ORDER NO. MB9104013C2

Service Manual

COMPACT disc DIGITAL AUDIO

DIGITAL

Compact Disc Player

SL-PJ38A

Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)
(EG)	F.R. Germany & Italy.	(K)

SPECIFICATIONS

■ **Audio**

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

■ **Pickup**

Wavelength 780 nm

Type One beam

■ **General**

Power supply

For Great Britain AC 50/60 Hz, 230 V−240 V

For others AC 50/60 Hz, 230 V

Power consumption 10 W

Dimensions (W×H×D) 360×85×288 mm

Weight 3.3 kg

Note:

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

■ CONTENTS

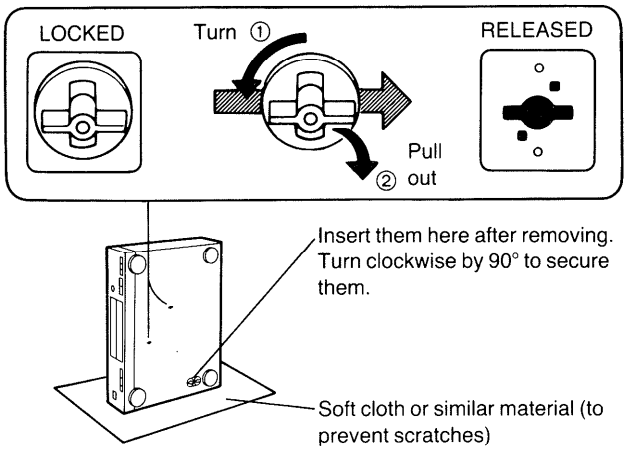
* TECHNICAL INFORMATION
* This technical information is located on pp 49~56 of the SL-PJ46A Service Manual (Order No. AD8902036C2). Therefore, refer to that Service Manual.

Technics

■ PLACEMENT

Before placement

Two transport security devices are secured to prevent the optical pickup from damage during transport.
Be sure to release them before use.



Note:
When transporting the unit, be sure to remove the compact disc from inside the unit. And replace the transport security devices again following the reverse order not to damage the optical pickup.

Notes of placement

■ **This unit is a precision instrument. Be sure to place it on a flat surface.**
■ **Avoid places such as the following:**
- Near any equipment or device that generates strong magnetism.
- On any heat-generating equipment or device, or in any place where the temperature is high (35°C or higher).
- Extremely cold places (5°C or below).
- Near a tuner or TV (It may cause noise in the broadcast, or disturbance of the TV picture.)

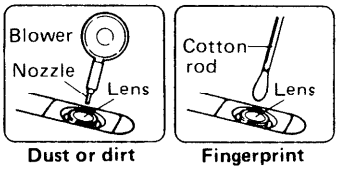
■ **When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.**
Always remove the disc before storing the unit for any period of time.
■ **To avoid problems due to vibration.**
- Do not place a book or similar object under this unit.
- Do not route the connection cables (of this or other units) across the operation panel, across the top, or under the unit.

■ CLEANING OF LENS

If the lens is stained causing sound skip or operation failure, open the top cover by pressing the open button, and clean the lens.

• To remove dust or dirt

Blow the lens with the blower provided in the cleaning kit to remove dust or dirt.

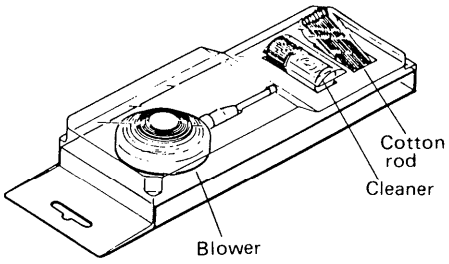


• To remove fingerprint

If the blower is not enough, moisten the cotton rod with the lens cleaner solution and wipe the lens with it from center of the lens to outside.

Cautions:
- Do not directly apply the cleaner solution to the lens. Do not apply too much solution to the cotton rod or otherwise the solution will flow into the player.
- Wipe the lens carefully. Do not give too much stress to the lens or otherwise it may scratch the lens or cause optical pickup trouble.
- If the solution should be too much applied, wipe the lens with a dry cotton rod.

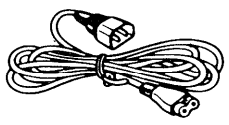
Lens cleaning kit (Part No. : SZZP1038C)

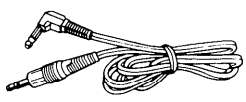


Spare of cleaning kit (Cotton rod, Cleaner) (Part No. SZZP1050C).

■ ACCESSORIES

- AC power supply cord ..... 1 pc.
  (SFDAC05E03 (E, EG) / SJA188 (EB))
- Optical-fiber cable ..... 1 pc.
  (SJPD16)
- L-type cable ..... 1 pc.
  (SJP2257T)





■ 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: 780nM
Maximum output radiation power from pick up: 100μW/VDE

Laser radiation from the pick up lens 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.

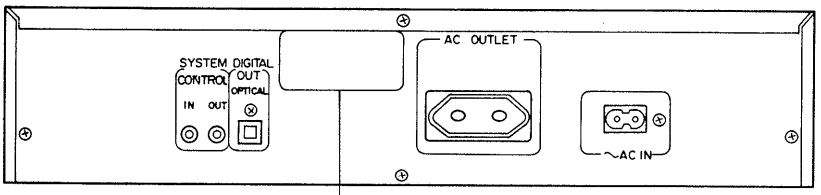
ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

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 werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

ADVARSEL: I dette a apparat anvendes laser.

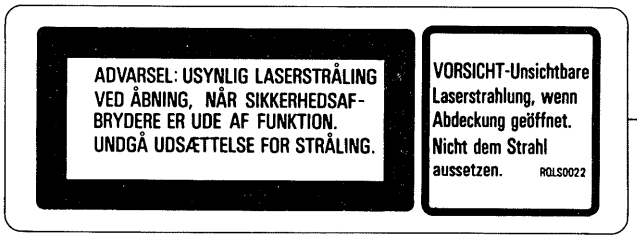


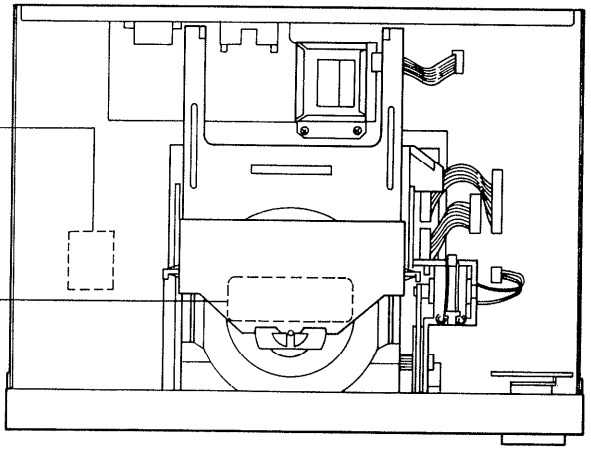
RQLS0051

SQWD7

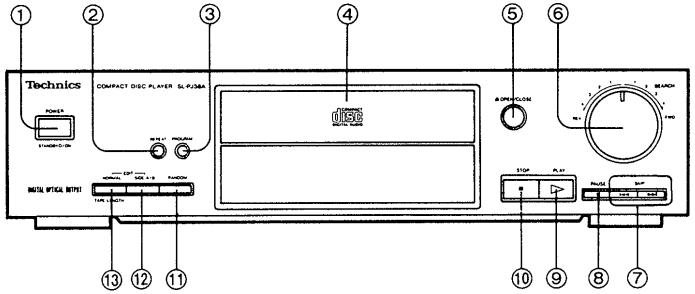
Obs:
Apparaten innehåller laser
Komponent av höger laserklass
än klass 1.

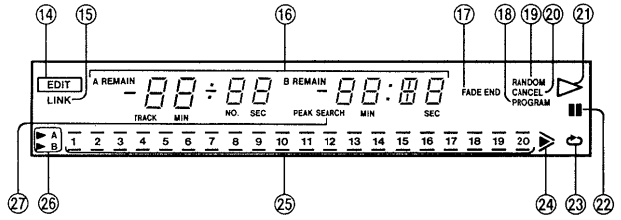
RQLS0022





■ LOCATION OF CONTROLS





Control section

① **Power "STANDBY ⏻/ON" switch (POWER STANDBY ⏻ /ON)**
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

② **Repeat play button (REPEAT)**

③ **Program button (PROGRAM)**
Pressing this button initiates the program play mode. You can then enter specific tracks using the skip buttons.

④ **Disc holder**

⑤ **Disc holder open/close button (▲ OPEN/CLOSE)**

⑥ **Search dial (SEARCH)**
This dial can be used to locate specific places on the disc during play at high speed, either forward or reverse.

⑦ **Skip buttons (⏮◀◀ SKIP ▶▶⏭)**
These buttons can be used to skip tracks and to specify the track number or the desired recording time.

⑧ **Pause button (❚❚ PAUSE)**

⑨ **Play button (▷ PLAY)**

⑩ **Stop button (■ STOP)**
This button can be used to stop the disc play, as well as to cancel the various play modes.

⑪ **Random play button (RANDOM)**
This button can be used to play the tracks on a disc in a random sequence.

⑫ **Tape side select button (SIDE A/B)**
When recording compact discs to tape, this button is used to switch the tape side for addition or cancelation of programmed tracks.

⑬ **Edit mode button (NORMAL, TAPE LENGTH)**
This button can be used to choose one of the edit modes or to specify the tape length to be used.

Indicators section

⑭ **Edit indicator (EDIT)**

⑮ **Link indicator (LINK)**

⑯ **Multi-display**
This display shows the following information.
- Track number and elapsed play time of the current track
- The number of tracks can be recorded on each side of the tape and the remaining time.

⑰ **Fade end indicator (FADE END)**
Illuminates when the unit is normal edit mode.

⑱ **Program indicator (PROGRAM)**

⑲ **Random play indicator (RANDOM)**

⑳ **Program cancel indicator (CANCEL)**
Illuminates when the programmed track can be cancelled.
(It can be operated only by the remote control transmitter included in the Technics tuner ST-X902.)

㉑ **Play indicator (▷)**

㉒ **Pause indicator (❚❚)**

㉓ **Repeat play indicator (↻)**

㉔ **"Over" mark (▶)**
This indicator lights if the total number of tracks on the disc is 21 or more.

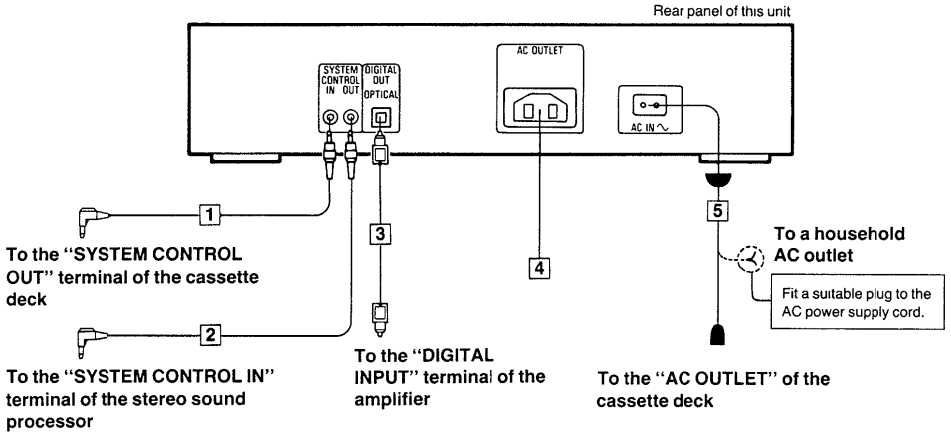
㉕ **Track number indicator (1 – 20)**

㉖ **Tape side indicator (▶ A, ▶ B)**

㉗ **Peak search indicator (PEAK SEARCH)**

■ CONNECTIONS

Notes:
- Turn off all components before making connections.
- See the operating instructions of the tuner for details.



1 L-type cable (included)
This cable can be used only with a Technics cassette deck having the appropriate "SYSTEM CONTROL OUT" terminal.

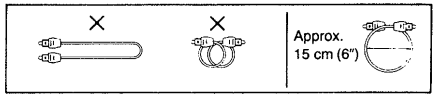
2 L-type cable (not included)
This cable is included to a Technics stereo sound processor having the appropriate "SYSTEM CONTROL IN" terminal.

3 Optical-fiber cable (included)
This cable can be used only with an amplifier having the "DIGITAL INPUT" terminal. A dust-protection cap is inserted in the "DIGITAL OUT/OPTICAL" terminal of this unit. Remove this cap only when a connection is to be made to this terminal.

4 "UNSWITCHED" outlet
Power is always available, regardless of power switch. Audio equipment rated up to 50 W can be connected here.

5 AC power supply cord (included)
Note:
If the AC power supply cord is connected to the household AC outlet, cut off and dispose of the plug.

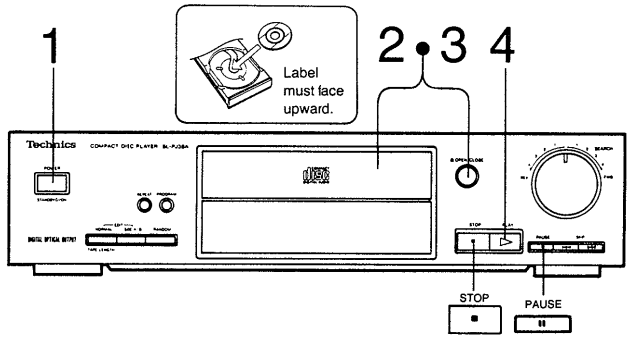
CAUTION
When using the optical-fiber cable, please keep the following points in mind:
1. The maximum length of optical-fiber cable to be used with this unit is 1 m (approx. 3.3 ft.).
2. Always make sure the plug is fully inserted. If the plug is not inserted all the way, an imperfect connection will result.
3. The optical-fiber cable must never be bent or coiled tightly. Doing so will permanently damage the optical-fiber in the cable and, therefore, prevent proper data transmission. If the cable must be coiled (for storage, etc.), the diameter of the loop should be at least 15 cm (approx. 6 inches).



4. Handle the optical-fiber cable's plug very carefully. Keep the plug free from dust or damage. Dust can be removed by wiping the plug with a soft cloth. Do not use any cleaners or solvents to clean the plug.

■ BASIC OPERATION

Have both of transport security devices been released? (Refer to page 2)



Normal play

Playing an entire disc from the first track to the last.

Basic operations such as open/close, turning the power ON and OFF are the same for the other play modes as well.

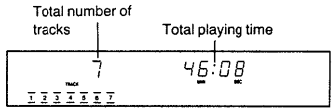
1 Reduce the volume level (at the amplifier), and then switch ON the power.

2 Press the open/close button to open the disc holder and insert a disc.

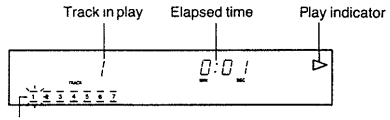
3 Press the open/close button again to close the disc holder.

Do not stick your finger through the hole in the middle of the disc holder. (It could get caught when the holder closes.)

The total number of tracks on the disc and the total playing time are displayed.



4 Press the play button.
Disc play begins from the first track on the disc.

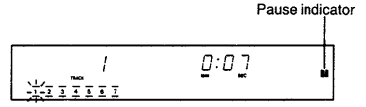


The bars above and below the number of the track in play flash. They go out when play finishes.

- The unit stops automatically when the last track on the disc finishes playing. (The display returns to the total number of tracks and total playing time indications.)
- Switch power OFF when finished.

■ To stop disc play, press the stop button.
The unit switches to the stop mode and the total number of tracks and total playing time are displayed.

■ To temporarily stop disc play, press the pause button.



Press the play button to play again.

Notes:
- Attempting the change discs while the disc holder is in the process of opening can scratch or damage your discs.
- The total playing time displayed includes the silent sections between tracks. For this reason, it may differ by a few seconds from the playing time printed in the disc's liner notes.

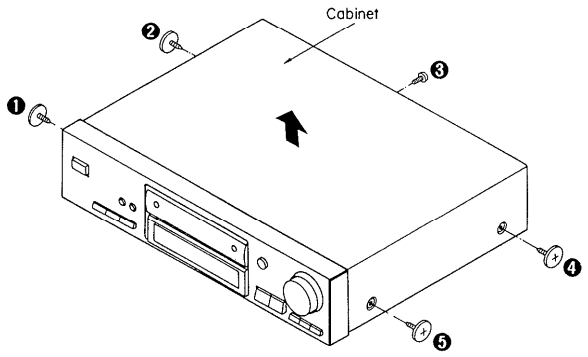
■ DISASSEMBLY INSTRUCTIONS

Warning: This product uses a laser diode. Refer to caution statements on page 3.

ACHTUNG:
- Die lasereinheit nicht zerlegen.
- Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

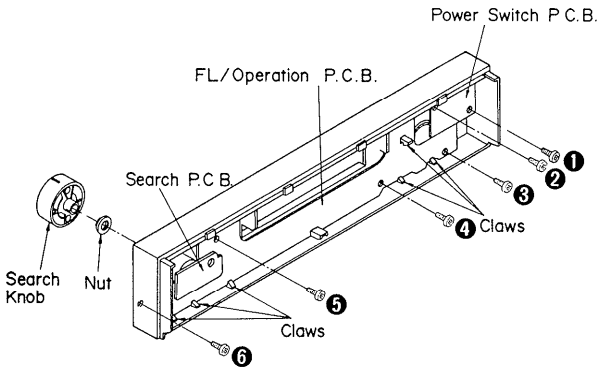
∗This CD player is equipped with FPC boards, so handle them with care during disassembly and reassembly.

Ref. No. 1	Removal of the cabinet
Procedure 1	



- Remove the 5 screws (❶~❺).

Ref. No. 3	Removal of the search P.C.B., power switch P.C.B. and FL/operation P.C.B.
Procedure 1→2→3	

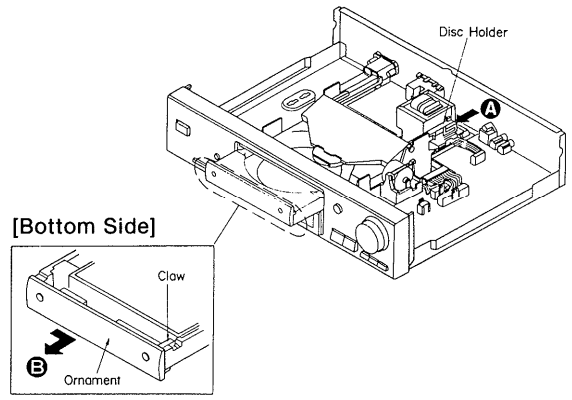


■ Removal of the search P.C.B.
1. Pull out the search knob.
2. Remove the nut.

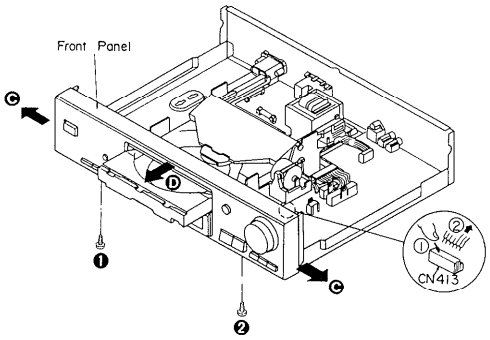
■ Removal of the power switch P.C.B.
- Remove the 2 screws (❶, ❷).

■ Removal of the FL/operation P.C.B.
1. Remove the 4 screws (❸~❻).
2. Release the 6 claws.

Ref. No. 2	Removal of the front panel
Procedure 1→2	

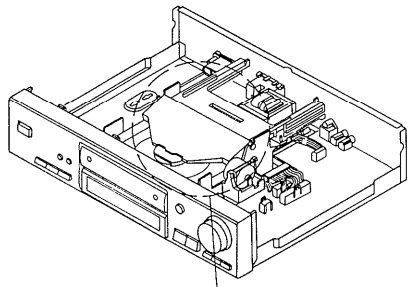


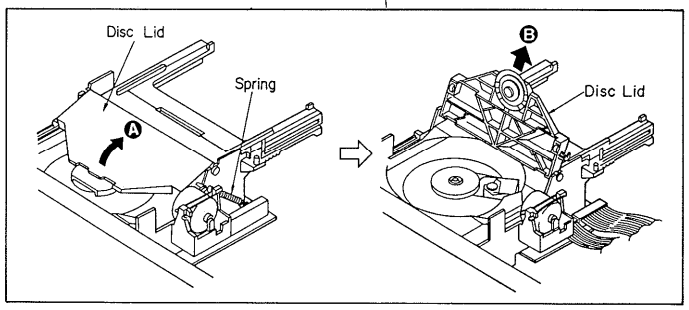
1. Push the disc holder slowly in the direction of arrow (Ⓐ).
2. Release the 1 claw and ornament in the direction of arrow (Ⓑ).



3. Remove the 1 flat cable (CN413).
4. Remove the 2 screws (❶, ❷).
5. Slightly pull out the front panel in the direction of arrow (Ⓒ).
6. Remove the front panel in the direction of arrow (Ⓓ).

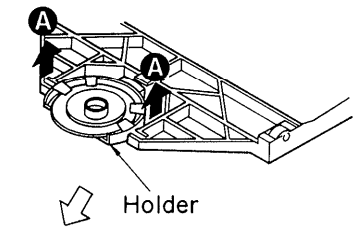
Ref. No. 4	Removal of the disc lid
Procedure 1→4	

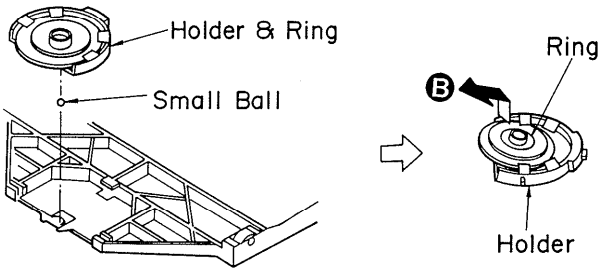




1. Remove the spring.
2. Move the disc lid in the direction of arrow (Ⓐ) and pull out this in the direction of arrow (Ⓑ).

Ref. No. 5	Removal of the holder and ring
Procedure 1→4→5	

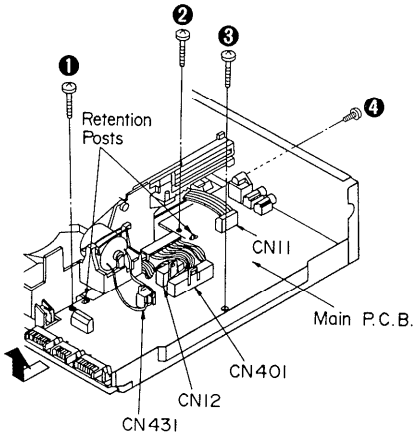




1. Pull out the holder in the direction of arrow (Ⓐ).
2. Remove the ring in the direction of arrow (Ⓑ).

Caution: Be sure to handle the small ball carefully.

Ref. No. 6	Removal of the main P.C.B.
Procedure 1→2→3→6	

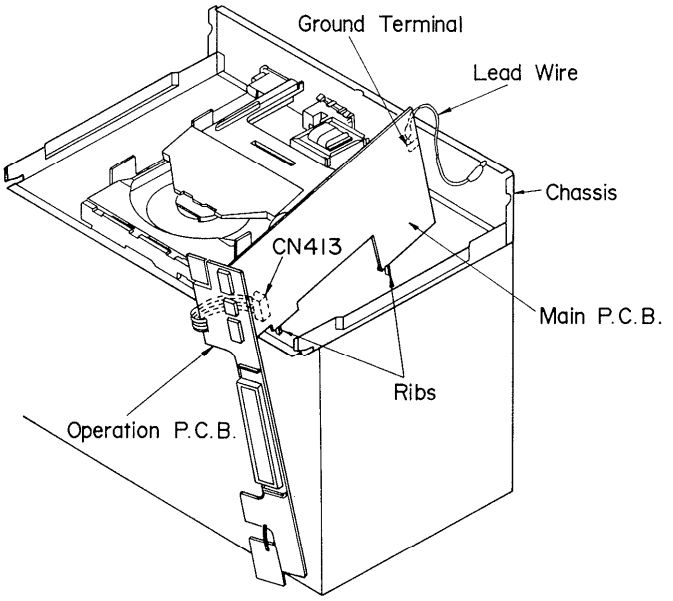


1. Remove the 4 screws (❶~❹).
2. Remove the 3 connectors (CN12, CN401, CN431).
3. Remove the 1 flat cable (CN11).
4. Lift the main P.C.B. off the retention posts on the chassis.
5. Remove the main P.C.B. in the direction of arrow.

How to check the main P.C.B.

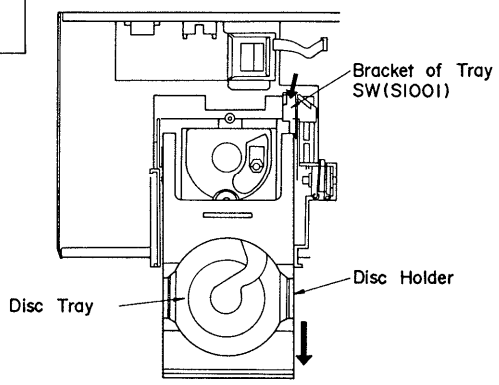
When checking the soldered surface of the main P.C.B. and replacing the parts, do as shown below.

1. Don't remove the connectors (CN12, CN401, CN431) and flat cables (CN11, CN413).
2. Connect the main P.C.B. ground terminal (LINE OUT terminal) to the chassis with a lead wire.



Ref. No. 7 **Removal of the disc holder**

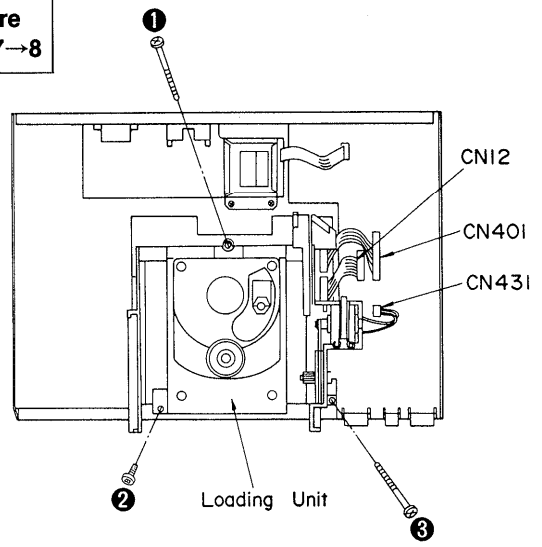
Procedure 1→2→4→7



1. Pull the disc holder slowly in the direction of arrow until the disc tray comes up.
2. Pull the disc holder until it stops.
3. Push the bracket of tray SW (S1001) in the direction of arrow.
4. Pull out the disc holder further to remove it.

Ref. No. 8 **Removal of the loading unit**

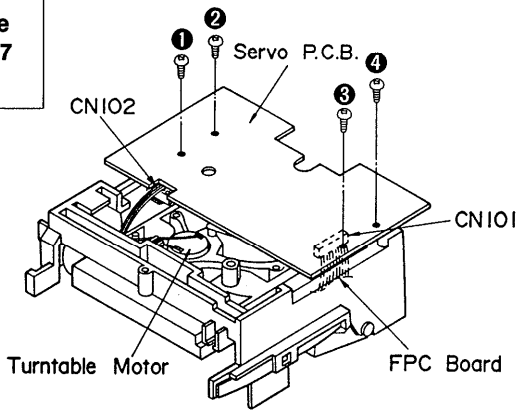
Procedure 1→2→4→7→8



1. Remove the 3 screws (❶~❸).
2. Remove the 3 connectors (CN12, CN401, CN431).

Ref. No. 9 **Removal of the servo P.C.B.**

Procedure 1→2→4→7→8→9

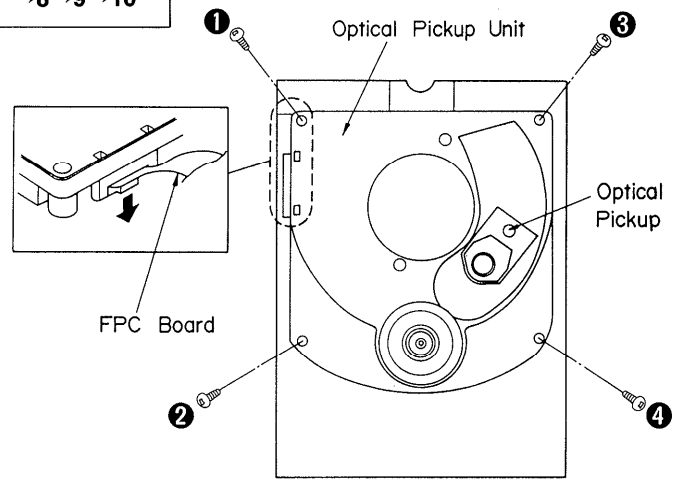


1. Remove the 4 screws (❶~❹).
2. Remove the FPC board (CN101) from the optical pickup.
3. Remove the 1 connector (CN102) of the turntable motor.

Caution: To prevent the breakdown of the laser diode, antistatic shorting pin is inserted into the FPC board.

Ref. No. 10 **Removal of the optical pickup unit**

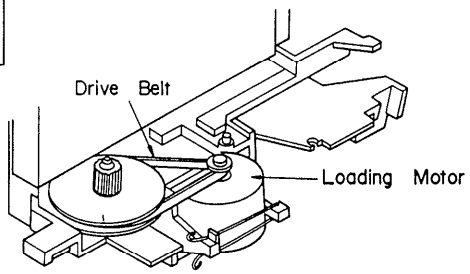
Procedure 1→2→4→7→8→9→10



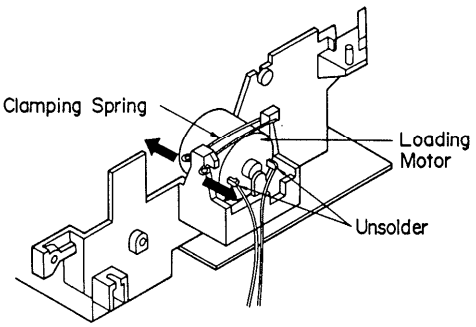
1. Remove the 4 screws (❶~❹).
2. Remove the FPC board from the optical pickup.

Ref. No. 11 **Removal of the loading motor**

Procedure 1→2→4→7→11



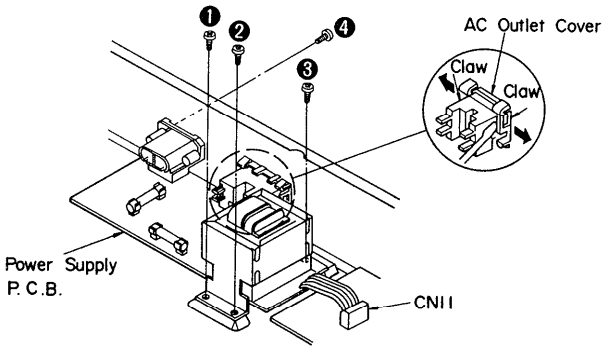
1. Remove the drive belt.



2. Release the clamping spring.
3. Unsolder the 2 terminals of the lead wire of the loading motor.

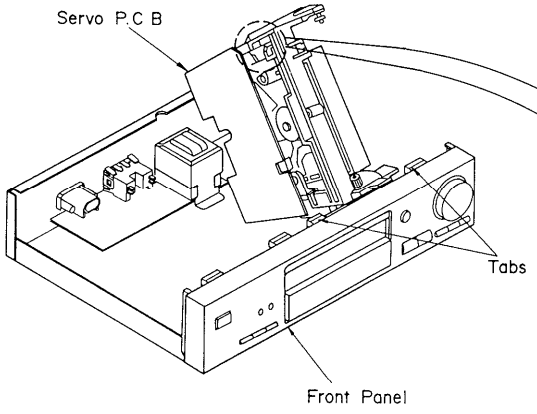
Ref. No. 12	Removal of the power supply P.C.B.
Procedure 1→12	

1. Remove the 4 screws (❶~❹).
2. Remove the 1 connector (CN11).
3. Release the 2 claws of the AC outlet cover.



■ CHECKING OF THE SERVO P.C.B.

1. Remove the cabinet (see Ref. No. 1 of the disassembly instructions).
2. Remove the disc lid and disc holder (see Ref. No. 4 and No. 7 of the same).
3. Remove the loading unit (see Ref. No. 8 of the same).
4. When checking the soldered surface of the servo P.C.B. and replacing the parts, do as shown below.

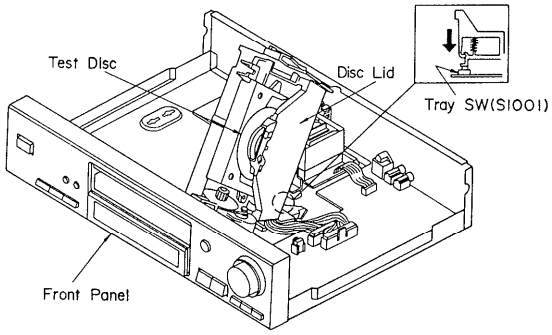


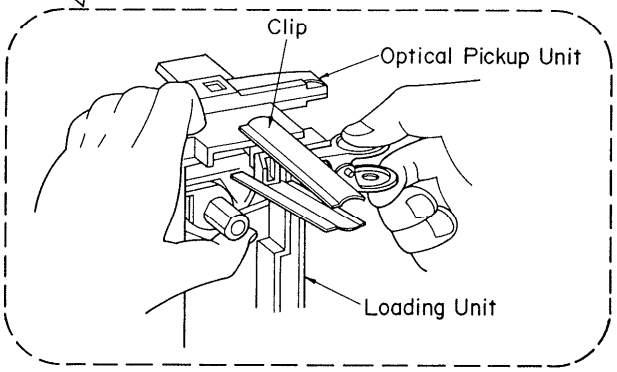
Note: Put on the loading unit on the tabs of the front panel. (Fixed loading unit)
Hold the loading unit and the optical pickup unit with a clip. (Fixed optical pickup unit)
Secure the optical pickup assembly with a clip. (Otherwise the clamper will interfere with the disc, restricting turntable rotation.)

(To play a disc)

1. Place the test disc.
2. Reinstall the disc lid to the loading unit.
3. Turn "ON" the power switch of the player.
4. Push the bracket of tray SW (S1001) in the direction of the arrow and release it.

Note: If the test disc fails to rotate, press the tray switch again.

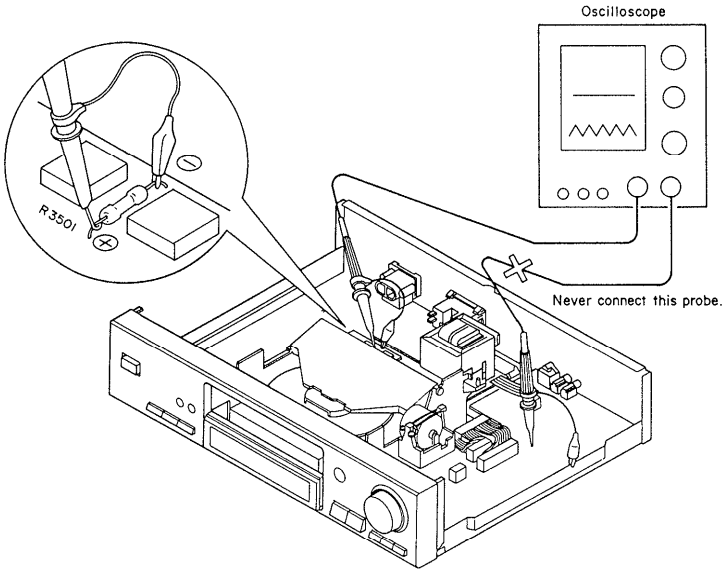




■ MEASUREMENTS AND ADJUSTMENTS

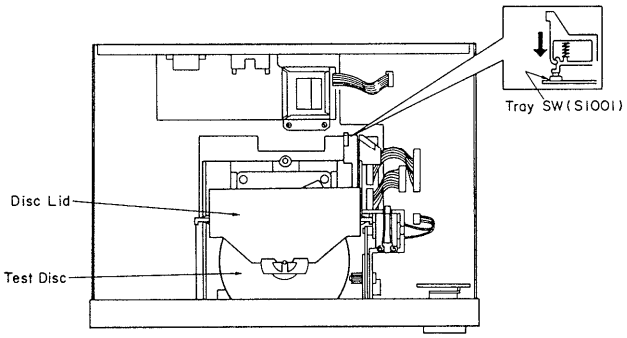
Caution:

1. 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.
2. During laser power or focus offset adjustment, never connect the other probe to the unit.
   (Otherwise the unit's power supply will sustain damage.)



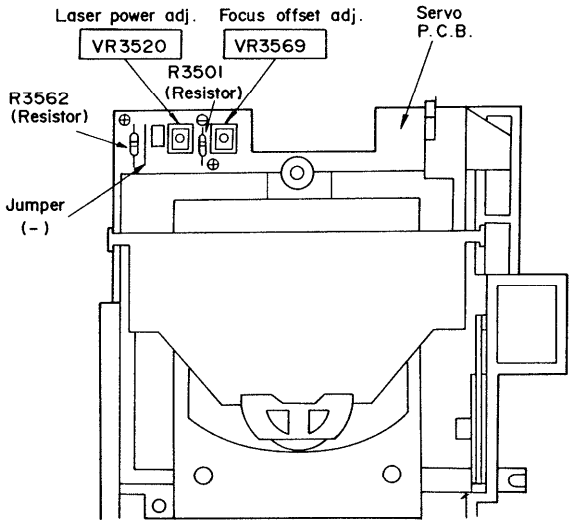
PREPARATION

1. Remove the cabinet (see Ref No. 1 of the disassembly instructions).
2. Remove the disc holder (see Ref No. 7 of the same).
3. Place the test disc on the turntable.
4. Turn "ON" the power switch at the player.
5. Push the bracket of tray SW (S1001) in the direction of the arrow and release it.
   Note: If the test disc fails to rotate, press the tray switch again.



ADJUSTMENT POINTS

• **Servo P.C.B.**



Measuring Instruments

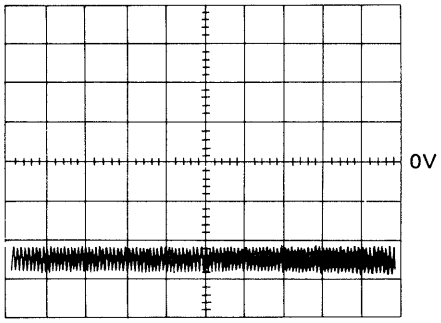
* Playability test disc (SZZP1054C).
* Normal disc (Ordinary musical program disc).
* Dual-beam oscilloscope with bandwidth of 30MHz or better (with EXT trigger and 1: 1 probe).

(1) LASER POWER ADJUSTMENT

1. Connect the oscilloscope's CH1 probe across (+) and (−) of **R3501** (Resistor) on the servo P.C.B.
2. Switch the player power ON, and play track No. 1 on the test disc (SZZP1054C).
3. Adjust **VR3520** so that the voltage is **−50±2mV**.

Oscilloscope setting:

VOLT 20mV
SWEEP.....0.2msec.
INPUT.....DC

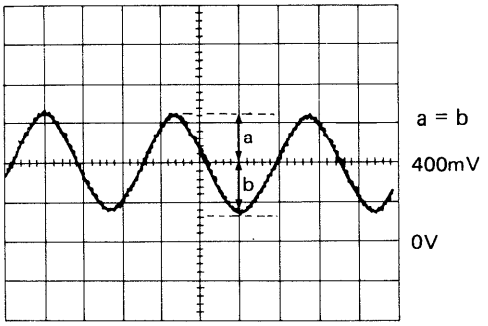


(2) FOCUS OFFSET ADJUSTMENT

1. Connect the oscilloscope's CH1 probe across **R3562** (Resistor) (+) and **Jumper** (−) on the servo P.C.B.
2. Switch the player power ON, and play track No. 1 on the test disc (SZZP1054C).
3. Adjust **VR3569** until the signal amplitude become in the center of **400mV**.

Oscilloscope setting:

VOLT 200mV
SWEEP.....5msec.
INPUT.....DC



(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

* **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).

* **Playability check by test disc**

1. Play the 0.7mm black dot and the 0.7mm wedge on the defect test disc (SZZP1054C) and verify that no sound skip or noise occurs.

■TERMINAL FUNCTION OF IC'S

• IC6501 (482220973234/TDA8808T): Photo diode signal processor

Pin No.	Mark	I/O Division	Function
1	GCHF	I	Gain control input of HF amplifier. Current output from HF amplitude detector
2	Vp	I	Positive supply voltage
3	HFout	O	HF amplifier and equalizer voltage output
4	DET	I	HF detector voltage input
5	Sc	I	Starting up capacitor input
6	Si/$\overline{RD}$	I/O	On/off control (start input); ready signal output (starting up procedure successful)
7	Beg	I	Equalizer reference current input
8	Bgc	I	DC and LF gain control reference current input
9	FOC START	I	Focus normalizing circuit starting current
10	PLLH	O	PLL on hold output
11	$\overline{TL}$	O	Track loss output
12	$\overline{DODS}$	I	Drop out detector suppression input
13	Vext	I	Negative supply connection for FE and FElag output stage; also substrate connection
14	LPF	O	Low pass filter for Iret, used in track loss ($\overline{TL}$) detector and LF gain control

Pin No.	Mark	I/O Division	Function
15	FE	O	Current output of normalized, switched focus error signal
16	FElag	O	Current output of switched focus error signal, intended for lag network
17	LO	O	Laser amplifier current output
18	LM	I	Laser monitor diode input
19	GCLF	I	Gain control input for AC and LF amplifiers. Current output from LF amplitude detector
20	Re2	O	Summation of amplified currents from D3 and D4
21	Re1	O	Summation of amplified currents from D1 and D2
22, 23	D1, D2	I	Current inputs to DC and LF photo diode amplifier
24, 25	D3, D4	I	Current inputs to DC and LF photo diode amplifier
26	HFin	I	Current input to HF amplifier
27	GND	I	Ground connection of device
28	DEC	I	Decoupling input (internal bypass)

• IC6503 (482220973235/TDA8809T): Radial error signal processor

Pin No.	Mark	I/O Division	Function
1	Vp	I	Positive supply voltage
2	Cosc1	I	Frequency setting capacitors for oscillator
3	Cosc2		
4	Rwob	I	Wobble generator input
5	Rosc	I	Biassing resistor for oscillator frequency and internal amplitude
6	$\overline{DIV4}$	I	Radial error digital signal devided by four
7	REdig	O	Digital output of sign (Re2−Re1)
8	B3	I	Input control bits for off-, catch-, play-status and DAC output current
9	B2		
10	B1		
11	B0		
12	Vext (+)	I	Positive external voltage input
13	Vext (−)	I	Negative external voltage input (also substrate connection)
14	GND	I	GND terminal
15	RADout	O	Current output of amplified (Re2−Re1) input currents
16	REin	I	Radial error input
17	RElag	O	Voltage output of integrated (Re2−Re1) input currents

Pin No.	Mark	I/O Division	Function
18	Lag	I	Connection of integrator capacitor for (Re1−Re2) input currents
19	Lead	O	Lead output
20	Vref	I	Internal reference voltage output
21	AGC	I	Gain control input for radial error signal
22	RDAC	O	Biassing resistor for current output for track jumping ($3^1/_2$ bits)
23	offset in	I	Offset control input for radial offset
24	offset off	O	Offset control output for radial offset
25	CLPF	I	Low-pass filter for Re1 and Re2, used for radial offset control
26	CHPF	I	High-pass filter for Re1 and Re2, used for radial offset control
27	Re1	I	Input for amplified currents from photo diodes D1 and D2
28	Re2	I	Input for amplified currents from photo diodes D3 and D4

• IC301 (MN6626): Digital signal processor

Pin No.	Mark	I/O Division	Function
1	AVSS	—	GND terminal
2	IREF	I	Reference current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias terminal (Not used, open)
5	DSLF	I/O	DSL loop filter terminal
6	PLLF	I/O	PLL loop filter terminal
7	AVDD	I	Power supply terminal
8	RSEL	I	RF signal polarity setting terminal (Not used, connected to VDD)
9 ∫ 16	TBUS7 ∫ TBUS0	O	Test terminal
17	FLAG	O	Flag terminal
18	IPFLAG	O	Interpolation flag terminal
19	FCLK	O	Crystal frame clock (Not used, open)
20	BYTCK	O	Byte clock (Not used, open)
21	WDCK	O	Word clock (Not used, open)
22	$\overline{RST}$	I	Reset terminal
23	TX	O	Digital audio signal
24	LDG	O	Lch deglitch signal (Not used, open)
25	RDG	O	Rch deglitch signal (Not used, open)
26	SRDATA	O	Serial data output (MSB first)
27	SCK	O	Serial bit clock output
28	LRCK	O	L/R discriminating signal
29	XCK	O	Crystal OSC terminal (f=16.9344MHz)
30	PMCK	O	Frequency division clock signal (Not used, open) ($f=\frac{1}{192}\times CK=88.2kHz$)
31	CSEL	I	Test terminal (Connected to GND)
32	PSEL		
33	X1	I	Crystal OSC terminal (f=16.9344MHz)
34	X2	O	
35	VSS	—	GND terminal
36	SUBQ	O	Sub-code Q data
37	SQCK	I	Sub-code Q register clock
38	$\overline{CLDCK}$	O	Sub-code frame clock (f=7.35kHz) (Not used, open)

Pin No.	Mark	I/O Division	Function
39	BLKCK	O	Sub-code block clock (f=75Hz)
40	DEMPH	O	De-emphasis ON signal ("H": ON)
41	MEMP	I	Emphasis signal
42	MLD	I	Command load signal ("L": LOAD)
43	MCLK	I	Command clock signal
44	MDATA	I	Command data signal
45	D MUTE	I	Muting input ("H": MUTE)
46	SMCK	O	System clock (f=4.2336MHz)
47	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
48	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG)
49	SUBC	O	Sub-code serial output data (Not used, open)
50	SBCK	I	Sub-code serial output clock (Not used, open)
51	$\overline{TRON}$	I	Tracking servo ON signal ("L": ON)
52	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo)
53	PC	O	Turntable motor ON signal ("L": ON)
54	ECM	O	Turntable motor drive signal (Forced mode)
55	ECS	O	Turntable motor drive signal (Servo error signal)
56	VDD	I	Power supply terminal
57	$\overline{TEST}$	I	Test terminal (Normal: "H")
58	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)
59	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz)
60	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
61	DO	I	Drop-out detection signal ("H": Drop-out) (Not used, connected to GND)
62	EFM	O	EFM signal (Not used, open)
63	PCK	O	PLL extract clock (f=4.3218MHz)
64	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)

• IC401 (MN1871617PKU): System control & FL drive

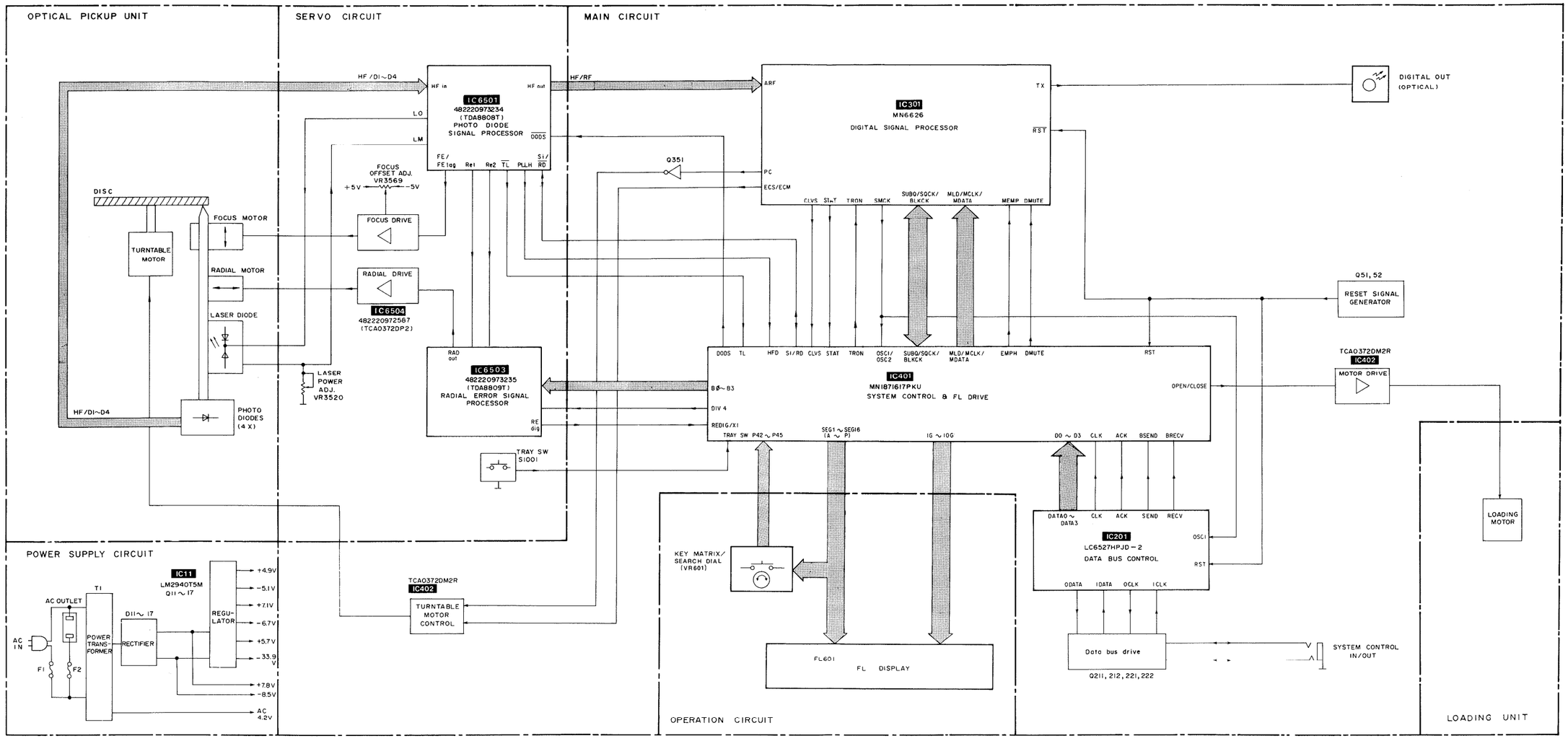
Pin No.	Mark	I/O Division	Function
1	VDD	I	Power supply terminal
2	OSC2	I	System clock input (f=4.2336MHz)
3	OSC1		
4	VSS	—	GND terminal
5	XI	I	Radial error digital signal
6	XO	O	Not Used, open
7	P47	I	
8 ∫ 12	P46 ∫ P42	I	Key return signal
13	SYNC REC	O	Synchro rec control
14	REC ENABLE	I	
15 ∫ 18	D3 ∫ D0	—	Not used, open
19	CLK	—	Not used, open
20	ACK		
21	BSEND		
22	BRECV		
23	P27		
24	OPEN/ CLOSE	O	Loading motor control signal
25	DMUTE	O	Muting output ("H": MUTE)
26	SI/RD	I/O	On/off control and ready signal
27 ∫ 30	B3 ∫ B0	O	Control bits for off-, catch-, play-status and DAC output current
31	REMOCON	I	Remote control signal
32	REDIG	I	Radial error digital signal
33	MDATA	O	Command data signal
34	MCLK	O	Command clock signal
35	MLD	O	Command load signal ("L": LOAD)

Pin No.	Mark	I/O Division	Function
36	TL	I	Track loss input
37	RST	I	Reset terminal
38	SQCK	O	Sub-code Q register clock
39	SUBQ	I	Sub-code Q data
40	TRAY SW	I	Disc holder open/close det. terminal
41	BLKCK	I	Sub-code block clock (f=75Hz)
42	DODS	O	Drop-out detect signal
43	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
44	P95	—	Not used, open
45	CLVS	I	Spindle servo phase synchro signal ("H": CLV, "L": Rough servo)
46	TRON	O	Tracking servo ON signal ("L": ON)
47	DIV4	O	Radial error digital signal devided by four
48	EMPH	O	Emphasis signal
49	HFD	I	PLL on hold input
50	CM	—	Not used, connected to GND
51	130Hz	—	Not used, open
52	VPP	I	Power supply terminal for FL drive
53 ∫ 56	16G ∫ 13G	—	Not used, open
57 ∫ 68	12G ∫ 1G	O	FL digit signal
69 ∫ 84	A/SEGO ∫ P/SEGP	O	FL segment signal and key scan signal

■ BLOCK DIAGRAM

Note)

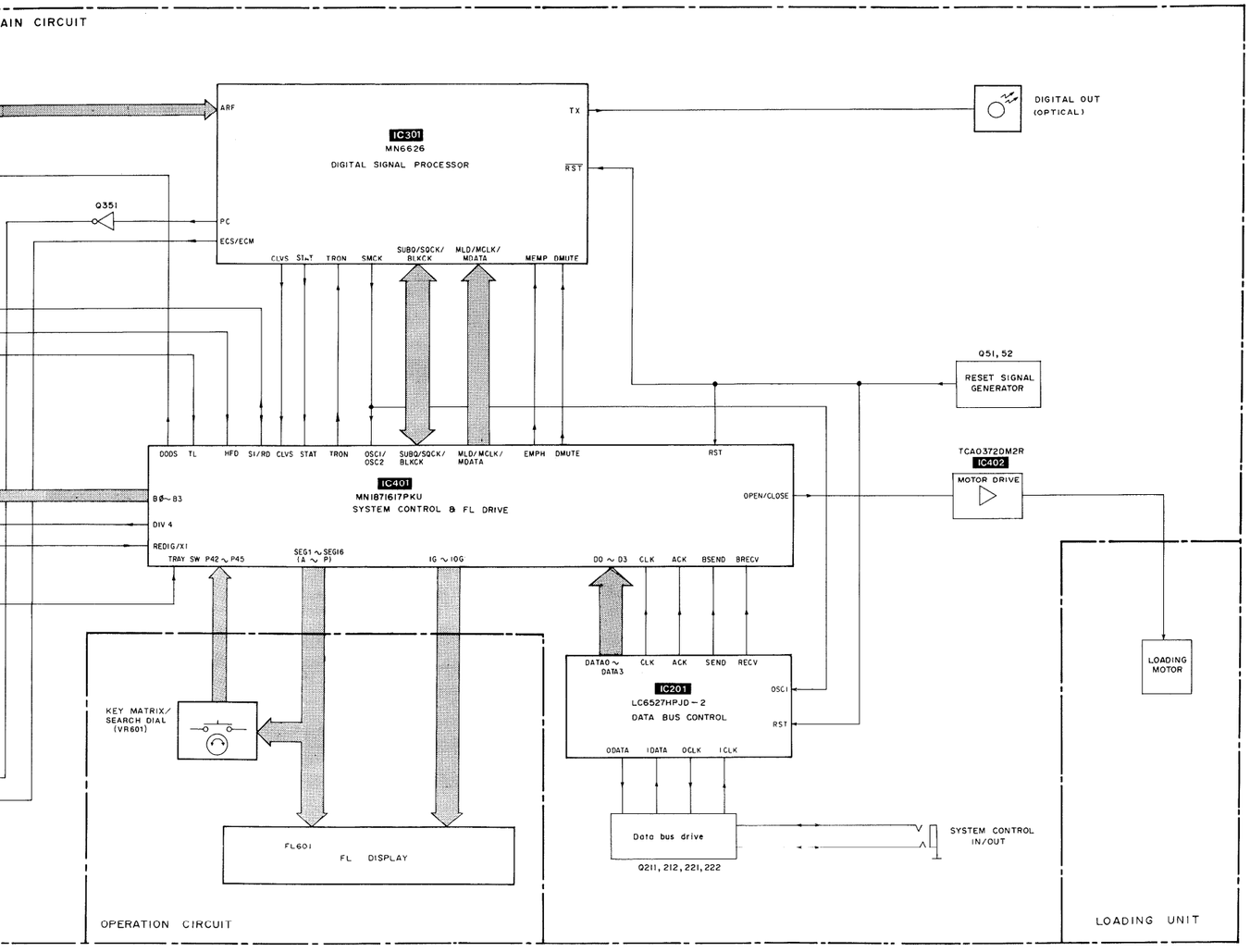
• ——► Audio signal.



RAD out	: Current output of integrated (Re2−Re1) input currents.	RE dig (RE DIG/X1)	: Radial error digital.	P42~45	: Key return signal.
B0~B3	: Control bits for radial circuit.	Si/RD	: On/off control for laser supply and focus circuit.	1G~10G	: FL digit signal.
DODS	: Drop out detect signal.	TL	: Track loss signal.	SEG1~16	: FL segment signal and key scan signal.
D1~D4	: Photodiode currents.	Div4	: Radial error digital devided by four.	MCLK	: Data clock for MDATA.
FE	: Focus error signal.	HF/RF/ARF	: RF (Audio) signal.	SUBQ	: Sub-code Q data.
FE lag	: Focus error signal for LAG network.	TRAY SW	: Disc holder open/close det. terminal.	BLKCK	: Sub-code Q data block clock (75Hz).
HF out	: HF amplifier and equalizer voltage output.	CLVS	: Spindle servo phase synchro signal.	SQCK	: Sub-code Q register clock.
HFin	: HF current input.	STAT	: Status command for CRC etc.	RST	: Reset command (Active Low).
LM	: Laser monitor diode input.	DMUTE	: Data mute command.	TRON	: Tracking servo ON command (Active Low).
LO	: Laser amplifier current output.	MDATA	: Mode control data.	ECS/ECM	: Turntable motor drive signal.
Re1	: Radial error signal 1 (summation of amplified currents D3 and D4).	MLD	: Load command for mode control data (Active Low).	PC	: Turntable motor ON command (Active Low).
Re2	: Radial error signal 2 (summation of amplified currents D1 and D2).	PLLH/HFD	: PLL on hold signal.	SMCK (OSC1/OSC2)	: System clock (4.2336MHz).

MEMP/EMPH	: De-emphasis command (Active High).
OPEN/CLOSE	: Loading motor control signal.
TX	: Digital audio (optical) signal.

AIN CIRCUIT



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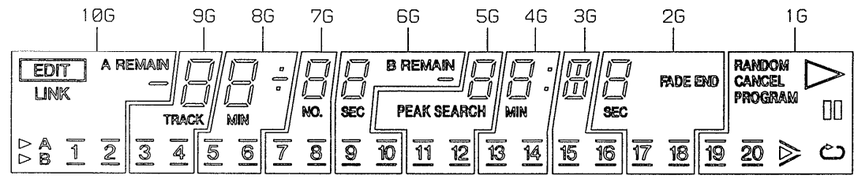
P42~45 : Key return signal.
1G~10G : FL digit signal.
SEG1~16 : FL segment signal and key scan signal.
MCLK : Data clock for MDATA.
SUBQ : Sub-code Q data.
BLKCK : Sub-code Q data block clock (75Hz).
SQCK : Sub-code Q register clock.
RST : Reset command (Active Low).
TRON : Tracking servo ON command (Active Low).
ECS/ECM : Turntable motor drive signal.
PC : Turntable motor ON command (Active Low).
SMCK (OSC1/OSC2) : System clock (4.2336MHz).

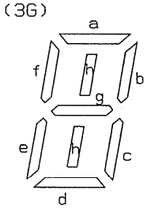
MEMP/EMPH : De-emphasis command (Active High).
OPEN/CLOSE : Loading motor control signal.
TX : Digital audio (optical) signal.

■ INTERNAL CONNECTION OF FL

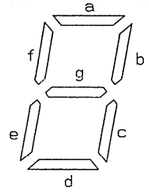
• Grid connection diagram



(3G)



(9G~4G, 2G, 1G)



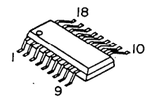
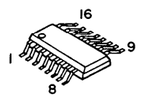
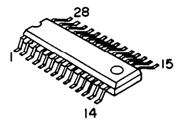
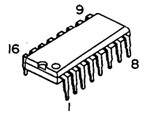
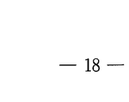
• Anode connection table

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	▷ (A)	a	a	a	a	a	a	a	a	▷
P2	▷ (B)	b	b	b	b	b	b	b	b	▯▯
P3	LINK	c	c	c	c	c	c	c	c	↻
P4	–	d	d	d	d	d	d	d	d	＼
P5	–	e	e	e	e	e	e	e	e	▷
P6	EDIT A B	f	f	f	f	f	f	f	f	／
P7	–	g	g	g	g	g	g	g	g	CANCEL
P8	–	TRACK	MIN	NO.	SEC	SEARCH	MIN	h	SEC	–
P9	⬭	–	⬭	–	⬭	PEAK	–	–	FADE END	RANDOM
P10	A REMAIN	–	▫ ▫	–	B REMAIN	–	▫ ▫	–	–	PROGRAM
P11	(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)
P12	1	3	5	7	9	11	13	15	17	19
P13	(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)
P14	(2)	(4)	(6)	(8)	(10)	(12)	(14)	(16)	(18)	(20)
P15	2	4	6	8	10	12	14	16	18	20
P16	(2)	(4)	(6)	(8)	(10)	(12)	(14)	(16)	(18)	(20)

• Pin connection

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
CONNECTION	F1	F1	NP	NP	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	CP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	NF1	NF2	F2

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

LC6527HPJD-2 	TCA0372DM2R 	 482220973234 (TDA8808T) 482220973235 (TDA8809T)		482220972587 (TCA0372DP2) 
MN6626 	MN1871617PKU 	LM2940T5M 	DTC114ESTP DTA124ESTP	
2SA1309QRSTA 2SC3311QRSTA 	2SB1238QSTV6 2SD1862QRTV6 	532213044349 (BC635) 	532213042136 (BC848C) 	MA4160MTA MA4062HTA 482213081101 (HZ7C2)
1SS254TA MA700ATA 	1SR139-200TA 	MA4039MTA MA4082MTA 		

■ SCHEMATIC DIAGRAM

(Parts list on pages 30, 31, 36, 37.)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S613** : Play (▷ PLAY) switch.
- **S614** : Skip (I◀◀ SKIP) switch.
- **S616** : Program (PROGRAM) switch.
- **S619** : Stop (■ STOP) switch.
- **S620** : Skip (▶▶I SKIP) switch.
- **S623** : Tape side select (SIDE A/B) switch.
- **S624** : Random play (RANDOM) switch.
- **S626** : Disc holder open/close (▲ OPEN/CLOSE) switch.
- **S627** : Pause (▮▮ PAUSE) switch.
- **S628** : Repeat play (REPEAT) switch.
- **S630** : Edit mode (NORMAL, TAPE LENGTH) switch.
- **S636** : Power "STANDBY ⏻ /ON" (POWER STANDBY ⏻ /ON) switch.
- **S1001** : Tray (OPEN/CLOSE) switch.

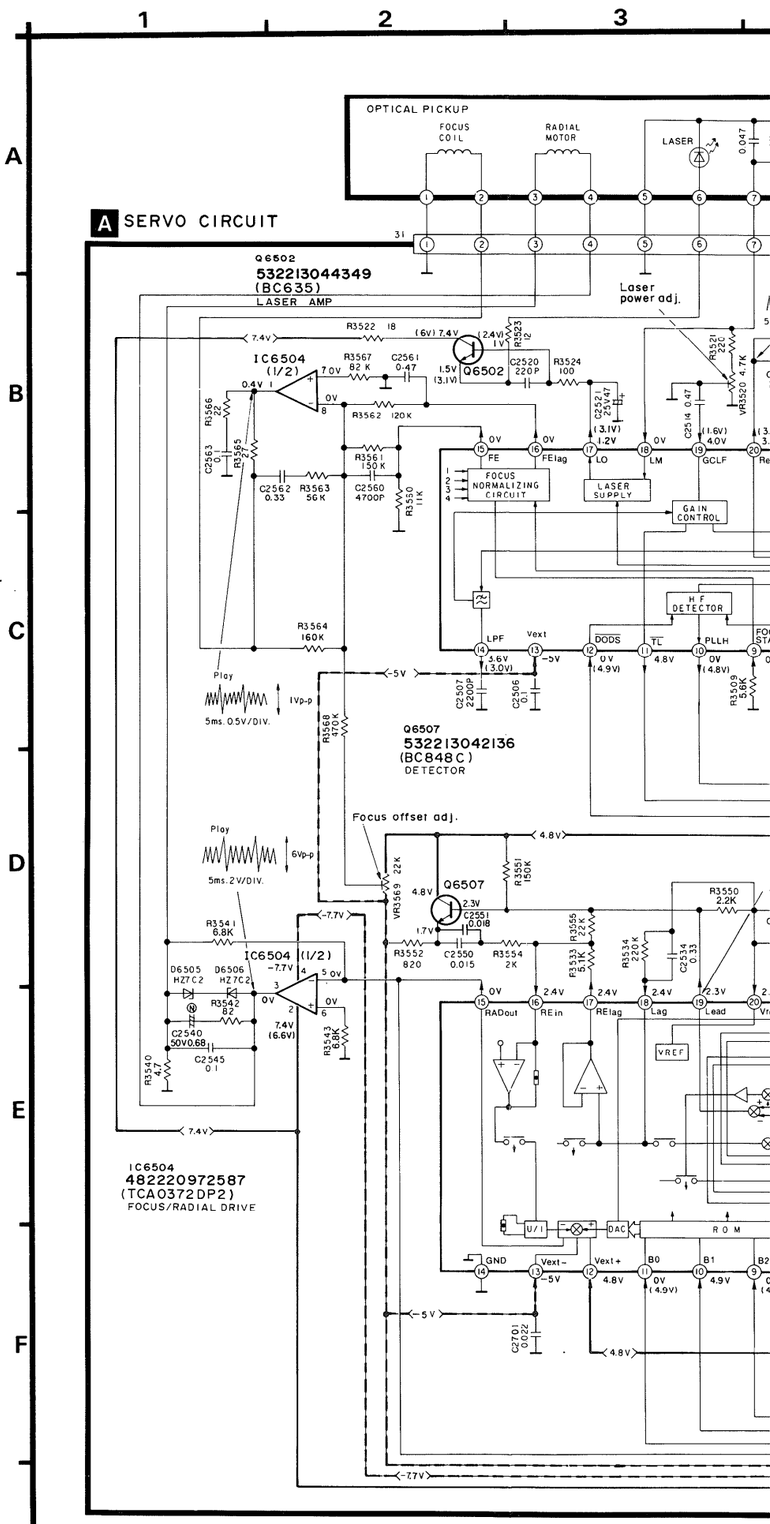
- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  ∗The parenthesized are the values of voltage generated during playing (Test disc 1kHz, L+R, 0dB), others are voltage values in stop mode.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Part No.	Original Part No.	Supply Part No.
IC11	LM2940T5M	LM2940T5

- ——— / – – – – : Positive voltage lines and negative voltage lines.
  ⟿ : Audio signal lines.

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.



■ SCHEMATIC DIAGRAM

(Parts list on pages 30, 31, 36, 37.)

(This schematic diagram may be modified at any time with development of new technology.)

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Part No.	Original Part No.	Supply Part No.
IC11	LM2940T5M	LM2940T5

- ——— / – – – – – : Positive voltage lines and negative voltage lines.
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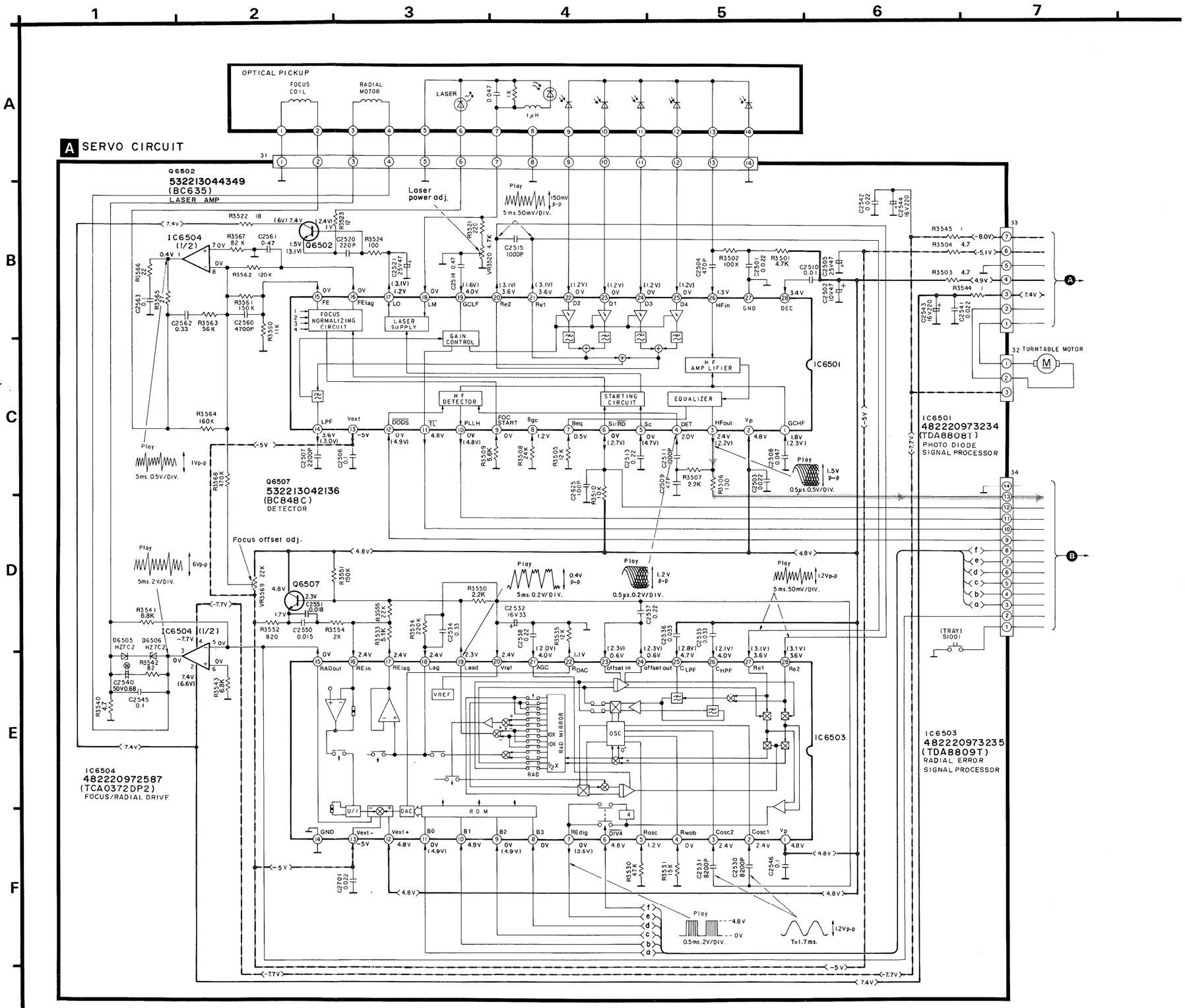


B FL/OPERATION CIRCUIT

FL601 (RSL0078-F)

FL DISPLAY

FC601 FC602

VR601 (SEARCH DIAL)

C SEARCH CIRCUIT

D POWER SWITCH CIRCUIT

S636 (POWER)

FC651

S619 (■ STOP)
S627 (❚❚ PAUSE)
S613 (▶ PLAY)
S626 (▲ OPEN/CLOSE)
S620 (▶▶ SKIP)
S614 (◀◀ SKIP)
S628 (REPEAT)
S616 (PROGRAM)
S624 (RANDOM)
S630 (TAPE LENGTH)
S623 (SIDE A/B)

D601~603, 605~607, D611
1SS254TA

D611 D607 D606 D605 D603 D602 D601

FC613

CN611 CN612 CN614

E MAIN CIRCUIT

CN431 LOADING MOTOR

IC402 (1/2)

CN12

IC402 (1/2)

IC402
TCA0372DM2R
MOTOR DRIVE

CN401

CN413 CN411 CN412 CN414

D401
1SR139-200TA

IC401
MN1871617PKU
SYSTEM CONTROL & FL DRIVE

IC301
MN6626
DIGITAL SIGNAL PROCESSOR

IC301

Q351
DTA124ESTP
MOTOR CONTROL

X321 (16.9MHz)

17 18 19 20 21 22 23 24 25 26

D401 ISR139-200TA

Q211, 221 DTC114ESTP BUS LINE DRIVE

Q212, 222 2SC3311QRSTA BUS LINE DRIVE

IC201 LC6527HPJD-2 MICRO COMPUTER (BUS LINE DRIVE)

Q51, 52 2SC3311QRSTA RESET SIGNAL GENERATOR

IC301 MN6626 DIGITAL SIGNAL PROCESSOR

Q11, 15 2SA1309QRSTA REGULATOR

Q16 2SB1238QSTV6 REGULATOR

Q17 2SD1862QSTV6 REGULATOR

IC11 LM2940T5M REGULATOR

ICP11 ICP11, 12 SRUN15T

D11~17 ISR139-200TA

JK202 IN

JK201 OUT

SYSTEM CONTROL

JK301 DIGITAL OUT (OPTICAL)

F POWER SUPPLY CIRCUIT FOR [E,EG] AREAS.

AC 230V (50/60Hz)

AC OUTLET (UNSWITCHED)

F POWER SUPPLY CIRCUIT FOR [EB] AREA.

ICP1 ICP1,2 SRUN38T

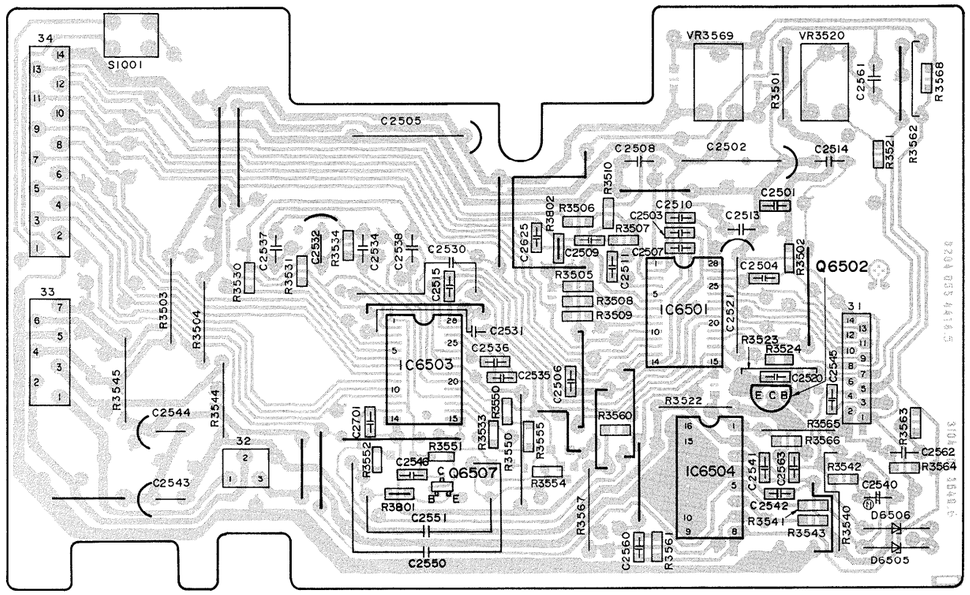
ICP2

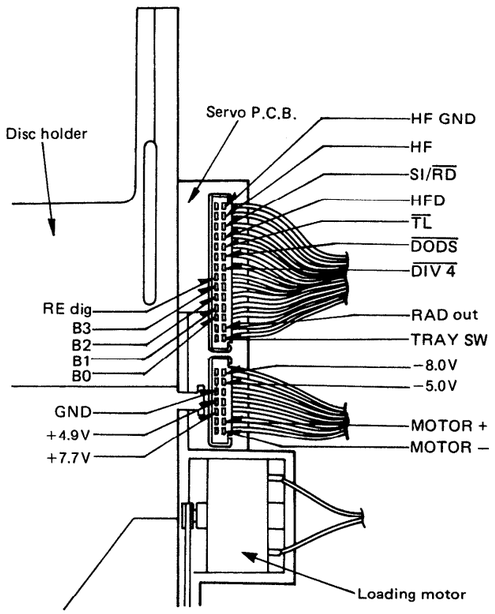
AC 230~240V (50/60Hz)

AC OUTLET (UNSWITCHED)

■ PRINTED CIRCUIT BOARDS

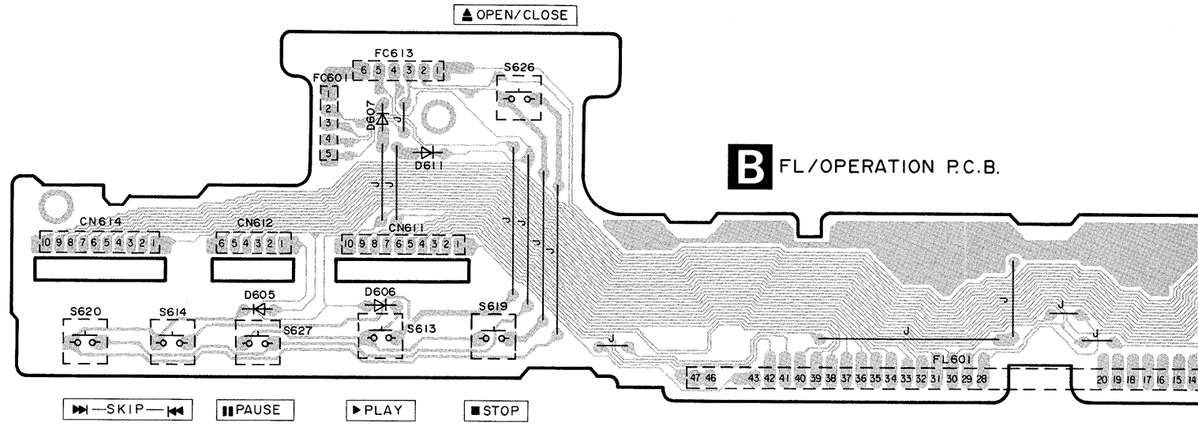
A SERVO P.C.B.



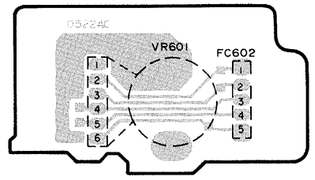


Note: Use connector pins to check servo circuit voltages and waveforms.

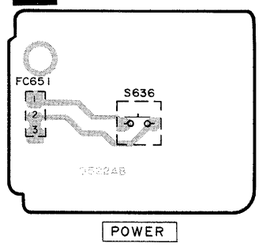
B FL/OPERATION P.C.B.



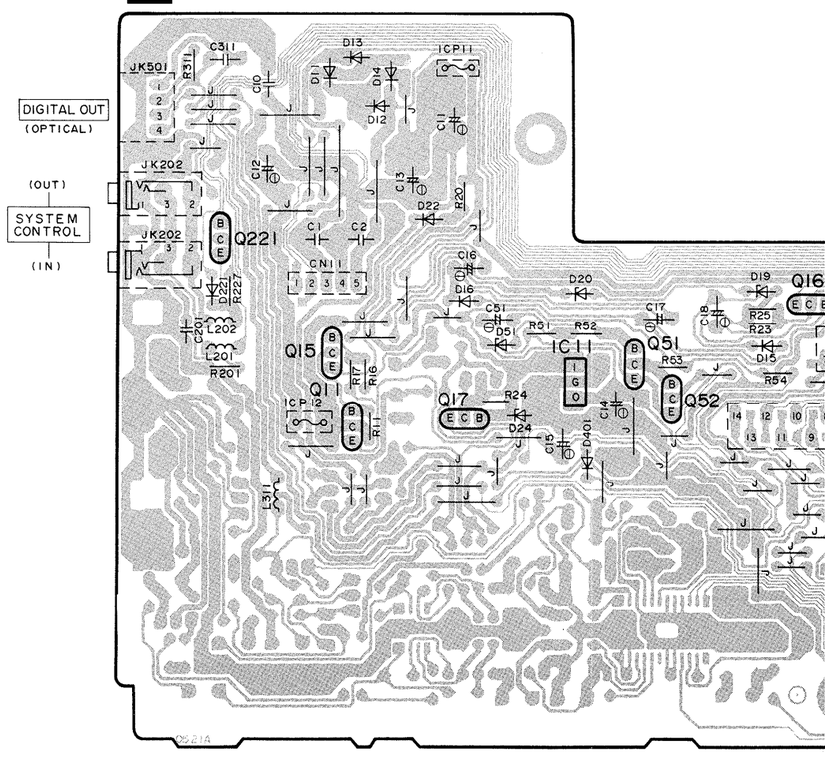
C SEARCH P.C.B.



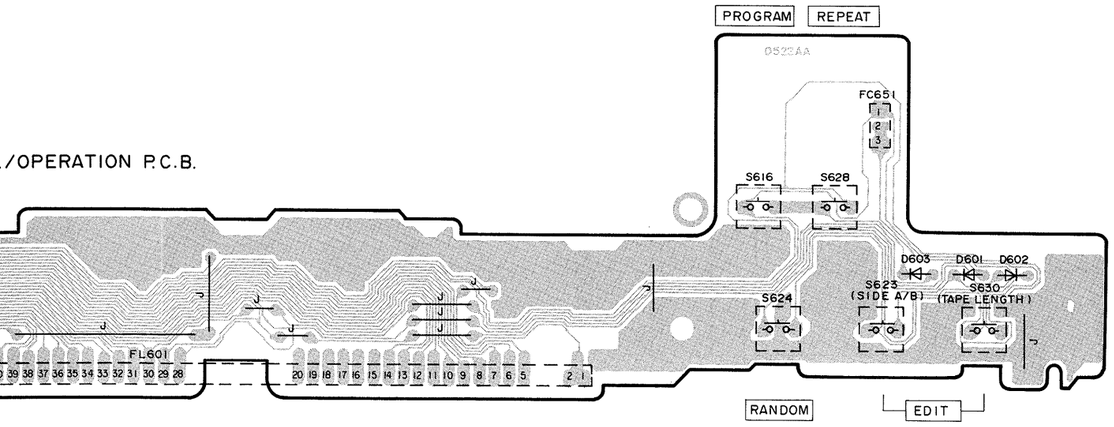
D POWER SWITCH P.C.B.

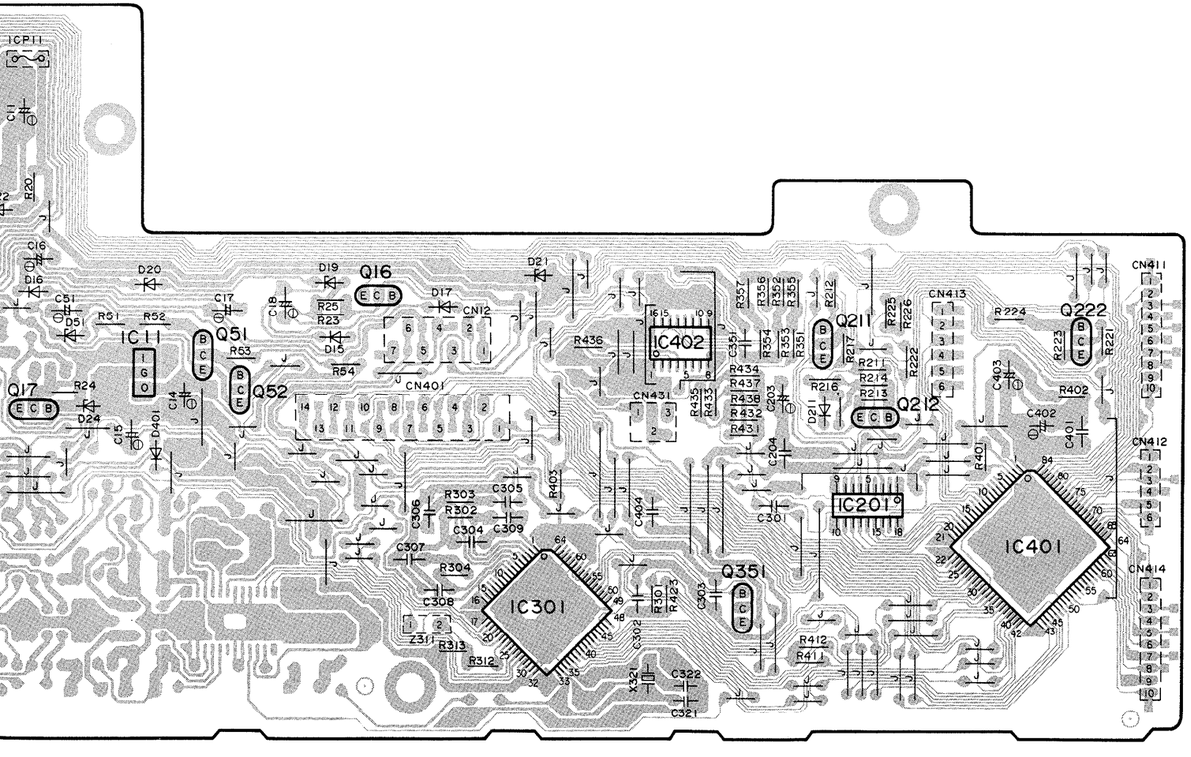


E MAIN P.C.B.

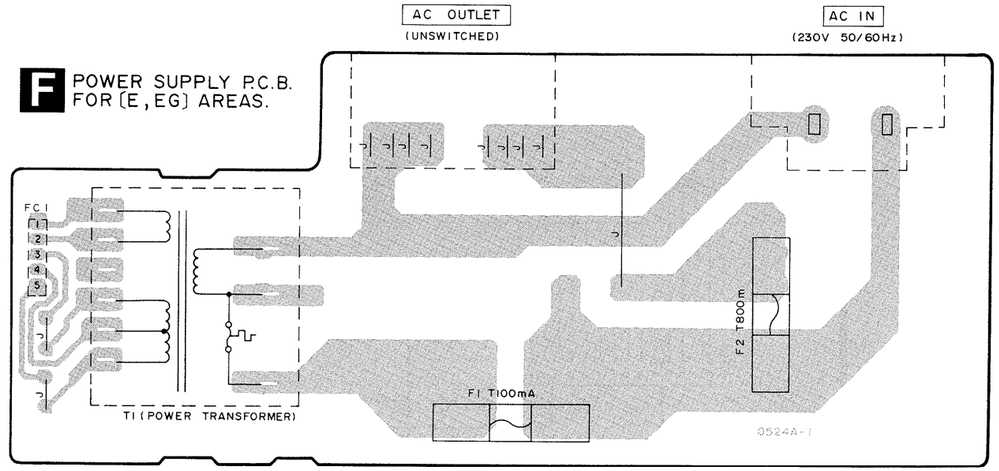


10 11 12 13 14 15 16 17 18 19

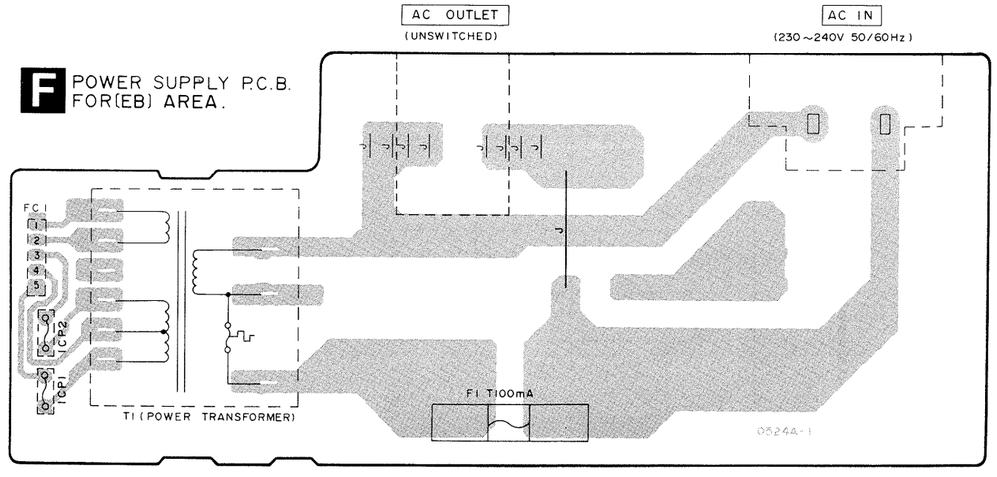




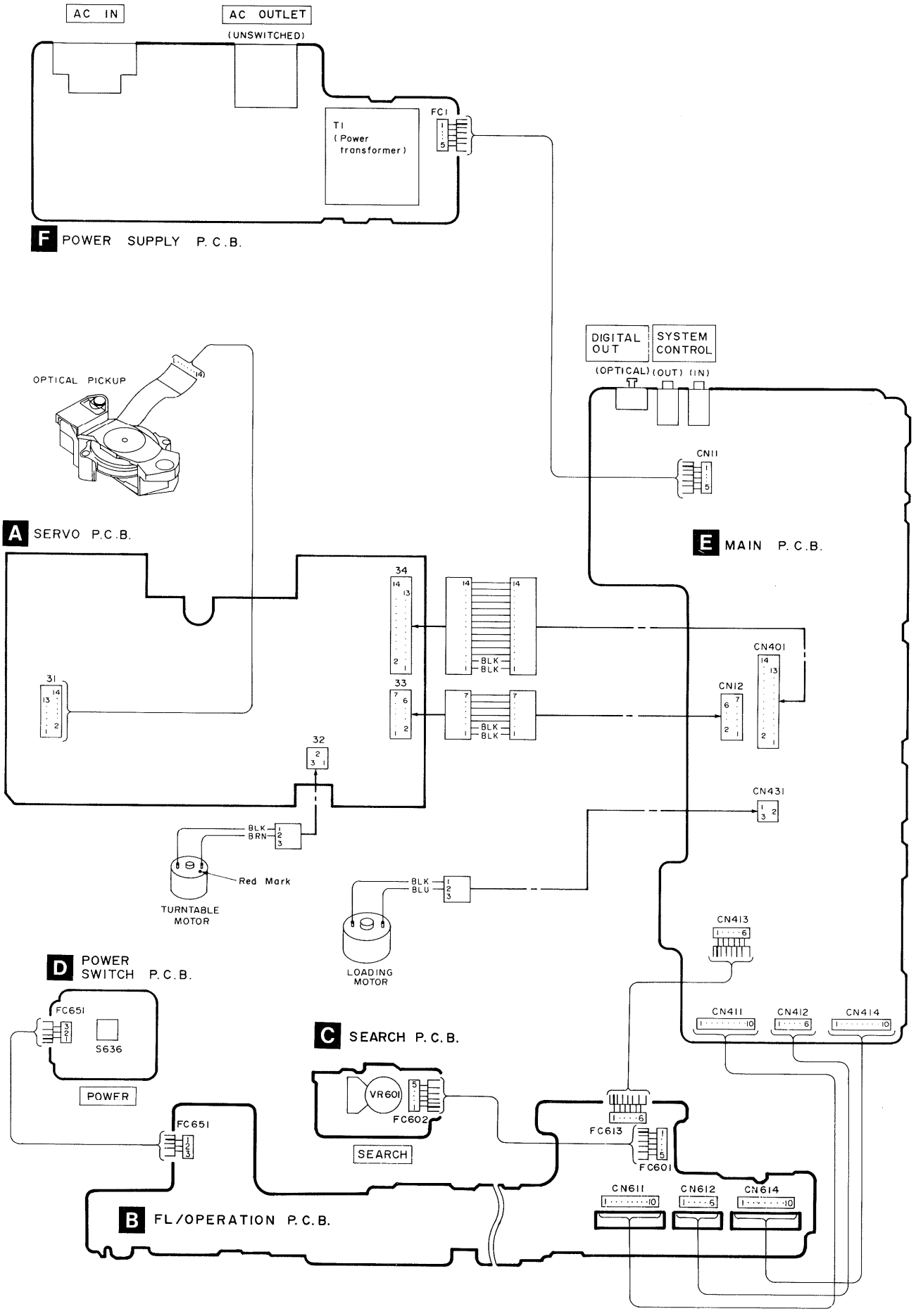
F POWER SUPPLY P.C.B. FOR (E, EG) AREAS.



F POWER SUPPLY P.C.B. FOR (EB) AREA.



■ WIRING CONNECTION DIAGRAM



■ REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* 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.
* [MB] Indicates in Remarks columns parts that are supplied by MBV.
* Warning: This product uses a laser diode. Refer to caution statements on page 3.
* ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	LM2940T5	IC, REGULATOR	
IC201	LC6527HPJD-2	IC, DATA BUS CONT.	[MB]
IC301	MN6626	IC, DIGITAL S. P.	
IC401	MN1871617PKU	IC, SYSTEM CONTROL&FL DRIVE	[MB]
IC402	TCA0372DM2R	IC, MOTOR DRIVE	
		TRANSISTOR(S)	
Q11	2SA1309A-R	TRANSISTOR	
Q15	2SA1309A-R	TRANSISTOR	
Q16	2SB1238QSTV6	TRANSISTOR	
Q17	2SD1862QRTV6	TRANSISTOR	
Q51, 52	2SC3311A-Q	TRANSISTOR	
Q211	DTC114ESTP	TRANSISTOR	
Q212	2SC3311A-Q	TRANSISTOR	
Q221	DTC114ESTP	TRANSISTOR	
Q222	2SC3311A-Q	TRANSISTOR	
Q351	DTA124ESTP	TRANSISTOR	
		DIODE(S)	
D11-17	1SR139-200TA	DIODE	⚠
D19, 20	MA4160M	DIODE	
D21	MA4082MTA	DIODE	
D22	1SS254TA	DIODE	
D24	MA4062-H	DIODE	
D51	MA4039MTA	DIODE	
D211	MA700	DIODE	
D221	MA700	DIODE	
D401	1SR139-200TA	DIODE	
D601-603	1SS254TA	DIODE	
D605-607	1SS254TA	DIODE	
D611	1SS254TA	DIODE	
		I. C. PROTECTOR(S)	
ICP1, 2	SRUN38T	IC PROTECTOR	(EB)⚠
ICP11, 12	SRUN15	IC PROTECTOR	
		VARIABLE RESISTOR(S)	
VR601	EVQWVN00004E	V. R, SEARCH DIAL	

Ref. No.	Part No.	Part Name & Description	Remarks
		COIL(S)	
L201, 202	RLQZN3R3KL-D	COIL	[MB]
L311	RLQZN1R0KL-D	COIL	
		TRANSFORMER(S)	
T1	RTP1K4E013	POWER TRANSFORMER	⚠[MB]
		COMPONENT COMBINATION(S)	
Z311	EXCELDR35V	COMBINATION PART	
		OSCILLATOR(S)	
X321	SVQAT169T-S	OSCILLATOR	[MB]
		DISPLAY TUBE	
FL601	RSL0078-F	DISPLAY TUBE	[MB]
		FUSE(S)	
F1	XBA2C01TB0	FUSE 250V T100mA	⚠
F2	XBA2C08TB0	FUSE 250V T800mA	(E, EG)⚠
		SWITCH(ES)	
S613	EVQ21405R	SW, PLAY	
S614	EVQ21405R	SW, SKIP(R)	
S616	EVQ21405R	SW, PROGRAM	
S619	EVQ21405R	SW, STOP	
S620	EVQ21405R	SW, SKIP(F)	
S623	EVQ21405R	SW, SIDE A/B(EDIT)	
S624	EVQ21405R	SW, RANDOM	
S626	EVQ21405R	SW, OPEN/CLOSE	
S627	EVQ21405R	SW, PAUSE	
S628	EVQ21405R	SW, REPEAT	
S630	EVQ21405R	SW, NORMAL:TAPE LENGTH(EDIT)	
S636	EVQ21405R	SW, POWER STANDBY/ON	
		CONNECTOR(S) AND SOCKET(S)	
CN11	RJS1A6605	CONNECTOR(5P)	[MB]

Ref. No.	Part No.	Part Name & Description	Remarks
CN12	RJT001H007	CONNECTOR(7P)	MB
CN401	RJT001H014	CONNECTOR(14P)	MB
CN411	RJU003K010M1	SOCKET(10P)	
CN412	RJU003K006M1	SOCKET(6P)	
CN413	RJS1A6606	CONNECTOR(6P)	MB
CN414	RJU003K010M1	SOCKET(10P)	
CN431	RJT001H003	CONNECTOR(3P)	MB
CN611	RJT003K010M1	CONNECTOR(10P)	
CN612	RJT003K006M1	CONNECTOR(6P)	
CN614	RJT003K010M1	CONNECTOR(10P)	
		JACK(S)	
JK201	RJJ33T01	CONTROL(TO DECK)	
JK202	RJJ33T01	REMOTE-CONTROL	
JK301	TOTX174-A	OPTICAL OUT	
		EARTH CONTACT(S)	
GND1	SUSD144	EARTH CONTACT	
		FLAT CABLE(S)	
FC1	RWJ1805130KQ	FLAT CABLE(5P)	MB
FC601	RWJ0905050KK	FLAT CABLE(5P)	MB
FC613	RWJ1806100KQ	FLAT CABLE(6P)	
FC651	RWJ1803050KK	FLAT CABLE(3P)	MB
		<SERVO P. C. B.>	
		INTEGRATED CIRCUIT(S)	
IC6501	482220973234	I. C, PHOTO DIODE S. P.	MB
IC6503	482220973235	I. C, RADIAL ERROR S. P.	MB
IC6504	482220972587	I. C, FOCUS/RADIAL DRIVE	MB
		TRANSISTOR(S)	
Q6502	532213044349	TRANSISTOR	MB
Q6507	532213042136	TRANSISTOR	MB
		DIODE(S)	
D6505	482213081101	DIODE	MB
D6506	482213081101	DIODE	MB
		VARIABLE RESISTOR(S)	
VR3520	482210110685	V. R, LASER POWER ADJ.	MB
VR3569	482210020522	V. R, FOCUS OFFSET ADJ.	MB
		SWITCH	

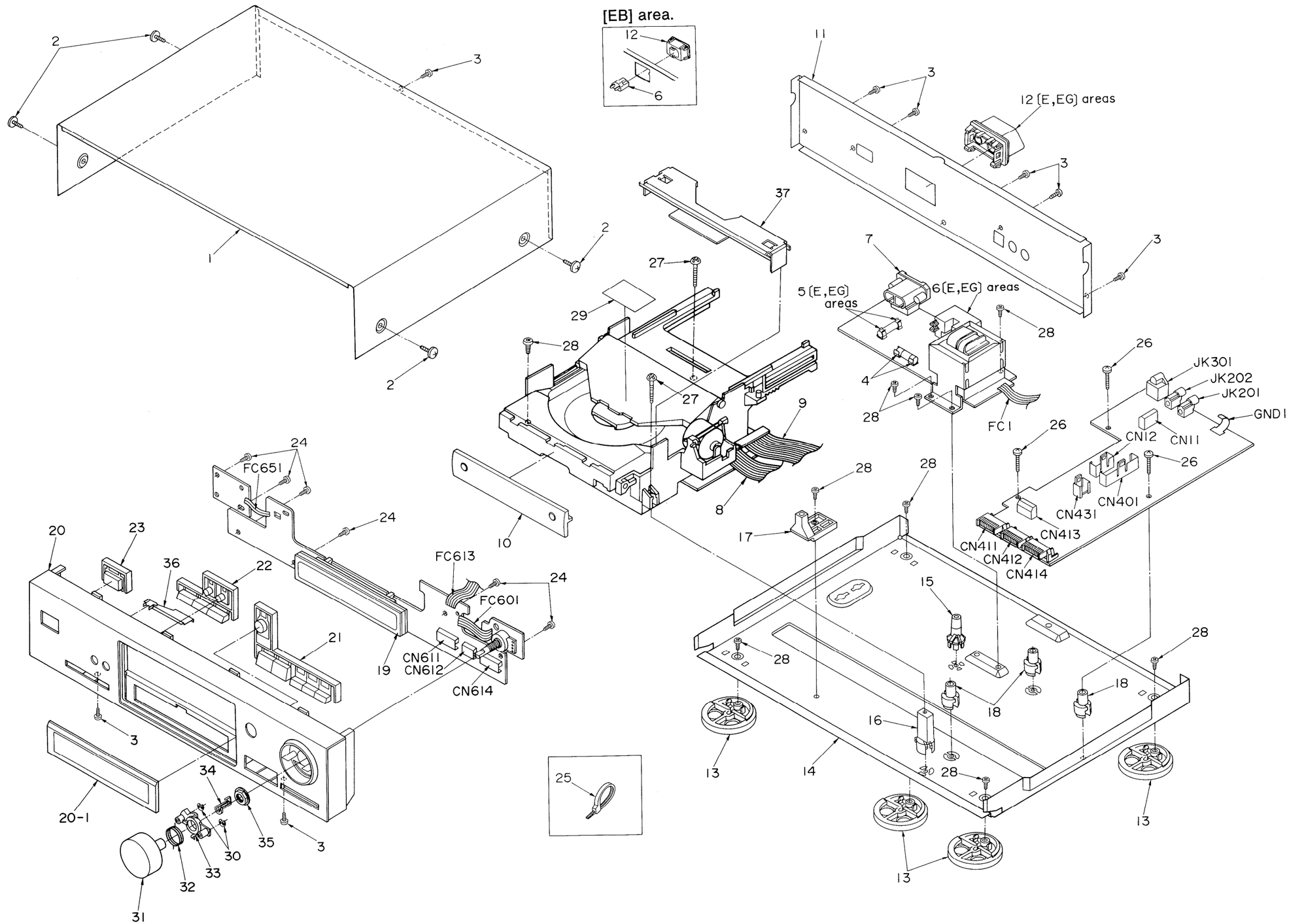
Ref. No.	Part No.	Part Name & Description	Remarks
S1001	482227612523	SW, TRAY	MB
		CABINET AND CHASSIS	
1	RKM0153-K	TOP CASE	MB
2	SNE2129-1	SCREW	
3	XTBS3+8JFZ1	SCREW	
4	EYF52BC	FUSE HOLDER	
5	EYF52BC	FUSE HOLDER	(E, EG)
6	RJS1A4802-B	AC OUTLET	(EB)⚠
6	RJS1A4902-B	AC OUTLET	(E, EG)⚠
7	SJS9236	AC INLET	⚠
8	REX0007	CONNECTOR ASS'Y(7P)	MB
9	REX0285	CONNECTOR ASS'Y(14P)	MB
10	RGK0326-K	TRAY ORNAMENT	MB
11	RFKHPJ38AE	REAR PANEL ASS'Y	(E, EG) MB
11	RFKHPJ38AEB	REAR PANEL ASS'Y	(EB) MB
12	RJS1A4802-A	AC OUTLET COVER	(EB)
12	RJS1A4902-A	AC OUTLET COVER	(E, EG)
13	RKA0042B	FOOT	MB
14	RFKJPJ28AE	CHASSIS ASS'Y	(E, EG) MB
14	RMK0115	CHASSIS	(EB) MB
15	RMR0020	SPACER(A)	MB
16	RMR0021	SPACER(B)	MB
17	RMR0471	SPACER(C)	MB
18	RMR0377	P. C. B. SUPPORT	MB
19	RMR0421	VFD HOLDER	MB
20	RFKGPJ38AE	FRONT PANEL ASS'Y	MB
20-1	RKW0137	WINDOW	
21	RGU0516-K1	MAIN BUTTON	
22	RGU0517-K	SUB KEY BUTTON	
23	RGU0437-K1	POWER BUTTON	
24	XTBS26+8J	SCREW	
25	SHR328	FASTENER	
26	XTB3+20JFZ	SCREW	
27	XTB3+35JFZ	SCREW	
28	XTB3+8JFZ	SCREW	
29	RQLS0022	LASER CAUTION LABEL	MB
30	CSTW-2	RETAINING RING	
31	RGW0114-K	SHUTTLE KNOB	
32	RME0082	RETURN SPRING	
33	RMR0418	SPRING HOLDER	
34	SHR9451	PLASTIC BEARING	
35	SNE4021	NUT	
36	RMA0492	EARTH PLATE	MB
37	RMA0491	ANGLE	MB

Ref. No.	Part No.	Part Name & Description	Remarks
		LOADING UNIT PARTS	
101	482244450603	TRAY	
102	482232550176	GROMMET, CABLE	
103	482232550177	GROMMET, CABLE	
104	482246692251	PLATE	
106	482235810115	BELT, DRIVING	
107	482252232359	WHEEL, GEAR	
108	482253251518	RING, RUBBER	
109	482240261081	GUIDE	
111	482240261132	GUIDE	
112	482252890638	ROLLER	
113	482249251902	SPRING, COMPRES.	
114	482246661587	FOAM	
116	482240261107	LEVER	
117	482249263659	SPRING, BLADE	
118	482244460568	LID	
119	482249232883	SPRING, TENSION	
121	482252890639	ROLLER	
122	482246692257	PLATE	
123	482240261207	HOLDER	
124	482252040177	BALL	
126	482253080503	RING, PRESSURE	
127	482269130209	OPTICAL PICKUP UNIT	
128	482240261196	SUPPORT	
129	482249263746	SPRING, CLAMPING	
131	482236120998	MOTOR	
132	482240250244	BRACKET	
133	482249251935	SPRING, COMPRES.	
134	482246450715	CHASSIS	
		PACKING MATERIAL	
P1	RPG0777	PACKING CASE	MB
P2	RPN0430	CUSHION	MB
P3	RMR0024	LOCK SHAFT	MB
P4	RQCA0059	LOCK CAUTION SHEET	MB
P5	XZB60X60A01	PROTECTION BAG (UNIT)	
P6	XZB23X20C03	POLYETHYLENE BAG (O. P.)	
P7	XZB23X35C03	POLYETHYLENE BAG (F. B.)	
P8	XZB26X17C03	POLYETHYLENE BAG (CORD)	
P9	RPH0026	PROTECTION SHEET	
		ACCESSORIES	

Ref. No.	Part No.	Part Name & Description	Remarks
A1	RQF0876	INSTRUCTION MANUAL ASS' Y	(E) MB
A1	RQF0877	INSTRUCTION MANUAL ASS' Y	(EB) MB
A1	RQF0878	INSTRUCTION MANUAL ASS' Y	(EG) MB
A1-1	RFKSPJ38AE	INSTRUCTION MANUAL	(E) MB
A1-1	RQT0779-B	INSTRUCTION MANUAL	(EB) MB
A1-1	RQT0780-D	INSTRUCTION MANUAL	(EG) MB
A1-2	RQA0013	GUARANTEE CARD	
A1-3	RQCB0169	SERVICE SHOP LIST	
A2	SJA187	AC POWER SUPPLY CORD	(E, EG) ⚠
A2	SJA188	AC POWER SUPPLY CORD	(EB) ⚠
A3	SJP2281	OPTICAL-FIBER CABLE	
A4	SJP2257T	L-TYPE CABLE	

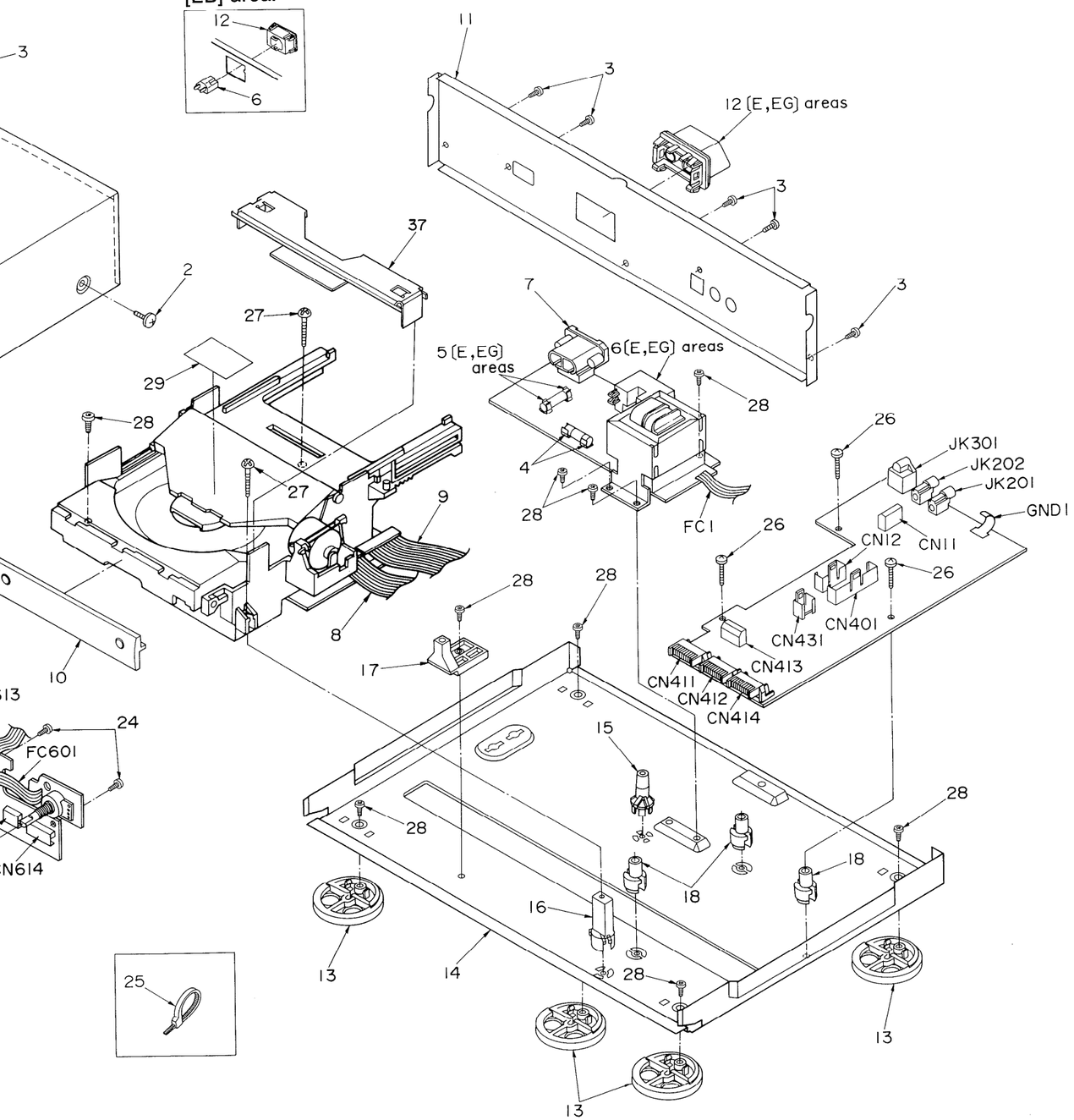
■ EXPLODED VIEWS

• Cabinet and chassis parts

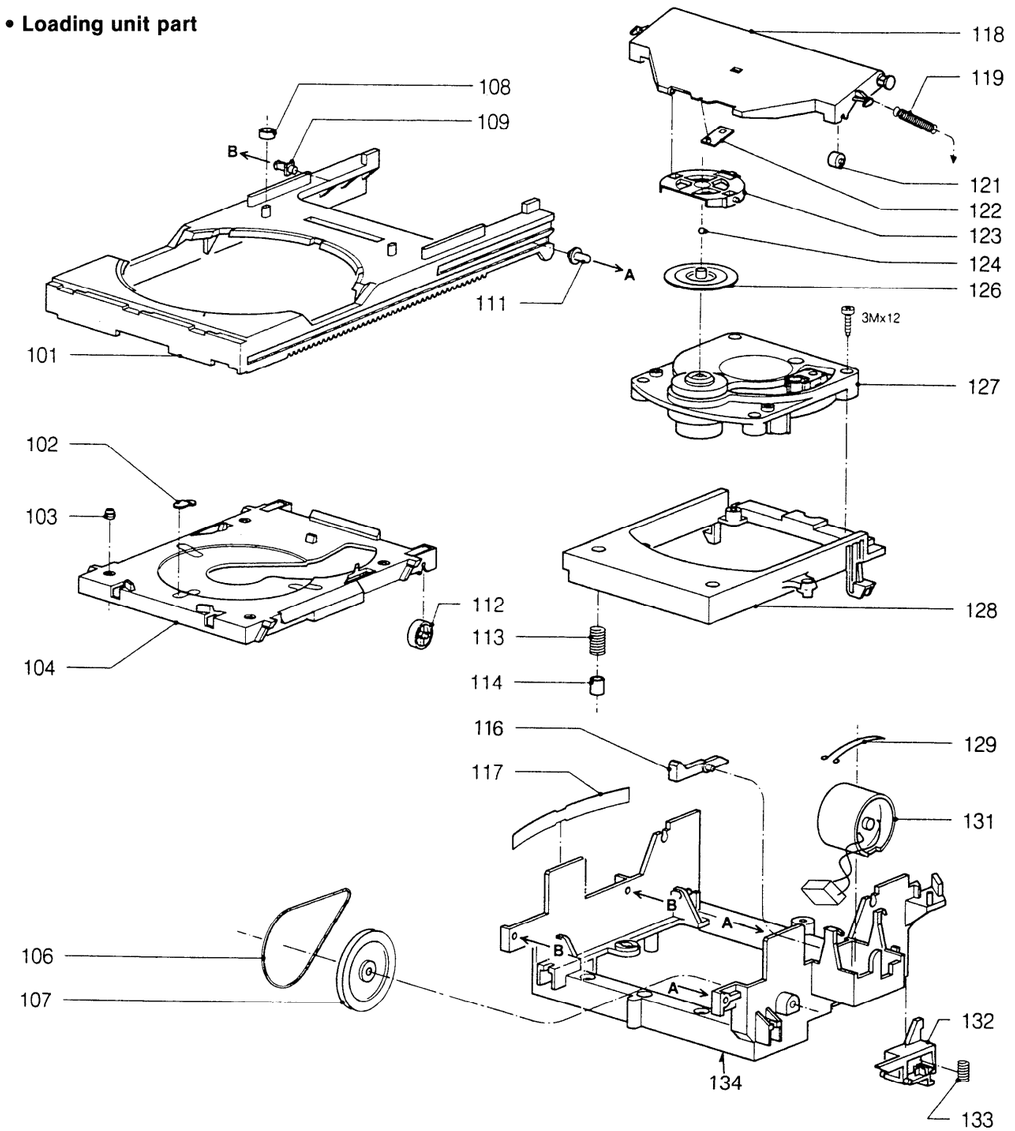


4 5 6 7 8 9 10 11 12 13 14

[EB] area.



• **Loading unit part**

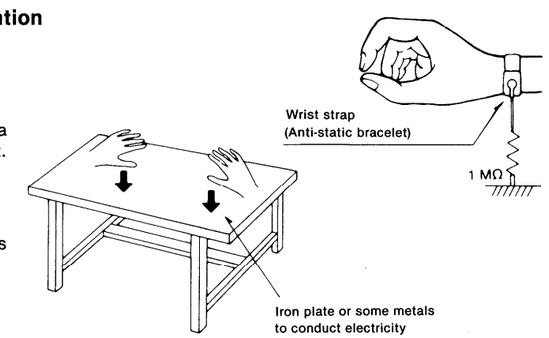


• Grounding for electrostatic breakdown prevention

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

Caution:

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



SL-PJ38A

■ RESISTORS & CAPACITORS

Notes : • Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
• Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)
* MB Indicates in Remarks columns parts that are supplied by MBV.

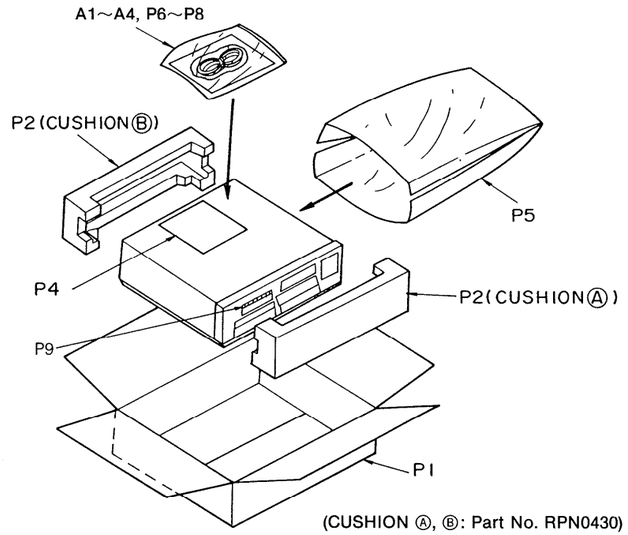
Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11	ERDS2TJ182	1/4W 1.8K
R16, 17	ERDS2TJ103	1/4W 10K
R20	ERDS2TJ102	1/4W 1K
R23	ERDS2TJ222	1/4W 2.2K
R24	ERDS2TJ102	1/4W 1K
R25	ERDS2TJ222	1/4W 2.2K
R51	ERDS2TJ331	1/4W 330
R52	ERDS2TJ272T	1/4W 2.7K
R53, 54	ERDS2TJ472	1/4W 4.7K
R201	ERDS2TJ100	1/4W 10
R211	ERDS2TJ223T	1/4W 22K
R212	ERDS2TJ472	1/4W 4.7K
R213, 214	ERDS2TJ393T	1/4W 39K
R215	ERDS2TJ100	1/4W 10
R216	ERDS2TJ393T	1/4W 39K
R217	ERDS2TJ100	1/4W 10
R221	ERDS2TJ223T	1/4W 22K
R222	ERDS2TJ472	1/4W 4.7K
R223, 224	ERDS2TJ393T	1/4W 39K
R225	ERDS2TJ100	1/4W 10
R226	ERDS2TJ393T	1/4W 39K
R227	ERDS2TJ100	1/4W 10
R301	ERDS2TJ182	1/4W 1.8K
R302	ERDS2TJ823T	1/4W 82K
R303	ERDS2TJ104	1/4W 100K
R304	ERDS2TJ471	1/4W 470
R311	ERDS2TJ822	1/4W 8.2K
R312	ERDS2TJ681T	1/4W 680
R313	ERDS2TJ272T	1/4W 2.7K
R351	ERDS2TJ103	1/4W 10K
R352	ERDS2TJ104	1/4W 100K
R353	ERDS2TJ123	1/4W 12K
R354	ERDS2TJ104	1/4W 100K
R355, 356	ERDS2TJ333	1/4W 33K
R357	ERD25FJ6R8	1/4W 6.8 ⚠
R401	ERDS2TJ104	1/4W 100K
R402	ERDS2TJ101	1/4W 100
R403	ERDS2TJ103T	1/4W 10K
R411, 412	ERDS2TJ472	1/4W 4.7K
R423	ERDS2TJ122	1/4W 1.2K
R431, 432	ERDS2TJ223	1/4W 22K
R433	ERDS2TJ104	1/4W 100K
R434	ERDS2TJ224T	1/4W 220K
R435	ERDS2TJ104	1/4W 100K
R436	ERDS2TJ224T	1/4W 220K
R437, 438	ERDS2TJ223	1/4W 22K

Ref. No.	Part No.	Values & Remarks
		CAPACITORS
C1, 2	ECFTD103KXL	50V 0.01U
C10	ECFR1E104ZF5	25V 0.1U
C11-13	ECEA1CU102	16V 1000U
C14, 15	ECEA0JK470	6.3V 47U
C16	ECEA1EU101	25V 100U
C17, 18	ECEA1HU101	50V 100U
C51	ECEA0JK220B	6.3V 22U
C201	ECBT1C103NS5	10V 0.01U
C203	ECEA0JK470	6.3V 47U
C204	ECFR1E104ZF5	25V 0.1U
C301	ECBT1C103NS5	16V 0.01U
C302	ECBT1H270J5	50V 27P
C303, 304	ECFR1E104ZF5	25V 0.1U
C305	ECBT1H102KB5	50V 1000P
C306	ECFR1E223KB	25V 0.022U
C307	ECQV1H474JZ3	50V 0.47U
C308	ECBT1H102KB5	50V 1000P
C309	ECFR1E104ZF5	25V 0.1U
C311	ECFR1E104ZF5	25V 0.1U
C321	ECBT1H6R8K5	50V 6.8P
C322	ECBT1H220J5	50V 22P
C351	ECBT1H102KB5	50V 1000P
C401	ECFR1E104ZF5	25V 0.1U
C402	ECEA0JK470	6.3V 47U
C403	ECEA0JU102	6.3V 1000U
C404	ECFR1E104ZF5	25V 0.1U
		<SERVO P.C.B.>
		RESISTORS
R3501	482211652426	1/2W 4.7K MB
R3502	482211190214	1/8W 100K MB
R3503	482211130499	1/3W 4.7 MB
R3504	482211130499	1/3W 4.7 MB
R3505	482211190253	1/8W 12K MB
R3506	532211190091	1/8W 100 MB
R3507	482211190248	1/8W 2.2K MB
R3508	482211190512	1/8W 24K MB
R3509	482211190572	1/8W 5.6K MB
R3510	482211190249	1/8W 10K MB
R3521	482211190178	1/8W 220 MB
R3522	482211130515	1/3W 18 MB
R3523	482211130511	1/3W 12 MB
R3524	532211190091	1/8W 100 MB

Ref. No.	Part No.	Values & Remarks
R3530	482211190543	1/8W 47K MB
R3531	482211190344	1/8W 15K MB
R3533	532211190268	1/8W 5.1K MB
R3534	482211190197	1/8W 220K MB
R3535	482211653081	3/5W 12K MB
R3540	482211652858	3/5W 4.7 MB
R3541	482211190544	1/8W 6.8K MB
R3542	482211190124	1/8W 82 MB
R3543	482211190544	1/8W 6.8K MB
R3544	482211130483	1/3W 1 MB
R3545	482211130483	1/3W 1 MB
R3550	482211190248	1/8W 2.2K MB
R3551	482211690417	1/8W 150K MB
R3552	482211190171	1/8W 820 MB
R3554	482211690421	1/8W 2K MB
R3555	482211190251	1/8W 22K MB
R3560	482211191494	1/8W 11K MB
R3561	482211690417	1/8W 150K MB
R3562	482211652845	3/5W 120K MB
R3563	482211190573	1/8W 56K MB
R3564	482211191495	1/8W 160K MB
R3565	482211652354	1/2W 27 MB
R3566	482211190186	1/8W 22 MB
R3567	482211652478	1/2W 82K MB
R3568	482211190161	1/8W 470K MB
		CHIP JUMPER(S)
R3801	482211190163	JUMPER MB
R3802	482211190163	JUMPER MB
		CAPACITORS
C2501	482212233147	50V 0.022U MB
C2502	482212440433	25V 47U MB
C2503	482212233147	50V 0.022U MB
C2504	482212231727	63V 470P MB
C2505	482212440433	25V 47U MB
C2506	482212233104	63V 0.1U MB
C2507	482212231644	63V 2200P MB
C2508	532212142491	100V 0.047U MB
C2509	482212231772	50V 47P MB
C2510	482212232442	50V 0.01U MB
C2511	482212231746	50V 1000P MB
C2513	482212142245	63V 0.22U MB
C2514	482212151252	100V 0.47U MB
C2515	482212231746	50V 1000P MB
C2520	482212231965	63V 220P MB
C2521	482212422027	2.5V 47U MB

Ref. No.	Part No.	Values & Remarks
C2530	482212151321	63V 8200P MB
C2531	482212151321	63V 8200P MB
C2532	482212440272	16V 33U MB
C2534	532212142661	63V 0.33U MB
C2535	532212231848	63V 0.033U MB
C2536	532212231848	63V 0.033U MB
C2537	482212142245	63V 0.22U MB
C2538	482212142245	63V 0.22U MB
C2540	482212441583	50V 0.68U MB
C2541	482212233147	50V 0.022U MB
C2542	482212233147	50V 0.022U MB
C2543	482212440196	16V 220U MB
C2544	482212440196	16V 220U MB
C2545	482212233104	63V 0.1U MB
C2546	482212233104	63V 0.1U MB
C2552	482212143526	47UF 100N MB
C2560	482212231784	50V 4700P MB
C2561	482212151252	100V 0.47U MB
C2562	532212142661	63V 0.33U MB
C2563	482212233104	63V 0.1U MB
C2625	482212231765	50V 100P MB
C2701	482212233147	50V 0.022U MB

■ PACKING



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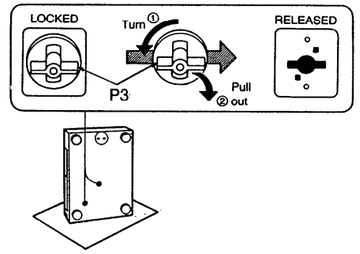

■ PACKING

Ref. No.	Part No.	Values & Remarks
C2530	482212151321	63V 8200P MB
C2531	482212151321	63V 8200P MB
C2532	482212440272	16V 33U MB
C2534	532212142661	63V 0.33U MB
C2535	532212231848	63V 0.033U MB
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C2537	482212142245	63V 0.22U MB
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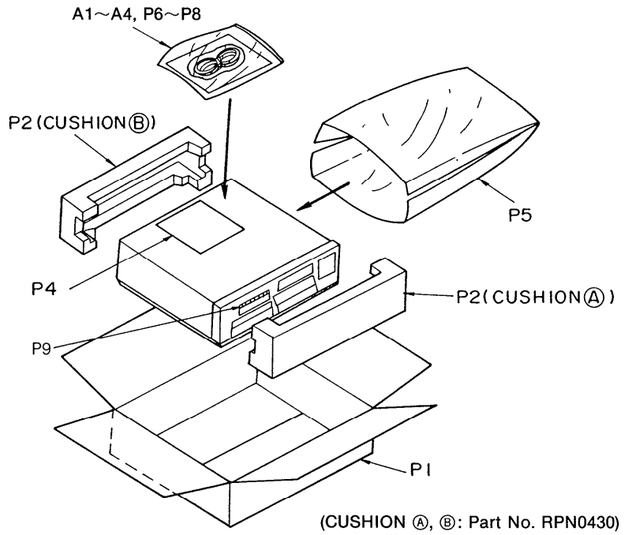
C2540	482212441583	50V 0.68U MB
C2541	482212233147	50V 0.022U MB
C2542	482212233147	50V 0.022U MB
C2543	482212440196	16V 220U MB
C2544	482212440196	16V 220U MB
C2545	482212233104	63V 0.1U MB
C2546	482212233104	63V 0.1U MB
C2552	482212143526	47UF 100N MB
C2560	482212231784	50V 4700P MB
C2561	482212151252	100V 0.47U MB
C2562	532212142661	63V 0.33U MB
C2563	482212233104	63V 0.1U MB
C2625	482212231765	50V 100P MB
C2701	482212233147	50V 0.022U MB



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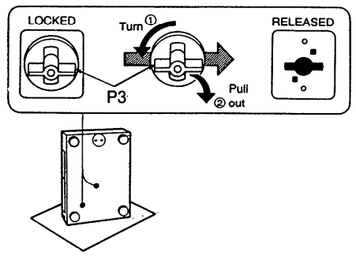
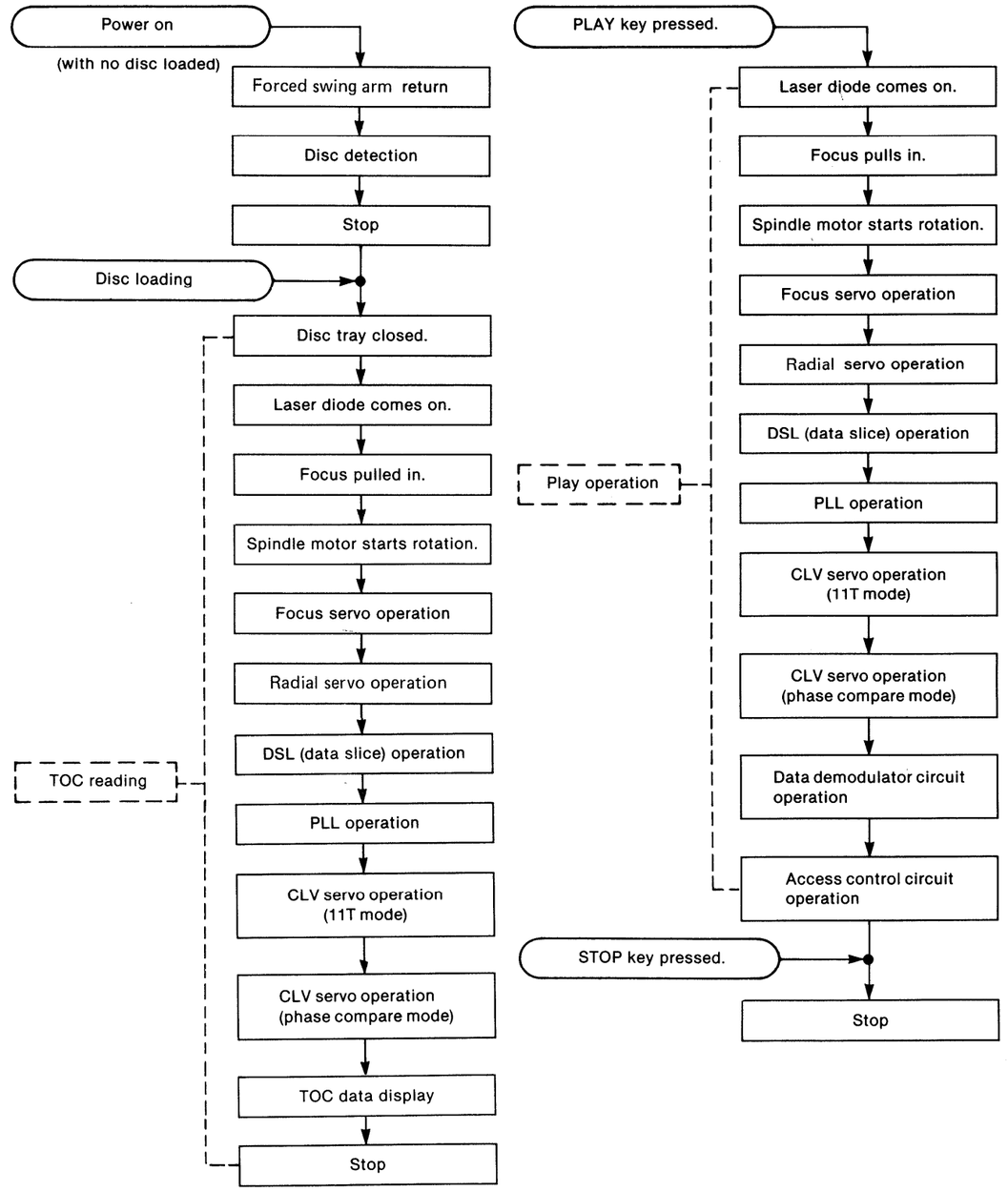


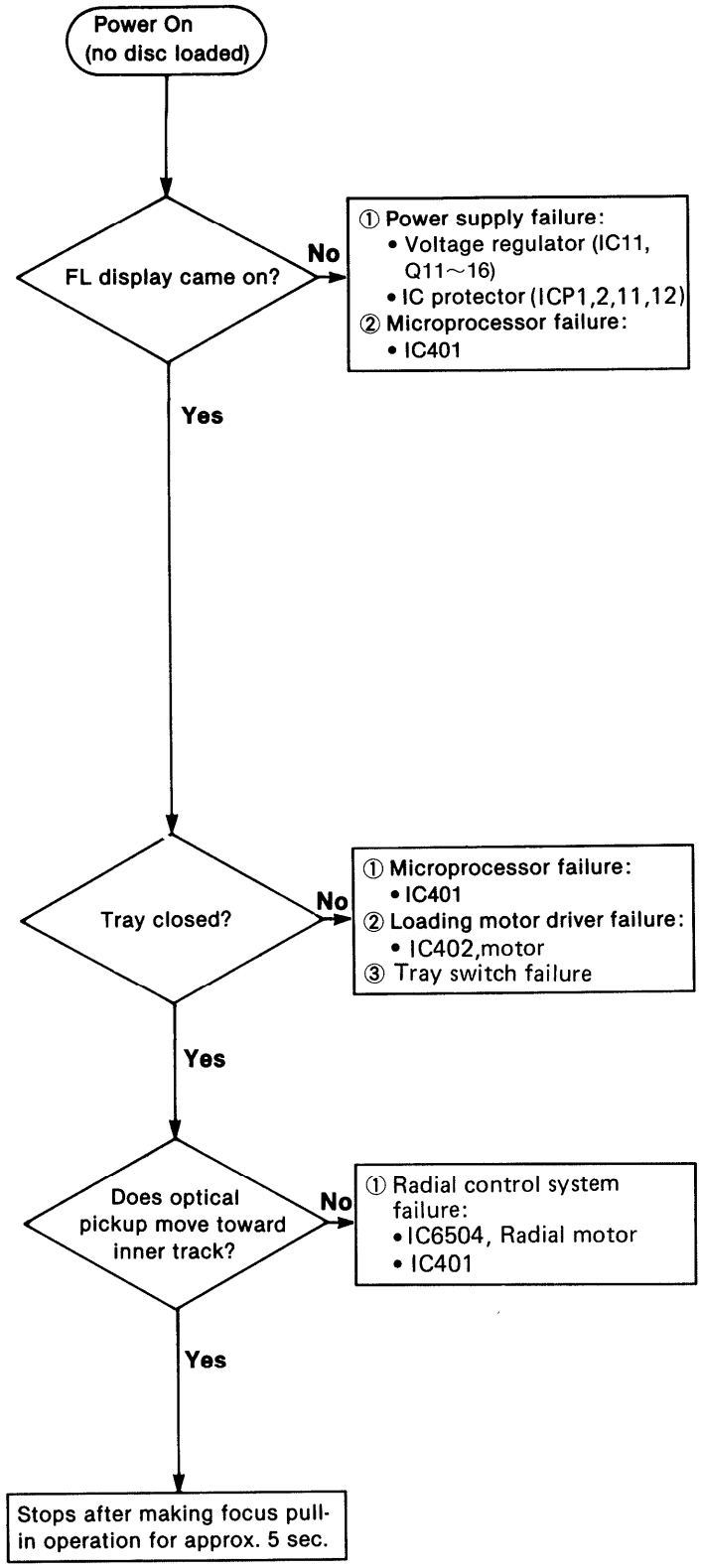
■ TROUBLESHOOTING GUIDE

SL-PJ38A Operation Sequence Check Sheet

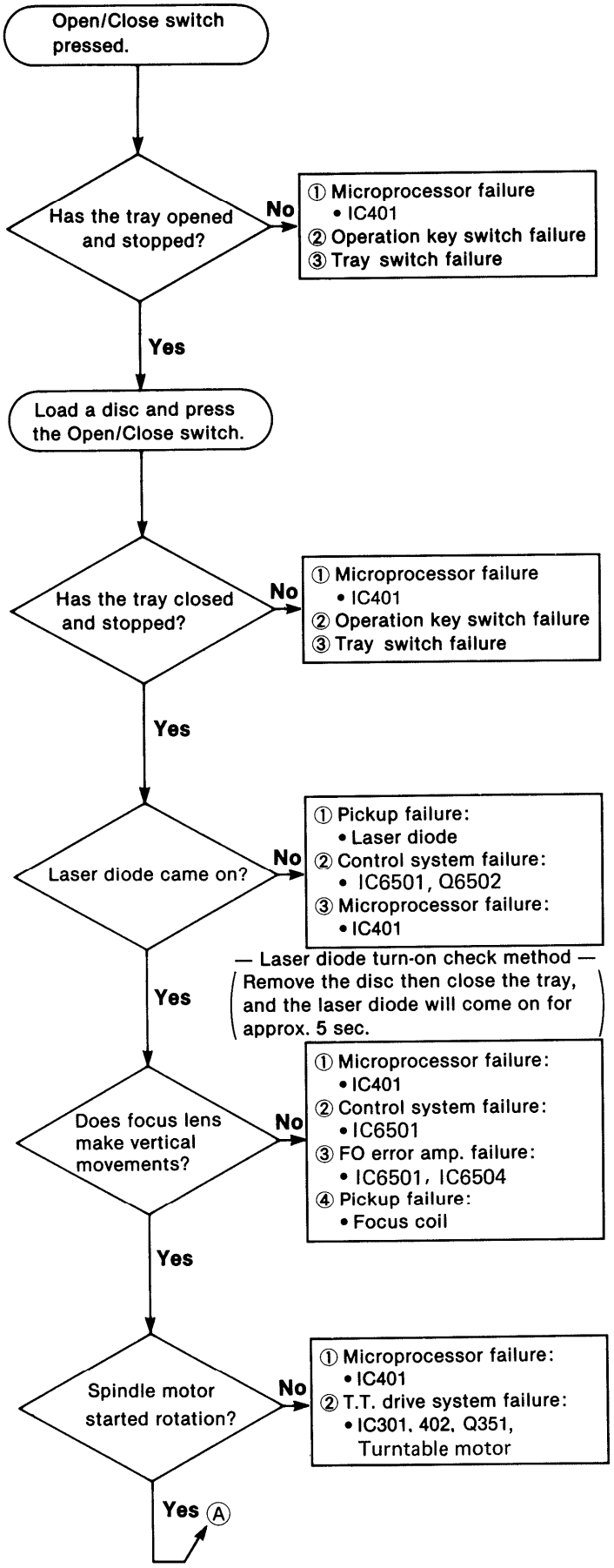
Play Operation Sequence

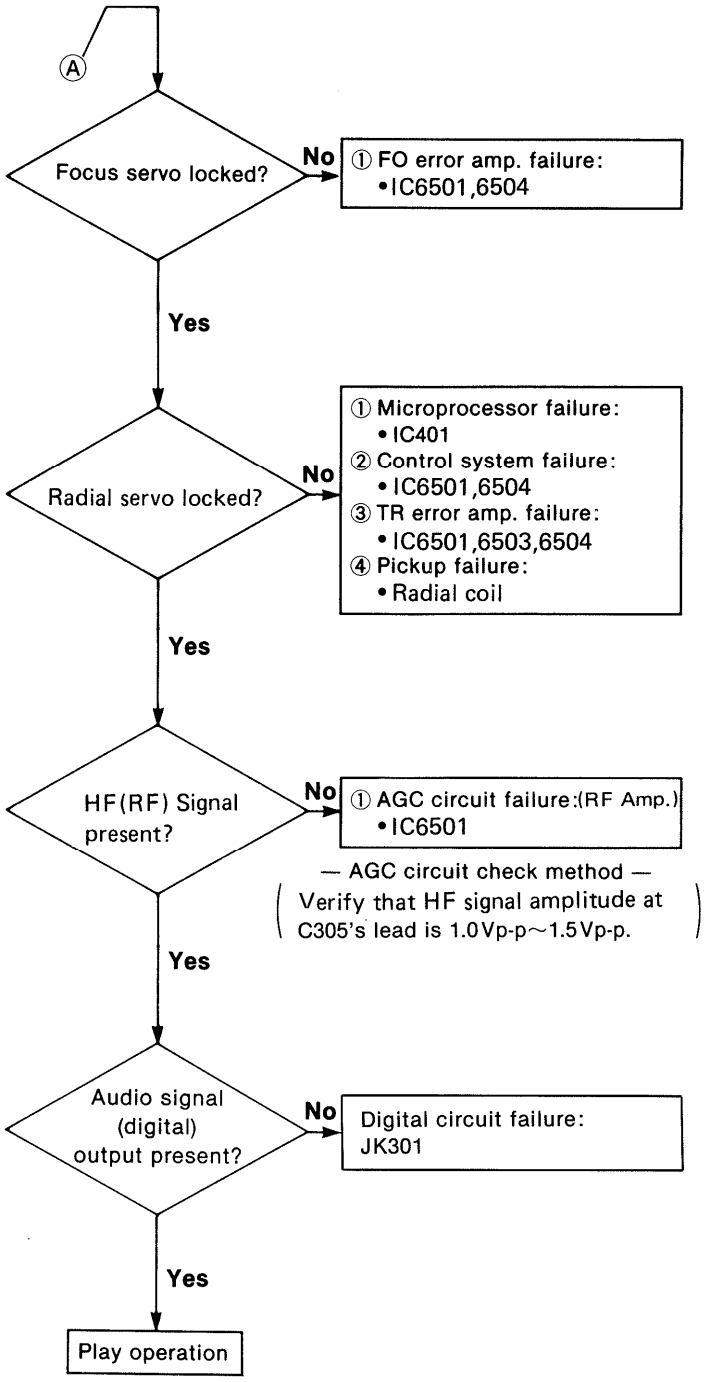


(Operation Sequence Just After Power On)



(TOC Read Operation-PLAY Operation)





MBV Printed in F.R. Germany
H910406223