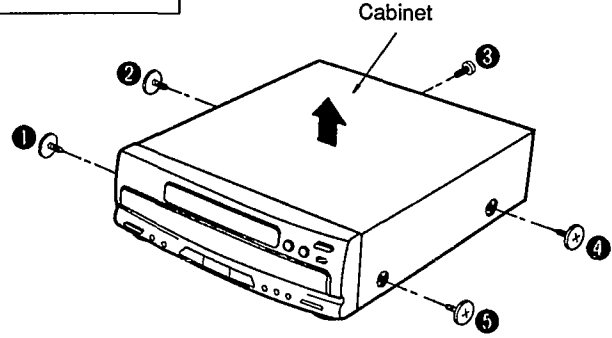
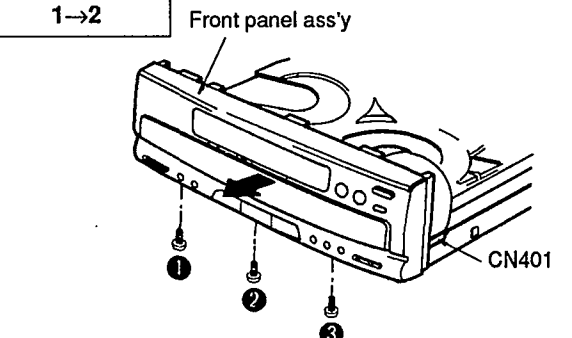
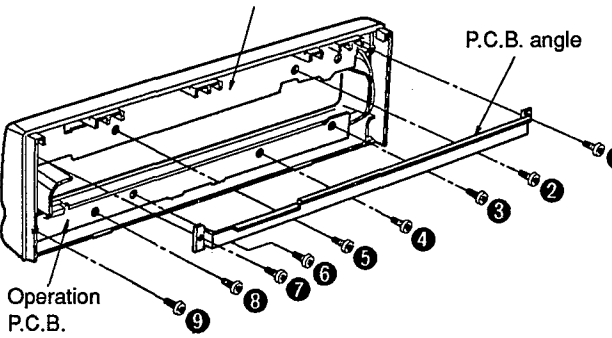
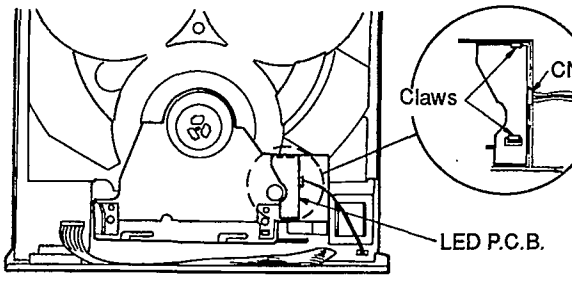
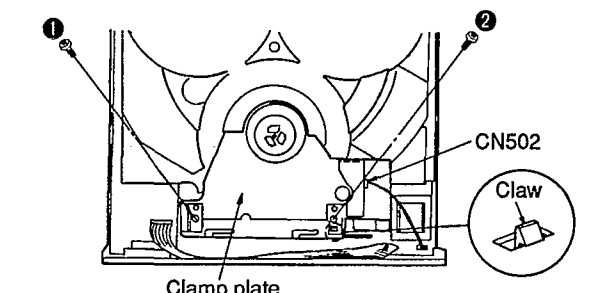
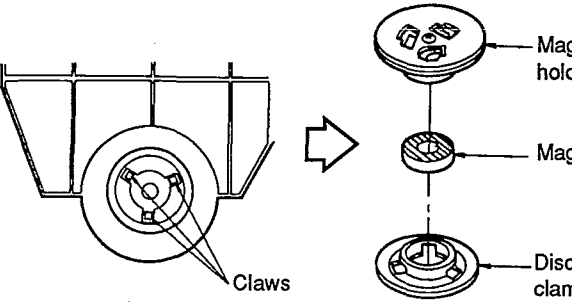
■ DISASSEMBLY INSTRUCTIONS

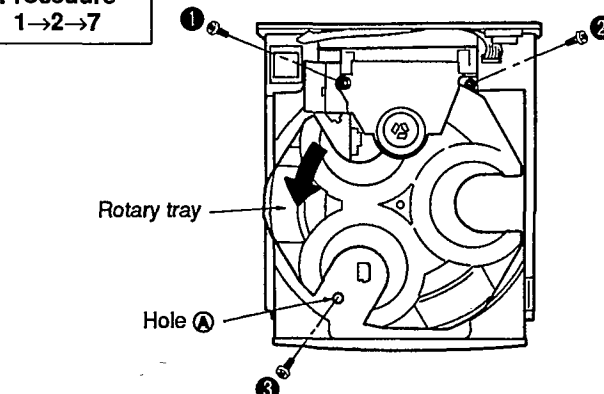
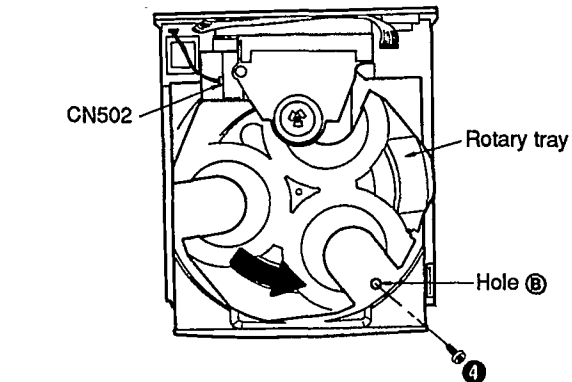
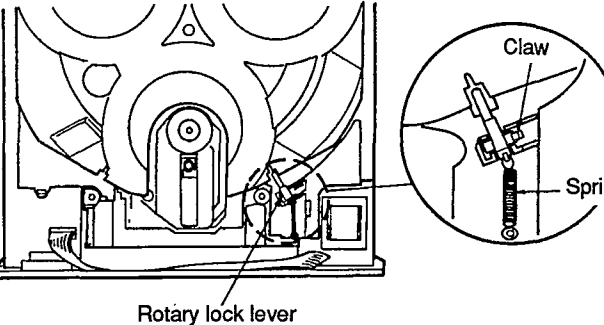
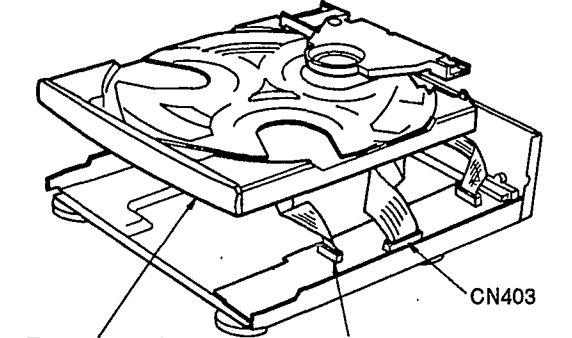
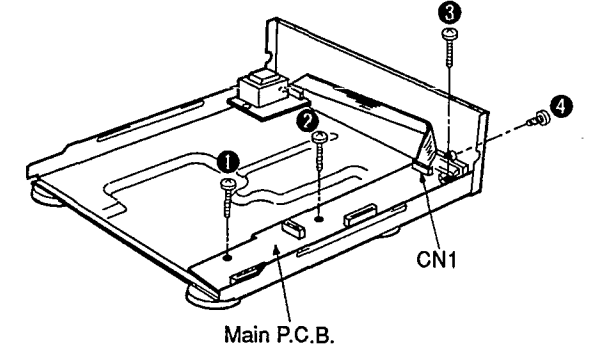
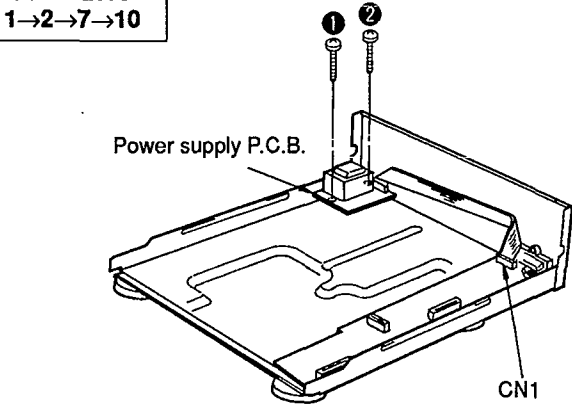
Warning: This product uses a laser diode. Refer to caution statements on page 2.

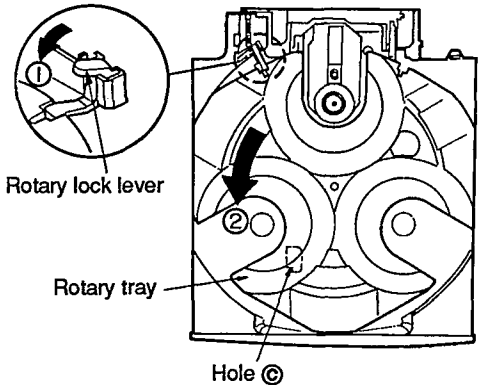
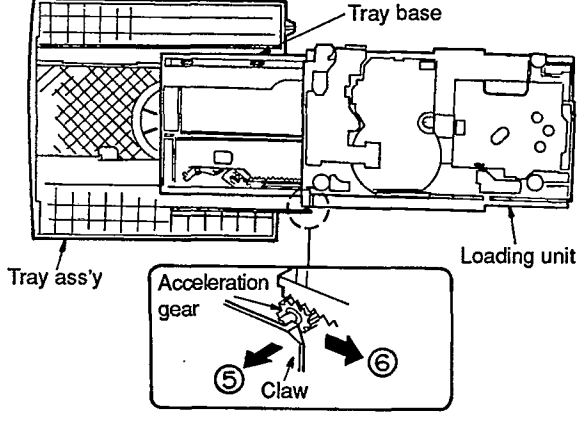
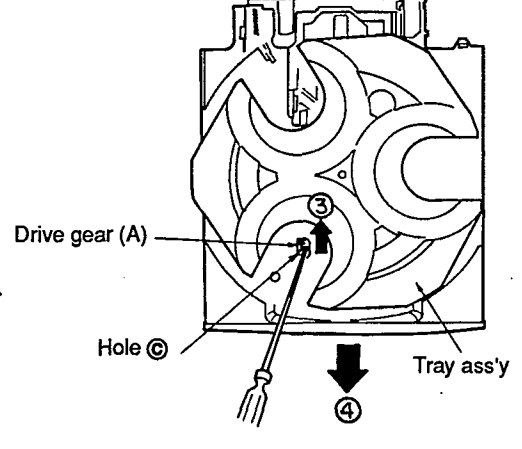
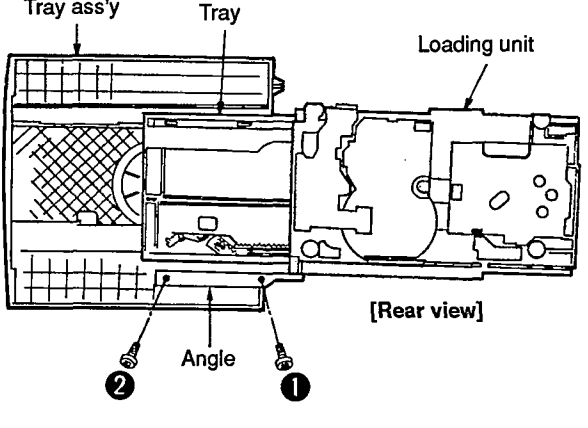
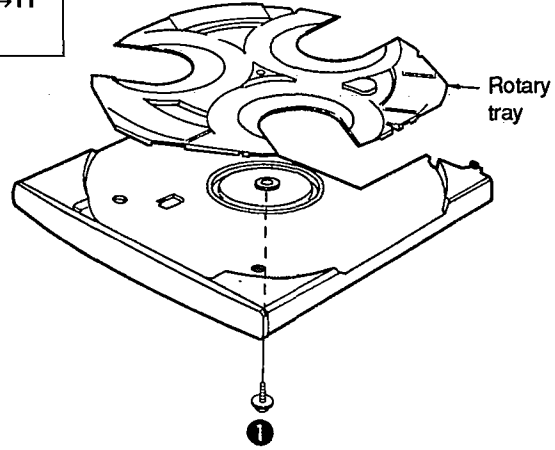
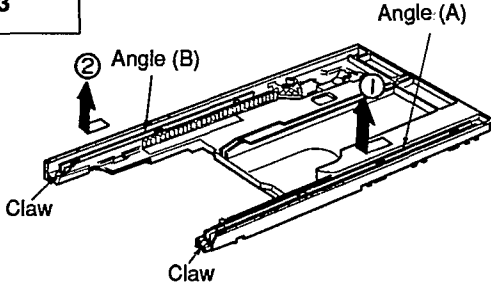
ACHTUNG: Die Lasereinheit nicht zerlegen.

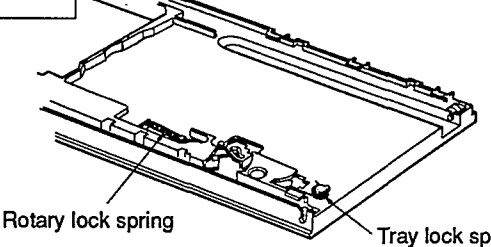
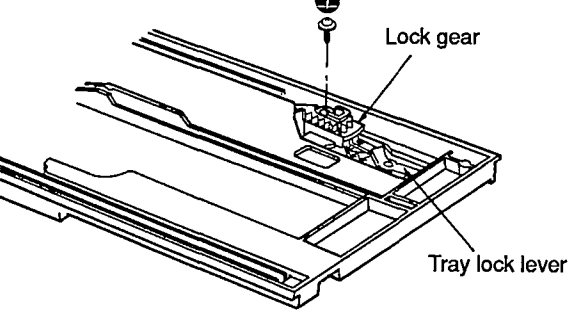
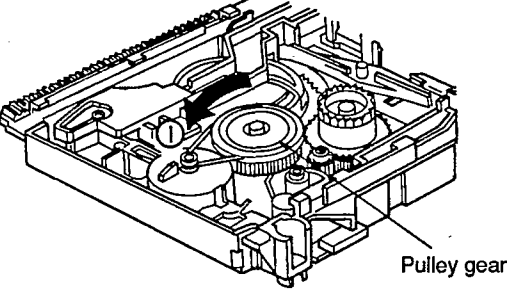
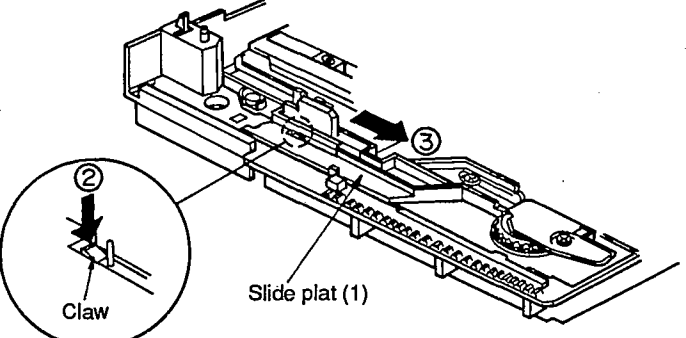
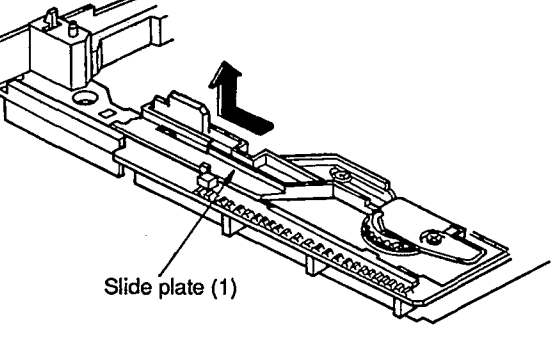
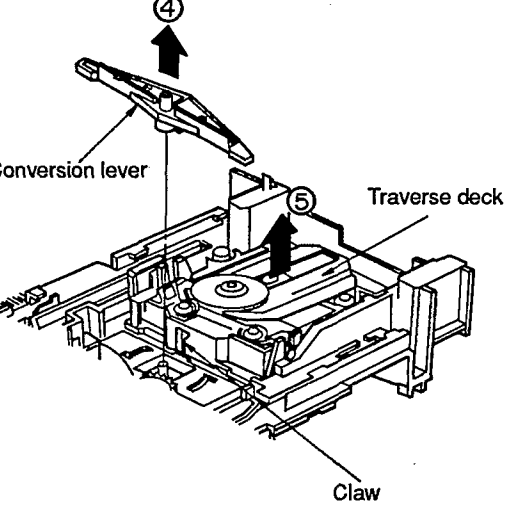
Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

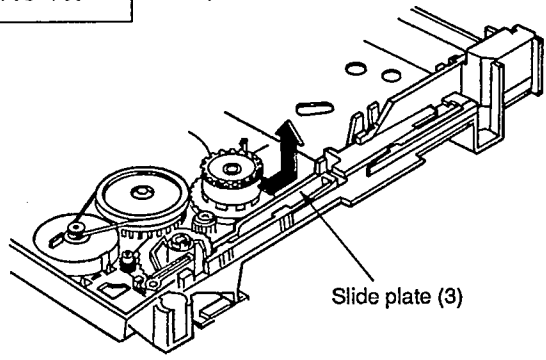
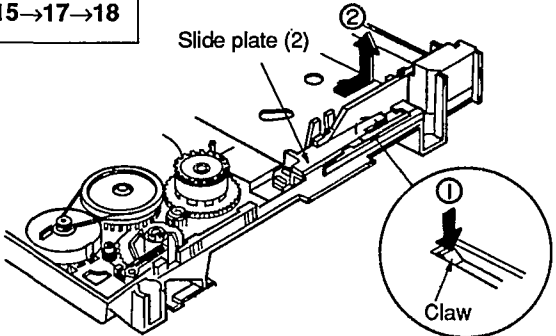
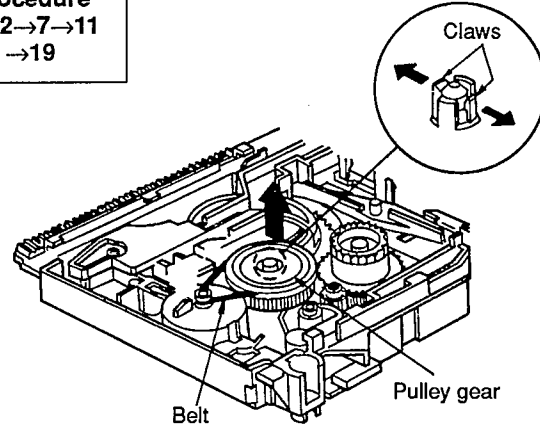
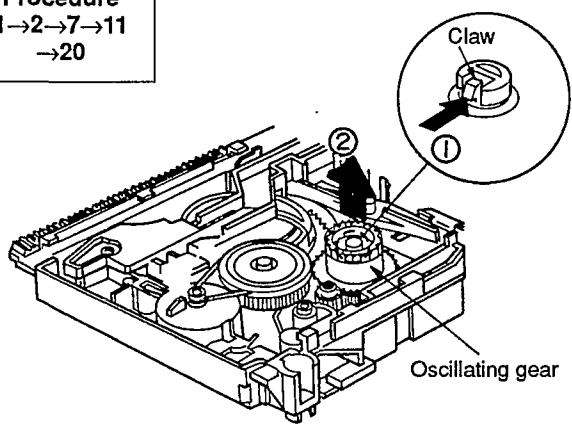
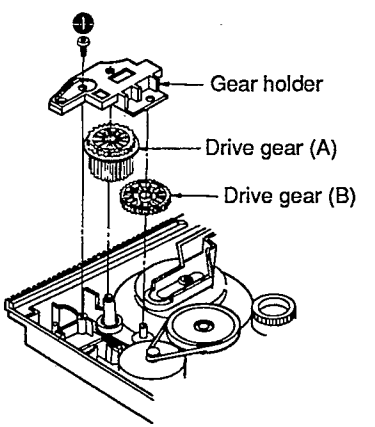
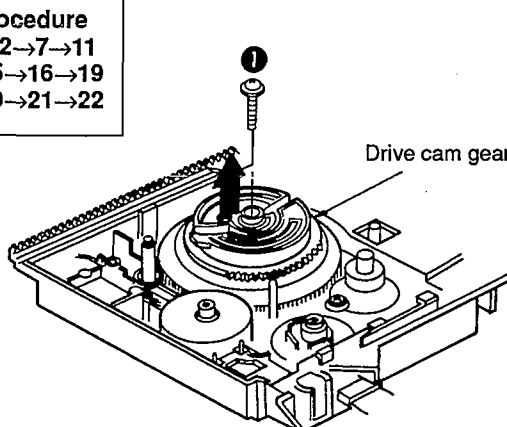
"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

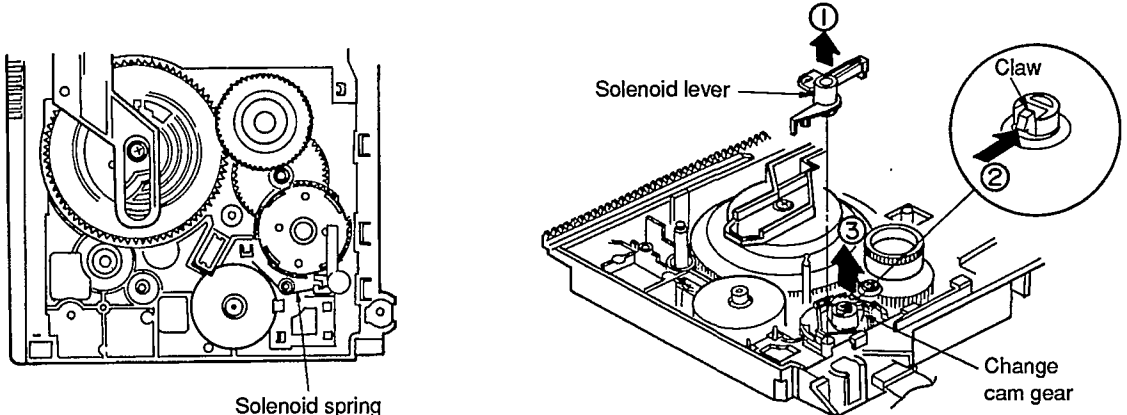
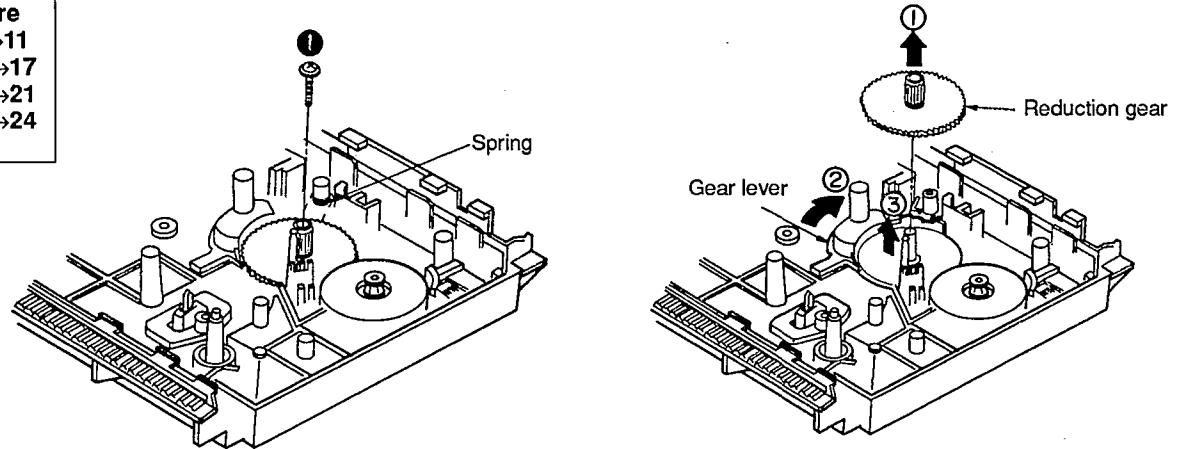
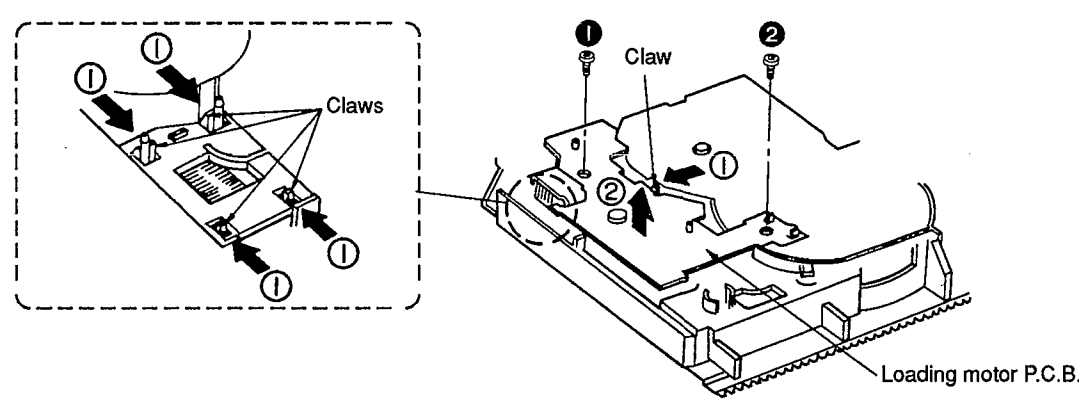
Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1	 1. Remove the 5 screws (1~5). 2. Remove the cabinet in the direction of arrow.	 1. Remove the 3 screws (1~3). 2. Remove the 1 connector (CN401). 3. Remove the front panel ass'y in the direction of arrow.	
Ref. No. 3	Removal of the Operation P.C.B. and FL P.C.B.	Ref. No. 4	Removal of the LED P.C.B.
Procedure 1→2→3	 1. Remove the 9 screws (1~9). 2. Remove the P.C.B. angle.	 1. Remove the 1 connector (CN502). 2. Release the 2 claws.	
Ref. No. 5	Removal of the Clamp Plate	Ref. No. 6	Removal of the Magnet Holder, Magnet and Disc Clamper
Procedure 1→5	 1. Remove the 1 connector (CN 502). 2. Remove the 2 screws (1~2). 3. Release the 1 claw.	 ●Release the 3 claws.	

Ref. No. 7	Removal of the Tray Ass'y And Loading Unit
Procedure 1→2→7	 1. Remove the 2 screws (1, 2). 2. Rotate the rotary tray to the position that can be confirmed the hole A. 3. Remove the 1 screw (3).  4. Rotate the rotary tray to the further position that can be confirmed the hole B. 5. Remove the 1 screw (4). 6. Remove the 1 connector (CN502).
Ref. No. 8	Removal of the Rotary Lock Lever
Procedure 1→5→8	 1. Remove the spring. 2. Release the claw.  7. Lift up the tray ass'y and the loading unit and then remove the 2 connectors (CN403, CN404).
Ref. No. 9	Removal of the Main P.C.B.
Procedure 1→2→7→9	 1. Remove the 1 connector (CN1). 2. Remove the 4 screws (1~4).
Ref. No. 10	Removal of the Power Supply P.C.B.
Procedure 1→2→7→10	 1. Remove the 1 connector (CN1). 2. Remove the 2 screws (1, 2).

Ref. No. 11	Removal of the Loading Unit and Tray Base	
Procedure 1→2→5→7→11	 1. While pressing the rotary lock lever in the direction of arrow ① and then rotate the rotary tray to the position that can be confirmed the hole ② in the direction of arrow ②.  5. Release the claw in the direction of arrow ⑤ and then remove the acceleration gear in the direction of arrow ⑥.	 2. Pressing the drive gear (A) in the direction of arrow ③ with inserting the (→) screwdriver in the hole ②, the tray ass'y moves slightly in the direction of arrow ④. Then, pull the tray ass'y in the direction of arrow ④.  3. Remove the 2 screws (①, ②). 4. Remove the angle.
Ref. No. 12	Removal of the Rotary Tray	Ref. No. 13
Procedure 1→2→7→11 →12	 • Remove the 1 screw (①).	 ■ Removal of the angle (A) • Release the claw and then remove the angle (A) in the direction of arrow ①. ■ Removal of the angle (B) • Release the claw and then remove the angle (B) in the direction of arrow ②.

Ref. No. 14	Removal of the Tray Lock Lever and Lock Gear	
Procedure 1→2→7→11 →14	 1. Remove the rotary lock spring and tray lock spring.	 2. Remove the 1 screw (①).
Ref. No. 15	Removal of the Traverse Deck and Conversion Lever	
Procedure 1→2→7→11 →15	 1. Rotate the pulley gear to full position in the direction of arrow ①.	 2. Push the claw in the direction of arrow ②, and then move the slide plate (1) in the direction of arrow ③.
Ref. No. 16	Removal of the Slide Plate (1)	
Procedure 1→2→7→11 →15→16	 • Remove the slide plate (1) in the direction of arrow.	 3. Remove the conversion lever in the direction of arrow ④. 4. Release the claw and then remove the traverse deck in the direction of arrow ⑤.

Ref. No. 17	Removal of the Slide Plate (3)	Ref. No. 18	Removal of the Slide Plate (2)
Procedure 1→2→7→11 →15→17	 Slide plate (3) • Remove the slide plate (3) in the direction of arrow.	Procedure 1→2→7→11 →15→17→18	 Slide plate (2) Claw • Push the claw in the direction of arrow ①, and then remove the slide plate (2) in the direction of arrow ②.
Ref. No. 19	Removal of the Pulley Gear	Ref. No. 20	Removal of the Oscillating Gear
Procedure 1→2→7→11 →19	 Claws Belt Pulley gear 1. Remove the belt. 2. Release the 2 claws and then remove the pulley gear in the direction of arrow.	Procedure 1→2→7→11 →20	 Claw Oscillating gear • Release the claw in the direction of arrow ① and then remove the oscillating gear in the direction of arrow ②.
Ref. No. 21	Removal of the Gear Holder, Drive Gear (A) and Drive Gear (B)	Ref. No. 22	Removal of the Drive Cam Gear
Procedure 1→2→7→11 →21	 Gear holder Drive gear (A) Drive gear (B) 1. Remove the 1 screw (①). 2. Remove the gear holder, drive gear (A) and drive gear (B).	Procedure 1→2→7→11 →15→16→19 →20→21→22	 Drive cam gear 1. Remove the 1 screw (①). 2. Remove the drive cam gear in the direction of arrow.

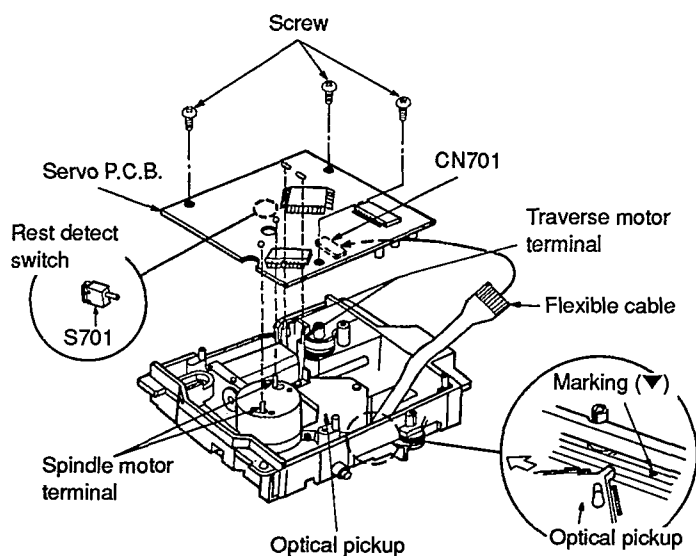
Ref. No. 23	Removal of the Change Cam Gear
Procedure 1→2→7→11 →15→17→19 →23	 Solenoid spring Solenoid lever Change cam gear 1. Remove the solenoid spring and then remove the solenoid lever in the direction of arrow ①. 2. Release the claw in the direction of arrow ② and then remove the change cam gear in the direction of arrow ③.
Ref. No. 24	Removal of the Reduction Gear and Gear Lever
Procedure 1→2→7→11 →15→16→17 →19→20→21 →22→23→24	 Spring Reduction gear Gear lever 1. Remove the spring. 2. Remove the 1 screw (①). 3. Remove the reduction gear in the direction of arrow ①. 4. Remove the gear lever in the direction of arrow ②, ③.
Ref. No. 25	Removal of the Loading Motor P.C.B.
Procedure 1→2→7→11 →15→16→17 →18→19→20 →21→22→23 →25	 Claws Claw Loading motor P.C.B. 1. Remove the 2 screws (①, ②). 2. Release the 5 claws in the direction of arrow ①. 3. Remove the loading motor P.C.B. in the direction of arrow ②.

Ref. No. 26	Removal of the Loading Motor	Ref. No. 27	Removal of the Photo TR. P.C.B.
Procedure 1→2→7→11 →15→16→17→18 →19→20→21→22 →23→25→26	• Unsolder the terminals of the loading motor.	Procedure 1→2→7→27	• Release the 2 claws.
Ref. No. 28	Removal of the Servo P.C.B.	※Push the top of the connector in the direction of arrow ①, and then pull out the flexible cable in the direction of arrow ②.	4. Remove the connector (CN701). Note: Insert a shorting pin into the traverse unit flexible cable. (Refer to "handling precautions for traverse deck" on page 2.)

■ INSTALLING SERVO P.C.B.

1. Before installing the servo P.C.B., move the optical pickup toward the outer edge from the mark "▲".
[Otherwise, the rest detect switch (S701) mounted on the servo P.C.B. may be damaged.]
2. Connect the flexible cable to the connector (CN701).
3. Install the servo P.C.B. in the traverse deck unit with the three screws.
4. Solder the two terminals of the traverse motor and the two terminals of the spindle motor.

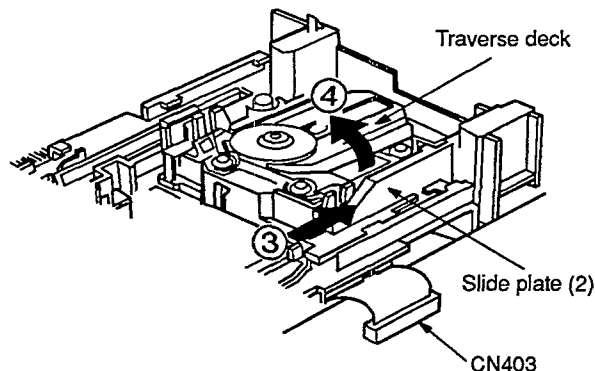
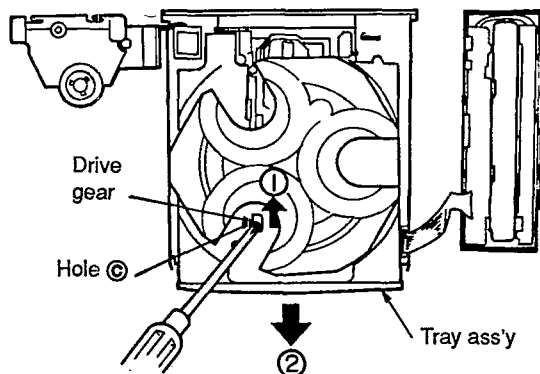
Note: Connect the flexible cable to the connector (CN701) firmly.
Tighten the 3 screws before soldering the terminals.



■ HOW TO CHECK THE SERVO AND MAIN P.C.B.

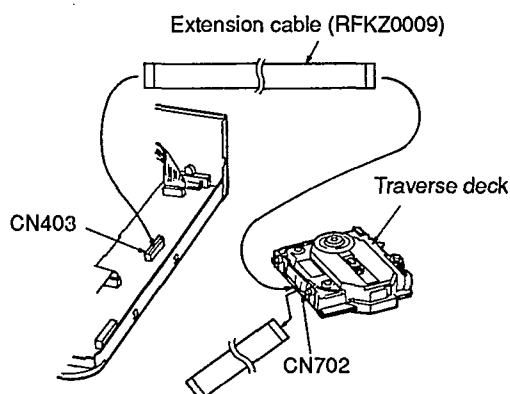
• Check the servo P.C.B.

1. Remove the cabinet. (See Ref.No.1 of the disassembly instructions.)
2. Remove the front panel ass'y. (See Ref.No. 2 of the disassembly instructions.)
Note: Take care not to remove the connector (CN 401).
3. Remove the clamp plate. (See Ref.No.5 of the disassembly instructions.)
Note: Take care not to remove the connector (CN 502).
4. Remove the magnet holder, magnet and disc clamber. (See Ref.No.6 of the disassembly instructions.)

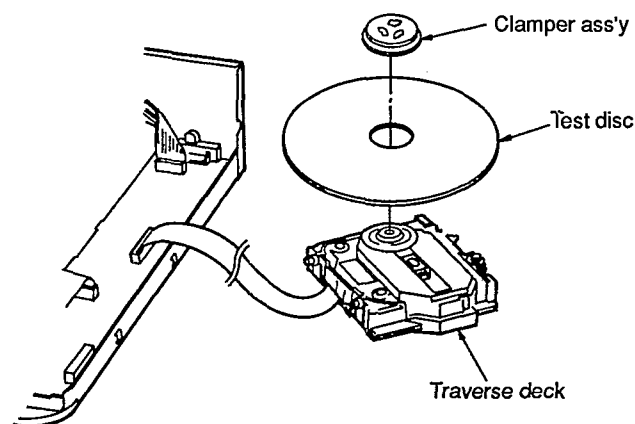


5. Pressing the lock gear in the direction of arrow ① with inserting the (-) screwdriver in the hole ㉞, the tray ass'y moves slightly in the direction of arrow ②. Then, pull out the tray ass'y in the direction of arrow ②.

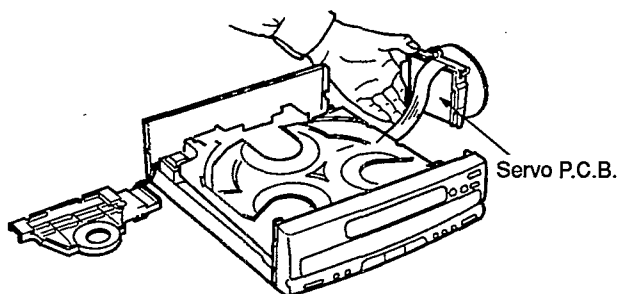
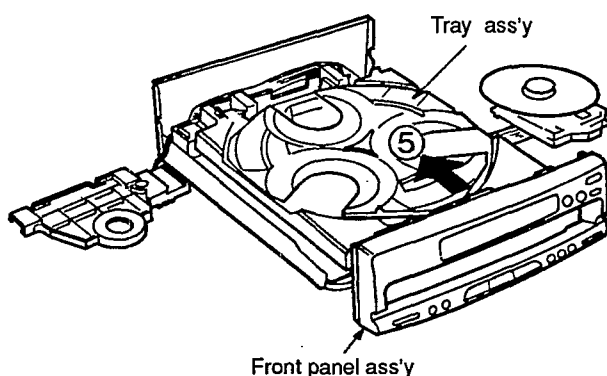
6. Remove the connector (CN403).
7. Pressing the slide plate (2) in the direction of arrow ③, and then remove the traverse deck in the direction of arrow ④.



8. Substitute the serviceable extension cable for the FPC between the connector (CN403) on main P.C.B. and the connector (CN702) on servo P.C.B.



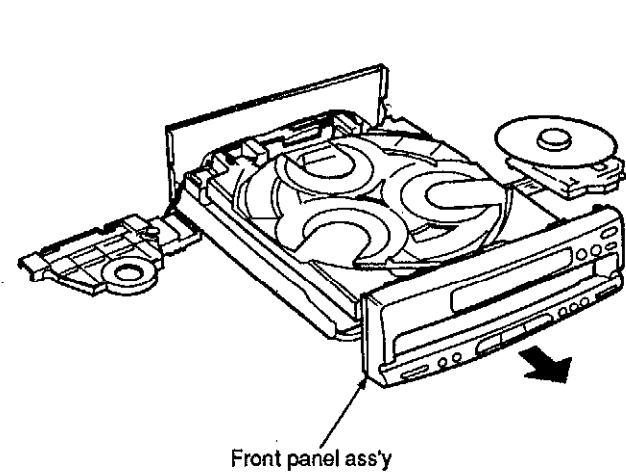
9. Place the test disc and secure it by using the clamber ass'y.



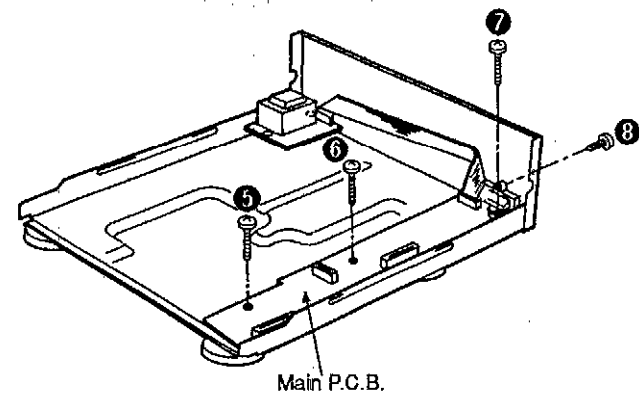
10. Restore the tray ass'y in the direction of arrow ⑤.
11. Reinstall the front panel ass'y to the main unit.

12. When checking the soldered surface of the servo P.C.B., do as shown above.

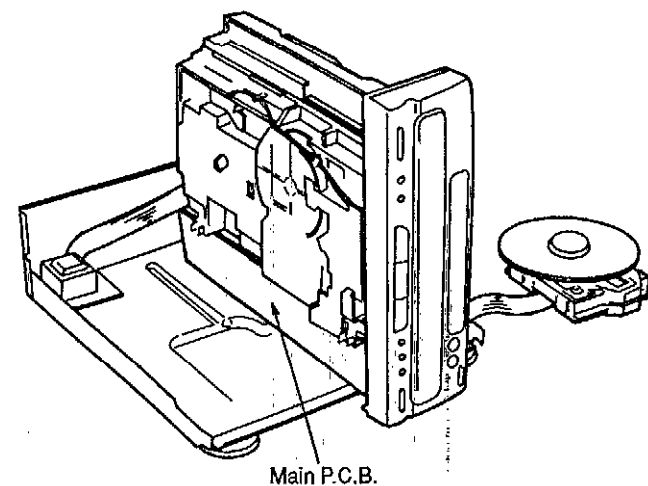
• Check the main P.C.B.



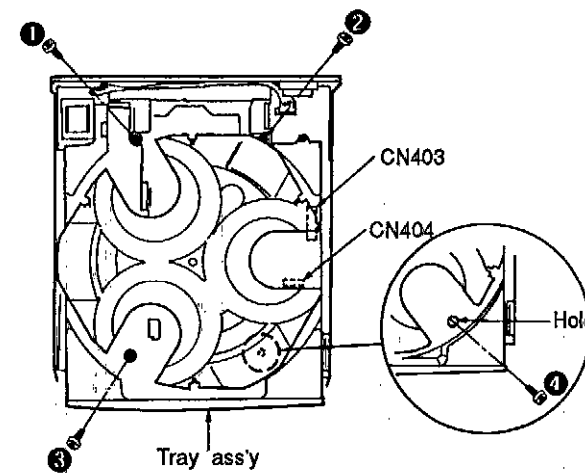
1. After checking the servo P.C.B., remove the front panel ass'y in the direction of arrow.



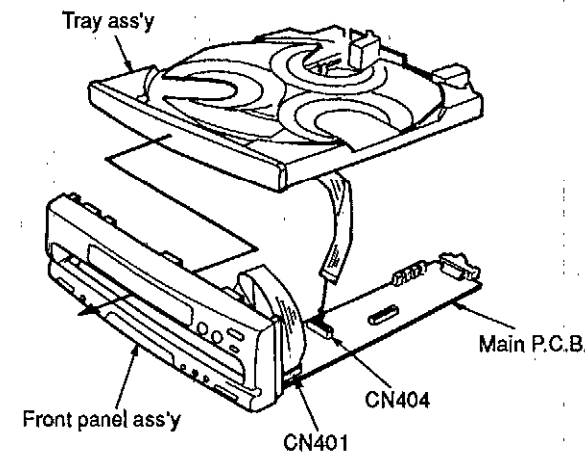
4. Remove the 4 screws (5~8).
5. Remove the main P.C.B.



9. When checking the soldered surface of the main P.C.B., do as shown above.



2. Remove the 4 screws (1~4) and then remove the tray ass'y.
3. Remove the 2 connector (CN403, CN404).



6. Reinstall the front panel ass'y to main P.C.B.
7. Reinstall the tray ass'y to front panel ass'y.
8. Connect the 2 FPC board (CN401, CN404).

■ INSTALLATION OF THE LOADING COMPONENTS

1. Install the gear lever on the loading base and then slide the gear lever in the direction of arrow ①. (See Fig.1.)
2. Install the reduction gear and secure it with a screw. (See Fig.1.)
3. Install the gear lever spring to the boss (A). (See Fig.1.)
4. Install the change cam gear. (See Fig.2.)
Note: Align the tip of the bold arrow marked with "↑" on the change cam gear with the axis of the reduction gear shaft.
5. Install the solenoid lever. (See Fig.3.)
Note: Align the slot of the solenoid lever with the solenoid core.
6. Install the solenoid spring to the boss (B). (See Fig.3.)
7. Align the hole (A) of the drive cam gear with the switch, and then insert the drive cam gear. (See Fig.4.)
8. Secure the drive cam gear with a screw. (See Fig.4.)
Note: In case that the drive cam gear is inserted into the holes except the hole (A) of the drive cam gear, the switch may be damaged.
9. Install the drive gear (B), the drive gear (A), the oscillating gear ass'y and the pulley gear. (See Fig.5)

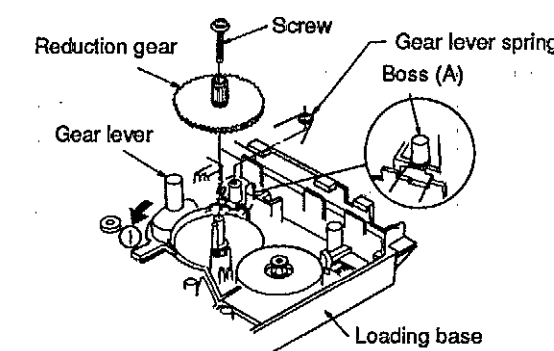


Fig.1

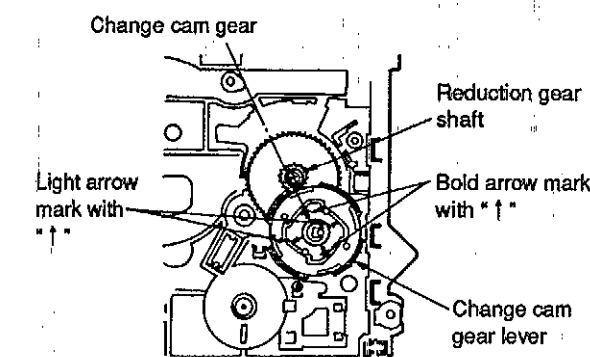


Fig.2

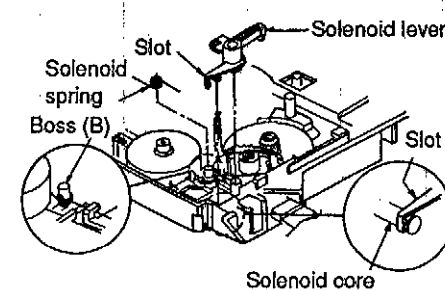


Fig.3

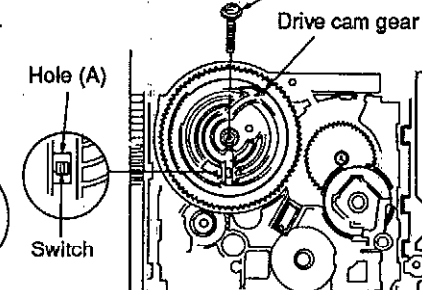


Fig.4

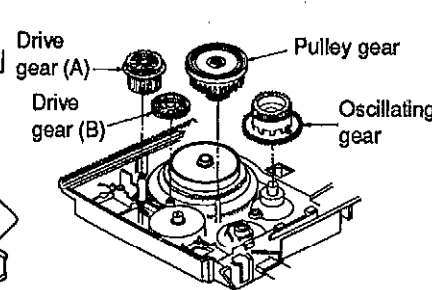


Fig.5

10. Install the gear holder and secure it with a screw. (See Fig.6.)
11. Install the belt. (See Fig.6.)
12. Rotate the pulley gear in the direction of arrow ② and then rotate the pulley gear to full position in the direction of arrow ③ when the oscillating gear stops.
13. Rotate the drive cam gear so that the slot (A) of the drive cam gear is put into a given position as shown in fig. 7.

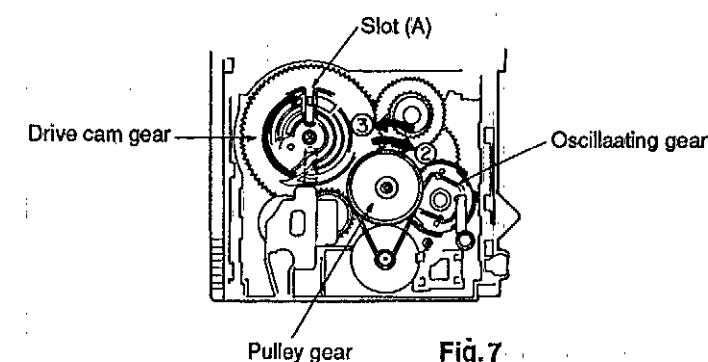


Fig.7

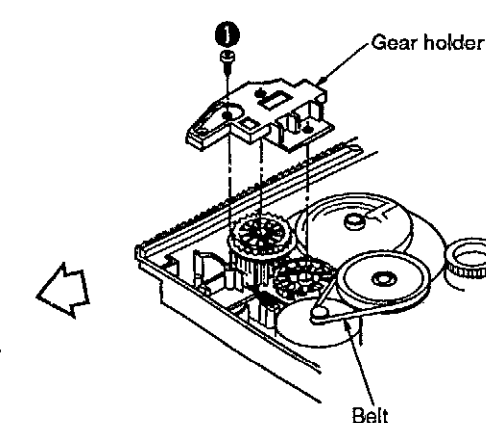


Fig.6

14. Install the slide plate (1), the slide plate (2) and the slide plate (3). (See Fig.8.)
15. Press the claw in the direction of arrow ④ and then slide the slide plate (1) in the loading unit in the direction of ⑤. (See Fig.9.)
16. Install the traverse deck and the conversion lever. (See Fig.9.)
17. Slide the slide plate (1) in the loading unit in the direction of arrow ⑥. (See Fig.10.)
18. Rotate the pulley gear in the direction of arrow ⑦ so that the slot (A) of the drive cam gear is put into a given position as shown in fig.10. (See Fig.10.)

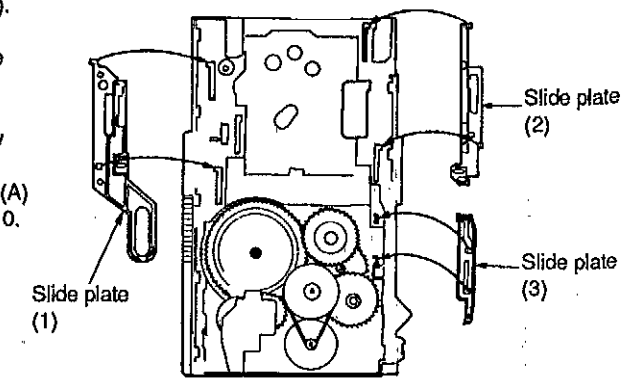


Fig.8

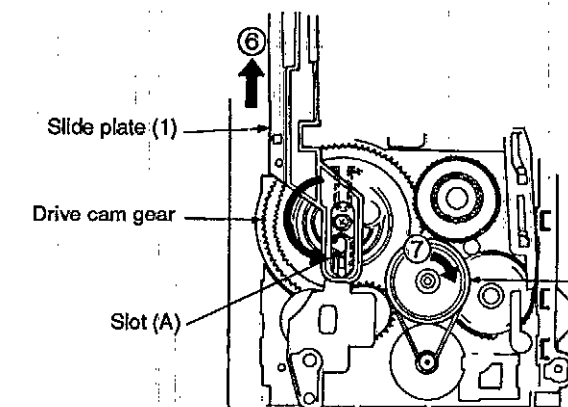


Fig.10

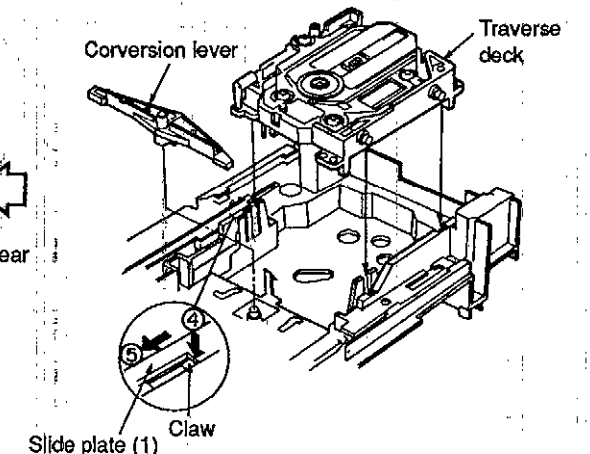


Fig.9

■ INSTALLATION OF THE TRAY BASE AND THE TRAY ASS'Y

1. Install the loading unit on the bottom board ass'y and secure it with 4 screw (1~4). (See Fig. 1.)
2. Install the tray base on the loading unit. (See Fig. 1)
3. After sliding the tray base in the direction of arrow ①, draw the tray base gradually in the direction of arrow ②. (See Fig. 2) Slide the tray base until the tray base stops.
4. Holding the tray base, install the tray ass'y on the tray base and feed the tray ass'y slowly. (See Fig. 3)
5. After engaging the acceleration gear, release the tray base which is held and feed the tray ass'y. (See Fig. 3)

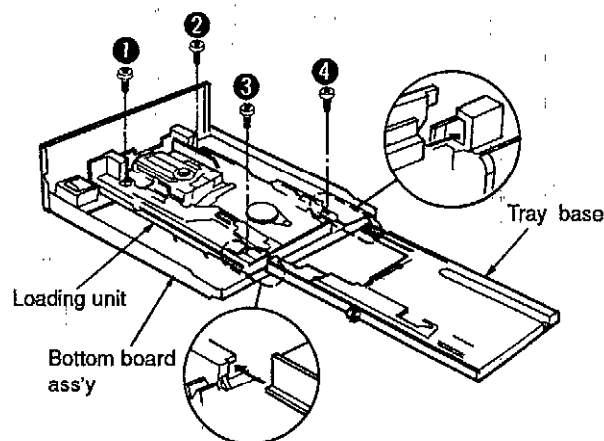


Fig.1

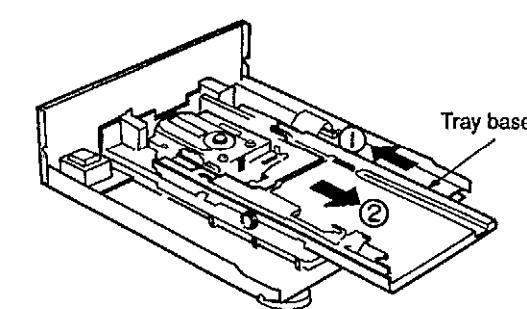


Fig.2

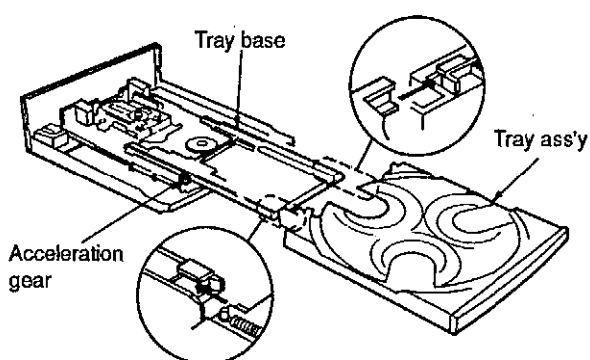
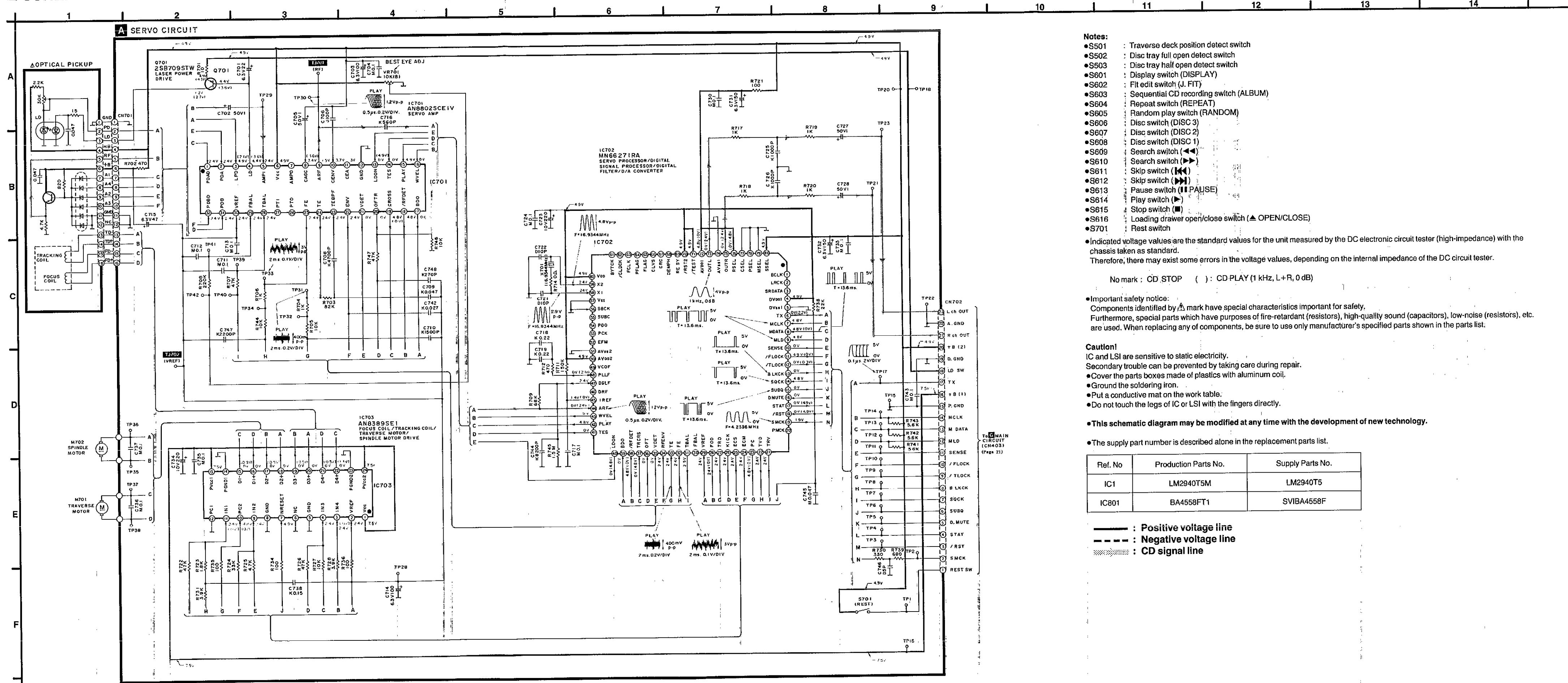
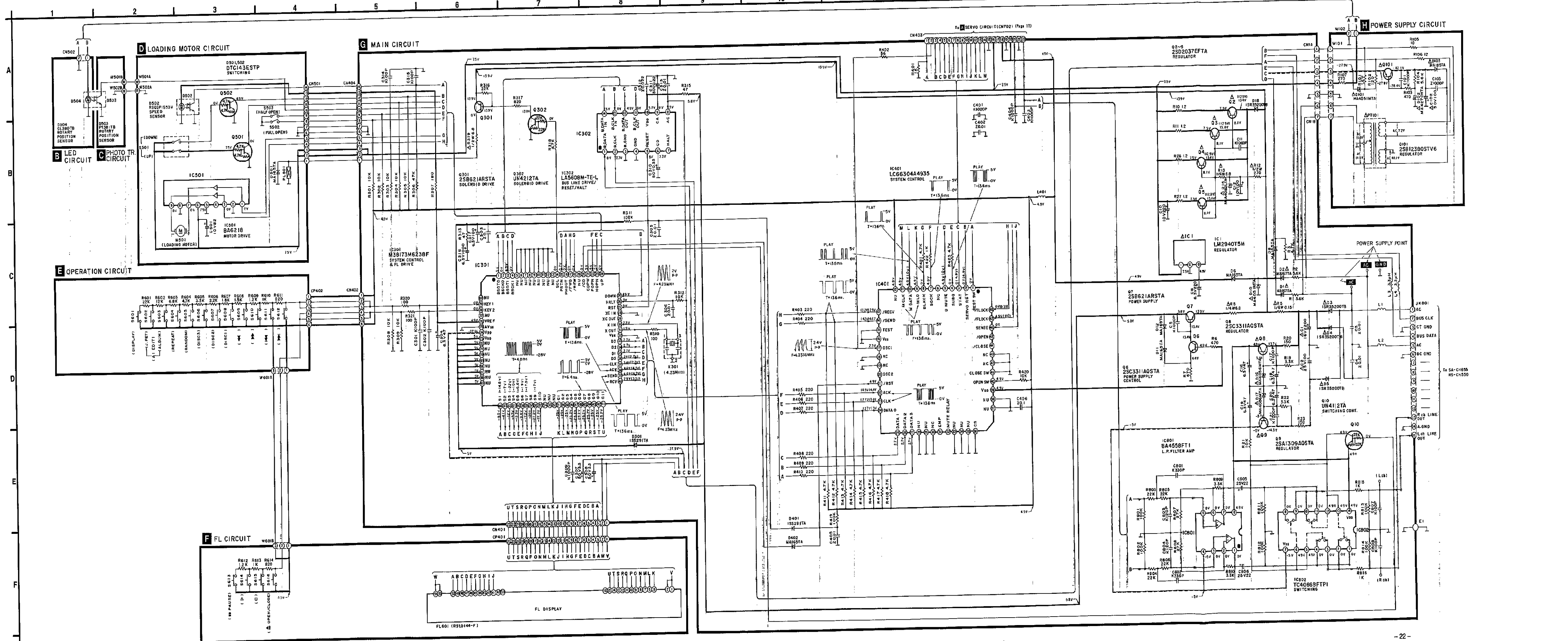


Fig.3

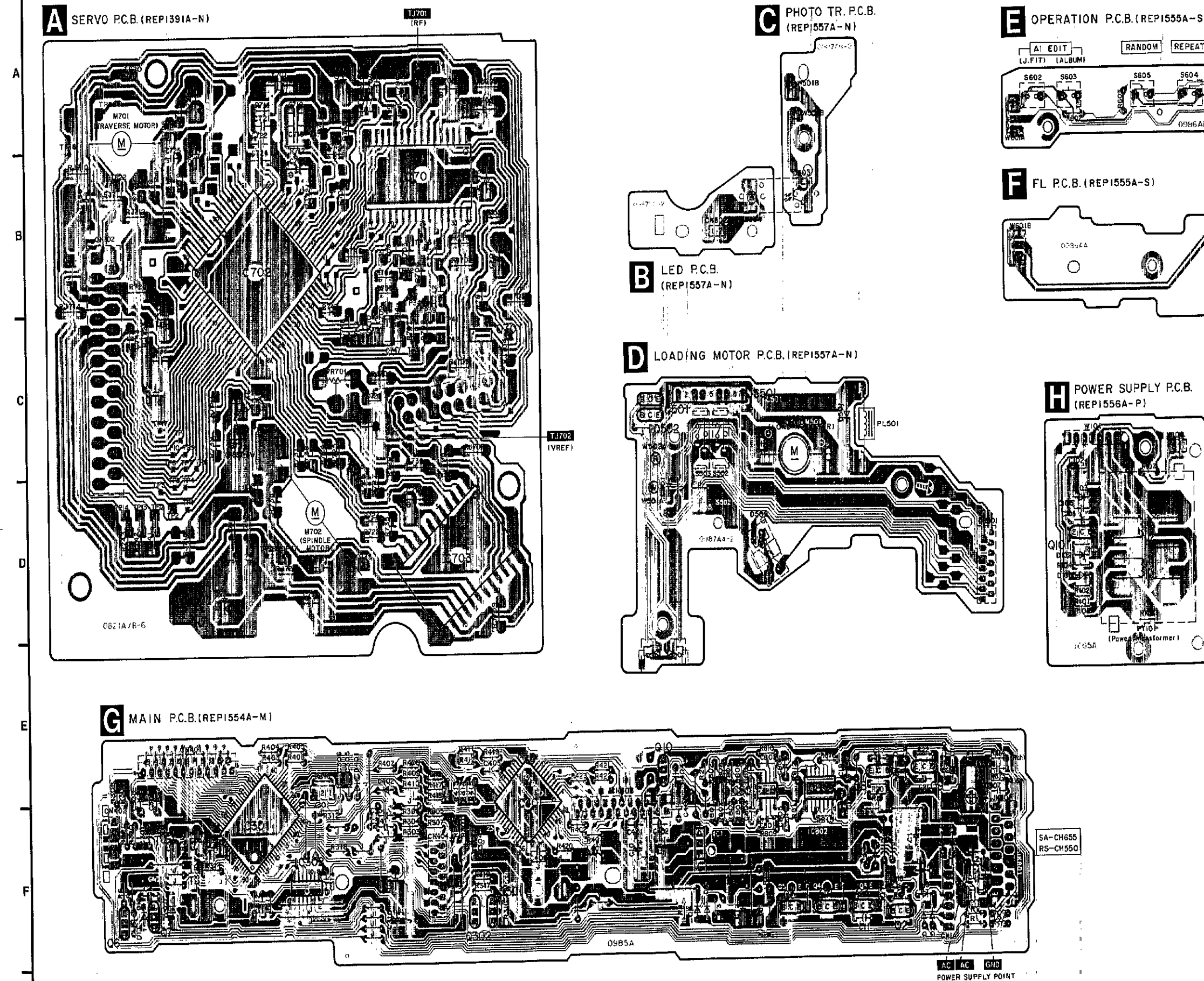
■ SCHEMATIC DIAGRAM • OPTICAL PICKUP AND SERVO CIRCUIT (Parts list on pages 41~43.)



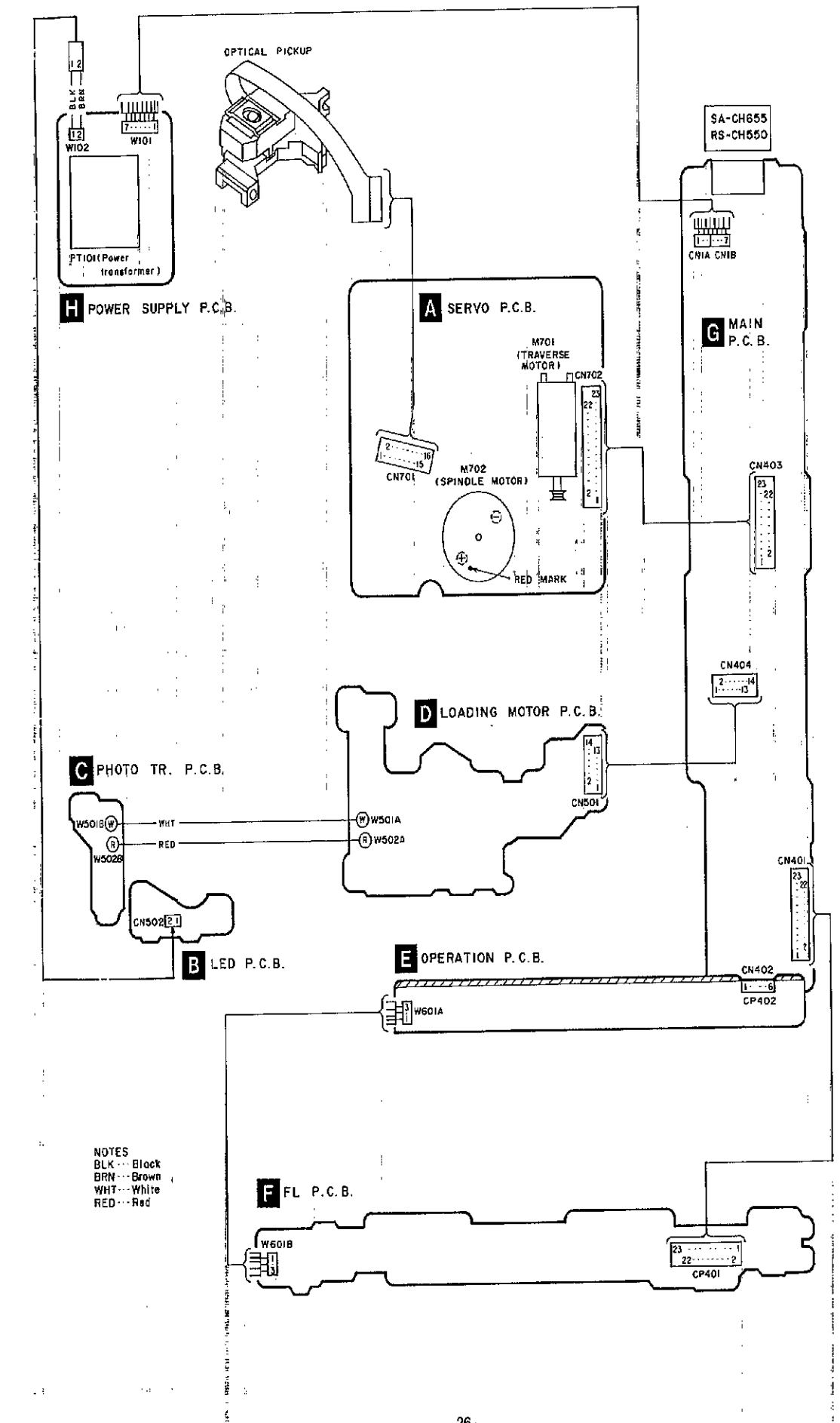
SCHEMATIC DIAGRAM • LED, PHOTO TR., FL, MAIN AND POWER SUPPLY CIRCUIT (Parts list on pages 41~43.)



■ PRINTED CIRCUIT BOARD DIAGRAM



■ WIRING CONNECTION DIAGRAM

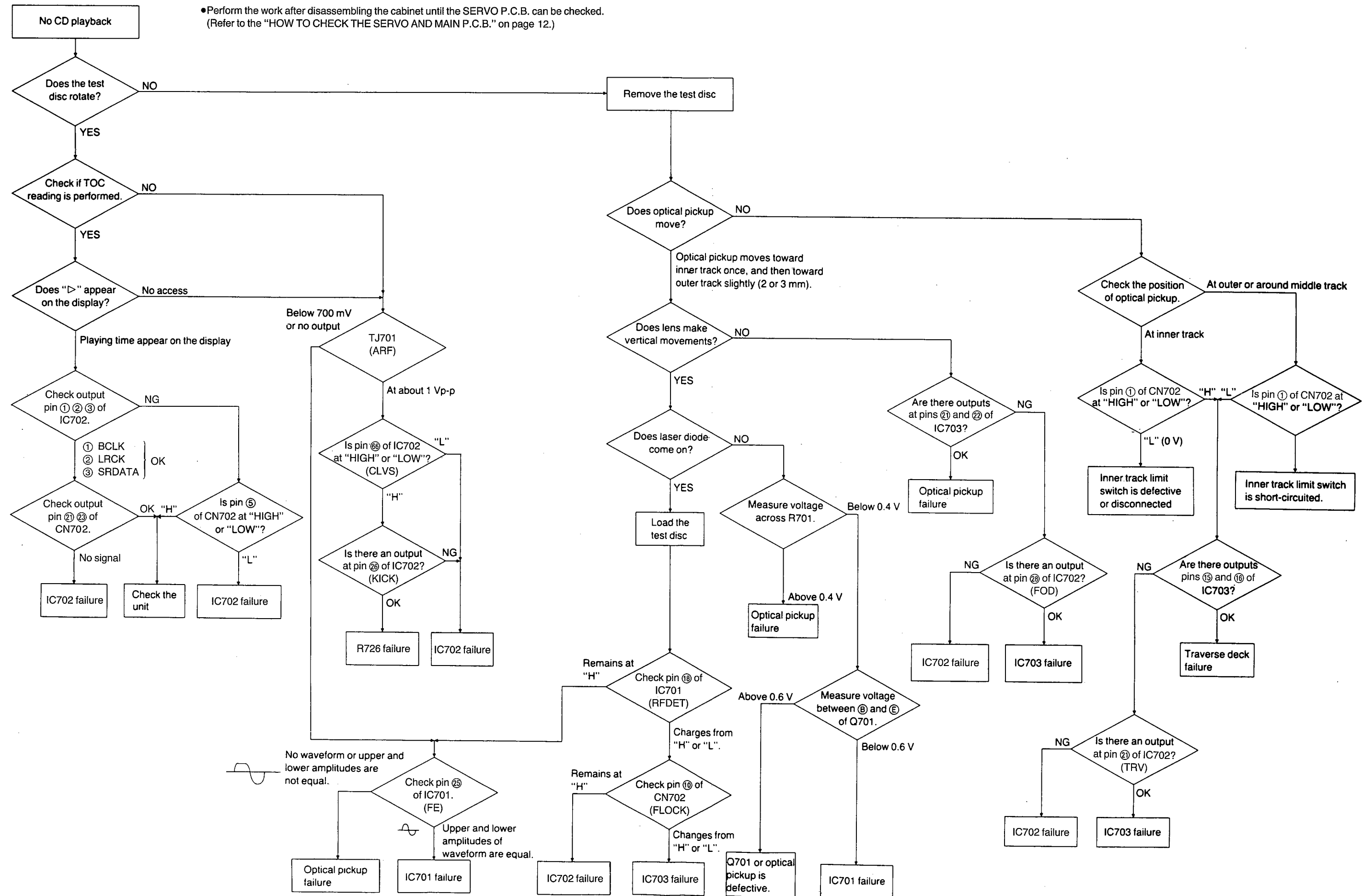


• This printed circuit board diagram may be modified at any time with the development of new technology.

BA4558FT1	TC4066BFTP1	LA5806M-TE-L 14 Pin AN8802SCE1V 32 Pin	MN66271RA	M38173M6238F
LC86304A4935	BA6218	LM2940T5M	AN8389SE1	2SA1309AQSTA 2SC3311AQSTA UN4112TA UN4212TA
2SB1238QSTV6	2SD2037EFTA	2SB621ARSTA	DTC143ESTP	2SB709STW
MA165TA MA167TA MA185TA 1SR35200TB 1SS291TA	MA4051MTA MA4056MTA MA4082LTA	GL380TB PT381TB	RSQG1S53V	

TROUBLESHOOTING GUIDE

• Perform the work after disassembling the cabinet until the SERVO P.C.B. can be checked.
(Refer to the "HOW TO CHECK THE SERVO AND MAIN P.C.B." on page 12.)



MEASUREMENTS AND ADJUSTMENTS

Caution:

- It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.)
- With the unit turned "on", laser radiation is emitted from the pickup lens.
- Avoid exposure to the laser beam, especially when performing adjustments.

■ This unit (SL-CH555) is actuated by power supply from the tuner amplifier SA-CH655.
If you wish to actuate this unit without using the tuner amplifier SA-CH655 for checking or repairing, follow below procedure.

- Apply AC 11 V between **AC** (L1)– **GND** (J1)– **AC** (L2).

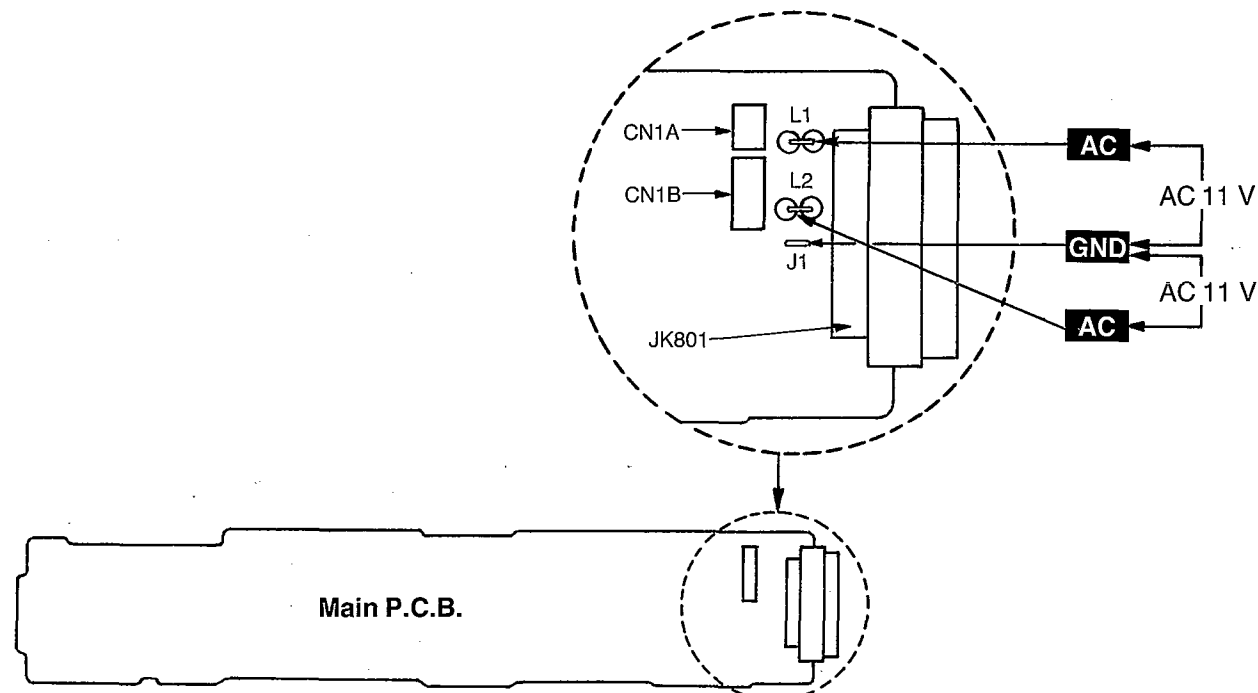


Fig. 1

Locations of Adjustments

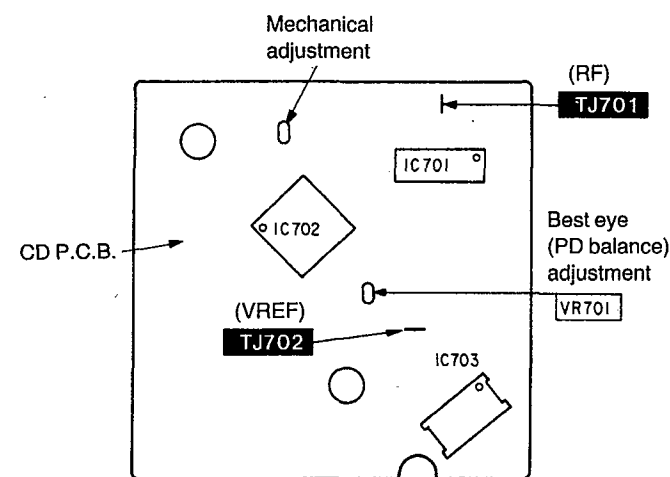


Fig. 2

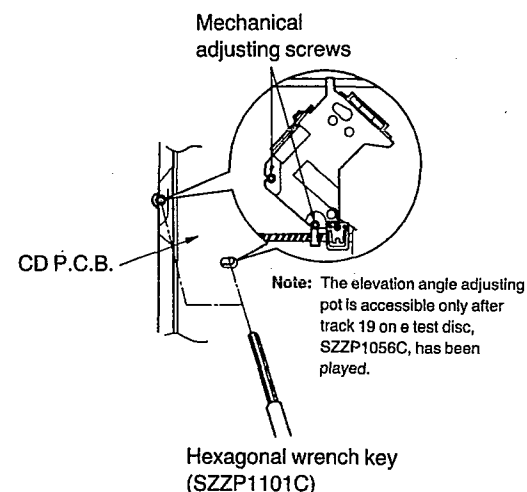


Fig. 3

Measuring Instruments and Special Tools

- Test disc
 - Playability test disc (SZZP1054C)
 - Uneven test disc (SZZP1056C)

- Allen wrench (M2.0) (SZZP1101C)
- Oscilloscope

(1) MECHANICAL ADJUSTMENT

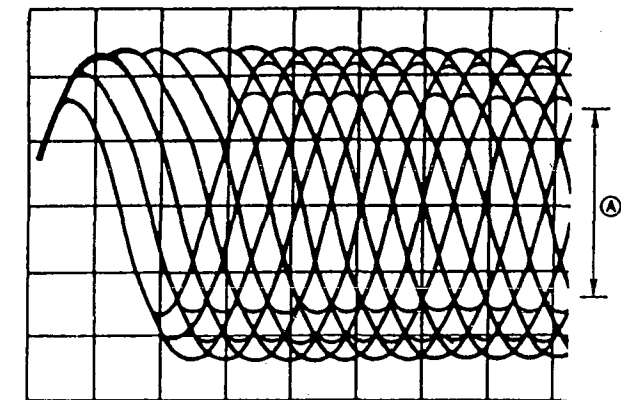
- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability when the traverse deck has not been replaced. Make the electrical adjustments first.

- Connect the oscilloscope's CH. 1 probe across **TJ701** (+) and **TJ702** (VREF) on the Servo P.C.B.

Oscilloscope setting:

VOLT 200 mV
SWEEP 0.5 μ sec
Input coupling AC

- Switch the player power ON, and play track 19 on the test disc (SZZP1056C).
- Leave the player in Play mode and place it as shown in the figure on the right.
- Alternately adjust the two mechanical adjusting screws with the 2.0 mm allen wrench (SZZP1101C) until the RF signal amplitude on the oscilloscope is maximize. (Shown in Fig. 3)
- After completing the adjustment, lock the mechanical adjustments with lock paint (RZZ0L01).



A Maximize the amplitude.

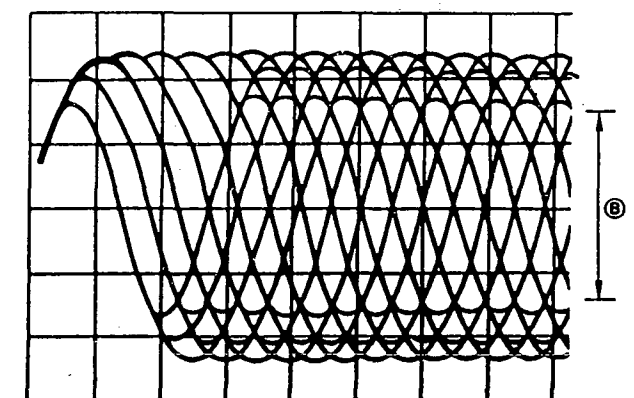
(2) BEST EYE (PD BALANCE) ADJUSTMENT

- Connect the oscilloscope's CH. 1 probe across **TJ701** (+) and **TJ702** (VREF) on the Servo P.C.B.

Oscilloscope setting:

VOLT 200 mV
SWEEP 0.5 μ sec
Input coupling AC

- Switch the player power ON, and play the 1 kHz (track 1) on test disc (SZZP1054C).
- Adjust VR701 until the RF signal eye pattern amplitude is maximized. (Shown in Fig. 2)



B Maximize the amplitude.

(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

Checking Skip Search

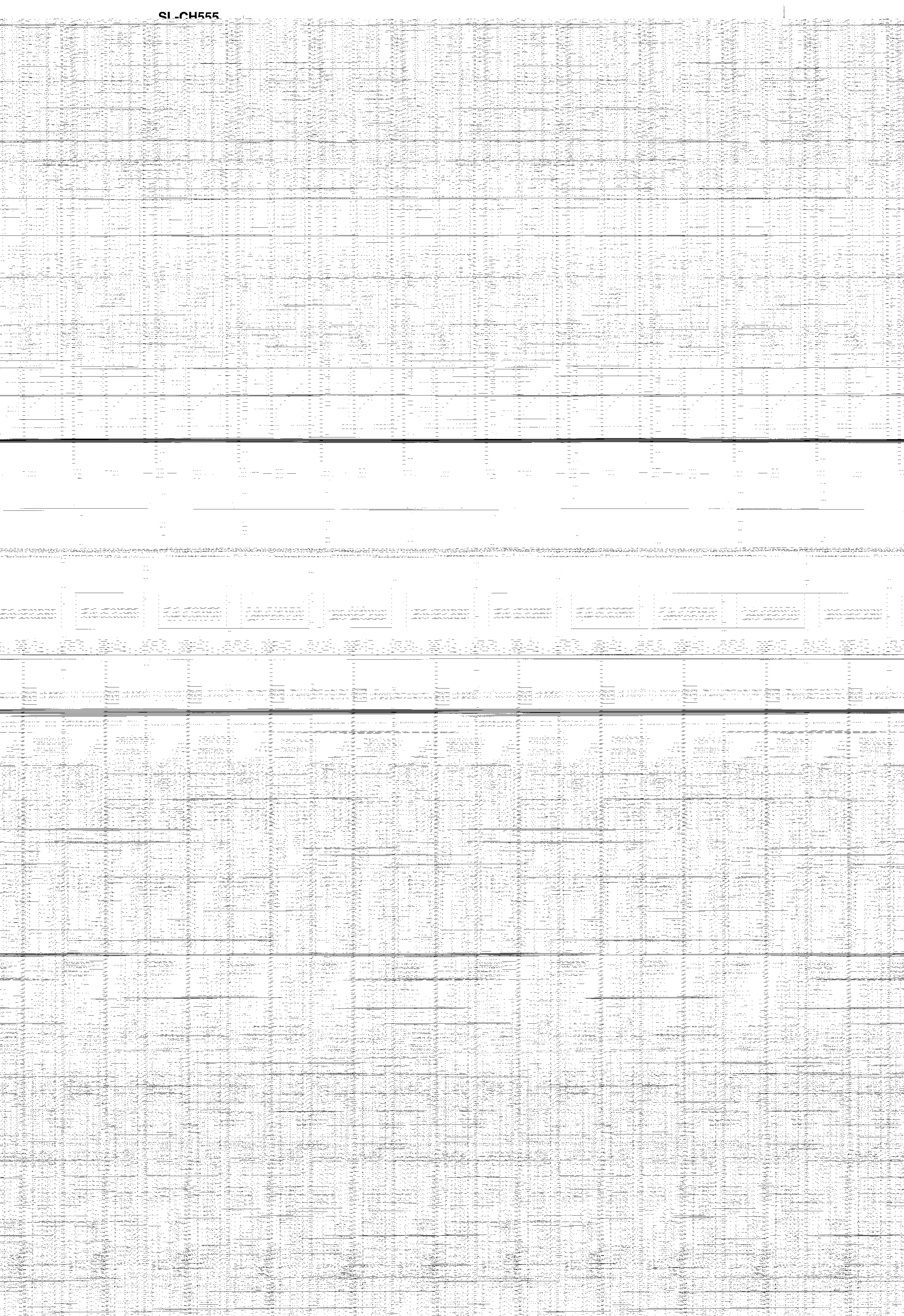
- Play an ordinary musical program disc.
- Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

Checking Manual Search

- Play an ordinary musical program disc.
- 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

- Play the 0.7 mm black dot and the 0.7 mm wedge on the test disc (SZZP1054C) and verify that no sound skip or noise occurs.
- Play the middle tracks of the uneven test disc and verify that no sound skip or noise occurs.



FUNCTION OF IC TERMINALS

•IC301 (M83173M6238F)

Pin No.	Terminal Name	I/O	Function
1	BSDTO	O	Bus data output
2	BSCO	O	Bus clock output
3	BSDTI	I	Bus data input
4	BSCI	I	Bus clock input
5 13	NU	—	—
14	SOL	O	Solenoid drive signal output
15	PSTN	I	Photo sensor signal input
16	PHOUT	I	Photo sensor signal input (Speed detect)
17	/FWD	O	Motor control (FWD)
18	/REW	O	Motor control (REW)
19	NU	—	—
20	/CD	O	Muting control signal output
21	CDPW	O	Reset control signal output
22	FOPN	I	Tray full open detect signal input
23	HOPN	I	Tray half open detect signal input
24	UP	I	Traverse up detect signal input
25	DOWN	I	Traverse down detect signal input
26	HALT	I	Power failure detect signal input
27	RST	I	Reset signal input
28	XCIN	—	GND
29	XCOUT	—	—
30	XIN	I	Clock input

Pin No.	Terminal Name	I/O	Function
31	XOUT	O	Clock output
32	VSS	—	GND
33 36	D3 D0	O	IC401 data output
37	CLK	O	IC401 clock output
38	ACK	O	IC401 acknowledge output
39	SEND	O	IC401 send enable
40	RCV	O	IC401 receive enable
41 51	G11 G1	O	FL grid drive signal output
52 54	NU	—	—
55 64	S10 S1	O	FL segment drive signal output
65 72	NU	—	—
73	VDD	I	+5 V
74	VPP	I	-28 V
75	AVSS	—	GND
76	VREF	O	Reference voltage output
77	NU	—	—
78, 79	KEY2, KEY1	I	Operation switch signal input
80	NU	—	—

•IC401 (LC66304A4935)

Pin No.	Pin Function	I/O	Description
1	REST SW	I	Innermost track sense switch status
2	SERVO RST	I	Reset signal input
3	STAT	I	Status signal input
4	SUBO	I	Subcode Q input
5	D MUTE	O	Muting signal output
6	NC	—	—
7	SQCK	O	External clock for subcode Q register
8	BLCK	I	Subcode block clock input
9	MLD	O	Microprocessor command load signal
10	MDATA	O	Microprocessor command data
11	MCLK	O	Microprocessor command clock
12	NU	—	Tied high
13	/RECV	I	Send enable
14	/SEND	I	Receive enable
15	TEST	—	GND
16	Vss	—	—
17	OSC1	I	Clock input from IC702
18	NC	—	GND
19	NC	—	GND
20	OSC2	—	—
21	/RST	O	Reset signal output
22	ACK	I	Acknowledge input for communication with IC601
23	CLK	I	Clock for communication with IC601

•IC703 (AN8389SE1)

Pin No.	Terminal Name	I/O	Function
1	Vcc	I	Power supply
2	VREF	I	VREF input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	Ground connection
6	NC	—	Ground connection
7	NRESET	I	Reset input
8	GND	—	Ground connection
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (no use, open)

Pin No.	Pin Function	I/O	Description
24	DATA0	I	Parallel 4-bit data from IC601
25	DATA1		
26	DATA2		
27	DATA3	—	GND
28	NU		
29	NC		
30	NC	—	GND
31	EMP	—	—
32	MUTE RELAY	—	—
33	NU	—	GND
34			
35			
36	CS	—	GND
37	NU	—	GND
38			
39	Vcc	I	Power supply
40	OPEN SW	I	Tied high
41	CLOSE SW	—	GND
42	NC	—	GND
43			
44	/CLOSE	—	—
45	/OPEN	—	—
46	SENSE	I	Sense signal input
47	/FLOCK	I	Focus servo pull-in signal
48	/TLOCK	I	Tracking servo pull-in signal

Pin No.	Terminal Name	I/O	Function
13	PVcc1	I	Power supply (1) for driver
14	PGND1	—	Ground connection (1) for driver
15	D1-	O	Motor driver (1) reverse-action output
16	D1+	O	Motor driver (1) forward-action output
17	D2-	O	Motor driver (2) reverse-action output
18	D2+	O	Motor driver (2) forward-action output
19	D3-	O	Motor driver (3) reverse-action output
20	D3+	O	Motor driver (3) forward-action output
21	D4-	O	Motor driver (4) reverse-action output
22	D4+	O	Motor driver (4) forward-action output
23	PGND2	—	Ground connection (2) for driver
24	PVcc2	I	Power supply (2) for driver

•IC701 (AN8802SCE1V)

Pin No.	Terminal Name	I/O	Function
1	PDAD	I	PD A channel signal input with delay
2	PDA	I	PD A channel signal input without delay
3	LPD	I	Laser PD connection
4	LD	O	Power supply for LD driving
5	AMPI	I	RF amplifier input
6	Vcc	I	Power supply connection
7	AMPO	O	RF amplifier output (no use, open)
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF AGC output
10	CENV	I	Capacitor connection for RF detection
11	CEA	I	Capacitor connection for HPF amplifier
12	GND	—	Ground connection
13	LDON	I	ON/OFF input of LD APC ("H": ON, "L": OFF)
14	TES	I	Tracking error shunt signal input ("H": shunt)
15	PLAY	I	Play signal input ("H": PLAY)
16	WVEL	I	WVEL control
17	BDO	O	BDO output
18	/RFDET	O	NRDET output
19	CROSS	O	CROSS output
20	OFTR	O	OFTR output
21	VDET	O	VDET output
22	ENV	O	ENV output
23	TEBPF	I	Vibration detection input
24	TE	O	Tracking error output
25	FE	O	Focus error output
26	PTO	O	Potentiometer output (no use, open)
27	PTI	I	Potentiometer inversion input (no use, open)
28	TBAL	I	Tracking balance input
29	FBAL	I	Focus balance input
30	VREF	O	VREF output
31	PDB	I	PD B channel signal input without delay
32	PDBD	I	PD B channel signal input with delay

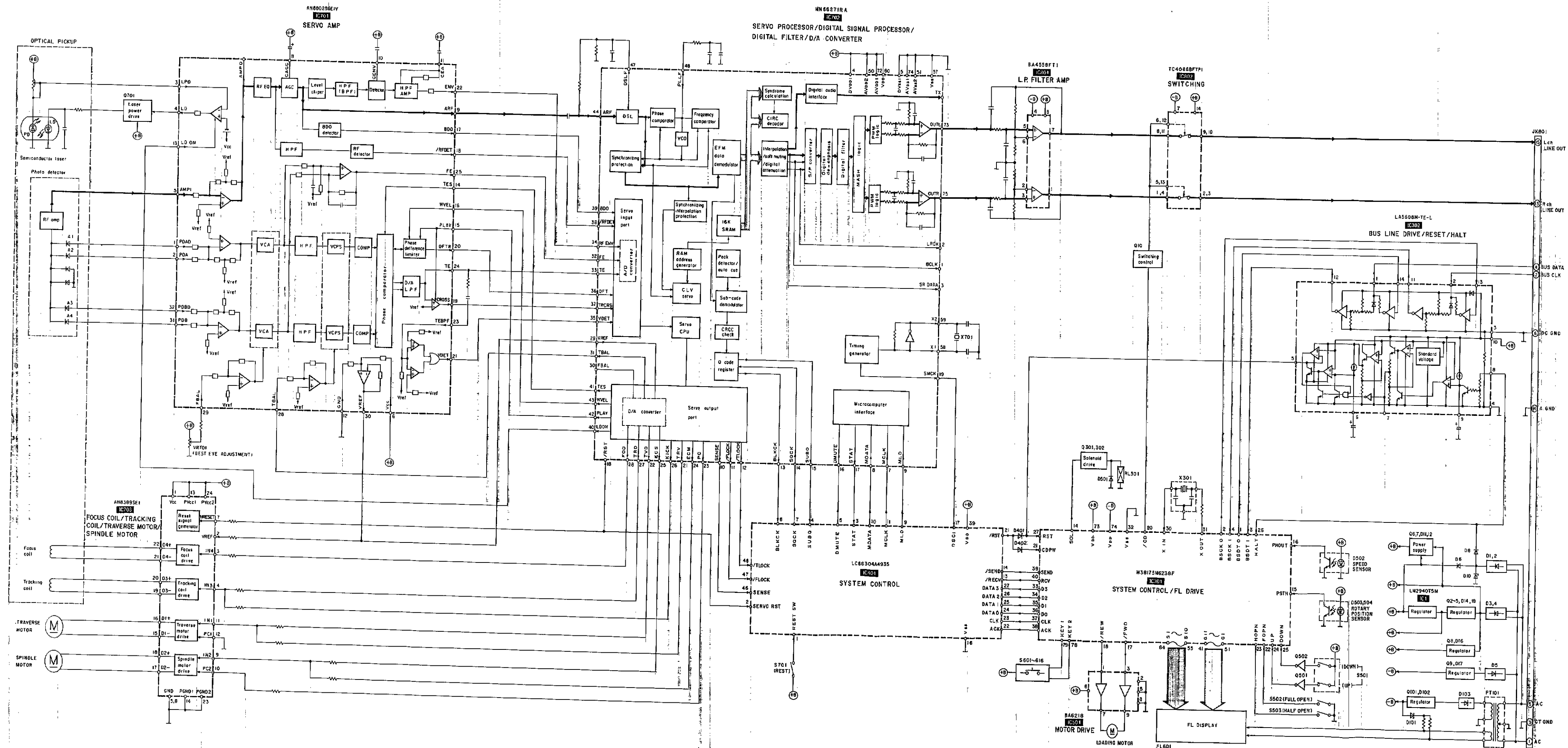
•IC702 (MN66271RA)

Pin No.	Terminal Name	I/O	Function
1	BCLK	O	Bit clock output for serial data (no use, open)
2	LRCK	O	L/R identification signal output (no use, open)
3	SRDATA	O	Serial data output (no use, open)
4	DVcc1	I	Power supply input (for digital circuit)
5	DVss1	—	GND (for digital circuit)
6	TX	O	Digital audio interface signal output
7	MCLK	I	Microprocessor command clock signal input (Latches data at first transition)
8	MDATA	I	Microprocessor command data signal input
9	MLD	I	Microprocessor command load signal input
10	SENSE	O	Sense signal output (OFT, FESL, MAGEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Focus servo feeding signal output ("L": Feed)
12	/TLOCK	O	Tracking servo feeding signal output ("L": Feed)
13	BLCK	O	Sub-code block clock signal output (BLCK=75 Hz during normal playback)
14	SQCK	I	External clock signal input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H": Mute)
17	STAT	O	Status signal output (CRC, CUE, CLVS, TTSTVP, FCLV, SOCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at MSEL="H" (SMCK=8.4672 MHz) 1/4-divided clock signal of crystal oscillating at MSEL="L" (SMCK=4.2335 MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating (PMCK=88.2 KHz) (no use, open)
21	TRV	O	Traverse forced feed output
22	TVD	O	Traverse drive output
23	PC	O	Spindle motor ON signal output ("L": ON)
24	ECM	O	Spindle motor drive signal output (forced mode output)
25	ECS	O	Spindle motor drive signal output (servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output

Pin No.	Terminal Name	I/O	Function
29	VREF	I	D/A (drive) output (TVD, ECS, TRD, FOD, FBAL, TBAL) Reference voltage input
30	FBAL	O	Focus balance adjustment output (no use, open)
31	TBAL	O	Tracking balance adjustment output
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
35	VDET	I	Vibration detection signal input ("H": detection)
36	OFT	I	Off-track signal input ("H": off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L": detection)
39	BDO	I	Dropout signal input ("H": Dropout)
40	LDON	O	Laser on signal output ("H": ON)
41	TES	O	Tracking error shunt signal output ("H": shunt)
42	PLAY	O	Play signal output ("H": PLAY)
43	WVEL	O	Double speed status signal output ("H": Double speed)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (no use, open)
47	DSLIF	IO	DSL loop filter
48	PLLIF	IO	PLL loop filter
49	VCOF	IO	VCO loop filter (no use, open)
50	AVcc2	I	Power supply input (for analog circuit)
51	AVss2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (not use, open)
53	PCK	O	PLL extraction clock output (PCK=4.321 MHz during normal playback) (no use, open)
54	PDO	O	Phase comparison signal of EFM and PCK signals (no use, open)
55	SUBC	O	Sub-code serial data output (no use, open)
56	SBCK	I	Clock input for sub-code serial data (no use, open)
57	Vss	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344 MHz)
59	X2	O	Crystal oscillation circuit output (f=16.9344 MHz)
60	Vcc	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (no use, open)

Pin No.	Terminal Name	I/O	Function
62	/CLDCK	O	Sub-code frame clock signal output (CLDCK=7.35 kHz during normal playback)
63	FCLK	O	Crystal frame clock signal output (FCLK=7.35 kHz, double=14.7 kHz)
64	PFLAG	O	Interpolation flag output ("H": Interpolation) (no use, open)
65	FLAG	O	Flag output (no use, open)
66	CLVS	O	Spindle servo phase synchronizing signal output ("H": CLV, "L": rough servo) (no use, open)
67	CRC	O	Sub-code CRC checked output ("H": OK, "L": NG) (no use, open)
68	DEMPH	O	De-emphasis ON signal output ("H": ON) (no use, open)
69	RESY	O	Frame resynchronizing signal output (no use, open)
70	/RST2	I	Reset input through MASH circuit ("L": Reset)
71	/TEST	I	Test input
72	AVcc1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVss1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input (at "H" level, RSEL="H"; at "L" level, RSEL="L")
77	CSEL	I	Crystal oscillating frequency designation input ("L": 16.9344 MHz, "H": 33.8688 MHz)
78	PSEL	I	Test input (normally, "L") (no use, open)
79	MSEL	I	Output frequency switching for SMCK terminal "H": SMCK=8.4672 MHz "L": SMCK=4.2335 MHz (no use, open)
80	SSEL	I	Output mode switching of SUBQ terminal ("H": Q code buffer mode)

■ BLOCK DIAGRAM

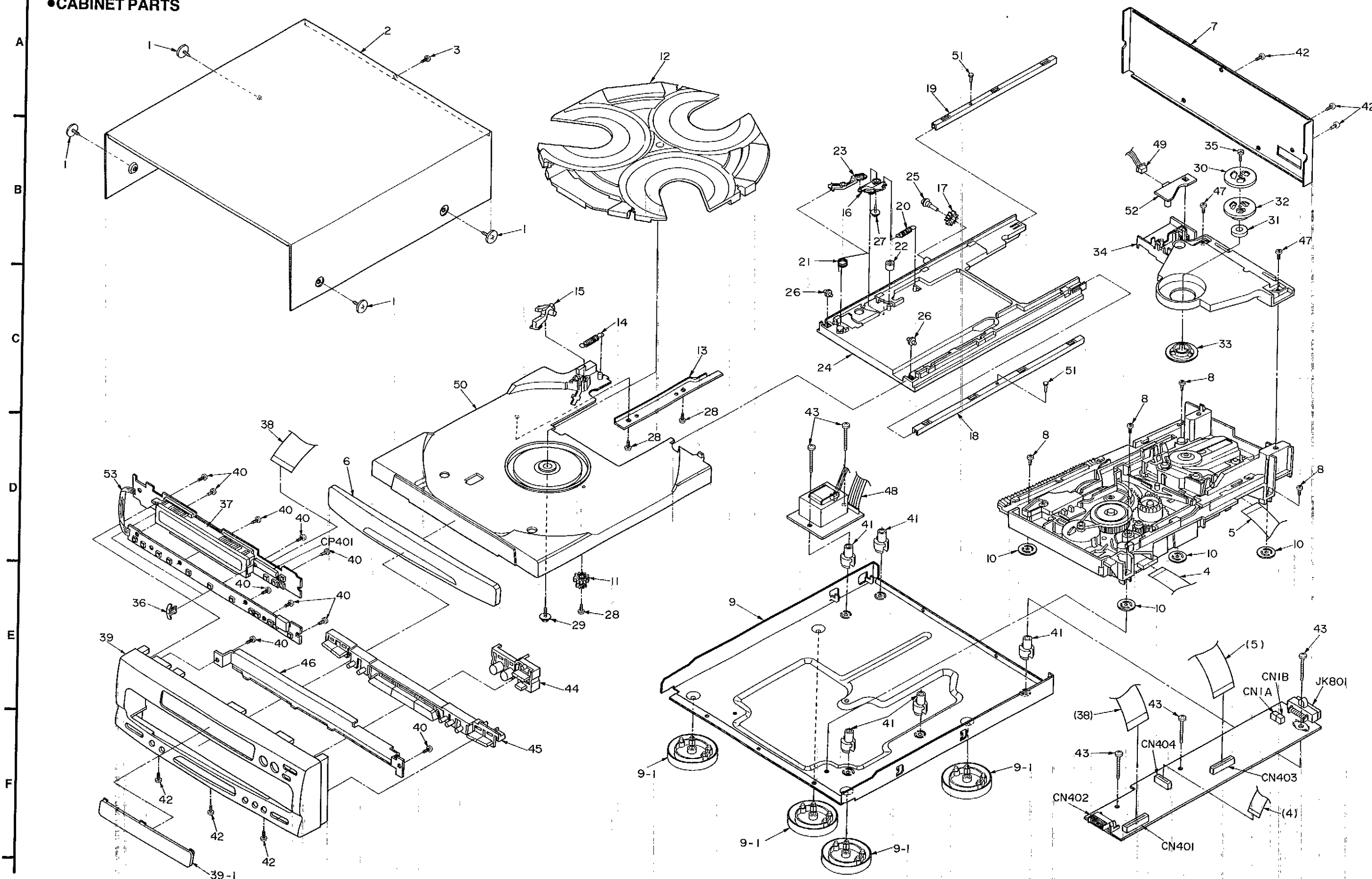


■ CABINET PARTS AND LOADING UNIT PARTS LOCATION

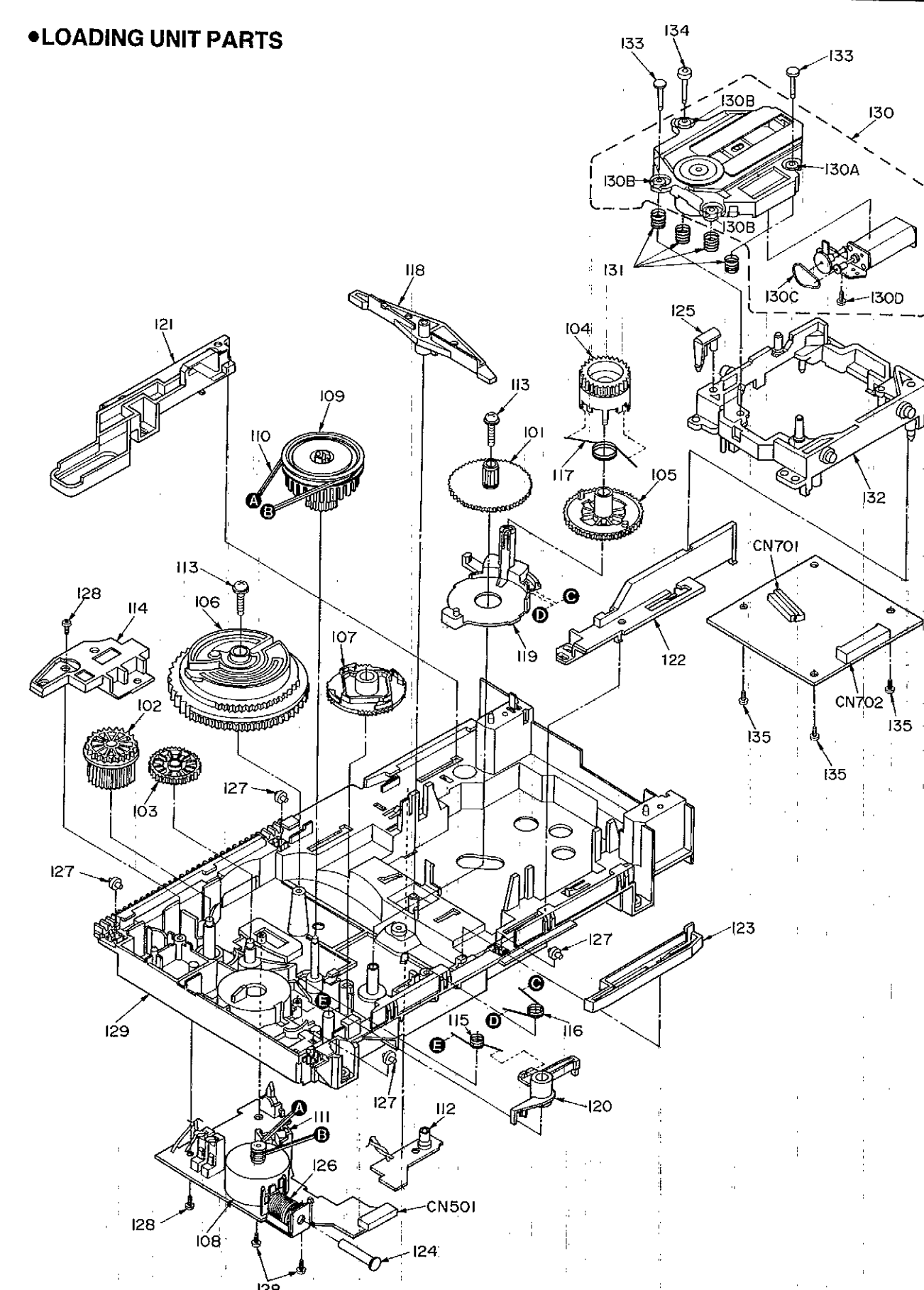
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●CABINET PARTS



●LOADING UNIT PARTS



Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS		48	REZ0557	FLAT CABLE (7P)	(W101)
				49	REX0482	FLAT CABLE (2P)	(W102)
1	RHD30007	SCREW		50	RFKJLCH555PK	DISC TRAY ASS'Y	
2	RKM0222-K	CABINET		51	XTN2+6F	SCREW	
3	XTBS3+8JFZ1	SCREW		52	RMN0222	LED HOLDER	
4	REZ0555	FLAT CABLE		53	REZ0558	FLAT CABLE (3P)	(W601A/W601B)
5	REZ0556	FLAT CABLE				LOADING PARTS	
6	RGK0536-K	TRAY PANEL					
7	RGRO162A-C	REAR PANEL		101	RDG0194	GEAR	
8	RHD30043	SCREW		102	RDG0223	GEAR	
9	RFKJLCH555PA	BOTTOM BOARD ASS'Y		103	RDG0224	GEAR	
9-1	RKA0055-N	FOOT		104	RDG0244	GEAR	
10	RMGO319-K	BUBBER		105	RDG0245	GEAR	
11	RDG0228	GEAR		106	RDK0022	GEAR	
12	RGTO014	ROTARY TRAY		107	RDK0023	GEAR	
13	RMA0681	ANGLE		108	RFKPLCH555PK	MOTOR ASS'Y	
14	RME0123	SPRING		109	RDP0058	GEAR	
15	RML0312	LEVER		110	RDV0025	BELT	
16	RDG0225	GEAR		111	RMN0204	SENSOR HOLDER	
17	RDG0227	GEAR		112	RMN0222	LED HOLDER	
18	RMA0654	ANGLE (A)		113	RHD30029	SCREW	
19	RMA0655	ANGLE (B)		114	RMA0653	ANGLE	
20	RME0123	SPRING		115	RME0120	SPRING	
21	RME0139	SPRING		116	RME0121	SPRING	
22	RMGO293-C	RUBBER		117	RME0137	SPRING	
23	RML0291	LEVER		118	RML0177	LEVER	
24	RMRO627-K	TRAY BASE		119	RML0288	LEVER	
25	RMS0382	SHAFT		120	RML0289	LEVER	
26	SDRD14	ROLLER		121	RMN0097	SLIDE PLATE (1)	
27	XTW3+6S	SCREW		122	RMN0098	SLIDE PLATE (2)	
28	XTBS26+10J	SCREW		123	RMN0099	SLIDE PLATE (3)	
29	XTWS3+10T	SCREW		124	RMS0398	PLUNGER	
30	RDF0033	MAGNET HOLDER (A)		125	RMX0072	LEVER	
31	RHM245ZA	MAGNET		126	RSJ0003	SOLENOID (PL501)	
32	RMRO334	MAGNET HOLDER (B)		127	SDRD14	ROLLER	
33	RMRO624-W	DISC HOLDER		128	XTB3+10JFZ	SCREW	
34	RMRO625-W	DISC CLAMPER		129	RFKJLCH555PB	MECHANISM CHASSIS ASS'Y	
35	XTB3+6JFZ	SCREW		130	RAE0111Z	TRAVERSE UNIT ASS'Y	
36	RMN0195	FL SPACER		130A	SHGD112	RUBBER (A)	
37	RMN0213	FL HOLDER		130B	SHGD113-1	RUBBER (B)	
38	REZ0554	FLAT CABLE (23P)		130C	RDV0023	BELT	
39	RFKGLCH555PK	FRONT PANEL ASS'Y		130D	SNSD38	SCREW	
39-1	RKW0258-V	FL PANEL		131	RME0109	SPRING	
40	XTBS26+8J	SCREW		132	RMRO533-K	TRAVERSE CHASSIS	
41	SHE185-2	P. C. B. SPACER		133	RMS0123-1	PIN (A)	
42	XTBS3+8JFZ1	SCREW		134	RMS0350	PIN (B)	
43	XTB3+16JFZ	SCREW		135	XTV2+6G	SCREW	
44	RGU0860-K	BUTTON,					
45	RGU0861-K	BUTTON,					
46	RMA0691	ANGLE					
47	XTB3+10JFZ	SCREW					

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