

Service Manual

Compact Disc Player

SL-PG540A

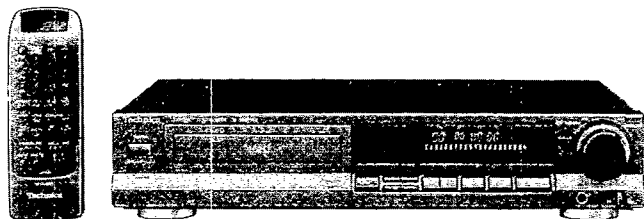
COMPACT
disc
DIGITAL AUDIO

DIGITAL

MASH*
multi-stage noise shaping

Colour

(K) Black Type



Area

| Suffix for Model No. | Area | Colour |
|----------------------|-------------------|--------|
| (E) | Europe | (K) |
| (EB) | Great Britain | |
| (EG) | Germany and Italy | |

*

- 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.

SL-PG320A TRAVERSE DECK SERIES (RAD0301-1) SPECIFICATIONS

(DIN 45 500)

■ Audio

| | |
|---------------------------|-------------------------------------|
| No. of channels | 2 (left and right, stereo) |
| Frequency response | 2–20,000 Hz, ± 0.5 dB |
| Output voltage | 2 V (at 0 dB) |
| Dynamic range | 98 dB |
| S/N | 105 dB |
| Harmonic distortion | 0.002% (1 kHz, 0 dB) |
| Total harmonic distortion | 0.0027% (1 kHz, 0 dB) |
| Wow and flutter | Below measurable limit |
| DA converter | MASH (1 bit) |
| Output impedance | 600 Ω |
| Load impedance | More than 10 k Ω |
| Headphone output level | 15 mW max. 32 Ω (adjustable) |

■ Pickup

| | |
|-------------|---|
| Wavelength | 780 nm |
| Laser Power | No hazardous radiation is emitted (with safety protection) |

■ General

| | |
|--------------------|------------------------|
| Power consumption | 10 W |
| Power supply | AC 50/60 Hz, 230–240 V |
| Dimensions (W×H×D) | 430×92×298 mm |
| Weight | 3.6 kg |

Note:

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

Technics

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■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

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

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

● Handling of traverse deck (optical pickup)

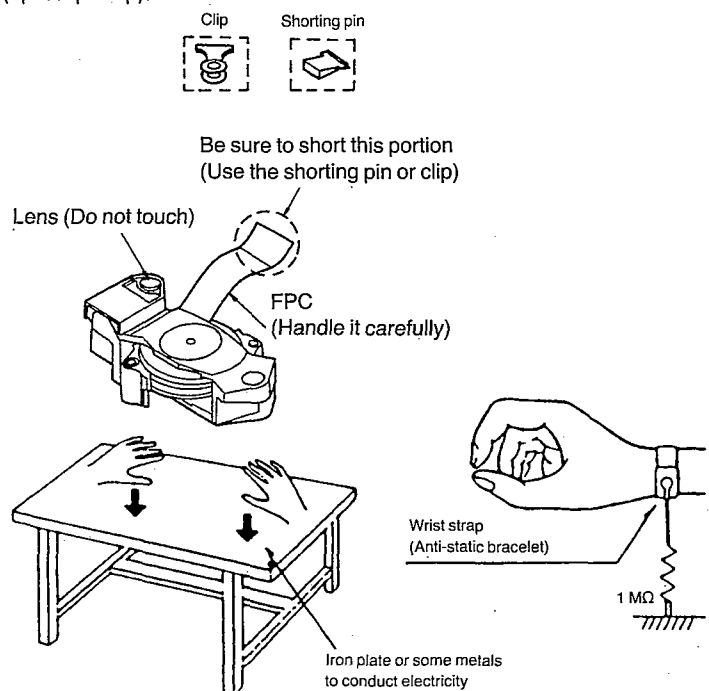
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board).
When removing or connecting the short pin, finish the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

● Grounding for electrostatic breakdown prevention

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

Caution:

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



■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 μ W/VDE

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

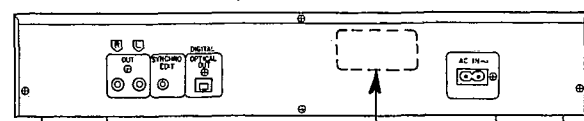
1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

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

Wellenlänge: 780 nm
Maximale strahlungsleistung der lasereinheit: 100 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 werksseitig justierten einstellregler der lasereinheit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.



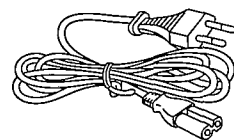
**CLASS 1
LASER PRODUCT**

**LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT**

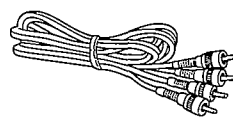
ACCESSORIES

Note:

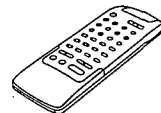
The configuration of the AC power supply cord differs according to area.



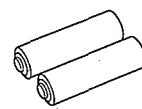
AC power supply cord
for (E) and (EG) areas...(RJA0018-K) 1



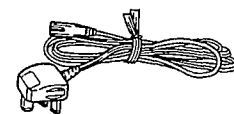
Stereo connection cable
(SJP2249-3) 1



Remote control transmitter
(EUR642100) 1



Batteries
UM-4 (AAA, R03) 2
for remote control transmitter

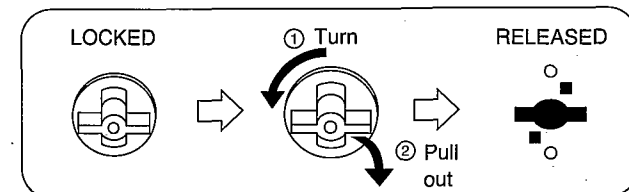


for (EB) area...(VJA0733) 1

INSTALLATION

Before placement

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



Insert them here after removing.
Turn clockwise by 90° to secure them.

Soft cloth or similar material
(to prevent scratches)

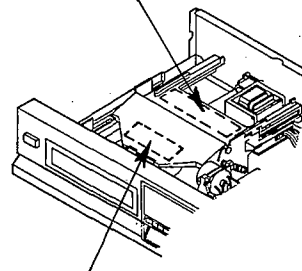
Note:

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.

VARO!
AVATTAESSA JA SUOJALUKITUS-
OHITETTAESSA OLET ALTTINA
NÄKYMÄTÖN LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESIN.

VARNING
OSYNLIG LASERSTRÅLNING NÄR
DENNA DEL ÄR ÖPPNAD OCH
SPÄRREN ÄR URKOPPLAD.
BETRÄKTA EJ STRÅLEN.

ADVERSEL
USYNLIG LASERSTRÅLNING NÄR
DEKSEL ÖPPNES OG SIKKERHEDSLÅS
BRYTES. UNNGÅ EKSPONERING FOR
STRÅLEN. R01S0074



ADVARSEL: USYNLIG LASERSTRÅLNING
VED ÅBNING, NÄR SIKKERHEDSAF-
BRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.

VORSICHT
Unsichtbare
Laserstrahlung, wenn
Abdeckung geöffnet.
Nicht dem Strahl
aussetzen. R01S0022

CAUTION FOR AC MAINS LEAD



(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT


The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral, Brown: Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

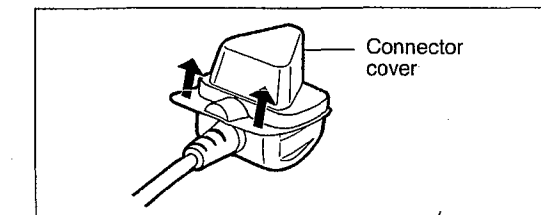
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

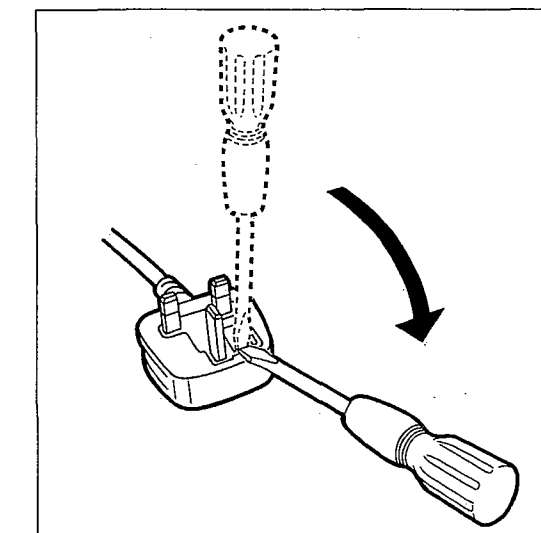
Before use

Remove the connector cover as follows.

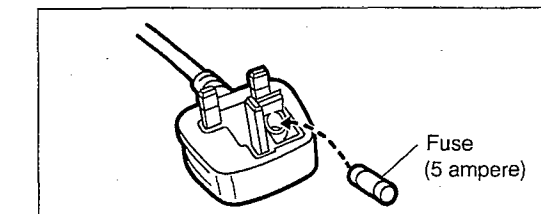


How to replace the fuse

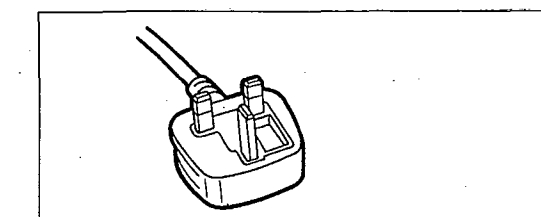
1. Open the fuse cover with a screwdriver.



2. Replace the fuse.



3. Close the fuse cover.



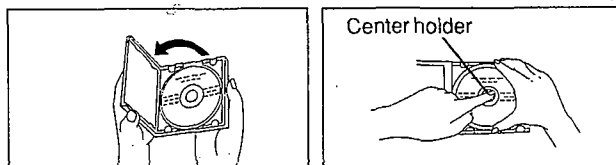
■ CONCERNING COMPACT DISCS

Only compact discs having this mark can be used with this unit.

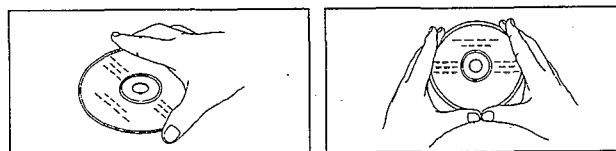


Handling precautions

To open the case, gently press the sides of the top, holding the top at both sides.



- To remove the disc from the case, press the center holder and lift the disc, holding by the edges.
- To return the disc to the case, insert the disc with label facing up and press downward at the center.
- Hold compact discs by the edges so the surface is not soiled with fingerprints. Fingerprints, dirt and scratches can cause skipping and distortion.

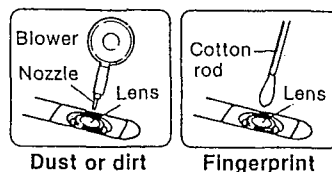


■ CLEANING OF LENS

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

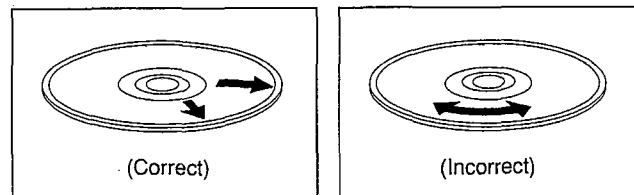
Blow the lens with the blower provided in the cleaning kit to remove dust or dirt.



• 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.

- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- If the surface is soiled, wipe gently with a soft, damp (water only) cloth.
- Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.



- If the disc is brought from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.
- Do not write on the label side with a ball-point pen or other writing instrument.

Storage precautions

Be sure to store discs in their cases to protect them from dust, scratches and warping.

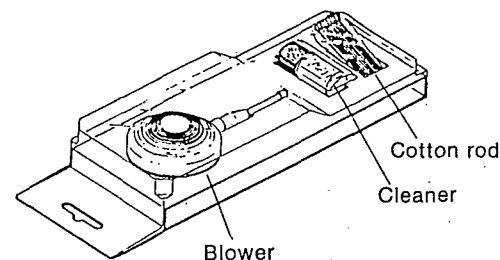
Do not place or store discs in the following places:

- 1) Locations exposed to direct sunlight.
- 2) Humid or dusty locations.
- 3) Locations directly exposed to a heat outlet or heating appliance.
- 4) In the glove compartment or rear ledge of an automobile.

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)



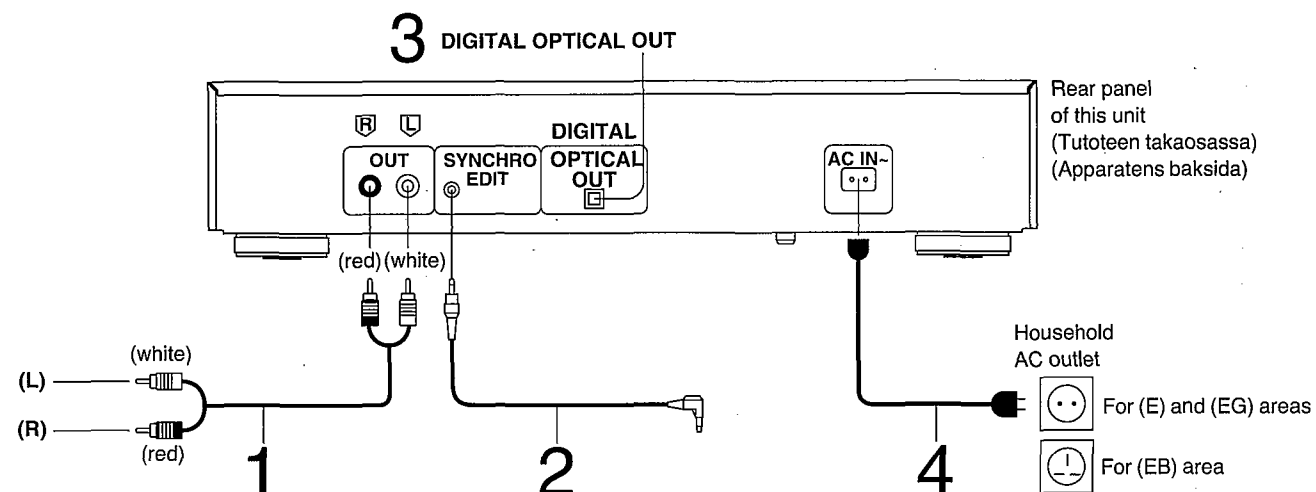
■ CONNECTIONS

Before making connections, be sure that the power of this unit and all other system components is first turned off.

See the operating instructions of the amplifier or the cassette deck for details.

Note:

The configuration of the AC outlet and AC power supply cord differs according to area.



1 Connect the stereo connection cable (included) to the "CD" or "AUX" terminals of the amplifier.

2 Connect the synchro edit cable (included with the cassette deck) to the "SYNCHRO EDIT" terminal of the Technics cassette deck.

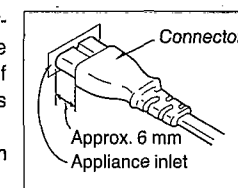
3 Connect the optical-fiber cable (not included) to the "DIGITAL INPUT" terminal of the amplifier.

This terminal can be used for connection with other equipment that has a digital input terminal, such as an amplifier, by using an optical-fiber cable (not included). A dust-protection cap is inserted in this terminal. Remove this cap only when a connection is to be made to this terminal.

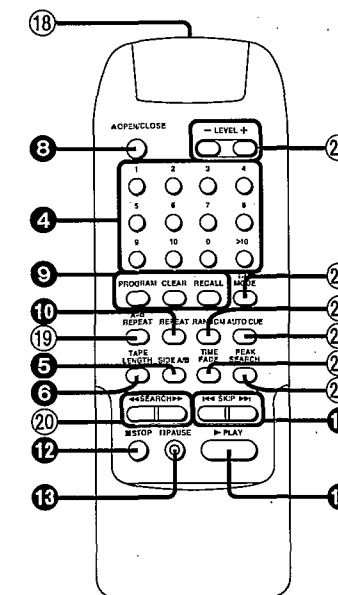
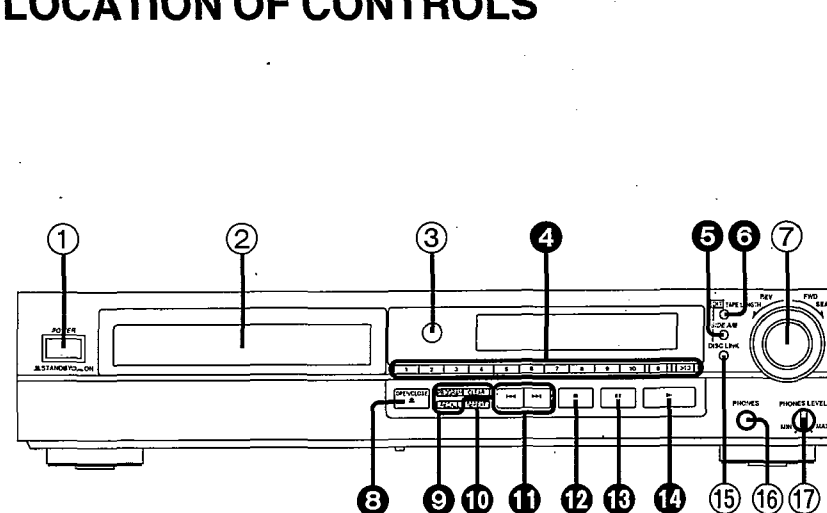
4 Connect the AC power supply cord (included) to the "AC OUTLET" of the amplifier or the household AC outlet.

Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.



■ LOCATION OF CONTROLS



Control section

Numbers with black background (for example 4) indicate functions available on the remote control.

- ① **Power "STANDBY \cup /ON" switch (POWER, \blacksquare STANDBY \cup \blacksquare 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 \cup 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 **Disc tray**
- ③ **Remote control signal sensor (SENSOR)**
- ④ **Numeric buttons (1–10, 0, >10)**
- ⑤ **Tape side select button (SIDE A/B)**
- ⑥ **Tape length button (TAPE LENGTH)**
- ⑦ **Search dial (SEARCH)**
- ⑧ **Disc tray open/close button (\blacktriangle OPEN/CLOSE)**
- ⑨ **Buttons for program function**
 - Program button (PROGRAM)
 - Clear button (CLEAR)
 - Recall button (RECALL)
- ⑩ **Repeat button (REPEAT)**
- ⑪ **Skip buttons (\blacktriangleleft , \blacktriangleright)**
- ⑫ **Stop button (\blacksquare)**

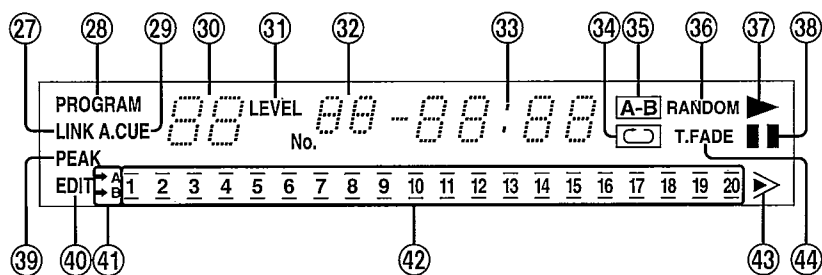
- ⑬ **Pause button (\parallel)**
- ⑭ **Play button (\blacktriangleright)**
- ⑮ **Disc link button (DISC LINK)**
- ⑯ **Headphones jack (PHONES) (\varnothing 6, 32 Ω)**
- ⑰ **Headphones volume control (PHONES LEVEL)**

Remote control section

The functions indicated by numbers with black background (for example 4) are described under "Control section" on page 7.

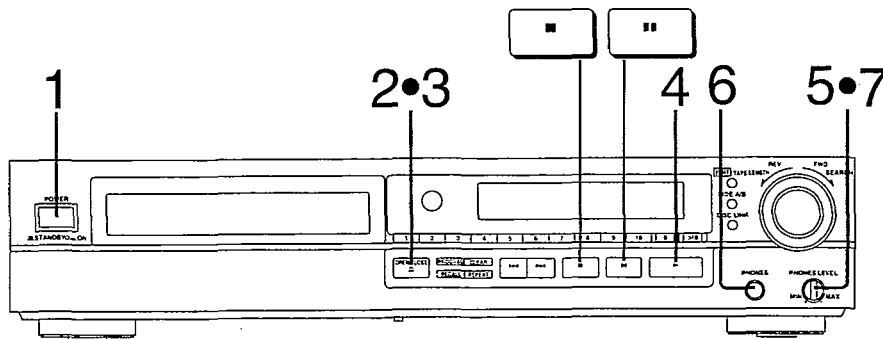
- ⑱ **Remote control transmission window**
- ⑲ **A-B repeat button (A-B REPEAT)**
- ⑳ **Search buttons (\blacktriangleleft SEARCH \blacktriangleright)**
- ㉑ **Level control buttons ($-$ LEVEL $+$)**
- ㉒ **Time mode select button (TIME MODE)**
- ㉓ **Random play button (RANDOM)**
- ㉔ **Auto cue button (AUTO CUE)**
- ㉕ **Time fade button (TIME FADE)**
- ㉖ **Peak search button (PEAK SEARCH)**

Display section



- ⑳ **Disc link indicator (LINK)**
- ㉑ **Program indicator (PROGRAM)**
- ㉒ **Auto cue indicator (A.CUE)**
- ㉓ **Track number display**
- ㉔ **Level control indicator (LEVEL)**
- ㉕ **Index/program sequence display**
- ㉖ **Time display**
- ㉗ **Repeat indicator (\square)**
- ㉘ **A-B repeat indicator ($\overline{A-B}$)**
- ㉙ **Random play indicator (RANDOM)**
- ㉚ **Play indicator (\blacktriangleright)**
- ㉛ **Pause indicator (\parallel)**
- ㉜ **Peak search indicator (PEAK)**
- ㉝ **Compact disc edit indicator (EDIT)**
- ㉞ **Tape side indicator (\rightarrow A, \rightarrow B)**
- ㉟ **Track number indicator ($\overline{1-20}$)**
- ㊱ **"Over" mark (\blacktriangleright)**
- ㊲ **Time fade/fade out indicator (T.FADE)**

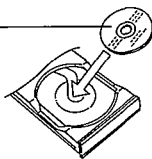
■ BASIC OPERATING PROCEDURE



1 Press POWER to switch on the power.
If there is a disc in the disc tray, play will start from the first track.

2 Press open/close button ▲ to open the disc tray and insert a disc.
(Also available from the remote control)

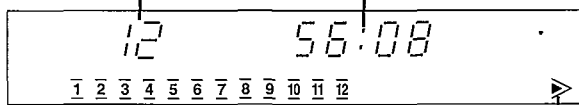
Label must face upward.



Before attempting to use the remote control transmitter to open the disc tray, make sure that there are no obstructions in front of the unit.

3 Press open/close button ▲ again to close the disc tray.
(Also available from the remote control)

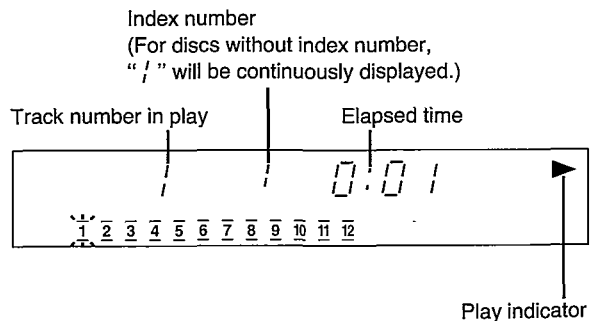
Total number of tracks Total playing time



Lights when the total number of tracks exceeds 21

- The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.
- You can skip this step and press play button ►. The disc tray will be automatically closed and then play will start from the first track.

4 Press play button ►.
(Also available from the remote control)



The unit stops automatically when the last track finishes playing.

To stop disc play

(Also available from the remote control)

Press stop button ■.



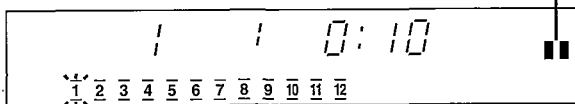
To temporarily stop disc play

(Also available from the remote control)

Press pause button ■■.



Pause indicator

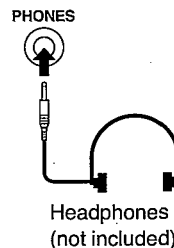


Press play button ► to resume play.

How to use headphones (not included)

- 5 Reduce the headphones volume level.**
- 6 Connect the headphones to the headphones jack.**

Plug type: Stereo large plug



- 7 Adjust the volume.**
Avoid listening for prolonged periods of time to prevent hearing damage.

DISASSEMBLY INSTRUCTIONS

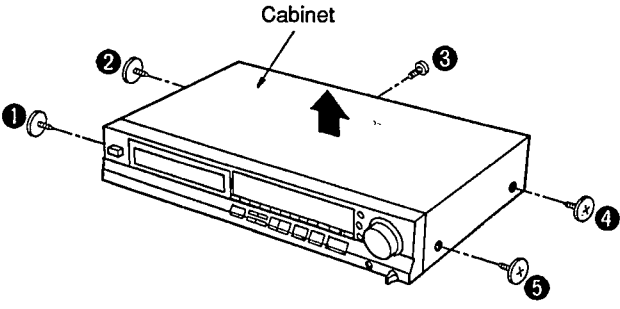
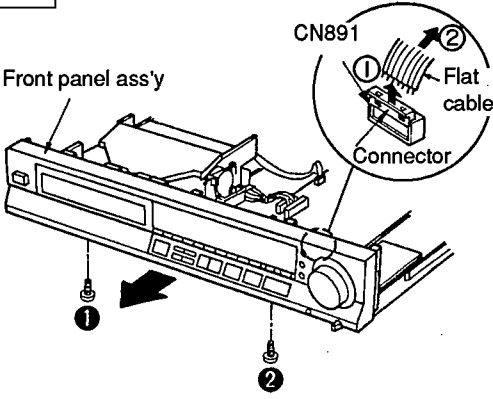
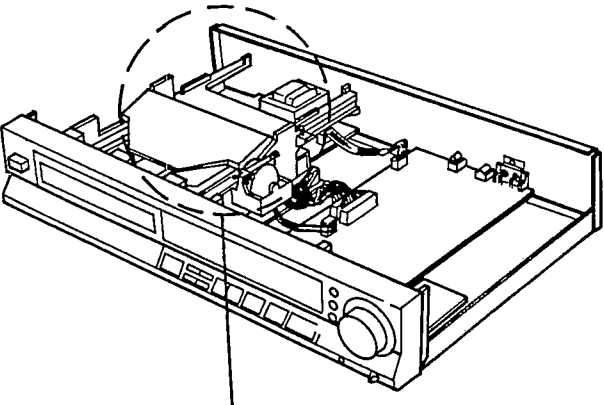
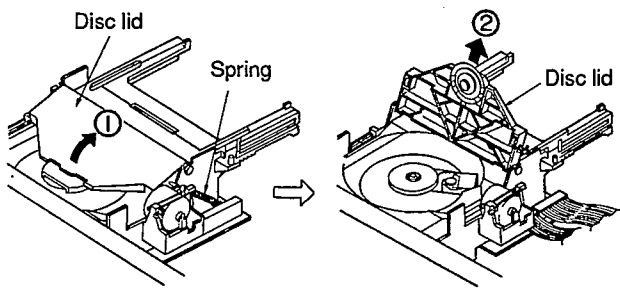
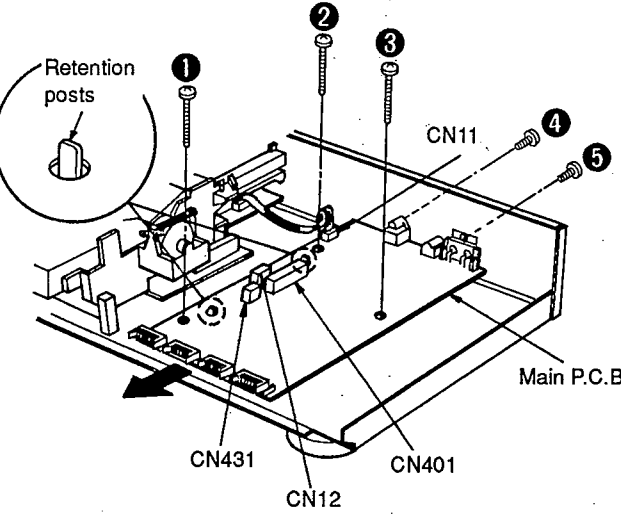
Warning: This product uses a laser diode. Refer to caution statements on page 2.

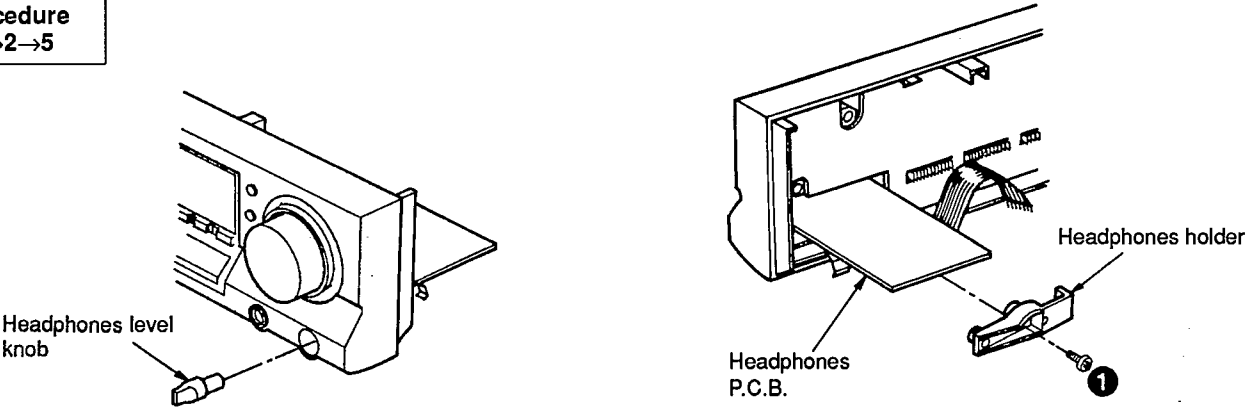
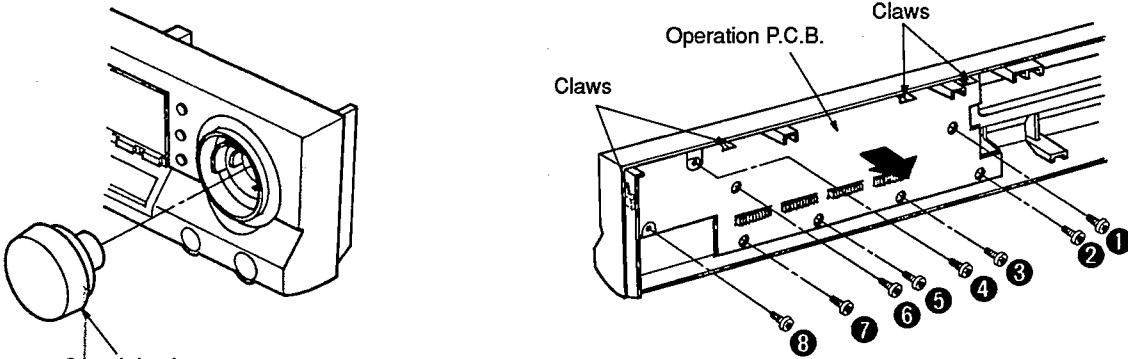
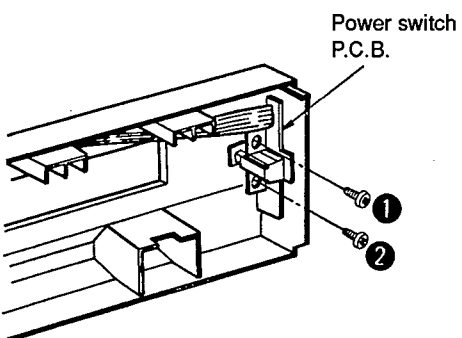
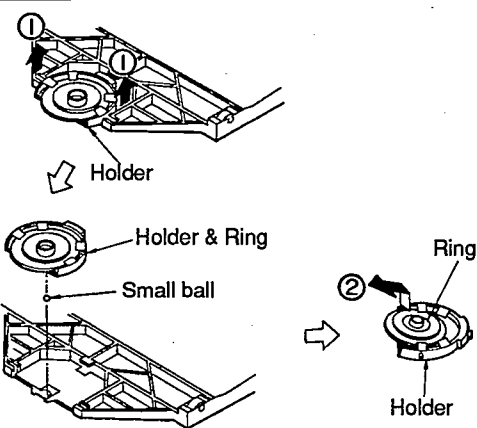
ACHTUNG: Die Lasereinheit nicht zerlegen.

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

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

* 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 | | Procedure 1→2 | |
| |  <ol style="list-style-type: none"> 1. Remove the 5 screws (①~⑤). 2. Remove the cabinet in the direction of arrow. | |  <ol style="list-style-type: none"> 1. Remove the 1 connector (CN891). 2. Remove the 2 screws (①, ②). 3. Remove the front panel ass'y in the direction of arrow. |
| Ref. No. 3 | Removal of the disc lid | Ref. No. 4 | Removal of the main P.C.B. |
| Procedure 1→3 | <ol style="list-style-type: none"> 1. Remove the spring. 2. Move the disc lid in the direction of arrow ① and pull out this in the direction of arrow ②. | Procedure 1→4 | |
| |   | |  <ol style="list-style-type: none"> 1. Remove the 4 connectors (CN11, CN12, CN401, CN431). 2. Remove the 5 screws (①~⑤). 3. Lift the main P.C.B. off the retention posts on the chassis. 4. Remove the main P.C.B. in the direction of arrow. |

| | | | |
|----------------------------|---|---|--|
| <p>Ref. No. 5</p> | <p>Removal of the headphones P.C.B.</p> |  <p>Headphones level knob</p> <p>Headphones P.C.B.</p> <p>Headphones holder</p> <ol style="list-style-type: none"> 1. Pull out the headphones level knob. 2. Remove the 1 screw (①). 3. Remove the headphones holder. | |
| <p>Ref. No. 6</p> | <p>Removal of the operation P.C.B.</p> |  <p>Search knob</p> <p>Operation P.C.B.</p> <p>Claws</p> <ol style="list-style-type: none"> 1. Pull out the search knob. 2. Remove the 8 screws (①~⑧). 3. Release the 4 claws. 4. Remove the operation P.C.B. in the direction of arrow. | |
| <p>Ref. No. 7</p> | <p>Removal of the power switch P.C.B.</p> | <p>Ref. No. 8</p> | <p>Removal of the holder and ring</p> |
| <p>Procedure 1→2→7</p> |  <p>Power switch P.C.B.</p> <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②). | | <p>Procedure 1→3→8</p>  <p>Holder</p> <p>Holder & Ring</p> <p>Small ball</p> <p>Ring</p> <p>Holder</p> <ol style="list-style-type: none"> 1. Pull out the holder in the direction of arrow ①. 2. Remove the ring in the direction of arrow ②. <p>Caution: Be sure to handle the small ball carefully.</p> |

LONG SCAN

LONG SCAN

LONG SCAN

LONG SCAN

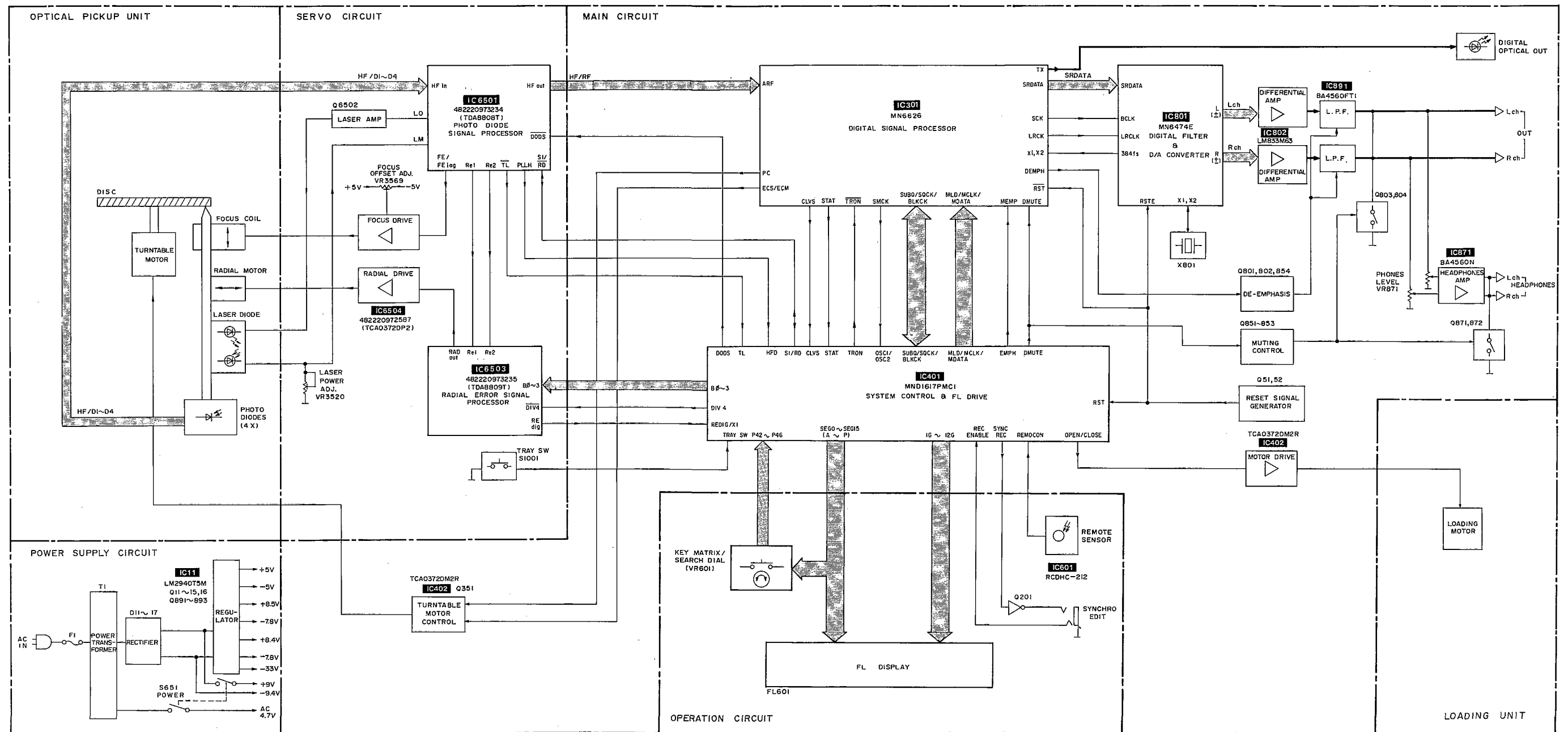
LONG SCAN

LONG SCAN

LONG SCAN

LONG SCAN

■ BLOCK DIAGRAM



SCHEMATIC DIAGRAM

(Parts list on pages 36~39.)

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

Notes:

- S601~612 : Numeric (>10, 0, 1~10) switches.
 - S601: 0, S602: 1, S603: 2,
 - S604: 3, S605: 4, S606: 5,
 - S607: >10, S608: 10, S609: 9,
 - S610: 8, S611: 7, S612: 6
- S613 : Play (▶) PLAY switch.
- S614 : Skip (◀◀ SKIP) switch.
- S616 : Program (PROGRAM) switch.
- S617 : Disc link (DISC LINK) switch.
- S619 : Stop (■ STOP) switch.
- S620 : Skip (▶▶ SKIP) switch.
- S622 : Recall (RECALL) switch.
- S623 : Tape-side select (SIDE A/B) 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.
- 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 1 kHz, L+R, 0 dB), others are voltage values in stop mode.

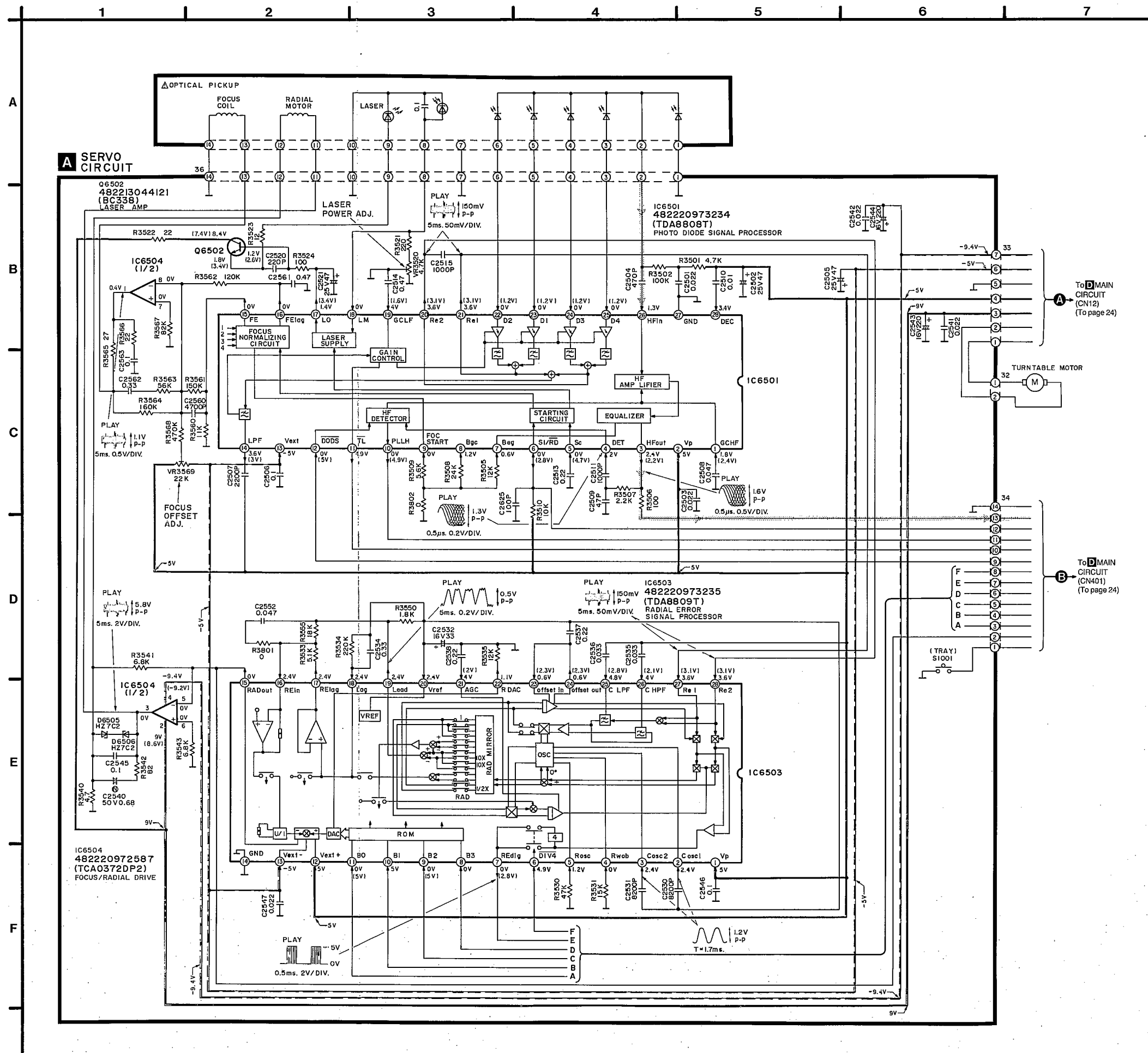
- Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The supply part number is described alone in the replacement parts list.

| Part No. | Production Part No. | Supply Part No. |
|----------|---------------------|-----------------|
| IC11 | LM2940T5M | LM2940T5 |
| IC891 | BA4560FT1 | SVIBA4560FT1 |

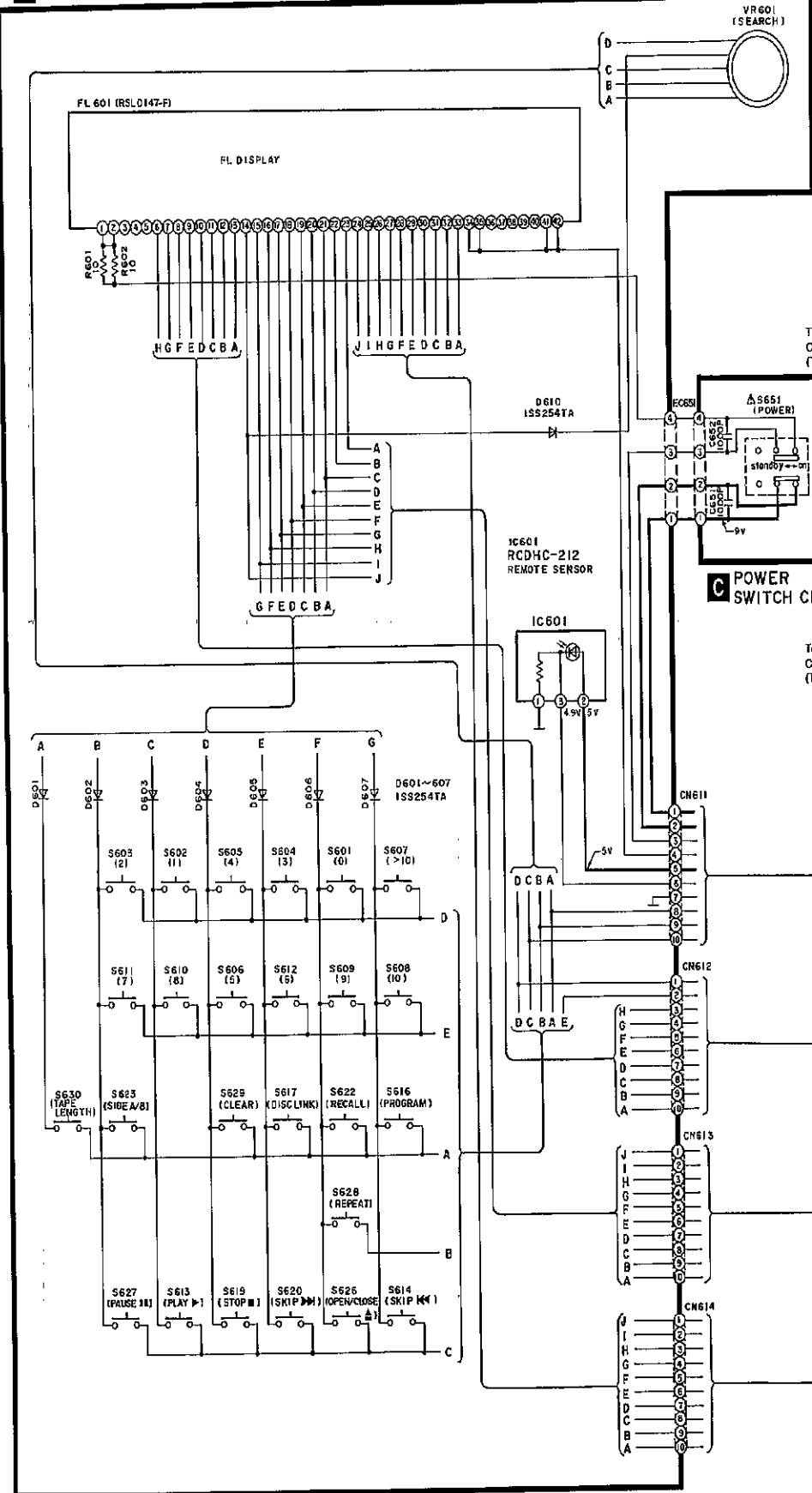
- ——— : Positive voltage lines.
- - - - - : Negative voltage lines.
- : Audio signal lines.

Caution!

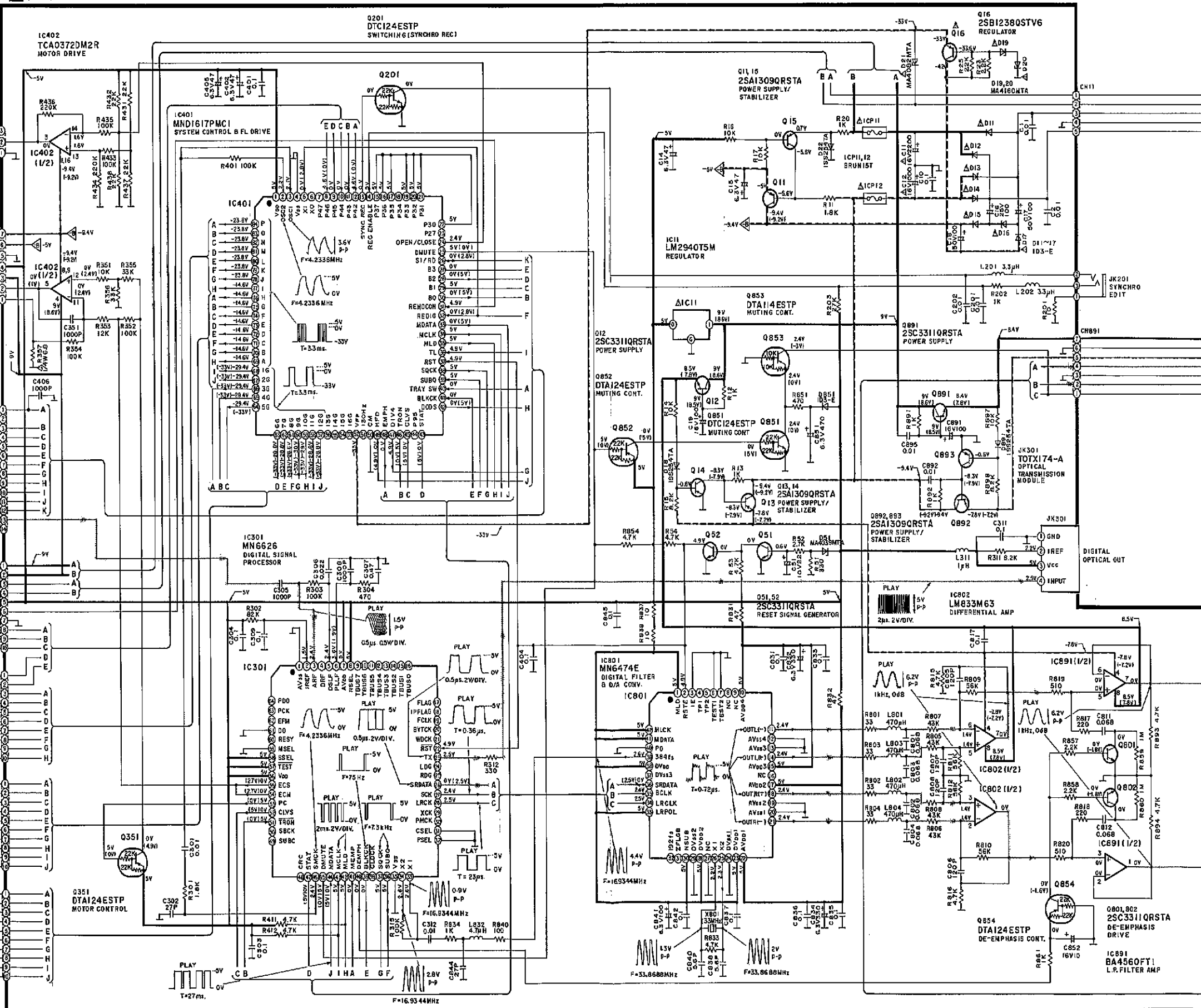
- IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.



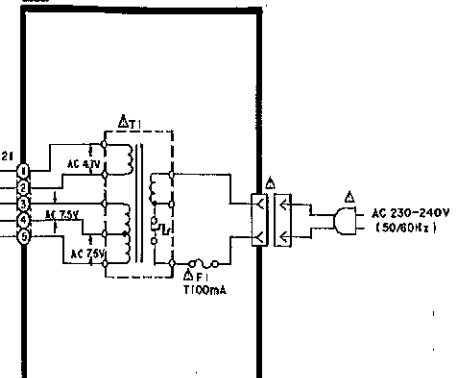
B OPERATION CIRCUIT



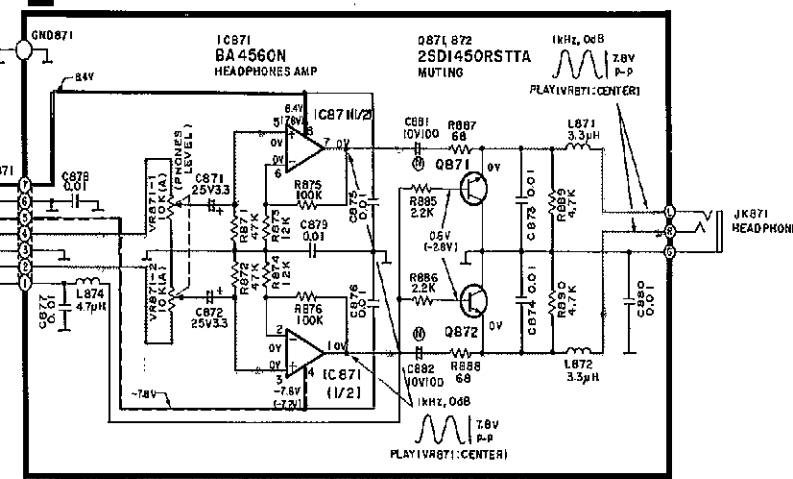
D MAIN CIRCUIT



E POWER SUPPLY CIRCUIT



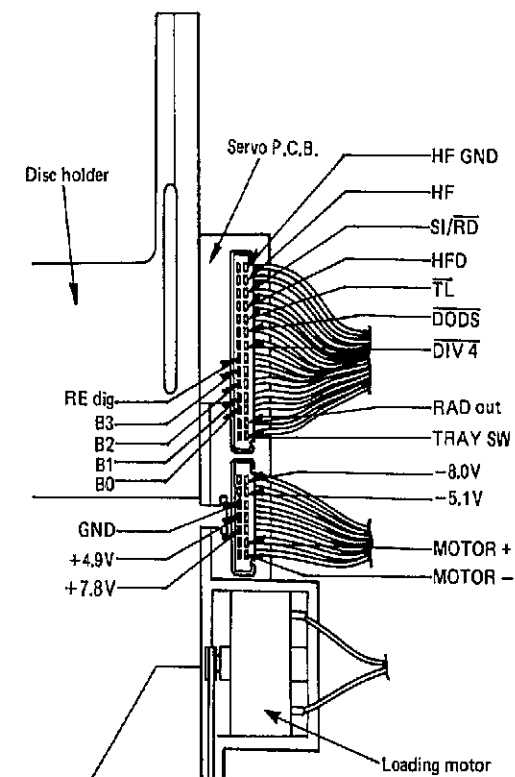
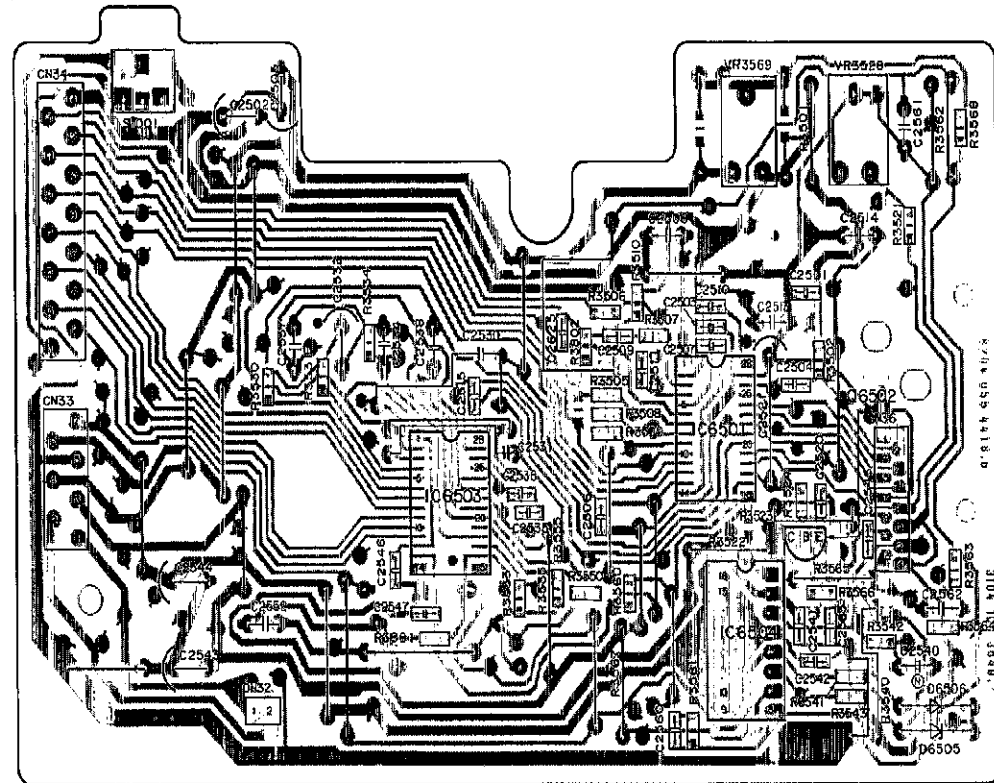
F HEADPHONES CIRCUIT



PRINTED CIRCUIT BOARD DIAGRAM

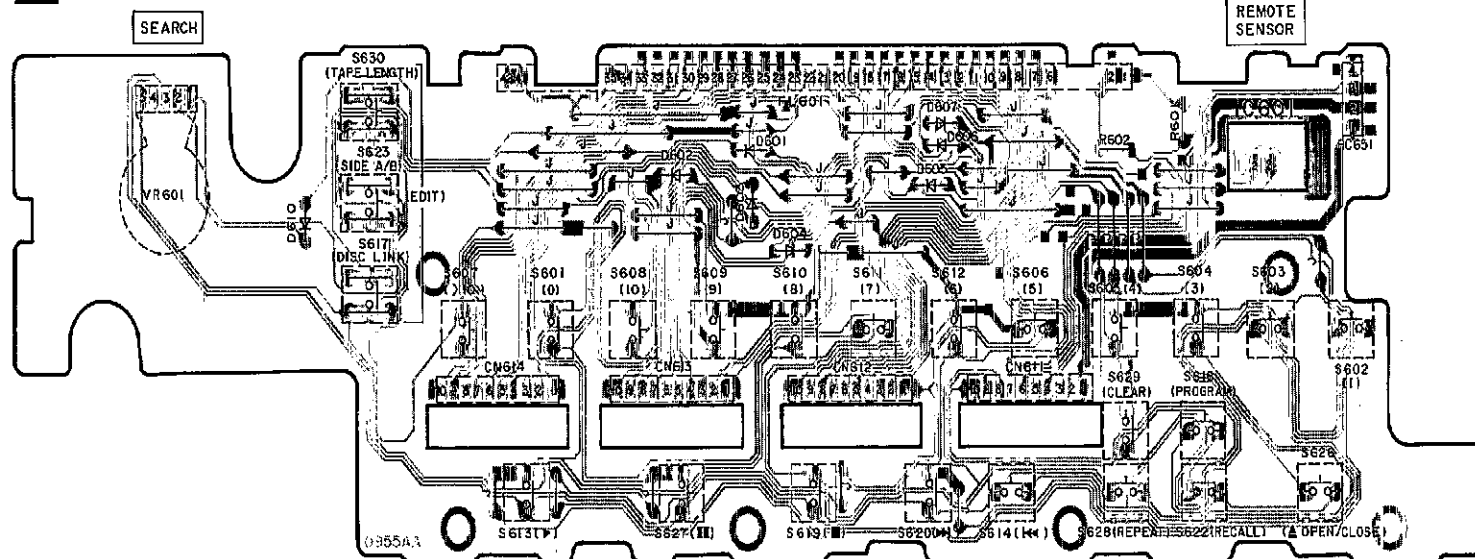
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

A SERVO P.C.B. (310 411 802 431)

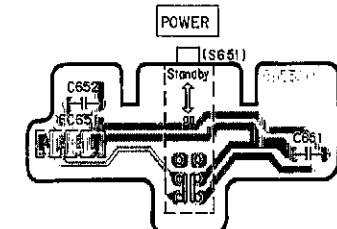


Note: Use connector pins to check servo circuit voltages and waveforms.

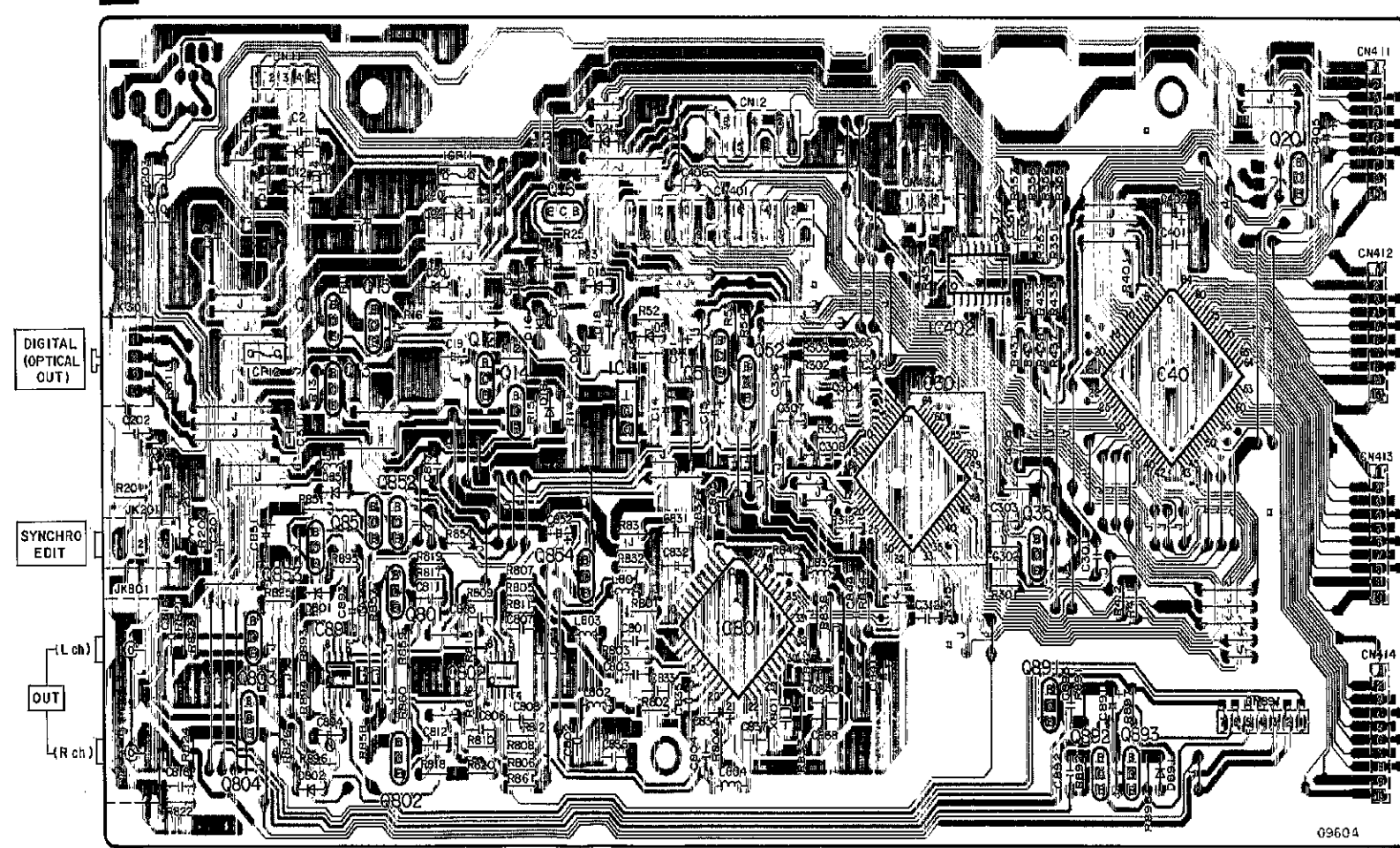
B OPERATION P.C.B. (REPI539A-S)



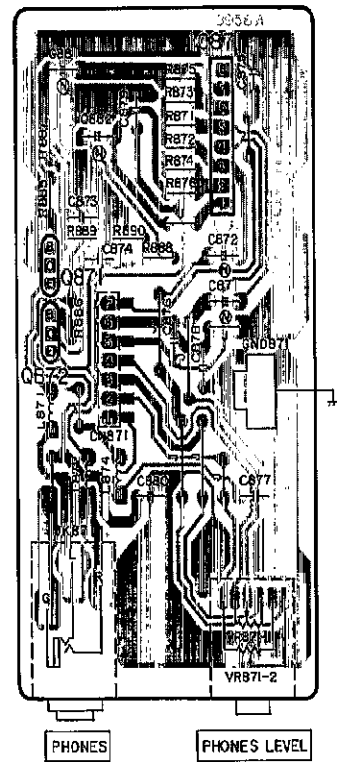
C POWER SWITCH P.C.B. (REPI539A-S)



D MAIN P.C.B. (REPI532A-M)



F HEADPHONES P.C.B. (REPI537A-S)

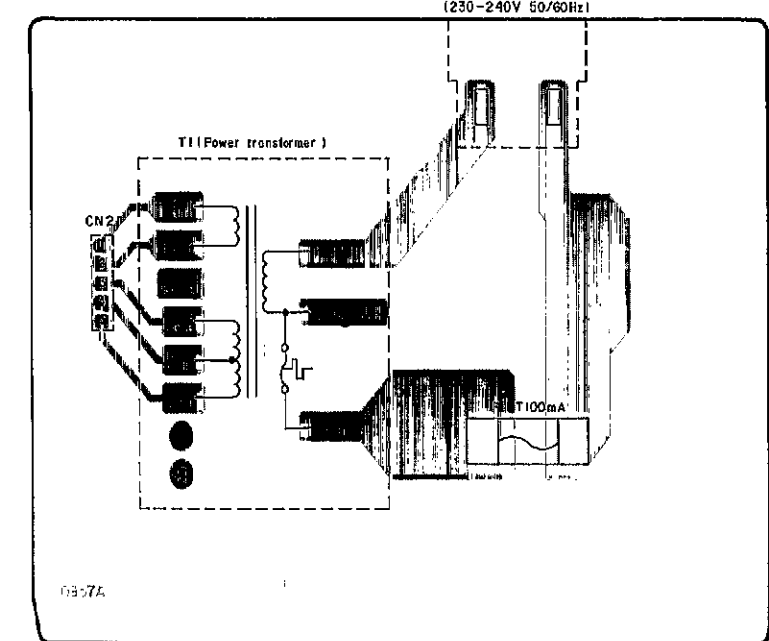


PHONES PHONES LEVEL

Terminal guide of IC's, transistors and diodes

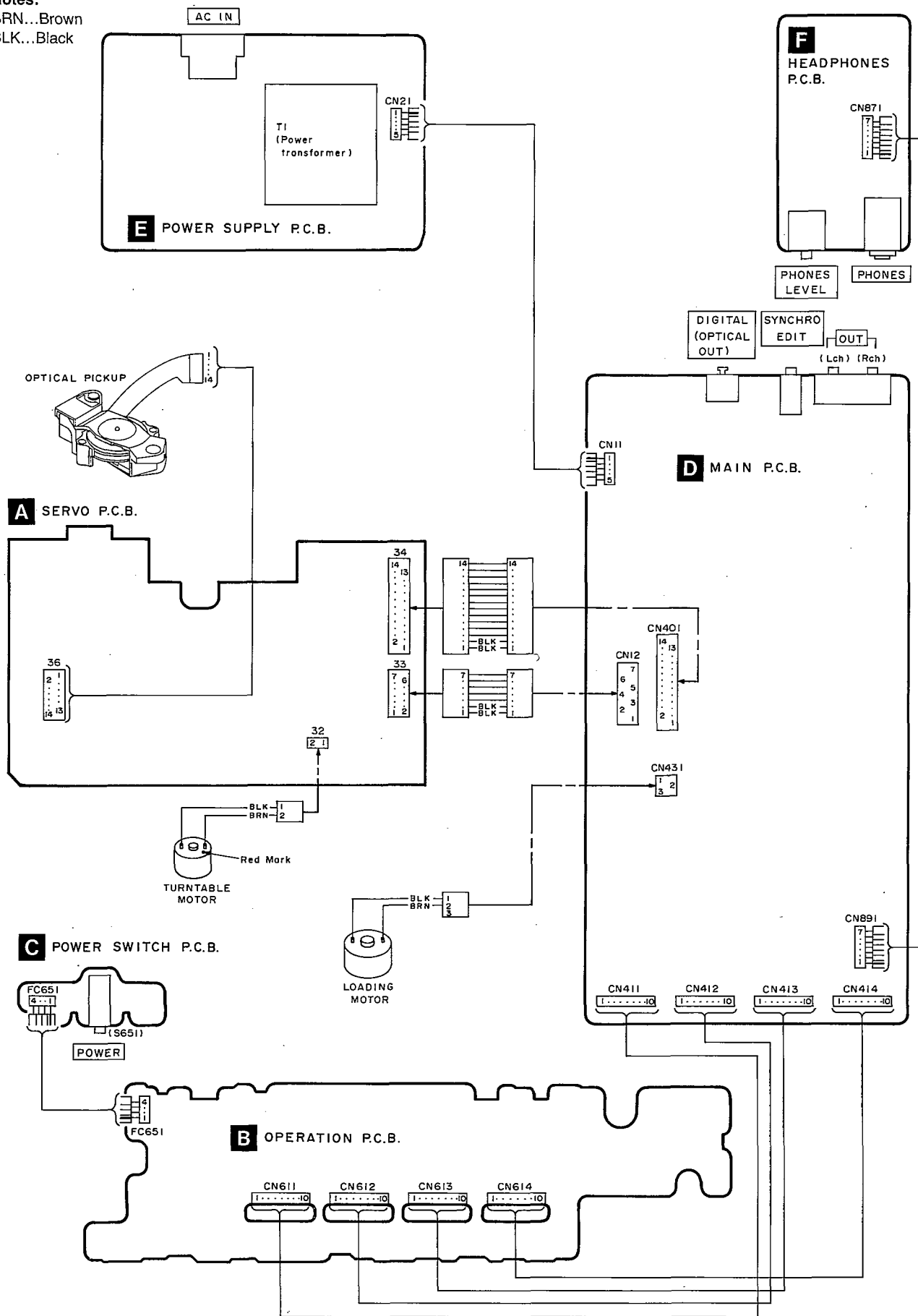
| | | | |
|---------------------------|--|---|--|
| BA4560FT1 | No.1 | LM833M63 8 Pin TCA0372DM2R 16 Pin | 482220973234 (TDA8808T) 482220973235 (TDA8809T) |
| 482220972587 (TCA0372DP2) | No.1 | MN6474E 42 Pin MN6626 64 Pin MND1617PMC1 84 Pin | BA4560N LM2940T5M |
| RCDHC-212 | 2SA1309QRSTA 2SC3311QRSTA 2SD1450RSTTA | DTA114ESTP DTA124ESTP DTC124ESTP | 2SB1238QSTV6 |
| 482213044121 (BC338) | 1SS254TA 1D3-E MA4039MTA MA4082MTA | MA4160MTA 482213081101 (HZ7C2) | |

E POWER SUPPLY P.C.B. (REPI536A-P)



WIRING CONNECTION DIAGRAM

Notes:
BRN...Brown
BLK...Black



■ 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 FEIag 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 | FEIag | 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 | REIag | 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 |
| 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) (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=16.9344MHz) |
| 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=7.35kHz) (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) (Not used, open) |
| 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=4.2336MHz) (Not used, connected to GND) |
| 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) (Not used, open) |
| 64 | PDO | O | Phase compared signal of EFM and PCK (Not used, open) |

• IC401 (MND1617PMC2): System control & FL drive

| Pin No. | Mark | I/O Division | Function | Pin No. | Mark | I/O Division | Function | | | |
|----------|------------|--------------|---|------------|------------------------------|--------------|--|------------------------------------|----------------------------|---|
| 1 | VDD | I | Power supply terminal | 36 | TL | I | Track loss input | | | |
| 2 | OSC2 | I | System clock input (f=4.2336 MHz) | 37 | RST | I | Reset terminal | | | |
| 3 | OSC1 | | | 38 | SQCK | O | Sub-code Q register clock | | | |
| 4 | VSS | — | GND terminal | 39 | SUBQ | I | Sub-code Q data | | | |
| 5 | XI | I | Radial error digital signal | 40 | TRAY SW | I | Disc holder open/close det. terminal | | | |
| 6 | XO | O | Not Used, open | 41 | BLKCK | I | Sub-code block clock (f=75Hz) | | | |
| 7 | P47 | I | | 42 | DODS | O | Drop-out detect signal | | | |
| 8 12 | P46 P42 | I | Key return signal | 43 | STAT | I | Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK) | | | |
| 13 | SYNC REC | | | O | Synchro rec control | 44 | P95 | — | Not used, open | |
| 14 | REC ENABLE | I | 15 18 | P37 P34 | | — | Not used, open and connected to terminal | 45 | CLVS | I |
| 19 | P33 | — | Not used, open and connected to terminal | 46 | TRON | O | | Tracking servo ON signal ("L": ON) | | |
| 20 | P32 | | | 47 | DIV4 | O | Radial error digital signal divided by four | | | |
| 21 | P31 | | | 48 | EMPH | O | Emphasis signal | | | |
| 22 | P30 | | | 49 | HFD | I | PLL on hold input | | | |
| 23 | P27 | 24 | OPEN/CLOSE | O | Loading motor control signal | 50 | CM | — | Not used, connected to GND | |
| 25 | DMUTE | O | Muting output ("H": MUTE) | 51 | 130Hz | — | Not used, open | | | |
| 26 | SI/RD | I/O | On/off control and ready signal | 52 | VPP | I | Power supply terminal for FL drive | | | |
| 27 30 | B3 B0 | O | Control bits for off-, catch-, play-status and DAC output current | 53 56 | 16G 13G | — | Not used, open | | | |
| 31 | REMOCON | | | I | Remote control signal | | | | | |
| 32 | REDIG | I | Radial error digital signal | 57 68 | 12G 1G | O | FL digit signal | | | |
| 33 | MDATA | O | Command data signal | | | | | | | |
| 34 | MCLK | O | Command clock signal | 69 84 | A/SEGO P/SEGP | O | FL segment signal and key scan signal | | | |
| 35 | MLD | O | Command load signal ("L": LOAD) | | | | | | | |



REPLACEMENT PARTS LIST

●IC801 (MN6474E): Digital filter and D/A converter

| Pin No. | Mark | I/O Division | Function | Pin No. | Mark | I/O Division | Function |
|---------|----------|--------------|--|---------|--------|--------------|--|
| 1 | MLD | I | Command load input (load: L) (Not used, connected to VDD) | 24 | DVSS1 | — | GND terminal (digital system) |
| 2 | RSTE | I | Reset terminal | 25 | X2 | O | Crystal OSC terminal (33MHz) |
| 3 | IE | I | Not used, connected to GND | 26 | X1 | I | |
| 4 | TP1 | — | TEST terminal | 27 | NC | — | Not connected |
| 5 | TP2 | — | | | | | |
| 6 | TEST1 | I | TEST terminal 1 (connected to GND) | 28 | DVDD2 | I | Power supply terminal |
| 7 | TEST2 | I | TEST terminal 2 (connected to GND) | 29 | DVSS2 | — | GND terminal (digital system) |
| 8 | NC | — | Not connected | 30 | NSUB | I | Sub-strate terminal (Not used, connected to VDD) |
| 9 | NC | — | Not connected | 31 | ZFLGB | O | Zero input detector terminal (Not used, open) |
| 10 | AVDD4 | I | Power supply terminal | 32 | 192fs | O | 192fs (8.4672MHz) (Not used, open) |
| 11 | OUTL (-) | O | Lch data output, (-) terminal | 33 | LRPOL | I | LR clock selector (Not used, connected to VDD) |
| 12 | AVSS4 | — | GND terminal | 34 | LRCLK | I | LR discrimination signal input |
| 13 | AVSS3 | — | GND terminal | 35 | BCLK | I | Serial bit clock input |
| 14 | OUTL (+) | O | Lch data output, (+) terminal | 36 | SRDATA | I | Serial data input (MSB first) |
| 15 | AVDD3 | I | Power supply terminal | 37 | DVSS3 | — | GND terminal (digital system) (Not used, open) |
| 16 | NC | — | Not connected | 38 | DVDD | I | Power supply terminal |
| 17 | AVDD2 | I | Power supply terminal | 39 | 384fs | O | 384fs (16.9344MHz) output |
| 18 | OUTR (+) | O | Rch data output, (+) terminal | 40 | PD | I | Power down terminal (Not used, connected to GND) |
| 19 | AVSS2 | — | GND terminal (analog system) | 41 | MDATA | I | Mode control data (Not used, connected to VDD) |
| 20 | AVSS1 | — | GND terminal (analog system) | 42 | MCLK | I | Data clock for MDATA (not used, connected to VDD) |
| 21 | OUTR (-) | O | Rch data output, (-) terminal | | | | |
| 22 | AVDD1 | I | Power supply terminal | | | | |
| 23 | DVDD1 | I | Power supply terminal | | | | |

Notes: *Important safety notice:
 Components identified by Δ mark have special characteristics important for safety.
 Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
 When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
 *The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
 Parts without these indications can be used for all areas.
 *Remote Control Assy:
 Supply period for three years from termination of production.
 *MBJ Indicates in Remarks columns parts that are supplied by MBV.
 *Warning: This product uses a laser diode. Refer to caution statements on page 2.
 *ACHTUNG: Die Lasereinheit nicht zerlegen.
 Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

| Ref. No. | Part No. | Part Name & Description | Remarks | Ref. No. | Part No. | Part Name & Description | Remarks |
|-----------|--------------|-------------------------------|---------|-----------|--------------|-------------------------|---------|
| | | INTEGRATED CIRCUIT(S) | | D601-607 | 1SS254TA | DIODE | |
| | | | | D610 | 1SS254TA | DIODE | |
| | | | | D801, 802 | 1SS254TA | DIODE | |
| IC11 | LM2940T5 | I. C. REGULATOR | Δ | D851 | 1D3-E | DIODE | [MB] |
| IC301 | MN6626 | I. C. D. SIGNAL PROCESSOR | | D891 | 1SS254TA | DIODE | |
| IC401 | MND1617PMC2 | I. C. SYS CONTROL & FL DRIVE | [MB] | | | VARIABLE RESISTOR(S) | |
| IC402 | TCA0372DM2R | I. C. MOTOR DRIVE | | | | | |
| IC601 | RCDC-212 | I. C. REMOTE CONTROL RECEIVER | [MB] | VR601 | RSR4A002-H | V. R. SEARCH | [MB] |
| IC801 | MN6474E | I. C. FILTER & D/A CONV. | | VR871 | EVJCB0F02A15 | V. R. HEADPHONES | |
| IC802 | LM833M63 | I. C. DIFFERENTIAL AMP. | | | | COIL | |
| IC871 | BA4560N | I. C. HEADPHONES AMP. | | | | | |
| IC891 | SVIBA4560FT1 | I. C. L. P. FILTER AMP. | | | | | |
| | | IC PROTECTOR(S) | | L201, 202 | RLQZN3R3KL-D | COIL | [MB] |
| ICP11, 12 | SRUN15 | I. C. PROTECTOR | Δ | L311 | RLQZN1R0KL-D | COIL | |
| | | TRANSISTOR(S) | | L801-804 | RLQZN471KL-D | COIL | [MB] |
| | | | | L832 | RLQZN4R7KL-D | COIL | |
| Q11 | 2SA1309A-R | TRANSISTOR | | L871, 872 | RLQZN3R3KL-D | COIL | [MB] |
| Q12 | 2SC3311A-Q | TRANSISTOR | | L874 | RLQZN4R7KL-D | COIL | |
| Q13, 14 | 2SA1309A-R | TRANSISTOR | | | | TRANSFORMER | |
| Q15 | 2SA1309A-R | TRANSISTOR | | T1 | RTP1K4B015 | POWER TRANSFORMER | Δ [MB] |
| Q16 | 2SB1238QSTV6 | TRANSISTOR | Δ | | | OSCILLATOR | |
| Q51, 52 | 2SC3311A-Q | TRANSISTOR | | | | | |
| Q201 | DTC124EST | TRANSISTOR | | X801 | RSXA33M8J01T | OSCILLATOR (33MHz) | [MB] |
| Q351 | DTA124ESTP | TRANSISTOR | | | | DISPLAY TUBE | |
| Q801, 802 | 2SC3311A-Q | TRANSISTOR | | | | | |
| Q803, 804 | 2SD1450RTA | TRANSISTOR | | FL601 | RSL0147-F | DISPLAY TUBE | [MB] |
| Q851 | DTC124EST | TRANSISTOR | | | | SWITCH(ES) | |
| Q852 | DTA124ESTP | TRANSISTOR | | S601 | EVQ21405R | SW, 0 | |
| Q853 | DTA114ESTP | TRANSISTOR | | S602 | EVQ21405R | SW, 1 | |
| Q854 | DTA124ESTP | TRANSISTOR | | S603 | EVQ21405R | SW, 2 | |
| Q871, 872 | 2SD1450RTA | TRANSISTOR | | S604 | EVQ21405R | SW, 3 | |
| Q891 | 2SC3311A-Q | TRANSISTOR | | S605 | EVQ21405R | SW, 4 | |
| Q892, 893 | 2SA1309A-R | TRANSISTOR | | S606 | EVQ21405R | SW, 5 | |
| | | DIODE(S) | | S607 | EVQ21405R | SW, >10 | |
| D11-17 | 1D3-E | DIODE | Δ [MB] | S608 | EVQ21405R | SW, 10 | |
| D18 | 1SS254TA | DIODE | | S609 | EVQ21405R | SW, 9 | |
| D19, 20 | MA4160M | DIODE | Δ | S610 | EVQ21405R | SW, 8 | |
| D21 | MA4082MTA | DIODE | Δ | S611 | EVQ21405R | SW, 7 | |
| D22 | 1SS254TA | DIODE | | | | | |
| D51 | MA4039MTA | DIODE | | | | | |

| Ref. No. | Part No. | Part Name & Description | Remarks | Ref. No. | Part No. | Part Name & Description | Remarks |
|-----------|--------------|--------------------------|---------|----------|--------------|-------------------------|---------|
| S612 | EVQ21405R | SW, 6 | | | | | |
| S613 | EVQ21405R | SW, PLAY | | Q6502 | 482213044121 | TRANSISTOR | [MB] |
| S614 | EVQ21405R | SW, R. SKIP | | | | | |
| S616 | EVQ21405R | SW, PROGRAM | | | | DIODE (S) | |
| S617 | EVQ21405R | SW, DISC LINK | | | | | |
| S619 | EVQ21405R | SW, STOP | | D6505 | 482213030861 | DIODE | [MB] |
| S620 | EVQ21405R | SW, F. SKIP | | D6506 | 482213030861 | DIODE | [MB] |
| S622 | EVQ21405R | SW, RECALL | | | | | |
| S623 | EVQ21405R | SW, SIDE A/B | | | | VARIABLE RESISTOR(S) | |
| S626 | EVQ21405R | SW, OPEN/CLOSE | | | | | |
| S627 | EVQ21405R | SW, PAUSE | | VR3520 | 482210110685 | V. R. LASER POWER ADJ. | [MB] |
| S628 | EVQ21405R | SW, REPEAT | | VR3569 | 482210011193 | V. R. FOCUS OFFSET ADJ. | [MB] |
| S629 | EVQ21405R | SW, CLEAR | | | | | |
| S630 | EVQ21405R | SW, TAPE LENGTH | | | | SWITCH | |
| S651 | RSP2B010 | SW, POWER | △ | | | | |
| | | CONNECTOR (S) | | S1001 | 482227612523 | SW, TRAY | [MB] |
| | | | | | | | |
| CN11 | RJS1A6605 | SOCKET (5P) | | | | | |
| CN12 | RJT001H007 | SOCKET (7P) | [MB] | | | | |
| CN21 | RJS1A6605 | SOCKET (5P) | | | | | |
| CN401 | RJT001H014 | SOCKET (14P) | [MB] | | | | |
| CN411-414 | RJU003K010M1 | SOCKET (10P) | | | | | |
| CN431 | RJT001H003 | SOCKET (3P) | [MB] | | | | |
| CN611-614 | RJT003K010M1 | CONNECTOR (10P) | | | | | |
| CN871 | RJS1A6607T1 | SOCKET (7P) | [MB] | | | | |
| CN891 | RJS1A6607T1 | SOCKET (7P) | [MB] | | | | |
| FC651 | RWJ1804200XX | FLAT CABLE (4P) | | | | | |
| | | TERMINAL | | | | | |
| | | | | | | | |
| GND871 | RMCO184 | TERMINAL, GND | [MB] | | | | |
| | | JACK (S) | | | | | |
| | | | | | | | |
| JK201 | RJ33T01 | JACK, SYNCHRO EDIT | | | | | |
| JK301 | TOTX174-A | JACK, OPTICAL OUT | | | | | |
| JK801 | RJH3201N | JACK, LINE OUT | | | | | |
| JK871 | QJA0455ZC | JACK, HEADPHONES | | | | | |
| | | FUSE | | | | | |
| | | | | | | | |
| F1 | XBA2C01T80 | FUSE 250V T100mA | △ | | | | |
| | | <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) | | | | | |

Notes : * Capacity values 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)

| Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks | Ref. No. | Part No. | Values & Remarks |
|-----------|-------------|------------------|-----------|--------------|------------------|-----------|--------------|-------------------|
| | | | R833 | ERDS2TJ472 | 1/4W 4.7K | C651, 652 | ECBT1H102KB5 | 50V 1000P |
| | | RESISTORS | R834 | ERDS2TJ102 | 1/4W 1K | C801-804 | ECQV1H683JM3 | 50V 0.068U |
| | | | R837, 838 | ERDS2TJ100 | 1/4W 10 | C805-808 | ECBT1H121KB5 | 50V 120P |
| R11 | ERDS2TJ182 | 1/4W 1.8K | R840 | ERDS2TJ101 | 1/4W 100 | C811, 812 | ECQV1H683JM3 | 50V 0.068U |
| R12, 13 | ERDS2TJ102 | 1/4W 1K | R851 | ERDS2TJ471 | 1/4W 470 | C815, 816 | ECBT1H102KB5 | 50V 1000P |
| R14 | ERDS2TJ103 | 1/4W 10K | R854 | ERDS2TJ472 | 1/4W 4.7K | C817 | ECFR1E104ZF5 | 25V 0.1U |
| R15 | ERDS2TJ822 | 1/4W 8.2K | R857, 858 | ERDS2TJ222 | 1/4W 2.2K | C831 | ECFR1E104ZF5 | 25V 0.1U |
| R16, 17 | ERDS2TJ103 | 1/4W 10K | R859, 860 | ERDS2TJ105T | 1/4W 1M | C832 | ECEAOJU331B | 6.3V 330U |
| R20 | ERDS2TJ102 | 1/4W 1K | R861 | ERDS2TJ102 | 1/4W 1K | C833 | ECFR1E104ZF5 | 25V 0.1U |
| R23 | ERDS2TJ222 | 1/4W 2.2K | R871, 872 | ERDS2TJ473 | 1/4W 47K | C834 | ECEAOJU331B | 6.3V 330U |
| R25 | ERDS2TJ222 | 1/4W 2.2K | R873, 874 | ERDS2TJ123 | 1/4W 12K | C835-837 | ECFR1E104ZF5 | 25V 0.1U |
| R51 | ERDS2TJ331 | 1/4W 330 | R875, 876 | ERDS2TJ104 | 1/4W 100K | C838 | ECBT1H566K5 | 50V 5.6P |
| R52 | ERDS2TJ272T | 1/4W 2.7K | R885, 886 | ERDS2TJ222 | 1/4W 2.2K | C840 | ECBT1H566K5 | 50V 5.6P |
| R53, 54 | ERDS2TJ472 | 1/4W 4.7K | R887, 888 | ERDS2TJ680T | 1/4W 68 | C841 | ECEAOJKA101B | 6.3V 100U |
| R201 | ERDS2TJ100 | 1/4W 10 | R889, 890 | ERDS2TJ472 | 1/4W 4.7K | C842 | ECFR1E104ZF5 | 25V 0.1U |
| R202 | ERDS2TJ102 | 1/4W 1K | R891, 892 | ERDS2TJ102 | 1/4W 1K | C844 | ECBT1H270J5 | 50V 27P |
| R203 | ERDS2TJ273 | 1/4W 27K | R893, 894 | ERDS2TJ472 | 1/4W 4.7K | C845 | ECFR1E104ZF5 | 25V 0.1U |
| R301 | ERDS2TJ182 | 1/4W 1.8K | R895, 896 | ERDS2TJ471 | 1/4W 470 | C851 | ECEAOJU471 | 6.3V 470U |
| R302 | ERDS2TJ823T | 1/4W 82K | R897 | ERDS2TJ103 | 1/4W 10K | C852 | ECEA1CKA100B | 16V 10U |
| R303 | ERDS2TJ104 | 1/4W 100K | R898 | ERDS2TJ822 | 1/4W 8.2K | C871, 872 | ECEA1EKN3R3B | 25V 3.3U |
| R304 | ERDS2TJ471 | 1/4W 470 | | | | C873, 874 | ECQB1H103JF3 | 50V 0.01U |
| R311 | ERDS2TJ822 | 1/4W 8.2K | | | CAPACITORS | C875-880 | ECBT1C103NS5 | 16V 0.01U |
| R312 | ERDS2TJ331 | 1/4W 330 | | | | C881, 882 | ECEA1AN101XB | 10V 100U |
| R315 | ERDS2TJ104 | 1/4W 100K | C1, 2 | ECFTD103KXL | 50V 0.01U | C891 | ECEA1CKA101B | 16V 100U |
| R351 | ERDS2TJ103 | 1/4W 10K | C10 | ECFR1E104ZF5 | 25V 0.1U | C892 | ECBT1C103NS5 | 16V 0.01U |
| R352 | ERDS2TJ104 | 1/4W 100K | C11 | ECA1CM222B | 16V 2200U △ | C893, 894 | ECEA1CKN220B | 16V 22U |
| R353 | ERDS2TJ123 | 1/4W 12K | C12 | ECEA1CU102 | 16V 1000U △ | C895 | ECBT1C103NS5 | 16V 0.01U |
| R354 | ERDS2TJ104 | 1/4W 100K | C14, 15 | ECEAOJKA470B | 6.3V 47U | | | |
| R355, 356 | ERDS2TJ333 | 1/4W 33K | C16 | ECEA1EU101 | 25V 100U | | | <SERVO P. C. B. > |
| R357 | ERD25FJ6R8 | 1/4W 6.8 △ | C17, 18 | ECEA1HU101 | 50V 100U | | | RESISTORS |
| R401 | ERDS2TJ104 | 1/4W 100K | C19 | ECEA1CKA101B | 16V 100U | | | |
| R411, 412 | ERDS2TJ472 | 1/4W 4.7K | C51 | ECEA1AKA220B | 10V 22U | R3501 | 482205024702 | 1/8W 4.7K [MB] |
| R431, 432 | ERDS2TJ223 | 1/4W 22K | C201, 202 | ECBT1C103NS5 | 16V 0.01U | R3502 | 482205110104 | 1/8W 100K [MB] |
| R433 | ERDS2TJ104 | 1/4W 100K | C301 | ECBT1C103NS5 | 16V 0.01U | R3505 | 482205110123 | 1/4W 12K [MB] |
| R434 | ERDS2TJ224T | 1/4W 220K | C302 | ECBT1H270J5 | 50V 27P | R3506 | 482205110101 | 1/8W 100 [MB] |
| R435 | ERDS2TJ104 | 1/4W 100K | C303, 304 | ECFR1E104ZF5 | 25V 0.1U | R3507 | 482205120222 | 1/8W 2.2K [MB] |
| R436 | ERDS2TJ224T | 1/4W 220K | C305 | ECBT1H102KB5 | 50V 1000P | R3508 | 482205110243 | 1/4W 24K [MB] |
| R437, 438 | ERDS2TJ223 | 1/4W 22K | C306 | ECFR1E223KB | 25V 0.022U | R3509 | 482205110562 | 1/8W 5.6K [MB] |
| R601, 602 | ERDS2TJ100 | 1/4W 10 | C307 | ECQV1H474JM3 | 50V 0.47U | R3510 | 482205110103 | 1/8W 10K [MB] |
| R801-804 | ERDS2TJ330 | 1/4W 33 | C308 | ECBT1H102KB5 | 50V 1000P | R3521 | 482205110221 | 1/8W 220 [MB] |
| R805-808 | ERDS2TJ433 | 1/4W 43K | C309 | ECFR1E104ZF5 | 25V 0.1U | R3522 | 482205210229 | 1/3W 22 [MB] |
| R809-812 | ERDS2TJ563 | 1/4W 56K | C311 | ECFR1E104ZF5 | 25V 0.1U | R3523 | 482205210129 | 1/3W 12 [MB] |
| R815, 816 | ERDS2TJ472 | 1/4W 4.7K | C312 | ECBT1C103NS5 | 16V 0.01U | R3524 | 482205110101 | 1/8W 100 [MB] |
| R817, 818 | ERDS2TJ221 | 1/4W 220 | C351 | ECBT1H102KB5 | 50V 1000P | R3530 | 482205110473 | 1/4W 47K [MB] |
| R819, 820 | ERDS2TJ511 | 1/4W 510 | C401 | ECFR1E104ZF5 | 25V 0.1U | R3531 | 482205110153 | 1/4W 15K [MB] |
| R821, 822 | ERDS2TJ473 | 1/4W 47K | C402 | ECEAOJKA470B | 6.3V 47U | R3533 | 482205110152 | 1/4W 5.1K [MB] |
| R823, 824 | ERDS2TJ331 | 1/4W 330 | C404 | ECFR1E104ZF5 | 25V 0.1U | R3534 | 482205110224 | 1/8W 220K [MB] |
| R825, 826 | ERDS2TJ102 | 1/4W 1K | C405 | ECEAOJKA470B | 6.3V 47U | R3535 | 482205021203 | 3/5W 12K [MB] |
| R831, 832 | ERDS2TJ470 | 1/4W 47 | C406 | ECBT1H102KB5 | 50V 1000P | R3540 | 482205024708 | 3/5W 4.7 [MB] |

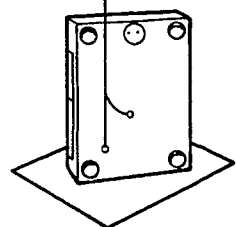
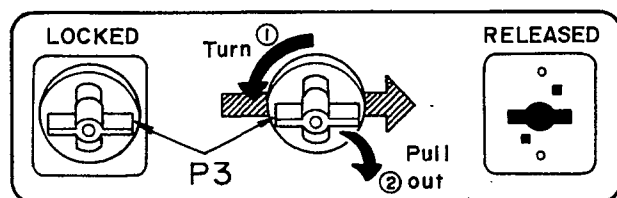
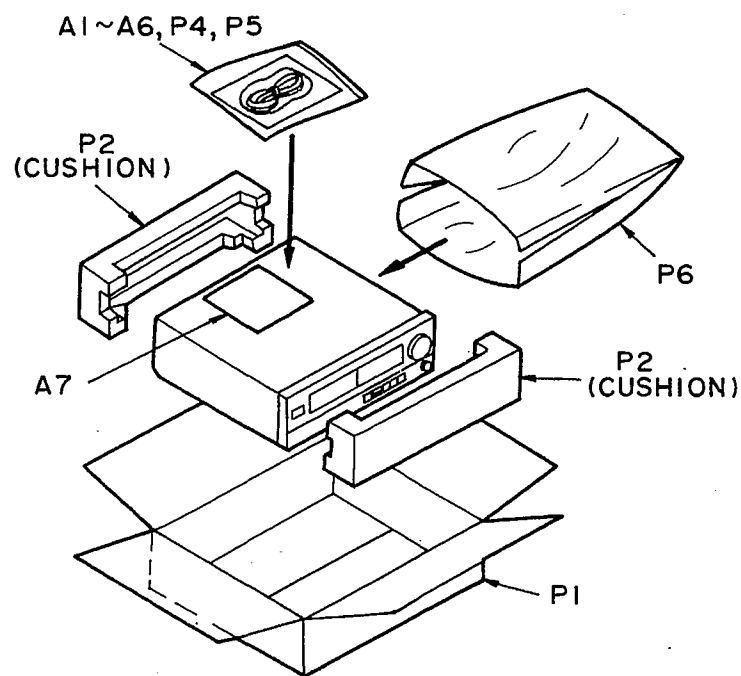
| Ref. No. | Part No. | Values & Remarks |
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| R3541 | 482205110682 | 1/4W 6.8K [MB] |
| R3542 | 482205110829 | 1/8W 82 [MB] |
| R3543 | 482205110682 | 1/8W 6.8K [MB] |
| R3550 | 482205110182 | 1/4W 1.8K [MB] |
| R3555 | 482205110183 | 1/4W 18K [MB] |
| R3560 | 482211191494 | 1/8W 11K [MB] |
| R3561 | 482205110154 | 1/4W 150K [MB] |
| R3562 | 482205021204 | 3/5W 120K [MB] |
| R3563 | 482205110563 | 1/8W 56K [MB] |
| R3564 | 482211191495 | 1/8W 160K [MB] |
| R3565 | 482205210279 | 1/3W 27 [MB] |
| R3566 | 482205110229 | 1/8W 22 [MB] |
| R3567 | 482205028203 | 1/8W 82K [MB] |
| R3568 | 482205110474 | 1/4W 470K [MB] |

| Ref. No. | Part No. | Values & Remarks |
|----------|--------------|------------------|
| C2546 | 482212233496 | 63V 0.1U [MB] |
| C2547 | 482212232863 | 50V 0.022U [MB] |
| C2552 | 482212143526 | 100V 0.047U [MB] |
| C2560 | 482212231784 | 50V 4700P [MB] |
| C2561 | 482212151252 | 63V 0.47U [MB] |
| C2562 | 532212142661 | 63V 0.33U [MB] |
| C2563 | 482212233496 | 63V 0.1U [MB] |
| C2625 | 482212231765 | 50V 100P [MB] |

| Ref. No. | Part No. | Values & Remarks |
|----------------|--------------|------------------|
| CHIP JUMPER(S) | | |
| R3801 | 482205110008 | JUMPER [MB] |
| R3802 | 482205110008 | JUMPER [MB] |
| CAPACITORS | | |

| | | |
|-------|--------------|------------------|
| C2501 | 482212232863 | 50V 0.022U [MB] |
| C2502 | 482212440433 | 25V 47U [MB] |
| C2503 | 482212232863 | 50V 0.022U [MB] |
| C2504 | 482212231727 | 63V 470P [MB] |
| C2505 | 482212440433 | 25V 47U [MB] |
| C2506 | 482212233496 | 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 | 482212143375 | 63V 0.22U [MB] |
| C2514 | 482212151252 | 63V 0.47U [MB] |
| C2515 | 482212231746 | 50V 1000P [MB] |
| C2520 | 482212231965 | 63V 220P [MB] |
| C2521 | 482212422027 | 25V 47U [MB] |
| C2530 | 482212151321 | 63V 8200P [MB] |
| C2531 | 482212151321 | 63V 8200P [MB] |
| C2532 | 482212440272 | 16V 33U [MB] |
| C2534 | 532212142661 | 63V 0.33U [MB] |
| C2535 | 482212231981 | 50V 0.033U [MB] |
| C2536 | 482212231981 | 50V 0.033U [MB] |
| C2537 | 482212143375 | 63V 0.22U [MB] |
| C2538 | 482212143375 | 63V 0.22U [MB] |
| C2540 | 482212441583 | 50V 0.68U [MB] |
| C2541 | 482212232863 | 50V 0.022U [MB] |
| C2542 | 482212232863 | 50V 0.022U [MB] |
| C2543 | 482212440196 | 16V 220U [MB] |
| C2544 | 482212440196 | 16V 220U [MB] |
| C2545 | 482212233496 | 63V 0.1U [MB] |

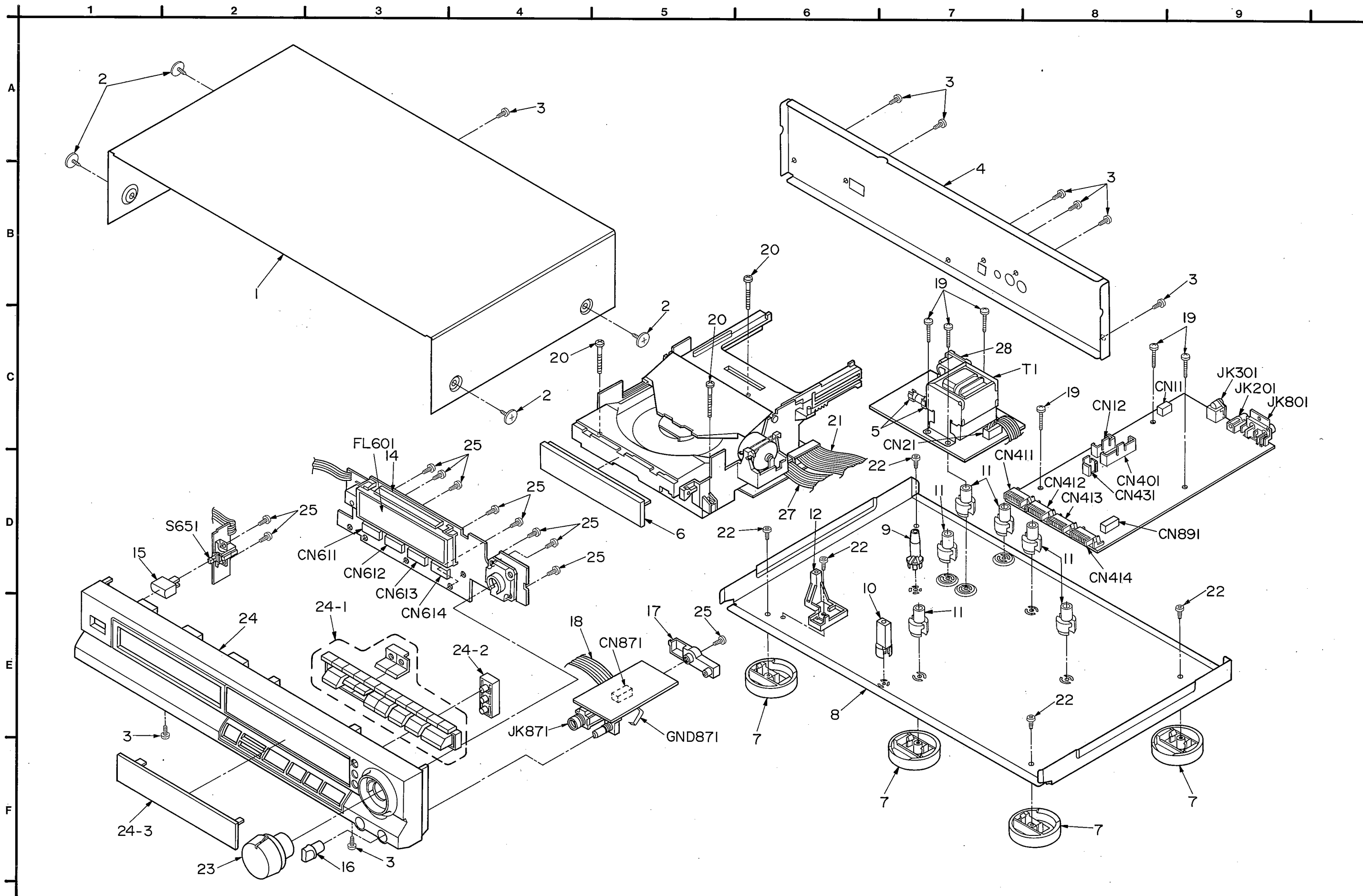
■ PACKAGING



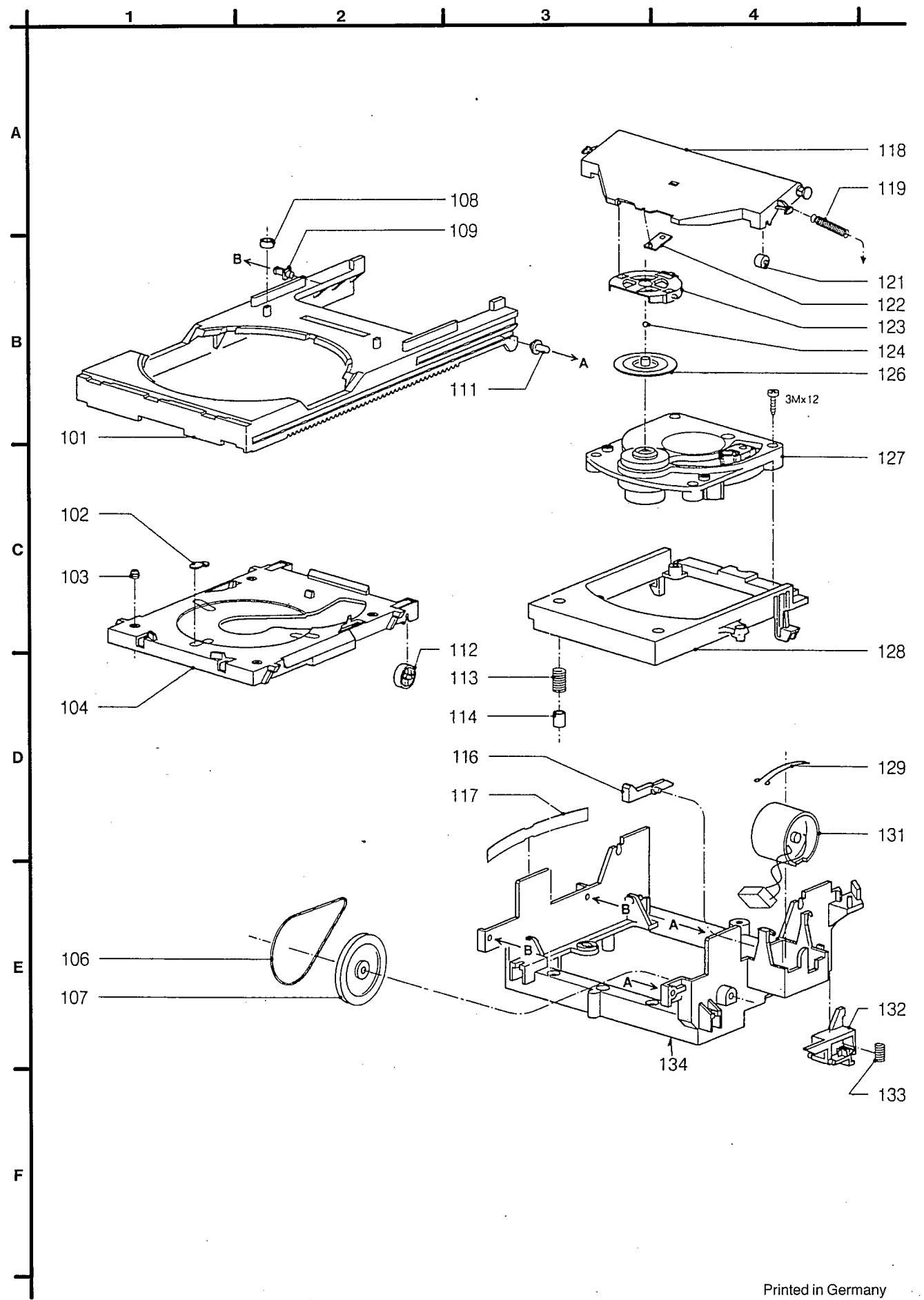
| Ref. No. | Part No. | Part Name & Description | Remarks |
|--------------------|--------------|-------------------------|-------------|
| CABINET PARTS | | | |
| 1 | RKMO098-K | CABINET | [MB] |
| 2 | SNE2129-1 | SCREW | |
| 3 | XTBS3+8JFZ1 | SCREW | |
| 4 | RFKHLPG540AE | REAR PANEL ASS'Y | (E/EG) [MB] |
| 4 | RFKHLPG540AB | REAR PANEL ASS'Y | (EB) [MB] |
| 5 | EYF52BC | FUSE HOLDER | |
| 6 | RGK0499-K | TRAY LID | [MB] |
| 7 | RKAO040B | FOOT | [MB] |
| 8 | RMK0178 | BOTTOM BOARD | [MB] |
| 9 | RMR0020 | SPACER (A) | [MB] |
| 10 | RMR0021 | SPACER (B) | [MB] |
| 11 | RMR0377 | PCB SUPPORT | [MB] |
| 12 | RMR0573-K1 | SPACER (C) | [MB] |
| 13 | RWJ6405130XX | FLAT CABLE (5P) | [MB] |
| 14 | RMR0659-K | FL. HOLDER | [MB] |
| 15 | RGU0030 | BUTTON, POWER | |
| 16 | RGW0048 | KNOB, H. P. VOLUME | |
| 17 | RMR0610-K | H. P. PCB HOLDER | [MB] |
| 18 | RWJ1807100XX | FLATE CABLE (7P) | [MB] |
| 19 | XTB3+20JFZ | SCREW | |
| 20 | XTB3+35JFZ | SCREW | |
| 21 | REX0285 | FLAT CABLE (14P) | [MB] |
| 22 | XTB3+8JFZ | SCREW | |
| 23 | RGW0169-K | SEARCH DIAL | [MB] |
| 24 | RYPD4012-K | FRONT PANEL ASS'Y | [MB] |
| 24-1 | RGU0807-K | BUTTON, PLAY etc. | [MB] |
| 24-2 | RGU0810-K | BUTTON, DISC LINK etc. | [MB] |
| 24-3 | RKWD245A-R | FL. PANEL | [MB] |
| 25 | XTBS26+8J | SCREW | |
| 27 | REX0007 | FLAT CABLE (7P) | [MB] |
| 28 | SJS9236 | AC INLET | △ |
| 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] |
| 117 | 482249263659 | SPRING, BLADE | [MB] |
| 118 | 482244460568 | DISC LID | [MB] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|-------------------|--------------|----------------------------|-----------|
| 119 | 482249232883 | SPRING, TENSION | [MB] |
| 121 | 482252890639 | ROLLER | [MB] |
| 122 | 482246692257 | PLATE | [MB] |
| 123 | 482240261207 | HOLDER | [MB] |
| 124 | 482252040177 | SMALL BALL | [MB] |
| 126 | 482253080503 | RING, PRESSURE | [MB] |
| 127 | 482269130209 | OPTICAL PICKUP UNIT | [MB] |
| 128 | 482240261196 | SUPPORT | [MB] |
| 129 | 482249263746 | CLAMPING SPRING | [MB] |
| 131 | 482236120998 | LOADING MOTOR | [MB] |
| 132 | 482240250244 | BRACKET | [MB] |
| 133 | 482249251935 | SPRING, COMPRES. | [MB] |
| 134 | 482270112729 | CHASSIS | [MB] |
| PACKING MATERIALS | | | |
| P1 | RPG1375 | PACKING CASE | [MB] |
| P2 | RPN0647 | CUSHION | [MB] |
| P3 | RMR0024 | LOCK SHAFT | [MB] |
| P4 | XZB26X17C03 | PROTECTION BAG (TRANSMITT) | |
| P5 | XZB23X35C03 | PROTECTION BAG (F. B.) | |
| P6 | XZB60X65A01Z | PROTECTION BAG | |
| ACCESSORIES | | | |
| A1 | EUR642100 | REMOTE CONTROL TRANSMITTER | [MB] |
| A1-1 | UR64EC1326 | BATTERY COVER | [MB] |
| A2 | RJA0018-1K | AC POWER SUPPLY CORD | △ (E/EG) |
| A2 | VJA0733 | AC POWER SUPPLY CORD | △ (EB) |
| A3 | ROA0013 | WARRANTY CARD | |
| A4 | RQCB0169 | SERVICE CENTER LIST | |
| A5 | RFKSLPG540AE | INSTRUCTIONS MANUAL | (E) [MB] |
| A5 | RQT1677-B | INSTRUCTIONS MANUAL | (EB) [MB] |
| A5 | RFKSLPG540AG | INSTRUCTIONS MANUAL | (EG) [MB] |
| A6 | SJP2249-3 | STEREO CONNECTION CABLE | |
| A7 | RQCA0059 | LOCK CAUTION SHEET | [MB] |

CABINET PARTS LOCATION



LOADING UNIT PARTS LOCATION



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