

Service Manual

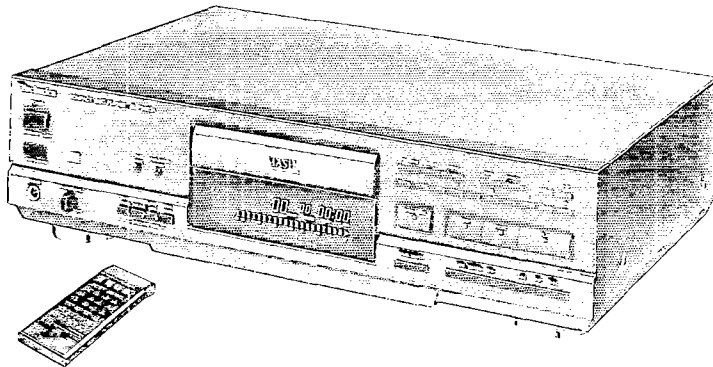
Compact Disc Player

SL-PS620A

COMPACT
disc
DIGITAL AUDIO
DIGITAL
MASH*
 multi-stage noise shaping

Colour

(K) ... Black Type



Area

Suffix for Model No.	Area	Colour
(E)	Continental Europe.	(K)
(EB)	Great Britain.	
(EG)	F.R. Germany & Italy.	

SPECIFICATIONS

■ Audio

No. of channels	2 (left and right, stereo)
Frequency response	2~20,000 Hz, +0.3 dB
Output voltage	2 V (at 0 dB)
Dynamic range	99 dB
S/N ratio	113 dB
Harmonic distortion	0.0018% (1 kHz, 0 dB)
Total harmonic distortion	0.0028% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	MASH (4 DAC)
Output impedance	Approx. 600Ω
Load impedance	More than 10 kΩ
Headphone output level	15 mW max. 32Ω (adjustable)

■ Pickup

Wavelength	780 nm
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■ General

Power supply	AC 50/60 Hz, 230 V~240 V
Power consumption	10 W
Dimensions (W×H×D)	430×116×289 mm
Weight	4.6 kg

Note:

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.

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* 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.

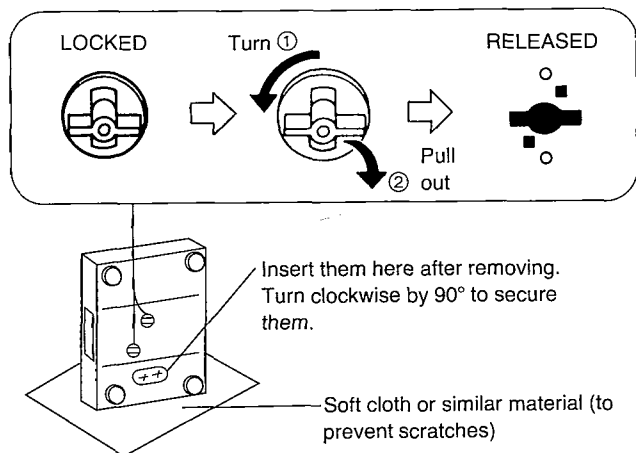
Technics

■ 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 (**TRANSPORT SECURITY DEVICE**).



Note:

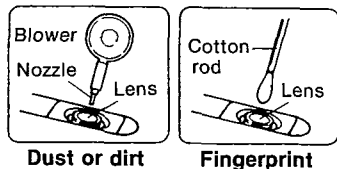
When transporting the unit, be sure to remove the compact disc from inside the unit. And replace the transport security devices again following the reverse order not to damage the optical pickup.

■ 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.

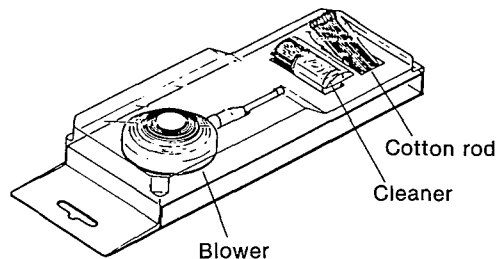
Notes of placement

- **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 that it is not subjected to any strong bumps.**
Always remove the compact 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.

Cautions:

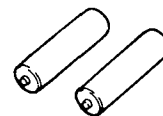
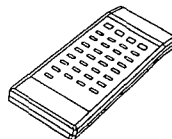
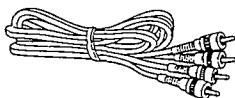
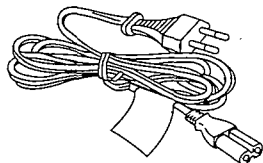
- Do not directly apply the cleaner solution to the lens. Do not apply too much solution to the cotton rod or otherwise the solution will flow into the player.
- Wipe the lens carefully. Do not give too much stress to the lens or otherwise it may scratch the lens or cause optical pickup trouble.
- If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

Lens cleaning kit (Part No. : SZZP1038C)



■ ACCESSORIES

- AC power supply cord... 1 pc.
[RJA0018-1K (E, EG)]
[SJA193 (EB)]
- Stereo connection cable.. 1 pc.
(SJP2249-3)
- Remote control transmitter
(EUR64798)..... 1 pc.
- Batteries 2 pcs.
Use two UM-4,
"AAA" (R03) size
(1.5V) batteries.



Note: Configuration of AC power supply cord differs according to area.

■ PRECAUTION OF LASER DIODE

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

Wave length: 780 nM

Maximum output radiation power from pickup: 100 μ W/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

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

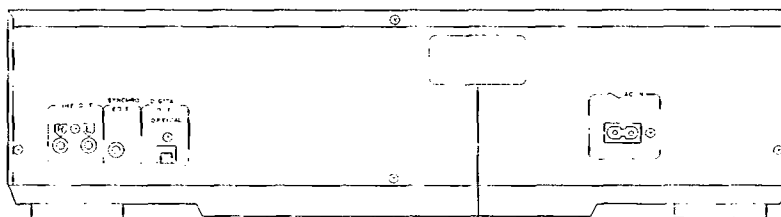
Wellenlänge: 780 nM

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

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

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



**CLASS 1
LASER PRODUCT**
SQWD7

RQLS0060

VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

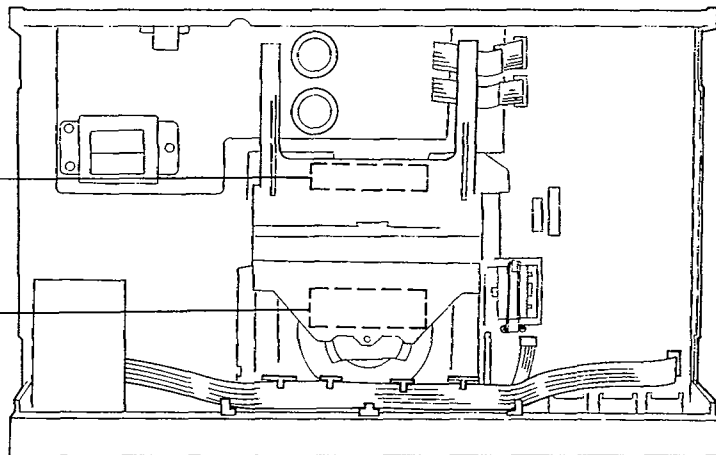
WARNING! Osynlig laserstrålning när denna del är öppnad och spårren är urkopplad. Betrakta ej strålen. RQLS0060

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

RQLS0022

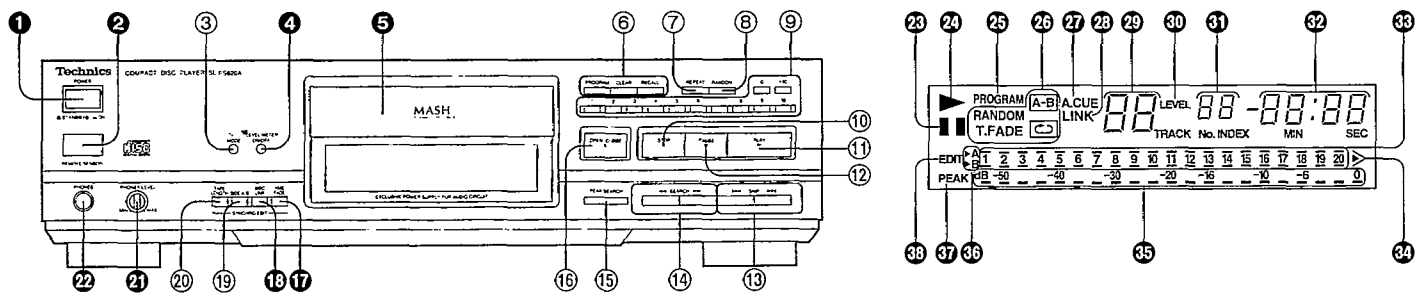
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

VORSICHT-Usichtbare Laserstrahlung, wenn Abdeckung geöffnet. Nicht dem Strahl aussetzen. RQLS0022



LOCATION OF CONTROLS

The functions indicated by the black numbers (with white background, ③ etc.) can also be activated using the remote control transmitter.



Control section

- ① Power "STANDBY \downarrow /ON" switch (POWER \blacksquare STANDBY \downarrow 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 \downarrow 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 Remote control signal sensor (REMOTE SENSOR)**
 - ③ Time mode select button (TIME MODE)**
 - ④ Output level meter on/off button (LEVEL METER ON/OFF)**
 - ⑤ Disc tray**
 - ⑥ Buttons for program function**

 - **Program button (PROGRAM)**
Pressing this button initiates the program play mode. You can then enter specific tracks using the numeric buttons.
 - **Clear button (CLEAR)**
Each pressing this button makes one track cleared from the programmed sequence.
 - **Recall button (RECALL)**
This button can be used to display the contents of the programmed track sequence for confirmation.
 - ⑦ Repeat button (REPEAT)**
 - ⑧ Random play button (RANDOM)**
This button can be used to play the tracks on a disc in a random sequence.
 - ⑨ Numeric buttons (>10, 0, 1~10)**
 - ⑩ Stop button (\blacksquare STOP)**
This button can be used to stop disc play, as well as to cancel the various play modes.
 - ⑪ Play button (\blacktriangleright PLAY)**
 - ⑫ Pause button ($\blacksquare\blacksquare$ PAUSE)**
 - ⑬ Skip buttons ($\blacktriangleleft\blacktriangleleft$ SKIP $\blacktriangleright\blacktriangleright$)**
These buttons can be used to skip by track in the forward or reverse direction.
 - ⑭ Search buttons ($\blacktriangleleft\blacktriangleleft$ SEARCH $\blacktriangleright\blacktriangleright$)**
These buttons can be used to move rapidly forward or backward on the disc during play. The search speed is slow when the button is pressed at first and becomes faster if the button is pressed and held continuously.
 - ⑮ Peak level search button (PEAK SEARCH)**
Pressing this button enables the unit to search out the "peak signal" locations in tracks on a disc so as to adjust the suitable recording level on the cassette deck.
 - ⑯ Disc tray open/close button (\blacktriangle OPEN/CLOSE)**
 - ⑰ Time fade button (TIME FADE)**
Pressing this button in the pause or stop mode causes the fade-out function to work at the specified time. Pressing this button in the edit mode causes the fade-out function to work at the end of the tape when the added track exceeds the remaining time of the tape.
 - ⑱ Disc link button (DISC LINK)**
This button can be used for edit recording from several discs.
 - ⑲ Tape-side select button (SIDE A/B)**
When recording compact discs to tape, this button can be used to check the number of tracks and amount of tape left over for side A or B.
 - ⑳ Edit tape length button (TAPE LENGTH)**
When compact discs are to be recorded to tape, this button can be used to calculate the number of tracks that can be recorded on each side of the tape, depending on the length of the cassette tape to be used, so that as little tape as possible is wasted.
 - ㉑ Headphones volume control (PHONES LEVEL)**
- Avoid listening to music at high volume levels for extended periods of time.
- ㉒ Headphones jack (PHONES)**

Indicators section


23 Pause indicator (II)

24 Play indicator (▶)

25 Program indicator (PROGRAM)

26 Operation indicators

The following indicators light during their respective operations.

[A-B]  : Peak level search
A-B repeat play (remote control operation)

RANDOM: Random play

 : Repeat play

T. FADE: Time fade (fade-out)

27 Auto cue indicator (A. CUE)

28 Disc link indicator (LINK)

29 Track number display (TRACK)

30 Level indicator (LEVEL)

This indicator lights when the output level is attenuated by the remote control.

31 Index/program number display (No., INDEX)

32 Time display (MIN, SEC)

33 Track number indicator (1–20)

34 "Over" mark (>)

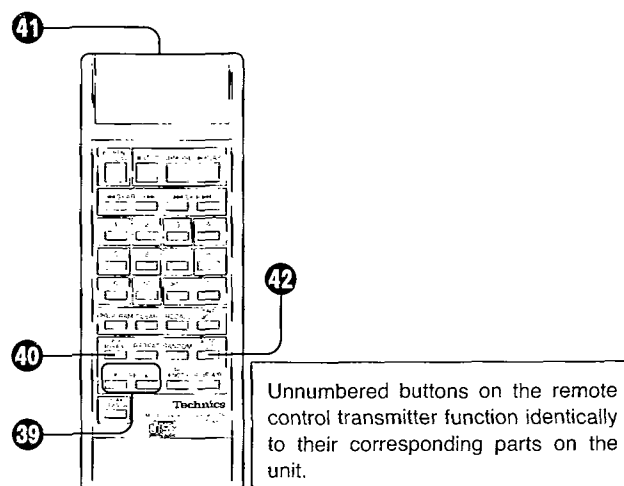
This indicator lights if the total number of tracks on the disc is 21 or more.

35 Output level indicator (dB, -50-0)

36 Tape side indicator (▶ A, ▶ B)

37 Peak level search indicator (PEAK)

38 Compact disc edit indicator (EDIT)



Remote control transmitter

39 Level buttons (▼ LEVEL ▲)

These buttons can be used to adjust output level (from 0 dB to -12 dB).

40 A-B repeat button (A-B REPEAT)

This button can be used to play the portion of a disc between two points (A and B) chosen by you.

41 Remote control signal transmission window

42 Auto cue button (AUTO CUE)

Pressing this button enables the unit to stop at the beginning of every track and switch to the play standby mode.

CONNECTIONS

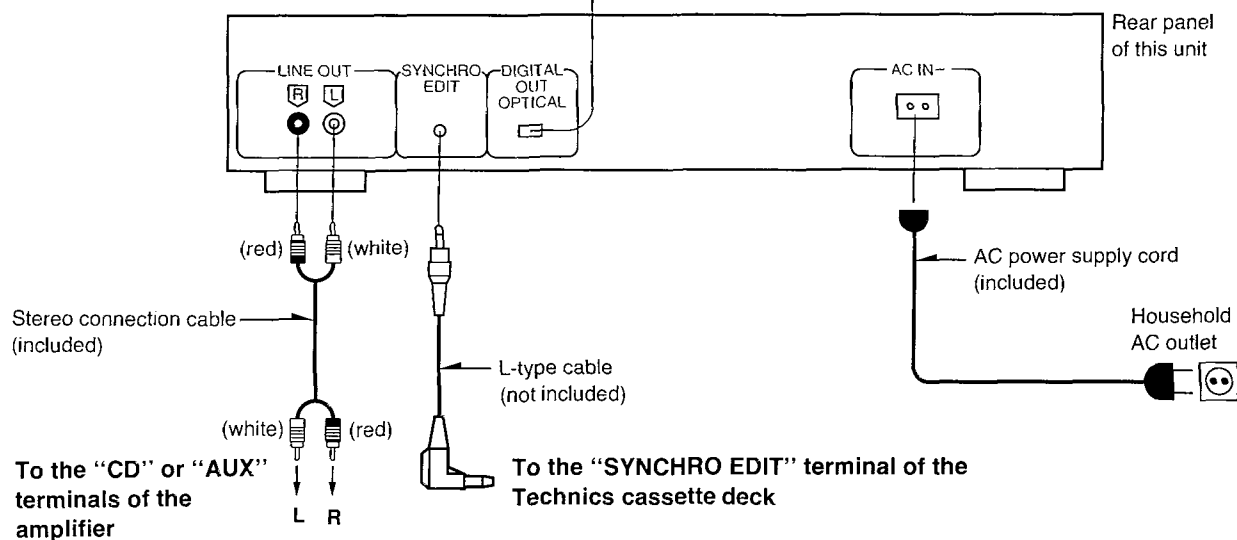
Turn all components off before making connections.

•Optical output terminal (DIGITAL OUT/OPTICAL)

This terminal can be used for connection with other equipment that has a digital input terminal, such as an amplifier, by using an optical cable (optional). A dust-protection cap is inserted in this terminal. Remove this cap only when a connection is to be made to this terminal.

Note:

Be sure to connect the stereo connection cable with the amplifier when using the synchro edit function even if the optical cable has been connected.

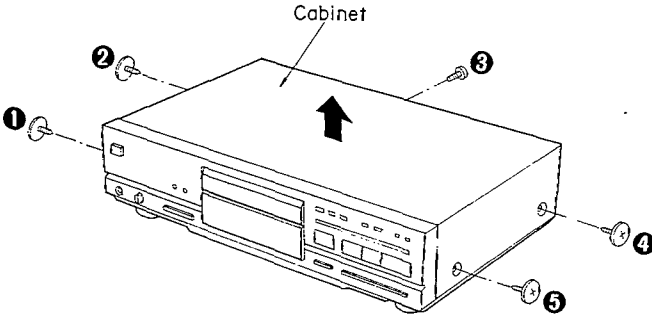
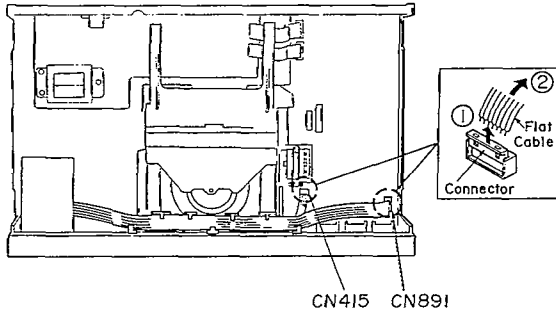
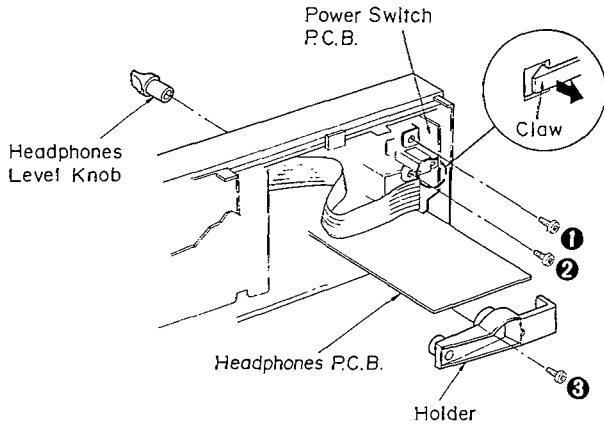
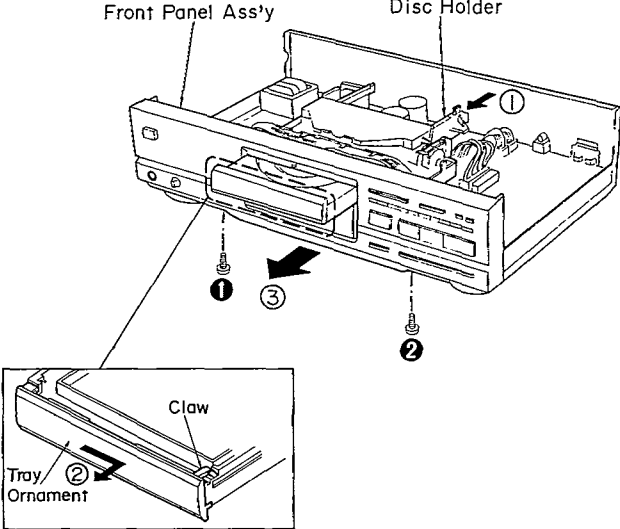


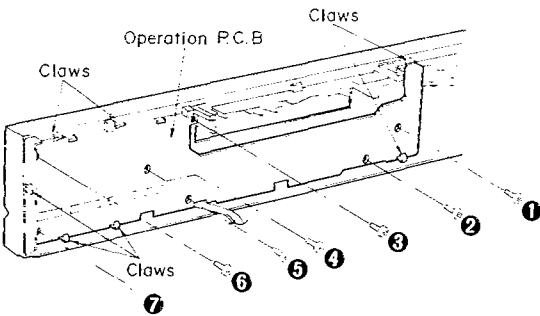
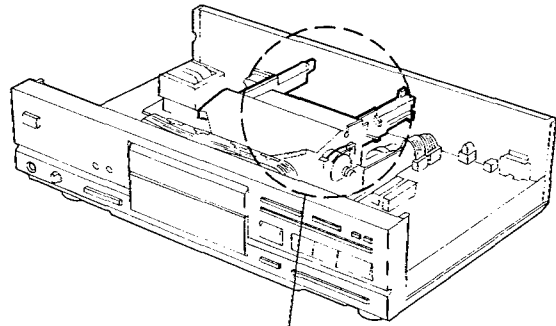
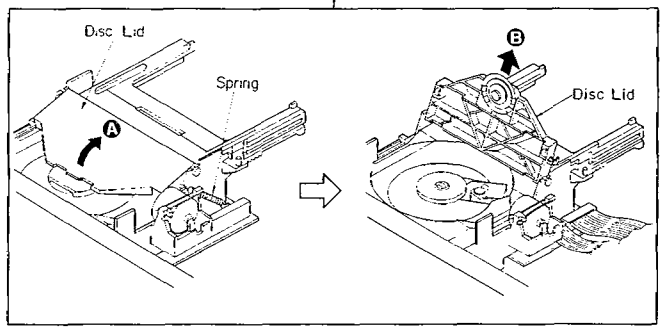
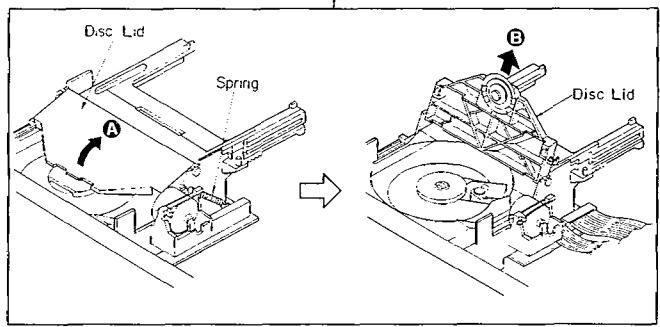
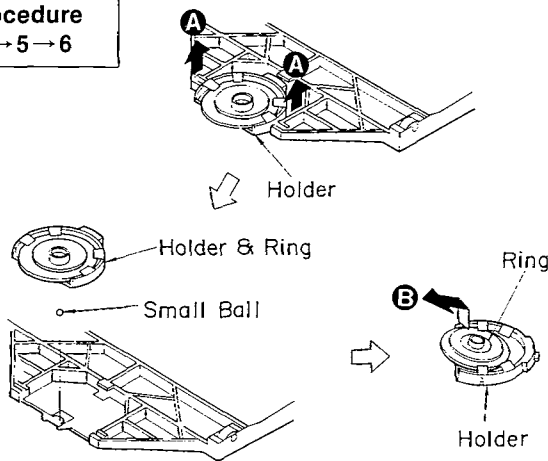
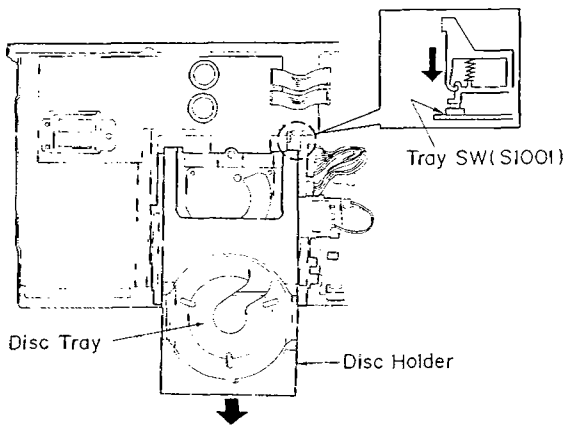
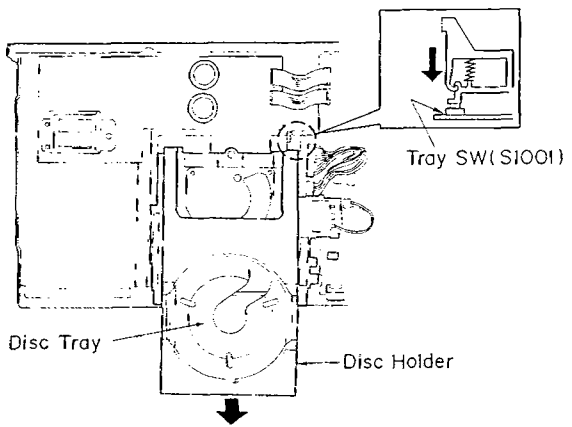
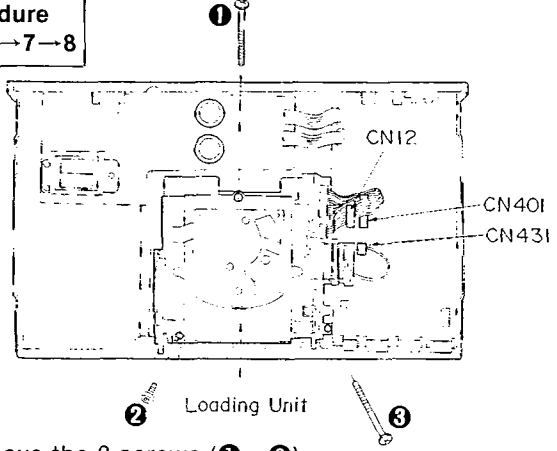
DISASSEMBLY INSTRUCTIONS

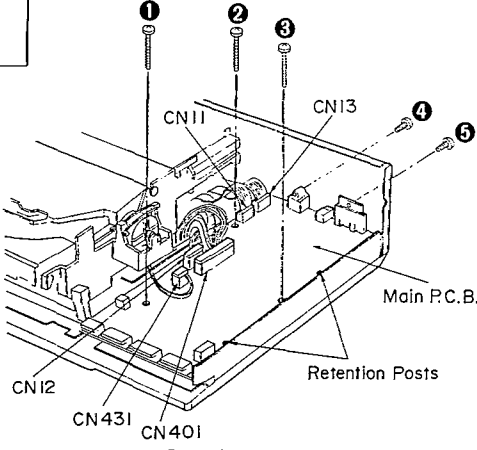
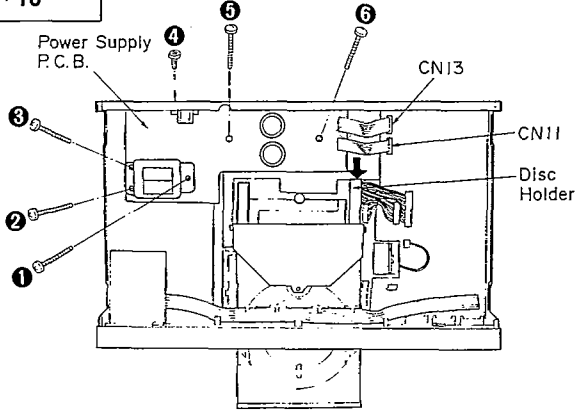
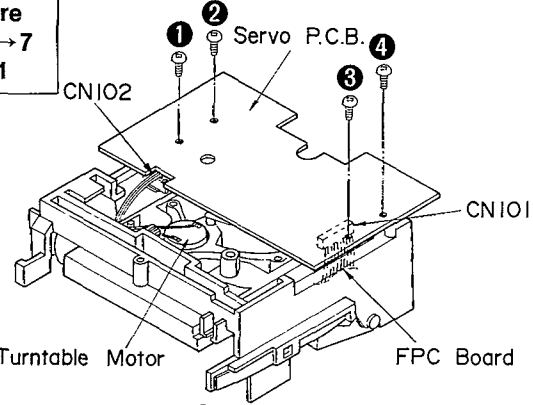
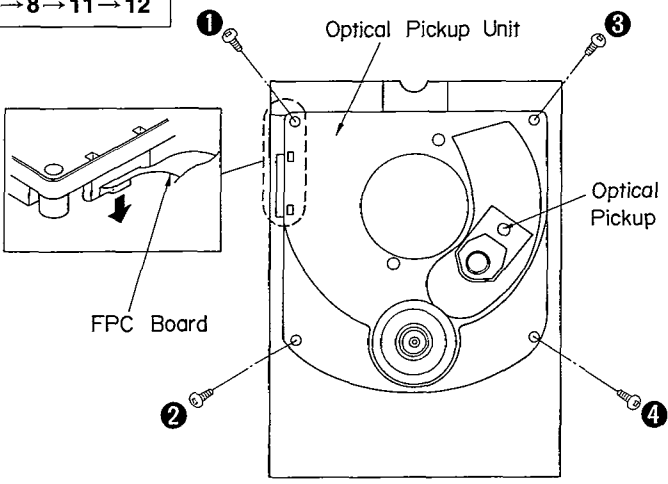
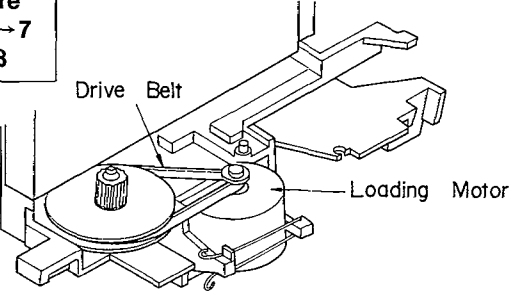
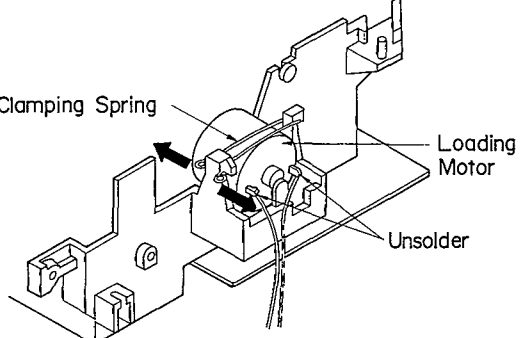
Warning: This product uses a laser diode. Refer to caution statements on page 3.

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	Ref. No. 2	Removal of the front panel ass'y
Procedure 1	 <p>Remove the 5 screws (①~⑤).</p>	Procedure 1→2	 <p>1. Remove the 2 flat cables (CN415, CN891).</p>
Ref. No. 3	Removal of the power switch P.C.B. and headphones P.C.B.		
Procedure 1→2→3			 <p>[Rear Side]</p>
<p>■ Removal of the power switch P.C.B.</p> <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②). 2. Release the 1 claw. <p>■ Removal of the headphones P.C.B.</p> <ol style="list-style-type: none"> 1. Pull out the headphones level knob. 2. Remove the 1 screw (③). 3. Remove the holder. 			<ol style="list-style-type: none"> 2. Push the disc holder slowly in the direction of arrow ①. 3. Release the 1 claw and the ornament in the direction of arrow ②. 4. Remove the 2 screws (①, ②). 5. Remove the front panel ass'y in the direction of arrow ③.

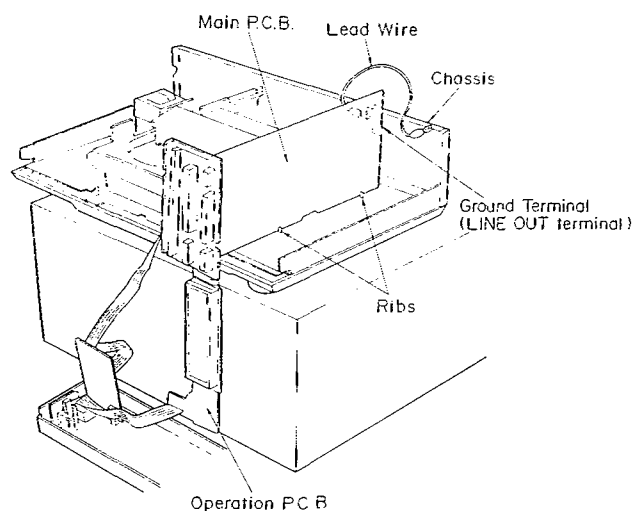
Ref. No. 4	Removal of the operation P.C.B.	Ref. No. 5	Removal of the disc lid
Procedure 1→2→4	 <p>1. Remove the 7 screws (①~⑦). 1. Release the 7 claws.</p>	Procedure 1→5	<p>1. Remove the spring. 2. Move the disc lid in the direction of arrow (A) and pull out this in the direction of arrow (B).</p> 
Ref. No. 6	Removal of the holder and ring		
Procedure 1→5→6	 <p>1. Pull out the holder in the direction of arrow (A). 2. Remove the ring in the direction of arrow (B).</p> <p>Caution: Be sure to handle the small ball carefully.</p>		
Procedure 1→2→5→7		Procedure 1→2→5→7	
Ref. No. 8	Removal of the loading unit	 <p>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.</p>	<p>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.</p>
Procedure 1→2→5→7→8	 <p>1. Remove the 3 screws (①~③). 3. Remove the 3 connectors (CN12, CN401, CN431).</p>		

<p>Ref. No. 9</p>	<p>Removal of the main P.C.B.</p>	<p>Ref. No. 10</p>	<p>Removal of the power supply P.C.B.</p>
<p>Procedure 1→2→9</p>	 <ol style="list-style-type: none"> 1. Remove the 5 screws (①~⑤). 2. Remove the 3 connectors (CN12, CN401, CN431). 3. Remove the 2 flat cables (CN11, CN13). 4. Lift the main P.C.B. off the retention posts on the chassis. 	<p>Procedure 1→10</p>	 <ol style="list-style-type: none"> 1. Push the disc holder slowly in the direction of arrow. 2. Remove the 6 screws (①~⑥). 3. Remove the 2 flat cables (CN11, CN13).
<p>Ref. No. 11</p>	<p>Removal of the servo P.C.B.</p>	<p>Ref. No. 12</p>	<p>Removal of the optical pickup unit</p>
<p>Procedure 1→2→5→7 →8→11</p>	 <ol style="list-style-type: none"> 1. Remove the 4 screws (①~④). 2. Remove the FPC board (CN101) from the optical pickup. 3. Remove the 1 connector (CN102) of the turntable motor. <p>Caution: To prevent the breakdown of the laser diode, antistatic shorting pin is inserted into the FPC board.</p>	<p>Procedure 1→2→5→7 →8→11→12</p>	 <ol style="list-style-type: none"> 1. Remove the 4 screws (①~④). 2. Remove the FPC board from the optical pickup.
<p>Ref. No. 13</p>	<p>Removal of the loading motor</p>		
<p>Procedure 1→2→5→7 →8→13</p>	 <ol style="list-style-type: none"> 1. Remove the drive belt. 	 <ol style="list-style-type: none"> 2. Release the clamping spring. 3. Unsolder the 2 terminals of the lead wire of the loading motor. 	

■ CHECKING OF THE MAIN 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 same).
3. Remove the operation P.C.B. (see Ref. No. 4 of the same).
4. Remove the main P.C.B. (see Ref. No. 9 of the same).
5. Don't remove the connectors (CN12, CN401, CN431) and flat cables (CN11, CN13, CN415, CN891).
6. Connect the main P.C.B. ground terminal (LINE OUT terminal) to the chassis with a lead wire.

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



■ CHECKING OF THE SERVO P.C.B.

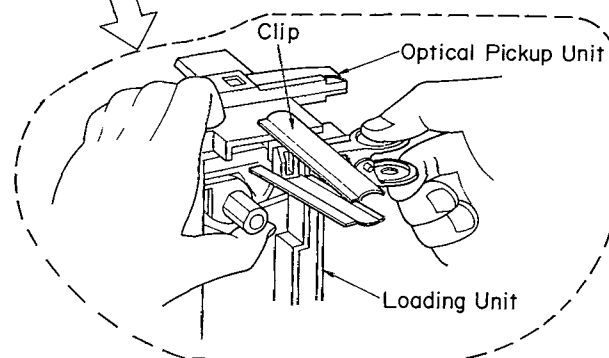
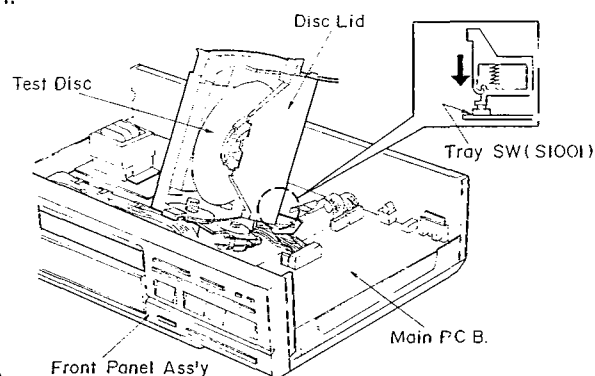
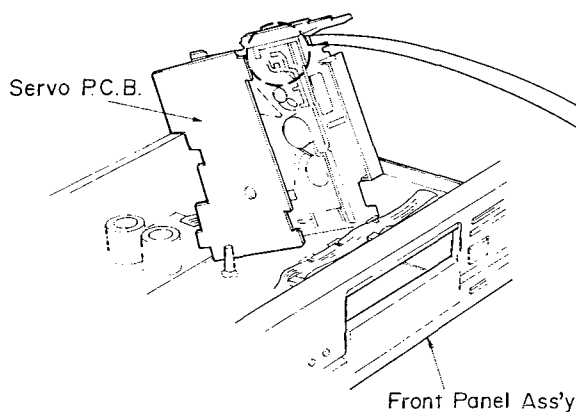
1. Remove the cabinet (see Ref. No. 1 of the disassembly instructions).
2. Remove the disc lid and disc holder (see Ref. No. 5 and No. 7 of the same).
3. Remove the loading unit (see Ref. No. 8 of the same).
4. When checking the soldered surface of the servo P.C.B. and replacing the parts, do as shown below.

(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.



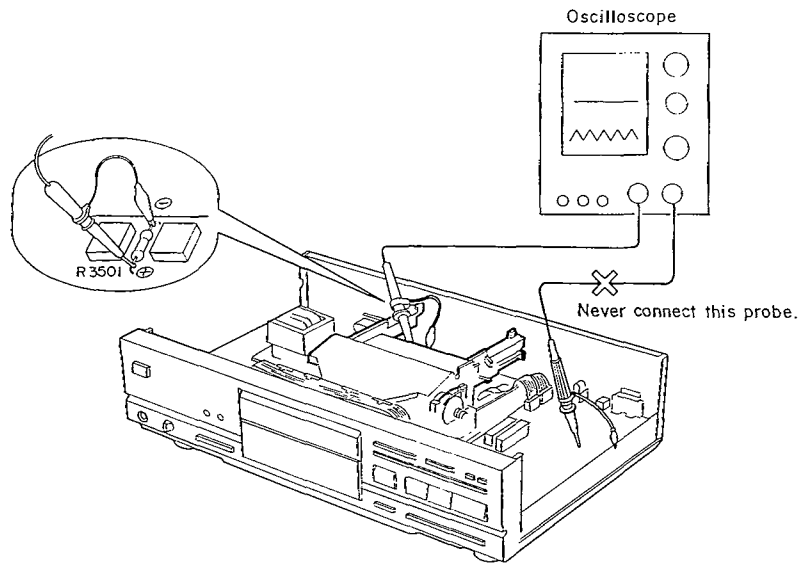
Note:

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 clammer will interfere with the disc, restricting turntable rotation.)

MEASUREMENTS AND ADJUSTMENTS

Caution:

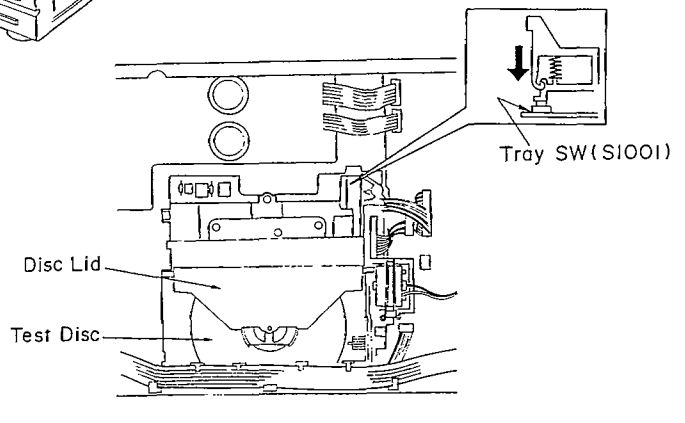
1. It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.)
With the unit turned "on", laser radiation is emitted from the pickup lens.
Avoid exposure to the laser beam, especially when performing adjustments.
2. During laser power or focus offset adjustment, never connect the other probe to the unit.
(Otherwise the unit's power supply will sustain damage.)



PREPARATION

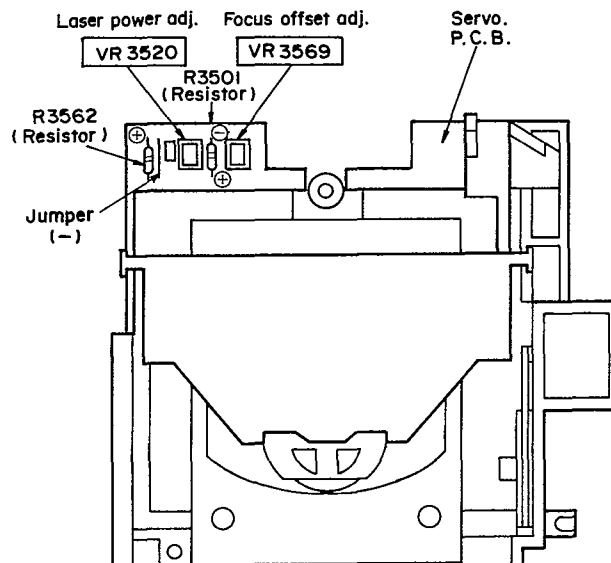
1. Remove the cabinet (see Ref No. 1 of the disassembly instructions).
2. Remove the disc holder (see Ref. No. 7 of the same).
3. Place the test disc on the turntable.
4. Turn "ON" the power switch at the player.
5. Push the bracket of tray SW (S1001) in the direction of the arrow and release it.

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).

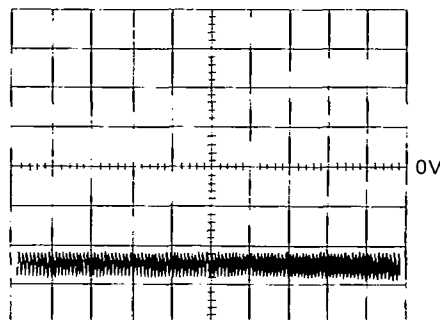
* Dual-beam oscilloscope with bandwidth of 30MHz or better (with EXT trigger and 1:1 probe).

(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 $-50 \pm 2\text{mV}$.

Oscilloscope setting:

VOLT20mV
 SWEEP0.2msec.
 INPUTDC

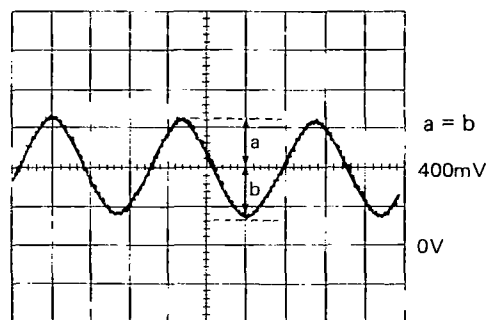


(2) FOCUS OFFSET ADJUSTMENT

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:

VOLT200mV
 SWEEP5msec.
 INPUTDC



(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 playability 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/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	TL	O	Track loss output
12	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 (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	—	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	DIV4	I	Radial error digital signal divided 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	—	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	DSL F	I/O	DSL loop filter terminal
6	PLL F	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	RST	I	Reset terminal
23	TX	O	Digital audio signal (Not used, open)
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 = 16.9344 MHz) (Not used, open)
30	PMCK	O	Frequency division clock signal (Not used, open) $(f = \frac{1}{192} \times CK = 88.2 \text{ kHz})$
31	CSEL	I	Test terminal (Connected to GND)
32	PSEL		
33	X1	I	Crystal OSC terminal (f = 16.9344 MHz)
34	X2	O	
35	VSS	—	GND terminal
36	SUBQ	O	Sub-code Q data
37	SQCK	I	Sub-code Q register clock
38	CLDCK	O	Sub-code frame clock (f = 7.35 kHz) (Not used, open)

Pin No.	Mark	I/O Division	Function
39	BLKCK	O	Sub-code block clock (f = 75 Hz)
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 = 4.2336 MHz)
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	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	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 = 4.2336 MHz)
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 = 4.3218 MHz) (Not used, open)
64	PDO	O	Phase compared signal of EFM and PCK (Not used, open)

• IC401 (MN1871617PMC): 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	P37 } P34	—	Not used, open and connected to terminal
19	P33	—	Not used, open and connected to terminal
20	P32		
21	P31		
22	P30		
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 divided 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/P1 } P/P16	O	FL segment signal and key scan signal

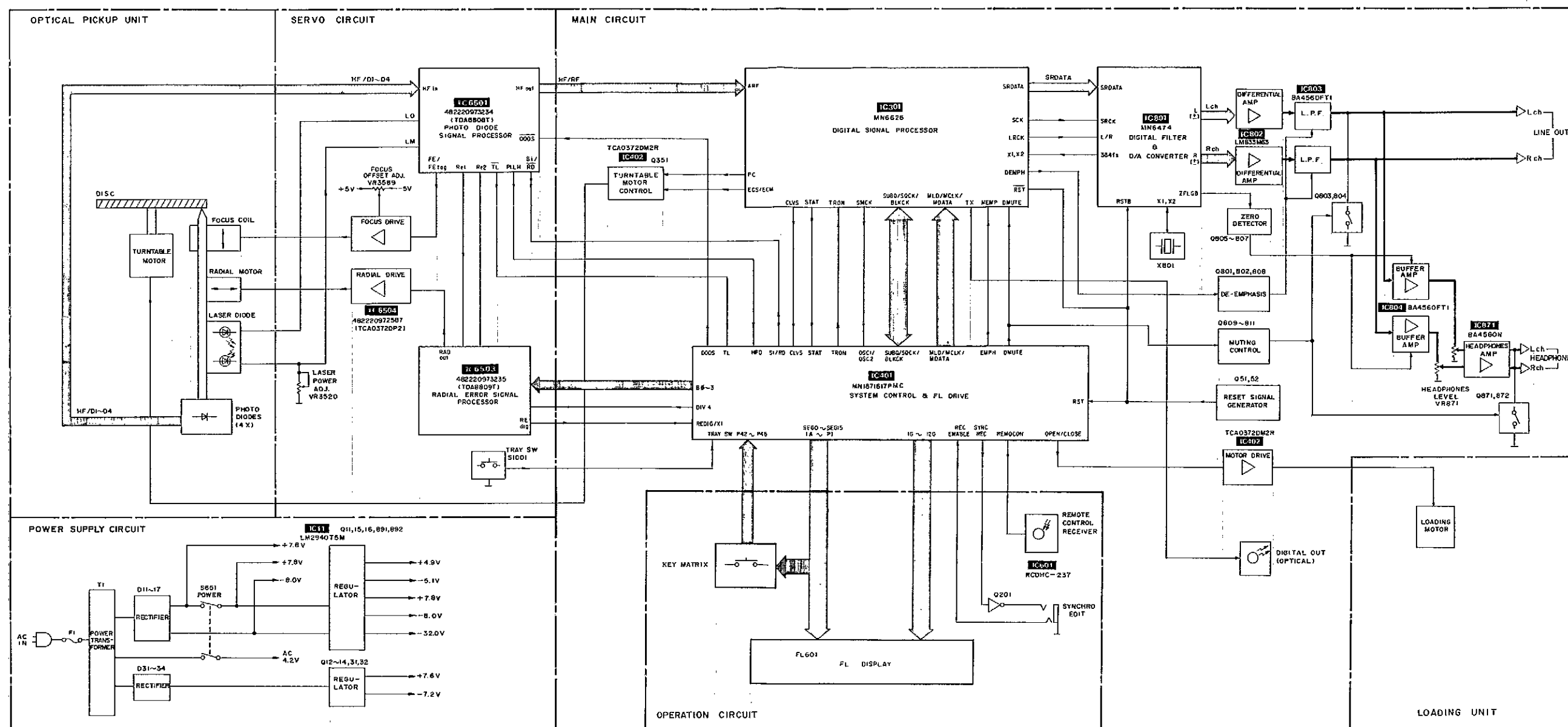
• IC801 (MN6474): Digital filter and D/A converter

Pin No.	Mark	I/O Division	Function
1	MLD	I	Command load input (load: L) (Not used, connected to VDD)
2	RSTB	I	Reset terminal
3	IE	I	Not used, connected to GND
4	TP1	—	TEST terminal
5	TP2	—	TEST terminal
6	TEST1	I	TEST terminal 1 (connected to GND)
7	TEST2	I	TEST terminal 2 (connected to GND)
8	NC	—	Not connected
9	NC	—	Not connected
10	AVDD4	I	Power supply terminal
11	OUTL (-)	O	Lch data output, (-) terminal
12	AVSS4	—	GND terminal
13	AVSS3	—	GND terminal
14	OUTL (+)	O	Lch data output, (+) terminal
15	AVDD3	I	Power supply terminal
16	NC	—	Not connected
17	AVDD2	I	Power supply terminal
18	OUTR (+)	O	Rch data output, (+) terminal
19	AVSS2	—	GND terminal (analog system)
20	AVSS1	—	GND terminal (analog system)
21	OUTR (-)	O	Rch data output, (-) terminal
22	AVDD1	I	Power supply terminal
23	DVDD1	I	Power supply terminal

Pin No.	Mark	I/O Division	Function
24	DVSS1	—	GND terminal (digital system)
25	X2	O	Crystal OSC terminal (33MHz)
26	X1	I	Crystal OSC terminal (33MHz)
27	NC	—	Not connected
28	DVDD2	I	Power supply terminal
29	DVSS2	—	GND terminal (digital system)
30	NSUB	I	Sub-strate terminal (Not used, connected to VDD)
31	ZFLGB	O	Zero input detector terminal
32	192fs	O	192fs (8.4672MHz) (Not used, open)
33	LRPOL	I	LR clock selector (Not used, connected to VDD)
34	LRCLK	I	LR discrimination signal input
35	BCLK	I	Serial bit clock input
36	SRDATA	I	Serial data input (MSB first)
37	DVSS3	—	GND terminal (digital system)
38	DVDD	I	Power supply terminal
39	384fs	O	384fs (16.9344MHz) output
40	PD	I	Power down terminal (Not used, connected to GND)
41	MDATA	I	Mode control data (Not used, connected to VDD)
42	MCLK	I	Data clock for MDATA (not used, connected to VDD)

■ BLOCK DIAGRAM

Note)
 Audio signal.



RAD out : Current output of integrated (Re2-Re1) input currents.
 B0~B3 : Control bits for radial circuit.
 D0~D4 : Photodiode currents.
 FE : Focus error signal.
 FE lag : Focus error signal for LAG network.
 HF in : HF amplifier and equalizer voltage output.
 HF out : HF current input.
 LM : Laser monitor diode input.
 LO : Laser amplifier current output.
 Re1 : Radial error signal 1 (summation of amplified currents D3 and D4).
 Re2 : Radial error signal 2 (summation of amplified currents D1 and D2).

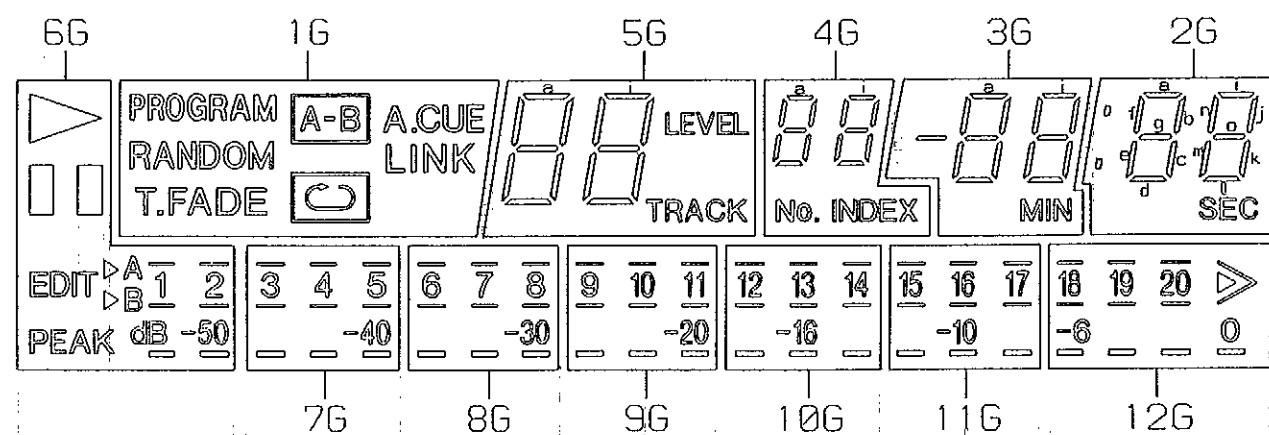
RE dig (RE DIG/X1) : Radial error digital.
 RE lag : Radial error signal for LAG network.
 SI/RD : On/off control for laser supply and focus circuit.
 TL : Track loss signal.
 Div4 : Radial error digital divided by four.
 HF/RF/ARF : RF (Audio) signal.
 TRAY SW : Disc holder open/close det. terminal.
 CLVS : Spindle servo phase synchro signal.
 STAT : Status command for CRC etc.
 DMUTE : Data mute command.
 MDATA : Mode control data.
 MLD : Load command for mode control data (Active Low).

P42~46 : Key return signal.
 1G~12G : FL digit signal.
 SEG0~15 : FL segment signal and key scan signal.
 MCLK : Data clock for MDATA.
 SUBQ : Sub-code Q data.
 CLDCK : Data frame clock (7.35 KHz).
 BLKCK : Sub-code Q data block clock (75Hz).
 SQCK : Sub-code Q register clock.
 RST(RSTB) : 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 : System clock (4.2336MHz).
 OSC1/OSC2 : Digital (optical) signal.

LRCK(L/R) : L/R data discrimination clock (88.2KHz).
 SRDATA : Serial data output (MSB first).
 SCK(SRCK) : Serial bit clock (2.82MHz).
 MEMP/EMPH : De-emphasis command (Active High).
 SYNC REC/ : Synchro rec control.
 REC ENABLE : Synchro rec control.
 REMOCON : Remote control signal.
 DEMPH : De-emphasis ON signal.
 L(±) : Lch data signal.
 R(±) : Rch data signal.
 OPEN/CLOSE : Loading motor control signal.
 ZFLGB : Zero input detector.

INTERNAL CONNECTION OF FL

Grid connection diagram



Anode connection table

Table mapping controls (P1-P16) to grids (1G-12G) and anodes (a-t).

Pin connection

Table mapping PIN NO. (1-44) to CONNECTION (F, N, P).

NOTE 1) F1, F2 --- Filament 2) NP ----- No pin 3) NC ----- No connection 4) 16~126 --- Grid

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:

- S601~612 : Numeric (>10, 0, 1~10) switches.
• S613 : Play (▶) PLAY switch.
• S614 : Skip (◀◀) SKIP switch.
• S615 : Search (◀◀) switch.
• S616 : Program (PROGRAM) switch.
• S617 : Disc link (DISC LINK) switch.
• S618 : Output level meter on/off (LEVEL METER ON/OFF) switch.
• S619 : Stop (■) STOP switch.
• S620 : Skip (▶▶) SKIP switch.
• S621 : Search (▶▶) switch.
• S622 : Recall (RECALL) switch.
• S623 : Tape-side select (SIDE A/B) switch.
• S624 : Random play (RANDOM) switch.
• S625 : Time fade (TIME FADE) switch.
• S626 : Disc tray open/close (▲ OPEN/CLOSE) switch.
• S627 : Pause (■) PAUSE switch.
• S628 : Repeat (REPEAT) switch.
• S629 : Clear (CLEAR) switch.
• S630 : Edit tape length (TAPE LENGTH) switch.
• S631 : Time mode select (TIME MODE) switch.
• S632 : Peak level search (PEAK SEARCH) switch.
• S651 : Power "STANDBY" / "ON" (POWER) switch in "on" position.
• 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.

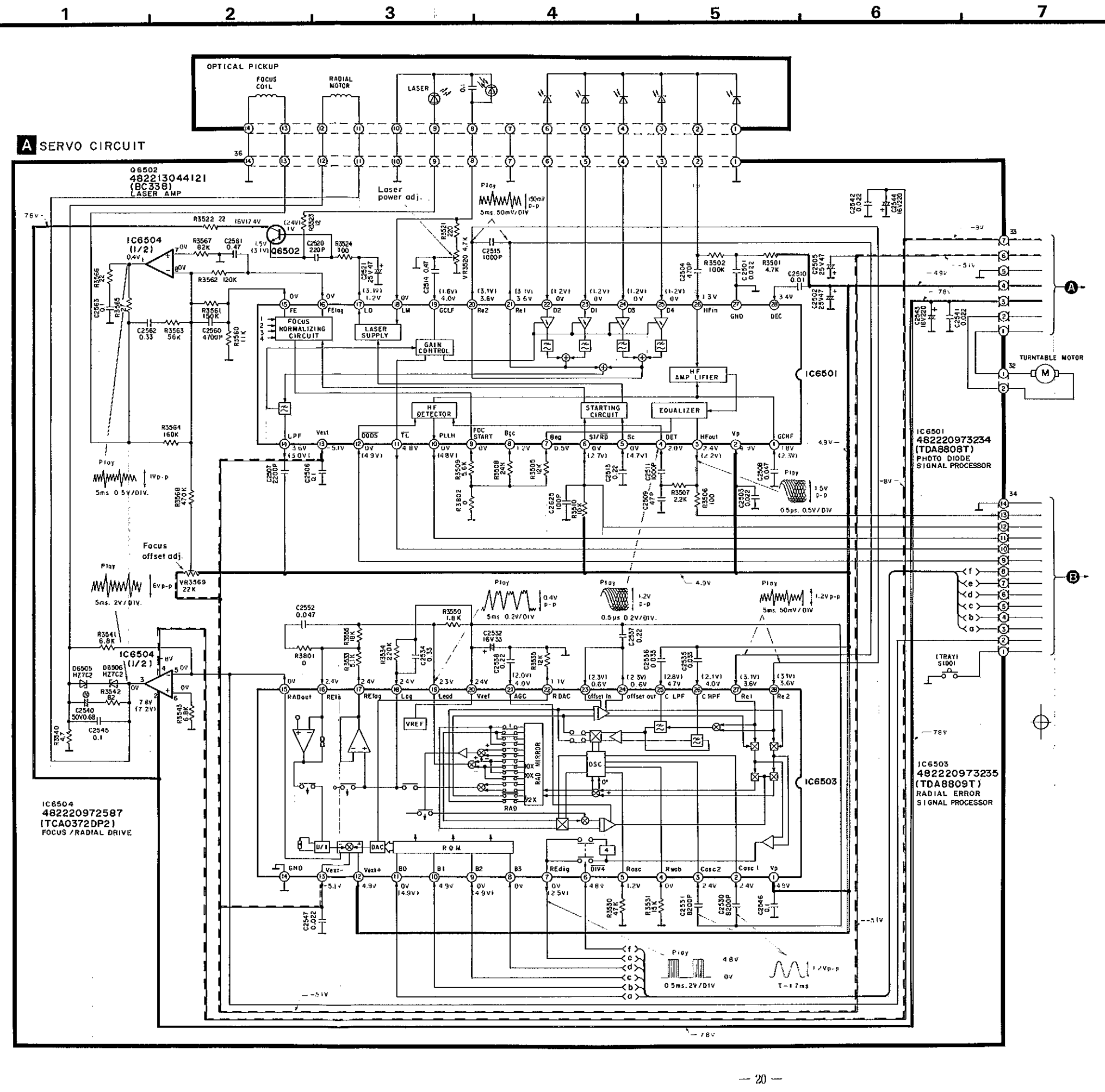
Important safety notice: Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

The supply part number is described alone in the replacement parts list.

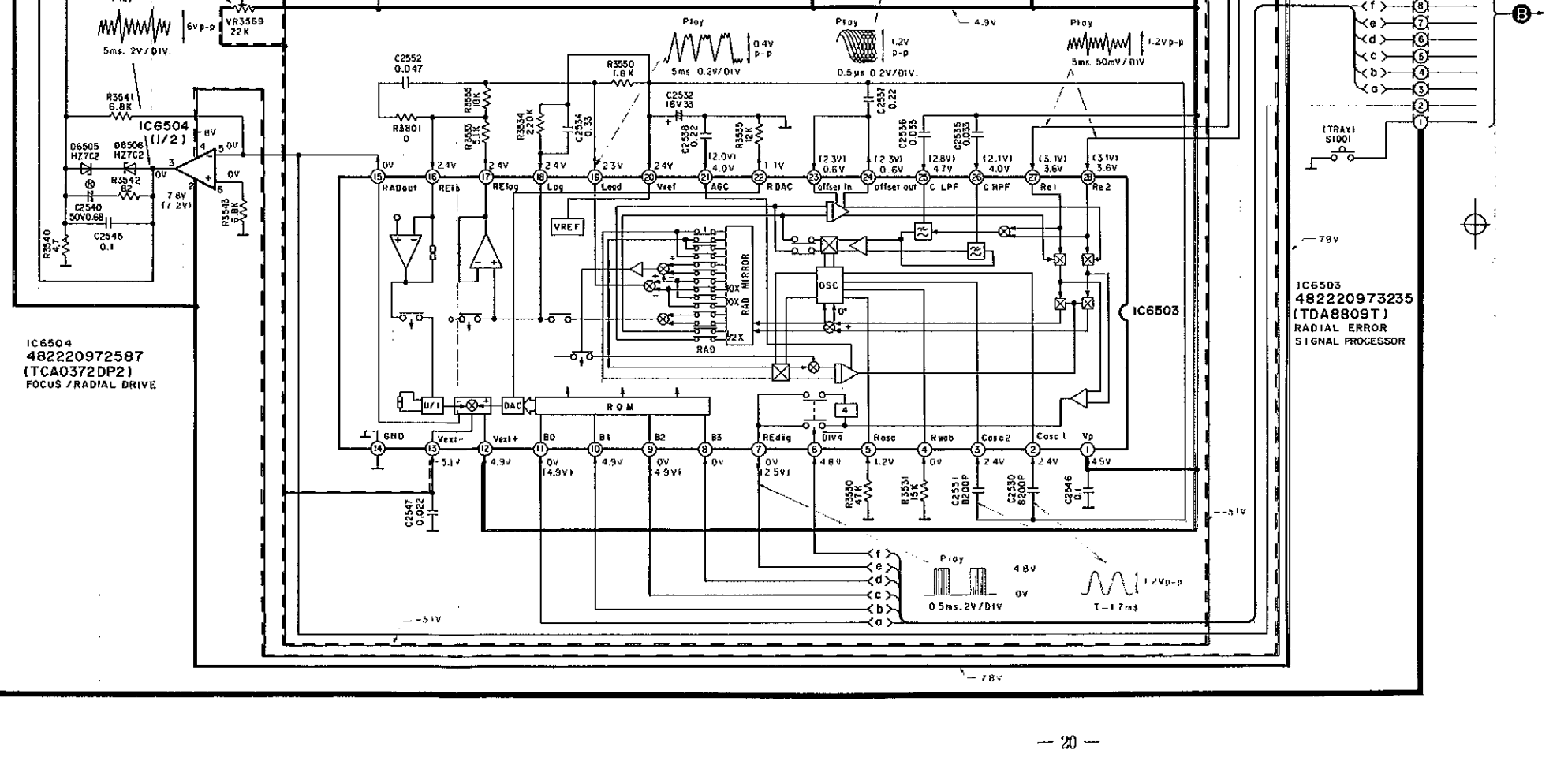
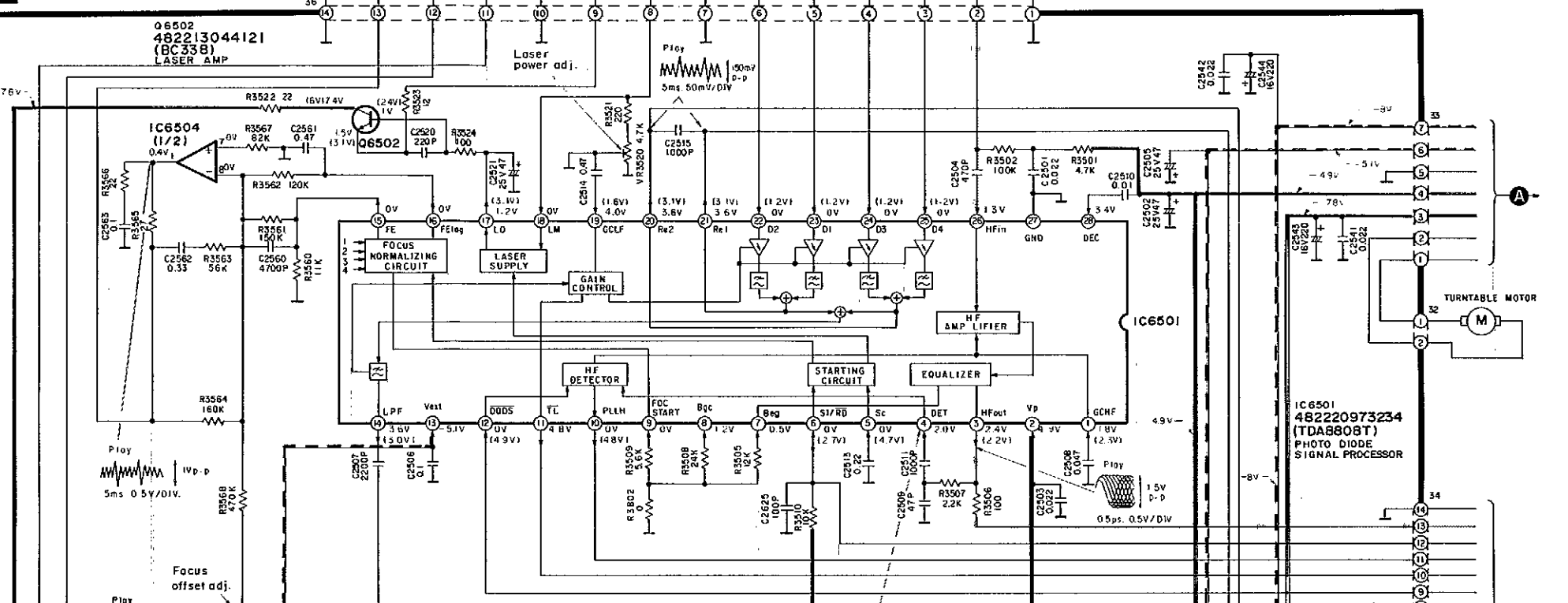
Table with 3 columns: Part No., Production Part No., Supply Part No.

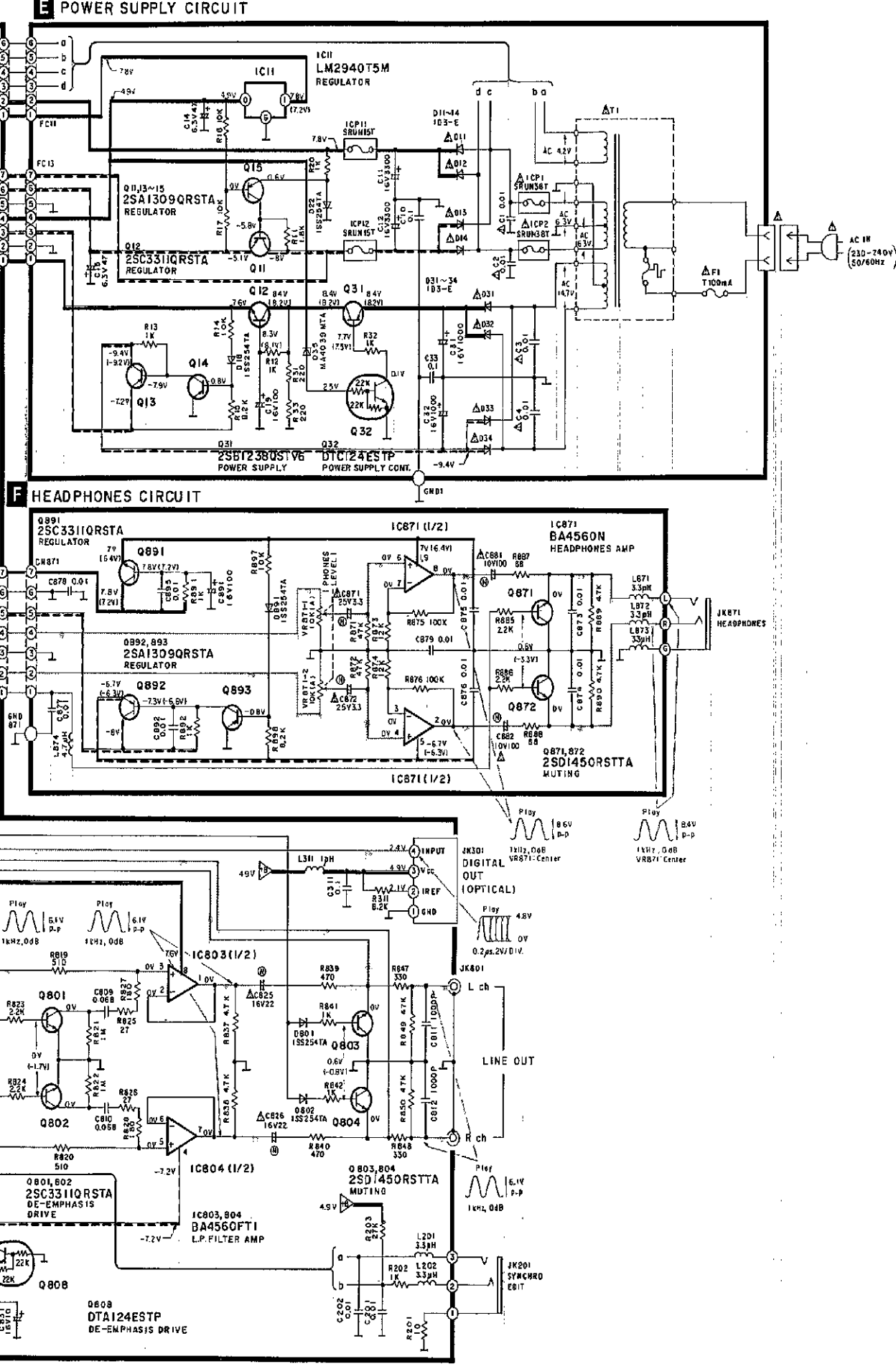
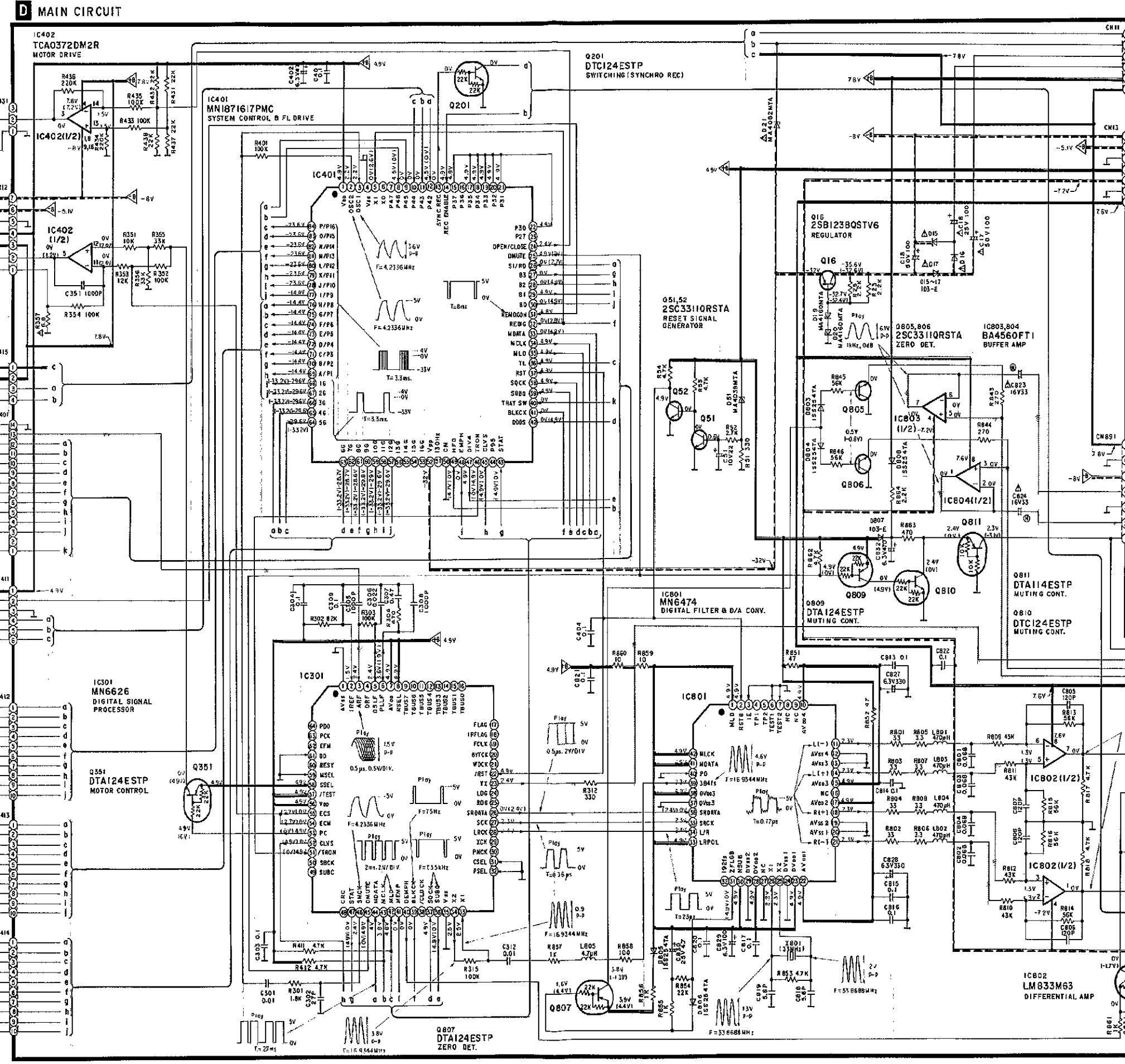
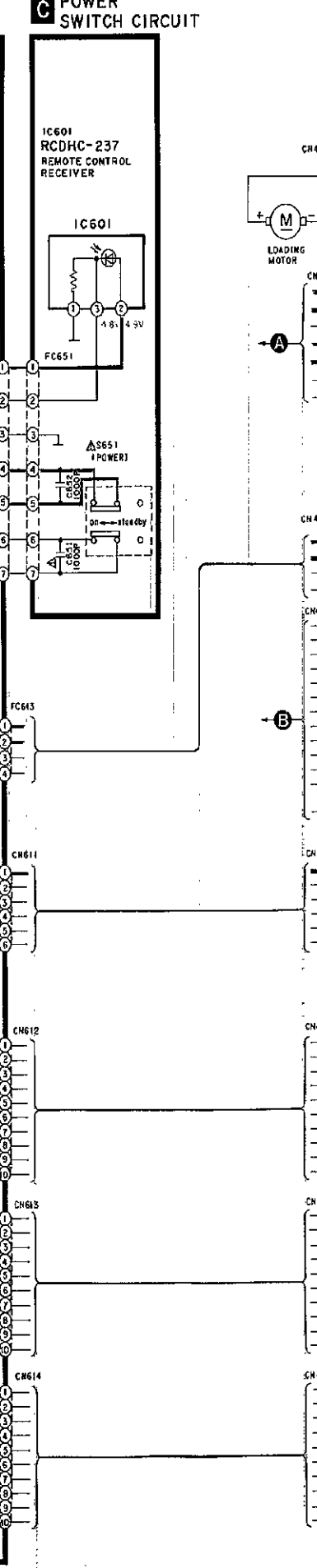
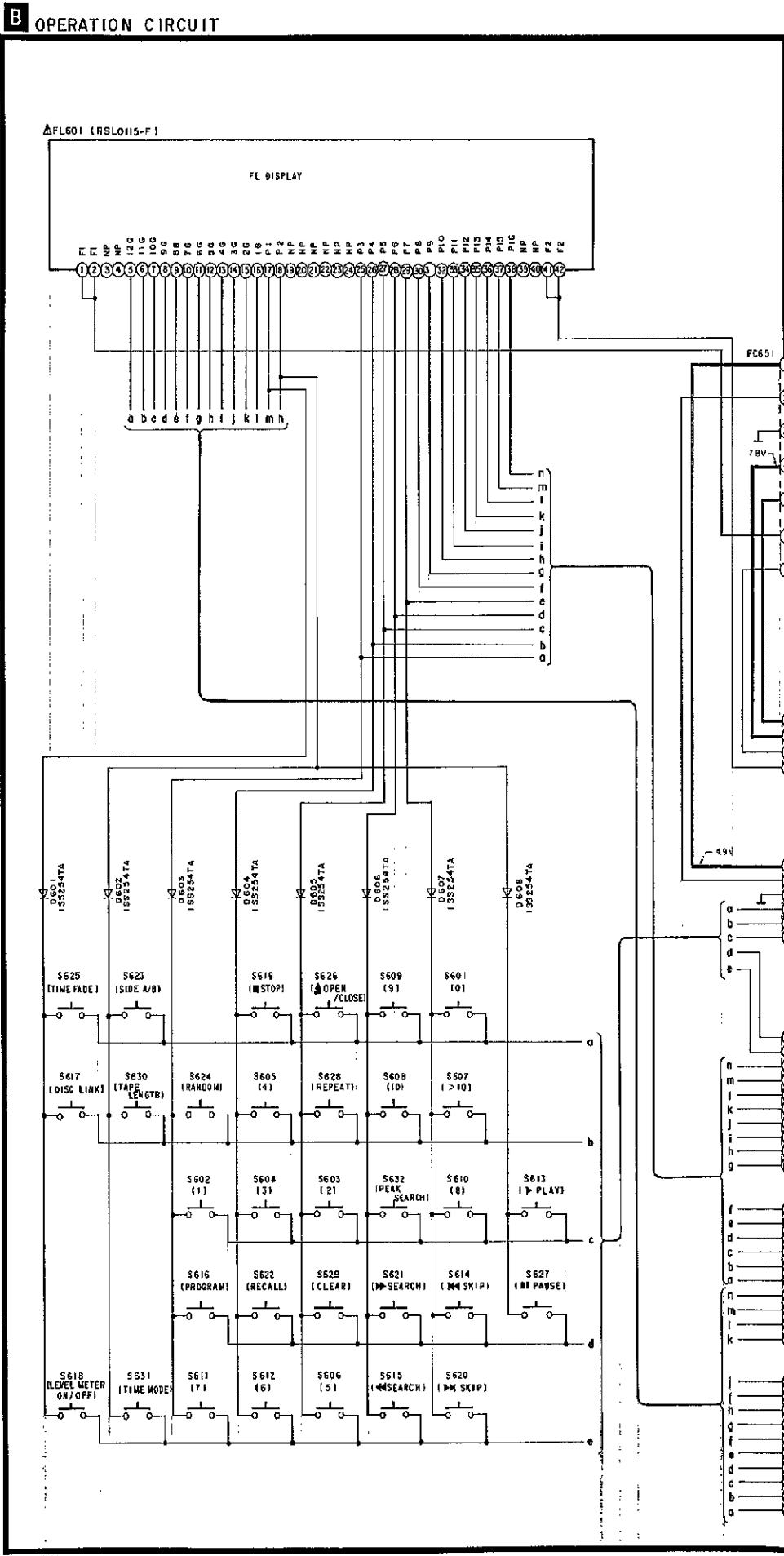
--- / ----- : Positive voltage lines and negative voltage lines.
~ : Audio signal lines.

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.



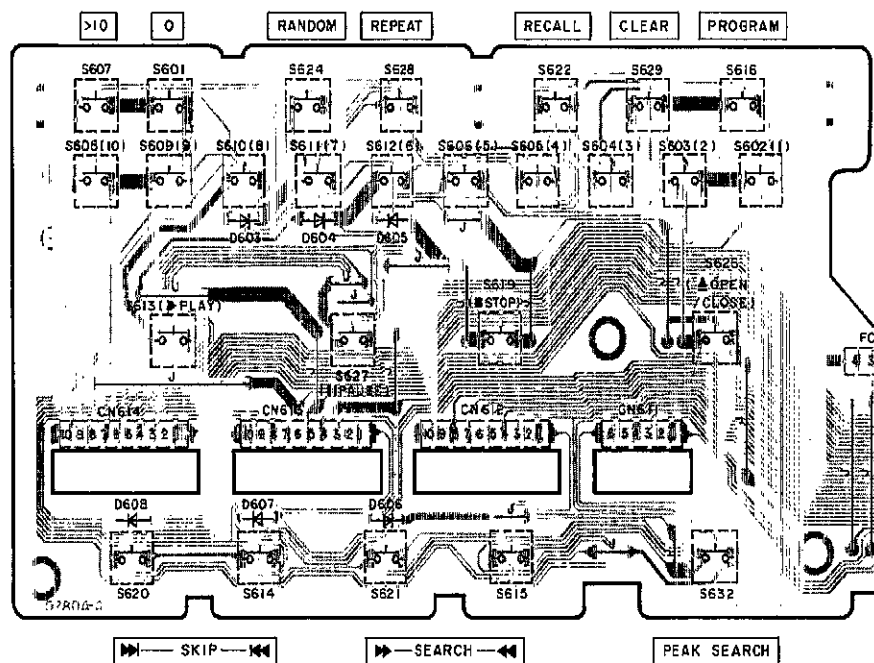
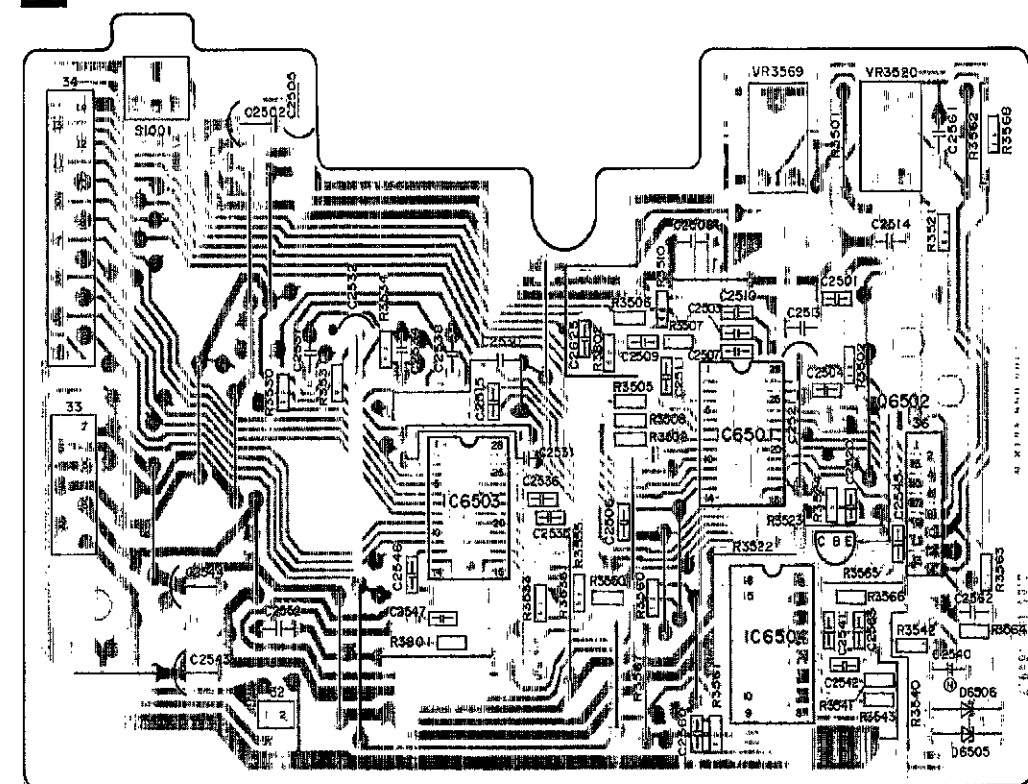
A SERVO CIRCUIT



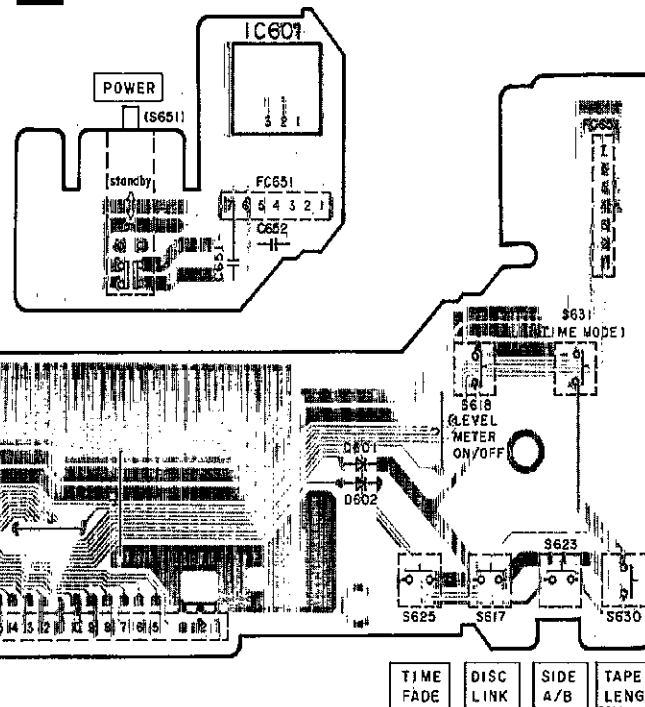


PRINTED CIRCUIT BOARDS

A SERVO P.C.B.

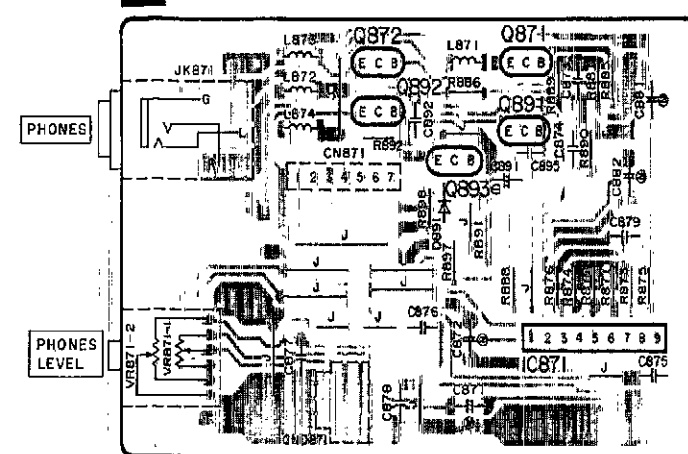


C POWER SWITCH P.C.B.

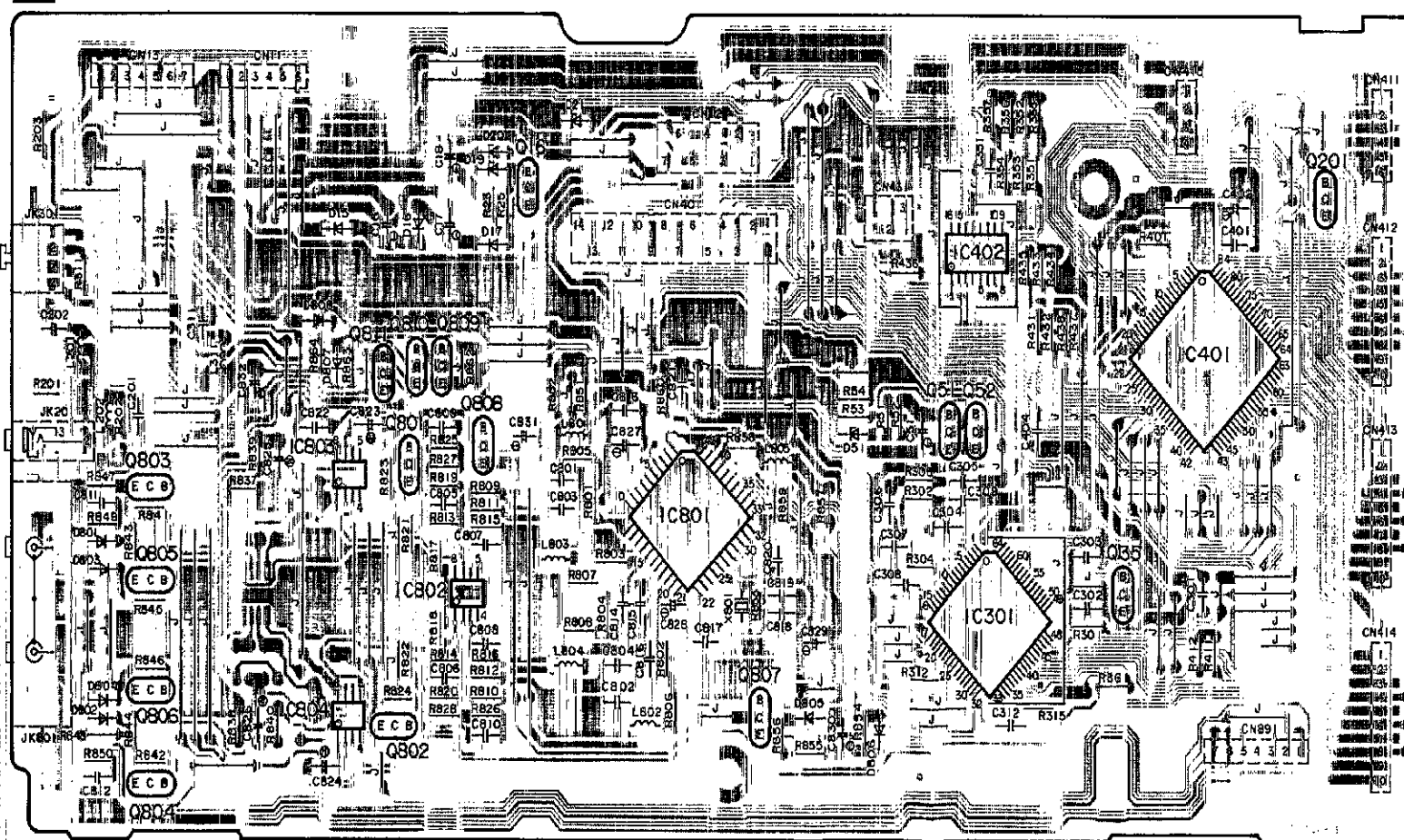


B OPERATION P.C.B.

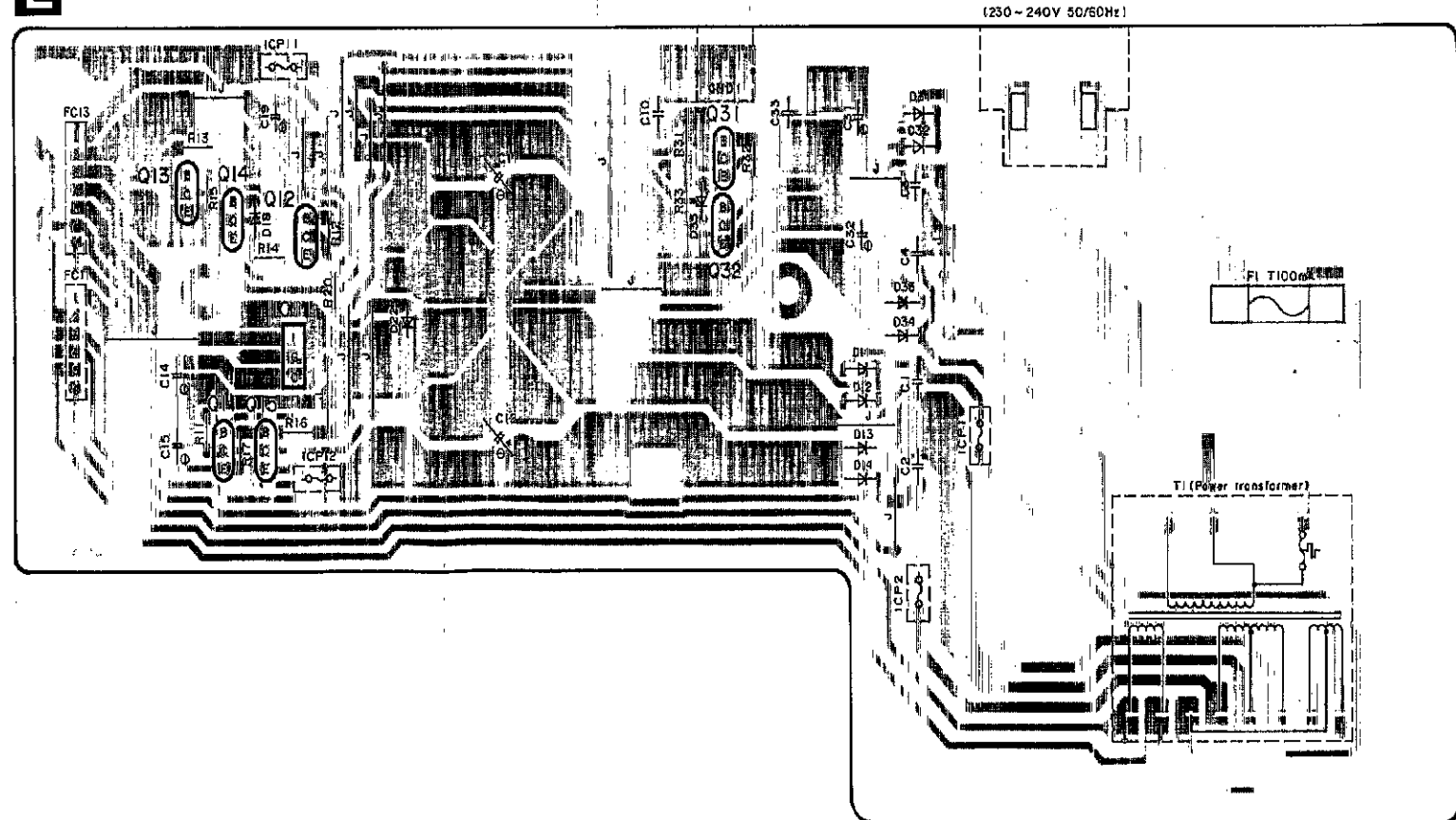
F HEADPHONES P.C.B.



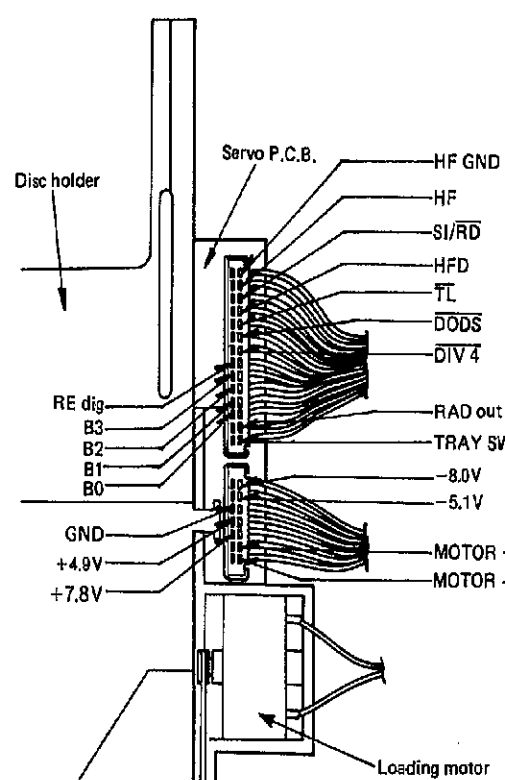
D MAIN P.C.B.



E POWER SUPPLY P.C.B.



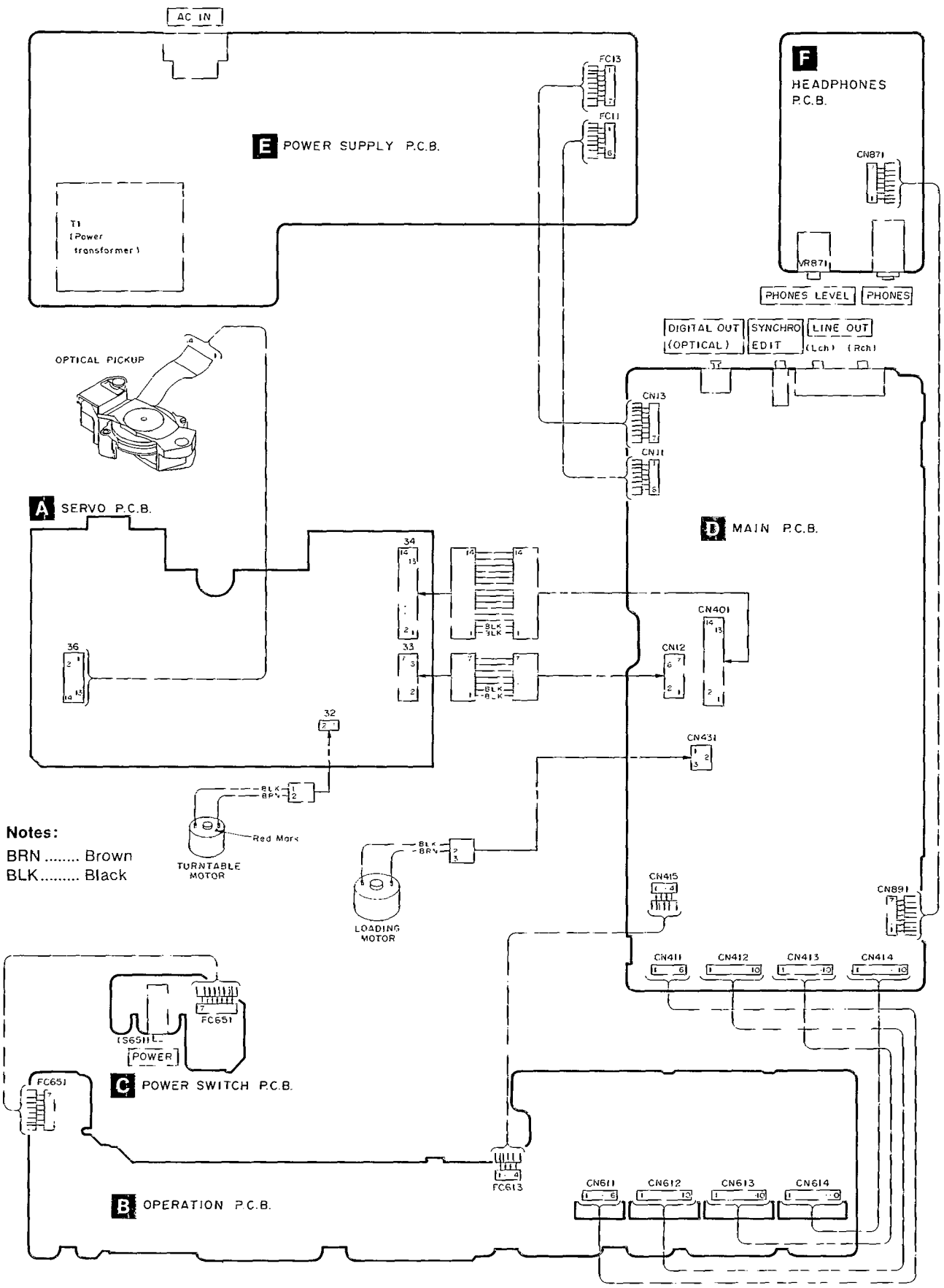
Note: Use connector pins to check servo circuit voltages and waveforms.



TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

BA4560FT1 	LM833M63 	TCA0372DM2R
	482220973234 (TDA8808T) 482220973235 (TDA8809T)	482220972587 (TCA0372DP2)
MN6474 	MN6626 	MN1871617PPMC
BA4560N 	LM2940T5M 	RCDHC-237
	DTA114ESTP DTA124ESTP DTC124ESTP	2SA1308QRSTA 2SC3111QRSTA 2SD1450RSTTA
2SB1238QSTV6 	482213044121 (BC338) 	1SS254TA
1D3-E 	MA4039MTA MA4082MTA 	MA4160MTA 482213030861 (HZ7C2)

WIRING CONNECTION DIAGRAM



Notes:
 BRN Brown
 BLK Black

REPLACEMENT PARTS LIST

Notes: * Important safety notice:

Components identified by Δ 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.

* Remote Control Ass'y: Supply period for three years from termination of production.

* [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.

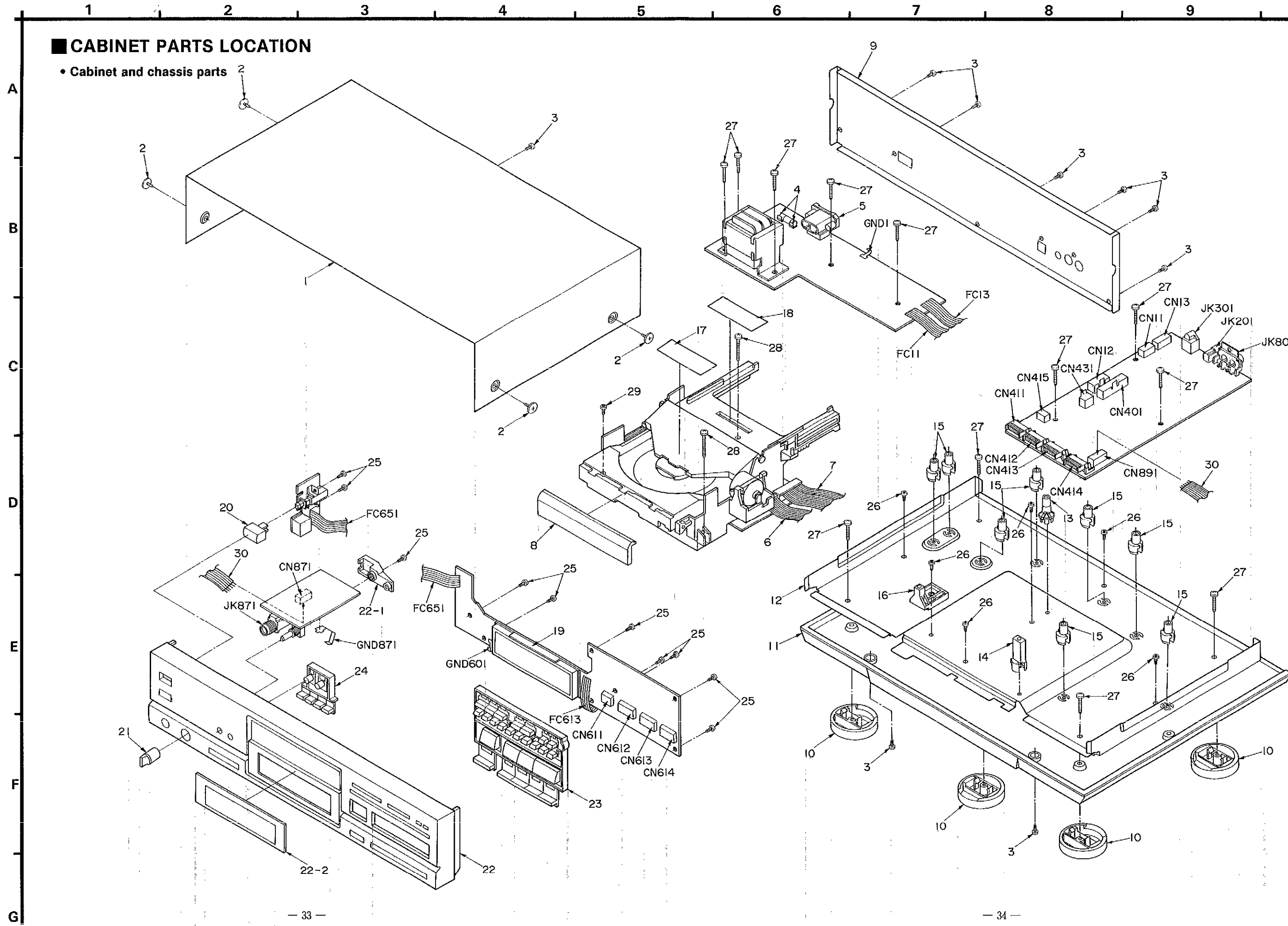
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D801-806	1SS254TA	DIODE	
				D807	1D3-E	DIODE	[MB]
				D808	1SS254TA	DIODE	
				D891	1SS254TA	DIODE	
IC11	LM2940T5	IC, REGULATOR				IC PROTECTOR(S)	
IC301	MN6626	IC, DIGITAL SIGNAL PROCESSOR		ICP1, 2	SRUN38T	IC PROTECTOR	Δ
IC401	MN1871617PMC	IC, SYSTEM CONTROL&FL DRIVE	[MB]	ICP11, 12	SRUN15	IC PROTECTOR	
IC402	TCA0372DM2R	IC, MOTOR DRIVE				VARIABLE RESISTOR(S)	
IC601	RCDHC-237	IC, REMOTE CONTROL RECEIVER		VR871	EVJCB0F02A14	V. R, HEADPHONES LEVEL	
IC801	MN6474	IC, DIGITAL FILTER&D/A CONV.				COIL(S)	
IC802	LM833M63	IC, DIFFERENTIAL AMP		L201, 202	RLQZN3R3KL-D	COIL	[MB]
IC803, 804	SV1BA4560FT1	IC, L. P. FILTER AMP		L311	RLQZN1R0KL-D	COIL	
IC871	BA4560N	IC, HEADPHONES AMP		L801-804	RLQZN471KL-D	COIL	[MB]
		TRANSISTOR(S)		L805	RLQZN4R7KL-D	COIL	
Q11	2SA1309A-R	TRANSISTOR		L871-873	RLQZN3R3KL-D	COIL	[MB]
Q12	2SC3311A-Q	TRANSISTOR		L874	RLQZN4R7KL-D	COIL	
Q13-15	2SA1309A-R	TRANSISTOR				TRANSFORMER(S)	
Q16	2SB1238QSTV6	TRANSISTOR		T1	RTP1K4B008	TRANSFORMER	Δ [MB]
Q31	2SB1238QSTV6	TRANSISTOR				OSCILLATOR(S)	
Q32	DTC124EST	TRANSISTOR		X801	RSXA33M8J01T	OSCILLATOR (33MHz)	[MB]
Q51, 52	2SC3311A-Q	TRANSISTOR				DISPLAY TUBE	
Q201	DTC124EST	TRANSISTOR		FL601	RSL0115-F	DISPLAY TUBE	Δ [MB]
Q351	DTA124ESTP	TRANSISTOR				FUSE(S)	
Q801, 802	2SC3311A-Q	TRANSISTOR		F1	XBA2C01T80	FUSE 250V T100mA	Δ
Q803, 804	2SD1450RTA	TRANSISTOR				SWITCH(ES)	
Q805, 806	2SC3311A-Q	TRANSISTOR		S601	EVQ21405R	SW, NUMERIC 0	
Q807-809	DTA124ESTP	TRANSISTOR		S602	EVQ21405R	SW, NUMERIC 1	
Q810	DTC124EST	TRANSISTOR		S603	EVQ21405R	SW, NUMERIC 2	
Q811	DTA114ESTP	TRANSISTOR		S604	EVQ21405R	SW, NUMERIC 3	
Q871, 872	2SD1450RTA	TRANSISTOR					
Q891	2SC3311A-Q	TRANSISTOR					
Q892, 893	2SA1309A-R	TRANSISTOR					
		DIODE(S)					
D11-17	1D3-E	DIODE	Δ [MB]				
D18	1SS254TA	DIODE					
D19, 20	MA4160M	DIODE					
D21	MA4082MTA	DIODE	Δ				
D22	1SS254TA	DIODE					
D31-34	1D3-E	DIODE	Δ [MB]				
D35	MA4039MTA	DIODE					
D51	MA4039MTA	DIODE					
D601-608	1SS254TA	DIODE					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
S605	EVQ21405R	SW, NUMERIC 4					
S606	EVQ21405R	SW, NUMERIC 5				EARTH CONTACT(S)	
S607	EVQ21405R	SW, NUMERIC 10					
S608	EVQ21405R	SW, NUMERIC 10		GND1	SUSD144	EARTH CONTACT	
S609	EVQ21405R	SW, NUMERIC 9		GND601	SUSD144	EARTH CONTACT	
S610	EVQ21405R	SW, NUMERIC 8		GND871	RMCD075	EARTH CONTACT	[MB]
S611	EVQ21405R	SW, NUMERIC 7					
S612	EVQ21405R	SW, NUMERIC 6				FLAT CABLE(S)	
S613	EVQ21405R	SW, PLAY					
S614	EVQ21405R	SW, SKIP (B)		FC11	RWJ1806100KX	FLAT CABLE (6P)	[MB]
S615	EVQ21405R	SW, SEARCH (B)		FC13	RWJ1807100KX	FLAT CABLE (7P)	[MB]
S616	EVQ21405R	SW, PROGRAM		FC613	RWJ1804150XX	FLAT CABLE (4P)	[MB]
S617	EVQ21405R	SW, LINK		FC651	RWJ1807150XX	FLAT CABLE (7P)	[MB]
S618	EVQ21405R	SW, LEVEL METER ON/OFF					
S619	EVQ21405R	SW, STOP					
S620	EVQ21405R	SW, SKIP (F)				SERVO P. C. B.	
S621	EVQ21405R	SW, SEARCH (F)				INTEGRATED CIRCUIT(S)	
S622	EVQ21405R	SW, RECALL					
S623	EVQ21405R	SW, SIDE A/B		IC6501	482220973234	I. C. PHOTO DIODE S. P.	[MB]
S624	EVQ21405R	SW, RANDOM		IC6503	482220973235	I. C. RADIAL ERROR S. P.	[MB]
S625	EVQ21405R	SW, TIME FADE		IC6504	482220972587	I. C. FOCUS/RADIAL DRIVE	[MB]
S626	EVQ21405R	SW, OPEN/CLOSE					
S627	EVQ21405R	SW, PAUSE				TRANSISTOR(S)	
S628	EVQ21405R	SW, REPEAT					
S629	EVQ21405R	SW, CLEAR		Q6502	482213044121	TRANSISTOR	[MB]
S630	EVQ21405R	SW, TAPE LENGTH					
S631	EVQ21405R	SW, TIME MODE				DIODE(S)	
S632	EVQ21405R	SW, PEAK SEARCH					
S651	RSP2B010	SW, POWER	A	D6505	482213030861	DIODE	[MB]
				D6506	482213030861	DIODE	[MB]
		CONNECTOR(S) & SOCKET(S)				VARIABLE RESISTOR(S)	
CN11	RJS1A6606	CONNECTOR (6P)		VR3520	482210110685	V. R. LASER POWER ADJ.	[MB]
CN12	RJT001H007	CONNECTOR (7P)	[MB]	VR3569	482210011193	V. R. FOCUS OFFSET ADJ.	[MB]
CN13	RJS1A6607	CONNECTOR (7P)	[MB]			SWITCH	
CN401	RJT001H014	CONNECTOR (14P)	[MB]				
CN411	RJC003K006M1	SOCKET (6P)		S1001	482227612523	SW, TRAY	[MB]
CN412-414	RJU003K010M1	SOCKET (10P)					
CN415	RJS1A6604	CONNECTOR (4P)					
CN431	RJT001H003	CONNECTOR (3P)	[MB]				
CN611	RJT003K006M1	CONNECTOR (6P)					
CN612 614	RJT003K010M1	CONNECTOR (10P)					
CN871	RJS1A6607	CONNECTOR (7P)	[MB]				
CN891	RJS1A6607	CONNECTOR (7P)	[MB]				
		JACK(S)					
JK201	RJJ33701	SYNCHRO EDIT					
JK301	TOTX174-A	DIGITAL (OPTICAL) OUT					
JK801	RJH3201N	LINE OUT					
JK871	QJA0455ZC A	HEADPHONES					

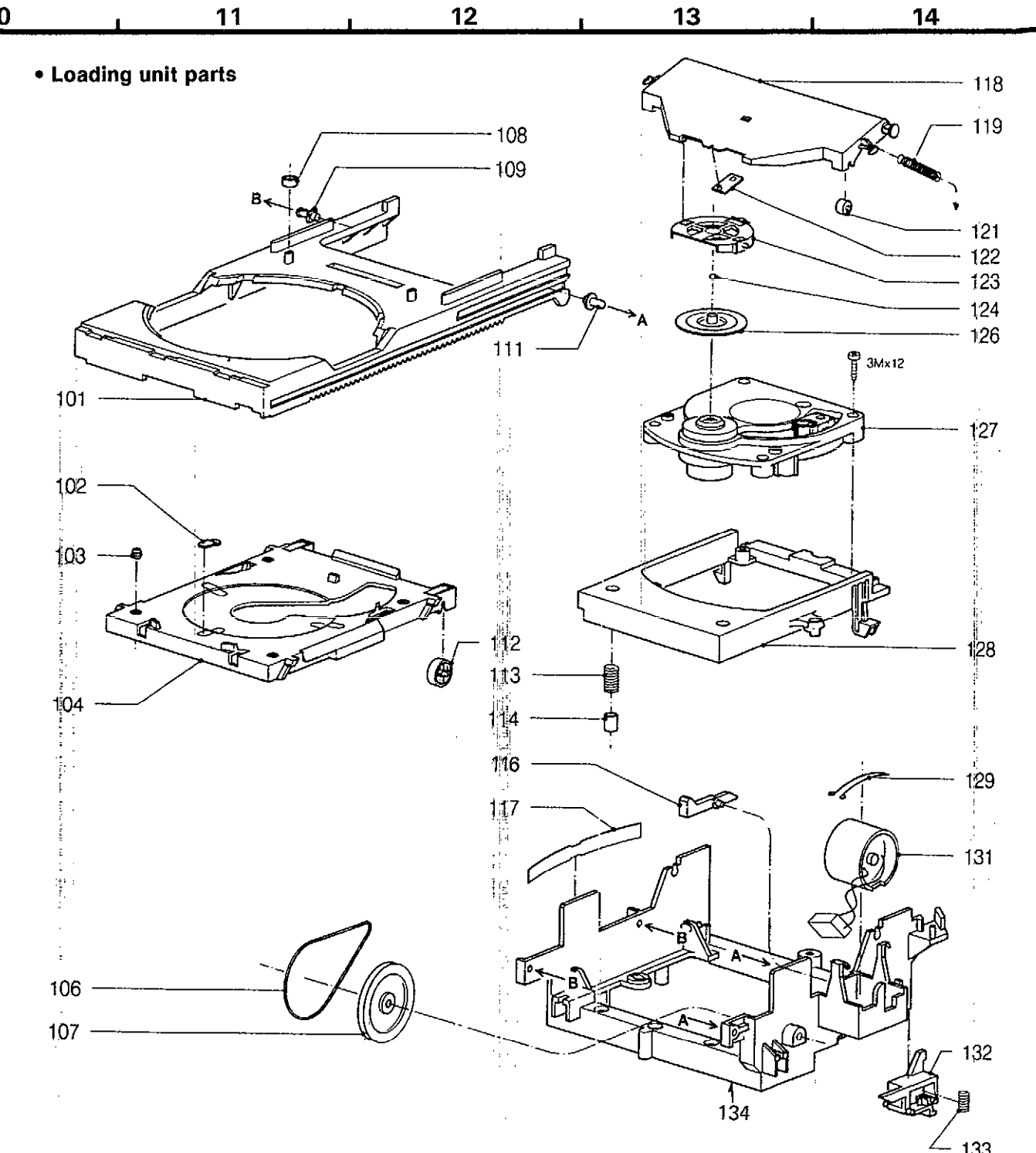
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		117	482249263659	SPRING, BLADE	[MB]
				118	482244460568	DISC LID	[MB]
				119	482249232883	SPRING, TENSION	[MB]
1	RKMO152-K	CABINET	[MB]	121	482252890639	ROLLER	[MB]
2	SNE2129-1	SCREW		122	482246692257	PLATE	[MB]
3	XTBS3+8JFZ1	SCREW		123	482240261207	HOLDER	[MB]
4	EYF52BC	FUSE HOLDER		124	482252040177	SMALL BALL	[MB]
5	SJS9236	AC INLET	△	126	482253080503	RING, PRESSURE	[MB]
6	REX0007	CONNECTOR ASS' Y (7P)	[MB]	127	482269130209	OPTICAL PICKUP UNIT	[MB]
7	REX0285	CONNECTOR ASS' Y (14P)	[MB]	128	482240261196	SUPPORT	[MB]
8	RGK0463-K	TRAY ORNAMENT	[MB]	129	482249263746	CLAMPING SPRING	[MB]
9	RFKHLPS620AE	REAR PANEL ASS' Y	(E, EG) [MB]	131	482236120998	LOADING MOTOR	[MB]
9	RFKHP620AEB	REAR PANEL ASS' Y	(EB) [MB]	132	482240250244	BRACKET	[MB]
10	RKA0040B	FOOT	[MB]	133	482249251935	SPRING, COMPRES.	[MB]
11	RKU0040-K	CHASSIS BASE	[MB]	134	482270112729	CHASSIS	[MB]
12	FMK0146	CHASSIS	[MB]			PACKING MATERIAL	
13	FMRO020	SPACER (A)	[MB]	P1	RPG1140	PACKING CASE	[MB]
14	FMRO021	SPACER (B)	[MB]	P2	RPN0591	CUSHION	[MB]
15	FMRO377	P. C. B. SUPPORT	[MB]	P3	FMRO024	LOCK SHAFT	[MB]
16	FMRO573-K	SPACER (C)	[MB]	P4	RQCA0059	LOCK CAUTION SHEET	[MB]
17	RQLS0022	LASER CAUTION LABEL	[MB]	P5	XZB60X65A01Z	PROTECTION BAG (UNIT)	
18	RQLS0060	LASER CAUTION LABEL	[MB]	P6	XZB23X35C03	PROTECTION BAG (F. B.)	
19	FMRO523	FL HOLDER	[MB]			ACCESSORIES	
20	RGU0030	POWER BUTTON		A1	RFKSLPS620AE	INSTRUCTION MANUAL ASS' Y	(E) [MB]
21	RGW0048	HEADPHONES LEVEL KNOB		A1	RQT1396-B	INSTRUCTION MANUAL	(EB) [MB]
22	RFKGLPS620AE	FRONT PANEL ASS' Y	[MB]	A1	RQT1397-D	INSTRUCTION MANUAL	(EG) [MB]
22-1	FMRO512	HEADPHONES HOLDER	[MB]	A2	RJA0018-1K	AC POWER SUPPLY CORD	(E, EG) △
22-2	RKWO197-R	WINDOW	[MB]	A2	SJA193	AC POWER SUPPLY CORD	(EB) △
23	RGU0711-K	MAIN BUTTON	[MB]	A3	RQA0013	WARRANTY CARD	
24	RGU0712-K	SUB BUTTON	[MB]	A4	RQCB0169	SERVICENTER LIST	
25	XTBS26+8J	SCREW		A5	SJP2249-3	STEREO CONNECTION CABLE	
26	XTB3+10GFZ	SCREW		A6	EUR64798	REMOTE CONTROL TRANSMITTER	[MB]
27	XTB3+20JFZ	SCREW		A6-1	UR64EC804	BATTERY COVER	
28	XTB3+35JFZ	SCREW					
29	XTB3+8JFZ	SCREW					
30	RWJ1807480XX	FLAT CABLE (7P)	[MB]				
		LOADING UNIT PARTS					
101	482244450603	DISC HOLDER	[MB]				
102	482232550176	GROMMET, CABLE	[MB]				
103	482232550177	GROMMET, CABLE	[MB]				
104	482246692251	DISC TRAY	[MB]				
106	482235810115	DRIVE BELT	[MB]				
107	482252232359	WHEEL, GEAR	[MB]				
108	482253251518	RING, RUBBER	[MB]				
109	482240261081	GUIDE	[MB]				
111	482240261132	GUIDE	[MB]				
112	482252890638	ROLLER	[MB]				
113	482249251902	SPRING, COMPRES.	[MB]				
114	482246661587	FOAM	[MB]				
116	482240261107	LEVER	[MB]				

CABINET PARTS LOCATION

• Cabinet and chassis parts



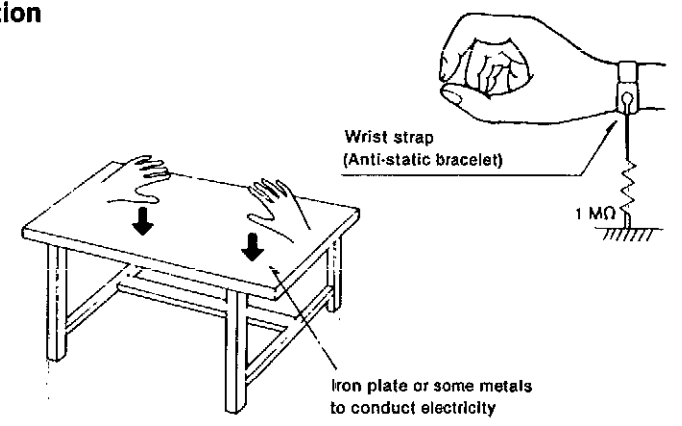
• Loading unit parts



• 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.



RESISTORS & CAPACITORS

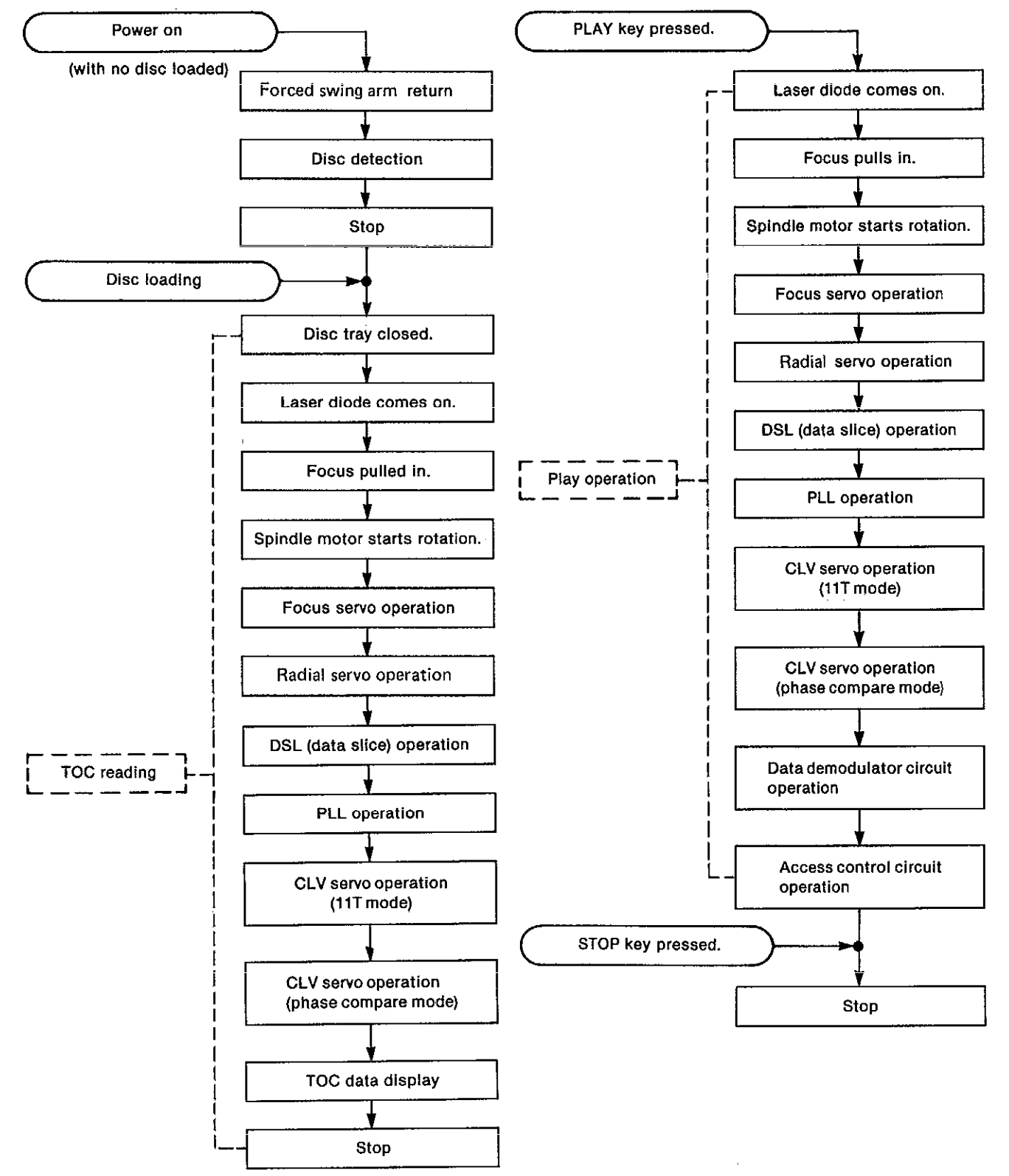
Notes : * Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k(OHM)
 * [MB]Indicates in Remarks columns parts that are supplied by MBV.

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
RESISTORS								
R11	ERDS2TJ182	1/4W 1.8K	R825, 826	ERDS2J270T	1/4W 27	C308	ECBT1H102KB5	50V 1000P
R12, 13	ERDS2TJ102	1/4W 1K	R827, 828	ERDS2TJ181T	1/4W 180	C309	ECFR1E104ZF5	25V 0.1U
R14	ERDS2TJ103	1/4W 10K	R837, 838	ERDS2TJ472	1/4W 4.7K	C311	ECFR1E104ZF5	25V 0.1U
R15	ERDS2TJ822	1/4W 8.2K	R839, 840	ERDS2TJ471	1/4W 470	C312	ECBT1C103NS5	16V 0.01U
R16, 17	ERDS2TJ103	1/4W 10K	R841, 842	ERDS2TJ102	1/4W 1K	C351	ECBT1H102KB5	50V 1000P
R20	ERDS2TJ102	1/4W 1K	R843, 844	ERDS2TJ271	1/4W 270	C401	ECFR1E104ZF5	25V 0.1U
R23	ERDS2TJ222	1/4W 2.2K	R845, 846	ERDS2TJ563	1/4W 56K	C402	ECEA0JKA470B	6.3V 47U
R25	ERDS2TJ222	1/4W 2.2K	R847, 848	ERDS2TJ331	1/4W 330	C404	ECFR1E104ZF5	25V 0.1U
R31	ERDS2TJ221	1/4W 220	R849, 850	ERDS2TJ473	1/4W 47K	C651	ECBT1C102KB	16V 1000P Δ
R32	ERDS2TJ102	1/4W 1K	R851, 852	ERDS2TJ470	1/4W 47	G652	ECBT1C102KB	16V 1000P
R33	ERDS2TJ221	1/4W 220	R853	ERDS2TJ472	1/4W 4.7K	C801-804	ECQV1H683J23	50V 0.068U
R51	ERDS2TJ331	1/4W 330	R854	ERDS2TJ223	1/4W 22K	C805-808	ECBT1H121KB5	50V 120P
R52	ERDS2TJ272T	1/4W 2.7K	R855-857	ERDS2TJ102	1/4W 1K	C809, 810	ECQV1H683J23	50V 0.068U
R53, 54	ERDS2TJ472	1/4W 4.7K	R858	ERDS2TJ101	1/4W 100	C811, 812	ECBT1H102KB5	50V 1000P
R201	ERDS2TJ100	1/4W 10	R859, 860	ERDS2TJ100	1/4W 10	C813-817	ECFR1E104ZF5	25V 0.1U
R202	ERDS2TJ102	1/4W 1K	R861	ERDS2TJ102	1/4W 1K	C818, 819	ECBT1H5R6K5	50V 5.6P
R203	ERDS2TJ273	1/4W 27K	R862	ERDS2TJ472	1/4W 4.7K	C820-822	ECFR1E104ZF5	25V 0.1U
R301	ERDS2TJ182	1/4W 1.8K	R863	ERDS2TJ471	1/4W 470	C823, 824	ECEA1CN330S	16V 33U Δ
R302	ERDS2TJ823T	1/4W 82K	R864	ERDS2TJ222	1/4W 2.2K	C825, 826	ECEA1CKN220B	16V 22U Δ
R303	ERDS2TJ104	1/4W 100K	R871, 872	ERDS2TJ473	1/4W 47K	C827, 828	ECEA0JU331B	6.3V 330U
R304	ERDS2TJ471	1/4W 470	R873, 874	ERDS2TJ123	1/4W 12K	C829	ECEA0JKA101B	6.3V 100U
R311	ERDS2TJ822	1/4W 8.2K	R875, 876	ERDS2TJ104	1/4W 100K	C830	ECEA1EKA4R7B	25V 4.7U
R312	ERDS2TJ331	1/4W 330	R885, 886	ERDS2TJ222	1/4W 2.2K	C831	ECEA1CKA100B	16V 10U
R315	ERDS2TJ104	1/4W 100K	R887, 888	ERDS2TJ680T	1/4W 68	C832	ECEA0JU471	6.3V 470U
R351	ERDS2TJ103	1/4W 10K	R889, 890	ERDS2TJ472	1/4W 4.7K	C871, 872	ECEA1EKN3R3B	25V 3.3U Δ
R352	ERDS2TJ104	1/4W 100K	R891, 892	ERDS2TJ102	1/4W 1K	C873, 874	ECQB1H103KF3	50V 0.01U
R353	ERDS2TJ123	1/4W 12K	R897	ERDS2TJ103	1/4W 10K	C875-879	ECBT1C103NS5	16V 0.01U
R354	ERDS2TJ104	1/4W 100K	R898	ERDS2TJ822	1/4W 8.2K	C881, 882	ECEA1AN101XB	10V 100U Δ
R355, 356	ERDS2TJ333	1/4W 33K				C891	ECEA1CKA101B	16V 100U
R357	ERD25FJ6R8	1/4W 6.8 Δ				C892	ECBT1C103NS5	16V 0.01U
R401	ERDS2TJ104	1/4W 100K				C895	ECBT1C103NS5	16V 0.01U
R411, 412	ERDS2TJ472	1/4W 4.7K	C1-4	ECFTD103KKL	50V 0.01U Δ			
R431, 432	ERDS2TJ223	1/4W 22K	C10	ECFR1E104ZF5	25V 0.1U			<SERVO P. C. B. >
R433	ERDS2TJ104	1/4W 100K	C11, 12	ECES1GV332R	16V 3300U [MB]			RESISTORS
R434	ERDS2TJ224T	1/4W 220K	C14, 15	ECEA0JKA470B	6.3V 47U	R3501	482205024702	1/8W 4.7K [MB]
R435	ERDS2TJ104	1/4W 100K	C16	ECEA1EU101	25V 100U Δ	R3502	482205110104	1/8W 100K [MB]
R436	ERDS2TJ224T	1/4W 220K	C17	ECEA1HU101	50V 100U Δ	R3505	482205110123	1/4W 12K [MB]
R437, 438	ERDS2TJ223	1/4W 22K	C18	ECEA1HU101	50V 100U	R3506	482205110101	1/8W 100 [MB]
R801-804	ERDS2TJ330	1/4W 33	C19	ECEA1CKA101B	16V 100U	R3507	482205120222	1/8W 2.2K [MB]
R805-808	ERDS2TJ3R3T	1/4W 3.3	C31	ECFR1E104ZF5	25V 0.1U	R3508	482205110243	1/4W 24K [MB]
R809-812	ERDS2TJ433	1/4W 43K	C33	ECFR1E104ZF5	25V 0.1U	R3509	482205110562	1/8W 5.6K [MB]
R813-816	ERDS2TJ563	1/4W 56K	C51	ECEA1AKA220B	10V 22U	R3510	482205110103	1/8W 10K [MB]
R817, 818	ERDS2TJ472	1/4W 4.7K	C201, 202	ECBT1C103NS5	16V 0.01U	R3521	482205110221	1/8W 220 [MB]
R819, 820	ERDS2TJ511	1/4W 510	C301	ECBT1C103NS5	16V 0.01U	R3522	482205210229	1/3W 22 [MB]
R821, 822	ERDS2TJ105T	1/4W 1M	C302	ECBT1H270J5	50V 27P	R3523	482205210129	1/3W 12 [MB]
R823, 824	ERDS2TJ222	1/4W 2.2K	C303, 304	ECFR1E104ZF5	25V 0.1U	R3524	482205110101	1/8W 100 [MB]
			C305	ECBT1H102KB5	50V 1000P	R3530	482205110473	1/4W 47K [MB]
			C306	ECFR1E223KB	25V 0.022U	R3531	482205110153	1/4W 15K [MB]
			C307	ECQV1H474J23	50V 0.47U			

TROUBLESHOOTING GUIDE

SL-PS620A Operation Sequence Check Sheet

Play Operation Sequence



PACKAGING

