

# DENON

Hi-Fi Component

## SERVICE MANUAL

# MODEL DN-2000FMKII

### DOUBLE CD PLAYER



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## NIPPON COLUMBIA CO., LTD.

**IMPORTANT TO SAFETY****WARNING:**

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

**CAUTION:**

1. Handle the power supply cord carefully. Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.
2. Do not open the top cover. In order to prevent electric shock, do not open the top cover. If problems occur, contact your DENON dealer.
3. Do not place anything inside. Do not place metal objects or spill liquid inside the CD player. Electric shock or malfunction may result.

Please, record and retain the Model name and serial number of your set shown on the rating label.

Model No. DN-2000FMKII Serial No. \_\_\_\_\_

**CAUTION**  
 RISK OF ELECTRIC SHOCK  
 DO NOT OPEN

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

• FOR U.S.A. & CANADA MODEL ONLY

**CAUTION**

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

• POUR LES MODELES AMERICAINS ET CANADIENS UNIQUEMENT

**ATTENTION**

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

**NOTE:**

This CD player uses the semiconductor laser. To allow you to enjoy music at a stable operation, it is recommended to use this in a room of 5°C (41°F) - 35°C (95°F).

**LABELS** (for U.S.A. model only)**CERTIFICATION**

THIS PRODUCT COMPLIES WITH DHS RULES 21CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

**CAUTION:**

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

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

**NOTE:**

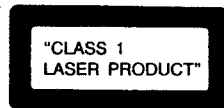
This unit may cause interference to radio and television reception if you do not operate it in strict accordance with this OPERATING INSTRUCTIONS.

This unit complies with Class B computing device rules in accordance with the specifications in Sub-part J or Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If the unit does cause interference to any radio or television reception, try to reduce it by one or more of the following means:

- a) Turn the other unit to improve reception
- b) Move this unit
- c) Move this unit away from others
- d) Plug this unit respectively into a different AC outlet

\* This is note in accordance with Section 15.838 of the FCC Rules.

CLASS 1 LASER PRODUCT  
 LUOKAN 1 LASERLAITE  
 KLASS 1 LASERAPPARAT



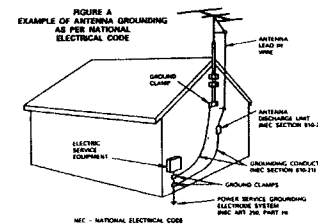
ADVARSEL: LISYNNIJO LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSÅBRYDENE ER UDE AF FUNKTION, UDDGÅ UDSÆTTELSE FOR STRÅLING.

VAROITUS: LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEJESSA MAINITTUILLA TAVULLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSTRÄLLELLE.

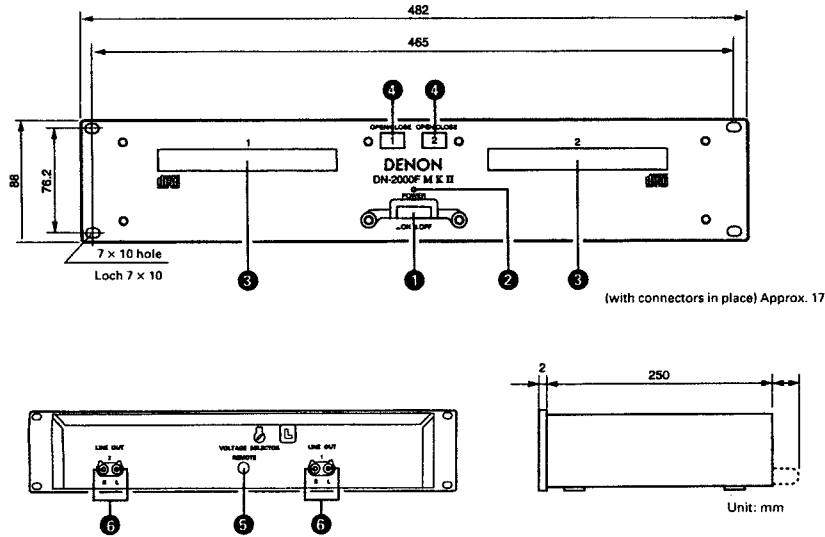
VARNING: OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATE, KAN ANVÄNDAREN UTSÄTTAS FÖR ÖSTYNNIG LASERSTRÅLNING SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

**SAFETY INSTRUCTIONS**

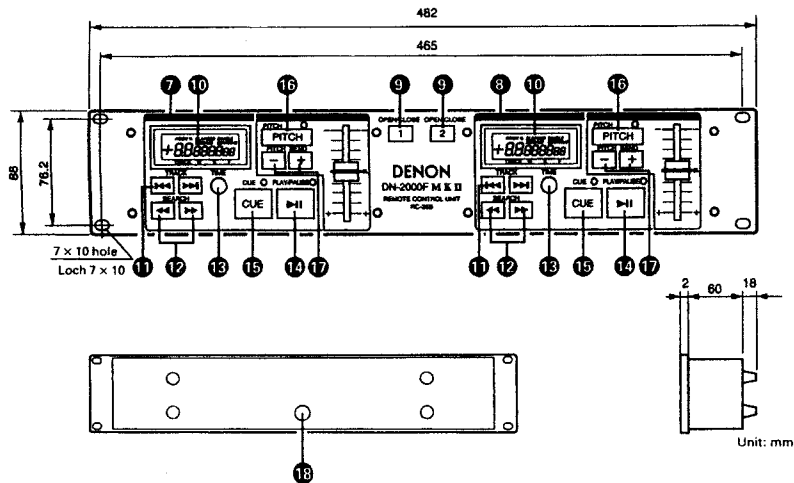
1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the appliance; or
  - C. The appliance has been exposed to rain; or
  - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



Main Unit



Remote Control Unit



NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION  
NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA  
OBSERVAÇÕES QUANTO AO USO

<ul style="list-style-type: none"> <li>• Avoid high temperatures. Allow for sufficient heat dispersion when installed on a rack.</li> <li>• Vermeiden Sie hohe Temperaturen. Beachten Sie, daß eine ausreichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.</li> <li>• Evitez des températures élevées. Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.</li> <li>• Evitate di esporre l'unità a temperature alte. Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.</li> <li>• Evite altas temperaturas. Permita la suficiente dispersión del calor cuando está instalado en la consola.</li> <li>• Vermijd hoge temperaturen. Zorg voor een degelijk hitteafvoer indien het apparaat op een rek wordt geplaatst.</li> <li>• Undvik höga temperaturer. Se till att det finns möjlighet till god värmeavledning vid monteringen i ett rack.</li> <li>• Evite temperaturas altas. Conceda suficiente dispersão de calor quando o equipamento for instalado numa prateleira.</li> </ul>	<ul style="list-style-type: none"> <li>• Keep the set free from moisture, water, and dust.</li> <li>• Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.</li> <li>• Protéger l'appareil contre l'humidité, l'eau et la poussière.</li> <li>• Teneva l'unità lontana dall'umidità, dall'acqua e dalla polvere.</li> <li>• Mantenga el equipo libre de humedad, agua y polvo.</li> <li>• Laat geen vochtigheid, water of stof in het apparaat binnendringen.</li> <li>• Utsätt inte apparaten för fukt, vatten och damm.</li> <li>• Mantenha o aparelho livre de qualquer umidade, água ou poeira.</li> </ul>	<ul style="list-style-type: none"> <li>• Do not let foreign objects in the set.</li> <li>• Keine fremden Gegenstände in das Gerät kommen lassen.</li> <li>• Ne pas laisser des objets étrangers dans l'appareil.</li> <li>• È importante che nessun oggetto è inserito all'interno dell'unità.</li> <li>• No deje objetos extraños dentro del equipo.</li> <li>• Laat geen vreemde voorwerpen in dit apparaat vallen.</li> <li>• Se till att främmande föremål inte tränger in i apparaten.</li> <li>• Não deixe objetos estranhos no aparelho.</li> </ul>
<ul style="list-style-type: none"> <li>• Handle the power cord carefully. Hold the plug when unplugging the cord.</li> <li>• Gehen Sie vorsichtig mit dem Netzkabel um. Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.</li> <li>• Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon.</li> <li>• Maneggiare il filo di alimentazione con cura. Agitare per la spina quando scollegate il cavo dalla presa.</li> <li>• Manéje el cordón de energía con cuidado. Sosrenga el enchufe cuando desconecte el cordón de energía.</li> <li>• Hanteer het netkabel voorzichtig. Houd het snoer bij de stecker vast wanneer deze moet worden aan- of losgekoppeld.</li> <li>• Hantera nätkabeln varsamt. Håll i kabelein när den kopplas från eluttaget.</li> <li>• Manuseie com cuidado o fio condutor de energia. Segure a tomada ao desconectar o fio.</li> </ul>	<ul style="list-style-type: none"> <li>• Unplug the power cord when not using the set for long periods of time.</li> <li>• Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.</li> <li>• Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.</li> <li>• Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.</li> <li>• Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.</li> <li>• Neem altijd het netkabel uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt.</li> <li>• Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid.</li> <li>• Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.</li> </ul>	<ul style="list-style-type: none"> <li>• Do not let insecticides, benzene, and thinner come in contact with the set.</li> <li>• Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.</li> <li>• Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.</li> <li>• Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.</li> <li>• No permita el contacto de insecticidas, gasolina y diluyentes con el equipo.</li> <li>• Laat geen insectenverdedigende middelen, benzine of verdunningsmiddel met dit apparaat in contact komen.</li> <li>• Se till att inte insektsmedel på spraybruk, bensin och thinner kommer i kontakt med apparatens hölje.</li> <li>• Não permita que inseticidas, benzina e dissolvente entrem em contacto com o aparelho.</li> </ul>
<ul style="list-style-type: none"> <li>• Do not obstruct the ventilation holes.</li> <li>• Die Belüftungsöffnungen dürfen nicht verdeckt werden.</li> <li>• Ne pas obstruer les trous d'aération.</li> <li>• Non coprire i fori di ventilazione.</li> <li>• No obstruya los orificios de ventilación.</li> <li>• De ventilatieopeningen mogen niet worden beblokkeerd.</li> <li>• Tapp inte till ventilationsöppningarna.</li> <li>• Não obstrua os orificios de ventilação.</li> </ul> <p>*[For sets with ventilation holes]</p>	<p>*[For sets with ventilation holes]</p>	<ul style="list-style-type: none"> <li>• Never disassemble or modify the set in any way.</li> <li>• Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.</li> <li>• Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.</li> <li>• Non smontate mai, né modificate l'unità in nessun modo.</li> <li>• Nunca desarme o modifique el equipo de ninguna manera.</li> <li>• Nooit dit apparaat demonteren of op andere wijze modifieren.</li> <li>• Ta inte isär apparaten och försök inte bygga om den.</li> <li>• Nunca desmonte ou modifique o aparelho de alguma forma.</li> </ul>

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**CAUTION:**

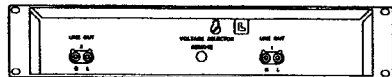
Whenever the power switch is in the OFF state, the apparatus is still connected on AC line voltage. Please be sure to unplug the cord when you leave home for, say, a vacation.  
Be sure turn on POWER switch after a Remote cable of RC-35B is connected to the Player unit, otherwise, the apparatus may not work correctly.

• **Line Voltage Selection (for multiple voltage model only)**

- The desired voltage may be set with the VOLTAGE SELECTOR knob on the rear panel, using a screwdriver.
- Do not twist the VOLTAGE SELECTOR knob with excessive force as this may cause damage.
- If the VOLTAGE SELECTOR knob does not turn smoothly, please contact a qualified serviceman.



VOLTAGE SELECTOR



**1 MAIN FEATURES**

The DN-2000FMKII is a double CD player which provides excellent performance as well as a variety of functions ideal for DJ mixing. The unit can be mounted in a standard 19-inch rack.

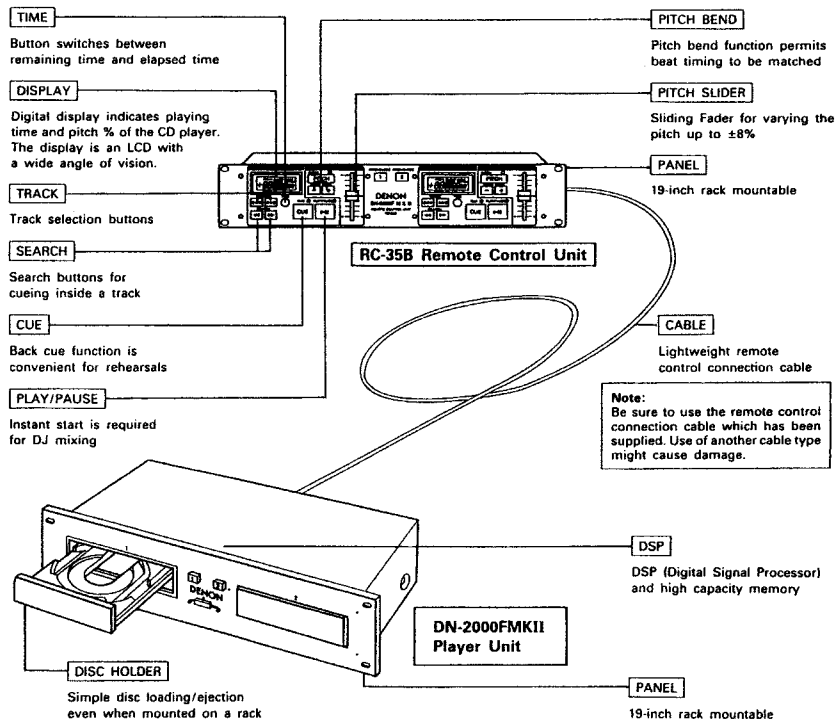


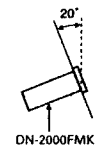
Figure 1

**2 PREPARATION**

**Check the Contents**

Check that the carton contains the following items in addition to the main unit.

- Operating instructions ..... 1
- Connection cords for signal output (RCA) ..... 2
- Remote control unit (RC-35B) ..... 1
- Remote control connection cable ..... 1



The DN-2000FMKII will work normally when the player unit is mounted within 20 degrees off the vertical plane at the front panel. If the unit is tilted excessively, the disc may not be loaded or unloaded properly.

### 3 DESCRIPTION OF THE FUNCTIONS

Below is a description of the names of the various parts and the functions of the main unit.

#### (1) Names and Functions of the Parts of the Main Unit

- ❶ **POWER (Power Switch)**  
Switches the power of the main unit and the remote control on and off.  
Power indicator ❷ is lit when the power is on.
- ❷ **POWER (Power Indicator)**  
Lights up red when power switch ❶ is on.
- ❸ **Disc Holder**  
The disc is placed on this holder. Pressing the disc holder open/close buttons ❹ will open and close each of the holders.  
When loading the CD, place it securely in the disc holder.
- ❹ **OPEN/CLOSE (Disc Holder Open/Close Button)**  
Press to load or eject the disc. Each press will open or close the disc holder ❸.  
The remote control is also equipped with similar buttons.
- ❺ **REMOTE (Remote Control Connector)**  
This connector accepts the cable which connects to the remote control unit RC-35B. Insert the plug securely as far as it will advance.
- ❻ **LINE OUT (Output Jacks)**  
The audio from each CD player is output from these jacks.  
Connect to the line input of the mixer.  
Red is for the right channel and white, the left channel.

#### (2) Names and Functions of the Parts of the Remote Control Unit

- ❶ **CD-1 Remote Control Operation Panel**  
This operation panel remotely controls the main unit CD-1.
- ❷ **CD-2 Remote Control Operation Panel**  
This operation panel remotely controls the main unit CD-2.
- ❸ **OPEN/CLOSE (Disc Holder Open/Close Button)**  
Press to load or eject the disc. Each press will open or close the disc holder ❹.
- ❹ **Time Display**  
This display shows the track number, time (minutes, seconds and frames), pitch mode, single or continuous play mode, and elapsed or remaining time. Each frame represents 1/75 of a second.
- ❺ **TRACK (Track Button)**  
This button selects the track to be played.
- ❻ **SEARCH (Search Buttons)**  
These buttons are used to accurately change the positions where disc play will start.
- ❼ **TIME (Time Button)**  
The TIME button switches the time display between elapsed time and remaining time. ELAPSED or REMAIN will be shown on the display.
- ❽ **PLAY/PAUSE (Play/Pause Button)**  
Each press of the PLAY/PAUSE button causes the operation to change from play to pause or from pause back to play.
- ❾ **CUE (Cue Button)**  
Pressing the CUE button during play provides a return to the position at which play was started. Alternately pressing the PLAY/PAUSE button and the CUE button allows the CD to be played from the same position any number of times. The red CUE LED will blink from the time the CUE button is pressed until the CD has reset to the position at which play was started. Steady lighting of this LED indicates the ready condition.
- ❿ **PITCH (Pitch Button)**  
This button changes the play speed.  
The pitch can be changed up to  $\pm 8\%$  by pressing the PITCH button so the green PITCH LED is lit, then moving the sliding fader.  
The pitch will not be changed if the green PITCH LED is off.
- ⓫ **PITCH BEND (Pitch Bend Button)**  
When each of the two CD players are playing a CD, the pitch bend function allows the positioning of the bass beats to be matched after the pitch has been matched.  
The pitch will automatically rise while the + button is pressed and return to the original pitch when the button is released.  
The pitch will drop while the - button is pressed. By changing the pitch in this way, the positioning of the beats can be matched.
- ⓬ **REMOTE (Remote Control Connector)**  
This connector accepts the cable which connects to the main unit. Insert the plug securely as possible.

**Note:**

When the TIME button is pressed for more than 2 seconds while the track number is displayed on the TRACK display, the pitch % appears on the TRACK display.  
When the TIME button is pressed for more than 2 seconds while the pitch is displayed on the TRACK display, the track number appears.

### 4 BASIC OPERATION

#### (1) Loading and Ejecting the Disc

- ❶ Open the disc holder  
When the disc holder is closed, press the OPEN/CLOSE button to open the disc holder.
- ❷ Place a disc in the disc holder

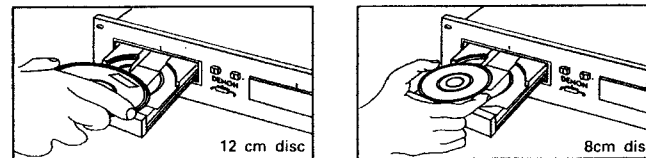


Figure 2

- ❸ Loading the disc  
Press the OPEN/CLOSE button to close the disc holder.
  - A press of the PLAY/PAUSE button will close the disc holder and start playback.
  - When a track is selected while the disc holder is open, the unit will access the selected track.

#### (2) Selecting Tracks

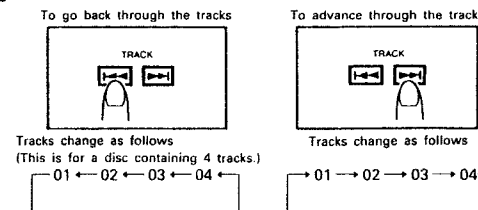


Figure 3

Each press of the TRACK button changes 1 track.  
Continuing to hold the TRACK button down provides an automatic change at a higher speed which is convenient for discs that contain many tracks.  
During the track selection operation, the track indication of the display will blink and the M S F indication will be off.  
When a new track is selected during play, after the selection operation is completed, play will immediately start from the beginning of the newly selected track.  
The track number can be selected before loading a disc on the player unit.  
You can select a track to play on the controller, then load a disc. The player will cue up to your selected track automatically.

#### (3) SINGLE/CONTINUE play mode selection

- Press the TIME and [ ] buttons of PITCH BEND simultaneously to set the player for SINGLE track playback mode, "SINGLE" is displayed.  
During single playback mode, the player stops after a specified track is played back.
- Press the TIME and [ ] button of PITCH BEND simultaneously to set the player for continuous playback mode, "CONTINUE" is displayed.  
During continuous playback mode, the player continue playback until completion of playback of the last track on the disc.

#### (4) ELAPSED/REMAIN Time Display Mode Selection

The time display switches each time the TIME button is pressed (for less than 2 seconds).  
When "ELAPSED" is lit: The track's elapsed time is displayed.  
When "REMAIN" is lit: The track's remaining time is displayed.

**(5) Starting Play**

Pressing the PLAY/PAUSE button during the pause condition or after the completion of back cue will start disc play.

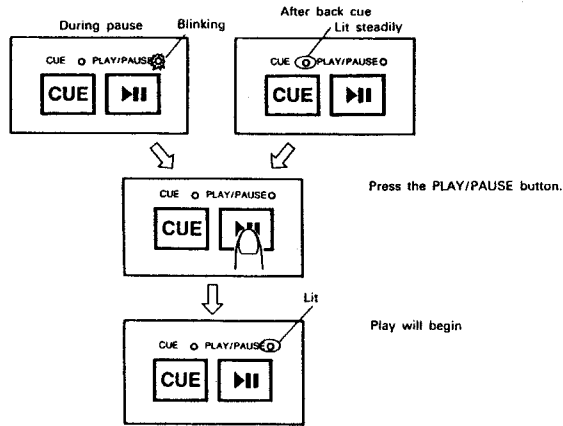


Figure 4

**(6) Stopping Play**

There are two ways of stopping play. One using the pause function and the other the back cue function.

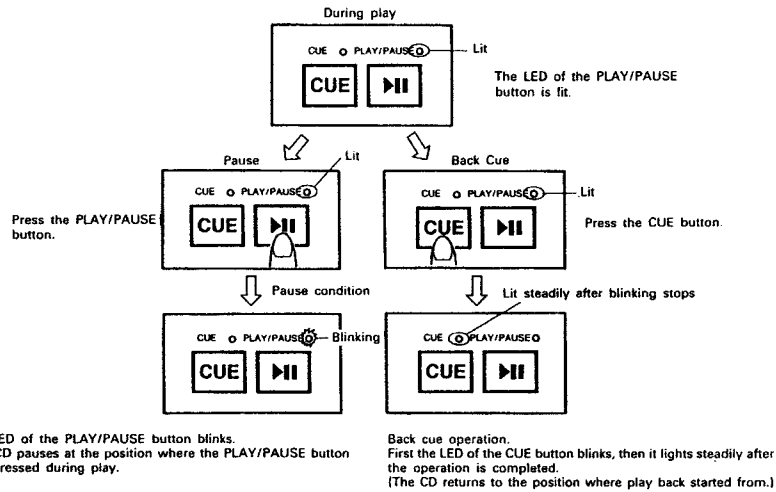


Figure 5

**(7) Description of the PLAY/PAUSE, and CUE Operations**

- Each press of the PLAY/PAUSE button causes the operation to change from play to pause or from pause back to play.
  - The play operation of this CD player is performed via DSP (Digital Signal Processor) and memory, so the audio starts instantly after the PLAY/PAUSE button is pressed.
  - Pressing the CUE button during disc play resets the CD to the position at which play was started. (This is called the back cue function.)
  - When the CUE button is pressed after setting the track number with the disc holder open, the disc holder automatically closes and the set track is cued. In the same way, when the PLAY button is pressed after setting the track number with the disc holder open, the disc holder automatically closes and playback of the set track begins.
- The steps through which disc play is performed when the PLAY/PAUSE and CUE buttons are pressed are described with the aid of the following illustrations in Figures 6 through 8.

**PLAY and PAUSE**

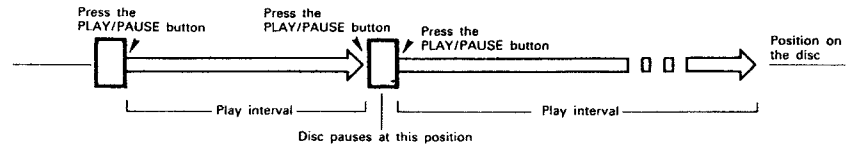


Figure 6

Pressing the PLAY/PAUSE button starts the disc play, the advancement of which is illustrated by the arrows of Figure 6. Pressing the PLAY/PAUSE button again during disc play causes the play operation to pause, and pressing this button once more causes the disc to be played again.

**PLAY and CUE**

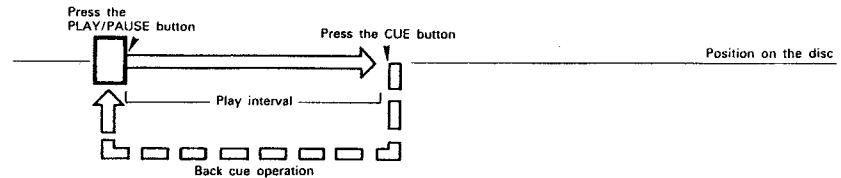


Figure 7

Pressing the PLAY/PAUSE button starts the disc. Pressing the CUE button will reset the disc to the position where play was started. By alternately pressing the PLAY/PAUSE button and the CUE button, the disc may be played from the same position any number of times. This function is called back cue.

**PLAY, PAUSE, and CUE**

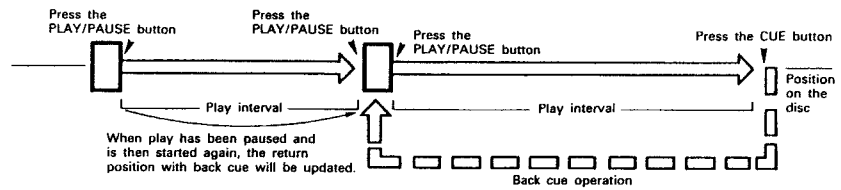
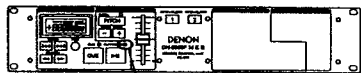


Figure 8

**(8) Matching the Beat Per Minute**

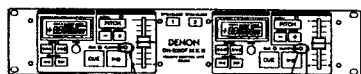
Match the pitch by monitoring the music of both CD-1 and CD-2 by ear. When the tempo of the music of the selected CD player is slow compared to the tempo of the other player, move the slider to the + side and match the tempo. When fast, move to the - side. The following description is for the case of matching the pitch of CD-2 to the pitch of the music being played on CD-1.



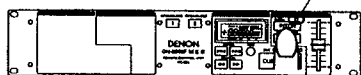
CD-1 is playing.



Press PLAY/PAUSE to start CD-2. The LED of the PLAY/PAUSE button will light.



Monitor CD-2 sound through headphones during both CD-1 and CD-2 playback.



Press the PITCH button of CD-2. The green LED of the PITCH button will light.

"PITCH" appears on the time display and the pitch corresponding to the position of the slide control is displayed on the TRACK display.

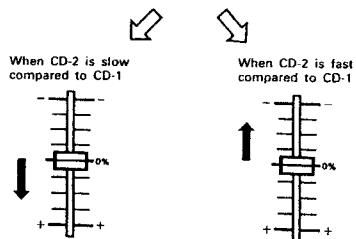
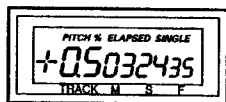


Figure 9



For instructions on displaying the pitch, refer to "(9) Displaying the Pitch".

**(9) Displaying the Pitch**

1) When preset item 3 is set to "OFF": (See Page 15, 16)

- ① The display on the TRACK display switches from the track to the pitch % when the TIME button is pressed for more than 2 seconds.
- ② If the pitch control mode is off, 0.0% is displayed. If the pitch control mode is on, the pitch corresponding to the position of the pitch slide control is displayed.
- ③ During track searching, the track number being searched for is displayed.
- ④ If the TIME button is pressed for more than 2 seconds, the display switches back from the pitch to the track.

2) When preset item 3 is set to "ON":

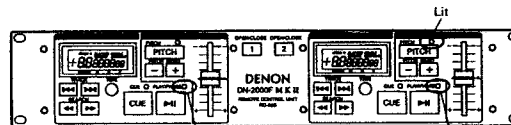
When the pitch slide control is moved while the pitch control mode is on, the pitch is displayed on the TRACK display. When you stop moving the pitch slide control, the display returns to the track after approximately 2 seconds.

**(10) Beat Matching Using Pitch Bend**

A description of the procedure for matching the beat of CD-1 and CD-2 using the PITCH BEND button is given below.

This description is for the case of matching the beat of CD-2 to the beat of the music being played on CD-1.

After Matching the BPM's According to Section (8)



BPM's (Beat Per Minute) are the same, however the bass beats are not matched.

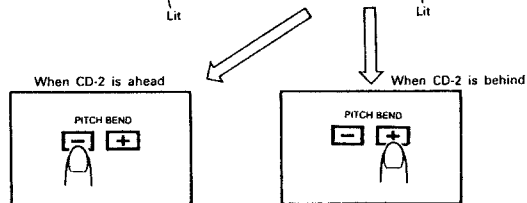


Figure 10

The pitch changes automatically while the + or - button is being pressed. Releasing the button results in a return to the original pitch. (So the BPM's are once again the same.)

**(11) Moving the Play Start Position**

When a track is selected and the PLAY/PAUSE button is pressed, the play operation will start from the beginning of that track. However, when you want play to start playback from a different position, use the following procedure to find that position.

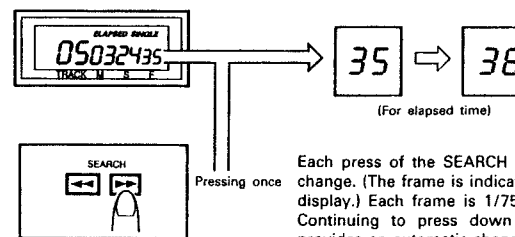


Figure 11

**Note:**  
When one of the SEARCH buttons is pressed during playback, the manual search operation is performed while the button is pressed. When the button is released, normal playback resumes from that position.

To Start Playback from the Middle of a track.

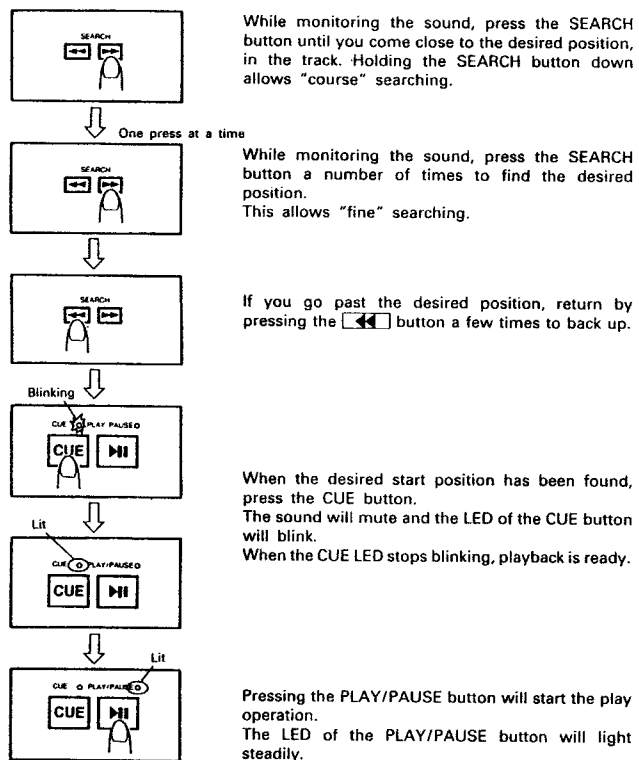
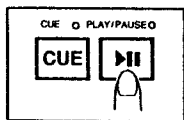


Figure 12

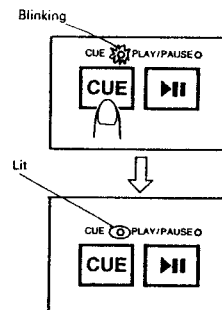
**(12) Checking the Play Start Position**

After selecting the track or after changing the play start position with the SEARCH button, use the following procedure to repeatedly check the position at which play will start.



Press the PLAY/PAUSE button. Check that play will start from the desired position.

**NOTE:**  
Once you have set up a new start position within a track, do not press the PAUSE or SEARCH buttons. Pressing these buttons will change your start position.



Press the CUE button after checking the start position. The player will return to the position where play was started. When the CUE LED stops blinking, it is ready to start again.

If the play start position is not to your desired point, use the search function to change the position.

Figure 13

**5 PRESET FUNCTIONS**

The DN-2000FMKII is equipped with non-volatile memory and is able to store various preset data. These data will not be lost even if the power is cut and so the desired settings corresponding to items such as those described in the table of Page 16 can be stored to memory. This function can be set independently for both CD-1 and CD-2, please use this function and operate the player at the optimum settings.

**(1) Starting the Preset Data Change Mode**

- Presetting can also be performed when no disc is loaded and in cue-up and pause modes.
- Press the TIME button and both PITCH buttons at the same time (PITCH LED starts blinking). The DN-2000FMKII will enter the preset data change mode and the first preset data will be displayed. The preset item number is displayed in the track display area and the current data are displayed in the minutes and seconds display area.

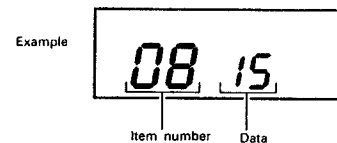


Figure 14

**(2) Selecting the Item Number**

- Press the TRACK button to increase the item number.
- Press the TRACK button to decrease the item number.
- The data of the selected item are displayed.

**(3) Changing the Preset Data**

- Press the SEARCH , button to select the preset data. The display data will change and blink.
- When the appropriate data have been selected, press the CUE button and store the data to the non-volatile memory. The display data will stop blinking.
- To change other items, repeat the operations of Steps (2) and (3).

**(4) Initializing the Preset Data**

- To initialize the preset data to the factory setting, store 1 to the data of item 0.
- The factory setting data are indicated by asterisks in the table of Page 16.

**(5) Exiting the Preset Data Change Mode**

To complete the change and return to the normal mode, press the TIME button and both PITCH buttons at the same time or press the OPEN/CLOSE button.



### (6) Table of Preset Functions

The "\*" mark indicates setting upon shipment from the factory.

ITEM No.	ITEM	DISPLAY					DESCRIPTION
		TRACK	MINUTE	SECOND			
00	Initialize	0	0				0 Non Initial 1 * Not Initialize Initialize to the same data as the factory setting.
01	Play Mode when Power Turned On	0	1				0 Single 1 Continue * Playback ends at the end of track. Playback continues until the end of disc.
02	Time Display Mode when Power Turn On	0	2				0 Elapse 1 Remain * Elapsed time is displayed when power turned on. Remaining time is displayed when power turned on.
03	Pitch Display Mode when Power Turn On	0	3				0 Off 1 On * The track number is displayed on the TRACK display. When the pitch slide control is moved while the pitch control mode is on, the pitch is displayed on the TRACK display.
04	Pitch Control Mode when Power Turn On	0	4				0 Off 1 On * The pitch control mode is turned off when the power is turned on. The pitch control mode is turned on when the power is turned on.
05	Pitch Control Range	0	5				0 ±8% 1 ±4% * The pitch can be varied by ±8%. The pitch can be varied by ±4%.
06	Disc holder auto close	0	6				0 Off 1 On * Disc holder does not close automatically. Disc holder closes automatically after it is left open for a specific amount of time. For approx. 1 min.
07	Cue Detect Level	0	7				— — —∞ — 7 2 -72dB — 6 6 -66dB — 6 0 -60dB — 5 4 -54dB — 4 8 -48dB — 4 2 -42dB — 3 6 -36dB * Individual tracks cue to the point where audio starts, rather than to the actual beginning of the track. The level at which sound is first detected can be set between -36dB and -72dB.
08	EOM Duration	0	8				0 0sec 1 10sec 2 15sec 3 20sec 4 30sec 5 60sec * EOM OFF At the end of a track, the LCD display flashes, providing a visual warning to the operator that the track will end shortly. The point at which the flashing begins can be set within a range of 10 to 60 seconds prior to the end of the track. NOTE: The EOM time may not be accurate for some discs.

### 6 BEFORE SWITCHING OFF THE POWER

When you have finished using the CD player, before switching off the power be sure that the disc holder has been closed with the OPEN/CLOSE button.

**CAUTION:**  
Do not forcibly close the disc holder when the power is off. It may damage the unit when it is transported.

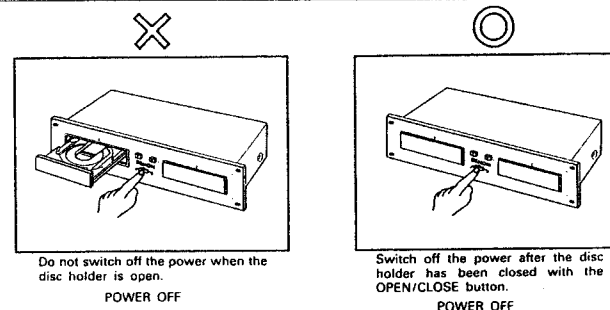


Figure 15

### 7 COMPACT DISCS

#### 1. Precautions on handling compact discs

- Do not allow fingerprints, oil or dust to get on the surface of the disc. If the disc is dirty, wipe it off with a soft dry cloth.
- Do not use benzene, thinner, water, record spray, electrostatic-proof chemicals, or silicone-treated cloths to clean discs.
- Always handle discs carefully to prevent damaging the surface; in particular when removing a disc from its case or returning it.
- Do not bend the disc.
- Do not apply heat.
- Do not enlarge the hole in the center of the disc.
- Do not write on the label (printed side) with a hard-tipped implement such as a pencil or ball point pen.
- Condensation will form if a disc is brought into a warm area from a colder one, such as outdoors in winter. Do not attempt to dry the disc with a hair dryer, etc.

#### 2. Precaution on storage

- After playing a disc, always unload it from the player.
- Always store the disc in the jewel case to protect from dirt or damage.
- Do not place discs in the following areas:
  - 1) Areas exposed to direct sunlight for a considerable time.
  - 2) Areas subject to accumulation of dust or high humidity.
  - 3) Areas affected by heat from indoor heaters, etc.

### 8 CLEANING THE OPTICAL PICK-UP LENS

Necessity of cleaning might be differed on location and frequency of use each player. It is recommend to clean the pick-up lens once a week. We recommend using DENON's AMC-22 PICK-UP LENS CLEANER.

## SEMICONDUCTORS

### GENERAL

<b>Type:</b>	Twin mechanism Compact Disc player with wired remote control.
<b>Disc type:</b>	Standard Compact Discs (12 cm and 8 cm)
<b>Dimensions:</b>	Player unit; 482(W)×88(H)×252(D)mm Remote control unit; 482(W)×88(H)×80(D)mm
<b>Installation:</b>	19-inch rack mountable Player unit; 2U Remote control unit; 2U
<b>Weight:</b>	Player unit; 5.5 kg Remote control unit; 1.5 kg
<b>Power supply:</b>	120 V AC ±10%, 60 Hz (for U.S.A. & Canada models) 230 V AC ±10%, 50/60 Hz (for European & U.K. model) 120/230 V AC ±10%, 50/60 Hz (for multi voltage version)
<b>Power consumption:</b>	25 W
<b>Environment:</b>	Temperature; 5 to 35°C Humidity; 25 to 85% (without condensation) Storage Temperature; -20 to 60°C
<b>Standard accessories:</b>	Pin-connected cord; L/R 2 pairs Remote connecting cable (3 m); 1 pc.

### AUDIO SECTION

<b>Quantization:</b>	18-bit linear/channel
<b>Sampling frequency:</b>	44.1 kHz
<b>Oversampling rate:</b>	8 times
<b>Frequency response:</b>	20 to 20,000 Hz
<b>Total harmonic distortion:</b>	0.006 %
<b>Signal-to-noise ratio:</b>	98 dB
<b>Dynamic range:</b>	98 dB
<b>Channel separation:</b>	96 dB
<b>Output level:</b>	2.0 V
<b>Load impedance:</b>	10 kΩ /kohms or more

### FUNCTIONS

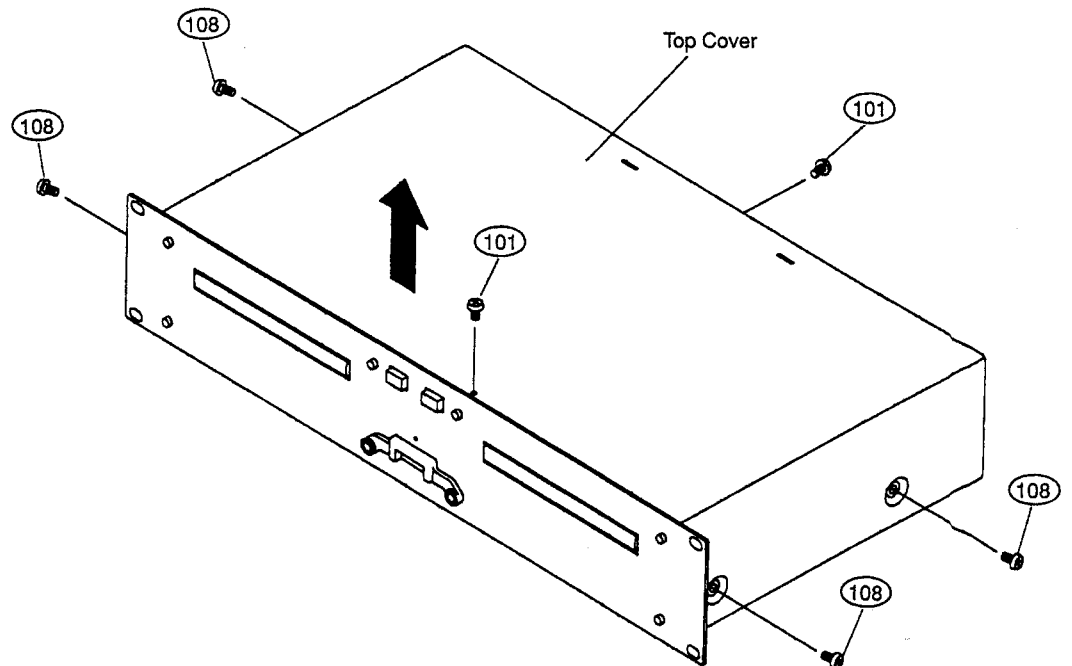
<b>Track selection:</b>	1 to 99 tracks
<b>Fast search:</b>	1 frame step and continuous search
<b>Automatic cueing:</b>	Beginning of music Back cueing to cued point
<b>Instant start:</b>	Within 0.01 sec.
<b>Variable pitch:</b>	±8% Slider with resume switch
<b>Pitch bend:</b>	±13% max.
<b>Display:</b>	Track number, Remaining time or Elapsed time in Min. Sec. and Frame Pitch %, Single or Continuous playback mode

\* Specifications and design are subject to change without notice for purpose of improvement.

## DISASSEMBLY

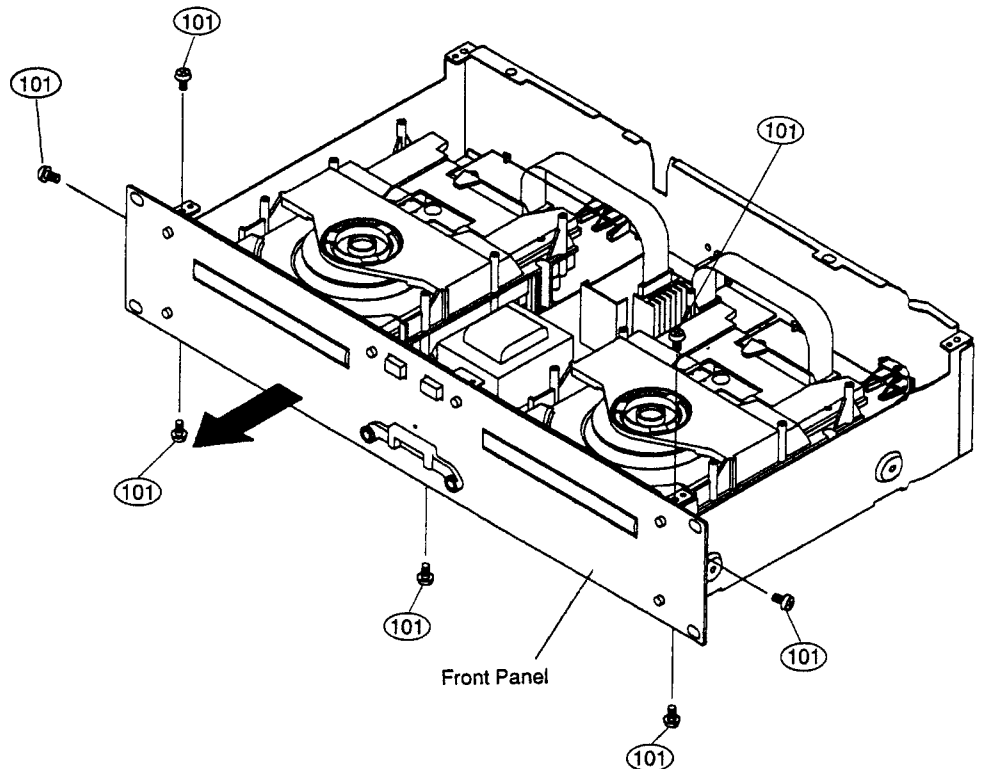
### ● TOP COVER

1. Remove 4 screws 108 on both sides, and 2 screws (101).
2. Pull up Top Cover.



### ● Front Panel

1. Remove 2 upper screws (101) and 3 lower screws (101), and 2 screws (101) on both sides.
2. Detach Front Panel.



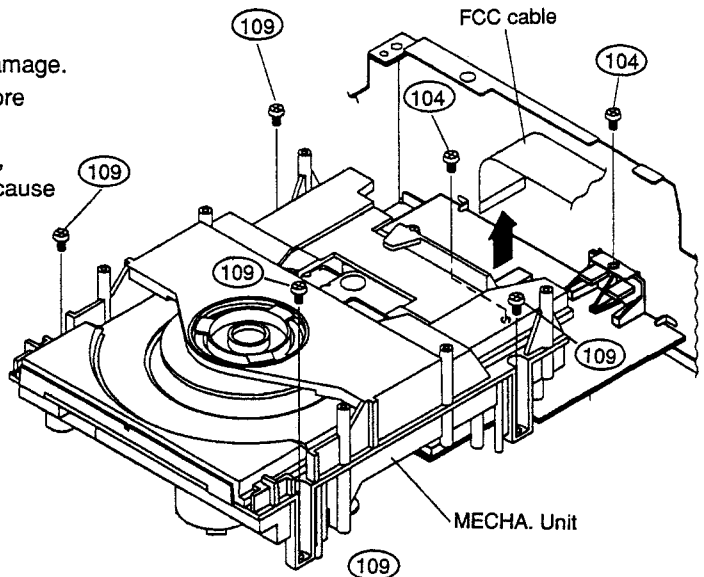
● MECHANISM UNIT

1. Disconnect FCC cable.
2. Remove 4 screws (109) and 2 screws (104).

Note : ● Do not pull out aslant to prevent FCC cable damage.

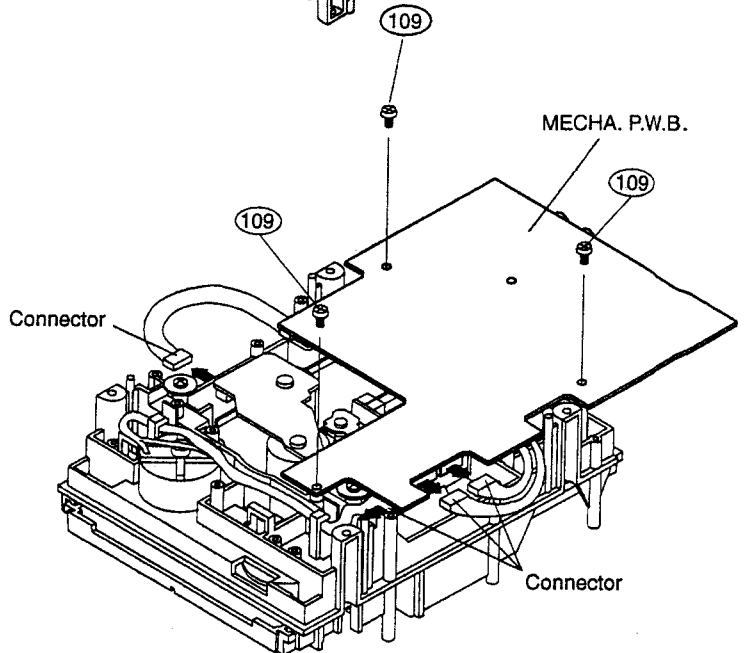
- Do not fail to pull AC cord from wall outlet before disconnect the FCC cable .

If AC cord is remained plugged into wall outlet, power is kept supplied in the unit, which may cause danger.



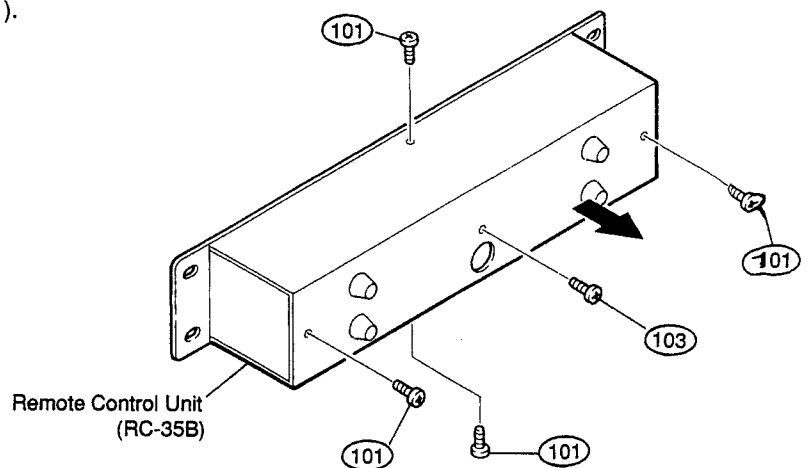
● MECHA. PWB

1. Remove 3 screws (109).
2. Disconnect Connector.
3. Detach MECHA. PWB.



● COVER (REMOTE CONTROL UNIT)

1. Remove 5 screws (1 103 and 4 101).



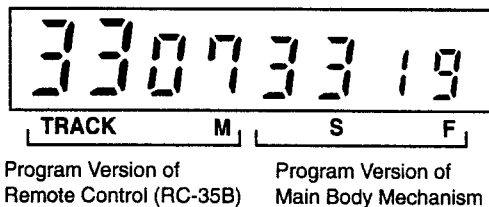
# CONFIRMING THE SERVO

## Required Measuring Implement

1. Dual trace oscilloscope
2. Reference disc (CA1094)

### 1. Actuating the Service Program and Servo Confirming Method

1. Turn the power switch off.
2. While simultaneously pushing the center blue buttons (1,2) of remote control (RC-35B), turn the power on.
3. Displayed indication on the remote control (RC-35B) is version number of microcomputer program.  
4 figures on the left are program version of remote control, and 4 figures on the right are program version of main body mechanism.



4. Press TRACK button once. Display shows "01" and each pressing of PLAY button opens or closes the tray.
5. As the tray opens, set the adjustment disc (CA-1094).
6. Press TRACK button ("02" is displayed), also, press PLAY button.  
Tracking error signal can be observed with the connection below. (Fig1)
7. Press TRACK button ("03" is displayed), also, press PLAY button.  
HF signal can be observed with the connection below. (Fig2)
8. Press TRACK button ("04" is displayed), also, press PLAY button.  
By pressing SEARCH button servo automatic adjustment value can be called. (Ref. Table below)

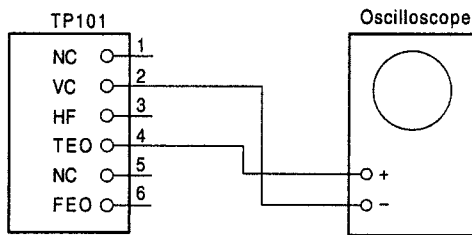


Fig1

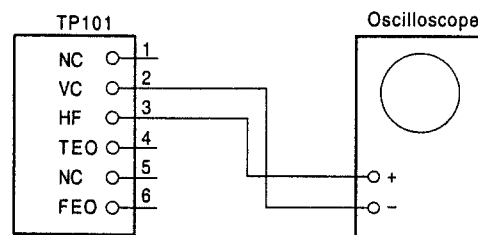


Fig2

TRACK Portion Indication	Adjustment Item	Adjustment Value indication at M and S portions.	Adjustment Item No. indication at F portion.
04	Error Code	--	00
	Focus Gain (FG)	57 ~ 285	01
	Focus Balance (FBAL)	-100 ~ 100	02
	Focus Offset (FOFS)	-35 ~ 35	03
	Tracking Gain (TG)	45 ~ 450	04
	Tracking Balance (TBAL)	-110 ~ 80	05
	Tracking Offset (TOFS)	-15 ~ 15	06

\* When adjustment range exceeds, replace pick-up.

## 2. What is Service Program

Service program is a special program intended for confirming servo.

## 3. Contents of Service Program.

After actuating the service program, select an aiming process number with the TRACK (◀▶) buttons, TIME button, and PITCH button, and push the PLAY button to execute processing, The process number is then displayed on the TRACK indication portion.

TRACK BUTTONS	Work No. (TRACK Indication)	Function	Contents
◀▶	01	OPEN/CLOSE	Performs OPEN/CLOSE each time the PLAY button is pushed.
	02	Tracking Error	Checks tracking error signal.
	03	HF Signal	Checks HF signal.
	04	Automatic Adjustment call	Push tray to open automatically, press SEARCH button to call servo adjustment value.
	05	Cleaning of Pick-up Lens	Tray open and pick-up, moves out of mechanism and cleaning the lens.
	06	Focus Gain Changing	Select Gain with SEARCH (◀▶) button. When operating SEARCH (◀▶) button, minute and second indicator are blinked. Press [PLAY] or [CUE] button, the display lights that will be newly memory in EEPROM. When select data becomes big or small, the Gain is up or down. In normally, do not change the data that is setted by 750.0.
	07	Tracking Gain Changing	Select Gain with SEARCH (◀▶) button. When operating SEARCH (◀▶) button, minute and second indicator are blinked. Press [PLAY] or [CUE] button, the display lights that will be newly memory in EEPROM. When select data becomes big or small, the Gain is up or down. In normally, do not change the data that is setted by 1000.0. When sound out is occured by oscillation, please raise gain. But there is sound out easily by defective disc.
TIME	0A	CHUCKING Test	Repeats OPEN/CLOSE of tray, servo ON, and TOC read.
PITCH	0B	Heat Run (No Skip Check)	Repeats OPEN/CLOSE of tray, repeats playing the first and the last programs of music on the disc. When an error occurs, displays error code and stops.

### Error Code Table (Appears only at Heat Run functon)

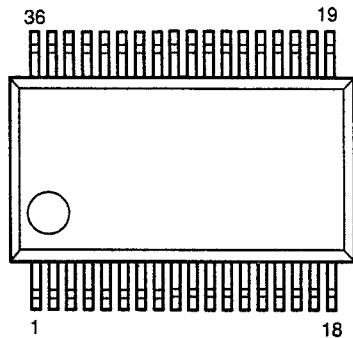
Error Code at TRACK portion	Contents No. at M portion	Contents
E1	00	Automatic Adjustment Error
	01	Unable to detect disc
	02	Unable to adjust tracking offset
	03	Unable to adjust focus offset
	04	Unable to adjust focus fine gain
	05	Unable to actuate focus
	06	Unable to actuate tracking
	07	Unable to adjust tracking fine gain
E2	00	Servo down during playback
	01	Not read subcode
E3		Unable to read TOC
E4		Loader error
E5		Slide error

Detailed error can be displayed by pushing TRACK button ◀▶ when error occurs.

LCD Error indication			
TR	MIN	SEC	FRAM
Error Code	Contents No.	Accumulated number of open/close function of the tray prior to Error occurs.	
Indication state when error occurs			
01	FG data	01	
02	FBAL data	02	
03	FOFS data	03	
04	TG data	04	
05	TBAL data	05	
06	TOFS data	06	

## IC TERMINAL FUNCTION LIST

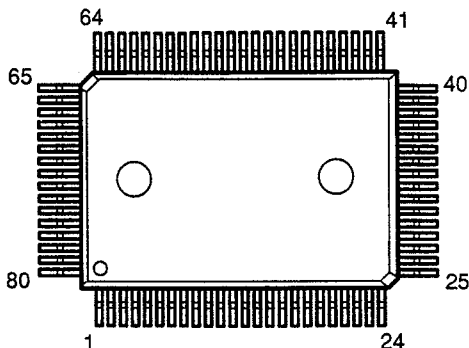
### AN8805S (IC102) (Mecha unit)



### AN8805S Terminal Function

Pin No.	Symbol	I/O	Function
1	PD	I	Inputs PD signal for output monitor of LD.
2	LD	O	Connet to external transistor's base for LD drive.
3	LDON	I	Shifts LD APC ON/OFF.
4	C.CRS	—	Capacitor connecting terminal for CROSS.
5	VCC	—	Power supply connecting terminal.
6	RF-	I	RF AMP reversal input terminal. Connect a resistor.
7	RFOUT	O	RF AMP output terminal (reversal AMP).
8	RFIN	I	Input terminal of RF AGC.
9	C. AGC	—	Capacitor connecting terminal for RF AGC loop filter.
10	ARF	O	RF output terminal of after AGC.
11	C. ENV	—	Capacitor connecting terminal for RF.
12	C. EA	—	Capacitor connecting terminal for AMP.
13	C. SBDO	—	Capacitor connecting terminal for low speed detection of dark level DO detection.
14	BDO	O	BDO detection output terminal. Positive logic.
15	C. SBRT	—	Capacitor connecting terminal for low speed detection of OFTR detection.
16	OFTR	O	Output terminal of OFF TRACK detection. Positive logic.
17	NRFDET	O	Output terminal of RF signal amplitude detection. Negative logic.
18	GND	—	GND.
19	ENV	O	ENV output terminal.
20	VREF	O	VCC x 0.5(V) output terminal.
21	LD OFF	I	Input terminal of LD APC forcible stop.
22	VDET	O	Output terminal of vibration detection.
23	TEBPF	I	Input terminal of vibration detection.
24	CROSS	O	Output terminal of TE CROSS detection signal.
25	TEOUT	O	Output terminal of TEAMP.
26	TE-	I	TEAMP reversal input terminal. Connect a resistor.
27	FEOUT	O	Output terminal of FEAMP.
28	FE-	I	FEAMP reversal input terminal. Connect a resistor.
29	FBAL	I	Control signal input terminal of FO balance adjustment.
30	TBAL	I	Control signal input terminal of TE balance adjustment.
31	PDFR	—	Resistor connecting terminal for setting IV converting resistance value of PDE.
32	PDER	—	Resistor connecting terminal for setting IV converting resistance value of PDF.
33	PDE	I	Connect to PIN diode E.
34	PDF	I	Connect to PIN diode F.
35	PDBD	I	Connect to B,D of astigmatism 1/4 divided PD.
36	PDAC	I	Connect to A,C of astigmatism 1/4 divided PD.

**μPD6382GF (Mecha unit)  
(IC301)**



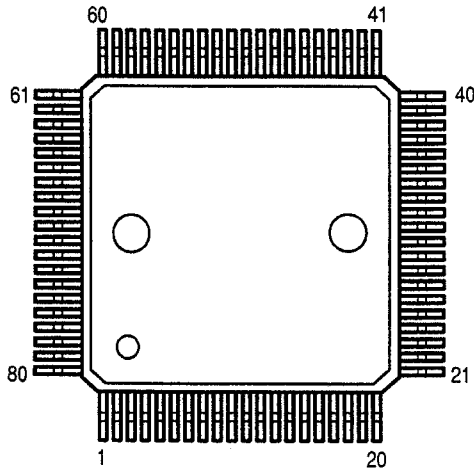
**μPD6382GF Terminal Function**

Pin No.	Symbol	I/O	Function
1	DRDY	O	Receives READY signal from microcomputer. Normally "H".
2	FSMASK	I	LRCK mask signal (fixed to "L").
3	SEL	I	Clock input for selection(fixed to "H").
4	—	I	Not used.
5	XO	O	X'tal osc. circuit output.
6	XI	I	X'tal osc. circuit input.
7	GND	—	GND (0V).
8	XFSO	O	Clock output. Not used.
9	—	—	NC.
10	LRCKO	O	LR 44.1kHz clock output.
11	WCLKO	O	Word 88, 2kHz clock output. Not used.
12	BCLKO	O	Bit 2.1MHz clock output.
13	BRAK-	O	Break confirming output signal (fixed to "H").
14	GND	—	GND (0V).
15	BRRQ-	I	Break request input signal (fixed to "H").
16	FSRST-	I	Program reverse reset input signal (fixed to "H").
17	RST2-	I	Soft reset. Normally "H".
18	RST-	I	Hard reset. Normally "H".
19	A0	O	External RAM address 0.
20	A1	O	External RAM address 1.
21	A2	O	External RAM address 2.
22	A3	O	External RAM address 3.
23	A4	O	External RAM address 4.
24	A5	O	External RAM address 5.
25	A6	O	External RAM address 6.
26	A7	O	External RAM address 7.
27	A8	O	External RAM address 8.
28	A9	O	External RAM address 9. Not used.
29	A10	O	External RAM address 10. Not used.
30	A11	O	External RAM address 11. Not used.



Pin No.	Symbol	I/O	Function
31	A12	O	External RAM address 12. Not used.
32	A13	O	External RAM address 13. Not used.
33	VDD	—	Power supply (+5V).
34	A14	O	External RAM address 14. Not used.
35	A15	O	External RAM address 15. Not used.
36	A16	O	External RAM address 16. Not used.
37	RAS-	O	External RAM row address strobe signal.
38	CAS-	O	External RAM column address strobe signal.
39	WE-	O	External RAM writing.
40	I01	I/O	External RAM data 1.
41	I02	I/O	External RAM data 2.
42	I03	I/O	External RAM data 3.
43	I04	I/O	External RAM data 4.
44	I05	I/O	External RAM data 5. Not used.
45	I06	I/O	External RAM data 6. Not used.
46	I07	I/O	External RAM data 7. Not used.
47	I08	I/O	External RAM data 8. Not used.
48	I09	I/O	External RAM data 9. Not used.
49	I010	I/O	External RAM data 10. Not used.
50	I011	I/O	External RAM data 11. Not used.
51	I012	I/O	External RAM data 12. Not used.
52	I013	I/O	External RAM data 13. Not used.
53	I014	I/O	External RAM data 14. Not used.
54	I015	I/O	External RAM data 15. Not used.
55	I016	I/O	External RAM data 16. Not used.
56	GND	—	GND (0V).
57	MD0	I	Mode selection (fixed to "L").
58	MD1	I	Mode selection (fixed to "L").
59	MD2	I	Mode selection (fixed to "L").
60	BCLK1	I	Bit 2.18MHz clock input.
61	LRCK1	I	LR 44.1MHz clock input.
62	BCLK2	I	Not used (fixed to "L").
63	LRCK2	I	Not used (fixed to "L").
64	DI1	I	Data input.
65	DO1	O	Data output.
66	DI2	I	Not used (fixed to "L").
67	DO2	O	Not used.
68	DO3	O	Not used.
69	DORQ-	I	Not used (fixed to "H").
70	GF-	O	G flag output signal. Normally "H".
71	OVF-	O	Over flag output signal. Normally "H".
72	VDD	—	Power supply (+5V).
73	TEST0	I	Fixed to "H".
74	TEST1	I	Fixed to "H".
75	SETRDY	O	Not used.
76	SO	O	Serial data output.
77	SCK-	I	Serial data clock input/output.
78	SI	I	Serial data input.
79	C-/D	I	Control/data designate shifting. "L" at control; "H" at data.
80	CS-	I	Input for chip selection.

**MN662720 (Mecha unit)  
(IC101)**

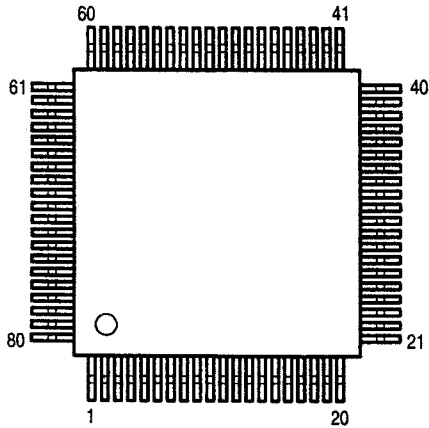


**MN662720 Terminal Function**

Pin No.	Symbol	I/O	Function
1	BCLK	O	Bit clock output for SRDATA.
2	LRCK	O	L,R discrimination signal output.
3	SRDATA	O	Serial data output.
4	DVDD1	I	Power supply for digital circuit.
5	DVSS1	I	GND for digital circuit.
6	TX	O	Digital audio interface output signal.
7	MCLK	I	Microcomputer command clock signal input (latches data at rising edge).
8	MDATA	I	Microcomputer command data input.
9	MLD	I	Microcomputer command load signal input. ("L": load)
10	SENSE	O	Sens signal output (OFT, FESL, NACEND, NAJEND, POSAD, SFG).
11	FLOCK	O	Focus servo draw in signal ("L": draw in state).
12	TLOCK	O	Tracking servo draw in signal ("L": draw in state).
13	BLKCK	O	Subcode block clock signal (fGLKCK=75Hz).
14	SQCK	I	External clock input for subcode Q register.
15	SUBQ	O	Subcode Q code output.
16	DMUTE	I	Muting input ("H": mute).
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK).
18	RST	I	Reset input ("L": reset).
19	SMCK	O	8.4672MHz clock signal output at MSEL="H". 4.2336MHz clock signal output at MSEL="L".
20	PMCK	O	88.2kHz clock output.
21	TRV	O	Traverse forcible sending output.
22	TVD	O	Traverse drive output.
23	PC	O	Spindle motor ON signal ("L": ON).
24	ECM	O	Spindle motor drive signal (forcible mode output). 3-state.
25	ECS	O	Spindle motor drive signal (servo error signal output).
26	KICK	O	Kick pulse output.
27	TRD	O	Tracking drive output.
28	FOD	O	Focus drive output.
29	VREF	I	Reference voltage for DA output portion (TVD,BCS,TRD,FOD,FBAL,TBAL).
30	FBAL	O	Focus balance adjusting output.

Pin No.	Symbol	I/O	Function
31	TBAL	O	Tracking balance adjusting output.
32	FE	I	Focus error signal input (analog input).
33	TE	I	Tracking error signal input (analog input).
34	RFENV	I	RF envelope signal input (analog input).
35	VDET	I	Vibration detecting signal input ("H": detect).
36	OFT	I	Off track signal input ("H": off track).
37	TRCRS	I	Track cross signal input.
38	RFDET	I	RF detecting signal input ("L": detect).
39	BDO	I	Drop out signal input ("H": drop out).
40	LDON	O	Laser ON signal output ("H": ON).
41	TES	O	Tracking error shunt signal output ("H": shunt).
42	PLAY	O	Play signal output ("H": play).
43	WVEL	O	Double speed status signal output.
44	ARF	I	RF signal input.
45	IREF	I	Reference current input terminal.
46	DRF	I	Bias terminal for DSL.
47	DSLFB	I/O	Loop filter terminal for DSL.
48	PLLF	I/O	Loop filter terminal for PLL.
49	VCOF	I/O	Loop filter terminal for VCO.
50	AVDD2	I	Power supply for analog circuit (for DSL, PLL, DA output sections).
51	AVSS2	I	GND for analog circuit (for DSL, PLL, DA output sections).
52	EFM	O	EFM signal output.
53	PCK	O	PLL extract clock output (fPCK=4.321MHz).
54	PDO	O	Phase comparing signal output of EFM signal and PCK signal.
55	SUBC	O	Subcode serial output data output.
56	SBCK	I	Clock input for subcode serial output.
57	VSS	I	GND for osc. circuit.
58	X1	I	X'tal osc. circuit input terminal. f=16.9344MHz or 33.8688MHz.
59	X2	O	X'tal osc. circuit output terminal (use 33.8688MHz at double speed PB).
60	VDD	I	Power supply for osc. circuit.
61	BYTCK	O	Byte clock output.
62	CLDCK	O	Subcode frame clock signal output (fCLDCK=7.35kHz).
63	FCLK	O	X'tal frame clock output (fFCLK=7.35kHz).
64	IPFLAG	O	Interpolation flag output ("H": interpolation).
65	FLAG	O	Flag output.
66	CLVS	O	Spindle servo phase sync state signal output ("H":CLV, "L":rough servo).
67	CRC	O	Subcode CRC check result output ("H":OK, "L":NG).
68	DEMPH	O	Deemphasis detecting signal output ("H":ON).
69	RESY	O	Flag 6 output at SSEL:"H"(RAM address reset generating signal by Jitter margin over of CLV servo. "L":address reset generate) . RESY output at SSBL:"L"(Re-sync signal output of frame sync. "H": sync, "L":out sync).
70	NC1	NC	No connection terminal (not connected internally).
71	TEST	I	Test terminal (normally "H").
72	AVDD1	I	Power supply for digital circuit.
73	NC2	NC	No connection terminal(not connected internally).
74	AVSS1	I	GND for digital circuit.
75	NC3	NC	No connection terminal (not connected internally).
76	RSEL	I	RF signal polarity specify terminal (RSEL="H" at brightness level "H". RSEL="L" at brightness level "L").
77	CSEL	I	X'tal osc. frequency specify terminal, X'tal osc. freq. 33.8688MHz:CSEL"H", 16.9344MHz:CSEL"L".
78	PSEL	I	Test terminal (normally "L").
79	MSEL	I	SMCK terminal. Output frequency shifting terminal ("H":SMCK=8.4672MHz, "L":SMCK=4.2336MHz).
80	SSEL	I	Sub Q terminal. Output mode shifting terminal ("H":Q code buffer using mode).

**μPD78233GC-3B9 (Mecha unit)  
(IC201)**

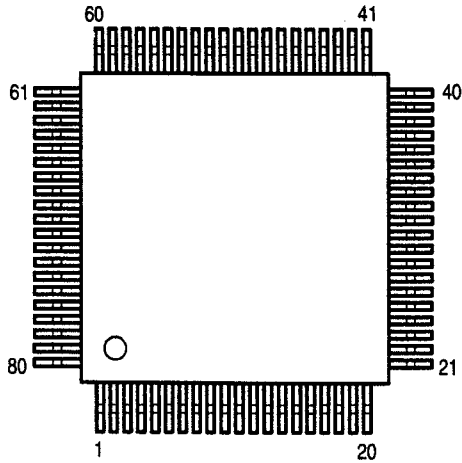


**μPD78233GC-3B9 Terminal Function**

Pin No.	Symbol	I/O	Function
1	SENCE	I	MN662720 servo state input signal.
2	/FLOCK	I	MN662720 focus search draw in signal.
3	/TLOCK	I	MN662720 tracking servo draw in signal.
4	SUBQ	I	MN662720 subcode Q code input.
5	STAT	I	MN662720 status signal.
6	CRC	I	MN662720 subcode CRC check result input.
7	! RESET	I	Reset signal input ("L": reset).
8	VDD	—	Power supply (+5V).
9	X2	O	System clock osc. circuit 2.
10	X1	I	System clock osc. circuit 1. X=12.0MHz.
11	VSS	I	GND(0V). Connect to ground.
12	MCLK	O	MN662720 and SM5840JS control data transfer clock.
13	MDATA	O	MN662720 and SM5840JS control data.
14	MLD	O	MN662720 control data latch pulse.
15	SQCK	O	MN662720 subcode Q register reading clock.
16	/RES	O	MN662720/AN8805SB/SM5804JS ICs reset signal.
17	/MLE	O	SM5804JA control data latch pulse.
18	AMUTE	O	Analog mute output ("H": mute ON).
19	LASER	O	Laser ON ("L": ON).
20	SO	O	uPD6381 command and data.
21	RST/2	O	uPD6381 IC reset signal.
22		O	Not used.
23		O	Not used.
24	! CS	O	uPD6381 chip enable signal.
25	C/! D	O	uPD6381 command/data shifting signal (command:"L", data:"H").
26	! SCK	O	uPD6381 command and data transfer clock.
27	SI	I	uPD6381 status input.
28	A15	O	Address bus 15.
29	A14	O	Address bus 14.
30	A13	O	Address bus 13.
31	A12	O	Address bus 12.

Pin No.	Symbol	I/O	Function
32	A11	O	Address bus 11.
33	A10	O	Address bus 10.
34	A9	O	Address bus 9.
35	A8	O	Address bus 8.
36	AD7	I/O	Address bus 7/data bus 7.
37	AD6	I/O	Address bus 6/data bus 6.
38	AD5	I/O	Address bus 5/data bus 5.
39	AD4	I/O	Address bus 4/data bus 4.
40	AD3	I/O	Address bus 3/data bus 3.
41	AD2	I/O	Address bus 2/data bus 2.
42	AD1	I/O	Address bus 1/data bus 1.
43	AD0	I/O	Address bus 0/data bus 0.
44	ASTB	O	Address strobe terminal ("L": address bus effective).
45	VSS	I	GND (0V). Connect to ground.
46	MODE	I	Memory read shifting terminal (use external ROM at "H", use mask ROM at "L").
47	OPEN	O	Loader OPEN switch signal.
48	CLOSE	O	Loader CLOSE switch signal.
49	LDOUT	I	Loader OPEN finish signal.
50	LDIN	I	Loader CLOSE finish signal.
51	TXDEN	O	M5M3045 IC enable signal.
52	CLVS	I	Spindle condition input.
53		I	Not used. Fixed to "L".
54		I	Not used. Fixed to "L".
55	VDD	—	Power supply (+5V).
56	STIN	I	RC-35B communication condition input signal.
57	CDSEL	I	ID number input.
58		I	Not used. Fixed to "L".
59		I	Not used. Fixed to "L".
60		I	Not used. Fixed to "L".
61		I	Not used. Fixed to "L".
62		I	Not used. Fixed to "L".
63		I	Not used. Fixed to "L".
64	AVDD	—	Power supply for A/D converter (+5V).
65	AVREF1	—	Reference voltage for A/D converter (+5V).
66	AVSS	—	GND for A/D converter ground (0V).
67	STOUT	O	RC-35B communication condition output signal.
68		O	Test point.
69	AVREF2		D/A converter reference voltage (+5V).
70	AVREF3		D/A converter reference voltage (0V).
71		I	Not used. Fixed to "L".
72	EJSW	I	EJECT key input.
73	INSW	I	Slide inner switch input.
74	BLKCK	I	Subcode block clock signal.
75	/RFDET	I	RF detection signal.
76	DEMPH	I	Deemphasis detection signal.
77		I	Not used. Fixed to "L".
78		I	Not used. Fixed to "L".
79	!RXD	I	Serial interface, data input.
80	!TXD	O	Serial interface, data transfer.

**μPD78233GC-3B9 (Remote control unit)  
(IC800)**

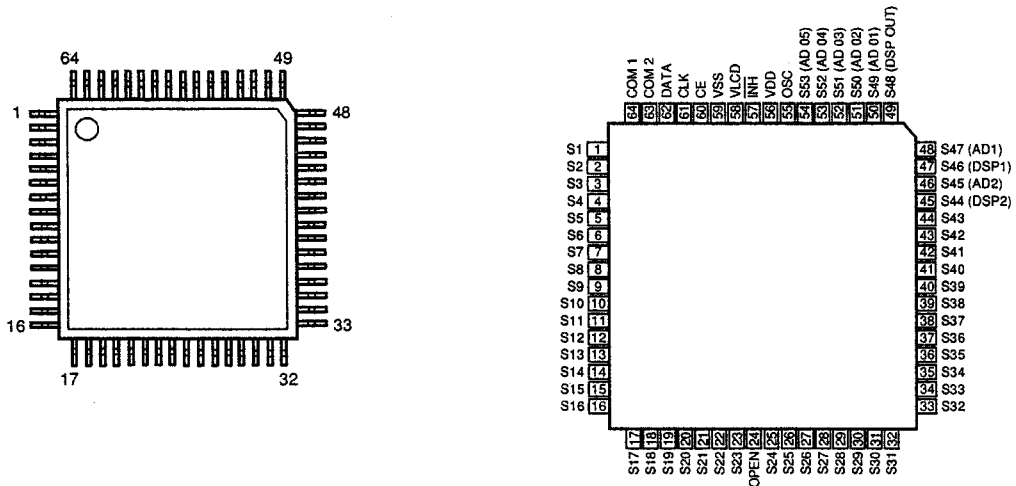


**μPD78233GC-3B9 Terminal Function**

Pin No.	Symbol	I/O	Function
1	CUEL1	O	CUE LED ON/OFF signal of CD-1 ("H": ON).
2	PLYL1	O	PLAY LED ON/OFF signal of CD-1 ("H": ON).
3	PITL1	O	PITCH LED ON/OFF signal of CD-1 ("H": ON).
4	PITL2	O	PITCH LED ON/OFF signal of CD-2 ("H": ON).
5	PLYL2	O	PLAY LED ON/OFF signal of CD-2 ("H": ON).
6	CUEL2	O	CUE LED ON/OFF signal of CD-2 ("H": ON).
7	! RESET	I	Reset signal input ("L": reset).
8	VDD	—	Power supply (+5V).
9	X2	O	System clock osc. circuit 2.
10	X1	I	System clock osc. circuit 1. X=12.0MHz.
11	VSS	I	GND (0V). Connect to ground.
12	LCE1	O	Chip enable signal of LCD driver for CD-1.
13	LCLK1	O	Command communication clock of LCD driver for CD-1.
14	LDAT1	O	Command data of LCD driver for CD-1.
15	LCE2	O	Chip select signal of LCD driver for CD-2.
16	LCLK2	O	Command communication clock of LCD driver for CD-2.
17	LDAT2	O	Command data of LCD driver for CD-2.
18	LSW1	O	LCD ON/OFF signal for CD-1.
19	LSW2	O	LCD ON/OFF signal for CD-2.
20		O	Test point.
21		O	Test point.
22	! WR	O	Not used.
23	! RD	O	Not used.
24		O	
25	KOUT2	O	Key matrix scan signal 2.
26	KOUT1	O	Key matrix scan signal 1.
27	KOUT0	O	Key matrix scan signal 0.
28	A15	O	Address bus 15.
29	A14	O	Address bus 14.
30	A13	O	Address bus 13.

Pin No.	Symbol	I/O	Function
31	A12	O	Address bus 12.
32	A11	O	Address bus 11.
33	A10	O	Address bus 10.
34	A9	O	Address bus 9.
35	A8	O	Address bus 8.
36	AD7	I/O	Address bus 7/data bus 7.
37	AD6	I/O	Address bus 6/data bus 6.
38	AD5	I/O	Address bus 5/data bus 5.
39	AD4	I/O	Address bus 4/data bus 4.
40	AD3	I/O	Address bus 3/data bus 3.
41	AD2	I/O	Address bus 2/data bus 2.
42	AD1	I/O	Address bus 1/data bus 1.
43	AD0	I/O	Address bus 0/data bus 0.
44	ASTB	O	Address strobe terminal ("L": address bus effective).
45	VSS	I	GND (0V). Connect to ground.
46	MODE	I	Memory read shifting terminal (use external ROM at "H", use mask ROM at "L").
47	SDA	I/O	Serial data in/out terminal for EEPROM write, read (input : at initial).
48	SCL	O	Clock output terminal for EEPROM write, read.
49		I	Not used. Fixed to "L".
50		I	Not used. Fixed to "L".
51		I	Not used. Fixed to "L".
52		I	Not used. Fixed to "L".
53		I	Not used. Fixed to "L".
54		I	Not used. Fixed to "L".
55	VDD	—	Power supply (+5V).
56	PIT1	I	CD-1 pitch volume input.
57	PIT2	I	CD-2 pitch volume input.
58	PITC1	I	CD-1 pitch volume center click input.
59	PITC2	I	CD-2 pitch volume center click input.
60		I	Not used. Fixed to "L".
61		I	Not used. Fixed to "L".
62		I	Not used. Fixed to "L".
63		I	Not used. Fixed to "L".
64	AVDD		Power supply for A/D converter (+5V).
65	AVREF1		Reference voltage for A/D converter (+5V).
66	AVSS		GND for A/D converter (0V).
67		O	Test point.
68		O	Test point.
69	AVREF2		D/A converter reference voltage (+5V).
70	AVREF3		D/D converter reference voltage (0V).
71	KIN10	I	CD-1 key data 0.
72	KIN11	I	CD-1 key data 1.
73	KIN12	I	CD-1 key data 2.
74	KIN13	I	CD-1 key data 3.
75	KIN20	I	CD-2 key data 0.
76	KIN21	I	CD-2 key data 1.
77	KIN22	I	CD-2 key data 2.
78	KIN23	I	CD-2 key data 3.
79	!RXD	I	Serial interface, data input.
80	!TXD	O	Serial interface, data transfer.

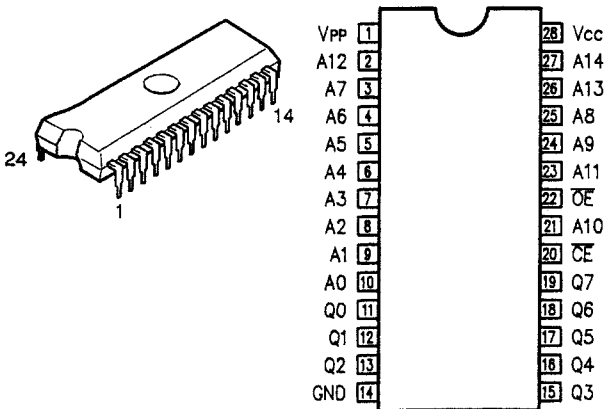
**LC7582 (IC802, 803) (Remote control unit)**



**LC7582 Terminal Function**

Pin No.	Symbol	I/O	Function
1 ~ 44	S1 ~ S43	O	Segment output terminal.
45	S44 (DSP2)	O	Segment output terminal or DSP input terminal.
46	S45 (AD2)	O	Segment output terminal or AD input terminal.
47	S46 (DSP1)	O	Segment output terminal or DSP input terminal.
48	S47 (AD1)	O	Segment output terminal or AD input terminal.
49	S48 (DSP OUT)	O	Segment output terminal or DSP output terminal.
50 ~ 54	S49 ~ S53 (AD01 ~ 5)	O	Segment output terminal or AD output terminal.
55	OSC	—	Oscillator terminal.
56	VDD	—	Power Supply.
57	INH	I	Input terminal for unlighting indication. (Effective only for output driver: transfer of serial data during unit is feasible.)
58	VLCD	—	LCD bias voltage setting terminal.
59	VSS	—	Power Supply.
60	CE	I	Input terminal for panel data transfer enable.
61	CLK	I	Input terminal for panel data transfer clock.
62	DATA	I	Input terminal for panel data.
63	COM2	I	Common output terminal.
64	COM1	I	Common output terminal.

**MX27C256 (IC805) (Remote Control Unit)**



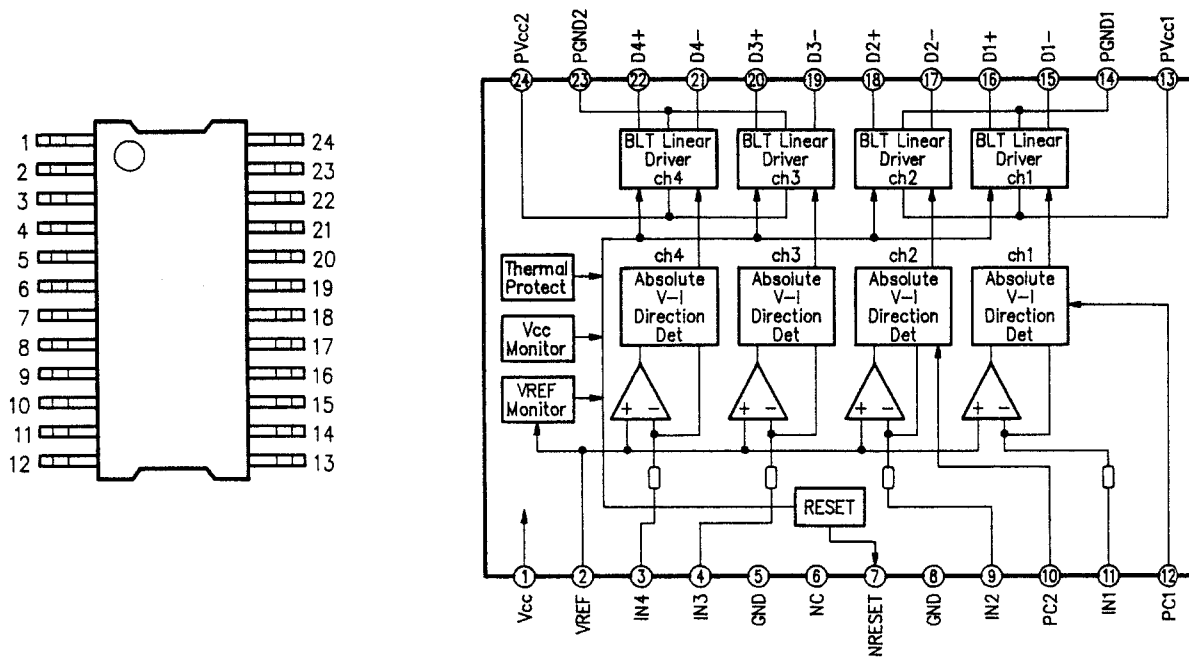
**MX27C256 Terminal Function**

Pin No.	Symbol	I/O	Function
1	VPP	—	Write power supply voltage.
2	A12	I	Address input 12.
3	A7	I	Address input 7.
4	A6	I	Address input 6.
5	A5	I	Address input 5.
6	A4	I	Address input 4.
7	A3	I	Address input 3.
8	A2	I	Address input 2.
9	A1	I	Address input 1.
10	A0	I	Address input 0.
11	Q0	I/O	Data input/output 0.
12	Q1	I/O	Data input/output 1.
13	Q2	I/O	Data input/output 2.
14	GND	—	GND.

Pin No.	Symbol	I/O	Function
15	Q3	I/O	Data input/output 3.
16	Q4	I/O	Data input/output 4.
17	Q5	I/O	Data input/output 5.
18	Q6	I/O	Data input/output 6.
19	Q7	I/O	Data input/output 7.
20	CE	I	Chip enable input.
21	A10	I	Address input 0.
22	OE	I	Output enable input.
23	A11	I	Address input 1.
24	A9	I	Address input 1.
25	A8	I	Address input 1.
26	A13	I	Address input 3.
27	A14	I	Address input 4.
28	VCC	—	Power supply (+5V).



AN8389 (IC103) (Mecha unit)



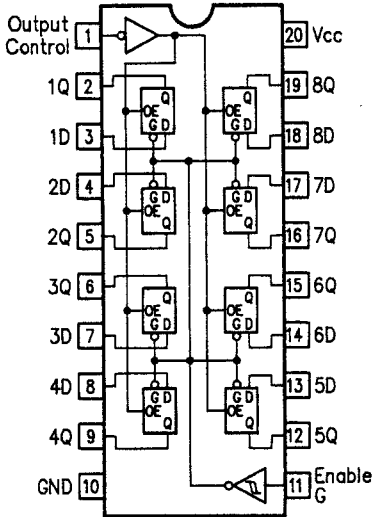
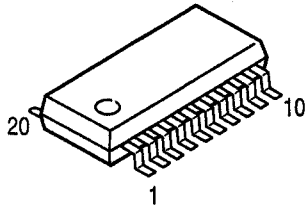
AN8389 Terminal Function

Pin No.	Symbol	I/O	Symbol
1	ACC	—	Power supply.
2	VREF	I	VREF input terminal.
3	IN4	I	Motor driver 4 input terminal.
4	IN3	I	Motor driver 3 input terminal.
5	GND	—	GND.
6	NC	—	
7	NRESET	O	Reset output terminal.
8	GND	—	GND.
9	IN2	I	Motor driver 2 input terminal.
10	PC2	I	PC2 (power cut) input terminal.
11	IN1	I	Motor driver 1 input terminal.
12	PC1	I	PC1 (power cut) input terminal.
13	PVCC1	—	Power supply terminal1 for driver.
14	PGND1	—	GND terminal1 for driver.
15	D1-	O	Motor driver 1 reversal output terminal.
16	D1+	O	Motor driver 1 obverse output terminal.
17	D2-	O	Motor driver 2 reversal output terminal.
18	D2+	O	Motor driver 2 obverse output terminal.
19	D3-	O	Motor driver 3 reversal output terminal.
20	D3+	O	Motor driver 3 obverse output terminal.
21	D4-	O	Motor driver 4 reversal output terminal.
22	D4+	O	Motor driver 4 obverse output terminal.
23	PGND2	—	GND terminal 2 for driver.
24	PVCC2	—	Power supply terminal2 for driver.

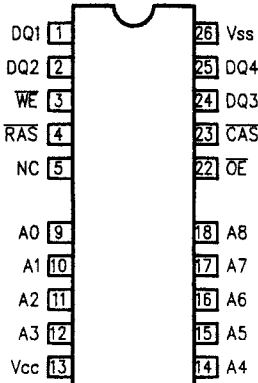
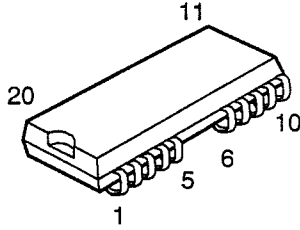
# SEMICONDUCTORS

## ● IC's

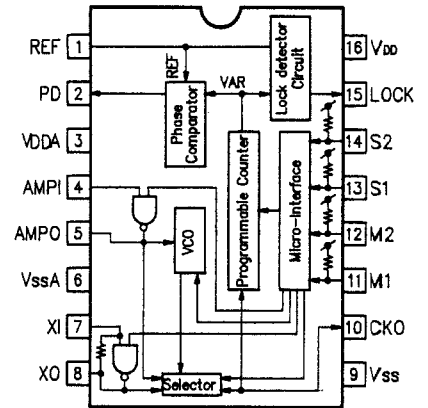
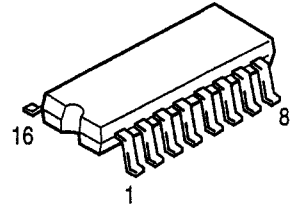
**HD74HC373FP(IC804)**  
(Remote control unit)



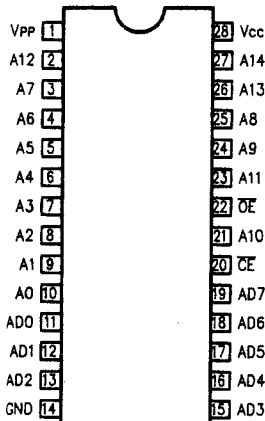
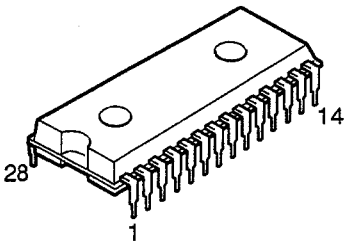
**MSM514256(IC302)**  
(Mecha unit)



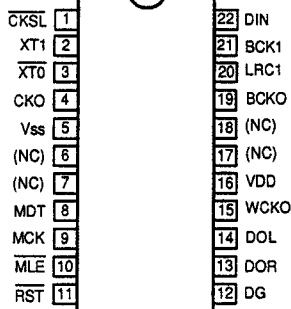
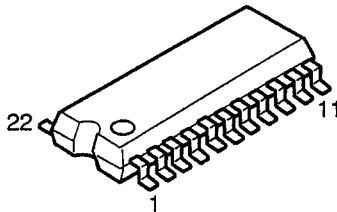
**TC9246F(IC404)**  
(Mecha unit)



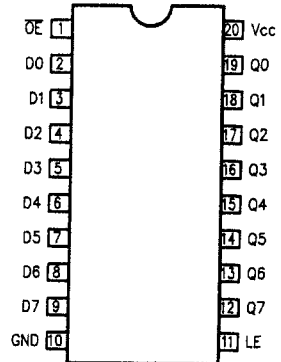
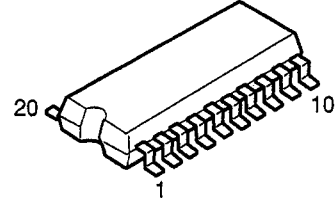
**TMS27C256(IC203)**  
(Mecha unit)



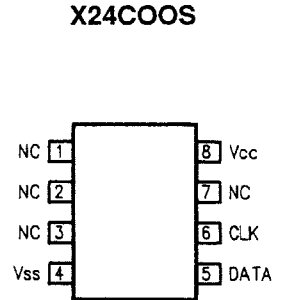
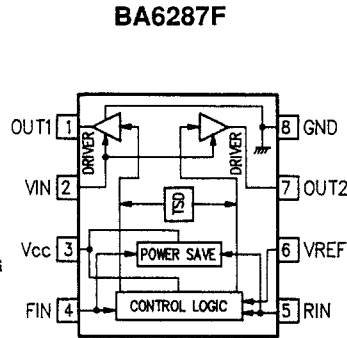
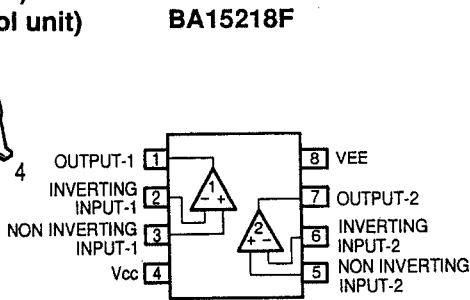
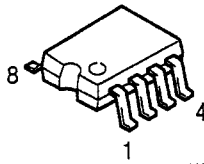
**SM5841BS(IC401)**  
(Mecha unit)



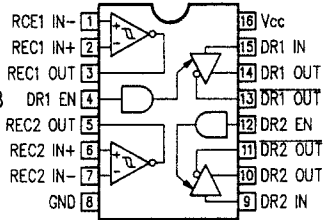
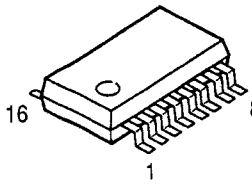
**TC74HC573AF(IC202)**  
(Mecha unit)



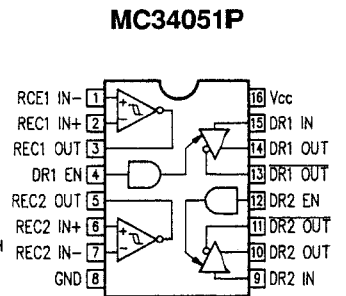
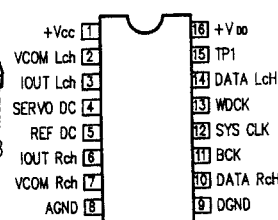
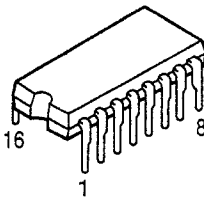
**BA6287F(IC104) (Mecha unit)**  
**BA15218F(IC403) (Mecha unit)**  
**X24COOS(IC810)**  
**(Remote control unit)**



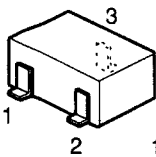
**MC34051M(IC801)**  
**(Remote control unit)**



**PCM69AP(IC402) (Mecha unit)**  
**MC34051P(IC706)**  
**(Main unit)**

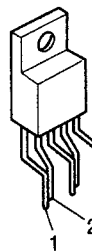


**MN1382-S**  
**(IC806)**  
**(Remote control unit)**



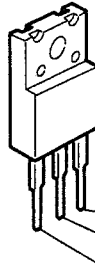
1: GND  
 2: VDD  
 3: OUT

**L780S05**  
**(IC702)**  
**(Main unit)**



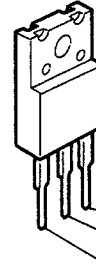
1. Vin  
 2. NC  
 3. GND  
 4. STB  
 5. Vout

**NJM78M05FA**  
**(IC701)**  
**(Main unit)**



1: Output  
 2: Common  
 3: Input

**NJM99M05FA**  
**(IC704)**  
**(Main unit)**



1: Output  
 2: Input  
 3: Common

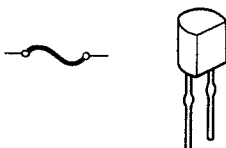
**PST529C**  
**(IC703)**  
**(Main unit)**



Vcc  
 GND  
 OUT

● IC PROTECTOR

**ICP-N38T(IC705)**  
**(Main unit)**



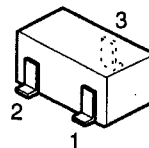
● TRANSISTORS

**2SA933(TR102)**  
**2SD2144(TR403,404)**

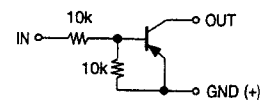


E C B

**DTA114EK(TR251)**  
**DTC114EK(TR252,800-805)**  
**810,830)**

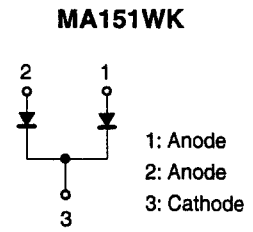
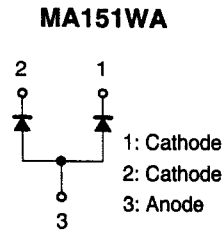
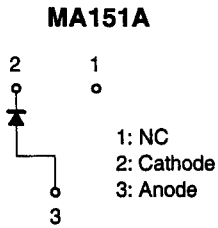
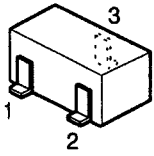


1: GND/Emitter  
 2: Input/Base  
 3: Output/Collector

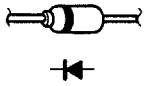


● DIODES

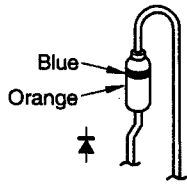
MA151A(D804~806, 816)  
 MA151WA(D802, 803)  
 MA151WK(D800, 801)



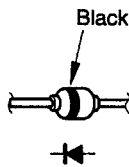
1SS270A  
 (D201, 708~716)



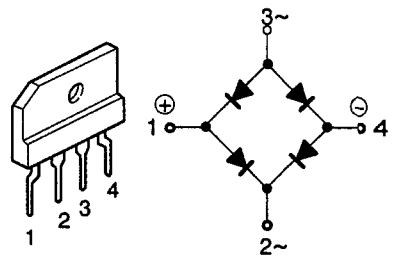
1SR35-200A  
 (D702~705, 751~756)



MTZJ4.7A(ZD101)

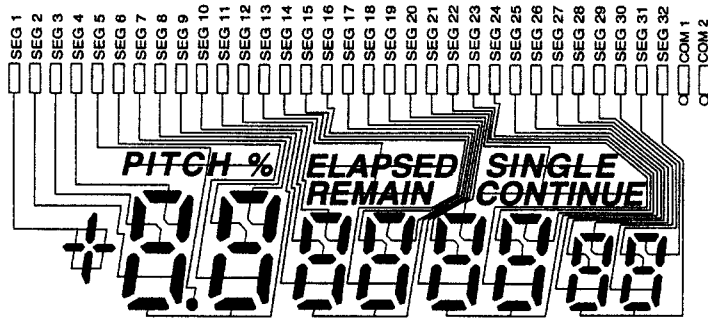


D4SBS6(D701)

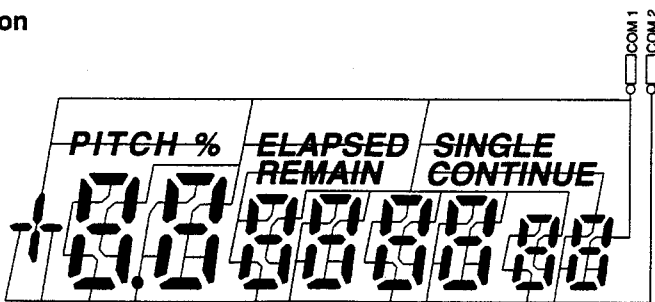


● LCD (LC)

Segment

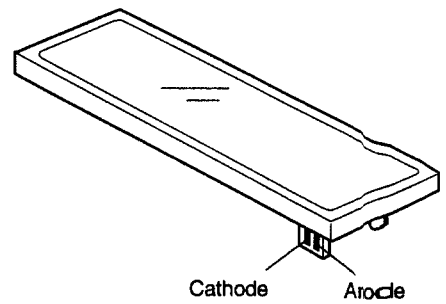


Common

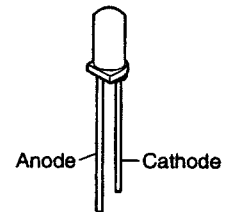


● LED

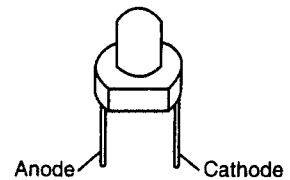
Back light(LE810,830)




SLR-325VC(Red) (LE701)



SLR-305VC(Red) (LE811, 831)  
 SLR-305MC(Green) (LE812, 813,  
 832, 833)



**NOTE FOR PARTS LIST**

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
  - When ordering of part, clearly indicate "1" and "1" (i) to avoid mis-supplying.
  - Ordering part without stating its part number can not be supplied.
  - Part indicated with the mark "★" is not illustrated in the exploded view.
  - Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
- WARNING:**  
Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

**● Resistors**

Ex.: **RN** **14K** **2E** **182** **G** **FR**

Type	Shape and performance	Power	Resistance	Allowable error	Others
RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type		
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type		
RS : Metal oxide film	2H : 1/2W	J : ±5%	NB : Non-burning type		
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor		
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming		
RK : Metal mixture	3F : 3W				
	3H : 5W				

- Resistance**
- 1 8 2 ⇒ 1800 ohm = 1.8 kohm  
Indicates number of zeros after effective number.  
2-digit effective number.
- Units: ohm
- 1 R 2 ⇒ 1.2 ohm  
1-digit effective number.  
2-digit effective number, decimal point indicated by R.
- Units: ohm

**● Capacitors**

Ex.: **CE** **04W** **1H** **2R2** **M** **BP**

Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others
CE : Aluminum foil electrolytic	0J : 6.3V	F : ±1%	HS : High stability type		
CA : Aluminum solid electrolytic	1A : 10V	G : ±2%	BP : Non-polar type		
CS : Tantalum electrolytic	1C : 16V	J : ±5%	HR : Ripple-resistant type		
CO : Film	1E : 25V	K : ±10%	DL : For charge and discharge		
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency		
CC : Ceramic	1H : 50V	Z : +80%	U : UL part		
CP : Oil	2A : 100V	-20%	C : CSA part		
CM : Mica	2B : 125V	P : +100%	W : UL-CSA type		
CF : Metallized	2C : 160V	-0%	F : Lead wire forming		
CH : Metallized	2D : 200V	C : ±0.25pF			
	2E : 250V	D : ±0.5pF			
	2H : 500V	= : Others			
	2J : 630V				

- Capacity (electrolyte only)**
- 2 2 2 ⇒ 2200µF  
Indicates number of zeros after effective number.  
2-digit effective number.
- Units: µF.
- 2 R 2 ⇒ 2.2µF  
1-digit effective number.  
2-digit effective number, decimal point indicated by R.
- Units: µF.
- Capacity (except electrolyte)**
- 2 2 2 ⇒ 2200pF = 0.0022µF  
(More than 2) — Indicates number of zeros after effective number.  
2-digit effective number.
- Units: µF.
- 2 2 1 ⇒ 220pF  
(0 or 1) — Indicates number of zeros after effective number.  
2-digit effective number.
- Units: pF.
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

**PRINTED WIRING BOARD PARTS LIST**  
GU-2842 MAIN P.W.B. UNIT ASS'Y

GU-2843 MECHA P.W.B. UNIT ASS'Y

Ref.No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC701	263 0800 005	IC NJM78M05FA(S)	
IC702	263 0695 003	IC L780S05	
IC703	263 0652 907	IC PST529C	
IC704	263 0501 003	IC NJM79M05FA	
IC705	268 0076 902	IC ICP-N38T	
IC706	263 1002 006	IC MC34051P	
D701	276 0641 008	Diode D4SBS6	
D702~705	276 0553 905	Diode 1SR35-200A	
D708~716	276 0432 903	Diode 1SS270A	
D751~756	276 0553 905	Diode 1SR35-200A	
<b>RESISTOR GROUP (not included carbon film ±5% 1/4w type)</b>			
<b>CAPACITORS GROUP</b>			
C199	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
C701	254 4255 720	Electrolytic 6800µF/16V	CE04W1C682MC
C702,703	254 4254 792	Electrolytic 2200µF/16V	CE04W1C222MC
C706	254 4254 941	Electrolytic 100µF/16V	CE04W1C101M
C708	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
C709	254 4254 954	Electrolytic 220µF/16V	CE04W1C221M
C751	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
C752	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C753	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
C754	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
C755	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
C756	254 4401 901	Electrolytic 10µF/16V	CE04W1C100M(KRE)
C757,758	253 9039 906	Ceramic 0.1µF/25V	CK45=1E104Z
<b>OTHER PARTS</b>			
CB701	205 0343 058	5P connector base (KR-PH)	
△CB702	205 0561 001	2P VH connector base	
CB703,704	205 0668 076	17P FFC connector base	
CB705	205 0877 003	8P MD base (F-S)	
△CN102	205 0825 000	3P AC connector base	Multi-voltage model only
△F100,101	202 0040 909	Fuse clip	
△F101	206 1039 018	Fuse 0.8A	U.S.A. and Canada models
△F101	206 1015 003	Fuse 0.5A	Multi-voltage model
△F101	206 1031 032	Fuse 0.18A	Europe and U.K. models

Ref.No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC101	262 2141 002	IC MN682720	
IC102	262 2142 904	IC AN8805S	
IC103	262 2143 903	IC AN8389	
IC104	263 0994 908	IC BA6287F	
IC201	262 2009 005	IC µPD78233GC-3B9	
IC202	262 1721 902	IC TC74HC573AF	
IC203	262 2157 009	IC MX27C256	
IC301	262 2153 003	IC µPD6382GF	
IC302	262 2173 902	IC MSM514256	
IC401	262 1765 900	IC SM5841BS	
IC402	262 2145 008	IC PCM69AP	
IC403	263 0615 902	IC BA15218F	
IC404	262 1883 905	IC TC9246F	
TR102	271 0183 927	Transistor 2SA933(R/S)	
TR251	269 0083 901	Transistor DTA114EK	Built in resistor
TR252	269 0082 902	Transistor DTC114EK	Built in resistor
TR403,404	274 0160 907	Transistor 2SD2144S	
D201	276 0432 903	Diode 1SS270A	
ZD101	276 0643 970	Zener diode MTZJ4.7A	
LE701	393 9543 907	LED SLR-325VC	Red
<b>RESISTOR GROUP (not included carbon film ±5% 1/4w type)</b>			
R101	247 0007 903	Chip 680ohm 1/10W	RM73B-681J
R102	247 0006 988	Chip 560ohm 1/10W	RM73B-561J
R103	247 0012 927	Chip 100kohm 1/10W	RM73B-104J
R104	247 0014 967	Chip 1Mohm 1/10W	RM73B-105J
R105	247 0012 927	Chip 100kohm 1/10W	RM73B-104J
R106	247 0012 943	Chip 120kohm 1/10W	RM73B-124J
R107	247 0008 986	Chip 3.9kohm 1/10W	RM73B-392J
R110	247 0013 900	Chip 220kohm 1/10W	RM73B-224J
R111	247 0011 928	Chip 39kohm 1/10W	RM73B-393J
R112	247 0010 987	Chip 27kohm 1/10W	RM73B-273J
R113	247 0011 986	Chip 68kohm 1/10W	RM73B-683J
R114,115	247 0013 942	Chip 330kohm 1/10W	RM73B-334J
R116	247 0012 901	Chip 82kohm 1/10W	RM73B-823J
R117	247 0010 945	Chip 18kohm 1/10W	RM73B-183J
R118	247 0011 960	Chip 56kohm 1/10W	RM73B-563J
R119	247 0008 944	Chip 2.7kohm 1/10W	RM73B-272J
R120	247 0012 998	Chip 200kohm 1/10W	RM73B-204J
R121	247 0009 901	Chip 4.7kohm 1/10W	RM73B-472J



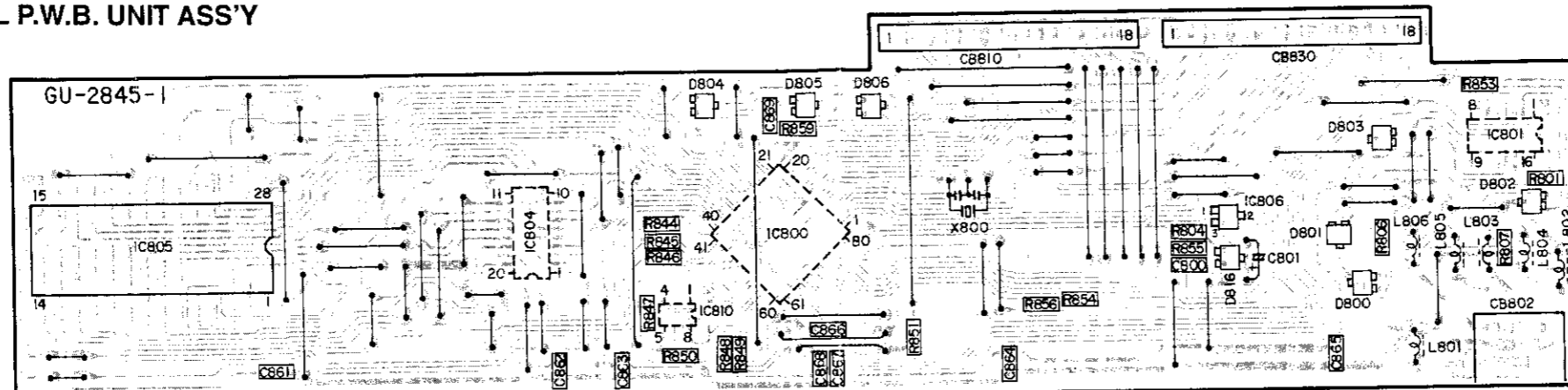
Ref.No.	Part No.	Part Name	Remarks
R850	247 0009 985	Chip 10kohm 1/10W	RM73B--103J
R853	247 0018 905	Chip 0ohm 1/10W	RM73B--0R0K
R855	247 0005 905	Chip 100ohm 1/10W	RM73B--101J
R860-866	247 0018 905	Chip 0ohm 1/10W	RM73B--0R0K
R863	247 0006 962	Chip 470ohm 1/10W	RM73B--471J
R872	247 0018 905	Chip 0ohm 1/10W	RM73B--0R0K
<b>CAPACITORS GROUP</b>			
C800	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C801	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C810,811	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C812	257 0006 969	Chip(Ceramic) 680pF/50V	CC73SL1H681J
C830	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C831	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C832	257 0006 969	Chip(Ceramic) 680pF/50V	CC73SL1H681J
C833	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C834	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C861-863	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
C864,865	257 0014 935	Chip(Ceramic) 0.1μF/25V	CK73F1E104Z
<b>OTHER PARTS</b>			
CB800,801	205 0708 020	18P connector socket	
CB802	205 0877 003	8P MD base (F-S)	
CB810	205 0707 021	18P connector base	
CB830	205 0707 021	18P connector base	
FB801-806	235 0049 900	Beads inductor	
LC810	393 6013 003	LCD	
LC830	393 6013 003	LCD	
SW811-824	212 4775 905	Tact switch	Long st
SW830,831	212 4775 905	Tact switch	Long st
SW834-841	212 4775 905	Tact switch	Long st
SW842,843	212 4775 905	Tact switch	Long st
X800	399 0038 901	Resonator	CST12.0MTW

PRINTED WIRING BOARD PATTERNS

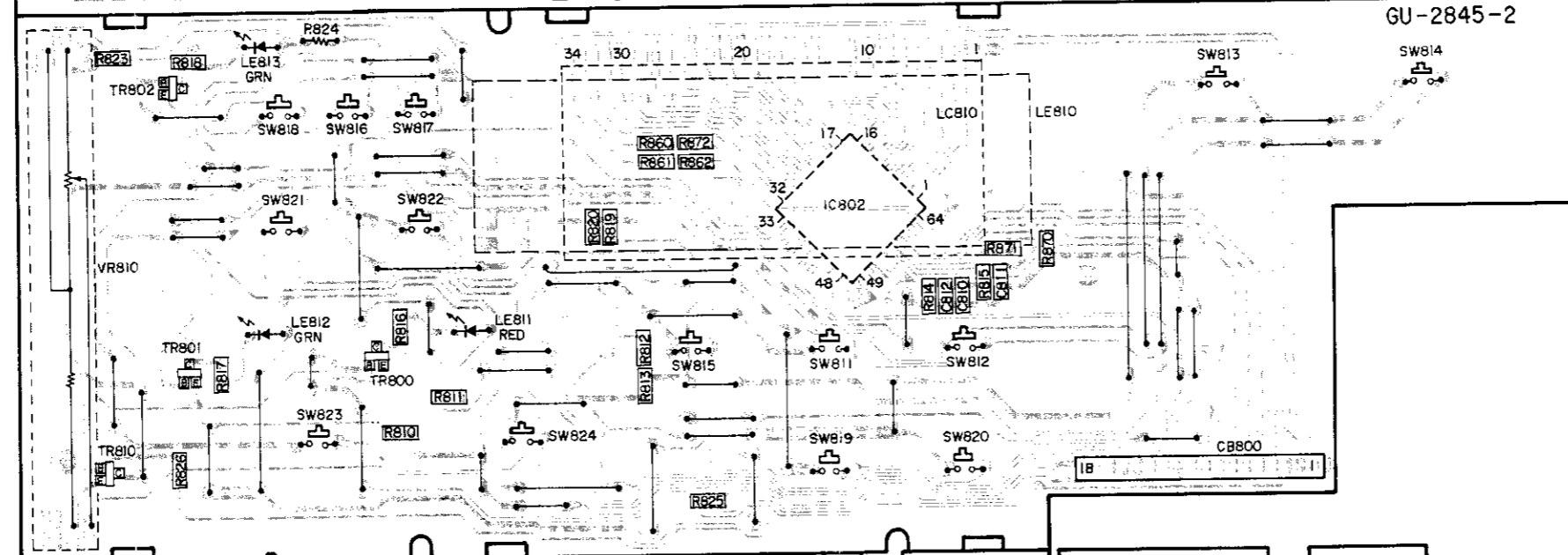
1 2 3 4 5 6 7 8

GU-2845 CONTROL P.W.B. UNIT ASS'Y

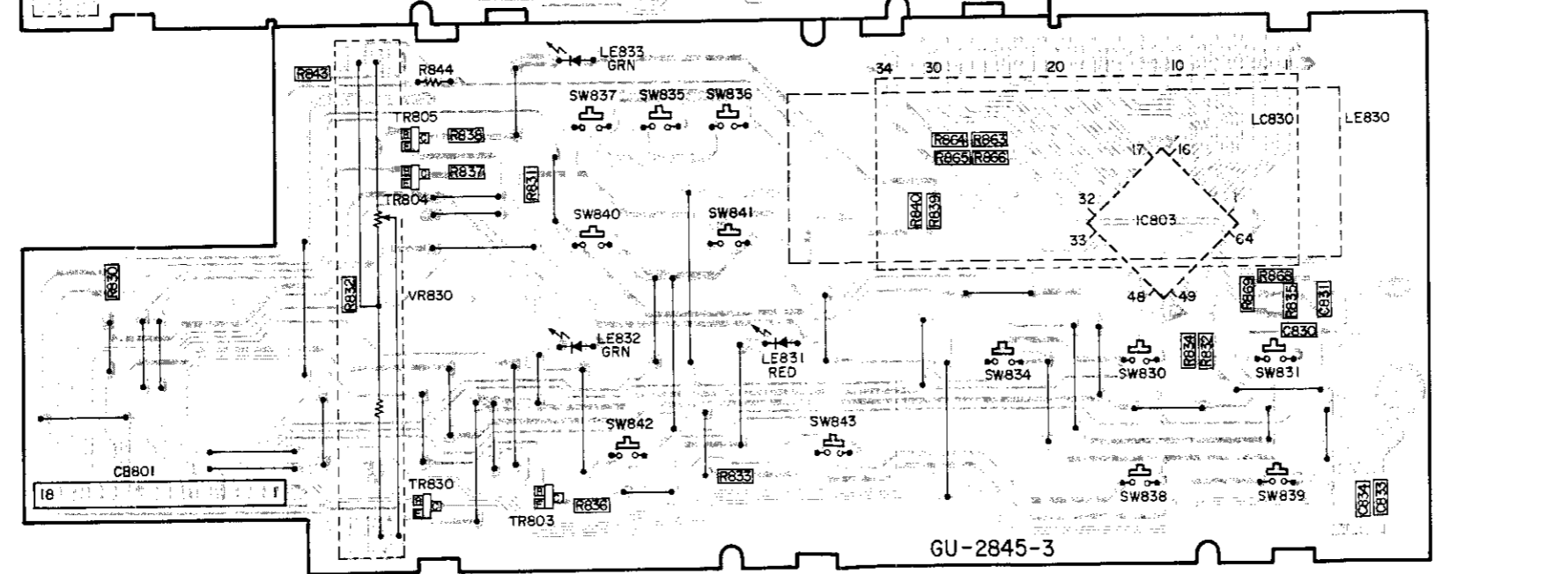
A



B



C



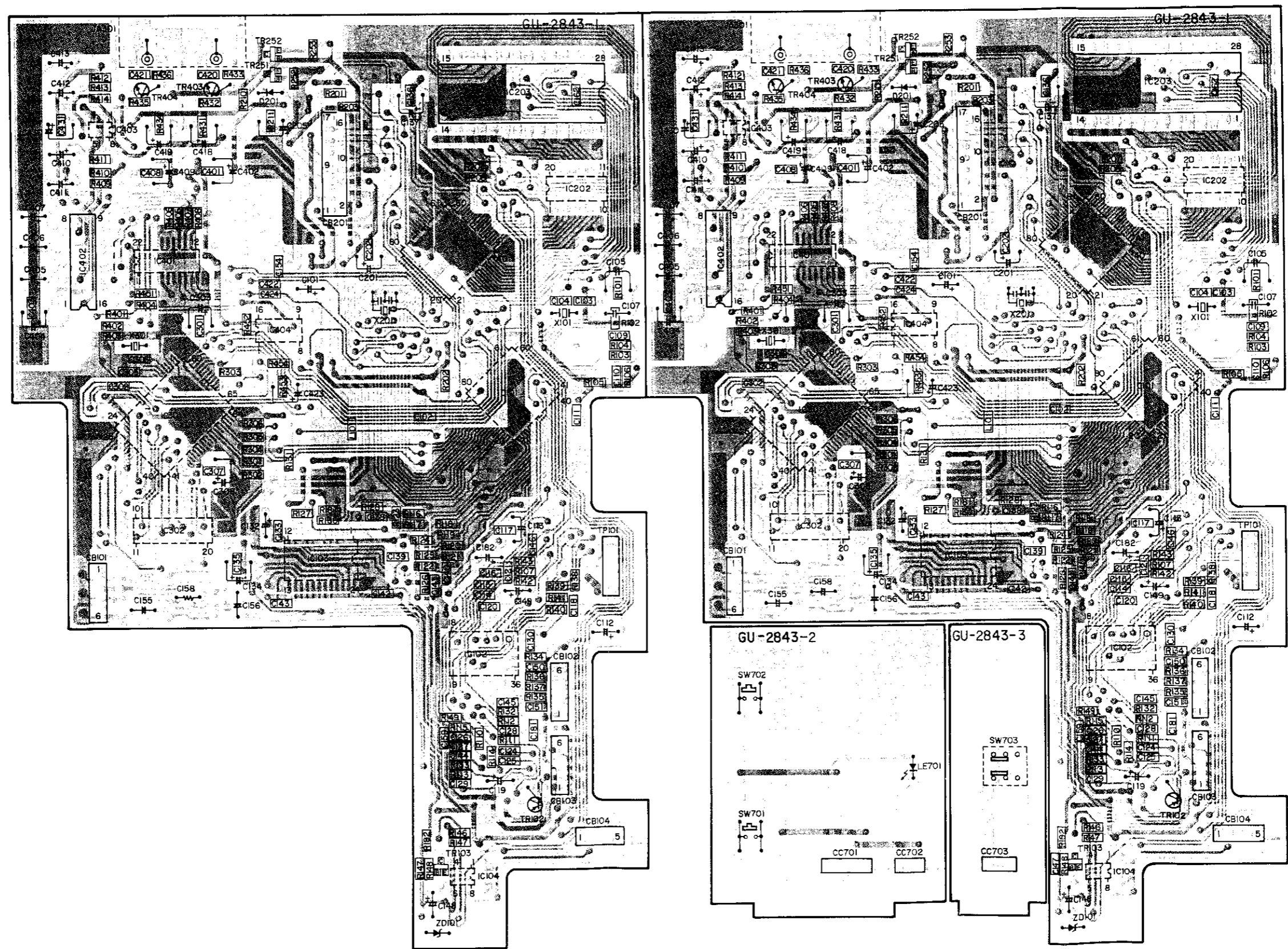
D

E

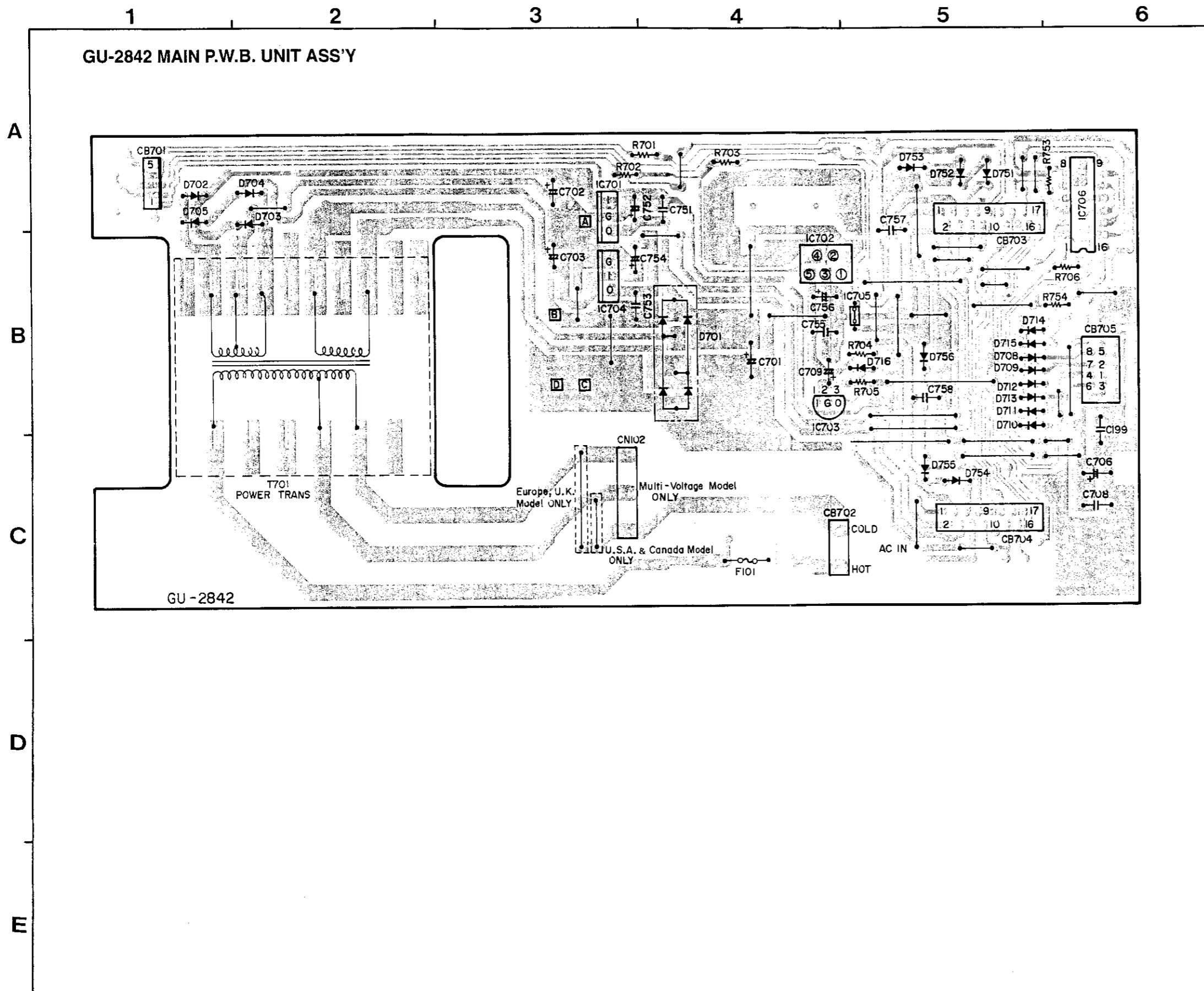


1 2 3 4 5 6 7 8

GU-2843 MECHA. P.W.B. UNIT ASS'Y



A  
B  
C  
D  
E

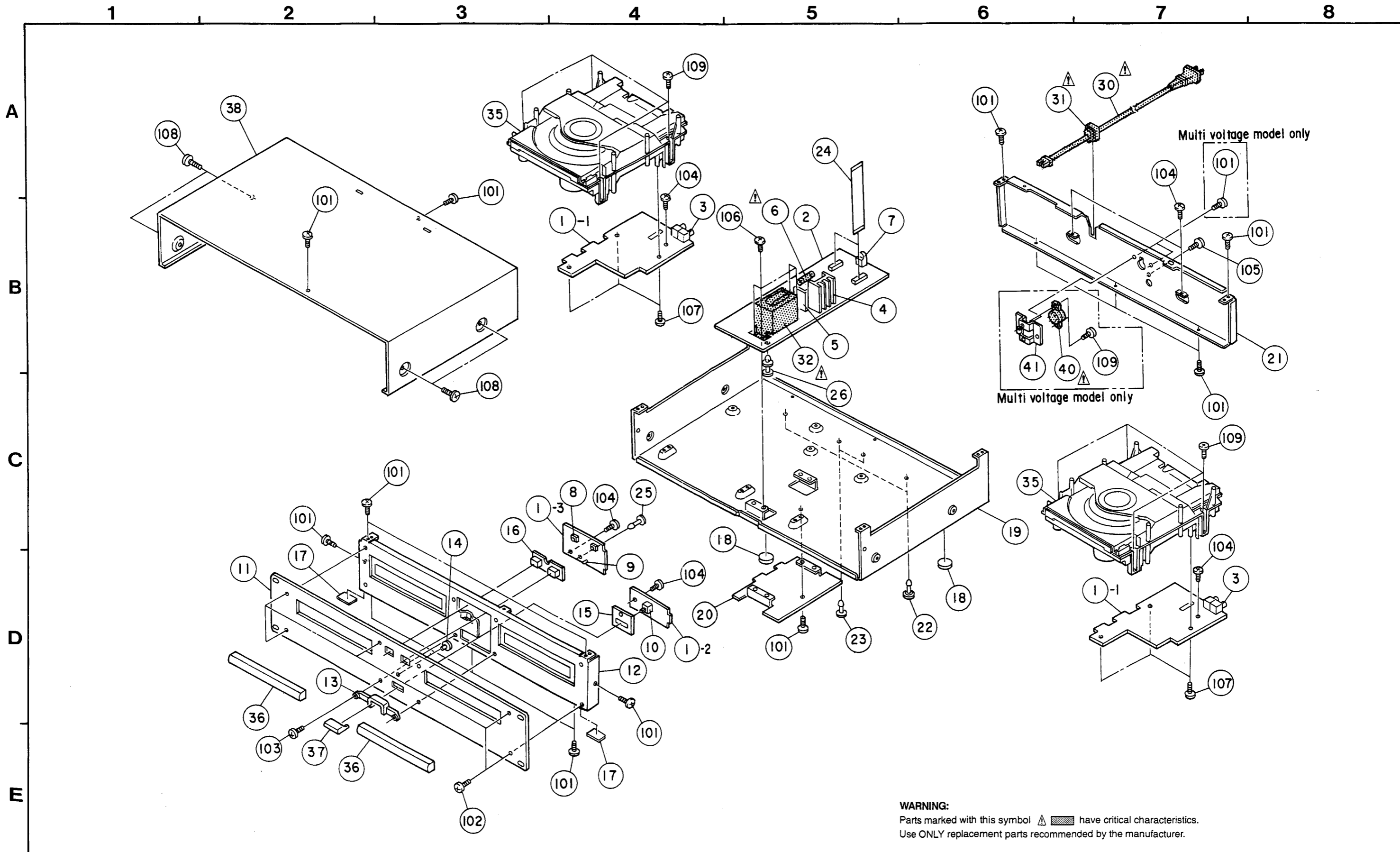



**PARTS LIST OF EXPLODED VIEW**  
RC-35B Control unit

Ref.No.	Part No.	Part Name	Remarks	Q'ty
1	GU-2845	Control P.W.B. unit Ass'y		1
1-1	—	CPU P.W.B. unit		
1-2	—	Left P.W.B. unit		
1-3	—	Right P.W.B. unit		
2	393 9511 104	LED Back light		2
3	393 6013 003	LCD		2
4	211 0849 007	Slide volume		2
5	212 0849 007	Tact switch (Long ST)		26
6	393 9543 907	LED (RED)	SLR325VC	2
7	393 9543 910	LED (GRN)	SLR325MC	4
8	205 0717 008	8P Mini DIN Conn.base		1
9				
10	144 2192 038	RC Front panel		1
11	146 1371 005	LEDWindow		6
12	449 0074 011	Locking card spacer		2
13	146 1369 208	Inner panel		2
14				
15	119 0068 100	Rubber button(A)		2
16	119 0069 109	Rubber button(B)		1
17	105 1030 329	Cover		1
18	146 1573 104	Window		2
19	113 1523 002	Slide knob		2
20	461 0853 005	Cushion(M)		1
21	461 0504 002	Pad		1
22	412 3493 215	Center bracket		1
23	412 3494 010	Side bracket		2
24	104 0270 006	Foot		4
25	461 0745 007	Spacer		2
<b>Screw</b>				
101	473 7002 034	Screw 3x6 CBTS(S)	Black	4
102	475 5120 024	Screw 3x5 HSHB	Black	8
103	471 3303 029	Screw 3x6 CBS	Black	1
105	473 7500 015	Screw 3x8 CBTS(P)		8
106	473 7002 021	Screw 3x8 CBTS(S)	Black	8



EXPLODED VIEW OF CHASSIS AND CABINET

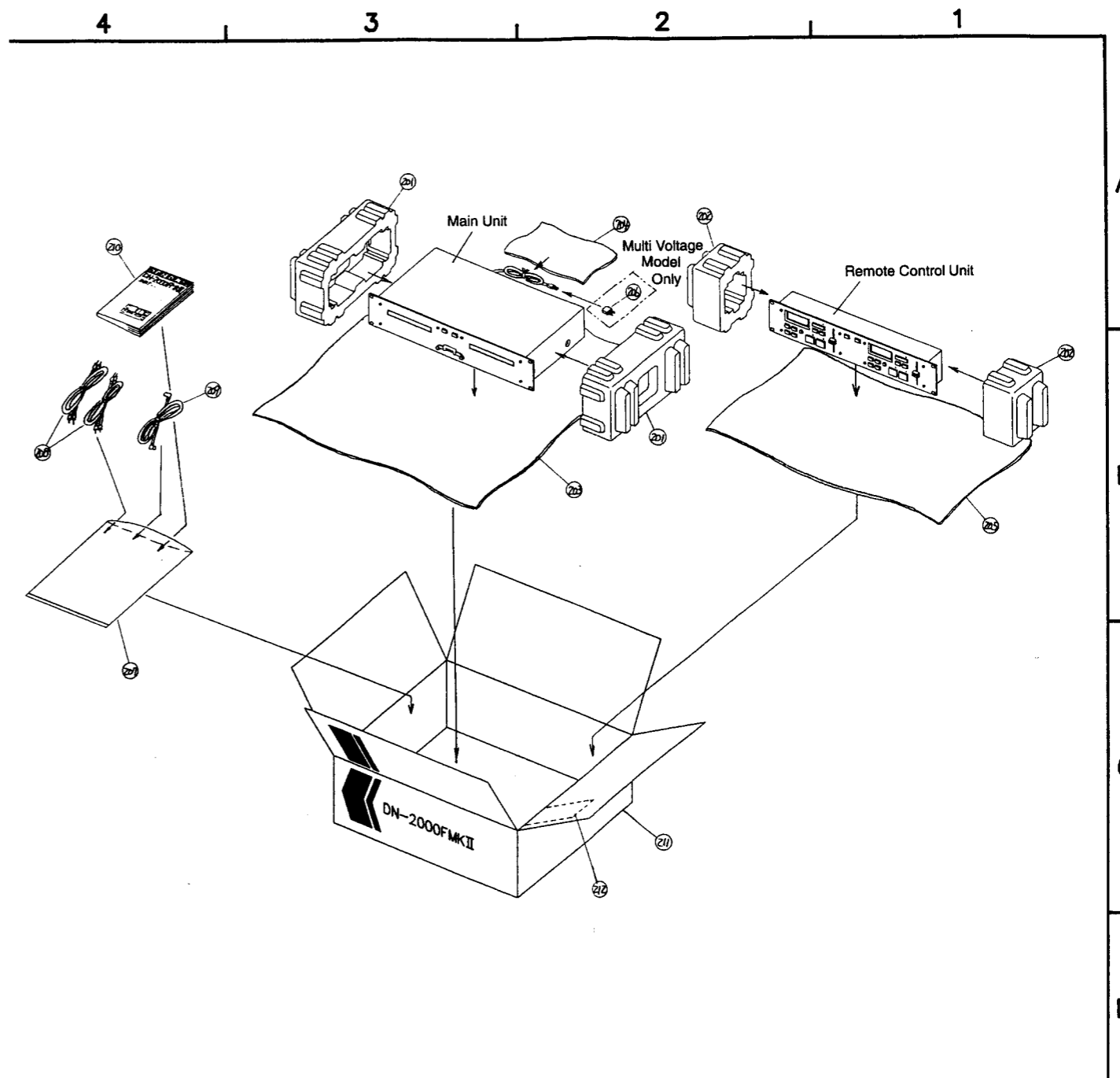


**WARNING:**  
 Parts marked with this symbol  have critical characteristics.  
 Use ONLY replacement parts recommended by the manufacturer.

**PARTS LIST OF EXPLODED VIEW  
CHASSIS AND CABINET**

Ref.No.	Part No.	Part Name	Remarks	Q'ty	Ref.No.	Part No.	Part Name	Remarks	Q'ty
1	GU-2843	Mecha. P.W.B. unit Assy		1	37	113 1357 207	Power sw. button		1
1-1	—	Mecha. P.W.B. unit			38	103 0425 253	Top cover		1
1-1	—	Mecha. P.W.B. unit			40	212 0359 008	Voltage selector	Multi-voltage model	1
1-2	—	SW. P. P.W.B. unit			41	412 3629 102	VOL. selector bracket	Multi-voltage model	1
1-3	—	SW. P.W.B. unit			<b>Screw</b>				
2	GU-2842	Main P.W.B. unit Assy		1	101	473 7002 021	Screw 3x8 CBTS (S)-BK		15
3	204 8311 021	2P pin jack	JA301,301	2	101	473 7002 021	Screw 3x8 CBTS (S)-BK	Multi-voltage model only	2
4	417 0462 105	Heat sink		1	102	475 5120 024	Screw 3x5 HSHB-BK		6
5	417 0505 004	Radiator		1	103	475 5120 011	Screw 3x8 HSHB-BK		2
6	206 1039 018	Fuse 0.8A	U.S.A. and Canada models	1	104	473 7002 005	Screw 3x6 CBTS (S)-Z		6
6	206 1031 032	Fuse 0.16A	Europe and U.K. models	1	105	471 3303 029	Screw 3x6 CBS-BK		1
6	206 1015 003	Fuse 0.5A	Multi-voltage model	1	106	473 7004 003	Screw 4x8 CBTS (S)-Z		4
7	205 0877 003	8P mini DIN conn.base		1	107	473 7519 006	Screw 2.6x8 CBTS (P)-BK		6
8	212 4775 905	Tact switch (Long ST)	SW701,702	2	108	473 7007 000	Screw 4x8 CBTS (S)-BK		4
9	393 9543 907	LED SLR-325VC (Red)	LE701	1	109	473 7005 002	Screw 3x10 CBTS (S)-Z		8
10	212 1039 000	1P push switch	SW703	1	109	473 7005 002	Screw 3x10 CBTS (S)-Z	Multi-voltage model only	2
11	144 2446 108	Front panel		1	★	473 7002 018	Screw 3x8 CBTS (S)-Z		2
12	441 1715 003	Inner panel		1					
13	146 1579 001	P.sw. button protector		1					
14	146 1371 005	LEDWindow		1					
15	441 1714 004	P.S.W. button guide		1					
16	119 0069 109	:Rubber button (B)		1					
17	461 0740 002	Sheet		2					
18	461 0706 127	Foot sheet		2					
19	411 1327 005	Chassis		1					
20	441 1713 005	Bottom plate		1					
21	105 1163 005	Rear panel	U.S.A. and Canada models	1					
21	105 1163 047	Rear panel	Europe and U.K. models	1					
21	105 1163 021	Rear panel	Multi-voltage model	1					
22	449 0077 021	Card spacer		2					
23	449 0077 034	Card spacer		2					
24	009 0096 008	17P FFC cable		2					
25	449 0077 047	Card spacer		1					
26	412 2814 015	Card spacer		1					
30	206 2110 004	AC cordWith connector	U.S.A. and Canada models	1					
30	206 2089 106	AC cordWith connector	Europe and Multi-voltage models	1					
30	206 2128 009	AC cordWith connector	U.K. model	1					
31	445 0056 006	Cord bush		1					
32	233 6163 004	Power trans	U.S.A. and Canada models	1					
32	233 6167 000	Power trans	Europe and U.K. models	1					
32	233 6166 001	Power trans	Multi-voltage model	1					
35	337 0043 008	CD Mecha.unit	FG-110	2					
36	149 1571 106	Loader panel		1					

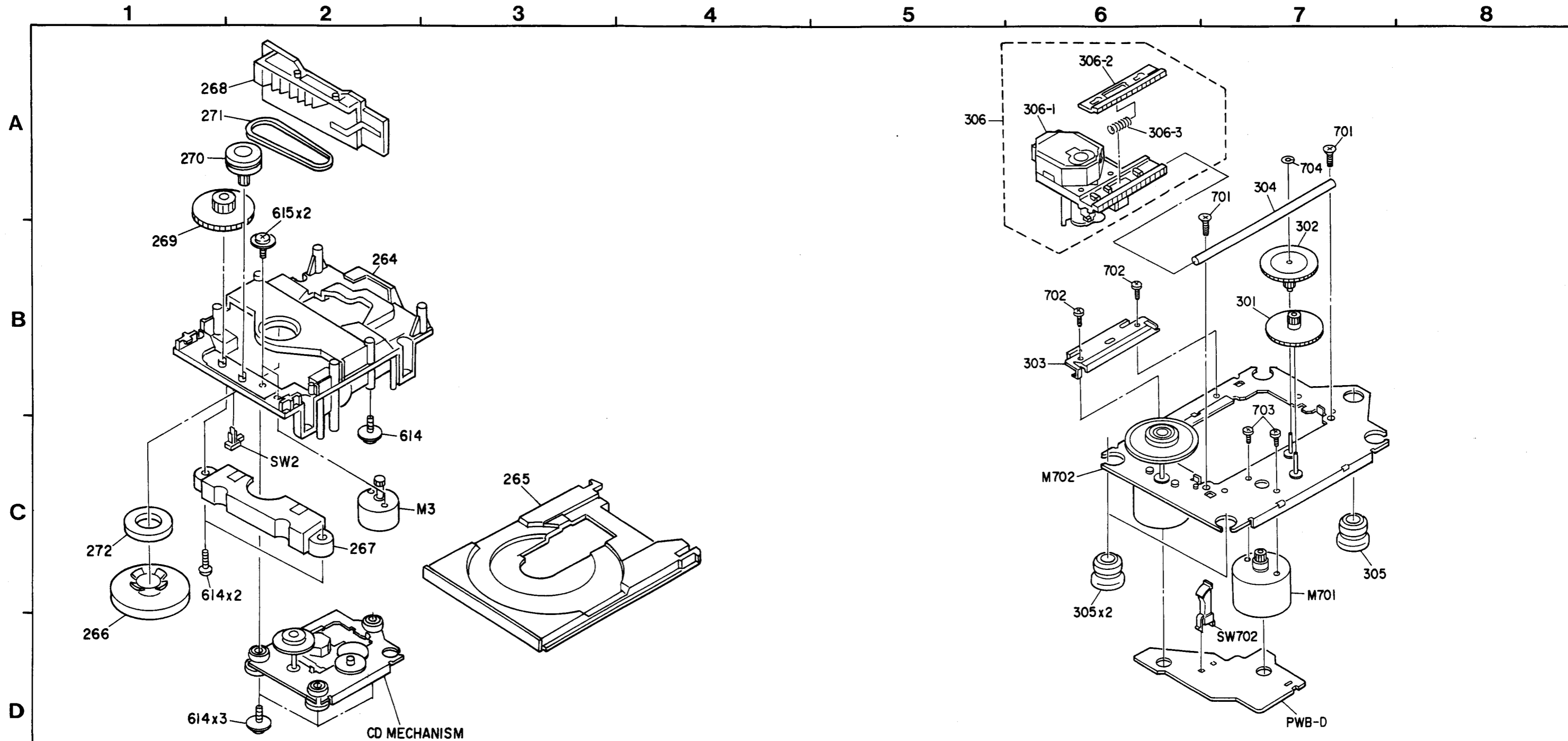
**PACKING & ACCESSORIES**



**PARTS LIST OF PACKING & ACCESSORIES**

Ref.No.	Part No.	Part Name	Remarks	Q'ty	Ref.No.	Part No.	Part Name	Remarks	Q'ty
201	503 1001 303	Cushion		2	207	505 0038 030	Poly cover	For accessories	1
202	503 1010 200	Cushion	For remote control unit	2	208	203 2360 004	2P Pin cord		2
203	505 0102 092	Styren paper	For main unit	1	209	204 2750 009	8P MD Connector cord		1
204	504 0092 060	Styren paper	For AC cord	1	210	511 2761 009	Operating instructions		1
204	504 0170 005	Protector sheet	Except to U.K. model	1	211	501 1853 034	Carton case		1
205	505 0102 021	Styren paper	U.K. model only	1	212	515 0692 004	DELWarranty com	U.S.A.model only	1
206	202 0042 004	AC Adapter	Multi-voltage model only	1					

EXPLODED VIEW OF CD MECHANISM UNIT (FG-110)



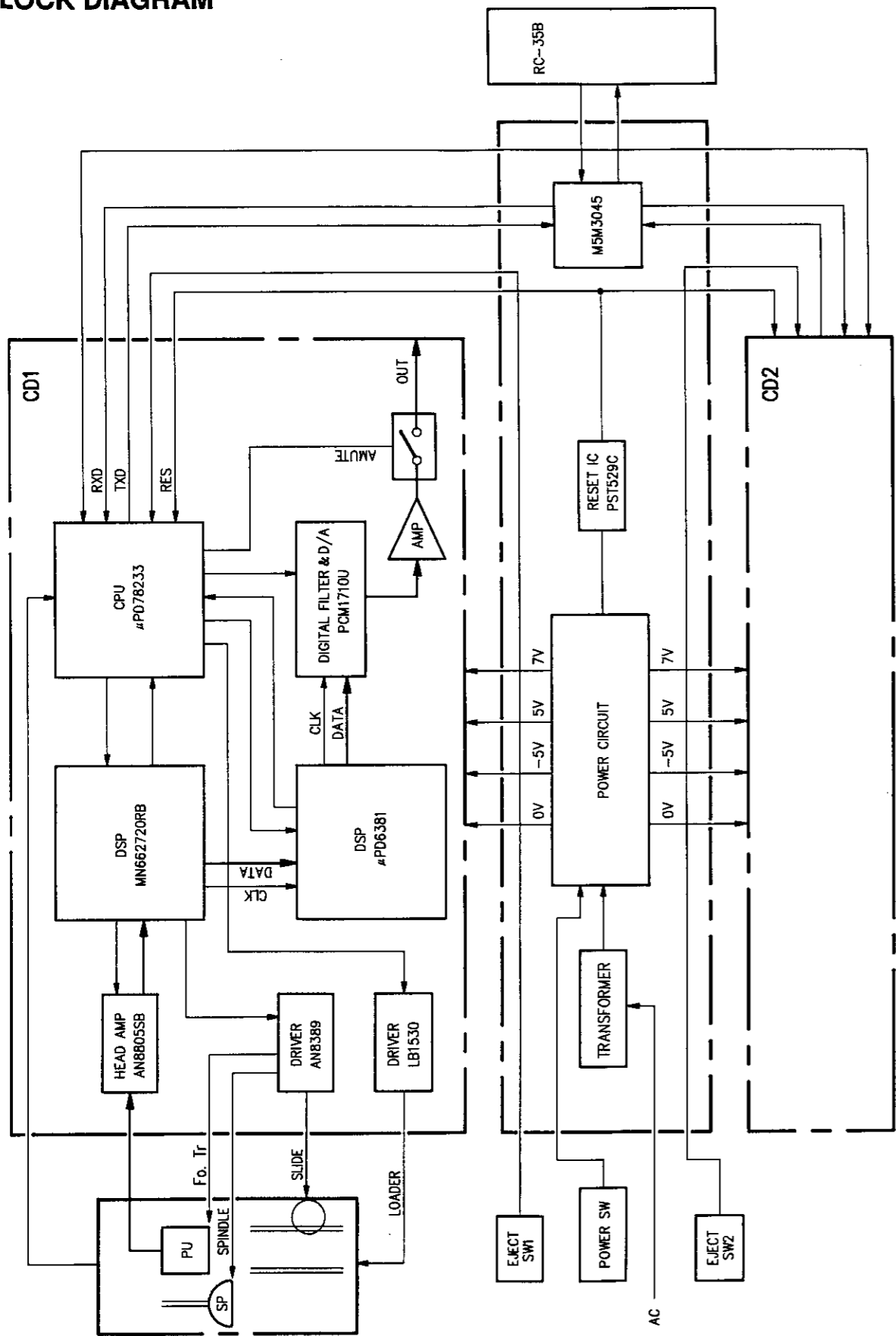
PARTS LIST OF MECHANISM UNIT (TRAY)

Ref.No.	Part No.	Part Name	Remarks	Q'ty	Ref.No.	Part No.	Part Name	Remarks	Q'ty
264	937 0122 402	Body chassis		1	271	937 0123 100	Belt drive		1
265	937 0122 509	Disc holder		1	272	937 0123 207	Magnet		1
266	937 0122 606	Stabilizer		1	M3	937 0123 304	Loading motor		1
267	937 0122 703	Mecha. holder		1	SW2	937 0123 401	Switch		1
268	937 0122 800	Gear rack		1	614	937 0121 830	Screw 2.6x10		6
269	937 0122 907	Gear tray		1	615	937 0121 843	Screw 2.6x5		2
270	937 0123 003	Pully drive		1					

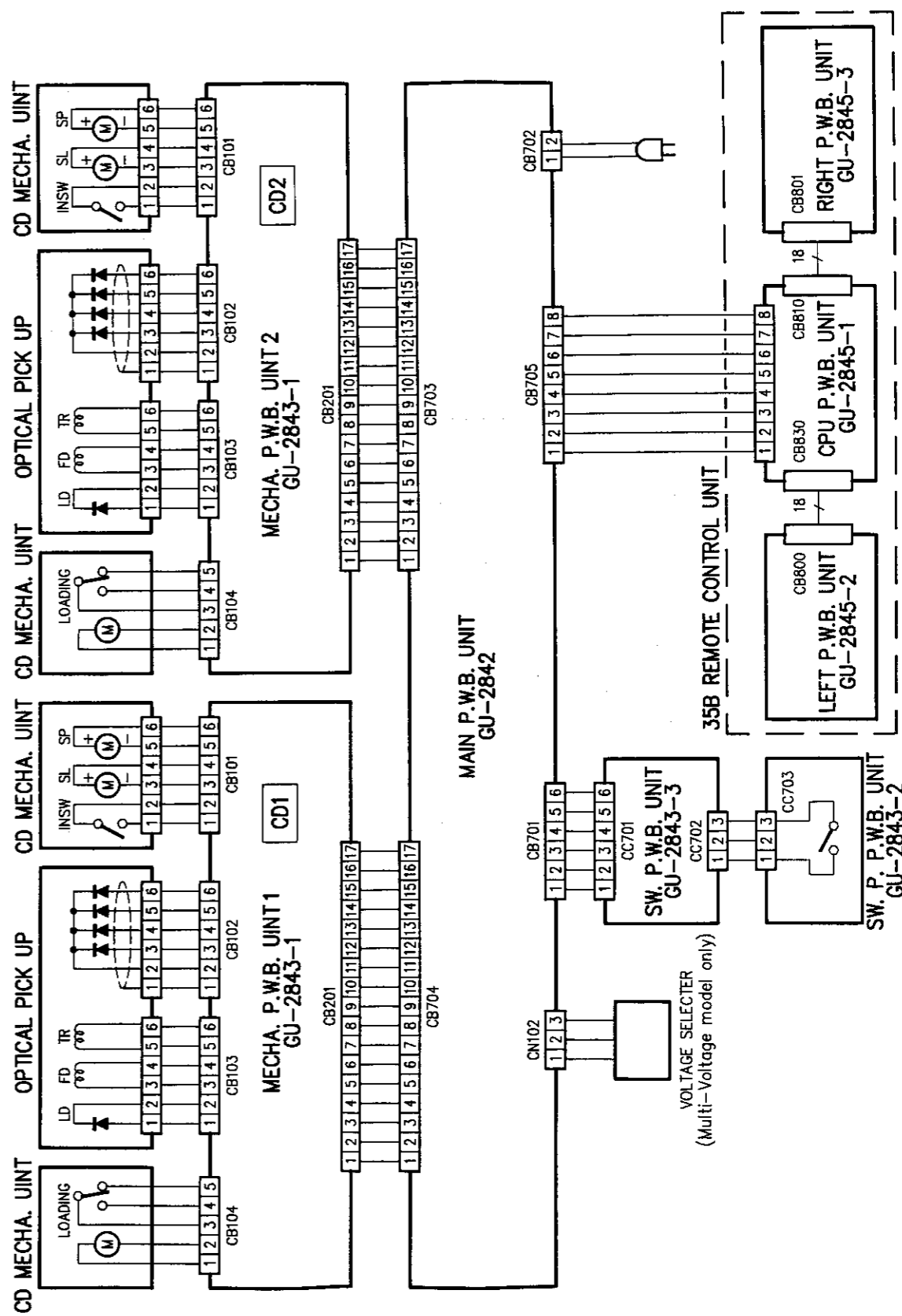
PARTS LIST OF MECHANISM UNIT (CD MECHA.)

Ref.No.	Part No.	Part Name	Remarks	Q'ty	Ref.No.	Part No.	Part Name	Remarks	Q'ty
301	937 0121 005	Gear middle		1	701	937 0121 801	Screw 2.6x6		2
302	937 0121 102	Gear drive		1	702	937 0121 814	Screw 2.0x5		2
303	937 0121 209	Rail guide		1	703	937 0121 827	Screw 2.0x3		2
304	937 0121 306	Shaft guide		1	704	937 0121 908	Washer		1
305	937 0121 403	Cushion		3	M701	937 0122 004	Motor+Gear		1
306	937 0121 500	Pickup Ass'y		1	M702	937 0122 101	Motor+Chassis		1
306-2	937 0121 607	Gear rack		1	SW702	937 0122 208	Switch		1
306-3	937 0121 704	Spring rack		1	PWB-D	937 0122 305	Board only		1

**BLOCK DIAGRAM**



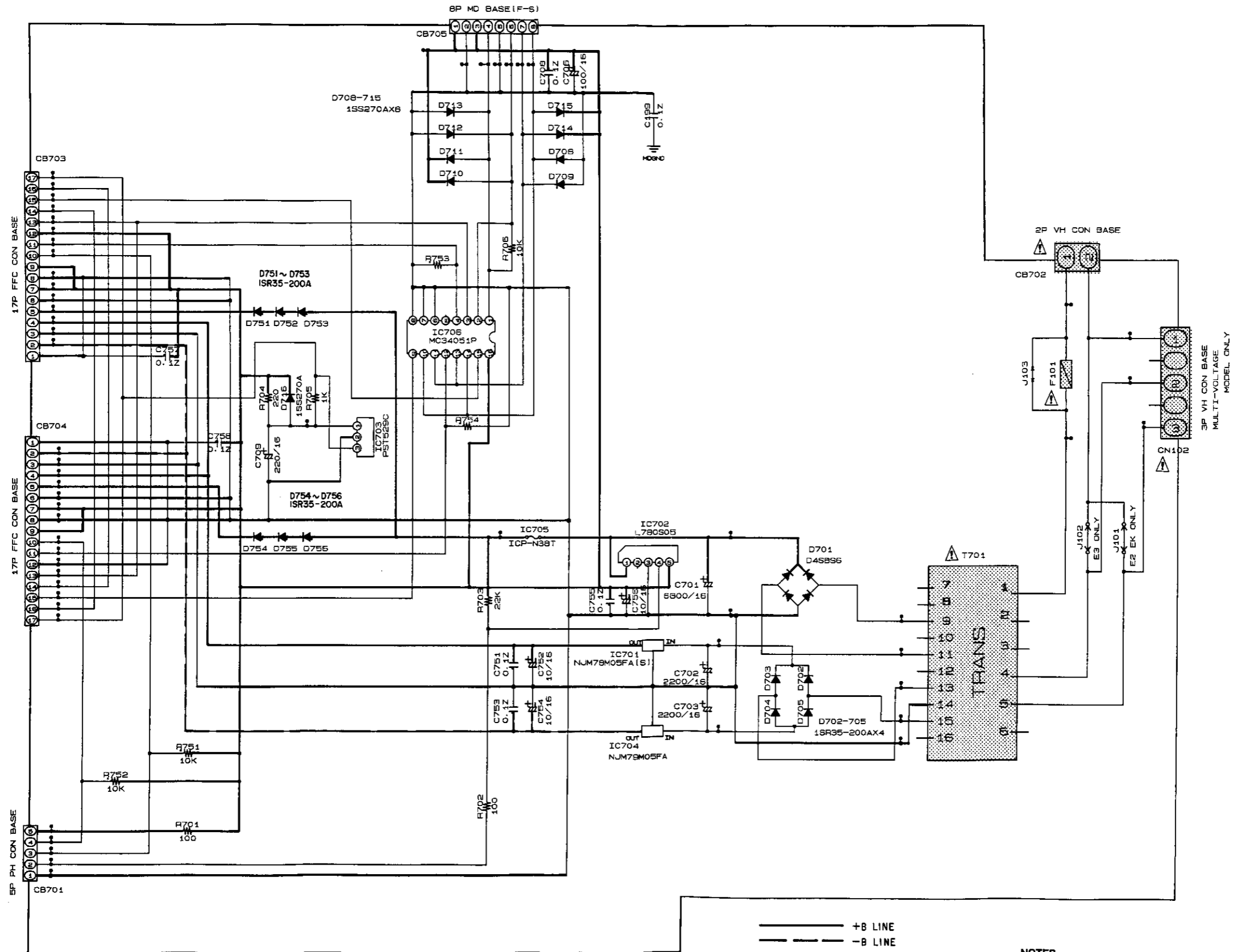
**WIRING DIAGRAM**



# SCHEMATIC DIAGRAM GU-2842 MAIN P.W.B. UNIT

1 2 3 4 5 6 7 8

A  
B  
C  
D  
E

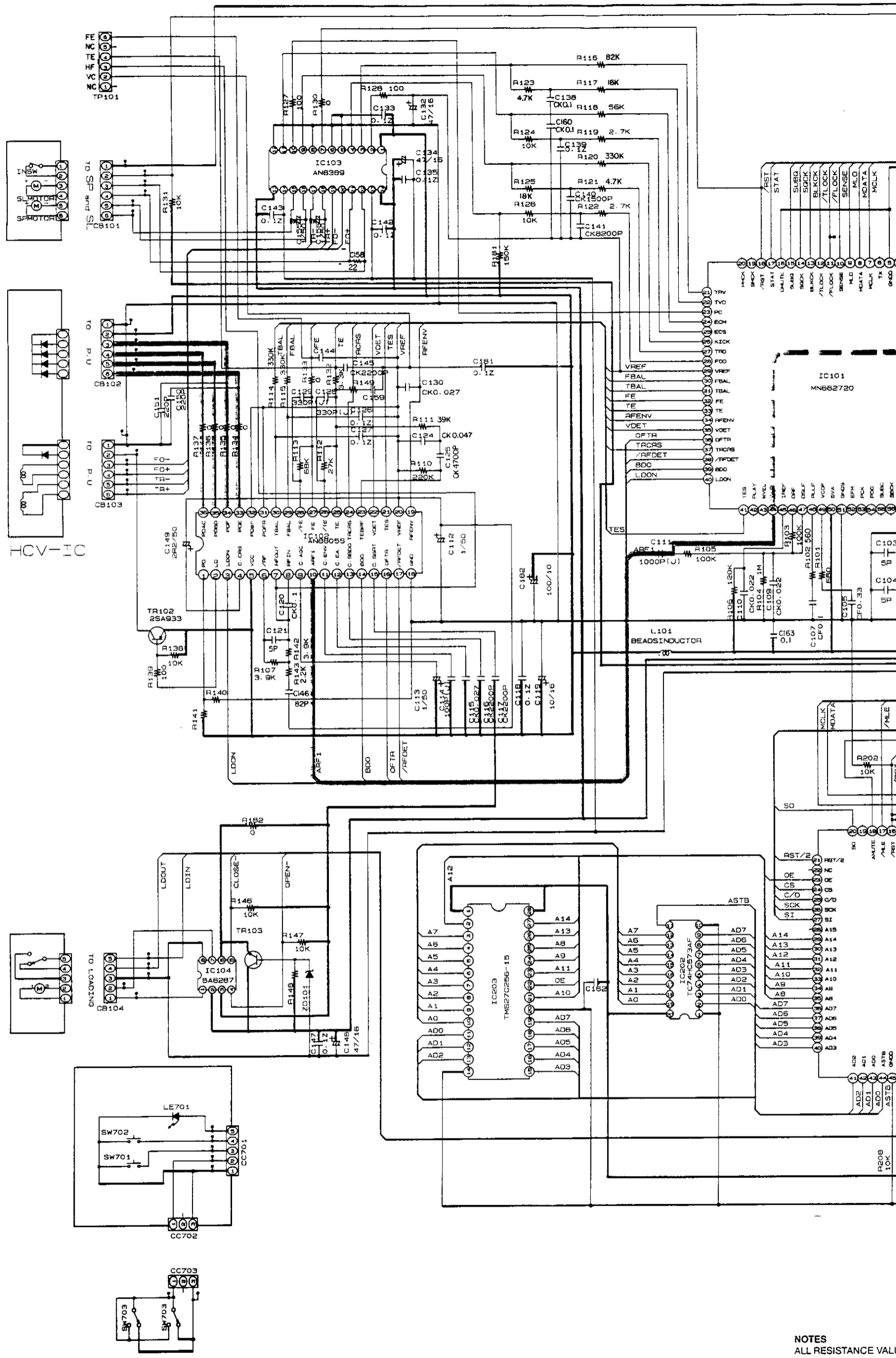


**NOTES**  
 ALL RESISTANCE VALUES IN OHM. K=1,000 OHM, M=1,000,000 OHM  
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

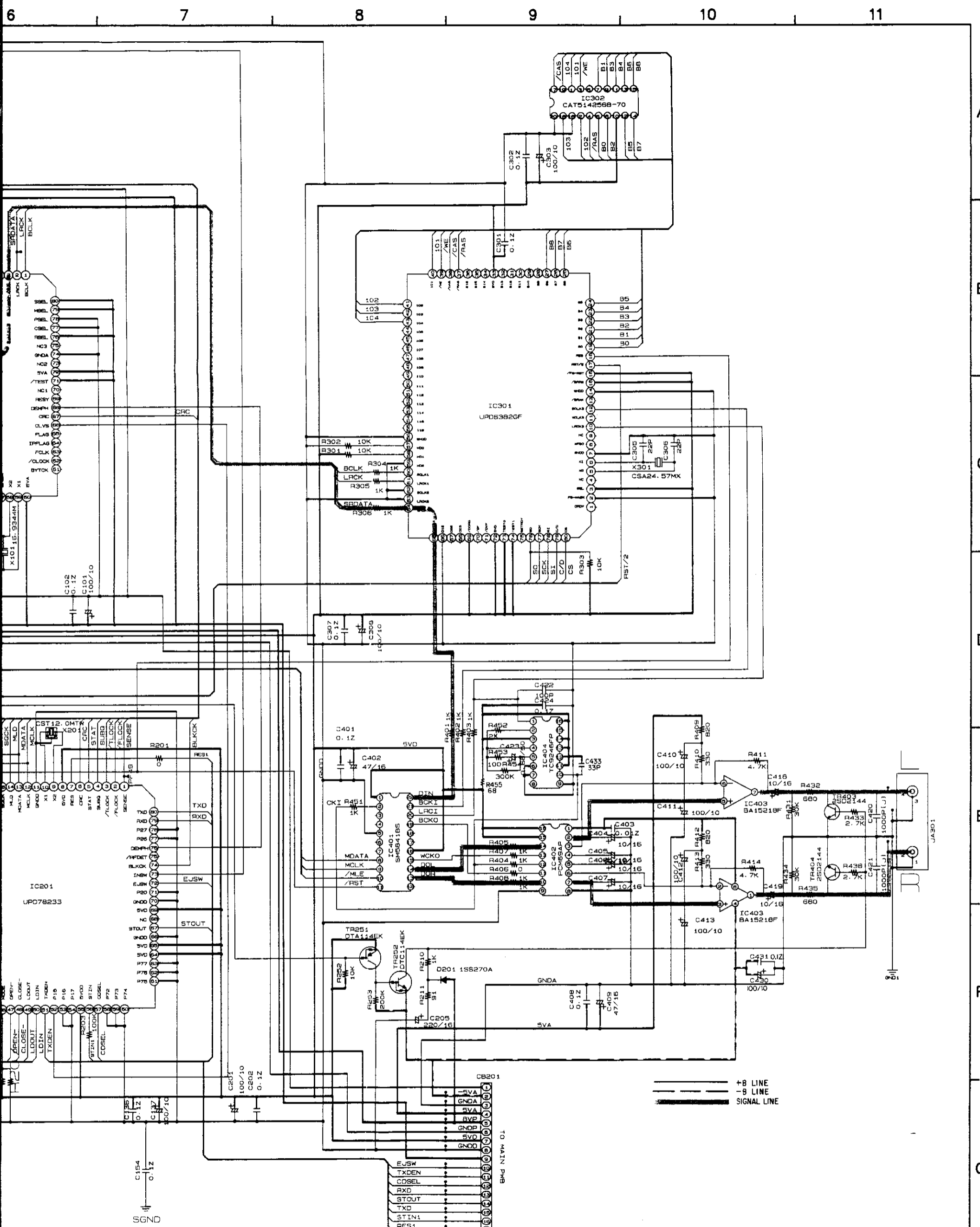


# SCHEMATIC DIAGRAM OF GU-2843 MECH. P.W.B. UNIT

1    2    3    4    5



**NOTES**  
 ALL RESISTANCE VALU  
 ALL CAPACITANCE VAL  
 EACH VOLTAGE AND C  
 CIRCUIT AND PARTS AF



RES IN OHM. k=1,000 OHM, M=1,000,000 OHM  
 CAPES IN MICRO FARAD. P=MICRO-MICRO FARAD  
 CURRENTS ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
 VALUES ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**WARNING:**  
 Parts marked with this symbol have critical characteristics.  
 Use ONLY replacement parts recommended by the manufacturer.

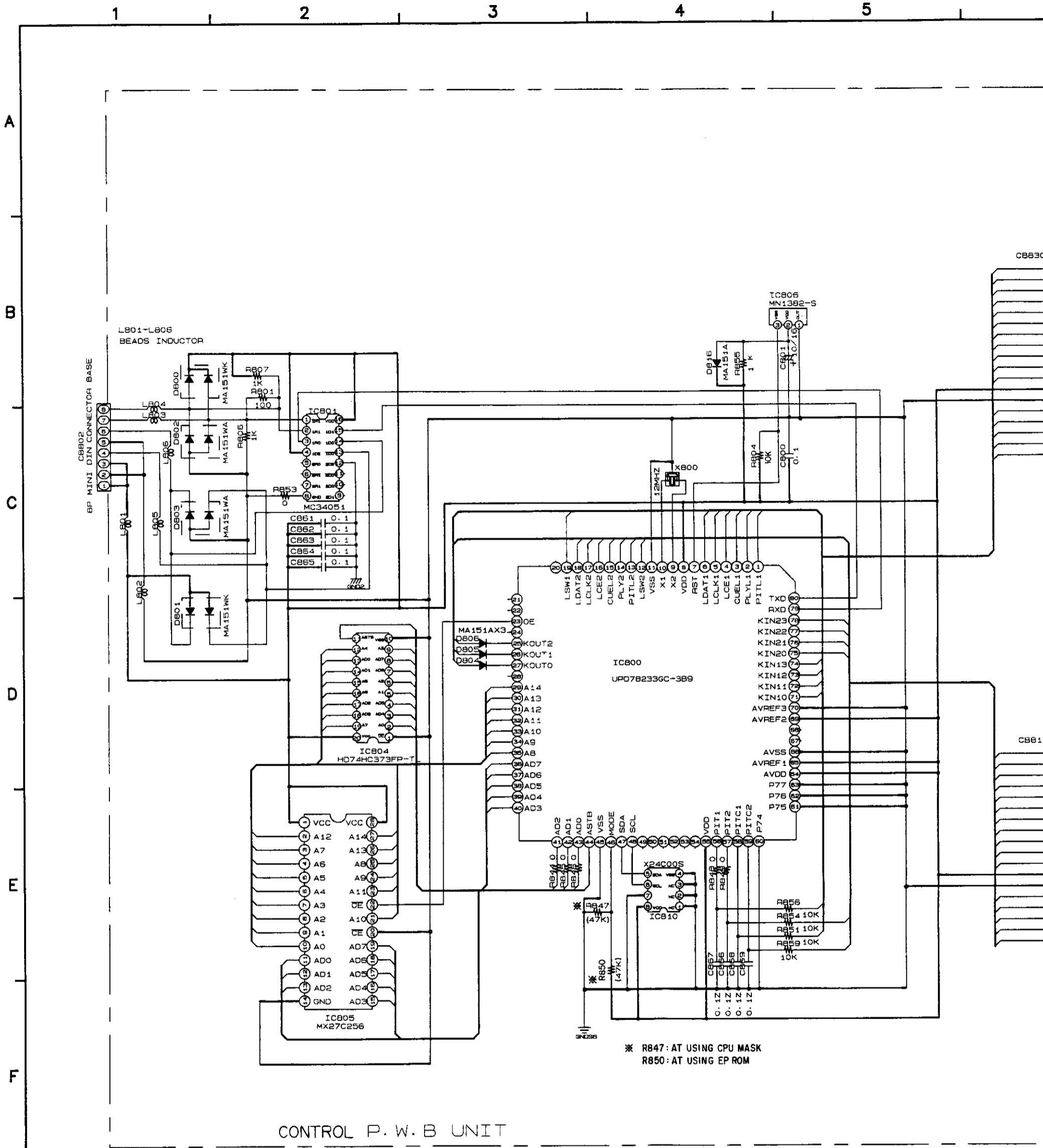
**CAUTION:**  
 Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

**WARNING:**  
 DO NOT return the unit to the customer until the problem is located and corrected.

**NOTES:**  
 Circuit and parts are subject to change without prior notice.

A  
 B  
 C  
 D  
 E  
 F  
 F  
 G  
 H

**SCHEMATIC DIAGRAM OF GU-2845 CONTROL P.W.B. UNIT**



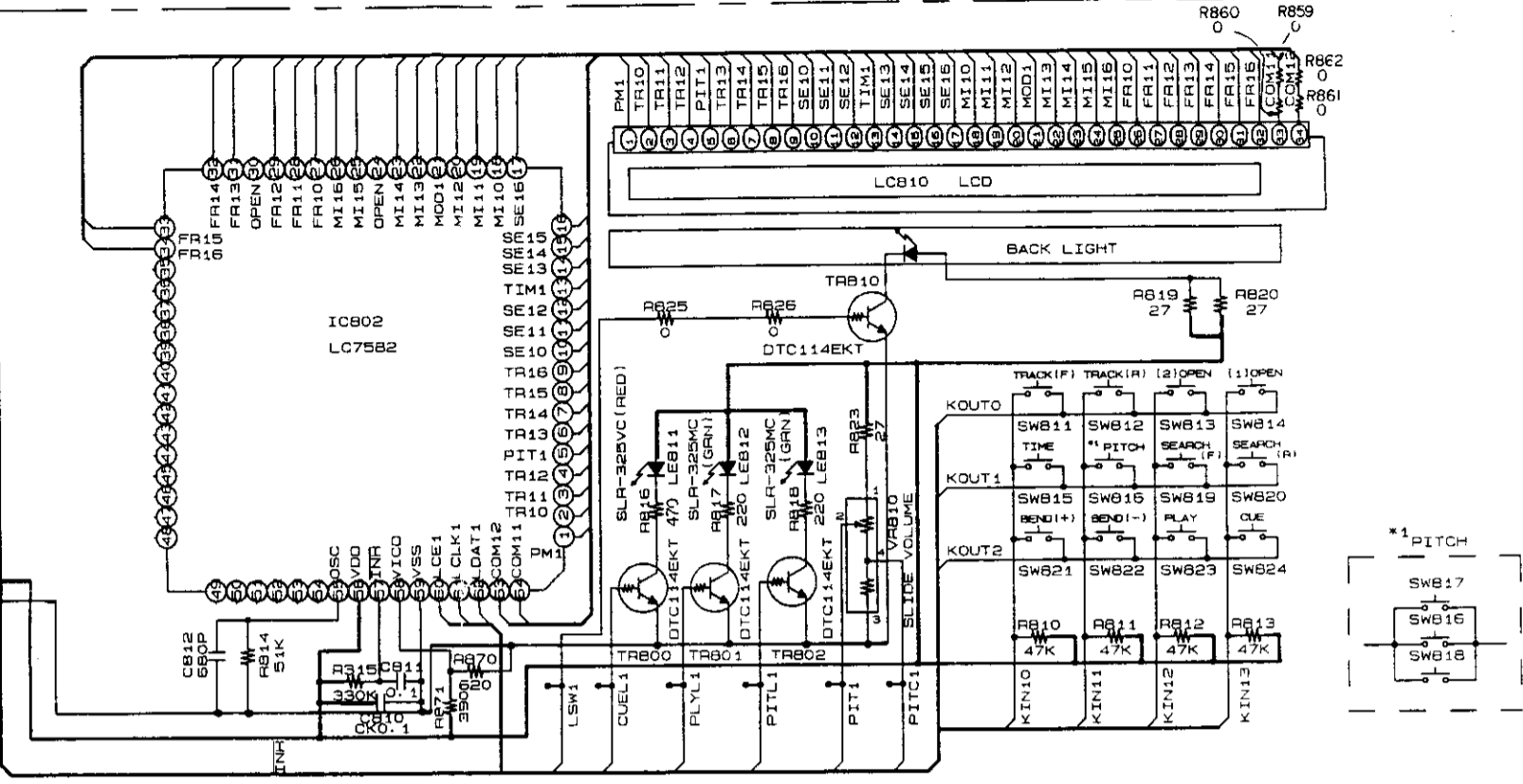
**WARNING:**  
Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

**CAUTION:**  
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

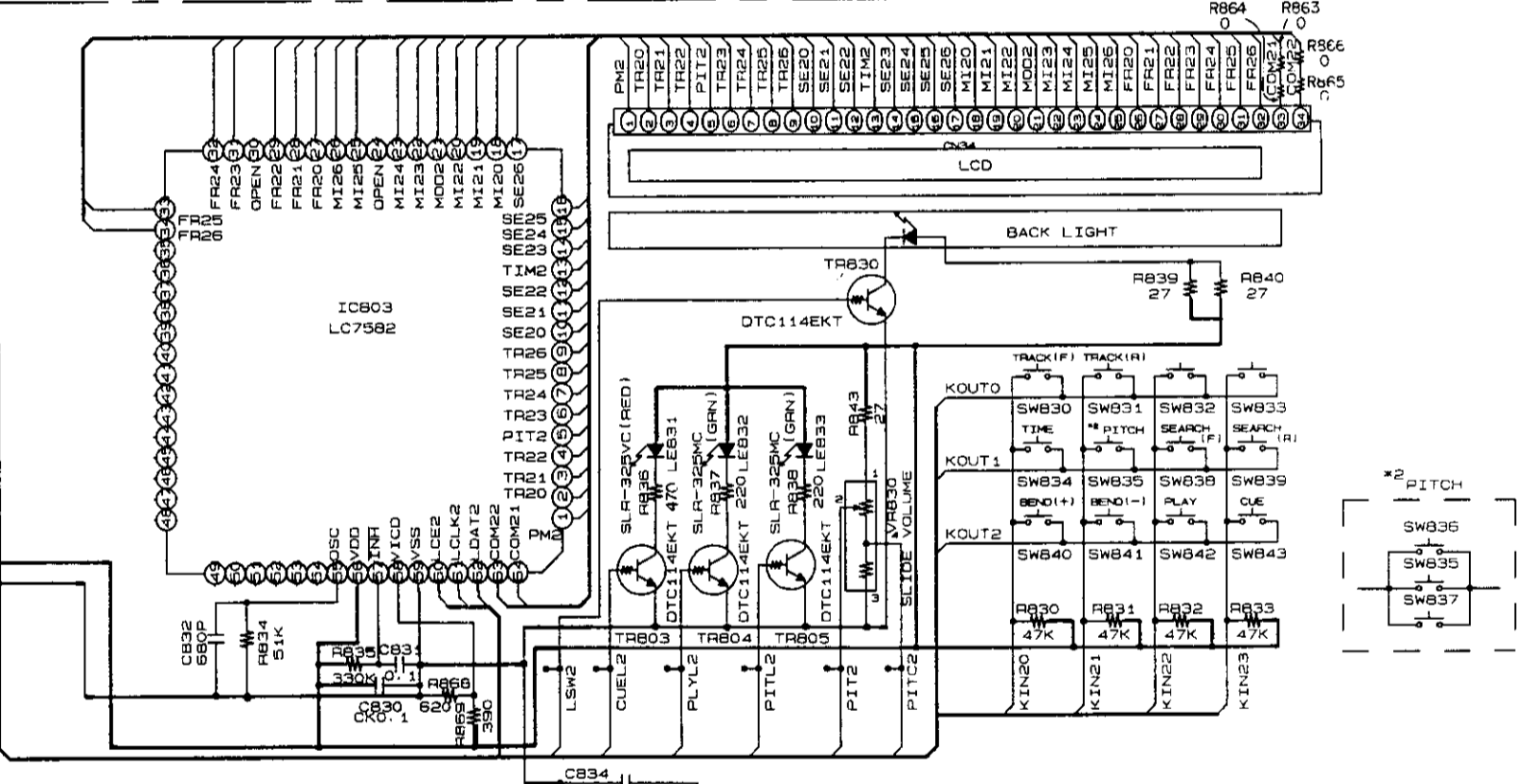
**WARNING:**  
DO NOT return the unit to the customer until the problem is located and corrected.

**NOTES:**  
Circuit and parts are subject to change without prior notice.

**NOTES**  
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM.  
ALL CAPACITANCE VALUES IN MICRO FARAD.  
EACH VOLTAGE AND CURRENT ARE MEASURED AT THE POINTS INDICATED.  
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.



RIGHT P. W. B UNIT



LEFT P. W. B UNIT

+8 LINE

M, M=1,000,000 OHM  
 P=MICRO-MICRO FARAD  
 ED AT NO SIGNAL INPUT CONDITION.  
 SE WITHOUT PRIOR NOTICE.