

# JVC

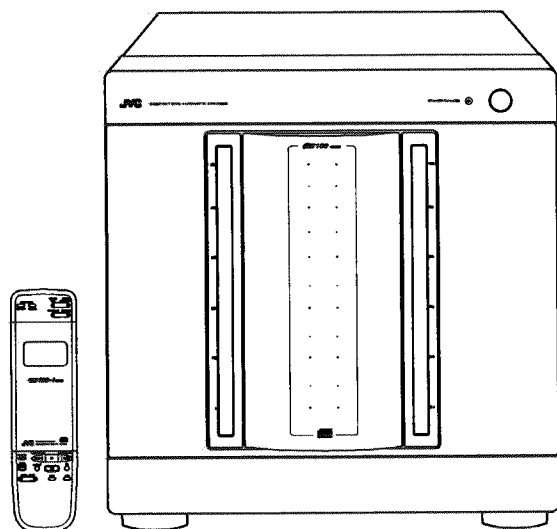
## SERVICE MANUAL

### COMPACT DISC AUTOMATIC CHANGER

## XL-MC302

#### Area Suffix

BS .....the U.K.  
 E .....Continental Europe  
 G .....Germany  
 VX .....East Europe  
 UT .....Taiwan  
 U .....Other Area

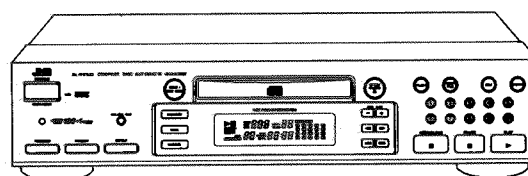


XL-MC302M

**100+1-DISC**

**COMPACT**  
**disc**  
 DIGITAL AUDIO

**COMPU LINK**  
 Remote Control Component



XL-MC302C

## Contents

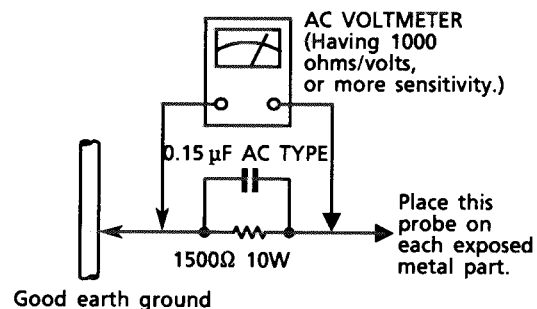
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## Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by ( $\Delta$ ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)  
After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.  
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

- Alternate check method  
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 $\Omega$  10 W resistor paralleled by a 0.15  $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



## Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

## Important for Laser Products

1. **CLASS 1 LASER PRODUCT**
2. **DANGER** : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION** : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. **CAUTION** : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. **CAUTION** : If safety switches malfunction, the laser is able to function.
6. **CAUTION** : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**VARNING** : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

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

**ADVARSEL** : Usynlig laserstrålning ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

**ADVARSEL** : Usynlig laserstrålning ved åpning, når sikkerhetsbryteren er avsløtt. unngå utsettelse for stråling.

### REPRODUCTION AND POSITION OF LABELS

#### WARNING LABEL

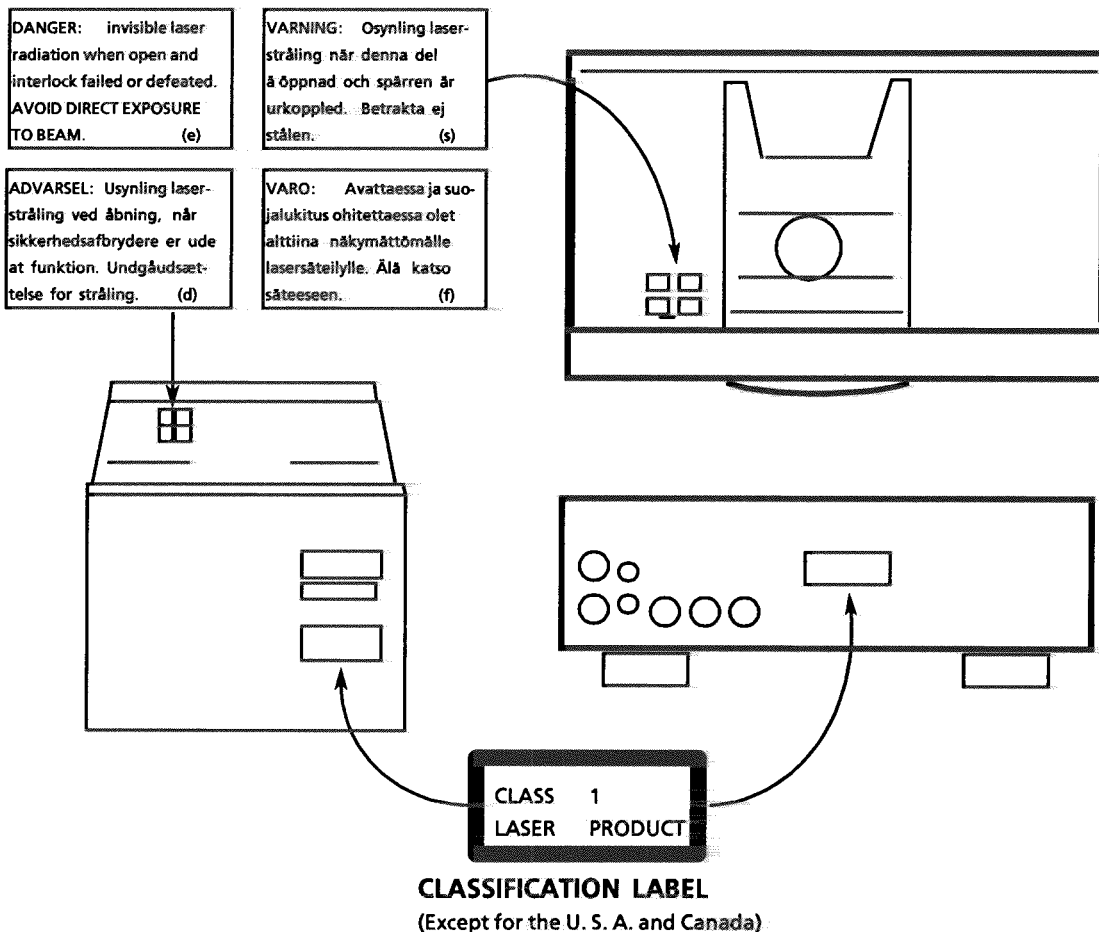
(Except for the U. S. A.)

**DANGER**: invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

**VARNING**: Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)

**ADVARSEL**: Usynlig laserstrålning ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (d)

**VARO**: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)



**CLASSIFICATION LABEL**  
(Except for the U. S. A. and Canada)

## Welcome!

We would like to thank you for purchasing one of our JVC products.  
Before connecting this unit to the wall outlet, please read the instructions carefully to ensure that you obtain the best possible performance.  
If you have any questions, please consult your JVC dealer.

With this system, the 100 disc capacity of the player unit, combined with single disc tray in the control unit lets you playback a total of 101 compact discs.  
By adding one XL-MC41 unit, you can expand the capacity to 201 discs, adding two XL-MC41 units lets you expand the system to its maximum capacity, 301 discs.  
Since this system operates the same way when you add XL-MC41 units, please retain these instructions in case you have any questions regarding operation.

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## INTRODUCTION

### About this manual

#### This manual is organized as follows:

The first part of this manual, "INTRODUCTION", tells you where to place this unit for best results, how to prevent malfunctions and what types of discs can be used in this unit.

The second part, "BEFORE USING FOR THE FIRST TIME", shows you what to do before playing discs. This part describes how to install batteries in the remote control unit and how to connect this unit to the amplifier and other components.

The third part, "LOCATION OF BUTTONS", shows the names of buttons and their location and gives you basic knowledge of the functions of buttons on the control unit and the remote control unit. Refer to the section on the indicated page for each button.

The fourth part, "BASIC OPERATIONS", describes how to load discs, and convenient basic functions for playing discs.

The fifth part, "VARIOUS PLAYBACK PATTERNS", describes various functions for playing discs, and convenient functions for recording.

The sixth part, "DISC TITLE MEMORY BANK", describes the disc title memory bank function which is useful for locating a desired disc among the discs stored in the player unit.

The seventh part, "APPENDIX", describes the compu link remote control system which facilitates various operations between JVC components, and explains how to take care of discs.

The eighth part, "TROUBLESHOOTING", tells you how to check the unit if a malfunction occurs.

The ninth part, "SPECIFICATIONS", gives you technical information regarding this unit and tells you what accessories you have.

#### About the names of the units

The XL-MC301 system is composed of two units, the XL-MC301C and the XL-MC301M. These instructions call the XL-MC301C the "control unit", and call the XL-MC301M the "player unit" when describing their operations.

## Precautions

#### Best location

Select a location which is level, dry and neither too cold nor too hot (temperature range 5°C (41°F) to 35°C (95°F)). Also, avoid dusty locations or any location subject to vibration.

#### If interference occurs

If this equipment is placed near a tuner or a radio receiver tuned to AM frequencies, interference may occur. If this happens, we recommend either that you move this unit as far away from the tuner or receiver as possible, or temporarily turn off the power to this unit.

#### Load only compact discs

Do not load anything except compact discs into the playback or the control unit.

#### If a problem persists

If something goes wrong, turn off the power immediately. If the problem remains when you turn the power back on, turn off the power again and consult your JVC dealer.

#### Handling the power cord

When unplugging the power cord from a wall socket, pull from the plug body. Never pull on the power cord.

#### Volume settings

A CD player has almost no background noise. Therefore, the technique of setting the volume before the music starts by listening to the background level, as used with analog turntables and tape decks, cannot be used and may result in speaker damage if you set the volume too high.

#### Condensation

If a CD player is moved from a cold to a warm location or is used in a room subject to excessive humidity, or where a fire has just been lit, condensation could form on the optical components used in the unit. This may prevent the laser beam from transmitting properly and cause noise or even malfunction.

If condensation forms and prevents the CD player from functioning properly, leaving the player turned on for an hour or two should remove the condensation. If the CD player does not function properly at the end of this time, please consult your JVC dealer.

#### Transporting the unit

When carrying this unit, it is best to avoid tilting it or turning it upside-down. If you have to tilt the unit, be sure to remove the disc first.

#### Using compact discs

Compact discs are made of plastic and can be damaged easily. If the disc is dirty, scratched, warped or otherwise damaged, the digital information may not be picked up correctly.

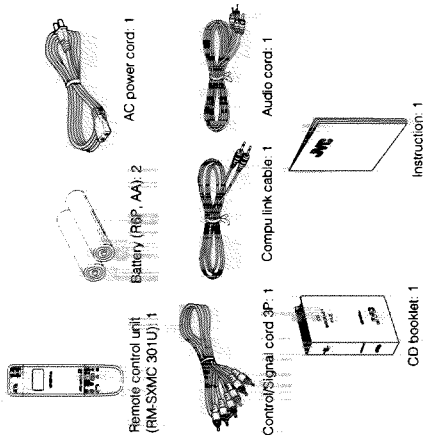
#### Applicable discs

This unit can only be used with compact discs bearing the mark below. Do not use other types of discs.



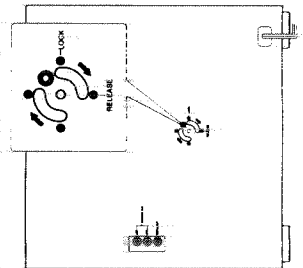
## Checking the Supplied accessories

Be sure all of the following accessories were included with your XL-MC301.



## Releasing the Transport Lock

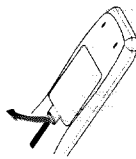
This unit is equipped with a transport lock in order to protect the inside mechanism during transport. Please make sure to release the lock before you start using the unit. Turn the Transport lock knob clockwise to the RELEASE position. The unit is inoperative when this knob is set to the LOCK position.



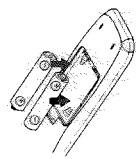
## Installing batteries in the remote control unit

Before operating the remote control unit, install two batteries.

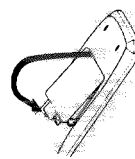
1. Remove the rear cover of the remote control unit.



2. Install batteries. Be sure to install the batteries with the correct polarity (+) and (-).



3. Attach the rear cover.



### Notes

- Incorrect battery usage can cause corrosion and damage the remote. To prevent damage to the remote and extend battery life.
- Do not use a combination of old and new batteries.
- Be sure to use the correct batteries (batteries with similar shapes may have different voltage ratings).
- Remove the batteries from the remote if it is not going to be used for a long time.
- Do not expose batteries to heat or flame.

### Battery replacement

Battery service life varies depending on the conditions of use but standard life is about one year. When batteries become weak, the remote control's operating distance decreases. If this happens, replace the batteries (1.5 V, R6P, size AA) with new ones.

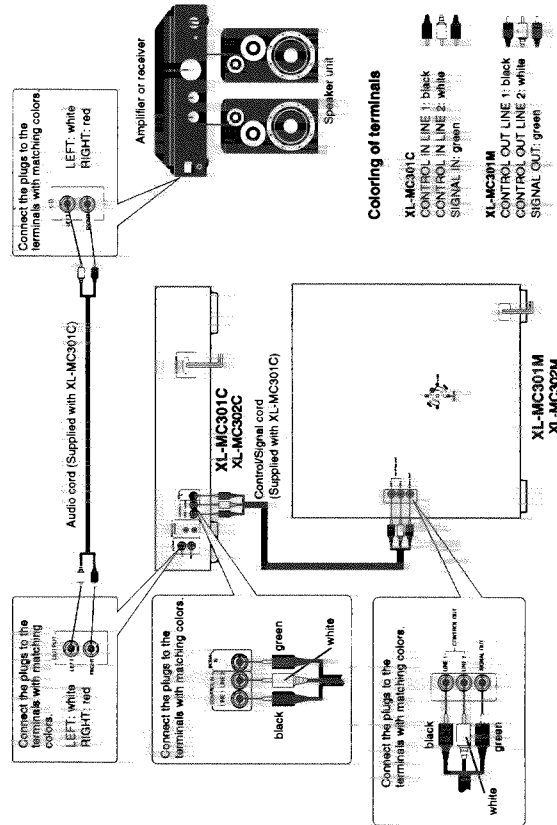
### Notes

- Extremely low temperatures may shorten battery life.
- Be sure to replace the batteries within 3 minutes. Otherwise, the items stored in the disc title memory bank will be erased.

## Connections

**Important** Please set up the units in the following order.

1. Connect plugs of the audio cord and the control/signal cord correctly by following the illustration below.
  2. Connect the AC power cord of each unit last.
- Incorrect connection order makes the operation impossible.



### Coloring of terminals

- XL-MC301C**  
CONTROL IN LINE 1: black  
CONTROL IN LINE 2: white  
SIGNAL IN: green
- XL-MC301M**  
CONTROL OUT LINE 1: black  
CONTROL OUT LINE 2: white  
SIGNAL OUT: green

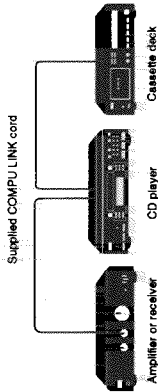
### Notes

- Do not connect the power plug to a wall outlet until you have completed all connections and set the transport lock knob to the RELEASE position. Making connections with the AC power cord connected to a wall outlet may cause a malfunction. If you connect the power cord to a wall outlet before connecting the control/signal cord between the control and player unit, you may not be able to operate the unit. If this happens, unplug the power cord for a moment, then plug it back in.
- Connect the plugs firmly. Loose connections may cause noise or malfunction.
- Do not lay the control/signal cord near the AC power cord. It may produce noise in the audio signal.
- Never connect this unit's OUTPUT jacks to an amplifier or receiver's PHONO jacks. It may damage the components.
- Make sure the same channels are connected between this unit and the amplifier or receiver. LEFT to LEFT and RIGHT to RIGHT.
- Do not lay the audio cord near the AC power cord. It may produce noise in the audio signal.

BEFORE USING FOR THE FIRST TIME

Compu Link Connections

The Compu Link jacks are used to input and output control signals for the compu link (remote control) system. Connecting this unit to other JVC audio components with COMPU LINK SYNC-HRO jacks provides automatic control of relative operations between the components and facilitates various operations, such as recording. COMPU LINK-compatible products are provided with the jacks marked COMPU LINK-1, COMPU LINK-2 or COMPU LINK-3, depending on the COMPU LINK version. The XL-MC301 is equipped with COMPU LINK-3. You can connect the XL-MC301 to components with previous versions of COMPU LINK, but only the previous version's features will be available. Connect the COMPU LINK SYNC-HRO jacks on the rear of this unit to the COMPU LINK SYNC-HRO jacks on other JVC components with the supplied COMPU LINK cord. Since each component has two COMPU LINK SYNC-HRO jacks you can connect two components to these jacks (there is no difference between the two jacks).



COMPU LINK  
Remote Control System

**Note**

- Make sure that the COMPU LINK SYNC-HRO jacks on each of the components are connected with COMPU LINK cords. Also, be sure to fully read the instructions supplied with each component.
- When using the Compu Link Remote Control System, do not connect the power cord to the SWITCHED AC OUTLET of an amplifier or receiver. Otherwise, the automatic power on/off function cannot be carried out.

Connecting the AC power supply

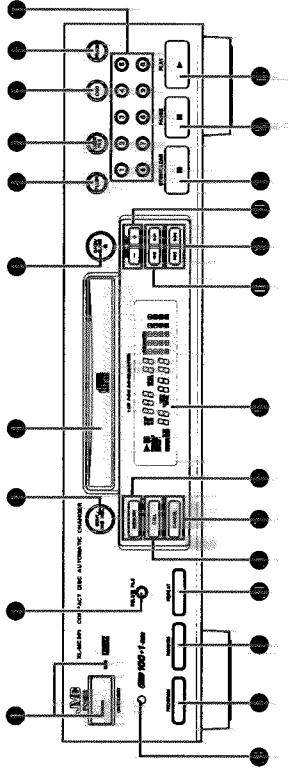
Plug the supplied detachable AC power cord into the AC POWER CORD inlet on the control unit. Connect the AC power cord from both units to AC household electrical outlets after completing all other connections.

Notes

- If you connect the power cord to a wall outlet before connecting the control/signal cord between the control and player unit, you may not be able to operate the unit. If this happens, unplug the power cord for a moment, then plug it back in.

LOCATION OF BUTTONS

XL-MC302C  
XL-MC301C (control unit)



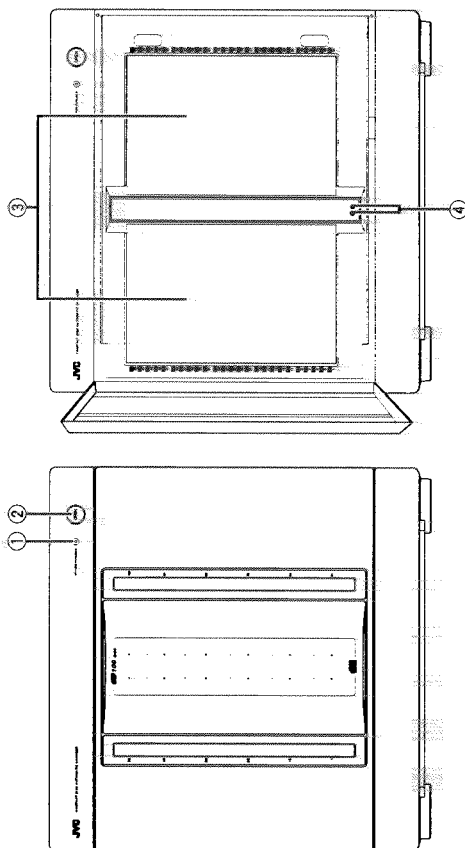
The operation for each button is described in the section indicated with the → mark.

- ➊ **POWER (ON/STANDBY) switch and STANDBY/RECEIVED indicator**  
→ "Turning on the power" on page 9  
To turn off the power completely, disconnect the power cord from the wall outlet.
- ➋ **DELETE FILE button**  
→ "Deleting a file" on page 18.
- ➌ **CONT./ONE DISC button**  
Selects either continuous playback of all discs or playback of the disc in the single disc tray.  
→ "CONTINUE PLAY" on page 13  
→ "ONE DISC PLAY" on page 14.
- ➍ **Single disc tray**  
→ "Loading the single disc tray" on page 10.
- ➎ **OPEN/CLOSE button**  
Opens and closes the single disc tray.  
→ "Loading the single disc tray" on page 10.
- ➏ **PLUS 1 button**  
→ "Specifying the single disc tray" on page 11.
- ➐ **USER FILE button**  
→ "USER FILE" on page 17.
- ➑ **DISC button**  
→ "Specifying a desired disc" on page 11.
- ➒ **TRACK button**  
→ "Specifying a desired track" on page 11.
- ➓ **Numeric buttons**  
These buttons are used to specify the track number, disc number, or user file number.
- ➔ **PLAY button**  
→ "Playing a disc" on page 11.

- ➕ **PAUSE button**  
→ "Playing a disc" on page 11.
- ➖ **STOP/CLEAR button**  
→ "Stopping playback" on page 12.
- ➗ **DISC SKIP buttons**  
→ "Skipping to a desired disc" on page 12.
- ➘ **SKIP buttons**  
→ "Skipping to a desired track" on page 12.
- ➙ **SEARCH buttons**  
→ "Searching for a desired section" on page 12.
- ➚ **Display window**  
Shows disc status information.
- ➛ **MEMORY button**  
This button is used to memorize disc and/or track number in the following operation modes.  
→ "PROGRAM PLAY" on page 16.  
→ "USER FILE" on page 17.  
→ "DELETE FILE" on page 18.
- ➜ **CANCEL button**  
Press this button to cancel displayed information.
- ➝ **CALL button**  
This button is used to display information in the following operation modes.  
→ "Door lock function" on page 10  
→ "PROGRAM PLAY" on page 16.  
→ "USER FILE" on page 17.
- ➞ **REPEAT button**  
→ "REPEAT" on page 14.
- ➟ **RANDOM button**  
→ "RANDOM PLAY" on page 15.
- ➠ **PROGRAM button**  
→ "PROGRAM PLAY" on page 16.
- ➡ **Remote sensor**  
Receives commands from the remote control unit.

## LOCATION OF BUTTONS

### XL-MC302M XL-MC301M (player unit)

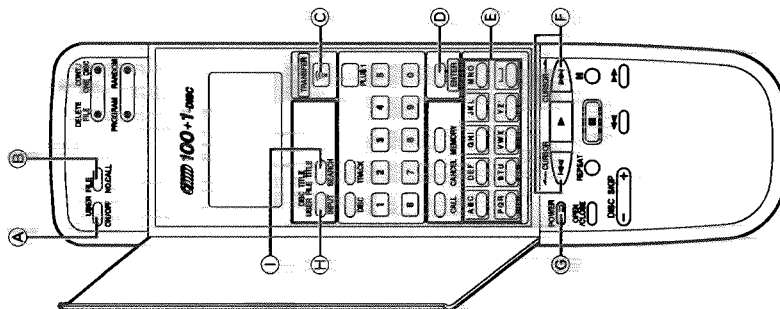


- ① **STANDBY/UNLOCK Indicator**  
This indicator lights when the player unit is in standby.
- ② **OPEN button**  
Press to open the front door on the player unit.
- Note**  
The unit cannot be operated when the door is open.  
Take care not to clamp your fingers when closing the player door.
- ③ **Disc trays**  
Up to 100 compact discs can be loaded into the player unit.
- ④ **Disc position Indicators**  
Indicate the position of the disc selected for playback. When you select a disc, the indicator moves up to the disc position and then moves with the disc down to the player section. During playback, the indicator blinks at the bottom of the window.

## LOCATION OF BUTTONS

### Remote control unit

The buttons without descriptions have the same functions as those on the control unit.



- ① **USER FILE ON/OFF button**  
This button turns the user file playback or programming mode on and off.  
→ 'USER FILE' on page 17.
- ② **USER FILE NO. CALL button**  
Use this button to select the user file number you wish to recall.  
→ 'USER FILE' on page 17.
- ③ **TRANSFER button**  
This button is used to transfer the disc and/or track number specified with the remote control unit to the control unit.
- ④ **ENTER button**  
This button is used to enter the specified disc title or user file name. Be sure to press this button after selecting characters for disc titles and file names.
- ⑤ **Alphabet buttons**  
These buttons are used to select letters for disc titles and user file names.
- ⑥ **CURSOR and ←→ (skip track) buttons**  
These buttons are used to move the cursor position when inputting the disc or user file title with the alphabet buttons or to skip to adjacent tracks during disc playback.
- ⑦ **POWER button**  
→ 'Turning on the power' on page 9.  
This button turns both the control and player unit ON/STANDBY.
- ⑧ **DISC TITLE/USER FILE TITLE INPUT button**  
→ 'TITLE INPUT' on page 19.
- ⑨ **DISC TITLE/USER FILE TITLE SEARCH button**  
→ 'DISC SEARCH' on page 20.  
→ 'USER FILE TITLE SEARCH' on page 20.

### Remote control operation

Point the remote control unit toward the REMOTE SENSOR on the front of the control unit and operate it steadily and carefully. The remote control unit can be used within a range of about 7 meters (23 feet) from the REMOTE SENSOR, and at angles of up to about 30 degrees.

## BASIC OPERATIONS

### Preliminary operations before playing a disc

#### Turning on the power

Press the **POWER** button.



Both the control and player units turn on. Press again to turn the unit off and activate standby mode.

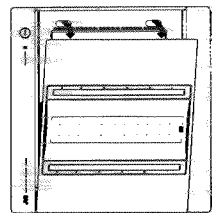
#### Note

This unit consumes approximately 4 watts of power in standby mode. To turn the power completely off, disconnect the power cord from the wall outlet.

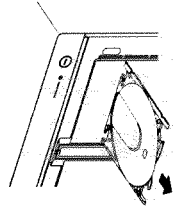
#### Loading discs in the player unit

You can load up to 100 discs in the player unit.

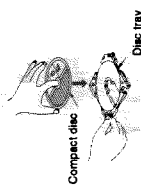
1. Press the **OPEN** button to open the front door of the player unit.  
Be careful not to put your hand too far inside the unit while the door is open.



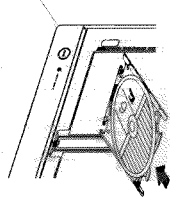
2. Slide out the disc tray.



3. Place a disc on the disc tray with its label side facing up.  
It is not possible to play discs inserted upside-down. Also, never place discs directly into the player unit without using a disc tray.



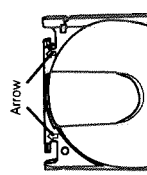
4. Line up the disc tray with the grooves in the player unit and push the tray back in.  
Be sure the disc tray is not skewed.



5. Close the door. Make sure the **STANDBY/UNLOCK** indicator goes out. This indicator lights when the door is open while the power is on.  
The unit can only be operated when the door is closed completely. 'OPEN' is displayed if you try to access the player unit while the door is open.

#### Be careful with the following when handling the disc tray.

- Be sure to insert trays according to the direction indicated by the arrows marked on each tray. Never insert them in the opposite direction.



- Never bend the disc tray or force it into the player unit.
- A skewed disc tray may cause malfunction.
- The openings in the disc trays are for passage of the laser signal. These openings leave part of the shiny surface on the bottom of the disc exposed, please be careful not to touch this shiny surface.
- Before proceeding to operate the control unit, close the door of the player unit completely and confirm that the **STANDBY/UNLOCK** indicator has gone out.

## BASIC OPERATIONS

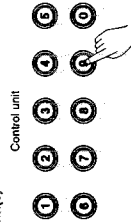
#### Door lock function

You can lock the door(s) on the player unit(s) so that they will not open even if the **OPEN** button is pressed. This is a convenient function for keeping your CDs safe.

1. While the unit is in the **STANDBY** mode, press the **CALL** button.



2. Enter "999" with the numeric buttons to lock the door(s) on the player unit(s).



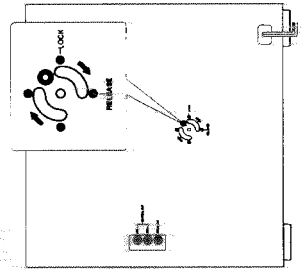
#### To release the door lock

Press the **CALL** button and enter "999" with the numeric buttons again.

### XL-MC302M When transporting the XL-MC301M

Secure the disc trays inside the player unit by turning the transportation knob on the rear panel 90° counterclockwise to the **LOCK** position.

- When moving the unit after playing a disc, press the **OPEN** button so that the disc which was played goes back to its original position. Take out all the discs loaded in the disc trays, close the door, and lock the unit for transportation.
- After the setting the unit in its new location, turn the knob clockwise to the **RELEASE** position. Playback is not possible when the disc trays are locked.



#### Loading the single disc tray

Use the **OPEN/CLOSE** button.

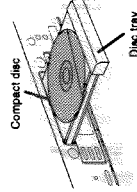


1. Press the **OPEN/CLOSE** button to open the disc tray.
2. Place a disc flat in the grooved depression on the disc tray with its label side facing up.
3. Press the **OPEN/CLOSE** button to close the disc tray.

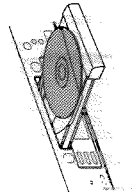
#### Note

When loading a disc onto the disc tray, be sure to place the disc so that it lies flat in the grooved depression. Otherwise, the disc may be damaged or stuck in the unit when the tray is closed.

#### Good



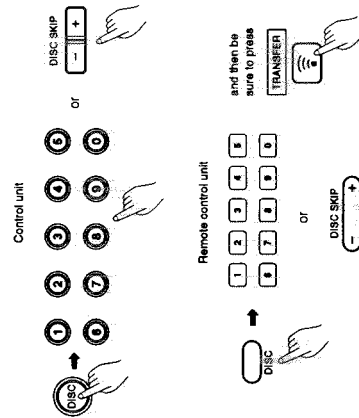
#### No Good



## Basic functions for disc playback

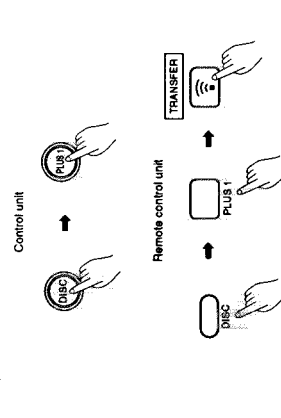
### Specifying a desired disc

Use the DISC and the numeric buttons or the DISC SKIP buttons.



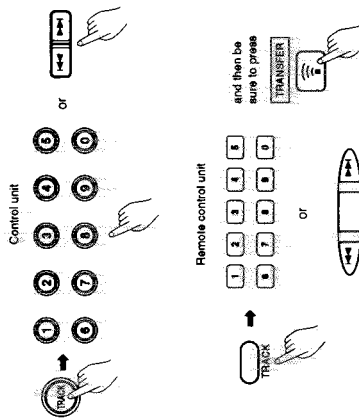
### Specifying the single disc tray

Use the DISC and the PLUS 1 button to choose the single disc tray.



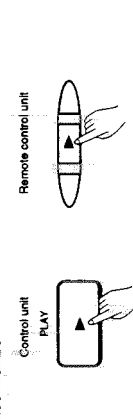
### Specifying a desired track

Use the TRACK and the numeric buttons or the TRACK buttons.



### Playing a disc

Press the ► PLAY button after specifying the desired disc and/or track number.



The ► indicator lights in the display and playback starts.

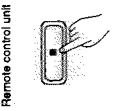
#### To stop playback temporarily

Press the ■ PAUSE button on either the control or the remote control unit. The ■ indicator lights on the display and playback stops temporarily. To resume playback, press either the ► PLAY button.

If you use the Compu Link system to connect this unit to a JVC amplifier or receiver, playback starts immediately from the beginning of the DISC PLUS 1, in one disc mode or continue mode when the ► PLAY button on the control/remote control unit or the CD button on the amplifier/receiver's source selector is pressed

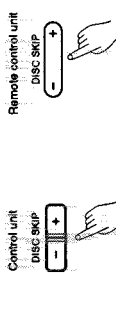
### Stopping playback

Press the ■ button.



### Skipping to a desired disc

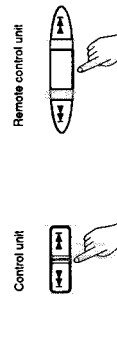
Use the DISC SKIP (►/◄) buttons.



To skip back to the previous disc, tap the ◄ button. To skip to the next disc, tap the ► button.

### Skipping to a desired track

Use the ◄/► (skip) buttons.



To skip to the beginning of the current track, tap the ◄ button. To skip to the beginning of previous tracks, press the ◄ button again. To skip to the beginning of the next track, tap the ► button.

**Note**  
You can specify the track number by using the numeric buttons (See page 11). Press the ► PLAY button to play the specified track.

Playback advances or reverses rapidly. The ◄ button puts playback into rapid reverse and the ► button puts playback into rapid advance. Release the button when you reach the section you desire, and the player resumes normal playback.



### Searching for a desired section

Hold down a ◄/► (search) button.

## Guidance for various functions

This unit has user file and delete file functions in addition to various playback functions. Please read this section and familiarize yourself with this unit.

### CONTINUE PLAY

You can start play from any track on any disc and play through to the final track on disc number 100.

### ONE DISC PLAY

You can start play from any track on any disc and play through to the final track on that disc.

### REPEAT

You can repeatedly play one track, one disc, an entire program, or all the discs loaded in the player unit. You can use this function also in the USER FILE mode.

### RANDOM PLAY

You can have the unit select and play tracks at random from a specific disc or from among all the discs loaded. You can also have the unit play tracks at random from a set of discs grouped in a user file.

### PROGRAM PLAY

You can program the unit to playback only certain tracks in any order from among all the discs in the unit.

### USER FILE

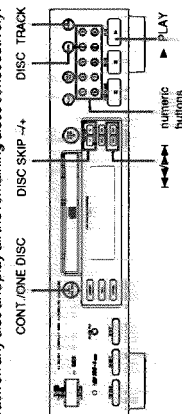
You can group selected discs and play them continuously (Except for the DISC PLUS 1).

### DELETE FILE

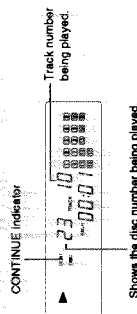
You can exclude certain tracks when playing back a disc by specifying the tracks to be deleted. (Only for tracks numbered 1-20) (Except for the DISC PLUS 1 and during the PROGRAM mode)

## CONTINUE PLAY

In continuous playback mode you can start playback from any track on any disc and play all the remaining discs consecutively.



1. Press the **CONT/ONE DISC** button so that the **CONT** indicator lights in the display.
2. Use the **DISC** and **numeric buttons** (or the **DISC SKIP ->** button) to select the disc number containing the track you want to play.  
If you want to start playback from the first track on the selected disc, skip to step 4.
3. Use the **TRACK** and **numeric buttons** (or the **skip** buttons) to select the track number from which you would like to start playback.  
The selected track number appears on the display.



4. Press the **▶ PLAY** button on the control unit to start playback.  
The unit plays back all of the remaining discs in consecutive order. Playback stops at disc number 100.

### To stop playback

Press the **■** button.

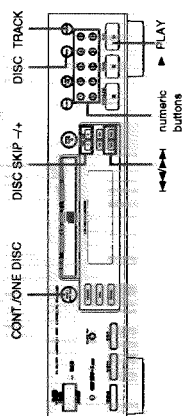
### When using the remote control unit

Press the **CONT/ONE DISC** button so that the **CONT** indicator lights in the display. Use the **DISC**, **TRACK** and **numeric buttons** as described in steps 2 and 3 above to select the disc and track numbers, then press the **TRANSFER** button. The selected disc and track numbers indicate in the display on the control unit. Press the **▶** button to start playback.

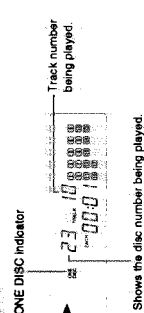
- If the disc and track numbers disappear from the display on the control unit before you press the **▶** button, press the **TRANSFER** button again and then press the **▶** button.

## ONE DISC PLAY

In one disc playback mode, you can start playback from any track on any disc and play through to the final track on that disc.



1. Press the **CONT/ONE DISC** button so that the **ONE DISC** indicator lights in the display.
2. Use the **DISC** and **numeric buttons** (or the **DISC SKIP ->** button) to select the disc number containing the track you want to play.  
If you want to start playback from the first track on the selected disc, skip to step 4.
3. Use the **TRACK** and **numeric buttons** (or the **skip** buttons) to select the track number from which you would like to start playback.  
The selected track number appears on the display.



4. Press the **▶ PLAY** button on the control unit to start playback.  
When the end of the disc is reached, playback stops automatically.

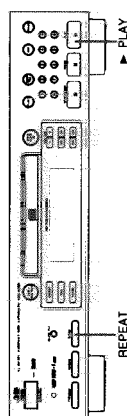
### When using the remote control unit

Press the **CONT/ONE DISC** button so that the **ONE DISC** indicator lights in the display. Use the **DISC**, **TRACK** and **numeric buttons** as described in steps 2 and 3 above to select the disc and track numbers, then press the **TRANSFER** button. The selected disc and track numbers indicate in the display on the control unit. Press the **▶** button to start playback.

- If the disc and track numbers disappear from the display on the control unit before you press the **▶** button, press the **TRANSFER** button again and then press the **▶** button.

## REPEAT

With the repeat functions, you can play all discs, one disc, or just one track repeatedly.



Press the **REPEAT** button on the control unit or remote control unit during playback so that either the **REPEAT** or **REPEAT 1** indicator lights in the display.

### In CONTINUE mode

When the **REPEAT** indicator is lit, playback starts again with the **PLUS 1** tray after all the discs in the player unit have finished playing. When the **REPEAT 1** indicator is lit, the current track is played repeatedly.

### In ONE DISC mode

When the **REPEAT** indicator is lit, all tracks on the selected disc are played back repeatedly. When the **REPEAT 1** indicator is lit, the current track is played repeatedly.

### In PROGRAM mode

When the **REPEAT** indicator is lit, the step in the program is played back repeatedly. When the **REPEAT 1** indicator is lit, the current step is played repeatedly.

### In USER FILE mode

When the **REPEAT** indicator is lit in **CONTINUE** mode, all tracks on all the discs in the selected user file are played back repeatedly. When the **REPEAT** indicator is lit in **ONE DISC** mode, all tracks on the selected disc in the selected user file are played back repeatedly. When the **REPEAT 1** indicator is lit in either **CONTINUE** or **ONE DISC** mode, the current track is played repeatedly.

### To stop repeat playback

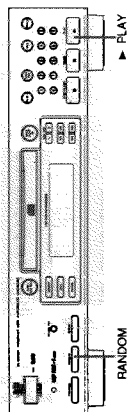
Press the **■** button on the control unit or remote control unit.

### To cancel repeat mode

Press the **REPEAT** button on the control unit or remote control unit so that the **REPEAT** indicator goes out.

## RANDOM PLAY

In random mode, you can have the unit select and playback tracks in a random order.



1. While in stop mode, press the **RANDOM** button on the control unit or remote control unit so that the **RANDOM** indicator lights in the display.
2. Press the **▶** **PLAY** button on the control unit or remote control unit to start playback.

### In CONTINUE mode

When you press the **▶** button on the control unit or remote control unit, the unit selects disc and track numbers for playback at random from among all of the discs loaded in the single disc tray or player unit. If you press the **REPEAT** button to light the **REPEAT** 1 indicator, the current track can be played back repeatedly.

### In ONE DISC mode

Select the disc you want to playback. When you press the **▶** button on the control unit or remote control unit, the unit selects tracks for playback at random from the specified disc. The unit enters stop mode when all the tracks on the specified disc have been played back once. If you press the **REPEAT** button to light the **REPEAT** 1 indicator, you can play all the tracks on the selected disc at random repeatedly. If you press the **REPEAT** button to light the **REPEAT** 1 indicator, the current track can be played back repeatedly.

### In USER FILE mode

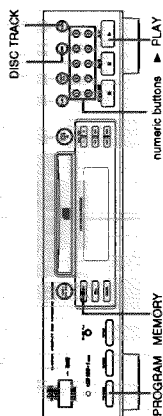
When you press the **▶** button on the control unit or remote control unit, the unit selects disc and track numbers for playback at random from all the discs in the specified user file. If you press the **REPEAT** button to light the **REPEAT** 1 indicator, the current track can be played back repeatedly. In **ONE DISC** mode, if you press the **REPEAT** button to light the **REPEAT** 1 indicator, you can play all the tracks on the selected disc at random repeatedly. If you press the **REPEAT** button to light the **REPEAT** 1 indicator, the current track can be played back repeatedly.

### To cancel random playback

Press the **■** button on the control unit or remote control unit.

## PROGRAM PLAY

You can program up to 32 steps (tracks or discs) in any order from among all the discs in the control unit and player unit.



As an example, the following steps show how to program track number 12 on disc number 57 and track number 6 on disc number 32 respectively.

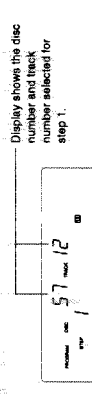
1. In stop mode, press the **PROGRAM** button on the control unit or remote control unit so that the **PROGRAM** indicator lights in the display.
2. Use the **DISC** and numeric buttons to select the disc which contains the track to be programmed.  
ALL (all tracks) appears on the display.

### To program the entire disc

Skip to step 4. If you do not specify the track number after selecting a disc, all the tracks on the displayed disc are programmed. (Be sure to press the **TRANSFER** button if you are using the remote control unit.)

3. Select the track number with the **TRACK** and numeric buttons (Be sure to press the **TRANSFER** button if you are using the remote control unit.)

If you want to cancel the displayed program step, press the **CANCEL** button and then enter a new disc number and/or track number.



4. Press the **MEMORY** button on the control unit or remote control unit.  
The first track is programmed as step 1.

5. Select the disc number and track number to be programmed for step 2. (Be sure to press the **TRANSFER** button if you are using the remote control unit.)

In this example, press the **DISC** button, the 3 button and then the 2 button. Next, press the **TRACK** button followed by the 6 button. (Then press the **TRANSFER** button if you are using the remote.)  
The following display appears.



Press the **MEMORY** button after selecting the track.

6. Repeat steps 2 to 4 for other tracks and/or discs you wish to program.

7. Press the **▶** **PLAY** button on the control unit or the **▶** button on the remote control unit to start program play.

The programmed tracks and/or discs are played in the programmed order.  
You can skip to other program steps during playback by using the **◀** **▶** buttons.

### To check the program contents

Press the **CALL** button while in stop mode. The programmed contents are displayed one by one in the programmed order each time you press the **CALL** button.

- When the unit is in program play mode, press the **■** button to enter stop mode before operating the **CALL** button.

### To modify the program contents

Press the **CALL** button repeatedly until the display shows the program step you wish to correct. Then enter the new disc number and/or track number referring to steps 2, 3 and 4 above.

To add a new step to the end of the program, press the **CALL** button, wait for the step number display to stop flashing, and enter the disc number and/or track number information referring to steps 2, 3, and 4 above.

To delete a program step, press the **CALL** button until the display shows the program step to be deleted and then press the **CANCEL** button. You can also delete the currently displayed program step during programming.

- When the unit is in program play mode, press the **■** button on the control unit or remote control unit to enter stop mode before deleting a program step.
- If you program a disc number for a tray without a disc, that step is automatically erased.

### To exit program mode

Press the **PROGRAM** button. The program contents are not erased. Whenever you select the program mode with the **PROGRAM** button, you can play the tracks in the previously programmed order.

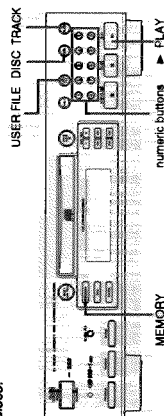
When the power of the unit is turned off and the unit enters **STANDBY** mode, the program contents are stored. When the power is turned on again, the unit re-enters the program mode. Press the **▶** button to start program playback from step 1.

### To clear an entire program

Press the **■** **STOP/CLEAR** button on the control unit while in program stop mode. The program contents will be cleared, but the program mode is not cancelled.

## USER FILE (except for DISC PLUS 1)

User file lets you create a group discs from the player unit and play them back in the programmed or the random order. You can create up to 10 different user files, each containing up to 32 discs.



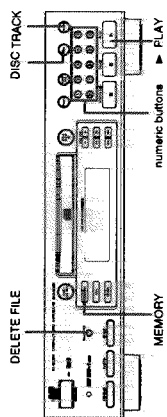
1. Press the **USER FILE** button on the control unit or the **USER FILE ON/OFF** button on the remote control unit during stop mode so that the **USER FILE** indicator lights in the display.
2. Select a user file number (1 - 10) by pressing the numeric buttons on the control unit or the **USER FILE NO CALL** button on the remote control unit.  
To enter user file number 10, press the '0' button.
3. Use the **DISC** and numeric buttons to select a disc you want to store in the user file. (Be sure to press the **TRANSFER** button if you are using the remote control unit.)



4. Press the **MEMORY** button.
5. Repeat steps 3 and 4 to program other discs.
6. Press the **PLAY** button on the control unit or the **PLAY** button on the remote control unit to start playback.  
Playback starts from the currently displayed disc number. To start playback from a specific disc, press the **DISC SKIP** - or - **+** button until the disc number you want to play appears in the display, then press the **PLAY** button.

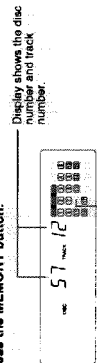
## DELETE FILE (except for DISC PLUS 1 and RANDOM)

With delete file, you can specify undesired tracks and then play only the remaining tracks. You can use this function for with tracks 1-20 on each disc.



As an example, the following steps show how to delete track number 12 on disc number 57 and track number 6 on disc number 34.

1. Press the **DELETE FILE** button on the control unit or remote control unit during stop mode so that the **DELETE FILE** indicator lights in the display.
2. Use the **DISC** and numeric buttons to select the disc number containing the track to be deleted.
3. Select the track number by using the **TRACK** and numeric buttons. (Be sure to press the **TRANSFER** button if you are using the remote control unit.)
4. Press the **MEMORY** button.



The deleted track number 12 indicator goes out.

5. Select the next disc and the track number you wish to delete. (Be sure to press the **TRANSFER** button if you are using the remote control unit.)  
For example, press the **DISC** button, the 3 button and then the 4 button. Then press the **TRACK** button and the 6 button. After selecting the track, press the **MEMORY** button. The following display appears.



The deleted track number 6 indicator goes out.

6. Repeat steps 2 to 4 for other tracks or discs you wish to delete.

Can you remember the titles of all the discs in the unit? Since you can store up to 300 discs (if you connect additional player units) you may find it difficult to remember which discs are stored in which tray of which unit. To solve this problem, we incorporated a disc title memory function into the remote control unit.

Once disc titles and disc tray numbers are stored in the remote control unit's disc title memory bank, you can easily find out which disc tray contains the disc you desire.

You can also title the user files.

Keep the following in mind when using the disc title memory bank.

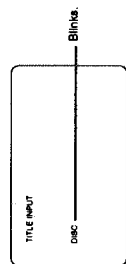
- Disc title input**  
Enter the disc tray number 1 - 100 (1 - 300 with the XL-MCM1), and then enter the corresponding disc title.
- Disc search - When you know the disc title but not the location.**  
You can find the disc tray number of any disc by specifying one or more letters of the disc title. You can specify as many letters as you desire, starting from the first letter.
- User File Title Search**  
You can display user file titles by entering the user file number.
- User File Title Input**  
Enter the user file numbers (1 - 10), and then enter the corresponding user file title.

## TITLE INPUT (except for DISC PLUS 1)

To utilize the disc title memory bank function, it is necessary to input the disc tray number, 1 - 100 (1 - 300 with the additional units) and the corresponding disc title beforehand. Up to 8 characters (including digits) can be used for each disc title.

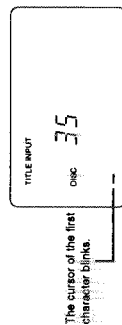
- Press the DISC TITLE INPUT button.**

The unit enters title input mode and the TITLE INPUT indicator lights in the remote control unit's display. To input the title for the user files, press the USER FILE ON/OFF button after pressing the DISC TITLE INPUT button.



- Specify the disc tray number 1 - 100 (1 - 300 with the additional units) with the numeric buttons, then press the ENTER button.**

The DISC SKIP buttons can also be used to specify the disc number. For user files, specify the file number (1 - 10) with the numeric buttons or the USER FILE NO. CALL buttons. (To enter user file number 10, press the 0 button.) If the disc or user file number already has a title, it appears in the display on the remote control unit.

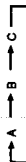


The cursor of the first character blinks.

- Specify the disc title by using the letter or numeric buttons. After choosing a character or number, use the —> button to move the cursor. Press the ENTER button after the entry is completed.**



Each time the button is pressed, the character in the display changes as follows.



If you want to choose a number, press the corresponding numeric button. If you want a space, press the —> button.

To correct a character, use the —< or —> button to move the cursor to the character to be corrected and input a new character.

- To enter a title for another disc tray, press the DISC button, then repeat steps 2 and 3.**

To enter a title for another user file, press USER FILE ON/OFF, then repeat steps 2 and 3.

**To play the disc whose title was just stored**  
Press the TRANSFER button and then the —> button.

**To correct a disc title**

Use the DISC and numeric buttons or the DISC SKIP buttons followed by the ENTER button so that the disc title you want to correct appears in the display. Move the cursor to the character to be corrected by using the —< or —> buttons, then input the new character. After correcting the disc title, be sure to press the ENTER button.

**To delete a disc title**

Use the DISC and numeric buttons or the DISC SKIP buttons followed by the ENTER button so that the disc title to be deleted appears on the display, then press the CANCEL button. The disc title goes out. Be sure to press the ENTER button.

**To exit title input mode**

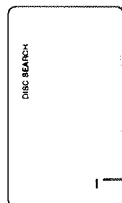
Press the TITLE INPUT button again. The whole display goes out and the title input mode is cancelled.

## DISC SEARCH

You can search for a disc tray number by specifying one or more of the characters in the disc title.

- Press the DISC TITLE SEARCH button.**

The unit enters disc search mode and the DISC SEARCH indicator lights in the display.



The cursor blinks for the first character.

- Specify one or more letters of the disc title (starting from the first letter) and press the ENTER button.**

You do not have to input the entire disc title. The unit searches for disc titles starting with the same first few characters, starting from disc tray number 1.

- If the title displayed is not the one you are looking for, press the DISC SKIP button until the desired title appears in the display.**

**To play the disc whose disc number is displayed**

Press the TRANSFER button and then the —> button.

**To exit disc search mode**

Press the DISC TITLE SEARCH button again. The whole display goes out and disc address search mode is cancelled.

## USER FILE TITLE SEARCH

You can identify user files by their titles.

- Press the USER FILE TITLE SEARCH button.**

The unit enters disc search mode and the DISC SEARCH indicator lights in the display.

- Press the USER FILE ON/OFF button.**



Blinks in the display.

- Use either the numeric buttons or the USER FILE NO. CALL button to select a user file. (To enter user file number 10, press the '0' button.)**

The title appears in the display automatically.

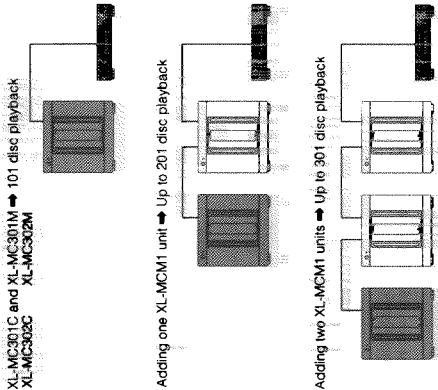
- To see the title for a different user file, use either the numeric buttons or the USER FILE NO. CALL button.**

**To exit the USER FILE TITLE search mode**

Press the USER FILE SEARCH button again. The whole display goes out and disc address search mode is cancelled.

### 300 disc playback

You can enjoy all of the functions listed in this instruction with up to 300 CDs by adding optional XL-MCM1 units (sold separately). The operation is the same after setting the DISC SW on the back of the additional XL-MCM1 according to the number of the discs, 101-200 or 201-300.



### COMPU LINK remote control system

The COMPU LINK Remote Control System controls relative operations between components automatically and facilitates various operations.

#### COMPU LINK Remote Control System

This is a system originated and developed by JVC for facilitating various system operations.  
The following is a brief explanation of this system:

##### Automatic source selection

When you use the provided COMPU LINK cord to connect this unit to other JVC products equipped with COMPU LINK jacks, you can switch system components with a the touch of a button.  
One touch of the source selector button on a JVC amplifier or receiver starts operation of the selected component automatically.  
Likewise, when you press the play button on one of the system components, the source selector on the amplifier or receiver changes automatically and the previously selected component stops operation within five seconds.

##### Synchronized recording

Synchronized recording refers to the process in which a JVC cassette deck starts recording, synchronized with this unit. Synchronized recording is carried out as follows:

1. Set the cassette deck to the recording pause mode in accordance with its instructions.
2. To record only certain tracks, make a program of the tracks you desire.
3. Press the ► button on the front panel of this unit. The cassette deck automatically starts recording, synchronized with this unit.

##### Notes

- Synchronized recording stops automatically when this unit stops playback.
- To cancel synchronized recording, press the ■ STOP button on this unit or on the cassette deck.
- Setting the recording pause mode by pressing the PAUSE button after pressing the ■ REC. and ► PLAY buttons simultaneously synchronized recording will not be possible. For details, refer to the instructions for the cassette deck.

##### Automatic power on/off function

This function controls the power of the receiver or amplifier or the power of this unit in the following manner:

- When this unit enters playback mode, the receiver or amplifier turns on automatically.
- When the source selector of the receiver or amplifier is set to the CD function mode, this unit turns on automatically.

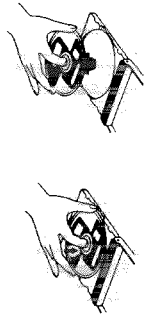
##### Notes

- Abnormal operation will result if the power supply of the component(s) is interrupted. If this happens, you must start over again.
- Be sure that the COMPU LINK jacks of the individual components are connected with the provided COMPU LINK cord. Also, be sure to fully read the instructions for each component.

### Care and handling

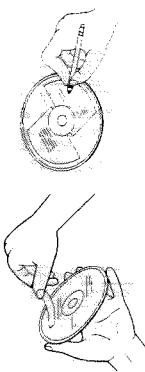
#### How to handle CDs

When handling compact discs, do not touch the bottom (reflective silver side - the side without the label) of the disc. If Since compact discs are made of plastic, they are easily damaged. If the disc gets dirty, dusty, scratched or warped, the sound will not be picked up correctly and may cause the CD player to malfunction.



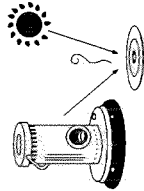
#### Even on the label side

Do not damage the label side, stick paper to or use adhesive on this surface.

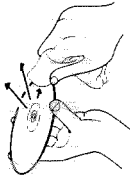


#### Storage

Make sure to keep discs in their cases. If discs are piled one on top of another without their protective cases, they can be damaged. Do not put discs in a location where they will be exposed to direct sunlight or in any place with high temperature or humidity. Avoid leaving discs in your car!



- #### Maintenance of discs
- When there are fingerprints or other dirt adhering to a disc, use a soft, dry cloth, and wipe the disc in a straight line starting from the inside and moving outwards.
  - If difficult to clean, wipe the disc with a cloth moistened with water.
  - Never use record cleaners, petrol, alcohol or any anti-static agents.



## TROUBLESHOOTING

What appears to be a malfunction may not always be serious. Please go through the following list before requesting service.

| Symptom                                 | Possible cause                                                                                   | Remedy                                                                                                                                                                         |
|-----------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A track on a CD is not played.          | The CD is missing.                                                                               | Load the CD.                                                                                                                                                                   |
|                                         | The CD is loaded upside-down.                                                                    | Load the CD with its label-side up on the disc tray or in the magazine.                                                                                                        |
|                                         | The disc tray is inserted skewed                                                                 | Insert it horizontally.                                                                                                                                                        |
|                                         | The audio cord is disconnected.                                                                  | Connect the cord firmly.                                                                                                                                                       |
|                                         | The CD is scratched.                                                                             | Replace the disc with a new one.                                                                                                                                               |
|                                         | The front door of the player unit was left open.                                                 | Close the door.                                                                                                                                                                |
| Programming is not possible.            | The transport lock knob is locked for transportation.                                            | Disconnect the AC power cords of both control and player units, turn the knob on the rear panel of the player unit to the RELEASE position, then reconnect the AC power cords. |
|                                         | The control/signal cord is disconnected.                                                         | Disconnect the AC power cords of both control unit and player unit, and connect the control/signal cord firmly, then reconnect the AC power cords.                             |
|                                         | The program indicator does not light.                                                            | Press the PROGRAM button to activate the program mode.                                                                                                                         |
|                                         | The control/signal cord is disconnected.                                                         | Disconnect the AC power cords of both control unit and player unit, connect the control/signal cord firmly and reconnect the AC power cords.                                   |
| The sound is intermittent or harsh.     | The disc is dirty.                                                                               | Wipe off the disc surface with a soft cloth.                                                                                                                                   |
|                                         | The disc is scratched.                                                                           | Replace the disc with a new one.                                                                                                                                               |
|                                         | The disc is warped.                                                                              | Replace the disc with a new one.                                                                                                                                               |
|                                         | Paper or adhesive tape is stuck to the disc.                                                     | Remove it completely.                                                                                                                                                          |
|                                         | The control/signal or audio cord is too close to the AC power cord.                              | Move them away from the AC power cord.                                                                                                                                         |
| Remote control unit cannot be operated. | The batteries are exhausted.                                                                     | Replace the batteries with new ones.                                                                                                                                           |
|                                         | The front door of the player unit is open.                                                       | Close the door.                                                                                                                                                                |
|                                         | The remote control unit is not pointed at the remote sensor.                                     | Point the remote control unit at the remote sensor.                                                                                                                            |
|                                         | The control/signal cord is disconnected.                                                         | Disconnect the AC power cords of both control unit and player unit, connect the control/signal cord firmly and reconnect the AC power cords.                                   |
| Playback will not stop.                 | The control/signal cord became disconnected during playback.                                     | See above.                                                                                                                                                                     |
| Operation is not possible.              | The built-in micro-computer may not function properly in static electricity or lightning storms. | Disconnect the AC power cords of both control unit and player unit once, then reconnect them.                                                                                  |
| You cannot operate the XL-MCM1.         | The DISC SW is not set to the correct position.                                                  | Unplug the power cord and set the DISC SW to the proper position.                                                                                                              |

## SPECIFICATIONS

|                         |                                          |
|-------------------------|------------------------------------------|
| <b>General</b>          | Compact disc digital audio system        |
| System:                 | Non-contact optical detection system     |
| CD capacity:            | 100 + 1 discs                            |
| Power requirement:      | AC 120 V ~, 60Hz                         |
| Power consumption:      | XL-MC301C 14 watts<br>XL-MC301M 14 watts |
| Dimensions (W x H x D): | 435 x 103 x 280.5 mm                     |
| XL-MC302C XL-MC301C     | 17-1/8 x 4 - 1/16 x 11 - 1/16 inches     |
| XL-MC302M XL-MC301M     | 360 x 386 x 376.1 mm                     |
|                         | 14-3/16 x 14 - 7/16 x 14-13/16 inches    |
| Mass:                   |                                          |
| XL-MC302C XL-MC301C     | 3.5 kg                                   |
| XL-MC302M XL-MC301M     | 7.7 lbs                                  |
|                         | 13.7 kg                                  |
|                         | 31 lbs                                   |

### Audio performance

|                            |                            |
|----------------------------|----------------------------|
| Frequency response:        | 2 Hz to 20,000 Hz          |
| Dynamic range:             | More than 99 dB at 1 kHz   |
| Signal to noise ratio:     | More than 107 dB           |
| Channel separation:        | More than 94 dB at 1 kHz   |
| Total harmonic distortion: | Less than 0.0020% at 1 kHz |
| Wow and flutter:           | Below the measurable limit |
| Analog output level:       | 2.0 Vrms at full scale     |

### Accessories

|                                     |   |
|-------------------------------------|---|
| Remote control unit (RM-SXMC301U)   | 1 |
| Battery (R6P, AA)                   | 2 |
| Complink cable (1 m)                | 1 |
| Control/Signal cord (3P) (2 m)      | 1 |
| Audio cord (stereo pin-plugs) (1 m) | 1 |
| CD booklet                          | 1 |
| AC power cord                       | 1 |

Design and specifications subject to change without notice.

## ■ Technical instruction

### 1. Control communication between Controller and CDChanger.

The Changer section is controlled by Controller section via 'Control Signal' cord. It will however rest itself when power is applied and the Open door switch pressed.

The control signal from the Controller is called TXD -the return status signal from the Changer is called RXD.

#### 1) Controller side

When a disc function is selected by the remote controller or by the front panel controls on the XL-MC301C/302C -IC251 the main System Controller interprets this instruction and outputs the relevant 8bit control signal by IC751 (parallel to serial control interface) and output, from pin 19 as the serial control signal, TXD, through IC753, the Buffer circuit, to the Changer Unit.

At the player side this control signal is labeled 'C TO M'. It is buffered and entered into pin 23 of IC201, the Mechanism Controller. IC201 will respond by moving the Elevator .5ms after receiving the command the status of the mechanism will be sent from IC201 pin 22 (M TO C) via IC702 to the Controller.

This serial data signal will be input to the Controller's interface IC751 pin 3 (RXD). The serial is converted into parallel an output to the System Controller, IC251.

Depending on the selected disc # the height of the Elevator Mechanism is detected by the Photo Interrupter, PH804. PH804 moves up and down with the Elevator Mechanism and detects the height by detecting the slits in the disc rails. The Mechanism Controller counts tray levels and stops the Elevator Mechanism when it has reached the correct level.

The Loading motor then pulls the selected disc tray into the Elevator Mechanism. There are two columns of 50 discs. Disc 1 to 50 are on the left side and disc 51 to 100 are on the right side. When the disc selected is below 50 the Traverse Mechanism stays to the left side. If the disc selected is above #50 then the Traverse Feed Motor moves the Traverse Mechanism to the right side.

#### 2) Changer Section

##### Vertical Position detect

When a tray is removed from or being returned to a column location the vertical motor raises the Elevator Mechanism up and down. The Photo interrupter PH804 is mounted on the Elevator Mechanism. In the rest position light from the phototransistor is shown on the photo diode. As the transistor is fed to pin 15 (PHL) of the Mechanism level and the processor can therefore count the levels as it moves up and down.

##### EEROM Backup

When a disc is removed from the tray column the processor must remember where it was taken from. During normal operation this location is stored in the Mechanism microprocessor IC201.

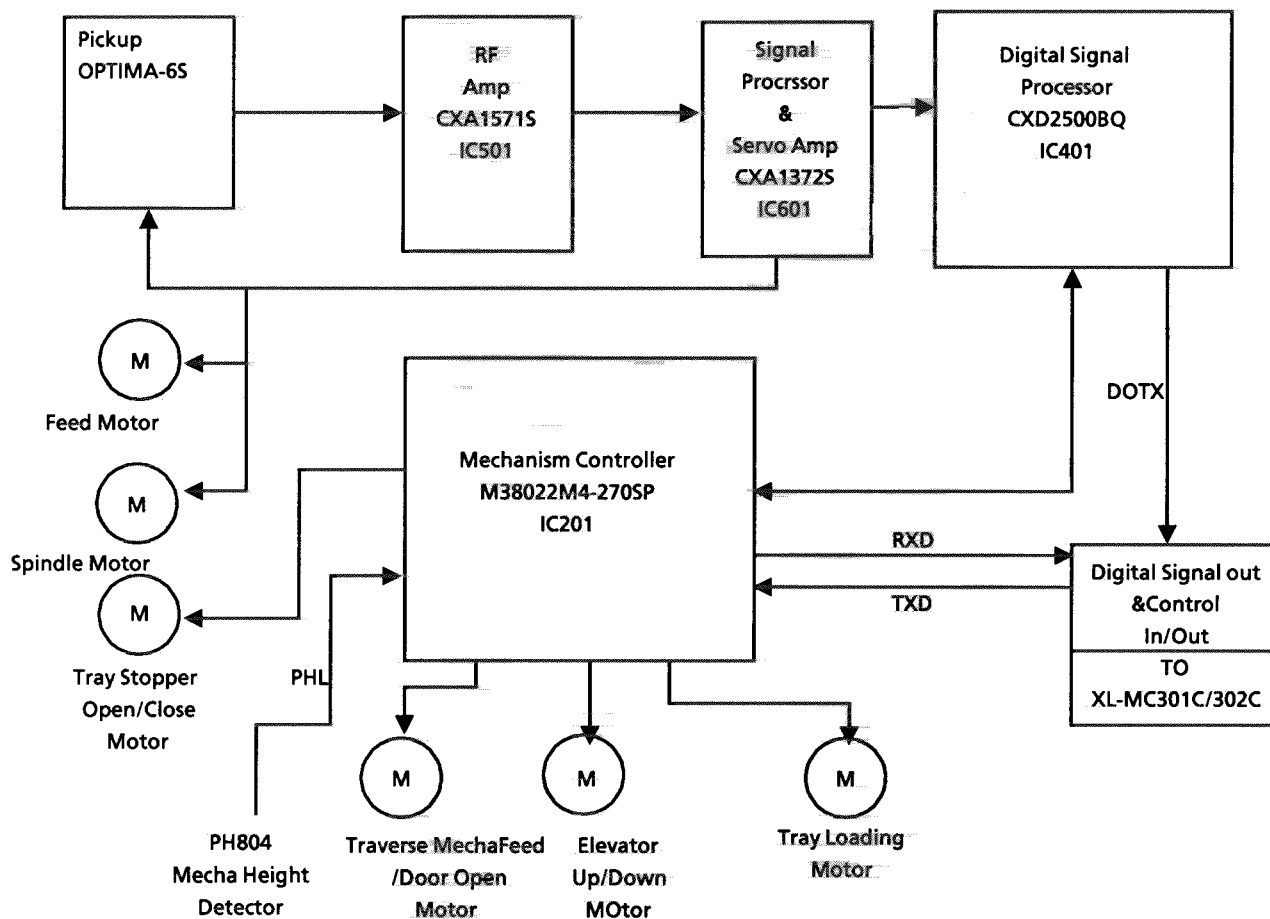
There are two conditions however where it is necessary to backup this tray location is external memory. During an emergency condition or if the power is removed when a disc has been removed from a tray column the location is stored in the EEROM, IC202.

In an emergency condition, the microprocessor will retry the function it is performing until it times out. At this time the data representing the tray location is output from pin 37 (SDA) to the EEROM chip, pin 5.

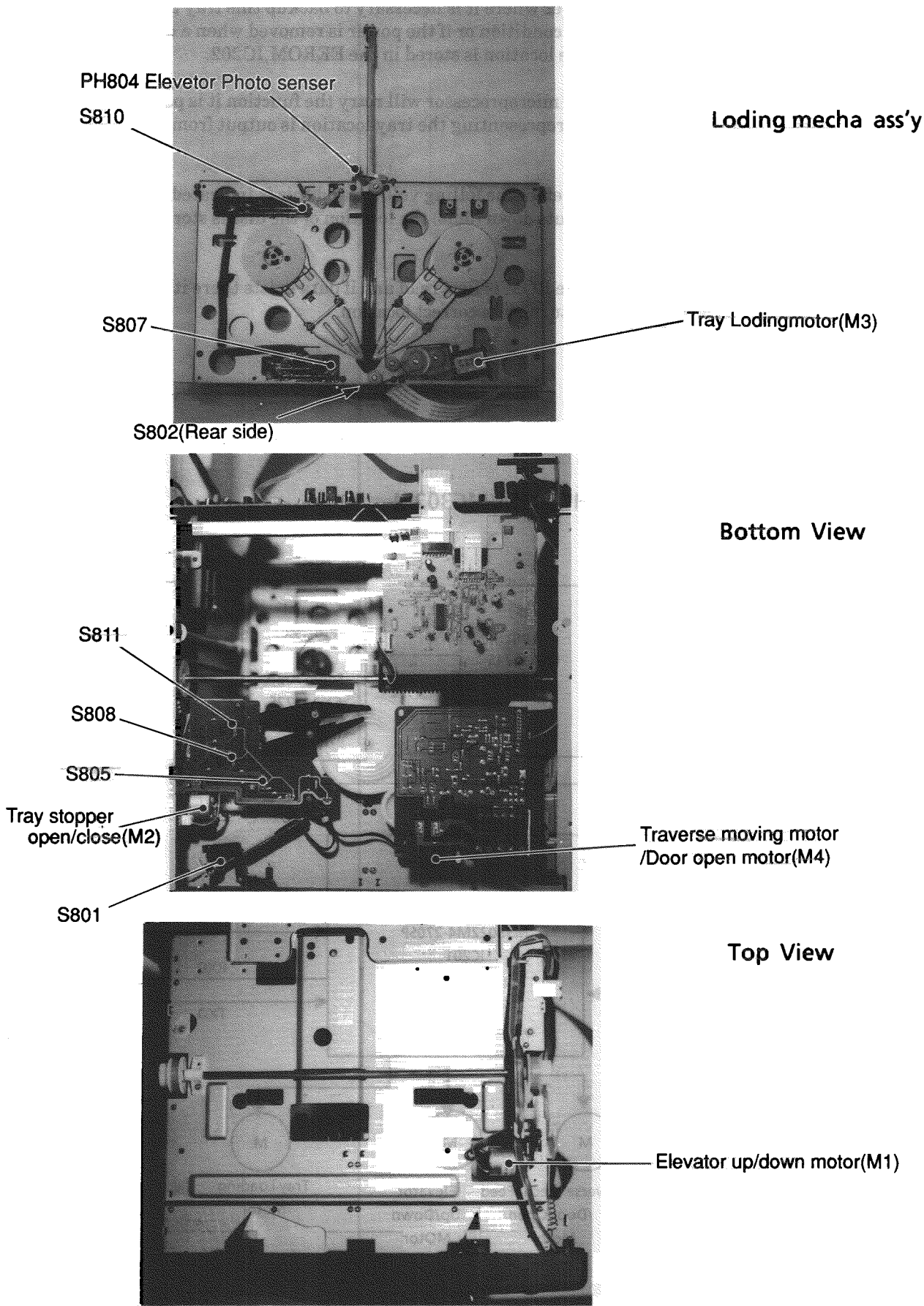
If the power is removed IC203 detects the falling voltage and this is indicated to pin 28 of IC201 (OFFDET). Before the power shuts down (5ms) the location of the disc is stored in the EEROM, IC202.

When the unit is powered on the ROM is first read and if data exists there it is interpreted and the disc in the mechanism is returned its correct location.

## ■ Composition of the XL-MC301M/MC302M



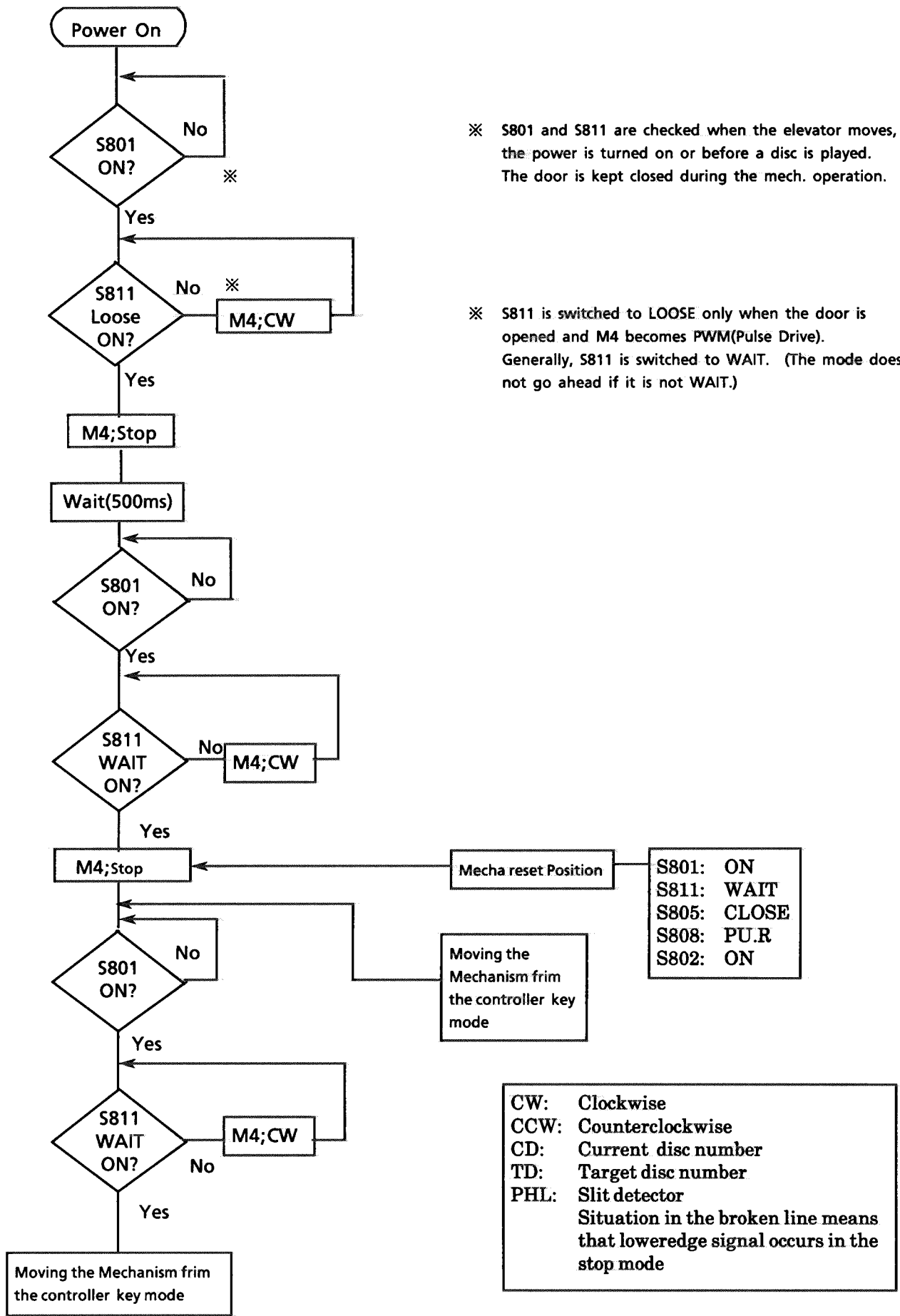
■ Position of switch and motor



## Operation of each switch and sensor(XL-MC301M/302M)

| SW Name                     | Symbol | A Part of SW                                                                                                                     | Pin No of Mecha<br>controlemon (IC201)  | Operation Mode                                 | Motor |
|-----------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|-------|
| Door SW                     | S801   | For detecting the door opened or closed.<br>The switch is turned on when the door is closed.                                     | 24pin                                   | Door close<br>SW : ON 'L'                      |       |
| Rest position detect SW     | S802   | For detecting the elevator is at the rest position. The switch is turned on when the elevator is at the rest position.           | 16pin                                   | Rest position<br>SW:ON 'L'                     | M1    |
| Door lock sensor SW         | S811   | Pin1 of P812 is on when the base is opened.                                                                                      | LOOSE side 45pin<br>WAIT side 46pin     | → Door unlock : ON 'L'<br>→ Door lock : ON 'L' | M4    |
| Tray stopper open /close SW | S805   | When the tray stopper is closed, pin 6 of P812 is on. When the tray stopper is opened, pin 5 of P812 is on.                      | T.CLOSE side 43pin<br>T.OPEN side 44pin | → L→H :CLOSE<br>→ L→H :OPEN                    | M2    |
| Tray loading SW             | S807   | The switch is on turned on when a tray is loaded.                                                                                | 25pin                                   | Finish load<br>SW : ON 'L'                     | M3    |
| Pick up position detect SW  | S808   | Pin 4 of P812 is on when the traverse mechanism is at the right. Pin 3 of P812 is on when the traverse mechanism is at the left. | PU.R 40pin<br>PU.L 41pin                | → Right side :ON 'L'<br>→ Left side :ON 'L'    | M4    |
| Tray JAB SW                 | S810   | The switch is turned on when a tray is returned into the holder.                                                                 | 29pin                                   | Return a tray to holder<br>SW : ON 'L'         | M3    |
| Photo sensor                | PH804  | The height of the elevator is detect by the sensor.                                                                              | 15pin                                   | Count of PHL                                   |       |

■ Frowchart of starting mechanism



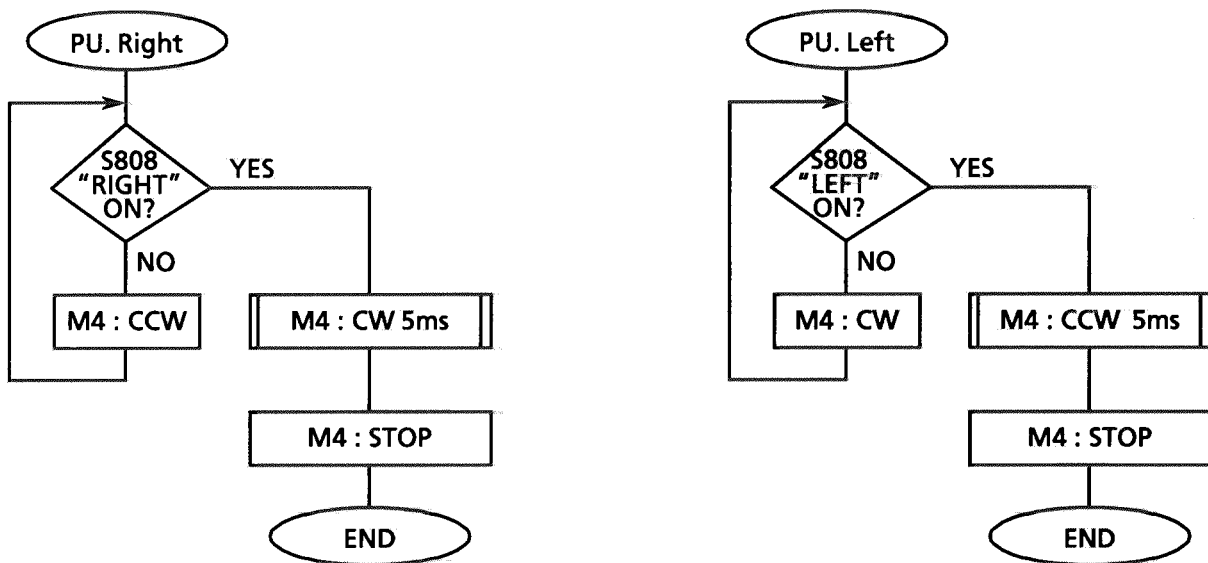
## ■ Operation of the Mechanism

### Traverse Mechanism Movement

When a disc is selected the Loading motor then pulls the selected disc tray is to the Traverse Mechanism. There are two columns of 50 disc. Viewing from the front Disc 1 to 50 are on the left side and 51 to 100 are on the right side. The normal 'rest' position for the Traverse Mechanism is the right side.

When the disc selected is above disc #50 the Traverse Mechanism stays at right side. When the disc selected is below disc #50 the Traverse Mechanism moves to the left side. The Traverse Feed Motor moved the Traverse Mechanism.

The traverse position detect switch ,S808, detects the position of the PU ass'y. This status is indicated to IC201, the Mechanism Microprocessor. The switch can be closed in one direction or the other by the SWITCH LEVER which moves when the mechanism switches from L to R or R to L. The switch lever is pushed when the main gear spins with the movement of the Traverse Mechanism .Relevant pin is pulled low(40:PU .R,41:PU.L)



◦ Traverse movement (Time out 6second)

### Elevator Mechanism Movement

The disc # and rail slit are synchronized so that the photosensor, PH804 can detect the elevator movement by counting the slits and incrementing or decrementing the disc level count. When the Elevator is moving the PHL signal is input to pin 15 of the Mechanism Controller, IC201.

The operation to move the elevator depends on where the target disc is in relation to the vertical 'current' position.

The 'current' position is compared with the selected disc position. With the Elevator at the 'current' position and the desired disc is less than 5 levels above the 'current' position-the Elevator is driven by a pulsed signal.

With the Elevator at the 'current' position and the desired disc is more than 5 levels above the 'current' position -the Elevator is driven by a DC voltage until it is 5 levels from the target. It is then driven by pulsed signal.

The output from the slit detector is monitored after the 'rest' switch is opened to determine that the elevator stops at the correct target level.

### Tray Stopper Open/Close Movement

Normally the Tray Stopper is locked to prevent discs coming out of the tray rails because of external shock . It will release and open during tray load and return.

S805 the Tray Stopper open/close detect switch detects whether the Tray Stopper is open or closed.

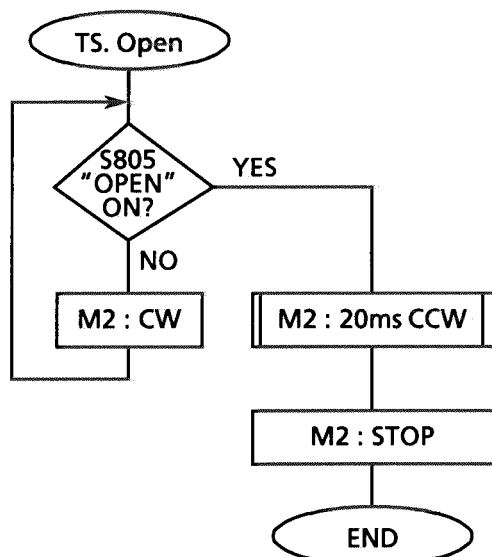
#### Tray Stopper open

The Tray Stopper will open when a disc is being returned to its column rail . or when a disc has been selected for play. When the Elevator moves to the correct level pin 61 (TYS O) outputs the tray Stopper Open signal to drive the Tray Stopper motor (M2). It outputs this drive signal for 180ms to open the Stopper . Unloading /loading is then completed.

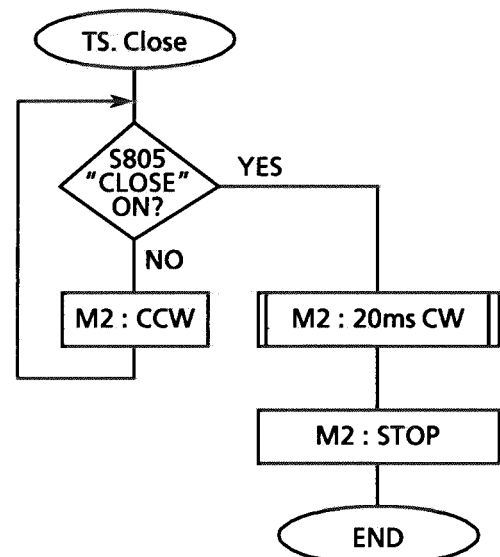
#### Tray Stopper Close

Tray finished loading /unloading IC201 pin 60 (TYSC) outputs the drive signal to the Tray Stopper motor ,M2,(6.6V)for 180ms to close the Tray Stopper.

#### ◦ Tray Stopper Open



#### ◦ Tray Stopper Close



### Loading Movement

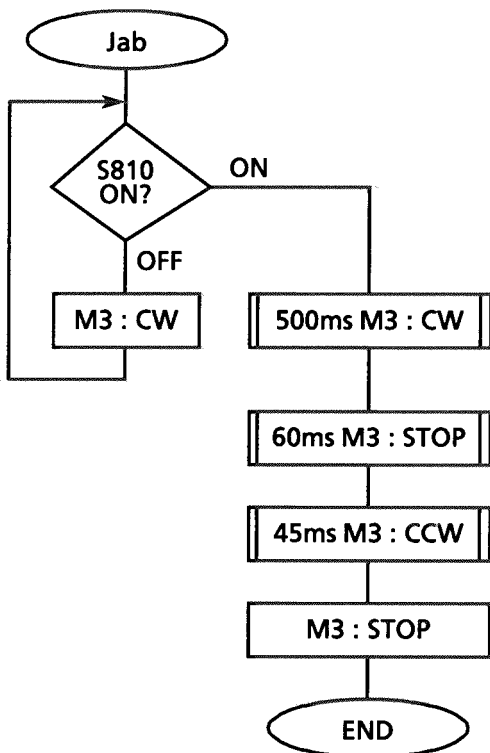
When the movement of the Traverse Mecha is finished -Next movement is the loading movement. Loading simultaneously happens for both trays(L&R). When a tray is loaded the LOAD switch , S807 is closed.

When the tray is pulled into the elevator ass'y, the Elevator then moves down to the rest position until S802, the Rest switch , is closed. The clamper ass'y is pushed down to clamp the disc on the Traverse Mechanism turntable..

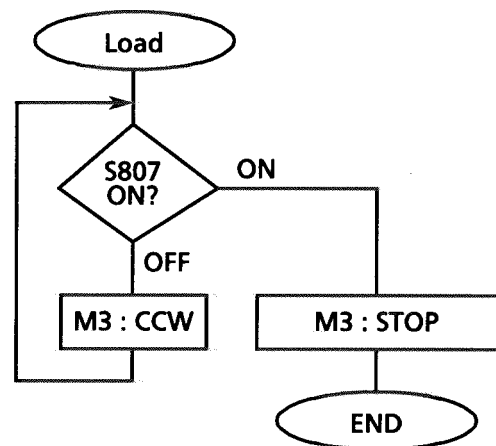
### Unloading Movement

When a tray is being returned to its disc position the elevator moves up to the level which has been memorized in IC201 by the PHL input signal . When the correct level is reached the loading/unloading motor is driven until the Jab switch , S810, is closed , pulling pin 29 of IC201 low, to indicate that the tray has been completely returned . The motor continues to drive for 500ms and then stops.

- Jab (When the tray is returned from the elevator to the tray holder)



- Load (When the tray is load from to the tray holder the elevator)



**-MEMO-**

# XL-MC302C

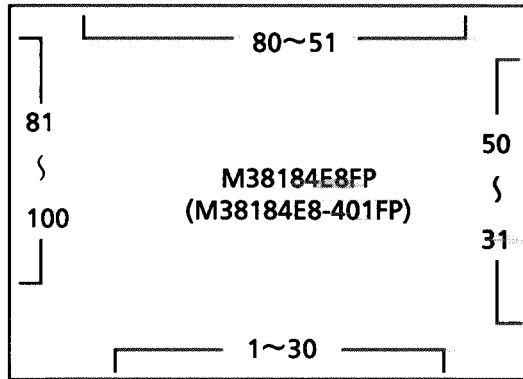
## — Contents —

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## Description of Major LSIs

### ■ M38184E8FP (IC251) : CD SYSTEM CONTROLLER

#### 1. Terminal Layout



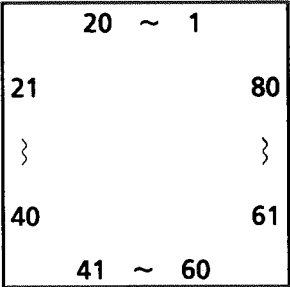
M38184E8-401FP is One time micon

#### 2. Pin Functions Description

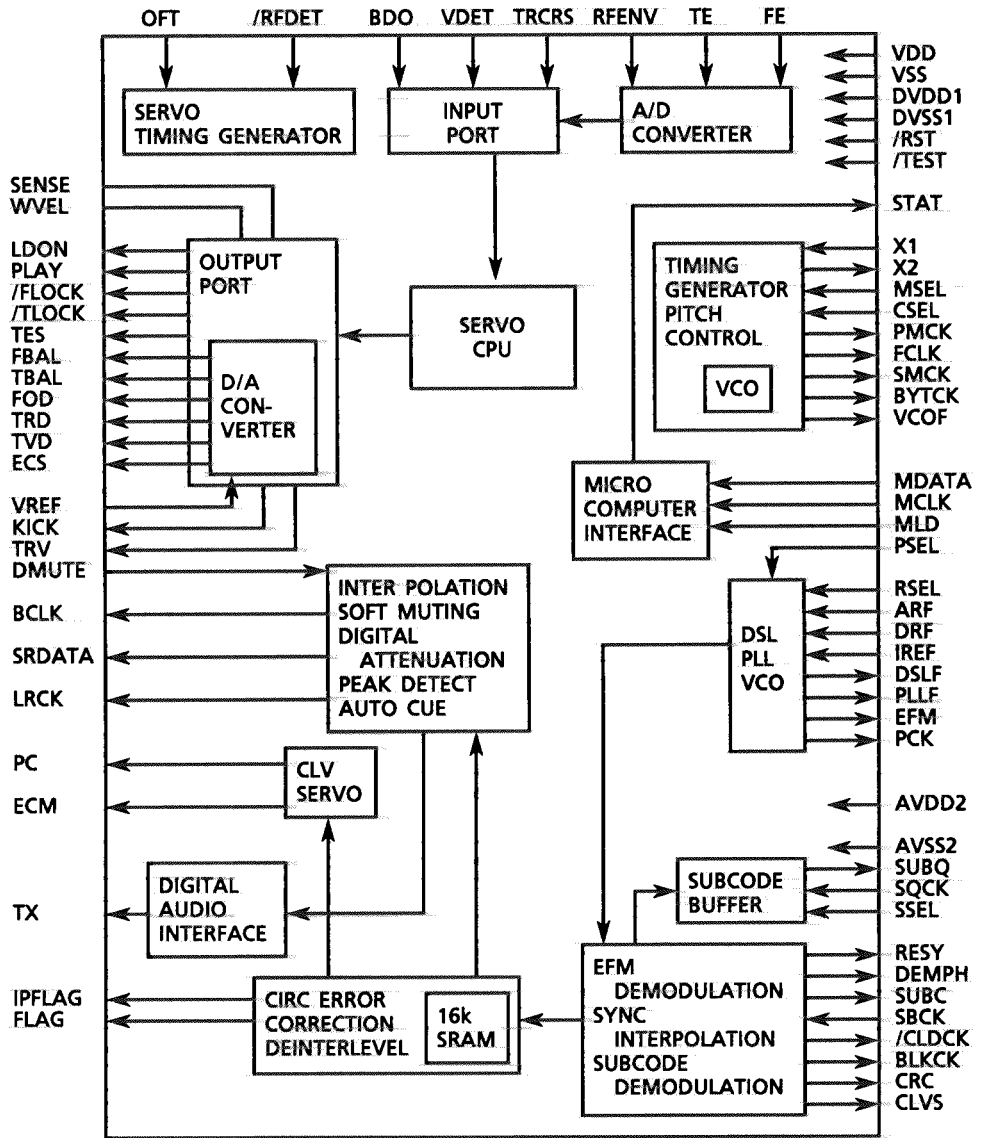
| Pin NO. | symbol             | I/O | Function                                   | Pin NO. | symbol   | I/O | Function                          |
|---------|--------------------|-----|--------------------------------------------|---------|----------|-----|-----------------------------------|
| 1~2     | D0,D1              | I/O | Data signal input and output               | 31      | NC       | --  | Non connect                       |
| 3       | $\overline{CS}$    | O   | Chip select signal to IC751                | 32      | RXRDY    | I   | Receiver ready                    |
| 4       | C/D                | O   | Control/Data output to IC751               | 33      | RMIN     | I   | Accepts remote control signal     |
| 5       | W/R                | O   | Write signal output                        | 34      | PCWDET   | I   | Power on detect                   |
| 6       | RD                 | O   | Read signal output                         | 35      | RESET    | I   | Reset signal input                |
| 9       | $\overline{TLOCK}$ | I   | Lock signal for tracking                   | 36      | XCIN     | --  | +9V                               |
| 10      | $\overline{FLOCK}$ | I   | Lock signal for focus                      | 37      | XCOUT    | --  | Non connect                       |
| 12      | MLD                | O   | D.Servo command clock signal output        | 38      | XIN      | I   | Input to 4.91MHz Xtal oscillation |
| 13      | MCLK               | O   | D.Servo command data signal output         | 39      | XOUT     | O   | Clock output                      |
| 14      | SUBQ               | I   | Input Q-data of subcode                    | 40      | Vss      | --  | Connect to GND                    |
| 15      | SQCK               | O   | Clock output for Q-resistor                | 41~43   | NC       | --  | Non connect                       |
| 16      | STATAS             | I   | STATUS signal input                        | 44~48   | KI0~KI4  | I   | Key matrix input                  |
| 17      | SENSE              | I   | Sense signal input                         | 49      | CLOSE SW | I   | Tray close SW input               |
| 18      | TX.SEL             | O   | Signal select to the PI and XL-MC301M/MCM1 | 50      | OPEN SW  | I   | Tray open SW input                |
| 19      | ERROR              | I   | Monitor to the DIR of ERROR terminal       | 51      | REST SW  | I   | Pickup rest SW input              |
| 20      | LSI.RST            | O   | Lsi reset signal output                    | 52~56   | NC       | --  | Non connect                       |
| 21      | P.ON               | O   | L:Power ON H:Power OFF                     | 57~67   | 1G~11G   | O   | FL grrid control output           |
| 22      | MUTE               | O   | A.Mute control signal                      | 68~81   | S1~S14   | O   | FL segment control output         |
| 23      | RMOK               | O   | STANBY indication signal                   | 82~88   | NC       | --  | Non connect                       |
| 24      | DMUTE              | O   | Lsi mute output                            | 89      | VEE      | --  | -Vdisp                            |
| 25      | OPEN               | O   | Tray open signal output                    | 90      | NC       | --  | Bu + 5V                           |
| 26      | CLOSE              | O   | Tray close signal output                   | 91      | VCC      | --  | Connect to GND                    |
| 27      | NC                 | --  | Non connect                                | 92      | NC       | --  | Non connect                       |
| 28      | RXOOUT             | O   | Receiver clock                             | 93      | AVSS     | --  | Connect to GND                    |
| 29      | RDCSOUT            | O   | DCS signal output                          | 94      | VREF     | --  | Bu + 5V                           |
| 30      | DCSIN              | I   | DCS signal input                           | 95~100  | D2~D7    | I/O | Data signal input and output      |

■ MN662720RB (IC451) : DIGITAL SERVO & DIGITAL SIGNAL PROCESSOR

1. Terminal Layout



2. Block Diagram



## XL-MC302C

### 3. Description

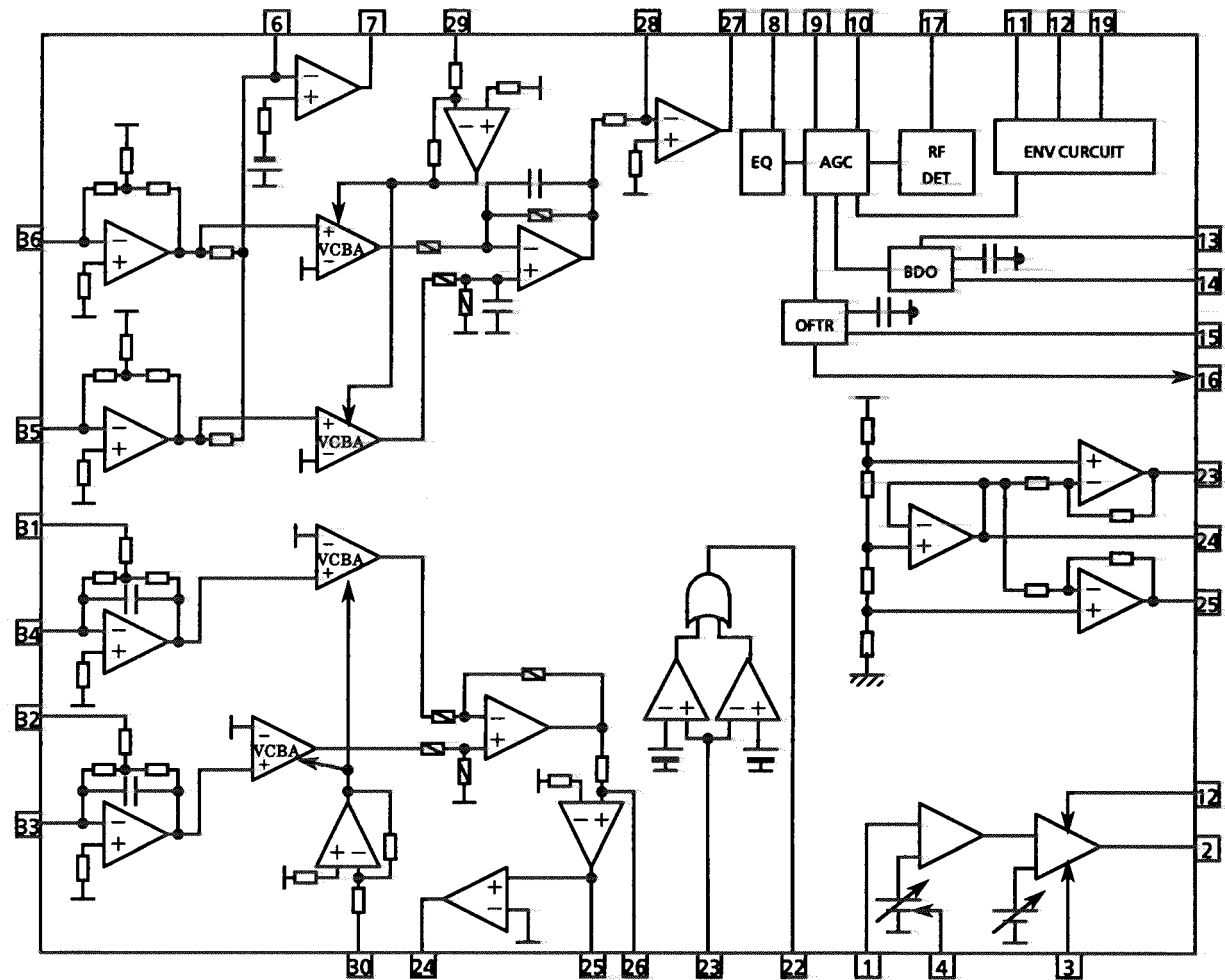
| Pin No. | symbol | I/O | Description                                          | Pin No. | symbol | I/O | Description                                   |
|---------|--------|-----|------------------------------------------------------|---------|--------|-----|-----------------------------------------------|
| 1       | BCLK   | O   | Bit clock output pin for SRDATA                      | 41      | TES    | —   | Not used                                      |
| 2       | LRCK   | O   | L/R distinction signal                               | 42      | PLAY   | —   | “                                             |
| 3       | SRDATA | O   | Serial data output                                   | 43      | WVEL   | —   | “                                             |
| 4       | DVDD1  | —   | Power supply                                         | 44      | ARF    | I   | RF signal input                               |
| 5       | DVSS1  | —   | Connected to GND                                     | 45      | IREF   | I   | Reference current input pin                   |
| 6       | TX     | O   | Digital audio interface signal                       | 46      | DRF    | I   | Bias adjustment pin for DSL                   |
| 7       | MCLK   | I   | μ-com command clock signal input                     | 47      | DSLIF  | I/O | Loop filter pin for DSL                       |
| 8       | MDATA  | I   | μ-com command data input                             | 48      | PLLIF  | I/O | Loop filter pin for PLL                       |
| 9       | MLD    | I   | μ-com command load signal input                      | 49      | VCOF   | —   | Not used                                      |
| 10      | SENSE  | O   | Sense signal output                                  | 50      | AVDD2  | —   | Power supply                                  |
| 11      | FLOCK  | O   | Lock signal for Tracking                             | 51      | AVSS2  | —   | Connected to GND                              |
| 12      | TLOCK  | O   | Lock signal for Focus                                | 52      | EFM    | —   | Not used                                      |
| 13      | BLKCK  | —   | Not used                                             | 53      | PCK    | —   | “                                             |
| 14      | SQCK   | I   | Clock for sub-code Q resister                        | 54      | PDO    | —   | “                                             |
| 15      | SUBQ   | O   | Sub-code Q-code output                               | 55      | SUBC   | —   | “                                             |
| 16      | DMUTE  | I   | Muting input (H : MUTE)                              | 56      | SBCK   | —   | Connected to GND                              |
| 17      | STATUS | O   | Status signal                                        | 57      | VSS    | —   | “                                             |
| 18      | /RST   | I   | Reset signal input (L:Reset)                         | 58      | X1     | I   | Input of 16.9344MHz X'tal oscillation circuit |
| 19      | SMCK   | —   | Not used                                             | 59      | X2     | —   | Not used                                      |
| 20      | PMCK   | —   | Not used                                             | 60      | VDD    | —   | Power supply                                  |
| 21      | TRV    | O   | Traverse enforced output                             | 61      | BYTCK  | —   | Not used                                      |
| 22      | TVD    | O   | Traverse drive output                                | 62      | CLDCK  | —   | “                                             |
| 23      | PC     | —   | Not used                                             | 63      | FCLK   | —   | “                                             |
| 24      | ECM    | O   | Spindle motor drive signal (Enforced output) 3-State | 64      | IPFLAG | —   | “                                             |
| 25      | ECS    | O   | Spindle motor drive signal (Servo signal)            | 65      | FLAG   | —   | “                                             |
| 26      | KICK   | O   | Kick pulse output                                    | 66      | CLVS   | —   | “                                             |
| 27      | TRD    | O   | Tracking drive output                                | 67      | CRC    | —   | “                                             |
| 28      | FOD    | O   | Focus drive output                                   | 68      | DEMPH  | O   | De-emphasis ON signal (H : ON)                |
| 29      | VREF   | I   | Reference voltage input pin                          | 69      | RESY   | —   | Not used                                      |
| 30      | FBAL   | O   | Focus Balance adjust signal output                   | 70      | NC1    | —   | Connected to GND                              |
| 31      | TBAL   | O   | Tracking Balance adjust signal output                | 71      | /TEST  | —   | Pull up (+5V)                                 |
| 32      | FE     | I   | Focus error signal input                             | 72      | AVDD1  | —   | Power supply                                  |
| 33      | TE     | I   | Tracking error signal input                          | 73      | NC2    | —   | Not used                                      |
| 34      | RF ENV | I   | RF envelope signal input                             | 74      | AVSS1  | —   | Connected to GND                              |
| 35      | VDET   | I   | Vibration detect signal input                        | 75      | NC3    | —   | Not used                                      |
| 36      | OFT    | I   | Off track signal input                               | 76      | RSEL   | —   | Pull up (+5V)                                 |
| 37      | TRCRS  | I   | Track cross signal input                             | 77      | CSEL   | —   | Connected to GND                              |
| 38      | /RFDET | I   | RF detect signal input                               | 78      | PSEL   | —   | “                                             |
| 39      | BDO    | I   | BDO input pin                                        | 79      | MSEL   | —   | “                                             |
| 40      | LDON   | O   | Laser ON signal output                               | 80      | SSEL   | —   | Pull up (+5V)                                 |

■ AN8806SB (IC551) : RF & SERVO AMP

1. Terminal Layout

|         |    |           |
|---------|----|-----------|
| PD      | 1  | 36 PDAC   |
| LD      | 2  | 35 PDBD   |
| LDON    | 3  | 34 PDE    |
| LDP     | 4  | 33 PDF    |
| VCC     | 5  | 32 PDER   |
| RF-     | 6  | 31 PDFR   |
| RF OUT  | 7  | 30 TBAL   |
| RF IN   | 8  | 29 FBAL   |
| C.AGC   | 9  | 28 FE-    |
| ARF     | 10 | 27 FE OUT |
| C.ENV   | 11 | 26 TE-    |
| C.EA    | 12 | 25 TE OUT |
| CS BDO  | 13 | 24 CROSS  |
| BDO     | 14 | 23 TE BPF |
| CS BRT  | 15 | 22 VDET   |
| OFTR    | 16 | 21 LD OFF |
| /NRFDET | 17 | 20 VREF   |
| GND     | 18 | 19 ENV    |

2. Block Diagram



### 3. Description

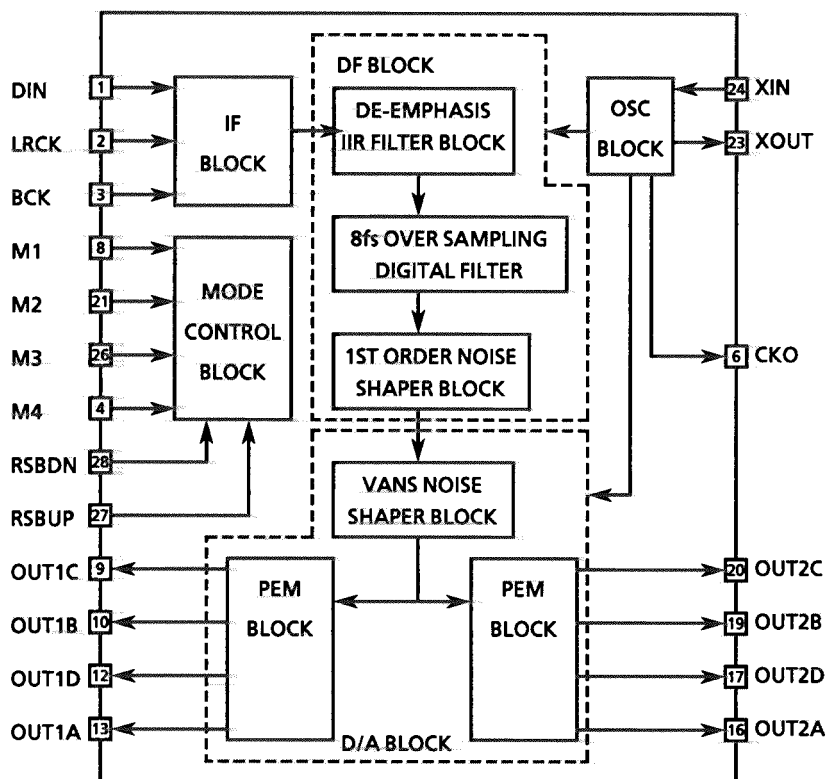
| Pin No. | Symbol   | I/O | Description                                                                   |
|---------|----------|-----|-------------------------------------------------------------------------------|
| 1       | PD       | I   | APC AMP input                                                                 |
| 2       | LD       | O   | APC AMP output                                                                |
| 3       | LD ON    | I   | APC on/off control signal input                                               |
| 4       | LDP      | --  | Connected to GND                                                              |
| 5       | VCC      | --  | Power supply                                                                  |
| 6       | RF-      | I   | Inverse input pin for RF amp                                                  |
| 7       | RF OUT   | O   | RF amp output pin                                                             |
| 8       | RF IN    | I   | AGC input pin                                                                 |
| 9       | C.AGC    | I/O | Connecting pin of AGC loop filter                                             |
| 10      | ARF      | O   | AGC output pin                                                                |
| 11      | C.ENV    | I/O | A capacitor is connected to this terminal to detect the envelope of RF signal |
| 12      | C.EA     | I/O | A capacitor is connected to this terminal to detect the envelope of RF signal |
| 13      | CS BDO   | I/O | A capacitor is connected to detect the lower envelope of the RF signal        |
| 14      | BDO      | O   | BDO output pin                                                                |
| 15      | CS BRT   | I/O | A capacitor is connected to detect the lower envelope of the RF signal        |
| 16      | OFTR     | O   | Of-track status signal output pin                                             |
| 17      | /NRFDDET | O   | RF detection signal output pin                                                |
| 18      | GND      | --  | GND                                                                           |
| 19      | ENV      | O   | Envelope output                                                               |
| 20      | VREF     | O   | Reference voltage output pin                                                  |
| 21      | LD OFF   | --  | Connect to GND                                                                |
| 22      | VDET     | O   | Vibration detection signal output pin                                         |
| 23      | TE BPF   | I   | Input pin of tracking error through BPF                                       |
| 24      | CROSS    | O   | Tracking error cross output pin                                               |
| 25      | TE OUT   | O   | Tracking error signal output pin                                              |
| 26      | TE-      | I   | Inverse input pin for tracking error amp                                      |
| 27      | FE OUT   | O   | Output pin of focus error                                                     |
| 28      | FE-      | I   | Inverse input pin for focus error amp                                         |
| 29      | FBAL     | I   | Focus balance control pin                                                     |
| 30      | TBAL     | I   | Tracking balance control pin                                                  |
| 31      | PDFR     | I/O | E and E I-V amp gain control pin                                              |
| 32      | PDER     | I/O | F and E I-V amp gain control pin                                              |
| 33      | PDF      | I   | I-V amp input pin                                                             |
| 34      | PDE      | I   | I-V amp input pin                                                             |
| 35      | PD BD    | I   | I-V amp input pin                                                             |
| 36      | PD AC    | I   | I-V amp input pin                                                             |

## ■ MN35502(IC301) : D / A CONVERTER

### 1. Terminal Layout

|       |    |    |       |
|-------|----|----|-------|
| DIN   | 1  | 28 | RSBDN |
| LRCK  | 2  | 27 | RSBUP |
| BCK   | 3  | 26 | M3    |
| M4    | 4  | 25 | DVDD1 |
| DVDD2 | 5  | 24 | XIN   |
| CKO   | 6  | 23 | XOUT  |
| DVSS2 | 7  | 22 | DVSS1 |
| M1    | 8  | 21 | M2    |
| OUT1C | 9  | 20 | OUT2C |
| OUT1B | 10 | 19 | OUT2B |
| AVDD1 | 11 | 18 | AVDD2 |
| OUT1D | 12 | 17 | OUT2D |
| OUT1A | 13 | 16 | OUT2A |
| AVSS1 | 14 | 15 | AVSS2 |

### 2. Block Diagram

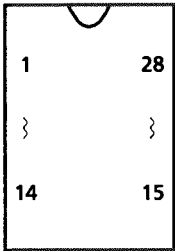


### 3. Description

| Pin No | Symbol | I/O | Description                | Pin No | Symbol | I/O | Description                                      |
|--------|--------|-----|----------------------------|--------|--------|-----|--------------------------------------------------|
| 1      | DIN    | I   | Data input                 | 15     | AVSS2  | —   | Analog ground 2                                  |
| 2      | LRCK   | I   | LR clock input             | 16     | OUT2A  | O   | 2A PEM output                                    |
| 3      | BCK    | I   | Bit clock input            | 17     | OUT2D  | O   | 2D PEM output                                    |
| 4      | M4     | I   | Operational mode control 4 | 18     | AVDD2  | —   | Analog power supply 2                            |
| 5      | DVDD2  | —   | Digital power supply 2     | 19     | OUT2B  | O   | 2B PEM output                                    |
| 6      | CKO    | I   | Clock output               | 20     | OUT2C  | O   | 2C PEM output                                    |
| 7      | DVSS2  | —   | Digital ground 2           | 21     | M2     | —   | Connected to ground                              |
| 8      | M1     | —   | Connected to ground        | 22     | DVSS1  | —   | Digital ground pin 1                             |
| 9      | OUT1C  | O   | 1C PEM output              | 23     | XOUT   | O   | Crystal oscillator output                        |
| 10     | OUT1B  | O   | 1B PEM output              | 24     | XIN    | I   | Crystal oscillator input                         |
| 11     | AVDD1  | —   | Analog power supply 1      | 25     | DVDD1  | —   | Digital power supply 1                           |
| 12     | OUT1D  | O   | 1D PEM output              | 26     | M3     | —   | Connected to ground                              |
| 13     | OUT1A  | O   | 1A PEM output              | 27     | RSBUP  | —   | Connected to ground                              |
| 14     | AVSS1  | —   | Analog ground 1            | 28     | RSBDN  | I   | Reset signal / Digital Att. control signal input |

■ UPD71051GU (IC751) : SERIAL CONTROL UNIT

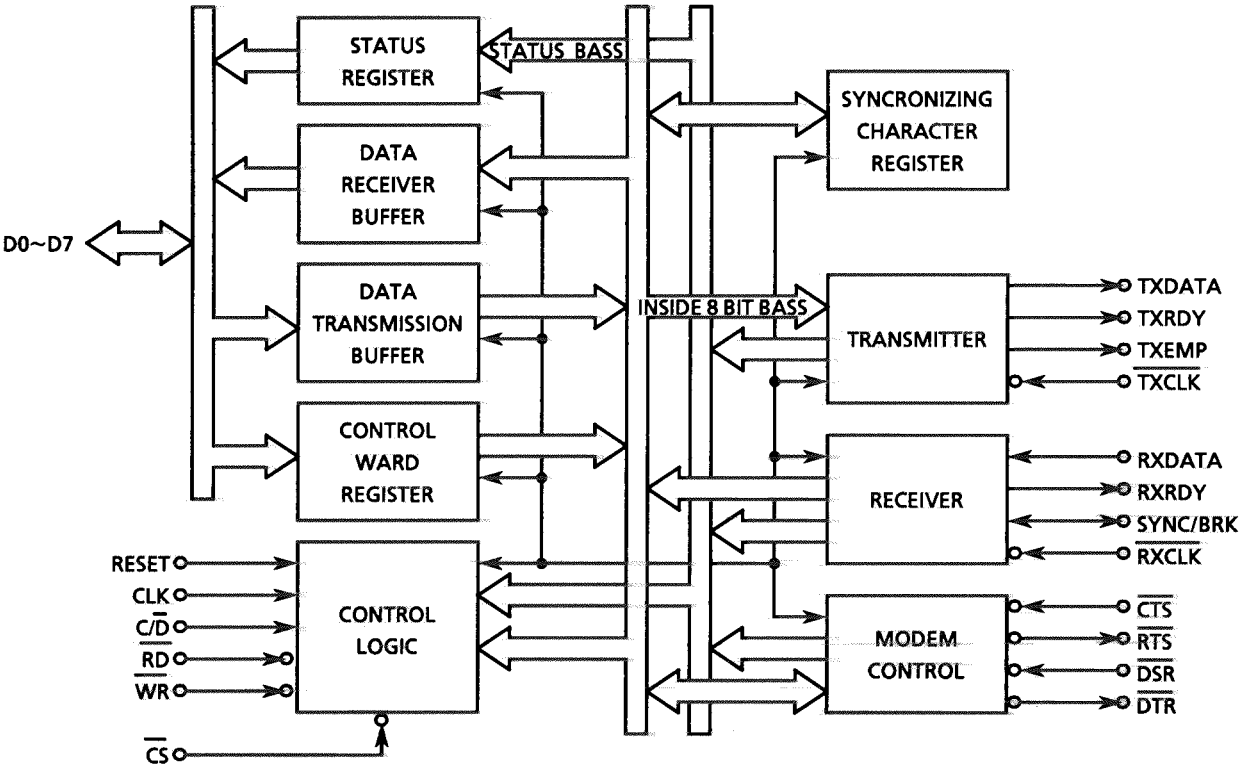
1. Terminal Layout



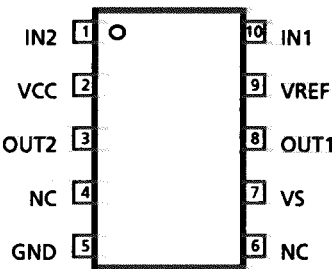
2. Terminal Functions

| Pin No. | Symbol | Functions         | Pin No. | Symbol    | Functions      |
|---------|--------|-------------------|---------|-----------|----------------|
| 1~2     | D2~D3  | Data Bus          | 15      | TXRDY     | Not used       |
| 3       | RXD    | Receive data      | 16      | SYNDET/BD | Not used       |
| 4       | GND    | GND               | 17,22   | CTS,DSR   | Connect to GND |
| 5~8     | D4~D7  | Data Bus          | 18      | TXEMPTY   | Not used       |
| 9       | TXC    | Transmitter clock | 19      | TXD       | Transmit data  |
| 10      | WR     | Write             | 20      | CLK       | Clock          |
| 11      | CS     | Chip select       | 21      | RESET     | Reset          |
| 12      | C/D    | Control / Data    | 23,24   | RTS,DTR   | Not used       |
| 13      | RD     | Read              | 25      | RXC       | Receiver clock |
| 14      | RXRDY  | Receiver ready    | 26      | VCC       | Power supply   |
|         |        |                   | 27~28   | D1~D0     | Data Bus       |

3. Block Diagram



■ TA8409F (IC852) : DC MOTOR DRIVER



FUNCTION

| INPUT |     | OUTPUT |      | MODE  |
|-------|-----|--------|------|-------|
| IN1   | IN2 | OUT1   | OUT2 |       |
| 0     | 0   | ∞      | ∞    | STOP  |
| 1     | 0   | H      | L    | OPEN  |
| 0     | 1   | L      | H    | CLOSE |
| 1     | 1   | L      | L    | BRAKE |

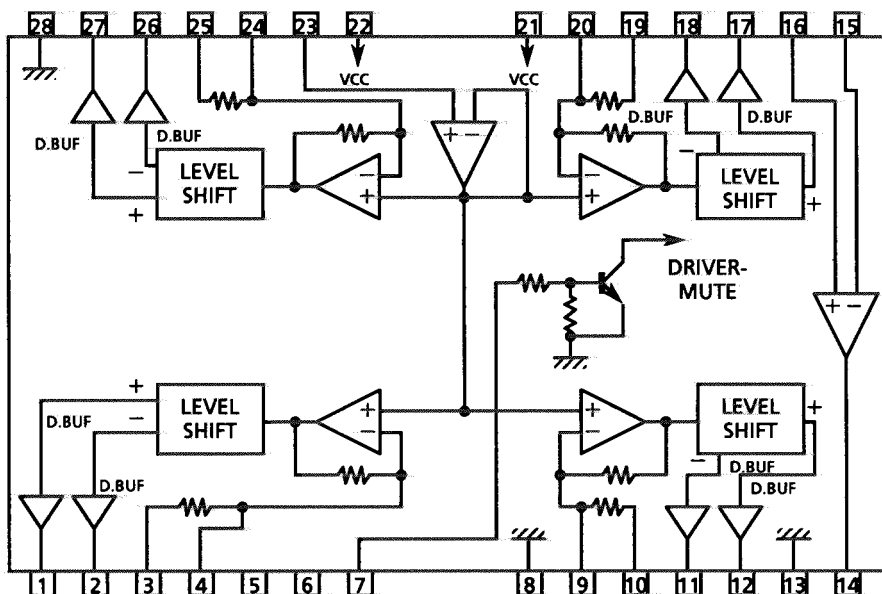
∞: High impedance

## BA6398FP(IC851) : BTL DRIVER

### 1. Terminal Layout

|           |    |    |           |
|-----------|----|----|-----------|
| CH1-OUT A | 1  | 28 | GND       |
| CH1-OUT B | 2  | 27 | CH4-OUT A |
| CH1-IN A  | 3  | 26 | CH4-OUT B |
| CH1-IN B  | 4  | 25 | CH4-IN A  |
| NC        | 5  | 24 | CH4-IN B  |
| NC        | 6  | 23 | BIAS IN   |
| MUTE      | 7  | 22 | VCC       |
| GND       | 8  | 21 | VCC       |
| CH2-IN B  | 9  | 20 | CH3-IN B  |
| CH2-IN A  | 10 | 19 | CH3-IN A  |
| CH2-OUT B | 11 | 18 | CH3-OUT B |
| CH2-OUT A | 12 | 17 | CH3-OUT A |
| GND       | 13 | 16 | OP IN+    |
| OP OUT    | 14 | 15 | OP IN-    |

### 2. Block Diagram

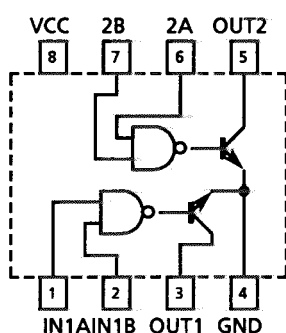


### 3. Description

| Pin No. | Symbol    | I/O | Description               | Pin No. | Symbol    | I/O | Description                |
|---------|-----------|-----|---------------------------|---------|-----------|-----|----------------------------|
| 1       | CH1-OUT A | O   | Focus drive output        | 8,13,28 | GND       | —   | GND                        |
| 2       | CH1-OUT B | O   | Focus drive output        | 11      | CH2-OUT B | O   | Spindle motor drive output |
| 4       | CH1-IN B  | I   | Focus drive input         | 12      | CH2-OUT A | O   | Spindle motor drive output |
| 3       | CH1-IN A  | —   | Non connection            | 14      | OP OUT    | O   | OP amp output              |
| 5,6     | NC        | —   | Non connection            | 15,16   | OP IN     | I   | OP amp input               |
| 10      | CH2-IN A  | —   | Non connection            | 17      | CH3-OUT A | O   | Feed motor drive output    |
| 19      | CH3-IN A  | —   | Non connection            | 18      | CH3-OUT B | O   | Feed motor drive output    |
| 25      | CH4-IN A  | —   | Non connection            | 21,22   | Vcc       | —   | Power supply               |
| 7       | MUTE      | I   | Mute signal input pin     | 23      | BIAS IN   | I   | Input pin of Bias          |
| 9       | CH2-IN B  | I   | Spindle motor drive input | 26      | CH4-OUT B | O   | Tracking drive output      |
| 20      | CH3-IN B  | I   | Feed motor drive input    | 27      | CH4-OUT A | O   | Tracking drive output      |
| 24      | CH4-IN B  | I   | Tracking drive input      |         |           |     |                            |

## SN75451BP (IC753) : Serial Eeprom

### 1. Terminal Layout

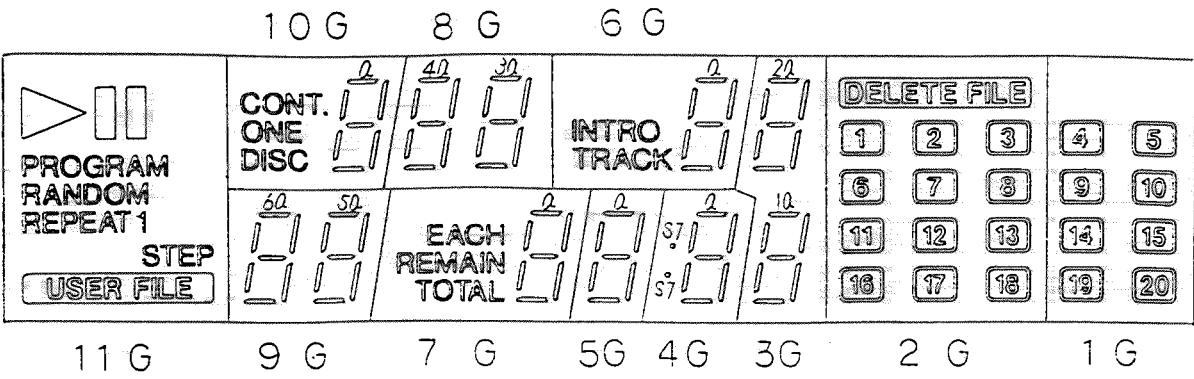


### 2. Terminal Function

| A | B | OUT     |
|---|---|---------|
| L | L | L (ON)  |
| L | H | L (ON)  |
| H | L | L (ON)  |
| H | H | H (OFF) |

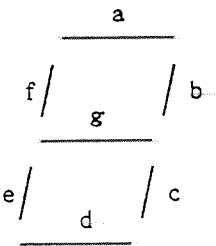
# FL Display Tube

(1) Grid Layout



(2) Anode Designation

|     | 11G      | 10G   | 9G | 8G | 7G     | 6G    | 5G | 4G | 3G | 2G          | 1G |
|-----|----------|-------|----|----|--------|-------|----|----|----|-------------|----|
| S1  | ▶        | ONE   | 5a | 3a |        |       |    |    | 1a | DELETE FILE |    |
| S2  | ■ ■      | DISC  | 5b | 3b |        |       |    |    | 1b | ①           | ④  |
| S3  | PROGRAM  | CONT. | 5f | 3f | EACH   |       |    |    | 1f | ②           | ⑤  |
| S4  | RANDOM   |       | 5g | 3g | REMAIN |       |    |    | 1g | ③           | ⑥  |
| S5  | REPEAT   |       | 5c | 3c | TOTAL  |       |    |    | 1c | ⑥           | ⑩  |
| S6  | 1        |       | 5e | 3e |        | INTRO |    |    | 1e | ⑦           | ⑬  |
| S7  | STEP     |       | 5d | 3d |        | TRACK |    | :  | 1d | ⑧           | ⑮  |
| S8  | USERFILE | a     | 6a | 4a | a      | a     | a  | a  | 2a | ⑪           | ⑰  |
| S9  |          | b     | 6b | 4b | b      | b     | b  | b  | 2b | ⑫           | ⑱  |
| S10 |          | f     | 6f | 4f | f      | f     | f  | f  | 2f | ⑬           |    |
| S11 |          | g     | 6g | 4g | g      | g     | g  | g  | 2g | ⑭           |    |
| S12 |          | c     | 6c | 4c | c      | c     | c  | c  | 2c | ⑯           |    |
| S13 |          | e     | 6e | 4e | e      | e     | e  | e  | 2e | ⑰           |    |
| S14 |          | d     | 6d | 4d | d      | d     | d  | d  | 2d |             |    |



(3) Pin connections

| TERMINAL NO. | 1        | 2        | 3        | 4        | 5        | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|----------|----------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----|----|----|----|----|----|
| ELECTRODE    | F        | F        | F        | NP       | NC       | 11G     | 10G     | 9G      | 8G      | 7G      | 6G      | 5G      | 4G      | 3G      | 2G | 1G | NC | NC | NC | NC |
| TERMINAL NO. | 21       | 22       | 23       | 24       | 25       | 26      | 27      | 28      | 29      | 30      | 31      | 32      | 33      | 34      | 35 | 36 | 37 | 38 | 39 |    |
| ELECTRODE    | P<br>S14 | P<br>S13 | P<br>S12 | P<br>S11 | P<br>S10 | P<br>S9 | P<br>S8 | P<br>S7 | P<br>S6 | P<br>S5 | P<br>S4 | P<br>S3 | P<br>S2 | P<br>S1 | NC | NP | F  | F  | F  |    |

Notes

F: Filament

G: Grid

P: Anode

NP: No Pin

NC: No Connection

## Disassembly Procedures

### (1) Top cover removal

1. Remove 2 screws ① on the rear side and 4 screws ② on both sides of the cover.
2. Remove the cover.

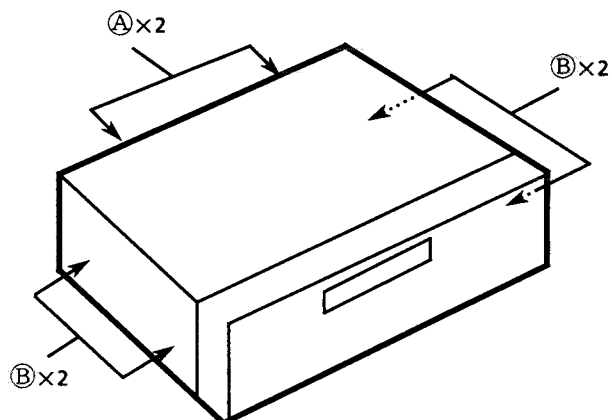


Fig1

### (2) Rear panel removal

1. Remove the top cover.
2. Remove the 8 screws ③.
3. Remove the rear panel.

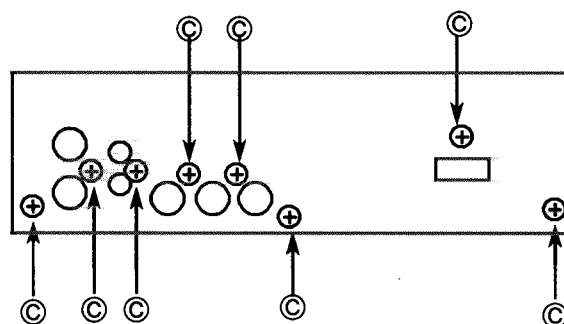


Fig2 Rear view

### (3) Tray assembly removal

1. Remove the top cover.
2. Remove the screw ④.
3. Turn the screw located under the mechanism to remove the tray out of the loading mecha.
4. Remove the tray.

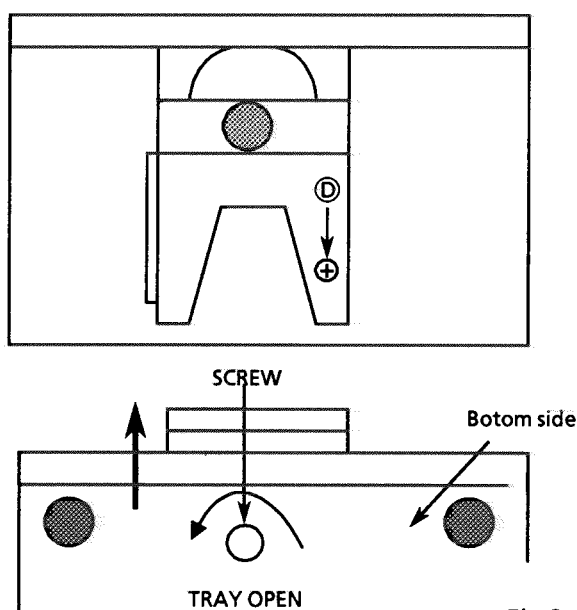


Fig 3

### (4) CD mecha Ass'y removal

1. Remove the (1)(3).
2. Disconnect the P551, P851, P852.
3. Remove the 2 screws ⑤ to remove the clamp assembly.
4. Remove the 2 screws ⑥ and screws ⑦ to remove the CD mecha Ass'y.

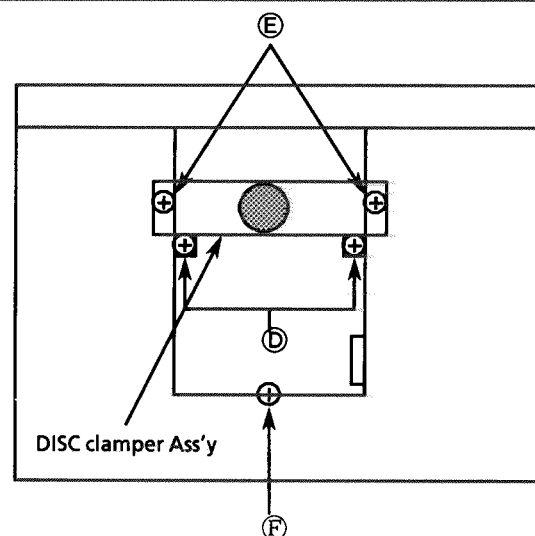


Fig 4 Top view

① SDSG3008M

② E406308-001

③ E73273-006

④ SBSF3008M

⑤ SBST3025Z

⑥ SBST3008Z

- (5) Removing the front panel assembly
1. Remove the metal cover and tray assembly.
  2. Remove the 3screws (G) on the bottom of the front panel.
  3. Remove the connector J202,P107.
  4. Release the hooks (H) holding the front panel, and remove the front panel assembly.

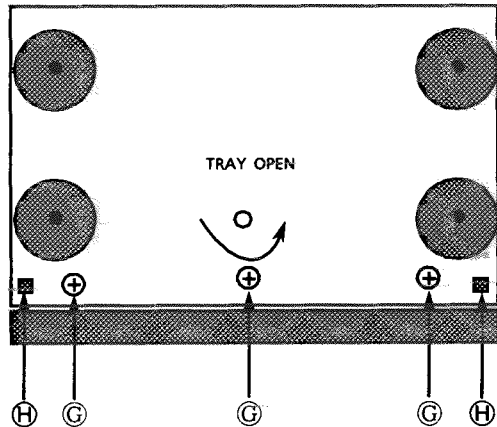


Fig 5 Bottom view

- (6) Audio PCB(ENN-437-3) removal
1. Remove the topcover.
  2. Disconnect the conector P301,P302 and P303.
  3. Remove the 4fasners (I).
  4. Remove the Audio PCB(ENN-437-3).

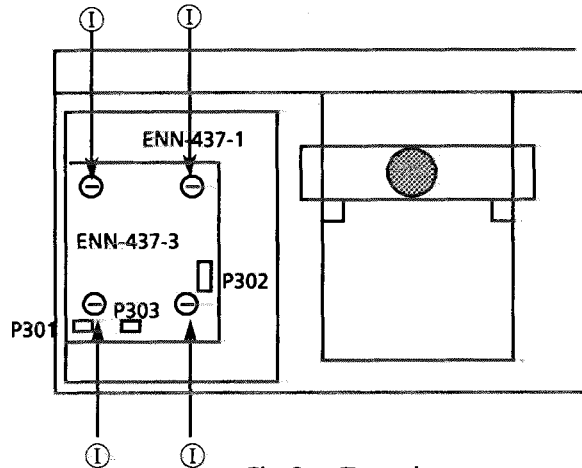


Fig 6 Top view

- (7) CD Main PCB(ENN-437-1) removal
1. Remove the(1) (6).
  2. Disconnect the conector P911,P912 and P551,P851,P852.
  3. Remove the 4screws (J).
  4. Remove the Main PCB(ENN-437-1).

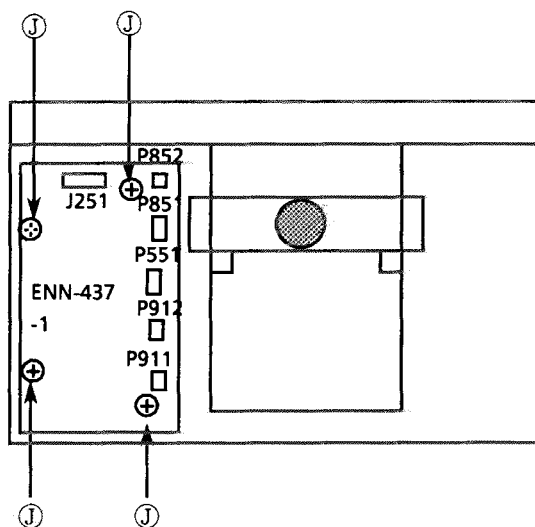


Fig 7 Top view

- (8) Power PCB(ENN-437-2) removal
1. Remove the(1) (6).
  2. Disconnect the conector P911,912.
  3. Remove the 2screws (K) and 2screws (L).
  4. Remove the Power PCB(ENN-437-2).

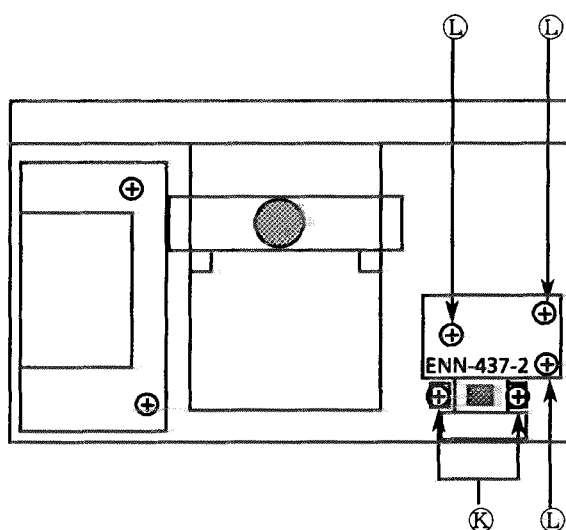


Fig 8 Top view

(9) Front PCB(ENN-427-3~5) removal

1. Remove the (1)(3)(5).
2. Remove the Front panel ass'y.
3. Remove the 10 screws ①.
4. Remove the Front PCB.

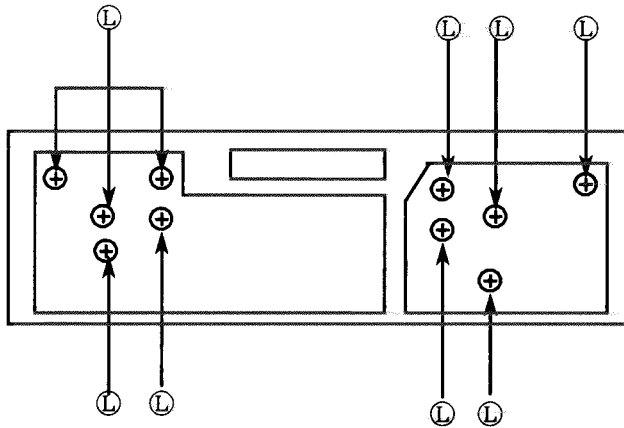


Fig 9 Front PCB view

(10) Installing CD mecha. tray

1. Insert the CD mecha. tray after checking that the traverse mecha. is positioned slantingly.
2. If it is set horizontally, press the cam plate until it stops so that the traverse mech. slants. (See an arrow in the following figure.)

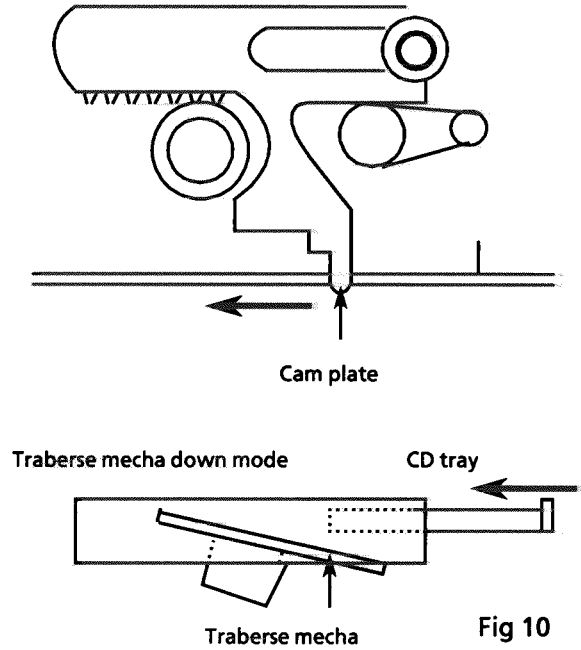
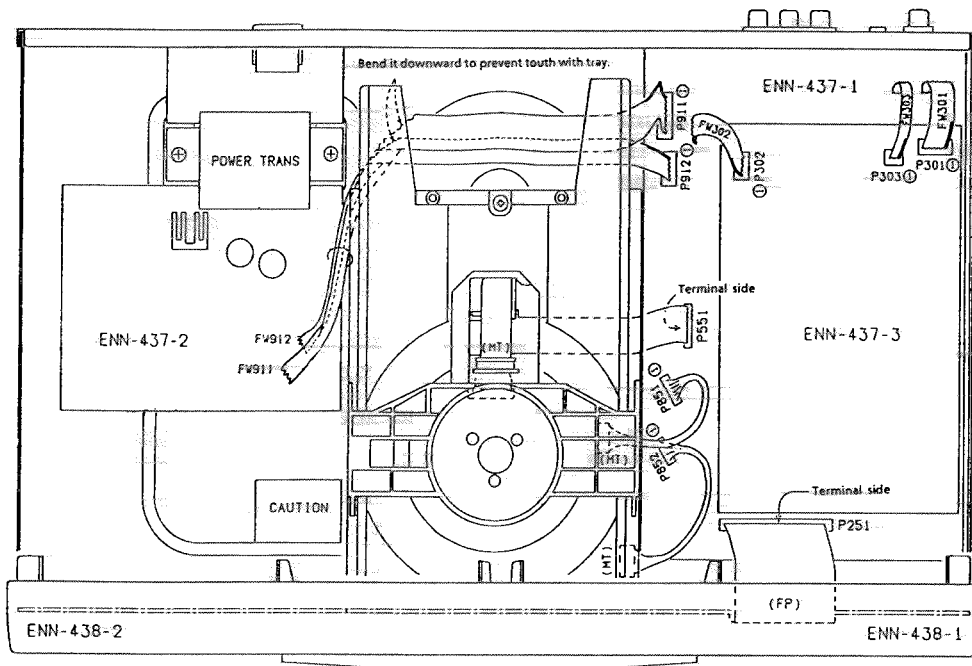


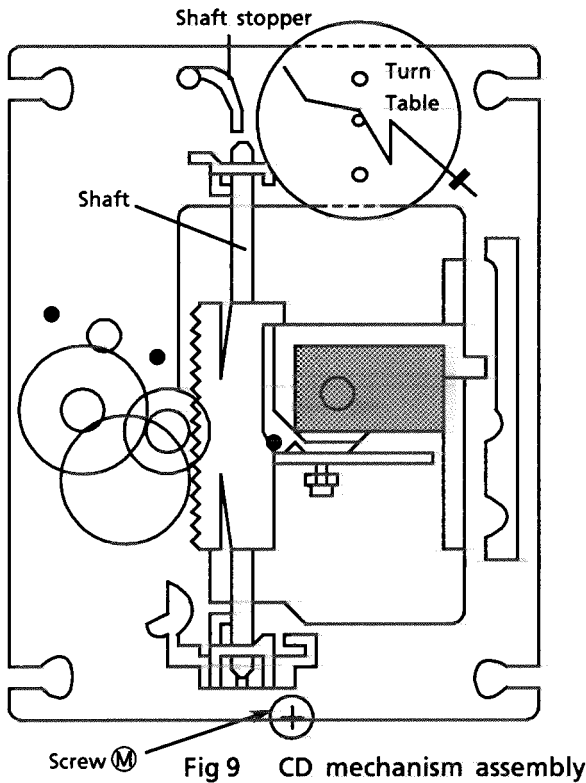
Fig 10

Wire assembly



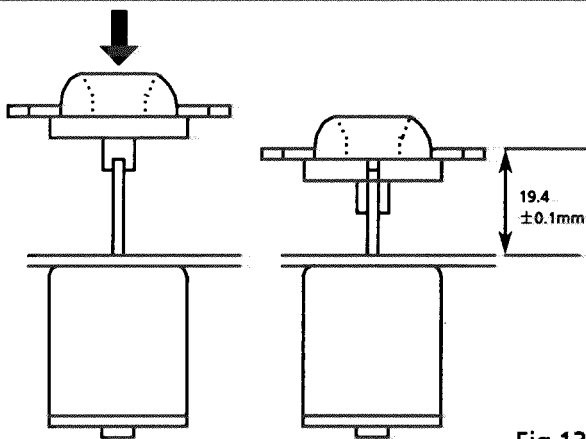
(11) Pickup removal

1. Remove the CD mechanism assembly.
2. Release the shaft to remove the pickup (Fig 9).



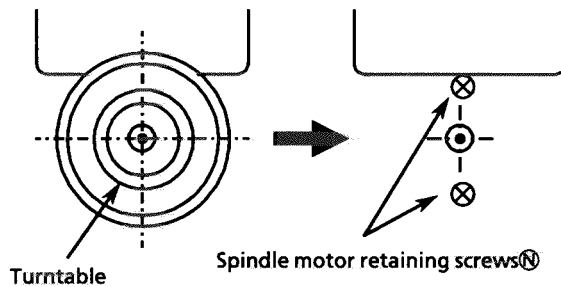
(13) Spindle motor installation

1. Tighten the 2 screws to the same torque.
2. Fasten the spindle and feed motor P.C. board with the screw and solder.
3. Install the turntable. When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the turntable is exactly  $19.4 \pm 0.1\text{mm}$ .

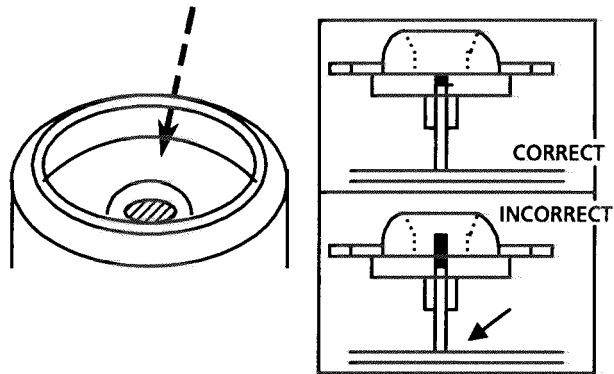


(12) Spindle motor removal

1. Remove the CD mechanism assembly.
2. Remove the turntable, and remove the two screws retaining the spindle motor.
3. Remove the screws retaining the spindle and feed motor P.C. Board and unsolder it.

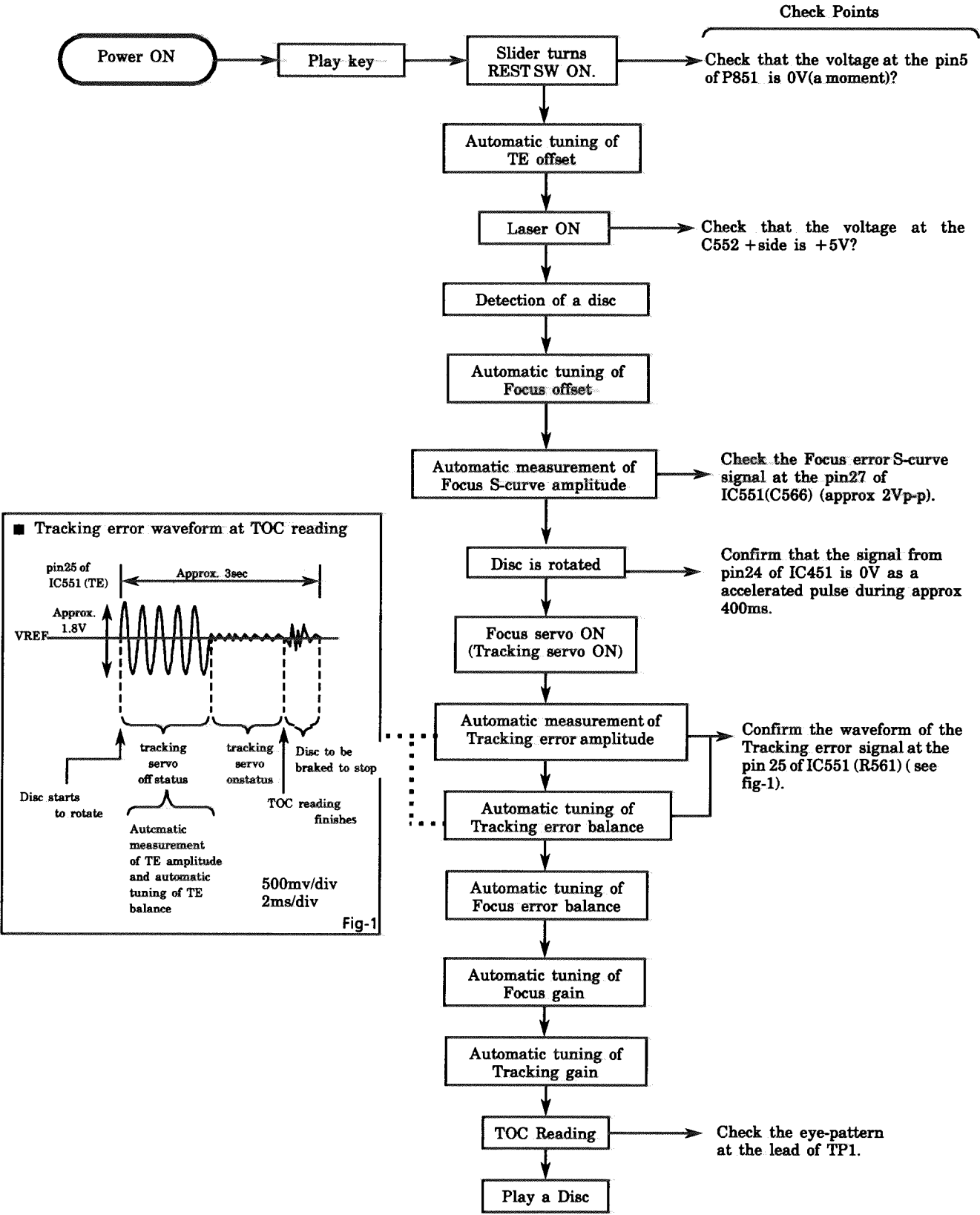


- (14) After inserting the turntable, bond the motor shaft and turntable together (at the section marked by an arrow in fig 12 on the left below).



- (15) Use "LOCTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearing (the section marked by an arrow in fig 14 on the right).

# Flow of Functional Operation Until TOC is Read



## Maintenance of Laser Pickup

### (1) Cleaning the pickup lens

Before you replace the pickup, please try to clean the lens with a alcohol soaked cotton swab.

### (2) Life of the laser diode

RF level (amplitude of eye pattern) is decreased when the life of laser diode is run out.

Check that the RF level is over 0.7Vp-p and under 1.2V.

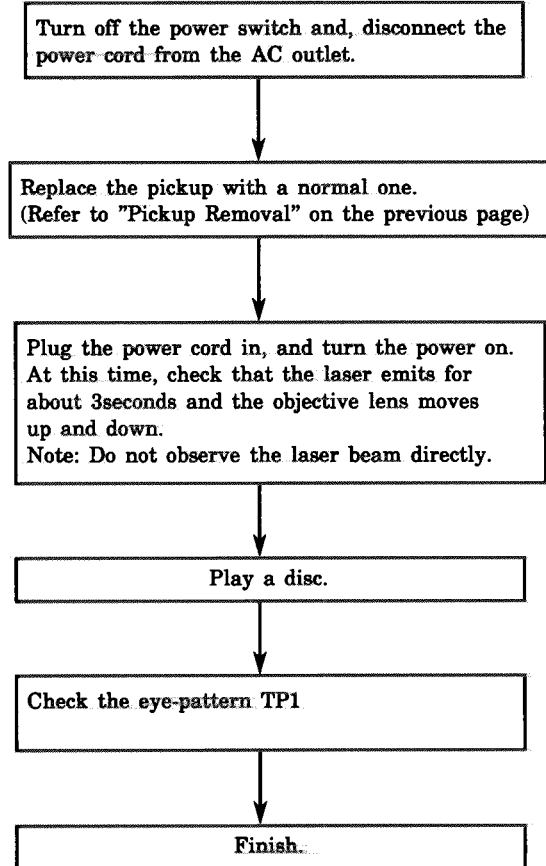
The pickup should be exchanged with new one for run out of its life if the value is 0.7Vp-p below.

### (3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor. If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

## Replacement of Laser Pickup



**Power on**

Does the FL indication light normally?

NO → To front section.

YES → Can the disc tray be slid in and out pressing the OPEN / CLOSE button?

NO → To loading section.

YES → Does the indications on the FL display show --- when the disc tray is closed?

NO → To loading section.

YES → Can it read TOC?

NO → Does the disc rotate?

YES → Can it play the first track?

NO → To Tracking section.  
To feed section.  
To spindle section.

YES → Is the RF waveform normal?

NO → Check the pickup.

YES → Can it search to each track correctly?

NO → To tracking section.  
To feed section.

YES → Does it sound OK?

NO → To audio circuit.

YES → Check general operations.

Are all operation keys on the front panel and the FL display correct?

NO → To front section.

YES → OK

Is there 5V at pin5 of P851?

NO → To focus section.

YES → To feed section.

Does the pickup lens move up and down with the tray closed?

NO → Does the disc rotate?

YES → Does the laser light for approx 3seconds after the tray is closed? (Check the laser by power meter)

YES → Check the pick-up and the connections from IC551 to the pickup.

NO → Is there +5V at pin40 of IC451 for approx 3seconds after the tray is closed?

YES → Check the pick-up and the connections from IC551 to the pickup.

NO → Check the IC551.

Does the disc rotate?

NO → Does the disc rotate?

YES → Is the focus servo loop applied?

The signal from /FLOCK (R464) must show the above-stated waveform when the spindle has started to accelerate.

5V  
0V  
200ms more than

NO → To focus section.

YES → Is the tracking servo loop applied?

Approx 1.8V  
Vref  
0.5ms/DIV  
500mV/DIV  
TP3(R561E)

tracking servo OFF status  
tracking servo ON status

Confirm that the condition of tracking error signal changes from tracking servo OFF to tracking servo ON like the above-stated waveform immediately after the spindle has accelerated.

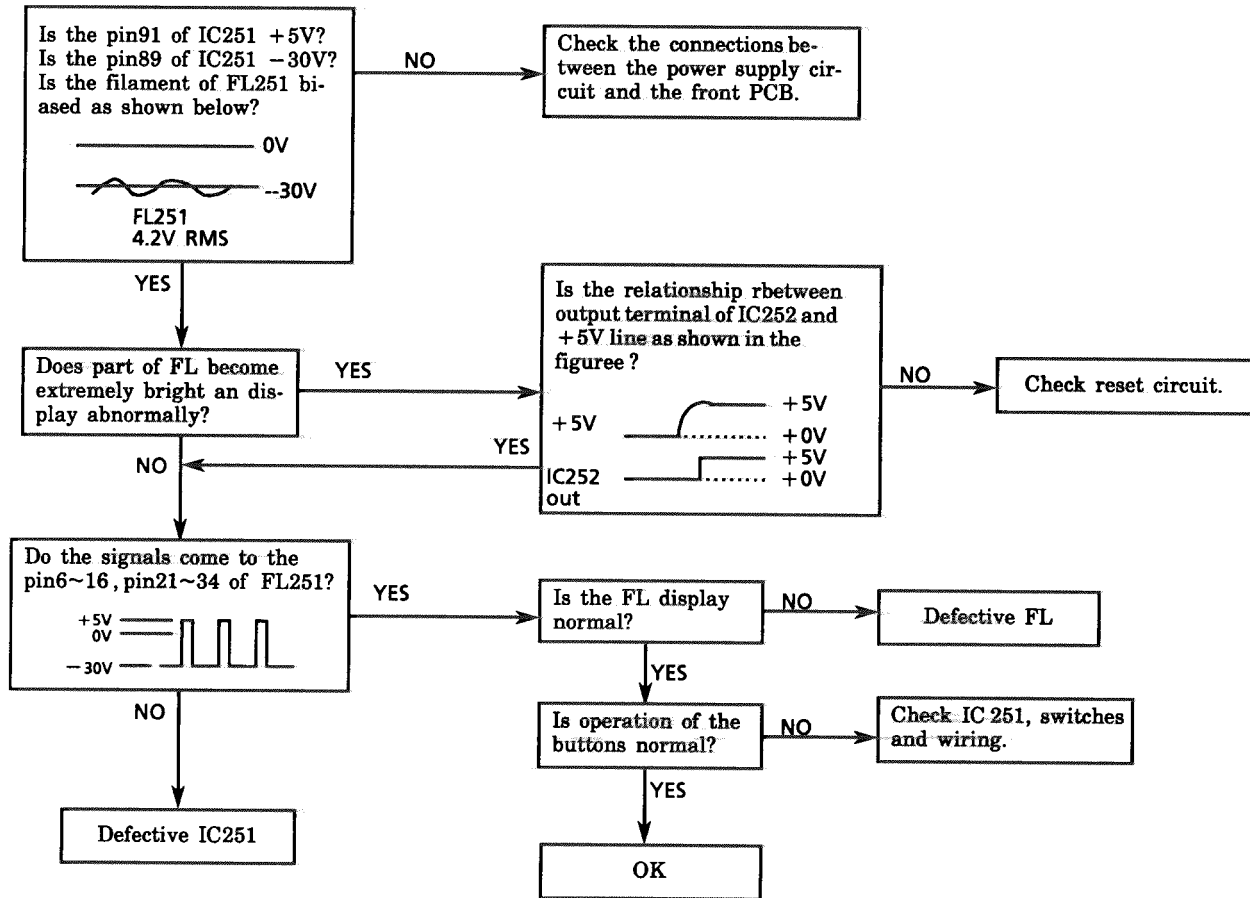
YES → By observing RF signal (TP2), the amplitude must be 0.8~1.2V when tracking servo is ON.

YES → To feed section.  
To spindle section.

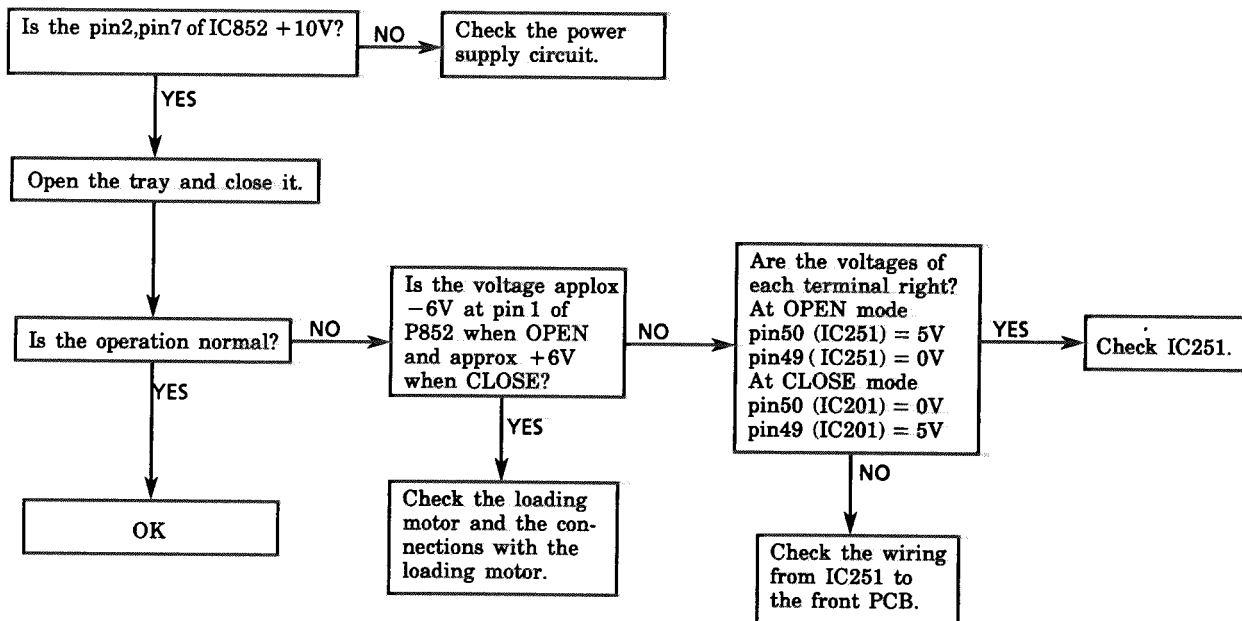
NO → Check the RF circuit and pick-up.

NO → To tracking section.

## Front Section

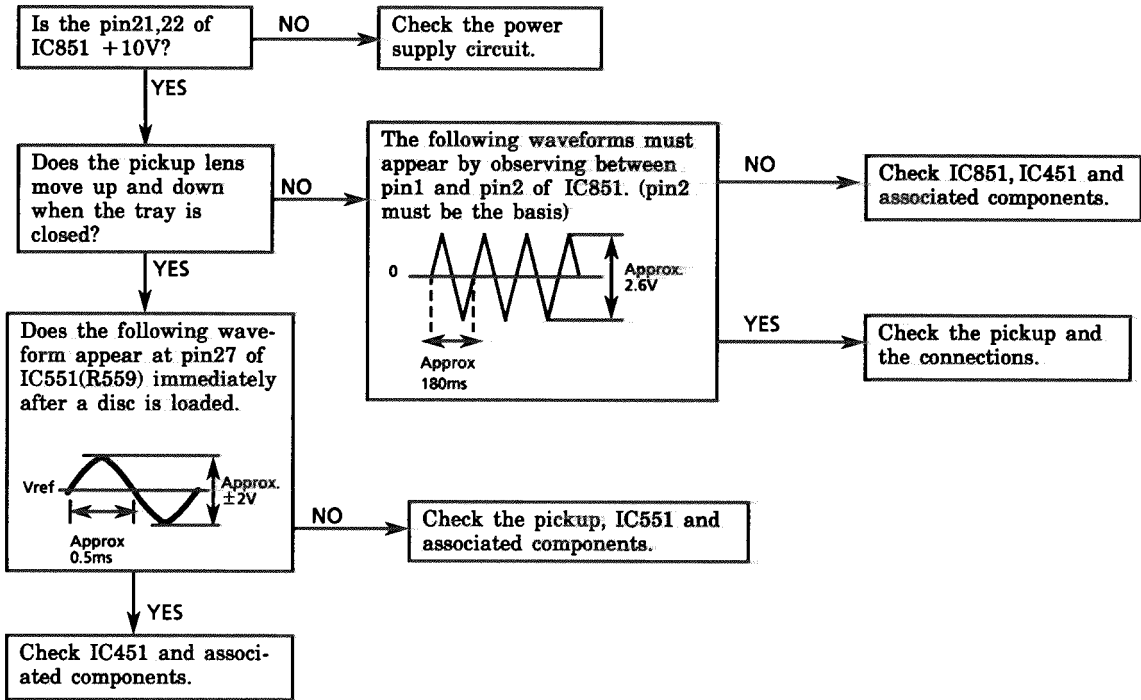


## Loading section

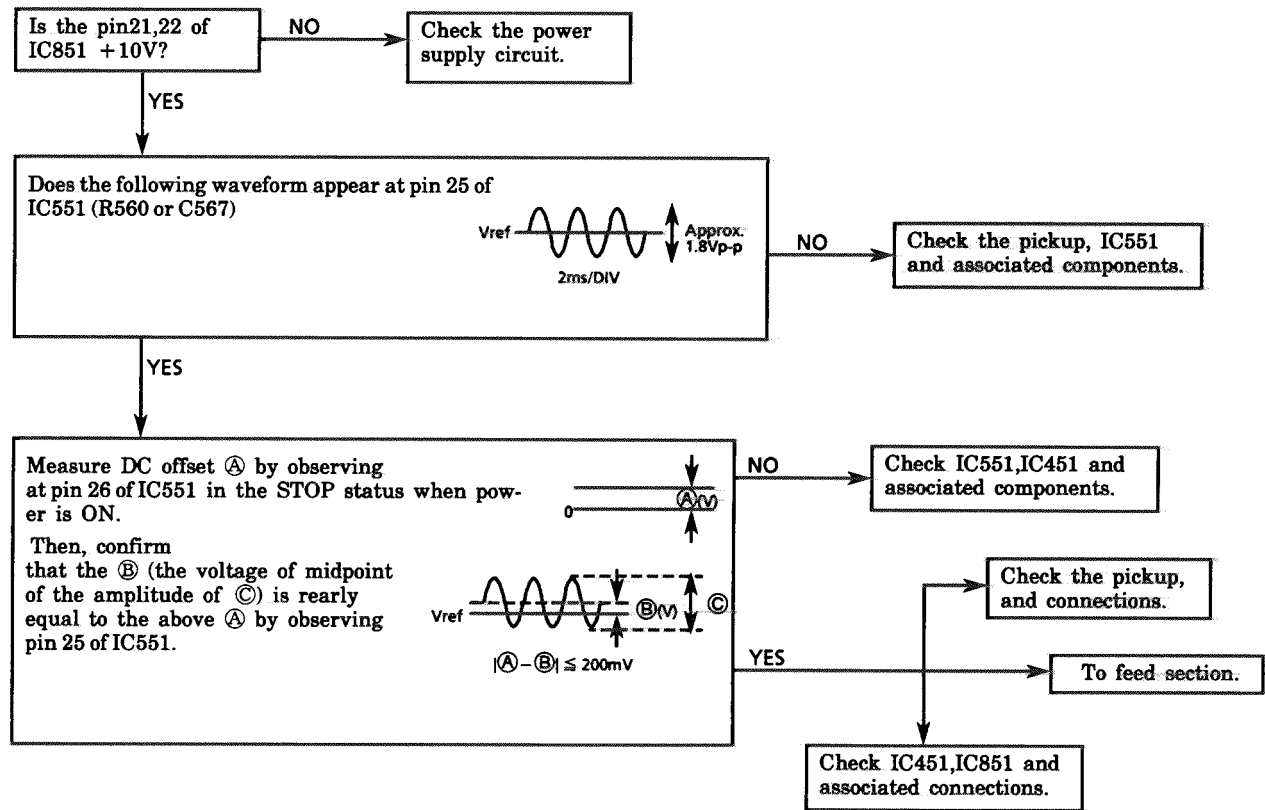


# Focus section

Note) When checking the voltages between pin1 and pin2 of IC801 with an oscilloscope, do not connect the other probes.

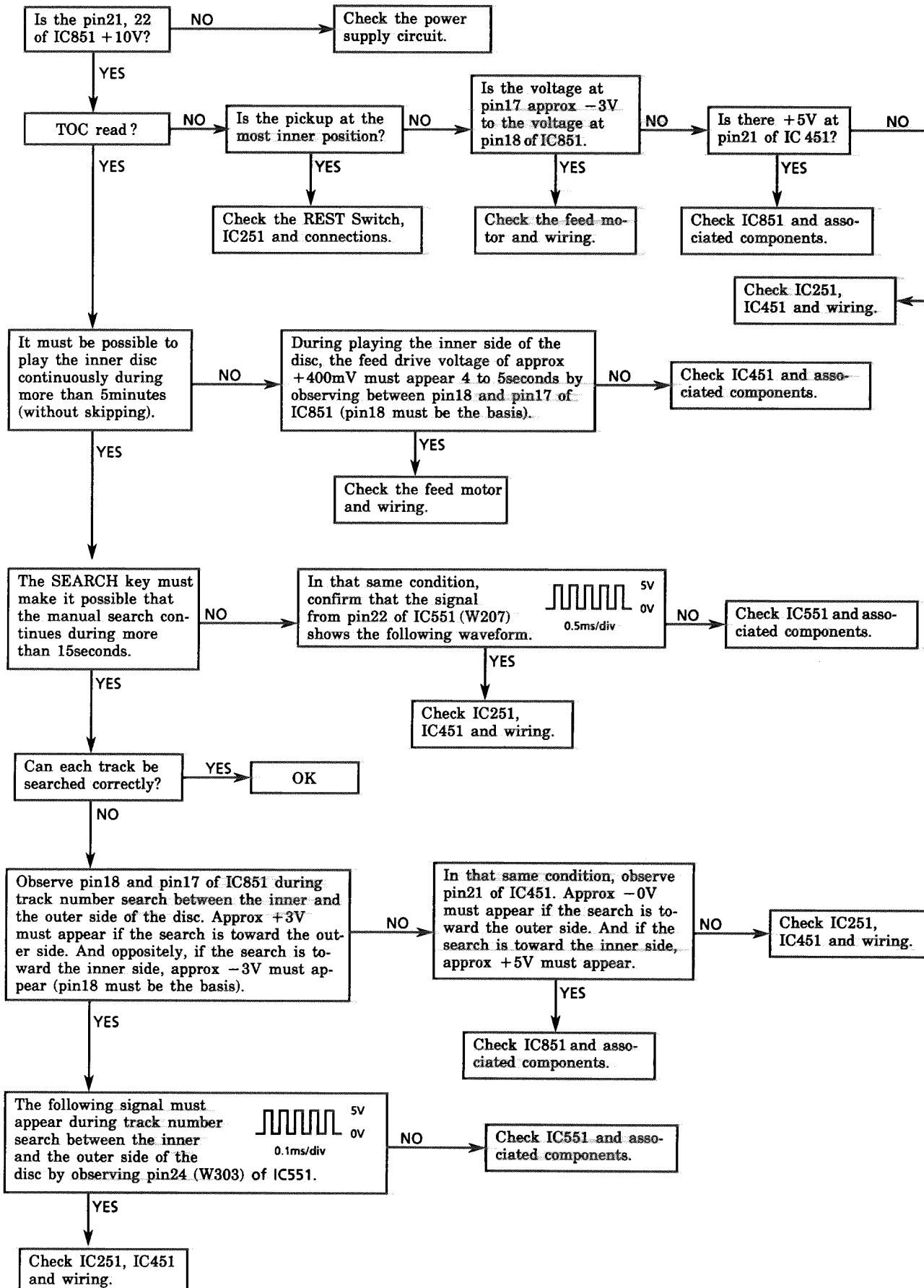


# Tracking section



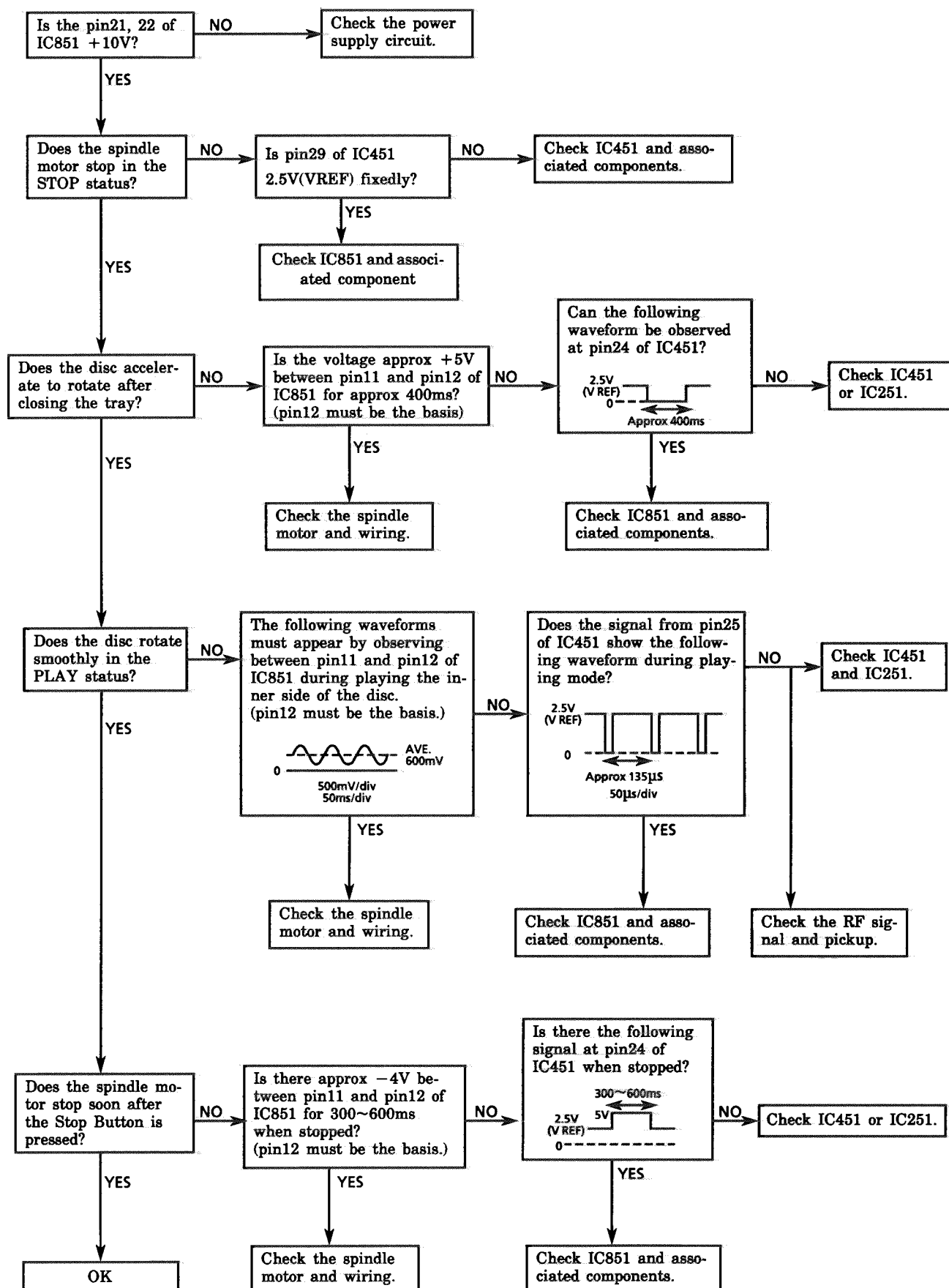
# Feed section

Note) When checking the voltages between pin18 and pin17 of IC801 with an oscilloscope, do not connect the other probes.

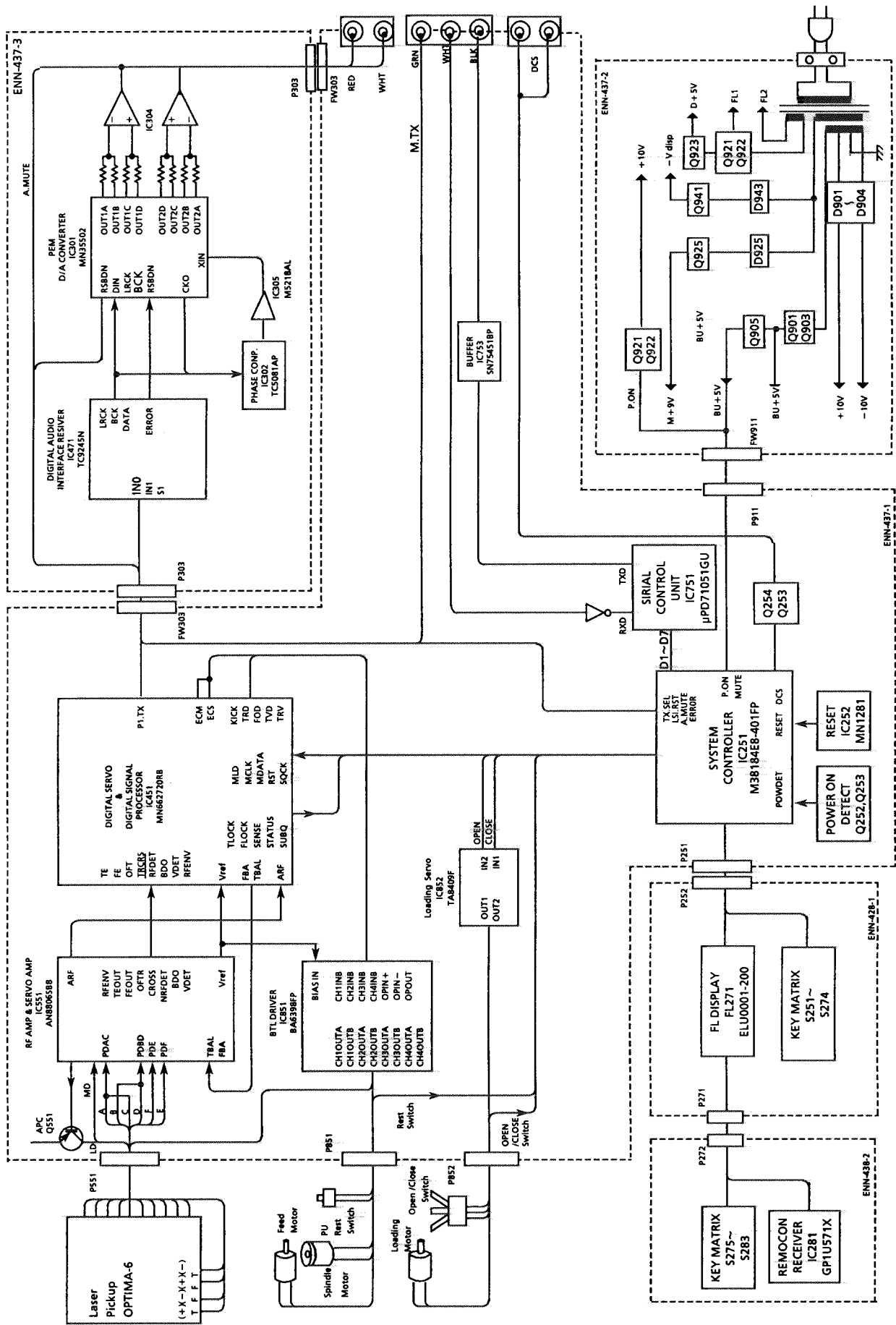


**Spindle section**

Note) When checking the voltages between pin11 and pin12 of IC851 with an oscilloscope, do not connect the other probes.

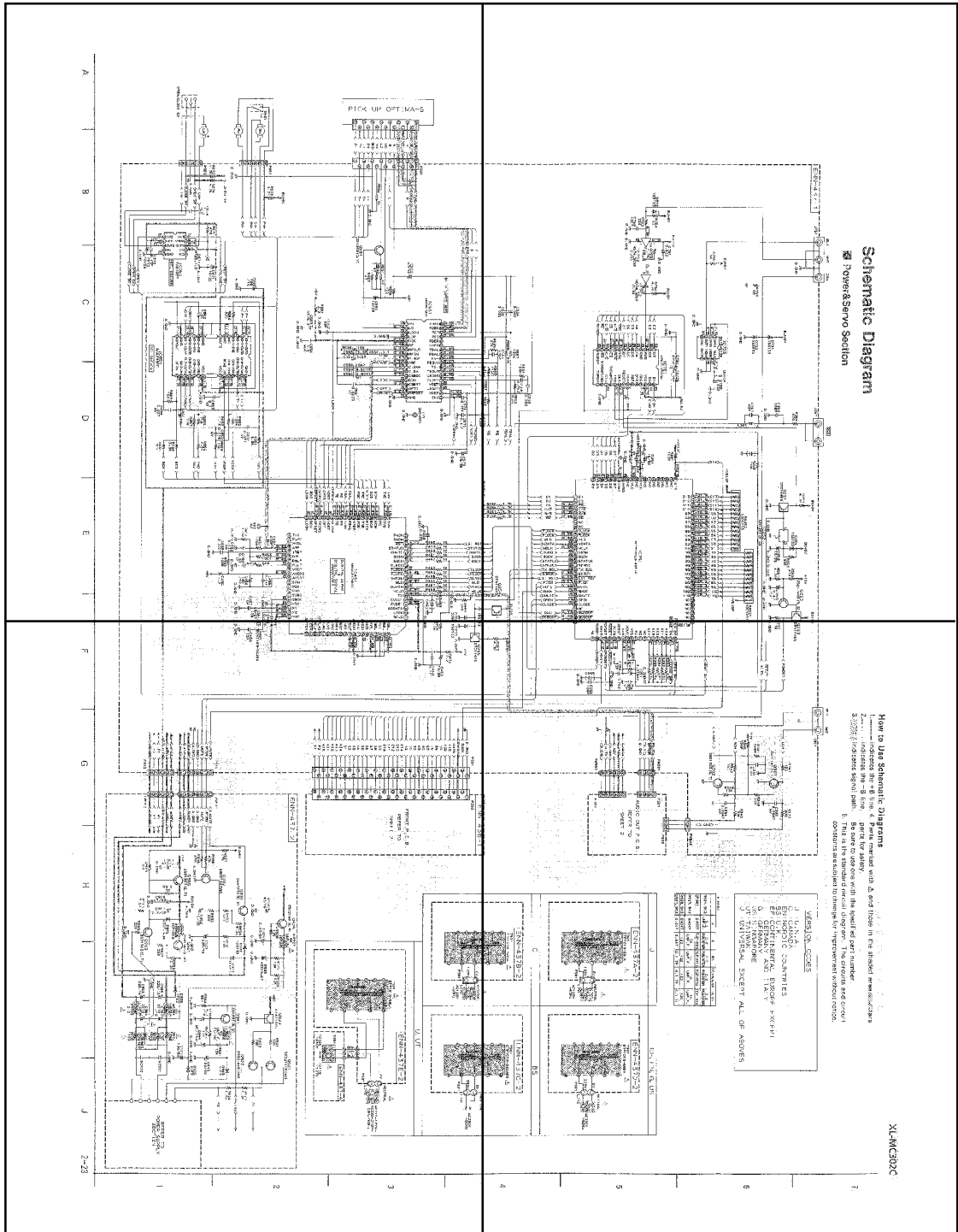


■ Block Diagrams(XL-MC302C)



P2-23-a

P2-23-b



P2-23-c

P2-23-d

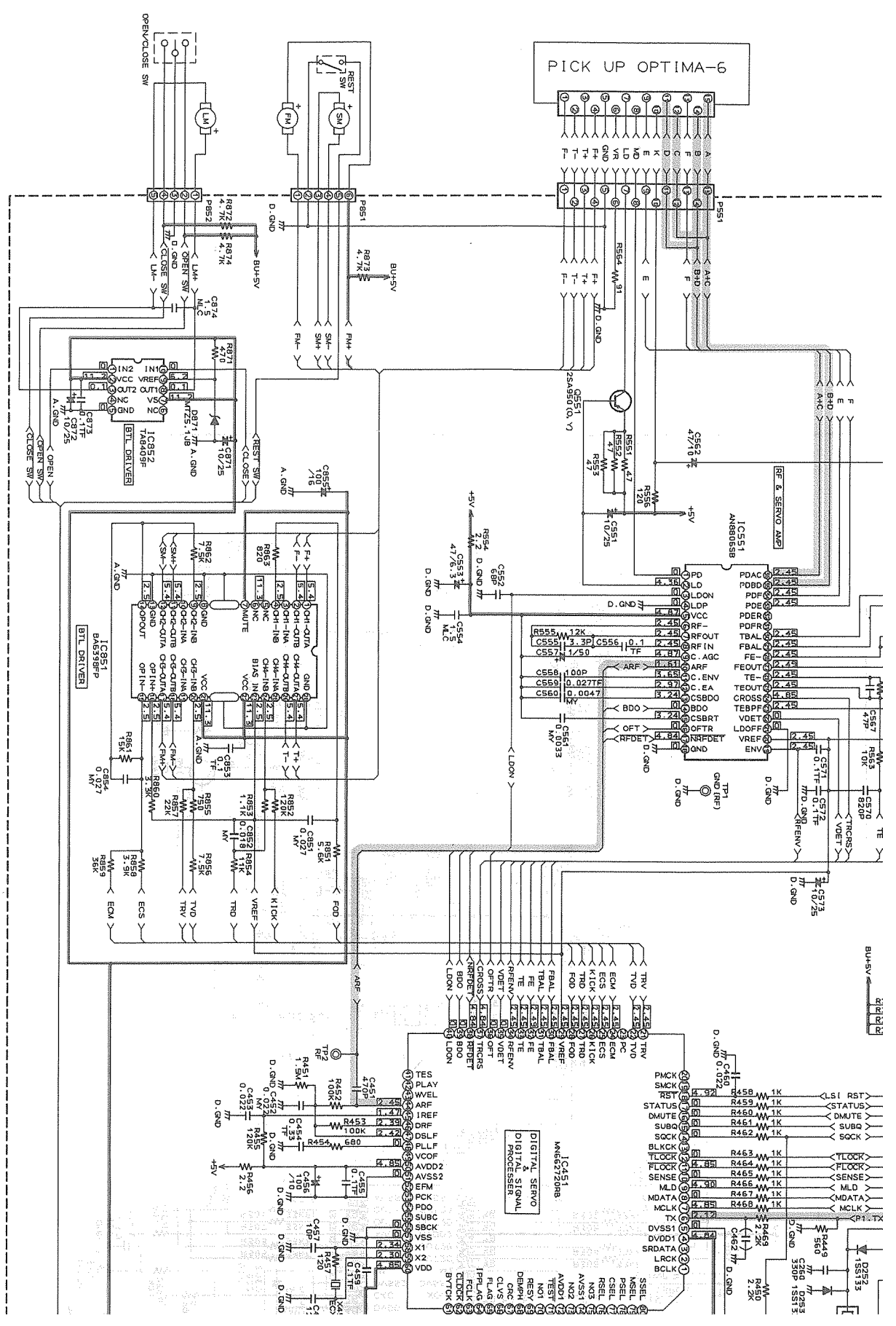
A

B

C

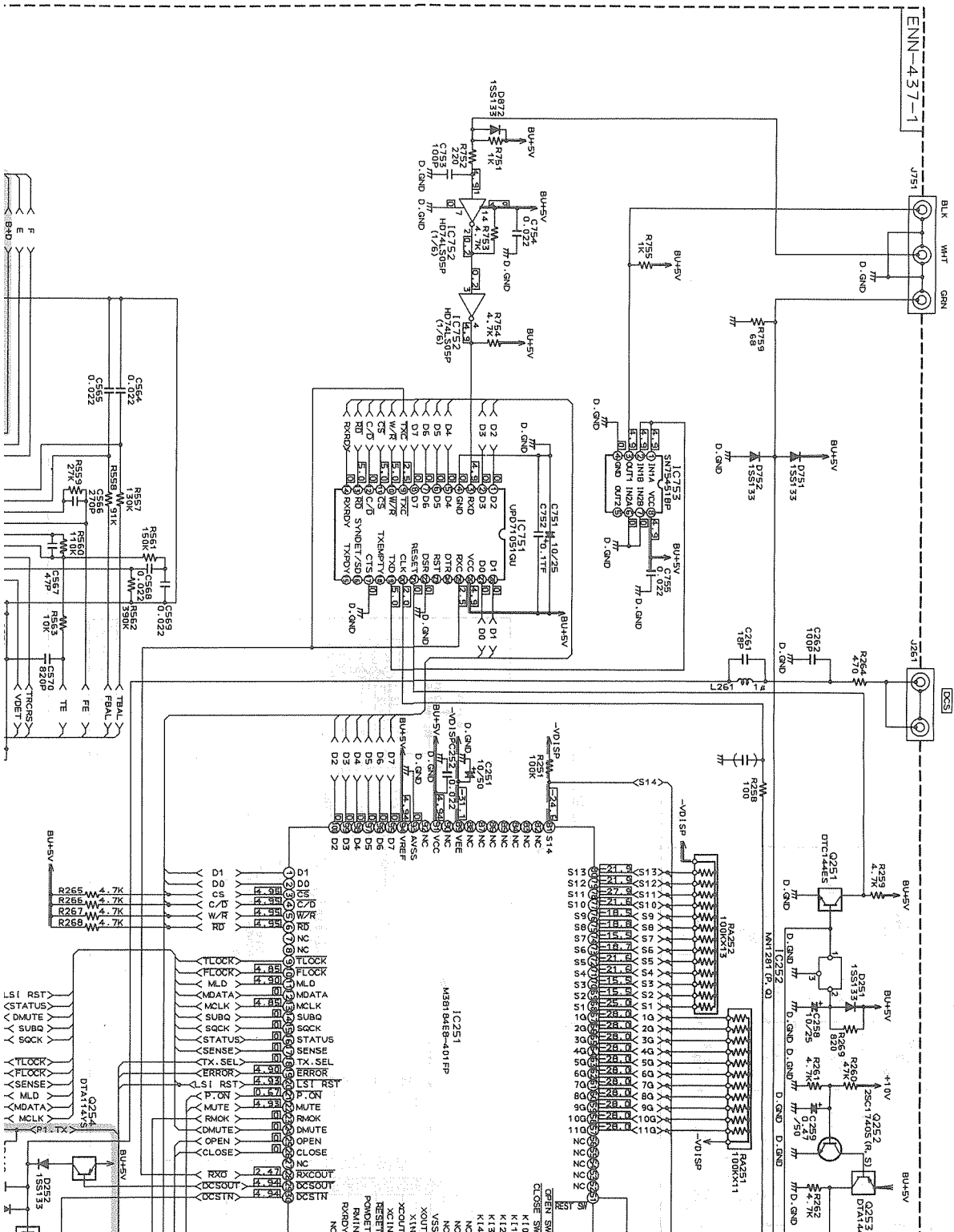
D

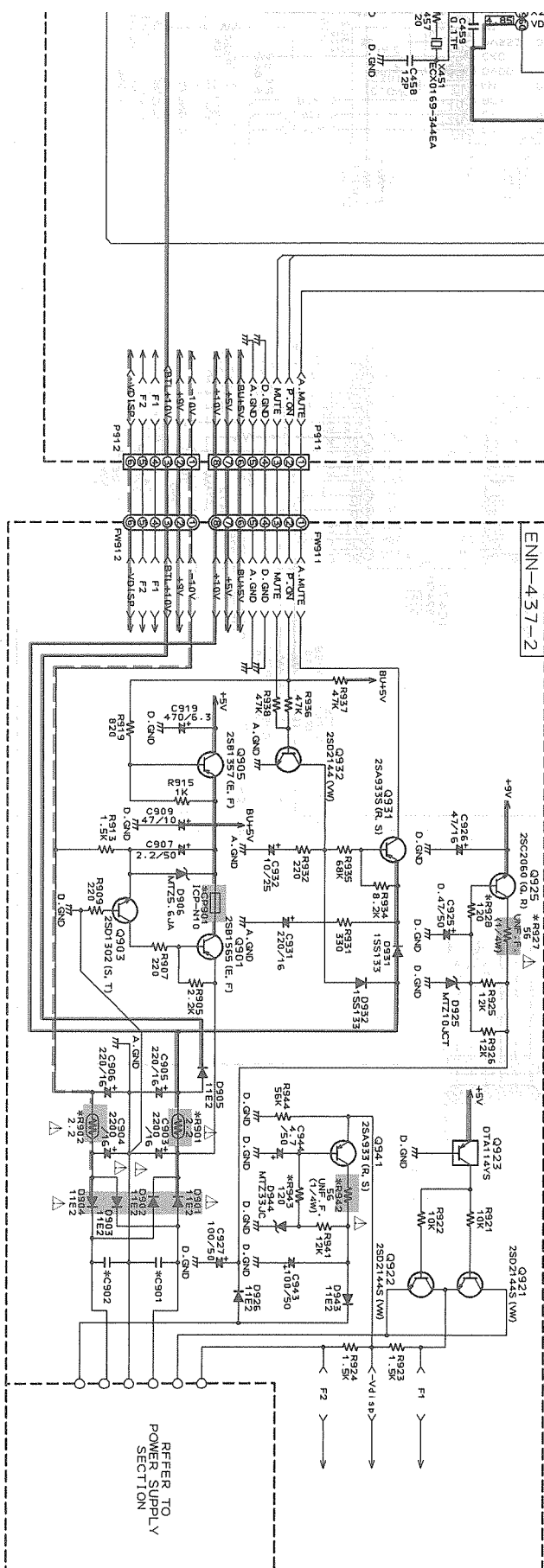
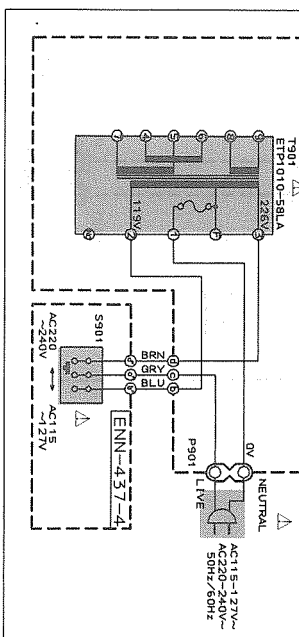
E



# Schematic Diagram

## Power & Servo Section



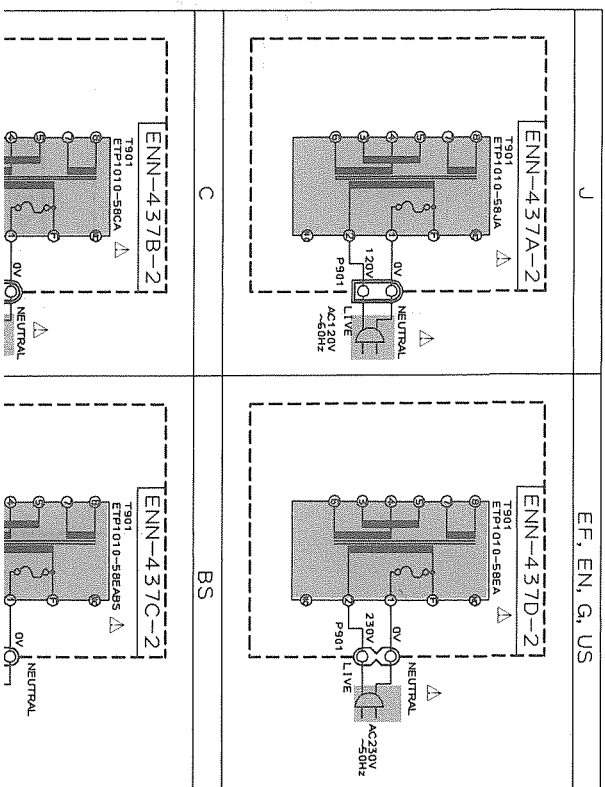


- 7.



UNIVERSAL EXCEPT ALL OF ABOVE

| * MARK    | J               | C              | BS             | FF, BN & LB    | LT, UT         |
|-----------|-----------------|----------------|----------------|----------------|----------------|
| R901, 902 | 2, 2<br>UNF. C. | 2, 2<br>ROSTER | 2, 2<br>ROSTER | 2, 2<br>ROSTER | 2, 2<br>ROSTER |
| CP901     | SHORT           | ICP-N10        | ICP-N10        | ICP-N10        | ICP-N11        |
| R921, 942 | 56<br>UNF. F.   | 56<br>UNF. F.  | 56<br>UNF. F.  | 56<br>UNF. F.  | 56<br>UNF. F.  |
| P928, 943 | SHORT           | 120            | 120            | 120            | 120            |
| C901, 902 | 0, 0.47         | 0, 0.47        | 0, 1. TF       | 0, 1. TF       | 0, 1. TF       |





[illegible]

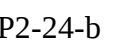
XL MC302C

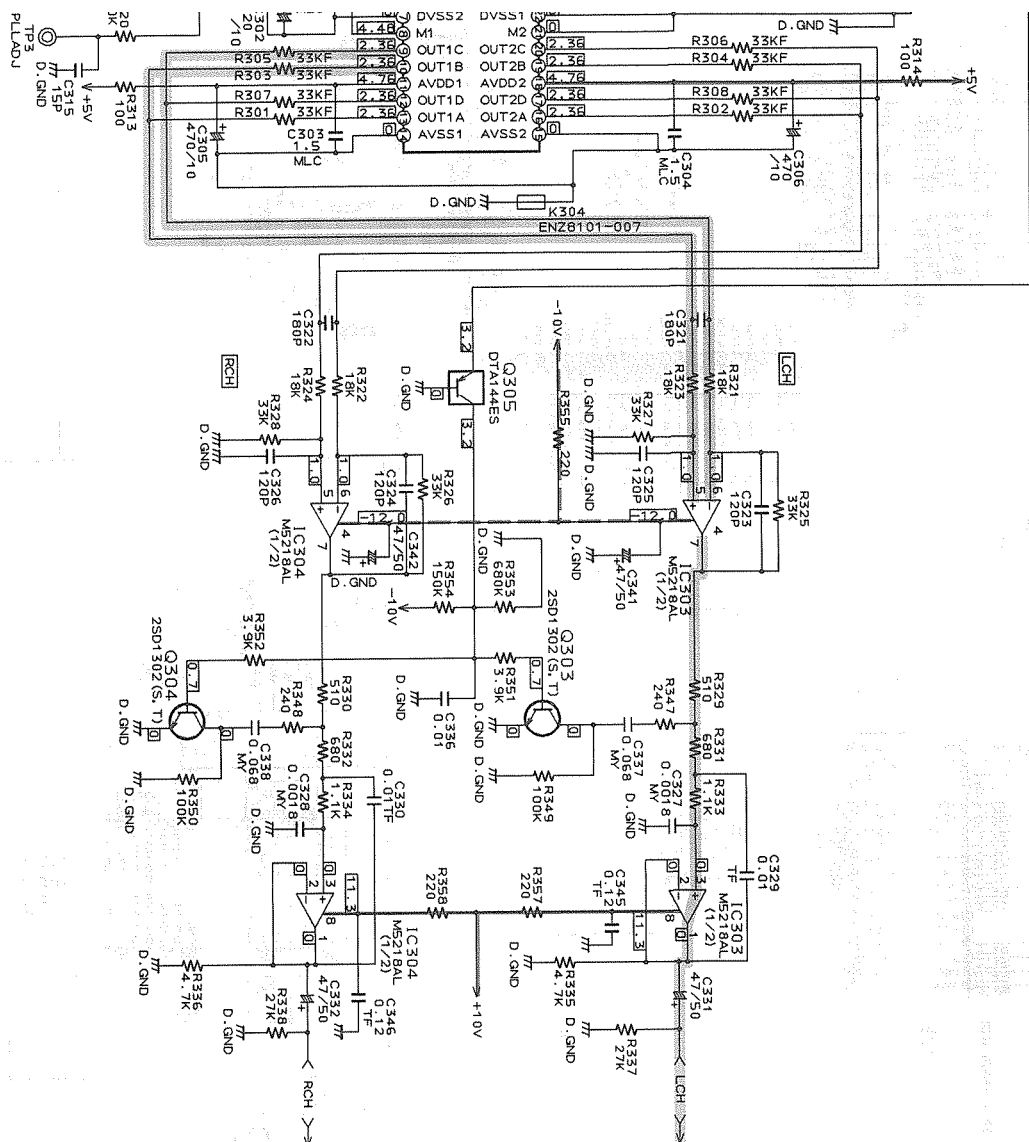
Front Audio Section

10K 100K 1M 100nF

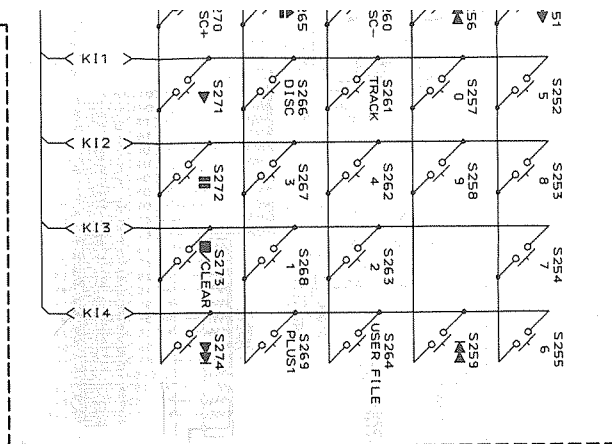
| QTY | DESCRIPTION | REF  |
|-----|-------------|------|
| 1   | 10K         | R1   |
| 1   | 100K        | R2   |
| 1   | 1M          | R3   |
| 1   | 100nF       | C1   |
| 1   | 10K         | R4   |
| 1   | 100K        | R5   |
| 1   | 1M          | R6   |
| 1   | 100nF       | C2   |
| 1   | 10K         | R7   |
| 1   | 100K        | R8   |
| 1   | 1M          | R9   |
| 1   | 100nF       | C3   |
| 1   | 10K         | R10  |
| 1   | 100K        | R11  |
| 1   | 1M          | R12  |
| 1   | 100nF       | C4   |
| 1   | 10K         | R13  |
| 1   | 100K        | R14  |
| 1   | 1M          | R15  |
| 1   | 100nF       | C5   |
| 1   | 10K         | R16  |
| 1   | 100K        | R17  |
| 1   | 1M          | R18  |
| 1   | 100nF       | C6   |
| 1   | 10K         | R19  |
| 1   | 100K        | R20  |
| 1   | 1M          | R21  |
| 1   | 100nF       | C7   |
| 1   | 10K         | R22  |
| 1   | 100K        | R23  |
| 1   | 1M          | R24  |
| 1   | 100nF       | C8   |
| 1   | 10K         | R25  |
| 1   | 100K        | R26  |
| 1   | 1M          | R27  |
| 1   | 100nF       | C9   |
| 1   | 10K         | R28  |
| 1   | 100K        | R29  |
| 1   | 1M          | R30  |
| 1   | 100nF       | C10  |
| 1   | 10K         | R31  |
| 1   | 100K        | R32  |
| 1   | 1M          | R33  |
| 1   | 100nF       | C11  |
| 1   | 10K         | R34  |
| 1   | 100K        | R35  |
| 1   | 1M          | R36  |
| 1   | 100nF       | C12  |
| 1   | 10K         | R37  |
| 1   | 100K        | R38  |
| 1   | 1M          | R39  |
| 1   | 100nF       | C13  |
| 1   | 10K         | R40  |
| 1   | 100K        | R41  |
| 1   | 1M          | R42  |
| 1   | 100nF       | C14  |
| 1   | 10K         | R43  |
| 1   | 100K        | R44  |
| 1   | 1M          | R45  |
| 1   | 100nF       | C15  |
| 1   | 10K         | R46  |
| 1   | 100K        | R47  |
| 1   | 1M          | R48  |
| 1   | 100nF       | C16  |
| 1   | 10K         | R49  |
| 1   | 100K        | R50  |
| 1   | 1M          | R51  |
| 1   | 100nF       | C17  |
| 1   | 10K         | R52  |
| 1   | 100K        | R53  |
| 1   | 1M          | R54  |
| 1   | 100nF       | C18  |
| 1   | 10K         | R55  |
| 1   | 100K        | R56  |
| 1   | 1M          | R57  |
| 1   | 100nF       | C19  |
| 1   | 10K         | R58  |
| 1   | 100K        | R59  |
| 1   | 1M          | R60  |
| 1   | 100nF       | C20  |
| 1   | 10K         | R61  |
| 1   | 100K        | R62  |
| 1   | 1M          | R63  |
| 1   | 100nF       | C21  |
| 1   | 10K         | R64  |
| 1   | 100K        | R65  |
| 1   | 1M          | R66  |
| 1   | 100nF       | C22  |
| 1   | 10K         | R67  |
| 1   | 100K        | R68  |
| 1   | 1M          | R69  |
| 1   | 100nF       | C23  |
| 1   | 10K         | R70  |
| 1   | 100K        | R71  |
| 1   | 1M          | R72  |
| 1   | 100nF       | C24  |
| 1   | 10K         | R73  |
| 1   | 100K        | R74  |
| 1   | 1M          | R75  |
| 1   | 100nF       | C25  |
| 1   | 10K         | R76  |
| 1   | 100K        | R77  |
| 1   | 1M          | R78  |
| 1   | 100nF       | C26  |
| 1   | 10K         | R79  |
| 1   | 100K        | R80  |
| 1   | 1M          | R81  |
| 1   | 100nF       | C27  |
| 1   | 10K         | R82  |
| 1   | 100K        | R83  |
| 1   | 1M          | R84  |
| 1   | 100nF       | C28  |
| 1   | 10K         | R85  |
| 1   | 100K        | R86  |
| 1   | 1M          | R87  |
| 1   | 100nF       | C29  |
| 1   | 10K         | R88  |
| 1   | 100K        | R89  |
| 1   | 1M          | R90  |
| 1   | 100nF       | C30  |
| 1   | 10K         | R91  |
| 1   | 100K        | R92  |
| 1   | 1M          | R93  |
| 1   | 100nF       | C31  |
| 1   | 10K         | R94  |
| 1   | 100K        | R95  |
| 1   | 1M          | R96  |
| 1   | 100nF       | C32  |
| 1   | 10K         | R97  |
| 1   | 100K        | R98  |
| 1   | 1M          | R99  |
| 1   | 100nF       | C33  |
| 1   | 10K         | R100 |
| 1   | 100K        | R101 |
| 1   | 1M          | R102 |
| 1   | 100nF       | C34  |
| 1   | 10K         | R103 |
| 1   | 100K        | R104 |
| 1   | 1M          | R105 |
| 1   | 100nF       | C35  |
| 1   | 10K         | R106 |
| 1   | 100K        | R107 |
| 1   | 1M          | R108 |
| 1   | 100nF       | C36  |
| 1   | 10K         | R109 |
| 1   | 100K        | R110 |
| 1   | 1M          | R111 |
| 1   | 100nF       | C37  |
| 1   | 10K         | R112 |
| 1   | 100K        | R113 |
| 1   | 1M          | R114 |
| 1   | 100nF       | C38  |
| 1   | 10K         | R115 |
| 1   |             |      |



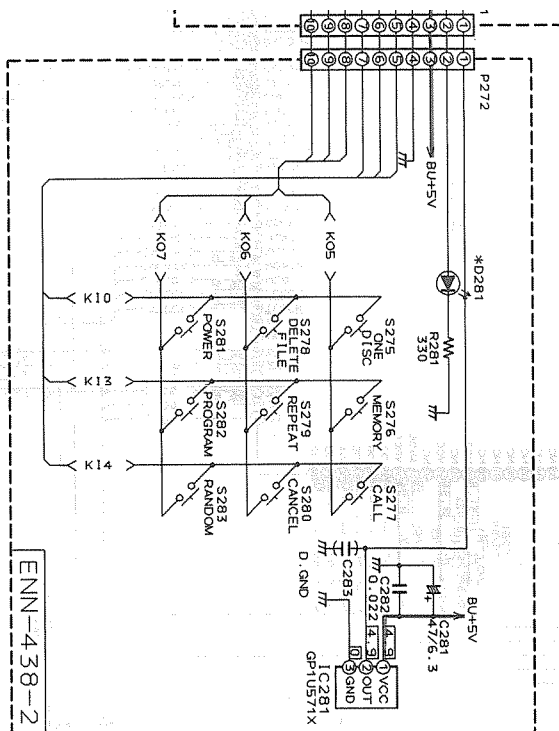




F G H I J



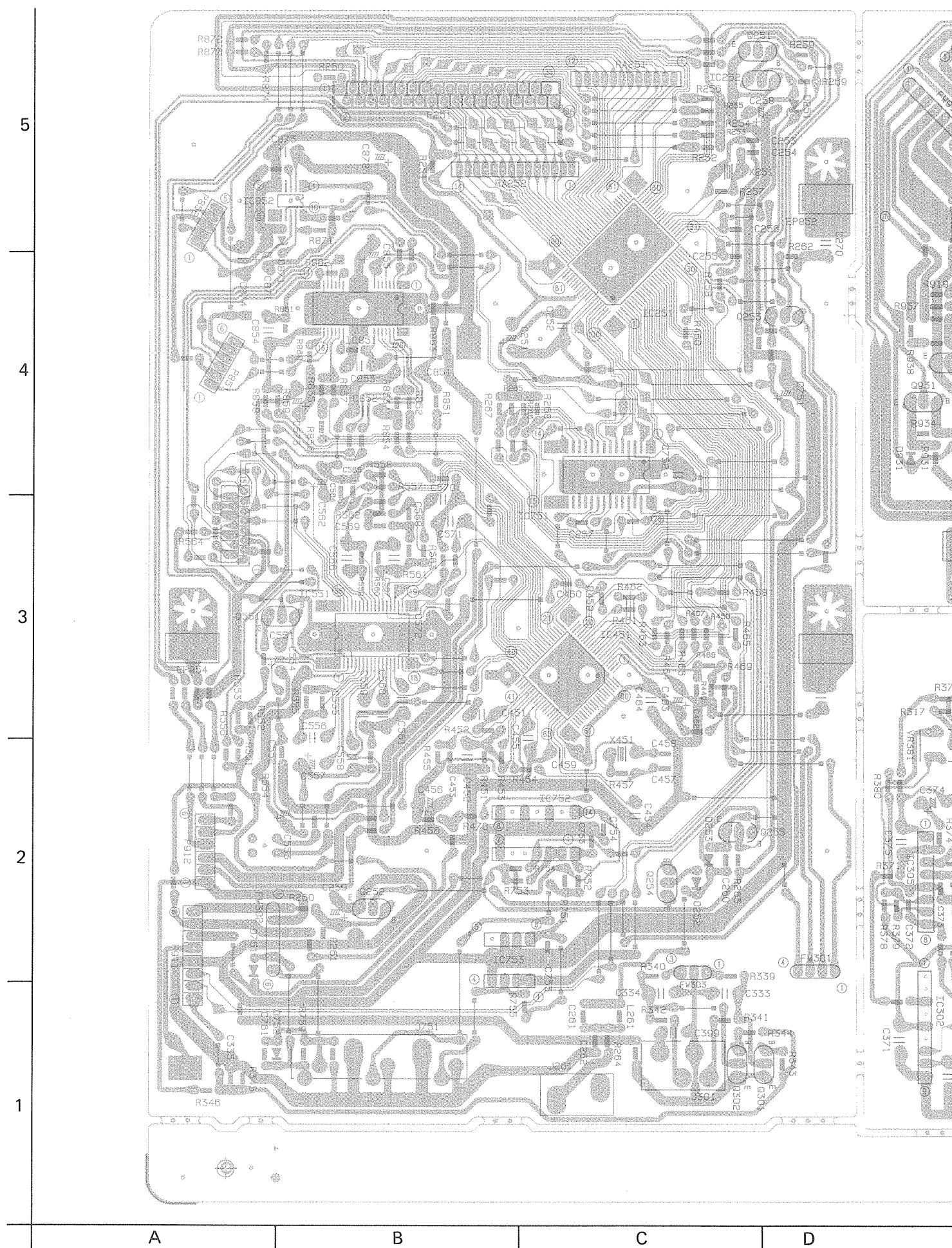
| * MARK |           |          |
|--------|-----------|----------|
|        | BS        | OTHER    |
| D281   | SLA-580LT | SLH-56VC |

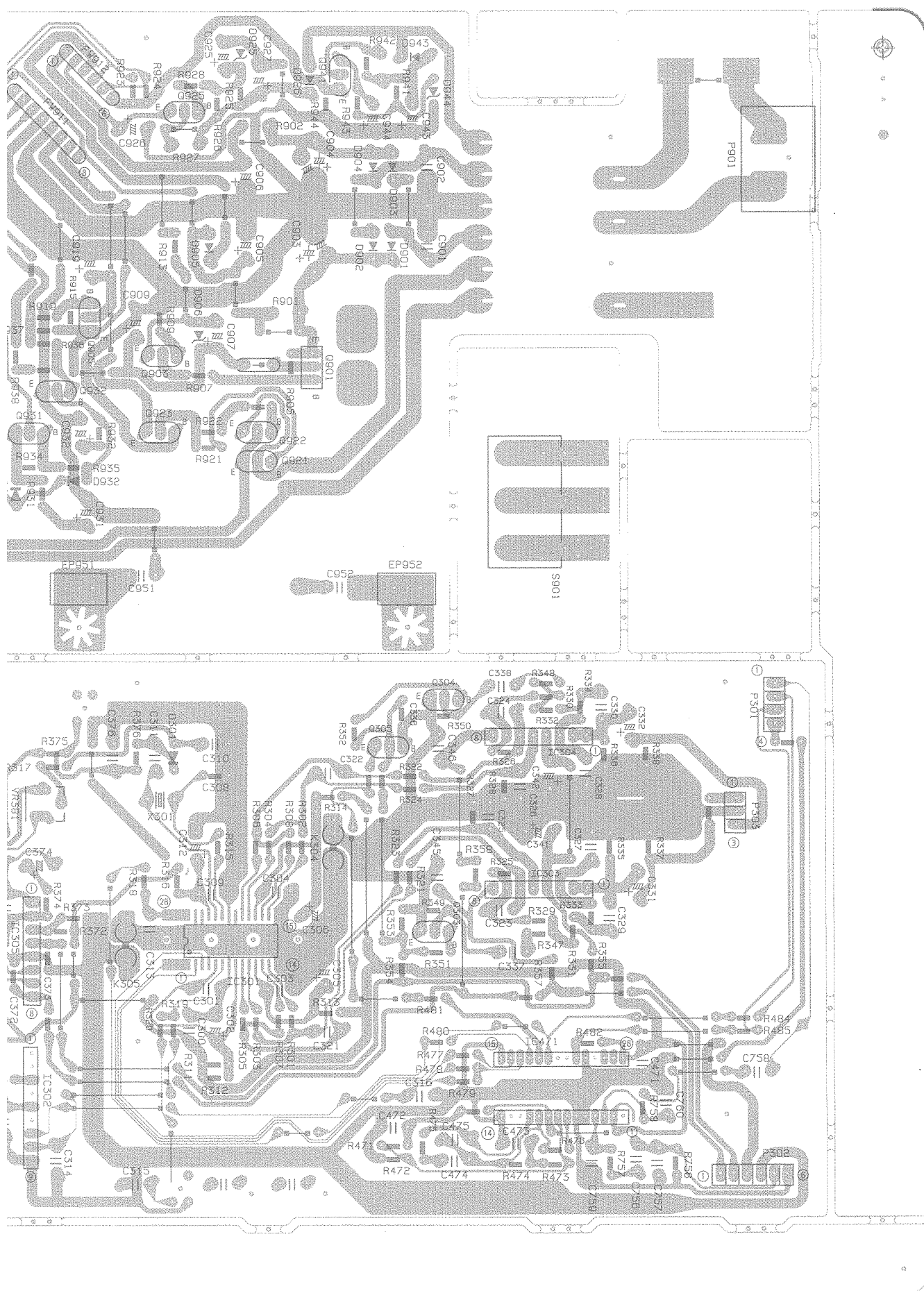


ENN-438-2

# Printed Circuit Board

■ Main P.C.Board (ENN-437)







# XL-MC302M

## — Contents —

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## Description of Major LSIs

### ■ M38022E4SP(IC201) : MECHANISM CONTROLLER

#### 1. Terminal Layout

|            |    |    |            |
|------------|----|----|------------|
| VCC        | 1  | 64 | EL DN      |
| VREF       | 2  | 63 | EL UP      |
| AVSS       | 3  | 62 | GND        |
| MNO1       | 4  | 61 | TYS O      |
| MNO0       | 5  | 60 | TYS C      |
| MUTE       | 6  | 59 | TY. +      |
| LOCK       | 7  | 58 | TY. -      |
| FOK        | 8  | 57 | M.FD+      |
| SENS       | 9  | 56 | M.FD-      |
| LON        | 10 | 55 | EL.LED1(R) |
| RESET      | 11 | 54 | EL.LED(L)  |
| SCOR       | 12 | 53 | OP.LED     |
| DATA       | 13 | 52 | DO.ACT     |
| CLOCK      | 14 | 51 | CHECKSW    |
| PHL        | 15 | 50 |            |
| RESET POS. | 16 | 49 | CHECK A    |
| SQCK       | 17 | 48 | CHECK B    |
| NC         | 18 | 47 | PHH        |
| SQCK       | 19 | 46 | WAIT       |
| ENABLE     | 20 | 45 | LOOSE      |
| DATA Y/N   | 21 | 44 | TY OPEN    |
| M TO C     | 22 | 43 | TY CLOSE   |
| C TO M     | 23 | 42 | XLAT       |
| OPEN KEY   | 24 | 41 | PU.L       |
| LOAD POS.  | 25 | 40 | PU.R       |
| CHIP MODE  | 26 | 39 | D.OPEN     |
| RST        | 27 | 38 | SCL        |
| OFF DIT    | 28 | 37 | SDA        |
| JAB POS.   | 29 | 36 | P.ON       |
| XIN        | 30 | 35 | XCX        |
| XOUT       | 31 | 34 | DFCT       |
| VSS        | 32 | 33 | TEST       |

#### 2. Description

| Pin No. | Symbol     | I/O | Description                                 | Pin No. | Symbol     | I/O | Description                                     |
|---------|------------|-----|---------------------------------------------|---------|------------|-----|-------------------------------------------------|
| 1       | VCC        | --  | Power supply                                | 33      | TEST       | --  | Pull up                                         |
| 2       | VREF       | O   | Reference voltage output pin                | 34      | DFCT       | O   | "H" with focus searching                        |
| 3       | AVSS       | --  | Analog GND                                  | 35      | XCX        | O   | "H" with tracking loop is off                   |
| 4       | MNO1       | --  | Pull up                                     | 36      | P.ON       | O   | H: power off, L: power on                       |
| 5       | MNO0       | --  | Connect GND                                 | 37      | SDA        | I/O | Data communication with IC202                   |
| 6       | MUTE       | O   | Muting signal                               | 38      | SCL        | I/O | READ/WR clock communication with IC202          |
| 7       | LOCK       | I   | Lock signal                                 | 39      | D.OPEN     | I   | H: door open, L: close                          |
| 8       | FOK        | I   | Focus ok signal                             | 40      | PU.R       | I   | Turn-table base mech. position detect, L: right |
| 9       | SENS       | I   | Sens signal                                 | 41      | PU.L       | I   | Turn-table base mech. position detect, L: left  |
| 10      | LON        | O   | Turns on laser                              | 42      | XLAT       | O   | Latch signal for data transmission              |
| 11      | RESET      | I   | Reset signal                                | 43      | TY CLOSE   | O   | Tray close signal                               |
| 12      | SCOR       | I   | Subcord synchronizing signal                | 44      | TY OPEN    | O   | Tray open signal                                |
| 13      | DATA       | O   | Serial data for signal processor            | 45      | LOOSE      | I   | Door lock detect, L: open                       |
| 14      | CLOCK      | O   | Clock output for data transmission          | 46      | WAIT       | I   | Door lock detect, L: lock                       |
| 15      | PHL        | I   | Elevator position detect                    | 47      | PHH        | --  | Non connection                                  |
| 16      | RESET POS. | I   | Reset position detect                       | 48      | CHECK B    | I   | Check mode select (pull up)                     |
| 17      | SQCK       | O   | Clock output for data transfers             | 49      | CHECK A    | I   | Check mode select (pull up)                     |
| 18      | NC         | --  | Non connection                              | 50      |            | --  | Pull up                                         |
| 19      | SQCK       | I   | Input of Q-data of subcode                  | 51      | CHECKSW    | --  | Switch for check mode                           |
| 20      | ENABLE     | --  | Non connection                              | 52      | DO.ACT     | O   | Pull up                                         |
| 21      | DATA Y/N   | --  | Pull up                                     | 53      | OP.LED     | O   | Door indicator                                  |
| 22      | M TO C     | I   | Communication signal from mech.             | 54      | EL.LED(L)  | O   | Elevator LED(right)                             |
| 23      | C TO M     | I   | Communication signal TO mech.               | 55      | EL.LED1(R) | O   | Elevator LED(left)                              |
| 24      | OPEN KEY   | I   | Door open key detect                        | 56      | M.FD-      | O   | Feed driving control signal                     |
| 25      | LOAD POS.  | I   | This pin becomes "L" when the tray loaded   | 57      | M.FD+      | O   | Feed driving control signal                     |
| 26      | CHIP MODE  | --  | Pull down                                   | 58      | TY. -      | O   | "H" with the tray opening                       |
| 27      | RST        | O   | Reset signal output                         | 59      | TY. +      | O   | "H" with the tray closing                       |
| 28      | OFF DIT    | --  | Connect GND                                 | 60      | TYS C      | O   | Tray stopper close signal                       |
| 29      | JAB POS    | I   | This pin becomes "L" when the tray returned | 61      | TYS O      | O   | Tray stopper open signal                        |
| 30      | XIN        | I   | Performs crystal oscillation                | 62      | GND        | --  | GND                                             |
| 31      | XOUT       | O   | Between XI and XO                           | 63      | EL UP      | O   | Lifter driving control signal                   |
| 32      | VSS        | --  | GND                                         | 64      | EL DN      | O   | Lifter driving control signal                   |

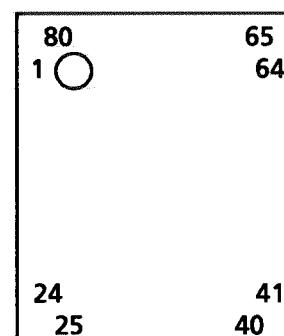
## ■ CXD2500BQ(IC401) : Digital Signal Processor

### 1. Outline

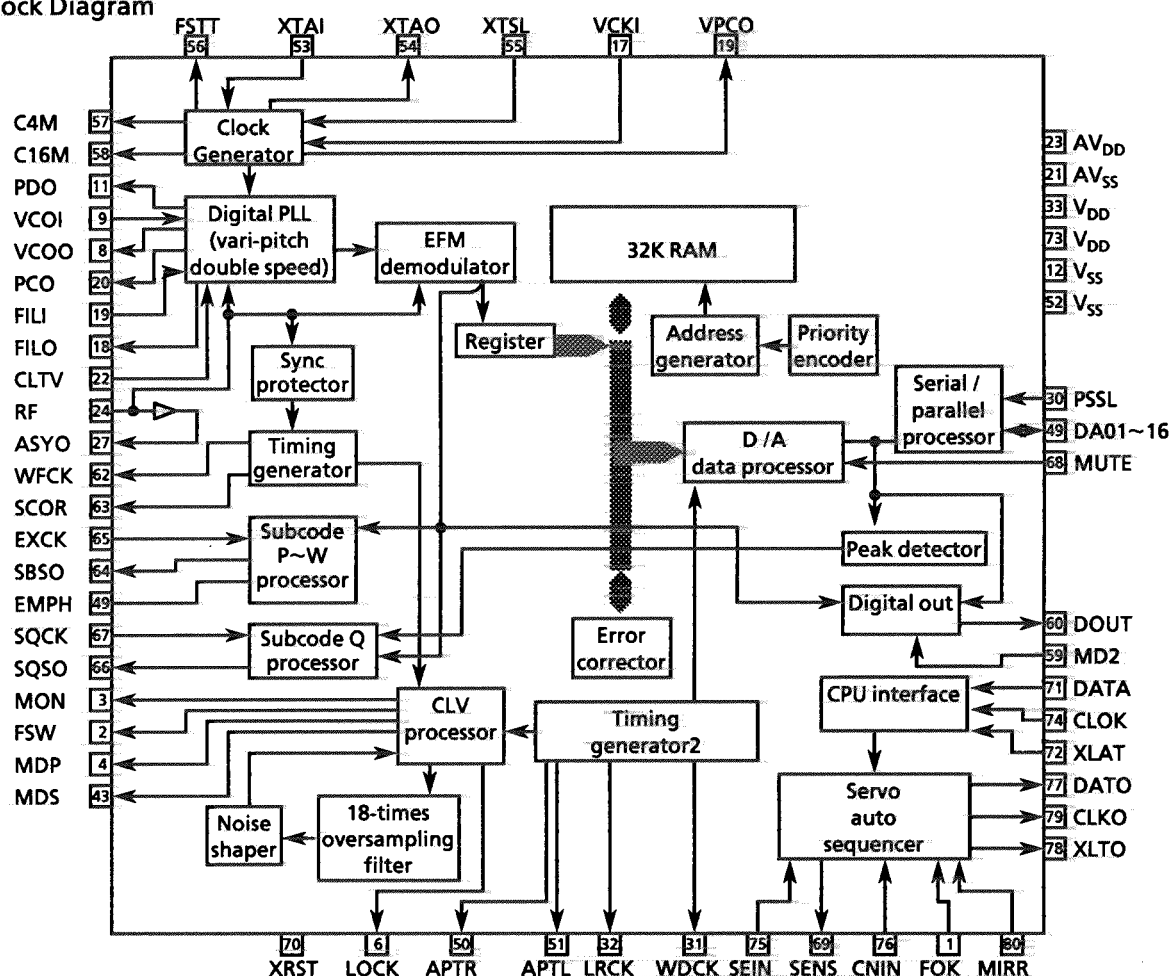
The CXD2500BQ is a digital signal processing LSI designed for use in compact disc players. It has the following functions:

- All digital signals for regeneration are processed using one chip.
- The built-in RAM enables high-integration mounting.
- Generation by the use of a digital PLL of bit clock pulses for strobing the EFM signal.
- EFM data demodulation
- Subcode demodulation and subcode Q data error detection
- Digital spindle servo system (incorporating an oversampling filter)

### 2. Terminal Layout (TopView)



### 3. Block Diagram



#### Notes:

- The data at the 64-bit slot is output in 2's complements on an LSB-first basis. The data at the 48-bit slot is output in 2's complements on an MSB-first basis.
- GTOP monitors the state of Frame Sync protection. ("H" : Sync protection window released)
- XUGF is a negative Frame Sync pulse obtained from the EFM signal before Frame Sync protection is effected.
- XPLCK is an inversion of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK coincides with a change point of the EFM signal.
- The GFS signal turns "H" upon coincidence between Frame Sync and the timing of interpolation protection.
- RFCK is a signal generated at 136- $\mu$ s periods using a crystal oscillator.
- C2PO is a signal to indicate a data error.
- XRAOF is a signal issued when a jitter margin of  $\pm 28F$  is exceeded by the 32K RAM.

## 4. Pin Function Description

| Pin No. | Symbol           | I/O | Description                                                                                                                                     |
|---------|------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | FOK              | I   | Focus OK input pin. Used for SENS output and servo auto sequencer.                                                                              |
| 2       | FSW              | O   | Non connection                                                                                                                                  |
| 3       | MON              | O   | Output for spindle motor ON / OFF control.                                                                                                      |
| 4       | MDP              | O   | Output for spindle servo control.                                                                                                               |
| 5       | MDS              | O   | Output for spindle servo control (Non connection).                                                                                              |
| 6       | LOCK             | O   | This terminal is "H" when the GFS signal sampled at 460Hz is "H". It turns "L" when the GFS signal turns out "L" 8 or more times in succession. |
| 7~9     | —                | --  | Non connection                                                                                                                                  |
| 10      | TEST             | I   | Test pin (Normally at 0V)                                                                                                                       |
| 11      | PDO              | O   | Output of charge pump for analog EFM PLL (Non connection).                                                                                      |
| 12      | Vss              | --  | GND                                                                                                                                             |
| 13~16   | —                | --  | Non connection                                                                                                                                  |
| 17      | VCKI             | I   | Clock input from external VCO for vari-pitch control. $f_c = 16.9344\text{MHz}$ . Connected to GND.                                             |
| 18      | FILO             | O   | Output of filter for master PLL (Slave = Digital PLL)                                                                                           |
| 19      | FILI             | I   | Input to filter for master PLL.                                                                                                                 |
| 20      | PCO              | O   | Output of charge pump for master PLL.                                                                                                           |
| 21      | AVss             | --  | Analog GND                                                                                                                                      |
| 22      | CLTV             | I   | VCO control voltage input for master PLL.                                                                                                       |
| 23      | AV <sub>DD</sub> | --  | Analog power supply                                                                                                                             |
| 24      | RF               | I   | EFM signal input                                                                                                                                |
| 25      | TEST2            | I   | TEST pin (Connected to GND)                                                                                                                     |
| 26      | TEST3            | I   | TEST pin (Connected to GND)                                                                                                                     |
| 27      | ASYO             | O   | EFM full-swing output                                                                                                                           |
| 28      | TEST4            | I   | TEST pin (Connected to GND)                                                                                                                     |
| 29      | NC               | --  | Non connection                                                                                                                                  |
| 30      | PSSL             | I   | Input used to switch the audio data output mode. "L" for serial output, "H" for parallel output.                                                |
| 31      | WDCK             | O   | D / A interface for 48-bit slot. Word clock $f = 2F_s$ .                                                                                        |
| 32      | LRCK             | O   | D / A interface for 48-bit slot. LR clock $f = F_s$ .                                                                                           |
| 33      | V <sub>DD</sub>  | --  | Power supply                                                                                                                                    |
| 34      | DATA             | O   | Output DA16(MSB) when PSSL = 1 or serial data from 48-bit slot (2's complements, MSB first) when PSSL = 0.                                      |
| 35      | BCLK             | O   | Output DA15 when PSSL = 1 or bit clock from 48-bit slot when PSSL = 0.                                                                          |
| 36~51   | —                | --  | Non connection                                                                                                                                  |
| 52      | VSS              | --  | GND                                                                                                                                             |
| 53      | XTAI             | I   | Input of 16.9344MHz Xtal oscillation circuit or 33.8688MHz input.                                                                               |
| 54      | XTAO             | O   | Output of 16.9344 MHz Xtal oscillation circuit.                                                                                                 |
| 55      | XTSL             | I   | Xtal selection input pin. "L" for 16,344MHz Xtal, "H" for 33.8688 MHz Xtal.                                                                     |
| 56~58   | —                | --  | Non connection                                                                                                                                  |
| 59      | MD2              | I   | Digital-Out ON/OFF control. "H" for ON, "L" for OFF.                                                                                            |
| 60      | DOUT             | O   | Digital-Out output pin. Non connection                                                                                                          |
| 61,62   | —                | --  | Non connection                                                                                                                                  |
| 63      | SCOR             | O   | Turns "H" when subcode Sync S0 or S1 is detected.                                                                                               |
| 64      | SBSO             | O   | Serial output of Sub P ~ W.                                                                                                                     |
| 65      | EXCK             | I   | Clock input for reading SBSO.                                                                                                                   |
| 66      | SQSO             | O   | Outputs 80-bit Sub Q and 16-bit PCM peak-level data.                                                                                            |
| 67      | SQCK             | I   | Clock input for reading SQSO.                                                                                                                   |
| 68      | MUTE             | I   | "H" for muting, "L" for release.                                                                                                                |
| 69      | SENS             | O   | SENS output to CPU.                                                                                                                             |
| 70      | XRST             | I   | System reset. "L" for resetting.                                                                                                                |
| 71      | DATA             | I   | Inputs serial data from CPU.                                                                                                                    |
| 72      | XLAT             | I   | Latches serial data input from CPU at falling edge.                                                                                             |
| 73      | V <sub>DD</sub>  | --  | Power supply(+ 5V)                                                                                                                              |
| 74      | CLOK             | I   | Inputs serial data transfer clock from CPU.                                                                                                     |
| 75      | SEIN             | I   | Inputs SENSE from SSP(IC601). SSP : Servo Signal Processor                                                                                      |
| 76      | CNIN             | I   | Inputs track jump count signal.                                                                                                                 |
| 77      | DATO             | O   | Outputs serial data to SSP.                                                                                                                     |
| 78      | XLTO             | O   | Latches serial data output to SSP at falling edge.                                                                                              |
| 79      | CLKO             | O   | Outputs serial data transfer clock to SSP.                                                                                                      |
| 80      | MIRR             | I   | Inputs mirror signal to be used by auto sequencer when jumping 128 or more tracks.                                                              |

## ■ CXA1372S (IC601) : Servo Signal Processing Amplifier

### 1.Outline

The CXA1372S is a bipolar IC developed for RF signal processing (focus OK, mirror, defect detection, EFM comparator) and servo control.

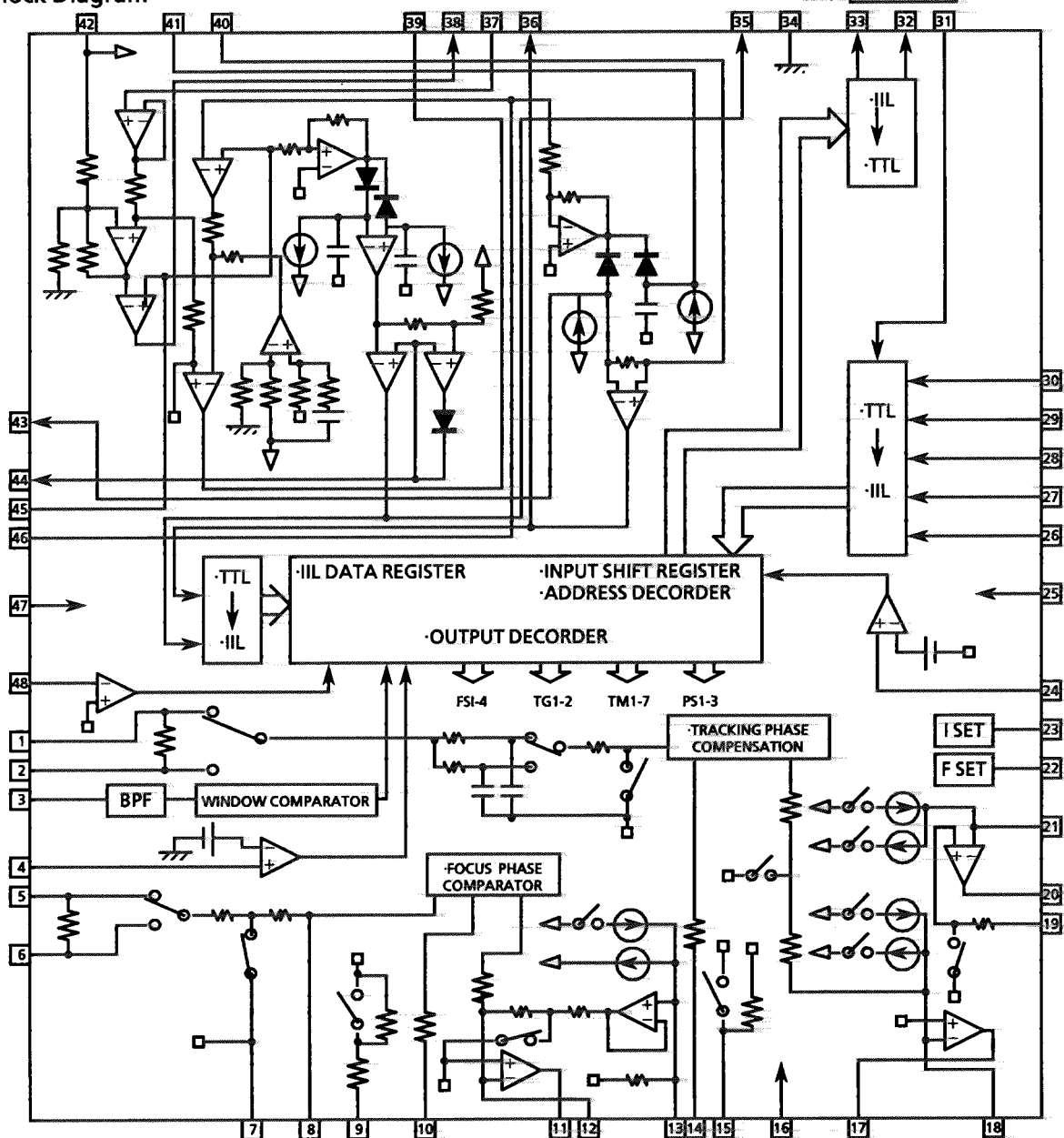
### 2.Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defects detection, counter measures circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Sled servo control

### 3.Terminal Layout

|       |    |    |       |
|-------|----|----|-------|
| TE    | 1  | 48 | TZC   |
| TDFCT | 2  | 47 | DVEE  |
| ATSC  | 3  | 46 | RFO   |
| FZC   | 4  | 45 | RFI   |
| FE    | 5  | 44 | CP    |
| FDFCT | 6  | 43 | CB    |
| VC    | 7  | 42 | DVCC  |
| FGD   | 8  | 41 | CC2   |
| FS3   | 9  | 40 | CC1   |
| FLB   | 10 | 39 | FOK   |
| PEO   | 11 | 38 | EFM   |
| FE-   | 12 | 37 | ASY   |
| SRCH  | 13 | 36 | DFCT  |
| TGU   | 14 | 35 | MIRR  |
| TG2   | 15 | 34 | DGND  |
| AVCC  | 16 | 33 | SENS  |
| TAO   | 17 | 32 | C.OUT |
| TA-   | 18 | 31 | XRST  |
| SL+   | 19 | 30 | DATA  |
| SLO   | 20 | 29 | XLT   |
| SL-   | 21 | 28 | CLK   |
| FSET  | 22 | 27 | LOCK  |
| ISET  | 23 | 26 | DIRC  |
| SSTOP | 24 | 25 | AVEE  |

### 4.Block Diagram

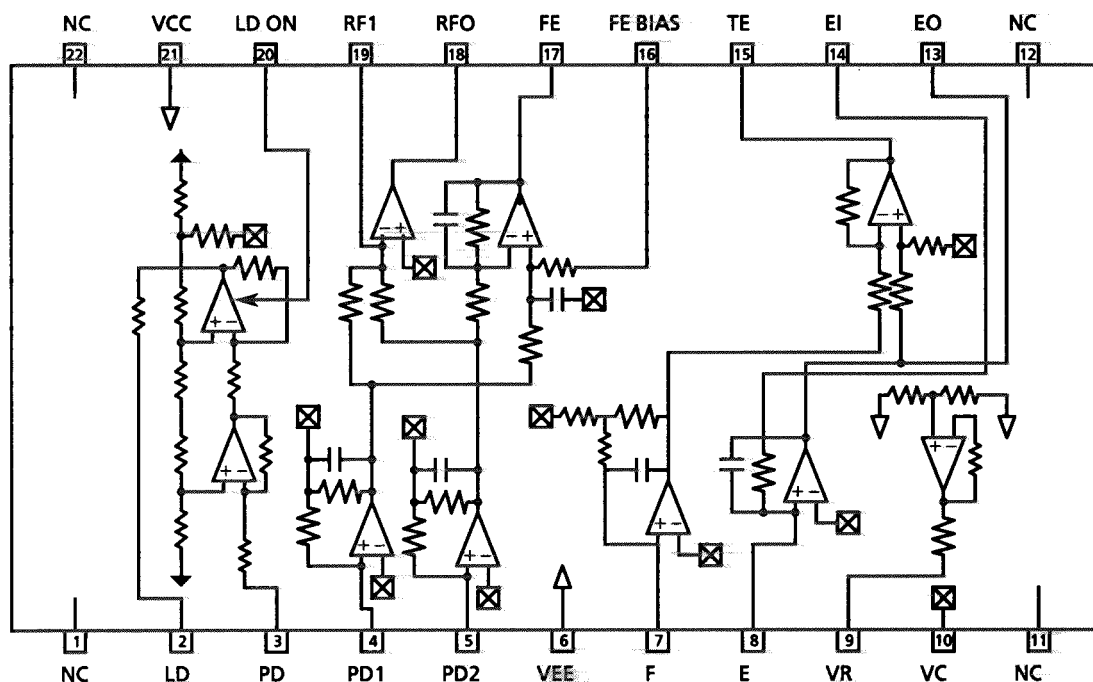


## 5.Pin Function Description

| Pin No | Symbol | I/O | Description                                                                          |
|--------|--------|-----|--------------------------------------------------------------------------------------|
| 1      | TE     | I   | Input pin of tracking error amplifier.                                               |
| 2      | TDFCT  | I   | Capacitor connecting pin for time constant during defects.                           |
| 3      | ATSC   | I   | Window comparator input pin for ATSC detection.                                      |
| 4      | FZC    | I   | Pin for focus zero-cross comparator input.                                           |
| 5      | FE     | I   | Input pin of focus error.                                                            |
| 6      | FDFCT  | I   | Capacitor connecting pin for time constant during defect functions.                  |
| 7      | VC     | I   | Center voltage input pin. For dual power: GND For single power supply: (VCC + GND)/2 |
| 8      | FGD    | I   | Connect a capacitor between this pin and pin3 to reduce high-frequency gain.         |
| 9      | F53    | I   | The high-frequency gain of the focus servo is switched through F53 ON and OFF.       |
| 10     | FLB    | I   | Time constant external pin to raise the low bandwidth of the focus servo.            |
| 11     | FEO    | O   | Focus drive output.                                                                  |
| 12     | FE-    | I   | Inverse input for focus amplifier.                                                   |
| 13     | SRCH   | I   | Time constant external pin for formation of focus search waveform.                   |
| 14     | TGU    | I   | Time constant external pin for the selection of tracking high band gain.             |
| 15     | TG2    | I   | Time constant external pin for the selection of tracking high band gain.             |
| 16     | AVCC   | --  | Power supply                                                                         |
| 17     | TAO    | O   | Tracking drive output.                                                               |
| 18     | TA-    | I   | Inverse input pin for tracking amplifier.                                            |
| 19     | SL+    | I   | Non- inverse input pin for sled amplifier.                                           |
| 20     | SLO    | O   | Sled drive output.                                                                   |
| 21     | SL-    | I   | Inverse input pin for sled amplifier.                                                |
| 22     | F SET  | I   | Pin to set peak frequency of focus tracking phase compensation and fo of CLV LPF.    |
| 23     | I SET  | I   | Current is input to determine focus search, track jump, and sled kick height.        |
| 24     | S STOP | I   | Limit SW ON/OFF signal detection pin for disc inner periphery detection.             |
| 25     | AVEE   | --  | -5V                                                                                  |
| 26     | DIRC   | I   | Pin for one-track jump. Contains 47kΩ pull-up resistor.                              |
| 27     | LOCK   | I   | At "L" sled runaway prevention circuit operate. Contains a 47kΩ pull-up resistor.    |
| 28     | CLK    | I   | Serial data transfer clock input from CPU.                                           |
| 29     | XLT    | I   | Latch input from CPU.                                                                |
| 30     | DATA   | I   | Serial data input from CPU.                                                          |
| 31     | XRST   | I   | Reset input pin, reset at "L".                                                       |
| 32     | C.OUT  | O   | Track number count signal output.                                                    |
| 33     | SENS   | O   | Outputs FZC, AS, TZC and S STOP through command from CPU.                            |
| 34     | DGND   | --  | GND                                                                                  |
| 35     | MIRR   | O   | MIRR comparator output pin.                                                          |
| 36     | DFCT   | O   | Output pin of DEFECT comparator.                                                     |
| 37     | ASY    | I   | Input pin of auto asymmetry control.                                                 |
| 38     | EFM    | O   | Output pin of EFM comparator.                                                        |
| 39     | FOK    | O   | Output pin of FOK comparator.                                                        |
| 40     | CC1    | I   | Output pin of DEFECT bottom hold.                                                    |
| 41     | CC2    | O   | Input pin for the capacitance coupled output of DEFECT bottom hold.                  |
| 42     | DVCC   | --  | -5V                                                                                  |
| 43     | CB     | I   | Connection pin of DEFECT bottom hold capacitor.                                      |
| 44     | CP     | I   | Connecting pin of MIRR hold condenser. Non-inverted input pin of MIRR comparator.    |
| 45     | RFI    | I   | Input pin with coupling capacitor where RF summing amplifier output is connected.    |
| 46     | RFO    | O   | Output pin of RF summing amplifier and check point of eye pattern.                   |
| 47     | DVEE   | --  | -5V                                                                                  |
| 48     | TZC    | I   | Input pin of tracking zero-cross comparator.                                         |

## ■ CXA1571S(IC501) : RF AMP

### 1. Block Diagram



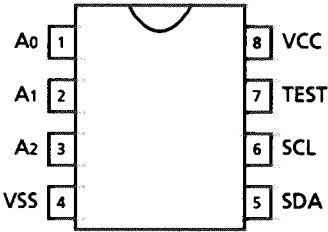
### 2. Pin Description

| Pin No. | Symbol  | I/O | Description                                                                                                                                                                |
|---------|---------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2       | LD      | O   | APC(Automatic Power Control) amp output pin.                                                                                                                               |
| 3       | PD      | I   | APC amp input pin.                                                                                                                                                         |
| 4       | PD1     | I   | RF I-V amp inverted input pins; they are connected to the A + C and B + D pins of the photodiode and receive current input.                                                |
| 5       | PD2     | I   |                                                                                                                                                                            |
| 7       | F-IN    | I   | F and E I-V amp inverted input pin; they are connected to Photodiodes F and E and receive current input.                                                                   |
| 8       | E-IN    | I   |                                                                                                                                                                            |
| 9       | VR      | O   | $(VCC + VEE) / 2$ DC voltage output pin.                                                                                                                                   |
| 10      | VC      | I   | VC intermediate voltage input pin; when dual $\pm 5V$ power supplies are used, this pin is connected to GND; for a single +5V power supply, it is connected to the VR pin. |
| 13      | EO      | O   | Monitor output pin for I-V amp E.                                                                                                                                          |
| 14      | EI      | I   | Gain adjustment pin for I-V amp E.                                                                                                                                         |
| 15      | TE      | O   | Tracking error amp. output pin.                                                                                                                                            |
| 16      | FE-BIAS | I   | Bias adjustment pin for the mon-inverted side of the focus error amp.                                                                                                      |
| 17      | FE      | O   | Focus error amp. output pin.                                                                                                                                               |
| 18      | RFO     | O   | RF amp output pin.                                                                                                                                                         |
| 19      | RF I    | I   | RF inverted side input pin; the resistor connected between this pin and the RFO pin determines the gain of the RF amp.                                                     |
| 20      | LD-ON   | I   | This pin switches the APC amp on / off: on for VCC, off for ground.                                                                                                        |

XL-MC302M

■ AT24C16-10PC  
(IC202) : Serial Eeprom

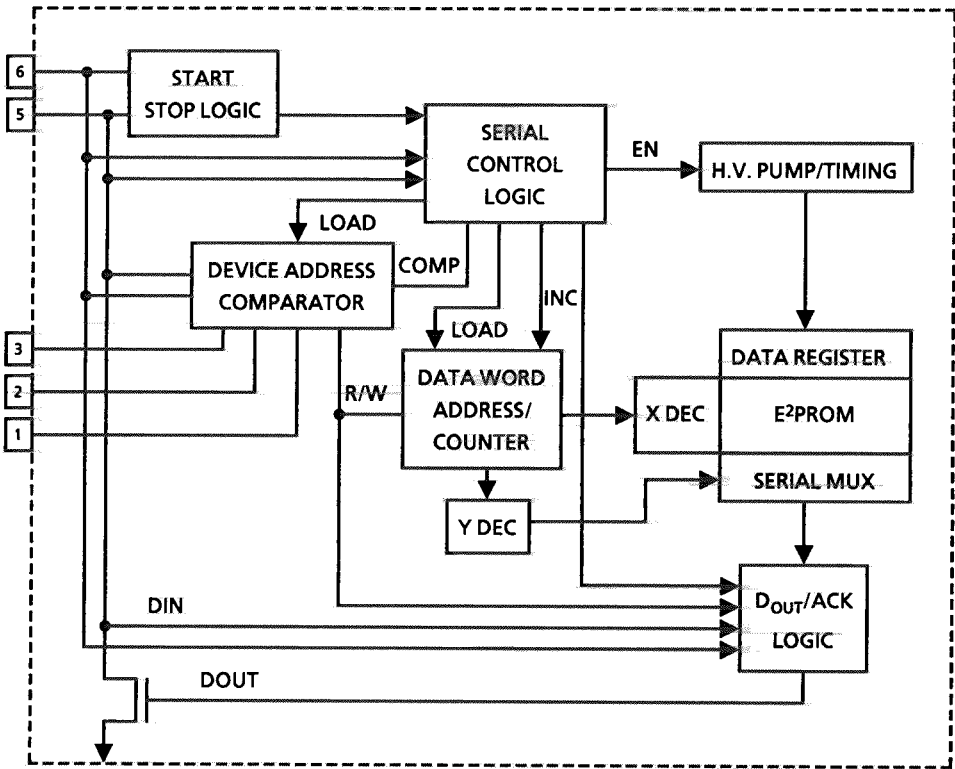
1. Terminal Layout



2. Terminal Functions

| Pin No. | Symbol | Functions                   |
|---------|--------|-----------------------------|
| 1~3     | A0~A2  | ADDRESS INPUT (NOT USED)    |
| 4       | VSS    | GND                         |
| 5       | SDA    | SERIAL DATA                 |
| 6       | SCL    | SERIAL CLOCK                |
| 7       | TEST   | TEST PIN (CONNECTED TO GND) |
| 8       | VCC    | POWER SUPPLY                |

3. Block Diagram



## Disassembly Procedures

### (1) Top cover removal

1. Remove 6 screws **A** on the rear side and 4 screws **A** on both sides of the cover.
2. Remove the cover.

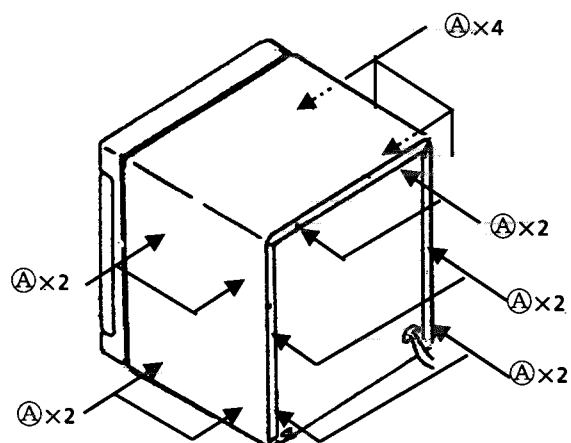
**A**

Fig1

**A** x 2

### (2) Rear panel removal

1. Remove the top cover.
2. Remove the 9 screws **B**.
3. Remove the rear panel.

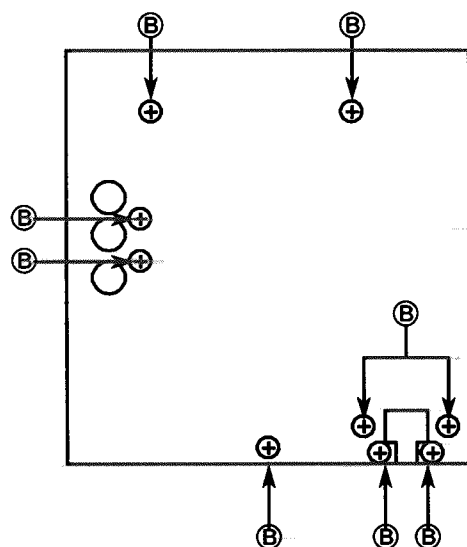
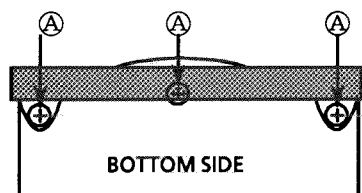


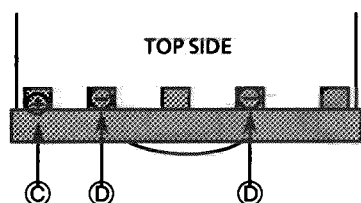
Fig2 Rear view

### (3) Front panel removal

1. Do the (1).
2. Remove the 3 screws **A** of the bottom side.
3. Remove the screw **C** and fasteners **D**.
4. Remove the Front panel ass'y.



BOTTOM SIDE

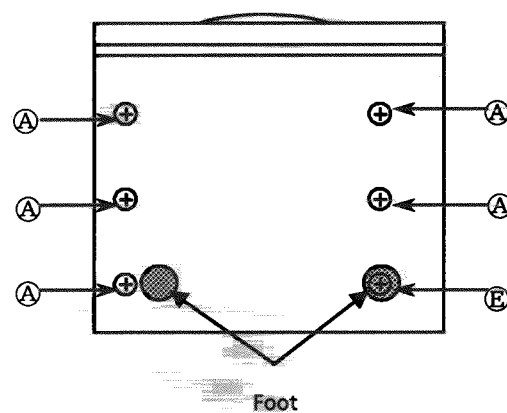


TOP SIDE

Fig 3 Front panel view

### (4) Bottom base removal

1. Do the (1) (2) and (3).
2. Remove the 3 screws **A** and screw **E**.
3. Remove the bottom base.



Foot

Fig 4 Bottom view

**A** .. SBSG3008M**B** ... E73273-006**B** ... GBSG3008Z**D** ... GBSG3008Z

(5) CD PCB(ENN-439-1) removal

1. Do the (1) (2).
2. Remove the screw ① holding the OUT PUT P.C. Board(ENN-439-4).
3. Remove the connectors P601,P811 and flatwire P101,P801.
4. Remove the 4 screws ② holding the CD P.C. Board.
5. Remove the CD P.C. Board(ENN-439-1).

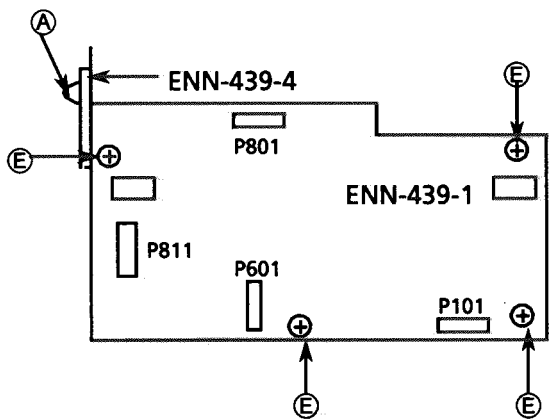


Fig 5. Rear View

[NOTICE]

Do not bend P601 and P801 in case of handling.

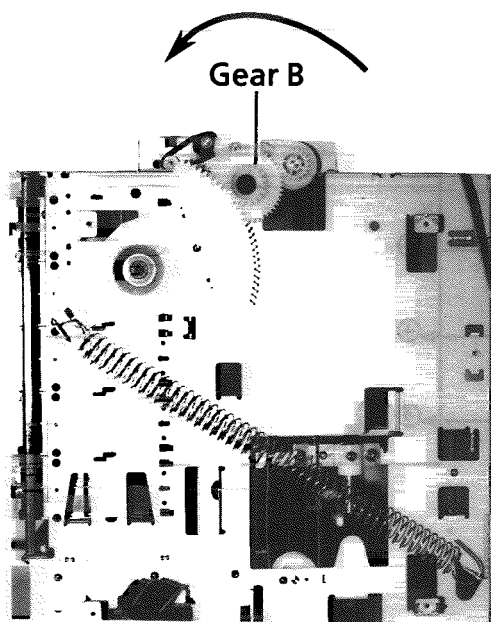


Fig 8 Elevator mechanism ass'y view

(6) CD mechanism Ass'y removal

1. Do the (1) (2) (5).
2. Rotate the B gear shown in Fig.8, and move the loding mecha ass'y to the top.
3. Rotate the Gear A shown in Fig.6 and move the CD mechanism ass'y to right side.
4. Remove the screw ③.
5. Remove the connector P603, and flatwire P501.
6. Remove the CD mechanism ass'y.

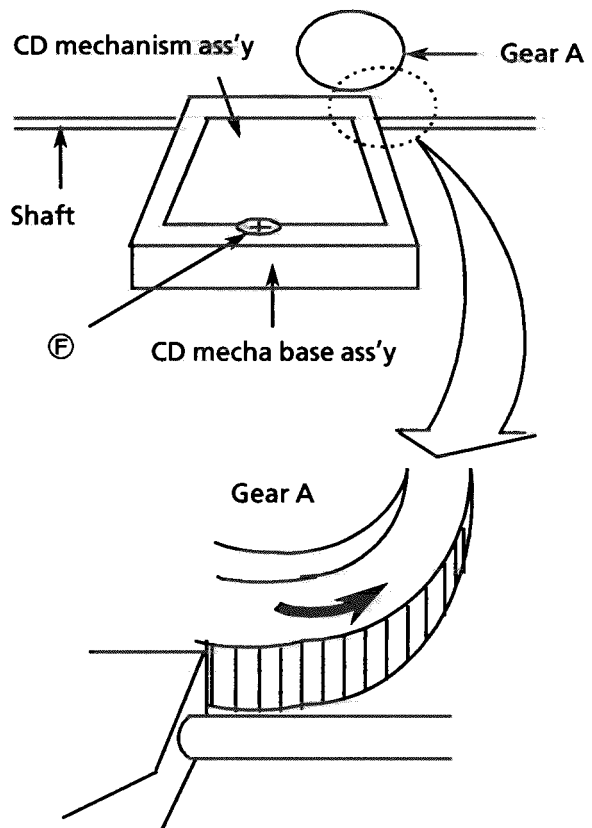


Fig 6 CD mecha base ass'y view

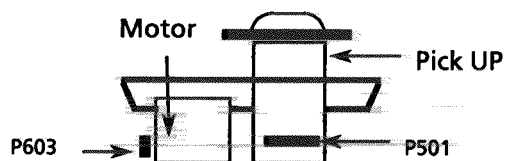


Fig 7. CD mechanism ass'y View

① .. SBSG3008M

② ... SBSG3008Z

③ ... E65923-003

**(7) CD mecha base ass'y removal**

1. Do the (1) (2) (5) (6) .
2. Remove 2 screws ③ securing the shaft of the both sides (Fig 9).
3. Remove the CD mecha base and shaft.

**(8) Loding mecha ass'y removal**

1. Do the (1) (2) (5) .
2. Rotate the Gear B so that the loading mecha can be set at the location shown in Fig.9 when you look the unit from its side.
3. Remove the screw ① holding the movingholder..
4. Remove 7 screws ④ securing the elevator belts of the both sides
5. Remove 7 screws ④ securing the elevator belts of the both sides
6. Pull the loding mecha from rear side of the unit after lifting down the mecha to the bottom.

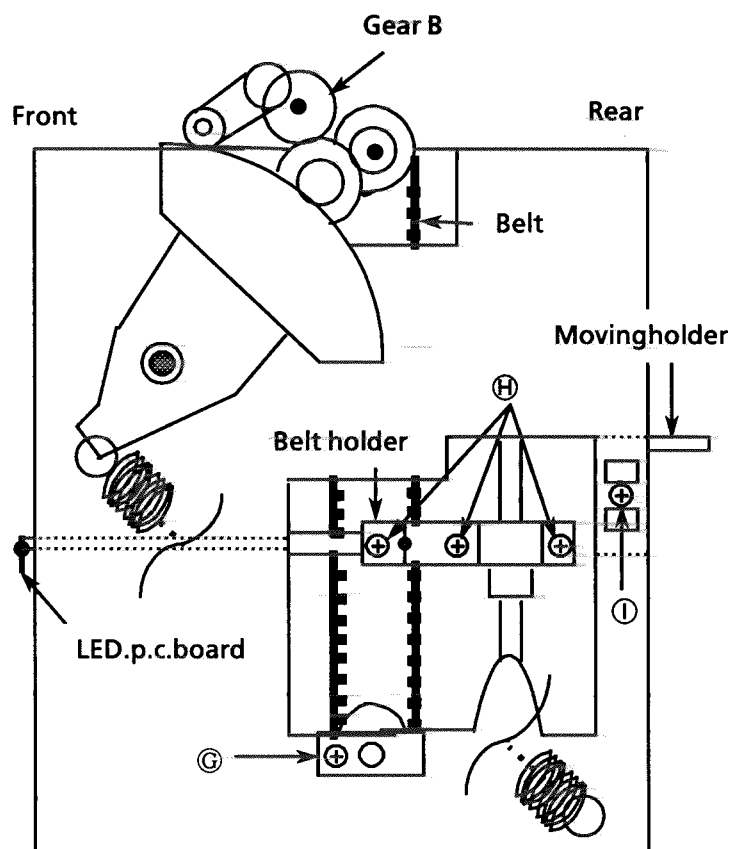


Fig9 Elevator mecha  
ass'y view

**(9) Main gear removal**

1. Do the (1) (3) (4) .
2. Remove 3 screws ① and connectors P823,P812,P813.
3. Remove the sw. P.C.Board(ENN-493-1).
4. Remove slit washers ②.
5. Remove the sw lever and gear C.
6. Remove the sw main gear.

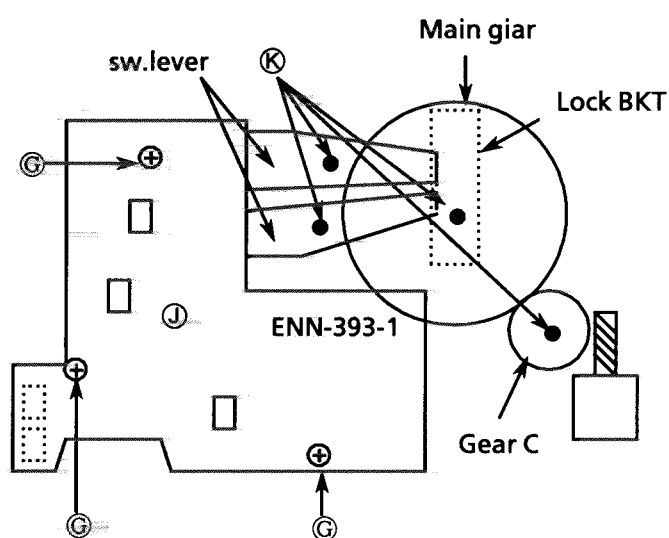
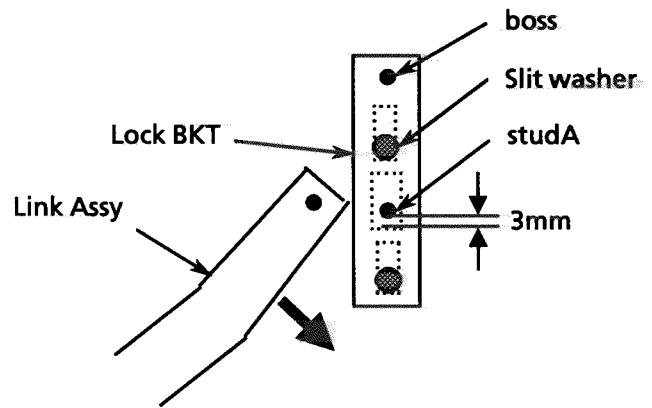


Fig10 Bottom view

(10)Mount the main gear

1. Move the link assy shown in Fig 11 .
2. Move the lock BKT shown in Fig 11 .
3. Remove the bottom base.
4. Insert the main gear to studA shown Fig 10.
5. Install the slit washer.



(11)Mount the SW lever

1. Insert the sw lever A boss to the mein gearA' position shown in Fig 12 .
2. Install the slit washer .
3. Insert the sw lever B boss to the mein gear B' position shown in Fig 12 .
4. Install the slit washer to the stud A.

Fig 11 CD mecha base ass'y view

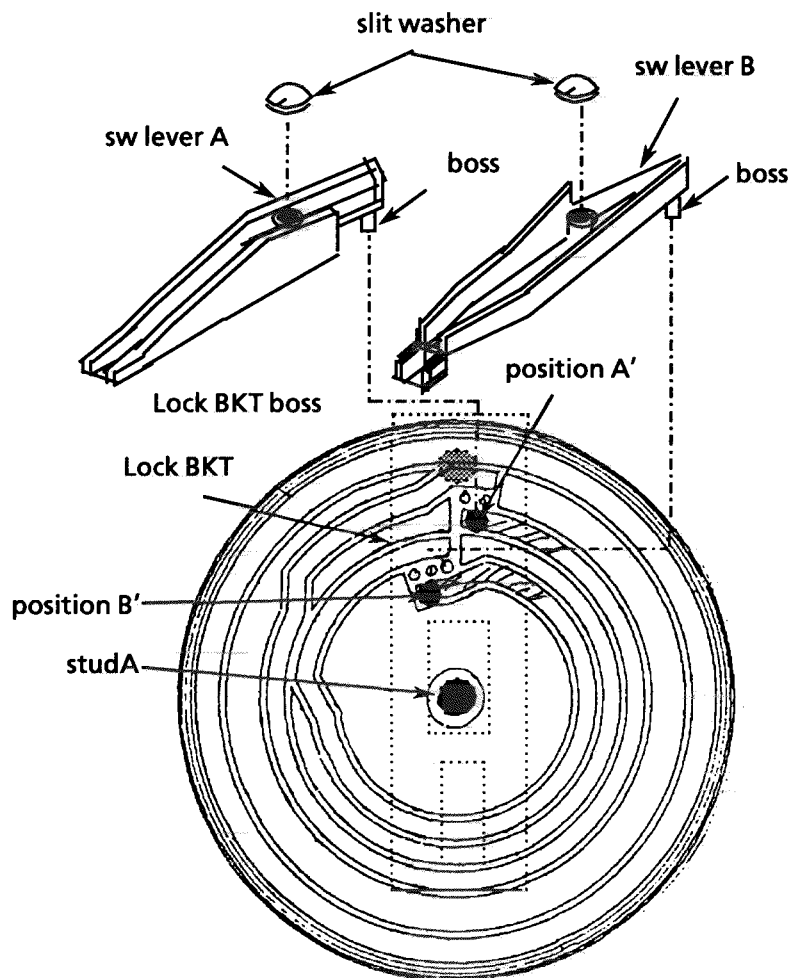
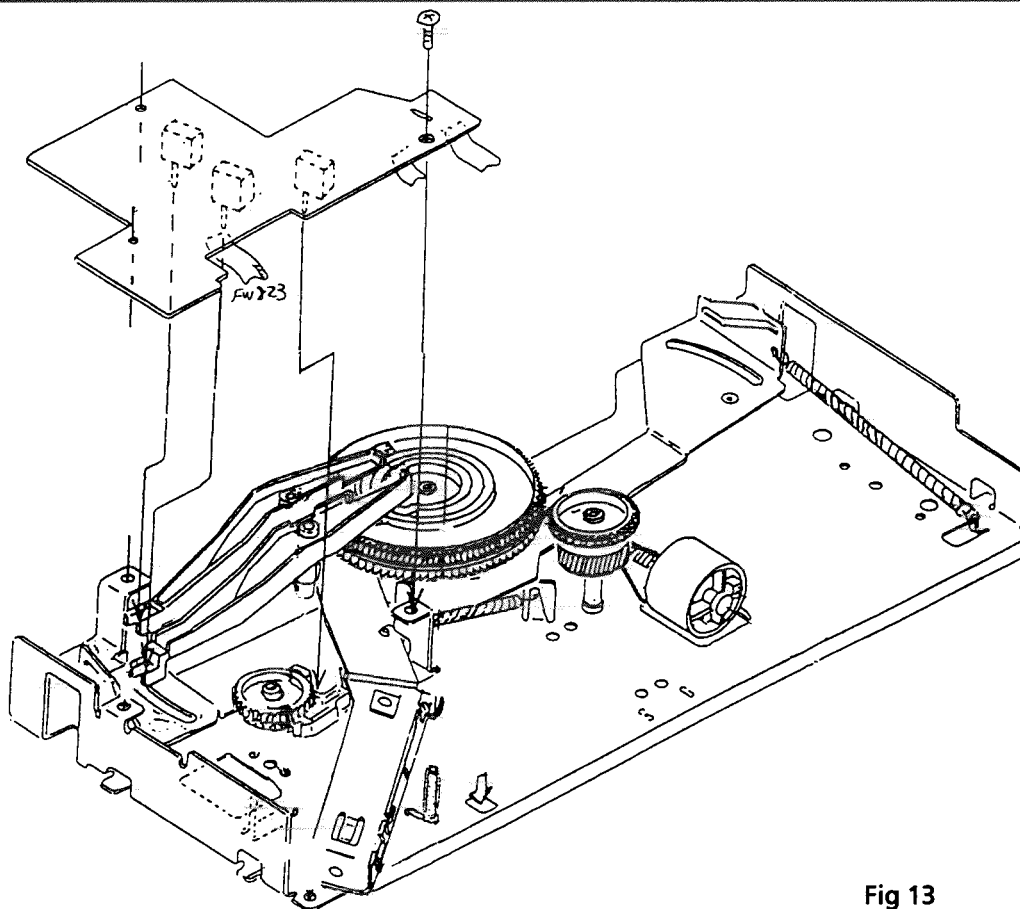


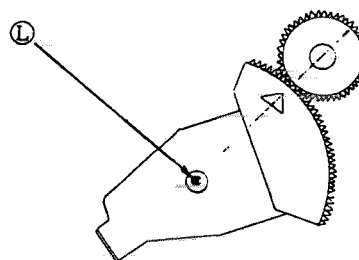
Fig 12. Main gere View

**(12) Asembling the arm ass'y**

1. Rotate the main gear so that stop position shown in Fig 12 .
2. Install the circuit board so that the lever of the switches meet the groove of the switches levers(fig 13) .  
(You can see the levers and groves from the hole on the circuit board when installing.)
3. Install the tree screws.

**Fig 13****(13)Asembling the Drive gear**

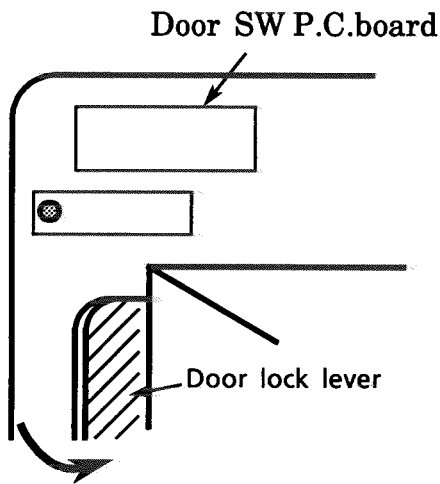
1. Rotate the gear B shown in Fig 8 and move the lodingmecha to the bottom side
2. Adjust the arm ass'y so that it engages with gear D as Fig-14.(Notice  $\Delta$  position)

**Fig 14**

## Adjustment Procedures

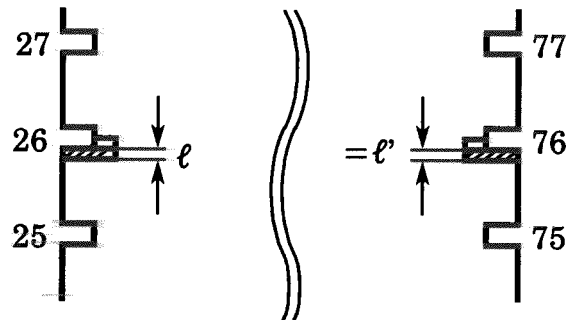
### ■ Confirming a slant of the elevator

- 1) Remove the top cover and the rear panel of the mechanism unit.
- 2) Pull the lock lever in the direction of the arrow shown in Fig . to open the door.
- 3) Take the trays numbered 26 and 76 out.
- 4) Rotate the B gear , and move the elevator mechanism ass'y to the trays numbered 26 and 76.
- 5) Confirm that the elevator is not slant :  $\ell$  is equals to  $\ell'$  in Fig .2.
- 6) Loose the screws ② and ③.
- 7) Adjust the screw ① so that the elevator becomes horizontal .
- 8) Fix the screws ② and ③.



Rear View

Fig 1. Door lock lever View



Front View

Fig 2.Tray surit ass'y View

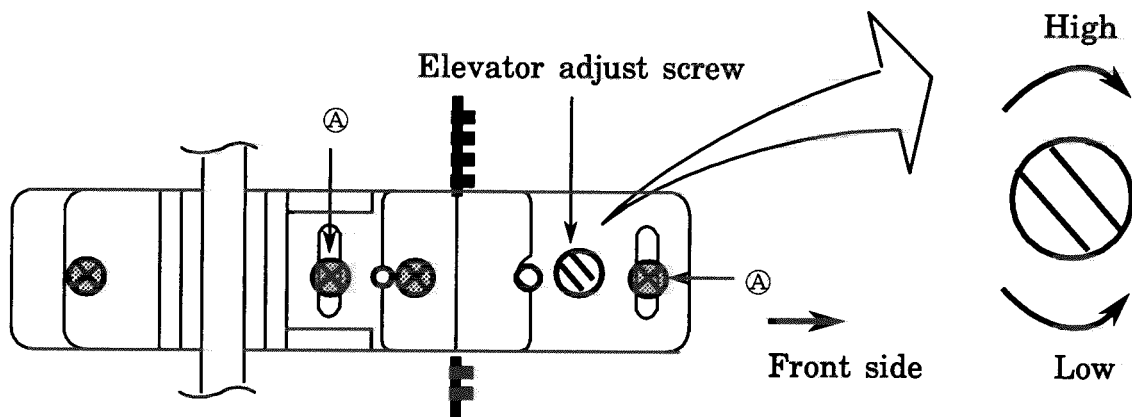
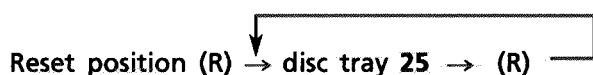


Fig 3. Elevator adjust screw View

## ■ High adjustment of the elevator

- 1) Remove the cover .
- 2) Connect the mains cord of the mechanism unit only with the outlet .
- 3) Open the door.
- 4) Take the disc trays 25.
- 5) Push the door SW using the like to turn the switch on shown fig 4 .
- 6) Push the switch S842 on the circuit board (ENN-439-1) at the rear side of the mechanism.
- 7) The elevator goes up and down as follows .



- The unit does not a disc . (The elevator stands by at the rest position during constant time.)
  - The mech. stops at the position after setting door switch OFF when the tray is on No.25 rail.
- 8) Comfirm if the elevator rail is at the height of the tray rail of disc 25 .
  - Adjustment
  - 9) Turn the elevator adjust screw to adjust the height of the elevator rail.
- (Note) Since the pitch of the screw is 0.4mm,a turn of the screw makes a change of 0.4mm.
- 10) Set the door switch ON again,and repeat the procedure(7)~(9) so that the position of the rail in the elevator can be the same as the one for the tray installing shelf.
  - 11) Bond the screw "BOND" #1401C used.
- The mech. moves to No.25 disc tray to return the tray when S842 is pressed after setting the door switch ON. And, it moves to No.49 disc tray and returned to mech. reset position (R),then the check mode is released.

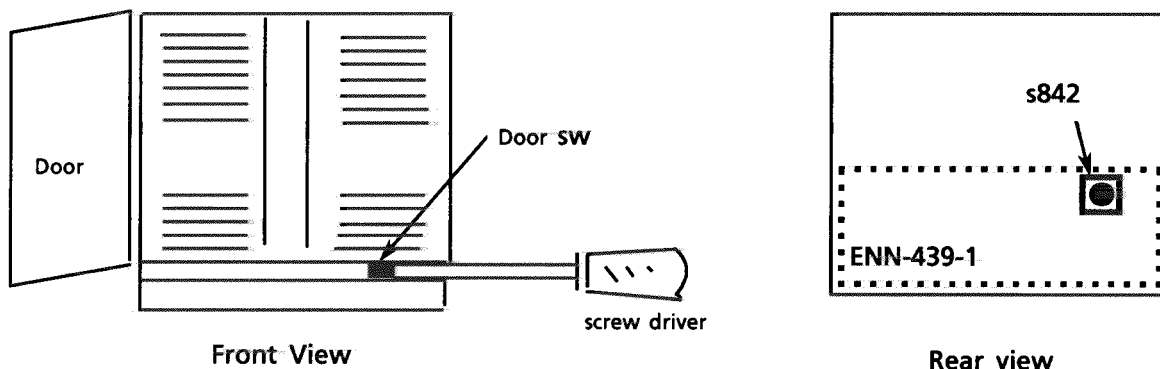


Fig 4. Door sw test sw View

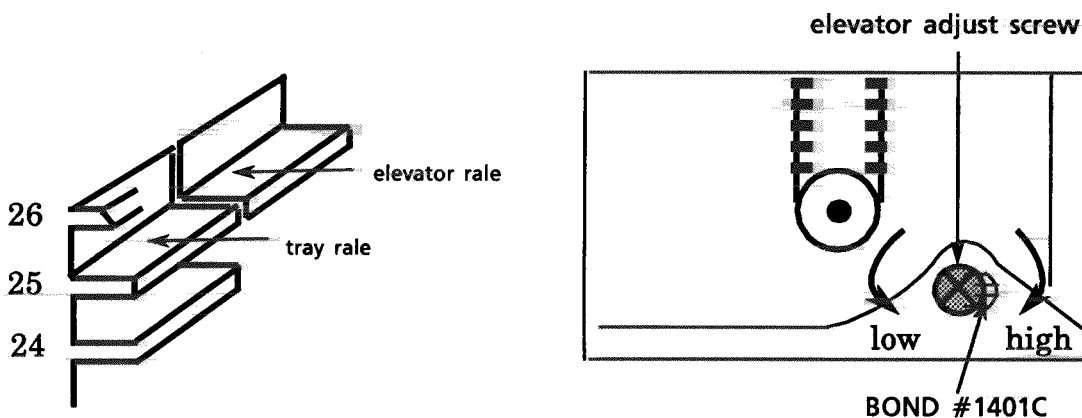


Fig 5. tray rail and elevator rail View

Fig 6. Top View

## ■ CD adjustment

- (1) Adjustment measure  
Oscilloscope , Test disc (CRG-1117)

(2) Procedures

1) FE bias

- ① Connect a oscilloscope between TP6(FE) and TP3(GND) .
- ② Adjust R515 so that the DC voltage at TP5 becomes  $0 \pm 0.01V$ .

2) EF balance

- ① Connect a oscilloscope between TP4(TE) and TP3(GND) and play the test disc.
- ② Adjust R516 so that the center voltage of the waveform becomes  $0 \pm 0.05V$ .

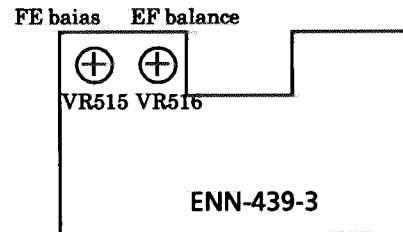
3) Gain adjustment

If the gain is out of adjustment, the symptoms below will appear.

As described above, the focus and tracking gain adjustment are performed to satisfy mutually contradictory characteristics.

A simplified adjustment procedure is described below. However, since exact adjustment can not be performed prior to adjustments, note(or mark) the positions of the semi-fixed resistors.

If the positions after the adjustment are only different, return the VRs to their original position.

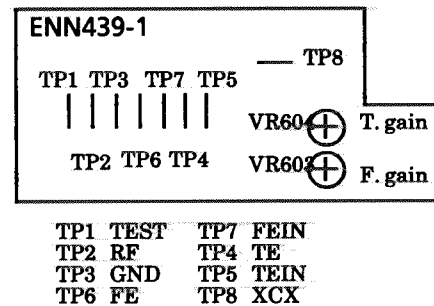


### Focus gain adjustment

1. Connect an oscilloscope to TP 6(FE) and TP 3(GND).
2. Load a disc and press the PLAY button.
3. Adjust VR603 (F.GAIN ADJ.) so that the waveform becomes below figure 1.

### Tracking gain adjustment

1. Connect an oscilloscope to TP 4(TEIN) and TP 3(GND).
2. Load the test disc and press the PLAY button.
3. Adjust VR604 (T.GAIN ADJ.) so that the waveform becomes below figure 2.



### ●Gain too low

Focus gain : Focus is not obtained and disc does not rotate.

Tracking gain : Mechanical shock occurs easily and sound is interrupted. Or time counter display stop counting .

### ●Gain too high

Focus gain : Scratches (on the disc) easily interrupt play, and noise is increased during play.

Tracking gain : Since the follow-up ability of the pickup is too high, the pickup may oscillate and oscillating sound may output.

Focus Gain Adjustment

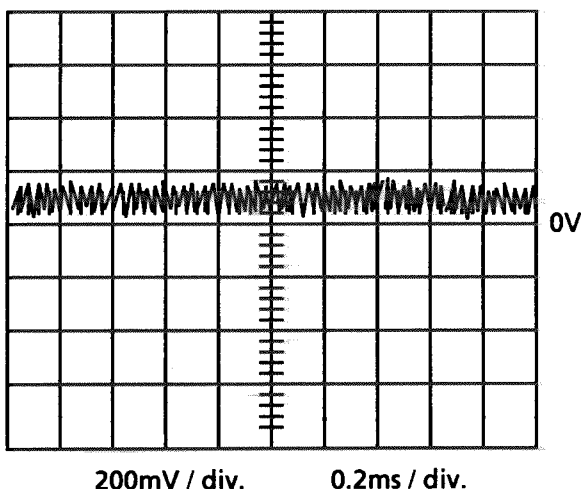


Figure 1

Tracking Gain Adjustment

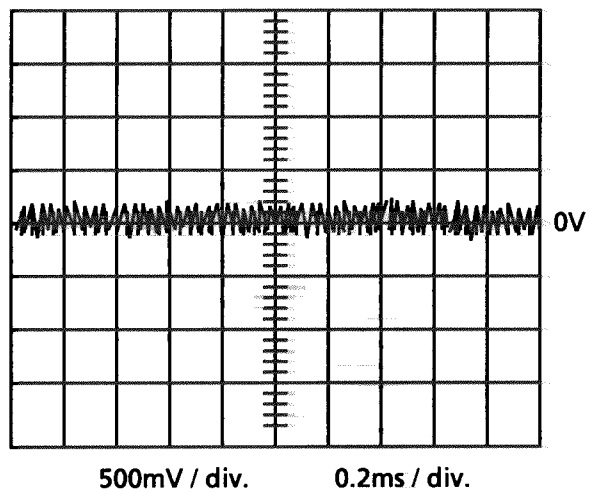
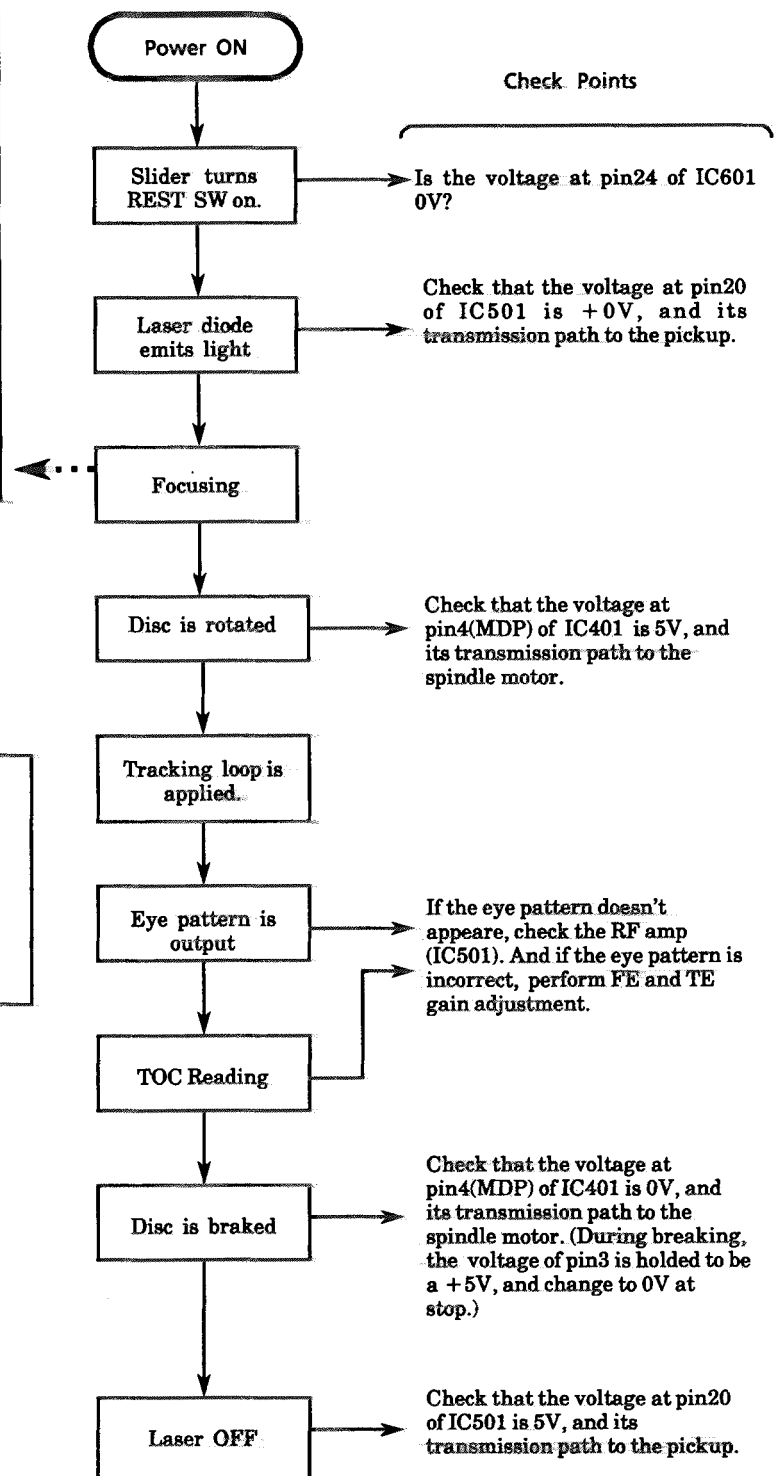
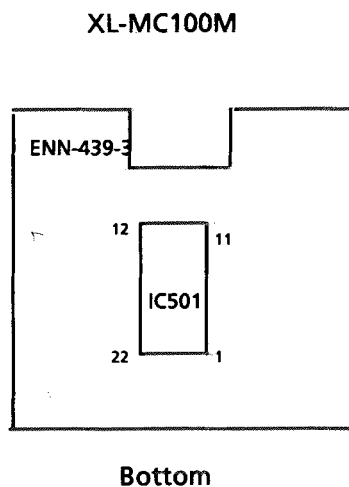
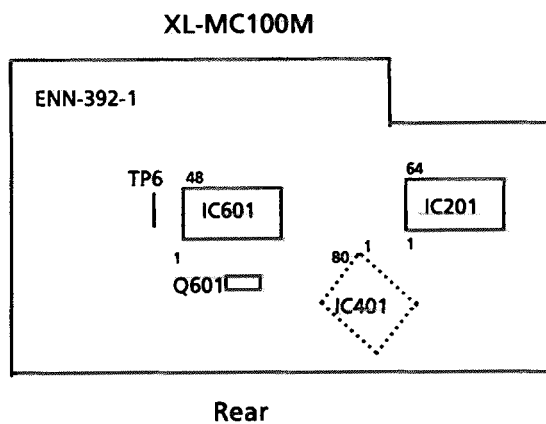
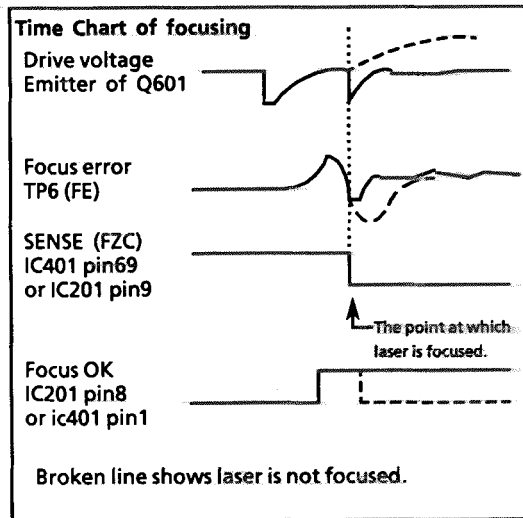


Figure 2

# Flow of Functional Operation Until TOC is Read



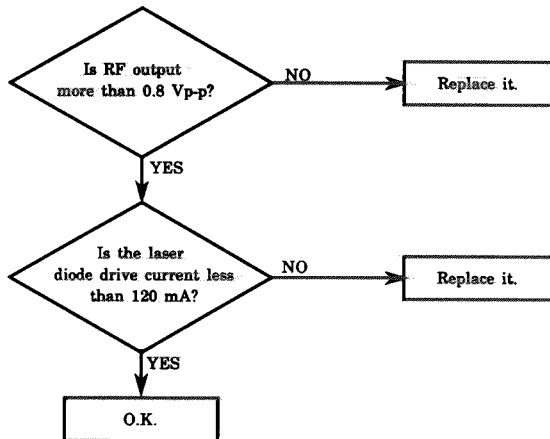
## Maintenance of Laser Pickup

### (1) Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

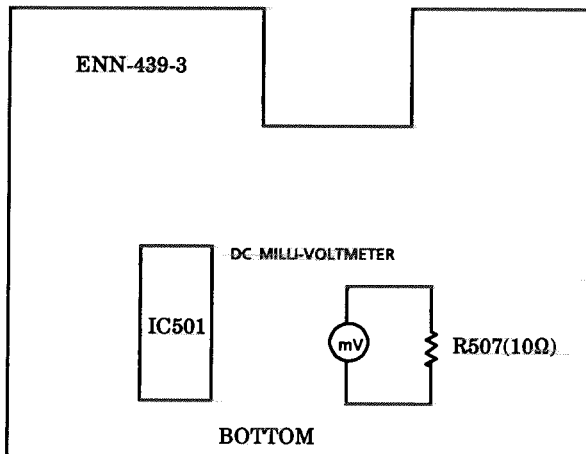
1. The level of RF output ( EFM output: amplitude of eye pattern) will be low.
2. The drive current required by the laser diode will be increased.

In such a case, check the life of the laser diode by the flowchart below



### (2) Measurement of laser diode drive current

Measure the voltage across the resistor R507 by using a milli-voltmeter. When the voltage is more than 1.2V, it shows that the life of the laser diode has expired.



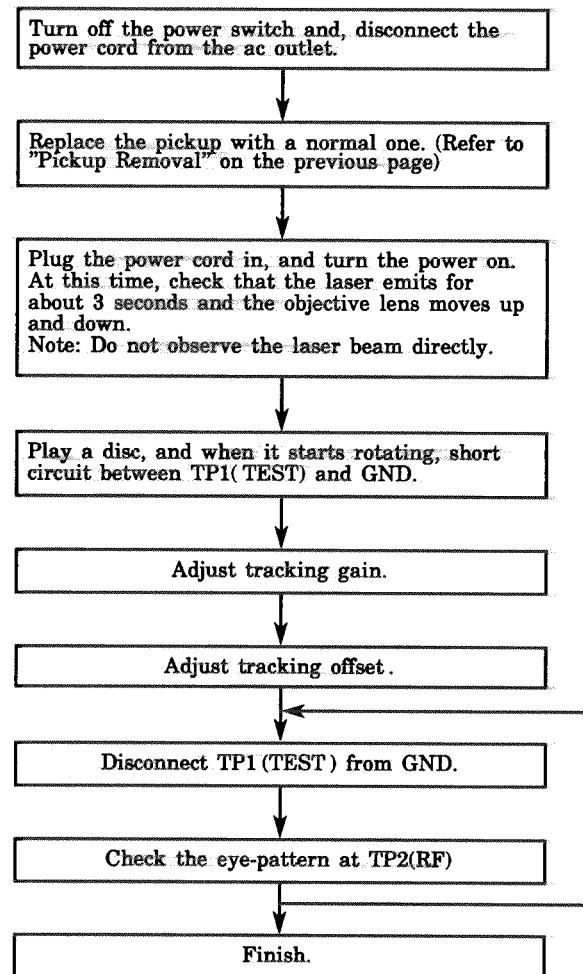
### (3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

## Replacement of Laser Pickup



Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

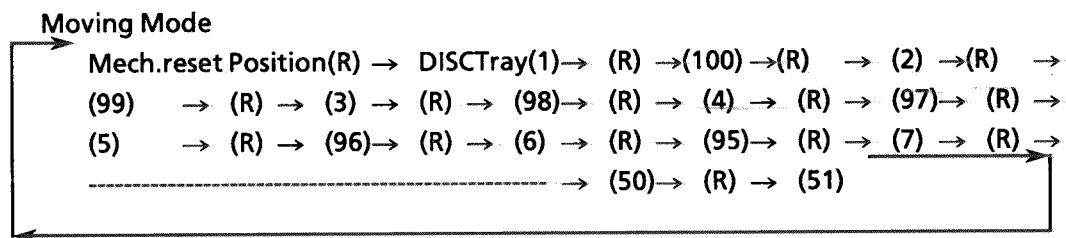
## ■ MECHANISM CHECK MODE

XL-MC302M itself can set the following check mode without connecting the controller(XL-MC302C).

### 1. Loading mode (aging mode) for all disc trays.

Open the door (Door SW OFF) and press S842\* .

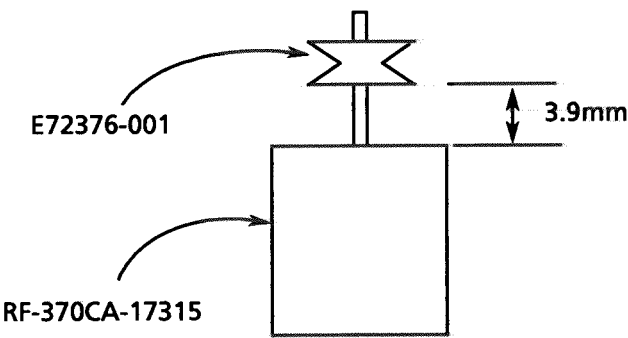
\* S842 is installed on ENN-392-1 which locates near the rear side.



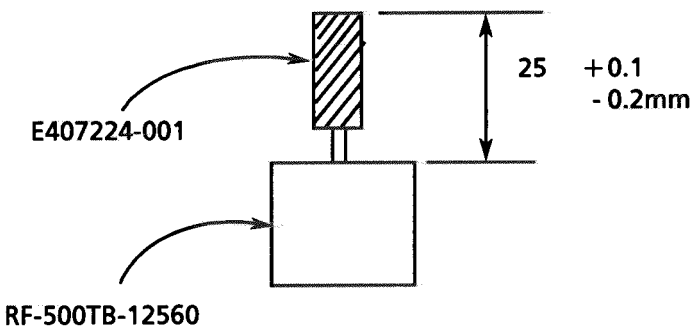
- Initial condition
  - 1) The tray is returned to its original position when it is being loaded.
  - 2) Except that, JAB is operated without moving the elevator.
- Unit does not play a disc.
- The function is continued even if the door is closed while the aging mode is ON
- Pressing S842 again makes the mode release.

■ Motor pulley height

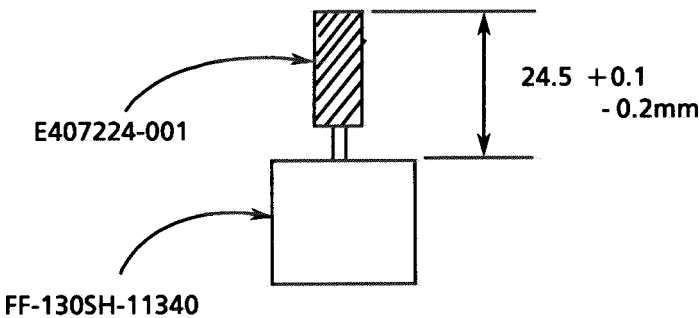
Elevator up/down motor(M1)



Tray stopper open/close & traverse moving motor(M2,M4)



Tray loding motor(M1)



## ■ Causes for mechanism malfunctions

### 1) The shutter does not open.

- Cause
- ① The tray touches the shutter.
  - ② The link for driving the shutter is bended.  
(The link is good if it returns automatically by the when you move the link after removing the rack.)
  - ③ Jamming worm gear.
  - ④ Connections of S805 and M2 are bad.(Wire ,solder,connector,parts etc.)
  - ⑤ Pins of the shutter do not meet the cams of the link and side panel.

### 2) The traverse mechanism does not move right and left .

- Cause
- ① The elevator assembly interferes with the traverse's move.
  - ② The pickup base is not installed correctly.
  - ③ The flut wire FW101 interferes with the pickup base.
  - ④ SW LEVER (D)and (P),and Lock bracket are not installed to the main gear correctly.
  - ⑤ Connections of S808 and M4 are bad.
  - ⑥ The pickup base does not gear into the main gear because of the guide shaft for the pickup base bended.

### 3) The door does not open.

- Cause
- ① The main gear does not tune normally.
  - ② The link is not installed in the main gear correctly.

The door can be opened by opening the door lock base on the right side of the front panel ,or pushing the circuit board with S801 using a screw drinor through the hole on the front of the bottom cover,when the traverse mechanism is in the right of the machine in the front view.When the elevator is in the left ,mone the elevator right after removing the metal cover ,rear panel and CD circuit board. So the door can be opened with the method mentioned above.

### 4) The elevator close not go up and down.

- Cause
- ① Transport lock is not released.
  - ② The tray loading hook touches a tray.
  - ③ A tray interferes with the elevator's move .
  - ④ The elevators LEDand braket touches the center panel.
  - ⑤ The wiring for the motor M1 is in correct.

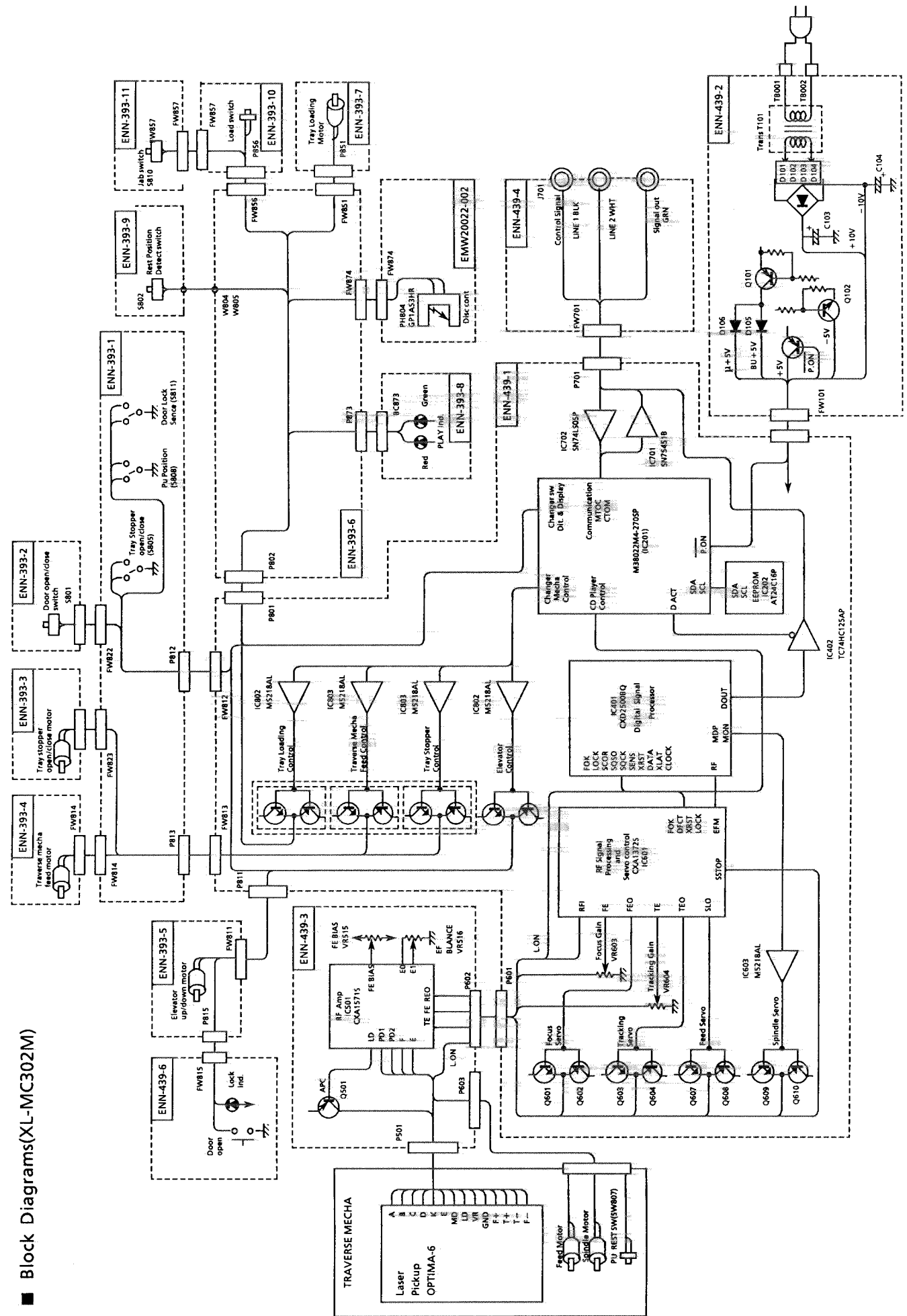
### 5) The elevator does not stop at the right position.

- Cause
- ① PH804 is bad.
  - ② The wire between P801 and P802 is broken.
  - ③ Friction between the shaft and guide.
  - ④ The springs on the right side of the elevator are off.
  - ⑤ Deterioration of the gear for the elevator up and down .
  - ⑥ The elevator is slant.
  - ⑦ The height adjustment is missed.

### 6) Tray can not be loaded.

- Cause
- ① The elevator is slant.
  - ② The elevator is not at the right position.
  - ③ Loading belt is jammed.
  - ④ The elevator is not flat for the loading hook.
  - ⑤ The timming belt and hook are off.

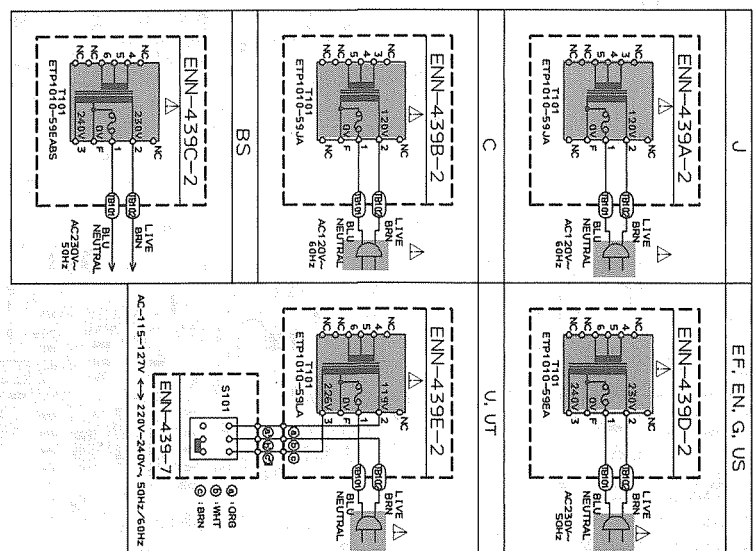
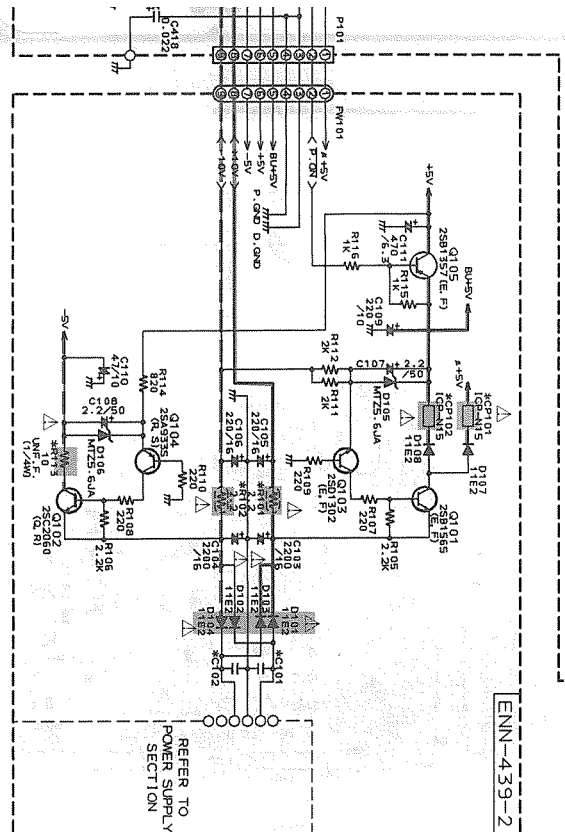
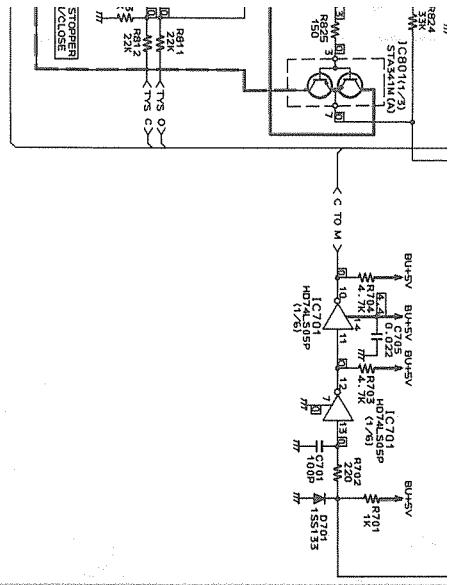
■ Block Diagrams(XL-MC302M)







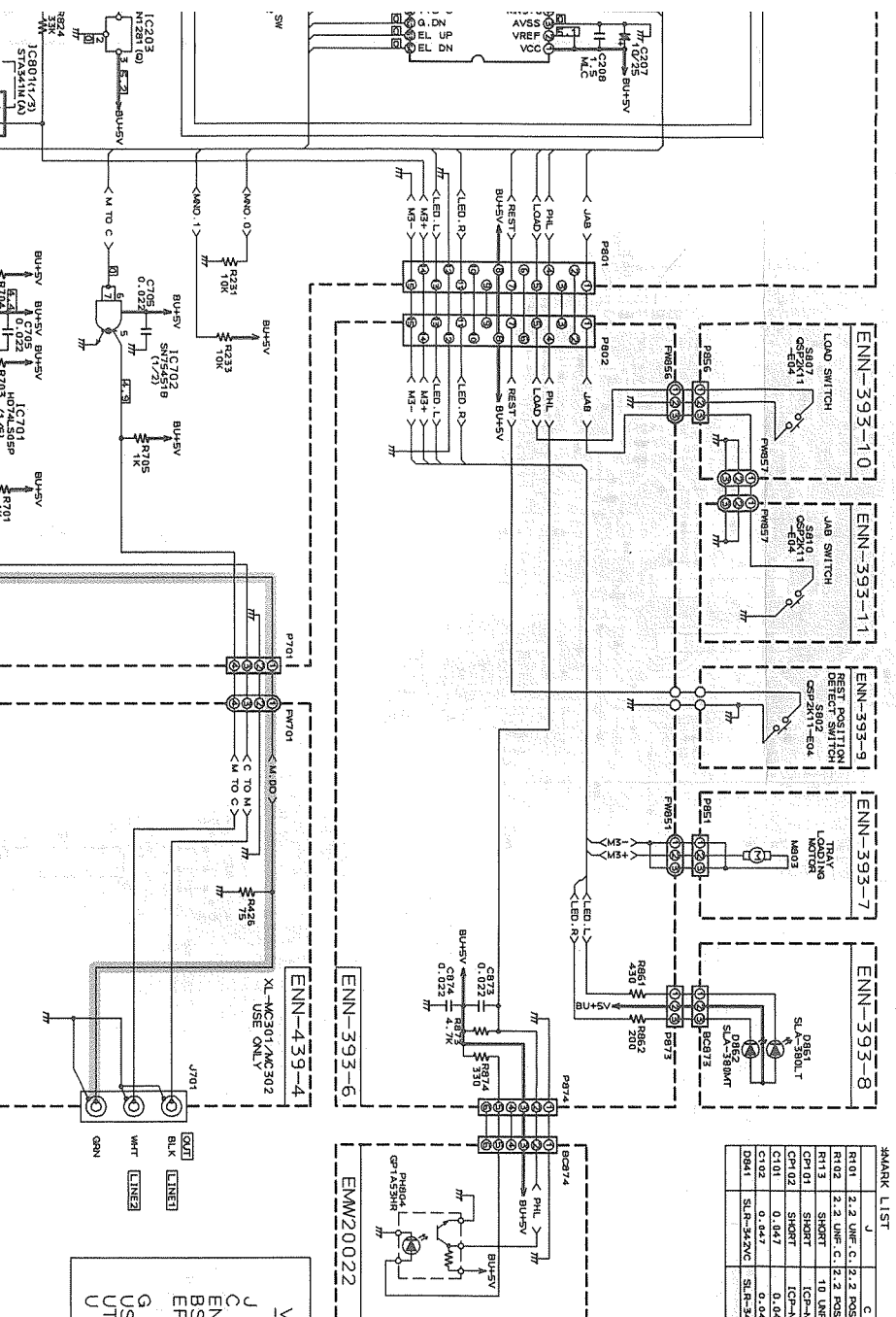




F G H I J 3-23

## How to Use Schematic Diagrams

1. — indicates the +B line.
2. — indicates the -B line.
3. indicates signal path.
4. Parts marked with  $\Delta$  and those in the shaded area are parts for safety.
5. This is the standard circuit diagram. The circuits and circuit constants are subject to change for improvement without notice.



MARK LIST

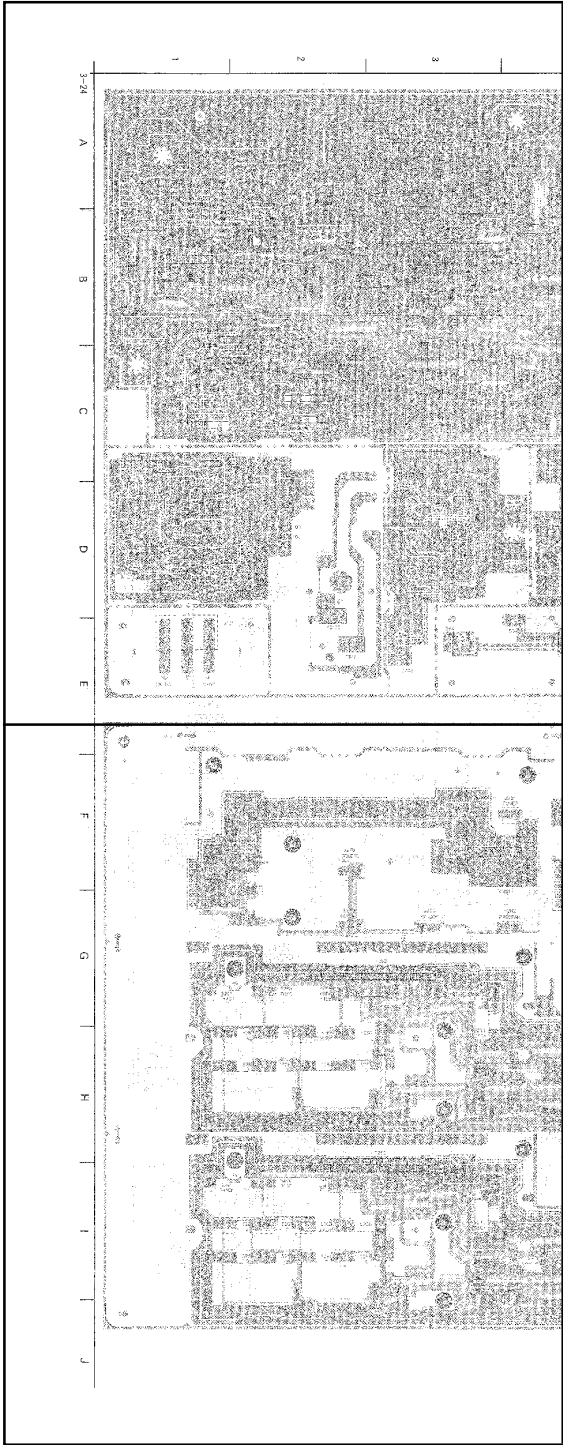
| MARK  | LIST       | U               | C               | BS              | EF, EN, G, US   | U, UT           |
|-------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| R101  | 2.2 UNF. C | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER |
| R102  | 2.2 UNF. C | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER | 2.2 POS. SISTER |
| R103  | SHORT      | 10 UNF. F.      | 10 UNF. F.      | 10 UNF. F.      | 10 UNF. F.      | 10 UNF. F.      |
| CP101 | SHORT      | ICP-N15         | ICP-N15         | ICP-N15         | ICP-N15         | ICP-N15         |
| CP102 | SHORT      | ICP-N15         | ICP-N15         | ICP-N15         | ICP-N15         | ICP-N15         |
| C101  | 0.1K7      | 0.1 TF          | 0.1 TF          | 0.1 TF          | 0.1 TF          | 0.1 TF          |
| C102  | 0.1K7      | 0.1 TF          | 0.1 TF          | 0.1 TF          | 0.1 TF          | 0.1 TF          |
| DBA1  | SLR-342VC  | SLR-342VC       | SLA-380LT       | SLA-342VC       | SLR-342VC       | SLR-342VC       |

### VERSION CODES

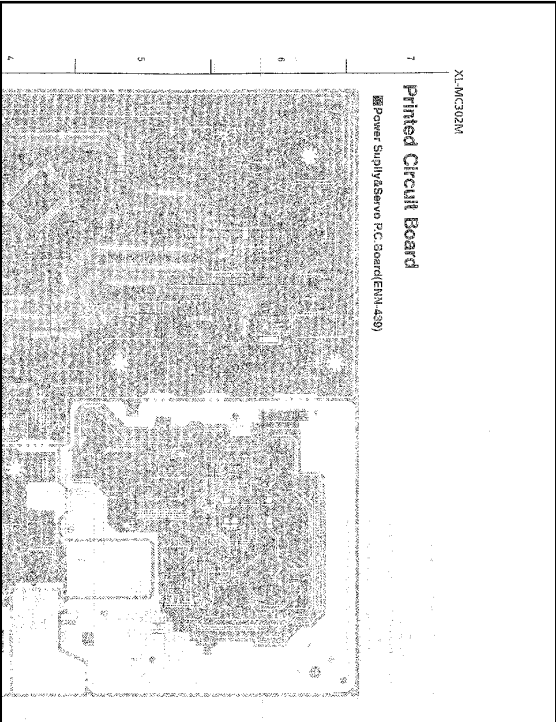
U : U.S.A.  
C : CANADA  
EN : ENORDIC COUNTRIES  
BS : U.K.  
EF : CONTINENTAL EUROPE EXCEPT  
G : GERMANY  
US : SINGAPORE  
UT : TAIWAN  
U : UNIVERSAL EXCEPT ALL OF ABOVE



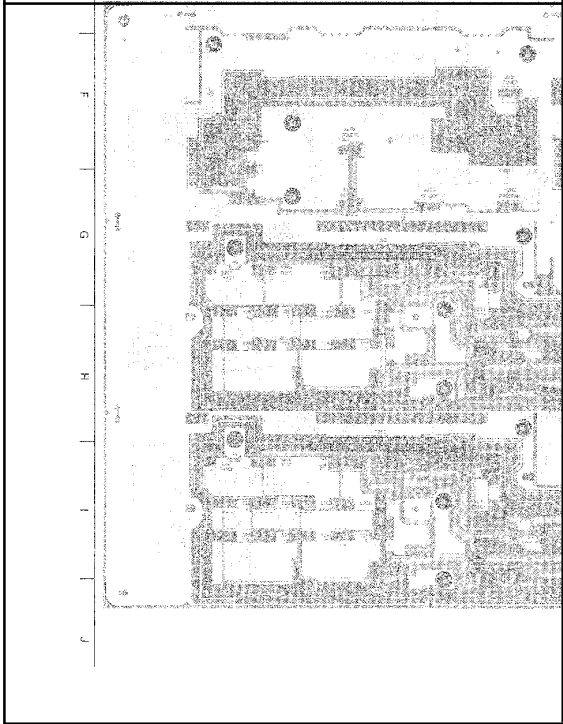
P3-24-a



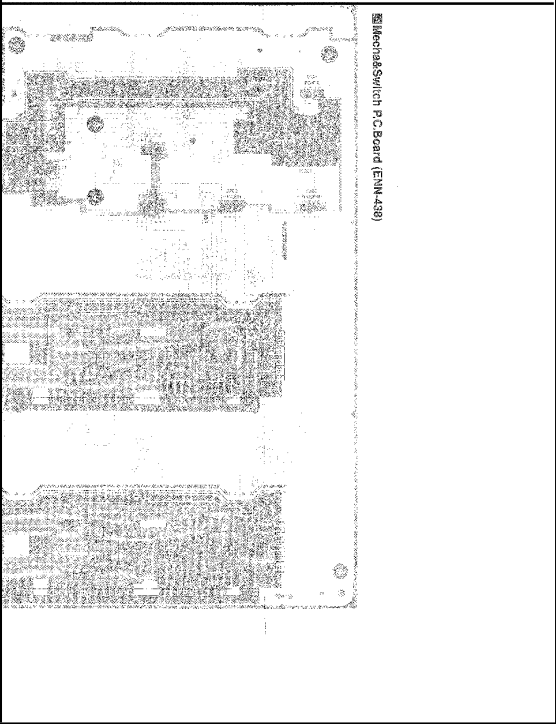
P3-24-b



P3-24-c



P3-24-d



3-24

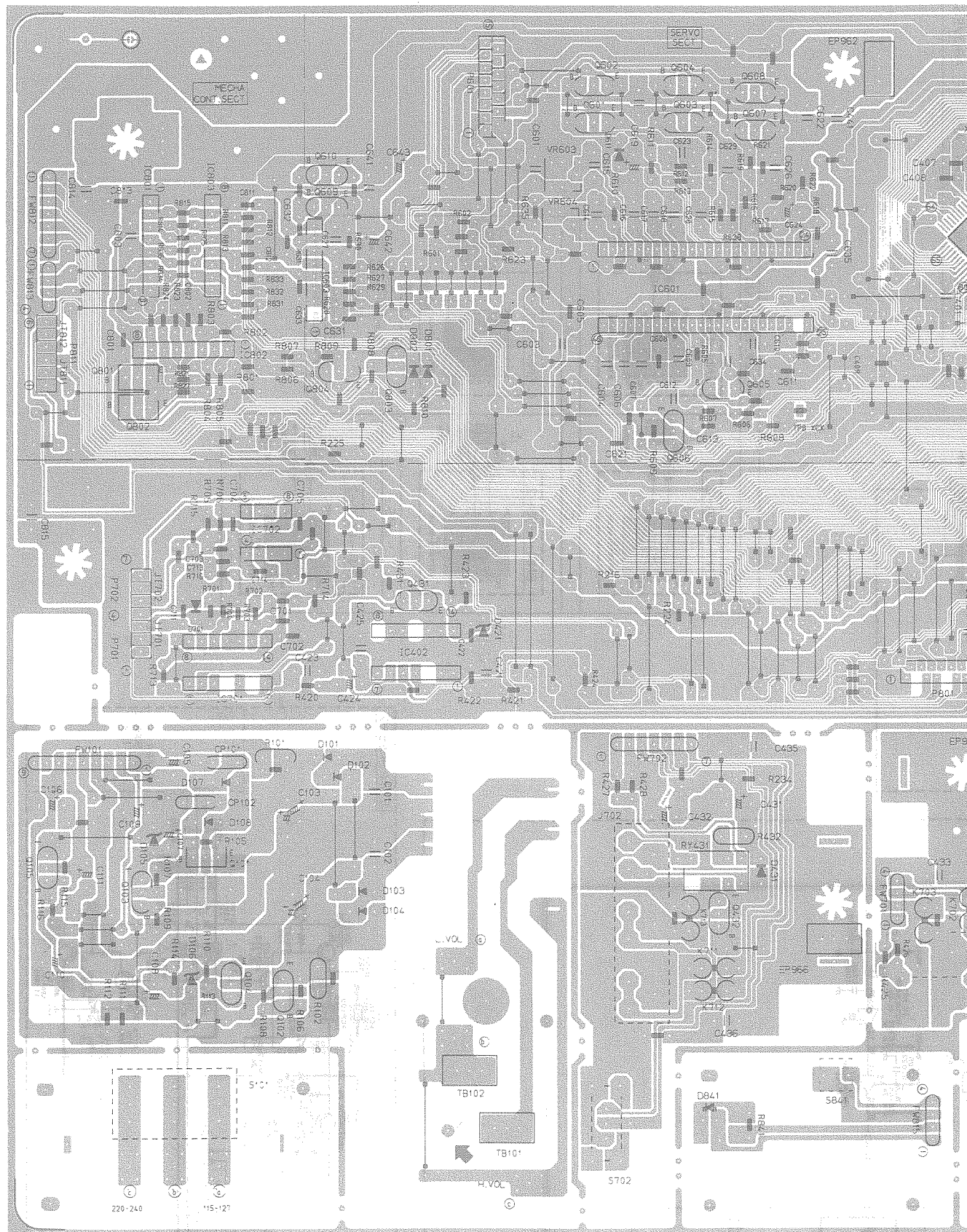
A

B

C

D

E



7

# Printed Circuit Board

### ■ Power Supply&Servo P.C.Board(ENN-439)



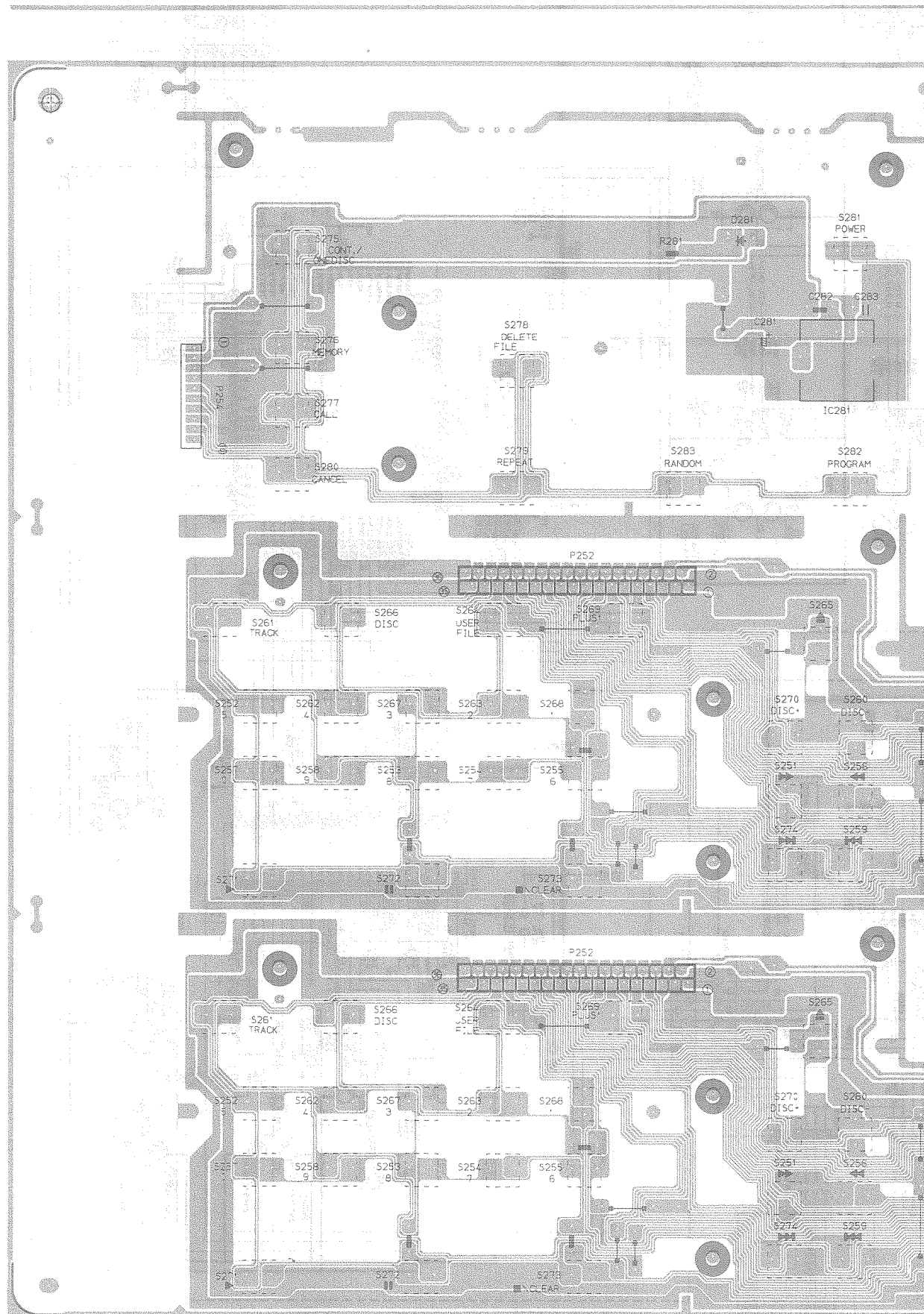
F

G

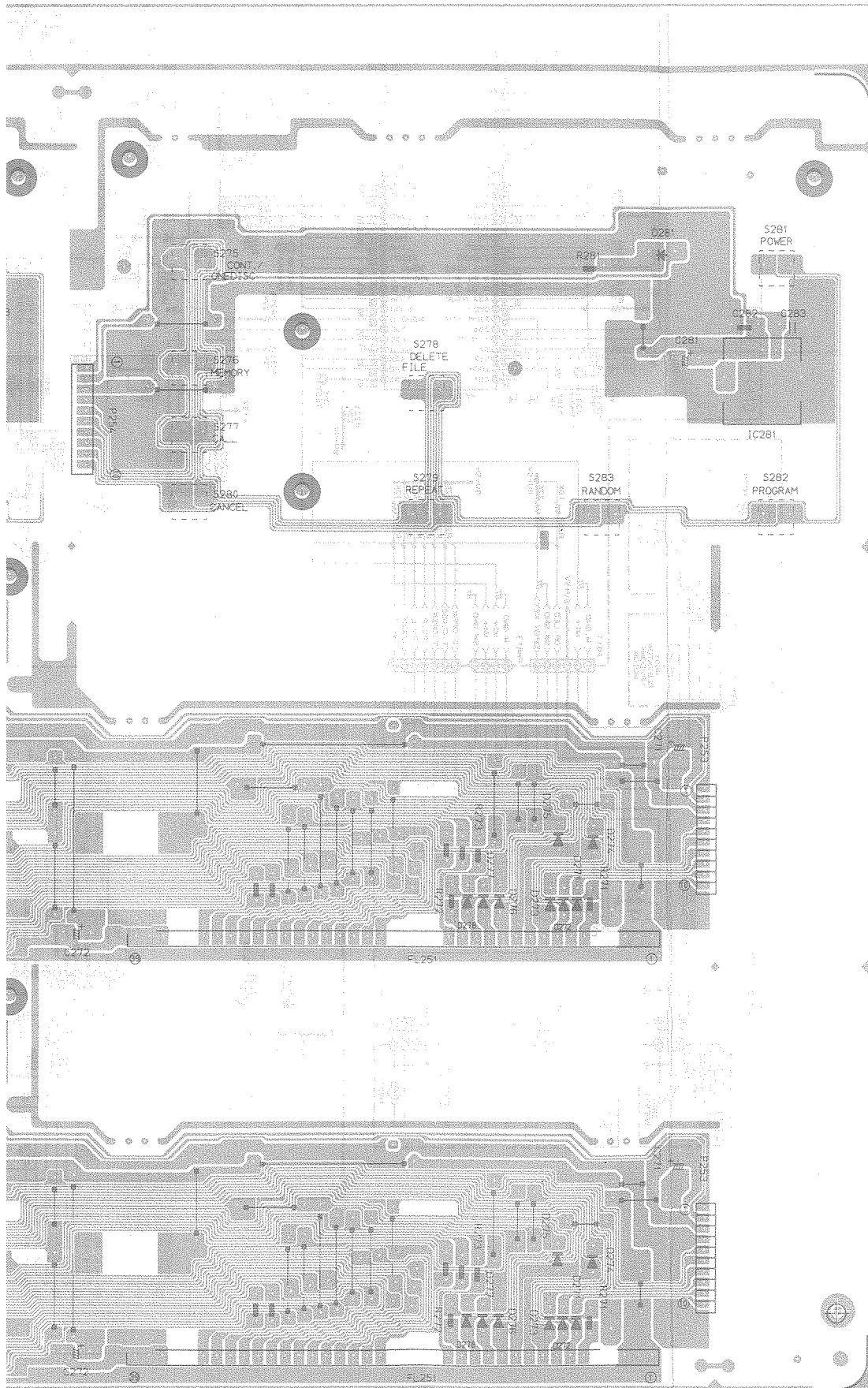
H

I

J



■ Mecha&Switch P.C.Board (ENN-438)





# XL-MC302C

## < Parts List >

**Note : All printed circuit boards and its assemblies are not available as service parts.**

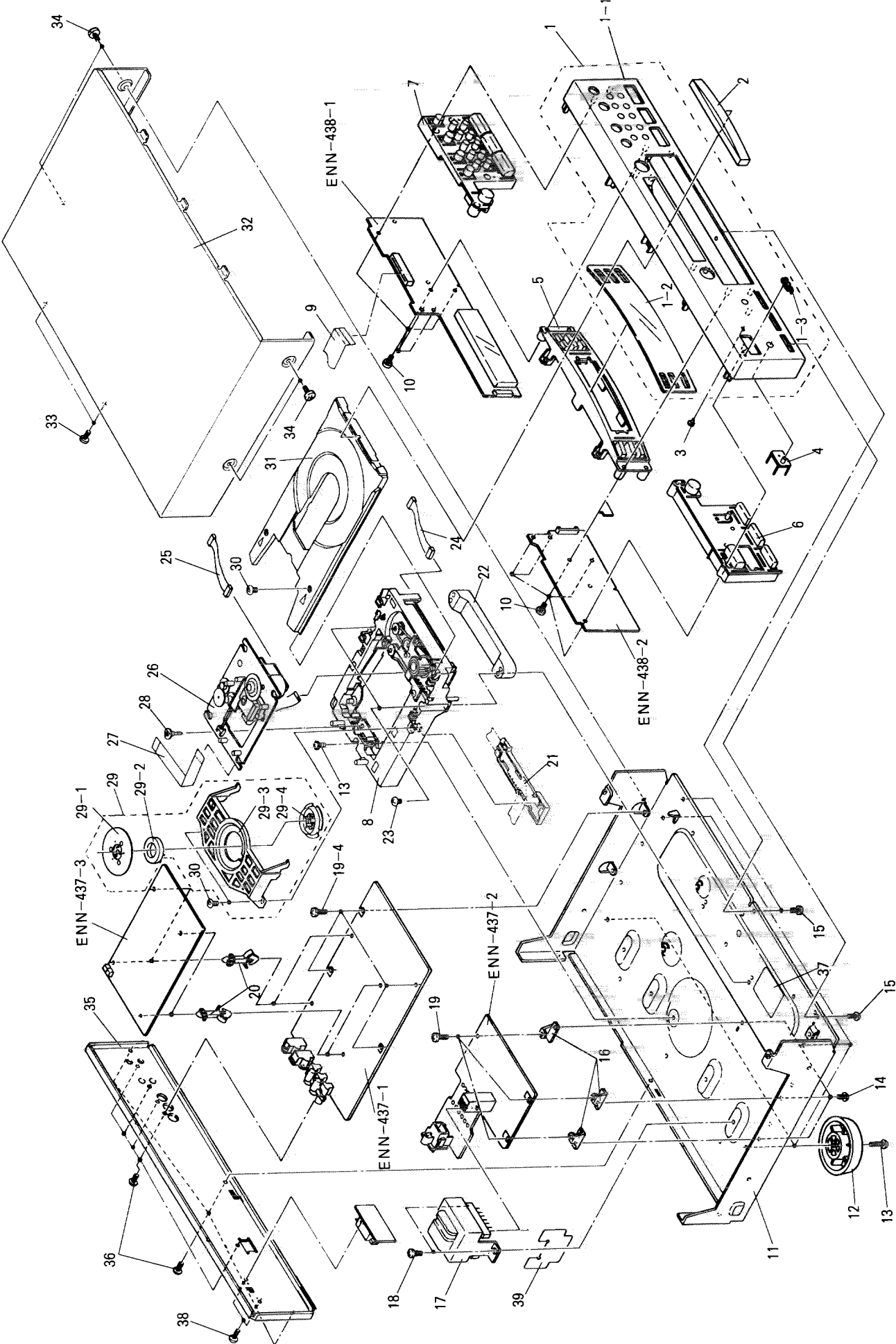
### — Contents

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| Loading Mechanism Ass'y and Parts List .....     | 4 - 6  |
| ■ Grease Point .....                             | 4 - 6  |
| Printed Circuit Board Ass'y and Parts List ..... | 4 - 8  |
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| ■ ENN-438 □ Front PC Board Ass'y .....           | 4 - 13 |

General Exploded View and Parts List

Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 1 | M | M |
|---|---|---|---|



**Parts List**

 Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 1 | M | M |
|---|---|---|---|

| Item | Part Number     | Part Name              | Q'ty | Description  | Area        |
|------|-----------------|------------------------|------|--------------|-------------|
| 1    | EFP-XLMC302CE(S | FRONT PANEL            | 1    |              |             |
| 1-1  | E103015-004ST   | FRONT PANEL            | 1    |              |             |
| 1-2  | E309369-003     | WINDOW SCREEN          | 1    |              |             |
| 1-3  | VJD5429-001     | JVC MARK               | 1    |              |             |
| 2    | E309367-002     | FITTING                | 1    |              |             |
| 3    | FSJD4001-002    | INDICATOR              | 1    |              |             |
| 4    | E308744-002     | REMOTE LENS            | 1    |              |             |
| 5    | E208510-004ST   | SCREEN BASE            | 1    |              |             |
| 6    | E208499-002ST   | PUSH BUTTON            | 1    | (L)          |             |
| 7    | E208501-002ST   | PUSH BUTTON            | 1    | (R)          |             |
| 8    | -----           | LOADING MECHANISM ASSY | 1    | See page 4-6 |             |
| 9    | VWF1236-14TTBW  | FFC CABLE              | 1    |              |             |
| 10   | SDSF2608Z       | SCREW                  | 10   |              |             |
| 11   | E102355-003SS   | CHASSIS BASE           | 1    |              |             |
| 12   | FSYH4001-00E    | FOOT ASSY              | 4    |              |             |
| 13   | SBST3008Z       | TAPPING SCREW          | 5    |              |             |
| 14   | SBSG3006Z       | TAPPING SCREW          | 3    |              |             |
| 15   | SDSF3008M       | SCREW                  | 3    |              |             |
| 16   | E68587-004      | BRACKET                | 3    |              |             |
| 17   | ETP1010-58EA    | POWER TRANSFORMER      | 1    |              | EF,EN,G,US  |
| 18   | ETP1010-58EABS  | POWER TRANSFORMER      | 1    |              | BS          |
| 19   | ETP1010-58LA    | POWER TRANSFORMER      | 1    |              | U,UT        |
| 20   | E65389-002      | SPECIAL SCREW          | 2    |              |             |
| 21   | SBSG3008Z       | TAPPING SCREW          | 7    |              |             |
| 22   | E306232-003     | FASTENER               | 4    |              |             |
| 23   | E308181-221SS   | FFC HOLDER             | 1    |              |             |
| 24   | E307158-003SS   | STAND                  | 1    |              |             |
| 25   | SBST3025Z       | TAPPING SCREW          | 2    |              |             |
| 26   | EWS265-B408     | SOCKET WIRE ASSY       | 1    | 5PIN         |             |
| 27   | EWS266-B410     | SOCKET WIRE ASSY       | 1    | 6PIN         |             |
| 28   | -----           | CD MECHANISM ASSY      | 1    | See page 4-5 |             |
| 29   | EWPZ02-001      | FFC CABLE              | 1    | 15PIN        |             |
| 30   | E406293-002     | SPECIAL SCREW          | 1    |              |             |
| 31   | E306837-005     | CLAMPER ASSY           | 1    |              |             |
| 32   | E306836-003     | YOKE PLATE             | 1    |              |             |
| 33   | E74897-002      | MAGNET                 | 1    |              |             |
| 34   | E26756-002      | CLAMPER BASE           | 1    |              |             |
| 35   | E306835-001     | CD CLAMPER             | 1    |              |             |
| 36   | SBSF3008M       | TAPPING SCREW          | 3    |              |             |
| 37   | E102358-332SS   | CD TRAY                | 1    |              |             |
| 38   | E206906-003     | METAL COVER            | 1    |              |             |
| 39   | SDSG3008M       | TAPPING SCREW          | 2    |              |             |
| 40   | E406308-001     | SPECIAL SCREW          | 4    |              |             |
| 41   | E208505-007     | REAR PANEL             | 1    |              | Except U,UT |
| 42   | E208505-008     | REAR PANEL             | 1    |              | U,UT        |
| 43   | E73273-006      | SPECIAL SCREW          | 8    |              |             |
| 44   | E406507-001     | CAUTION LABEL          | 1    |              |             |
| 45   | SBSF2608M       | TAPPING SCREW          | 2    |              | U,UT        |
| 46   | E408772-001     | PROTECT SHEET          | 1    |              | U,UT        |
| 47   | E408450-001     | RATING LABEL           | 1    |              | BS          |
| 48   | E408450-001     | RATING LABEL           | 1    |              | EF          |
| 49   | E408450-001     | RATING LABEL           | 1    |              | EN          |
| 50   | E408450-001     | RATING LABEL           | 1    |              | G           |
| 51   | E61029-005      | NUMBER LABEL           | 1    |              |             |
| 52   | E70027-001      | LABEL                  | 1    |              | EN          |
| 53   | E70419-003F     | MARK LABEL             | 1    |              | G           |
| 54   | E70891-001      | CLASS 1 LABEL          | 1    |              |             |
| 55   | QZL1007-001     | BEAB LABEL             | 1    |              | BS          |
| 56   | QZL1031-101     | LABEL                  | 1    |              | EF          |

⚠ : Safety Parts

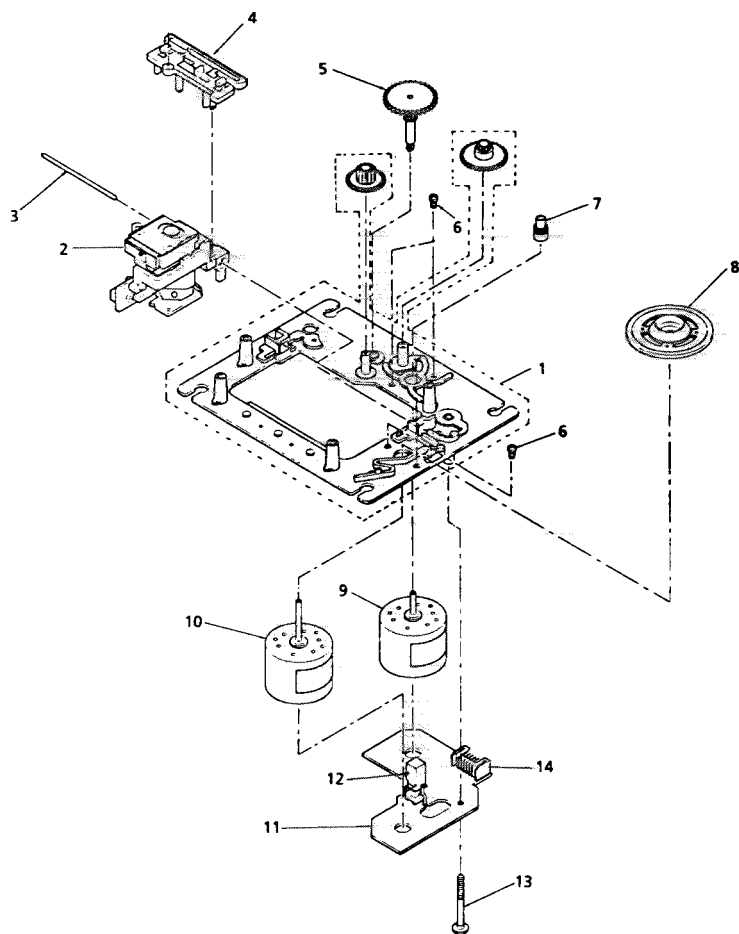
**The Marks for Designated Areas**

|                    |                         |                  |                             |
|--------------------|-------------------------|------------------|-----------------------------|
| BS . the U.K.      | EF . Continental Europe | EN . Scandinavia | G . Germany                 |
| U . Universal Type | US . Singapore          | UT . Taiwan      | No mark indicates all area. |

CD Mechanism Ass'y and Parts List

Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 2 | M | M |
|---|---|---|---|



■ Parts List ( CD Mechanism Ass'y )

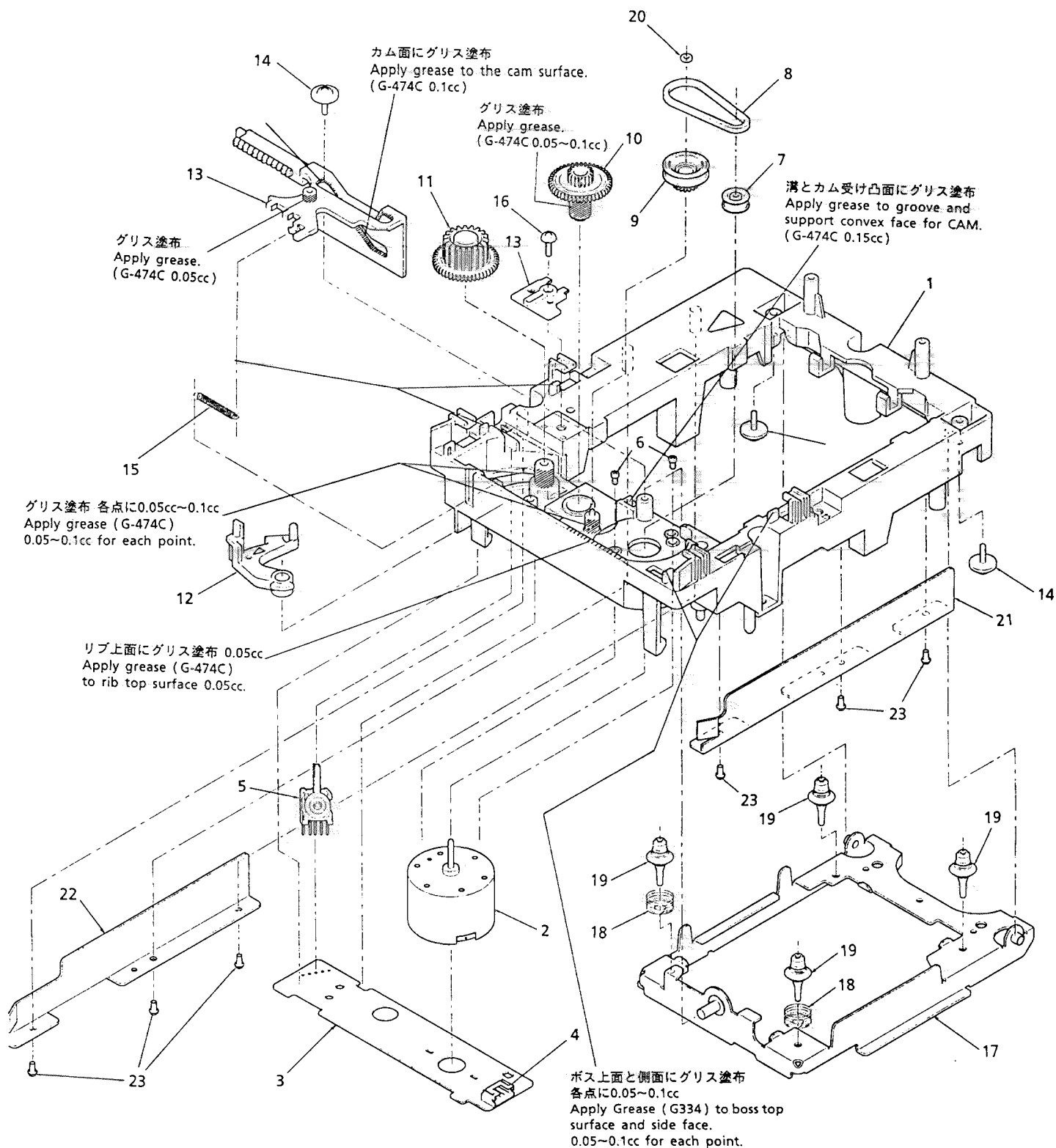
| Item | Part Number     | Part Name           | Q'ty | Description | Area |
|------|-----------------|---------------------|------|-------------|------|
| 1    | EPB-002A        | MECHANISM BASE ASSY | 1    |             |      |
| 2    | OPTIMA-6S       | PICK UP ASSY        | 1    |             |      |
| 3    | E407782-001     | SHAFT               | 1    |             |      |
| 4    | E307746-001     | CD RACK             | 1    |             |      |
| 5    | EPB-003A        | GEAR (3)            | 1    |             |      |
| 6    | SDSP2003N       | SCREW               | 4    |             |      |
| 7    | E406750-001     | PINION GEAR         | 1    |             |      |
| 8    | E75807-302      | TURN TABLE          | 1    |             |      |
| 9    | E406784-001     | FEED MOTOR          | 1    |             |      |
| 10   | E406783-001     | SPINDLE MOTOR       | 1    |             |      |
| 11   | EMW10190-001(S) | CIRCUIT BOARD       | 1    |             |      |
| 12   | ESB1100-005     | LEAF SWITCH         | 1    |             |      |
| 13   | E75832-001      | SCREW               | 1    |             |      |
| 14   | EMV5109-006B    | PLUG ASSY           | 1    | 6PIN        |      |

# Loading Mechanism Ass'y and Parts List

Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 3 | M | M |
|---|---|---|---|

## ■ Grease Point



XL-MC302C

■ Parts List (Loading Mechanism Ass'y)

Symbol No. 

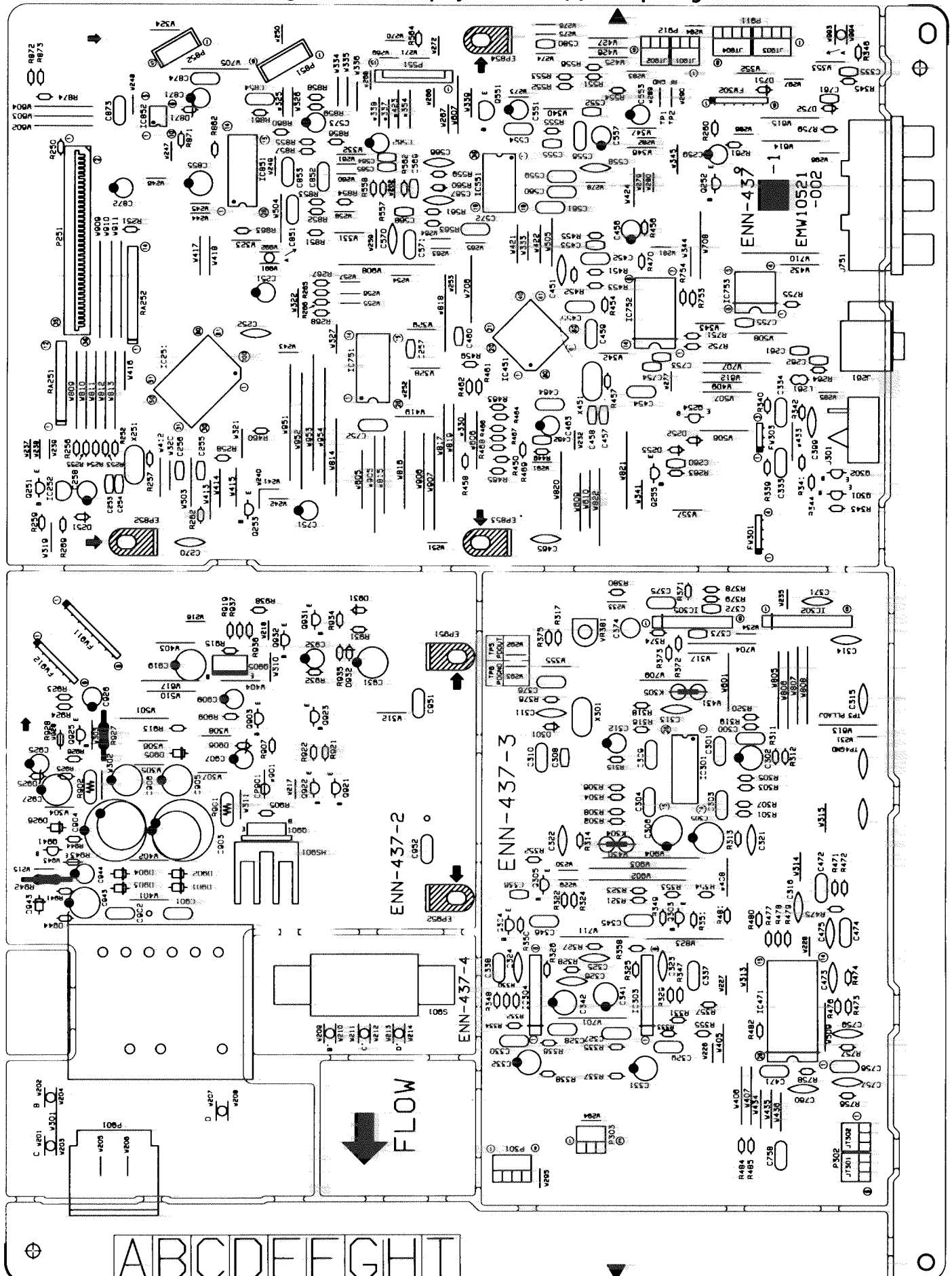
|   |   |   |   |
|---|---|---|---|
| M | 3 | M | M |
|---|---|---|---|

| Item | Part Number  | Part Name          | Q'ty | Description | Area |
|------|--------------|--------------------|------|-------------|------|
| 1    | E102357-221  | LOADING BASE       | 1    |             |      |
| 2    | MMN-6F1LB8K  | MOTOR              | 1    |             |      |
| 3    | EMW10264-002 | CIRCUIT BOARD      | 1    |             |      |
| 4    | EMV5109-005B | 5P PLUG ASSY       | 1    |             |      |
| 5    | ESS1200-002  | SWITCH             | 1    |             |      |
| 6    | SPSK2640Z    | SCREW              | 2    |             |      |
| 7    | E75984-221   | MOTOR PULLEY       | 1    |             |      |
| 8    | E75950-002   | BELT               | 1    |             |      |
| 9    | E75985-221   | GEAR (1)           | 1    |             |      |
| 10   | E75986-221SS | GEAR (2)           | 1    |             |      |
| 11   | E75987-221SS | GEAR (3)           | 1    |             |      |
| 12   | E307162-331  | LEVER              | 1    |             |      |
| 13   | E307252-331  | CAM-PLATE          | 1    |             |      |
| 14   | E65923-003   | SCREW              | 3    |             |      |
| 15   | E75989-001   | SPRING             | 1    |             |      |
| 16   | SBSF3008Z    | SCREW              | 1    |             |      |
| 17   | E307179-332  | ELEVATOR BASE ASSY | 1    |             |      |
| 18   | E406871-001  | SPRING             | 2    |             |      |
| 19   | E406294-002  | INSULATOR          | 4    | BLACK       |      |
| 20   | E60912-005SS | SPEED NUT          | 1    |             |      |
| 21   | E308839-001  | STAY (R)           | 1    |             |      |
| 22   | E308838-001  | STAY (L)           | 1    |             |      |
| 23   | SBSF2008Z    | SCREW              | 6    |             |      |

# Printed Circuit Board Ass'y and Parts List

■ ENN-437 □ Main PC Board Ass'y

Note : ENN-437 □ varies according to the areas employd. See note (1) when placing an order.



# XL-MC302C

## Note (1)

| PC Board Ass'y      | Version             | Designated Areas                                          |
|---------------------|---------------------|-----------------------------------------------------------|
| ENN-437 <b>C</b> BS | BS                  | the U.K.                                                  |
| ENN-437 <b>D</b>    | EF<br>EN<br>G<br>US | Continental Europe<br>Scandinavia<br>Germany<br>Singapore |
| ENN-437 <b>E</b>    | U<br>UT             | Universal Type<br>Taiwan                                  |

## TRANSISTORS

| ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|------|---------------|------------------------|------|
| Q251 | DTA144ES      | DIGITAL TRA ROHM       |      |
| Q252 | 2SC1740S(R,S) | SI TRANSIST ROHM       |      |
| Q253 | DTA144ES      | DIGITAL TRA ROHM       |      |
| Q254 | DTA114YS      | DIGITAL TRA ROHM       |      |
| Q255 | DTA114YS      | DIGITAL TRA ROHM       |      |
| Q301 | 2SD1302       | SI TRANSIST MATSUSHITA |      |
| Q302 | 2SD1302       | SI TRANSIST MATSUSHITA |      |
| Q303 | 2SD1302       | SI TRANSIST MATSUSHITA |      |
| Q304 | 2SD1302       | SI TRANSIST MATSUSHITA |      |
| Q305 | DTA144ES      | DIGITAL TRA ROHM       |      |
| Q306 | 2SC1740S(R,S) | SI TRANSIST ROHM       |      |
| Q307 | DTA144ES      | DIGITAL TRA ROHM       |      |
| Q551 | 2SA930(D,Y)   | SI TRANSIST TOSHIBA    |      |
| Q901 | 2SB156S(E,F)  | SI TRANSIST ROHM       |      |
| Q903 | 2SD1302       | SI TRANSIST MATSUSHITA |      |
| Q905 | 2SB1557(E,F)  | SI TRANSIST ROHM       |      |
| Q921 | 2SD2144S(VW)  | SI TRANSIST ROHM       |      |
| Q922 | 2SD2144S(VW)  | SI TRANSIST ROHM       |      |
| Q923 | DTA114YS      | DIGITAL TRA ROHM       |      |
| Q925 | 2SC2060(Q,R)  | SI TRANSIST ROHM       |      |
| Q931 | 2SA933S(RS)   | SI TRANSIST            |      |
| Q932 | 2SD2144S(VW)  | SI TRANSIST ROHM       |      |
| Q941 | 2SA933S(RS)   | SI TRANSIST            |      |

## I. C. S.

| ITEM  | PART NUMBER    | DESCRIPTION            | AREA |
|-------|----------------|------------------------|------|
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | BS   |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | EF   |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | EN   |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | G    |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | U    |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | US   |
| IC251 | M38184E8-401FP | I.C(MICRO-C MITSUBISHI | UT   |
| IC252 | MN1281(P,Q)    | I.C(DIGI-MO MATSUSHITA |      |
| IC301 | MN35502        | I.C(DIGI-MO MATSUSHITA |      |
| IC302 | TC9081AP       | I.C(DIGI-MO TOSHIBA    |      |
| IC303 | M5218AL        | I.C(MONO-AN MITSUBISHI |      |
| IC304 | M5218AL        | I.C(MONO-AN MITSUBISHI |      |
| IC305 | M5218AL        | I.C(MONO-AN MITSUBISHI |      |
| IC451 | MN662720RB     | I.C(DIGI-MO MATSUSHITA |      |
| IC471 | TC9245N        | I.C(DIGI-MO TOSHIBA    |      |
| IC551 | AN8804SB       | I.C(M) MATSUSHITA      |      |
| IC751 | UPD71051GU     | I.C(MICRO-C NEC        |      |
| IC752 | HD74LS05P      | I.C(DIGI-OT HITACHI    |      |
| IC753 | SN75451BP      | I.C(MONO-AN 1679       |      |
| IC851 | BA6398FP       | I.C(MONO-AN ROHM       |      |
| IC852 | TA8409FTP1     | I.C(MONO-AN TOSHIBA    |      |

## DIODES

| ITEM | PART NUMBER | DESCRIPTION      | AREA |
|------|-------------|------------------|------|
| D251 | 1SS133      | SI DIODE ROHM    |      |
| D252 | 1SS133      | SI DIODE ROHM    |      |
| D253 | 1SS133      | SI DIODE ROHM    |      |
| D301 | 1SV145B-T3  | DIODE HITACHI    |      |
| D751 | 1SS133      | SI DIODE ROHM    |      |
| D752 | 1SS133      | SI DIODE ROHM    |      |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | BS   |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | EF   |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | EN   |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | G    |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | U    |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | US   |
| D871 | MTZ5.1JB    | ZENER DIODE ROHM | UT   |
| D872 | 1SS133      | SI DIODE ROHM    | BS   |
| D872 | 1SS133      | SI DIODE ROHM    | EF   |

## DIODES

| ITEM | PART NUMBER | DESCRIPTION         | AREA |
|------|-------------|---------------------|------|
| D872 | 1SS133      | SI DIODE ROHM       | EN   |
| D872 | 1SS133      | SI DIODE ROHM       | G    |
| D872 | 1SS133      | SI DIODE ROHM       | U    |
| D872 | 1SS133      | SI DIODE ROHM       | US   |
| D872 | 1SS133      | SI DIODE ROHM       | UT   |
| D901 | 11E2        | SI DIODE NIHONINTER |      |
| D902 | 11E2        | SI DIODE NIHONINTER |      |
| D903 | 11E2        | SI DIODE NIHONINTER |      |
| D904 | 11E2        | SI DIODE NIHONINTER |      |
| D905 | 11E2        | SI DIODE NIHONINTER |      |
| D906 | MTZ5.6JA    | ZENER DIODE ROHM    |      |
| D925 | MTZ10JC     | ZENER DIODE ROHM    |      |
| D926 | 11E2        | SI DIODE NIHONINTER |      |
| D931 | 1SS133      | SI DIODE ROHM       |      |
| D932 | 1SS133      | SI DIODE ROHM       |      |
| D943 | 11E2        | SI DIODE NIHONINTER |      |
| D944 | MTZ33JC     | ZENER DIODE ROHM    |      |

## CAPACITORS

| ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|------|---------------|------------------------|------|
| C251 | QETB1HM-106   | 10MF 50V E.CAPACITO    |      |
| C252 | QCF21HP-223A  | 0.022MF 50V CER.CAPACI |      |
| C253 | QCT30CH-120Y  | 12PF 50V CER.CAPACI    |      |
| C254 | QCT30CH-120Y  | 12PF 50V CER.CAPACI    |      |
| C256 | QCB1HK-101Y   | 100PF 50V CER.CAPACI   |      |
| C258 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
| C259 | QETB1HM-474   | 0.47MF 50V ELECTRO     |      |
| C260 | QCB1HK-331Y   | 330PF 50V CER.CAPACI   |      |
| C261 | QCT30CH-180Y  | 18PF 50V CER.CAPACI    |      |
| C262 | QCB1HK-101Y   | 100PF 50V CER.CAPACI   |      |
| C300 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C301 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C302 | QETB1AM-227   | 220MF 10V E.CAPACITO   |      |
| C303 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C304 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C305 | QETB1AM-477   | 470MF 10V E.CAPACITO   |      |
| C306 | QETB1AM-477   | 470MF 10V E.CAPACITO   |      |
| C308 | QCT30CH-150Y  | 15PF 50V CER.CAPACI    |      |
| C309 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C310 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | BS   |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | EF   |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | EN   |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | G    |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | U    |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | US   |
| C311 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  | UT   |
| C312 | QETB1AM-476   | 47MF 10V E.CAPACITO    |      |
| C313 | QCT30CH-100Y  | 10PF 50V CER.CAPACI    |      |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | BS   |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EF   |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EN   |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | G    |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | U    |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | US   |
| C314 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | UT   |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | BS   |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EF   |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EN   |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | G    |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | U    |
| C315 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | US   |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | BS   |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EF   |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | EN   |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | G    |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | U    |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | US   |
| C316 | QCS31HJ-150Z  | 15PF 50V CER.CAPACI    | UT   |
| C321 | QCS21HJ-181A  | 180PF 50V CER.CAPACI   |      |
| C322 | QCS21HJ-181A  | 180PF 50V CER.CAPACI   |      |
| C323 | QCS31HJ-121Z  | 120PF 50V CER.CAPACI   |      |
| C324 | QCS31HJ-121Z  | 120PF 50V CER.CAPACI   |      |
| C325 | QCS31HJ-121Z  | 120PF 50V CER.CAPACI   |      |
| C326 | QCS31HJ-121Z  | 120PF 50V CER.CAPACI   |      |
| C327 | QFN81HJ-182   | 1800PF 50V METAL.MYLA  |      |
| C328 | QFN81HJ-182   | 1800PF 50V METAL.MYLA  |      |
| C329 | QFV81HJ-103   | 0.01MF 50V THIN FILM   |      |
| C330 | QFV81HJ-103   | 0.01MF 50V THIN FILM   |      |
| C331 | QETB1HM-476   | 47MF 50V E.CAPACITO    |      |
| C332 | QETB1HM-476   | 47MF 50V E.CAPACITO    |      |
| C333 | QFN81HJ-472   | 4700PF 50V MYLAR CAPA  |      |
| C334 | QFN81HJ-472   | 4700PF 50V MYLAR CAPA  |      |
| C335 | QCVB1CM-103Y  | 0.01MF 16V CER.CAPACI  |      |
| C336 | QCVB1CM-103Y  | 0.01MF 16V CER.CAPACI  |      |
| C337 | QFN81HJ-683   | 0.068MF 50V METAL.MYLA |      |
| C338 | QFN81HJ-683   | 0.068MF 50V METAL.MYLA |      |
| C341 | QETB1HM-476   | 47MF 50V E.CAPACITO    |      |
| C342 | QETB1HM-476   | 47MF 50V E.CAPACITO    |      |

## CAPACITORS

| Δ | ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|---|------|---------------|------------------------|------|
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | BS   |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | EF   |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | EN   |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | G    |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | U    |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | US   |
|   | C345 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | UT   |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | BS   |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | EF   |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | EN   |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | G    |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | U    |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | US   |
|   | C346 | QFV71HJ-124ZM | 0.12MF 50V THIN FILM   | UT   |
|   | C371 | QCF21HP-223A  | 0.022MF 50V CER.CAPACI |      |
|   | C372 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C373 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | BS   |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | EF   |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | EN   |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | G    |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | U    |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | US   |
|   | C374 | QENB1HM-474   | 0.47MF 50V NP E.CAPAC  | UT   |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | BS   |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | EF   |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | EN   |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | G    |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | U    |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | US   |
|   | C375 | QFN81HJ-153   | 0.015MF 50V MYLAR CAPA | UT   |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | BS   |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | EF   |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | EN   |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | G    |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | U    |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | US   |
|   | C376 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | UT   |
|   | C451 | QCS31HJ-471Z  | 470PF 50V CER.CAPACI   |      |
|   | C452 | QFN81HJ-223   | 0.022MF 50V METAL.MYLA |      |
|   | C453 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C454 | QFV71HJ-334ZM | 0.33MF 50V THIN FILM   |      |
|   | C455 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C456 | QETB1AM-107   | 100MF 10V AL E.CAPAC   |      |
|   | C457 | QCT30CH-100Y  | 10PF 50V CER.CAPACI    |      |
|   | C458 | QCT30CH-120Y  | 12PF 50V CER.CAPACI    |      |
|   | C459 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C460 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C463 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C464 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C471 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C472 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C473 | QCS31HJ-221Z  | 220PF 50V CER.CAPACI   |      |
|   | C474 | QFN81HJ-473   | 0.047MF 50V METAL.MYLA |      |
|   | C475 | QCS31HJ-121Z  | 120PF 50V CER.CAPACI   |      |
|   | C551 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C552 | QCSB1HJ-680   | 68PF 50V CER.CAPACI    |      |
|   | C553 | QETB0JM-476   | 47MF 6.3V AL E.CAPAC   |      |
|   | C554 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
|   | C555 | QCT30CH-3R3Y  | 3.3PF 50V CER.CAPACI   |      |
|   | C556 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C557 | QETB1HM-105   | 1MF 50V AL E.CAPAC     |      |
|   | C558 | QCS31HJ-101Z  | 100PF 50V CER.CAPACI   |      |
|   | C559 | QFV81HJ-273   | 0.027MF 50V THIN FILM  |      |
|   | C560 | QFN81HJ-472   | 4700PF 50V MYLAR CAPA  |      |
|   | C561 | QFN31HJ-332Z  | 3300PF 50V MYLAR CAPA  |      |
|   | C562 | QETB1AM-476   | 47MF 10V E.CAPACITO    |      |
|   | C564 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C565 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C566 | QCS31HJ-271Z  | 270PF 50V CER.CAPACI   |      |
|   | C567 | QCS31HJ-470Z  | 47PF 50V CER.CAPACI    |      |
|   | C568 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C569 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C570 | QCS31HJ-821Z  | 820PF 50V CER.CAPACI   |      |
|   | C571 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C572 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C573 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C751 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C752 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C753 | QCB81HK-101Y  | 100PF 50V CER.CAPACI   |      |
|   | C754 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C755 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
|   | C756 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | BS   |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | EF   |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | EN   |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | G    |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | U    |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | US   |
|   | C757 | QCS31HJ-331Z  | 330PF 50V CER.CAPACI   | UT   |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | BS   |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | EF   |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | EN   |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | G    |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | U    |

## CAPACITORS

| Δ | ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|---|------|---------------|------------------------|------|
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | US   |
|   | C758 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  | UT   |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | BS   |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | EF   |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | EN   |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | G    |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | U    |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | US   |
|   | C759 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | UT   |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | BS   |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | EF   |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | EN   |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | G    |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | U    |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | US   |
|   | C760 | QCS31HJ-270Z  | 27PF 50V CER.CAPACI    | UT   |
|   | C851 | QFN81HJ-273   | 0.027MF 50V METAL.MYLA |      |
|   | C852 | QFN81HJ-183   | 0.018MF 50V METAL.MYLA |      |
|   | C853 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C854 | QFN81HJ-273   | 0.027MF 50V METAL.MYLA |      |
|   | C855 | QETB1CM-107   | 100MF 16V AL E.CAPAC   |      |
|   | C871 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C872 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
|   | C873 | QFV81HJ-104   | 0.1MF 50V THIN FILM    |      |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | BS   |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | EF   |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | EN   |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | G    |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | U    |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | US   |
|   | C874 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   | UT   |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | BS   |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EF   |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EN   |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | G    |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | U    |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | US   |
|   | C901 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | UT   |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | BS   |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EF   |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EN   |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | G    |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | U    |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | US   |
|   | C902 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | UT   |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | BS   |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | EF   |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | EN   |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | G    |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | U    |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | US   |
|   | C903 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  | UT   |
|   | C904 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  |      |
|   | C905 | QETB1CM-227   | 220MF 16V AL E.CAPAC   |      |
|   | C906 | QETB1CM-227   | 220MF 16V AL E.CAPAC   |      |
|   | C907 | QETB1HM-225   | 2.2MF 50V AL E.CAPAC   |      |
|   | C909 | QETB1AM-476   | 47MF 10V E.CAPACITO    |      |
|   | C919 | QETC0JM-477ZN | 470MF 6.3V AL E.CAPAC  |      |
|   | C925 | QETB1HM-474   | 0.47MF 50V ELECTRO     |      |
|   | C926 | QETB1CM-476   | 47MF 16V AL E.CAPAC    |      |
|   | C927 | QETB1HM-107   | 100MF 50V E.CAPACITO   |      |
|   | C931 | QETB1CM-227   | 220MF 16V AL E.CAPAC   |      |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | BS   |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | EF   |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | EN   |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | G    |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | U    |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | US   |
|   | C932 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    | UT   |
|   | C943 | QETB1HM-107   | 100MF 50V E.CAPACITO   |      |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | BS   |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | EF   |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | EN   |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | G    |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | U    |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | US   |
|   | C944 | QETB1HM-475E  | 4.7MF 50V E.CAPACITO   | UT   |

# XL-MC302C

## RESISTORS

| ITEM   | PART NUMBER  | DESCRIPTION | AREA               |
|--------|--------------|-------------|--------------------|
| R250   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R251   | QRD161J-104  | 100K        | 1/6W CARBON RES    |
| R252   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R253   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R254   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R255   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R256   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R257   | QRD161J-105  | 1M          | 1/6W CARBON RES    |
| R258   | QRD161J-101  | 100         | 1/6W CARBON RES    |
| R259   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R260   | QRD161J-473  | 47K         | 1/6W CARBON RES    |
| R261   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R262   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R263   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R264   | QRD161J-471  | 470         | 1/6W CARBON RES    |
| R265   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R266   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R267   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R268   | QRD161J-472  | 4.7K        | 1/6W CARBON RES    |
| R269   | QRD161J-821  | 820         | 1/6W CARBON RES    |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R301 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R302 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R303 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R304 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R305 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R306 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R307 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM BS |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM EF |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM EN |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM G  |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM U  |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM US |
| △ R308 | QRV144F-3302 | 33K         | 1/4W METAL FILM UT |
| R311   | QRD167J-560  | 56          | 1/6W CARBON RES    |
| R312   | QRD167J-560  | 56          | 1/6W CARBON RES    |

## RESISTORS

| ITEM | PART NUMBER | DESCRIPTION          | AREA |
|------|-------------|----------------------|------|
| R320 | QRD161J-103 | 10K 1/6W CARBON RES  | G    |
| R320 | QRD161J-103 | 10K 1/6W CARBON RES  | U    |
| R320 | QRD161J-103 | 10K 1/6W CARBON RES  | US   |
| R320 | QRD161J-103 | 10K 1/6W CARBON RES  | UT   |
| R321 | QRD161J-183 | 18K 1/6W CARBON RES  |      |
| R322 | QRD161J-183 | 18K 1/6W CARBON RES  |      |
| R323 | QRD161J-183 | 18K 1/6W CARBON RES  |      |
| R324 | QRD161J-183 | 18K 1/6W CARBON RES  |      |
| R325 | QRD161J-333 | 33K 1/6W CARBON RES  |      |
| R326 | QRD161J-333 | 33K 1/6W CARBON RES  |      |
| R327 | QRD161J-333 | 33K 1/6W CARBON RES  |      |
| R328 | QRD161J-333 | 33K 1/6W CARBON RES  |      |
| R329 | QRD167J-511 | 510 1/6W CARBON RES  |      |
| R330 | QRD167J-511 | 510 1/6W CARBON RES  |      |
| R331 | QRD161J-681 | 680 1/6W CARBON RES  |      |
| R332 | QRD161J-681 | 680 1/6W CARBON RES  |      |
| R333 | QRD161J-112 | 1.1K 1/6W CARBON RES |      |
| R334 | QRD161J-112 | 1.1K 1/6W CARBON RES |      |
| R335 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R336 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R337 | QRD161J-273 | 27K 1/6W CARBON RES  |      |
| R338 | QRD161J-273 | 27K 1/6W CARBON RES  |      |
| R339 | QRD161J-301 | 300 1/6W CARBON RES  |      |
| R340 | QRD161J-301 | 300 1/6W CARBON RES  |      |
| R341 | QRD167J-151 | 150 1/6W CARBON RES  |      |
| R342 | QRD167J-151 | 150 1/6W CARBON RES  |      |
| R343 | QRD161J-103 | 10K 1/6W CARBON RES  |      |
| R344 | QRD161J-103 | 10K 1/6W CARBON RES  |      |
| R345 | QRD161J-684 | 680K 1/6W CARBON RES |      |
| R346 | QRD167J-154 | 150K 1/6W CARBON RES |      |
| R347 | QRD161J-241 | 240 1/6W CARBON RES  |      |
| R348 | QRD161J-241 | 240 1/6W CARBON RES  |      |
| R349 | QRD161J-104 | 100K 1/6W CARBON RES |      |
| R350 | QRD161J-104 | 100K 1/6W CARBON RES |      |
| R351 | QRD161J-392 | 3.9K 1/6W CARBON RES |      |
| R352 | QRD161J-392 | 3.9K 1/6W CARBON RES |      |
| R353 | QRD161J-684 | 680K 1/6W CARBON RES |      |
| R354 | QRD167J-154 | 150K 1/6W CARBON RES |      |
| R355 | QRD161J-221 | 220 1/6W CARBON RES  |      |
| R357 | QRD161J-221 | 220 1/6W CARBON RES  |      |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | BS   |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | EF   |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | EN   |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | G    |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | U    |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | US   |
| R358 | QRD161J-221 | 220 1/6W CARBON RES  | UT   |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | BS   |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | EF   |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | EN   |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | G    |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | U    |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | US   |
| R371 | QRD161J-222 | 2.2K 1/6W CARBON RES | UT   |
| R372 | QRD161J-103 | 10K 1/6W CARBON RES  |      |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | BS   |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | EF   |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | EN   |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | G    |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | U    |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | US   |
| R373 | QRD167J-682 | 6.8K 1/6W CARBON RES | UT   |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | BS   |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | EF   |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | EN   |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | G    |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | U    |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | US   |
| R374 | QRD161J-103 | 10K 1/6W CARBON RES  | UT   |
| R375 | QRD161J-473 | 4.7K 1/6W CARBON RES |      |
| R376 | QRD161J-473 | 4.7K 1/6W CARBON RES |      |
| R378 | QRD161J-103 | 10K 1/6W CARBON RES  |      |
| R379 | QRD161J-103 | 10K 1/6W CARBON RES  |      |
| R380 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R385 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R449 | QRD161J-561 | 560 1/6W CARBON RES  |      |
| R450 | QRD161J-222 | 2.2K 1/6W CARBON RES |      |
| R451 | QRD167J-155 | 1.5M 1/6W CARBON RES |      |
| R452 | QRD161J-104 | 100K 1/6W CARBON RES |      |
| R453 | QRD161J-104 | 100K 1/6W CARBON RES |      |
| R454 | QRD161J-681 | 680 1/6W CARBON RES  |      |
| R455 | QRD161J-124 | 120K 1/6W CARBON RES |      |
| R456 | QRD161J-2R2 | 2.2 1/6W CARBON RES  |      |
| R457 | QRD167J-121 | 120 1/6W CARBON RES  |      |
| R458 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R459 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R460 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R461 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R462 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R463 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R464 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R465 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R466 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R467 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R468 | QRD161J-102 | 1K 1/6W CARBON RES   |      |
| R469 | QRD161J-222 | 2.2K 1/6W CARBON RES |      |
| R470 | QRD161J-2R2 | 2.2 1/6W CARBON RES  |      |
| R471 | QRD167J-751 | 750 1/6W CARBON RES  |      |
| R472 | QRD167J-751 | 750 1/6W CARBON RES  |      |
| R473 | QRD167J-751 | 750 1/6W CARBON RES  |      |

## RESISTORS

| ITEM | PART NUMBER  | DESCRIPTION          | AREA |
|------|--------------|----------------------|------|
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | BS   |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | EF   |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | EN   |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | G    |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | U    |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | US   |
| R474 | QRD161J-333  | 33K 1/6W CARBON RES  | UT   |
| R475 | QRD161J-122  | 1.2K 1/6W CARBON RES |      |
| R476 | QRD161J-203  | 20K 1/6W CARBON RES  |      |
| R477 | QRD161J-102  | 1K 1/6W CARBON RES   |      |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | BS   |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | EF   |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | EN   |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | G    |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | U    |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | US   |
| R478 | QRD161J-221  | 220 1/6W CARBON RES  | UT   |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | BS   |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | EF   |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | EN   |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | G    |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | U    |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | US   |
| R479 | QRD161J-103  | 10K 1/6W CARBON RES  | UT   |
| R480 | QRD161J-102  | 1K 1/6W CARBON RES   |      |
| R481 | QRD161J-102  | 1K 1/6W CARBON RES   |      |
| R482 | QRD161J-102  | 1K 1/6W CARBON RES   | BS   |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | EF   |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | EN   |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | G    |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | U    |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | US   |
| R484 | QRD161J-102  | 1K 1/6W CARBON RES   | UT   |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | BS   |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | EF   |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | EN   |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | G    |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | U    |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | US   |
| R485 | QRD161J-102  | 1K 1/6W CARBON RES   | UT   |
| R551 | QRD161J-470  | 47 1/6W CARBON RES   |      |
| R552 | QRD161J-470  | 47 1/6W CARBON RES   |      |
| R553 | QRD161J-470  | 47 1/6W CARBON RES   |      |
| R554 | QRD161J-2R2  | 2.2 1/6W CARBON RES  |      |
| R555 | QRD161J-123  | 12K 1/6W CARBON RES  |      |
| R556 | QRD167J-121  | 120 1/6W CARBON RES  |      |
| R557 | QRD167J-134  | 130K 1/6W CARBON RES |      |
| R558 | QRD161J-913  | 91K 1/6W CARBON RES  |      |
| R559 | QRD161J-273  | 27K 1/6W CARBON RES  |      |
| R560 | QRD161J-114  | 110K 1/6W CARBON RES |      |
| R561 | QRD167J-154  | 150K 1/6W CARBON RES |      |
| R562 | QRD161J-394  | 390K 1/6W CARBON RES |      |
| R563 | QRD161J-103  | 10K 1/6W CARBON RES  |      |
| R564 | QRD161J-910Y | 91 1/6W CARBON RES   |      |
| R751 | QRD161J-102  | 1K 1/6W CARBON RES   |      |
| R752 | QRD161J-221  | 220 1/6W CARBON RES  |      |
| R753 | QRD161J-472  | 4.7K 1/6W CARBON RES |      |
| R754 | QRD161J-472  | 4.7K 1/6W CARBON RES |      |
| R755 | QRD161J-102  | 1K 1/6W CARBON RES   |      |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | BS   |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | EF   |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | EN   |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | G    |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | U    |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | US   |
| R756 | QRD167J-151  | 150 1/6W CARBON RES  | UT   |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | BS   |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | EF   |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | EN   |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | G    |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | U    |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | US   |
| R757 | QRD167J-511  | 510 1/6W CARBON RES  | UT   |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | BS   |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | EF   |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | EN   |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | G    |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | U    |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | US   |
| R758 | QRD167J-511  | 510 1/6W CARBON RES  | UT   |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | BS   |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | EF   |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | EN   |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | G    |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | U    |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | US   |
| R759 | QRD167J-680  | 68 1/6W CARBON RES   | UT   |
| R851 | QRD167J-562  | 5.6K 1/6W CARBON RES |      |
| R852 | QRD161J-124  | 120K 1/6W CARBON RES |      |
| R853 | QRD161J-112  | 1.1K 1/6W CARBON RES |      |
| R854 | QRD167J-113  | 11K 1/6W CARBON RES  |      |
| R855 | QRD167J-751  | 750 1/6W CARBON RES  |      |
| R856 | QRD161J-752  | 7.5K 1/6W CARBON RES |      |
| R857 | QRD167J-223  | 22K 1/6W CARBON RES  |      |
| R858 | QRD161J-392  | 3.9K 1/6W CARBON RES |      |
| R859 | QRD161J-363  | 36K 1/6W CARBON RES  | BS   |
| R859 | QRD161J-363  | 36K 1/6W CARBON RES  | EF   |
| R859 | QRD161J-363  | 36K 1/6W CARBON RES  | EN   |
| R859 | QRD161J-363  | 36K 1/6W CARBON RES  | G    |

## RESISTORS

| ITEM  | PART NUMBER    | DESCRIPTION           | AREA |
|-------|----------------|-----------------------|------|
| R859  | QRD161J-363    | 36K 1/6W CARBON RES   | U    |
| R859  | QRD161J-363    | 36K 1/6W CARBON RES   | US   |
| R859  | QRD161J-363    | 36K 1/6W CARBON RES   | UT   |
| R860  | QRD167J-332    | 3.3K 1/6W CARBON RES  |      |
| R861  | QRD167J-153    | 15K 1/6W CARBON RES   |      |
| R862  | QRD161J-752    | 7.5K 1/6W CARBON RES  |      |
| R863  | QRD161J-821    | 820 1/6W CARBON RES   |      |
| R871  | QRD161J-471    | 470 1/6W CARBON RES   |      |
| R872  | QRD161J-472    | 4.7K 1/6W CARBON RES  |      |
| R873  | QRD161J-472    | 4.7K 1/6W CARBON RES  |      |
| R874  | QRD161J-472    | 4.7K 1/6W CARBON RES  |      |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | BS   |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | EF   |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | EN   |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | G    |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | U    |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | US   |
| R901  | PTH61G30BD2R2N | FUSIBLE RE            | UT   |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | BS   |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | EF   |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | EN   |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | G    |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | U    |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | US   |
| R902  | PTH61G30BD2R2N | FUSIBLE RE            | UT   |
| R905  | QRD161J-222    | 2.2K 1/6W CARBON RES  |      |
| R907  | QRD161J-221    | 220 1/6W CARBON RES   |      |
| R909  | QRD161J-221    | 220 1/6W CARBON RES   |      |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | BS   |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | EF   |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | EN   |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | G    |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | U    |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | US   |
| R913  | QRD167J-152    | 1.5K 1/6W CARBON RES  | UT   |
| R915  | QRD161J-102    | 1K 1/6W CARBON RES    |      |
| R919  | QRD161J-821    | 820 1/6W CARBON RES   |      |
| R921  | QRD161J-103    | 10K 1/6W CARBON RES   |      |
| R922  | QRD161J-103    | 10K 1/6W CARBON RES   |      |
| R923  | QRD167J-152    | 1.5K 1/6W CARBON RES  |      |
| R924  | QRD167J-152    | 1.5K 1/6W CARBON RES  |      |
| R925  | QRD161J-123    | 12K 1/6W CARBON RES   |      |
| R926  | QRD161J-123    | 12K 1/6W CARBON RES   |      |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | BS   |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | EF   |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | EN   |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | G    |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | U    |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | US   |
| R927  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | UT   |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | BS   |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | EF   |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | EN   |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | G    |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | U    |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | US   |
| R928  | QRD167J-121    | 120 1/6W CARBON RES   | UT   |
| R931  | QRD161J-331    | 330 1/6W CARBON RES   |      |
| R932  | QRD161J-221    | 220 1/6W CARBON RES   |      |
| R934  | QRD167J-822    | 8.2K 1/6W CARBON RES  |      |
| R935  | QRD161J-683    | 68K 1/6W CARBON RES   |      |
| R936  | QRD161J-473    | 47K 1/6W CARBON RES   |      |
| R937  | QRD161J-473    | 47K 1/6W CARBON RES   |      |
| R938  | QRD161J-473    | 47K 1/6W CARBON RES   |      |
| R941  | QRD161J-123    | 12K 1/6W CARBON RES   |      |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | BS   |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | EF   |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | EN   |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | G    |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | U    |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | US   |
| R942  | QRZ0077-560    | 56 1/4W FUSIBLE RE    | UT   |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | BS   |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | EF   |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | EN   |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | G    |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | U    |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | US   |
| R943  | QRD167J-121    | 120 1/6W CARBON RES   | UT   |
| R944  | QRD161J-563    | 56K 1/6W CARBON RES   |      |
| RA251 | QRB119J-104    | 100K 1/10W NETWORK RE |      |
| RA252 | QRB139J-104    | 100K 1/10W RESISTOR   |      |
| VR381 | QVPA601-103A   | 10K TRIMMER RE        |      |

# XL-MC302C

## OTHERS

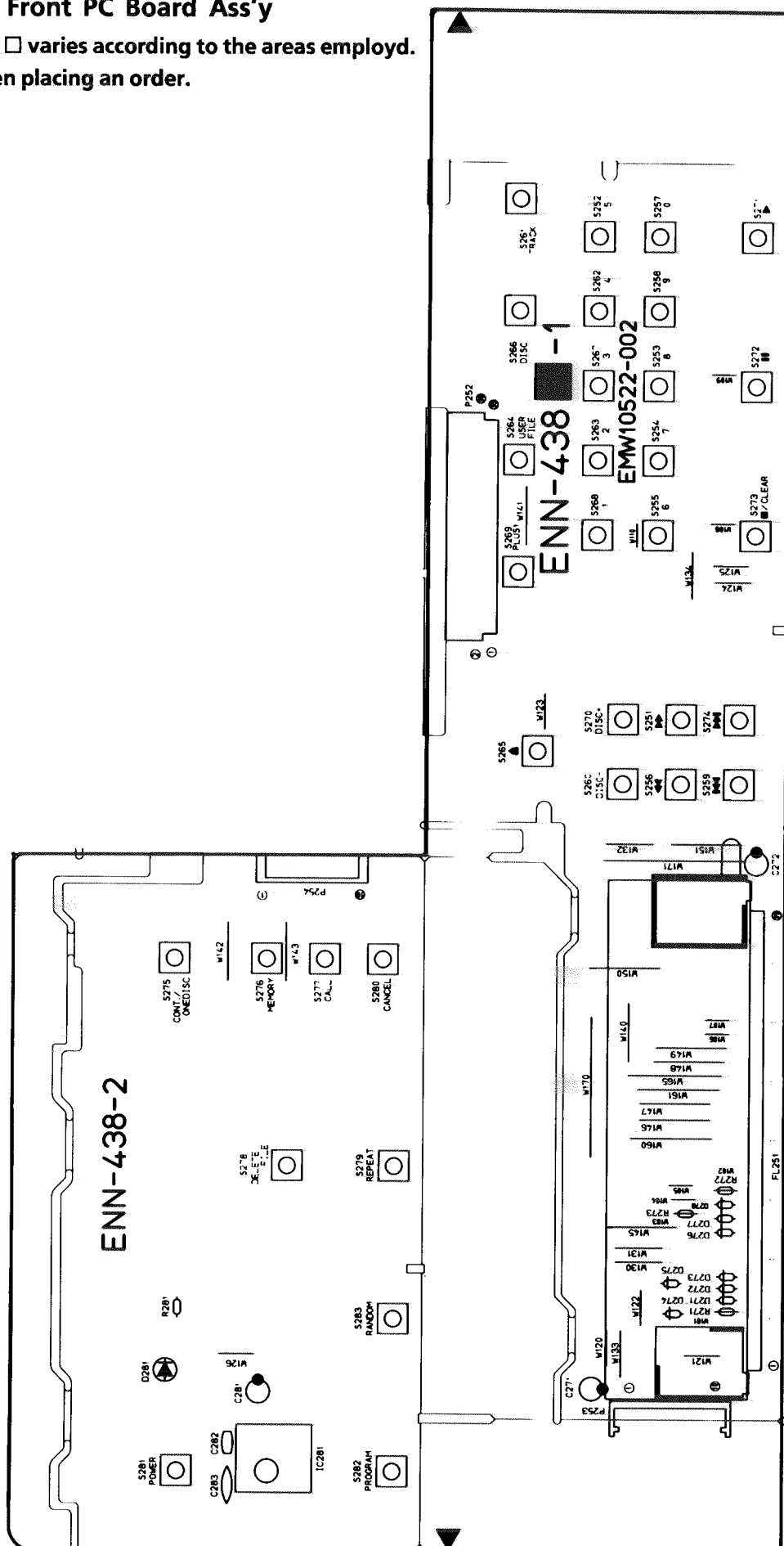
| ITEM    | PART NUMBER     | DESCRIPTION | AREA |
|---------|-----------------|-------------|------|
|         | EMW10521-002    | PRINTED BOA | EF   |
|         | EMW10521-002    | PRINTED BOA | EN   |
|         | EMW10521-002    | PRINTED BOA | G    |
|         | EMW10521-002    | PRINTED BOA | U    |
|         | EMW10521-002    | PRINTED BOA | US   |
|         | EMW10521-002    | PRINTED BOA | UT   |
|         | EMW10521-002BS  | PRINTED BOA | BS   |
|         | E3400-431       | FELT SPACER | BS   |
|         | E3400-431       | FELT SPACER | EF   |
|         | E3400-431       | FELT SPACER | EN   |
|         | E3400-431       | FELT SPACER | G    |
|         | E3400-431       | FELT SPACER | U    |
|         | E3400-431       | FELT SPACER | US   |
|         | E3400-431       | FELT SPACER | UT   |
|         | E70945-H35      | HEAT SINK   |      |
|         | QWE690-20RR     | VINYL WIRE  | BS   |
|         | QWE690-20RR     | VINYL WIRE  | EF   |
|         | QWE690-20RR     | VINYL WIRE  | EN   |
|         | QWE690-20RR     | VINYL WIRE  | G    |
|         | QWE690-20RR     | VINYL WIRE  | U    |
|         | QWE690-20RR     | VINYL WIRE  | US   |
|         | QWE690-20RR     | VINYL WIRE  | UT   |
|         | QWE881-10RR     | VINYL WIRE  | U    |
|         | QWE881-10RR     | VINYL WIRE  | UT   |
|         | QWE886-13RR     | VINYL WIRE  | U    |
|         | QWE886-13RR     | VINYL WIRE  | UT   |
|         | QWE888-14RR     | PIN WIRE    | U    |
|         | QWE888-14RR     | PIN WIRE    | UT   |
|         | SBSE30082       | SCREW       |      |
| J261    | QMS3501-020     | PIN JACK    |      |
| J301    | EMN00TV-217A    | PIN JACK    |      |
| J751    | EMN00YV-322A    | PIN JACK    |      |
| K304    | ENZ8101-007     | INDUCTOR    | BS   |
| K304    | ENZ8101-007     | INDUCTOR    | EF   |
| K304    | ENZ8101-007     | INDUCTOR    | EN   |
| K304    | ENZ8101-007     | INDUCTOR    | G    |
| K304    | ENZ8101-007     | INDUCTOR    | U    |
| K304    | ENZ8101-007     | INDUCTOR    | US   |
| K304    | ENZ8101-007     | INDUCTOR    | UT   |
| K305    | ENZ8101-007     | INDUCTOR    | BS   |
| K305    | ENZ8101-007     | INDUCTOR    | EF   |
| K305    | ENZ8101-007     | INDUCTOR    | EN   |
| K305    | ENZ8101-007     | INDUCTOR    | G    |
| K305    | ENZ8101-007     | INDUCTOR    | U    |
| K305    | ENZ8101-007     | INDUCTOR    | US   |
| K305    | ENZ8101-007     | INDUCTOR    | UT   |
| L261    | EQL4004-1R0     | INDUCTOR    |      |
| P251    | EMV7123-036     | CONNECT TER |      |
| P301    | EMV7122-004Z    | CONNECT TER | BS   |
| P301    | EMV7122-004Z    | CONNECT TER | EF   |
| P301    | EMV7122-004Z    | CONNECT TER | EN   |
| P301    | EMV7122-004Z    | CONNECT TER | G    |
| P301    | EMV7122-004Z    | CONNECT TER | U    |
| P301    | EMV7122-004Z    | CONNECT TER | US   |
| P301    | EMV7122-004Z    | CONNECT TER | UT   |
| P302    | EMV7122-005     | MALE CONNEC |      |
| P303    | EMV7122-103     | CONNECT TER |      |
| P551    | EMV7144-015     | F.P.C.PLUG  |      |
| P851    | EMV5109-006A    | CONNECT TER |      |
| P852    | EMV5109-005A    | MALE CONNEC |      |
| P901    | QMCB001-E02H    | AC SOCKET   | EF   |
| P901    | QMCB001-E02H    | AC SOCKET   | EN   |
| P901    | QMCB001-E02H    | AC SOCKET   | G    |
| P901    | QMCB001-E02H    | AC SOCKET   | U    |
| P901    | QMCB001-E02H    | AC SOCKET   | US   |
| P901    | QMCB001-E02H    | AC SOCKET   | UT   |
| P901    | QMCB001-E02HBS  | AC SOCKET   | BS   |
| S901    | QSS1L22-E01     | SLIDE SWITC | U    |
| S901    | QSS1L22-E01     | SLIDE SWITC | UT   |
| X251    | ECXA4R9-001N    | CRYSTAL     |      |
| X301    | ECX0169-344ENAT | CRYSTAL     |      |
| X451    | ECX0169-344EA   | CRYSTAL     |      |
| Δ CP901 | ICP-N10         | I.C.PROTECT | BS   |
| Δ CP901 | ICP-N10         | I.C.PROTECT | EF   |
| Δ CP901 | ICP-N10         | I.C.PROTECT | EN   |
| Δ CP901 | ICP-N10         | I.C.PROTECT | G    |
| Δ CP901 | ICP-N10         | I.C.PROTECT | U    |
| Δ CP901 | ICP-N10         | I.C.PROTECT | US   |
| Δ CP901 | ICP-N10         | I.C.PROTECT | UT   |
| EP852   | EMZ4002-001Z    | EARTH PLATE |      |
| EP853   | EMZ4002-001Z    | EARTH PLATE |      |
| EP854   | EMZ4002-001Z    | EARTH PLATE |      |
| EP951   | EMZ4002-001Z    | EARTH PLATE |      |
| EP952   | EMZ4002-001Z    | EARTH PLATE |      |
| FW301   | EWR34B-10LST    | FLAT WIRE A | BS   |
| FW301   | EWR34B-10LST    | FLAT WIRE A | EF   |
| FW301   | EWR34B-10LST    | FLAT WIRE A | EN   |
| FW301   | EWR34B-10LST    | FLAT WIRE A | G    |
| FW301   | EWR34B-10LST    | FLAT WIRE A | U    |
| FW301   | EWR34B-10LST    | FLAT WIRE A | US   |
| FW301   | EWR34B-10LST    | FLAT WIRE A | UT   |
| FW302   | EWR36B-10LST    | FLAT WIRE A | BS   |
| FW302   | EWR36B-10LST    | FLAT WIRE A | EF   |
| FW302   | EWR36B-10LST    | FLAT WIRE A | EN   |
| FW302   | EWR36B-10LST    | FLAT WIRE A | G    |
| FW302   | EWR36B-10LST    | FLAT WIRE A | U    |
| FW302   | EWR36B-10LST    | FLAT WIRE A | US   |
| FW302   | EWR36B-10LST    | FLAT WIRE A | UT   |
| FW303   | EWR33B-10LST    | FLAT WIRE A |      |
| FW911   | EWR38B-25LST    | FLAT WIRE A | BS   |

## OTHERS

| ITEM  | PART NUMBER  | DESCRIPTION | AREA |
|-------|--------------|-------------|------|
| FW911 | EWR38B-25LST | FLAT WIRE A | EF   |
| FW911 | EWR38B-25LST | FLAT WIRE A | EN   |
| FW911 | EWR38B-25LST | FLAT WIRE A | G    |
| FW911 | EWR38B-25LST | FLAT WIRE A | U    |
| FW911 | EWR38B-25LST | FLAT WIRE A | US   |
| FW911 | EWR38B-25LST | FLAT WIRE A | UT   |
| FW912 | EWR36B-25LST | FLAT WIRE A |      |
| JT301 | EMV7122-103  | CONNECT TER | BS   |
| JT301 | EMV7122-103  | CONNECT TER | EF   |
| JT301 | EMV7122-103  | CONNECT TER | EN   |
| JT301 | EMV7122-103  | CONNECT TER | G    |
| JT301 | EMV7122-103  | CONNECT TER | U    |
| JT301 | EMV7122-103  | CONNECT TER | US   |
| JT301 | EMV7122-103  | CONNECT TER | UT   |
| JT302 | EMV7122-103  | CONNECT TER | BS   |
| JT302 | EMV7122-103  | CONNECT TER | EF   |
| JT302 | EMV7122-103  | CONNECT TER | EN   |
| JT302 | EMV7122-103  | CONNECT TER | G    |
| JT302 | EMV7122-103  | CONNECT TER | U    |
| JT302 | EMV7122-103  | CONNECT TER | US   |
| JT302 | EMV7122-103  | CONNECT TER | UT   |
| JT901 | EMV7122-103  | CONNECT TER |      |
| JT902 | EMV7122-103  | CONNECT TER |      |
| JT903 | EMV7122-004Z | CONNECT TER |      |
| JT904 | EMV7122-004Z | CONNECT TER |      |
| JT905 | EMV7122-103  | CONNECT TER |      |
| JT906 | EMV7122-103  | CONNECT TER |      |
| SP251 | VYH7653-003  | I.C.PROTECT |      |
| SP301 | VYH7653-002  | I.C.SOCKET  |      |
| SP551 | VYH7653-002  | I.C.SOCKET  |      |
| SP851 | VYH7653-002  | I.C.SOCKET  |      |
| SP852 | VYH7653-004  | I.C.PROTECT |      |

■ ENN-438 □ Front PC Board Ass'y

Note : ENN-437 □ varies according to the areas employd.  
See note (1) when placing an order.



# XL-MC302C

## Note (1)

| PC Board Ass'y      | Version | Designated Areas   |
|---------------------|---------|--------------------|
| ENN-438 <b>A</b> BS | EF      | Continental Europe |
|                     | EN      | Scandinavia        |
|                     | G       | Germany            |
|                     | U       | Universal Type     |
|                     | US      | Singapore          |
| ENN-438 <b>B</b>    | UT      | Taiwan             |
|                     | BS      | the U.K.           |

## I. C. S.

| ITEM  | PART NUMBER | DESCRIPTION       | AREA |
|-------|-------------|-------------------|------|
| IC281 | GP1U571X    | INFRARED DE SHARP |      |

## DIODES

| ITEM | PART NUMBER     | DESCRIPTION    | AREA |
|------|-----------------|----------------|------|
| D271 | 1SS133          | SI. DIODE ROHM |      |
| D272 | 1SS133          | SI. DIODE ROHM |      |
| D273 | 1SS133          | SI. DIODE ROHM |      |
| D274 | 1SS133          | SI. DIODE ROHM |      |
| D275 | 1SS133          | SI. DIODE ROHM |      |
| D276 | 1SS133          | SI. DIODE ROHM |      |
| D277 | 1SS133          | SI. DIODE ROHM |      |
| D278 | 1SS133          | SI. DIODE ROHM |      |
| D281 | SLA-580LT70F124 | L.E.D.         | BS   |
| D281 | SLH-56VC50F130  | L.E.D.         | EF   |
| D281 | SLH-56VC50F130  | L.E.D.         | EN   |
| D281 | SLH-56VC50F130  | L.E.D.         | G    |
| D281 | SLH-56VC50F130  | L.E.D.         | U    |
| D281 | SLH-56VC50F130  | L.E.D.         | US   |
| D281 | SLH-56VC50F130  | L.E.D.         | UT   |

## CAPACITORS

| ITEM | PART NUMBER | DESCRIPTION             | AREA |
|------|-------------|-------------------------|------|
| C271 | QER51HM-475 | 4.7MF 50V AL E. CAPAC   |      |
| C272 | QER51HM-475 | 4.7MF 50V AL E. CAPAC   |      |
| C281 | QER50JM-476 | 47MF 6.3V AL E. CAPAC   |      |
| C282 | QCHB1EZ-223 | 0.022MF 25V CER. CAPACI |      |

## RESISTORS

| ITEM | PART NUMBER | DESCRIPTION         | AREA |
|------|-------------|---------------------|------|
| R281 | QRD161J-331 | 330 1/6W CARBON RES |      |

## OTHERS

| ITEM  | PART NUMBER   | DESCRIPTION                  | AREA |
|-------|---------------|------------------------------|------|
|       | EMW10522-002A | PRINTED BOA                  | BS   |
|       | EMW10522-002A | PRINTED BOA                  | EF   |
|       | EMW10522-002A | PRINTED BOA                  | EN   |
|       | EMW10522-002A | PRINTED BOA                  | G    |
|       | EMW10522-002A | PRINTED BOA                  | U    |
|       | EMW10522-002A | PRINTED BOA                  | US   |
|       | EMW10522-002A | PRINTED BOA                  | UT   |
|       | E3400-439     | FELT SPACER                  |      |
|       | E75819-001    | SUPPORT HOL                  |      |
|       | E75820-001    | SUPPORT HOL                  |      |
| P252  | EMV7123-036R  | CONNECT TER                  |      |
| P253  | EMV5120-010   | MALE CONNec                  |      |
| P254  | EMV7120-010   | MALE CONNec                  |      |
| S251  | ESP0001-023M  | TACT SWITCH (▶▶)             |      |
| S252  | ESP0001-023M  | TACT SWITCH (5)              |      |
| S253  | ESP0001-023M  | TACT SWITCH (8)              |      |
| S254  | ESP0001-023M  | TACT SWITCH (7)              |      |
| S255  | ESP0001-023M  | TACT SWITCH (6)              |      |
| S256  | ESP0001-023M  | TACT SWITCH (◀◀)             |      |
| S257  | ESP0001-023M  | TACT SWITCH (0)              |      |
| S258  | ESP0001-023M  | TACT SWITCH (9)              |      |
| S259  | ESP0001-023M  | TACT SWITCH (MM)             |      |
| S260  | ESP0001-023M  | TACT SWITCH (DISC --)        |      |
| S261  | ESP0001-023M  | TACT SWITCH (TRACK)          |      |
| S262  | ESP0001-023M  | TACT SWITCH (4)              |      |
| S263  | ESP0001-023M  | TACT SWITCH (2)              |      |
| S264  | ESP0001-023M  | TACT SWITCH (USER FILE)      |      |
| S265  | ESP0001-023M  | TACT SWITCH (▲)              |      |
| S266  | ESP0001-023M  | TACT SWITCH (DISC)           |      |
| S267  | ESP0001-023M  | TACT SWITCH (3)              |      |
| S268  | ESP0001-023M  | TACT SWITCH (1)              |      |
| S269  | ESP0001-023M  | TACT SWITCH (PLUS 1)         |      |
| S270  | ESP0001-023M  | TACT SWITCH (DISC +)         |      |
| S271  | ESP0001-023M  | TACT SWITCH (▶)              |      |
| S272  | ESP0001-023M  | TACT SWITCH (■)              |      |
| S273  | ESP0001-023M  | TACT SWITCH (■/CLEAR)        |      |
| S274  | ESP0001-023M  | TACT SWITCH (▶▶)             |      |
| S275  | ESP0001-023M  | TACT SWITCH (CONT./ONE DISC) |      |
| S276  | ESP0001-023M  | TACT SWITCH (MEMORY)         |      |
| S277  | ESP0001-023M  | TACT SWITCH (CALL)           |      |
| S278  | ESP0001-023M  | TACT SWITCH (DELETE FILE)    |      |
| S279  | ESP0001-023M  | TACT SWITCH (REPEAT)         |      |
| S280  | ESP0001-023M  | TACT SWITCH (CANCEL)         |      |
| S281  | ESP0001-023M  | TACT SWITCH (POWER)          |      |
| S282  | ESP0001-023M  | TACT SWITCH (PROGRAM)        |      |
| S283  | ESP0001-023M  | TACT SWITCH (RANDOM)         |      |
| FL251 | ELU0001-200   | FLUORESCENT                  |      |

# XL-MC302M

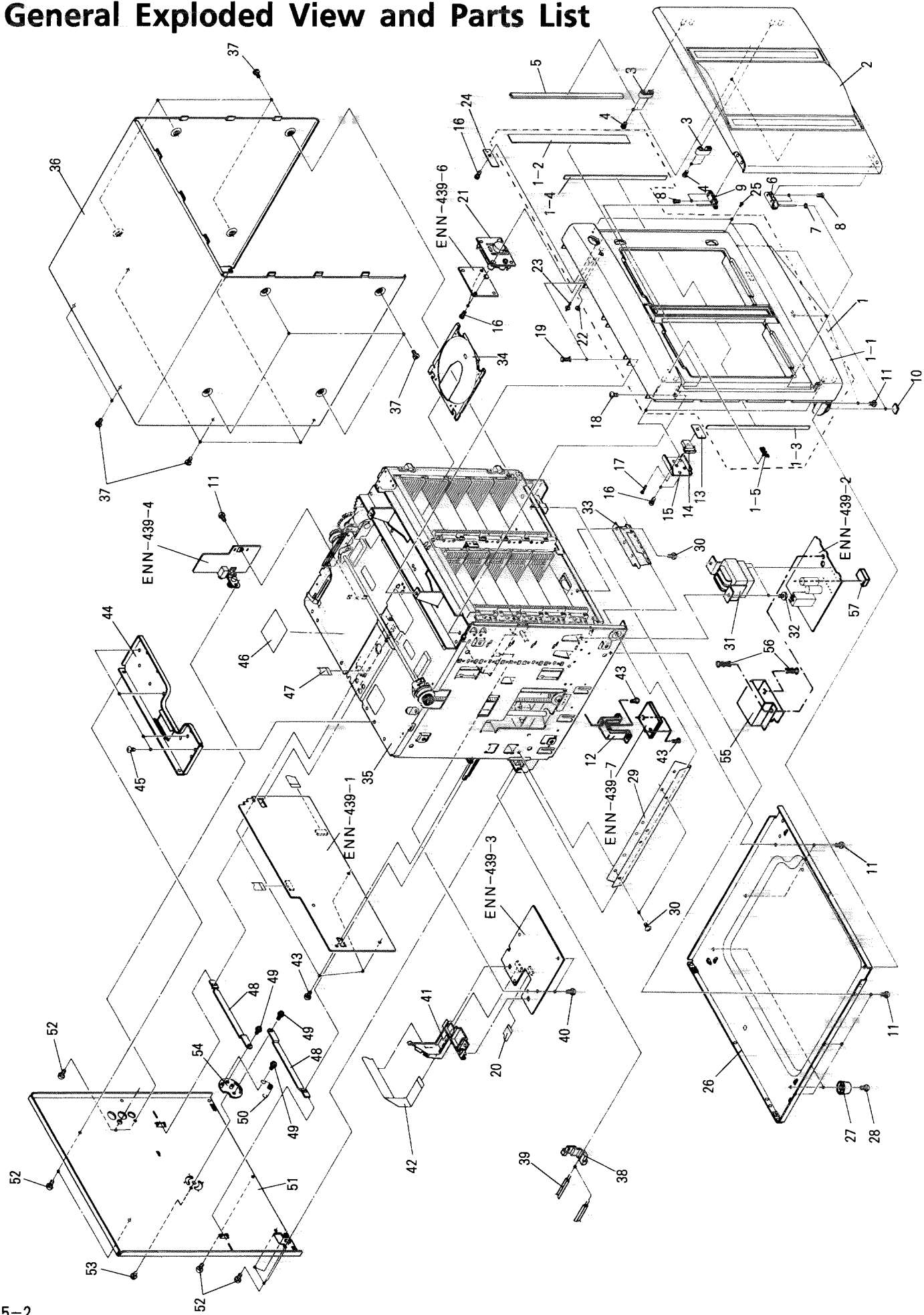
## <Parts List>

**Note :** All printed circuit boards and its assemblies are not available as service parts.

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| ■ ENN-393 <input checked="" type="checkbox"/> Mecha Switch PC Board Ass'y ..... | 5 - 16 |
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General Exploded View and Parts List



Symbol No.

|   |   |   |   |
|---|---|---|---|
| M | 3 | M | M |
|---|---|---|---|

**Parts List**

| Item | Part Number     | Part Name              | Q'ty | Description  | Area       |
|------|-----------------|------------------------|------|--------------|------------|
| 1    | EFP-XLMC302MJ(S | F.PANEL ASSY           | 1    |              |            |
| 1-1  | E102783-011ST   | FRONT PANEL            | 1    |              |            |
| 1-2  | E208017-003     | WINDOW SCREEN          | 1    |              |            |
| 1-3  | E308770-001     | NUMBER PLATE           | 1    |              |            |
| 1-4  | E308770-002     | NUMBER PLATE           | 1    |              |            |
| 1-5  | E406971-221     | JVC MARK               | 1    |              |            |
| 2    | E102785-004     | CD DOOR                | 1    |              |            |
| 3    | E407847-002     | HOOK                   | 2    |              |            |
| 4    | SPSF2608M       | TAPPING SCREW          | 4    |              |            |
| 5    | E408068-001     | SPACER                 | 2    |              |            |
| 6    | E308783-002     | DOOR BRACKET           | 1    |              |            |
| 7    | Q03093-814      | POLY WASHER            | 1    |              |            |
| 8    | SHSP2606M       | SCREW                  | 4    |              |            |
| 9    | E308783-001     | DOOR BRACKET           | 1    |              |            |
| 10   | E406855-008     | SPACER                 | 2    |              |            |
| 11   | SBSG3008M       | TAPPING SCREW          | 10   |              | U,UT       |
| 12   | E408240-001     | TRANSFORMER BRACKET    | 1    |              |            |
| 13   | E407877-002     | SPRING                 | 2    |              |            |
| 14   | E407862-001     | HINGE HOLDER           | 2    |              |            |
| 15   | E407861-001     | HINGE BRACKET          | 2    |              |            |
| 16   | SDSF2608Z       | SCREW                  | 7    |              |            |
| 17   | SPSP2610Z       | SCREW                  | 2    |              |            |
| 18   | GBSG3008Z       | TAPPING SCREW          | 1    |              |            |
| 19   | E48729-002      | PLASTIC RIVET          | 2    |              |            |
| 20   | EWR615M-10BB-X  | FLAT WIRE ASSY         | 1    |              |            |
| 21   | E308735-005ST   | PUSH BUTTON            | 1    |              |            |
| 22   | E406686-001     | C.D INDICATOR          | 1    |              |            |
| 23   | E407901-001     | PUSH ROD               | 1    |              |            |
| 24   | E407902-002     | SPRING                 | 1    |              |            |
| 25   | E69897-002      | RUBBER CUSHION         | 2    |              |            |
| 26   | E102782-001     | CHASSIS BASE           | 1    |              | BS         |
| 27   | E47227-010      | FOOT ASSY              | 2    |              |            |
| 28   | SBSG3010Z       | TAPPING SCREW          | 2    |              |            |
| 29   | E308895-001     | PROTECT SHEET          | 1    |              |            |
| 30   | GBSG3008Z       | TAPPING SCREW          | 3    |              |            |
| 31   | ETP1010-59EA    | POWER TRANSFORMER      | 1    |              | EF,EN,G,US |
| 32   | ETP1010-59EABS  | POWER TRANSFORMER      | 1    |              | BS         |
| 33   | ETP1010-59LA    | POWER TRANSFORMER      | 1    |              | U,UT       |
| 34   | E65389-002      | SPECIAL SCREW          | 2    |              |            |
| 35   | E308894-001     | PROTECTOR COVER        | 1    |              |            |
| 36   | E102740-002     | CD TRAY                | 100  |              |            |
| 37   | -----           | CHANGER MECHANISM ASSY | 1    | See page 5-5 |            |
| 38   | E102789-003     | METAL COVER            | 1    |              |            |
| 39   | SDSG3008M       | TAPPING SCREW          | 14   |              |            |
| 40   | QHS3771-108     | CORD STOPPER           | 1    |              | Except BS  |
| 41   | QHS3771-108BS   | P.W.BOARD STOPPER      | 1    |              | BS         |
| 42   | QMP3900-250     | POWER CORD             | 1    |              | EF,EN,G,US |
| 43   | QMP5530-250BS   | POWER CORD             | 1    |              | BS         |
| 44   | QMP7520-250     | POWER CORD             | 1    |              | U,UT       |
| 45   | SBSF2608Z       | TAPPING SCREW          | 2    |              |            |
| 46   | E308717-002     | WIRE HOLDER            | 1    |              |            |
| 47   | EWpz01-003      | FFC CABLE              | 1    |              |            |
| 48   | SBSG3008Z       | TAPPING SCREW          | 4    |              |            |
| 49   | SBSG3008Z       | TAPPING SCREW          | 7    |              |            |
| 50   | E208031-002     | REAR BRACKET           | 1    |              | U,UT       |

# XL-MC302M

|  | Item | Part Number  | Part Name       | Q'ty | Description | Area          |
|----------------------------------------------------------------------------------|------|--------------|-----------------|------|-------------|---------------|
|                                                                                  | 45   | SBST3006Z    | TAPPING SCREW   | 4    |             |               |
|                                                                                  | 46   | E406507-001  | CAUTION LABEL   | 1    |             |               |
|                                                                                  | 47   | EWR115M-17BB | FFC CABLE       | 1    |             |               |
|                                                                                  | 48   | E308772-001  | LOCK PLATE      | 2    |             |               |
|                                                                                  | 49   | E72405-001   | SPECIAL SCREW   | 3    |             |               |
|                                                                                  | 50   | E407932-001  | TORSION SPRING  | 1    |             |               |
|                                                                                  | 51   | E103017-011  | REAR PANEL      | 1    |             | BS,EF,EN,G,US |
|                                                                                  |      | E103017-012  | REAR PANEL      | 1    |             | U,UT          |
|                                                                                  | 52   | E73273-006   | SPECIAL SCREW   | 9    |             |               |
|                                                                                  | 53   | E72405-002   | SPECIAL SCREW   | 1    |             |               |
|                                                                                  | 54   | E308773-001  | LOCK KNOB       | 1    |             |               |
|                                                                                  | 55   | E309136-001  | PROTECTOR COVER | 1    |             | BS,EF,EN,G    |
|                                                                                  | 56   | E48729-008   | PLASTIC RIVET   | 2    |             | BS,EF,EN,G    |
|                                                                                  | 57   | E306805-042  | SPACER          | 1    |             |               |
|                                                                                  | -    | E309383-007  | RATING LABEL    | 1    |             | UT            |
|                                                                                  | -    | E408271-001  | RATING LABEL    | 1    |             | U,UT          |
|                                                                                  | -    | E408450-001  | RATING LABEL    | 1    |             | BS,EF,EN,G    |
|                                                                                  | -    | E61029-005   | NUMBER LABEL    | 1    |             |               |
|                                                                                  | -    | E70027-001   | LABEL           | 1    |             | EN            |
|                                                                                  | -    | E70419-003F  | MARK LABEL      | 1    |             | G             |
|                                                                                  | -    | E70891-001   | CLASS 1 LABEL   | 1    |             |               |
|                                                                                  | -    | QZL1007-001  | BEAB LABEL      | 1    |             | BS            |
|                                                                                  | -    | QZL1031-101  | LABEL           | 1    |             | EF            |

 : Safety Parts

## The Marks for Designated Areas

BS .... the U.K.      EF .... Continental Europe      EN .. Scandinavia      G .... Germany  
 U ..... Universal Type      US .... Singapore      UT .. Taiwan      No mark indicates all area.

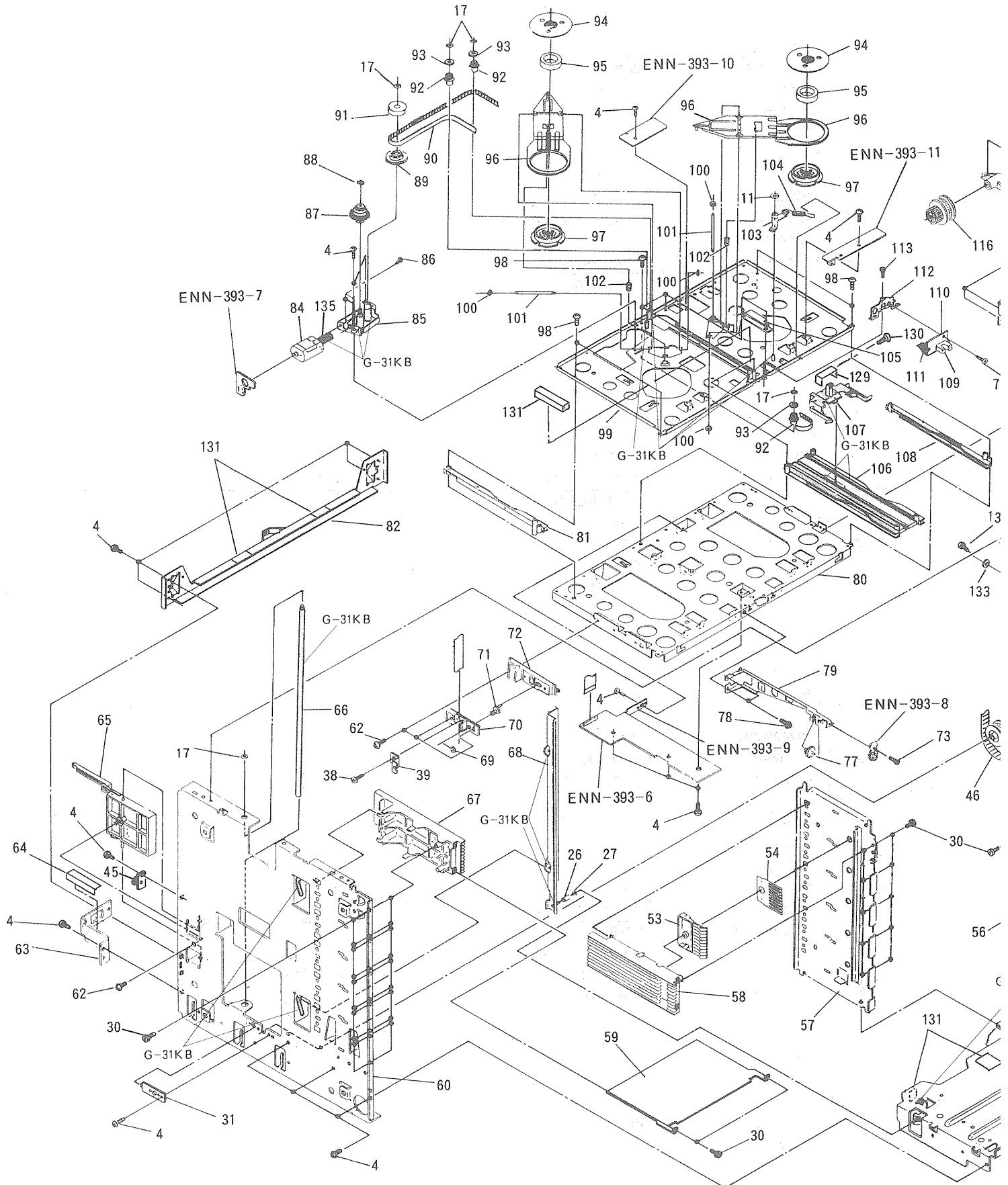


# Changer Mechanism Ass'y and Parts List

■ Grease Point

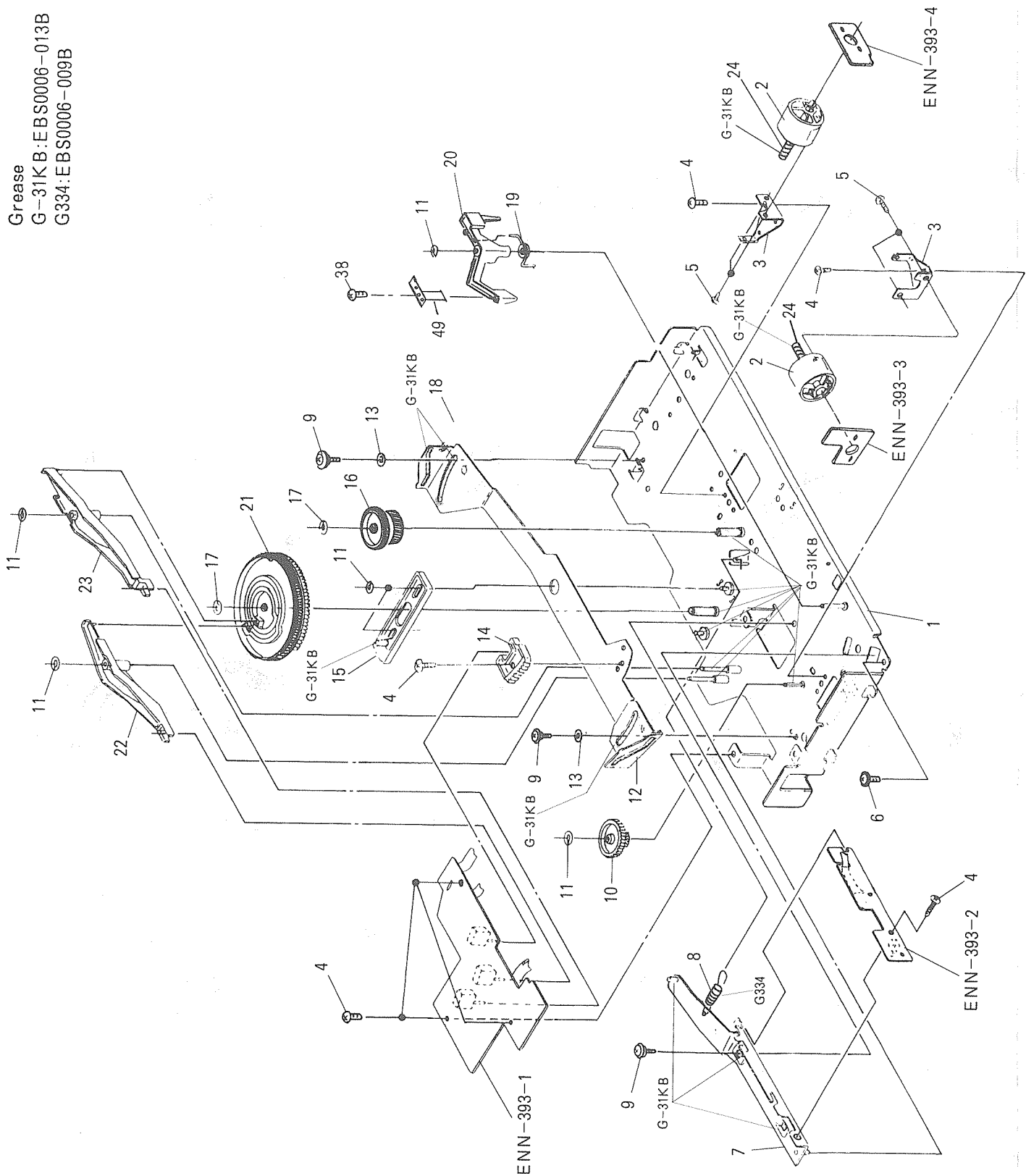
Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 4 | M | M |
|---|---|---|---|





Grease  
G-31KB:EBS0006-013B  
G334:EBS0006-009B



# XL-MC302M

## Parts List (Changer Mechanism Ass'y)

Symbol No.

M 4 M M

| Item | Part Number    | Part Name         | Q'ty | Description   | Area |
|------|----------------|-------------------|------|---------------|------|
| 1    | E207894-003    | MECHA BASE ASSY   | 1    |               |      |
| 2    | RF-500TB-12560 | DC MOTOR          | 2    |               |      |
| 3    | E407647-001    | MOTOR BRACKET     | 2    |               |      |
| 4    | SBST2606Z      | TAPPING SCREW     | 59   |               |      |
| 5    | SPSK2625Z      | SCREW             | 3    |               |      |
| 6    | GBST3006Z      | SCREW             | 1    |               |      |
| 7    | E308585-001    | LINK ASSY         | 1    |               |      |
| 8    | E407706-009    | SPRING            | 1    |               |      |
| 9    | E74727-006     | SPECIAL SCREW     | 2    |               |      |
| 10   | E407675-001    | CAM GEAR          | 1    |               |      |
| 11   | WDL216035-2    | WASHER            | 6    |               |      |
| 12   | E207901-002    | STOPPER LINK      | 1    |               |      |
| 13   | Q03093-836     | PLASTIC WASHER    | 1    |               |      |
| 14   | E308592-001    | SUB RACK          | 1    |               |      |
| 15   | E407679-02     | LOCK BRACKET      | 1    |               |      |
| 16   | E308600-001    | WHEEL GEAR        | 1    |               |      |
| 17   | WDL418050      | WASHER            | 7    |               |      |
| 18   | REE4000X       | RING              | 1    |               |      |
| 19   | E407708-004    | TORSION SPRING    | 1    |               |      |
| 20   | E308607-004    | SWITCH LEVER      | 1    |               |      |
| 21   | E207908-001    | MAIN GEAR         | 1    |               |      |
| 22   | E308597-001    | SWITCH LEVER      | 1    | (D)           |      |
| 23   | E308598-001    | SWITCH LEVER      | 1    | (P)           |      |
| 24   | E407224-001    | WORM GEAR         | 2    |               |      |
| 25   | E308579-002    | TRAY STOPPER      | 1    | RIGHT         |      |
| 26   | E407999-001    | LOADING ROLLER    | 2    | (B)           |      |
| 27   | WDL123025-4    | WASHER            | 2    |               |      |
| 28   | E207905-002    | TRAY RAIL         | 1    | (4)           |      |
| 29   | E102738-003    | SIDE PANEL        | 1    | RIGHT         |      |
| 30   | SDSF2606M      | TAPPING SCREW     | 24   |               |      |
| 31   | E407652-001    | SHAFT STOPPER     | 2    |               |      |
| 32   | E308885-001    | ELEVATOR ARM      | 1    |               |      |
| 33   | E75871-002     | SCREW             | 2    |               |      |
| 34   | E308604-002    | DRIVE GEAR        | 1    | (E)           |      |
| 35   | E308603-001    | CAM GEAR          | 1    | (D)           |      |
| 36   | E407706-007    | SPRING            | 1    |               |      |
| 37   | E408009-001    | WASHER            | 1    |               |      |
| 38   | SBSF2606Z      | TAPPING SCREW     | 5    |               |      |
| 39   | E407655-001    | LOCK BRACKET      | 2    |               |      |
| 40   | E308599-002    | SHAFT GUIDE       | 1    | RIGHT         |      |
| 41   | E407681-003    | GUIDE BUSHING     | 1    |               |      |
| 42   | E407701-004    | ELEVATOR SHAFT    | 1    | RIGHT         |      |
| 43   | E407682-001    | SPECIAL SCREW     | 2    |               |      |
| 44   | E308757-001    | LOCK LEVER        | 1    | RIGHT         |      |
| 45   | E68587-002     | P.W.BOARD BRACKET | 2    |               |      |
| 46   | SB-236XL025UK  | TIMING BELT       | 2    |               |      |
| 47   | E407673-002    | TIMING GEAR ASSY  | 2    |               |      |
| 48   | E407704-002    | ELEVATOR SHAFT    | 1    | (D)           |      |
| 49   | E408161-001    | LEAF SPRING       | 1    |               |      |
| 50   | EWS266-B410    | SOCKET WIRE ASSY  | 1    | 6PIN          |      |
| 51   | -----          | CD MECHANISM ASSY | 1    | See page 5-11 |      |
| 52   | E65923-003     | TAPPING SCREW     | 1    |               |      |
| 53   | E308593-002    | LOCK SPRING       | 2    |               |      |
| 54   | E407648-001    | LEAF SPRING       | 2    |               |      |
| 55   | E207904-002    | TRAY RAIL         | 1    | (3)           |      |
| 56   | E207896-004    | CENTER PANEL      | 1    | RIGHT         |      |
| 57   | E207895-004    | CENTER PANEL      | 1    | LEFT          |      |
| 58   | E207903-002    | TRAY RAIL         | 1    | (2)           |      |
| 59   | E309324-001    | TRAY BRACKET      | 10   |               |      |
| 60   | E102737-003    | SIDE PANEL        | 1    | LEFT          |      |



| ⚠ | Item | Part Number    | Part Name          | Q'ty | Description | Area |
|---|------|----------------|--------------------|------|-------------|------|
|   | 61   | E207907-003    | PICK-UP BASE       | 1    |             |      |
|   | 62   | SBST2610Z      | SCREW              | 5    |             |      |
|   | 63   | E407846-001    | STOPPER BRACKET    | 1    |             |      |
|   | 64   | E65778-005     | SPACER             | 1    |             |      |
|   | 65   | E308756-001    | LOCK LEVER         | 1    | LEFT        |      |
|   | 66   | E407702-001    | ELEVATOR SHAFT     | 1    | LEFT        |      |
|   | 67   | E207902-002    | TRAY RAIL          | 1    | (1)         |      |
|   | 68   | E308577-002    | TRAY STOPPER       | 1    | LEFT        |      |
|   | 69   | E407853-002    | 'E' WASHER         | 1    |             |      |
|   | 70   | E308606-001    | BELT HOLDER        | 1    | LEFT        |      |
|   | 71   | E407705-001    | MOUNT STUD         | 1    |             |      |
|   | 72   | E308605-001    | SHAFT GUIDE        | 1    | LEFT        |      |
|   | 73   | SPSP2006M      | SCREW              | 1    |             |      |
|   | 74   | E407653-001    | LOCK BRACKET       | 1    |             |      |
|   | 75   | E308584-005    | LOCK BASE          | 1    |             |      |
|   | 76   | E407664-003    | LOCK LEVER         | 2    |             |      |
|   | 77   | E407677-002    | DRIVE ROLLER       | 1    |             |      |
|   | 78   | SBST2004Z      | TAPPING SCREW      | 3    |             |      |
|   | 79   | E308583-002    | LED BRACKET        | 1    |             |      |
|   | 80   | E207899-002    | BOTTOM PLATE       | 1    |             |      |
|   | 81   | E308595-002    | ELEVATOR RAIL      | 1    | LEFT        |      |
|   | 82   | E207900-003    | REAR BRACKET       | 1    |             |      |
|   | 83   | E406871-001    | SPRING             | 1    |             |      |
|   | 84   | FF-130SH-11340 | DC MOTOR           | 1    |             |      |
|   | 85   | E407893-002    | MOTOR BRACKET ASSY | 1    |             |      |
|   | 86   | SPSK2025K      | SCREW              | 2    |             |      |
|   | 87   | E407666-002    | WORM WHEEL         | 1    |             |      |
|   | 88   | WDL316035-2    | WASHER             | 1    |             |      |
|   | 89   | E407892-001    | TIMING GEAR        | 1    | (C)         |      |
|   | 90   | SB-270TN15-3K  | TIMING BELT        | 1    |             |      |
|   | 91   | E407920-002    | FLANGE             | 1    |             |      |
|   | 92   | E407667-001    | TIMING GEAR        | 3    |             |      |
|   | 93   | E407668-001    | FLANGE             | 3    |             |      |
|   | 94   | E306836-003    | YOKE PLATE         | 1    |             |      |
|   | 95   | E74897-002     | MAGNET             | 1    |             |      |
|   | 96   | E308581-003    | CLAMPER BRACKET    | 1    |             |      |
|   | 97   | E306835-331    | CD CLAMPER         | 1    |             |      |
|   | 98   | SBST2614Z      | TAPPING SCREW      | 8    |             |      |
|   | 99   | E207897-003    | UPPER PLATE        | 1    | TOP         |      |
|   | 100  | WDL214035-2    | WASHER             | 4    |             |      |
|   | 101  | E407699-002    | CLAMP SHAFT        | 2    |             |      |
|   | 102  | E407707-001    | SPRING             | 2    |             |      |
|   | 103  | E407669-001    | SWITCH LEVER       | 1    |             |      |
|   | 104  | E407706-001    | SPRING             | 1    |             |      |
|   | 105  | E407658-001    | LEAF SPRING        | 1    |             |      |
|   | 106  | E207906-002    | ELEVATOR RAIL      | 1    | CENTER      |      |
|   | 107  | E308596-003    | HOOK               | 1    |             |      |
|   | 108  | E308594-002    | ELEVATOR RAIL      | 1    | RIGHT       |      |
|   | 109  | GP1A53HR       | I.C                | 1    | PH804       |      |
|   | 110  | EMW20022-003   | PRINTED BOARD      | 1    |             |      |
|   | 111  | EWS266-A208    | SOCKET WIRE ASSY   | 1    | BC874       |      |
|   | 112  | E308590-002    | SENSOR BRACKET     | 1    |             |      |
|   | 113  | SPSP2016Z      | SCREW              | 1    |             |      |
|   | 114  | E102739-003    | BRACKET            | 1    | TOP         |      |
|   | 115  | SBST2604Z      | SCREW              | 2    |             |      |
|   | 116  | E407673-003    | TIMING GEAR ASSY   | 1    |             |      |
|   | 117  | E407671-001    | SHAFT BUSHING      | 1    |             |      |
|   | 118  | E407703-001    | GEAR SHAFT         | 1    | (U)         |      |
|   | 119  | E208026-001    | TOP BRACKET        | 1    |             |      |
|   | 120  | RF-370CA-17315 | DC MOTOR           | 1    |             |      |

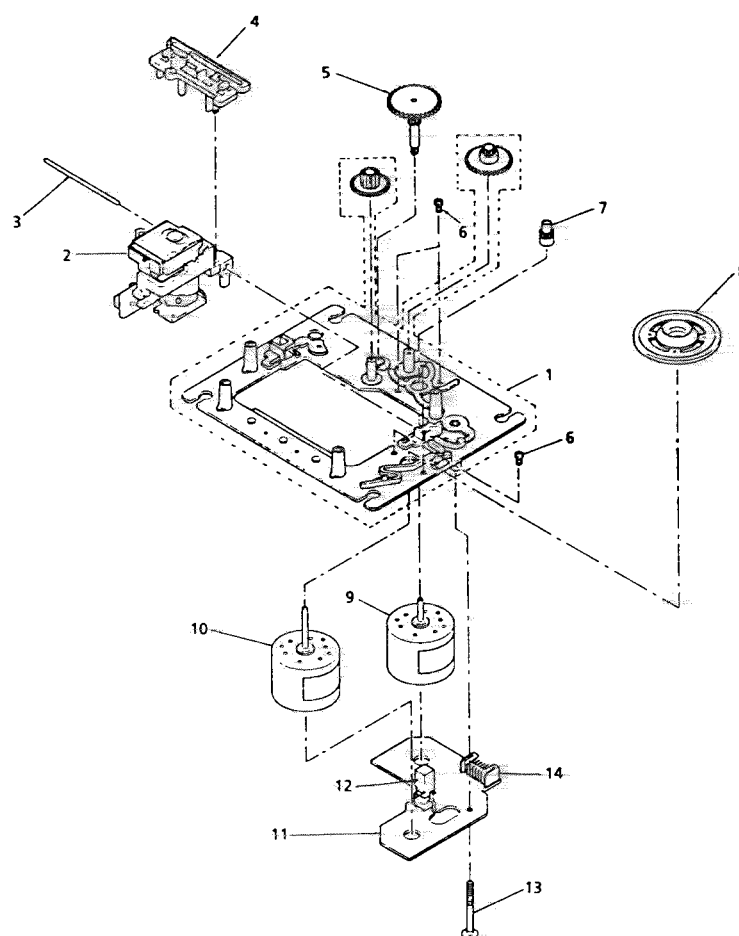
## XL-MC302M

|  | Item | Part Number   | Part Name      | Q'ty | Description | Area |
|----------------------------------------------------------------------------------|------|---------------|----------------|------|-------------|------|
|                                                                                  | 121  | E72376-001    | MOTOR PULLEY   | 1    |             |      |
|                                                                                  | 122  | E308588-002   | GEAR BASE ASSY | 1    |             |      |
|                                                                                  | 123  | SDSP3003Z     | SCREW          | 1    |             |      |
|                                                                                  | 124  | E407670-001   | CAM GEAR       | 1    | (B)         |      |
|                                                                                  | 125  | WDL417050     | WASHER         | 1    |             |      |
|                                                                                  | 126  | E407676-001   | CAM GEAR       | 1    | (C)         |      |
|                                                                                  | 127  | E75985-001    | DRIVE GEAR     | 1    | (1)         |      |
|                                                                                  | 128  | E75950-002    | REEL BELT      | 1    |             |      |
|                                                                                  | 129  | E408105-001   | ROCK BRACKET   | 1    |             |      |
|                                                                                  | 130  | SDSF2004Z     | SCREW          | 1    |             |      |
|                                                                                  | 131  | E306805-125   | SPECER         | 3    |             |      |
|                                                                                  | 132  | E406294-002   | INSULATOR      | 1    |             |      |
|                                                                                  | 133  | E407672-001   | LOADING ROLLER | 1    |             |      |
|                                                                                  | 134  | E408750-001   | ROLLER STUD    | 1    |             |      |
|                                                                                  | 135  | E407224-001ST | WORM           | 1    |             |      |

# CD Mechanism Ass'y and Parts List

Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 2 | M | M |
|---|---|---|---|



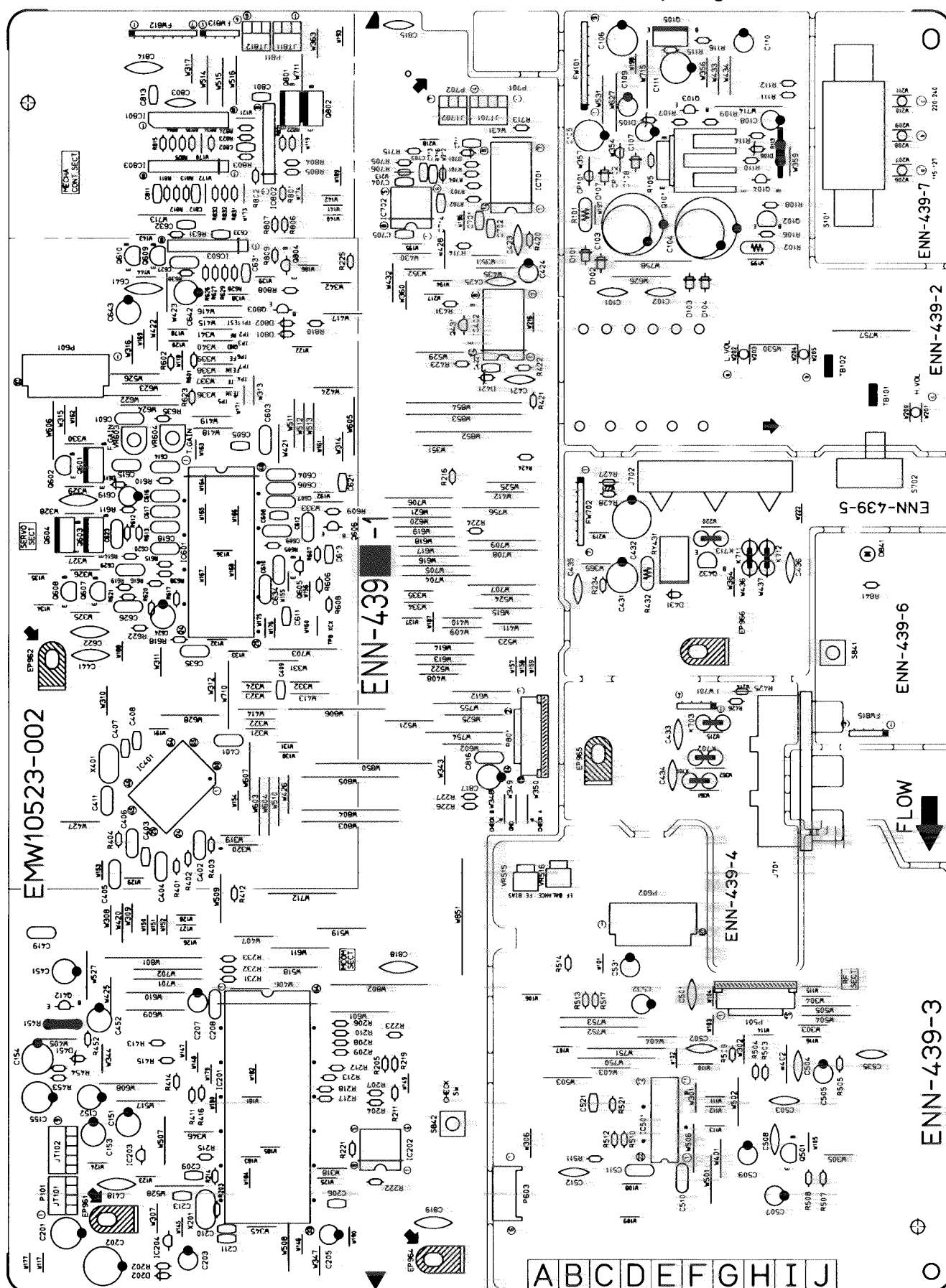
## ■ Parts List ( CD Mechanism Ass'y )

| Item | Part Number     | Part Name           | Q'ty | Description | Area |
|------|-----------------|---------------------|------|-------------|------|
| 1    | EPB-002A        | MECHANISM BASE ASSY | 1    |             |      |
| 2    | OPTIMA-6S       | PICK UP ASSY        | 1    |             |      |
| 3    | E407782-001     | SHAFT               | 1    |             |      |
| 4    | E307746-001     | CD RACK             | 1    |             |      |
| 5    | EPB-003A        | GEAR (3)            | 1    |             |      |
| 6    | SDSP2003N       | SCREW               | 4    |             |      |
| 7    | E406750-001     | PINION GEAR         | 1    |             |      |
| 8    | E75807-302      | TURN TABLE          | 1    |             |      |
| 9    | E406784-001     | FEED MOTOR          | 1    |             |      |
| 10   | E406783-001     | SPINDLE MOTOR       | 1    |             |      |
| 11   | EMW10190-001(S) | CIRCUIT BOARD       | 1    |             |      |
| 12   | ESB1100-005     | LEAF SWITCH         | 1    |             |      |
| 13   | E75832-001      | SCREW               | 1    |             |      |
| 14   | EMV5109-006B    | PLUG ASSY           | 1    | 6PIN        |      |

## Printed Circuit Board Ass'y and Parts List

**■ ENN-439 □ Main PC Board Ass'y**

**Note : ENN-439** ☐ varies according to the areas employd. See note (1) when placing an order.



## Note (1)

| PC Board Ass'y      | Version             | Designated Areas                                          |
|---------------------|---------------------|-----------------------------------------------------------|
| ENN-439 <b>C</b> BS | BS                  | the U.K.                                                  |
| ENN-439 <b>D</b>    | EF<br>EN<br>G<br>US | Continental Europe<br>Scandinavia<br>Germany<br>Singapore |
| ENN-439 <b>E</b>    | U<br>UT             | Universal Type<br>Taiwan                                  |

## TRANSISTORS

| ITEM | PART NUMBER   | DESCRIPTION             | AREA |
|------|---------------|-------------------------|------|
| Q101 | 2SB1565(E,F)  | SI. TRANSIST ROHM       |      |
| Q102 | 2SC2060(Q,R)  | SI. TRANSIST ROHM       |      |
| Q103 | 2SD1302       | SI. TRANSIST MATSUSHITA |      |
| Q104 | 2SA933S(RS)   | SI. TRANSIST            |      |
| Q105 | 2SB1357(E,F)  | SI. TRANSIST ROHM       |      |
| Q501 | 2SA934(Q,R)   | SI. TRANSIST ROHM       |      |
| Q601 | 2SD2037(E,F)  | SI. TRANSIST ROHM       |      |
| Q602 | 2SA934(Q,R)   | SI. TRANSIST ROHM       |      |
| Q603 | 2SD2037(E,F)  | SI. TRANSIST ROHM       |      |
| Q604 | 2SB1357(E,F)  | SI. TRANSIST ROHM       |      |
| Q605 | DT0144ES      | DIGITAL TRA ROHM        |      |
| Q606 | 2SC1740S(R,S) | SI. TRANSIST ROHM       |      |
| Q607 | 2SC2060(Q,R)  | SI. TRANSIST ROHM       |      |
| Q608 | 2SA934(Q,R)   | SI. TRANSIST ROHM       |      |
| Q609 | 2SC2060(Q,R)  | SI. TRANSIST ROHM       |      |
| Q610 | 2SA934(Q,R)   | SI. TRANSIST ROHM       |      |
| Q801 | 2SD2037(E,F)  | SI. TRANSIST ROHM       |      |
| Q802 | 2SB1357(E,F)  | SI. TRANSIST ROHM       |      |

## I. C. S.

| ITEM  | PART NUMBER    | DESCRIPTION             | AREA |
|-------|----------------|-------------------------|------|
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | BS   |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | EF   |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | EN   |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | G    |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | U    |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | US   |
| IC201 | M38022M4-270SP | I.C.(MICRO-C MITSUBISHI | UT   |
| IC202 | AT24016-10PC   | I.C.                    | BS   |
| IC202 | AT24016-10PC   | I.C.                    | EF   |
| IC202 | AT24016-10PC   | I.C.                    | EN   |
| IC202 | AT24016-10PC   | I.C.                    | G    |
| IC202 | AT24016-10PC   | I.C.                    | U    |
| IC202 | AT24016-10PC   | I.C.                    | US   |
| IC202 | AT24016-10PC   | I.C.                    | UT   |
| IC203 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  |      |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | BS   |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | EF   |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | EN   |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | G    |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | U    |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | US   |
| IC204 | MN1281(Q)      | I.C(DIGI-MO MATSUSHITA  | UT   |
| IC401 | CXD2500B0      | I.C(MICRO-P 1680        |      |
| IC402 | TC74HC125AP    | I.C(DIGI-MO TOSHIBA     |      |
| IC501 | CXA1571S       | I.C(MONO-AN 1680        |      |
| IC601 | CXA1372S       | I.C(MONO-AN 1680        |      |
| IC603 | M5218AL        | I.C(MONO-AN MITSUBISHI  |      |
| IC701 | HD74LS05P      | I.C(DIGI-OT HITACHI     |      |
| IC702 | SN75451BP      | I.C(MONO-AN 1679        |      |
| IC801 | STA341M(A)     | TRANSISTOR SANKEN       |      |
| IC802 | M5218AL        | I.C(MONO-AN MITSUBISHI  |      |
| IC803 | M5218AL        | I.C(MONO-AN MITSUBISHI  |      |

## DIODES

| ITEM | PART NUMBER | DESCRIPTION         | AREA |
|------|-------------|---------------------|------|
| D101 | 11E2        | SI.DIODE NIHONINTER |      |
| D102 | 11E2        | SI.DIODE NIHONINTER |      |
| D103 | 11E2        | SI.DIODE NIHONINTER |      |
| D104 | 11E2        | SI.DIODE NIHONINTER |      |
| D105 | MT25.6JA    | ZENER DIODE ROHM    |      |
| D106 | MT25.6JA    | ZENER DIODE ROHM    |      |
| D107 | 11E2        | SI.DIODE NIHONINTER |      |
| D108 | 11E2        | SI.DIODE NIHONINTER |      |
| D202 | 1SS133      | SI.DIODE ROHM       |      |
| D701 | 1SS133      | SI.DIODE ROHM       |      |

## DIODES

| ITEM | PART NUMBER | DESCRIPTION | AREA |
|------|-------------|-------------|------|
| D841 | SLA-380LT   | L.E.D. ROHM | BS   |
| D841 | SLR-342VC3F | L.E.D. ROHM | EF   |
| D841 | SLR-342VC3F | L.E.D. ROHM | EN   |
| D841 | SLR-342VC3F | L.E.D. ROHM | G    |
| D841 | SLR-342VC3F | L.E.D. ROHM | U    |
| D841 | SLR-342VC3F | L.E.D. ROHM | US   |
| D841 | SLR-342VC3F | L.E.D. ROHM | UT   |

## CAPACITORS

| ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|------|---------------|------------------------|------|
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | BS   |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EF   |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EN   |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | G    |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | U    |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | US   |
| C101 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | UT   |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | BS   |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EF   |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | EN   |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | G    |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | U    |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | US   |
| C102 | QFV81HJ-104   | 0.1MF 50V THIN FILM    | UT   |
| C103 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  |      |
| C104 | QETB1CM-228M  | 2200MF 16V E.CAPACITO  |      |
| C105 | QETB1CM-227   | 220MF 16V AL E.CAPAC   |      |
| C106 | QETB1CM-227   | 220MF 16V AL E.CAPAC   |      |
| C107 | QETB1HM-225   | 2.2MF 50V AL E.CAPAC   |      |
| C108 | QETB1HM-225   | 2.2MF 50V AL E.CAPAC   |      |
| C109 | QETB1AM-227   | 220MF 10V E.CAPACITO   |      |
| C110 | QETB1AM-476   | 47MF 10V E.CAPACITO    |      |
| C111 | QETC0JM-477ZN | 470MF 6.3V AL E.CAPAC  |      |
| C151 | QETB1AM-227   | 220MF 10V E.CAPACITO   |      |
| C152 | QETB1AM-227   | 220MF 10V E.CAPACITO   |      |
| C153 | QETB1AM-227   | 220MF 10V E.CAPACITO   |      |
| C154 | QETB1EM-227   | 220MF 25V AL E.CAPAC   |      |
| C155 | QETB1EM-227   | 220MF 25V AL E.CAPAC   |      |
| C201 | QETB1AM-477   | 470MF 10V E.CAPACITO   |      |
| C202 | QETB1AM-108   | 1000MF 10V E.CAPACITO  |      |
| C203 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
| C205 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
| C206 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C207 | QETC1EM-106ZM | 10MF 25V AL E.CAPAC    |      |
| C208 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C209 | QCB81HK-101Y  | 100PF 50V CER.CAPACI   |      |
| C210 | QCT30CH-100Y  | 10PF 50V CER.CAPACI    |      |
| C211 | QCT30CH-100Y  | 10PF 50V CER.CAPACI    |      |
| C213 | QCB81HK-101Y  | 100PF 50V CER.CAPACI   |      |
| C401 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C402 | QFN81HJ-473   | 0.047MF 50V METAL.MYLA |      |
| C403 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C404 | QFN81HJ-152   | 1500PF 50V METAL.MYLA  |      |
| C405 | QFN81HJ-102   | 1000PF 50V METAL.MYLA  |      |
| C406 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C407 | QCT30CH-6R8Y  | 6.8PF 50V CER.CAPACI   |      |
| C408 | QCT30CH-160Y  | 16PF 50V CER.CAPACI    |      |
| C418 | QCF21HP-223A  | 0.022MF 25V CER.CAPACI |      |
| C422 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C423 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  |      |
| C424 | QETB1EM-226N  | 22MF 25V E.CAPACITO    |      |
| C425 | QCS31HJ-560Z  | 56PF 50V CER.CAPACI    |      |
| C501 | QCS31HJ-100Z  | 10PF 50V CER.CAPACI    |      |
| C502 | QCS31HJ-100Z  | 10PF 50V CER.CAPACI    |      |
| C503 | QCS31HJ-101Z  | 100PF 50V CER.CAPACI   |      |
| C504 | QCS31HJ-820Z  | 82PF 50V CER.CAPACI    |      |
| C505 | QETB1AM-476   | 47MF 10V E.CAPACITO    |      |
| C507 | QETB1AM-107   | 100MF 10V AL E.CAPAC   |      |
| C508 | QCF31HP-102Z  | 1000PF 50V CER.CAPACI  |      |
| C509 | QETB1HM-105   | 1MF 50V AL E.CAPAC     |      |
| C510 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C511 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C512 | QCS21HJ-220A  | 22PF 50V CER.CAPACI    |      |
| C521 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C531 | QETB1AM-107   | 100MF 10V AL E.CAPAC   |      |
| C532 | QETB1AM-107   | 100MF 10V AL E.CAPAC   |      |
| C535 | QCS21HJ-180A  | 18PF 50V CER.CAPACI    |      |
| C601 | QFN81HJ-182   | 1800PF 50V METAL.MYLA  |      |
| C603 | QFN81HJ-222   | 2200PF 50V METAL.MYLA  |      |
| C604 | QFN81HJ-222   | 2200PF 50V METAL.MYLA  |      |
| C605 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C606 | QFN81HJ-333   | 0.033MF 50V MYLAR CAPA |      |
| C607 | QFN81HJ-103   | 0.01MF 50V METAL.MYLA  |      |
| C608 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C609 | QFN81HJ-333   | 0.033MF 50V MYLAR CAPA |      |
| C610 | QCZ0205-155   | 1.5MF 25V C.CAPACITO   |      |
| C611 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C612 | QFN81HJ-104   | 0.1MF 50V METAL.MYLA   |      |
| C613 | QCB81HK-471Y  | 470PF 50V CER.CAPACI   |      |
| C614 | QFN81HJ-104   | 0.1MF 50V METAL.MYLA   |      |

# XL-MC302M

## CAPACITORS

| ITEM | PART NUMBER   | DESCRIPTION            | AREA |
|------|---------------|------------------------|------|
| C615 | QFN81HJ-333   | 0.033MF 50V MYLAR CAPA |      |
| C616 | QFV81HJ-473   | 0.047MF 50V THIN FILM  |      |
| C617 | QFV81HJ-473   | 0.047MF 50V THIN FILM  |      |
| C618 | QFV81HJ-473   | 0.047MF 50V THIN FILM  |      |
| C619 | QETC1EM-1062M | 10MF 25V AL E.CAPAC    |      |
| C620 | QFN81HJ-104   | 0.1MF 50V METAL.MYLA   |      |
| C622 | QCF21HP-223A  | 0.022MF 50V CER.CAPACI |      |
| C623 | QFN81HJ-333   | 0.033MF 50V MYLAR CAPA |      |
| C624 | QETC1EM-1062M | 10MF 25V AL E.CAPAC    |      |
| C626 | QFN81HJ-183   | 0.018MF 50V METAL.MYLA |      |
| C627 | QFN81HJ-103   | 0.01MF 50V METAL.MYLA  |      |
| C629 | QFN81HJ-393   | 0.039MF 50V METAL.MYLA |      |
| C632 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C633 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C641 | QCF21HP-223A  | 0.022MF 50V CER.CAPACI |      |
| C701 | QCB91HK-101Y  | 100PF 50V CER.CAPACI   |      |
| C702 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C705 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C801 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C802 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C803 | QCF31HP-103Z  | 0.01MF 50V CER.CAPACI  |      |
| C811 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |
| C812 | QCHB1EZ-223   | 0.022MF 25V CER.CAPACI |      |

## RESISTORS

| ITEM | PART NUMBER    | DESCRIPTION          | AREA |
|------|----------------|----------------------|------|
| R101 | PTH61G30B02R2N | FUSIBLE RE           | BS   |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | EF   |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | EN   |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | G    |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | U    |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | US   |
| R101 | PTH61G30B02R2N | FUSIBLE RE           | UT   |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | BS   |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | EF   |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | EN   |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | G    |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | U    |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | US   |
| R102 | PTH61G30B02R2N | FUSIBLE RE           | UT   |
| R105 | QRD161J-222    | 2.2K 1/6W CARBON RES |      |
| R106 | QRD161J-222    | 2.2K 1/6W CARBON RES |      |
| R107 | QRD161J-221    | 220 1/6W CARBON RES  |      |
| R108 | QRD161J-221    | 220 1/6W CARBON RES  |      |
| R109 | QRD161J-221    | 220 1/6W CARBON RES  |      |
| R110 | QRD161J-221    | 220 1/6W CARBON RES  |      |
| R111 | QRD161J-202    | 2K 1/6W CARBON RES   |      |
| R112 | QRD161J-202    | 2K 1/6W CARBON RES   |      |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | BS   |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | EF   |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | EN   |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | G    |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | U    |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | US   |
| R113 | QRZ0077-100    | 10 1/4W FUSIBLE RE   | UT   |
| R114 | QRD161J-821    | 820 1/6W CARBON RES  |      |
| R115 | QRD161J-102    | 1K 1/6W CARBON RES   |      |
| R116 | QRD161J-102    | 1K 1/6W CARBON RES   |      |
| R202 | QRD161J-821    | 820 1/6W CARBON RES  |      |
| R203 | QRD161J-105    | 1M 1/6W CARBON RES   |      |
| R204 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R205 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R206 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R207 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R208 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R209 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R210 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R211 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R212 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R213 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R214 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R215 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R216 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R217 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R218 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R219 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R221 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R222 | QRD161J-103    | 10K 1/6W CARBON RES  |      |
| R223 | QRD167J-223    | 22K 1/6W CARBON RES  |      |
| R224 | QRD161J-472    | 4.7K 1/6W CARBON RES |      |
| R225 | QRD161J-103    | 10K 1/6W CARBON RES  |      |
| R226 | QRD161J-103    | 10K 1/6W CARBON RES  |      |
| R227 | QRD161J-103    | 10K 1/6W CARBON RES  |      |
| R231 | QRD161J-103    | 10K 1/6W CARBON RES  | BS   |
| R231 | QRD161J-103    | 10K 1/6W CARBON RES  | EF   |
| R231 | QRD161J-103    | 10K 1/6W CARBON RES  | EN   |

## RESISTORS

| ITEM | PART NUMBER   | DESCRIPTION          | AREA |
|------|---------------|----------------------|------|
| R231 | QRD161J-103   | 10K 1/6W CARBON RES  | G    |
| R231 | QRD161J-103   | 10K 1/6W CARBON RES  | U    |
| R231 | QRD161J-103   | 10K 1/6W CARBON RES  | US   |
| R231 | QRD161J-103   | 10K 1/6W CARBON RES  | UT   |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | BS   |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | EF   |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | EN   |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | G    |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | U    |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | US   |
| R233 | QRD161J-103   | 10K 1/6W CARBON RES  | UT   |
| R401 | QRD167J-682   | 6.8K 1/6W CARBON RES |      |
| R402 | QRD167J-332   | 3.3K 1/6W CARBON RES |      |
| R403 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R404 | QRD167J-113   | 11K 1/6W CARBON RES  |      |
| R411 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R412 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R413 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R414 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R415 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R420 | QRD167J-151   | 150 1/6W CARBON RES  |      |
| R421 | QRD161J-681   | 680 1/6W CARBON RES  |      |
| R423 | QRD161J-101   | 100 1/6W CARBON RES  |      |
| R424 | QRD167J-223   | 22K 1/6W CARBON RES  |      |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | BS   |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | EF   |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | EN   |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | G    |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | U    |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | US   |
| R426 | QRD161J-750   | 75 1/6W CARBON RES   | UT   |
| R503 | QRD161J-183   | 18K 1/6W CARBON RES  |      |
| R504 | QRD161J-183   | 18K 1/6W CARBON RES  |      |
| R505 | QRD167J-121   | 120 1/6W CARBON RES  |      |
| R507 | QRD161J-100   | 10 1/6W CARBON RES   |      |
| R508 | QRD161J-120   | 12 1/6W CARBON RES   |      |
| R509 | QRD161J-910Y  | 91 1/6W CARBON RES   |      |
| R510 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R511 | QRD167J-332   | 3.3K 1/6W CARBON RES |      |
| R512 | QRD167J-822   | 8.2K 1/6W CARBON RES |      |
| R513 | QRD167J-113   | 11K 1/6W CARBON RES  |      |
| R514 | QRD161J-104   | 100K 1/6W CARBON RES |      |
| R517 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R521 | QRD161J-102   | 1K 1/6W CARBON RES   |      |
| R601 | QRD161J-472   | 4.7K 1/6W CARBON RES |      |
| R602 | QRD161J-472   | 4.7K 1/6W CARBON RES |      |
| R605 | QRD161J-102   | 1K 1/6W CARBON RES   |      |
| R606 | QRD161J-104   | 100K 1/6W CARBON RES |      |
| R607 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R608 | QRD161J-183   | 18K 1/6W CARBON RES  |      |
| R609 | QRD161J-183   | 18K 1/6W CARBON RES  |      |
| R610 | QRD161J-224   | 220K 1/6W CARBON RES |      |
| R611 | QRD161J-2R2   | 2.2 1/6W CARBON RES  |      |
| R612 | QRD161J-164YT | 160K 1/6W CARBON RES |      |
| R613 | QRD167J-134   | 130K 1/6W CARBON RES |      |
| R614 | QRD161J-2R2   | 2.2 1/6W CARBON RES  |      |
| R615 | QRD161J-224   | 220K 1/6W CARBON RES |      |
| R616 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R617 | QRD161J-103   | 10K 1/6W CARBON RES  |      |
| R618 | QRD167J-514   | 510K 1/6W CARBON RES |      |
| R619 | QRD161J-2R2   | 2.2 1/6W CARBON RES  |      |
| R620 | QRD167J-153   | 15K 1/6W CARBON RES  |      |
| R621 | QRD161J-393   | 39K 1/6W CARBON RES  |      |
| R622 | QRD161J-124   | 120K 1/6W CARBON RES |      |
| R623 | QRD161J-472   | 4.7K 1/6W CARBON RES |      |
| R626 | QRD161J-203   | 20K 1/6W CARBON RES  |      |
| R627 | QRD161J-273   | 27K 1/6W CARBON RES  |      |
| R628 | QRD161J-752   | 7.5K 1/6W CARBON RES |      |
| R629 | QRD161J-752   | 7.5K 1/6W CARBON RES |      |
| R630 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R631 | QRD161J-2R2   | 2.2 1/6W CARBON RES  |      |
| R635 | QRD161J-475   | 4.7M 1/6W CARBON RES |      |
| R638 | QRD161J-823   | 82K 1/6W CARBON RES  |      |
| R701 | QRD161J-102   | 1K 1/6W CARBON RES   |      |
| R702 | QRD161J-221   | 220 1/6W CARBON RES  |      |
| R703 | QRD161J-472   | 4.7K 1/6W CARBON RES |      |
| R704 | QRD161J-472   | 4.7K 1/6W CARBON RES |      |
| R705 | QRD161J-102   | 1K 1/6W CARBON RES   |      |
| R801 | QRD161J-203   | 20K 1/6W CARBON RES  |      |
| R802 | QRD161J-203   | 20K 1/6W CARBON RES  |      |
| R803 | QRD161J-823   | 82K 1/6W CARBON RES  |      |
| R804 | QRD161J-823   | 82K 1/6W CARBON RES  |      |
| R805 | QRD161J-2R2   | 2.2 1/6W CARBON RES  |      |
| R806 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R807 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R811 | QRD167J-223   | 22K 1/6W CARBON RES  |      |
| R812 | QRD167J-223   | 22K 1/6W CARBON RES  |      |
| R813 | QRD161J-273   | 27K 1/6W CARBON RES  |      |
| R814 | QRD161J-273   | 27K 1/6W CARBON RES  |      |
| R815 | QRD167J-151   | 150 1/6W CARBON RES  |      |
| R821 | QRD161J-243   | 24K 1/6W CARBON RES  |      |
| R822 | QRD161J-243   | 24K 1/6W CARBON RES  |      |
| R823 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R824 | QRD161J-333   | 33K 1/6W CARBON RES  |      |
| R825 | QRD167J-151   | 150 1/6W CARBON RES  |      |

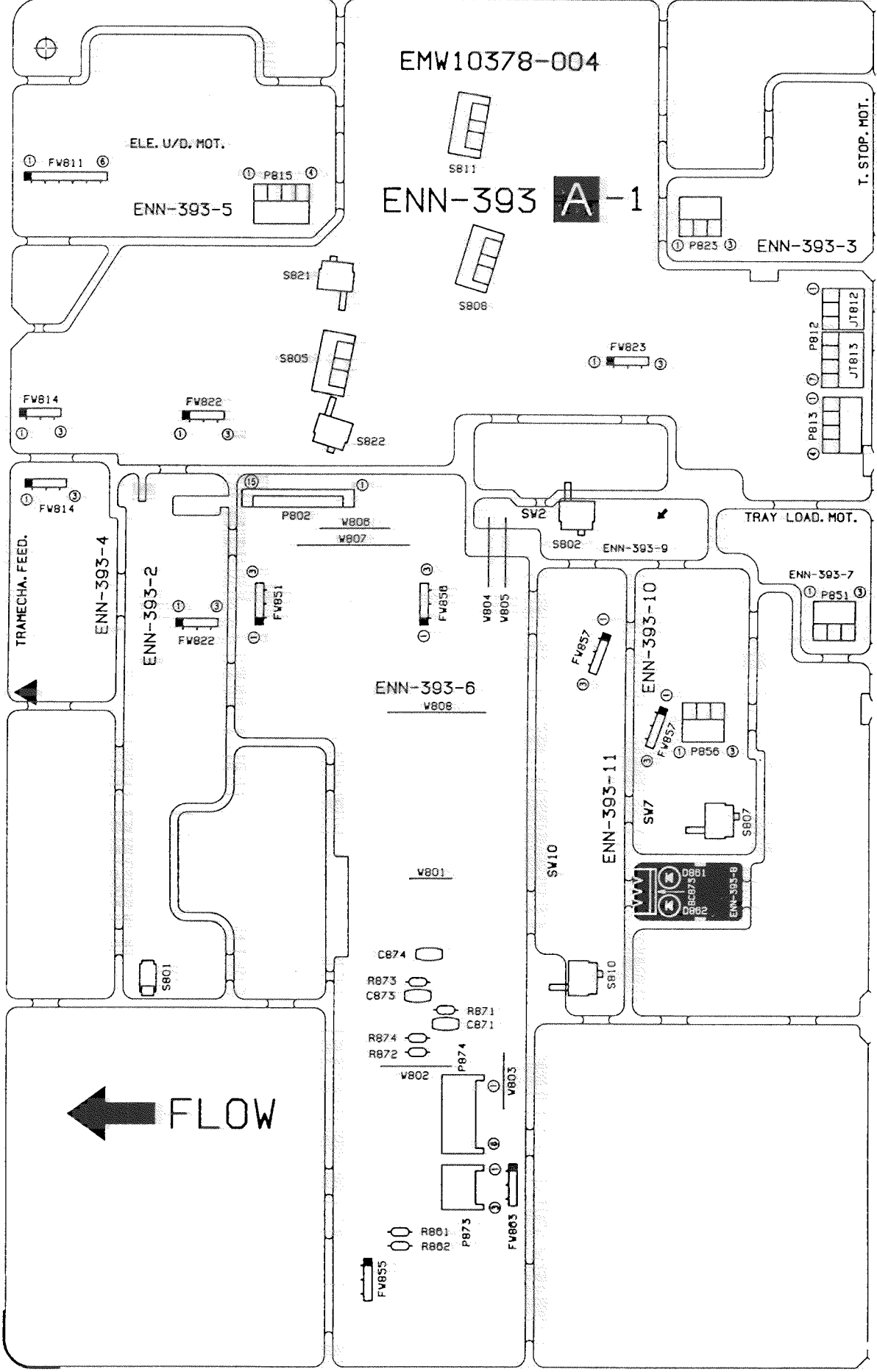
RESISTORS

| ITEM  | PART NUMBER  | DESCRIPTION         | AREA |
|-------|--------------|---------------------|------|
| R831  | QRD167J-223  | 22K 1/6W CARBON RES |      |
| R832  | QRD167J-223  | 22K 1/6W CARBON RES |      |
| R833  | QRD167J-223  | 22K 1/6W CARBON RES |      |
| R834  | QRD167J-223  | 22K 1/6W CARBON RES |      |
| R835  | QRD167J-151  | 150 1/6W CARBON RES |      |
| R841  | QRD161J-331  | 330 1/6W CARBON RES |      |
| VR515 | QVPA603-203M | 20K TRIMMER RE      |      |
| VR516 | QVPA603-203M | 20K TRIMMER RE      |      |
| VR603 | QVPA601-203A | 20K VARIABLE R      |      |
| VR604 | QVPA601-203A | 20K VARIABLE R      |      |

OTHERS

| ITEM  | PART NUMBER     | DESCRIPTION | AREA |
|-------|-----------------|-------------|------|
|       | EMW10523-002    | PRINTED BOA | EF   |
|       | EMW10523-002    | PRINTED BOA | EN   |
|       | EMW10523-002    | PRINTED BOA | G    |
|       | EMW10523-002    | PRINTED BOA | U    |
|       | EMW10523-002    | PRINTED BOA | US   |
|       | EMW10523-002    | PRINTED BOA | UT   |
|       | EMW10523-002BS  | PRINTED BOA | BS   |
|       | E70945-H35      | HEAT SINK   |      |
|       | QWE881-13RR     | VINYL WIRE  | U    |
|       | QWE881-13RR     | VINYL WIRE  | UT   |
|       | QWE883-17RR     | PIN WIRE    | U    |
|       | QWE883-17RR     | PIN WIRE    | UT   |
|       | QWE889-15RR     | VINYL WIRE  | U    |
|       | QWE889-15RR     | VINYL WIRE  | UT   |
|       | SBSE3008Z       | SCREW       |      |
| J701  | EMN00YV-322A    | PIN JACK    | BS   |
| J701  | EMN00YV-322A    | PIN JACK    | EF   |
| J701  | EMN00YV-322A    | PIN JACK    | EN   |
| J701  | EMN00YV-322A    | PIN JACK    | G    |
| J701  | EMN00YV-322A    | PIN JACK    | U    |
| J701  | EMN00YV-322A    | PIN JACK    | US   |
| J701  | EMN00YV-322A    | PIN JACK    | UT   |
| P501  | EMV7144-015R    | CONNECT TER |      |
| P601  | EMV7123-015R    | MALE CONNec |      |
| P602  | EMV7123-015R    | MALE CONNec |      |
| P603  | EMV5109-006B    | CONNECT TER |      |
| P701  | EMV7122-004Z    | CONNECT TER | BS   |
| P701  | EMV7122-004Z    | CONNECT TER | EF   |
| P701  | EMV7122-004Z    | CONNECT TER | EN   |
| P701  | EMV7122-004Z    | CONNECT TER | G    |
| P701  | EMV7122-004Z    | CONNECT TER | U    |
| P701  | EMV7122-004Z    | CONNECT TER | US   |
| P701  | EMV7122-004Z    | CONNECT TER | UT   |
| P801  | EMV7144-015R    | CONNECT TER |      |
| S101  | QSS1L22-E01     | SLIDE SWITC | U    |
| S101  | QSS1L22-E01     | SLIDE SWITC | UT   |
| S841  | ESPO001-023M    | TACT SWITCH |      |
| S842  | ESPO001-023M    | TACT SWITCH |      |
| X201  | ECX0007-987KNTJ | CRYSTAL     |      |
| X401  | ECX0169-344EA   | CRYSTAL     |      |
| CP101 | ICP-N15         | I.C.PROTECT | BS   |
| CP101 | ICP-N15         | I.C.PROTECT | EF   |
| CP101 | ICP-N15         | I.C.PROTECT | EN   |
| CP101 | ICP-N15         | I.C.PROTECT | G    |
| CP101 | ICP-N15         | I.C.PROTECT | U    |
| CP101 | ICP-N15         | I.C.PROTECT | US   |
| CP101 | ICP-N15         | I.C.PROTECT | UT   |
| CP102 | ICP-N15         | I.C.PROTECT | BS   |
| CP102 | ICP-N15         | I.C.PROTECT | EF   |
| CP102 | ICP-N15         | I.C.PROTECT | EN   |
| CP102 | ICP-N15         | I.C.PROTECT | G    |
| CP102 | ICP-N15         | I.C.PROTECT | U    |
| CP102 | ICP-N15         | I.C.PROTECT | US   |
| CP102 | ICP-N15         | I.C.PROTECT | UT   |
| EP961 | EMZ4002-001Z    | EARTH PLATE |      |
| FW101 | EWR39B-30LST    | FLAT WIRE A |      |
| FW701 | EWR34B-10LST    | FLAT WIRE A | BS   |
| FW701 | EWR34B-10LST    | FLAT WIRE A | EF   |
| FW701 | EWR34B-10LST    | FLAT WIRE A | EN   |
| FW701 | EWR34B-10LST    | FLAT WIRE A | G    |
| FW701 | EWR34B-10LST    | FLAT WIRE A | U    |
| FW701 | EWR34B-10LST    | FLAT WIRE A | US   |
| FW701 | EWR34B-10LST    | FLAT WIRE A | UT   |
| FW812 | EWR37B-40LST    | FLAT WIRE A |      |
| FW813 | EWR34B-40LST    | FLAT WIRE A |      |
| FW815 | EWR34B-16LST    | FLAT WIRE A |      |
| JT101 | EMV7122-004Z    | CONNECT TER |      |
| JT102 | EMV7122-005     | MALE CONNec |      |
| JT811 | EMV7122-103     | CONNECT TER |      |
| JT812 | EMV7122-103     | CONNECT TER |      |
| TB101 | EMZ4001-001     | TAB         |      |
| TB102 | EMZ4001-001     | TAB         |      |

■ ENN-393 A Mecha Switch PC Board Ass'y



## DIODES

| ITEM | PART NUMBER  | DESCRIPTION | AREA |
|------|--------------|-------------|------|
| D861 | SLA-380LT    | L.E.D. ROHM | BS   |
| D861 | SLA-380LT    | L.E.D. ROHM | EF   |
| D861 | SLA-380LT    | L.E.D. ROHM | EN   |
| D861 | SLA-380LT    | L.E.D. ROHM | G    |
| D861 | SLA-380LT    | L.E.D. ROHM | U    |
| D861 | SLA-380LT    | L.E.D. ROHM | US   |
| D861 | SLA-380LT    | L.E.D. ROHM | UT   |
| D862 | SLA-380MTA47 | L.E.D. ROHM |      |

## CAPACITORS

| ITEM | PART NUMBER | DESCRIPTION            | AREA |
|------|-------------|------------------------|------|
| C871 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI |      |
| C873 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | BS   |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | EF   |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | EN   |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | G    |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | U    |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | US   |
| C874 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | UT   |

## RESISTORS

| ITEM | PART NUMBER | DESCRIPTION          | AREA |
|------|-------------|----------------------|------|
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | BS   |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | EF   |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | EN   |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | G    |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | U    |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | US   |
| R861 | QRD161J-331 | 330 1/6W CARBON RES  | UT   |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | BS   |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | EF   |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | EN   |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | G    |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | U    |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | US   |
| R862 | QRD161J-331 | 330 1/6W CARBON RES  | UT   |
| R871 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R872 | QRD161J-331 | 330 1/6W CARBON RES  |      |
| R873 | QRD161J-472 | 4.7K 1/6W CARBON RES |      |
| R874 | QRD161J-331 | 330 1/6W CARBON RES  |      |

## OTHERS

| ITEM  | PART NUMBER  | DESCRIPTION  | AREA |
|-------|--------------|--------------|------|
|       | EMW10378-004 | PRINTED BOA  | BS   |
|       | EMW10378-004 | PRINTED BOA  | EF   |
|       | EMW10378-004 | PRINTED BOA  | EN   |
|       | EMW10378-004 | PRINTED BOA  | G    |
|       | EMW10378-004 | PRINTED BOA  | U    |
|       | EMW10378-004 | PRINTED BOA  | US   |
|       | EMW10378-004 | PRINTED BOA  | UT   |
| P802  | EMV7144-015  | F.P.C.PLUG   |      |
| P813  | EMV7122-004Z | CONNECT TER  |      |
| P815  | EMV7122-004Z | CONNECT TER  | BS   |
| P815  | EMV7122-004Z | CONNECT TER  | EF   |
| P815  | EMV7122-004Z | CONNECT TER  | EN   |
| P815  | EMV7122-004Z | CONNECT TER  | G    |
| P815  | EMV7122-004Z | CONNECT TER  | U    |
| P815  | EMV7122-004Z | CONNECT TER  | US   |
| P815  | EMV7122-004Z | CONNECT TER  | UT   |
| P823  | EMV7122-103  | CONNECT TER  |      |
| P851  | EMV7122-103  | CONNECT TER  |      |
| P856  | EMV7122-103  | CONNECT TER  |      |
| P873  | EMV5109-003B | CONNECT TER  |      |
| P874  | EMV5109-006B | CONNECT TER  |      |
| S801  | QSM2001-E01  | MICRO SWITC  |      |
| S802  | QSP2K11-E04  | PUSH SWITCH  |      |
| S805  | ESS1200-002  | LEVER SWITCH |      |
| S807  | QSP2K11-E04  | PUSH SWITCH  |      |
| S808  | ESS1200-002  | LEVER SWITCH |      |
| S810  | QSP2K11-E04  | PUSH SWITCH  |      |
| S811  | ESS1200-002  | LEVER SWITC  |      |
| BC873 | EWS263-F222  | SOCKET WIRE  |      |
| FW811 | EWR36B-50LST | FLAT WIRE A  | BS   |
| FW811 | EWR36B-50LST | FLAT WIRE A  | EF   |
| FW811 | EWR36B-50LST | FLAT WIRE A  | EN   |
| FW811 | EWR36B-50LST | FLAT WIRE A  | G    |
| FW811 | EWR36B-50LST | FLAT WIRE A  | U    |
| FW811 | EWR36B-50LST | FLAT WIRE A  | US   |
| FW811 | EWR36B-50LST | FLAT WIRE A  | UT   |
| FW814 | EWR33B-10SST | FLAT WIRE A  |      |
| FW822 | EWR33B-13SST | FLAT WIRE A  |      |
| FW823 | EWR33B-08LST | FLAT WIRE A  |      |
| FW851 | EWR33B-08LST | FLAT WIRE A  |      |
| FW856 | EWR33B-10LST | FLAT WIRE A  |      |
| FW857 | EWR33B-20SST | FLAT WIRE A  |      |
| UT812 | EMV7122-103  | CONNECT TER  |      |
| UT813 | EMV7122-004Z | CONNECT TER  |      |

## Accessories List

Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 6 | M | M |
|---|---|---|---|

| Item | Part Number    | Part Name                | Q'ty | Description | Area       |
|------|----------------|--------------------------|------|-------------|------------|
| 1    | E30580-2271ABS | INSTRUCTION BOOK         | 1    |             | BS         |
|      | E30580-2272A   | INSTRUCTION BOOK         | 1    |             | EF,EN,G    |
|      | E30580-2273A   | INSTRUCTION BOOK         | 1    |             | US,UT      |
| 2    | UM-3DJ-SPSA    | BATTERY                  | 1    |             |            |
| 3    | EWP805-012     | REMOTE WIRE              | 1    |             |            |
| 4    | EWP309-003     | RCA CORD                 | 1    | 3PIN        |            |
| 5    | QMP5520-1835BS | POWER CORD               | 1    |             | BS         |
|      | QMP39F0-183    | POWER CORD               | 1    |             | EF,EN,G,US |
|      | QMP7530-183    | POWER CORD               | 1    |             | U,UT       |
| 6    | E300196-010B   | ENVELOPE                 | 1    | FOR CORD    |            |
| 7    | EWP302-013K    | SIGNAL CORD              | 1    |             |            |
| 8    | ENZ2203-001    | SIEMENS PLUG             | 2    |             | U,UT       |
| 9    | E43486-340A    | SAFETY INSTRUCTION SHEET | 1    |             |            |
| 10   | BT-20060       | WARRANTY CARD            | 1    |             | BS         |
|      | BT-20066A      | WARRANTY CARD            | 1    |             | BS         |
|      | BT-20134       | WARRANTY CARD            | 1    |             | G          |
| 11   | NS4571-003     | C.D BOOKLET              | 1    |             |            |
| 12   | E308801-008    | SHEET                    | 1    |             |            |
| 13   | QPGA040-04305B | ENVELOPE                 | 1    |             |            |
| 14   | RM-SXMC301U    | REMOCON UNIT             | 1    |             |            |

⚠ : Safety Parts

## The Marks for Designated Areas

|                       |                            |                   |                            |
|-----------------------|----------------------------|-------------------|----------------------------|
| BS ... the U.K.       | EF .... Continental Europe | EN .. Scandinavia | G .... Germany             |
| U .... Universal Type | US .... Singapore          | UT .. Taiwan      | No mark indicates all area |

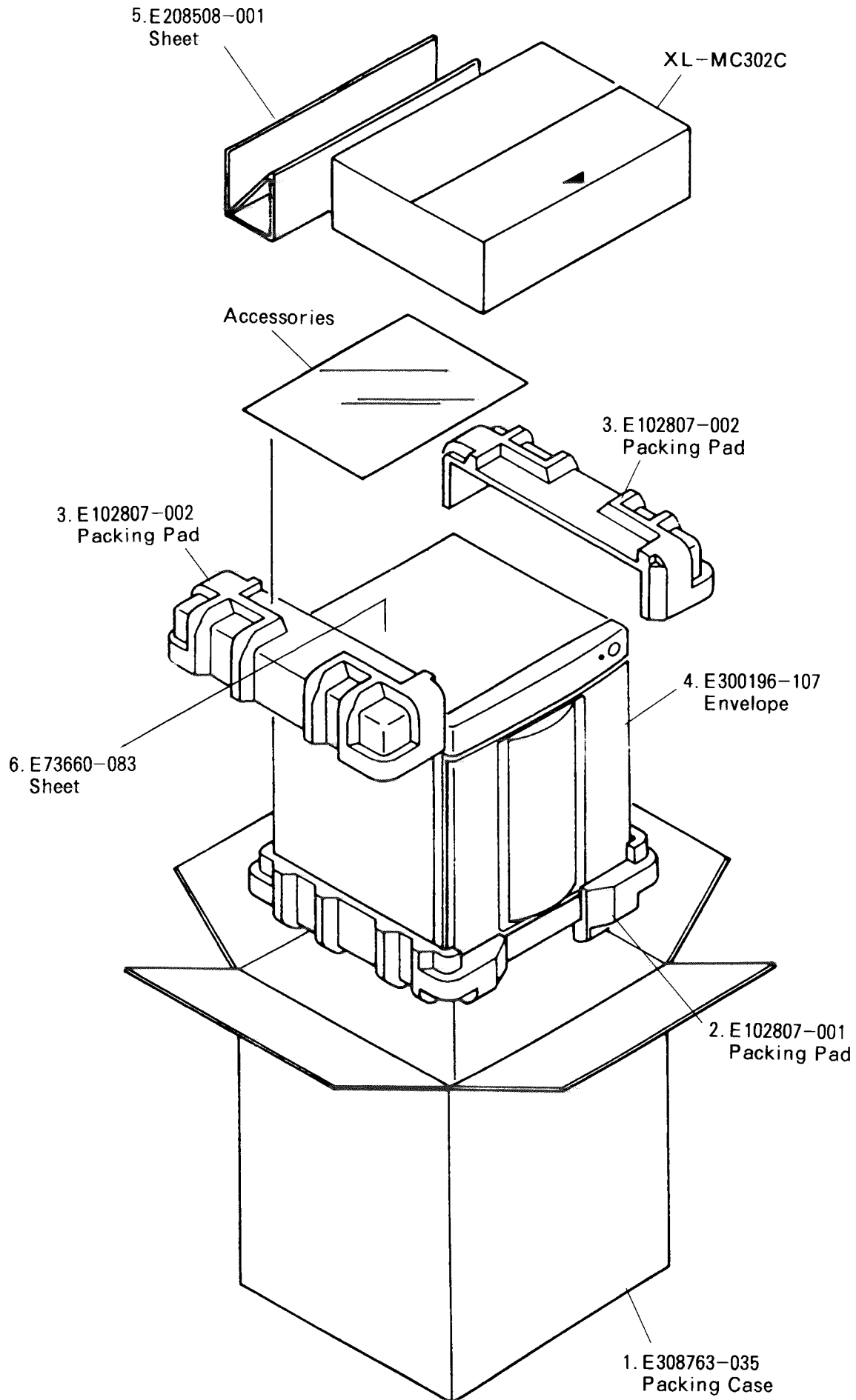
**XL-MC302M**

**-MEMO-**

# Packing Materials and Part Numbers

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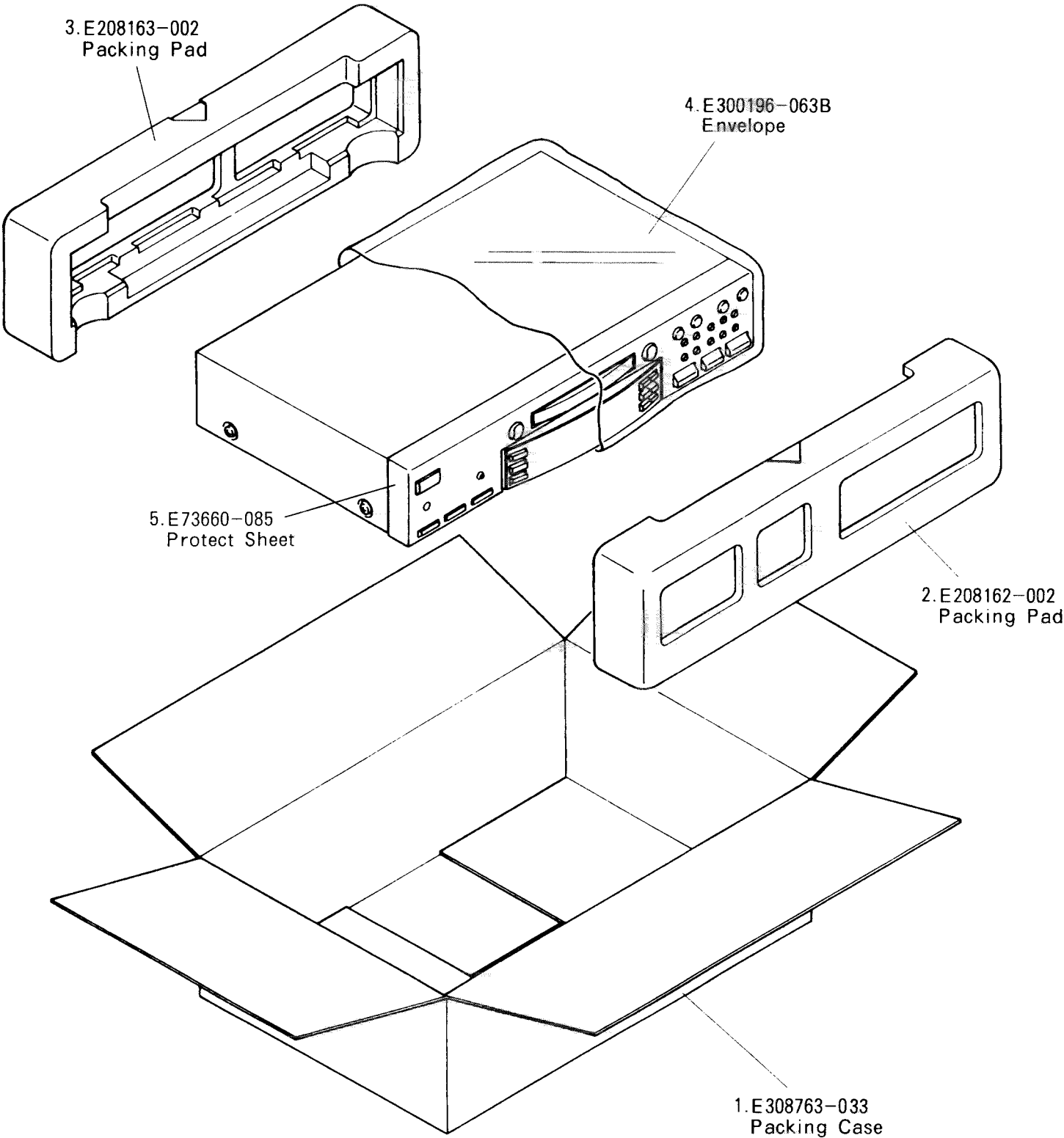
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|---|---|---|---|
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|---|---|---|---|



Packing Materials and Part Numbers

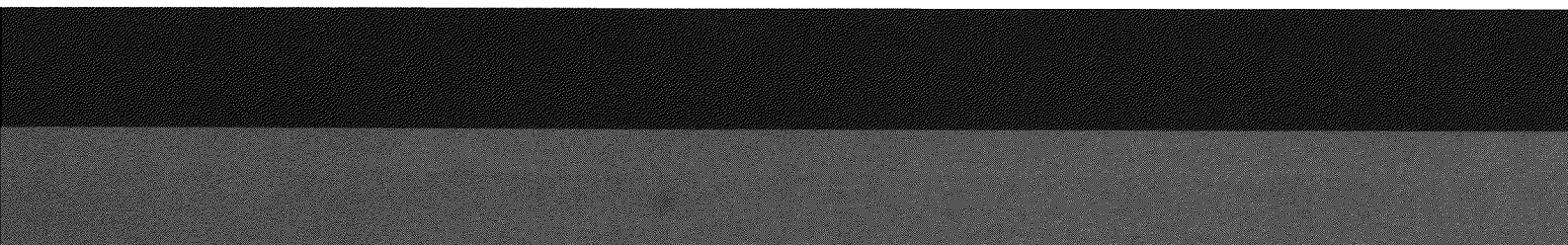
Symbol No. 

|   |   |   |   |
|---|---|---|---|
| M | 8 | M | M |
|---|---|---|---|



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XL-MC302



**JVC**

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