

Service Manual

Compact Disc Changer

MASH
 multi-stage noise shaping

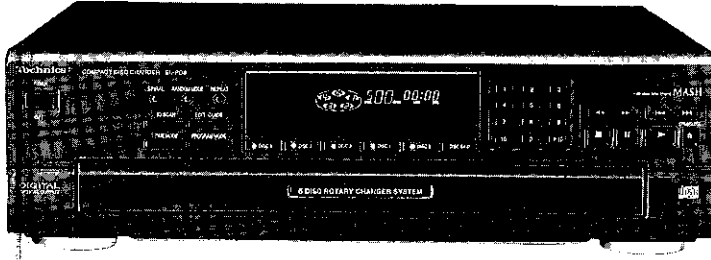
COMPACT
disc
DIGITAL AUDIO
SL-PD8

Colour

(K) ... Black Type

Area

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


TRAVERSE DECK : RAE0152Z-M Mechanism Series

Specifications

AUDIO

| | |
|---------------------------|----------------------------|
| No. of channels | 2 (left and right, stereo) |
| Frequency response | 2 - 20000 Hz, ± 1 dB |
| Output voltage | 2 V (at 0 dB) |
| Dynamic range | 92 dB |
| S/N | 100 dB |
| Total harmonic distortion | 0.007% (1 kHz, 0 dB) |
| Wow and flutter | Below measurable limit |
| DA converter | MASH (1 bit) |
| Output impedance | Approx. 1 k Ω |
| Load impedance | More than 10 k Ω |

PICKUP

| | |
|------------|--------|
| Wavelength | 780 nm |
|------------|--------|

GENERAL

| | |
|------------------------|-----------------------|
| Power supply | AC 230 - 240 V, 50 Hz |
| Power consumption | 9 W |
| Dimensions (W x H x D) | 430 x 125 x 374 mm |
| Weight | 4.5 kg |

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

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

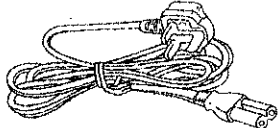
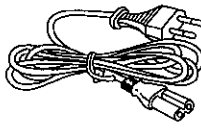

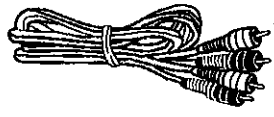
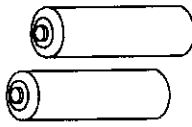
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Accessories

| | | | |
|--|--|--|--|
|  AC power cord for United Kingdom |  AC power cord for others |  Remote control |  Stereo connection cable |
|  Batteries | | | |

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)

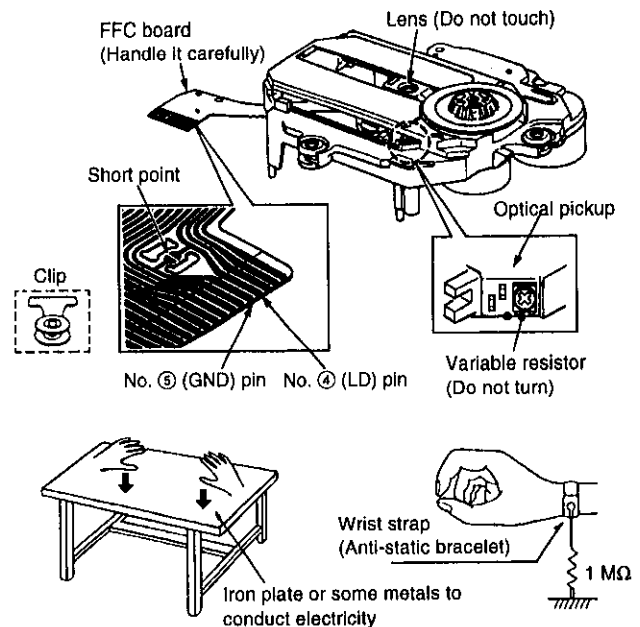
- Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
- The short land between the No.4 (LD) and No.5 (GND) pins on the flexible boards (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
- Take care not to apply excessive stress to the flexible board (FFC board).
- Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

Grounding for electrostatic breakdown prevention

- Human body grounding**
Use the anti-static wrist strap to discharge the static electricity from your body.
- 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.

Wavelength: 780 nm

Maximum output radiation power from pick up: 100 μ W/VDE

Laser radiation from 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 pick up 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 : 780nm

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.

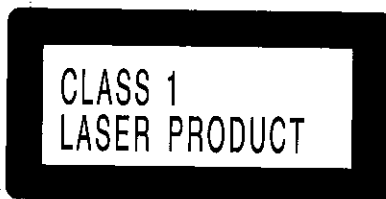
ADVASEL : I dette a apparat anvendes laser.

CAUTION !

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

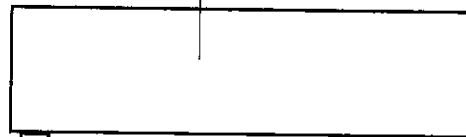
■ Use of Caution Labels



**LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT**

| | |
|----------|--|
| DANGER | INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. |
| ADVASEL | USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSÅBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETELSE FOR STRÅLING. |
| VARO! | AVATTAESSA JA SUOJALUKITUS OHJETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTTEESEEN. |
| VARNING | OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN. |
| ADVASEL | USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES UNGÅ EKSPONERING FOR STRÅLEN. |
| VORSICHT | UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEOFFNET. NICHT DEM STRAHLE AUSSETZEN. |

(Back of product)



■ Caution for AC Mains Lead



(For "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 OFF 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.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

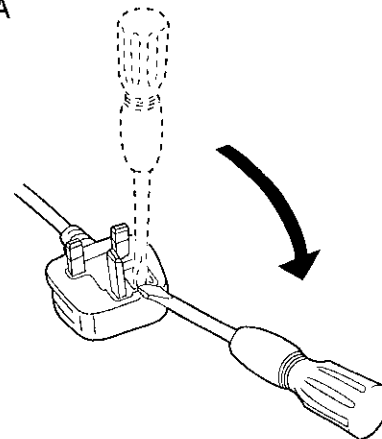
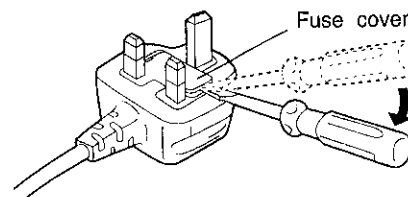


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

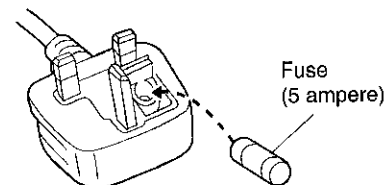
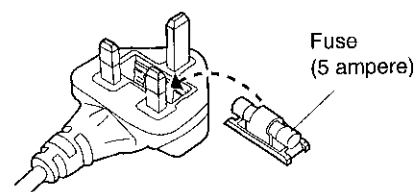
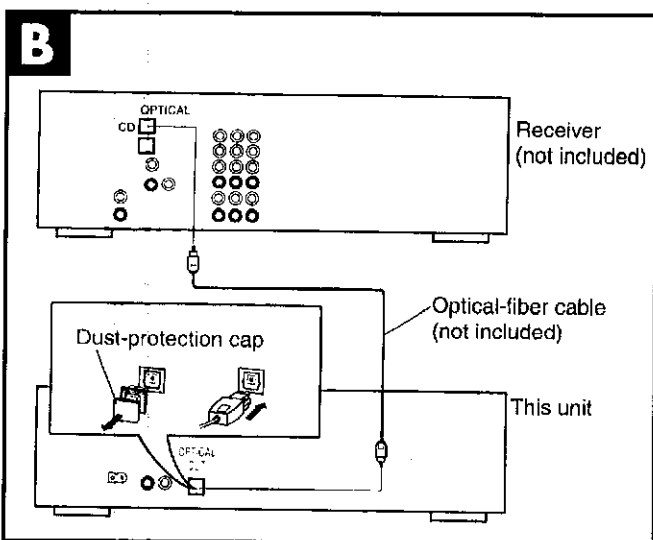
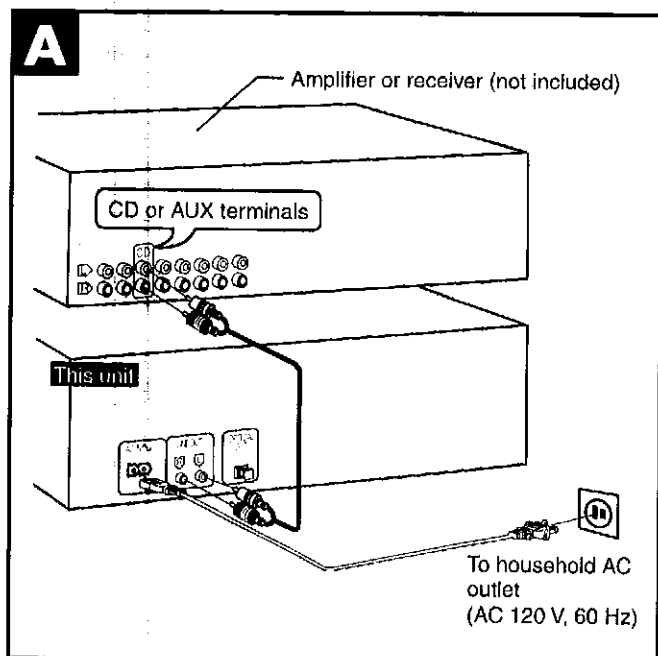


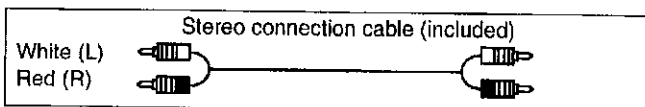
Figure B





Connections

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



Note

Although the figure shows the AC power supply cord being connected to a household AC outlet, if the amplifier (or receiver) is equipped with a AC outlet, connect the cord to that outlet.

Digital connection **B**

Remove the dust cap and connect this unit to other digital equipment with an optical fiber terminal, such as a receiver or digital surround processor.

- Leave the cap attached when this terminal is not being used.

For your reference

If you have DTS format CDs, you can enjoy six channel playback by connecting this unit to a receiver or digital surround processor that has a DTS decoder.

Note

Use only the optical fiber terminal when playing back DTS format discs. DTS signals can only be correctly output through the digital terminal. Connection through the stereo LINE OUT terminals will result in noise and could possibly damage your speakers.

- DTS is a trademark of Digital Theater Systems, L.P.

Cautions concerning the moving of this unit

CAUTION

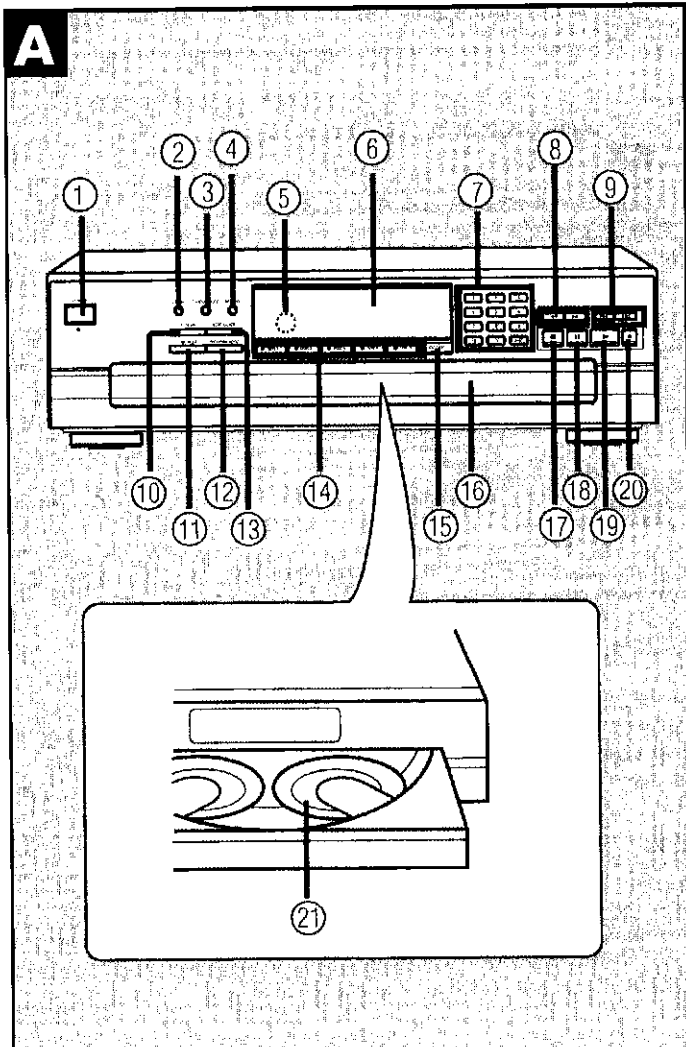
Before moving the changer to another location, be sure to carry out the "Preparation for moving the unit" described below.

Failure to do so will expose the compact discs and changer to the risk of severe damage.

Preparation for moving the unit

1. Press POWER to switch off the unit.
2. Press POWER to switch on the unit.
(If there is a disc in the play section, it will returned to the disc tray at this time.)
3. Press OPEN/CLOSE to open the loading drawer.
4. Press DISC SKIP to rotate the disc trays and remove the discs from all the trays.
5. Press OPEN/CLOSE to close the loading drawer.
6. Press POWER to switch off the unit.

If you have pressed a wrong button by mistake, return to step 1.

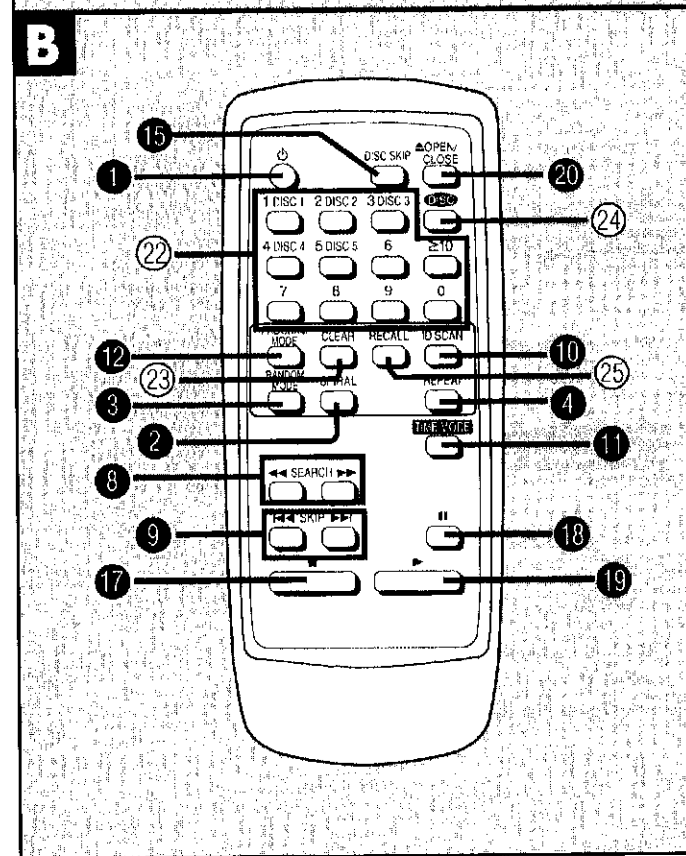


Front panel controls

Main unit **A**

| No. | Name |
|-----|------|
|-----|------|

- ① **Standby/on switch (⏻/I, POWER)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ② **Spiral button (SPIRAL)**
- ③ **Random mode button (RANDOM MODE)**
- ④ **Repeat button (REPEAT)**
- ⑤ **Remote control signal sensor**
This changer can be operated by using the remote control provided with a Technics receiver. (This may not be possible with some models.)
- ⑥ **Display**
- ⑦ **Numeric buttons (1-10, 0, >10)**
- ⑧ **Search buttons (◀◀, ▶▶)**
- ⑨ **Skip buttons (◀◀, ▶▶)**
- ⑩ **ID scan button (ID SCAN)**
- ⑪ **Time mode button (TIME MODE)**
- ⑫ **Program mode button (PROGRAM MODE)**
- ⑬ **Edit guide button (EDIT GUIDE)**
- ⑭ **Disc buttons (DISC 1-DISC 5)**
- ⑮ **Disc skip button (DISC SKIP)**
- ⑯ **Loading drawer**
- ⑰ **Stop button (■)**
- ⑱ **Pause button (||)**
- ⑲ **Play button (▶)**
- ⑳ **Loading drawer open/close button (▲OPEN/CLOSE)**
- ㉑ **Disc trays (1-5)**



Remote control **B**

Buttons ①, ②, ③, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩, ⑪, ⑫, ⑬, ⑭, ⑮, ⑯, ⑰, ⑱ and ⑳ have the same functions as the corresponding buttons on the main unit.

| No. | Name |
|-----|------|
|-----|------|

- ⑳ **Numeric buttons**
- ㉑ **Clear button (CLEAR)**
- ㉒ **Disc button (DISC)**
- ㉓ **Recall button (RECALL)**

Basic Operations

Sequential play

All of the discs will be played, beginning from track 1 on the selected disc.

The explanation below is an example of operation in the case where all five disc trays in the changer are holding CDs.

- 1 Press [POWER].
The unit will switch on.
- 2 Press [OPEN/CLOSE] to open the loading drawer.
- 3 Load the disc(s) on the disc tray(s).
The discs can be loaded two at a time by pressing [DISC SKIP] to rotate the carousel.

- Note
- Do not load 3" (8 cm) and 5" (12 cm) discs on the same disc tray.
- Do not use irregular shape CDs.

CAUTION
Do not touch the loading drawer and carousel while they are in motion, and do not attempt to rotate the carousel by hand, doing so could result in incorrect operation of the unit and/or damage to the discs.

- 4 Press [OPEN/CLOSE] again to close the loading drawer.

Note

Do not attempt to close the drawer by hand.

- 5 Press the desired disc button ([DISC 1]-[DISC 5]).
Play will begin from the selected disc. If a disc is not on the selected disc tray, the changer plays the disc at the next number.

The disc indicator lights when there is a disc in the corresponding tray.

For remote control

Press [DISC] and then within 7 seconds or so, press [DISC 1]-[DISC 5] to select the disc you want.

The changer plays all the tracks on all the discs in order and stops automatically when the last track on the last disc finishes playing. The first disc will then be at the playing position.

1 POWER ON

2 Loading drawer is opened.

3 Disc tray Carousel
Disc number
Label must face upward.

4 Current play position (The numeral illuminates with a red color.)

5 Disc indicator
Disc number in play
Elapsed play time
Track number in play

Basic operations

To directly access a desired track

Press the numeric button(s) to select the track.

To select a two-digit track number over 10

(or to select a two-digit track from the remote control)

Press [>10] ([:>10] on the remote control) and then the two numbers you want within 7 seconds or so.

For example

Track no. 20: [>10] ([:>10] on the remote control)

[2]—[0]

To exchange discs during play

While playing a disc, it is possible to change the other discs without interrupting play.

- 1 Press [OPEN/CLOSE] to open the loading drawer.
- 2 Press [DISC SKIP] to rotate the disc trays and exchange the discs.
The carousel will move by one disc tray. Pressing again moves the carousel in the opposite direction by two disc trays.
- 3 Press [OPEN/CLOSE] to close the loading drawer.

Note

If you play a disc with the loading drawer open, discs other than the current disc cannot be played.

To temporarily stop play

Press [H].

Press [▶] to resume play.

To stop play

Press [E].

The display will show the total number of tracks and the total playing time of the current disc.

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.

Press [▶] to re-start play.

CAUTION

Do not move this changer with a compact disc inside the unit. If a disc comes off the disc tray, it might be scratched or the changer might become incapable of playing.
(Refer to "Cautions concerning the moving of this unit".)

A Track number

B Current disc
Discs which can be changed

C

D Total number of tracks
Current disc
Total playing time

Program play

This unit has two program play modes: program (PGM) and delete (DEL).
 Program mode allows you to select and play your favorite tracks in the order you want to hear them.
 Delete mode allows you to program the unit not to play certain tracks. This mode can be used in combination with sequential and random play.
 Up to 32 tracks can be selected for each mode.

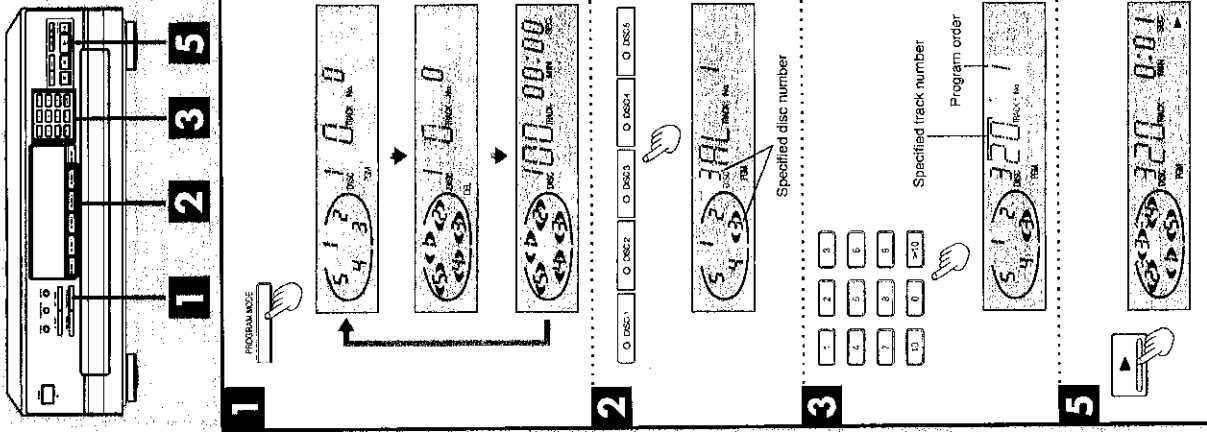
- 1** While the unit is stopped
Select the mode with [PROGRAM MODE].
 Every time you press the button:
 PGM → DEL → (off)
- 2** Press [DISC (1 to 5)] to select the required disc.
 "AL" appears on the display to indicate all the tracks on the disc are selected.
 Repeat the above if you want to make selection by disc only.
 The number of programmed items increases by one each time a [DISC] button is pressed.
- 3** Press the numeric button(s) to select a track.
 (or to select a two-digit track number over 10)
 Press [>10] on the remote control) and then
 the two numbers you want within 7 seconds or so.
 For example
 Track no. 20: [>10] [2] [0] on the remote control)
- 4** Repeat steps 2 and 3 to complete the selection.
 If non-existing disc or track number is entered, the selection is initially recorded but erased automatically during playback.
 "F" is displayed if you attempt to enter a 33rd item.
- 5** Press [▶] to start play.
 Additional selections can be made during play by repeating steps 2 and 3.

To use random play and delete mode together
 After step 4, make your random play mode selection.

To cancel program play
 While the unit is stopped
 Press [PROGRAM MODE] to select "(off)" mode.
 The contents of the program remain in the unit's memory even after the unit is turned off.

To use the program again
 1. Press [PROGRAM MODE] to select the required mode.
 2. Press [▶].

For your reference
 The program remains in the memory for up to two weeks even if the unit is disconnected from its power source.



Random play

All of the tracks will be played one time each in random order. There are two types of random play as described below.

One disc random play

The changer will play all tracks on the current disc in a random order. Then it will choose a new disc randomly, excluding the discs already played, and play all tracks on that disc in a random order.

In the stop or play mode

Press [RANDOM MODE] so that the "1 DISC RND" indicator illuminates.

Every time you press the button:
 1 DISC RND → FULL RND → (off)

Full random play

Each track to be played back is selected randomly from all of the tracks on all of the discs, excluding the tracks that have already been played.

In the stop or play mode

Press [RANDOM MODE] so that the "FULL RND" indicator illuminates.

Every time you press the button:
 1 DISC RND → FULL RND → (off)

The changer will stop automatically when all the tracks on all discs have been played once.

To cancel random play mode

Press [▶].
 The "1 DISC (or FULL) RND" indicator will go out.

Spiral play

The changer plays the first tracks on all the loaded discs in sequence, followed by the second tracks on all the discs, and so on.

In the stop or play mode

Press [SPIRAL].
 Spiral play will begin with the first track on the disc situated at the playing position.

The changer will stop automatically when all the tracks on all discs have been played once.

For your reference

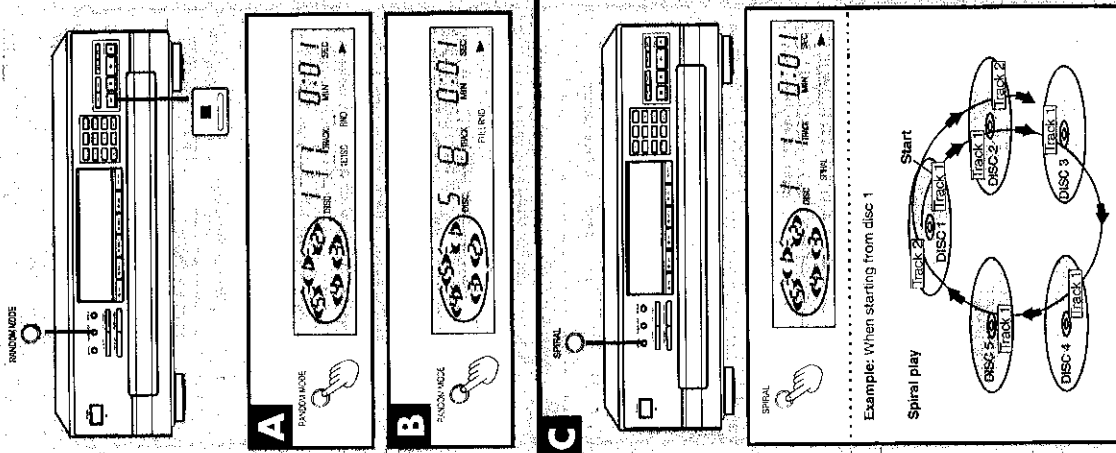
When a disc with fewer tracks finishes playing, that disc will be skipped and the changer will continue playing the remaining track on the other discs in spiral sequence.

To cancel spiral play mode

Press [SPIRAL] again.

The "SPIRAL" indicator will go out.

The changer will return to sequential play mode from the current track on the current disc which is playing.



Program play

To skip discs

Use this function to skip discs when selecting a disc to which you wish to listen, and when loading and unloading the discs.

You can use this function in stop, sequential play, one disc random play and delete play modes.

Press [DISC SKIP] to rotate the disc tray.

In stop mode

When the loading drawer is closed, pressing [DISC SKIP] changes the disc tray to the next one. When the loading drawer is open, pressing [DISC SKIP] moves the carousel by two disc trays.

In play mode

When the loading drawer is closed, pressing [DISC SKIP] changes the disc and the changer plays the track on the next disc. If a disc is not on the selected disc tray, the changer plays the disc at the next number.

When the loading drawer is open, pressing [DISC SKIP] moves the carousel by one disc tray. Pressing again moves the carousel in the opposite direction so that you can change all discs except the one being played.

To skip tracks

Use this function to skip tracks when selecting a track to which you wish to listen.

Press either [◀] or [▶] until you reach the desired track.

▶: You can skip backward.
▶▶: You can skip forward.

In sequential/program/delete play mode

In sequential play mode, you can skip only within the current disc. In program play mode, you can skip from one track to another in the programmed sequence.

In delete play mode, you can skip tracks only within the current disc excluding the tracks to be deleted. You press this button again quickly, you can skip to the beginning of the previous track. Remember that in a backward skip, the current track is included in the count.

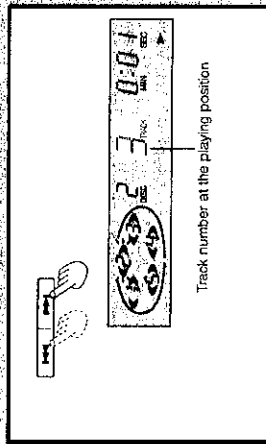
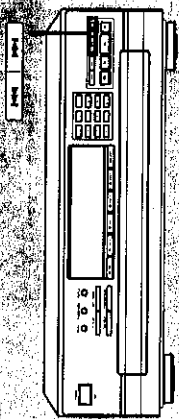
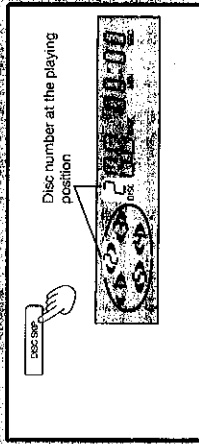
▶▶▶: You can skip as many tracks as the number of times you press the button.

In random play mode

▶▶▶▶: You can skip to the beginning of the current track.
▶▶▶▶▶: You can skip to the beginning of a next track in random order.

In spiral play mode

▶▶▶▶▶▶: You can skip to the beginning of the current track.
▶▶▶▶▶▶▶: You can skip to the beginning of the track on the next disc. You can also skip tracks when the changer is in the stop mode (except during random play and spiral play) or pause mode.



Program play

To confirm the selections **A** (Remote control only) Press [RECALL].

Each time you press the button, the tracks and discs you programmed appear on the display in the order they were selected.

To cancel selections

While the unit is stopped Press [CLEAR]. The entire program is cancelled.

To clear the last item in the program **B** (Remote control only) Press [CLEAR].

To clear a specific item

1. Press [RECALL] until the item is displayed.
2. Press [CLEAR].

ID scan function

This function is convenient to use when searching for a desired track.

The function will search from the beginning of the track for a loud section, and will play 10 seconds of the track centering around that point.

The order of scanning is the same as for play mode.

- 1 Press [ID SCAN]. ID scan will start.
- 2 When the desired track has been found: Press [▶].

The changer will play the track from the beginning. To cancel ID scan Press [ID SCAN]. The "ID" indicator will go out. The changer will continue to play from the track being played.

Search function

You can search rapidly forward or backward on the disc for specific sections.

In the play or pause mode

Press and hold [◀] or [▶]. You can search backward. ▶▶▶: You can search forward.

Release the button when you reach the desired point.

The changer will return to the previous mode (play or pause).

In sequential play mode

You can search forward over discs and backward within the current disc.

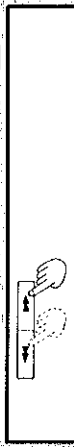
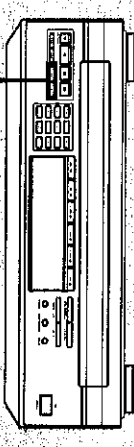
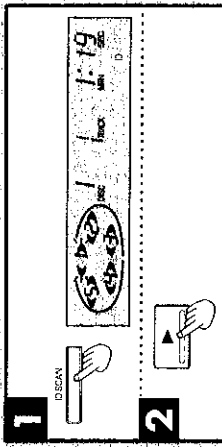
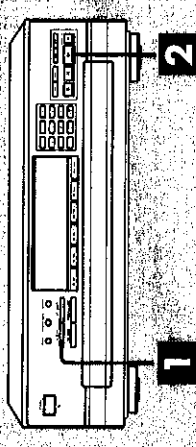
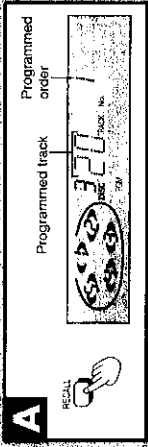
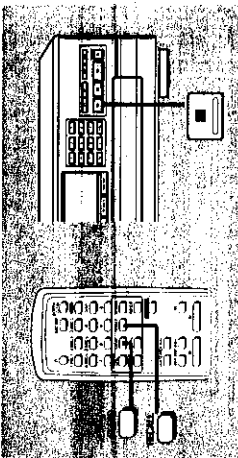
In other play modes

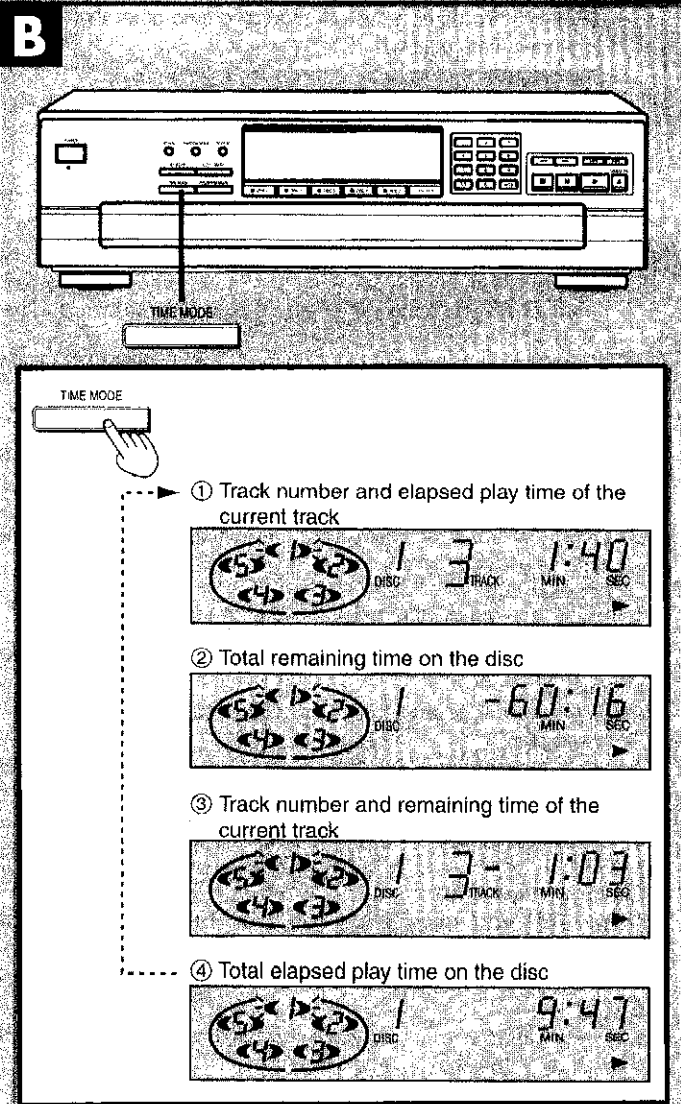
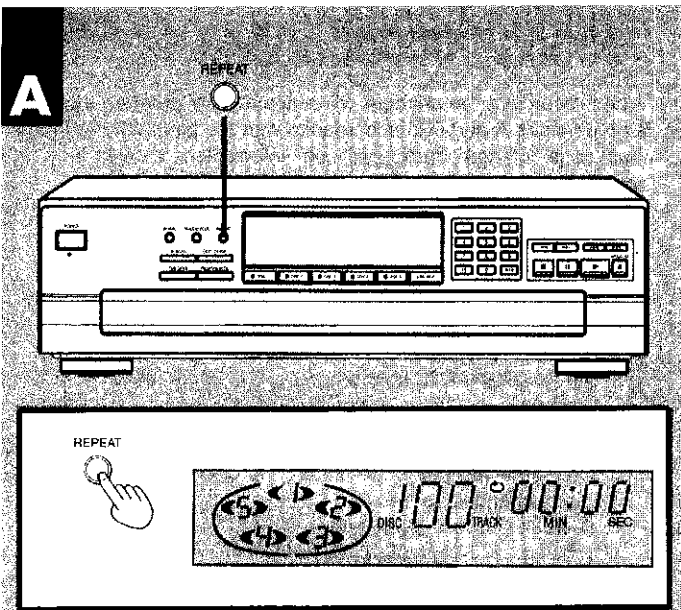
You can search forward or backward only within the current track.

For your reference

The search function will begin slowly, and then, if the button is held pressed for longer than 3 seconds, it will change to high-speed search.

Searching in the play mode will decrease the sound level by 12 dB (1/4).





Repeat function A

Play will continue endlessly in accordance with the specific play mode selected.

Before or during play
Press [REPEAT].

In sequential play mode
All tracks of all discs will be played repeatedly.

In program play mode
The changer plays only the programmed selections in the programmed sequence repeatedly.

In delete play mode
The changer plays the discs and tracks excluding the selections to be deleted repeatedly.

In random play mode
When the changer has played all the tracks on all the loaded discs, it will select a new random sequence and play continuously. The sequence differs each time.

In spiral play mode
The changer plays all tracks of all discs repeatedly in the sequence of spiral play.

To cancel repeat mode
Press [REPEAT] again.
The "⏮" indicator will go out.

Time mode selection B

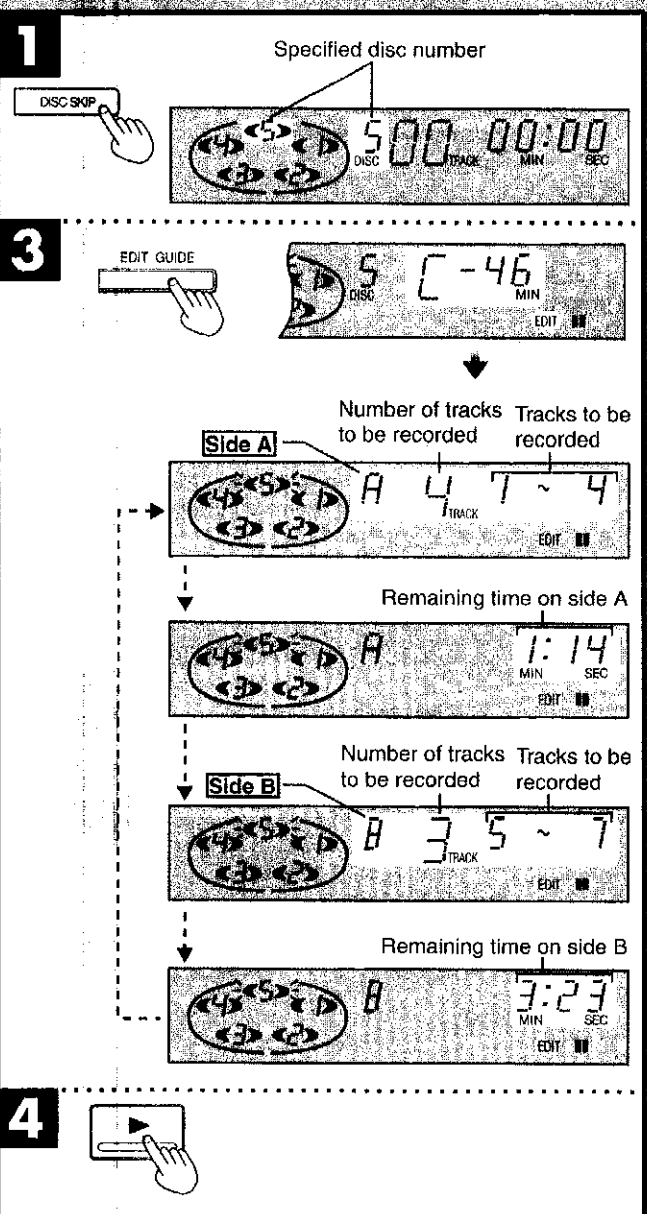
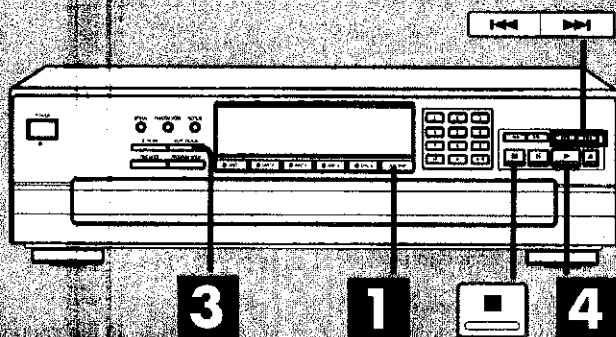
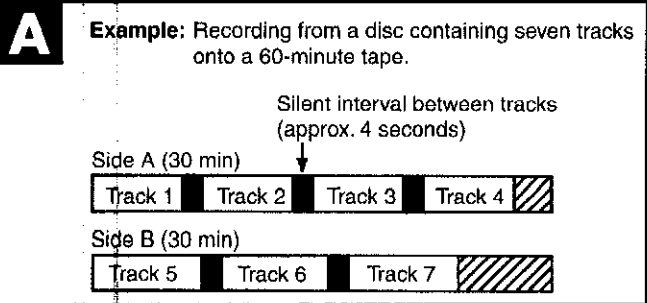
The various time information of the current disc can be displayed.

In the play or pause mode
Press [TIME MODE].
The display changes in the order shown in the diagram.

In all play modes
When track number 21 or greater is playing, display ③ shows "----".
① is displayed if play is stopped and then started again.

In program/delete/random/spiral mode
The displayed information will alternate between displays ① and ③ each time the button is pressed.

During operation of the edit guide function
The remaining play time on side A or side B will be shown in display ②, and the elapsed play time for side A or side B will be shown in display ④.



Edit Guide Function

When recording, the changer will automatically program the tracks for tape sides A and B in accordance with the length of the tape so that none of the tracks will be interrupted before they are completed.

In addition, the program will also include a silent interval of approximately 4 seconds between tracks. **A**

1 Press [DISC SKIP] to select the disc to be recorded.

2 Prepare the tape deck for recording.

Set the Dolby NR, reverse mode, recording level, etc., as instructed in the Operating Instructions for the tape deck.

Note

Prepare the tape so that recording is possible from its beginning.

3 Press [EDIT GUIDE] to select the tape length.

Each time you press the button, the display showing the tape length changes as follows.

C-46 → C-60 → C-90 → C---

Choose the length of the tape you will use.

More precise time settings are also possible.

(Refer to "To enter a desired recording time other than 46, 60 or 90 minutes" below.)

The data of the tracks to be recorded is displayed as shown in the diagram.

In this example, disc 5 can be recorded with tracks 1-4 on side A and tracks 5-7 on side B of the cassette tape.

4 Start recording on the tape deck and then immediately:

Press [▶].

When the last track set for recording on side A is finished, the changer will enter the pause mode. Set the tape to the position from which recording will begin on side B, and then perform step 4 once again.

When all the programmed tracks on the specified disc finish playing, the changer will automatically stop. The edit guide mode will be cancelled at the same time.

To enter a desired recording time other than 46, 60 or 90 minutes

1. Select "C---" in step **3**.
2. Enter the total recording time in minutes (1-99) using the numeric buttons.

For example

To use 52-minute tape, press [5] then [2].

You can also specify the tape length by pressing [◀◀] or [▶▶] buttons.

Press either [◀◀] or [▶▶] from each step C-46, C-60, C-90 or C---

For example

To use 52-minute tape, select C-46 and then press and hold [▶▶] until the display shows "52".

The maximum allowable playing time for editing is 99 minutes.

To stop recording

Press [■] and then press the stop button on the tape deck.

Note

Depending on the disc, a little of the beginning of the next track may be recorded onto the end of the track.

■ Operation Checks

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

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.
4. For details disassembly, please refer to SL-PD687 series.

• Contents

| | |
|---|---------|
| | page |
| • Checking Procedure For Each Major P.C.B. | 12 ~ 14 |
| • Installation Of Tray Assembly | 15 |

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

ACHTUNG : • Die Lasereinheit nicht zerlegen.
• Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

■ Checking Procedure For Each Major P.C.B.

Step 1
a X 4

Step 2
b X 2

Step 3
Remove the top cabinet in the direction of arrow.

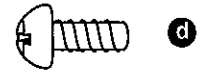
Step 4
Pull both the FFC from the front panel connectors

Step 5
c X 3

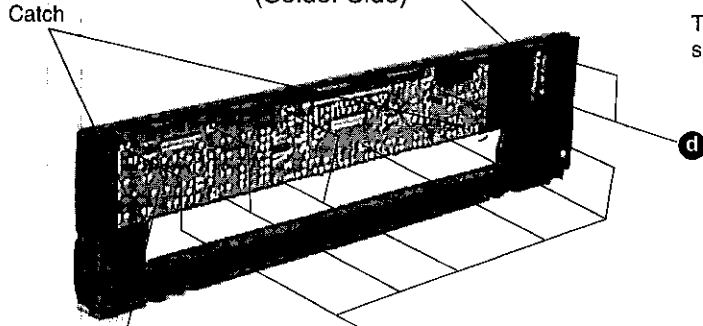
Step 6
Pull the front panel in both direction of arrow A to unlock the rib and then remove the front in the direction of arrow B.

a
[SNE2129-3] (Black)

b **c**
[XTBS3+8JFZ1] (Black)
[XTBS3+8JFZ] (Black)



Power Switch P.C.B.
(Solder Side)



Step 8

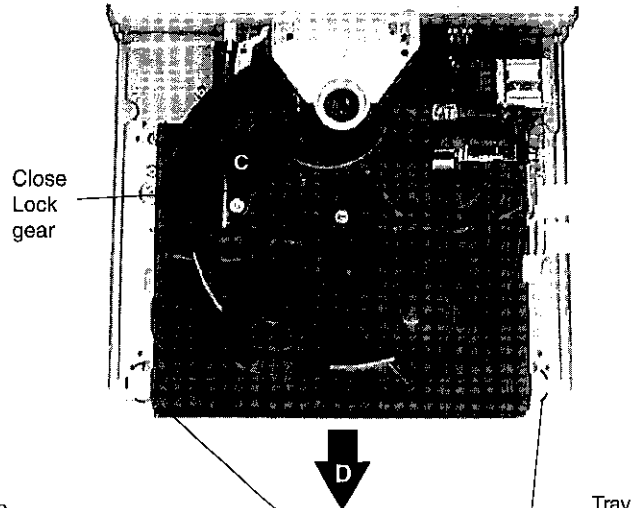
To check Panel P.C.B component side release both catch.

Panel P.C.B.
(Solder Side)

d X 11
Step 7

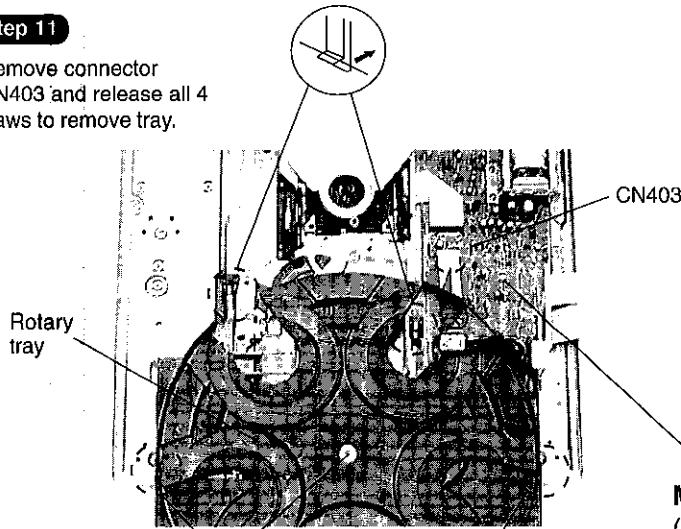
Step 9

Keep the close lock gear pressed in the direction of arrow C, and move the tray in the direction of arrow D.



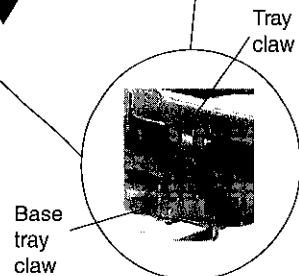
Step 11

Remove connector CN403 and release all 4 claws to remove tray.



Step 10

Fit the claw of the tray and the claw of the Base tray guide (left & right side).



Main P.C.B.
(Component Side)

Step 12

To remove rotary tray, remove screw e

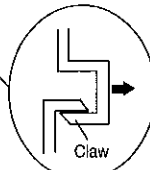
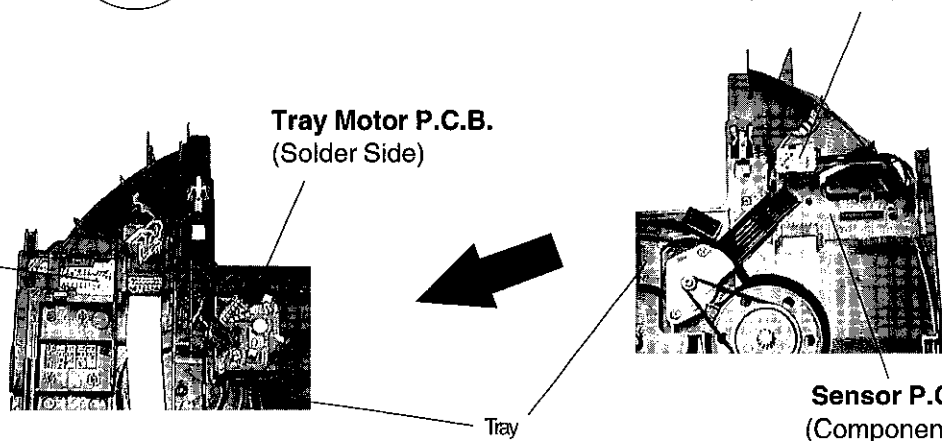


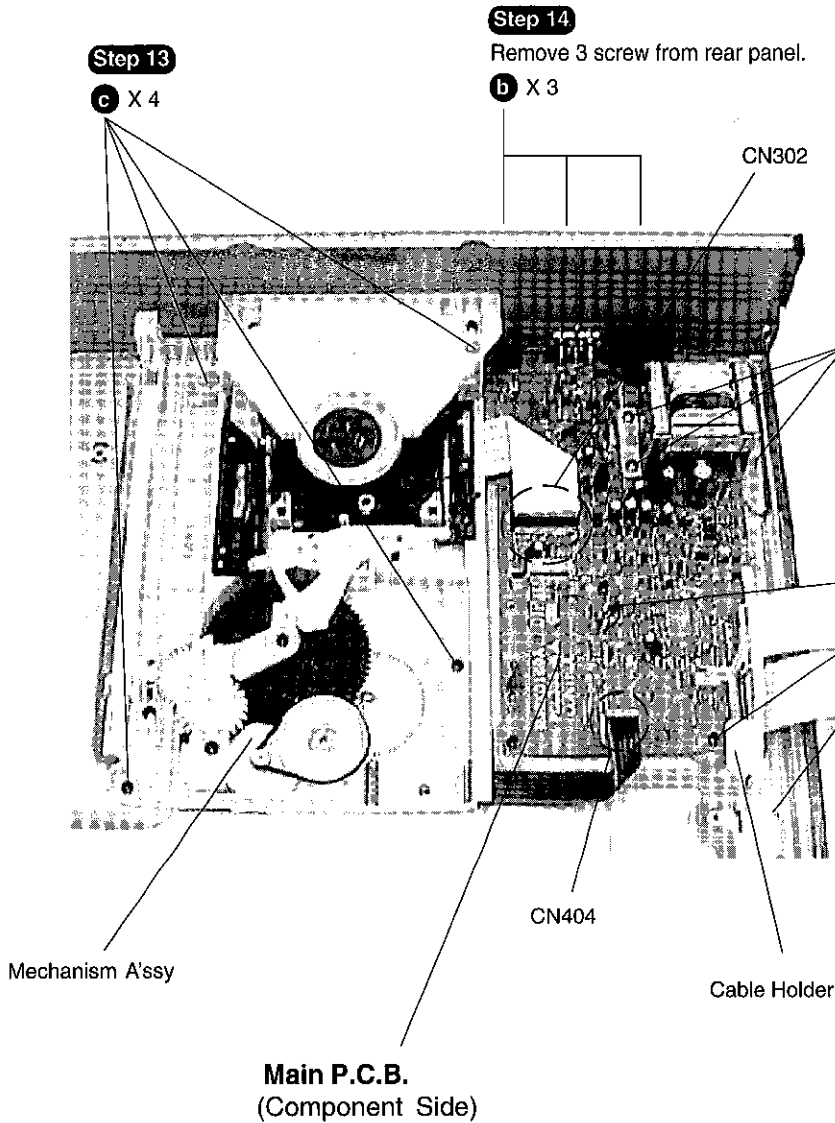
Photo Transistor P.C.B.
(Solder Side)

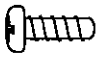
Sensor P.C.B.
(Solder Side)

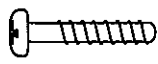
Tray Motor P.C.B.
(Solder Side)

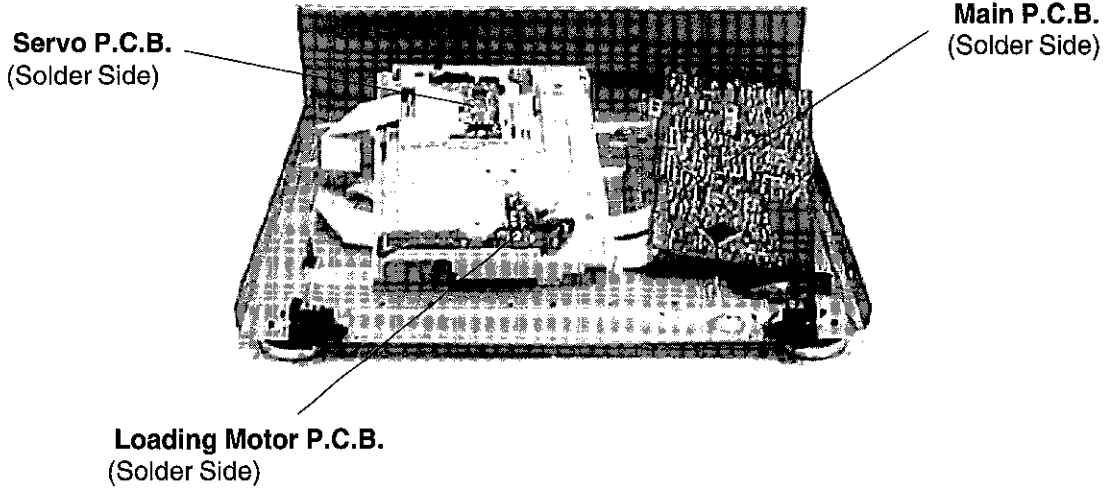


Sensor P.C.B.
(Component Side)

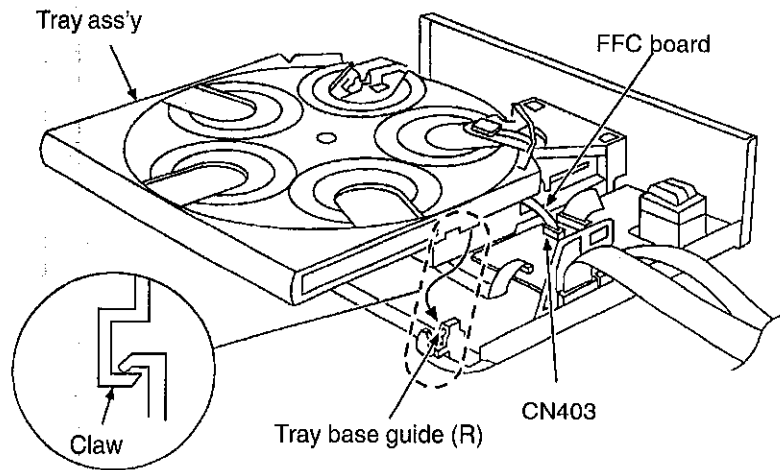


-  [XTBS3+8JFZ1] (Black)
- c** [XTBS3+8JFZ] (Black)
- f** [XTBS3+8J]

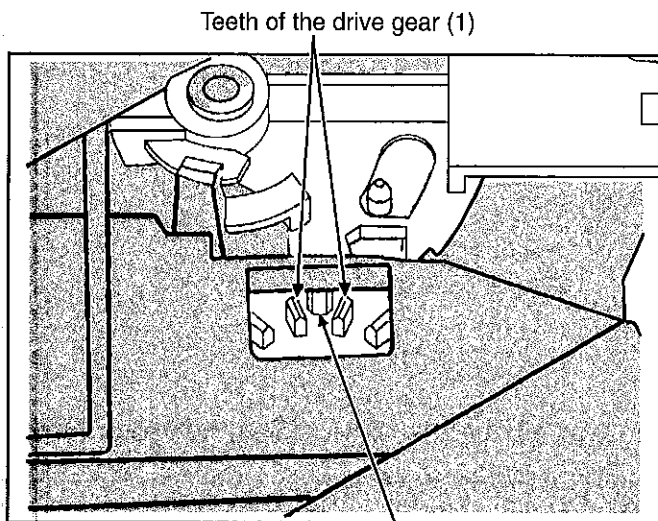
-  **g**
- [XTBS3+20J]



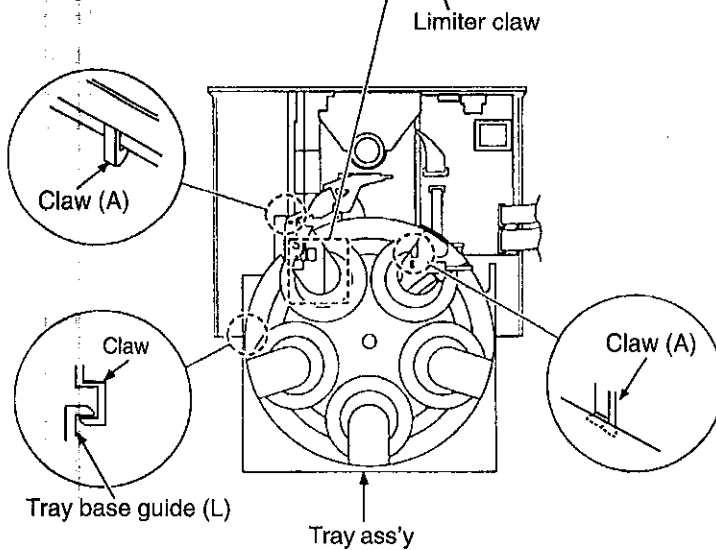
■ Installation Of Tray Assembly.



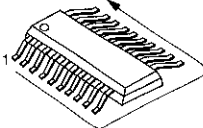
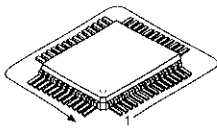
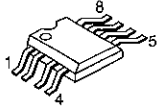
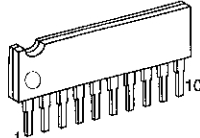
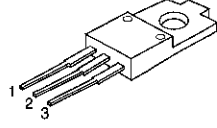
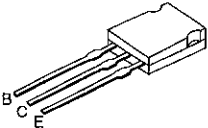
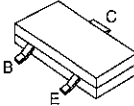
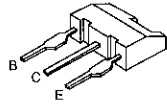
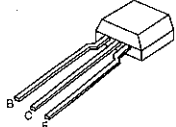
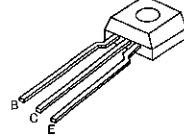
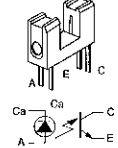
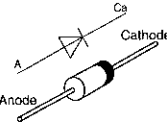
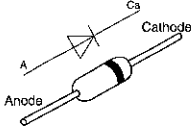
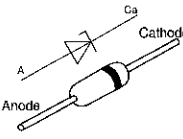
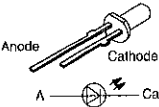
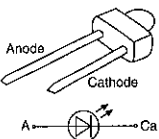
1. Attach the FFC board to the connector (CN403).
2. Fit the claw on the right side of the tray ass'y underneath the claw on the tray base guide (R).



3. Fit the claw on the left side of the tray ass'y underneath the claw on the tray base guide (L).
4. Fit the limiter claw on the tray ass'y between the teeth of the drive gear (1).
5. Catch both the claws (A) with the loading mechanism ass'y.
6. After installing the tray ass'y check that it moves smoothly.



■ Type Illustration of ICs, Transistors and Diodes

| | | | | | |
|--|--|---|---|--|---|
| AN8837SBE1 (28p) AN8780NSBE2 (28p) NJU3713G(18p)  | UPD78044F139(80p) MN662741RPA (80p)  | BA4558FDXE2  | BA6247N  | BA05T  | 2SD2037ETA  |
| DTC114YKA146 2SA1037AKSTX  | 2SB1238QRTV2 2SD1859QRTV2  | 2SD2144STA  |  | 2SA1175FETA 2SC2785FETA KRA103MTA KRC103MTA KRA107MTA KRC107MTA KRC111MTA | RSQGP1S53V SG-206S  |
| RL1N4003N02  | 1SS291TA RVD1SS133TA  |  | MTZJ27CTA MTZJ5R1BTA MTZJ5R6BTA MTZJ6R2CTA MTZJ6R8CTA MTZJ8R2CTA MTZJ9R1CTA | GL380 PT381  | LNJ301MPUJAD  |

■ Terminal Function Of IC's

• IC703 (AN8780NSBE2) : Focus Coil / Tracking Coil / Traverse Motor / Spindle Motor Drive

| Pin No. | Mark | I/O | Function |
|---------|-------|-----|---|
| 1 | /RST | - | Not used, open |
| 2 | NC | - | Not used |
| 3 | IN2 | I | Motor driver (2) input |
| 4 | PC2 | I | Turntable motor drive signal ("L" : ON) |
| 5 | NC | - | Not used |
| 6 | IN1 | I | Motor driver (1) input |
| 7 | PVcc1 | I | Driver power supply terminal (1) |
| 8 | PGND1 | - | Driver GND terminal (1) |
| 9 | NC | - | Not used, connected to GND |
| 10 | D1- | O | Motor driver (1) output terminal (-) |
| 11 | D1+ | O | Motor driver (1) output terminal (+) |
| 12 | D2- | O | Motor driver (2) output terminal (-) |
| 13 | D2+ | O | Motor driver (2) output terminal (+) |

| Pin No. | Mark | I/O | Function |
|---------|-------|-----|---|
| 14 | D3- | O | Motor driver (3) output terminal (-) |
| 15 | D3+ | O | Motor driver (3) output terminal (+) |
| 16 | D4- | O | Motor driver (4) output terminal (-) |
| 17 | D4+ | O | Motor driver (4) output terminal (+) |
| 18 | NC | - | Not used, open |
| 19 | PGND2 | - | Driver GND terminal (2) |
| 20 | PVcc2 | I | Driver power supply (2) |
| 21 | Vcc | I | Power supply terminal |
| 22 | VREF | I | Reference voltage input terminal |
| 23 | IN4 | I | Motor driver (4) input |
| 24 | IN3 | I | Motor driver (3) input |
| 25 | RSTIN | I | Reset terminal (Not used, connected to GND) |
| 26 | NC | - | Not used, connected to GND |

• IC701 (AN8837SBE1) Servo Amplifier

| Pin No. | Mark | I/O | Function |
|---------|-------|-----|---|
| 1 | PDE | I | Tracking signal input terminal 1 (E ch) |
| 2 | PDF | I | Tracking signal input terminal 2 (F ch) |
| 3 | VCC | I | Power supply terminal |
| 4 | PDA | I | Focus signal input terminal 1 (A ch) |
| 5 | PDB | I | Focus signal input terminal 2 (B ch) |
| 6 | LPD | I | Laser PD signal |
| 7 | LD | O | Laser power auto control output |
| 8 | RF | O | RF amp terminal |
| 9 | RF IN | I | AGC input terminal |
| 10 | CSBRT | I | OFTR capacitor connection terminal |
| 11 | CEA | I | HPF-AMP capacitor connection terminal |
| 12 | BDO | O | Dropout detection control |
| 13 | LDON | I | LD APC ON/OFF ("H" : ON, "L" : OFF) |
| 14 | GND | - | GND terminal |

| Pin No. | Mark | I/O | Function |
|---------|--------|-----|---|
| 15 | /RFDET | O | RF det. signal output terminal ("L" : det.) |
| 16 | CROSS | O | Tracking error zero cross output |
| 17 | OFTR | O | Off track detection ("H" : det.) |
| 18 | VDET | O | Oscillation det. signal ("H" : det.) |
| 19 | ENV | O | Envelope signal output terminal |
| 20 | ENVOFF | I | Not used, connected to power supply |
| 21 | TEBPF | O | Oscillation detect input terminal |
| 22 | TEN | I | Tracking error signal |
| 23 | TEOUT | O | Tracking error signal |
| 24 | FEOUT | O | Focus error signal |
| 25 | FEN | I | Focusing error signal |
| 26 | VREF | O | Reference voltage output terminal |
| 27 | TBAL | I | Tracking balance adj. input |
| 28 | FBAL | I | Focus balance adj. input |

• IC702 (MN662741RPA) Servo Processor / Digital Signal Processor / Digital Filter / D/A Converter

| Pin No. | Mark | I/O | Function |
|---------|--------|-----|--|
| 1 | BCLK | O | Serial bit clock output |
| 2 | -LRCK | O | L/R discriminating signal output |
| 3 | SRDATA | O | Serial data |
| 4 | DVDD1 | I | Power supply (digital circuit) terminal |
| 5 | DVSS1 | - | GND (digital circuit) terminal |
| 6 | TX | O | Digital audio interface signal |
| 7 | MCLK | I | Command clock signal |
| 8 | MDATA | I | Command data signal |
| 9 | MLD | I | Command load signal ("L" : LOAD) |
| 10 | SENSE | O | Sense signal output (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open) |
| 11 | /FLOCK | O | Optical servo condition (focus) ("L" : Lead-in) (Not used, open) |
| 12 | /TLOCK | O | Optical servo condition (tracking) ("L" : Lead-in) (Not used, open) |
| 13 | BLKCK | O | Sub-code block clock (f = 75Hz) |
| 14 | iSQCK | I | Sub-code Q register clock |
| 15 | SUBQ | O | Sub-code Q data |
| 16 | DMUTE | - | Muting input ("H" : Mute) (Not used, connected to GND) |
| 17 | STAT | O | Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK) |
| 18 | /RST | I | Reset signal ("L" : reset) |
| 19 | SMCK | - | System clock (f = 4.2336 MHz) (Not used, open) |
| 20 | PMCK | - | Frequency division clock signal (f = 1/192 Crystal OSC (16.9344MHz) = 88.2 KHz) (Not used, open) |
| 21 | TRV | O | Traverse servo control |
| 22 | TVD | O | Traverse drive signal |
| 23 | PC | O | Turntable motor drive signal ("L" : ON) |
| 24 | ECM | O | Turntable motor drive signal (Forced mode) |

| Pin No. | Mark | I/O | Function |
|---------|--------|-----|---|
| 25 | ECS | O | Turntable motor drive signal (Servo error signal) |
| 26 | KICK | O | Kick pulse output |
| 27 | TRD | O | Tracking drive signal output |
| 28 | FOD | O | Focus drive signal output |
| 29 | VREF | I | D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal |
| 30 | FBAL | O | Focus balance adjustment output |
| 31 | TBAL | O | Tracking balance adjustment output |
| 32 | FE | I | Focus error signal (analog input) |
| 33 | TE | I | Tracking error signal (analog input) |
| 34 | RFENV | I | RF envelope signal |
| 35 | VDET | I | Oscillation detection signal ("H" : detection) |
| 36 | OFTR | I | Off-track signal ("H" : Off track) |
| 37 | TRCRS | I | Track cross signal input |
| 38 | /RFDET | I | RF detection signal ("L" : detection) |
| 39 | BDO | I | Dropout detection signal ("H" : dropout) |
| 40 | LDON | O | Laser power control ("H" : ON) |
| 41 | TES | O | Tracking error shunt output ("H" : dropout) |
| 42 | PLAY | O | Play signal ("H" : play) (Not used, open) |
| 43 | WVEL | O | Double velocity status signal ("H" : Double) (Not used, open) |
| 44 | ARF | I | RF signal input |
| 45 | IREF | I | Reference current input |
| 46 | DRF | I | DSL bias terminal (Not used, open) |
| 47 | DSLFL | I/O | DSL loop filter terminal |
| 48 | PLLF | I/O | PLL loop filter terminal |
| 49 | VCOF | I/O | VCO loop filter terminal |
| 50 | AVDD2 | I | Power supply (analog circuit) terminal 2 |

| Pin No. | Mark | I/O | Function |
|---------|--------|-----|---|
| 51 | AVss2 | - | GND (analog circuit) terminal |
| 52 | EFM | O | EFM signal (Not used, open) |
| 53 | PCK | O | PLL extract clock (f=4.3218MHz) (Not used, open) |
| 54 | PDO | O | Phase compared signal of EFM and PCK (Not used, open) |
| 55 | SUBC | O | Sub-code serial output clock |
| 56 | SBCK | I | Sub-code serial input data |
| 57 | Vss | - | GND terminal |
| 58 | X1 | I | Crystal oscillator terminal (f=16.9344MHz) |
| 59 | X2 | O | Crystal oscillator terminal (f=16.9344MHz) |
| 60 | VDD | I | Power supply terminal |
| 61 | BYTCK | O | Byte clock signal (Not used, open) |
| 62 | /CLDCK | O | Sub-code frame clock signal (f = CLDCK = 7.35 kHz : Normal) |
| 63 | FCLK | O | Crystal frame clock (Not used, open) |
| 64 | IPFLAG | O | Interpolation flag terminal |
| 65 | FLAG | O | Flag terminal (Not used, open) |
| 66 | CLVS | O | Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open) |
| 67 | CRC | O | Sub-code CRC check terminal ("H": OK, "L": NG) (Not used, open) |

| Pin No. | Mark | I/O | Function |
|---------|--------|-----|---|
| 68 | DEMPH | O | De-emphasis ON signal ("H" :ON) (Not used, open) |
| 69 | RESY | O | Re-synchronizing signal of frame sync. (Not used, open) |
| 70 | /RST2 | I | Reset terminal after "MASH" circuit (Not used, connected to GND) |
| 71 | /TEST | I | Test terminal (Normal : "H") (Not used, connected to power supply) |
| 72 | AVDD1 | I | Power supply (analog circuit) terminal (1) |
| 73 | OUTL | O | Lch audio signal |
| 74 | AVss1 | I | GND (analog circuit) terminal (1) |
| 75 | OUTR | O | Rch audio signal |
| 76 | RSEL | I | Polarity direction control terminal of RF signal (Not used, connected to power supply) |
| 77 | CSEL | I | Frequency control terminal of crystal oscillator (Not used, connected to GND) |
| 78 | SRDATA | I | Serial data input |
| 79 | LRCK | I | L ch / R ch clock signal input |
| 80 | BCLK | I | Audio bit clock input |
| | | | |
| | | | |
| | | | |

• IC401 (UPD78044F139) Micro-processor

| Pin No. | Mark | I/O | Function |
|---------|---------|-----|-------------------------------------|
| 1~7 | G7 ~ G1 | O | Grid signal of FL display |
| 8 | VDD | I | Power supply terminal |
| 9 | MCLK | O | Command clock signal |
| 10 | MDATA | O | Command data signal |
| 11 | MLD | O | Command Load signal ("L" LOAD) |
| 12 | SENSE | I | Sense signal |
| 13 | DMUTE | O | Muting control signal |
| 14 | SQCK | O | Sub-code Q register clock |
| 15 | NC | - | Not connected |
| 16 | SUBQ | O | Sub-code Q data |
| 17 | /RESET | I | Reset signal input |
| 18 | ZSENSE | - | Not used, connected to GND |
| 19 | REC.EN | I | Synchro. rec. control terminal |
| 20 | AVSS | - | GND terminal |
| 21 | /RSTSV | O | Reset signal output |
| 22 | OPEN | I | Open detect terminal |
| 23 | DIR | O | Motor control signal |
| 24 | TURN | O | Motor control signal |
| 25 | LOAD | O | Motor control signal |
| 26 | DAC | - | Not used, open |
| 27 | RESTSW | I | Reset position det. |
| 28 | UP/DOWN | I | Traverse deck up/down det. terminal |
| 29 | AVDD | I | Power supply terminal |
| 30 | AVREF | I | Power supply terminal |
| 31 | XT1 | - | Not used, connected to GND |

| Pin No. | Mark | I/O | Function |
|---------|--------------|-----|--|
| 32 | XT2 | - | Not used, open |
| 33 | VSS | - | GND terminal |
| 34 | X1 | I | Crystal Osc terminal (F : 4.2336MHz) |
| 35 | X2 | O | Crystal Osc terminal (F: 4.2336 MHz) |
| 36~42 | KEYIN 7 ~ 1 | I | Key return signal |
| 43 | PWM | O | Motor control signal |
| 44 | POFF | I | Power det. terminal |
| 45 | POSITION | I | Rotary tray position det. terminal |
| 46 | SPEED | I | Loading motor speed sensor signal |
| 47 | REMCON | I | Remote control signal input |
| 48 | IC | - | Not used, connected to GND |
| 49 | /TLOCK | I | Optical servo condition (tracking) input |
| 50 | /FLOCK | I | Optical servo condition (focus) input |
| 51 | STAT | I | Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK) |
| 52 | VDD | I | Power supply terminal |
| 53 | POWER | O | Power ON/OFF output terminal |
| 54 | SYNCHRO | - | Not used, open |
| 55~60 | KEYOUT 6 ~ 1 | O | Key scan signal |
| 61~70 | S16 ~ S7 | O | Segment signal of FL display |
| 71 | VPP | I | Power supply terminal |
| 72~77 | S6 ~ S1 | O | Segment signal of FL display |
| 78 | EXDATA | - | Not used, open |
| 79 | EXCLK | - | Not used, open |
| 80 | G8 | O | Grid signal of FL display |

Self-Diagnostic Display Function

Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem.

Use this function when performing maintenance on the unit.



Entering the Self-Diagnostic Mode

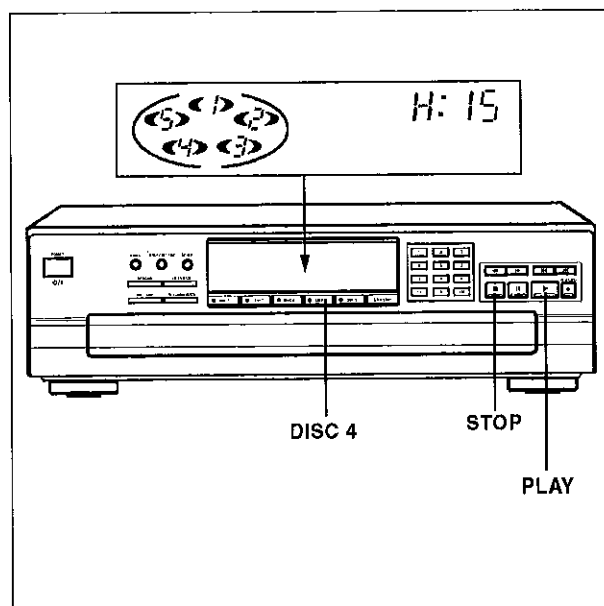
1. With no CD loaded in the tray, turn on the unit.
2. Unplug the power cord of the unit, and then plug it back in while pressing the STOP (■), PLAY (▶) and DISC 4 buttons together. This will bring up the FL display.
3. Release the above three buttons.

To Display Self-Diagnostic Results

1. When the FL display lights up, the unit automatically repeats an approximately 50-second cycle of the following operations.

START

- a. Tray opens. ----- (A)
 - b. Tray closes. ----- (B)
 - c. Traverse deck lifts.
 - d. Tray opens.
 - e. Tray closes. ----- (B)
 - f. Traverse deck lifts.
 - g. Rotary tray turns counter-clockwise two disc slots. --- (C)
 - h. Traverse deck lifts once, and then lowers.
 - i. Rotary tray turns clockwise one disc slots. ----- (C)
 - j. Traverse deck lifts once, and then lowers.
 - k. Rotary tray turns clockwise three disc slots. ----- (C)
 - l. Traverse deck lifts once, and then lowers.
 - m. Rotary tray turns counter-clockwise one disc slots. --- (C)
 - n. Traverse deck lifts once, and then lowers.
 - o. Rotary tray turns counter-clockwise two disc slots.
(Repeats from a - o).
2. Self-diagnostic fault results appear on the FL display for approximately one second as "H15" at location (A), "H16" at (B) and "H18" at (C), during the above cycle.
 3. If there are no faults as a result of self-diagnostic, "  TRACK  " appears on the FL display.



To Return to Normal Display

- Press the power button to off the unit, and then turn it on again.

To Display Self-Diagnostic Results Again

- Follow steps 1 through 3 of "Entering Self-Diagnostic Mode" above.

To Clear the Display of Self-Diagnostic Results

- Turn off the unit to clear the contents of the stored faults results.

Interpretation of error codes

| Error code | Problem condition | Correction procedure |
|------------|--|---|
| H15 | CD tray does not open or close when CD tray open/close (▲) button is pressed. | Faulty loading motor and motor drive IC (IC501), or faulty contact or short-circuit on open/close detect switch, S551. (Check and replace) |
| H16 | When the CD open/close (▲) button is pressed, the CD tray closes momentarily but then opens again, or opens momentarily and then closes again. | |
| F18 | Faulty rotary turret rotation detection. Example : The turret continues to turn at the initial position without stopping. | Check the optical sensor (D501) and replace if necessary. |

Schematic Diagram

| | Page | | Page |
|------------------------------------|---------|---|------|
| A SERVO CIRCUIT | 22 ~ 23 | E SENSOR CIRCUIT | 26 |
| B MAIN CIRCUIT | 24 ~ 25 | F TRAY MOTOR CIRCUIT | 26 |
| C PANEL CIRCUIT | 26 | G PHOTO TRANSISTOR CIRCUIT | 26 |
| D POWER SWITCH CIRCUIT..... | 26 | H LOADING MOTOR CIRCUIT | 26 |

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

| | |
|-----------------------------------|---|
| • S551 : Open/close detect switch | • S618 : Numeric 5 switch |
| • S601 : SPIRAL switch | • S619 : Numeric 6 switch |
| • S602 : RANDOM MODE switch | • S620 : Numeric 7 switch |
| • S603 : REPEAT switch | • S621 : Numeric 8 switch |
| • S604 : ID SCAN switch | • S622 : Numeric 9 switch |
| • S605 : EDIT GUIDE switch | • S623 : Numeric 10 switch |
| • S606 : TIME MODE switch | • S624 : Numeric 0 switch |
| • S607 : PROGRAM MODE switch | • S625 : Numeric >10 switch |
| • S608 : DISC 1 select switch | • S626 : REV search switch |
| • S609 : DISC 2 select switch | • S627 : FWD search switch |
| • S610 : DISC 3 select switch | • S628 : REV Skip switch |
| • S611 : DISC 4 select switch | • S629 : FWD Skip switch |
| • S612 : DISC 5 select switch | • S630 : STOP switch |
| • S613 : DISC SKIP switch | • S631 : PAUSE switch |
| • S614 : Numeric 1 switch | • S632 : PLAY switch |
| • S615 : Numeric 2 switch | • S633 : Loading drawer OPEN/CLOSE switch |
| • S616 : Numeric 3 switch | • S701 : Rest switch |
| • S617 : Numeric 4 switch | • S901 : Power On/Standby switch |

• **Signal line**

————— : +B Line
 ~~~~~ : - B Line

- 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.

( ) : CD Playback

No Mark : CD stop

⇔ : CD Signal Line

• **Importance safety notice:**

Components identified by  $\Delta$  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.

**Caution !**

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

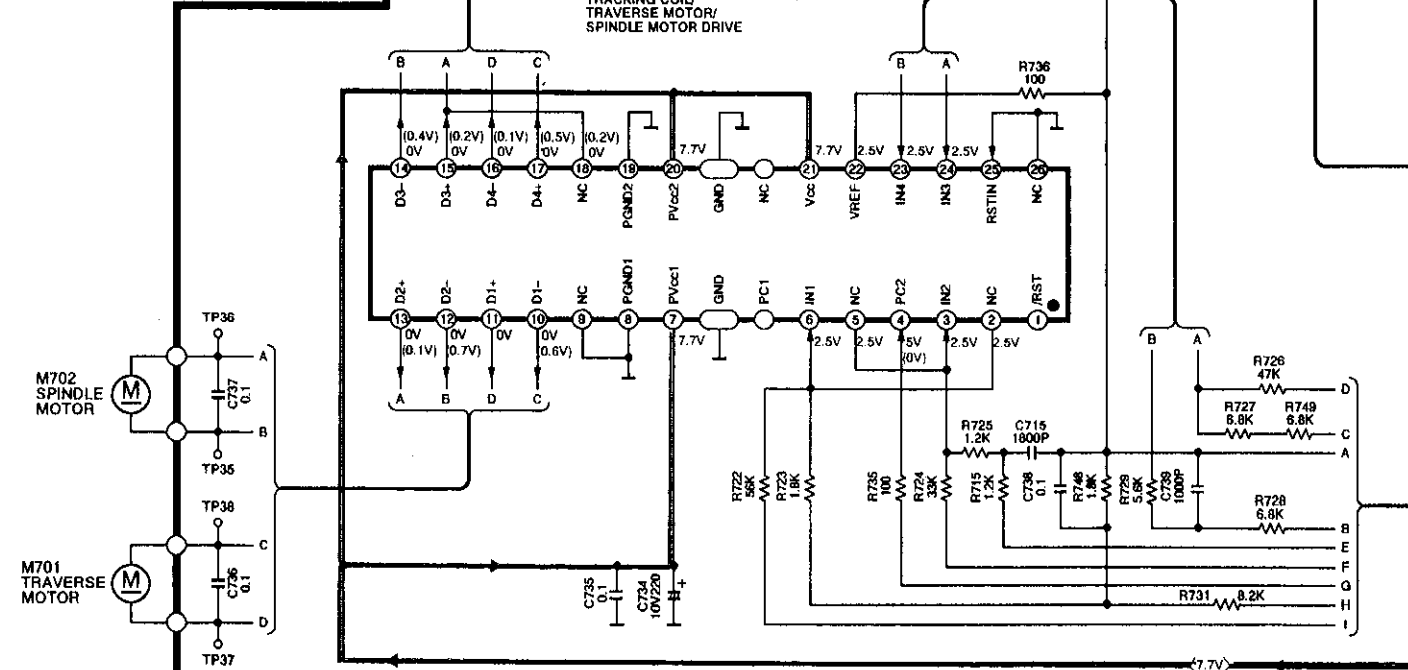
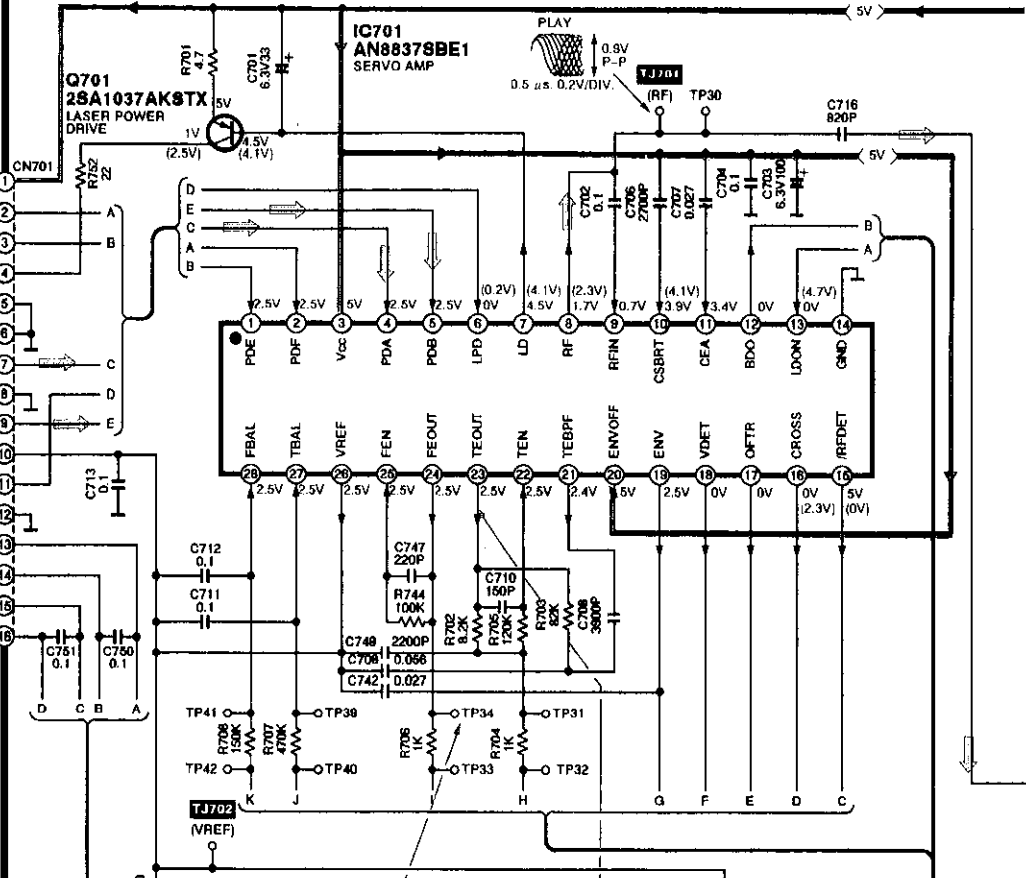
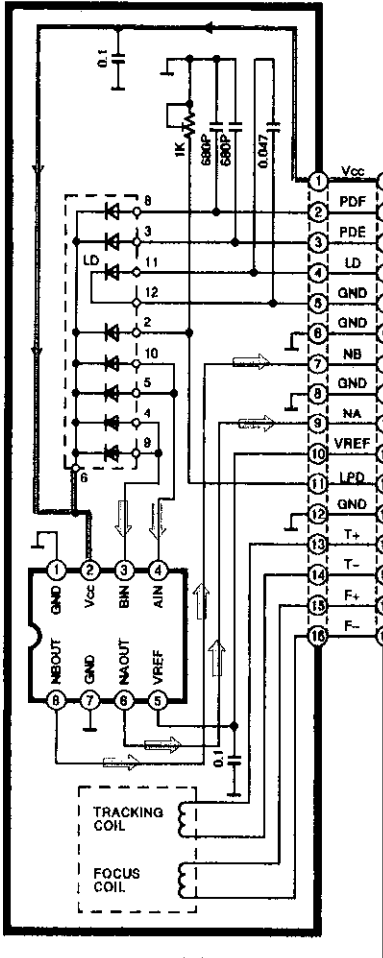
- Cover the parts boxes made of plastics with aluminium foil.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.
- Put a conductive mat on the work table.

— + B Line

⇨ : CD signal line

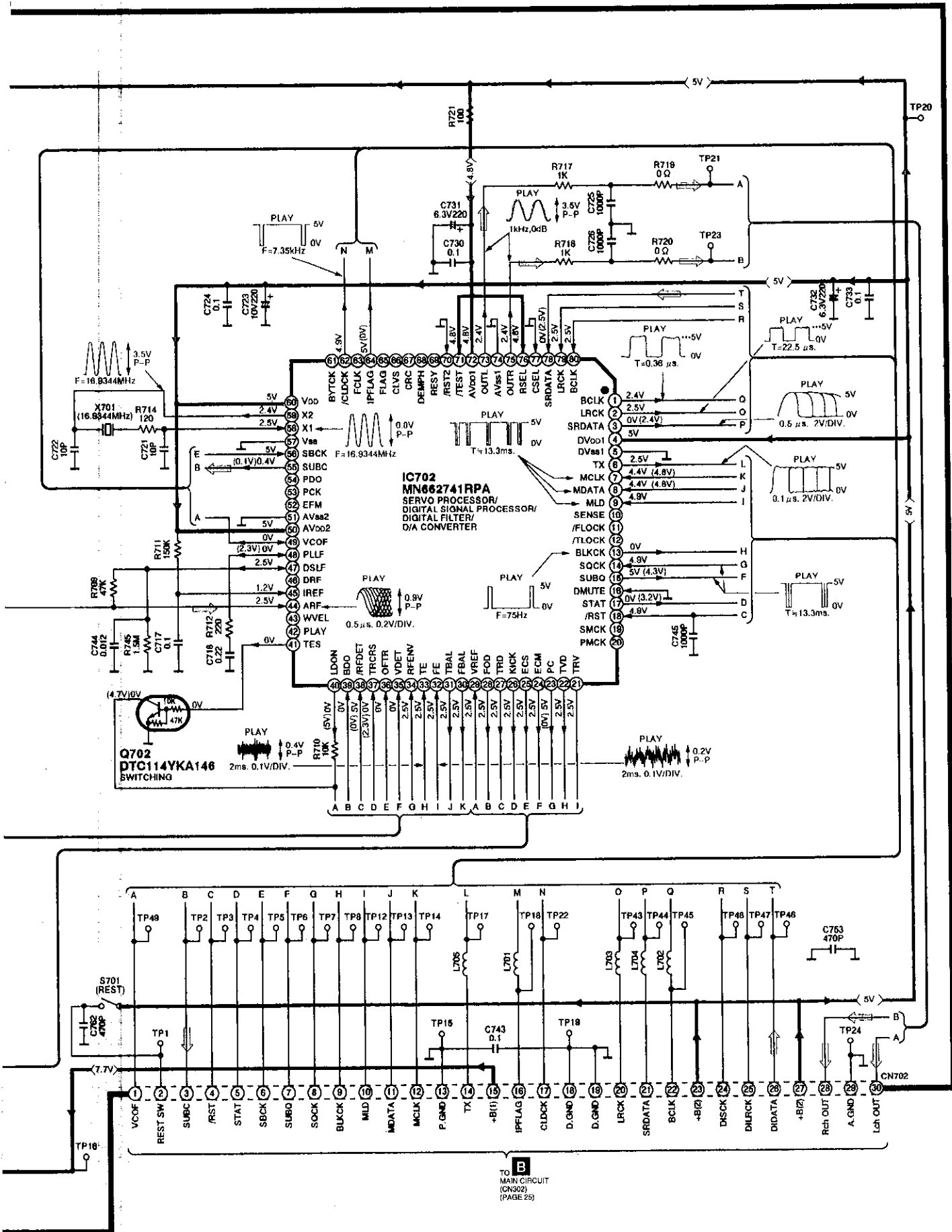
**A** CD SERVO CIRCUIT (P.C.Board on page 28)

**△ OPTICAL PICKUP**



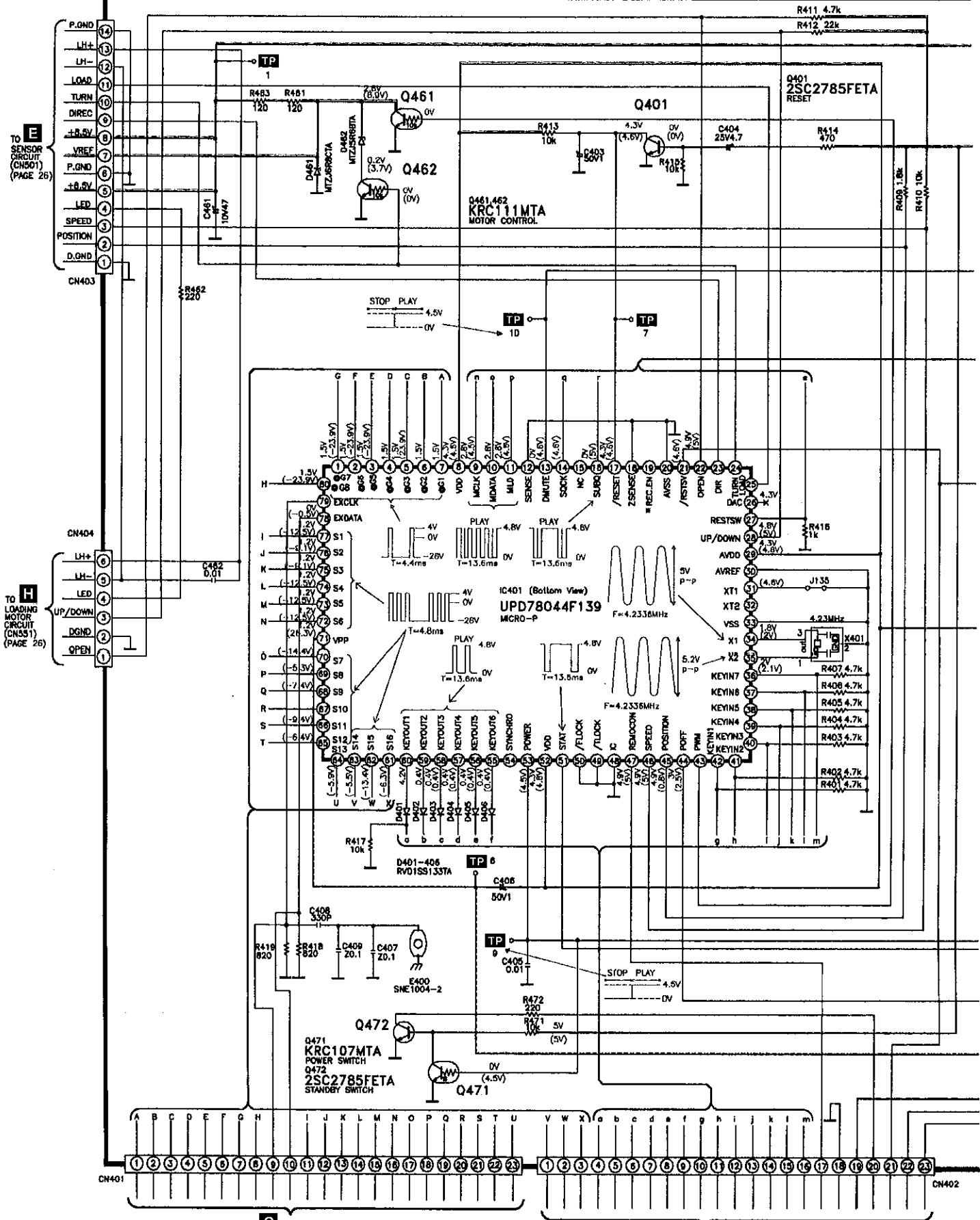
+ B line

⇔ : CD signal line



— : +B line      - - - - - : -B line

**B** MAIN CIRCUIT  
( P.C.BOARD ON PAGE 27 )

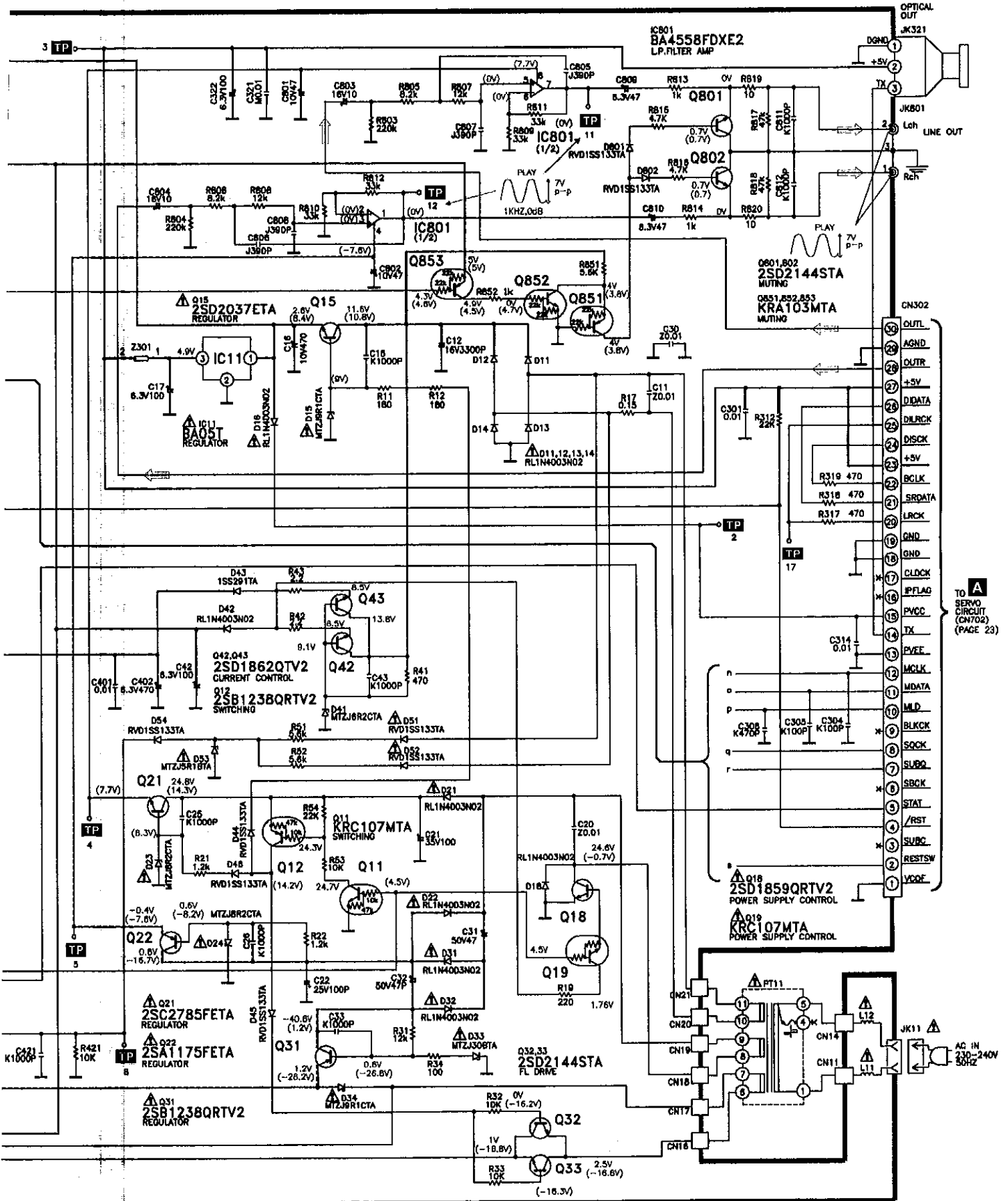


**C** TO PANEL CIRCUIT (CN401) (PAGE 26)

**C** TO PANEL CIRCUIT (CN402) (PAGE 26)

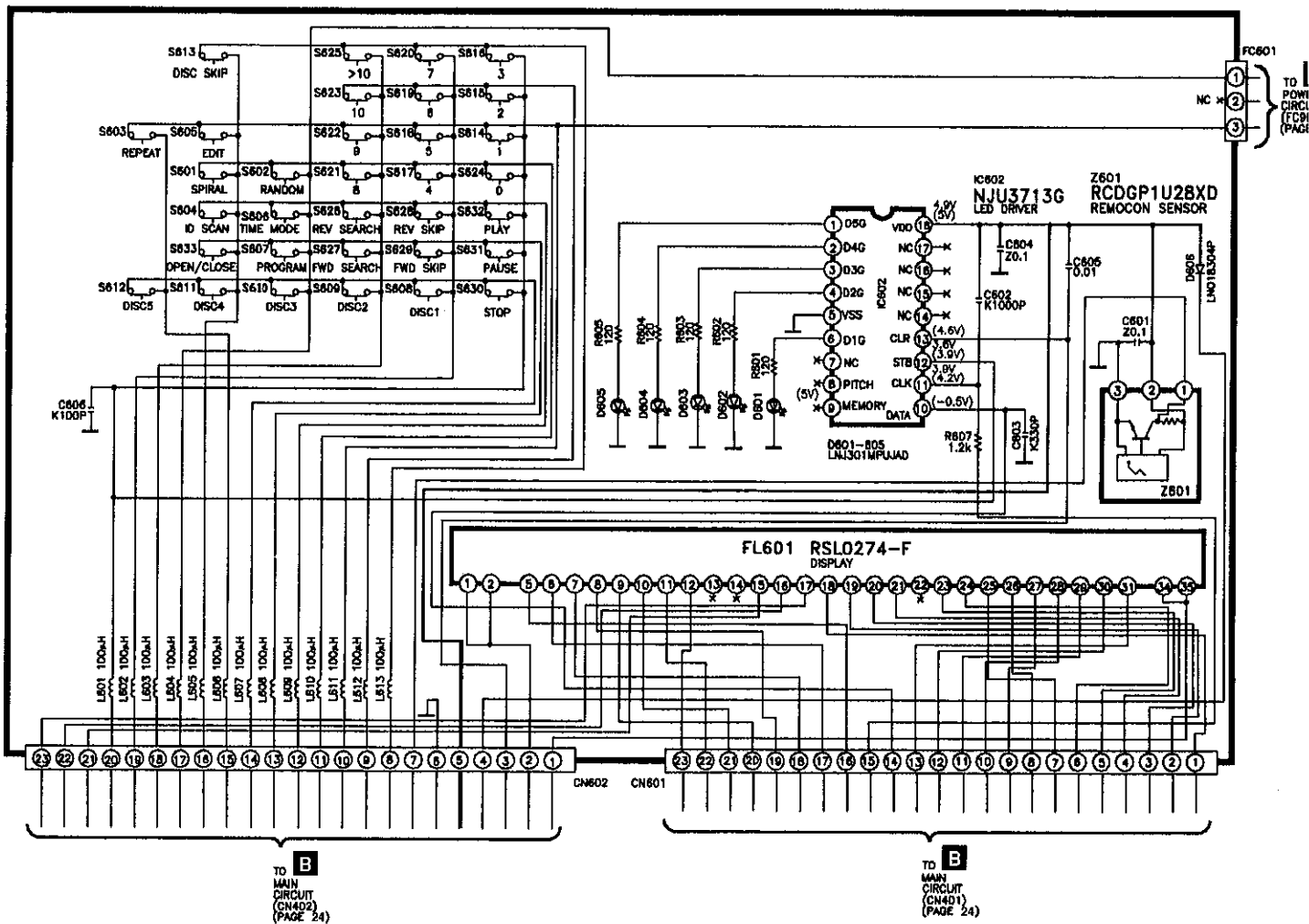


— : +B line      - - - - : -B line      ⇨ : CD signal line



— : +B line

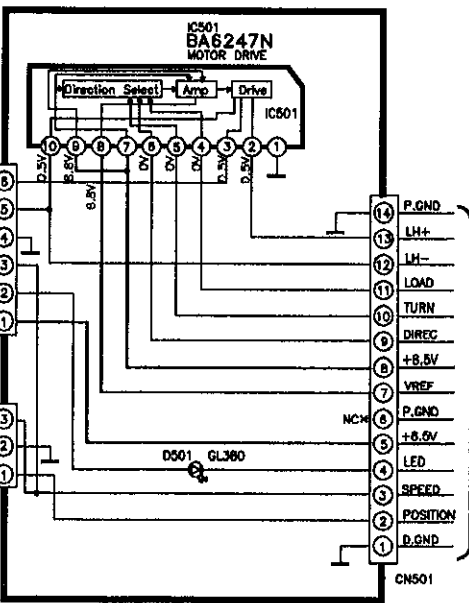
**C** PANEL CIRCUIT  
( P.C.BOARD ON PAGE 28 )



TO MAIN CIRCUIT (CN402) (PAGE 24)

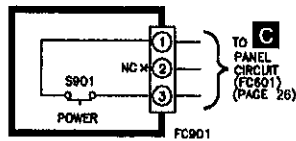
TO MAIN CIRCUIT (CN401) (PAGE 24)

**E** SENSOR CIRCUIT  
( P.C.BOARD ON PAGE 29 )

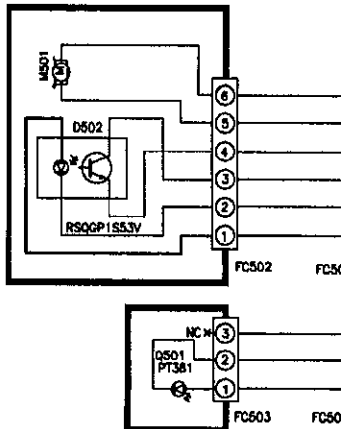


TO MAIN CIRCUIT (CN403) (PAGE 24)

**D** POWER SWITCH CIRCUIT  
( P.C.BOARD ON PAGE 28 )

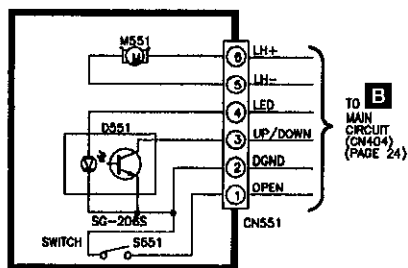


**F** TRAYMOTOR CIRCUIT  
( P.C.BOARD ON PAGE 28 )



**G** PHOTO TRANSISTOR CIRCUIT  
( P.C.BOARD ON PAGE 29 )

**H** LOADING MOTOR CIRCUIT  
( P.C.BOARD ON PAGE 29 )

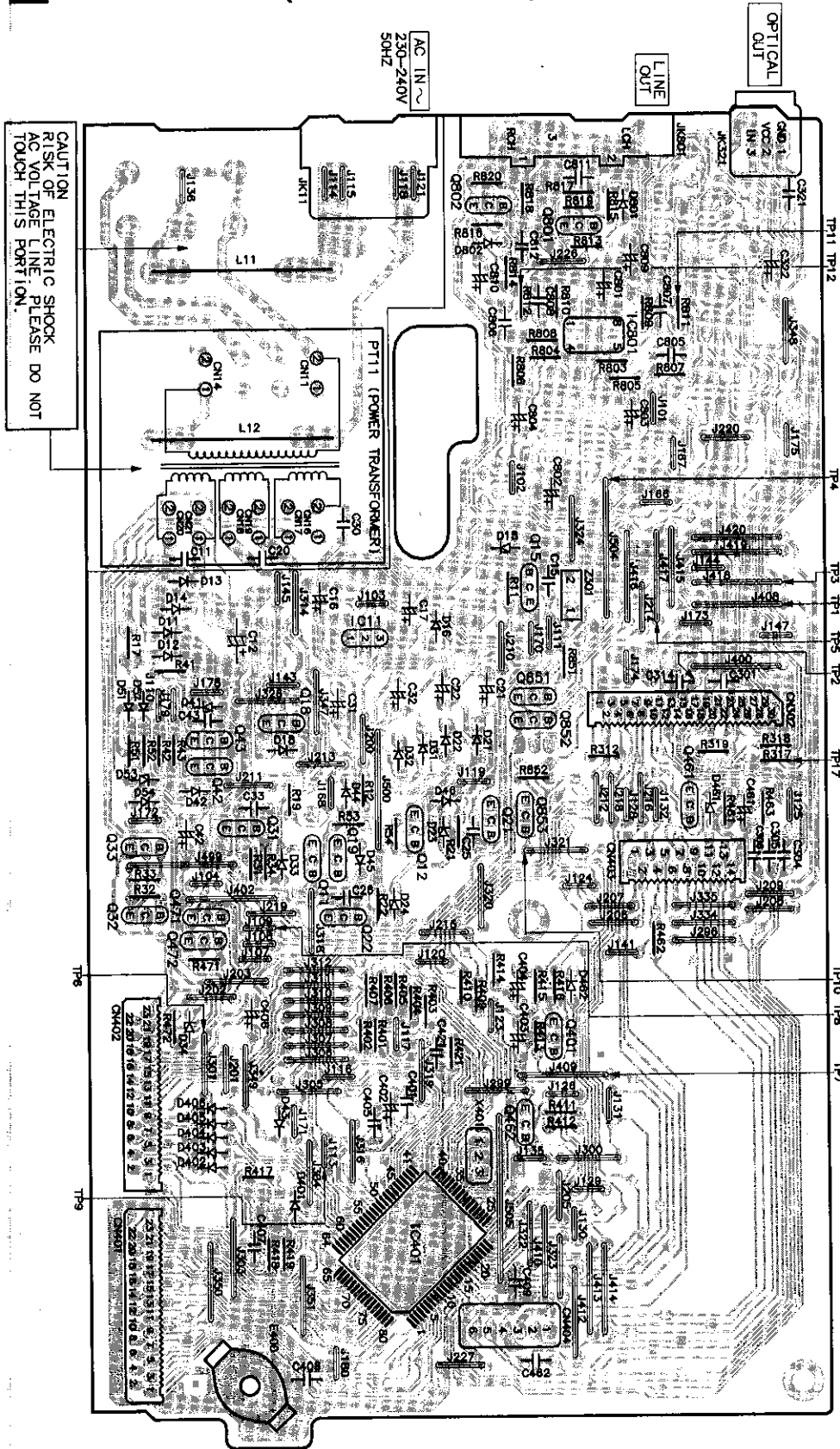


TO MAIN CIRCUIT (CN404) (PAGE 24)

Printed Circuit Board (This printed circuit board diagram may be modified at any time with the development of new technology.)

**B MAIN P.C.B. (REPX0176C-M)**

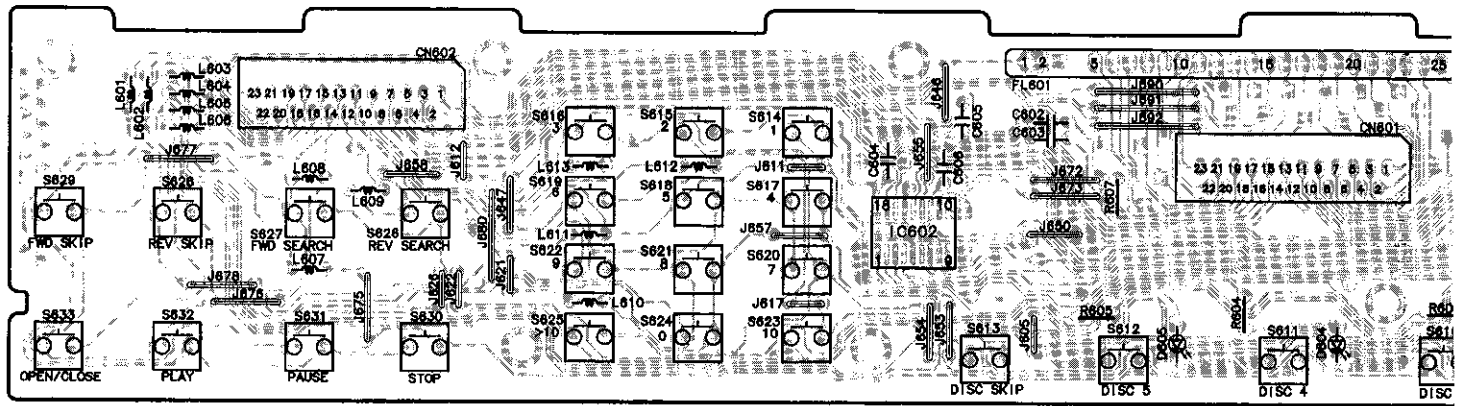
1  
2  
3  
4  
5  
6  
7  
8  
9  
10



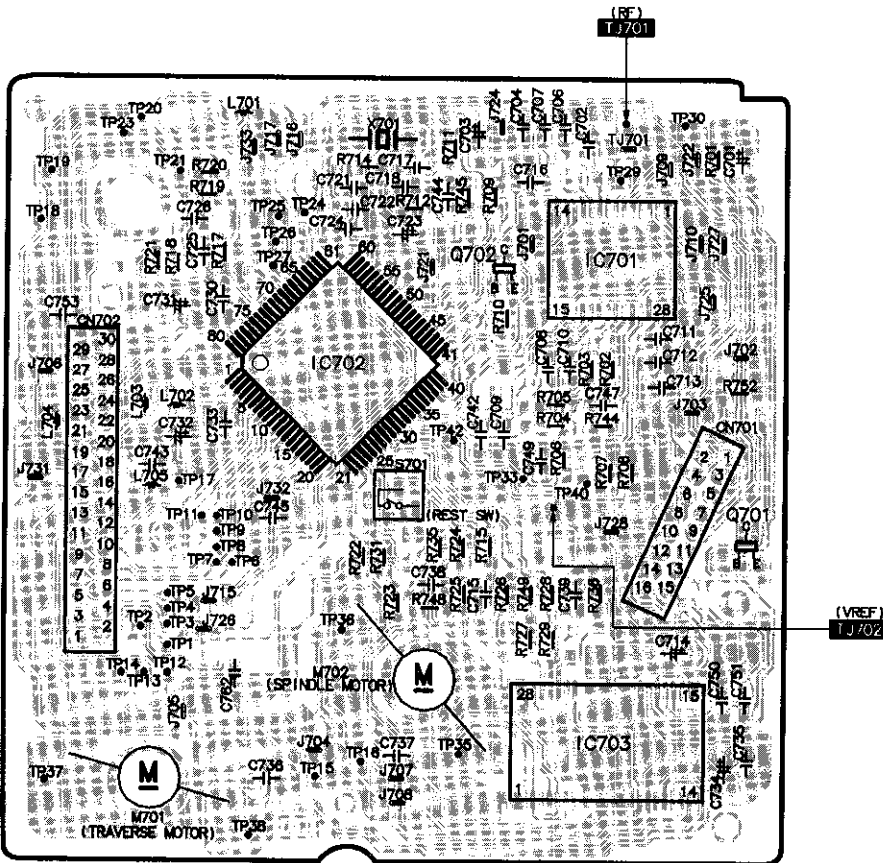
Semiconductors Locations Table

| Ref. No | Loc. No |
|---------|---------|
| CN11    | D4      |
| CN14    | D5      |
| CN16    | E4      |
| CN17    | E4      |
| CN18    | E5      |
| CN19    | E4      |
| CN20    | E5      |
| CN21    | E5      |
| CN302   | F1      |
| CN401   | J5      |
| CN402   | I5      |
| CN403   | G2      |
| CN404   | J3      |
| D11     | E5      |
| D12     | F5      |
| D13     | E5      |
| D14     | E5      |
| D15     | E3      |
| D16     | E3      |
| D18     | F4      |
| D21     | F3      |
| D22     | F3      |
| D23     | G3      |
| D24     | G3      |
| D31     | F3      |
| D32     | F3      |
| D33     | G4      |
| D34     | H5      |
| D401    | I4      |
| D402    | I5      |
| D403    | I5      |
| D404    | I5      |
| D405    | I5      |
| D406    | I5      |
| D41     | F6      |
| D42     | G5      |
| D43     | I4      |
| D44     | G4      |
| D45     | G4      |
| D46     | G3      |
| D461    | G1      |
| D462    | H2      |
| D51     | F5      |
| D52     | F5      |
| D53     | F6      |
| D54     | G5      |
| D801    | C2      |
| D802    | C3      |
| E400    | K4      |
| IC11    | F4      |
| IC401   | C3      |
| IC801   | I2      |
| JK11    | C4      |
| JK321   | B1      |
| JK801   | B2      |
| PT11    | E3      |
| Q11     | G4      |
| Q12     | G3      |
| Q15     | E3      |
| Q18     | F4      |
| Q19     | G4      |
| Q21     | G3      |
| Q22     | G4      |
| Q31     | G4      |
| Q32     | G5      |
| Q33     | G5      |
| Q401    | H2      |
| Q42     | F5      |
| Q43     | F5      |
| Q461    | G1      |
| Q462    | I3      |
| Q801    | C2      |
| Q802    | C3      |
| Q851    | F3      |
| Q852    | F3      |
| Q853    | G3      |
| X401    | I3      |
| Z301    | E2      |

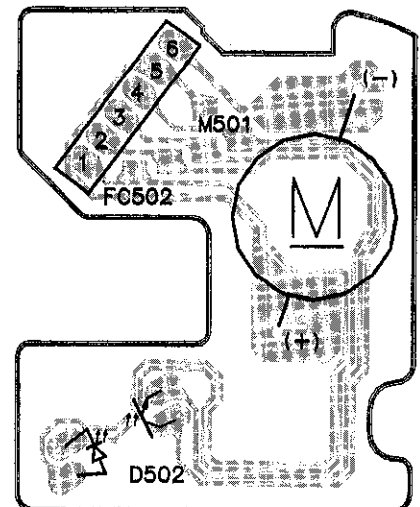
**C** PANEL P.C.B. (REPX0177E-S)



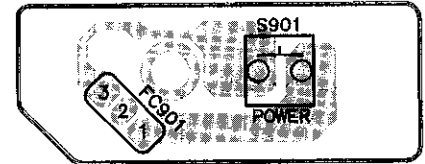
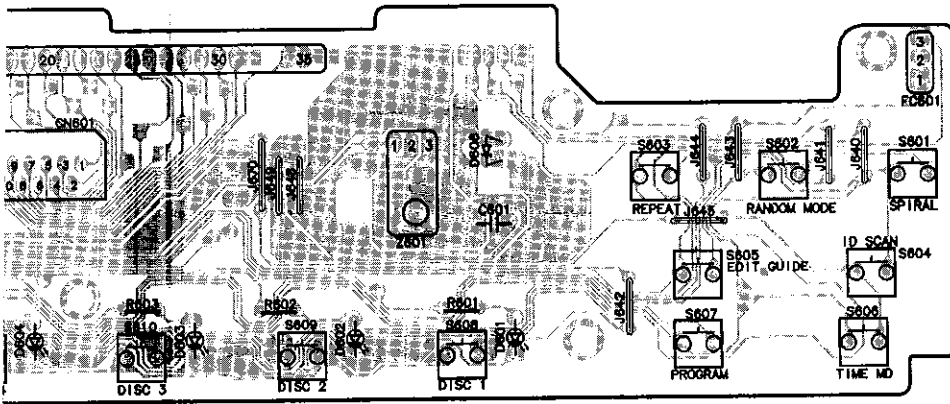
**A** SERVO P.C.B. (REPX0145)



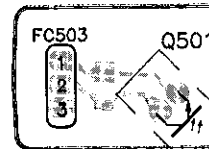
**F** TRAY MOTOR P.C.B. (REPX0096A-N)



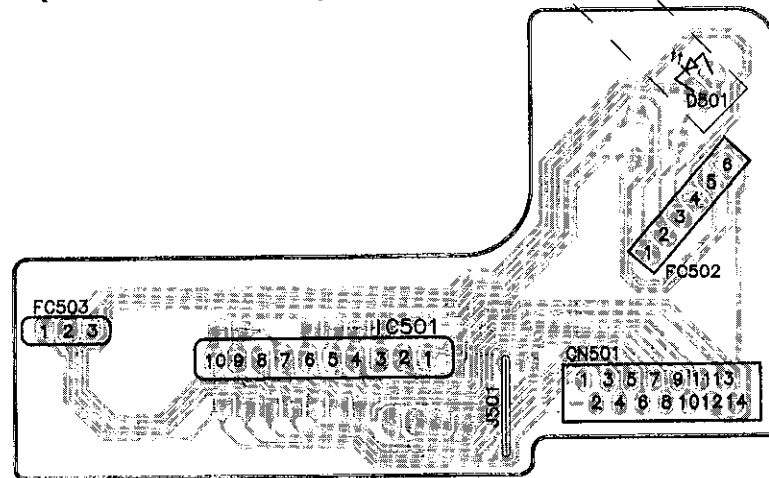
**D POWER SWITCH P.C.B. (REPX0177E-S)**



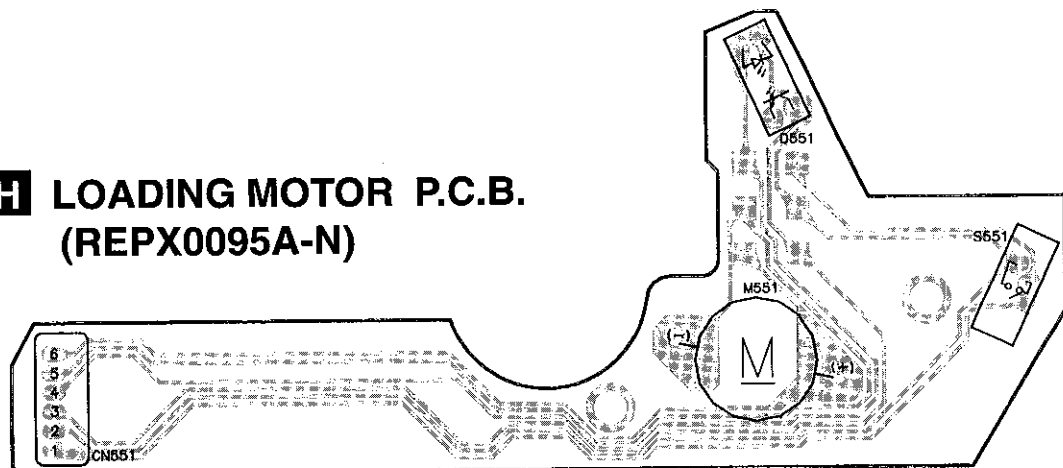
**G PHOTO TRANSISTOR P.C.B. (REPX0096A-N)**



**E SENSOR P.C.B. (REPX0096A-N)**



**H LOADING MOTOR P.C.B. (REPX0095A-N)**

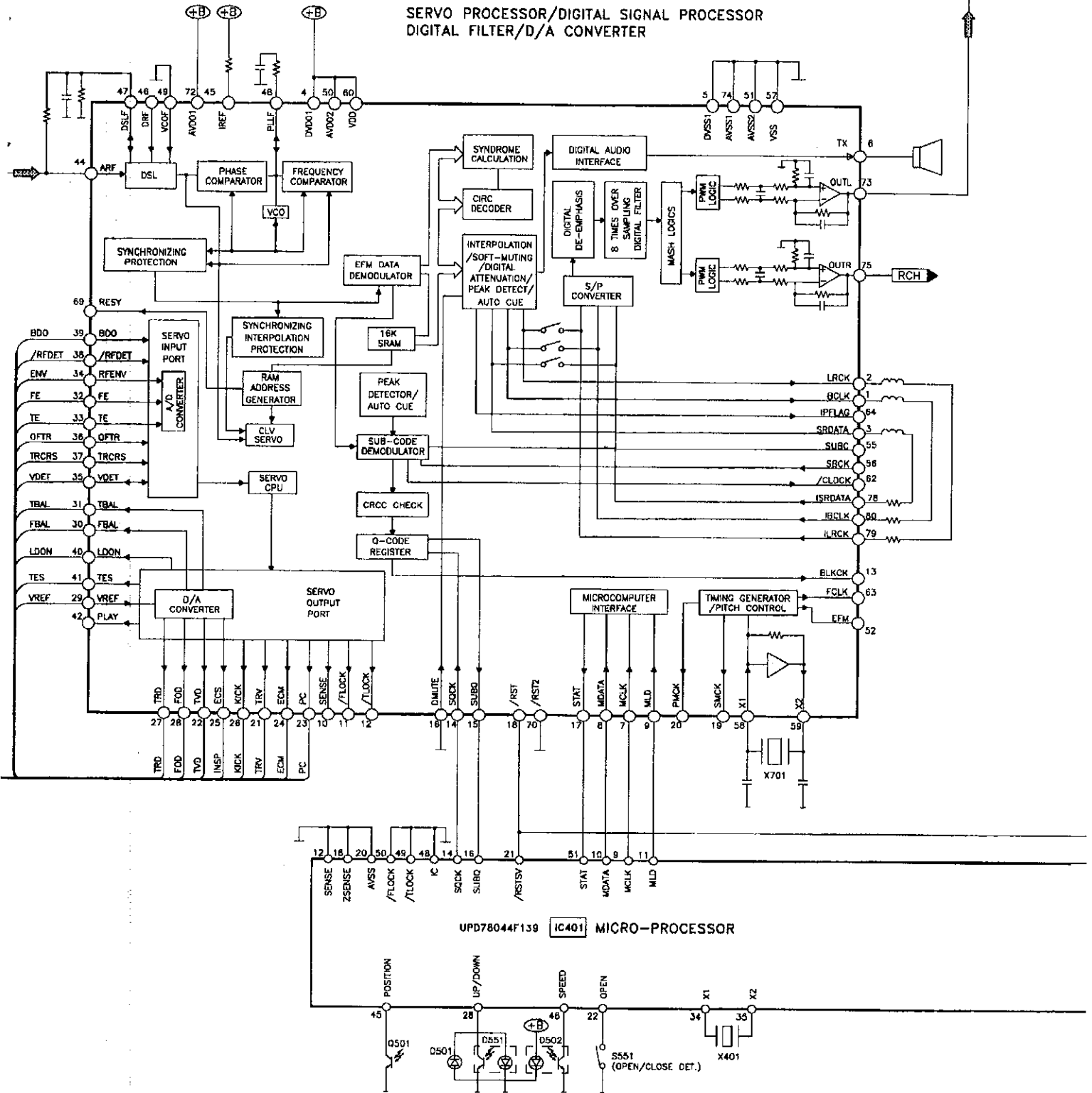


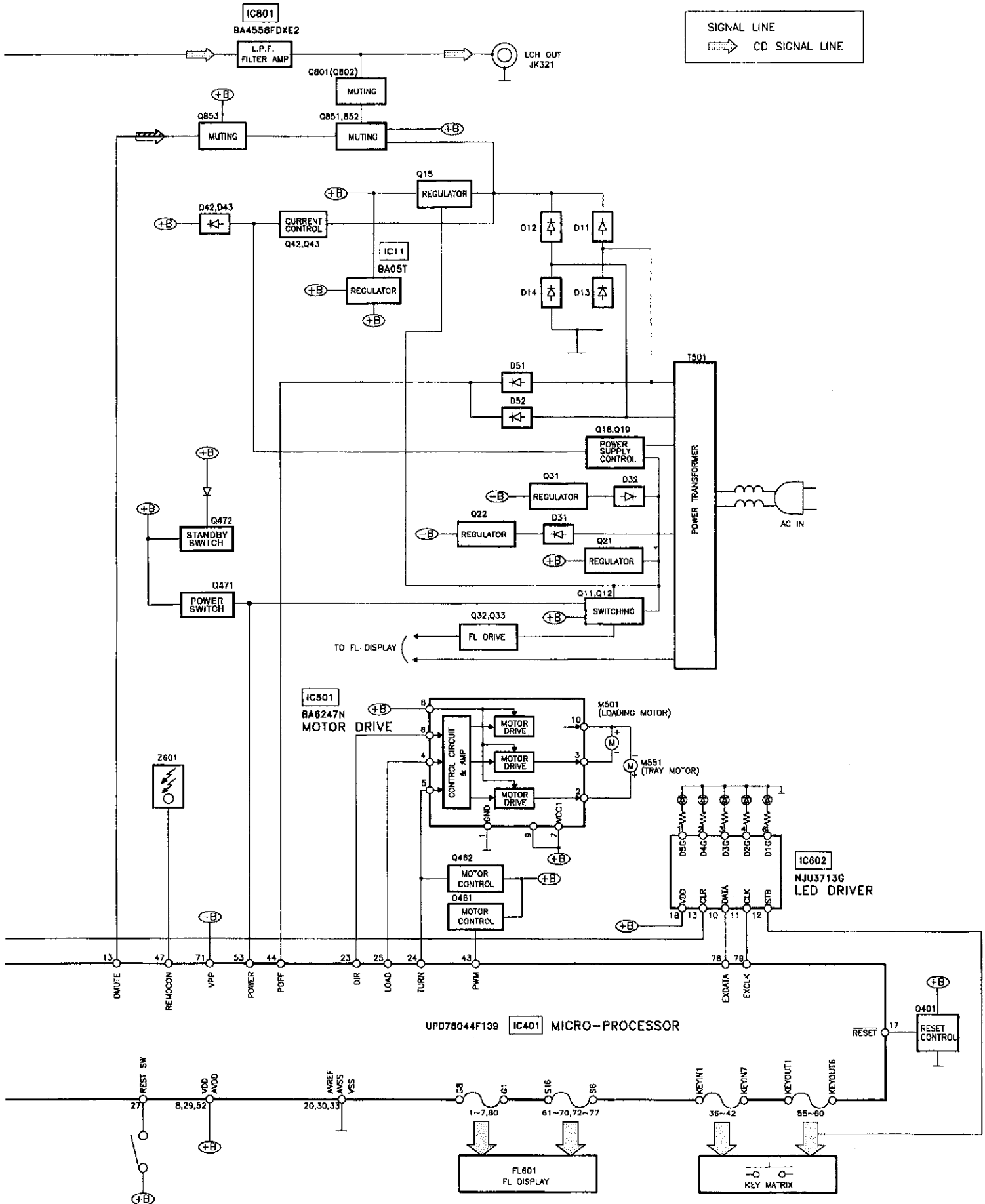


IC702

MN662741RPA

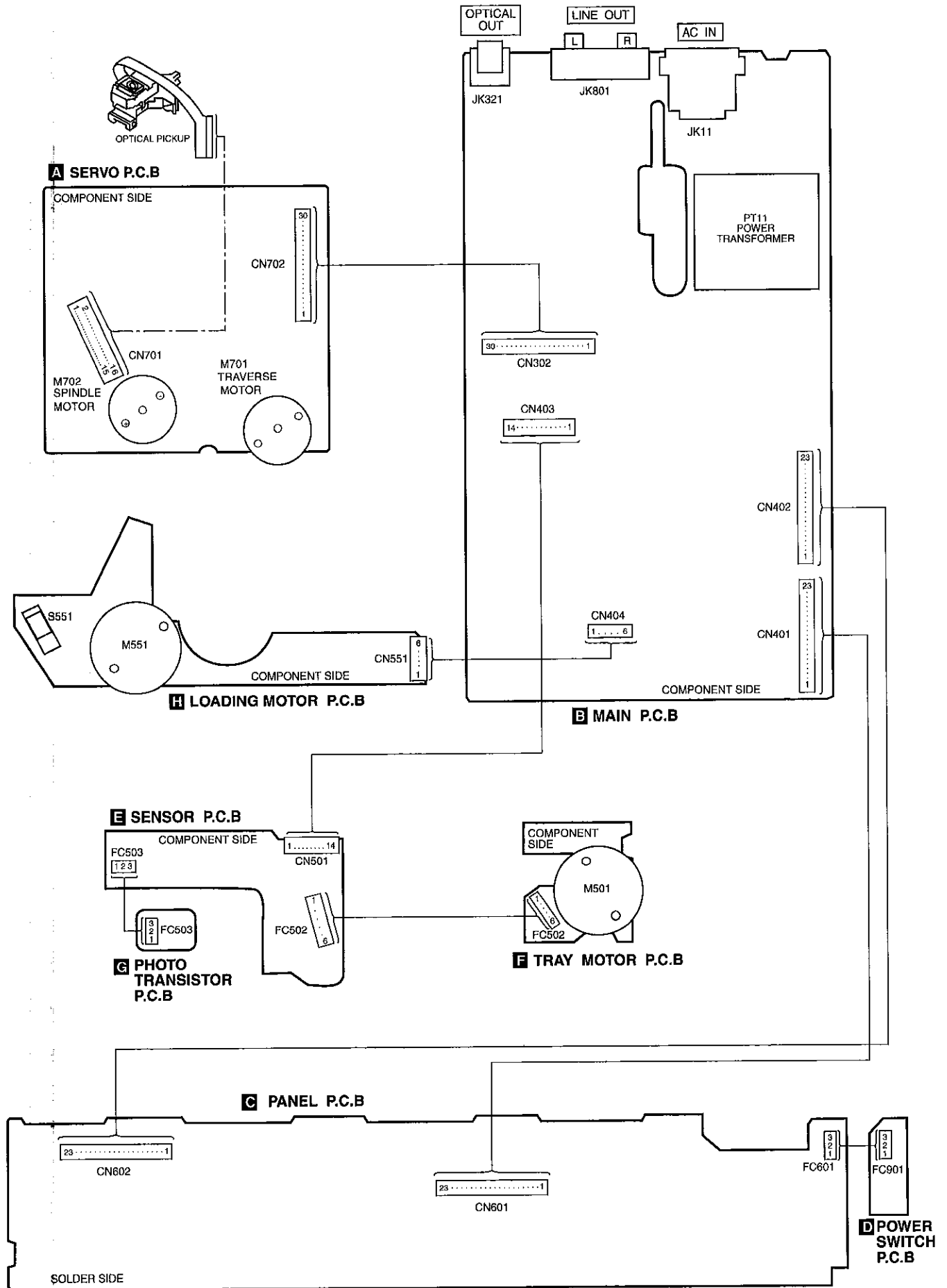
SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR  
DIGITAL FILTER/D/A CONVERTER



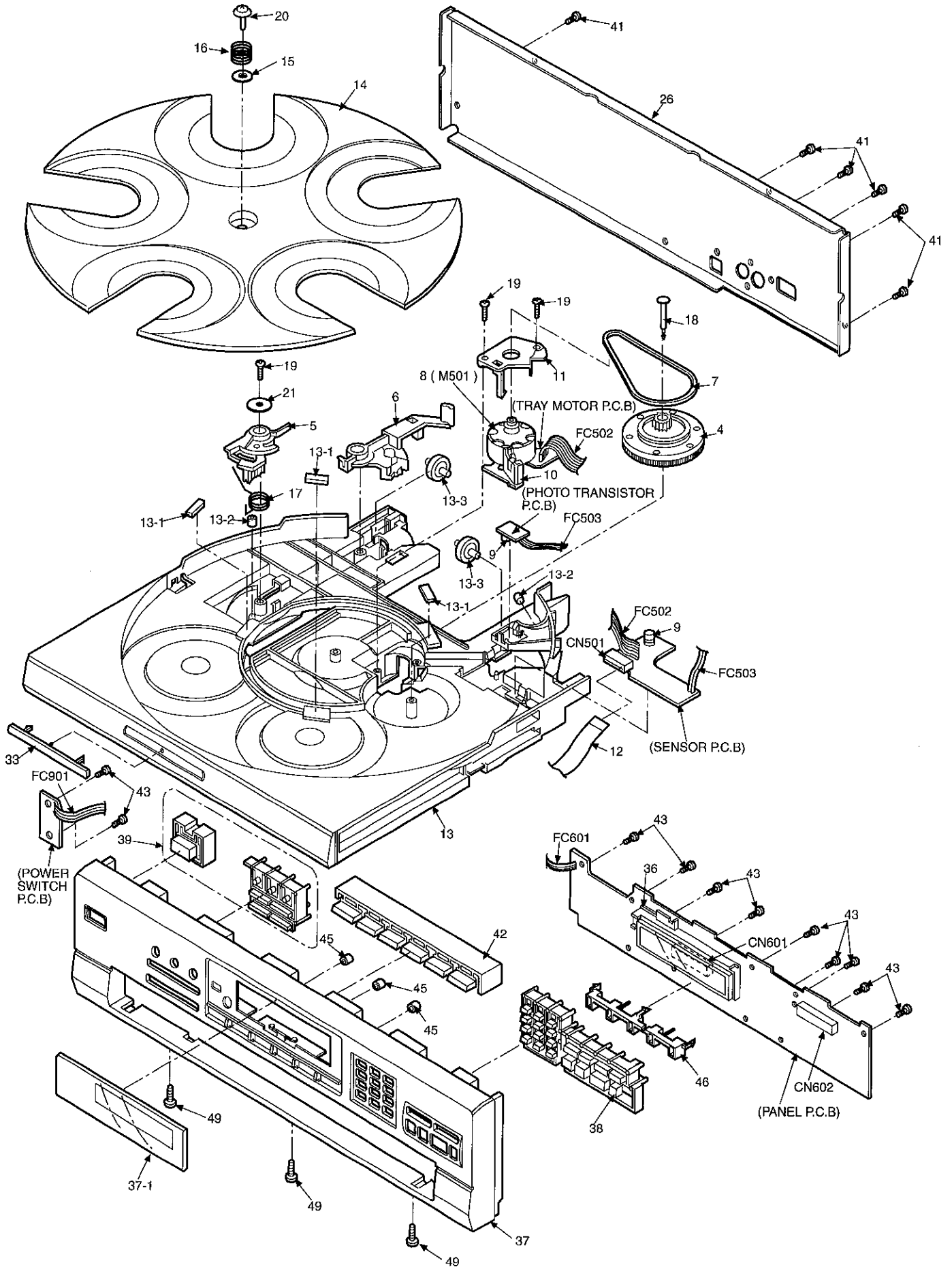


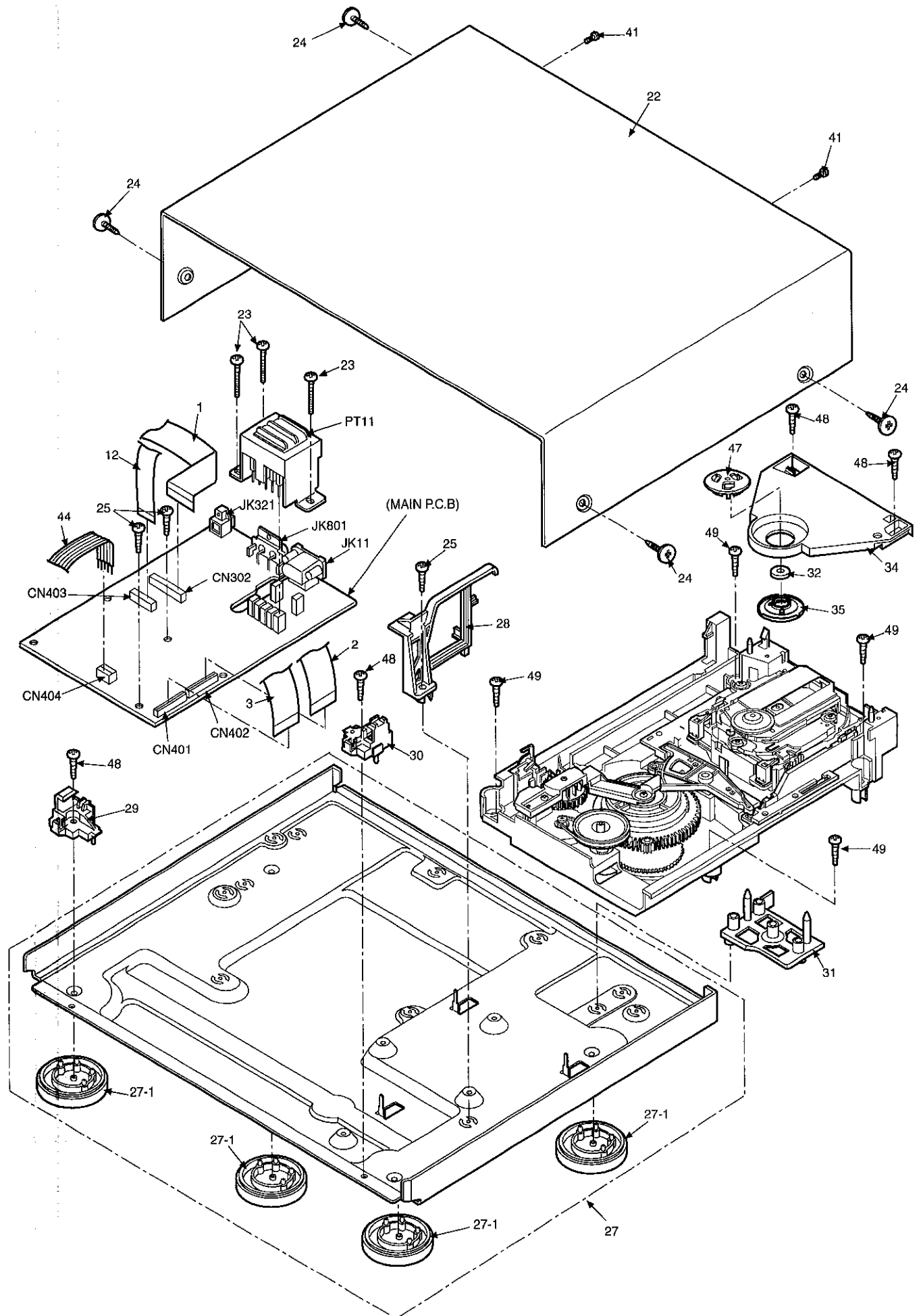


# Wiring Connection Diagram

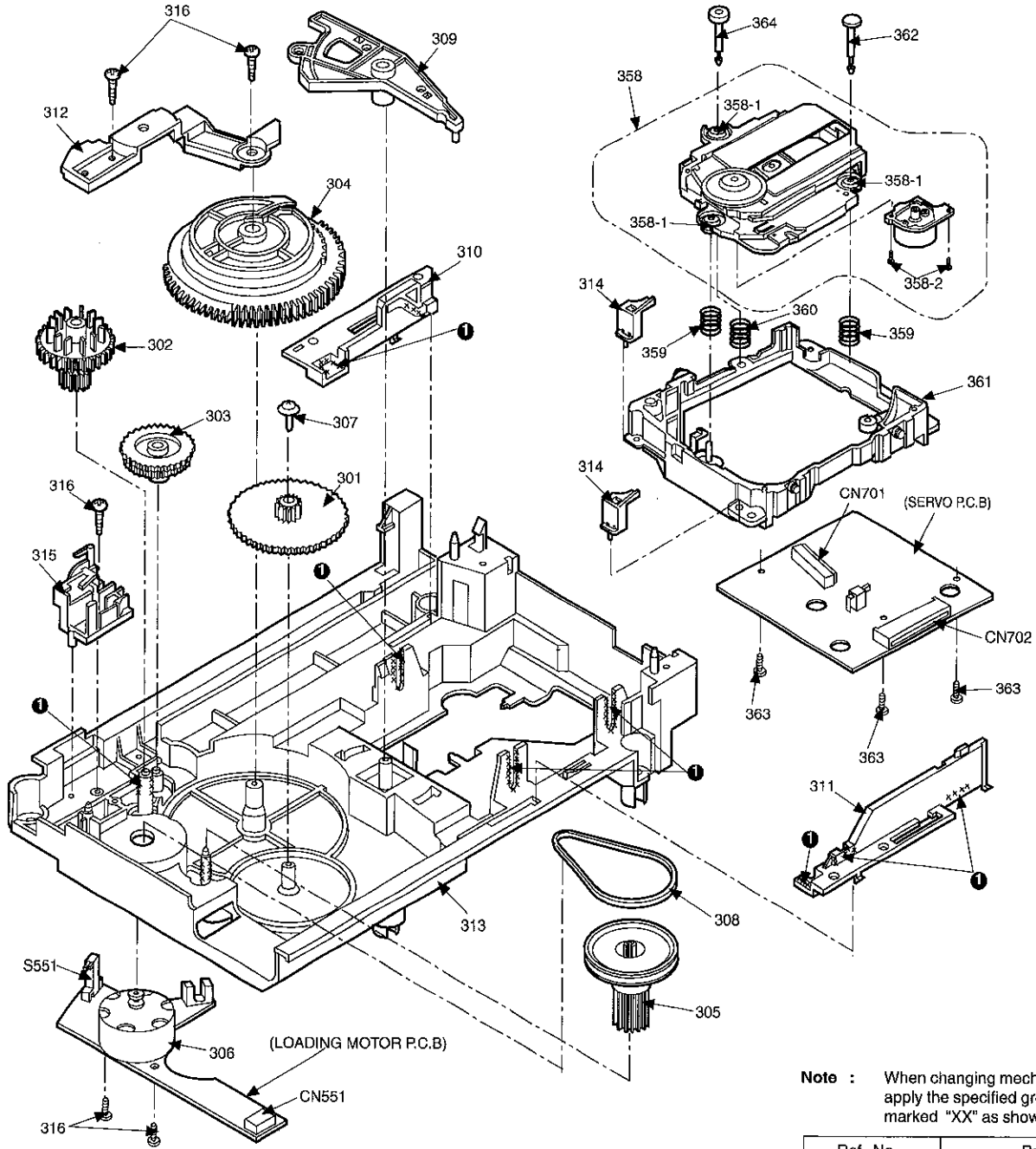


# ■ Cabinet Parts Location





# Loading Mechanism Parts



**Note :** When changing mechanism parts, apply the specified grease to the areas marked "XX" as shown in the drawing.

| Ref. No. | Part No.  |
|----------|-----------|
| ①        | RFKXPG671 |

Notes : [M] in Remarks column indicates parts supplied by MESA.

| Ref No. | Part No.     | Part Name & Description | Remarks | Ref No. | Part No.     | Part Name & Description | Remarks | Ref No. | Part No.   | Part Name & Description | Remarks |
|---------|--------------|-------------------------|---------|---------|--------------|-------------------------|---------|---------|------------|-------------------------|---------|
|         |              | <b>TRAVERSE DECK</b>    |         | 308     | RMG0268-K    | BELT                    | [M]     | 358     | RAE0152Z-M | TRAVERSE UNIT           | [M]     |
|         |              |                         |         | 309     | FML0334      | CHANGE LEVER            | [M]     | 358-1   | SHGD113-1  | FLOATING CUSHION        | [M]     |
| 301     | RDG0270      | SPEED REDUCTION GEAR    | [M]     | 310     | RMM0117      | SLIDE PLATE 1           | [M]     | 358-2   | SNSD38     | TRV MOTOR ASS'Y SCRE    | [M]     |
| 302     | RDG0271      | DRIVE GEAR A            | [M]     | 311     | RMM0118-1    | SLIDE PLATE 2           | [M]     | 359     | RME0109    | FLOATING SPRING B       | [M]     |
| 303     | RDG0272      | DRIVE GEAR B            | [M]     | 312     | RMR0746-W    | STRENGTHENING PLATE     | [M]     | 360     | RME0142    | FLOATING SPRING A       | [M]     |
| 304     | RDK0025      | DRIVE CAM               | [M]     | 313     | RFKNLPD667PB | MECHA BASE ASS'Y        | [M]     | 361     | RMR0698-K  | TRY CHASSIS             | [M]     |
| 305     | RDP0050      | PULLEY GEAR             | [M]     | 314     | RMX0094      | TRAY GUIDE              | [M]     | 362     | RMS0123-1  | FIXED PIN B             | [M]     |
| 306     | RFKPLPD667PB | LOADING MOTOR ASS'Y     | [M]     | 315     | RXQ0346-1    | SLIDER ASS'Y            | [M]     | 363     | XTN2+6G    | PCB SCREW               | [M]     |
| 307     | RHD26019     | SCREW                   | [M]     | 316     | XTB3+10JFZ   | SCREW                   | [M]     | 364     | RMS0350    | FIXED PIN A             | [M]     |



| Ref No. | Part No.     | Part Name & Description | Remarks | Ref No. | Part No.     | Part Name & Description | Remarks | Ref No. | Part No.     | Part Name & Description | Remarks |
|---------|--------------|-------------------------|---------|---------|--------------|-------------------------|---------|---------|--------------|-------------------------|---------|
| D52     | RVD1SS133TA  | DIODE                   | [M] △   | S623    | EVQ21405R    | SW, TRACK 10            | [M]     | L609    | RLQZP101KT-Y | AXIAL COIL              | [M]     |
| D53     | MTZJ5R1BTA   | DIODE                   | [M] △   | S624    | EVQ21405R    | SW, TRACK 0             | [M]     | L610    | RLQZP101KT-Y | AXIAL COIL              | [M]     |
| D54     | RVD1SS133TA  | DIODE                   | [M]     | S625    | EVQ21405R    | SW, TRACK >10           | [M]     | L611    | RLQZP101KT-Y | AXIAL COIL              | [M]     |
| D401    | RVD1SS133TA  | DIODE                   | [M]     | S626    | EVQ21405R    | SW, REV SEARCH          | [M]     | L612    | RLQZP101KT-Y | AXIAL COIL              | [M]     |
| D402    | RVD1SS133TA  | DIODE                   | [M]     | S627    | EVQ21405R    | SW, FWD SEARCH          | [M]     | L613    | RLQZP101KT-Y | AXIAL COIL              | [M]     |
| D403    | RVD1SS133TA  | DIODE                   | [M]     | S628    | EVQ21405R    | SW, REV SKIP            | [M]     | L701    | RLBN102V-Y   | CHIP INDUCTOR           | [M]     |
| D404    | RVD1SS133TA  | DIODE                   | [M]     | S629    | EVQ21405R    | SW, FWD SKIP            | [M]     | L702    | RLBN102V-Y   | CHIP INDUCTOR           | [M]     |
| D405    | RVD1SS133TA  | DIODE                   | [M]     | S630    | EVQ21405R    | SW, STOP                | [M]     | L703    | RLBN102V-Y   | CHIP INDUCTOR           | [M]     |
| D406    | RVD1SS133TA  | DIODE                   | [M]     | S631    | EVQ21405R    | SW, PAUSE               | [M]     | L704    | RLBN102V-Y   | CHIP INDUCTOR           | [M]     |
| D461    | MTZJ6R8CTA   | DIODE                   | [M]     | S632    | EVQ21405R    | SW, PLAY                | [M]     | L705    | RLBN102V-Y   | CHIP INDUCTOR           | [M]     |
| D462    | MTZJ5R6BTA   | DIODE                   | [M]     | S633    | EVQ21405R    | SW, OPEN/CLOSE          | [M]     | PT11    | RTP1K4B030-X | POWER TRANSFORMER       | [M] △   |
| D501    | GL380        | DIODE                   | [M]     | S701    | RSH1A043-U   | SW, REST                | [M]     |         |              |                         |         |
| D502    | RSQGP1S53V   | DIODE                   | [M]     | S901    | EVQ21405R    | SW, POWER               | [M]     |         |              | COMPONENT COMBINATION   |         |
| D551    | SG-206S      | DIODE                   | [M]     |         |              |                         |         |         |              |                         |         |
| D601    | LNJ301MPUJAD | DIODE                   | [M]     |         |              | CONNECTORS              |         | Z301    | BL02RN2R65T2 | COIL                    | [M]     |
| D602    | LNJ301MPUJAD | DIODE                   | [M]     |         |              |                         |         | Z601    | RCDGP1U28XD  | REMOTE SENSOR           | [M]     |
| D603    | LNJ301MPUJAD | DIODE                   | [M]     | CN11    | RJS1A1101T1  | CONNECTOR               | [M]     |         |              |                         |         |
| D604    | LNJ301MPUJAD | DIODE                   | [M]     | CN14    | RJS1A1101T1  | CONNECTOR               | [M]     |         |              | OSCILLATORS             |         |
| D605    | LNJ301MPUJAD | DIODE                   | [M]     | CN16    | RJS1A1101T1  | CONNECTOR               | [M]     |         |              |                         |         |
| D806    | LN018304P    | DIODE                   | [M]     | CN17    | RJS1A1101T1  | CONNECTOR               | [M]     | X401    | RSXY4M23M01T | CRYSTAL RESONATOR       | [M]     |
| D801    | RVD1SS133TA  | DIODE                   | [M]     | CN18    | RJS1A1101T1  | CONNECTOR               | [M]     | X701    | RSXB16M9J02T | CRYSTAL OSCILLATOR      | [M]     |
| D802    | RVD1SS133TA  | DIODE                   | [M]     | CN19    | RJS1A1101T1  | CONNECTOR               | [M]     |         |              | DISPLAY TUBE            |         |
|         |              |                         |         | CN20    | RJS1A1101T1  | CONNECTOR               | [M]     |         |              |                         |         |
|         |              | SWITCHES                |         | CN21    | RJS1A1101T1  | CONNECTOR               | [M]     | FL601   | RSL0274-F    | FL DISPLAY              | [M]     |
|         |              |                         |         | CN302   | RJS2A3330    | 30P CONNECTOR           | [M]     |         |              |                         |         |
| S551    | RSH1A005-1U  | SWITCH                  | [M]     | CN401   | RJS1A9423    | FFC CONNECTOR           | [M]     |         |              | FUSE CABLES             |         |
| S601    | EVQ21405R    | SW, SPIRAL              | [M]     | CN402   | RJS1A9423    | FFC CONNECTOR           | [M]     |         |              |                         |         |
| S602    | EVQ21405R    | SW, RANDOM MODE         | [M]     | CN403   | RJS1A9414-1  | 14P FFC CONNECTOR       | [M]     | FC502   | RWJ4406087KK | 6P FLAT CABLE           | [M]     |
| S603    | EVQ21405R    | SW, REPEAT              | [M]     | CN404   | RJS1A6606T1  | TAPING CONNECTOR        | [M]     | FC503   | RWJ4403102KK | 3P FLAT CABLE           | [M]     |
| S604    | EVQ21405R    | SW, ID SCAN             | [M]     | CN501   | RJS1A6714-Q  | 14P CONNECTOR           | [M]     | FC601   | RWJ1803085KK | 3P WIRE                 | [M]     |
| S605    | EVQ21405R    | SW, EDIT GUIDE          | [M]     | CN551   | RJS2A1506    | 6P CONNECTOR            | [M]     | FC901   | RWJ1803085KK | 3P WIRE                 | [M]     |
| S606    | EVQ21405R    | SW, TIME MD             | [M]     | CN601   | RJS1A6223-1  | 23P CONNECTOR           | [M]     |         |              | JACKS                   |         |
| S607    | EVQ21405R    | SW, PROGRAM             | [M]     | CN602   | RJS1A6223-1  | 23P CONNECTOR           | [M]     |         |              |                         |         |
| S608    | EVQ21405R    | SW, DISC 1              | [M]     | CN701   | RJS2A6016    | 16P FFC CONNECTOR       | [M]     | JK11    | SJS9236-1    | JK, SOCKET              | [M] △   |
| S609    | EVQ21405R    | SW, DISC 2              | [M]     | CN702   | RJS2A4230-1F | 30P CONNECTOR           | [M]     | JK321   | GP1F32T      | JK, OPT TERMINAL        | [M]     |
| S610    | EVQ21405R    | SW, DISC 3              | [M]     |         |              |                         |         | JK801   | RJH3201N-J   | JK, RCA                 | [M]     |
| S611    | EVQ21405R    | SW, DISC 4              | [M]     |         |              | COILS & TRANSFORMERS    |         |         |              |                         |         |
| S612    | EVQ21405R    | SW, DISC 5              | [M]     | L11     | SLQX400-1D   | RADIO FREQ COIL         | [M] △   |         |              | EARTH TERMINAL          |         |
| S613    | EVQ21405R    | SW, DISC SKIP           | [M]     | L12     | SLQX400-1D   | RADIO FREQ COIL         | [M] △   | E400    | SNE1004-2    | EARTH TERMINAL          | [M]     |
| S614    | EVQ21405R    | SW, TRACK 1             | [M]     | L601    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S615    | EVQ21405R    | SW, TRACK 2             | [M]     | L602    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S616    | EVQ21405R    | SW, TRACK 3             | [M]     | L603    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S617    | EVQ21405R    | SW, TRACK 4             | [M]     | L604    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S618    | EVQ21405R    | SW, TRACK 5             | [M]     | L605    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S619    | EVQ21405R    | SW, TRACK 6             | [M]     | L606    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S620    | EVQ21405R    | SW, TRACK 7             | [M]     | L607    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S621    | EVQ21405R    | SW, TRACK 8             | [M]     | L608    | RLQZP101KT-Y | AXIAL COIL              | [M]     |         |              |                         |         |
| S622    | EVQ21405R    | SW, TRACK 9             | [M]     |         |              |                         |         |         |              |                         |         |

# Resistors & Capacitors

- Notes :**
- Important safety notice:  
Components identified by  $\Delta$  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 in the Remarks columns specify the areas. (Refer to the cover page for area.)  
Parts without these indication can be used for all areas.
  - [M] in Remarks column indicates parts that are supplied by MESA.
  - Capacitor values are in microfarad ( $\mu$ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
  - Resistors 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 | Ref No. | Part No.     | Values & Remarks |
|---------|------------------|------------------|---------|--------------|------------------|---------|-------------------|------------------|---------|--------------|------------------|
|         | <b>RESISTORS</b> |                  | R421    | ERDS2TJ103T  | 10K 1/4W [M]     | R735    | ERJ6GEYJ101A      | 100 1/10W[M]     | C31     | RCA1HM470BT  | 47P 50V [M]      |
| R11     | ERDS2TJ181T      | 180 1/4W [M]     | R461    | ERDS2TJ121T  | 120 1/4W [M]     | R736    | ERJ6GEYJ101A      | 100 1/10W[M]     | C32     | RCA1HM470BT  | 47P 50V [M]      |
| R12     | ERDS2TJ181T      | 180 1/4W [M]     | R462    | ERDS2TJ221T  | 220 1/4W [M]     | R744    | ERJ6GEYJ104A      | 100K 1/10W[M]    | C33     | ECBT1H102KB5 | 1000P 50V [M]    |
| R17     | ERQ10NKWR15E     | 0.15 1/6W [M]    | R463    | ERDS2TJ121T  | 120 1/4W [M]     | R745    | ERJ6GEYJ155A      | 1.5M 1/10W[M]    | C42     | ECEA0JKA101B | 100 6.3V [M]     |
| R19     | ERDS2TJ221T      | 220 1/4W [M]     | R471    | ERDS2TJ103T  | 10K 1/4W [M]     | R748    | ERJ6GEYJ182A      | 1.8K 1/10W[M]    | C43     | ECBT1H102KB5 | 1000P 50V [M]    |
| R21     | ERDS2TJ122T      | 1.2K 1/4W [M]    | R472    | ERDS2TJ221T  | 220 1/4W [M]     | R749    | ERJ6GEYJ682A      | 6.8K 1/10W[M]    | C301    | ECBT1C103NS5 | 0.01 16V [M]     |
| R22     | ERDS2TJ122T      | 1.2K 1/4W [M]    | R601    | ERDS2TJ121T  | 120 1/4W [M]     | R752    | ERJ8GEYJ220A      | 22 1/8W [M]      | C304    | ECBT1H101KB5 | 100P 50V [M]     |
| R31     | ERDS2TJ123T      | 12K 1/4W [M]     | R602    | ERDS2TJ121T  | 120 1/4W [M]     | R803    | ERDS2TJ224T       | 220K 1/4W [M]    | C305    | ECBT1H101KB5 | 100P 50V [M]     |
| R32     | ERDS2TJ103T      | 10K 1/4W [M]     | R603    | ERDS2TJ121T  | 120 1/4W [M]     | R804    | ERDS2TJ224T       | 220K 1/4W [M]    | C306    | ECBT1H471KB5 | 470P 50V [M]     |
| R33     | ERDS2TJ103T      | 10K 1/4W [M]     | R604    | ERDS2TJ121T  | 120 1/4W [M]     | R805    | ERDS2TJ822T       | 8.2K 1/4W [M]    | C314    | ECBT1C103NS5 | 0.01 16V [M]     |
| R34     | ERDS2TJ101T      | 100 1/4W [M]     | R605    | ERDS2TJ121T  | 120 1/4W [M]     | R806    | ERDS2TJ822T       | 8.2K 1/4W [M]    | C321    | ECBT1C103MS5 | 0.01 16V [M]     |
| R41     | ERDS2TJ471T      | 470 1/4W [M]     | R607    | ERDS2TJ122T  | 1.2K 1/4W [M]    | R807    | ERDS2TJ123T       | 12K 1/4W [M]     | C322    | ECEA0JKA101B | 100 6.3V [M]     |
| R42     | ERDS2TJ1R0T      | 1 1/4W [M]       | R701    | ERJ6GEYJ4R7A | 4.7 1/10W[M]     | R808    | ERDS2TJ123T       | 12K 1/4W [M]     | C401    | ECBT1C103NS5 | 0.01 16V [M]     |
| R43     | ERDS2TJ1R0T      | 1 1/4W [M]       | R702    | ERJ6GEYJ822A | 8.2K 1/10W[M]    | R809    | ERDS2TJ333T       | 33K 1/4W [M]     | C402    | ECA0JM471B   | 470 6.3V [M]     |
| R51     | ERDS2TJ562T      | 5.6K 1/4W [M]    | R703    | ERJ6GEYJ823A | 82K 1/10W[M]     | R810    | ERDS2TJ333T       | 33K 1/4W [M]     | C403    | ECEA1HKA101B | 1 50V [M]        |
| R52     | ERDS2TJ562T      | 5.6K 1/4W [M]    | R704    | ERJ6GEYJ102A | 1K 1/10W[M]      | R811    | ERDS2TJ333T       | 33K 1/4W [M]     | C404    | ECEA1EKA4R7B | 4.7 25V [M]      |
| R63     | ERDS2TJ103T      | 10K 1/4W [M]     | R705    | ERJ6GEYJ124A | 120K 1/10W[M]    | R812    | ERDS2TJ333T       | 33K 1/4W [M]     | C405    | ECBT1C103NS5 | 0.01 16V [M]     |
| R64     | ERDS2TJ223T      | 22K 1/4W [M]     | R706    | ERJ6GEYJ102A | 1K 1/10W[M]      | R813    | ERDS2TJ102T       | 1K 1/4W [M]      | C406    | ECEA1HKA101B | 1 50V [M]        |
| R312    | ERDS2TJ223T      | 22K 1/4W [M]     | R707    | ERJ6GEYJ474A | 470K 1/10W[M]    | R814    | ERDS2TJ102T       | 1K 1/4W [M]      | C407    | ECBT1H104ZF5 | 0.1 50V [M]      |
| R317    | ERDS2TJ471T      | 470 1/4W [M]     | R708    | ERJ6GEYJ154A | 150K 1/10W[M]    | R815    | ERDS2TJ472T       | 4.7K 1/4W [M]    | C408    | ECBT1H331KB5 | 330P 50V [M]     |
| R318    | ERDS2TJ471T      | 470 1/4W [M]     | R709    | ERJ6GEYJ473A | 47K 1/10W[M]     | R816    | ERDS2TJ472T       | 4.7K 1/4W [M]    | C409    | ECBT1H104ZF5 | 0.1 50V [M]      |
| R319    | ERDS2TJ471T      | 470 1/4W [M]     | R710    | ERJ6GEYJ103A | 10K 1/10W[M]     | R817    | ERDS2TJ473T       | 47K 1/4W [M]     | C421    | ECBT1H102KB5 | 1000P 50V [M]    |
| R401    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R711    | ERJ6GEYJ154A | 150K 1/10W[M]    | R818    | ERDS2TJ473T       | 47K 1/4W [M]     | C461    | ECEA1AKA470B | 47 10V [M]       |
| R402    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R712    | ERJ6GEYJ221A | 220 1/10W[M]     | R819    | ERDS2TJ100T       | 10 1/4W [M]      | C462    | ECBT1C103NS5 | 0.01 16V [M]     |
| R403    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R714    | ERJ6GEYJ121A | 120 1/10W[M]     | R820    | ERDS2TJ100T       | 10 1/4W [M]      | C601    | ECBT1H104ZF5 | 0.1 50V [M]      |
| R404    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R715    | ERJ6GEYJ122A | 1.2K 1/10W[M]    | R851    | ERDS2TJ562T       | 5.6K 1/4W [M]    | C602    | ECBT1H102KB5 | 1000P 50V [M]    |
| R405    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R717    | ERJ6GEYJ102A | 1K 1/10W[M]      | R852    | ERDS2TJ102T       | 1K 1/4W [M]      | C603    | ECBT1H331KB5 | 330P 50V [M]     |
| R406    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R718    | ERJ6GEYJ102A | 1K 1/10W[M]      |         |                   |                  | C604    | ECBT1H104ZF5 | 0.1 50V [M]      |
| R407    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R719    | ERJ8GEY0R00A | 0 1/8W [M]       |         |                   |                  | C605    | ECBT1C103NS5 | 0.01 16V [M]     |
| R409    | ERDS2TJ182T      | 1.8K 1/4W [M]    | R720    | ERJ6GEY0R00A | 0 1/10W[M]       |         |                   |                  | C606    | ECBT1H101KB5 | 100P 50V [M]     |
| R410    | ERDS2TJ103T      | 10K 1/4W [M]     | R721    | ERJ6GEYJ101A | 100 1/10W[M]     | C11     | ECBT1H103ZF5      | 0.01 50V [M]     | C701    | ECEA0JKA330I | 33 6.3V [M]      |
| R411    | ERDS2TJ472T      | 4.7K 1/4W [M]    | R722    | ERJ6GEYJ563A | 56K 1/10W[M]     | C12     | RCEA1C332B-S      | 3300P 16V [M]    | C702    | ECUZ1E104MBN | 0.1 25V [M]      |
| R412    | ERDS2TJ223T      | 22K 1/4W [M]     | R723    | ERJ6GEYJ182A | 1.8K 1/10W[M]    | C15     | ECBT1H102KB5      | 1000P 50V [M]    | C703    | ECEA0JKA101I | 100 6.3V [M]     |
| R413    | ERDS2TJ103T      | 10K 1/4W [M]     | R724    | ERJ6GEYJ333A | 33K 1/10W[M]     | C16     | ECEA1AM471B       | 470 10V [M]      | C704    | ECUZ1E104MBN | 0.1 25V [M]      |
| R414    | ERDS2TJ471T      | 470 1/4W [M]     | R725    | ERJ6GEYJ122A | 1.2K 1/10W[M]    | C17     | ECEA0JKA101B      | 100 6.3V [M]     | C706    | ECUZ1H272KBN | 2700P 50V [M]    |
| R415    | ERDS2TJ103T      | 10K 1/4W [M]     | R726    | ERJ6GEYJ473A | 47K 1/10W[M]     | C20     | ECBT1H103ZF5      | 0.01 50V [M]     | C707    | ECUZ1E273KBN | 0.027 25V [M]    |
| R416    | ERDS2TJ102T      | 1K 1/4W [M]      | R727    | ERJ6GEYJ682A | 6.8K 1/10W[M]    | C21     | RCA1VM101BT       | 100P 35V [M]     | C708    | ECUZ1H392KBN | 3900P 50V [M]    |
| R417    | ERDS2TJ103T      | 10K 1/4W [M]     | R728    | ERJ6GEYJ682A | 6.8K 1/10W[M]    | C22     | RCA1EM101BT       | 100P 25V [M]     | C709    | ECUZ1E563KBN | 0.056 25V [M]    |
| R418    | ERDS2TJ821T      | 820 1/4W [M]     | R729    | ERJ6GEYJ562A | 5.6K 1/10W[M]    | C25     | ECBT1H102KB5      | 1000P 50V [M]    | C710    | ECUV1H151KCN | 150P 50V [M]     |
| R419    | ERDS2TJ821T      | 820 1/4W [M]     | R731    | ERJ6GEYJ822A | 8.2K 1/10W[M]    | C26     | ECBT1H102KB5      | 1000P 50V [M]    | C711    | ECUZ1E104ZFN | 0.1 25V [M]      |
|         |                  |                  |         |              |                  | C30     | ECBT1H103ZF5      | 0.01 50V [M]     |         |              |                  |
|         |                  |                  |         |              |                  |         | <b>CAPACITORS</b> |                  |         |              |                  |

| Ref No. | Part No.     | Values & Remarks | Ref No. | Part No.     | Values & Remarks | Ref No. | Part No.           | Values & Remarks | Ref No. | Part No.           | Values & Remarks |
|---------|--------------|------------------|---------|--------------|------------------|---------|--------------------|------------------|---------|--------------------|------------------|
| C712    | ECUZ1E104ZFN | 0.1 25V [M]      | C736    | ECUZ1E104ZFN | 0.1 25V [M]      | C806    | ECCR1H391J5        | 390P 50V [M]     | RJ715   | ERJ8GEY0R00A       | 0 1/8W [M]       |
| C713    | ECUZ1E104MBN | 0.1 25V [M]      | C737    | ECUZ1E104ZFN | 0.1 25V [M]      | C807    | ECCR1H391J5        | 390P 50V [M]     | RJ716   | ERJ8GEY0R00A       | 0 1/8W [M]       |
| C714    | ECEA0JKA101I | 100 8.3V [M]     | C738    | ECUZ1E104MBN | 0.1 25V [M]      | C808    | ECCR1H391J5        | 390P 50V [M]     | RJ717   | ERJ8GEY0R00A       | 0 1/8W [M]       |
| C715    | ECUZ1H182KBN | 1800P 50V [M]    | C739    | ECUZ1H102KBN | 1000P 50V [M]    | C809    | ECEA0JKA470B       | 47 6.3V [M]      | RJ721   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C716    | ECUZ1H821KBN | 820P 50V [M]     | C742    | ECUZ1E273KBN | 0.027 25V [M]    | C810    | ECEA0JKA470B       | 47 6.3V [M]      | RJ722   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C717    | ECUZ1E104ZFN | 0.1 25V [M]      | C743    | ECUZ1E104ZFN | 0.1 25V [M]      | C811    | ECBT1H102KB5       | 1000P 50V [M]    | RJ724   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C718    | ECUZ1C224KBN | 0.22 16V [M]     | C744    | ECUZ1E123KBN | 0.012 25V [M]    | C812    | ECBT1H102KB5       | 1000P 50V [M]    | RJ725   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C721    | ECUZ1H100DCN | 10P 50V [M]      | C745    | ECUZ1H102KBN | 1000P 50V [M]    |         |                    |                  | RJ726   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C722    | ECUZ1H100DCN | 10P 50V [M]      | C747    | ECUV1H221KBN | 220P 50V [M]     |         | <b>CHIP JUMPER</b> |                  | RJ727   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C723    | ECEA1AKA221I | 220 10V [M]      | C749    | ECUZ1H222KBN | 2200P 50V [M]    | RJ701   | ERJ8GEY0R00A       | 0 1/10W[M]       | RJ728   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C724    | ECUZ1E104MBN | 0.1 25V [M]      | C750    | ECUZ1E104MBN | 0.1 25V [M]      | RJ702   | ERJ8GEY0R00A       | 0 1/8W [M]       | RJ731   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C725    | ECUZ1H102KBN | 1000P 50V [M]    | C751    | ECUZ1E104MBN | 0.1 25V [M]      | RJ703   | ERJ8GEY0R00A       | 0 1/8W [M]       | RJ732   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C726    | ECUZ1H102KBN | 1000P 50V [M]    | C753    | ECUZ1H471KBM | 470P 50V [M]     | RJ704   | ERJ8GEY0R00A       | 0 1/8W [M]       | RJ733   | ERJ8GEY0R00A       | 0 1/10W[M]       |
| C730    | ECUZ1E104ZFN | 0.1 25V [M]      | C762    | ECUZ1H471KBN | 470P 50V [M]     | RJ705   | ERJ8GEY0R00A       | 0 1/8W [M]       |         |                    |                  |
| C731    | ECEA0JKA221I | 220 6.3V [M]     | C801    | ECEA1AKA470B | 47 10V [M]       | RJ706   | ERJ8GEY0R00A       | 0 1/8W [M]       |         | <b>TEST JUMPER</b> |                  |
| C732    | ECEA0JKA221I | 220 6.3V [M]     | C802    | ECEA1AKA470B | 47 10V [M]       | RJ707   | ERJ8GEY0R00A       | 0 1/8W [M]       | TJ701   | EYF8CU             | TEST JUMPER [M]  |
| C733    | ECUZ1E104MBN | 0.1 25V [M]      | C803    | ECEA1CKA100B | 10 16V [M]       | RJ708   | ERJ8GEY0R00A       | 0 1/8W [M]       |         |                    |                  |
| C734    | ECEA1AKA221I | 220 10V [M]      | C804    | ECEA1CKA100B | 10 16V [M]       | RJ709   | ERJ8GEY0R00A       | 0 1/8W [M]       |         |                    |                  |
| C735    | ECUZ1E104ZFN | 0.1 25V [M]      | C805    | ECCR1H391J5  | 390P 50V [M]     | RJ710   | ERJ8GEY0R00A       | 0 1/8W [M]       |         |                    |                  |

### Packing Materials & Accessories

**Notes :**

- \* Important safety notice : Components identified by  $\Delta$  mark have special characteristics impo
- Furthermore, special parts which have purposes of fire-retardant (res
- When replacing any of components, be sure to use only manufacture
- The parenthesized in the Remarks columns specify the areas. (Refer
- \* Parts without these indication can be used for all areas.
- \* The "(SF)" mark denotes the standard part.
- \* [M] in Remarks column indicates parts supplied by MESA.
- \* Remote Control Unit : Supply period for three years from terminatic
- \* Reference for O/I book languages are as follows :

Ar : Arabic      Cf : Canadian French      Co : Chinese (old)  
 Du : Dutch      En : English      Fr : French  
 Po : Polish      Ru : Russian      Sp : Spanish

Customer: TECHNICAL

Order: MDS940612

Drop No. 2

Door No. 3

05/07/00

Sample at: 00

049: 1

| Ref No. | Part No.   | Part Name & Description  | Remarks | Ref No. | Part No.     | Part Name & Description | Remarks | Ref No. | Part No.  | Part Name & Description | Remarks |
|---------|------------|--------------------------|---------|---------|--------------|-------------------------|---------|---------|-----------|-------------------------|---------|
|         |            | <b>PACKING MATERIALS</b> |         |         |              | <b>ACCESSORIES</b>      |         | A4      | RQT4753-E | O/I BOOK (En/Sp/Sw)     | [M]E    |
| P1      | RPGX0541   | PACKING CASE             | [M]EB   | A1      | RAK-SL948WK  | REMOTE CONTROL          | [M]     | A4      | RQT4754-R | O/I BOOK (Ru/Cz/Po)     | [M]E    |
| P1      | RPGX0542   | PACKING CASE             | [M]EG E | A1-1    | 251200F1A    | R/C BATTERY COVER       | [M]     | A4      | RQT4755-D | O/I BOOK (Ge/It/Fr)     | [M]EG   |
| P2      | RPFX0005   | MIRAMAT BAG              | [M]     | A2      | RJA0019-2K   | AC CORD (SF) $\Delta$   | [M]EG E | A4      | RQT4756-H | O/I BOOK (Du/Da)        | [M]EG   |
| P3      | RPNX0099   | POLYFOAM                 | [M]EG E | A2      | RJA0053-2X   | AC CORD $\Delta$        | [M]EB   | A4      | RQT4757-B | O/I BOOK (En)           | [M]EB   |
| P3      | RPNX0100-1 | POLYFOAM                 | [M]EB   | A3      | RJL2P004B08A | STEREO CONNECTOR        | [M]     |         |           |                         |         |

### Packaging

