

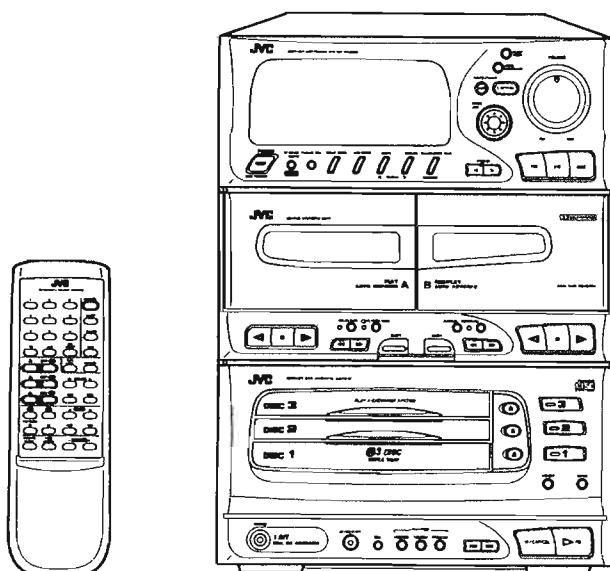
# JVC

## SERVICE MANUAL

### COMPACT COMPONENT SYSTEM

## CA-C220

Pick up	OPTIMA-6
CD SIGNAL PROCESSOR with in 1 bit DAC	TC9284BF
CD SERVO	TA8191F



COMPACT  
disc  
DIGITAL AUDIO

#### Area Suffix

A..... Austraria  
 BS..... the U.K.  
 C..... Canada  
 EF..... Continental Europe  
 EN..... Scandinavia  
 G..... Germany  
 GI..... Italy  
 J..... U.S.A.  
 UB..... Hong Kong  
 UP..... Korea  
 US..... Singapore  
 UT..... Taiwan  
 VX..... Eastern Europe  
 U..... Other Countries

## Contents

Safety Precaution .....	1-2	Adjustment Procedures .....	1-44
Important for Laser Products .....	1-3	Block Diagram .....	1-49
Instruction Book .....	1-4	Printed Circuit Boards .....	1-50
Description of ICs .....	1-18	Schematic Diagrams .....	1-54
Internal Connection for the FL .....	1-29	Parts List .....	2-1
Disassembly Procedures .....	1-31		

## 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.).

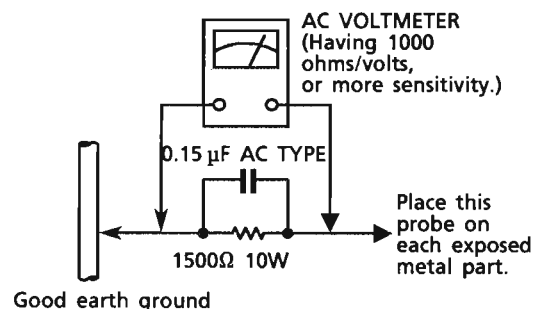
- Alternate check method

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.

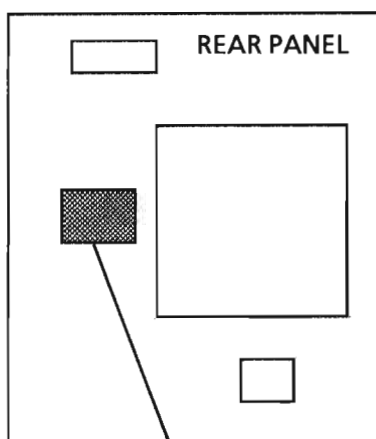
**WARNING** : Osynlig laserstråling när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

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

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

**ADVARSEL** : Usynlig laserstråling ved åbning, når sikkerhedsbryteren er avslott. unngå utsettelse for stråling.

### REPRODUCTION AND POSITION OF LABELS



**CLASS 1  
LASER PRODUCT**

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

#### WARNING LABEL

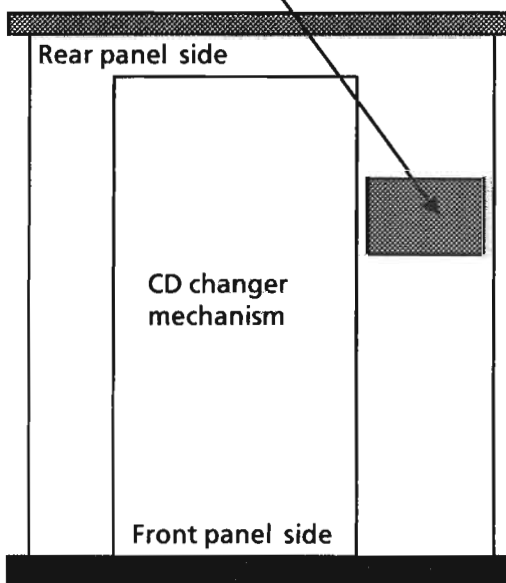
(Except for the U. S. A.)

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

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

**ADVARSEL**: Usynlig laserstråling 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)



## Table of Contents

Features.....	1	Using the Tuner.....	14
How This Manual Is Organized.....	1	Listening To the Radio.....	14
How To Put Batteries in the Remote Control.....	1	One Touch Radio.....	14
IMPORTANT CAUTIONS.....	2	Tuning In a Station.....	14
Getting Started.....	3	Three ways to select a station.....	14
Connecting the Speakers.....	3	Presetting Stations.....	15
Connecting Auxiliary Equipment.....	3	Receiving In Stereo Or Mono.....	15
Laying Out the Unit.....	3	Switching From FM Auto Mode To FM Mono Mode.....	15
Connecting the FM And AM Antennas.....	4	Switching From FM Mono Mode To FM Auto Mode.....	15
FM Antenna Connections.....	4	Using the Cassette Deck.....	16
AM Antenna Connections.....	4	Listening To a Tape.....	16
Using the Amplifier.....	5	One Touch Play.....	16
COMPU PLAY.....	5	Regular Play.....	16
Demonstration Function.....	5	Fast Left And Fast Right.....	16
Turning the CA-C220 On.....	6	Music Scan.....	17
Turning the CA-C220 Off.....	6	To Find the Beginning of the Current Song.....	17
Adjusting the Volume Controls.....	6	To Find the Beginning of the Next Song.....	17
Volume Control.....	6	Other Useful Features of the Cassette Deck.....	17
Active Bass Extension.....	6	Recording.....	18
Listening With Headphones.....	6	Things To Know Before You Start Recording.....	18
Sound Effect Modes.....	6	Standard Recording.....	18
Live Surround Effects.....	6	To Record Any Sound Source To Tape.....	19
Preset S.E.A. (Sound Effect Amplifier) Effects.....	6	CD Direct Recording.....	19
Listening To Optional Equipment.....	7	Tape To Tape Recording (Dubbing).....	20
Auto Power Off.....	7	How To Use the DUBBING Button.....	20
Using the CD Player.....	8	Recording With the Timer.....	20
Basics of Using the CD Player.....	9	Using the Timers.....	21
To Insert Discs.....	9	Clock Setting.....	21
To Play a Disc.....	9	Setting the REC (Recording) Timer.....	21
To Change Discs While Playing.....	10	Setting the DAILY Timer.....	22
To Select a Disc, Track Or Passage Within a Track.....	10	Setting the SLEEP Timer.....	23
Intro Scan.....	11	Timer Priority.....	23
Random Play.....	11	Using the Remote Control.....	24
Programming the Playing Order of the Tracks.....	12	Using the Numeric Key Pad.....	24
Programming Discs.....	12	Care And Maintenance — General Notes.....	25
A Few Hints to Make Programming Easier.....	12	Troubleshooting.....	26
Repeating a Selection Or the Discs.....	13	Specifications.....	27
Tray Lock Function.....	13		
Locking the Electronic Lock.....	13		
Unlocking the Electronic Lock.....	13		

Thank you for purchasing the JVC Compact Component System. We hope it will be a valued addition to your home, giving you years of enjoyment. Be sure to read this instruction manual carefully before operating your new stereo system. Here you will find all the information you need to set up and use the system. For questions that are not answered in the manual, please contact your dealer.

### Features

- Here are some of the things that make your CA-C220 powerful and easy to use.
- To get such great sound from such a compact package, the CA-C220 has:
    - Pre-programmed live surround effects like **D. CLUB (Dance Club)**, **HALL STADIUM** as well as **S.E.A.** effects like **ROCK, POPS, and CLASSIC** so you don't have to be a sound engineer to get great effects.
  - CD changer function can operate 3 discs.
    - Discs can be changed during play using the **TRIPLE TRAY**.
    - Continuous, random or program play of 3 discs.
  - The controls and operations have been redesigned to make them very easy to use so you can spend your time listening to music.
    - With the **One Touch Operation** feature of JVC's **COMPU PLAY** you can turn on the CA-C220 and start the radio, the **Cassette Deck**, or the **CD Player** with a single touch.
    - The three timers, **REC (Recording) Timer**, **DAILY Timer**, and **SLEEP Timer** are extremely easy to set.
    - The Displays are large and clear. They are organized so you can tell at a glance what's happening because functions light up as you use them, and blink to tell you they are ready. They give you some important messages like "NO DISC", and some others.

Great sound

Triple Tray

Easy operation



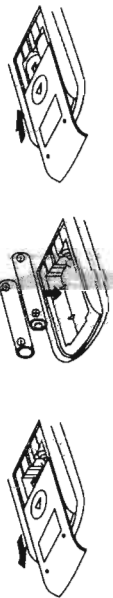
### How This Manual Is Organized

- In this manual we have incorporated some special features:
- Basic information that is the same for many different functions is grouped in one place, and not repeated in each procedure. For instance, in the section on playing a CD, we do not repeat the information about setting the volume and sound conditioning, which are talked about in the Using the Amplifier section.
  - Name of buttons and controls are written in all capital letters like this: **POWER**.
  - When we are talking about the Function, rather than the **BUTTON** or **DISPLAY**, only the first letter is capitalized.
  - The column on the left of the page is a special place to make it easier to find just what you want to know about, with little headlines announcing what each part of the page is about. Sometimes illustrations and helpful hints are placed here also.
- The manual has a table of contents to help you easily look up what you want to know. We've enjoyed making this manual for you, and hope you will use it to enjoy the sound and many features built into your CA-C220.

### How To Put Batteries in the Remote Control

Match the polarity (+ and -) on the batteries with the + and - markings in the battery compartment.

R6P (SUM-3/AAA (15F))



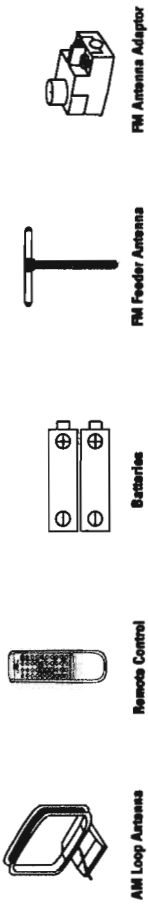
- CAUTION:** Handle batteries properly. To avoid battery leakage or explosion:
- Remove batteries when the Remote Control will not be used for a long time.
  - When you need to replace the batteries, replace both batteries at the same time with new ones.
  - Don't use an old battery with a new one.
  - Don't use different types of batteries together.

### IMPORTANT CAUTIONS

1. **Installation of the Unit**
  - Select a place which is level, dry and neither too hot nor too cold (Between 5°C and 35°C or 41°F - 95°F).
  - Leave sufficient distance between the Unit and a TV.
  - Do not use the Unit in a place subject to vibrations.
2. **Power cord**
  - Do not handle the power cord with wet hands!
  - A small amount of power (1.3 watts) is always consumed as long as the power cord is connected to the wall outlet.
  - When unplugging the Unit from the wall outlet, always pull the plug, not the power cord.
3. **Malfunctions, etc.**
  - There are no user serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
  - Do not insert any metallic object into the Unit.

## Getting Started

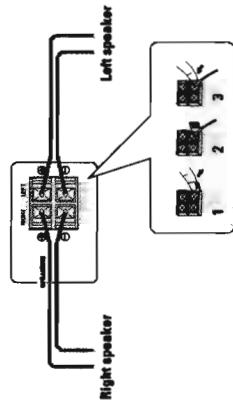
Check to be sure you have all of the following things, which are supplied with the CA-C220.



If any are missing, contact your dealer immediately.

### Connecting the Speakers *(Please refer to instructions for speakers as well when you connect speakers.)*

- For each speaker connect one end of the speaker wire to the speaker terminals on the back of the CA-C220 and one end to the speaker.
1. Open each terminal.
  2. Insert the end of the speaker wire as shown (be sure to remove the insulation at the end of each wire first).
  3. Close the terminals to clamp the speaker wires firmly in place.
  4. Connect the red (+) and black (-) terminals of the right side speaker to the red (+) and black (-) terminals marked **RIGHT** on the CA-C220. Connect the red (+) and black (-) terminals of the left side speaker to the red (+) and black (-) terminals marked **LEFT** on the CA-C220.

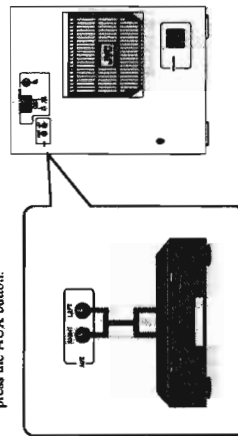


**IMPORTANT:** Use speakers with the correct impedance only. The correct impedance is indicated on the back panel.  
**CAUTION:** If a TV is installed near speakers, the TV may display irregular colors. In this case, set the speakers away from the TV.

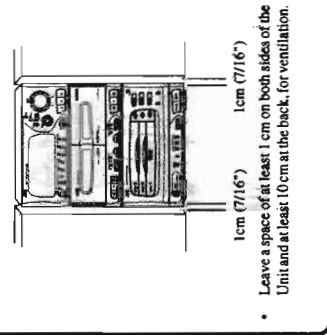
### Connecting Auxiliary Equipment

**CAUTION:** Make all connections before plugging the Unit into an AC power outlet.

**VCR or other equipment**  
 To listen to these sources, press the AUX button.



### Laying Out the Unit



## Connecting the FM And AM Antennas

### FM Antenna Connections

**A. Using the Supplied Feeder Antenna**

- Attach the Feeder Antenna to the FM connector as shown in the figure.
- Connect the FM connector to the FM 75-ohm COAXIAL terminal.

**B. Using an FM 75-Ohm Antenna Cable (Not Supplied)**

- Open the claws at both sides and remove the cover.
- Move the conductor wire from ⓐ to ⓑ using tweezers or a similar instrument (only when using coaxial cable).
- Fix the coaxial cable and its core.
- Put on the cover.
- Connect the FM connector on the FM 75-ohm COAXIAL terminal.

**Note:** Make sure the antenna conductors do not touch any other terminals, connecting cords or the power cord in the system as this could cause poor reception.

Unfold the loops of the supplied dipole FM Feeder Antenna and extend them as shown. Install them in the position and location which gives you the best FM reception.

If reception is poor, connect the outside antenna.

Before attaching a 75 ohm coaxial lead (the kind with a round wire going to an outside antenna), disconnect the supplied FM feeder antenna.

### How To Strip the 75-Ohm Coaxial Cable

1. Remove about 20 mm from the outside cover of the 75 ohm coaxial cable, exposing the metal mesh.
2. Pull the mesh back over the cable as shown.
3. Strip the insulation about 10 mm back from the central wire.
4. Attach to the supplied Antenna Adaptor, as shown in the diagram above.

**CAUTION:** To avoid noise, keep antennas away from metallic parts of the CA-C220, connecting cord and the AC power cord.

### AM Antenna Connections

AM antenna wire

**Note:** Even when connecting an outside AM antenna, keep the inboard AM loop connected.

AM Loop Antenna

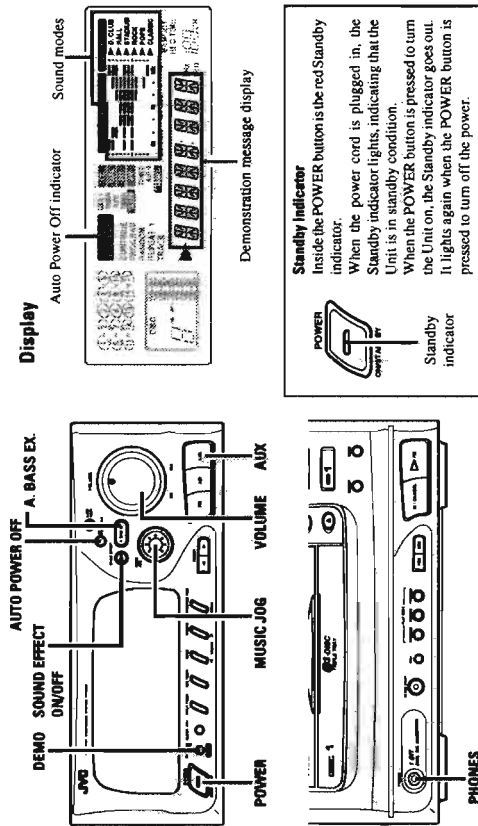
Turn the loop until you have the best reception

Snap the tabs on the loop into the slots of the base to attach the AM Loop.

If reception is poor, connect the outside antenna.

Now you can plug the AC power cord into the wall outlet, and your CA-C220 is at your command!

## Using the Amplifier



The magic of



### COMPU PLAY

COMPU PLAY is JVC's feature that lets you control the most used functions of the CA-C220 with a single touch. One Touch Operation starts playing a CD, turns on the Tuner, plays a tape, etc. with a single press of the play button for that function. What One Touch Operation does for you is to turn the power on, then start the function you have specified. If the Unit is not ready, such as when no CD or tape is in place, the Unit still powers on so you can put in a CD or tape. How One Touch Operation works in each case is explained in the section dealing with that function.

### Demonstration Function

When the CA-C220 is connected to an AC power outlet, after "DEMO" flashes in the display, the Demonstration Display comes on repeatedly.

**Power off → power on:** After the power has been turned on by pressing the POWER button, the Demonstration Display comes on automatically after about 1 minute.

**During power on:** If no operation is done for about 1 minute, the Demonstration Display comes on. When doing the Sound Mode Demonstration, you can listen to the effects produced by each Sound Mode.

**Power on → power off:** After the power has been turned off by pressing the POWER button (Standby Mode), the Demonstration Display will come on after about 1 minute.

**To stop the Demonstration Display,** press the DEMO button (FM MODE/MUTE button) when the Demonstration Display is on. This will work whether the power is on or off.

**To start the Demonstration Display again,** press the DEMO button (FM MODE/MUTE button) when the Demonstration Display is off. This will work whether the power is on or off.

The Demonstration Display will always come on when the Unit is plugged into an AC outlet. When plugging the Unit back in once it has been disconnected, if you don't want the Demonstration Display to come on, turn it off by pressing the DEMO button (FM MODE/MUTE button) when the display is on.



### Turning the CA-C220 On

Press the **POWER** button.

The displays come on and the Standby indicator on the POWER button goes out.

- The CA-C220 comes on ready to do whatever it was doing when the power was last shut off. If the last thing you were doing was listening to a tape in Deck B, you are now ready to listen to a tape again in Deck B, or you can change to another source.
- If you were listening to the Tuner last, the Tuner comes on playing the station it was last set to.

### Turning the CA-C220 Off

Press the **POWER** button again.

The Standby indicator on the POWER button lights up and the displays blank, except for the clock display.

- A little power (13 watts) is always consumed even though power is turned off (called Standby Mode).
- To switch off the Unit completely, unplug the AC power cord from the AC outlet. When you unplug the AC power cord, the clock will reset to AM 12:00 again away, and preset Tuner stations will be erased after a few days.

## Adjusting the Volume Controls

### Volume Control

Turn the VOLUME control to adjust the volume level of the speakers or headphones.

**CAUTION:** Always set the VOLUME control to MIN before turning on a connected source such as a VCR, or starting any of the other sound sources such as the Tuner, Cassette Deck or CD Player. Otherwise, the sudden blast of sound can permanently damage your hearing and/or ruin your speakers.

### Active Bass Extension

This feature is designed and incorporated to reinforce the bass sound, depending on the volume level to maintain the richness and fullness of the bass. You cannot control it manually.

Press the A. BASS EX. button to light the indicator if you want to use the Active Bass Extension function. To cancel this function, press the A. BASS EX. button again. The indicator will go off.

### Listening With Headphones

A standard pair of headphones can be connected to the PHONES jack on the front panel. With the headphones connected, no sound will be heard from the speakers. Be sure to turn down the volume before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.

## Sound Effect Modes

The CA-C220 has some preset sound effects that give you control of the way your music sounds, so you can tailor it for your room and for the quality of the source. We can give you some idea of how each one affects the music, but the only way to really tell is to try them yourself.

You can use only one effect at a time, selecting from the Live Surround or S.E.A. effects. Feel free to experiment!

### Live Surround Effects

With these effects, the sound coming from only two speakers approaches the quality of sound from four speakers.

- D. CLUB** Increases resonance and bass.
- HALL** Adds depth and brilliance to the sound, like in a concert hall.
- STADIUM** Adds clarity and spreads the sound, like in an outdoor stadium.

### Preset S.E.A. (Sound Effect Amplifier) Effects

Adjustments of frequency range levels have been preset as three S.E.A. effects.

- ROCK** Boosts low and high frequencies.
- POPS** Good for vocal music.
- CLASSIC** Set for wide and dynamic sound stereo systems.

**To get an effect,** turn the MUSIC JOG. The "SOUND MODE" indicator lights in the display, displaying the selected Sound Effect Mode and equalizing pattern.

If you select the Live surround effects, the "LIVE-S" indicator lights up on the display. If you select the S.E.A. effects, the "LIVE-S" indicator goes off.

**To cancel the effect,** press the SOUND EFFECT ON/OFF button, "SEA OFF" is displayed and "LIVE-S" and "SOUND MODE" or the "SOUND MODE" indicator goes off.

□ While the "SOUND MODE" indicator is off, if you press the SOUND EFFECT ON/OFF button, Sound Effect is turned on. To select the mode, turn the MUSIC JOG.



**CAUTION:** Too LOUD!



### Live Surround Effects

- D. CLUB** (Dance Club)
- HALL**
- STADIUM**

- S.E.A. Effects**
- ROCK**
- POPS**
- CLASSIC**





When using the Remote Control, press the **SOUND MODE** button. Each time you press the button, the Sound Mode changes as follows:



- "SEA OFF" appears in the display to show that Sound Effect Mode has been turned off.

### Listening To Optional Equipment

By playing the sound from auxiliary equipment through the CA-C220, you can gain control over how the music or program sounds. Once the connected equipment is playing through the CA-C220, you can apply the sound effects, make recordings, or listen with the headphones.

- First make sure that the optional equipment is properly connected to the CA-C220.

1. Set the **VOLUME** control to **MIN.**
2. Press the **AUX** button.
3. The Unit automatically turns on and "AUX" lights up on the display.
4. Start playing the selected equipment.
5. Adjust the **VOLUME** control to the desired listening level.

### To Cancel the Setting

Change the source by starting any one of the CA-C220's built-in sound sources, such as the Tuner or CD Player.

### Auto Power Off

When playing either a tape or a CD, Auto Power Off will shut the Unit off when the tape or CD comes to an end. Although Auto Power Off is very useful for shutting off the CA-C220 at night, you can also use it if you think you might forget to turn the Unit off when leaving the house or your room at other times of the day.

### To Use Auto Power Off

Press the **AUTO POWER OFF** button so that the "AUTO POWER OFF" indicator lights up on the display.

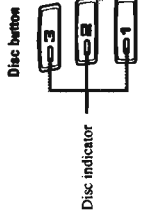
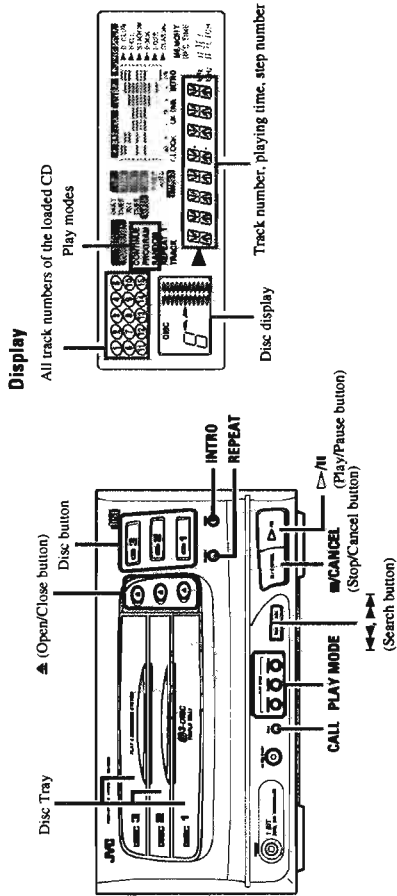
### To Cancel Auto Power Off

Press the **AUTO POWER OFF** button again so that the "AUTO POWER OFF" indicator disappears from the display.

### Important Information On Using Auto Power Off

- The end of CD musical performance varies depending on the play mode of the CD Player. If the play mode is "CONTINUE" or "RANDOM", when all tracks on the disc set in the CD player end, the power is automatically turned off. If the play mode is "PROGRAM", the power is automatically turned off when the last track you programmed ends.
- Auto Power Off will still work even though you press the **REPEAT** button.
- **Repeat Mode ("REPEAT" indicator lights up on the display):** After all tracks on the disc set in the CD Player end, the power is automatically turned off.
- **Repeat 1 Mode ("REPEAT 1" indicator lights up on the display):** After the current track ends, the power is automatically turned off.
- If you press the **AUTO POWER OFF** button while the tape is playing:
  - If Reverse Mode is off (the **REVERSE MODE** indicator is not lighted), the Unit turns off when the current side finishes.
  - If Reverse Mode is on (the **REVERSE MODE** indicator is lighted), the Unit will turn off when the tape finishes playing in the ◀ direction.

## Using the CD Player



There is a disc indicator for each Disc button. This indicator goes out when you press the **▲** button to open the tray, and lights when the tray is closed. While a disc is playing, the Disc indicator on its Disc button flashes. To confirm there is no disc in a CD player tray, its disc indicator is unlit.

The CA-C220's CD Player has an Automatic Changer with 3 disc trays. You can do Continuous, Random, Program or Repeat Play of the discs in the DISC 1, DISC 2 and DISC 3 trays. Repeat Play can be done of either all the tracks or only 1 track. There is also the **Intro Scan** function, which continuously plays only the beginning of each of the tracks of the discs inserted in the trays, and the **Tray Lock** function, which safely keeps discs in the trays.

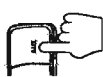
Here are the basic things you need to know to play a CD and locate the different selections on it. Each selection is called a track, so when we are talking about locating a track, we are also talking about how you find a certain song or performance.

### The Quickest Way To Start a CD is With the One Touch Operation

- The power comes on, and operations are done automatically.
- Press a Disc button (1 to 3).
  - When the CD Player is not checking for trays with no disc, if there is a disc in the tray for the disc button you pushed, playback begins from the first track on that disc. If there is no disc in that tray, the next disc is automatically selected and playback begins from the first track of that disc.
  - When the CD Player is checking for trays with no disc, if there is a disc in the tray for the disc button you pushed, playback begins from the first track of that disc. If there is no disc in the tray, however, "NO DISC" appears in the display, then "OPEN" flashes in the display and the tray of the disc button pushed slides out automatically.
- Press the **◀/▶** button (or the **▶** button on the Remote Control) on the CD Player.
  - When the CD Player is not checking for trays with no disc, if there is a disc in the tray of the disc number displayed in the Disc display, playback begins from the first track of that disc. If there is no disc in that tray, the next disc is automatically selected, and playback begins from the first track of that disc.
  - When the CD Player is checking for trays with no disc, if there is a disc in the tray of the disc number shown in the Disc display, playback begins from the first track on that disc. If there is no disc in that tray, a tray containing a disc is automatically selected, and playback begins from the first track on that disc.
  - When the CD Player is checking for all the trays having no discs, "NO DISC" appears in the display, then "OPEN" flashes, and the tray of the disc number shown in the Disc display opens automatically.
- Press the **▲** button.
- The power turns on, and the tray opens automatically.



Advantages of connecting optional equipment



## Basics of Using the CD Player

You can play the discs continuously in the DISC 1 to DISC 3 trays.



### To Insert Discs

1. Press the **▲** button on the right of the tray you want to insert the disc into. The disc tray slides out automatically.
  2. Put a CD, with its label side up, into the tray.
  3. Press the **▲** button to close the tray.
  4. Repeat steps 1 to 3 to insert other discs into other trays.
    - To continue putting discs into other trays, even if a tray is open, by pressing the **▲** button of another disc tray, the open tray will close automatically, and the new disc tray will slide out.
    - To put an 8 cm CD into a tray, insert it so that it is aligned with the groove in the tray's center.
- Note:** When the tray displayed in the Disc display is opened, "OPEN" appears in the display.
- The same operation can be done by pressing the **▲** button on the Remote Control.**

**ATTENTION:** To avoid malfunctions when you play a CD, please set the CD in the right place at the center of the tray.



### To Play a Disc

The discs in the CD Player for which Disc indicators are lighted play continuously, beginning with the selected disc, and moving toward disc 3.

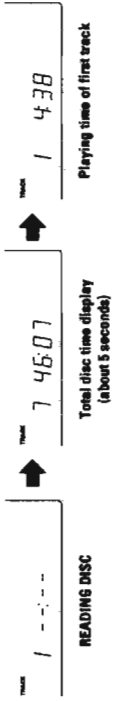


1. Prepare the discs. Check that "CONTINUE" appears in the display. If "CONTINUE" does not appear, press the CONTINUE button. When using the Remote Control, press the PLAY MODE button repeatedly until "CONTINUE" appears in the display.
2. Press the Disc button (1-3) of the disc to play. The first track of the selected disc will begin playing. The Disc No. of the selected disc will appear in the display. When the selected disc finishes playing, the next disc will begin playing automatically. When the last disc has finished playing, the Unit will stop automatically.
- When a Disc button is pressed when a tray is open, the open tray will close automatically, and Continuous Play of the disc which was pressed begins. To play discs continuously, beginning with the first track of the disc in the Disc display, you do not need to press a Disc button (1-3), just press the **▷/II** button. **Note:** When a Disc button is pressed where the Disc indicator is unlit, "NO DISC" appears in the display, "OPEN" lights, and the tray opens automatically. **The same operation can be done by pressing the DISC button or **▷** button on the Remote Control.** To stop the CD, press the **III/CANCEL** button (or the **III** button on the Remote Control). To pause, press the **▷/II** button while the CD is playing. The **▷** display is flash. To cancel/pause (resume playing), press the **▷/II** button again. (Pause cannot be done with the **▷** button on the Remote Control.)

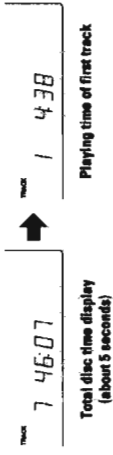


### Display

- When the **▲** button of the tray shown in the Disc display is pressed to close the tray, the display changes as follows.



- When playback of a disc is stopped, the display changes as follows.



**Note:** When doing program operations, after the disc's display reads "Playing time of first track", change the Play mode to "PROGRAM". Before the display changes to "Playing time of first track", the Play mode cannot be changed to "PROGRAM".

### To Change Discs While Playing

You can replace a CD in a tray not being used, while another CD is playing.

1. Press the **▲** button of the tray not being used. The tray opens.
2. Replace the disc in the tray.
3. Press the **▲** button to close the tray.

### To Select a Disc, Track Or Passage Within a Track

Using the Unit

1. If the disc with the track you want is not playing, enter the number of the disc you want using the Disc buttons (1 to 3).
  - Example: for the third disc, press 3.
2. When playback has started or when "Playing time of first track" has appeared in the display, choose the number of the track you want to listen to with the **◀** and **▶** buttons. The selected track starts playing.
  - Each time you briefly press and release the **◀** or **▶** button, the track changes by one. Press and release the **▶** button to go ahead one track at a time. Press and release the **◀** button to go back one track at a time.
  - Holding down the **◀** or **▶** button will fast forward or fast reverse the CD so you can quickly find a particular passage in the selection you are listening to.

Using the Remote Control

1. If the disc with the track you want is not playing, enter the number of the disc you want, using the DISC buttons (1 to 3).
  - Example: for the third disc, press 3.
2. Press the CD **1KEY** button.
3. When playback has started or when "Playing time of first track" has appeared in the display, input the number of the track you want to listen to with the numeric keys. The selected track starts playing.
  - Example: for track 5, press 5. For track 15, press +10 then 5. For track 20, press +10, then 10.
  - You can also use the **◀** or **▶** button to change tracks. However, you cannot fast forward or fast reverse to locate a particular passage using the Remote Control.

### How to find a track





**Searching the contents of CDs**



**Intro Scan**

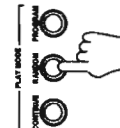
You can use the Intro Scan function to search for a desired track.

1. **Make sure that the CD is not playing and that "CONTINUE" appears on the display.**  
If not, stop the CD Player and press the CONTINUE button on the Unit.  
When using the Remote Control, press the PLAY MODE button until the display reads "CONTINUE".
2. **Press the INTRO button while the CD Player is stopped.**  
"INTRO" appears in the display.
3. **Press the Disc button (1-3) of the disc on which you want to begin Intro Scan.**  
When the >||/H button is pressed instead of the Disc buttons (1-3), Intro Scan begins from the disc in the Disc display. Beginning with the first track on the selected disc, the first 1.5 seconds of each track is played continuously, one after another.  
The Unit stops automatically after the first 1.5 seconds of the last track on the last disc has been played.
4. **Press the <-> button (or the <-> button on the Remote Control) when the desired track is reached.**  
Intro Scan is canceled and normal playback starts from the selected track.
  - If you press the following buttons instead of the <-> button (or the <-> button on the Remote Control), Intro Scan is also canceled, and:
    - If you press the >||/H button (or the >||/H button on the Remote Control) : Continuous Play starts from the next track.
    - Disc buttons (1 to 3): Continuous Play starts from the first track of the selected disc.
    - To specify a track using the Remote Control, press the CD LOKEY button and then the numeric keys (1 to +10) to enter a desired track number. Continuous Play starts from the selected track.

To stop playing and to exit Intro Scan Mode, press the ■/CANCEL button (or the ■ button on the Remote Control).

**Random Play**

The tracks will play in no special order when you use this mode.



To Do Random Play of the Discs

1. **Press the RANDOM button on the CD Player.**  
"RANDOM" will appear in the display.  
When using the Remote Control, press the PLAY MODE button repeatedly until "RANDOM" appears in the display.
  2. **Press the <-> button.**  
Random Play begins.  
When all of the tracks have been played, the CD Player stops.
- To stop playing, press the ■/CANCEL button (or the ■ button on the Remote Control).

To exit Random Mode, press the CONTINUE button.  
When using the Remote Control, press the PLAY MODE button repeatedly until "CONTINUE" appears in the display. (The CD Player must be in Stop Mode.)

- When Random Play finishes, press the CONTINUE button. You cannot select a disc while "RANDOM" is lighted in the display.

**Programming the Playing Order of the Tracks**

You can change the order in which the discs and tracks play, and select only the discs and tracks you want from among those loaded in the CD Player.

- You can do Program Play using either the Unit or the Remote Control, or a combination of both.
- You can program up to 20 steps in any desired order from among the discs in the player.

**Programming Procedure**

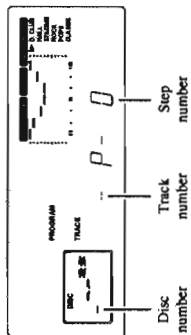
You can only make or change a program when the CD Player is stopped.

**Programming Discs**

Check that "Playing time of first track" has appeared in the display before doing program operations. If "Playing time of first track" has not appeared, press the Disc button of a disc that has been inserted, then press the ■/CANCEL button and wait until "Playing time of first track" is displayed. (See page 10).

**Using the Unit**

1. **Press the PROGRAM button.**  
PROGRAM lights in the display and the "Playing time of first track" display changes to the program input display.
2. **Select a disc with the disc buttons (1 to 3).**  
The input disc number appears in the display, and "..." flashes in the track display area.
3. **While "..." is flashing, press the <-> and >||/H buttons to select individual tracks on the selected disc.**  
If "..." changes from a flashing to a steadily lighted display, start over again by inputting a disc number.
4. **Press the PROGRAM button.**  
The step number changes from "0" to "1", and the track which will be played as the first track has been programmed.
5. **Repeat steps 2-4 until you have entered all the tracks you want to program.**
6. **Press the <->/H button.**  
The Unit plays the tracks in the order you have programmed them.



**Using the Remote Control**

1. **Press the PLAY MODE button repeatedly until "PROGRAM" appears on the display.**  
The "Playing time of first track" display changes to the program input display.
2. **Select a disc with the numeric keys (1 to 3).**
3. **To select individual tracks from the selected disc enter each number by pressing the CD 10 KEY button and using the numeric keys (1 to 10 and +10).**  
□ Example: for track 5, press 5. For track 15, press +10 and 5. For track 20, press +10 and 10.
4. **Repeat steps 2-3 until you have entered all the tracks you want to program.**
5. **Press the >||/H button.**  
The Unit plays the tracks in the order you have programmed them.

To stop playing, press the ■/CANCEL button (or the ■ button on the Remote Control) once.

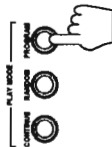
To delete the program and exit Program Mode, press the ■/CANCEL button on the Unit (or the CANCEL button on the Remote Control) repeatedly until all the program steps are deleted, and then press the CONTINUE button.

- You can skip to a particular program step by pressing the <-> or >||/H button (or the <-> or >||/H button on the Remote Control) during program play.
  - To play the programmed tracks over and over, press the REPEAT button on the Unit. "REPEAT" lights up on the display.
- Note:** When a >||/H button is pressed, the program contents for that button's disc are canceled. Pressing all the >||/H buttons cancels all program contents.

- When Program Play finishes, press the CONTINUE button. You cannot select a disc while "PROGRAM" is lighted in the display.

With programming, you can play back tracks in any order

**How to program**



Programming hints



**A Few Hints to Make Programming Easier**

- To Check the Program Contents (The Unit Must Be in Step Mode)**
- Each time you press the CALL button on the Unit, the program contents are shown on the display in the programmed order.
- To Change the Program Contents**
- Press the CALL button on the Unit until the display shows the program step to correct. While the step number display is flashing, enter the new disc number and/or track number, which will replace the one originally showing.
  - To delete a program step, press the CALL button until the display shows the program step to delete, then press the **CANCEL** button.
  - You can use both of these ways to change program steps during programming as well as later.

**How to repeat a selection or all the CDs**



**Repeating a Selection Or the Discs**

- You can have all the discs, the program or the individual selection currently playing repeat as many times as you like.
- Press the REPEAT button on the CD Player.**  
Each time you press the REPEAT button, it cycles from function-off, which turns "REPEAT" off on the display, to "REPEAT" which will repeat all the tracks in order or according to the program you have set, and then to "REPEAT 1" which will repeat the currently playing track.
- To exit Repeat Mode, press the REPEAT button so that neither "REPEAT" nor "REPEAT 1" appear on the display.**
- Press the REPEAT button before or during Random Play to instruct the CA-C220 to continue with a different random track selection after the last selection of the last disc is played.

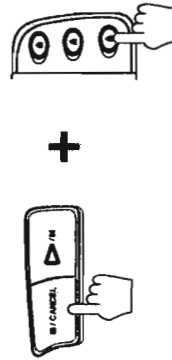
**Tray Lock Function**

In order to safely keep the discs in the CD Player, the three trays can be electronically locked in a single operation. When the electronic lock is on, the trays cannot be opened even if the **▲** button is pressed.



**Locking the Electronic Lock**

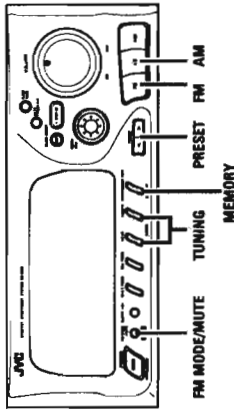
1. Put the CA-C220's power into the **STANDBY** condition. If the power is on, press the **POWER** button to light the Standby indicator.
2. While pressing the **CD Player's** **▲/CANCEL** button, press the **▲** button for **DISC 1's** tray. "LOCKED" flashes in the display a few times to notify that the trays have been locked. When the CD Player's trays have been locked, pressing the **▲** key for **DISC 1** to **DISC 3** will only result in "LOCKED" flashing a few times in the display, and the trays cannot be opened.



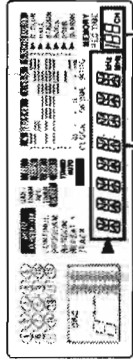
**Unlocking the Electronic Lock**

1. Put the CA-C220's power into the **STANDBY** condition. If the power is on, press the **POWER** button to light the Standby indicator.
2. While pressing the **CD Player's** **▲/CANCEL** button, press the **▲** button for **DISC 1's** tray. When the unlock operation is done, "UNLOCKED" appears in the display to show that the lock has been taken off. The trays can now be opened by pressing the **▲** buttons.

**Using the Tuner**



Display



Band display, Frequency display

Preset channel

**Listening To the Radio**

You can listen to both FM and AM stations. Stations can be tuned in manually, automatically, or from preset memory storage.

- Before listening to the radio:
  - Check that both the FM and AM antennas are firmly connected.

**One Touch Radio**

Just press the FM button to turn on the Unit and start playing the most recent FM station tuned in, or press the AM button to listen to the most recent AM station tuned in.

- You can switch from any other sound source to the radio by pressing either the FM or AM button.



**Tuning In a Station**

Press the FM or AM button to turn on the radio. The display shows the station frequency (tuned in).

**Three ways to select a station in a station**

- Press the **TUNING** < or > button repeatedly to move from frequency to frequency until you find the one you want.
  - OR
  - Hold down the **TUNING** < or > button, the frequency starts changing on the display. When a station is tuned in, "TUNED" lights up on the display and the frequency stops changing.
  - OR
  - (Possible only after presetting stations.) Press once and release the **PRESET** < or > button to go to the next preset station, or hold the **PRESET** < or > button to cycle through the preset stations; release the button when the preset station you want shows on the display.
- You can also use the **Remote Control** to tune in preset channels:
1. Press the **TUNER** button so that you can receive the most recent station tuned in.
  2. Select the station by entering the preset number in the numeric keys of the **Remote Control**.



Three ways to tune in a station



**How to preset FM and AM radio stations**



**Presetting Stations**

You can store up to 40 of your favorite radio stations (FM and AM) in memory, giving you quick, easy access to the stations.

1. Select a band by pressing either the **FM** or **AM** button.
2. Press the **TUNING** < or > button to tune in a station.
3. Press the **MEMORY** button on the Tuner.
  - On the display, "MEMORY" will blink for 5 seconds.
  - During these 5 seconds while "MEMORY" is blinking, you can assign a channel number to the station and enter it into the memory.
4. Select a channel number by pressing the **PRESET** < or > button until you find the channel number you want.
5. Press the **MEMORY** button and the station will be assigned to the channel number showing on the display.
  - If a station has been previously stored using the same channel number, this will be erased and the newly selected station will be stored.
  - If "MEMORY" in the display goes off, start again from step 3.
6. Repeat steps 1 - 5 for each station you want to store in memory with a preset number.

**CAUTION:** If the Unit is unplugged or if a power failure occurs, the preset stations stored in memory may be lost.

**Receiving In Stereo Or Mono**

The CA-C220 can receive FM broadcasts in either stereo or mono. When "AUTO" lights up on the display, the Unit automatically receives broadcasts in the mode they are transmitted. (When a stereo broadcast is received, "STEREO" lights up on the display.) Furthermore, you won't hear noise while tuning in stations. Usually, leaving the Unit in Auto Mode, with "AUTO" lighted, gives you the best reception.

While receiving an FM broadcast, the FM Mode can be switched between Auto and Mono with the FM MODE/MUTE button (DEMO button), as explained below.

**Switching From FM Auto Mode To FM Mono Mode**

- When the Demonstration Display is On  
Press the FM MODE/MUTE button (DEMO button) twice.
- When the Demonstration Display is Off  
Press the FM MODE/MUTE button (DEMO button) three times.
- "MONO" appears in the display.

MONO

**Switching From FM Mono Mode To FM Auto Mode**

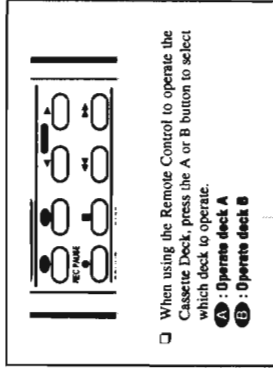
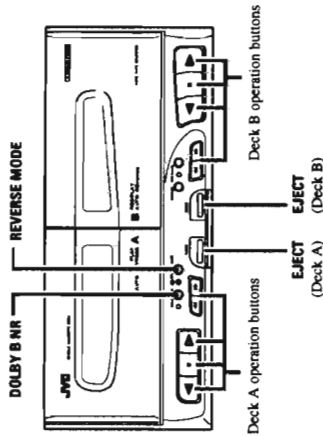
- When the Demonstration Display is On  
Press the FM MODE/MUTE button (DEMO button) twice.
- When the Demonstration Display is Off  
Press the FM MODE/MUTE button (DEMO button) three times.
- "AUTO" appears in the display.

AUTO

**Note:** The Demonstration Display will always turn off when the FM Mode is switched from Mono to Auto or vice versa.

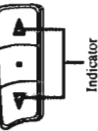
**Using the Cassette Deck**

**Listening To a Tape**



□ When using the Remote Control to operate the Cassette Deck, press the A or B button to select which deck to operate.

**ⓐ** : Operate deck A  
**ⓑ** : Operate deck B



There are indicators on the ◀ and ▶ button of Deck A and Deck B. These indicators indicate the direction the tape advances. These indicators flash slowly when playing or recording, and quickly when fast left and fast right. When doing Music Scan, the indicators flash slowly and quickly repetitively.

**Listening to a tape: how to use your Cassette Deck**

- The Cassette Deck allows you to play, record and dub audio tapes.
- Most tapes are now recorded with the Dolby NR system, so first check which type of the Dolby NR system has been used on the tape. Only Dolby B NR is incorporated into the CA-C220.
- With Automatic Tape Detection, you can listen to type I or II tapes without changing any settings.

**CAUTION for when playing tapes:**

The CA-C220's Cassette Deck prioritizes later operations over earlier ones. If a deck is operated while the other deck is already operating, the deck which was already operating will stop, and the other deck will start.

The use of tapes longer than 120 minutes is not recommended, since characteristic deterioration may occur and these tapes easily jams in the pinch-rollers and the capstans.

**One Touch Play**

By pressing either the ▶ or ◀ button (or the ◀ or ▶ button on the Remote Control) on either Deck A or B, the Unit will come on, "TAPE" appears in the display, and if a tape is in the deck, it will start to play. If no tape is loaded, the Unit will come on and wait for you to insert a tape, or select another function.



Playback procedure



When the power is already on, you can use this basic procedure:

1. Press the EJECT button for the deck you want to use.
2. When the cassette carrier opens, put the cassette in, with the exposed part of the tape down, toward the base of the CA-C220.
3. Close the carrier gently.
4. Press the button to play the front side, or the button to play the reverse side. The arrow indicator on the pressed button flashes and the tape starts playing.

To stop playing, press the button.

To remove the tape, stop the tape, and press the EJECT button.

**Fast Left And Fast Right**

- While the tape is stopped, press the button and the tape will wind rapidly onto the left side of the cassette without playing.
- While the tape is stopped, press the button and the tape will wind rapidly onto the right side of the cassette without playing.

**Music Scan**

To find the beginning of a music track during play, use the Music Scan function. Music Scan searches for blank portions that usually separate tracks, then plays the next song.

**To Find the Beginning of the Current Song**

- Press the or button during play.
- Make sure that you press the or button in the opposite direction to that in which the tape is playing. Searching stops at the beginning of the current song, and the current song starts automatically.

**To Find the Beginning of the Next Song**

- Press the or button during play.
- Make sure that you press the or button in the same direction as that in which the tape is playing. Searching stops at the beginning of the next song, and the next song starts automatically.

Music Scan works by detecting a 4-second long blank at the beginning of each selection, so it won't work well if your tape has:

- No blank at the beginning of a track
- Noise (often caused by much use or poor quality dubbing) which fills the blank with noise.
- Long, very soft passages or pauses in a selection. The scan will detect these as 4-second long blanks. If this happens, just scan again until you reach the selection you want.

**Other Useful Features of the Cassette Deck**

- Use Reverse Mode to make the tape automatically reverse at the end of a side and start playing the other side. Press the REVERSE MODE button to change from Reverse Mode on (when the indicator is lighted) to Reverse Mode off, or from off to on.
- Continuous Play: With the Reverse Mode indicator on, when tape playback in the direction finishes, the Unit always checks to see if a tape is in the other deck. If there is, it automatically starts playing. This Continuous Play function works regardless of which deck starts first.
- Press the DOLBY B NR button to switch Dolby B Noise Reduction on (the indicator lights up) or off (the indicator goes off). If a tape is recorded with the Dolby B NR system, playing it back with the Dolby NR on will reduce tape noise and improve the clarity of the sound.

More useful things to know:

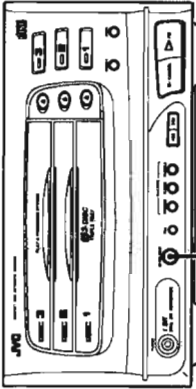
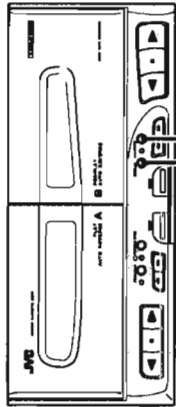
- Reverse Mode
- Continuous Play



- Dolby NR



**Recording**



**What can you record?**

- Tapes
- Radio
- CDs
- Connected source

Recording onto a cassette from any of the sound sources is simple. Just place a tape in Deck B, have the source ready, make one or two settings, and you're ready to record. For each source the procedure is a little different and now we'll explain just what to do for each one. If you forget, just come back to the section which has the specific procedures you need. But first, here are a few things to make your recordings better.

**Note:** Set the demonstration function to OFF before doing recording.

Press the DEMO button 1 time when doing Demonstration Display.

Press the DEMO button 2 times when not doing Demonstration Display.

Take care that if recording is done with the demonstration function left ON, the sound of the recording will change or break off to match changes in the "SOUND MODE".

**Copyright**

**Things To Know Before You Start Recording**

- It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.

**Reduce hiss — Dolby NR**

- Press the DOLBY B NR button — the indicator lights up — to reduce tape hiss, except when dubbing tapes, since Dolby NR is inactive in Dubbing Mode regardless of the setting of DOLBY B NR. The dubbed tape automatically contains the same processing as the source tape.

**Recording level**

- The recording level, which is the volume at which the new tape is being made, is automatically set correctly, so it is not affected by the VOLUME control on the CA-C220. Thus, during recording you can adjust the sound you are actually listening to without affecting the recording level.

**Erase protection**

- Two small tabs on the back, one for side A and one for side B, can be removed to prevent accidental erasure or re-recording. To record on a cassette with the tabs removed, you must cover the holes with adhesive tape first. However, when a type II tape is used, only cover part of the hole as shown, since the other part of the hole is used to detect the tape type.



**Recording sound mode**

- When recording, you can use the Sound Effect Modes to condition the music as it is recorded. But when recording using CD Direct, once recording has started, these settings cannot be changed.

**Usable tape type**

- Type I and Type II tapes can be used for recording.

**Note:** At the start and end of cassette tapes, there is leader tape which cannot be recorded onto. Depending on the recording source, the first part of the recording may be missing because of the leader. When recording CDs or radio broadcasts, to get the beginning of the recording on the tape, first wind on the leader before beginning recording.

**CAUTION:** If recordings you have made have excessive noise or static, the Unit may be too close to a TV which was on during the recording. Either turn off the TV or increase the distance between the TV and the CA-C220.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

**Standard recording:**  
any source to tape

### Standard Recording

This is the basic method for recording any source. The CA-C220 also has special ways for recording CD to tape, and tape to tape, which save you time and effort, as well as give you some special effects. However, when you need to add a selection to a tape you have made, or are combining selections from several sources on one tape, use the method described below; just substitute the source you want into this procedure, such as a tape in Deck A, a CD, or the Tuner. You can also record from an auxiliary source with this procedure.

**Source to tape:**  
step by step



#### To Record Any Sound Source To Tape

Follow these steps to record from any sound source onto a tape in Deck B.

1. Insert a blank or erasable tape into Deck B.
2. Press the REC PAUSE button.
3. Press the REVERSE MODE button if you want to record on both sides of the tape. The REVERSE MODE indicator lights up.
4. Prepare the source, by, for example, tuning in a radio station, loading CDs, or turning on connected equipment.
5. On Deck B, press either the ▷ button to record on the front side, or the ◁ button to record on the reverse side.

#### To Pause At Any Time During the Recording Process

Press the REC PAUSE button again. Then press either the ▷ or ◁ button on Deck B to restart recording. To Stop At Any Time During the Recording Process Press the ■ button on Deck B.

**CAUTION:** When Sound Effect Mode or other buttons are operated during recording, note that the recorded sound or the sound of the recording source may change. However, discs not being recorded can be changed, and AUTO POWER OFF or SLEEP timer settings can be made with no effect to the sound.

### CD Direct Recording

Everything on the CD goes onto the tape in the order it is on the CD, or according to an order you have set in a program.

**CD Direct Recording:**  
step by step



1. Prepare CDs. (See page 5.) When recording from a disc in the holder, first select the disc by pressing the Disc button (1-3) of the disc to record from, then the M/CANCEL button.
2. Set the Sound Effect Mode if you want.
3. Insert a cassette in Deck B to record on.
  - If you want to record on both sides of the tape, press the REVERSE MODE button on the Cassette Deck so that the REVERSE MODE indicator lights up.
4. Press the CD REC START button on the CD Player. The Unit plays the CD and starts recording.

At the end of the tape, the CA-C220 automatically goes back to the beginning of the last selection and re-records it, this time gently fading out at the end. If you selected the Reverse Mode, the reverse side starts with the last selection on the front side and will be faded out at the end again. (A 10 second blank is created at the beginning of the reverse side.)

When the tape is finished, the Unit stops the CD Player and the Cassette Deck.

#### To Stop At Any Time During the Recording Process

Press the ■ button on Deck B.

#### Notes:

- When the Auto Power Off function is turned on while recording a CD, the power will automatically turn OFF when either the CD or tape finishes. Be careful when the Auto Power Off function is turned on while recording a CD in Repeat Mode, as repeat will be canceled and the power will automatically turn OFF with Repeat Mode ("REPEAT" or "REPEAT !"). (Page 7)
- When making SLEEP timer settings while doing CD Direct recording, set the time so that there is enough leeway to finish the recording before the power goes off. If the time is set to about the length of the CD, the power may go off before recording finishes.

For CD Direct Recording using more than one disc, use a blank tape. If you use a pre-recorded tape, pre-recorded sound may not be erased between newly-recorded tracks.

**Tape to tape dubbing:**  
Introduction

### Tape To Tape Recording (Dubbing)

Recording from one tape to another is called dubbing.

- You can dub tapes simply, with just a single button.
- To dub both sides of a tape, start from side A for both Deck A and Deck B, and press the REVERSE MODE button so that the REVERSE MODE indicator lights up.
- It is preferable that the type of tape (Type I or Type II) you record from be the same as the type you record onto.

#### How To Use the DUBBING Button

1. Insert the source cassette you want to copy from into Deck A for playback.
2. Insert the blank or erasable cassette you want to copy onto in to Deck B for recording.
3. Press the DUBBING button. Deck A and Deck B will start simultaneously.

To stop dubbing, press the ■ button on Deck A or Deck B.

- Dolby NR is inactive in dubbing mode regardless of the setting of DOLBY B NR. The dubbed tape automatically contains the same processing as the source tape.
- When doing dubbing with the DUBBING button, you can hear Sound Effect Mode effects through the speakers or headphones. However, the sound is dubbed without Sound Effect Mode effects. To do dubbing with the sounds from the Sound Effect Mode, use the "Standard Recording" method given on page 19.

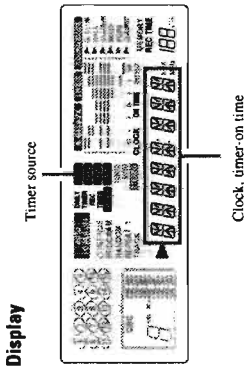
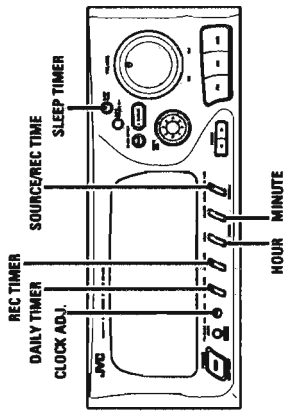
### Recording With the Timer

The Cassette Deck can be set to record a tape automatically. This is especially useful for recording broadcasts when you are not at home, or late at night when you are asleep.

1. Insert a cassette for recording into Deck B.
2. Set the REC Timer, by following the steps in "Setting the REC (Recording) Timer" (Page 21).



# Using the Timers



**Three Timers:**

- REC Timer
- DAILY Timer
- SLEEP Timer

The timers let you control recording and listening functions automatically.

- Three types of timers are available:
  - **REC (Recording) Timer** — Unattended recording of radio broadcasts. You can set the starting time and length of the recording.
  - **DAILY Timer** — Wake up to music from any source.
  - **SLEEP Timer** — Fall asleep and have your CA-C220 turn off automatically after a certain length of time.

## Clock Setting

The timers depend on the clock; the clock must be right for the timers to work as you expect. Note that the clock must be set, or the timers cannot be set.

### Setting the Clock

1. Press the **CLOCK ADJ.** button.
2. Set the hour by pressing the **HOUR** button. Each time you press the button, the hour advances by one. Hold the button down, and the hour displayed will advance continuously, until you release the button.
3. Set the minutes by pressing the **MINUTE** button. Each time you press the button, the minutes advance by one. Hold the button down, and the minutes advance in ten minutes increments until you release the button.
4. Press the **CLOCK ADJ.** button again and the clock is set for the hour and minutes you have selected, starting from zero seconds.

**CAUTION:** If there is a power failure, the clock loses its setting. The display shows "AM 12:00", and the clock must be reset.

## Setting the REC (Recording) Timer

With the Recording Timer you can make a tape of a radio broadcast automatically whether or not you are home. For the timer to work correctly, you need to make sure of the following in addition to setting the time for the Tuner and Cassette Deck to come on:

- You can set the Recording Timer whether the Unit is on or off.
- The tape you want to record onto must be in Deck B.
- The radio station whose program you want to tape must be the last one played before the timer comes on.

### Procedures For Setting the Recording Timer

1. Press the **REC TIMER** button so that "REC TIMER" blinks on the display. As long as it is blinking, you can continue with the setting process.
  - If you wait too long, and it stops before you are done, just press the **REC TIMER** button once and start over.
2. Set the time you want the radio to come on, and put a tape in Deck B to record on. Press the **HOUR** button to set the hour and the **MINUTE** button to set the minute.
3. Press the **SOURCE/REC TIME** button to set the length of time for the recording. Each time you press this button, the duration increases by one minute. If you hold the button down, it will advance in ten minute increments up to 120 minutes, which is the maximum time you can set.
  - At the end of the set length of time the radio and Deck B will shut off.



4. Press the **REC TIMER** button again, or wait 5 seconds. The set contents are displayed for a few seconds and the "REC TIMER" indicator lights up. The Unit will memorize the setting. When the set time comes, the CA-C220 turns the power on and records the broadcasting station you selected last, before turning the power off.
    - If a button is pressed when the Recording timer is operating, recording continues but the timer is canceled.
- Before the Set Time Comes**
- Check that tape direction is correct. This is important especially when Reverse Mode is off.
  - Set Reverse Mode on if you want to record on both sides of the tape.
  - Select the Sound Mode if you want to record with one of the Sound Mode (D. CLUB, HALL, STADIUM, etc.).
  - Set the VOLUME control to MIN so that no sound comes out from speakers when the recording timer switches on the CA-C220. This is important especially if you will be out during the recording.

*It is very easy, and can be very disappointing, to forget to put in a tape, or to accidentally leave a tape in Deck B you don't want recorded over. Although this happens to almost everyone at one time or another, we hope it won't happen to you!*

**To Change the Recording Timer Setting**  
 Press the **REC TIMER** button twice ("REC TIMER" reappears) and make any changes you want.  
**To Cancel the Recording Timer Setting**  
 Press the **REC TIMER** button again so that "REC TIMER" goes off on the display.

## Setting the DAILY Timer

With this timer you can wake up to music from a CD, tape or your favourite radio program.

- You can set the **DAILY Timer** whether the Unit is on or off.

### Procedure For Setting the DAILY Timer

1. Press the **DAILY TIMER** button so that "DAILY TIMER" blinks on the display.
2. Set the time you want the Unit to turn on:
  - Press the **HOUR** button to set the hour and the **MINUTE** button to set the minute.
  - Press the **SOURCE/REC TIME** button to set the source.
    - Each time you press this button, the display shows one of the four possible sources: CD, TAPE, FM or AM. Leave the one you want lighted but select within 5 seconds.
      - If you select FM or AM as the source, the last played station is the one which comes on at the set time.
      - If the CD is the source, when the set time comes, the CA-C220 plays in the Play Mode you set before turning the power off.
3. Press the **DAILY TIMER** button again, or wait 5 seconds. The set contents are displayed for a few seconds and the "DAILY TIMER" indicator lights up.
  - Turn the power off.
5. Turn the power off. When the set time comes, the CA-C220 turns on, plays the source you have selected for 60 minutes, and then the Unit turns off.
  - If you press any button while the **DAILY Timer** is being activated, the Unit will not turn off automatically after 60 minutes.



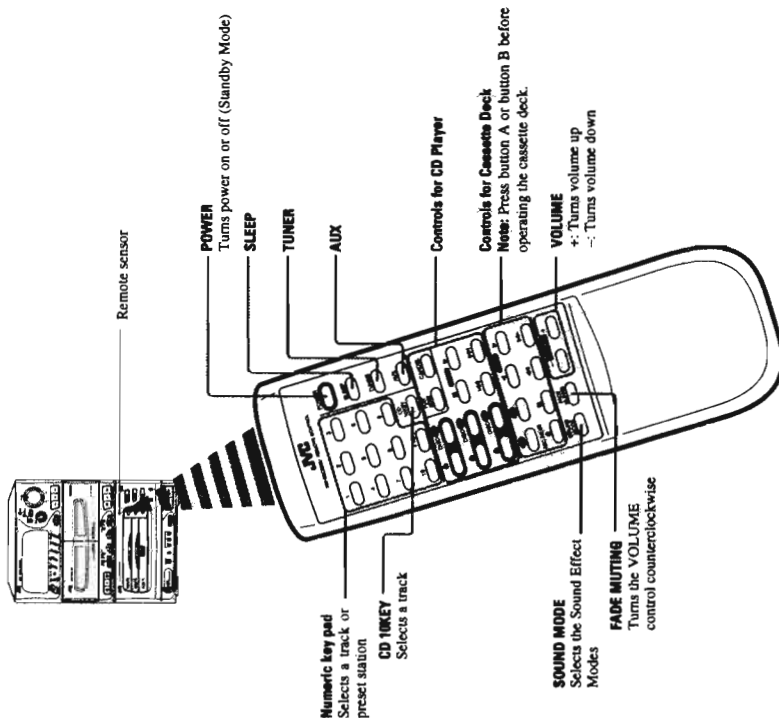
- Before Turning Off the Unit**
- If the source is a tape:
    - Check that the tape direction is correct. This is important especially when Reverse Mode is off.
    - Deck B has priority, so if tapes are in both decks, the tape in Deck B plays first.
  - Set Reverse Mode on if you want to play both sides of the tape.
  - Select the Sound Mode if you want to listen using a Sound Mode (D. CLUB, HALL, STADIUM, etc.).
  - Set the volume to an appropriate level.

**To change the DAILY Timer setting**  
 Press the **DAILY TIMER** button twice ("DAILY TIMER" reappears) and make any changes you want.  
**To cancel the DAILY Timer setting**  
 Press the **DAILY TIMER** button again so that "DAILY TIMER" goes off on the display.

## Using the Remote Control

The Remote Control makes it easy to use many of the functions of the CA-C220 from a distance of up to 23 feet away. You need to point the Remote Control at the remote sensor on the CA-C220's front panel.

- Most of the buttons on the Remote Control do just what the ones on the CA-C220 do.
- A few functions are available only by using the Remote Control, as described below.



### Using the Numeric Key Pad

The numeric key pad is used to specify a CD track or the number you have assigned to a preset radio station. To enter a number using the numeric key pad, follow these steps:

- Before using the numeric key pad, check to see whether the numeric key pad is functioning to operate the CD Player or Tuner. This depends on which button on the Remote Control you have pressed before using the numeric key pad. For example, if you press the TUNER button before the numeric key pad, it can select a preset station. If you press the CD 10KEY button, it can select a CD track.
- For numbers between 1 and 10, just press the button with the number you want.
- For numbers from 11 to 20, first press the +10 key, then the ones digit of the number you want — to get 15, first press +10, then 5. For 20, press +10 and 10.
- For numbers from 21 to 30, press the +10 key twice; then press the ones digit — to get 25, press +10 +10 and 5.
- For numbers from 31 to 40, press the +10 key three times, then the ones digit of the number you want — to get 32, press +10 +10 +10 and 2. For 40, press +10 +10 +10 and 10.

## Setting the SLEEP Timer

Use the Sleep Timer to turn the Unit off after a certain number of minutes when it is playing. By setting this timer, you can fall asleep to music and know your Unit will turn off by itself rather than play all night.

- You can only set the Sleep Timer when the Unit is on and a source is playing.

To set the SLEEP Timer, follow this procedure:

1. With the CA-C220 on and a source playing, press the SLEEP TIMER button. When using the Remote Control, press the SLEEP button. The "SLEEP" indicator on the display will start blinking.

SLEEP 10

2. Set the length of time you want the source to play before shutting off.

- Each time you press this button while the "SLEEP" indicator is blinking, it changes the number of minutes shown on the display in this sequence:  
→ 10 → 20 → 30 → 60 → 90 → 120 → Sleep Timer off → (back to the beginning)

When the number of minutes you want shows on the display, just wait 5 seconds until the indicator stops blinking, and is lighted steadily.

The Unit is now set to turn off after the number of minutes you set.

### To Change the SLEEP Timer Setting

Press the SLEEP TIMER button until the number of minutes you want appears on the display.

### To Cancel the SLEEP Timer Setting

Press the SLEEP TIMER button until the "SLEEP" indicator goes off on the display.

Turning off the Unit also cancels the SLEEP Timer.

## Timer Priority

Since each timer can be set independently, you may wonder what happens if the settings overlap. Here are the priorities for each timer:

- The Recording Timer always has priority. This means that:
  - If another timer is set to come on during a time when the Recording Timer is operating, the other timer just won't come on at all, so you will always get the entire program on tape.
  - If the Recording Timer is set to come on while another timer is operating, the other timer will shut off 10 seconds before the Recording Timer is set to turn on, and the Recording Timer will then take over.
- The SLEEP Timer has priority over the DAILY Timer. This is important because if you set the SLEEP Timer to start before and then end after the DAILY Timer would start, the DAILY Timer doesn't come on. So if you want your alarm to go off as scheduled, be sure the SLEEP Timer shuts off before the DAILY Timer is set to turn on the Unit.



## Care And Maintenance — General Notes

### Compact Discs

Handle your compact discs, cassette tapes, and Cassette Deck carefully, and they will last a long time.



- Remove the CD from the case by holding it at the edges while pressing the center hole lightly.
- Do not touch the shiny surface of the CD, or bend the CD.



- Put the CD back in its case after use to prevent warping.
- Be careful not to scratch the surface of the CD when placing it back in the case.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.



- A dirty CD may not play correctly. If a CD does become dirty, wipe it with a soft cloth in a straight line, from center to edge.

**CAUTION:** Do not use any solvent (for example, conventional record cleaner, spray thinner, benzine, etc.) to clean a CD.

### Moisture Condensation



- Moisture may condense on the lens inside the Unit in the following cases:
- After starting the heating in the room.
  - In a damp room.
  - If the unit is brought directly from a cold to a warm place.
- Should this occur, the Unit may malfunction. In this case, leave the unit turned on for a few hours until the moisture evaporates, unplug the AC power cord, and then plug it in again.

- In general, you will have the best performance by keeping your tapes, CDs, and the mechanism clean.
- Store tapes and CDs in their cases, and keep them in cabinets or on shelves.
  - Keep the Cassette Deck's tape doors and the CD trays closed when not in use.

### Cassette Tapes



- If the tape is loose in its cassette, take up the slack by inserting a pencil in one of the reels and rotating.
- If the tape is loose, it may get stretched, cut, or caught in the cassette.



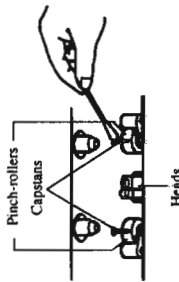
- Do not touch the tape surface.



- Do not store the tape:
  - In dusty places
  - In direct sunlight or heat
  - In moist areas
  - On a TV or speaker
  - Near a magnet

### Cassette Deck

- If the heads, capstans, and pinch-rollers of the Cassette Deck become dirty, the following will occur:
  - Loss of sound quality
  - Discontinuous sound
  - Fading
  - Incomplete erasure
  - Difficulty recording
- Clean the heads, capstans, and pinch-rollers using a cotton swab moistened with alcohol.



- If the heads become magnetized, the Unit will produce noise or lose high frequencies.
- To demagnetize the heads, turn off the Unit, and use a head demagnetizer (available at electronics and record shops).

## Troubleshooting

- If you are having a problem with your CA-C220, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

Symptom	Possible Cause	Action
No sound is heard.	Connections are incorrect, or loose.	Check all connections and make corrections. (See pages 3 - 4.)
Unable to record.	Cassette record protect tabs are removed.	Cover holes on back edge of cassette with tape.
Poor radio reception	The antenna is disconnected. The AM Loop Antenna is too close to the Unit. The FM Wire Antenna is not properly extended and positioned.	Re-connect the antenna securely. Change the position and direction of the AM Loop Antenna. Extend FM Wire Antenna to the best reception position.
The CD skips.	The CD is dirty or scratched.	Clean or replace the CD.
Unable to operate the Remote Control.	The path between the Remote Control and the sensor on the Unit is blocked. The batteries have lost their charge.	Remove the obstruction. Replace the batteries.
The CD tray cannot be opened.	The main AC power cord is not plugged in.	Plug in the AC power plug.
The CD does not play.	The CD is upside down.	Put the CD in with the label side up.
Operations are disabled.	The built-in microprocessor has malfunctioned due to external electrical interference.	Unplug the Unit then plug it back in.
The cassette door cannot be opened.	During tape playing, the power cord was unplugged.	Plug in the power cord, press the POWER button, and then the EJECT button.



## Specifications

### Amplifier Section

Output Power **25 watts per channel, min. RMS, both channels driven, into 6 ohms from 63 Hz to 20 kHz, with no more than 0.9% total harmonic distortion.**

Input Sensitivity/Impedance (1 kHz)  
AUX 280 mV/47 kohms

### Cassette Deck Section

Frequency Response  
Type II (CrO<sub>2</sub>) : 30 - 16,000 Hz  
Type I (NORMAL) : 30 - 15,000 Hz  
Wow And Flutter 0.09% (WRMS)

### CD Automatic Changer Section

CD Capacity 3 discs  
Dynamic Range 90 dB  
Signal-To-Noise Ratio 90 dB  
Wow And Flutter Unmeasurable

### Tuner Section

FM Tuner  
Tuning Range 87.5 - 108.0 MHz  
AM Tuner  
Tuning Range 530 - 1,710 kHz

Dimensions 245 x 329 x 342.5 mm (W/H/D)  
(9-11/16 x 13 x 13-1/2 inches)

Weight 8.0 kg (17.7 lbs)

### Accessories

AM Loop Antenna (1)  
Remote Control (1)  
Batteries R6P (SUM-3)/AA (15F) (2)  
FM Feeder Antenna (1)  
FM Antenna Adaptor (1)

### Power Specifications

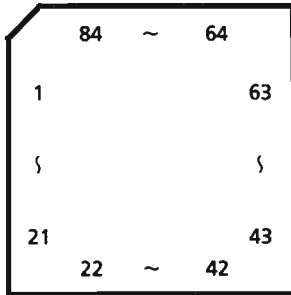
Power Requirements AC 120 V  $\sim$ , 60 Hz  
Power Consumption 100 watts  
13 watts (in standby mode)

*Design and specifications are subject to change without notice.*

## Description of ICs

### ■ MN172412J6G(IC804) : CD / Tuner Controller

#### 1. Terminal Layout



#### 2. Key Matrix

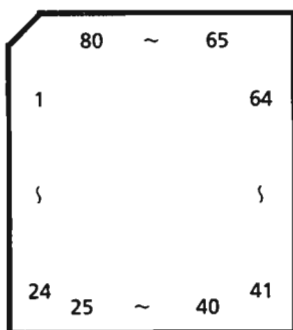
	KEY IN 0 (PIN48)	KEY IN 1 (PIN49)	KEY IN 2 (PIN50)	KEY IN 3 (PIN51)
KEY OUT 0 (PIN52)	FM MODE / MUTE (S800)	CLOCK ADJ (S803)	DAILY TIMER (S806)	REC TIMER (S809)
KEY OUT 1 (PIN53)	HOUR TU < (S801)	MINUTE TU > (S804)	SOURCE (S807)	PRESET < (S810)
KEY OUT 2 (PIN54)	PRESET > (S802)	FM (S805)	AM (S808)	VOCAL MASKING (UB,UP,US,UT,U) SLEEP TIMER (Other Area) (S811)
KEY OUT 3 (PIN12)	CALL (S834)	CONTINUE (S838)	RANDOM (S842)	PROGRAM (S846)
KEY OUT 4 (PIN11)	⏮ (S835)	⏭ (S839)	REPEAT (S843)	▶ / ⏸ (S847)
KEY OUT 5 (PIN10)	INTO (S836)	DISC 1 (S840)	DISC 2 (S844)	DISC 3 (S848)
KEY OUT 6 (PIN9)	■ / CANCEL (S837)	▲ 1 (S841)	▲ 2 (S845)	▲ 3 (S849)

#### 3. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1~3	1G~3G	O	FL grid control signal	56	CHST	O	Strobe signal output for IC801
4	LSI ON	O	ON signal for CD LSI (IC801)	57	DATA	I/O	Control,Status data I/O for IC801
5	INH	I	Inhibit signal input for tuner controller	58	SCK	O	Clock output for IC801
6	CS	I	Chip select terminal for tuner controller	59	CHREQ	I	Input the "mecha. data request" to IC801
7	DISC 3	O	DISC 3 indicator control signal	60	STEREO	I	Stereo mode signal input from IC012
8	DISC 2	O	DISC 2 indicator control signal	61	TUNED	I	TUNED indicator on signal input from tuner P.C.B.
9~12	KO6~KO3	O	Key matrix output	62	T.CE	O	Chip enable signal output for IC121
13,14	DCS IN,OUT	I/O	DCS signal input / output	63	T.CLK	O	Clock output for IC121
15	DISC 1	O	DISC 1 indicator control signal	64	IFDATA	O	IF data output for IC121
16~22	S23~S17	O	FL segment control signal	65	T.DATA	I	Data input from IC121
23	VDISP	-	Power supply for FL display	66	T.MUTE	I	Mute signal input from tuner P.C.B.
24~39	S16~S1	O	FL segment control signal	67	TU TEST	I	Test mode input for tuner controller
40~43	BUS0~ BUS3	I/O	CD bus command / data input and output (IC601)	68	RESET	I	Reset signal input for tuner controller
44	CCE	O	CD bus data chip enable (IC601)	69	X1	-	Connected to ground
45	BUCK	O	CD bus clock output (IC601)	70	X2	-	Non connection
46	CD RESET	O	CD reset signal output (IC601)	71	VSS	-	Connected to ground
47	RESTSW	I	CD rest switch signal input	72,73	OSC2,1	I/O	Oscillation terminal
48~51	KI0~KI3	I	Key matrix input	74	VDD	-	Power supply
52~54	KO0~KO2	O	Key matrix output	75~84	13G~4G	O	FL grid control signal
55	CD TEST	I	CD TEST mode input				

■ MN172412J5Z (IC901) : Deck / Amp. Controller

1. Terminal Layout



2. Key Matrix (\* D.ECHO: U,UB,UP,US,UT / AUTO P.OFF: Other area)

	S10 (PIN33)	S11 (PIN34)	S12 (PIN35)	S13 (PIN36)
SO0 (PIN27)	A ◀ (S819)	A ◀◀ (S820)	A ▶▶ (S821)	A ▶ (S822)
SO1 (PIN28)	B ◀ (S823)	B ◀◀ (S824)	B ▶▶ (S825)	B ▶ (S826)
SO2 (PIN29)	A ■ (S827)	B ■ (S828)	PAUSE (S829)	--
SO3 (PIN30)	A ▶▶ B (S830)	DOLBY (S831)	REV.MODE (S832)	CD REC (S833)
SO4 (PIN31)	--	* D.ECHO / AUTO P.OFF (S812)	SOUND EFFECT (S813)	--
SO5 (PIN32)	AUX (S814)	POWER (S815)	ABX (S816)	--

2. Pin Functions

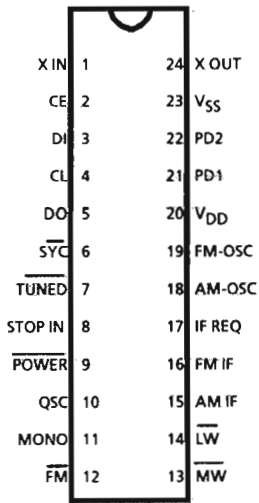
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	DCSIN	I	DCS signal input	46	HC	O	High frequency cut control signal output
2	DCSOUT	O	DCS signal output	47	HB	O	High frequency boost control signal output
3	SPK	O	Speaker relay control signal output	48	RMIN	I	Remote control signal input
4	PRT	I	Detection for protector	49	INH	I	Inhibit signal input
5	NRR	O	NR REC/P.B select signal output for IC352	50	FREC	I	Forward REC. sw input
6	NR	O	NR on signal output for IC352	51	BEQ	I	Deck B CrO2 sw input
7	RMT	O	Rec. mute signal output	52	RREC	I	Reverse REC. sw input
8	AMT	O	It is "H" when Deck A is not playing	53	BPACK	I	Deck B pack sw input
9	BMT	O	It is "H" when Deck B is not playing	54	BPLS	I	Pulse signal input from hall IC
10	CMT	O	Deck P.B. mute control signal output	55	BPSW	I	Deck B play sw input
11	PBEQ	O	P.B. equalizer control signal output	56	VPU	O	Master volume up signal output
12	MSIN	I	Music scan signal input	57	VDN	O	Master volume down signal output
13	REC	O	Rec. P.B select signal output for IC304	58	APLS	I	Pulse signal input from hall IC
14	BIAS	O	Bias on signal output	59	APSW	I	Deck A play sw input
15	FADE	I	FADE mode control signal output	60	APACK	I	Deck A pack sw input
16	APLZ	O	Deck A Solenoid control signal output	61	AEQ	I	Deck A CrO2 sw input
17	BPLZ	O	Deck B Solenoid control signal output	62	SMT	O	Source mute control signal output
18	CAPN	O	Capstan motor control signal output	63	CS	I	Chip select terminal U,UB,UP,US,UT "H", others area "L"
19,20	BFI,BRI	O	Forward / reverse indicator control signal for B deck	64,65	ECHO1,2	O	Echo level control signal output
21,22	ARI,AFI	O	Forward / reverse indicator control signal for A deck	66,67	NC	O	Connection to the ground
24	DBI	O	Dolby indicator control signal	68	RESET	I	Amp. reset signal input
25	REVI	O	Reverse mode indicator control signal	69	X1	-	Connection to the ground
26	RECI	O	Recording indicator control signal	71	VSS	-	Ground
27~32	SO0~SO4	O	Operation switch signal output	72,73	OSC1,2	I/O	Oscillation terminal
33~36	S10~S13	I	Operation switch signal input	23,74	VDD	-	Power supply
37	HPIN	I	Headphone in signal input	75	STANDBY	O	STANDBY LED control signal
38	POWER	O	Power control signal output	76,77	JOG1,2	I	JOG dial signal input
39	KARAOKE	O	KARAOKE control signal output	78	D.CLUB	O	"D.CLUB" indicator control signal
40	SURR	O	SURROUND control signal output	79	HALL	O	"HALL" indicator control signal
41	ABX	O	A. BASS EX. control signal output	80	STADIUM	O	"STADIUM" indicator control signal
42	CONT.A	O	Source select signal output	81	ROCK	O	"ROCK" indicator control signal
43	CONT.B	O	Source select signal output	82	POPS	O	"POPS" indicator control signal
44	LC	O	Low frequency cut control signal output	83	CLASSIC	O	"CLASSIC" indicator control signal
45	LB	O	Low frequency boost control signal output	84	FLAT	O	Flat control signal for sound mode indicator

■ LC7218 (IC121) : PLL Synthesizer

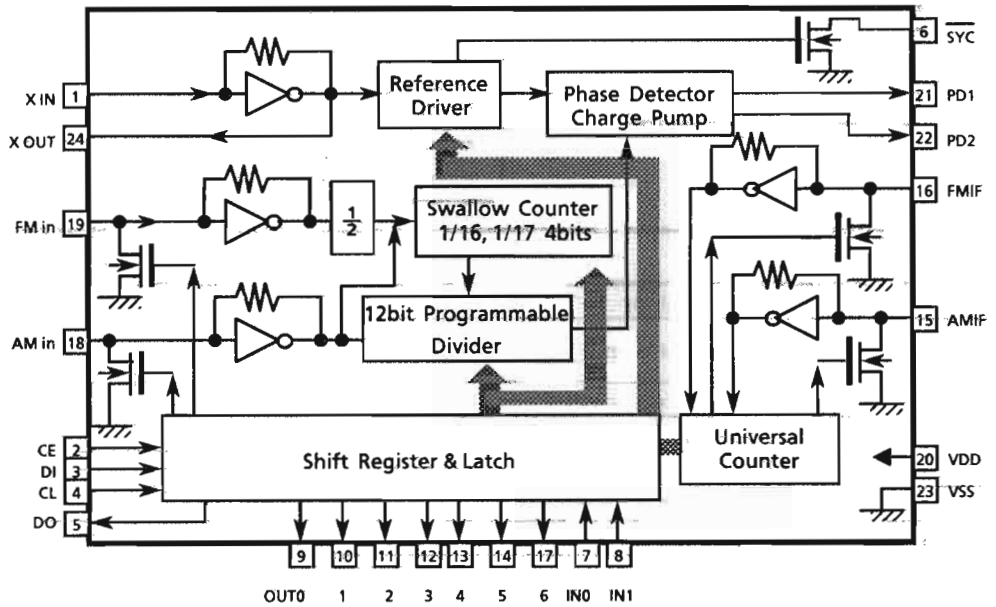
1. The main function descriptions

- (1) It makes the local oscillation frequency by the control data from IC804.
- (2) Decode the control signal and transmit the signal for receiving conditions.
- (3) For the best tuning, count the internal-frequency and transmit the data to IC804.

2. Terminal Layout



3. Block Diagram

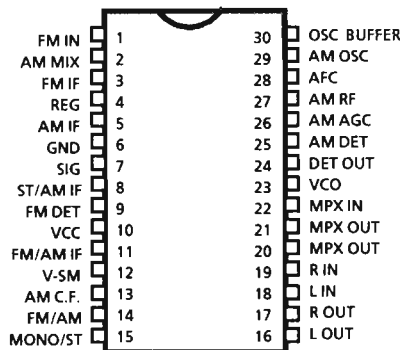


4. Pin Functions

Pin No.	Symbol	I/O	Function
1,24	X in , X out	I/O	Crystal oscillator (7.2MHz).
2	CE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	I	Receive the control data from the controller (IC804).
4	CL	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	O	Transmit the data from LC7218 to the controller which is synchronized with CL.
6	SYNC	-	Not used.
7	TUNED	I	Receive the tuned signal from IC102 (LA1836).
8	STOP IN	-	Connected to GND
9	POWER	-	Not used.
10	QSC	-	Not used.
11	MONO	O	It is "H" on FM-monaural; "L" on FM-Stereo.
12	FM	O	It is "L" on FM mode.
13	MW	O	It is "L" on MW mode.
14	LW	O	It is "L" on LW mode.
15	AM-IF	I	Universal counter input for AM-IF from IC102 (LA1836).
16	FM-IF	I	Universal counter input for FM-IF from IC102(LA1836).
17	IF REQ	O	Output the "IF-signal request" to IC102 when the pin-7 (tuned in) goes to "H".
18	AM OSC	I	Input the local oscillator signal of AM.
19	FM OSC	I	Input the local oscillator signal of FM.
20	V <sub>DD</sub>	-	This is a terminal of power supply.
21	PD1	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	-	Not used.
23	V <sub>SS</sub>	-	Connected to GND

LA1836M (IC102) : FM / AM IF Amp. & Detector

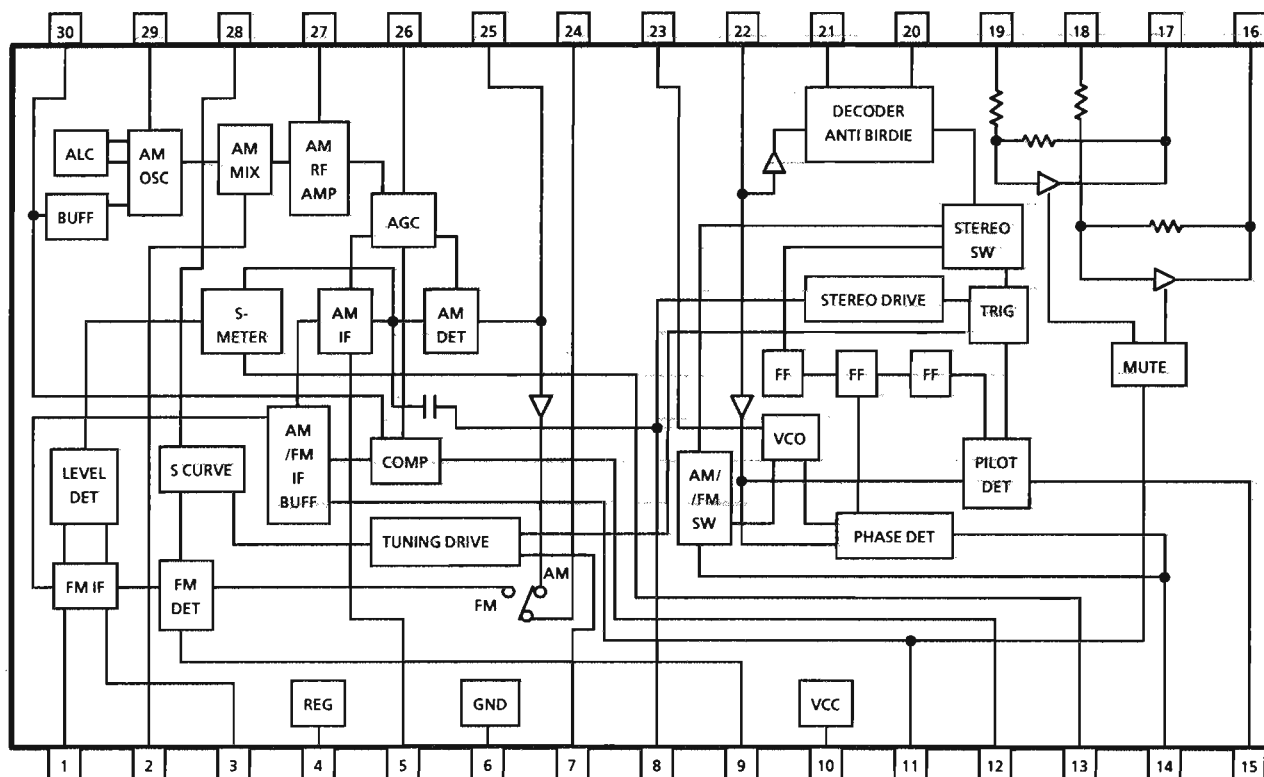
1. Terminal Layout



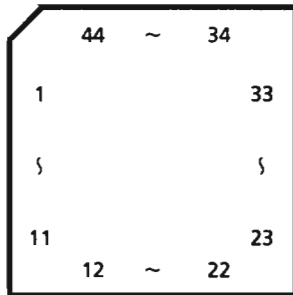
2. Pin Functions

Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF Signal.
2	AM MIX	O	This is an output terminal for AM mixer.
3	FM IF	I	Bypass of FM IF
4	REG	-	Register value between pin4 and pin28 desides the frequency width of the input signal.
5	AM IF	I	Input of AM IF Signal.
6	GND	-	This is the device ground terminal.
7	SIG	O	When the set is tunning ,this terminal becomes "L".
8	ST/AM IF	O	Stereo indicator output. Stereo : "L", Mono : "H"
9	FM DET	-	FM detect transformer.
10	VCC	-	This is the power supply terminal.
11	FM/AM IF	O	When the signal of IF REQ of IC121(LC7218) appear, the signal of FM/AM IF output.
12	VSM	O	S Meter output and adjust AM SD sensitivity.
13	AM C.F.	I	This is a terminal of AM ceramic filter.
14	FM/AM	I	Change over the FM / AM input. "H" : FM, "L" : AM
15	MONO/ST	O	Stereo : "H", Mono : "L"
16	L OUT	O	Left channel signal output.
17	R OUT	O	Right channel signal output.
18	L IN	I	Input terminal of the Left channel post AMP.
19	R IN	I	Input terminal of the Right channel post AMP.
20	MPX L OUT	O	Mpx Left channel signal output.
21	MPX R OUT	O	Mpx Right channel signal output.
22	MPX IN	I	Mpx input terminal.
23	VCO	I	Voltage controlled oscillator terminal.
24	DET OUT	O	AM/FM detection output.
25	AM DET	-	AM low cut adjustment.
26	AM AGC	I	This is an AGC voltage input terminal for AM.
27	AM RF	I	This is an input terminal for AM RF signal.
28	AFC	-	This is an output terminal of voltage for FM-AFC.
29	AM OSC	-	This is a terminal of AM Local oscillation circuit.
30	OSC BUFFER	O	AM Local oscillation Signal output.

3. Block Diagram



■ UPD65662GB-177(IC801) : Changer Controller  
1. Terminal Layout

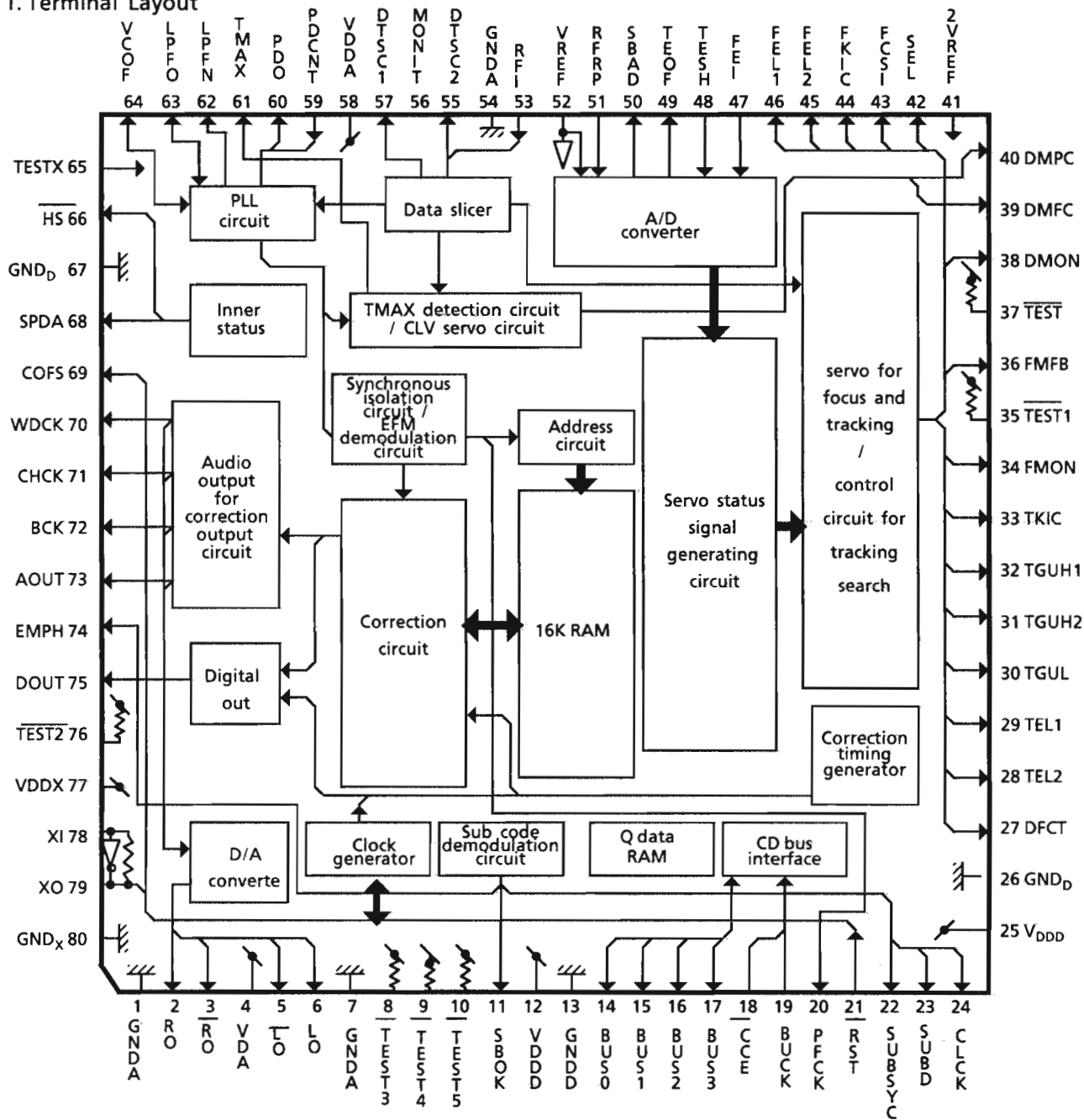


## 2. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	NC	--	Non connection	23	2SSW	I	TRAY2 switch input signal
2	NC	--	Non connection	24	1SSW	I	TRAY1 switch input signal
3	MSPOSI	--	Non connection	25	NC	--	Non connection
4	OS1I	I	Oscillation terminal	26	CAM0	I	Cam switch input signal for LCAM
5	OS1O	O	Oscillation terminal	27	CAM1	I	Cam switch input signal for LCAM
6	OS2I	I	Oscillation terminal	28	CAM2	I	Cam switch input signal for LCAM
7	OS2O	O	Oscillation terminal	29	CAM3	I	Cam switch input signal for LCAM
8	NC	--	Non connection	30	CAM4	I	Cam switch input signal for RCAM
9	C25IN	I	Connected to C25OUT	31	CAM5	I	Cam switch input signal for RCAM
10	C25OUT	O	Connected to C25IN	32	CAM6	I	Cam switch input signal for RCAM
11	RESET	I	Reset signal input	33	CAM7	I	Cam switch input signal for RCAM
12	REQ	O	Output the "mecha. data request"	34	FIT	O	Connected to C50
13	DATA	I/O	Control,Status data I/O	35	C50	I	Connected to FIT
14	ST	I	Strobe signal input	36	LMUP	O	L motor control signal
15	CKS	I	Clock input	37	LMDWN	O	L motor control signal
16	SELECT	--	Connected to GND	38	C25	--	Non connection
17	GND	--	GND	39	VDD	--	Power supply terminal
18	CK	--	Connected to GND	40	C100	--	Non connection
19	1MSW	I	TRAY1 switch input signal	41	RMUP	O	R motor control signal
20	2MSW	I	TRAY2 switch input signal	42	RMDWN	O	R motor control signal
21	3MSW	I	TRAY3 switch input signal	43	NC	--	Non connection
22	3SSW	I	TRAY3 switch input signal	44	NC	--	Non connection

TC9284BF(IC601) : 1 Chip Processor (1 Bit DAC)

1. Terminal Layout



2. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	GND <sub>A</sub>	--	Analog ground pin for R-CH D/A conversion.	11	SBOK	O	CRCC judgment result output pin for sub code Q data. It becomes "H" when the result is OK.
2	RO	O	Output pin for R-CH data positive phase.	12	V <sub>DD</sub>	--	Digital Power supply pin
3	/RO	O	Output pin for R-CH data negative phase.	13	GND <sub>D</sub>	--	Digital ground pin.
4	V <sub>DA</sub>	--	Power supply for DAC	14~17	BUS0 BUS1 BUS2 BUS3	I/O	Data in/output pin for microprocessor interface.
5	/LO	O	Output pin for L-CH data negative phase.	18	/CCE	I	Chip enable signal pin for microcomputer interface. BUS 3~0 become active when it is "L".
6	LO	O	Output pin for L-CH data positive phase.	19	BUCK	I	Clock input pin for microprocessor interface.
7	GND <sub>A</sub>	--	Analog ground pin for L-CH D/A conversion.	20	PFCK	O	Output pin for playback frame synch signal.
8~10	TEST	-	+5V	21	/RST	I	Reset signal input pin. It becomes "L" when it is reset.

## 2. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
22	SUBSYC	O	Output pin for subcode block synch. It becomes "H" at S1 spot when the subcode synch is detected.	53	RFI	I	RF signal input pin.
23	SUBD	O	Sub code P~W data output	54	GND <sub>A</sub>	--	Analog ground pin.
24	CLCK	O	Clock input pin for Sub code P~W data	55	DTSC2	O	EFM signal negative phase output pin for data slice control.
25	V <sub>DD</sub>	--	Digital Power supply pin	56	MONIT	O	Output pin for internal signal monitor. The commands can select EFMO, PLCK and LOCK signals. Muting is possible.
26	GND <sub>D</sub>	--	Digital ground pin.	57	DTSC1	O	EFM signal positive phase output pin for data slice control.
27	DFCT	O	Output pin for defect detecting signal. It is generally "Hiz". It becomes "V <sub>REF</sub> " when defect is detected.	58	V <sub>DDA</sub>	--	Analog power supply pin.
28,29	TEL1,2	O	Analog switch output pin to adjust tracking gain. It is "V <sub>REF</sub> " or "Hiz".	59	PDCNT	I	PDO output control pin. PDO pin is fixed to "Hiz" forcefully when it is "L" and it becomes general output in "H".
30	TGUL	O	Analog switch output pin to increase tracking servo gain. Polarity at the increased gain and general playback can be selected by the command.	60	PDO	O	Phase error signal output pin between EFM signal and PLCK signal.
31,32	TGUH1, 2	O	Analog switch output pin to increase tracking servo gain. It is generally "V <sub>REF</sub> " and changes to "Hiz" when the gain is increased. TGUH1 is used for general playback and for double speed playback TGUH2 is used.	61	TMAX	O	TMAX detecting result output pin.
33	TKIC	O	Pin to output tracking actuator kick signal. It is used to kick when NKICx, CKICx or tracking gain is adjusted. It kicks toward exterior when it is "2V <sub>REF</sub> " and changed to interior in case of "L". Generally, it is "Hiz".	62	LPON	I	Amp. negative phase input pin for low-pass filter.
34	FMON	O	Analog switch output pin to set feed servo on and off. It becomes "Hiz" when it is on and changes to "V <sub>REF</sub> " in case of the off.	63	LPOF	O	Amp. output pin for low-pass filter.
35	TEST1	I	Test pin. Generally, it is "H" or open.	64	VCOF	O	Filter pin for VCO.
36	FMFB	O	Control signal output pin to rotate feed motor forward or backward. The motor rotates to exterior when it is "2V <sub>REF</sub> " and to interior in case of "L". Generally, it is "Hiz".	65	TESTX	I	Test pin. Generally, it is "H" or open.
37	TEST	I	Test pin. Generally, it is "H" or open.	66	HS	O	Output pin for double speed mode. It becomes "H" for general playback and changes to "L" in case of double speed playback.
38	DMON	O	Analog switch output pin to switch the gain at disc motor's drive circuit. It becomes "Hiz" when CLV servo is off. If it is on, "Hiz/V <sub>REF</sub> " can be selected with the command.	67	GND <sub>D</sub>	--	Digital ground pin.
39	DMFC	O	AFC signal output pin for disc motor CLV servo.	68	SPDA	O	Output pin for processor status signal.
40	DMPC	O	APC signal output pin for disc motor CLV servo.	69	COFS	O	Output pin for correction flame clock. (7.35kHz)
41	2V <sub>REF</sub>	--	Analog reference power supply pin. (Double voltage of "V <sub>REF</sub> ".)	70	WDCK	O	Output pin for word clock(88.2kHz). SUBQ, BUFOV and IPF signals can be selected with microprocessor command.
42	SEL	O	Output pin for servo mode indication signal. It controls on/off for laser diode and focus servo.	71	CHCK	O	Output pin for channel clock(44.1kHz). It becomes "L" for L-CH and changes to "H" for R-CH.
43	FCSI	O	Focus actuator drive signal output pin in focus search mode. It is generally "Hiz". The lens leaves from the disc in "V <sub>DDA</sub> " and it closes the disc in "L".	72	BCK	O	Output pin for bit clock(1.4112MHz).
44	FKIC	O	Focus actuator drive signal output pin in focus gain adjustment mode. It is generally "Hiz". The lens leaves from the disc in "V <sub>DDA</sub> " and it closes the disc in "L".	73	AOUT	O	Audio data output pin.
45,46	FEL1,2	O	Analog switch output pin for focus gain adjustment. "V <sub>REF</sub> " or "Hiz".	74	EMPH	O	Pin to output signal which indicates emphasis' on/off. It becomes "H" when the emphasis is on and changes to "L" in case of its off.
47	FEI	I	Focus error signal input pin.	75	DOUT	O	Digital output pin
48	TESH	I	Analog switch input pin to hold tracking error signal sample.	76	TEST2	I	Test pin. Generally, it is "H" or open.
49	TEOF	O	Analog switch output pin to set on and off the tracking servo function. It is "V <sub>REF</sub> " when the tracking servo is OFF.	77	V <sub>DDX</sub>	--	Oscillation Power supply pin
50	SBAD	I	Sub beam adding signal input pin.	78	XI	I	Oscillation terminal
51	RFRP	I	RF ripple signal input pin.	79	XO	O	Oscillation terminal
52	V <sub>REF</sub>	--	Analog reference power supply pin.	80	GND <sub>X</sub>	--	Oscillation ground pin.

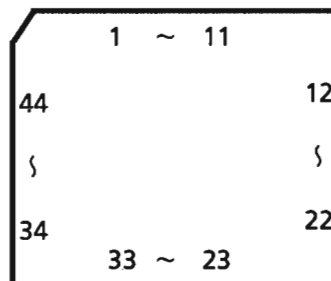


## ■ TA8191F ( IC501 ) : Focus Tracking Servo LSI

### 1. Description

- RF amp, Focus error amp, and Tracking error amp
- Focus and Tracking servo amp
- Phase compensation amp and LPF amp

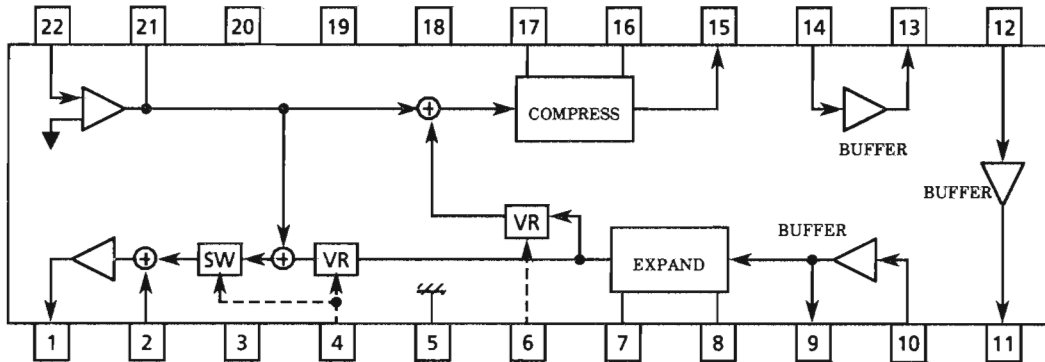
### 2. Terminal layout



### 3. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	TPO	O	Sub beam I-V amp ( TP AMP ) output	23	VCC	--	+5V
2	TPI	I	Sub beam I-V amp ( TP AMP ) input	24	DMEP	I	Disc motor amp ( DM AMP ) positive phase input
3	TNI	I	Sub beam I-V amp ( TN AMP ) input	25	DMEN	I	Disc motor amp ( DM AMP ) negative phase input
4	FNI	I	Main beam I-V amp ( FN AMP ) input	26	DMEO	O	Disc motor amp ( DM AMP ) output
5	FPI	I	Main beam I-V amp ( FP AMP ) input	27	DMPO	O	Disc motor driving amp ( DM AMP ) output
6	LDO	O	Laser diode amp ( LD AMP ) output	28	PVR	I	Driving amp reference voltage input
7	MDI	I	Monitor photo amp ( MD AMP ) input	29	FMPO	O	Feed motor driving amp ( FMP AMP ) output
8	RFN	I	RF amp ( RF AMP ) negative phase input	30	FMEO	O	Feed motor amp ( FM AMP ) output
9	RFO	O	RF amp ( RF AMP ) output	31	FMEP	I	Feed motor amp ( FM AMP ) negative phase input
10	RFI	I	RF ripple signal generating circuit	32	TS2O	I	Feed motor amp ( FM AMP ) positive phase input
11	VREF	O	Reference voltage supply ( +2.1V ) output	33	FAPO	O	Focus actuator driving amp ( FAP AMP ) output
12	RFRP	O	RF ripple signal output	34	2VRO	O	2VREF amp ( 2VREF AMP ) output
13	SBAD	O	Defects detection signal output	35	2VRP	I	2VREF amp ( 2VREF AMP ) positive phase input
14	FEB	I	Focus error balance adjusting input	36	2VRN	I	2VREF amp ( 2VREF AMP ) negative phase input
15	FEO	O	Focus error amp ( FE AMP ) output	37	TS2O	O	Tracking servo amp ( TS2 AMP ) output
16	SEL	I	Analog switch control signal input	38	TS2N	I	Tracking servo amp ( TS2 AMP ) negative phase input
17	VEE	--	GND	39	TS2P	I	Tracking servo amp ( TS2 AMP ) positive phase input
18	FSN	I	Focus output amp ( FS AMP ) negative phase input	40	TS1O	O	Tracking servo amp ( TS1 AMP ) output
19	FSO	O	Focus output amp ( FS AMP ) output	41	TS1N	I	Tracking servo amp ( TS1 AMP ) negative phase input
20	COSC	O	Focus search signal generating capacitor connecting	42	TS1P	I	Tracking servo amp ( TS1 AMP ) positive phase input
21	OSCI	I	Focus search signal generating built-in current source control input	43	TSO	O	Tracking output amp ( TS AMP ) output
22	GND	--	GND	44	TSN	I	Tracking output amp ( TS AMP ) negative phase input

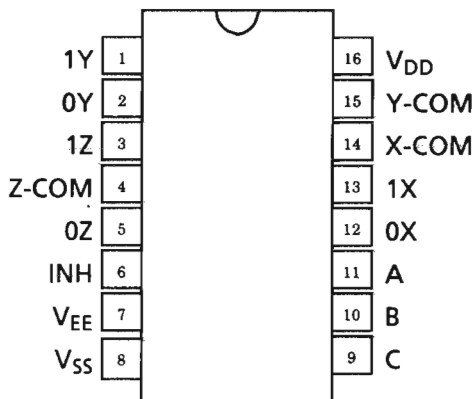
■ BA7725S (IC998) :Echo circuit ( Use for U,UT,US,UB,UP only)



Terminal Description

Pin No.	Symbol	Function
1	LINE OUT	Line output
2	LINE IN	Line input
3	NC	Not used
4	ECHO LEV CTRL	Determines echo level. The echo circuit is off when 1 volt is added. The echo level varies according to the voltage from 2 volts to 9 volts.
5	GND	Analog GND
6	LOOP GAIN CTRL	Loop gain control terminal. The gain varies according to the voltage from 2 volts to 9 volts.
7	EXP DET	Detection terminal for expand circuit
8	EXP DET CT	Determines the attack and recovery time of expand circuit
9	EXP BF OUT	Buffer output (Expand circuit side)
10	EXP BF IN	Buffer input (Expand circuit side)
11	DLY BF OUT	Delay buffer output
12	DLY BF IN	Delay buffer input
13	CMP BF OUT	Buffer output (Compress circuit side)
14	CMP BF IN	Buffer input (Compress circuit side)
15	CMP OUT	Compress circuit output
16	CMP DET CT	Determines the attack and recovery time of compress circuit
17	CMP DET	Detection terminal for compress circuit
18	RIPPLE FILTER	A capacitor is connected for ripple elimination filter
19	VCC	Power supply
20	NC	Not used
21	MIC AMP OUT	Mic amp output
22	MIC AMP IN	Mic amp input

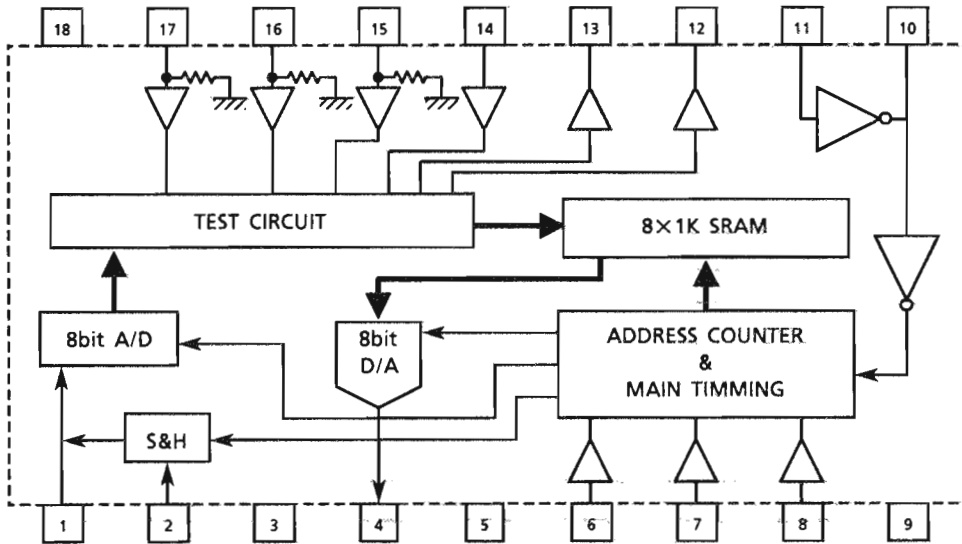
■ TC4053BP (IC442) :Triple 2-Channel Multiplexer ( Use for U,UT,US,UB,UP only)



CONTROL INPUTS				"ON" CHANNEL
INH	C	B	A	
L	L	L	L	0X,0Y,0Z
L	H	L	H	1X,0Y,1Z

■ BU9251S (IC999) : Delay Circuit (Use for U,UT,US,UB,UP only)

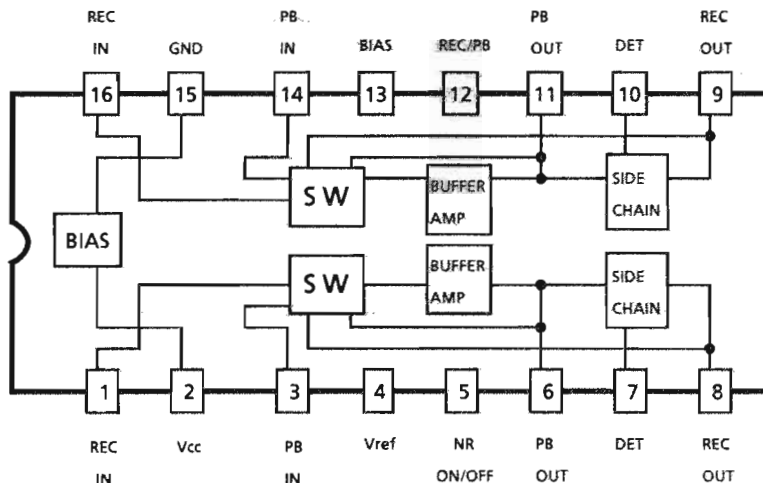
Block Diagram



Description

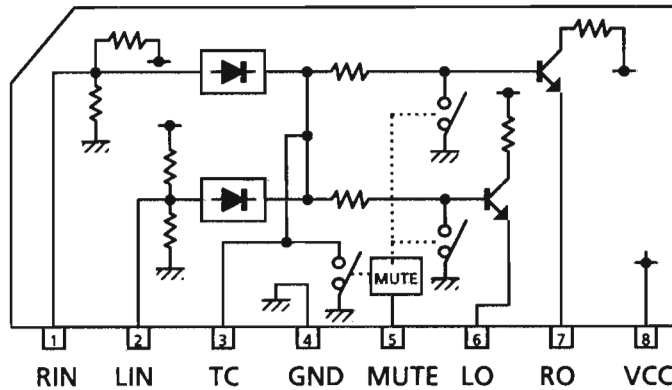
Pin No	Symbol	Function	Pin No	Symbol	Function
1	S&H	A capacitor is connected for sample & hold	10	OSC0	Oscillation terminal
2	AIN	Analog input	11	OSC1	Oscillation terminal
3	GND	GND	12	TDO1	Not used
4	AOUT	Analog output	13	TDO0	Not used
5	VDD	Power supply	14	TDIN	Not used
6	DCNT0	Pull up (+5V)	15	TST2	Not used
7	DCNT1	Pull up (+5V)	16	TST1	Not used
8	DCNT2	Pull up (+5V)	17	TST0	Not used
9	GND	GND	18	VCC	Power supply

■ HA12136A (IC352) :Noise Reduction Amplifier

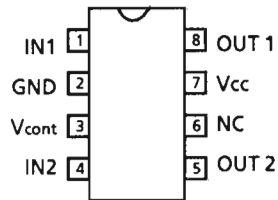


## CA-C220

### ■ BA8221N (IC292) : ALC

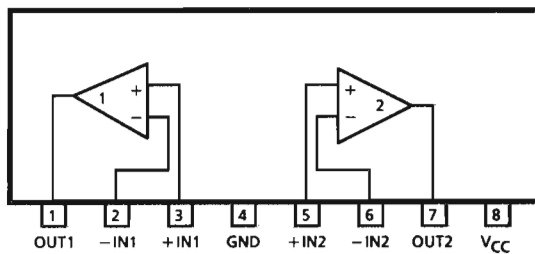


### ■ LB1639-CV (IC902) : Motor Driver

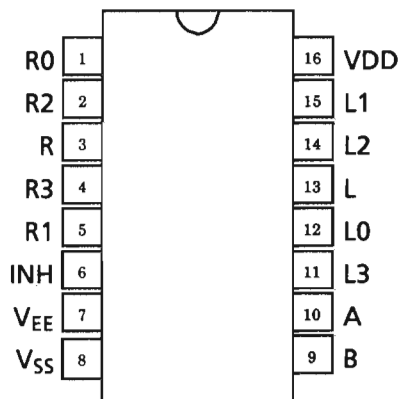


IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	clockwise
L	H	L	H	counter - clockwise
H	H	OFF	OFF	waiting
L	L	OFF	OFF	waiting

### ■ BA15218N(IC301~IC303,IC471,410,441) or BA1521AN (IC805,604) : Dual OP Amp. (IC441,IC805: Use for U,UT,US,UB,UP only)



### ■ TC4052BP (IC401) :Differntinal 4-Channel Multiplexer

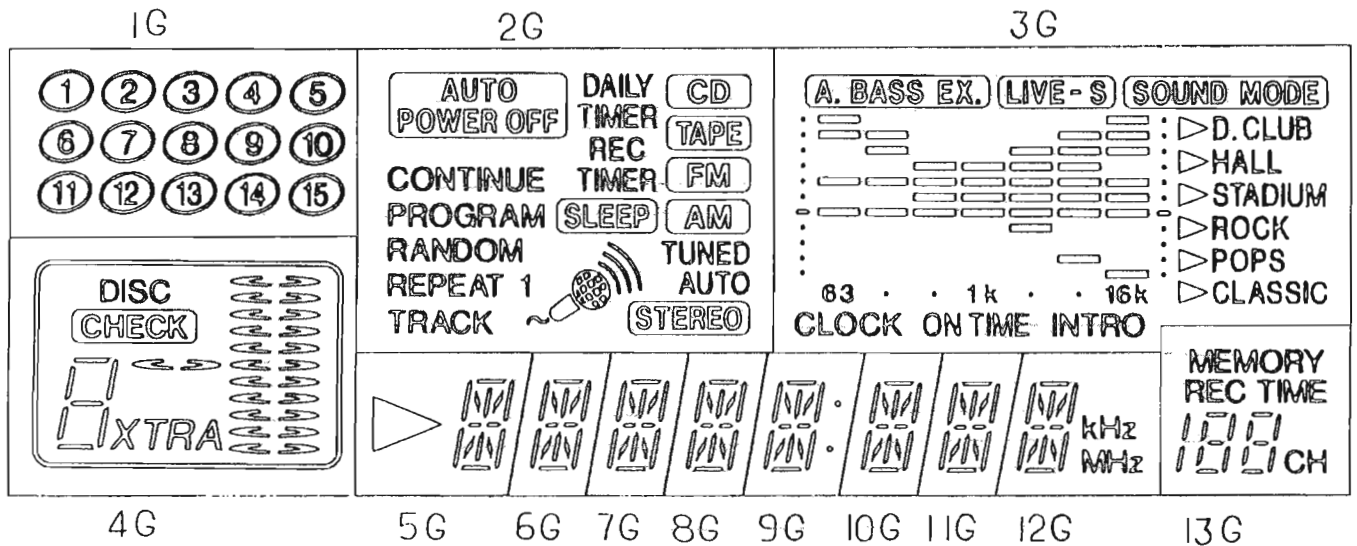


CONTROL INPUTS			"ON" CHANNEL
INH	B	A	
L	L	L	0L,0R
L	L	H	1L,1R
L	H	L	2L,2R
L	H	H	3L,3R

# Internal Connections of FL Display

■ ELU0001-201 : (DI800)

## 1. Grid Layout



## 2. Pin Connections

### LOWER

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ELECTRODE	F1	F1	F1	NP	P S1	P S2	P S3	P S4	P S5	P S6	P S7	P S8	P S9	P S10	P S11	P S12
TERMINAL NO.		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ELECTRODE		P S13	P S14	P S15	P S16	NP	P S17	P S18	P S19	P S20	P S21	P S22	NP	F2	F2	F2

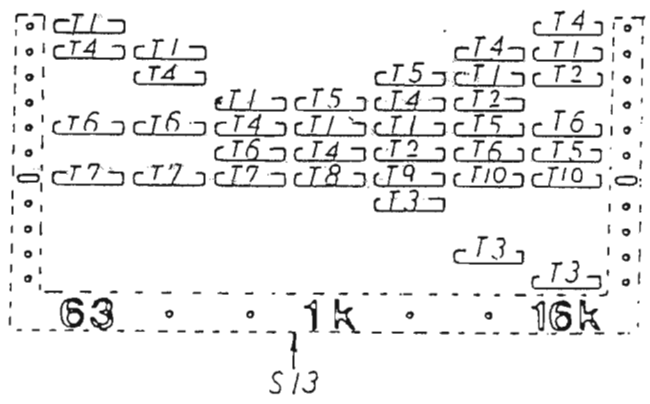
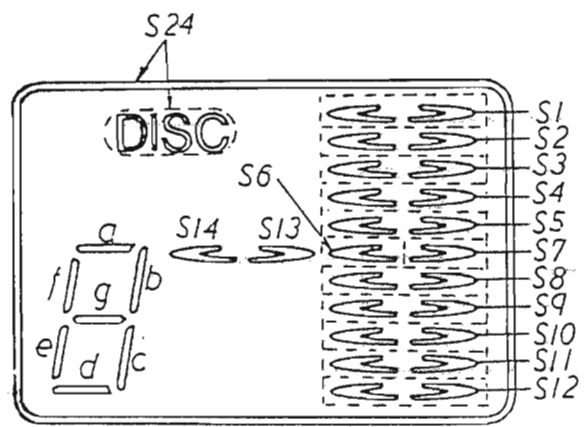
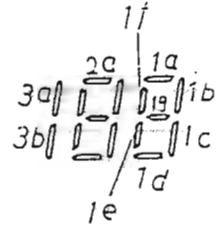
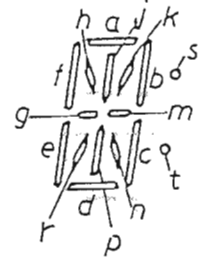
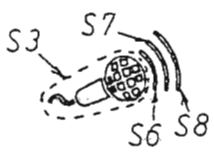
### UPPER

TERMINAL NO.	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
ELECTRODE	F2	F2	F2	NP	P S23	P S24	P S25	P S26	P S27	P S28	P S29	P S30	P S31	P S32	P S33	P S34
TERMINAL NO.		48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
ELECTRODE		P S35	1G	2G	3G	4G	5G	6G	7G	8G	9G	NP	NP	F1	F1	F1

(Notes) F: Filament G: Grid P: Anode NP: No Pin

(3) Anode Designation

	1G	2G	3G	4G	5G	6-8G	9G	10, 11G	12G	13G
S1	15	TRACK	CLOCK	S1	▶		s		kHz	MEMORY
S2	14	STEREO	ON TIME	S2	a	a	a	a	a	REC TIME
S3	13	S3	INTORO	S3	b	b	b	b	b	1a
S4	12	REPEAT	CLASSIC	S4	j	j	j	j	j	1b
S5	11	1	POPS	S5	k	k	k	k	k	1f
S6	10	S6	ROCK	S6	h	h	h	h	h	1g
S7	9	S7	STADIUM	S7	f	f	f	f	f	1c
S8	8	S8	HALL	S8	g	g	g	g	g	1e
S9	7	AUTO	D. CLUB	S9	m	m	m	m	m	1d
S10	6	TUNED	SOUND MODE	S10	e	e	e	e	e	CH
S11	5	SLEEP	LIVE-S	S11	n	n	n	n	n	2a
S12	4	RANDOM	A BASS EX	S12	r	r	r	r	r	2b
S13	3	AM	S13	S13	p	p	p	p	p	2f
S14	2	PROGRAM		S14	c	c	c	c	c	2g
S15	1	CONTINUE		XTRA	d	d	d	d	d	2c
S16		REC TIMER		d			t		MHz	2e
S17		FM		e						2d
S18		TAPE		c						3a, 3b
S19		AUTO POWER OFF		g						
S20		DAILY TIMER		f						
S21		CD		b						
S22				a						
S23				CHECK						
S24				S24						
T1			▶ (D. CLUB) .T1							
T2			▶ (HALL) .T2							
T3			▶ (STADIUM) .T3							
T4			▶ (ROCK) .T4							
T5			▶ (POPS) .T5							
T6			▶ (CLASSIC) .T6							
T7			T7							
T8			T8							
T9			T9							
T10			T10							



## Disassembly Procedures

### (1-1) Top cover removal

1. Take off 6 screws (A) on the rear side and 2 screws (A) on both sides of the cover.
2. Remove the cover.

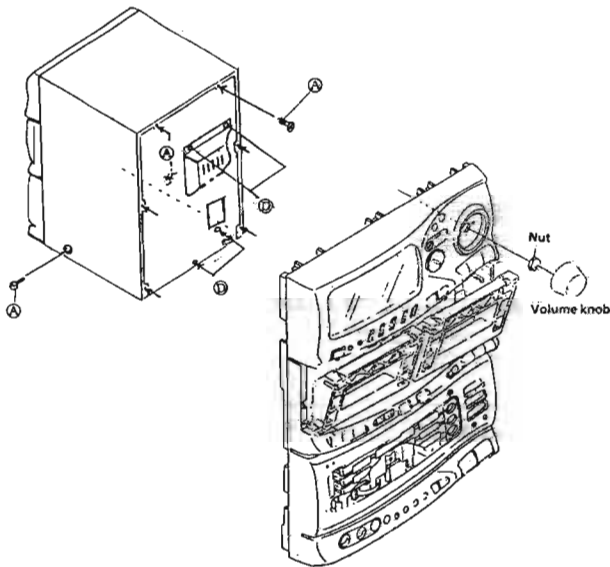


Fig.1-1

### (1-2) Front panel and Cassette mecha.. ass'y removal

1. Remove the top cover.
2. Take off 2 screws (C) on the bottom side.
3. Remove the main volume knob and remove the NUT for the volume shaft.
4. Take off 2 screws (B) and remove the Main P.C.B. from the cassette P.C.B.'s 4 connectors.
5. Remove 2 flat wires (CN811, CN812) and 2 wire assembly (CN813, J103) from each connector.
6. Release the hooks holding the bottom to remove the assembly.

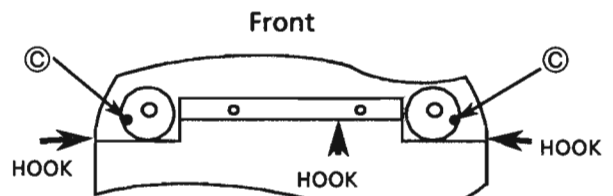


Fig. 1-4 Bottom view

### (1-3) Rear panel removal (including power trans and power amp. P.C.B. and tuner P.C.B. and main P.C.B.)

1. Remove the top cover.
2. Remove the main volume knob and remove the NUT for the volume shaft.
3. Take off 2 screws (D) remove the rear cover, and take off 3 screws (D) fixing power PCB.
4. Take off 7 wires from each connector.
5. Take off 2 screws (B) and remove the Main P.C.B. from the cassette P.C.B.'s connector.
6. Take off screw (D) and remove the rear panel assembly.

**CAUTION:** Pay attention to remove the rear panel assembly. It's be cracked the POWER AMP PCB.

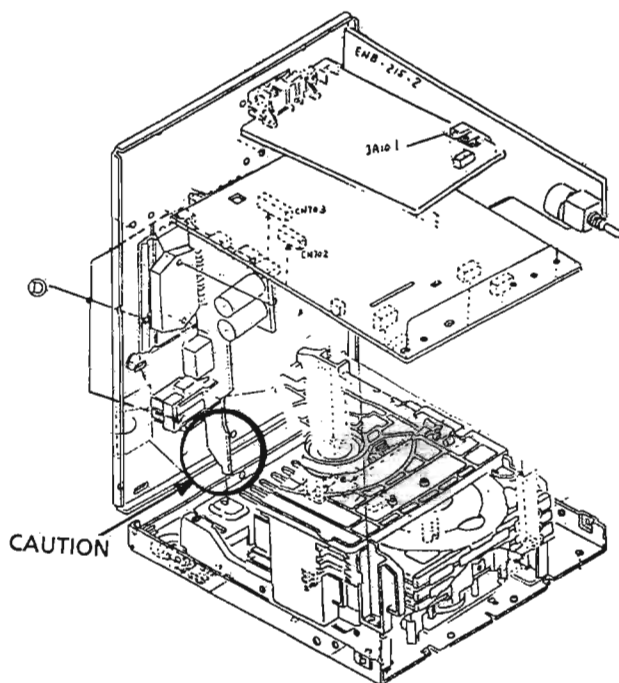


Fig.1-2

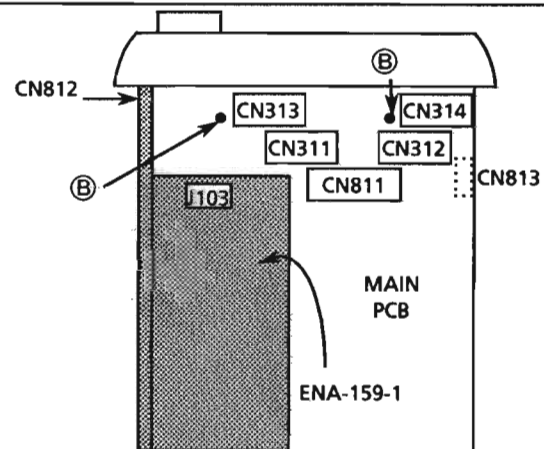


Fig. 1-3 Top view

(A) .. SD5G3006M    (B) ... SDST2604Z    (C) ... SBST3006Z    (D) ... E73273-003

(2-1) CD Changer mechanism assembly removal

1. Remove the front panel assembly and rear panel assembly.
2. Take off 4 screws (E) securing the CD changer mechanism assembly.
3. Remove the CD changer mechanism assembly.

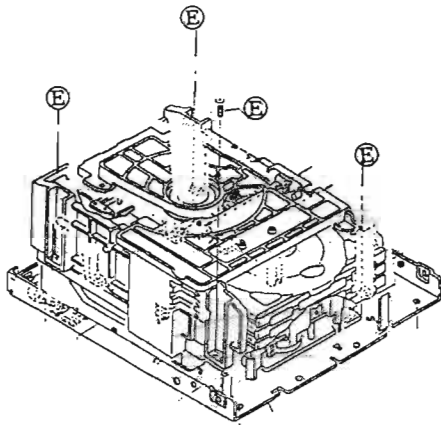


Fig. 2-1

(2-2) CD Tray assembly removal

1. Disassemble the changer mech..
2. Remove the rod from both ends' hooks which are secured on T.Bracket (a) and clamber base (b). (See Fig. 2-2.)
3. Remove 3 screws (F) securing T.Bracket. (See Fig. 2-3.)
4. Remove a screw (C) securing center of the clamber ass'y. (See Fig. 2-3.)
5. Remove the clamber ass'y from ★ which secures it.
6. Remove a screw (F) which secures the return spring and lock levers from the chassis ass'y. (See Fig. 2-4.)
7. Remove 2 pawls (d) which slightly secure the return spring to remove it.
8. Remove 3 lock levers.
9. Check that the lifter unit stopper is inserted into hole (e) located on CD tray ass'y. (See Fig. 2-5.)
10. Check that the driver unit elevator is seen from a hole (marked ② or ⑤) on left side of the CD changer mech.. (See Fig. 2-7.)

[NOTE] Set the elevator in correct position (Fig. 2-7) by rotating the pulley gear with finger if it is not positioned correctly (Fig. 2-8.).

11. Rotate the motor pulley clockwise with finger until the lifter unit's stopper is lowered from (e) hole located on the CD tray ass'y. (See Fig. 2-8.)
12. And, pull all 3 CD tray assemblies forward until they stop. (See Fig. 2-6.)
13. Press 2 pawls (f, f') located rear side of the CD tray ass'y according to an arrow (h) to remove the CD tray ass'y. (See Fig. 2-9.)  
At first, removing the lowest tray is easier.

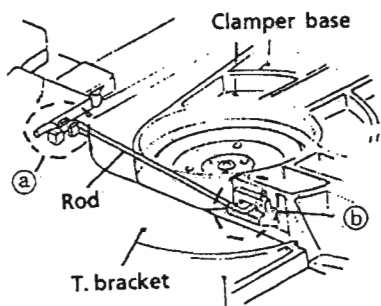


Fig. 2-2

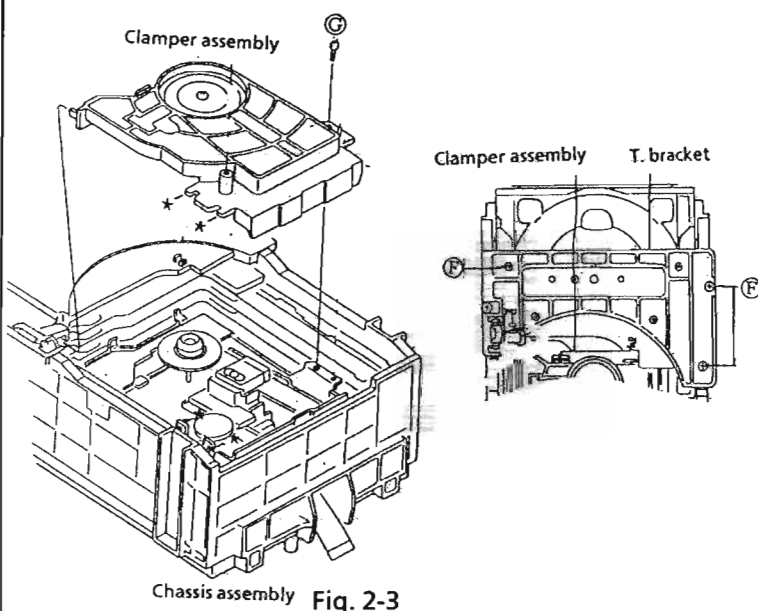


Fig. 2-3

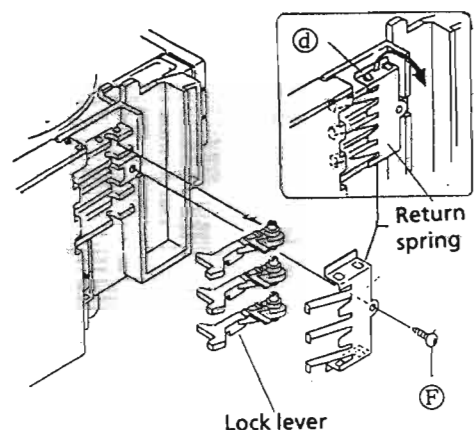


Fig. 2-4

(E) .. SBST3008Z      (F) ... SBSF2608Z      (C) ... SPST2606Z



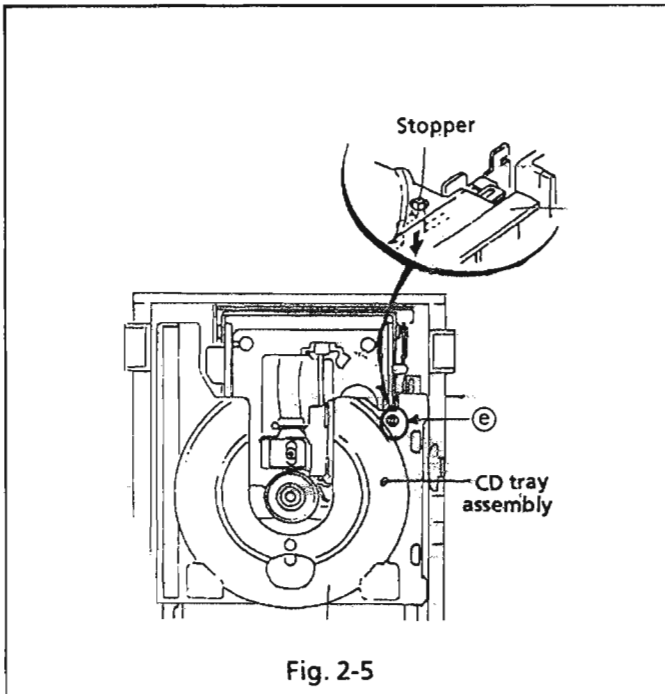


Fig. 2-5

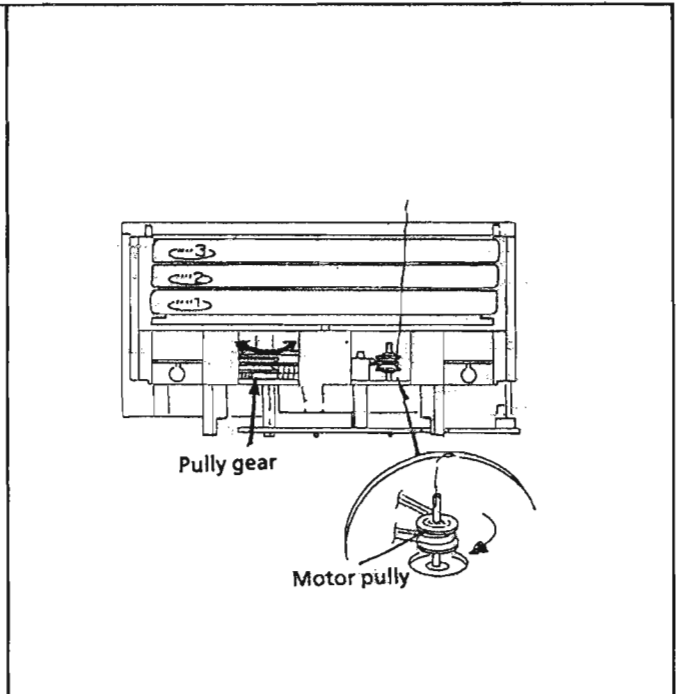


Fig. 2-8

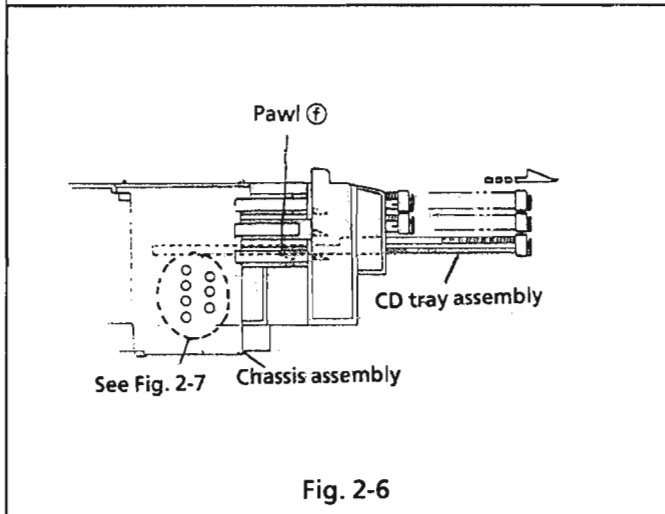


Fig. 2-6

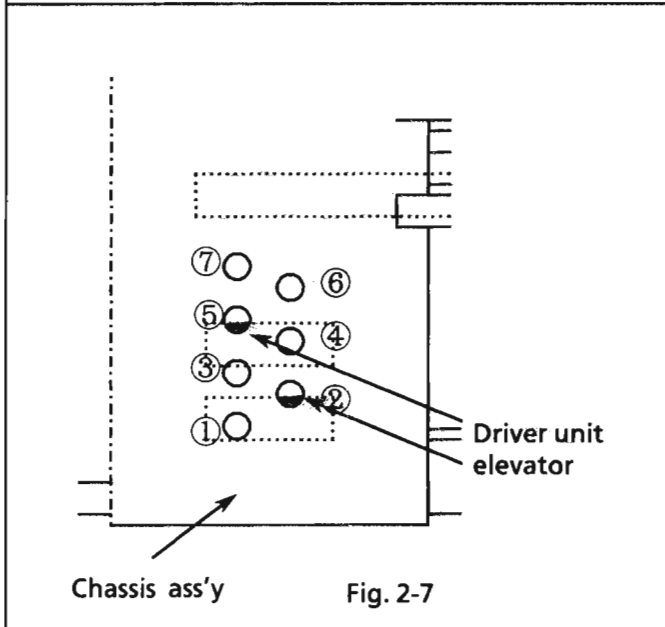


Fig. 2-7

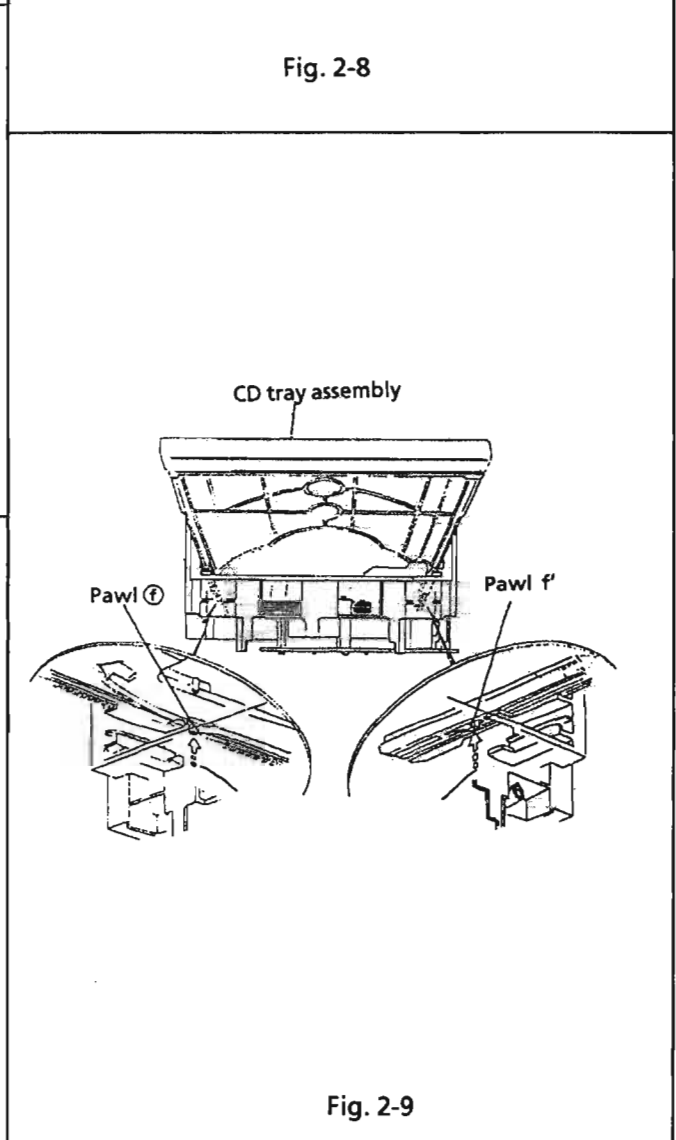


Fig. 2-9

(2-3) CD mechanism removal

1. Remove a screw ① securing the CD servo board.(Fig. 2-11-a)
2. Press the hook and release it to remove the CD servo board.(Fig. 2-11-a)
3. Disconnect the connectors. (CN501,CN502)
4. Rotate the Cam R1, R2 ass'y counterclockwise so that CD mech. ass'y's shaft ① is positioned as shown in Fig. 2-10-b.
5. Remove 4 screws ② securing CD mech. ass'y. (See Fig. 2-10-b.)

\*How to replace pick-up unit

1. If CD mech. is removed without disassembling CD mech. ass'y, rotate the Cam R1, R2 ass'y clockwise to set the CD mech. ass'y's shaft(L) as shown in Fig. 2-11.
2. Lift the CD mech. ass'y toward the direction ③ to remove it from the lifter unit. (See Fig. 2-12.)

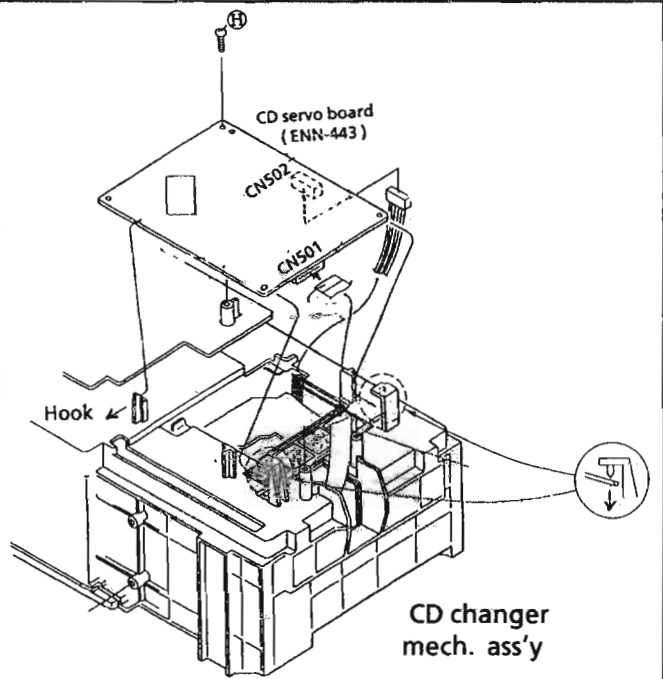


Fig. 2-10-a

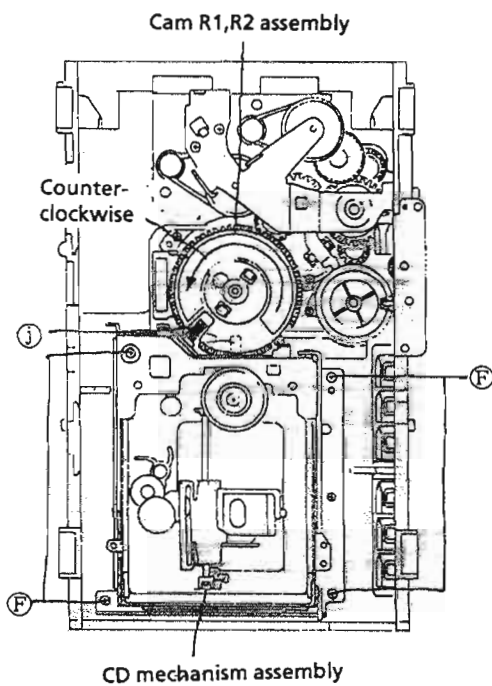


Fig. 2-10-b

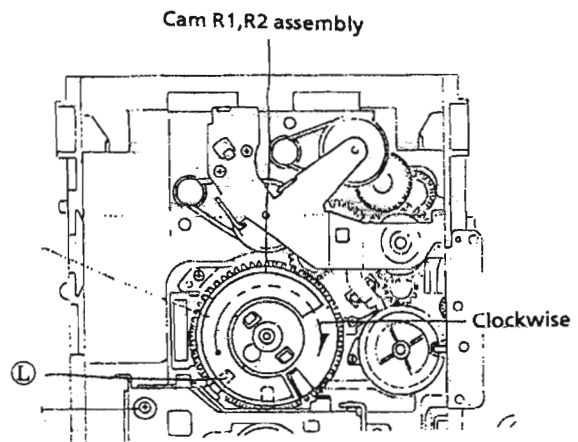


Fig. 2-11

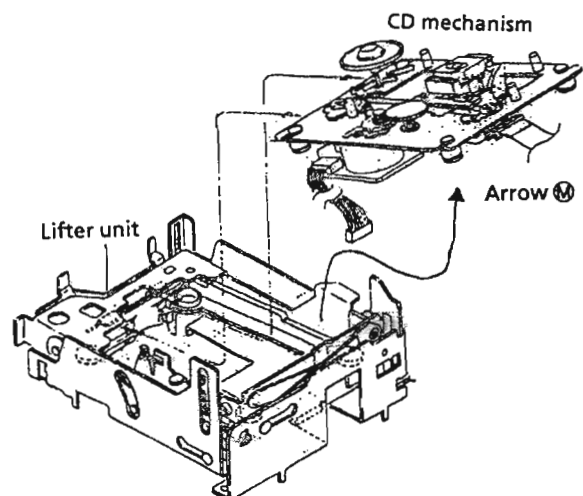


Fig. 2-12

② .. SBSF2608Z      ① ... SBSF3008Z

**(2-4) Actuator motor board removal**

1. Unsolder 4 soldered point (N) for both motors. (See Fig. 2-13.)
2. Remove a screw (H) securing the CD servo board. (See Fig. 2-13.)
3. Press the hook and release it to remove the CD servo board.
4. Remove 2 screws (F) securing the actuator motor board. (See Fig. 2-13.)
5. Remove 2 screws (F) securing the tray select switch board. (See Fig. 2-14.)

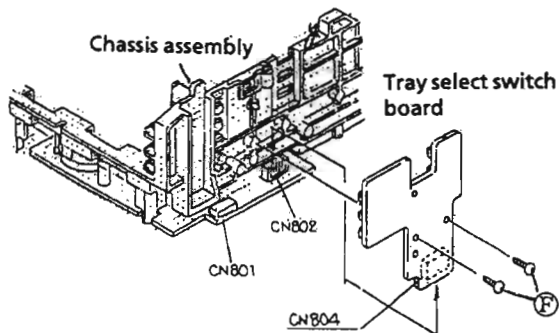


Fig. 2-14

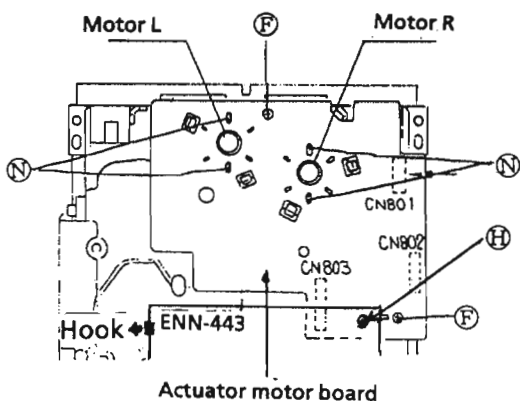


Fig. 2-13

**(2-5) Cam unit removal**

1. Disassemble CD mech. ass'y.
2. Rotate the Cam gear L so that the drive unit's pawl (C) is positioned as shown in Fig. 2-15.
3. Remove the drive unit and cylinder gear. (See Fig. 2-16.)
4. Rotate the Cam gear L so that the select gear's (P) is positioned as shown in Fig. 2-17.
5. Remove 4 screws (F) securing the cam unit which includes the cam gear L and Cam R1, R2 ass'y. (See Fig. 2-17.)

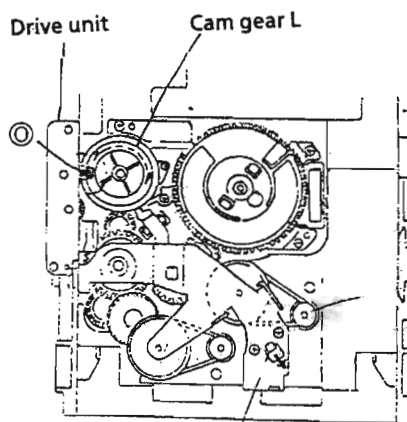


Fig. 2-15

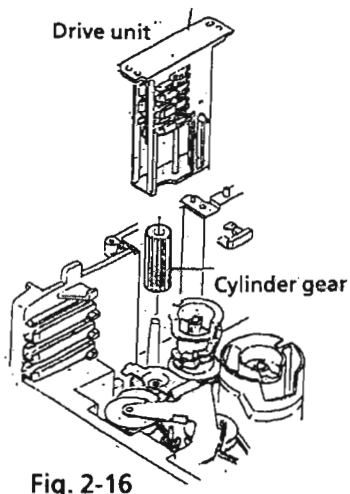


Fig. 2-16

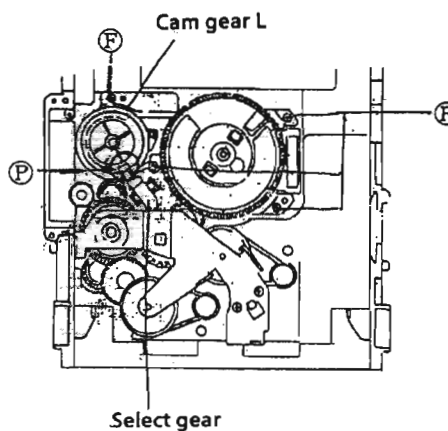


Fig. 2-17

(F) .. SBSF2608Z      (H) ... SBSF3008Z

(2-6) Removal for actuator motor and belt

1. Remove 2 screws ① securing the gear bracket.  
(See Fig. 2-18.)
2. Press the pawl ② securing the gear bracket to the arrow in the figure to remove the gear bracket. (See Fig. 2-18.)
3. Remove the gear bracket from the chassis ass'y's ③ securing top of the gear bracket. (See Fig. 2-19.)
4. Remove each belts from the both actuator motor pulleys and the pulley gears. (See Fig. 2-18.)
5. Reverse the chassis ass'y and widen 4 pawls ④ which secure both actuator motors to its arrows to remove the actuator motors. (See Fig. 2-20.)

[NOTE] The pulley gears and other gears which consist the gear unit may drop separately if the chassis ass'y is reversed without gear bracket and belt. See Fig. 2-21 to assemble them again.

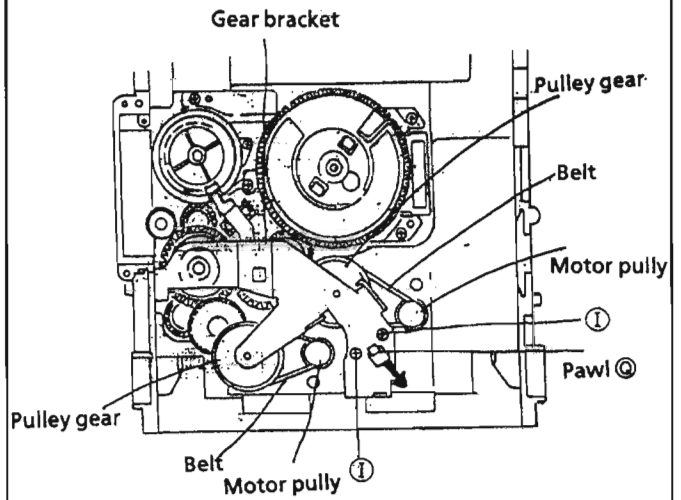


Fig. 2-18

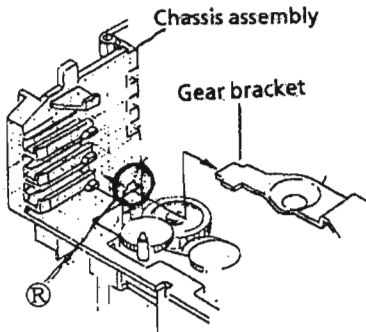


Fig. 2-19

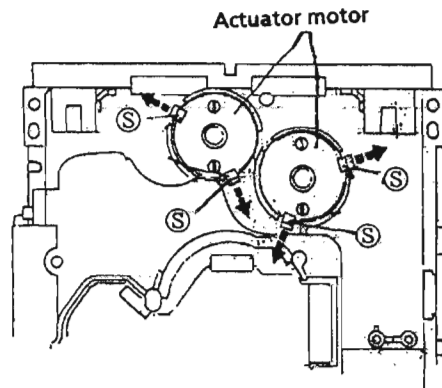


Fig. 2-20

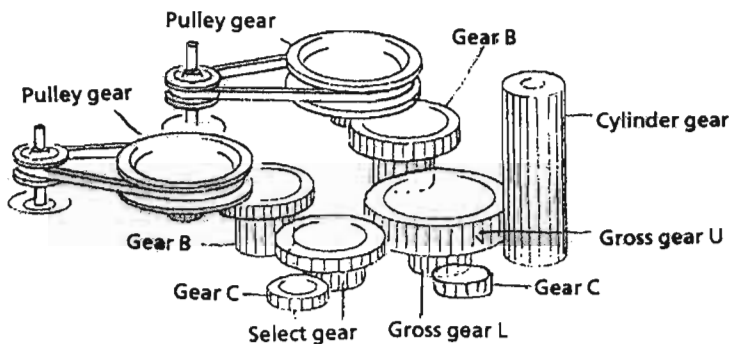


Fig. 2-21

① .. DPSP2616Z

## (2-7) Removal of cam R1, R2 ass'y and cam gear L

1. Remove the slit washer securing Cam R1, R2 ass'y.  
(See Fig. 2-22.)
2. Remove 2 pawls ① securing Cam R1 to remove Cam R2 from Cam R1.
3. Remove the slit washer securing Cam gear L.
4. Remove Cam gear L from the C.G. base ass'y.

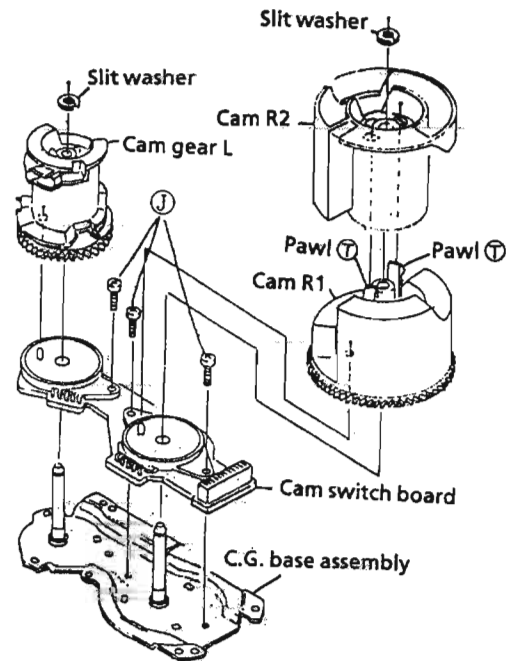


Fig. 2-22

## (2-8) Removal of C.G. base ass'y

Remove 3 screws ② securing the C.G. base ass'y. (See Fig. 2-22 and 2-23.)

[NOTE] Set the drive unit's pawl ③ so that it is positioned as shown in Fig. 2-23.

Confirm that the cam gear L engages with the gear unit by rotating the cam gear L.

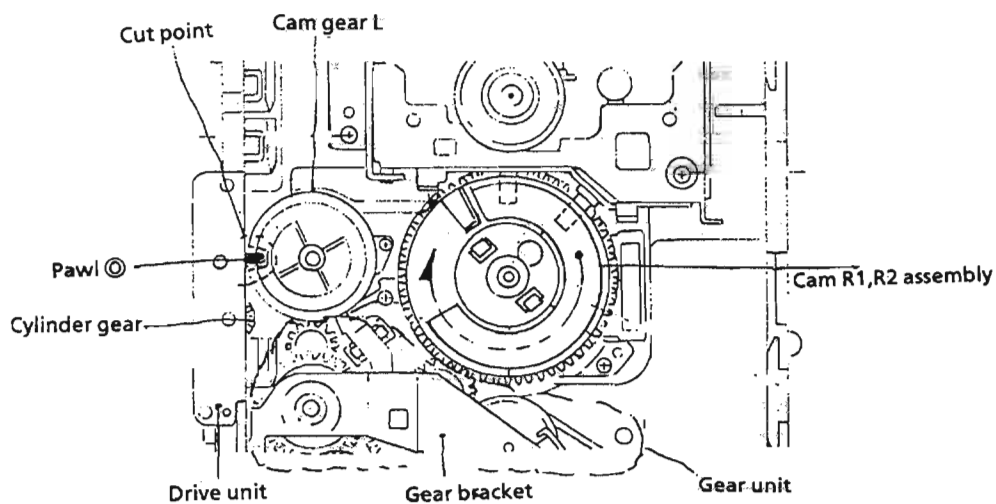
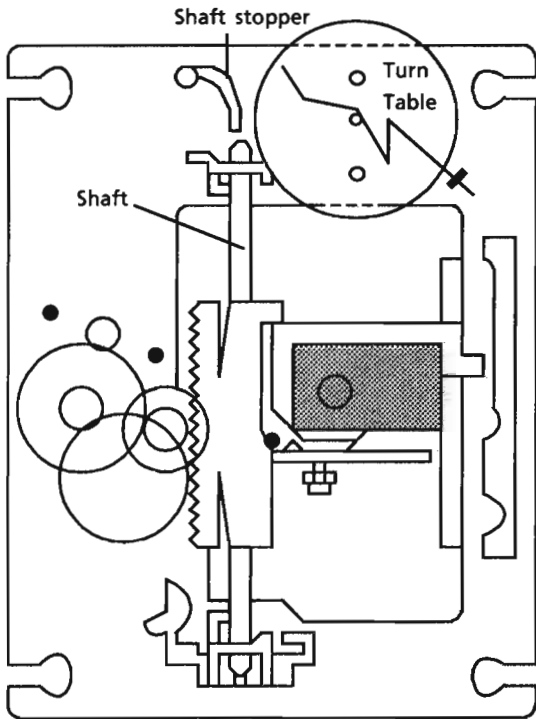


Fig. 2-23

② .. SPST2606Z

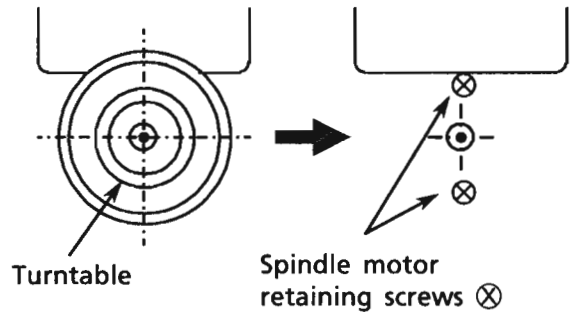
**(2-9) Removing the Pickup**

1. Remove the CD mech. assembly.
2. Release the shaft to remove the pickup.

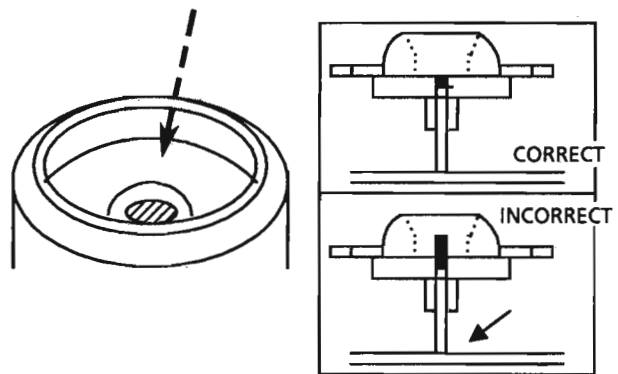


**(2-10) Removing the Spindle motor**

1. Remove the CD mech. assembly.
2. Remove the turntable, and remove the 2 screws ⊗ retaining the spindle motor.
3. Remove the screw retaining the spindle and feed motor circuit board and unsolder it.



- (2-12) After inserting the turntable, bond the motor shaft and turntable together (at the section marked by an arrow in fig 20 on the left below).**



**(2-11) 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 mech. base to the turntable is exactly  $19.4 \pm 0.1\text{mm}$ .

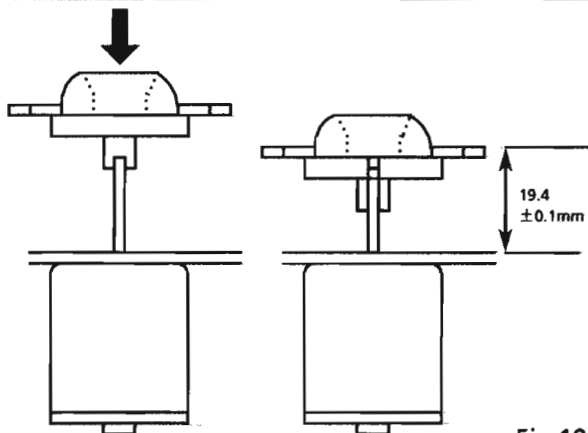


Fig 19

- (2-13) Use "LOKTTITE" #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 allow in fig 20 on the right).

**(3-1) Cassette mechanism with the PCB removal and cassette amp PCB(ENJ-090) removal**

1. Remove the (1-1) and (1-2).
  2. Open the cassette door.
  3. Remove the 4screws (H) and 4screws (C).
  4. Remove the Cassette mechanism.
  5. Remove the 2screws (C) holding the cassette amp PCB.
  6. Remove the PCB (ENJ-090).
- ( See fig. 3-1 )

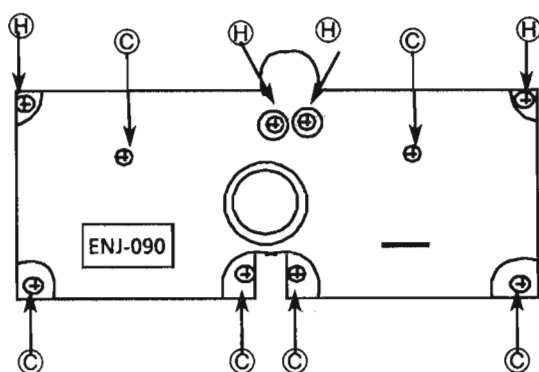


Fig. 3-1 Front panel Rear view

**(3-2) Cassette lid removal**

1. Open the cassette door.
  2. Remove the Cassette lid slide up ward.
- ( See fig. 3-2 )

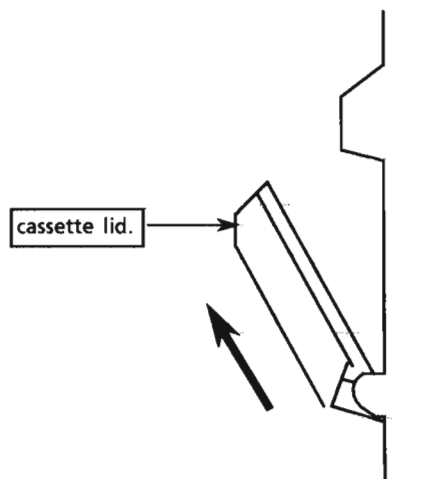


Fig 3-2 Side view

**(3-3) Damper removal**

1. Remove the cassette mechanism.
2. Remove the spring holding the cassette holder or open the cassette door.
3. Press the tab which secures the damper to remove the damper.(See the arrow shown in the figure below)

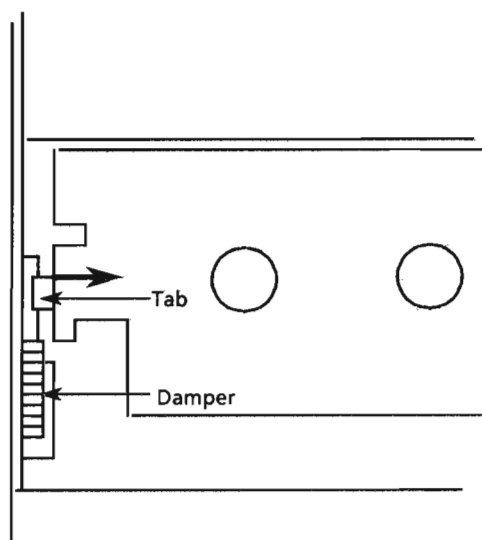


Fig 3-3 Door damper view

**(3-4) Cassette holder removal**

1. Remove the Cassette mechanism assembly.
2. Remove the damper and spring holding the cassette holder.
3. Remove Cassette holder .

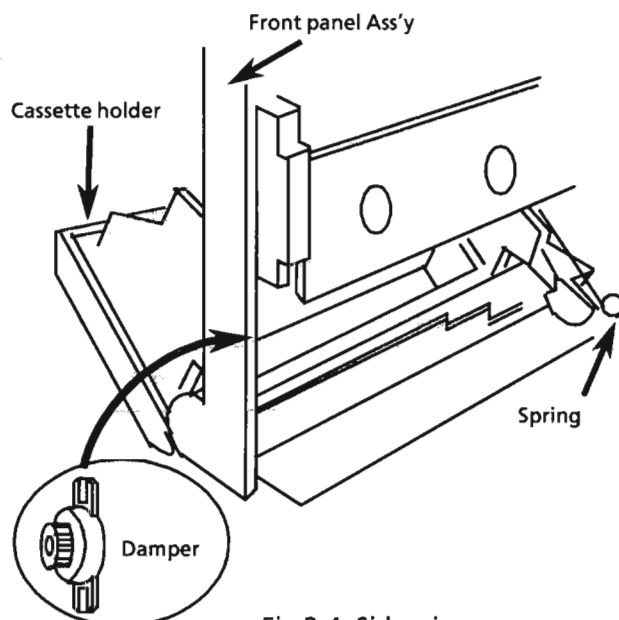


Fig 3-4 Side view

**(3-5) Cassette mechanism holder bracket removal**

1. Remove the (1-1),(1-2)and (3-1),(3-3),(3-4).
2. Remove the 6screws (K) holding the holder bracket.
3. Remove the holder bracket.

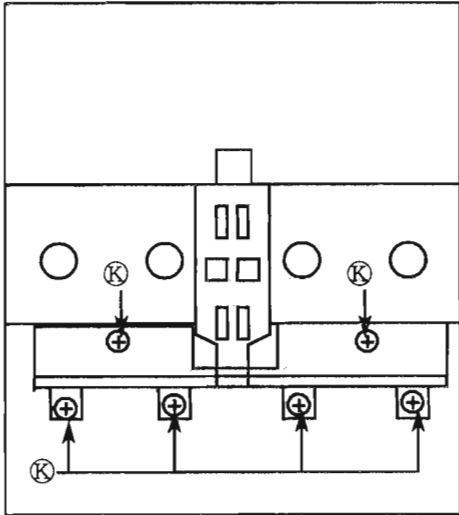


Fig. 3-5 Front panel Rear view

**(3-6) Front SW PCB( ENH-267-2) removal**

1. Remove the (1-1),(1-2) and (3-1),(3-3),(3-4),(3-5).
2. Remove the 11 screws (K) holding the PCB.
3. Remove the SW PCB .

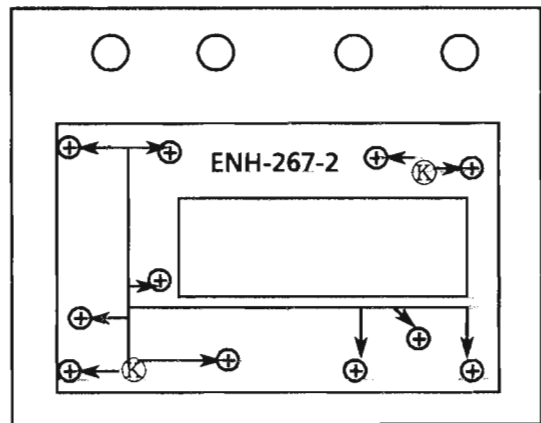


Fig. 3-6 Front panel Rear view

**(3-7) FL display PCB (ENB-215-1) removal**

1. Remove the (1-1),(1-2).
2. Remove the music jog knob.
3. Remove the 7 screws (K) holding the PCB.
4. Remove the FL display PCB.

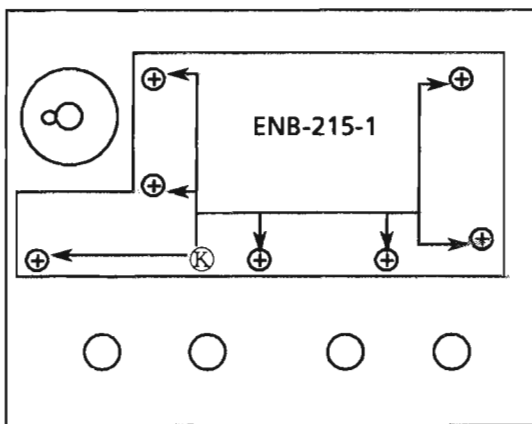


Fig. 3-7 Front panel Rear view

**(3-8) Pinch roller arm assembly removal**

1. Release the hook holding the pinch roller arm assembly to remove the assembly .

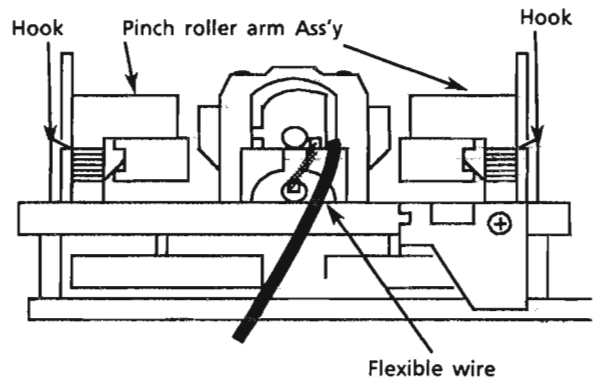


Fig.3-8 Cassette mechanism bottom view

(K) .. SDSF2608Z



**(3-9) Head assembly**

The direction of the head is changed with the direction lever. When servicing, install the direction lever according to the direction of the head.

\*Head incline to upper cassette mechanism stop, head holder at a little distance azimuth screw.

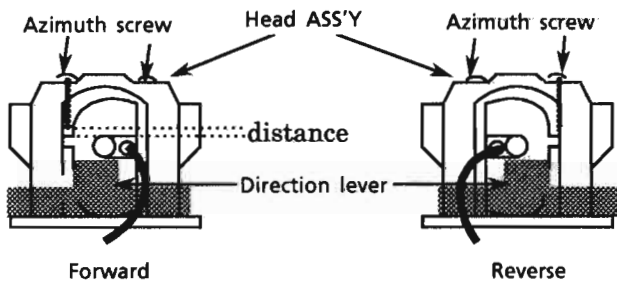


Fig 3-9 Head ass'y side view

**(3-10) Head assembly removal**

1. Remove the cassette mechanism assembly.
2. Remove the FPC wire to the Cassette amp PCB.
3. Remove the 3 screws (U) fixing the head ass'y to remove it.

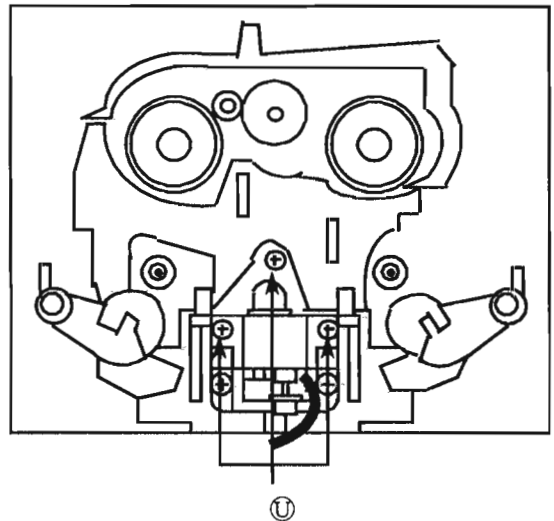


Fig 3-10 Cassette mecha. Top view

**(3-11) Capstan motor removal.**

1. Remove the cassette mechanism.
2. Remove the cassette deck control PCB.
3. Remove the 6screws (F) holding the bracket.
4. Remove the hooks (■) of the bracket.
5. Put the cutting on the flywheel A together the bracket's pawl as shown in Fig. 3-11-a and check that the flywheel B is removed from the bracket's pawl(Fig. 3-11-b).
6. Remove the capstan motor with the bracket.
7. Unsolder the broken flat wire of the capstan motor.
8. Remove the 2screws fixing the motor and the bracket.

\* To remove the bracket, it is easier to remove mech. "B" first. Vice versa, assembling mech. "A" is easier for reassembly.

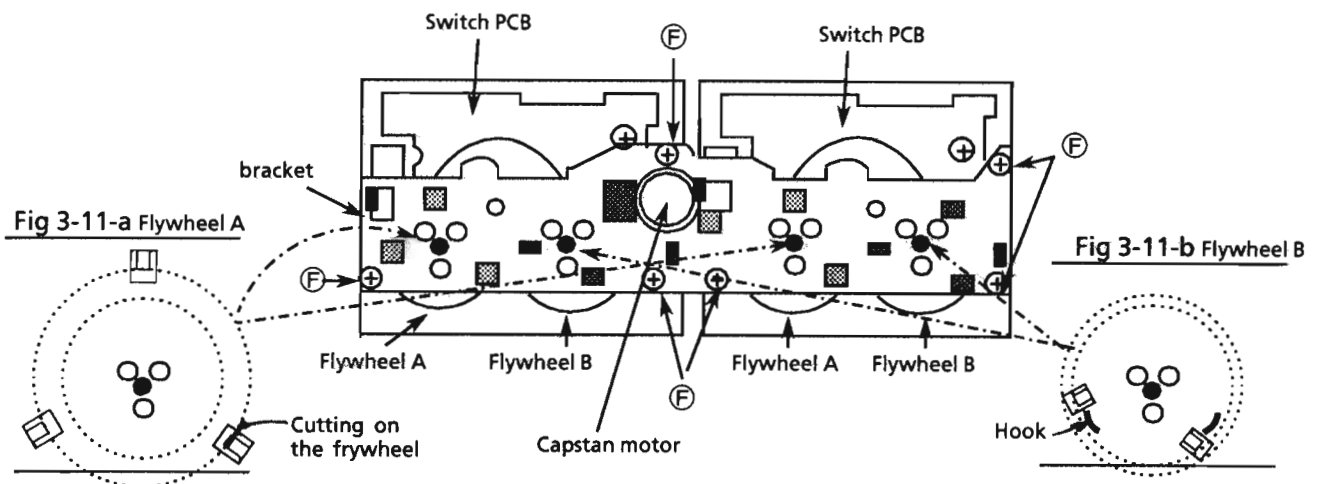


Fig. 3-11 Cassette mechanism bottom view

(F) .. SBSF2608Z      (U) ... SDSR2004Z

**(3-12) Flywheel removal**

1. Remove the cassette mechanism assembly.
  2. Remove the cassette amp PCB.
  3. Remove the 6 screws (F) and the bracket.
  4. Remove the 4 hooks of the bracket.
  5. Remove the bracket.
  6. Remove the flywheels.
- \*The oil on the capstan must be wiped out after re-assembling.

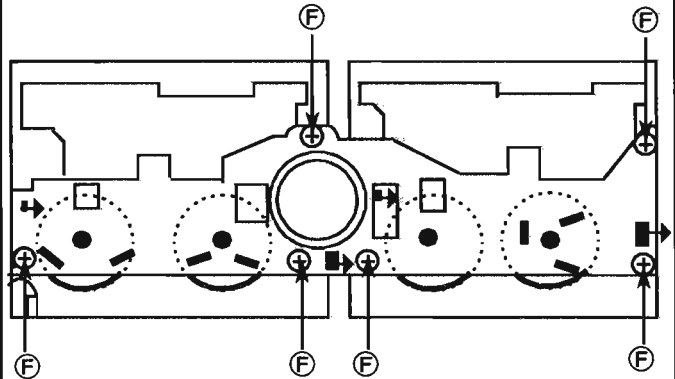


Fig 3-12 Cassette mechanism bottom view

**(3-13)How to install the belts**

1. Install the flywheels and belts as shown in the figure below . ( Fig 3-13 )  
When putting the belts, put the long belt first.
2. Install the main reels to put the belts on the flywheels.

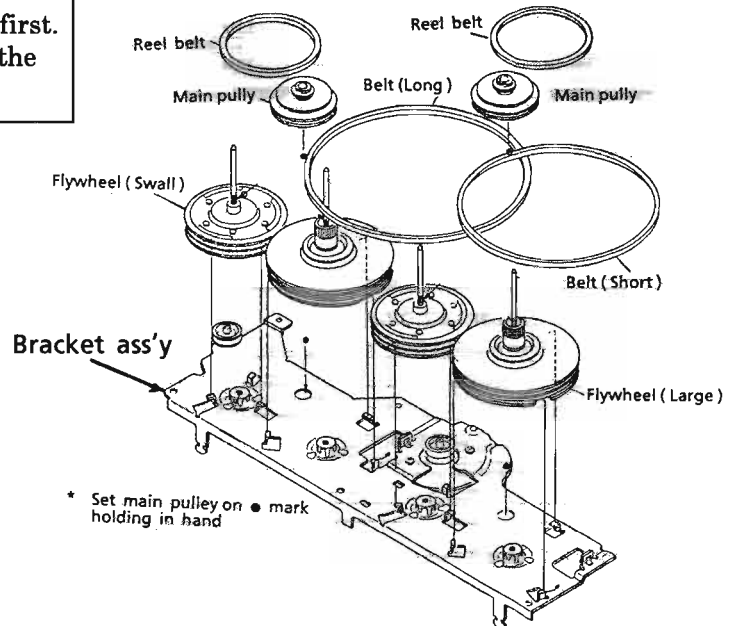
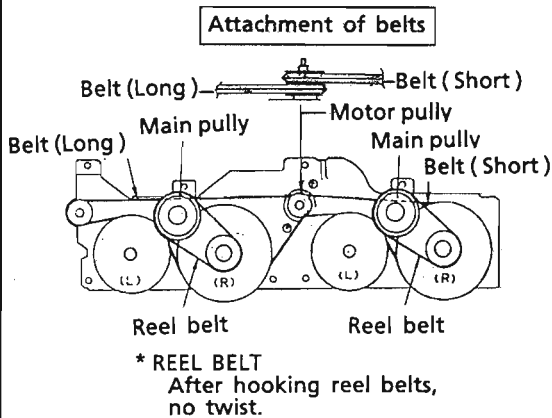


Fig. 3-13 Install the belts

**(3-14) How to install the cassette mech. and bracket ass'y.**

1. Set main pulley on ● mark for bracket holding in hand. ( Fig.3-13 )
2. Install the bracket ass'y on the cassette mech..( Fig.3-14 )  
when assembling the cassette mechanisms, assembling the cassette mechanism "A" first.

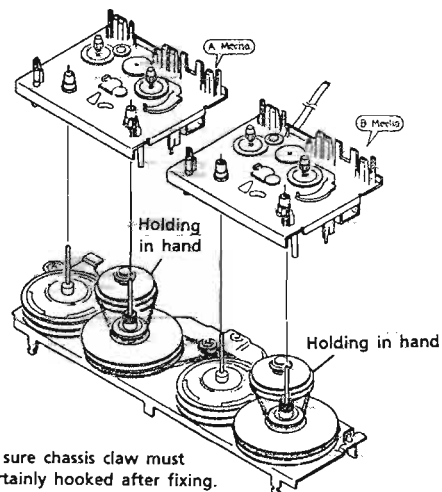
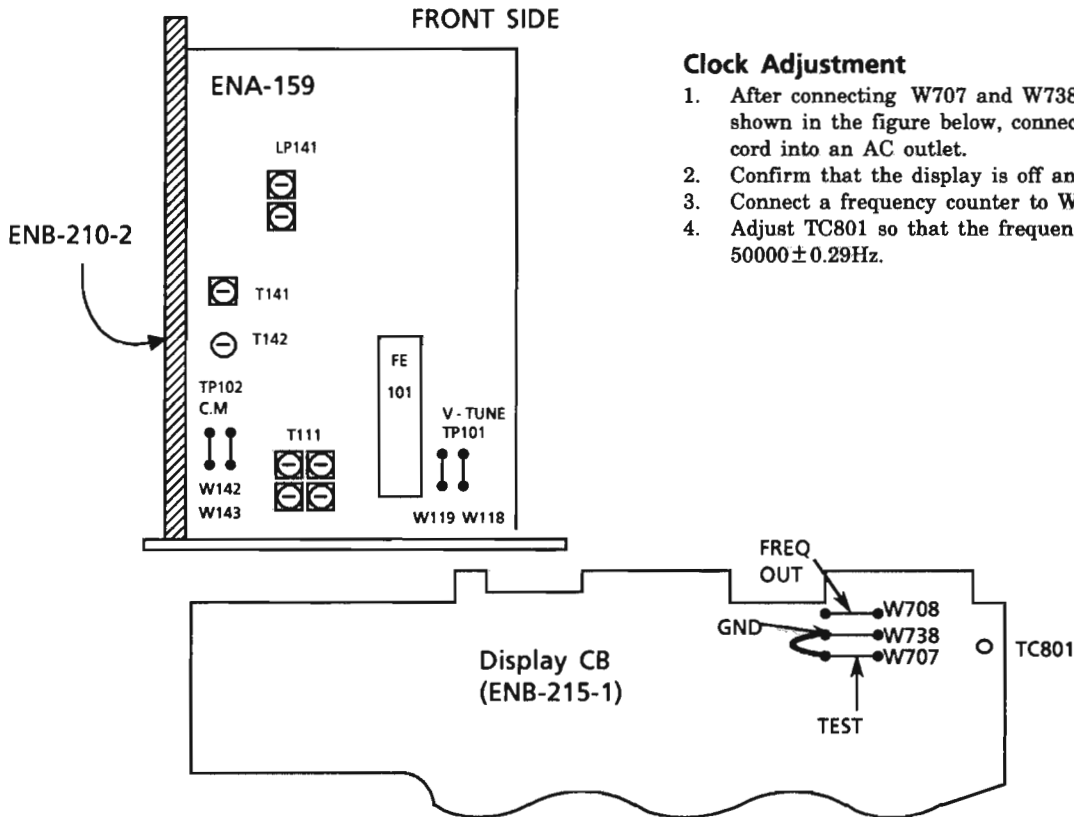


Fig. 3-14 Install the cassette mech. and bracket ass'y



## Adjustment procedures

### ■ Tuner section



### Clock Adjustment

1. After connecting W707 and W738 with some wire as shown in the figure below, connect the AC power cord into an AC outlet.
2. Confirm that the display is off and remove the wire.
3. Connect a frequency counter to W708 and W738.
4. Adjust TC801 so that the frequency becomes  $50000 \pm 0.29\text{Hz}$ .

#### (1) Tuning voltage

Confirm the voltages at TP101 is within the standard values shown in the table below. If the voltages are not satisfied, replace T111 for MW and for LW or FE101 for FM.

#### FM Tuning voltage (Unit : V)

Area	Frequency	
	87.5MHz	108MHz
Except VX	$1.6 \pm 1.0(V)$	$8 \pm 2.0(V)$
VX	$1.6 \pm 1.0(V)$	6~11(V)

#### AM Tuning voltage (Unit : V)

Area	Frequency (MW)							Frequency (LW)	
	522KHz	530KHz	531KHz	1600KHz	1602KHz	1629KHz	1710KHz	144kHz	288kHz
BS,EF,EN,G,GI,VX	>0.7	—	—	—	—	<8.3	—	0.5<	>7.5
C,J	—	>0.8	—	—	—	—	<8.8	—	—
U,UT,UB,UP,US(Channel Space 9kHz)	—	—	>0.8	—	<7.9	—	—	—	—
Universal(Channel Space 10kHz)	—	>0.8	—	<7.9	—	—	—	—	—
A	>0.7	—	—	—	—	<8.3	—	—	—

#### (2) FM center meter

Receive a broadcast by using the function of 'AUTO STOP'.

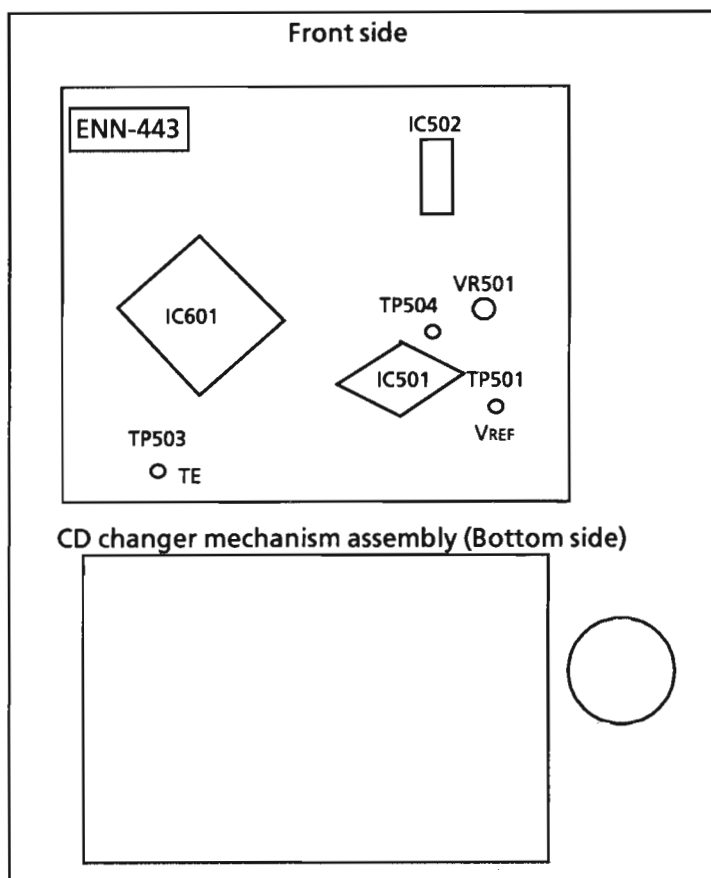
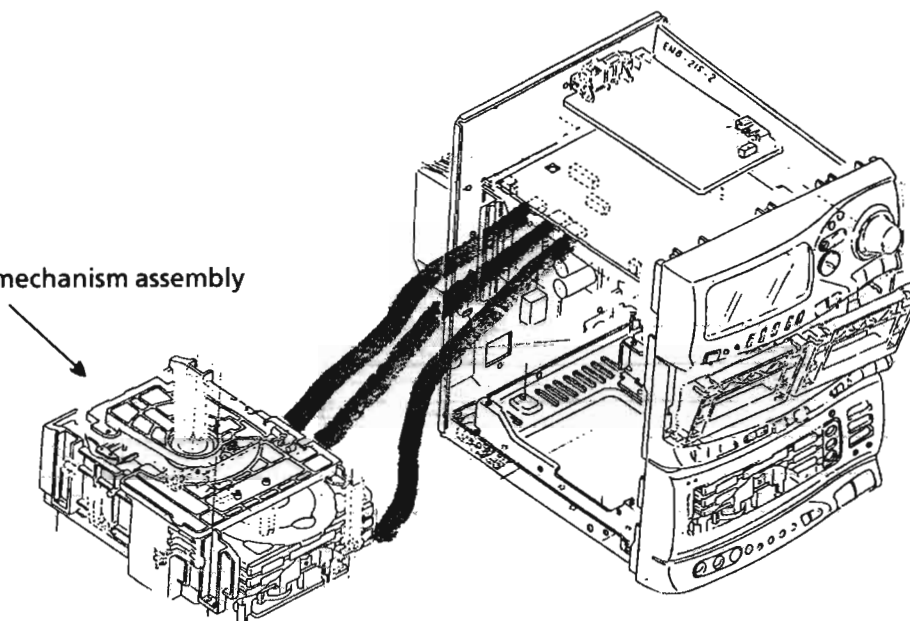
Adjust T141 (detector coil) so that the voltage at TP102 becomes  $0 \pm 1.5\text{mV}$ .

#### The Marks for Designated Areas

J ..... the U.S.A.	A ..... Australia	C ..... Canada	VX ..... East Europe
G ..... Germany	U ..... Universal	US ..... Singapore	UT ..... Taiwan
EF .... Continental Europe	EN .... Scandinavia	GI ..... Italy	BS ..... the U.K.
UB .... Hong Kong	UP .... Korea	No mark indicates all area.	

## ■ CD section

CD changer mechanism assembly



1. CD changer mechanism assembly removal.
2. Re-assembling front panel assembly (including cassette mechanism ass'y) and rear panel ass'y.
3. Connections all wires.
4. Adjusting Tracking offset adjustment.

### Tracking offset adjustment

- 1) Measuring instruments : Oscilloscope, Normal disc
  - 2) Adjusting procedure
    - (1) Connect an oscilloscope with TP503 (HOT side) and TP501 (EARTH side) on the CD servo (ENN-443) PC board.
    - (2) Play a disc.
    - (3) Short circuit between TP504 and TP501.
    - (4) Adjust VR501 for setting the DC level of the tracking error (offset) becomes 0.
- Note : Adjust VR501 for setting the waveform becomes symmetrical around the 0 level.  
Input to the oscilloscope should be DC coupling.

■ Deck section

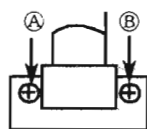
1. Measuring instruments

- Audio frequency signal generator ( 0dbs output at the 600 ohm output terminal from 50Hz to 20KHz)
- Electronic voltmeter
- Frequency counter
- Wow & Flutter meter
- Distortion Meter with band pass filter
- Attenuator (600 ohm impedance)
- A resistor with 600Ω

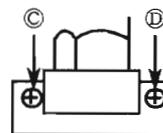
Tape No.	Frequency	Level (Wow & Flutter)	Purpose
VTT-703L	10kHz	- 10dBs	Head azimuth , Frequency Response
VTT-712	3000Hz	0dBs 0.025%WRMS	Tape Speed , Wow & Flutter
VTT-724	1kHz	- 4dBs	Standard Level
TMT-6447	--	--	Blank Skip
TMT-6247 , TMT-6237	--	--	Music Scan
TMT-7088S	--	--	Recording standard Normal : UR
AC-712	--	--	Recording standard METAL : MA
AC-513	--	--	Recording standard CrO <sub>2</sub> : SA
TW-2111, TW-2121	--	--	Forward / reverse play torque measuring
TW-2231	--	--	Feed forward / rewind torque measuring
C-120 Tape	--	--	Confirming the tape running

2. Adjustment and repairing the mechanism

Item	Adjustment method	Standard value	Remarks
Head azimuth	<p>Deck A</p> <ol style="list-style-type: none"> <li>1. Connect an electronic voltmeter to the DOLBY TP (figure 5) to playback VTT-703L.</li> <li>2. Adjust screw ① so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed.</li> <li>3. Adjust screw ② so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed.</li> </ol> <p>Deck B</p> <ol style="list-style-type: none"> <li>4. Adjust screw ③ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed.</li> <li>5. Adjust screw ④ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed.</li> <li>6. After making the adjustment, apply screw lock to prevent screws ①, ②, ③ and ④ coming loose.</li> </ol>	Maximum	<ol style="list-style-type: none"> <li>1. Refer to figure 1.</li> <li>2. When the specified characteristic cannot be obtained because of head wear, excessive magnetization, etc., replace the head assembly and adjust the head azimuth. Also, perform the electric adjustment.</li> <li>3. When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head assembly to avoid complaints.</li> </ol>
Playback torque	1. Measure the torque in the playback mode by the torque meter.	26 ~ 72 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Fast forward torque	1. Measure the torque in the fast forward mode by the torque meter.	80 ~ 170 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Rewind torque	1. Measure the torque in the rewind mode by the torque meter.	80 ~ 170 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Wow & flutter	<ol style="list-style-type: none"> <li>1. Connect the wow &amp; flutter meter to the DOLBY TP (figure 5) and play back VTT-712.</li> <li>2. Its reading should be within 0.25% (WTD).</li> </ol>	Less than 0.25%	As a complaint may occur if the wow & flutter fluctuates by 0.1% even though it is allowed in the standard, repairing is required.



Deck A



Deck B

Figure 1

### 3. Electrical Adjustments (Make the following adjustments after adjusting the head azimuth.)

In principle, the adjustments should be made in the following sequence.

Set the NR switch to OFF and the BEAT CUT switch to "1".

Adjustments marked with an asterisk (\*) should always be made after the head is replaced

0dBs=0.775V.

Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
Tape Speed	1. Connect a frequency counter to the DOLBY TP (figure 5) and play back VTT-712. 2. Adjust the semi-fixed resistor VR948 on ENH-267 - 1 (figure 4).	VR948	3,000 Hz ± 10Hz	Connect a wow & flutter meter with a built-in frequency counter to the speaker terminals.
Standard level (Playback Level)	1. Connect an electronic voltmeter to the DOLBY TP (figure 5). Play back VTT-724 (1 kHz : -4dBs) to adjust the semi-fixed resistors.	<b>Deck A</b> L: VR301 R: VR302 <b>Deck B</b> L: VR303 R: VR304	488mV (-4dBs)	1) The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
Playback Frequency Response	1. Connect an electronic voltmeter to the DOLBY TP (figure 5). 2. Play VTT-703L (10kHz : -10dBs) and adjust semi-fixed resistors to obtain the standard values.	<b>Deck A</b> L: VR305 R: VR306 <b>Deck B</b> L: VR307 R: VR308	245mV (-10dBs)	—
Recording Bias Frequency	1. Connect a frequency counter to the BIAS TP (figure 3 and 5), and perform a recording to adjust bias frequency.	L301	105 kHz ± 5 kHz	Set the BEAT CUT SWITCH to "1". (BS,EF,EN,G,GI,VX only)
Record / Play Frequency Response (Bias current)	1. Supply 1kHz and 12.5kHz with 30mV signals to AUX terminals respectively to record them. 2. Connect an electronic voltmeter to the DOLBY TP (figure 5) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signal again to confirm the recorded values.	L: VR309 R: VR310	0±2 dB with 1 kHz as the standard.	<b>Refer to figure 2 below.</b> 1) The recording and playback frequency response of a cassette deck are adjusted by adjusting the bias. 2) Perform the adjustment with normal tape and confirm that the values are within the range for metal tape.

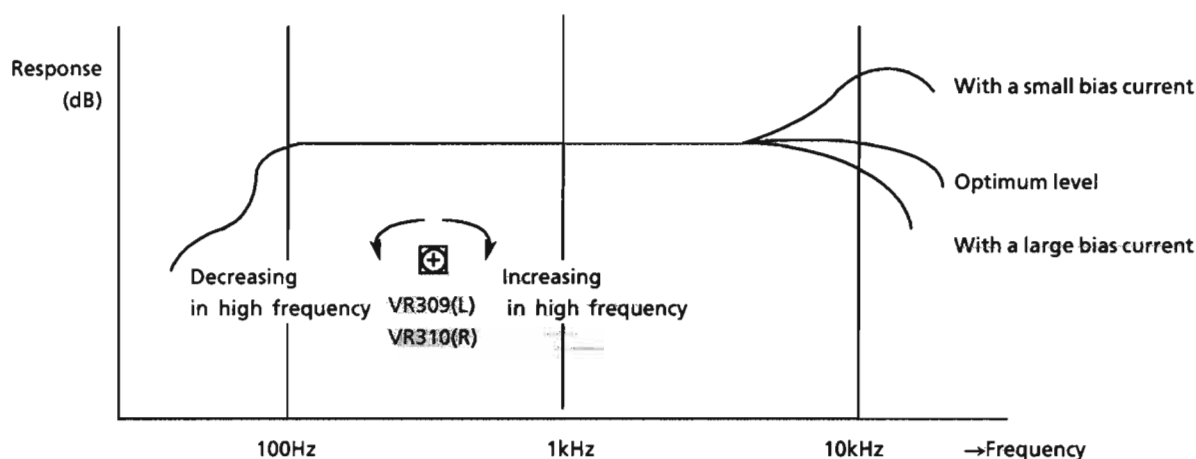


Figure 2

Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
Record / Playback Sensitivity	<ol style="list-style-type: none"> <li>1. Input a 1kHz (300mV) signal to AUX terminal and record it with a normal tape.</li> <li>2. Connect an electronic voltmeter to the DOLBY TP (figure 5) to confirm the values.</li> <li>3. If the values are not satisfied, adjust the semi-fixed resistors and record the signal again to confirm the values.</li> </ol>	L : VR311 R : VR312	-5.5dBs (411mV)	Adjust with normal tape and make sure that the left / right level difference is 1.0dB or less
Recording / playback distortion	<ol style="list-style-type: none"> <li>1) Input a 1 kHz (300mV) to AUX terminal and record it.</li> <li>2) Play it back and check the speaker out with a distortion meter to make sure it is within the criterion.</li> </ol>		less than 3% (Normal/ CrO <sub>2</sub> )	Perform after the record / play frequency response and recording / playback sensitivity adjustments.
Recording / playback S/N ratio	<ol style="list-style-type: none"> <li>1) Input a 1 kHz (300mV) signal to AUX terminal and record it. While recording, remove the input and record without the signal.</li> <li>2) Connect a electronic voltmeter to the speaker terminals to measure the output levels.</li> <li>3) Confirm that the output level ratio between the signals with a 1kHz and no signal is more than 40dB.</li> </ol>		more than 40 dB (Normal/ CrO <sub>2</sub> )	
Erase ratio check	<ol style="list-style-type: none"> <li>1. Record a music source using the Metal tape.</li> <li>2. Rewind and erase the recorded section.</li> <li>3. Comfirm nothing can be heard.</li> </ol>	—	—	—
Music Scan	<ol style="list-style-type: none"> <li>1. Make sure not to work the music scanning operation at the start of tape wind.</li> <li>2. Make sure to work the music scanning operation at the end of tape wind.</li> </ol>	—	—	—

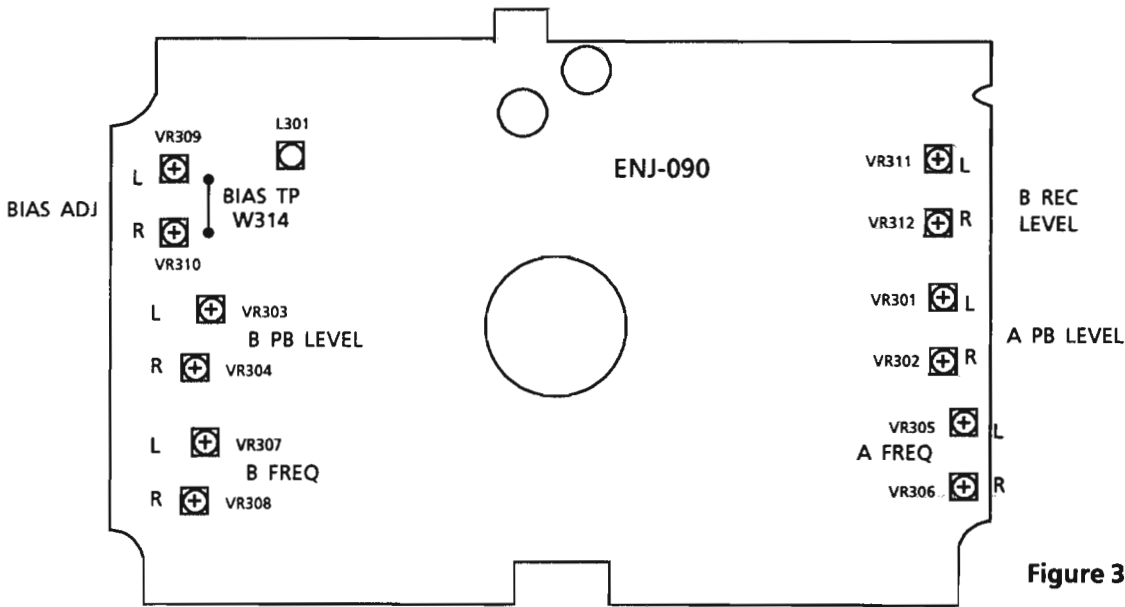


Figure 3

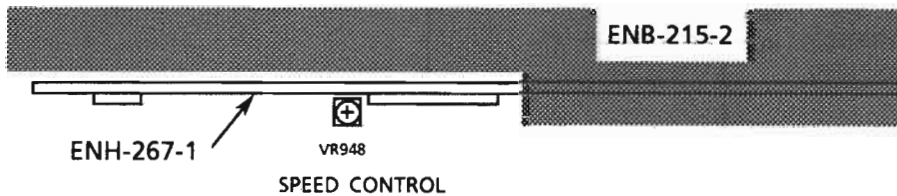


Figure 4

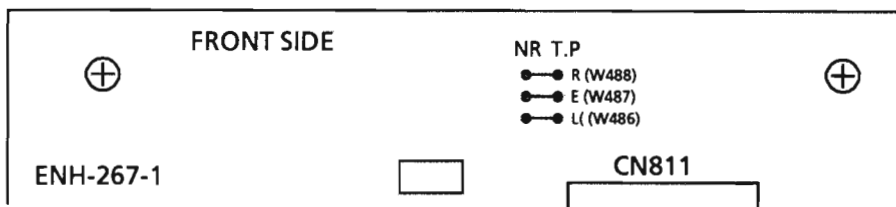
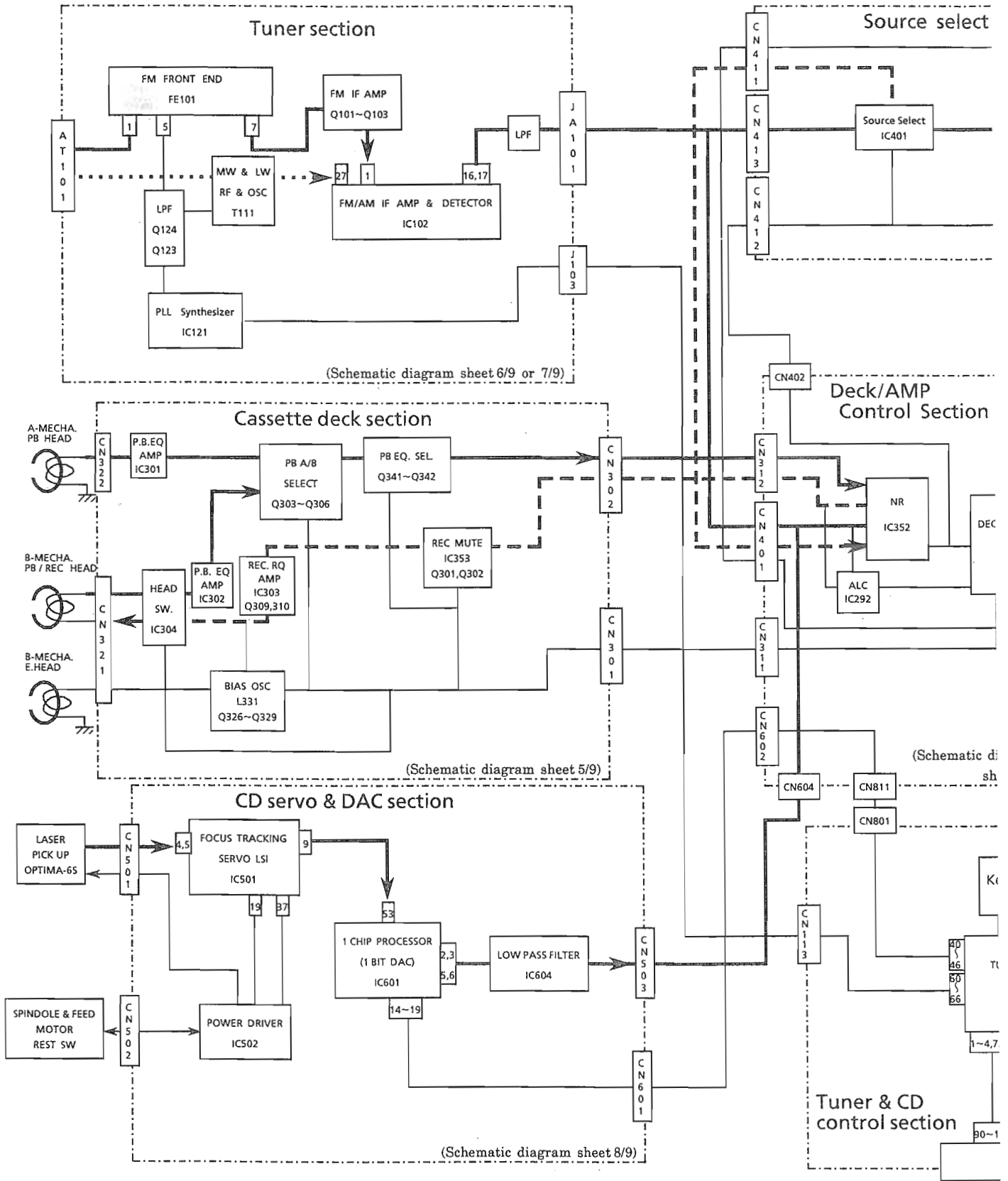


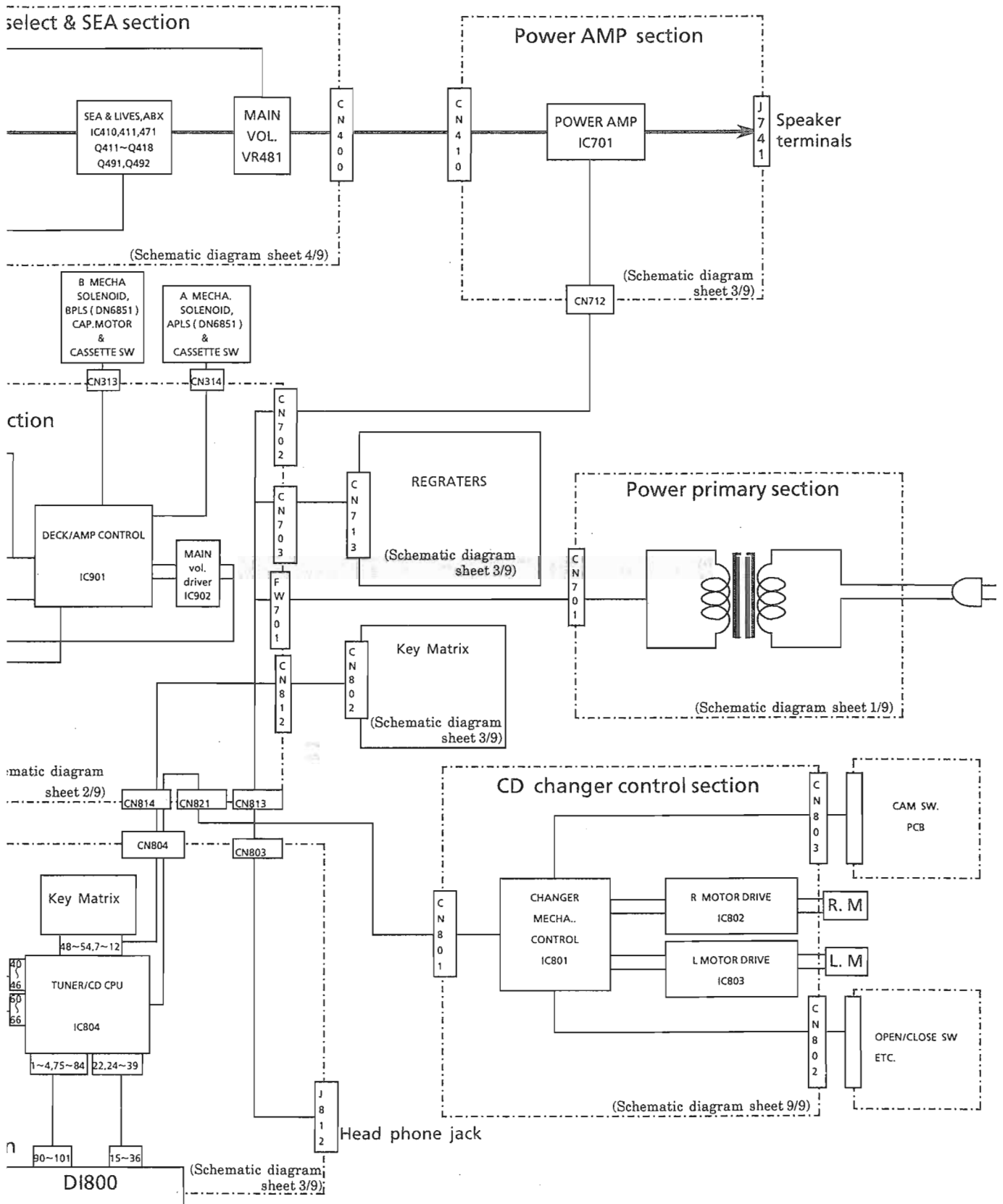
Figure 5





■ Block Diagram





# Printed Circuit Boards

## ■ Tuner / CD Control, FL Display & Power Supply P.C.Board (ENB-215)

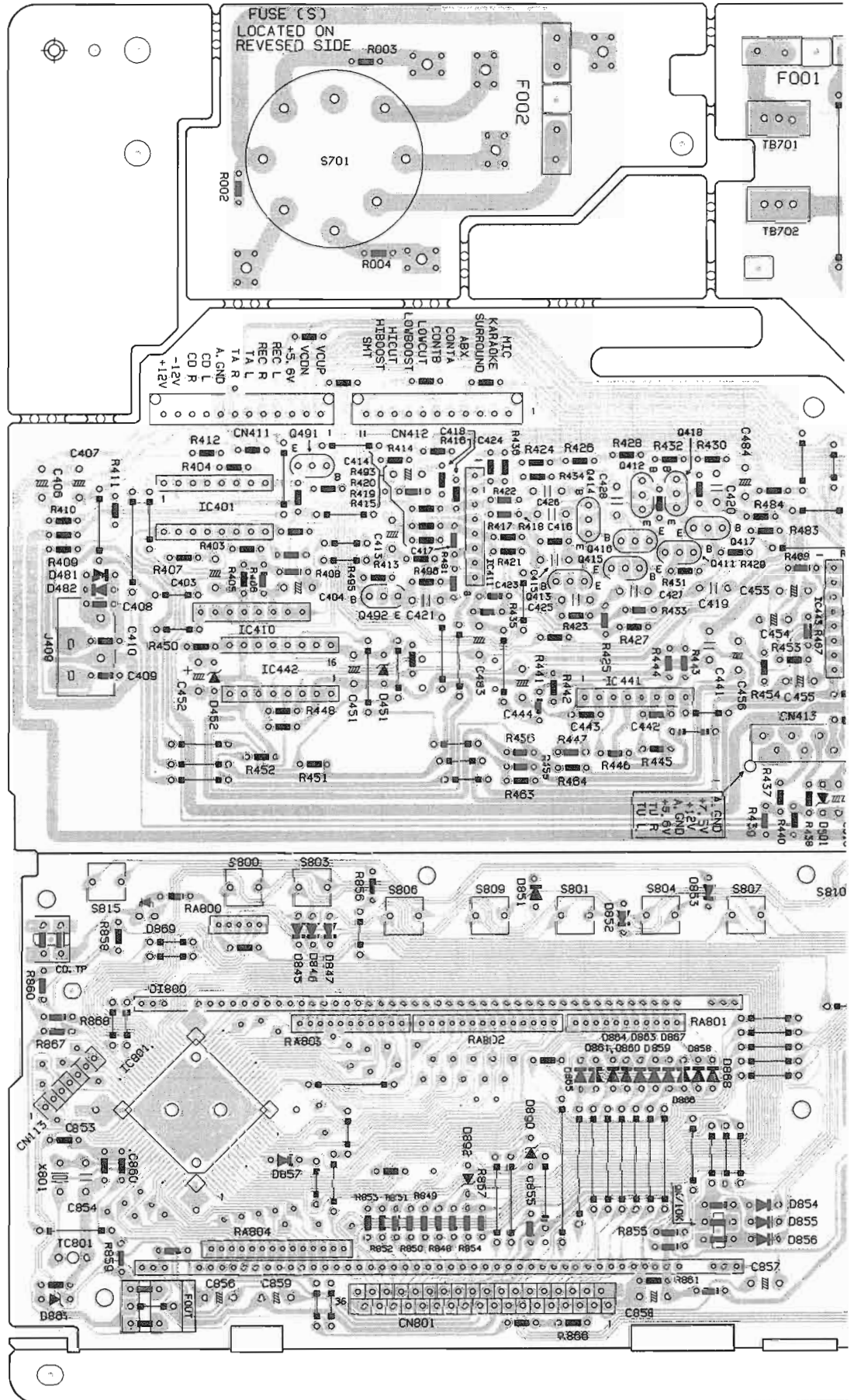
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1

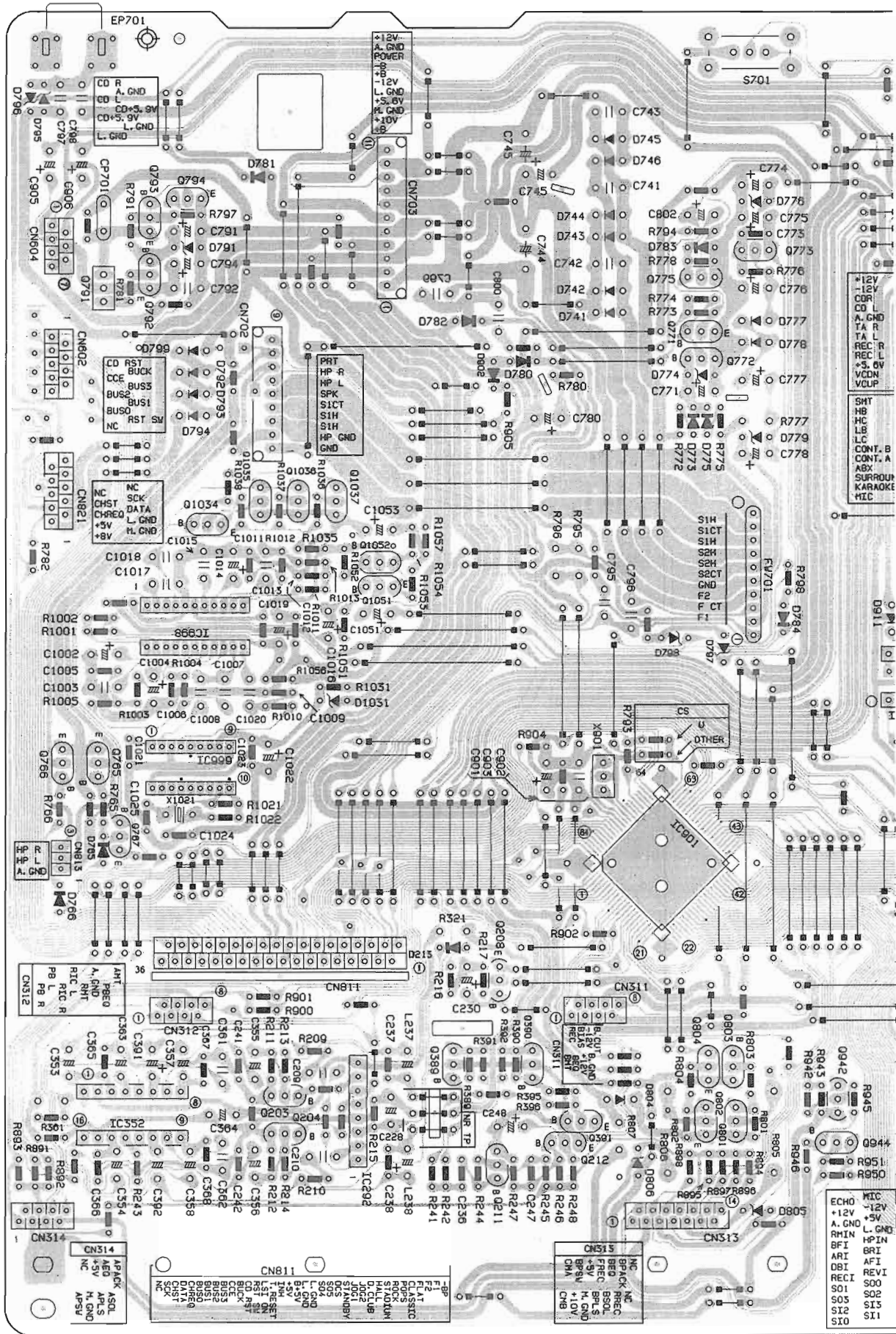


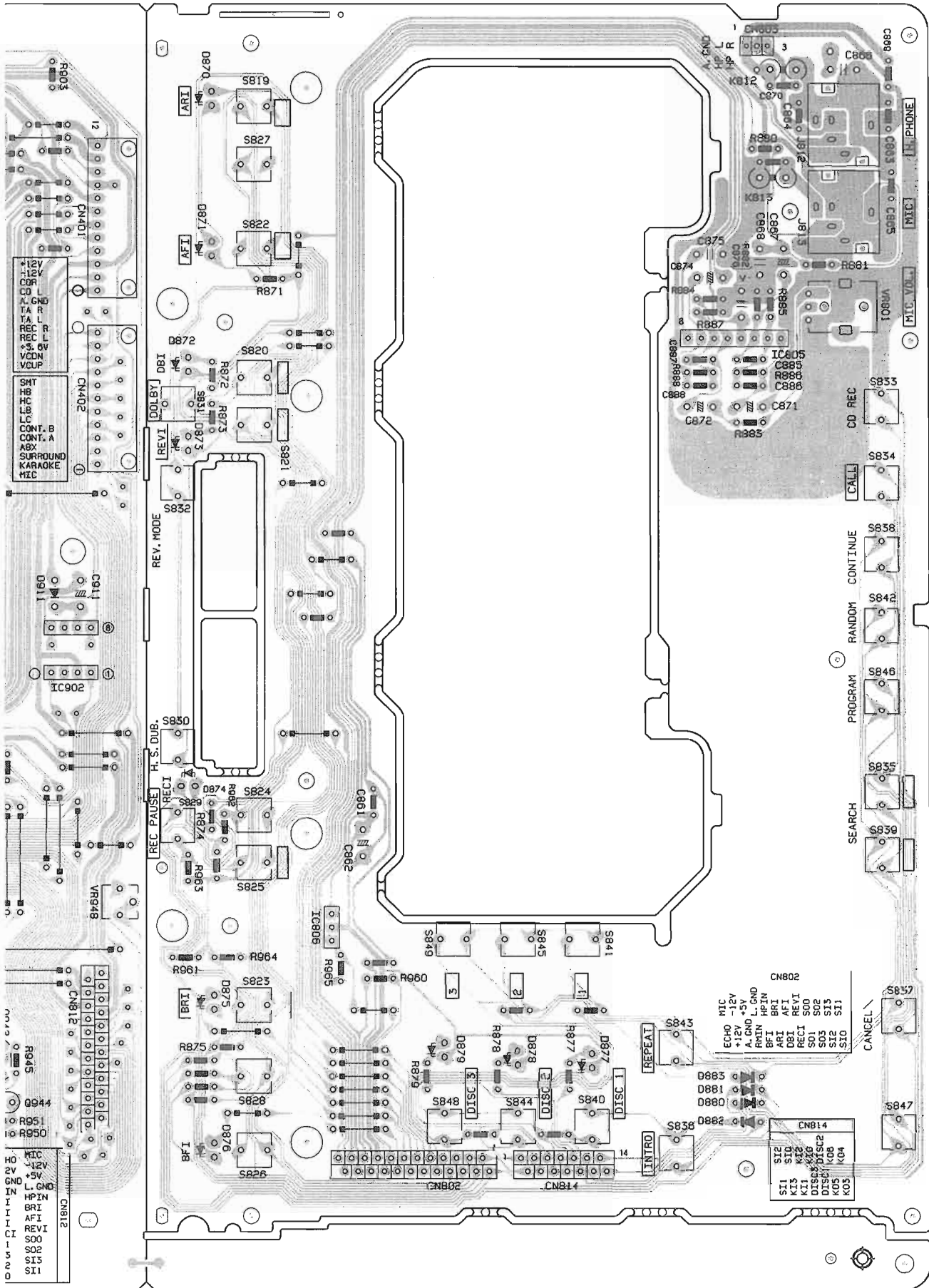


# Indicator, Key & Deck / Amp. Control P.C.Board ( ENH-267 )

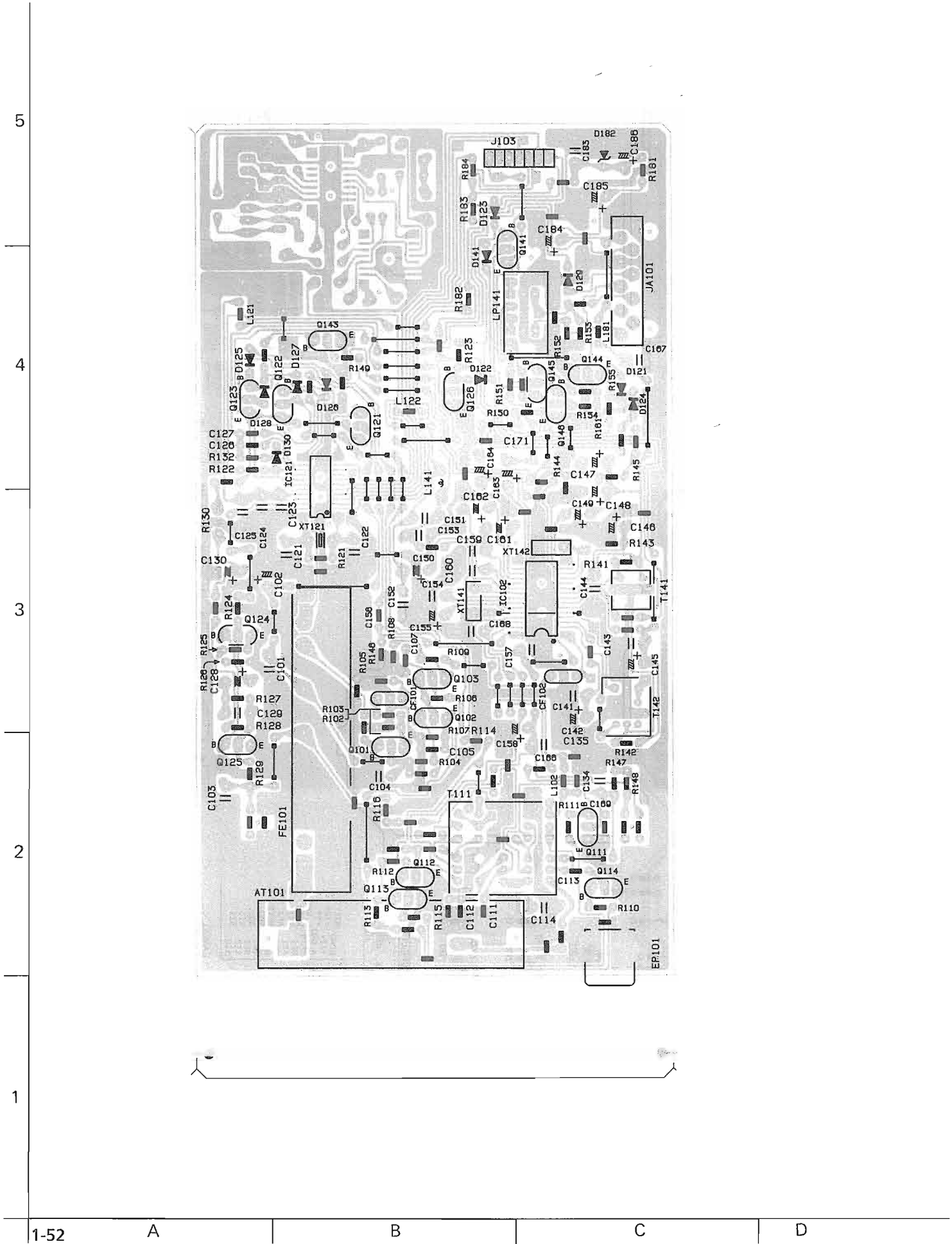
5  
4  
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2  
1

A B C D



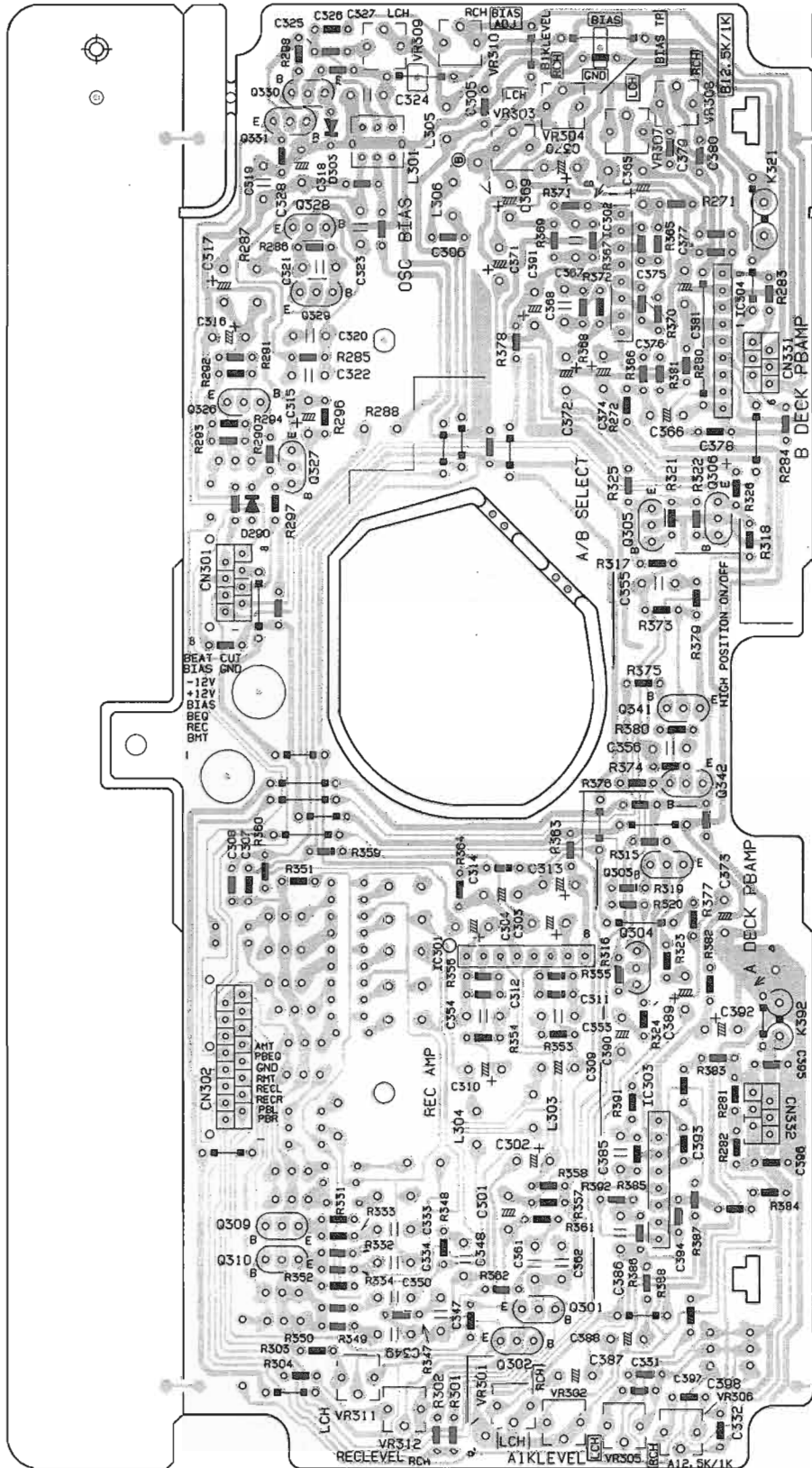


■ Tuner P.C.Board (ENA-159)





■ Deck Amp. & EQ P.C.Board ( ENJ-090 )



E

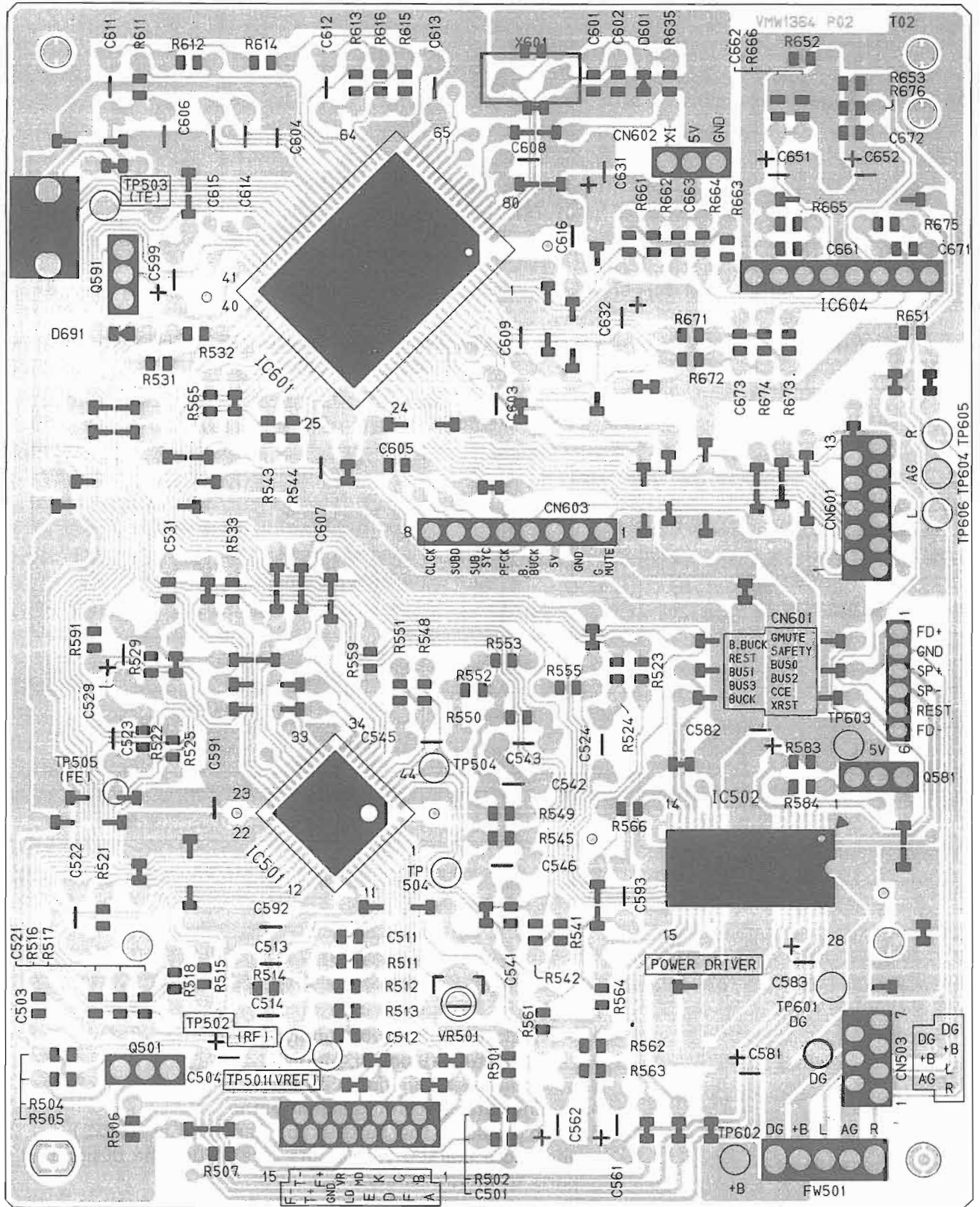
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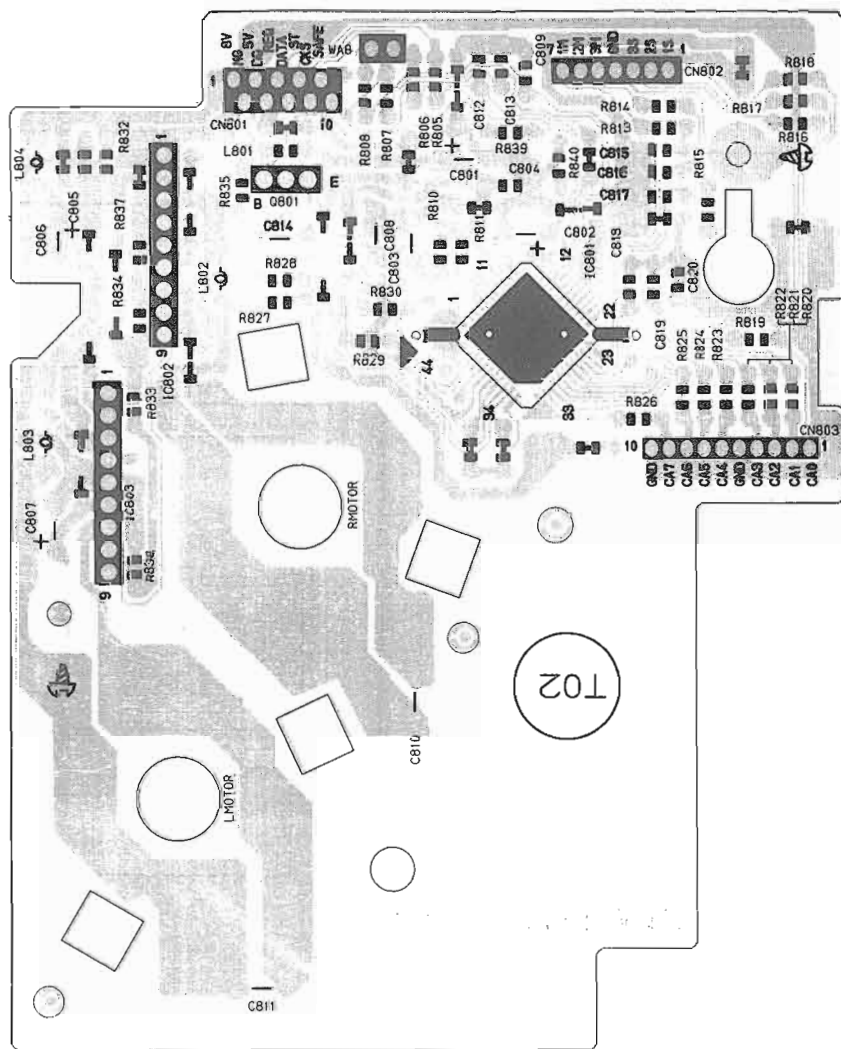
■ CD Servo & Low Pass Filter P.C.Board ( ENN-443 )

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3  
2  
1



A B C D

■ CD Changer Mechanism Control P.C.Board

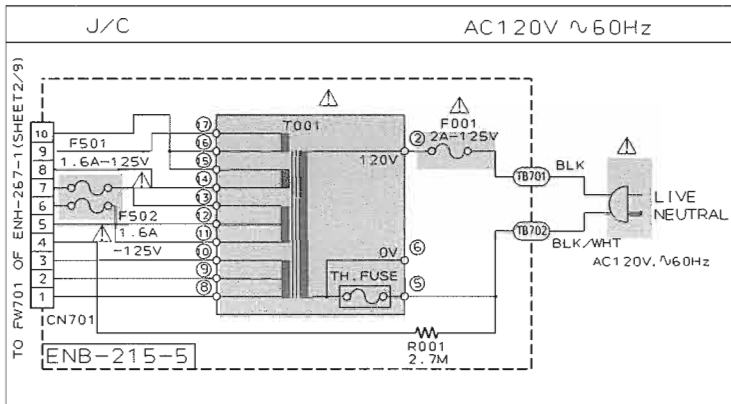


75  
671  
TP606 TP604 TP605  
6  
6  
6

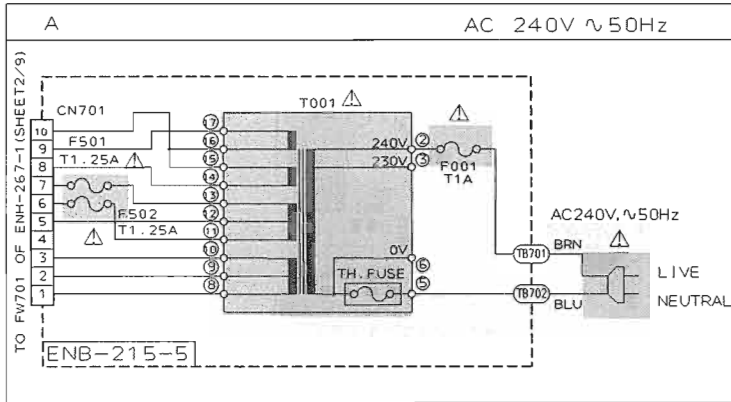
# Schematic Diagrams

## Power Primary Section

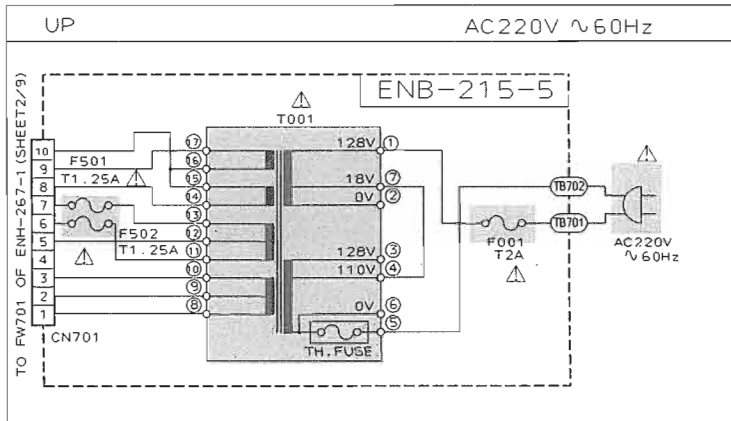
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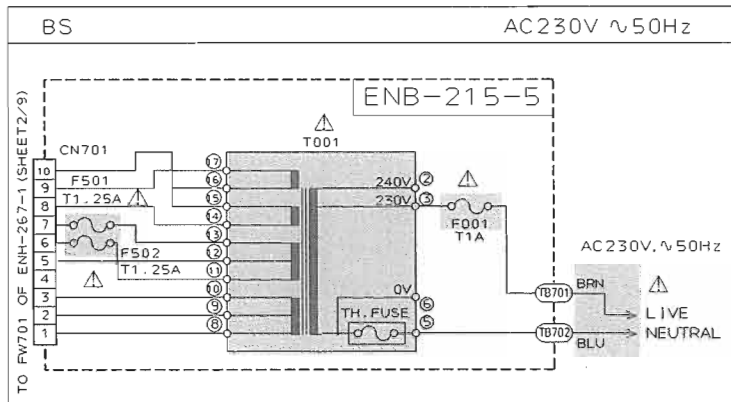
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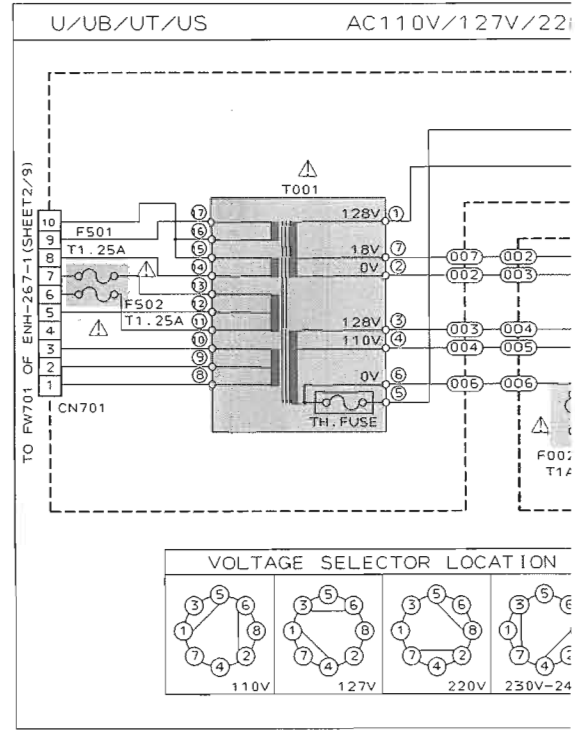
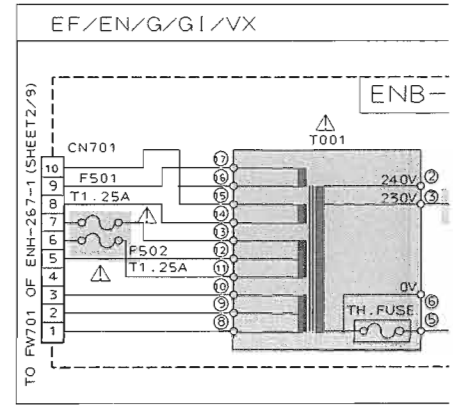
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2

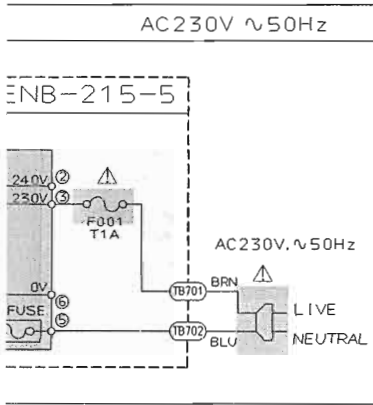


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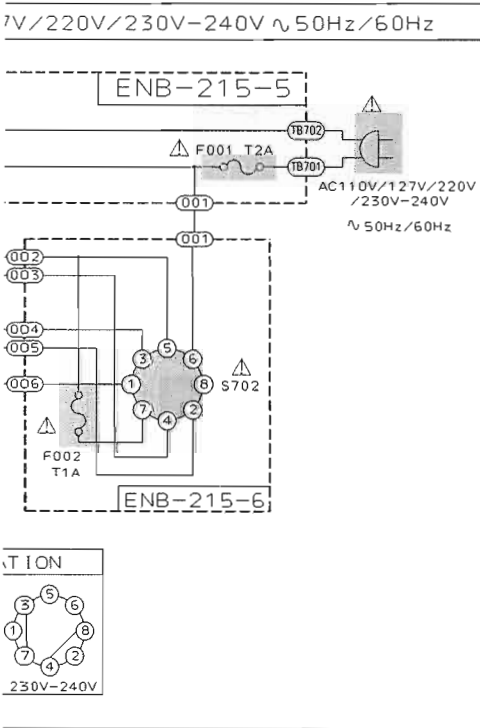


VERSION CODES

J : U.S.A.  
 C : CANADA  
 EN: NORDIC COUNTRIES  
 EF: CONTINENTAL EUROPE EXCEPT  
 GERMANY AND ITALY  
 G : GERMANY  
 GI : ITALY  
 VX: EASTERN EUROPE  
 BS: U.K.  
 A : AUSTRARIA  
 UP: KOREA  
 U : UNIVERSAL EXCEPT ALL OF ABOVE  
 UB: HONG KONG  
 US: SINGAPORE  
 UT: TAIWAN



EXPLANATION OF OVERALL OF SCHEMA.  
 MODEL CA-C220



SHEET NUMBER	MODEL NUMBERS TO BE APPLIED	CIRCUITS DESCRIPTION
1/9	CA-C220	· PRIMARY WITH MAINS TRANSFORMER
2/9	CA-C220	· TAPE DECK MECHANISMS CONTROL
3/9	CA-C220	· DC REGULATORS · AUDIO OUTPUT · FL DISPLAY · SYSTEM CONTROL LSI · USER CONTROL KEYS FOR AUDIO DISK AMPLIFIER SECTION
4/9	CA-C220	· SIGNAL INPUT JACKS / SOURCE & SEA SELECT
5/9	CA-C220	· MISCELLANEOUS CIRCUITS FOR TAPE DECK SUCH AS AMPLIFIER, SWITCH, BIAS AND OTHERS
6/9	CA-C220	· TUNER RF/IF/FM MULTIPLEX (ONLY FOR J, C, U, UT, US, UP, UB, A)
7/9	CA-C220	· TUNER RF/IF/FM MULTIPLEX (ONLY FOR BS, EN, EF, G, GI, VX)
8/9	CA-C220	· DIGITAL PROCESSOR AND SERVO FOR AUDIO DISC
9/9	CA-C220	· AUDIO DISC MECHANISMS CONTROL

NOTES:  
 1. MARK (\*) IS TO SHOW DEVIATION IN VERSIONS. DETAILS ARE EXPLAINED NEAR THE MARK.

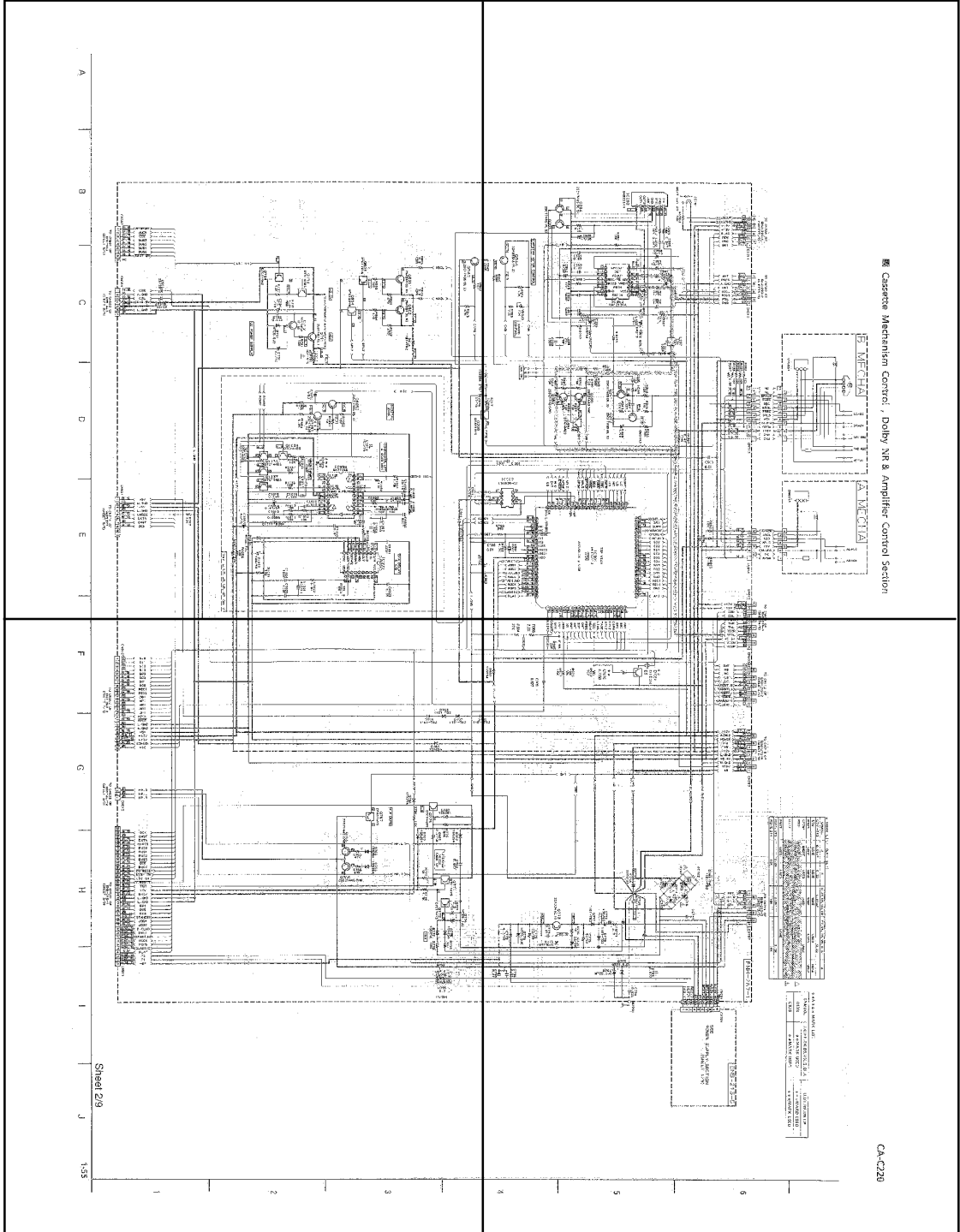
Notes:

- indicates +B power supply.
- - - indicates -B power supply.
- indicates Main signal path.
- ▨ indicates Recording signal path.
- When replacing the parts in the darkened are (■) and those marked with △, be sure to use the designated parts to ensure safety.
- This is the standard circuit diagram. The design and contents are subject to change without notice.



P1-55-a

P1-55-b



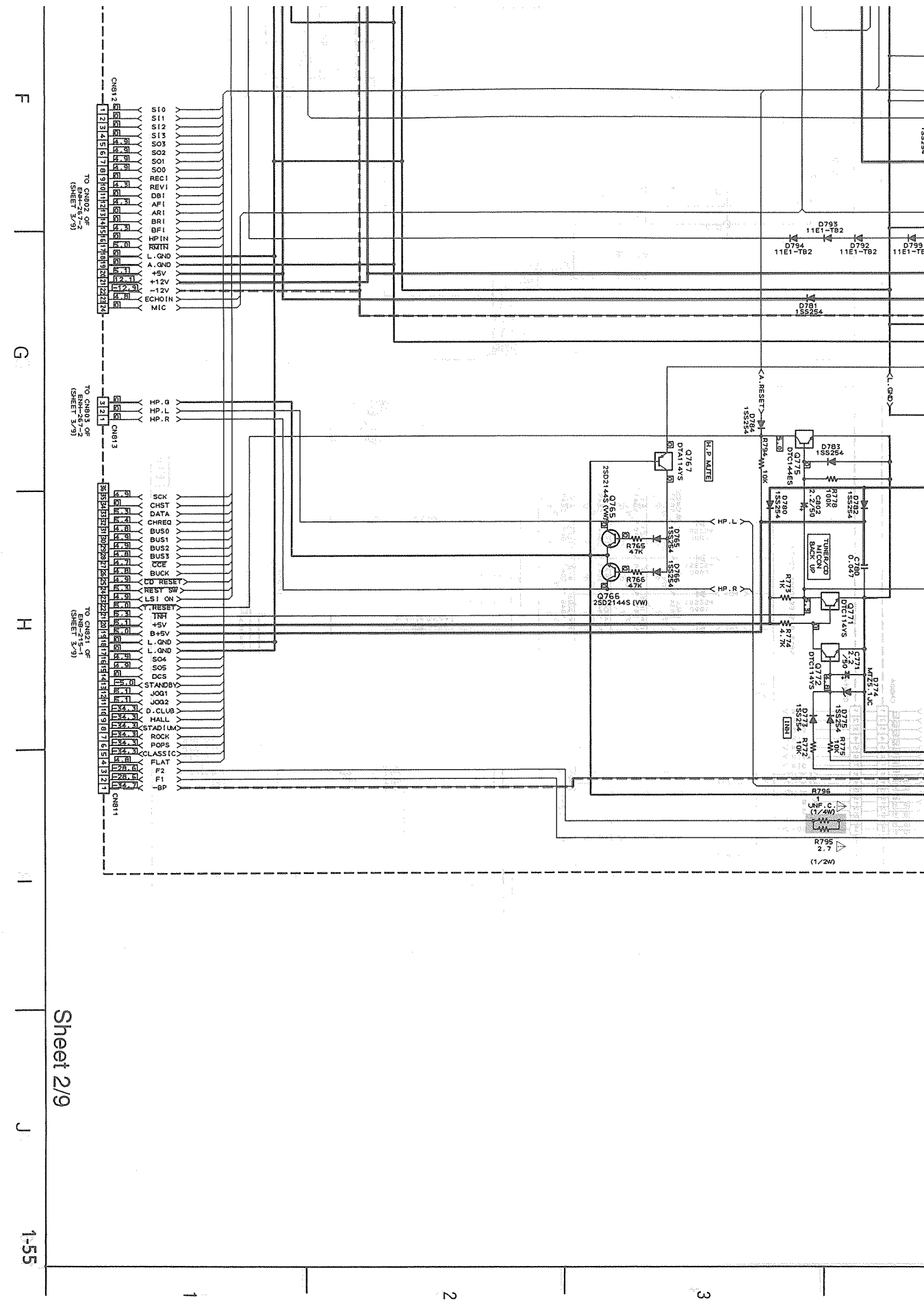
P1-55-c

P1-55-d









F

G

H

I

J

1-55

Sheet 2/9

TO CN812 OF  
DMM-457-2  
(SHEET 3/9)

TO CN813 OF  
DMM-457-2  
(SHEET 3/9)

TO CN811 OF  
DMM-215-1  
(SHEET 3/9)

S10  
S11  
S12  
S13  
S03  
S02  
S01  
S00  
REC1  
REV1  
DB1  
AFI  
ARI  
BRI  
BFI  
HPIN  
RMIN  
L.GND  
A.GND  
+5V  
+12V  
-12V  
ECHOIN  
MIC

HP.L  
HP.L  
HP.R

SCK  
CHST  
DATA  
CHREQ  
BUS0  
BUS1  
BUS2  
BUS3  
CCE  
BUCK  
CD  
RESET  
LSI ON  
Y  
RESET  
IMF  
+5V  
B+5V  
L.GND  
SC4  
SOS  
DCS  
STANDBY  
JOG1  
JOG2  
D.CLUB  
HALL  
STADLM  
ROCK  
POPP  
CLASSIC  
FLAT  
F2  
F1  
BP

CN812

CN813

CN811

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1SS254

D793  
11E1-T82  
D792  
11E1-T82  
D791  
11E1-T82

D781  
1SS254

D782  
11E1-T82  
D783  
11E1-T82  
D784  
1SS254

D785  
1SS254  
D786  
1SS254  
D787  
1SS254  
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D797  
1SS254  
D798  
1SS254  
D799  
1SS254  
D800  
1SS254

D765  
47K  
D766  
47K  
D767  
D7A114VS  
D775  
D7C144ES  
D776  
D7C144ES  
D777  
D7C144VS  
D778  
D7C144VS  
D779  
D7C144VS  
D780  
D7C144ES

R765  
47K  
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C800

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(1/2W)

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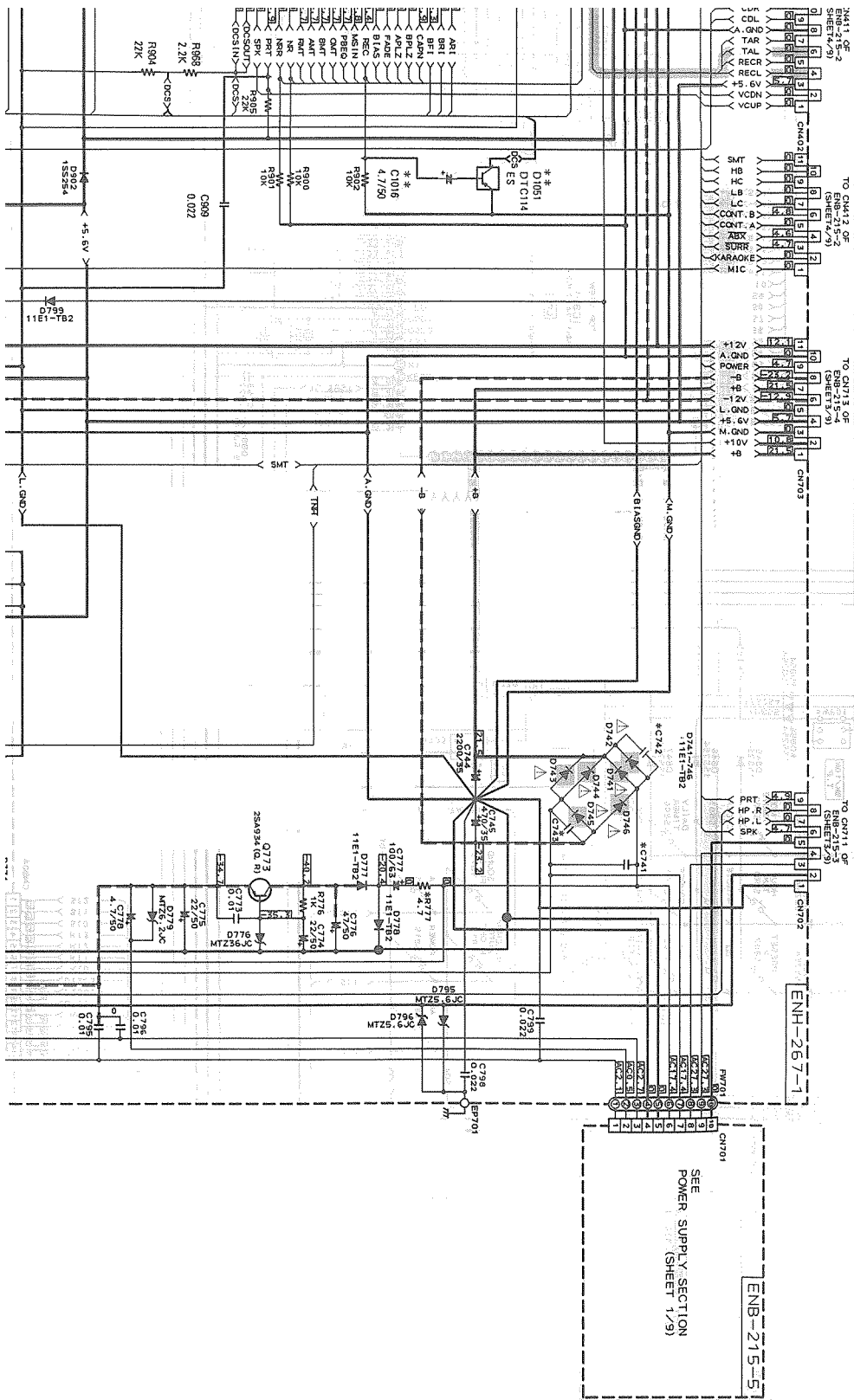
3

\* MARK LIST (ENH-267)

SYMBOL	J	C	U	UT	US	UB	UP	EF	EN	BS	VX	G	GI	A
C741-743	0.01uF	0.22	NONE	NONE	NONE	NONE	NONE	USED	USED	USED	NONE	NONE	NONE	NONE
S701	NONE	NONE	NONE	NONE	NONE	NONE	NONE	USED	USED	USED	NONE	NONE	NONE	NONE
R903	NONE	NONE	NONE	NONE	NONE	NONE	NONE	USED	USED	USED	NONE	NONE	NONE	NONE
CP701	SHORT	USED	USED	USED	USED	USED	USED	USED	USED	USED	NONE	NONE	NONE	NONE
R321	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)	22 UHF C (1/4W)
R777	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C	4.7 UHF C
R807	USED	USED	USED	USED	USED	USED	USED	USED	USED	USED	USED	USED	USED	USED
R211, 212	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K	2.2K
R213, 214	1K	1K	1K	1K	1K	1K	1K	1K	1K	1K	1K	1K	1K	1K

\*\*\* MARK LIST

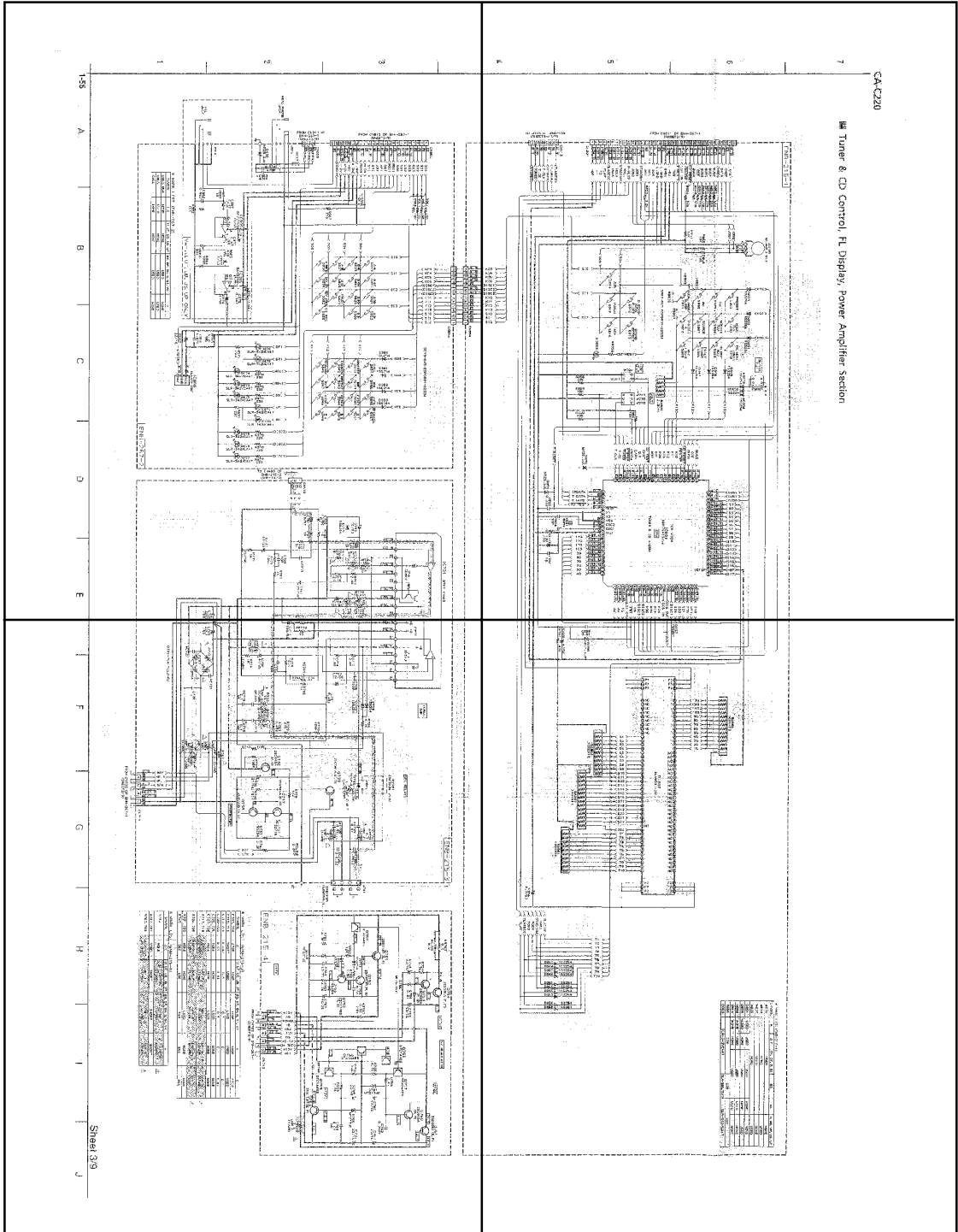
SYMBOL	J,C,E,F,EN,BS,VX,G,GI,A	U,UT,US,UB,UP
01051	** MARK USED	** MARK USED
C1016	** MARK USED	** MARK USED



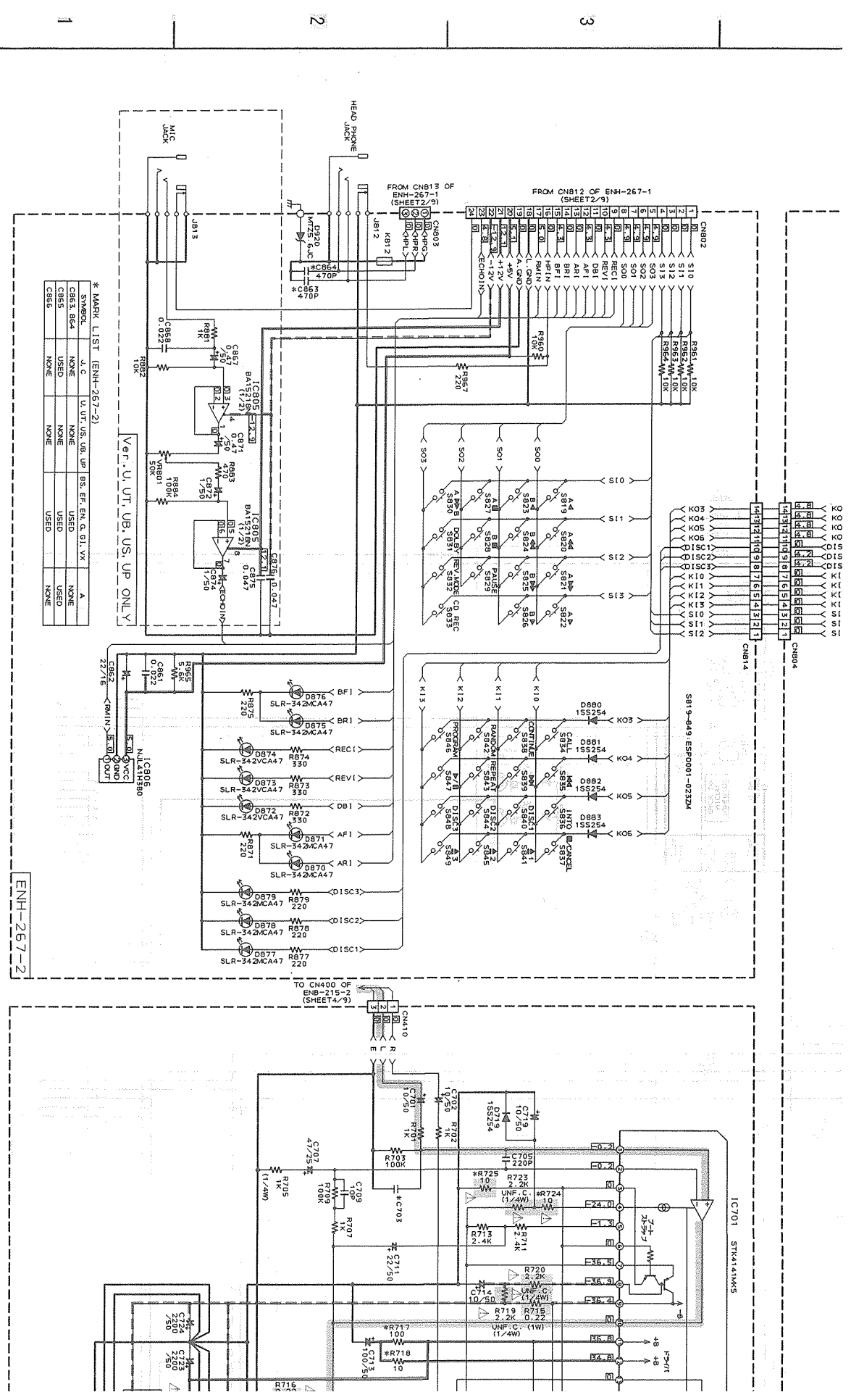


P1-56-a

P1-56-b



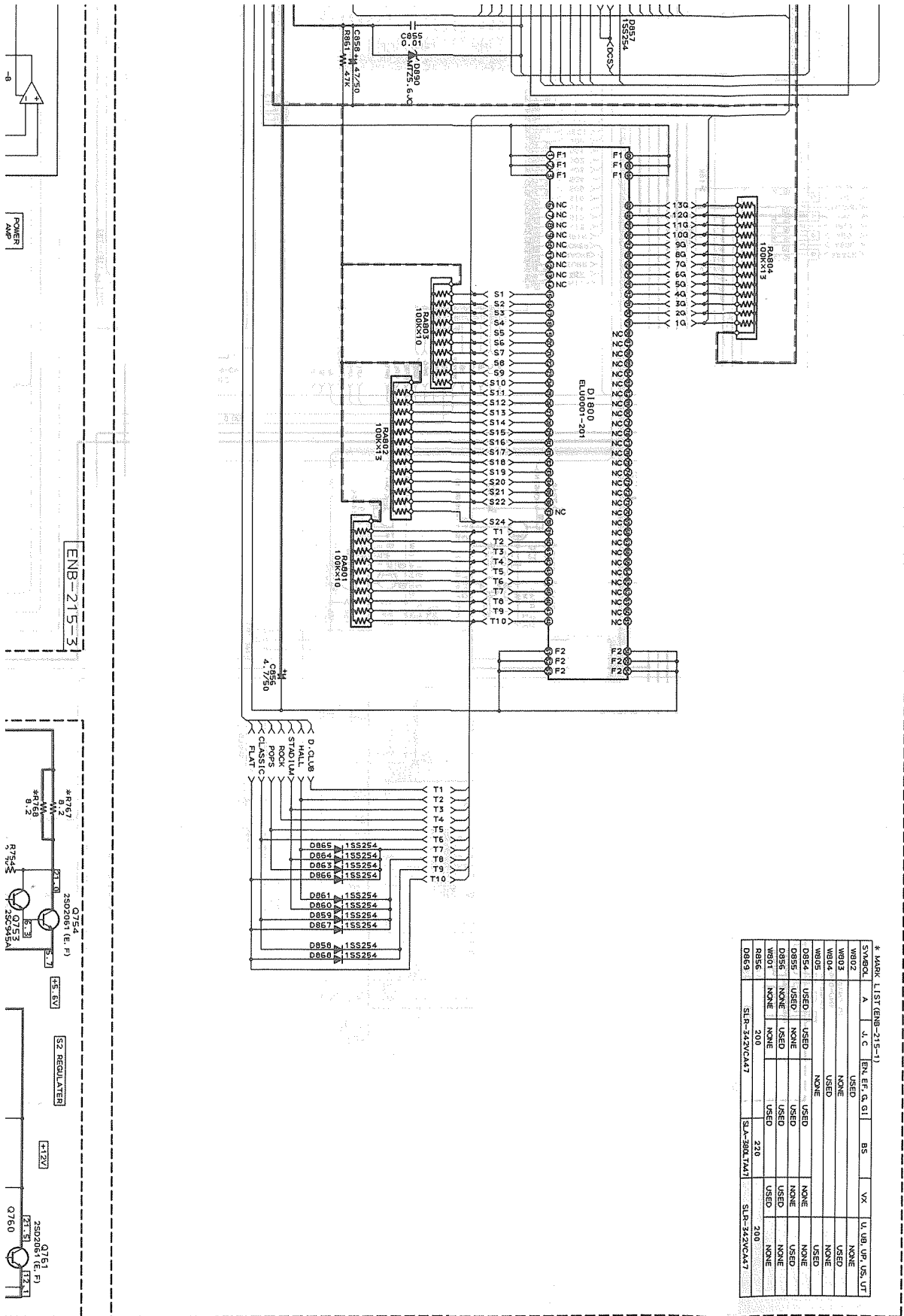
1-56 A B C D E





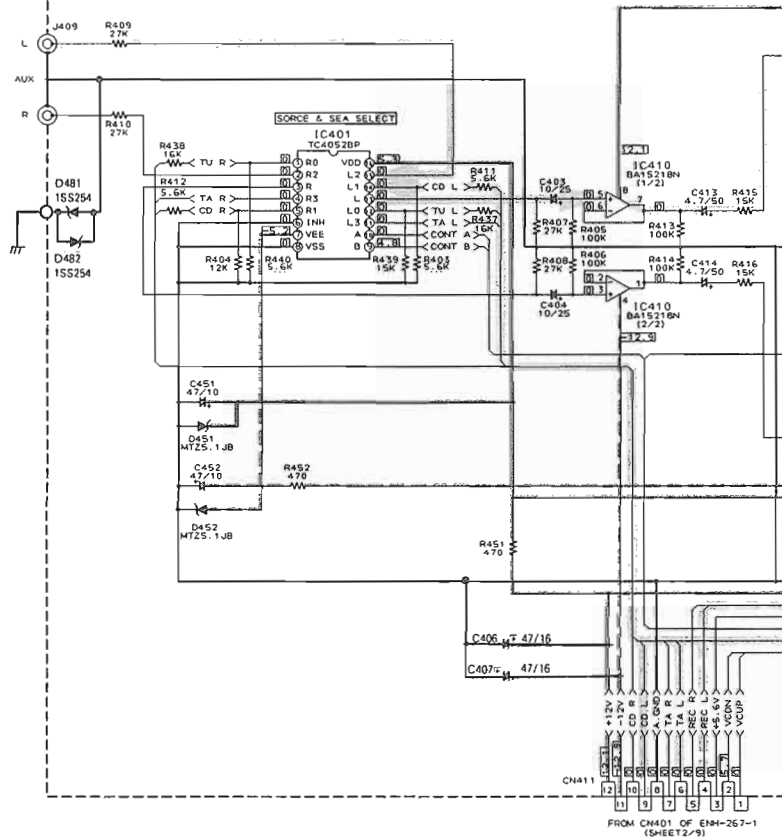




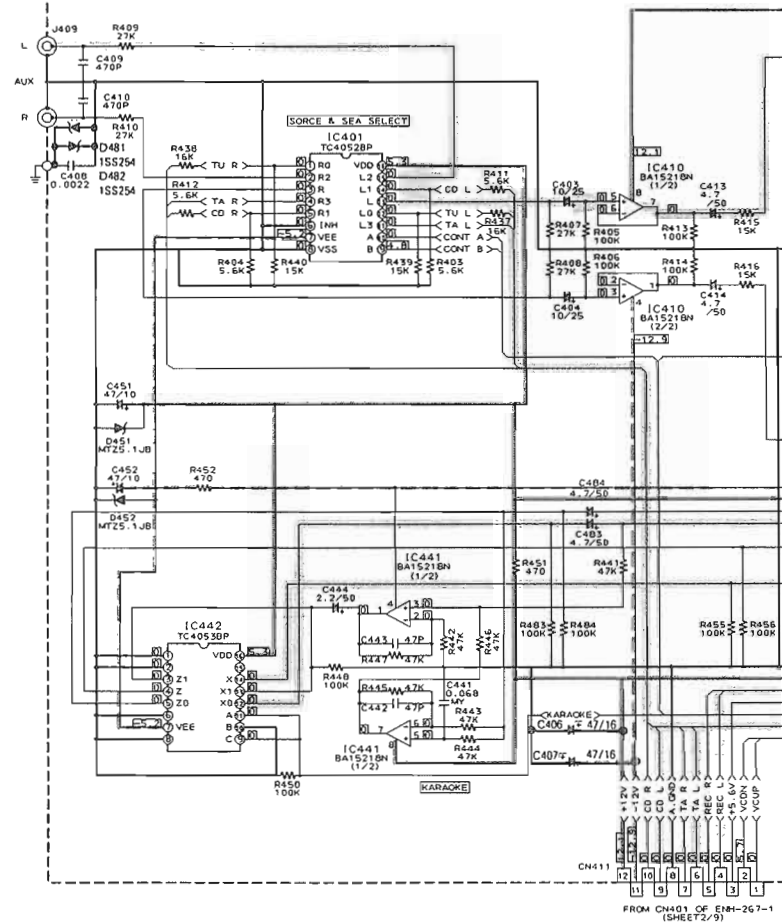


Input selector & S.E.A Section

Ver. J, C, A, EN, EF, BS, G, GI, VX ONLY



Ver. U, UT, US, UB, UP ONLY



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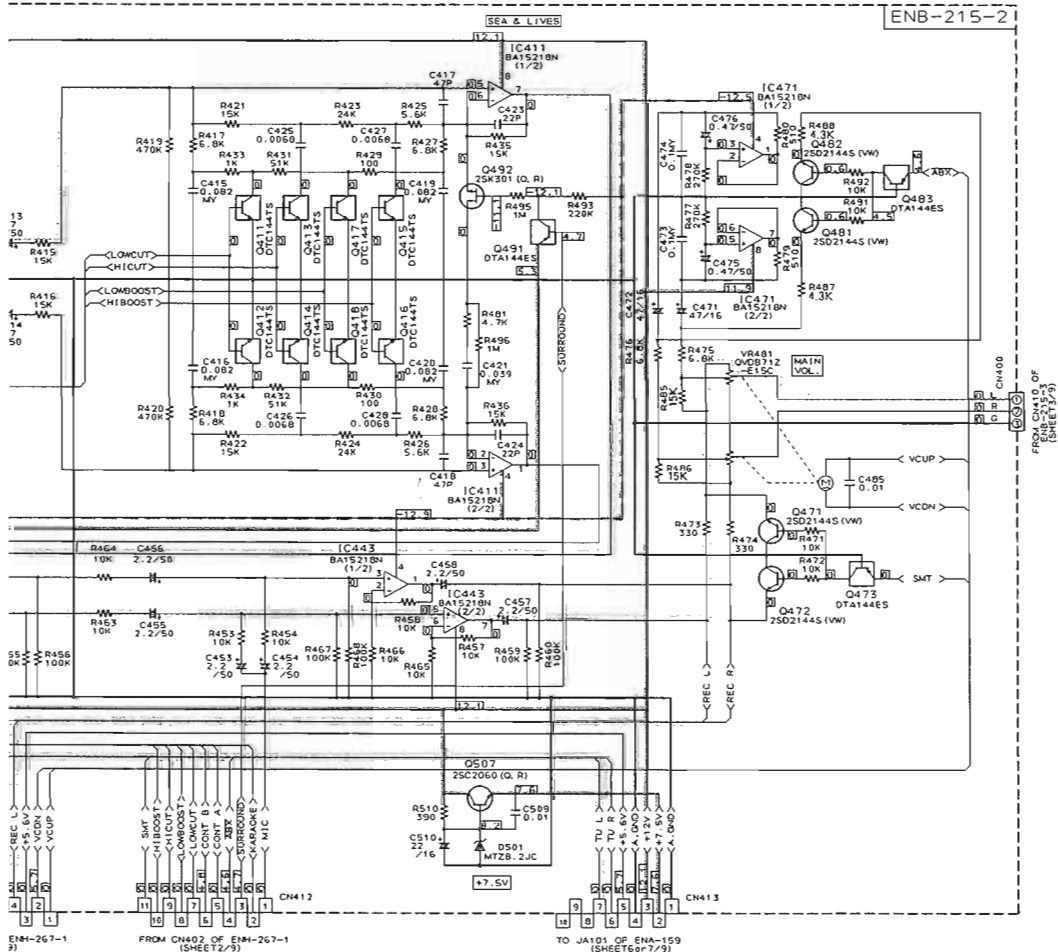
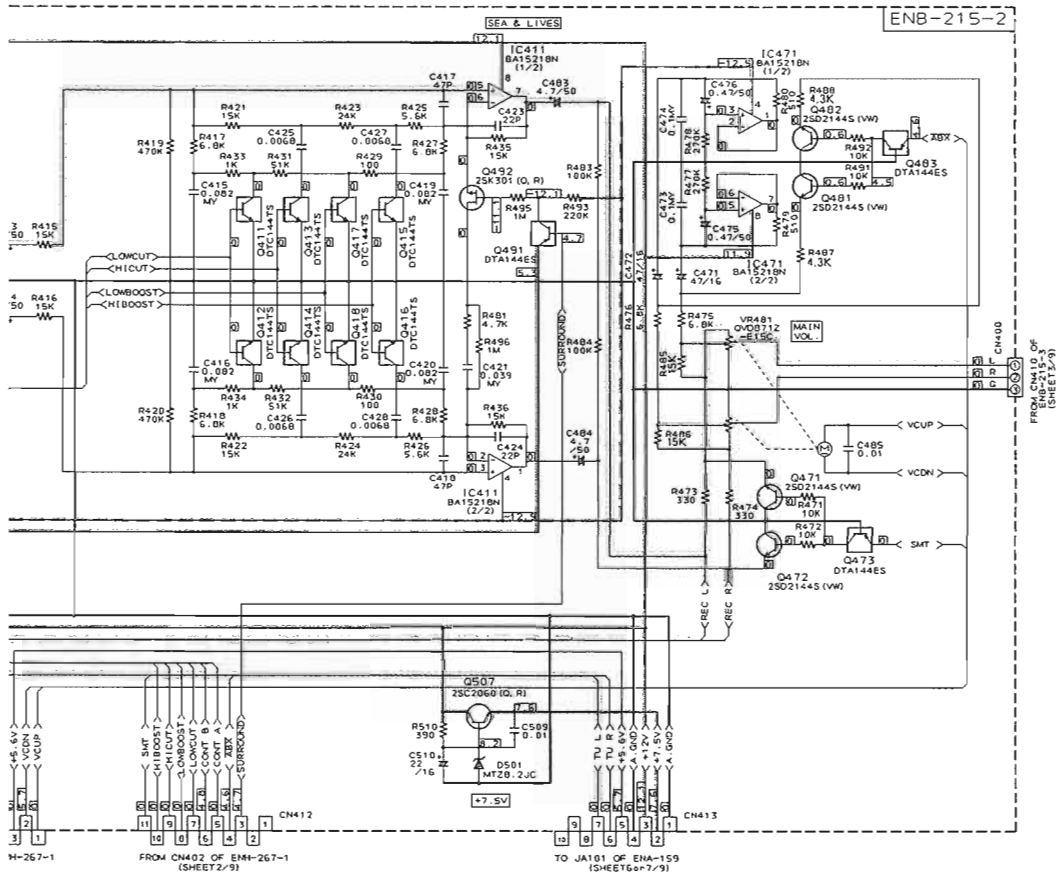
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A

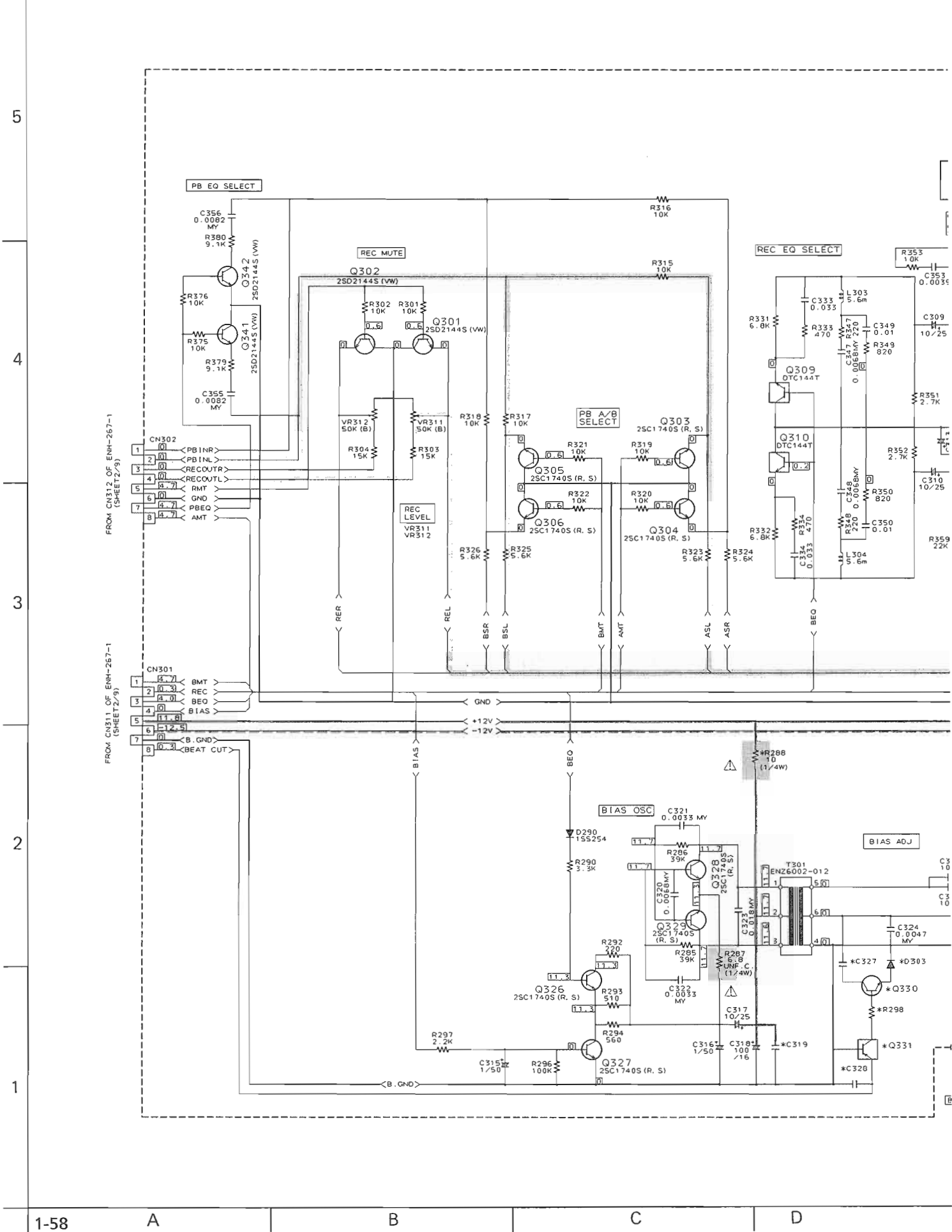
B

C

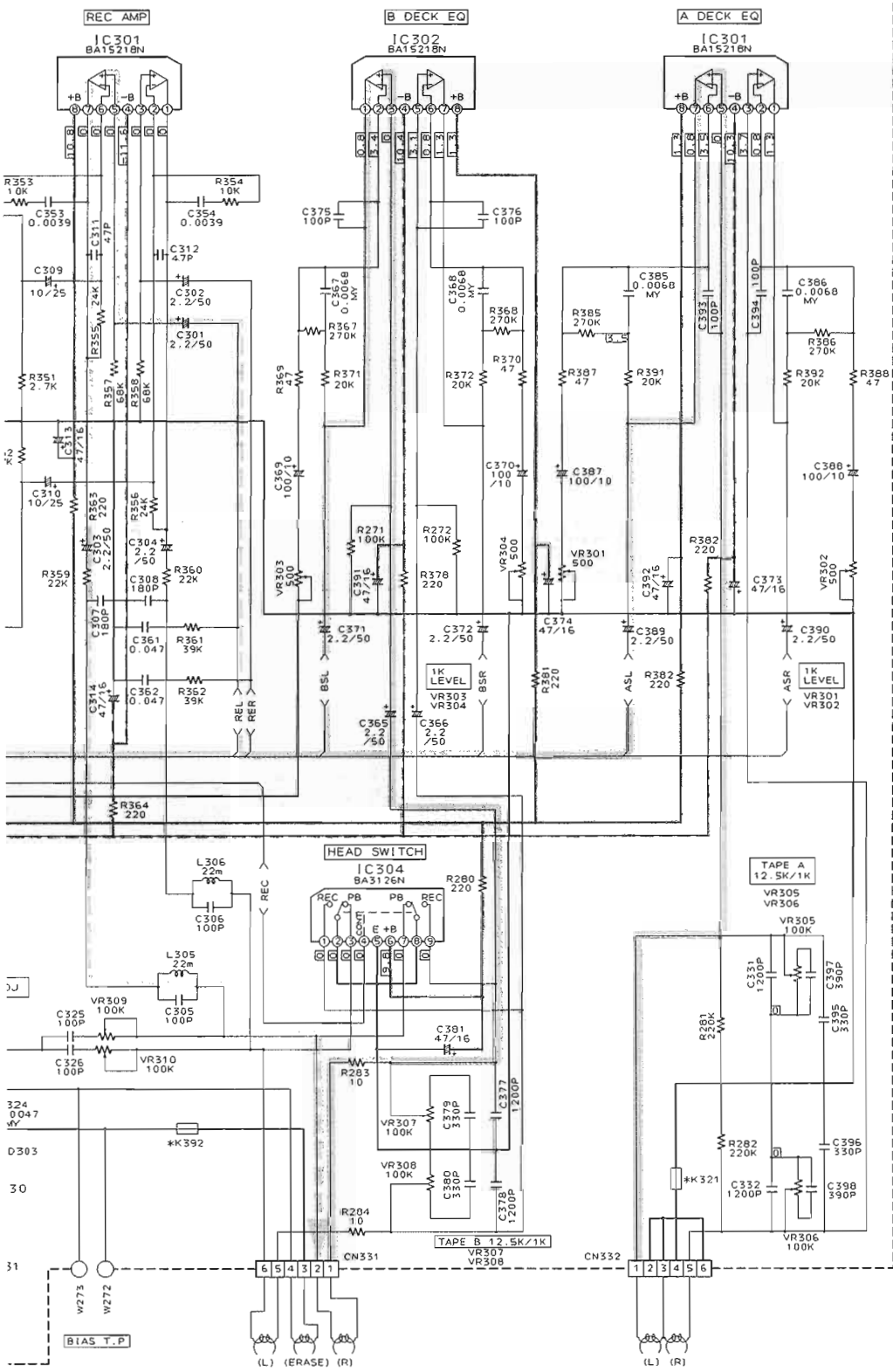
D



■ Cassette Amplifier, & Bias Oscillator Section



ENJ-090-1



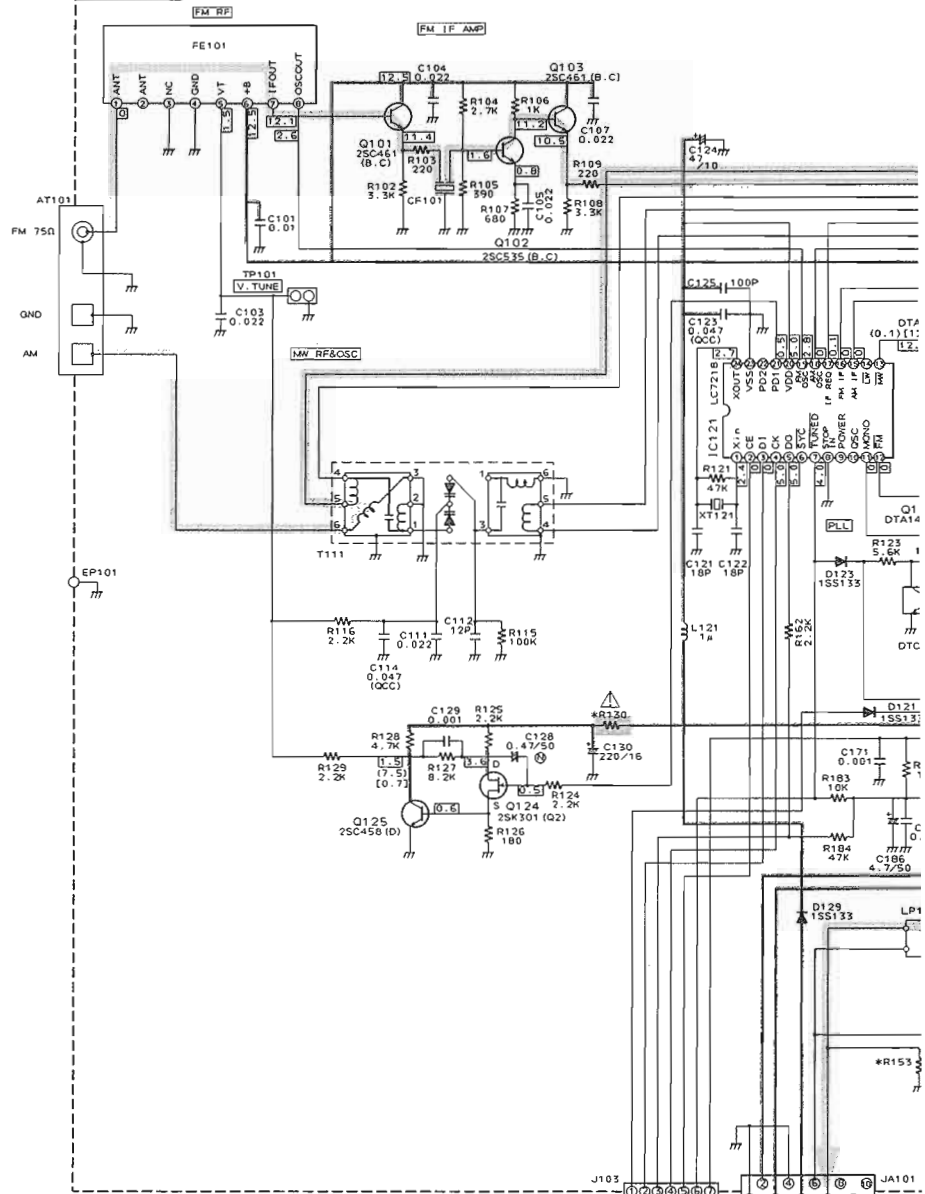
\* MARK

	BS. EF. EN. G. GI. VX	J. C	U. UB. US. UT. UP	A
C319	0.022	NONE	NONE	NONE
C327	560P	NONE	NONE	NONE
C328	0.022	NONE	NONE	NONE
C330	0.022	NONE	NONE	NONE
R288	F. RES	UNF. C.	F. RES	UNF. C.
R298	560	NONE	NONE	NONE
R385, 386	47	SHORT	SHORT	SHORT
R451, 452	47	SHORT	SHORT	SHORT
Q330	2SC945A	NONE	NONE	NONE
Q331	DTA144E	NONE	NONE	NONE
D303	1S5119	NONE	NONE	NONE
K321	USED	SHORT	SHORT	SHORT
K392	USED	SHORT	SHORT	SHORT

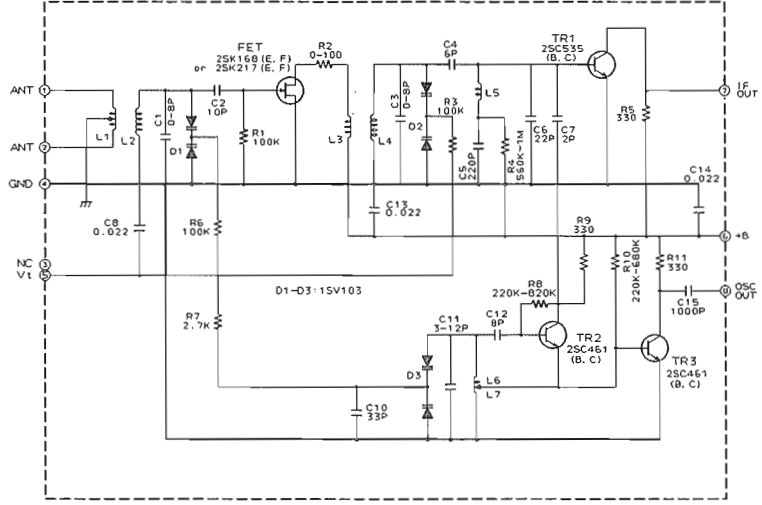
# Tuner Section

FOR J. C. U. UT. US. UP. UB. A

ENA-159



FE101  
EAF2203-004

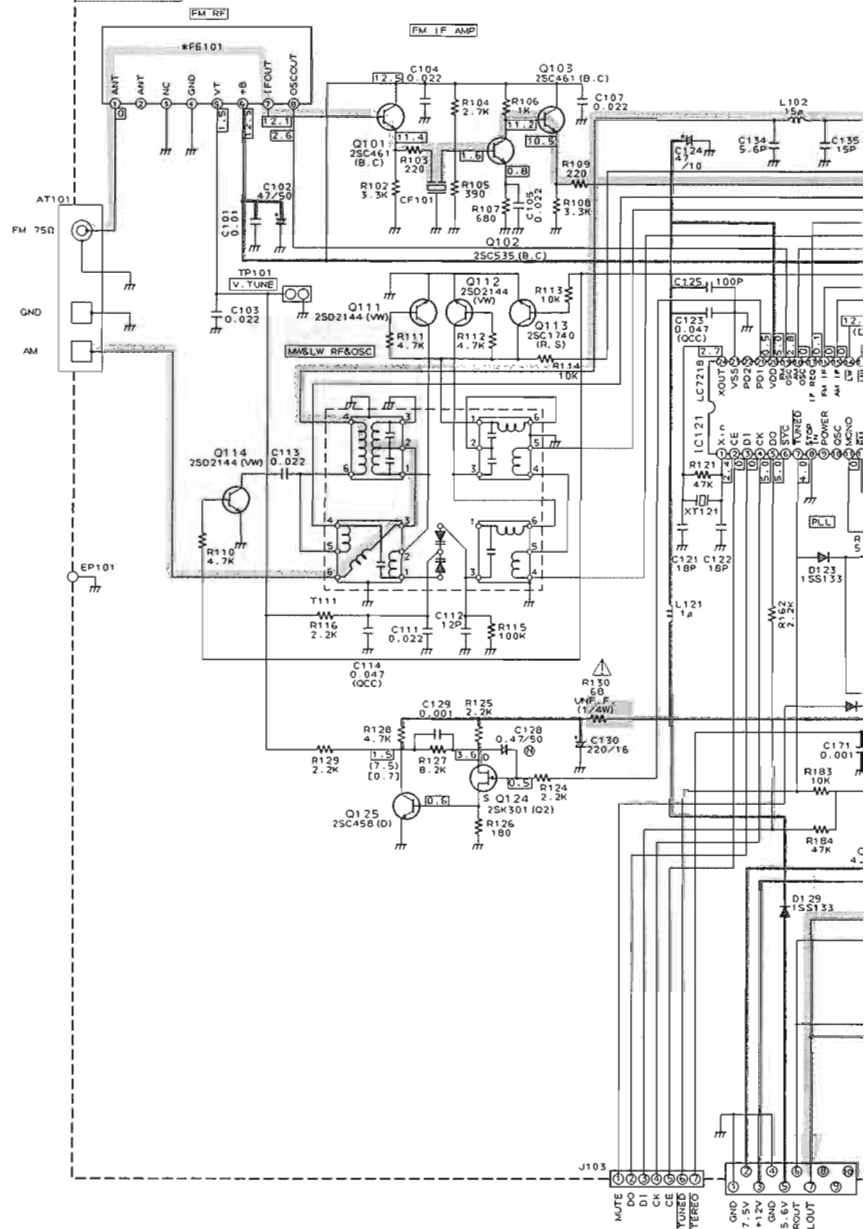




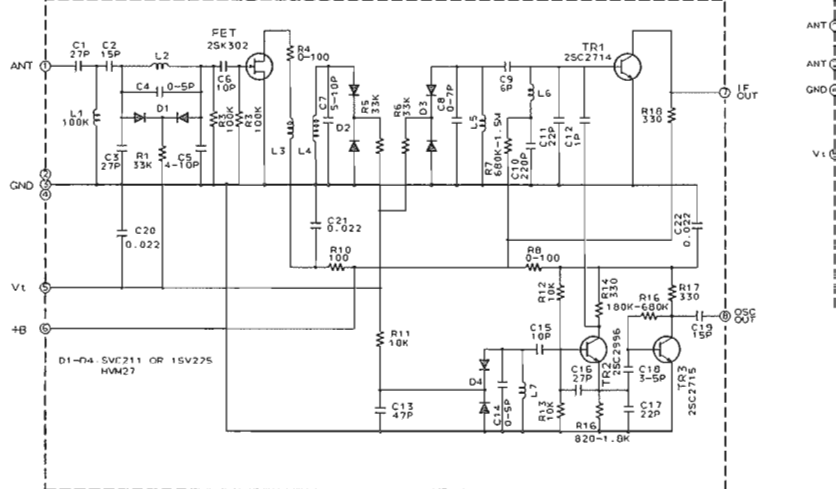
Tuner Section

FOR BS. EN. EF. G. GI. VX

ENA-159



FE101  
EAF2203-005 (FOR BS. EF. EN. G. GI)



5

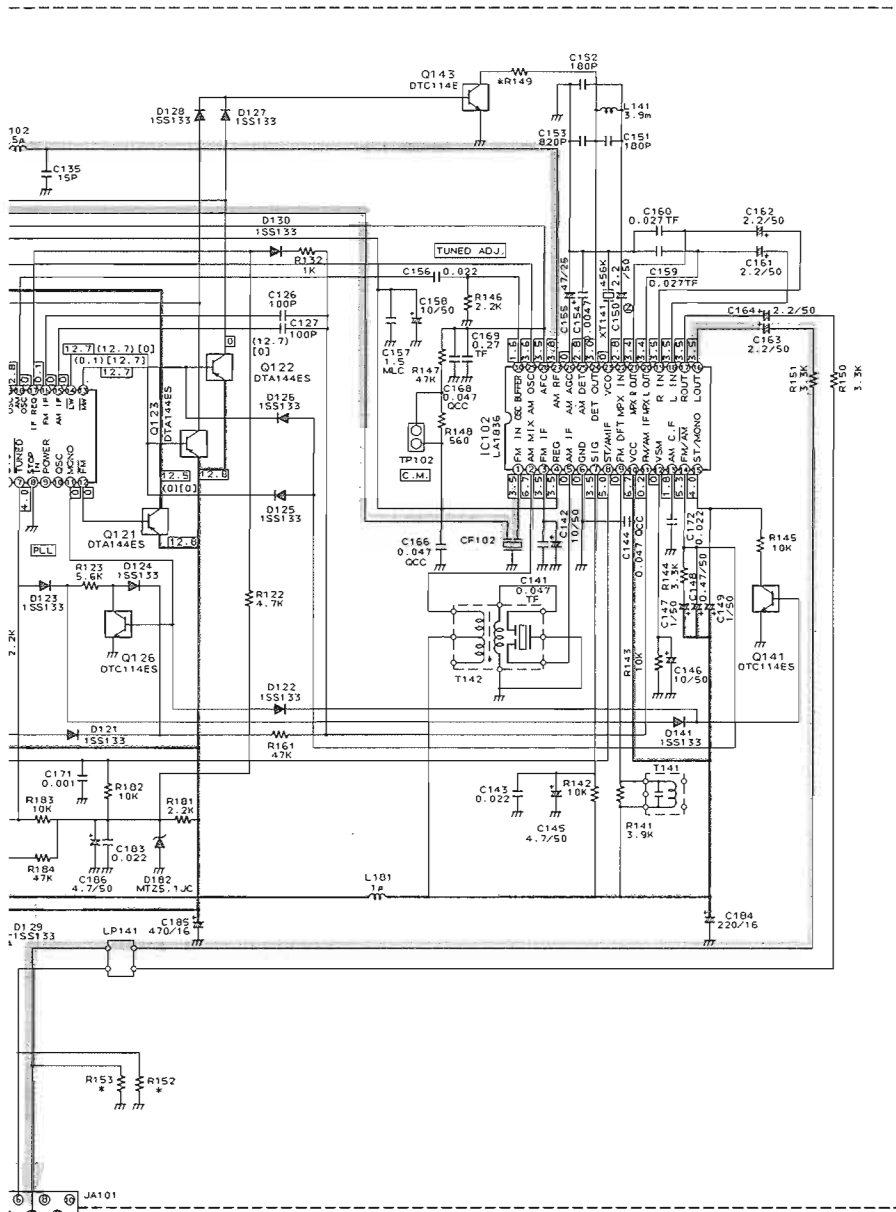
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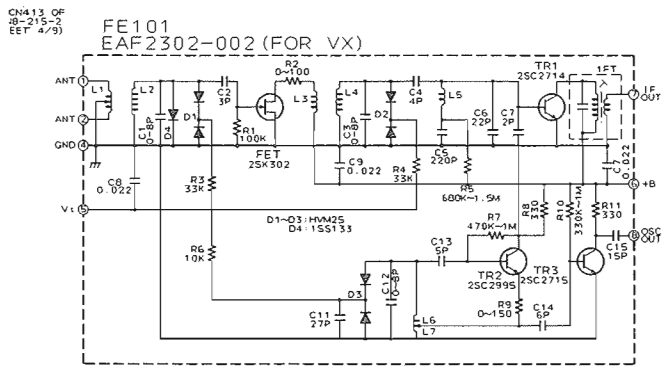




\* MARK

	EN. EF	G. G1	9S	VX
R149	10K	10K	22K	10K
R152, 153	8.2K	8.2K	3.3K	8.2K
FE101	EAF2203-005	EAF2203-005	EAF2203-005	EAF2302-002

□ FM AUTO NO SIGNAL  
 ( 1M V NO SIGNAL  
 ( TLW NO SIGNAL



■ CD Servo & Low Pass Filter Section

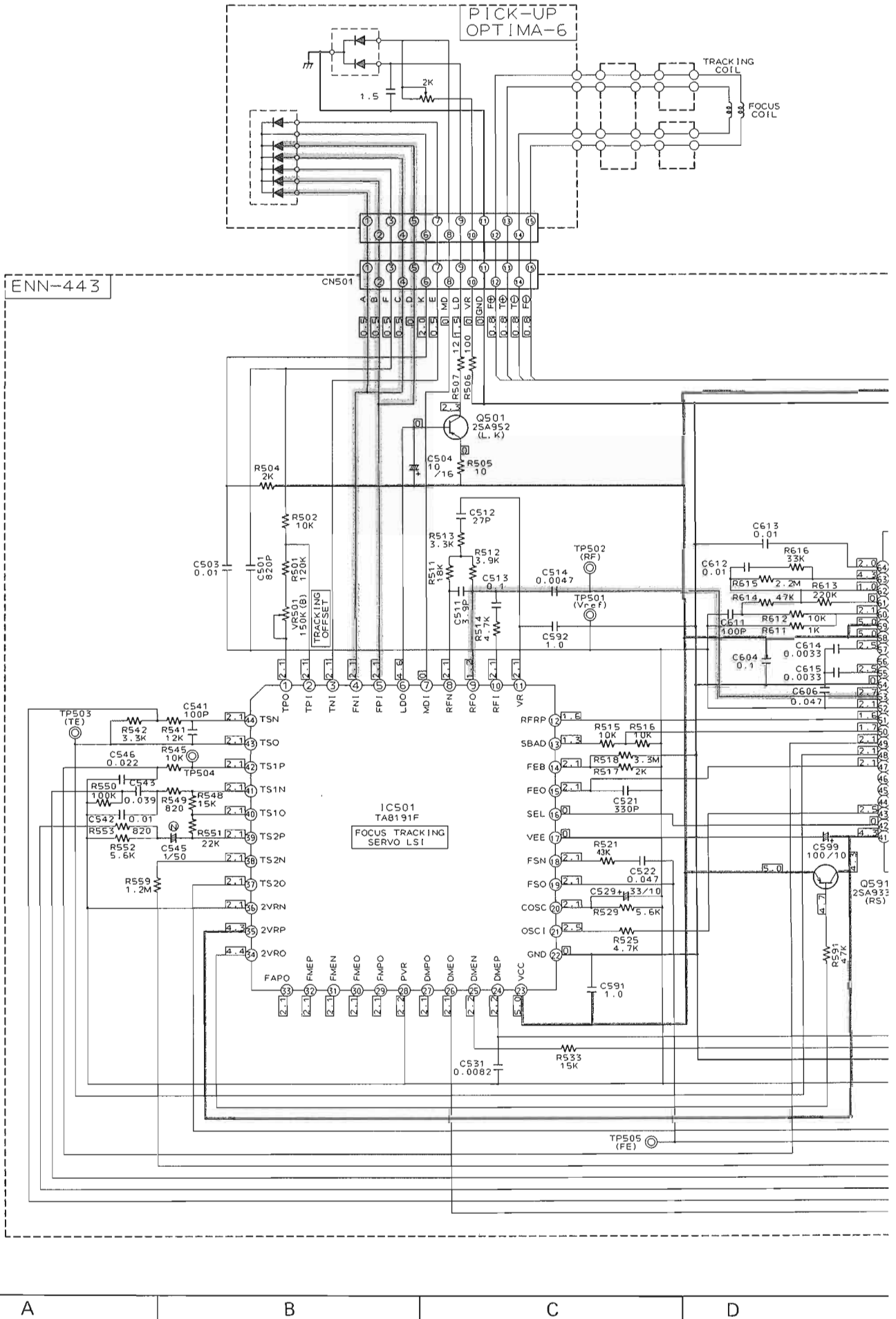
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■ CD Changer Mechanism Control Section

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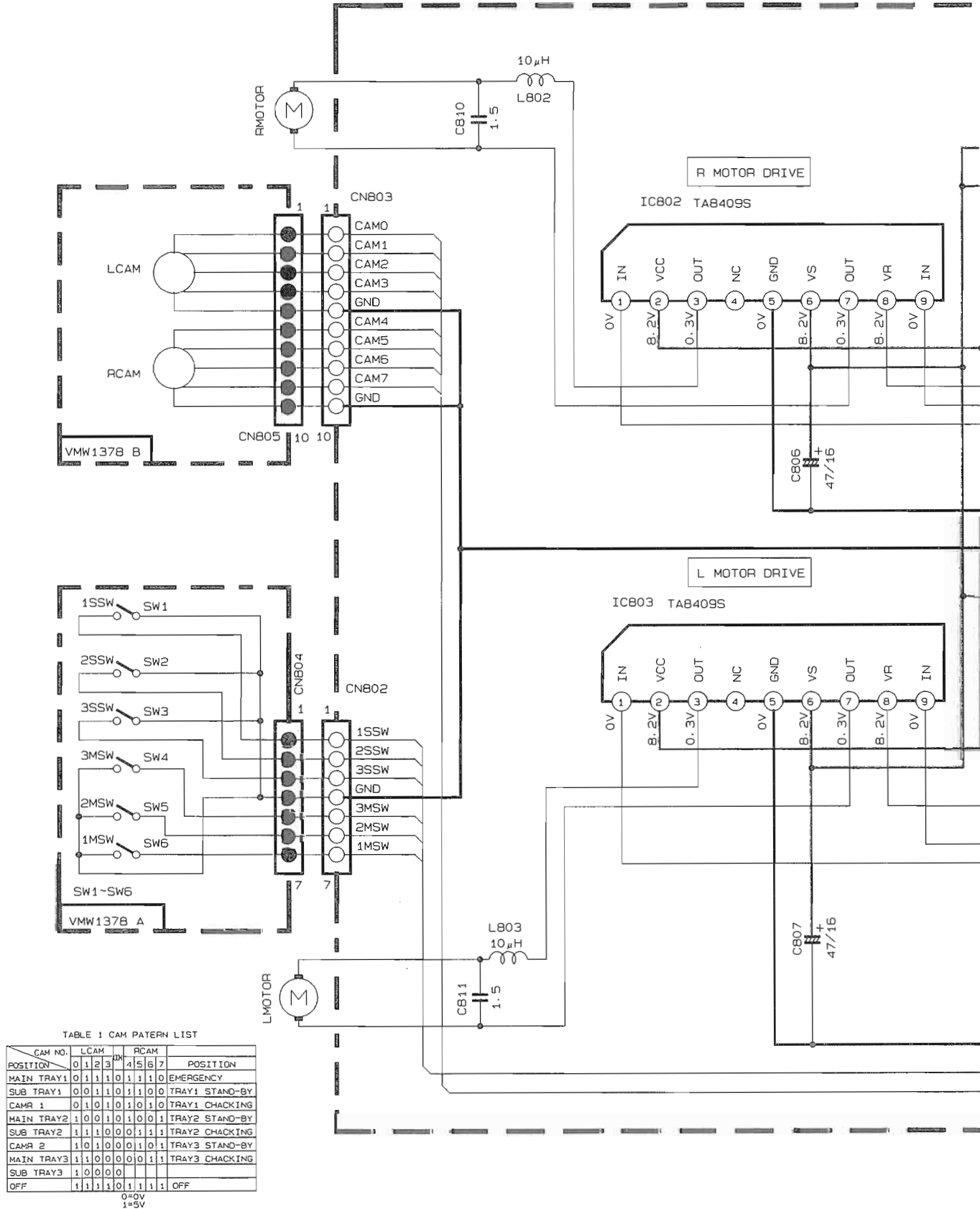
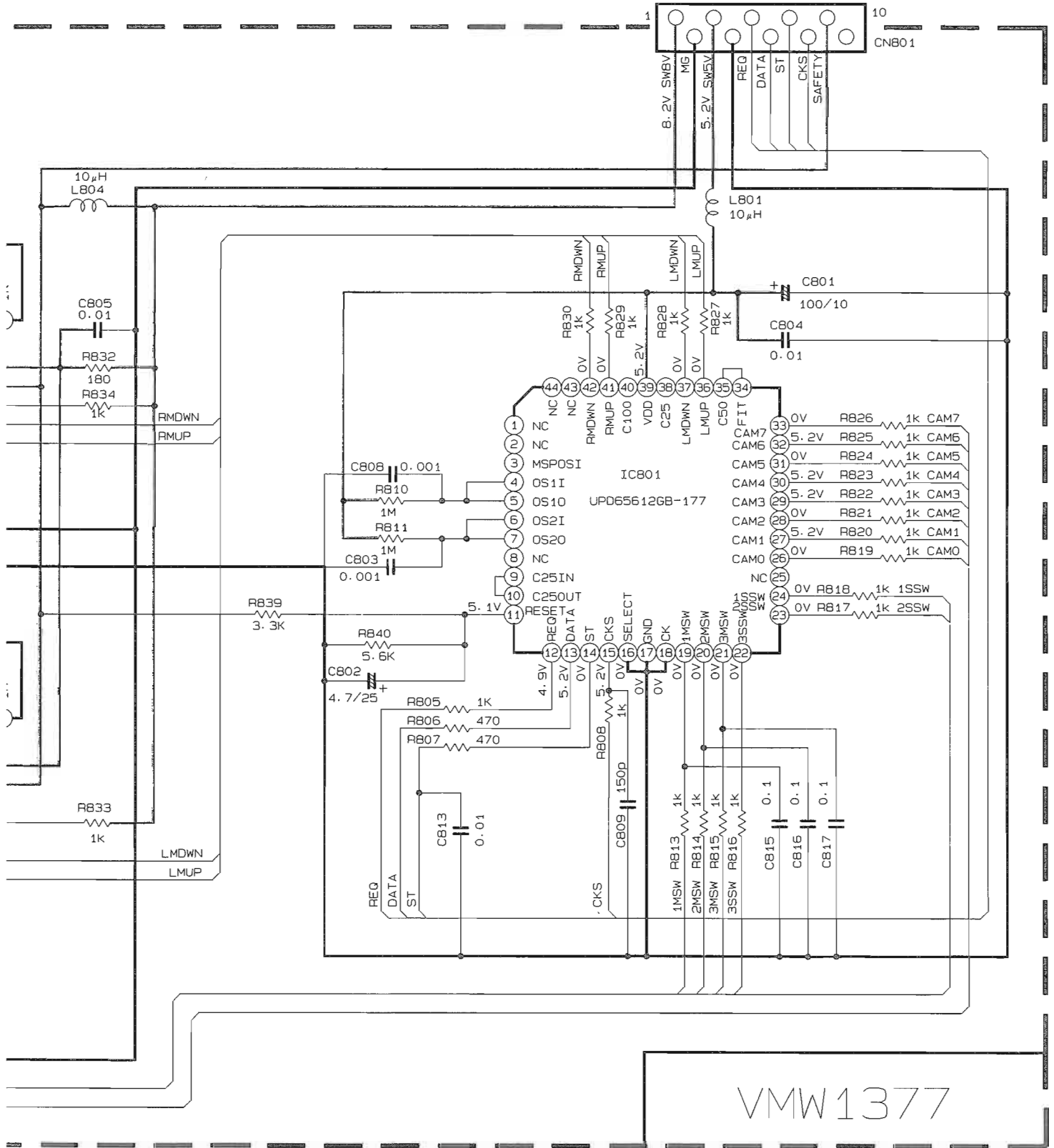


TABLE 1 CAM PATTERN LIST

CAM NO.	LCAM			RCAM			POSITION	
	0	1	2	3	4	5		6
MAIN TRAY1	0	1	1	0	1	1	0	EMERGENCY
SUB TRAY1	0	0	1	1	0	1	0	TRAY1 STAND-BY
CAMR 1	0	1	0	1	0	1	0	TRAY1 CHACKING
MAIN TRAY2	1	0	0	1	0	1	0	TRAY2 STAND-BY
SUB TRAY2	1	1	1	0	0	1	1	TRAY2 CHACKING
CAMR 2	1	0	1	0	0	1	0	TRAY3 STAND-BY
MAIN TRAY3	1	1	0	0	0	0	1	TRAY3 CHACKING
SUB TRAY3	1	0	0	0	0	0	0	
OFF	1	1	1	1	0	1	1	OFF

0=0V  
1=5V

FROM CNB21 OF ENH-267-1 SHEET2/9



VMW1377



# PARTS LIST

※ All printed circuit boards and its assemblies are not available as service parts.

## - Contents -

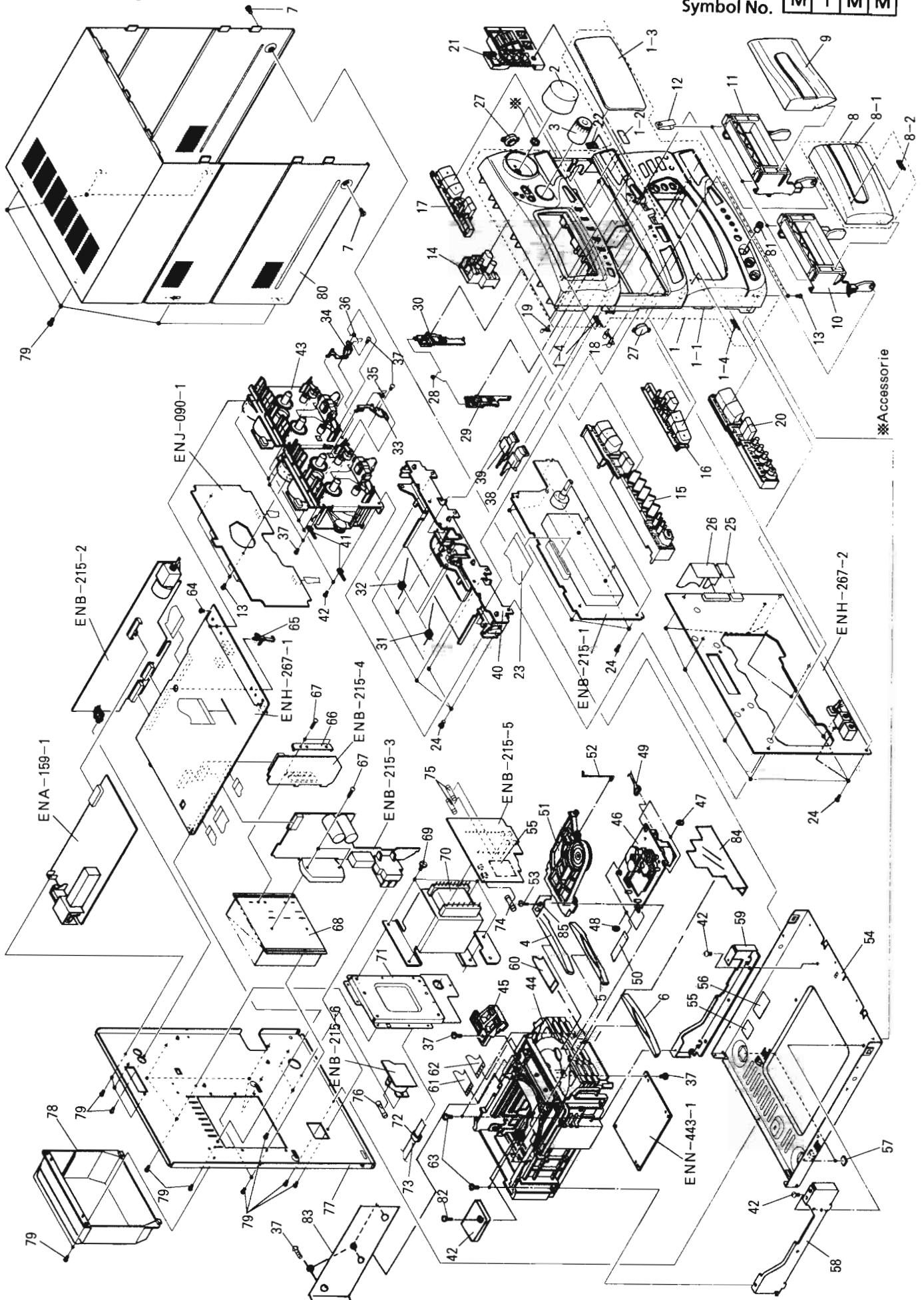
General Exploded View and Parts List .....	2-2
Changer Mechanism Ass'y and Parts List .....	2-6
■ Grease Point .....	2-6
CD Mechanism Ass'y and Parts List .....	2-8
Cassette Mechanism Ass'y and Parts List .....	2-9
■ Grease Point .....	2-9
Printed Circuit Board Ass'y and Parts List .....	2-12
■ Indicator, Key & Deck/Amp. Control P.C. Board (ENH-267) .....	2-12
■ Tuner/CD Control, FL Display & Power Supply P.C. Board (ENB-215) .....	2-17
■ Tuner P.C. Board ( ENA-159) .....	2-23
■ Deck Amp EQ & NR P.C. Board (ENJ-090) .....	2-26
■ CD Changer Mechanism Control P.C. Board .....	2-27
Accessories List .....	2-29
Packing Materials and Part Numbers .....	2-30

CA-C220

# General Exploded View and Parts List

Symbol No. 

M	1	M	M
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## Parts List

Symbol No. 

M	1	M	M
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Item	Part Number	Part Name	Q'ty	Description	Area	
1	EFP-CAC220E(S)	FRONT PANEL ASSY	1		A,BS,C,EF,EN,G,GI,J,VX	
	EFP-CAC220U(S)	FRONT PANEL ASSY	1		U,UB,US,UT	
	EFP-CAC220UP(S)	FRONT PANEL ASSY	1		UP	
	1-1	E103045-001SS	FRONT PANEL	1		U,UB,US,UT
		E103045-002SS	FRONT PANEL	1		A,BS,C,EF,EN,G,GI,J,VX
1-2	E103045-003SS	FRONT PANEL	1		UP	
	E69777-003	REFLECTION PLATE	2	AMP WINDOW		
	1-3	E208489-001SS	WINDOW SCREEN		1	
	1-4	E406971-221	JVC MARK		2	
	2	E309084-004SS	VOLUME KNOB		1	
3	FSXP3016-001	SELECT KNOB	1			
	4	E208563-001SS	FITTING	1		U,UB,US,UT,UP
		E208563-002SS	FITTING	1		A,BS,C,EF,EN,G,GI,J,VX
	5	E208565-001SS	FITTING	1		U,UB,US,UT,UP
		E208565-002SS	FITTING	1		A,BS,C,EF,EN,,G,GI,J,VX
6	E208567-001SS	FITTING	1		U,UB,US,UT,UP	
	E208567-002SS	FITTING	1		A,BS,C,EF,EN,,G,GI,J,VX	
	7	SDSG3006M	TAPPING SCREW	2		
	8	FSJT2003-001SA	CASSETTE LID ASSY	1		
	8-1	FSJT2003-001	CASSETTE LID	1		
8-2	E406971-221	JVC MARK	1			
	9	FSJT2004-001	CASSETTE LID	1		
	10	E207972-004SS	CASSETTE HOLDER	1	HOLDER A	
	11	E207973-004SS	CASSETTE HOLDER	1	HOLDER B	
	12	E406713-001	CASSETTE SPRING	4		
13	SBST3006Z	TAPPING SCREW	10			
	14	E309079-005SS	PUSH BUTTON	1	SEA	UP
		E309079-006SS	PUSH BUTTON	1	SEA	Except UP
	15	E208479-003SS	PUSH BUTTON ASSY	1	AMP/TUNER	UP
E208479-004SS		PUSH BUTTON ASSY	1	AMP/TUNER	A,C,J,U,UB,US,UT	
16	E208479-005SS	PUSH BUTTON ASSY	1	AMP/TUNER	BS,EF,EN,G,GI,VX	
	E208241-005SS	PUSH BUTTON ASSY	1	DECK A		
	E208244-005SS	PUSH BUTTON ASSY	1	DECK B		
	18	E408305-001	INDICATOR LENS	1	DOLBY	
	19	E408306-001	INDICATOR LENS	1	REC	
20	E208482-002SS	PUSH BUTTON	1		UP	
	E208482-003SS	PUSH BUTTON	1		Except UP	
	21	E208560-002SS	PUSH BUTTON ASSY	1	CD EJECT	
	22	E408303-001	REMOTE LENS	1		
	23	VWF1236-18TTBW	FLAT WIRE ASSY	1		
24	SDSF2608Z	SCREW	24			
	25	VWF1214-30TTB	FLAT WIRE ASSY	1		
	26	VWF1224-25TTB	FLAT WIRE ASSY	1		
	27	E304434-005	DAMPER ASSY	2		
	28	E408742-001SS	SPRING	1		
29	E309479-001SS	EJECT LEVER	1			
	30	E309480-001SS	EJECT LEVER	1		
	31	FSKW4002-001	HOLDER SPRING	1	HOLDER A	
	32	FSKW4003-001	HOLDER SPRING	1	HOLDER B	
	33	E309477-002SS	SAFETY LEVER	1		
34	E309478-002SS	SAFETY LEVER	1			
	35	E407801-002	SPRING	1		
	36	E407802-002	SPRING	1		
	37	SBSF3008Z	TAPPING SCREW	11		
	38	E309081-002SS	EJECT BUTTON	1	CD PLAY	

CA-C220

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	39	E309082-002SS	EJECT BUTTON	1		
	40	E208256-001	HOLDER BKT	1		
	41	PU49485-3	CORD CLAMP	2		
	42	E408979-001SS	ROD STOPPER	8		J
	43	-----	CASSETTE MECHANISM ASSY	1		
	44	-----	CHANGER MECHANISM ASSY	1		
	45	E309662-001	DISC STOPPER	1		
	46	-----	CD MECHANISM ASSY	1		
	47	FMYH4003-002	INSULATOR	2		
	48	FMYH4003-001	INSULATOR	2		
	49	VDM1001-S001A	WIRE&TUBE	1		
	50	VWF1015-09TTAV	FLAT WIRE ASSY	1	PICK TO SERVO	
	51	VKS3703-00B	CLAMPER ASS'Y	1		
	52	VKW5187-001	ROD	1		
	53	SDST2608Z	TAPPING SCREW	1		
	54	E103047-001SS	CHASSIS BASE	1		
	55	E75803-001	CAUTION LABEL	2		J
		E75804-001	CAUTION LABEL	2		C
	56	E406507-001	CAUTION LABEL	1		
	57	E75896-006	FELT SPACER	2	REAR FOOT	
	58	E309481-002SS	BRACKET	1	CHG MECHA	
	59	E309482-002SS	BRACKET	1	CHG MECHA	
	60	VWF1210-45TTBX	FLAT WIRE ASSY	1	MECHA CONTROL T	
	61	VWF1207-40TTB	FLAT WIRE ASSY	1	SERVO TO MAIN	
	62	VWF1209-40TTB	FLAT WIRE ASSY	1		
	63	SBST3008Z	TAPPING SCREW	4		
	64	SDST2604Z	SCREW	2		
	65	E307572-001	VINYL TIE	1		
	66	E406969-221	LEAF SPRING	1		
	67	SBSG3014CC	SCREW	4		
	68	FSJC3007-001	HEAT SINK	1		
	69	E408279-001	SPECIAL SCREW	4		
	70	ETP1070-38EAJ	POWER TRANSFORMER	1		A,EF,EN,G,GI,VX,BS
		ETP1070-38FAJ	POWER TRANSFORMER	1		U,UB,UP,US,UT
		ETP1070-38JAJ	POWER TRANSFORMER	1		C,J
⚠	71	E309358-001SS	P.W.BOARD BRACKET	1		
⚠	72	QHS3876-162	CORD STOPPER	1		Except J,C
⚠		QHS3876-163	CORD BUSHING	1		C
⚠		QHS3876-163	CORD BUSHING	1		J
⚠	73	EMP7000-200	POWER CORD	1		UP
⚠		QMP1D00-200H	POWER CORD	1		C,J
⚠		QMP25F0-244	POWER CORD	1		A
⚠		QMP3900-200	POWER CORD	1		EF,EN,G,GI,US,VX
⚠		QMP5530-0085BS	POWER CORD	1		BS,UB
⚠		QMP7520-200	POWER CORD	1		U,UT
⚠	74	QMF0007-2R0J1	FUSE	1	F001	C,J
⚠		QMF51E2-1R0J1	FUSE	1	F001	A,EF,EN,G,GI,UP,VX,BS
⚠		QMF51E2-2R0	FUSE	1	F001	U,UB,US,UT
⚠	75	QMF0007-1R6J1	FUSE	2	F501,502	C,J
⚠		QMF51E2-1R2J1BS	FUSE	2	F501,502	BS
⚠		QMF51E2-1R25	FUSE	2	F501,502	Except C,J and BS
⚠	76	QMF51E2-1R0J1	FUSE	1	F002	U,UB,US,UT
	77	E103012-015SS	REAR PANEL	1		J
		E103012-016SS	REAR PANEL	1		C
		E103012-017SS	REAR PANEL	1		U,UB,US,UT

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
		E103012-018SS	REAR PANEL	1		BS,EF,EN,G,GI
		E103012-019SS	REAR PANEL	1		A
		E103012-020SS	REAR PANEL	1		VX
		E103012-021SS	REAR PANEL	1		UP
	78	E207356-002SM	REAR COVER	1		C,J
		E207356-223SS	REAR COVER	1		Except C,J
	79	E73273-003	SPECIAL SCREW	21		Except U,UB,US,UT
	80	E103014-001SS	METAL COVER	1		
	81	FSXP3017-001	VOLUME KNOB	1		
	82	SBSF3006Z	SCREW	1		J
		E309695-001SS	COVER	1		
	83	E409012-001SS	COVER	1		
	84	E409012-001SS	COVER	1		
	85	VKL7816-001	STOPPER	1		
	-	E307570-001	NUMBER LABEL	1		J
	-	E61029-005	NUMBER LABEL	1		A
	-	E407619-047	FTZ LABEL	1		G
	-	E309384-014	RATING LABEL	2		UT
	-	E309552-003	RATING LABEL	1		U
	-	E408450-001	RATING LABEL	1		BS,EF,EN,G,GI
	-	E408919-001	BEAB LABEL	1		BS
	-	E70028-001	APPROVAL LABEL	1		EN
	-	E70891-001	CLASS 1 LABEL	1		A
	-	E75040-057	GI LABEL	1		GI
	-	E75139-004	NAME LABEL	1		UT
	-	QZL1031-101	LABEL	1		EF

⚠ : Safety Parts

The Marks for Designated Areas

A .....	Australia	BS .....	the U.K.	C .....	Canada	EF .....	Continental Europe
EN .....	Scandinavia	GI .....	Italy	G .....	Germany	J .....	the U.S.A.
UB .....	Hongkong	U .....	Universal Type	UP .....	Korea	US .....	Singapore
UT .....	Taiwan	VX .....	East Europe	No mark indicates all area.			

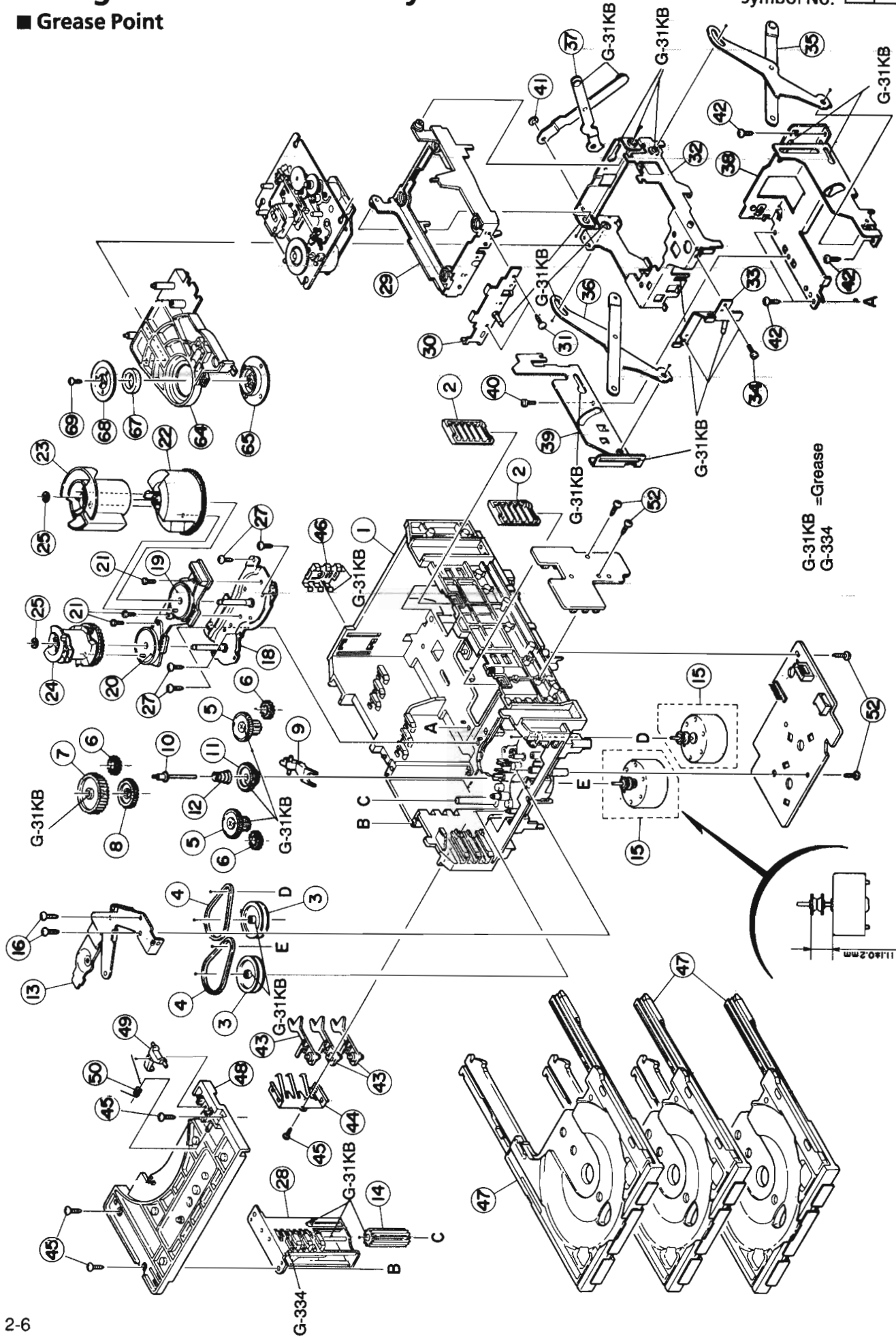
CA-C220

# Changer Mechanism Ass'y and Parts List

■ Grease Point

Symbol No. 

M	2	M	M
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Symbol No. 

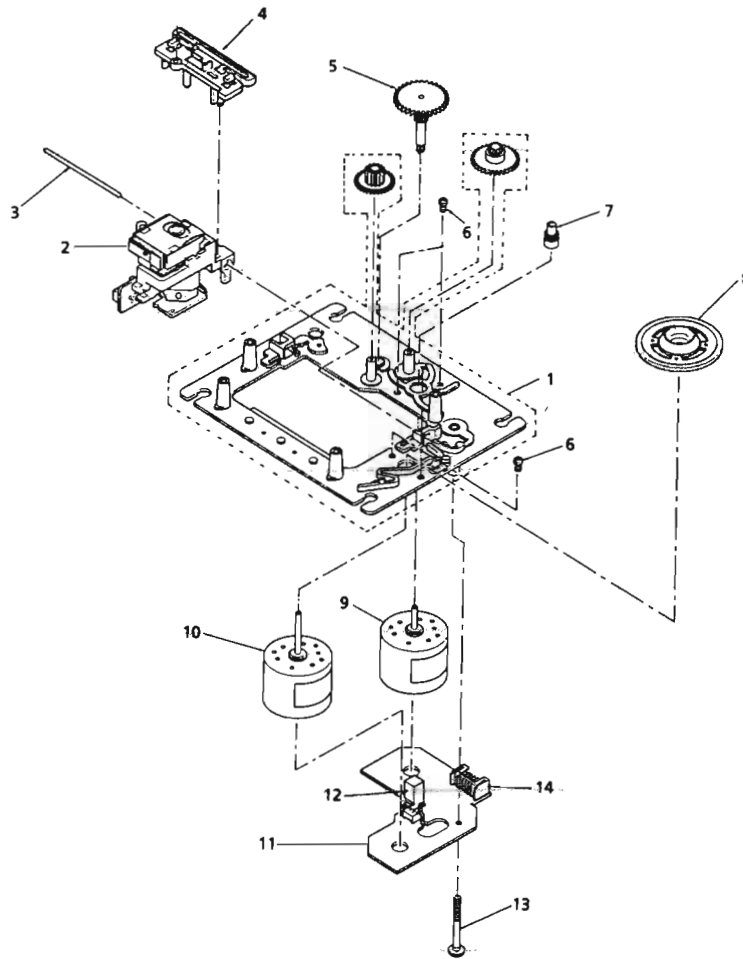
M	2	M	M
---	---	---	---

## Parts List (Changer Mechanism Ass'y)

△	Item	Part Number	Part Name	Q'ty	Description	Area
	1	VKS1144-002	CHASSIS BASE	1		
	2	VKS3698-001	TRAY GUIDE	2		
	3	VKS5532-001	GEAR	2		
	4	VKB3000-164	DRIVE BELT	2		
	5	VKS5505-001	GEAR	2	(B)	
	6	VKS5506-001	GEAR	3	(C)	
	7	VKS5507-001	GEAR	1	(U)	
	8	VKS5508-001	GEAR	1	(L)	
	9	VKS5510-002	SELECT LEVER	1		
	10	VKH5769-001	GEAR STUD	1		
	11	VKS5511-001	GEAR	1		
	12	VKW5155-003	COMPRESS SPRING	1	FOR SELECT GEAR	
	13	VKM3846-001	GEAR BRACKET	1		
	14	VKS5509-001	CYLINDER GEAR	1		
	15	MSN5D257A-SA2	D.C.MOTOR	2	WITH M.PULLEY	
	16	DPSP2616Z	SCREW	2	FOR MOTOR	
	18	VKM3825-00A	GEAR BASE	1		
	19	VKZ3172-00A	CAM SWITCH	1		
	20	VKZ3173-00A	CAM SWITCH	1		
	21	SPST2606Z	TAPPING SCREW	3	FOR CAM SW.	
	22	VKS2263-001	DRIVING CAM	1		
	23	VKS2264-001	DRIVING CAM	1		
	24	VKS2265-001	GEAR	1		
	25	WDL316050	SLIT WASHER	2	FOR CAM GEAR L	
	27	SBSF2608Z	TAPPING SCREW	4	FOR C.GEAR BASE	
	28	VKS3702-00E	DRIVE UNIT	1		
	29	VKS2247-002	MECHA HOLDER	1		
	30	VKL7767-00B	MECHABRACKET	1		
	31	SBSF2606Z	TAPPING SCREW	2	FOR BRACKET	
	32	VKM3824-00D	HOLDER	1		
	33	VKL7802-00C	MECHA HOLDER	1		
	34	SDST2604Z	SCREW	2	FOR M.HOLDER C	
	35	VKL7810-00A	LIFTER	1		
	36	VKL7811-00A	LIFTER	1		
	37	VKL7812-00A	LIFTER	1		
	38	VKL2732-001	LIFTER BASE	1		
	39	VKM3823-001	LIFTER BRACKET	1		
	40	SDST2604Z	SCREW	1		
	41	WDL266035-2	SLIT WASHER	1		
	42	SBSF2608Z	TAPPING SCREW	4		
	43	VKS5514-001	LOCK LEVER	3		
	44	VKY3133-001	RETURN SPRING	1		
	45	SBSF2608Z	TAPPING SCREW	6		
	46	VKY3134-002	SPRING	1		
	47	VKS2252-00C	TRAY	3		
	48	VKS2250-001	TOP BRACKET	1		
	49	VKS5515-001	TRAY STOPPER	1		
	50	VKW5156-002	TORSION SPRING	1		
	64	VKS2248-001	CLAMPER BASE	1		
	65	VKS3697-001	CD-CLAMPER	1		
	67	VYH7313-003	MAGNET	1		
	68	VKL7757-001	YOKE PLATE	1		
	69	SBSF2606Z	TAPPING SCREW	1		

# CD Mechanism Ass'y and Parts List

Symbol No. M 3 M M



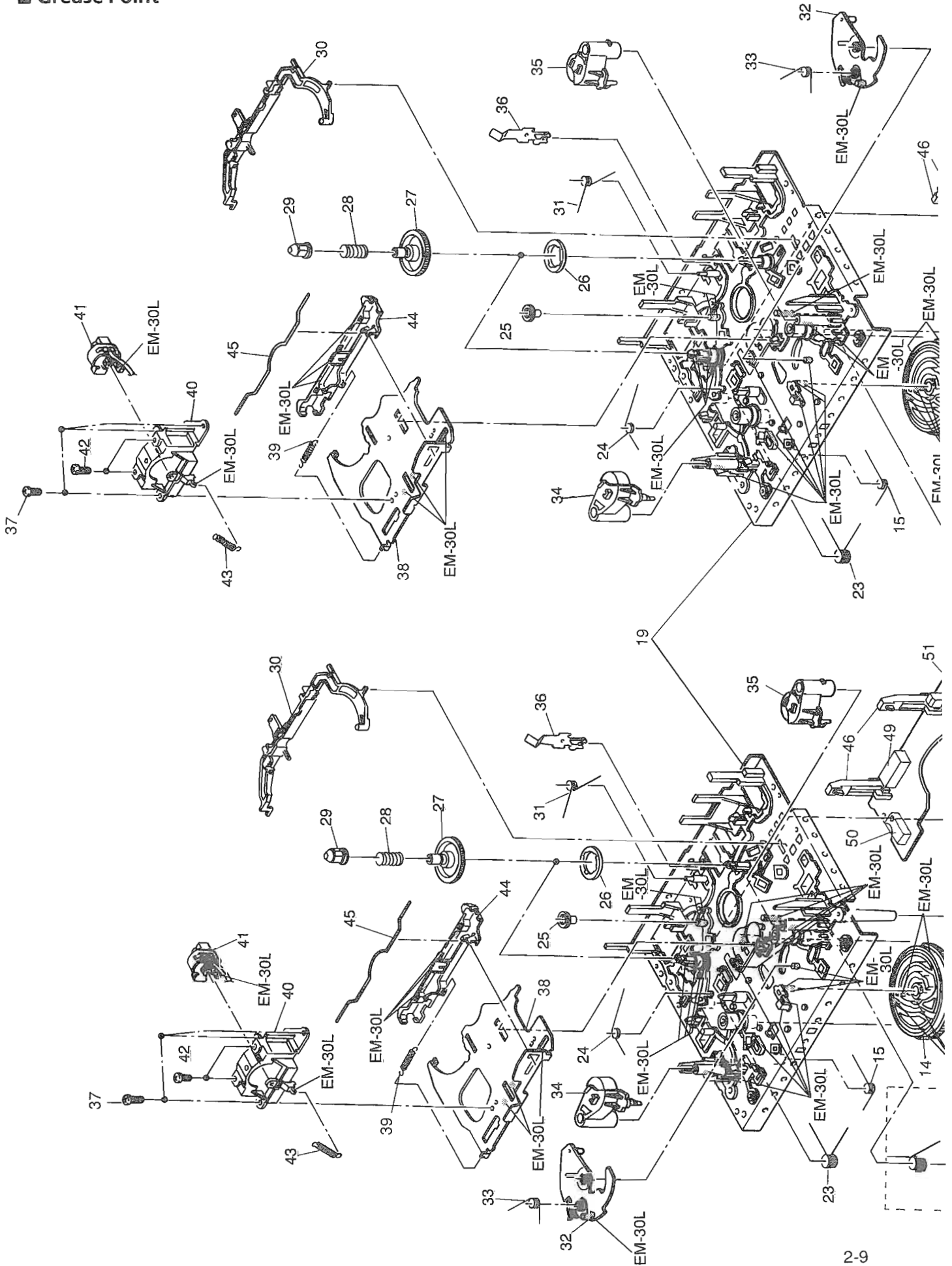
■ Parts List ( CD Mechanism Ass'y )

Item	Part Number	Part Name	Q'ty	Description	Area
1	E102501-221SS	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASSY	1		
3	E406777-001	SHAFT	1		
4	E307746-001	CD RACK	1		
5	E307745-221SS	GEAR (3)	1		
6	SDSP2003N	SCREW	4		
7	E406750-001	PINION GEAR	1		
8	E75807-302	TURN TABLE	1		
9	MDN-4RA3ETA-1	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	



# Cassette Mechanism Ass'y and Parts List

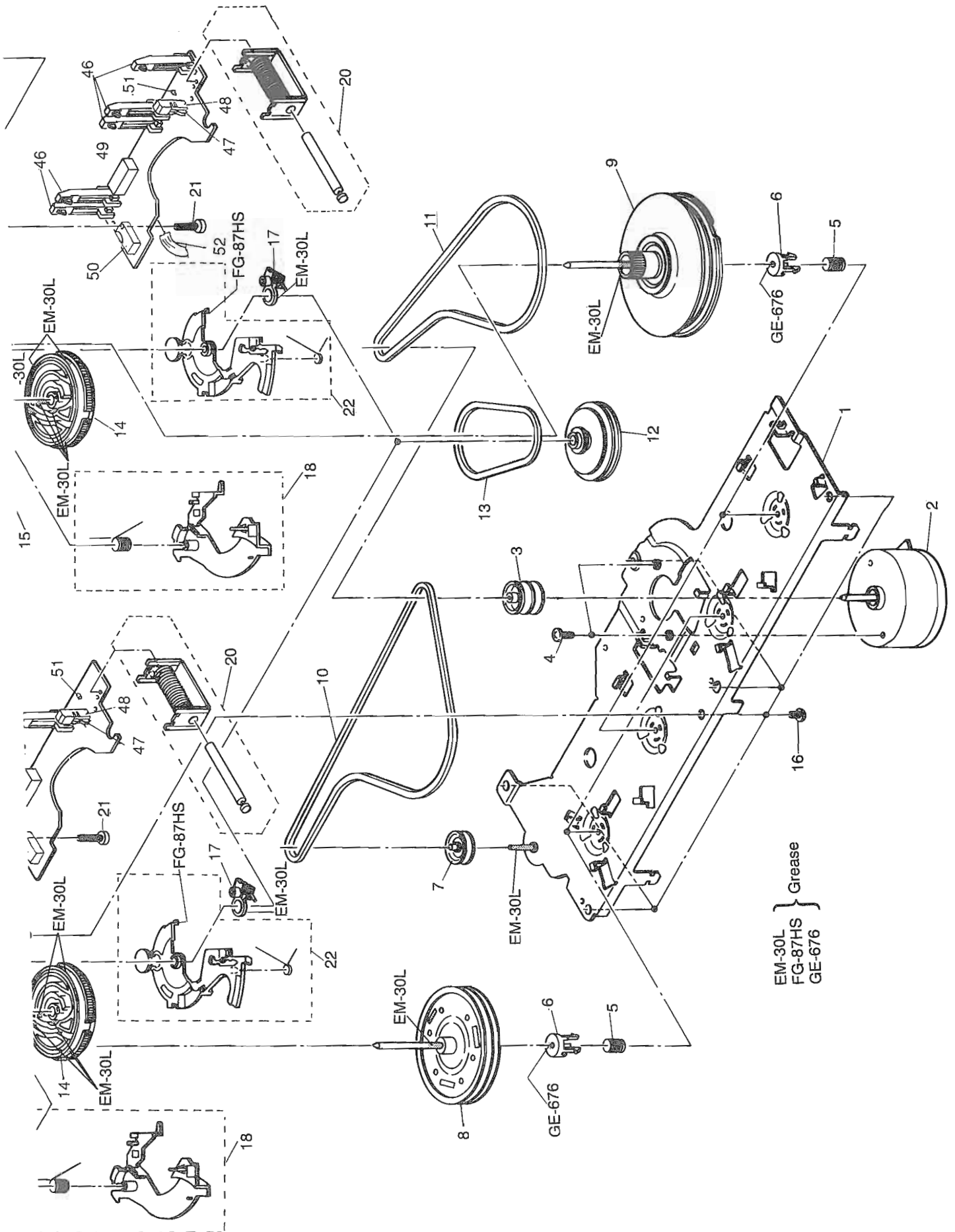
■ Grease Point





Symbol No. 

M	4	M	M
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Symbol No.

M 4 M M

## Parts List (Cassette Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	VKM3835-00A	FLYWHEEL BRACKET	1		
2	MMI-6H2LWK	DC MOTOR	1		
3	VKR4740-002	MOTOR PULLEY	1		
4	SPSP2603Z	WOOD SCREW	1		
5	VKW5177-002	SPRING	1		
6	VKS5524-001	THRUST GUIDE	1		
7	VKR4741-001	IDLER PULLEY	1		
8	VKF3202-00A	FLYWHEEL	2		
9	VKF3200-00A	FLYWHEEL	2		
10	VKB3000-161	CAPSTAN BELT	1		
11	VKB3000-162	CAPSTAN BELT	1		
12	VKS5523-00C	MAIN PLY ASY	1		
13	VKB3000-167	REEL BELT	2		
14	VKS1150-001	CONTROL CAM	2		
15	VKW5170-002	SPRING	2		
16	SBSF2608Z	SCREW	6		
17	VKS3719-001	RING	2		
18	VKS5525-00B	TRIGGER ARM	2		
19	VKS1151-00A	CHASSIS BASE ASSY	2		
20	VGP2401-00A	SOLENOID	2		
21	SDST2612Z	SCREW	2		
22	VKS3714-00B	F.F./REW.ARM	2		
23	VKW5173-001	SPRING	2		
24	VKW5202-002	SPRING	2		
25	VKS5519-001	IDLER GEAR	2		
26	VKZ4690-002	MAGNET	2		
27	VKS3707-002	REEL GEAR	2		
28	VKW5162-002	SPRING	4		
29	VKS3708-002	REEL DISK	2		
30	VKS2261-001	REEL STOPPER	2		
31	VKW5178-001	BRAKE SPRING	2		
32	VKS2255-001	DIRECTION LEVER	2		
33	VKW5163-001	SPRING	2		
34	VKP4232-00A	PINCH ROLLER	2		
35	VKP4231-00B	PINCH ROLLER	2		
36	VKY4670-001	SPRING	2		
37	SDSR2004Z	SCREW	6		
38	VKL7809-00A	BASE PLATE	2		
39	VKW5167-002	SPRING	2		
40	VKS3744-00A	H. MOUNT ASY	2		
41	VKS5540-00A	HEAD HOLDER ASSY	2		
	VKS5541-00A	HEAD HOLDER ASSY	2		
42	VKZ4629-003	SCREW	2		
43	VKW5126-001	HEAD SPRING	2		
44	VKS2257-002	ACTION LEVER	2		
45	VKW5209-001	SPRING	2		
46	MXS00220MVL0	CASSETTE SWITCH	7		
47	DN6851-HI	HALL IC	2	IC1	
48	VKS3630-001MM	IC HOLDER	2		
49	VMC0314-P08	CONNECTOR	2		
50	QSEC001-E03	SWITCH	2	S6	
51	1SR139-100T-32	SI DIODE	2		
52	VMSC04-11A13K	TM FLAT WIRE	1	FW1	



# Printed Circuit Board Ass'y and Parts List

■ Indicator, Key & Deck/Amp. Control P.C.Board (ENH-267)

## TRANSISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q203	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q204	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q208	DTA114YS	DIGITAL TRA ROHM	
	Q211	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q212	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q389	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q390	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q391	DTA144ES	DIGITAL TRA ROHM	
	Q765	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q771	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q772	DTA114YS	DIGITAL TRA ROHM	
	Q772	DTA114YS	DIGITAL TRA ROHM	
	Q773	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q775	DTA144ES	DIGITAL TRA ROHM	
	Q791	2SB1187(F,G)	SI.TRANSIST ROHM	
	Q792	2SC945A	SI.TRANSIST NEC	
	Q793	DTA144ES	DIGITAL TRA ROHM	
	Q794	DTA114WS	DIGITAL TRA SOO1	
	Q801	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q802	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q803	DTA123YSTP	SILICON	
	Q804	DTA123YSTP	SILICON	
	Q942	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q944	2SA933S(RS)	SI.TRANSIST	
	Q1034	DTA144ES	DIGITAL TRA ROHM	U
	Q1034	DTA144ES	DIGITAL TRA ROHM	UB
	Q1034	DTA144ES	DIGITAL TRA ROHM	UP
	Q1034	DTA144ES	DIGITAL TRA ROHM	US
	Q1034	DTA144ES	DIGITAL TRA ROHM	UT
	Q1035	DTA144ES	DIGITAL TRA ROHM	U
	Q1035	DTA144ES	DIGITAL TRA ROHM	UB
	Q1035	DTA144ES	DIGITAL TRA ROHM	UP
	Q1035	DTA144ES	DIGITAL TRA ROHM	US
	Q1035	DTA144ES	DIGITAL TRA ROHM	UT
	Q1036	DTA144ES	DIGITAL TRA ROHM	U
	Q1036	DTA144ES	DIGITAL TRA ROHM	UB
	Q1036	DTA144ES	DIGITAL TRA ROHM	UP
	Q1036	DTA144ES	DIGITAL TRA ROHM	US
	Q1036	DTA144ES	DIGITAL TRA ROHM	UT
	Q1037	DTA144ES	DIGITAL TRA ROHM	U
	Q1037	DTA144ES	DIGITAL TRA ROHM	UB
	Q1037	DTA144ES	DIGITAL TRA ROHM	UP
	Q1037	DTA144ES	DIGITAL TRA ROHM	US
	Q1037	DTA144ES	DIGITAL TRA ROHM	UT
	Q1051	2SC1740S(R,S)	SI.TRANSIST ROHM	J
	Q1051	2SC1740S(R,S)	SI.TRANSIST ROHM	UB
	Q1051	2SC1740S(R,S)	SI.TRANSIST ROHM	UP
	Q1051	2SC1740S(R,S)	SI.TRANSIST ROHM	US
	Q1051	2SC1740S(R,S)	SI.TRANSIST ROHM	UT
	Q1052	2SC1740S(R,S)	SI.TRANSIST ROHM	U
	Q1052	2SC1740S(R,S)	SI.TRANSIST ROHM	UB
	Q1052	2SC1740S(R,S)	SI.TRANSIST ROHM	UP
	Q1052	2SC1740S(R,S)	SI.TRANSIST ROHM	US
	Q1052	2SC1740S(R,S)	SI.TRANSIST ROHM	UT

## DIODES

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	D213	1SS254	DIODE	
	D741	11E1	SI.DIODE NIHONINTER	
	D742	11E1	SI.DIODE NIHONINTER	
	D743	11E1	SI.DIODE NIHONINTER	
	D744	11E1	SI.DIODE NIHONINTER	
	D745	11E1	SI.DIODE NIHONINTER	
	D746	11E1	SI.DIODE NIHONINTER	
	D765	1SS254	DIODE	
	D766	1SS254	DIODE	
	D773	1SS254	DIODE	
	D774	MTZ5.1JC	ZENER DIODE ROHM	
	D775	1SS254	DIODE	
	D776	MTZ36JC	ZENER DIODE ROHM	
	D777	11E1	SI.DIODE NIHONINTER	
	D778	11E1	SI.DIODE NIHONINTER	
	D779	MTZ6.2JC	ZENER DIODE ROHM	
	D780	1SS254	DIODE	
	D781	1SS254	DIODE	
	D782	1SS254	DIODE	
	D783	1SS254	DIODE	
	D784	1SS254	DIODE	
	D791	MTZ6.8JB	ZENER DIODE ROHM	
	D792	11E1	SI.DIODE NIHONINTER	
	D793	11E1	SI.DIODE NIHONINTER	
	D794	11E1	SI.DIODE NIHONINTER	
	D795	MTZ5.6JC	ZENER DIODE ROHM	
	D796	MTZ5.6JC	ZENER DIODE ROHM	
	D799	11E1	SI.DIODE NIHONINTER	
	D804	11E1	SI.DIODE NIHONINTER	
	D870	SLR-342MCA47	L.E.D. ROHM	
	D871	SLR-342MCA47	L.E.D. ROHM	
	D872	SLR-342VC3F	L.E.D. ROHM	
	D873	SLR-342VC3F	L.E.D. ROHM	
	D874	SLR-342VC3F	L.E.D. ROHM	
	D875	SLR-342MCA47	L.E.D. ROHM	
	D876	SLR-342MCA47	L.E.D. ROHM	
	D877	SLR-342MCA47	L.E.D. ROHM	
	D878	SLR-342MCA47	L.E.D. ROHM	
	D879	SLR-342MCA47	L.E.D. ROHM	
	D880	1SS254	DIODE	
	D881	1SS254	DIODE	
	D882	1SS254	DIODE	
	D883	1SS254	DIODE	
	D902	1SS254	DIODE	
	D911	11E1	SI.DIODE NIHONINTER	
	D920	MTZ5.6JC	ZENER DIODE ROHM	
	D1031	MTZ5.1JC	ZENER DIODE ROHM	U
	D1031	MTZ5.1JC	ZENER DIODE ROHM	UB
	D1031	MTZ5.1JC	ZENER DIODE ROHM	UP
	D1031	MTZ5.1JC	ZENER DIODE ROHM	US
	D1031	MTZ5.1JC	ZENER DIODE ROHM	UT

## I. C. S.

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC292	BA8221AN	I.C(MONO-AN ROHM	
	IC352	HA12136A	I.C(MONO-AN HITACHI	
	IC805	BA15218N	I.C(MONO-AN ROHM	U
	IC805	BA15218N	I.C(MONO-AN ROHM	UB
	IC805	BA15218N	I.C(MONO-AN ROHM	UP
	IC805	BA15218N	I.C(MONO-AN ROHM	US
	IC805	BA15218N	I.C(MONO-AN ROHM	UT
	IC806	NJL41H380	INFRARED DE DAINICHI	
	IC901	MN172412J6G	I.C(MICRO-C MATSUSHITA	
	IC902	LB1639-CV	I.C(DIGI-OT SANYO	
	IC998	BA7725S	I.C(MONO-AN ROHM	U
	IC998	BA7725S	I.C(MONO-AN ROHM	UB
	IC998	BA7725S	I.C(MONO-AN ROHM	UP
	IC998	BA7725S	I.C(MONO-AN ROHM	US
	IC998	BA7725S	I.C(MONO-AN ROHM	UT
	IC999	BU9251S	I.C(M) ROHM	U
	IC999	BU9251S	I.C(M) ROHM	UB
	IC999	BU9251S	I.C(M) ROHM	UP
	IC999	BU9251S	I.C(M) ROHM	US
	IC999	BU9251S	I.C(M) ROHM	UT

## CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C209	QFN81HJ-473	0.047MF 50V METAL.MYLA	
	C210	QFN81HJ-473	0.047MF 50V METAL.MYLA	
	C228	QETB1EM-476	47MF 25V AL E.CAPAC	
	C230	QETB1CM-476	47MF 16V AL E.CAPAC	
	C236	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C237	QCB81HK-101Y	100PF 50V CER.CAPACI	
	C238	QCB81HK-101Y	100PF 50V CER.CAPACI	
	C241	QCB81HK-561Y	560PF 50V CER.CAPACI	
	C242	QCB81HK-561Y	560PF 50V CER.CAPACI	
	C247	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C248	QETB1HM-105	1MF 50V AL E.CAPAC	
	C353	QEK51HM-105G	1MF 50V AL E.CAPAC	
	C354	QEK51HM-105G	1MF 50V AL E.CAPAC	
	C355	QEK51HM-105G	1MF 50V AL E.CAPAC	
	C356	QEK51HM-105G	1MF 50V AL E.CAPAC	
	C357	QEK51EM-106	10MF 25V AL E.CAPAC	
	C358	QEK51EM-106	10MF 25V AL E.CAPAC	
	C361	QFN81HJ-224	0.22MF 50V METAL.MYLA	
	C362	QFN81HJ-224	0.22MF 50V METAL.MYLA	
	C363	QEK51HM-475	4.7MF 50V AL E.CAPAC	
	C364	QETB1CM-476	47MF 16V AL E.CAPAC	
	C391	QEK51EM-106	10MF 25V AL E.CAPAC	
	C392	QEK51EM-106	10MF 25V AL E.CAPAC	
	C741	QFN82AJ-103	0.01MF 100V MYLAR CAPA	J
	C741	QFN82AJ-103	0.01MF 100V MYLAR CAPA	U

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	C741	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UB
	C741	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UP
	C741	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	US
	C741	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UT
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	A
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	BS
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	C
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EF
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EN
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	G
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	GI
	C741	QFN82AK-224	0.22MF	100V	MYLAR CAPA	VX
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	J
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	U
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UB
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UP
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	US
	C742	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UT
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	A
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	BS
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	C
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EF
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EN
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	G
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	GI
	C742	QFN82AK-224	0.22MF	100V	MYLAR CAPA	VX
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	J
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	U
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UB
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UP
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	US
	C743	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UT
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	A
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	BS
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	C
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EF
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	EN
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	G
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	GI
	C743	QFN82AK-224	0.22MF	100V	MYLAR CAPA	VX
	C744	QETM1VM-228J7	2200MF	35V	E.CAPACITO	
	C745	QETB1VM-477E	470MF	35V	AL E.CAPAC	
	C771	QETB1HM-225	2.2MF	50V	AL E.CAPAC	
	C773	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	
	C774	QETB1HM-226E	22MF	50V	E.CAPACITO	
	C775	QETB1HM-226E	22MF	50V	E.CAPACITO	
	C776	QETB1HM-476	47MF	50V	E.CAPACITO	
	C777	QETB1JM-107	100MF	63V	AL E.CAPAC	
	C778	QETB1HM-475E	4.7MF	50V	E.CAPACITO	
	C780	QEA0D0HZ-479A	47000MF		E.CAPACITO	
	C791	QETB1CM-476	47MF	16V	AL E.CAPAC	
	C792	QCF21HP-223A	0.022MF	50V	CER.CAPACI	
	C794	QETB1AM-107	100MF	10V	AL E.CAPAC	
	C795	QCF21HP-103A	0.01MF	50V	CER.CAPACI	
	C796	QCF21HP-103A	0.01MF	50V	CER.CAPACI	
	C798	QCF21HP-223A	0.022MF	50V	CER.CAPACI	
	C799	QCF21HP-223A	0.022MF	50V	CER.CAPACI	
	C800	QCF21HP-223A	0.022MF	50V	CER.CAPACI	
	C802	QETB1HM-225	2.2MF	50V	AL E.CAPAC	
	C861	QCB1EZ-223	0.022MF	25V	CER.CAPACI	
	C862	QEK51CM-226	22MF	16V	AL E.CAPAC	
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	BS
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	EF
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	EN
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	G
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	GI
	C863	QCB1HK-471Y	470PF	50V	CER.CAPACI	VX
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	BS
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	EF
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	EN
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	G
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	GI
	C864	QCB1HK-471Y	470PF	50V	CER.CAPACI	VX
	C867	QETB1HM-474	0.47MF	50V	ELECTRO	U
	C867	QETB1HM-474	0.47MF	50V	ELECTRO	UB
	C867	QETB1HM-474	0.47MF	50V	ELECTRO	UP
	C867	QETB1HM-474	0.47MF	50V	ELECTRO	US
	C867	QETB1HM-474	0.47MF	50V	ELECTRO	UT
	C868	QCF21HP-223A	0.022MF	50V	CER.CAPACI	U
	C868	QCF21HP-223A	0.022MF	50V	CER.CAPACI	UB
	C868	QCF21HP-223A	0.022MF	50V	CER.CAPACI	UP
	C868	QCF21HP-223A	0.022MF	50V	CER.CAPACI	US
	C868	QCF21HP-223A	0.022MF	50V	CER.CAPACI	UT
	C871	QETB1HM-474	0.47MF	50V	ELECTRO	U
	C871	QETB1HM-474	0.47MF	50V	ELECTRO	UB
	C871	QETB1HM-474	0.47MF	50V	ELECTRO	UP
	C871	QETB1HM-474	0.47MF	50V	ELECTRO	US
	C871	QETB1HM-474	0.47MF	50V	ELECTRO	UT
	C872	QETB1HM-105	1MF	50V	AL E.CAPAC	U
	C872	QETB1HM-105	1MF	50V	AL E.CAPAC	UB
	C872	QETB1HM-105	1MF	50V	AL E.CAPAC	UP
	C872	QETB1HM-105	1MF	50V	AL E.CAPAC	US
	C872	QETB1HM-105	1MF	50V	AL E.CAPAC	UT
	C874	QETB1HM-105	1MF	50V	AL E.CAPAC	U
	C874	QETB1HM-105	1MF	50V	AL E.CAPAC	UB

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	C874	QETB1HM-105	1MF	50V	AL E.CAPAC	UP
	C874	QETB1HM-105	1MF	50V	AL E.CAPAC	US
	C874	QETB1HM-105	1MF	50V	AL E.CAPAC	UT
	C875	QCF21HP-473A	0.047MF	50V	CER.CAPACI	U
	C875	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UB
	C875	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UP
	C875	QCF21HP-473A	0.047MF	50V	CER.CAPACI	US
	C875	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UT
	C876	QCF21HP-473A	0.047MF	50V	CER.CAPACI	U
	C876	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UB
	C876	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UP
	C876	QCF21HP-473A	0.047MF	50V	CER.CAPACI	US
	C876	QCF21HP-473A	0.047MF	50V	CER.CAPACI	UT
	C901	QETB1CM-476	47MF	16V	AL E.CAPAC	
	C902	QCZ0205-155	1.5MF	25V	C.CAPACITO	
	C905	QETB1EM-226N	22MF	25V	E.CAPACITO	
	C906	QETB1EM-226N	22MF	25V	E.CAPACITO	
	C907	QCGB1HK-102	1000PF	50V	CER.CAPACI	
	C908	QCVB1CM-103Y	0.01MF	16V	CERAMIC	
	C909	QCF21HP-223A	0.022MF	50V	CER.CAPACI	
	C910	QCF21HP-103A	0.01MF	50V	CER.CAPACI	
	C911	QEK51EM-476	47MF	25V	AL E.CAPAC	
	C1002	QETB1CM-226	22MF	16V	E.CAPACITO	U
	C1002	QETB1CM-226	22MF	16V	E.CAPACITO	UB
	C1002	QETB1CM-226	22MF	16V	E.CAPACITO	UP
	C1002	QETB1CM-226	22MF	16V	E.CAPACITO	US
	C1002	QETB1CM-226	22MF	16V	E.CAPACITO	UT
	C1003	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	U
	C1003	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UB
	C1003	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UP
	C1003	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	US
	C1003	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UT
	C1004	QETB1HM-474	0.47MF	50V	ELECTRO	U
	C1004	QETB1HM-474	0.47MF	50V	ELECTRO	UB
	C1004	QETB1HM-474	0.47MF	50V	ELECTRO	UP
	C1004	QETB1HM-474	0.47MF	50V	ELECTRO	US
	C1004	QETB1HM-474	0.47MF	50V	ELECTRO	UT
	C1005	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	U
	C1005	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UB
	C1005	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UP
	C1005	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	US
	C1005	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UT
	C1006	QCGB1HK-821	820PF	50V	CER.CAPACI	U
	C1006	QCGB1HK-821	820PF	50V	CER.CAPACI	UB
	C1006	QCGB1HK-821	820PF	50V	CER.CAPACI	UP
	C1006	QCGB1HK-821	820PF	50V	CER.CAPACI	US
	C1006	QCGB1HK-821	820PF	50V	CER.CAPACI	UT
	C1007	QFN81HJ-183	0.018MF	50V	METAL.MYLA	U
	C1007	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UB
	C1007	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UP
	C1007	QFN81HJ-183	0.018MF	50V	METAL.MYLA	US
	C1007	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UT
	C1008	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	U
	C1008	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UB
	C1008	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UP
	C1008	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	US
	C1008	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UT
	C1009	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	U
	C1009	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UB
	C1009	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UP
	C1009	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	US
	C1009	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UT
	C1010	QCGB1HK-821	820PF	50V	CER.CAPACI	U
	C1010	QCGB1HK-821	820PF	50V	CER.CAPACI	UB
	C1010	QCGB1HK-821	820PF	50V	CER.CAPACI	UP
	C1010	QCGB1HK-821	820PF	50V	CER.CAPACI	US
	C1010	QCGB1HK-821	820PF	50V	CER.CAPACI	UT
	C1012	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	U
	C1012	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UB
	C1012	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UP
	C1012	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	US
	C1012	QCXB1CM-562Y	5600PF	16V	CER.CAPACI	UT
	C1013	QFN81HJ-183	0.018MF	50V	METAL.MYLA	U
	C1013	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UB
	C1013	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UP
	C1013	QFN81HJ-183	0.018MF	50V	METAL.MYLA	US
	C1013	QFN81HJ-183	0.018MF	50V	METAL.MYLA	UT
	C1014	QETB1HM-474	0.47MF	50V	ELECTRO	U
	C1014	QETB1HM-474	0.47MF	50V	ELECTRO	UB
	C1014	QETB1HM-474	0.47MF	50V	ELECTRO	UP
	C1014	QETB1HM-474	0.47MF	50V	ELECTRO	US
	C1014	QETB1HM-474	0.47MF	50V	ELECTRO	UT
	C1015	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	U
	C1015	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UB
	C1015	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UP
	C1015	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	US
	C1015	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UT
	C1016	QETB1HM-105	1MF	50V	AL E.CAPAC	U
	C1016	QETB1HM-105	1MF	50V	AL E.CAPAC	UB
	C1016	QETB1HM-105	1MF	50V	AL E.CAPAC	UP
	C1016	QETB1HM-105	1MF	50V	AL E.CAPAC	US
	C1016	QETB1HM-105	1MF	50V	AL E.CAPAC	UT
	C1017	QFLB1HJ-104</				

# CA-C220

## CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	C1018	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	US
	C1018	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UT
	C1019	QETB1CM-107	100MF	16V	AL E.CAPAC	U
	C1019	QETB1CM-107	100MF	16V	AL E.CAPAC	UB
	C1019	QETB1CM-107	100MF	16V	AL E.CAPAC	UP
	C1019	QETB1CM-107	100MF	16V	AL E.CAPAC	US
	C1019	QETB1CM-107	100MF	16V	AL E.CAPAC	UT
	C1020	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	U
	C1020	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UB
	C1020	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UP
	C1020	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	US
	C1020	QFLB1HJ-104	0.1MF	50V	MYLAR CAPA	UT
	C1021	QCBB1HK-221Y	220PF	50V	CER.CAPACI	U
	C1021	QCBB1HK-221Y	220PF	50V	CER.CAPACI	UB
	C1021	QCBB1HK-221Y	220PF	50V	CER.CAPACI	UP
	C1021	QCBB1HK-221Y	220PF	50V	CER.CAPACI	US
	C1021	QCBB1HK-221Y	220PF	50V	CER.CAPACI	UT
	C1022	QETB1AM-107	100MF	10V	AL E.CAPAC	U
	C1022	QETB1AM-107	100MF	10V	AL E.CAPAC	UB
	C1022	QETB1AM-107	100MF	10V	AL E.CAPAC	UP
	C1022	QETB1AM-107	100MF	10V	AL E.CAPAC	US
	C1022	QETB1AM-107	100MF	10V	AL E.CAPAC	UT
	C1023	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	U
	C1023	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UB
	C1023	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UP
	C1023	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	US
	C1023	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	UT
	C1024	QCBB1HK-101Y	100PF	50V	CER.CAPACI	U
	C1024	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UB
	C1024	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UP
	C1024	QCBB1HK-101Y	100PF	50V	CER.CAPACI	US
	C1024	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UT
	C1025	QCBB1HK-101Y	100PF	50V	CER.CAPACI	U
	C1025	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UB
	C1025	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UP
	C1025	QCBB1HK-101Y	100PF	50V	CER.CAPACI	US
	C1025	QCBB1HK-101Y	100PF	50V	CER.CAPACI	UT
	C1051	QETB1HM-105	1MF	50V	AL E.CAPAC	U
	C1051	QETB1HM-105	1MF	50V	AL E.CAPAC	UB
	C1051	QETB1HM-105	1MF	50V	AL E.CAPAC	UP
	C1051	QETB1HM-105	1MF	50V	AL E.CAPAC	US
	C1051	QETB1HM-105	1MF	50V	AL E.CAPAC	UT
	C1053	QETB1EM-476	47MF	25V	AL E.CAPAC	U
	C1053	QETB1EM-476	47MF	25V	AL E.CAPAC	UB
	C1053	QETB1EM-476	47MF	25V	AL E.CAPAC	UP
	C1053	QETB1EM-476	47MF	25V	AL E.CAPAC	US
	C1053	QETB1EM-476	47MF	25V	AL E.CAPAC	UT

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	VX
	P361	QRD161J-103	10K	1/6W	CARBON RES	
	R389	QRD161J-103	10K	1/6W	CARBON RES	
	R390	QRD161J-103	10K	1/6W	CARBON RES	
	R391	QRD167J-153	15K	1/6W	CARBON RES	
	R392	QRD167J-153	15K	1/6W	CARBON RES	
	R395	QRD161J-103	10K	1/6W	CARBON RES	
	R396	QRD161J-103	10K	1/6W	CARBON RES	
	R765	QRD161J-473	47K	1/6W	CARBON RES	
	R766	QRD161J-473	47K	1/6W	CARBON RES	
	R772	QRD161J-103	10K	1/6W	CARBON RES	
	R773	QRD161J-102	1K	1/6W	CARBON RES	
	R774	QRD161J-472	4.7K	1/6W	CARBON RES	
	R775	QRD161J-103	10K	1/6W	CARBON RES	
	R776	QRD161J-102	1K	1/6W	CARBON RES	
	R777	PTH61G25AR4R7M			POSITIVE T	A
	R777	PTH61G25AR4R7M			POSITIVE T	BS
	R777	PTH61G25AR4R7M			POSITIVE T	C
	R777	PTH61G25AR4R7M			POSITIVE T	EF
	R777	PTH61G25AR4R7M			POSITIVE T	EN
	R777	PTH61G25AR4R7M			POSITIVE T	G
	R777	PTH61G25AR4R7M			POSITIVE T	GI
	R777	PTH61G25AR4R7M			POSITIVE T	U
	R777	PTH61G25AR4R7M			POSITIVE T	UB
	R777	PTH61G25AR4R7M			POSITIVE T	UP
	R777	PTH61G25AR4R7M			POSITIVE T	US
	R777	PTH61G25AR4R7M			POSITIVE T	UT
	R777	PTH61G25AR4R7M			POSITIVE T	VX
	R777	QRD14CJ-4R7SX	4.7	1/4W	UNF.CARBON	J
	R778	QRD161J-103	10K	1/6W	CARBON RES	
	R781	QRD167J-121	220	1/6W	CARBON RES	
	R782	QRD161J-104	100K	1/6W	CARBON RES	
	R791	QRD161J-122	1.2K	1/6W	CARBON RES	
	R793	QRD161J-472	4.7K	1/6W	CARBON RES	
	R794	QRD161J-103	10K	1/6W	CARBON RES	
	R795	QRD120J-2R7SX	2.7	1/2W	CARBON RES	
	R796	QRD14CJ-100SX	10	1/4W	UNF.CARBON	
	R797	QRD161J-103	10K	1/6W	CARBON RES	
	R798	QRD161J-391	390	1/6W	CARBON RES	
	R801	QRD161J-471	470	1/6W	CARBON RES	
Δ	R802	QRD161J-471	470	1/6W	CARBON RES	
	R803	QRD161J-101	100	1/6W	CARBON RES	
	R804	QRD161J-101	100	1/6W	CARBON RES	
	R805	QRX022J-3R3A	3.3	2W	METAL FILM	
	R806	QRX022J-3R3A	3.3	2W	METAL FILM	
	R807	QRX014J-R47X	0.47	1W	M.FILM	C
	R807	QRX014J-R47X	0.47	1W	M.FILM	J
	R871	QRD161J-221	220	1/6W	CARBON RES	
	R872	QRD161J-331	330	1/6W	CARBON RES	
	R873	QRD161J-331	330	1/6W	CARBON RES	
	R874	QRD161J-331	330	1/6W	CARBON RES	
	R875	QRD161J-221	220	1/6W	CARBON RES	
	R877	QRD161J-221	220	1/6W	CARBON RES	
	R878	QRD161J-221	220	1/6W	CARBON RES	
	R879	QRD161J-221	220	1/6W	CARBON RES	
	R881	QRD161J-102	1K	1/6W	CARBON RES	U
	R881	QRD161J-102	1K	1/6W	CARBON RES	UB
	R881	QRD161J-102	1K	1/6W	CARBON RES	UP
	R881	QRD161J-122	1.2K	1/6W	CARBON RES	US
	R881	QRD161J-122	1.2K	1/6W	CARBON RES	UT
	R882	QRD161J-103	10K	1/6W	CARBON RES	U
	R882	QRD161J-103	10K	1/6W	CARBON RES	UB
	R882	QRD161J-103	10K	1/6W	CARBON RES	UP
	R882	QRD161J-103	10K	1/6W	CARBON RES	US
	R882	QRD161J-103	10K	1/6W	CARBON RES	UT
	R883	QRD161J-471	470	1/6W	CARBON RES	U
	R883	QRD161J-471	470	1/6W	CARBON RES	UB
Δ	R883	QRD161J-471	470	1/6W	CARBON RES	UP
Δ	R883	QRD161J-471	470	1/6W	CARBON RES	US
Δ	R883	QRD161J-471	470	1/6W	CARBON RES	UT
Δ	R884	QRD161J-104	100K	1/6W	CARBON RES	U
Δ	R884	QRD161J-104	100K	1/6W	CARBON RES	UB
Δ	R884	QRD161J-104	100K	1/6W	CARBON RES	UP
Δ	R884	QRD161J-104	100K	1/6W	CARBON RES	US
Δ	R884	QRD161J-104	100K	1/6W	CARBON RES	UT
Δ	R891	QRD161J-103	10K	1/6W	CARBON RES	U
Δ	R892	QRD161J-103	10K	1/6W	CARBON RES	UB
Δ	R893	QRD161J-103	10K	1/6W	CARBON RES	UP
Δ	R894	QRD161J-103	10K	1/6W	CARBON RES	US
Δ	R895	QRD161J-103	10K	1/6W	CARBON RES	UT
	R896	QRD161J-103	10K	1/6W	CARBON RES	
	R897	QRD167J-562	5.6K	1/6W	CARBON RES	
	R898	QRD161J-103	10K	1/6W	CARBON RES	
	R900	QRD161J-103	10K	1/6W	CARBON RES	
	R901	QRD161J-103	10K	1/6W	CARBON RES	
	R902	QRD161J-103	10K	1/6W	CARBON RES	
	R903	QRD161J-103	10K	1/6W	CARBON RES	BS
	R903	QRD161J-103	10K	1/6W	CARBON RES	EF
Δ	R903	QRD161J-103	10K	1/6W	CARBON RES	EN
Δ	R903	QRD161J-103	10K	1/6W	CARBON RES	G
	R903	QRD161J-103	10K	1/6W	CARBON RES	GI
	R903	QRD161J-103	10K	1/6W	CARBON RES	VX
	R904	QRD167J-223	22K	1/6W	CARBON RES	
	R905	QRD167J-223	22K	1/6W	CARBON RES	
	R942	QRD161J-103	10K	1/6W	CARBON RES	

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R209	QRD161J-183	18K	1/6W	CARBON RES	
	R210	QRD161J-183	18K	1/6W	CARBON RES	
	R211	QRD161J-222	2.2K	1/6W	CARBON RES	
	R212	QRD161J-222	2.2K	1/6W	CARBON RES	
	R213	QRD167J-153	15K	1/6W	CARBON RES	
	R214	QRD167J-153	15K	1/6W	CARBON RES	
	R215	QRD161J-105	1M	1/6W	CARBON RES	
	R216	QRD161J-274	270K	1/6W	CARBON RES	
	R217	QRD161J-104	100K	1/6W	CARBON RES	
	R241	QRD161J-754	750K	1/6W	CARBON RES	
	R242	QRD161J-754	750K	1/6W	CARBON RES	
	R243	QRD161J-183	18K	1/6W	CARBON RES	
	R244	QRD161J-105	1M	1/6W	CARBON RES	
	R245	QRD161J-103	10K	1/6W	CARBON RES	
	R246	QRD161J-105	1M	1/6W	CARBON RES	
	R247	QRD161J-913	91K	1/6W	CARBON RES	
	R248	QRD161J-104	100K	1/6W	CARBON RES	
	R321	QRD14CJ-220S	22	1/4W	UNF.CARBON	C
	R321	QRD14CJ-220S	22	1/4W	UNF.CARBON	J
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	A
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	BS
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	EF
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	EN
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	G
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	GI
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	U
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	UB
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	UP
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	US
	R321	GRZ0077-220X	22	1/4W	FUSIBLE RE	UT

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
Δ	R943	QRD161J-473	47K	1/6W	CARBON RES	
Δ	R945	QRD161J-224	220K	1/6W	CARBON RES	
	R946	QRD161J-224	220K	1/6W	CARBON RES	
	R950	QRD161J-273	27K	1/6W	CARBON RES	
	R951	QRD161J-473	47K	1/6W	CARBON RES	
	R960	QRD161J-103	10K	1/6W	CARBON RES	
	R961	QRD161J-103	10K	1/6W	CARBON RES	
	R962	QRD161J-103	10K	1/6W	CARBON RES	
	R963	QRD161J-103	10K	1/6W	CARBON RES	
	R964	QRD161J-103	10K	1/6W	CARBON RES	
	R965	QRD167J-562	5.6K	1/6W	CARBON RES	
	R967	QRD167J-221	220	1/6W	CARBON RES	
	R968	QRD161J-222	2.2K	1/6W	CARBON RES	
	R1001	QRD167J-152	1.5K	1/6W	CARBON RES	U
	R1001	QRD167J-152	1.5K	1/6W	CARBON RES	UB
	R1001	QRD167J-152	1.5K	1/6W	CARBON RES	UP
	R1001	QRD167J-152	1.5K	1/6W	CARBON RES	US
	R1001	QRD167J-152	1.5K	1/6W	CARBON RES	UT
	R1002	QRD161J-123	12K	1/6W	CARBON RES	U
	R1002	QRD161J-123	12K	1/6W	CARBON RES	UB
	R1002	QRD161J-123	12K	1/6W	CARBON RES	UP
	R1002	QRD161J-123	12K	1/6W	CARBON RES	US
	R1002	QRD161J-123	12K	1/6W	CARBON RES	UT
	R1003	QRD161J-103	10K	1/6W	CARBON RES	U
	R1003	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1003	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1003	QRD161J-103	10K	1/6W	CARBON RES	US
	R1003	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1004	QRD161J-103	10K	1/6W	CARBON RES	U
	R1004	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1004	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1004	QRD161J-103	10K	1/6W	CARBON RES	US
	R1004	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1005	QRD161J-103	10K	1/6W	CARBON RES	U
	R1005	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1005	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1005	QRD161J-103	10K	1/6W	CARBON RES	US
	R1005	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1010	QRD161J-472	4.7K	1/6W	CARBON RES	U
	R1010	QRD161J-472	4.7K	1/6W	CARBON RES	UB
	R1010	QRD161J-472	4.7K	1/6W	CARBON RES	UP
	R1010	QRD161J-472	4.7K	1/6W	CARBON RES	US
	R1010	QRD161J-472	4.7K	1/6W	CARBON RES	UT
	R1011	QRD161J-103	10K	1/6W	CARBON RES	U
	R1011	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1011	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1011	QRD161J-103	10K	1/6W	CARBON RES	US
	R1011	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1012	QRD161J-103	10K	1/6W	CARBON RES	U
	R1012	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1012	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1012	QRD161J-103	10K	1/6W	CARBON RES	US
	R1012	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1013	QRD161J-103	10K	1/6W	CARBON RES	U
	R1013	QRD161J-103	10K	1/6W	CARBON RES	UB
	R1013	QRD161J-103	10K	1/6W	CARBON RES	UP
	R1013	QRD161J-103	10K	1/6W	CARBON RES	US
	R1013	QRD161J-103	10K	1/6W	CARBON RES	UT
	R1021	QRD161J-105	1M	1/6W	CARBON RES	U
	R1021	QRD161J-105	1M	1/6W	CARBON RES	UB
	R1021	QRD161J-105	1M	1/6W	CARBON RES	UP
	R1021	QRD161J-105	1M	1/6W	CARBON RES	US
	R1021	QRD161J-105	1M	1/6W	CARBON RES	UT
	R1022	QRD167J-682	6.8K	1/6W	CARBON RES	U
	R1022	QRD167J-682	6.8K	1/6W	CARBON RES	UB
	R1022	QRD167J-682	6.8K	1/6W	CARBON RES	UP
	R1022	QRD167J-682	6.8K	1/6W	CARBON RES	US
	R1022	QRD167J-682	6.8K	1/6W	CARBON RES	UT
	R1031	QRD161J-331	330	1/6W	CARBON RES	U
	R1031	QRD161J-331	330	1/6W	CARBON RES	UB
	R1031	QRD161J-331	330	1/6W	CARBON RES	UP
	R1031	QRD161J-331	330	1/6W	CARBON RES	US
	R1031	QRD161J-331	330	1/6W	CARBON RES	UT
	R1035	QRD161J-303Y	30K	1/6W	CARBON RES	U
	R1035	QRD161J-303Y	30K	1/6W	CARBON RES	UB
	R1035	QRD161J-303Y	30K	1/6W	CARBON RES	UP
	R1035	QRD161J-303Y	30K	1/6W	CARBON RES	US
	R1035	QRD161J-303Y	30K	1/6W	CARBON RES	UT
	R1036	QRD161J-563	56K	1/6W	CARBON RES	U
	R1036	QRD161J-563	56K	1/6W	CARBON RES	UB
	R1036	QRD161J-563	56K	1/6W	CARBON RES	UP
	R1036	QRD161J-563	56K	1/6W	CARBON RES	US
	R1036	QRD161J-563	56K	1/6W	CARBON RES	UT
	R1037	QRD161J-243	24K	1/6W	CARBON RES	U
	R1037	QRD161J-243	24K	1/6W	CARBON RES	UB
	R1037	QRD161J-243	24K	1/6W	CARBON RES	UP
	R1037	QRD161J-243	24K	1/6W	CARBON RES	US
	R1037	QRD161J-243	24K	1/6W	CARBON RES	UT
	R1038	QRD161J-123	12K	1/6W	CARBON RES	U
	R1038	QRD161J-123	12K	1/6W	CARBON RES	UB
	R1038	QRD161J-123	12K	1/6W	CARBON RES	UP
	R1038	QRD161J-123	12K	1/6W	CARBON RES	US
	R1038	QRD161J-123	12K	1/6W	CARBON RES	UT
	R1051	QRD161J-105	1M	1/6W	CARBON RES	U
	R1051	QRD161J-105	1M	1/6W	CARBON RES	UB

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R1051	QRD161J-105	1M	1/6W	CARBON RES	UP
	R1051	QRD161J-105	1M	1/6W	CARBON RES	US
	R1051	QRD161J-105	1M	1/6W	CARBON RES	UT
	R1052	QRD167J-153	15K	1/6W	CARBON RES	U
	R1052	QRD167J-153	15K	1/6W	CARBON RES	UB
	R1052	QRD167J-153	15K	1/6W	CARBON RES	UP
	R1052	QRD167J-153	15K	1/6W	CARBON RES	US
	R1052	QRD167J-153	15K	1/6W	CARBON RES	UT
	R1053	QRD167J-682	6.8K	1/6W	CARBON RES	U
	R1053	QRD167J-682	6.8K	1/6W	CARBON RES	UB
	R1053	QRD167J-682	6.8K	1/6W	CARBON RES	UP
	R1053	QRD167J-682	6.8K	1/6W	CARBON RES	US
	R1053	QRD167J-682	6.8K	1/6W	CARBON RES	UT
	R1054	QRD161J-133Y	13K	1/6W	CARBON RES	U
	R1054	QRD161J-133Y	13K	1/6W	CARBON RES	UB
	R1054	QRD161J-133Y	13K	1/6W	CARBON RES	UP
	R1054	QRD161J-133Y	13K	1/6W	CARBON RES	US
	R1054	QRD161J-133Y	13K	1/6W	CARBON RES	UT
	R1056	QRD161J-221	220	1/6W	CARBON RES	U
	R1056	QRD161J-221	220	1/6W	CARBON RES	UB
	R1056	QRD161J-221	220	1/6W	CARBON RES	UP
	R1056	QRD161J-221	220	1/6W	CARBON RES	US
	R1056	QRD161J-221	220	1/6W	CARBON RES	UT
	R1057	QRD161J-271	270	1/6W	CARBON RES	U
	R1057	QRD161J-271	270	1/6W	CARBON RES	UB
	R1057	QRD161J-271	270	1/6W	CARBON RES	UP
	R1057	QRD161J-271	270	1/6W	CARBON RES	US
	R1057	QRD161J-271	270	1/6W	CARBON RES	UT
	VR801	QVAA72B-E54B	50K		VARIABLE R	U
	VR801	QVAA72B-E54B	50K		VARIABLE R	UB
	VR801	QVAA72B-E54B	50K		VARIABLE R	UP
	VR801	QVAA72B-E54B	50K		VARIABLE R	US
	VR801	QVAA72B-E54B	50K		VARIABLE R	UT
	VP948	QVPA603-103A	10K		TRIMMER RE	U

# CA-C220

## OTHERS

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
	EMW10535-002	PRINTED BOA	
J812	QMS3R80-EE0S	HEADPHONE J	
J813	QMS3R80-EE0S	HEADPHONE J	U
J813	QMS3R80-EE0S	HEADPHONE J	UB
J813	QMS3R80-EE0S	HEADPHONE J	UP
J813	QMS3R80-EE0S	HEADPHONE J	US
J813	QMS3R80-EE0S	HEADPHONE J	UT
K812	ENZ8101-007	INDUCTOR	
L237	EQL2106-223	INDUCTOR	
L238	EQL2106-223	INDUCTOR	
S701	QSS7A12-E01	SLIDE SWITC	BS
S701	QSS7A12-E01	SLIDE SWITC	EF
S701	QSS7A12-E01	SLIDE SWITC	EN
S701	QSS7A12-E01	SLIDE SWITC	G
S701	QSS7A12-E01	SLIDE SWITC	GI
S701	QSS7A12-E01	SLIDE SWITC	VX
S819	ESP0001-023M	TACT SWITCH	
S820	ESP0001-023M	TACT SWITCH	
S821	ESP0001-023M	TACT SWITCH	
S822	ESP0001-023M	TACT SWITCH	
S823	ESP0001-023M	TACT SWITCH	
S824	ESP0001-023M	TACT SWITCH	
S825	ESP0001-023M	TACT SWITCH	
S826	ESP0001-023M	TACT SWITCH	
S827	ESP0001-023M	TACT SWITCH	
S828	ESP0001-023M	TACT SWITCH	
S829	ESP0001-023M	TACT SWITCH	
S830	ESP0001-023M	TACT SWITCH	
S831	ESP0001-023M	TACT SWITCH	
S832	ESP0001-023M	TACT SWITCH	
S833	ESP0001-023M	TACT SWITCH	
S834	ESP0001-023M	TACT SWITCH	
S835	ESP0001-023M	TACT SWITCH	
S836	ESP0001-023M	TACT SWITCH	
S837	ESP0001-023M	TACT SWITCH	
S838	ESP0001-023M	TACT SWITCH	
S839	ESP0001-023M	TACT SWITCH	
S840	ESP0001-023M	TACT SWITCH	
S841	ESP0001-023M	TACT SWITCH	
S842	ESP0001-023M	TACT SWITCH	
S843	ESP0001-023M	TACT SWITCH	
S844	ESP0001-023M	TACT SWITCH	
S845	ESP0001-023M	TACT SWITCH	
S846	ESP0001-023M	TACT SWITCH	
S847	ESP0001-023M	TACT SWITCH	
S848	ESP0001-023M	TACT SWITCH	
S849	ESP0001-023M	TACT SWITCH	
X901	ECX0060-000EM	CERAMIC RES	
CN311	VMC0314-S08	CONNECT TER	
CN312	VMC0314-S08	CONNECT TER	
CN313	VMC0314-S14	CONNECT TER	
CN314	VMC0314-S08	CONNECT TER	
CN401	EMV5163-012R	CONNECT TER	
CN402	EMV5163-011R	CONNECT TER	
CN602	EMV7155-109R	CONNECT TER	
CN604	EMV7155-107R	CONNECT TER	
CN702	EMV7163-009	CONNECT TER	
CN703	EMV7163-011	CONNECT TER	
CN802	VMC0161-R24	P.W.BOARD C	
CN803	EWS293-0130	SOCKET WIRE	
CN811	EMV7160-036	CONNECT TER	
CN812	VMC0161-R24	P.W.BOARD C	
CN813	EMV5109-003B	CONNECT TER	
CN814	VMC0161-R14	CONNECT TER	
CN821	VMC0161-R10	CONNECT TER	
Δ CP701	ICP-N15	I.C.PROTECT	A
Δ CP701	ICP-N15	I.C.PROTECT	BS
Δ CP701	ICP-N15	I.C.PROTECT	C
Δ CP701	ICP-N15	I.C.PROTECT	EF
Δ CP701	ICP-N15	I.C.PROTECT	EN
Δ CP701	ICP-N15	I.C.PROTECT	G
Δ CP701	ICP-N15	I.C.PROTECT	GI
Δ CP701	ICP-N15	I.C.PROTECT	U
Δ CP701	ICP-N15	I.C.PROTECT	UB
Δ CP701	ICP-N15	I.C.PROTECT	UP
Δ CP701	ICP-N15	I.C.PROTECT	US
Δ CP701	ICP-N15	I.C.PROTECT	UT
Δ CP701	ICP-N15	I.C.PROTECT	VX
EP701	E70225-003SS	EARTH PLATE	
EP801	EWT011-124	TERMINAL W	
FW701	EWR3AD-20LS	FLAT WIRE A	
X1021	ECX0000-400KS	CERAMIC RES	U
X1021	ECX0000-400KS	CERAMIC RES	UB
X1021	ECX0000-400KS	CERAMIC RES	UP
X1021	ECX0000-400KS	CERAMIC RES	US
X1021	ECX0000-400KS	CERAMIC RES	UT



■ Tuner/CD Control, FL Display & Power Supply P.C. Board (ENB-215)

TRANSISTORS

Δ	TEMP	PART NUMBER	DESCRIPTION	AREA
	Q411	DTC144TS	DIGITAL TRA ROHM	
	Q412	DTC144TS	DIGITAL TRA ROHM	
	Q413	DTC144TS	DIGITAL TRA ROHM	
	Q414	DTC144TS	DIGITAL TRA ROHM	
	Q415	DTC144TS	DIGITAL TRA ROHM	
	Q416	DTC144TS	DIGITAL TRA ROHM	
	Q417	DTC144TS	DIGITAL TRA ROHM	
	Q418	DTC144TS	DIGITAL TRA ROHM	
	Q471	2SD2144S(VW)	SI. TRANSIST ROHM	
	Q472	2SD2144S(VW)	SI. TRANSIST ROHM	
	Q473	DTA144ES	DIGITAL TRA ROHM	
	Q481	2SD2144S(VW)	SI. TRANSIST ROHM	
	Q482	2SD2144S(VW)	SI. TRANSIST ROHM	
	Q483	DTA144ES	DIGITAL TRA ROHM	
	Q491	DTA144ES	DIGITAL TRA ROHM	
	Q492	2SK301(P,Q)	F.S.T.	
	Q507	2SC2060(R,R)	SI. TRANSIST ROHM	
	Q726	2SC945A	SI. TRANSIST NEC	
	Q737	2SC945A	SI. TRANSIST NEC	
	Q738	2SA933S(RS)	SI. TRANSIST	
	Q739	2SC945A	SI. TRANSIST NEC	
	Q750	2SC1740S(R,S)	SI. TRANSIST ROHM	
	Q751	2SB1187(F,G)	SI. TRANSIST ROHM	
	Q752	2SA933S(RS)	SI. TRANSIST	
	Q753	2SC945A	SI. TRANSIST NEC	
	Q754	2SD2061(F,G)	SI. TRANSIST ROHM	
	Q756	DTC144ES	DIGITAL TRA ROHM	
	Q757	DTA144ES	DIGITAL TRA ROHM	
	Q758	DTA144ES	DIGITAL TRA ROHM	
	Q759	DTC144ES	DIGITAL TRA ROHM	
	Q760	2SC945A	SI. TRANSIST NEC	
	Q761	2SD2061(F,G)	SI. TRANSIST ROHM	
	Q763	2SB1187(F,G)	SI. TRANSIST ROHM	
	Q764	DTA144ES	DIGITAL TRA ROHM	

I. C. S.

Δ	TEMP	PART NUMBER	DESCRIPTION	AREA
	IC401	TC4052BP	I.C.(DIGI-MO TOSHIBA	
	IC410	BA15218N	I.C.(MONO-AN ROHM	
	IC411	BA15218N	I.C.(MONO-AN ROHM	
	IC441	BA15218N	I.C.(MONO-AN ROHM	U
	IC441	BA15218N	I.C.(MONO-AN ROHM	UB
	IC441	BA15218N	I.C.(MONO-AN ROHM	UP
	IC441	BA15218N	I.C.(MONO-AN ROHM	US
	IC441	BA15218N	I.C.(MONO-AN ROHM	UT
	IC442	TC4053BP	I.C.(DIGI-MO TOSHIBA	U
	IC442	TC4053BP	I.C.(DIGI-MO TOSHIBA	UB
	IC442	TC4053BP	I.C.(DIGI-MO TOSHIBA	UP
	IC442	TC4053BP	I.C.(DIGI-MO TOSHIBA	US
	IC442	TC4053BP	I.C.(DIGI-MO TOSHIBA	UT
	IC443	BA15218N	I.C.(MONO-AN ROHM	U
	IC443	BA15218N	I.C.(MONO-AN ROHM	UB
	IC443	BA15218N	I.C.(MONO-AN ROHM	UP
	IC443	BA15218N	I.C.(MONO-AN ROHM	US
	IC443	BA15218N	I.C.(MONO-AN ROHM	UT
	IC471	BA15218N	I.C.(MONO-AN ROHM	
	IC701	STK4141MK5	I.C.(HYBRID) SANYO	
	IC801	MN172412J6F	I.C.(MICRO-C MATSUSHITA	

DIODES

Δ	TEMP	PART NUMBER	DESCRIPTION	AREA
	D451	MTZ5.1JB	ZENER DIODE ROHM	
	D452	MTZ5.1JB	ZENER DIODE ROHM	
	D501	MTZ8.2JC	ZENER DIODE ROHM	
	D701	10E2-FD	DIODE NIHONINTER	
	D702	10E2-FD	DIODE NIHONINTER	
	D703	10E2-FD	DIODE NIHONINTER	
	D704	10E2-FD	DIODE NIHONINTER	
	D719	1SS254	DIODE	
	D737	1SS254	DIODE	
	D738	1SS254	DIODE	
	D739	1SS254	DIODE	
	D740	1SS254	DIODE	
	D751	1SS254	DIODE	
	D752	1SS254	DIODE	
	D753	1SS254	DIODE	
	D754	MTZ13JC	ZENER DIODE ROHM	
	D755	MTZ13JC	ZENER DIODE ROHM	
	D756	MTZ6.8JC	ZENER DIODE ROHM	
	D760	MTZ11JC	ZENER DIODE ROHM	
	D845	1SS254	DIODE	

DIODES

Δ	TEMP	PART NUMBER	DESCRIPTION	AREA
	D846	1SS254	DIODE	
	D847	1SS254	DIODE	
	D851	1SS254	DIODE	
	D852	1SS254	DIODE	
	D853	1SS254	DIODE	
	D854	1SS254	DIODE	A
	D854	1SS254	DIODE	BS
	D854	1SS254	DIODE	C
	D854	1SS254	DIODE	EF
	D854	1SS254	DIODE	EN
	D854	1SS254	DIODE	G
	D854	1SS254	DIODE	GI
	D854	1SS254	DIODE	J
	D855	1SS254	DIODE	A
	D855	1SS254	DIODE	BS
	D855	1SS254	DIODE	EF
	D855	1SS254	DIODE	EN
	D855	1SS254	DIODE	G
	D855	1SS254	DIODE	GI
	D855	1SS254	DIODE	U
	D855	1SS254	DIODE	UB
	D855	1SS254	DIODE	UP
	D855	1SS254	DIODE	US
	D855	1SS254	DIODE	UT
	D856	1SS254	DIODE	BS
	D856	1SS254	DIODE	C
	D856	1SS254	DIODE	EF
	D856	1SS254	DIODE	EN
	D856	1SS254	DIODE	G
	D856	1SS254	DIODE	GI
	D856	1SS254	DIODE	J
	D856	1SS254	DIODE	VX
	D858	1SS254	DIODE	
	D859	1SS254	DIODE	
	D860	1SS254	DIODE	
	D861	1SS254	DIODE	
	D863	1SS254	DIODE	
	D864	1SS254	DIODE	
	D865	1SS254	DIODE	
	D866	1SS254	DIODE	
	D867	1SS254	DIODE	
	D868	1SS254	DIODE	
	D869	SLA-380LT	L.E.D. ROHM	BS
	D869	SLR-342VC3F	L.E.D. ROHM	A
	D869	SLR-342VC3F	L.E.D. ROHM	C
	D869	SLR-342VC3F	L.E.D. ROHM	EF
	D869	SLR-342VC3F	L.E.D. ROHM	EN
	D869	SLR-342VC3F	L.E.D. ROHM	G
	D869	SLR-342VC3F	L.E.D. ROHM	GI
	D869	SLR-342VC3F	L.E.D. ROHM	J
	D869	SLR-342VC3F	L.E.D. ROHM	U
	D869	SLR-342VC3F	L.E.D. ROHM	UB
	D869	SLR-342VC3F	L.E.D. ROHM	UP
	D869	SLR-342VC3F	L.E.D. ROHM	US
	D869	SLR-342VC3F	L.E.D. ROHM	UT
	D869	SLR-342VC3F	L.E.D. ROHM	VX
	D890	MTZ5.6JC	ZENER DIODE ROHM	
	D891	MTZ5.6JC	ZENER DIODE ROHM	
	D892	MTZ5.6JC	ZENER DIODE ROHM	
	D481	1SS254	DIODE	
	D482	1SS254	DIODE	

CAPACITORS

Δ	TEMP	PART NUMBER	DESCRIPTION	AREA
	C403	QETB1EM-106	10MF 25V AL E.CAPAC	
	C404	QETB1EM-106	10MF 25V AL E.CAPAC	
	C406	QETB1CM-476	47MF 16V AL E.CAPAC	
	C407	QETB1CM-476	47MF 16V AL E.CAPAC	
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	BS
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	EF
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	EN
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	G
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	GI
	C408	QCHB1EZ-223	0.022MF 25V CER.CAPACI	VX
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	BS
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	EF
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	EN
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	G
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	GI
	C409	QCB1HK-471Y	470PF 50V CER.CAPACI	VX
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	BS
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	EF
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	EN
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	G
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	GI
	C410	QCB1HK-471Y	470PF 50V CER.CAPACI	VX
	C413	QETB1HM-475E	4.7MF 50V E.CAPACITO	
	C414	QETB1HM-475E	4.7MF 50V E.CAPACITO	
	C415	QFN1HJ-823	0.082MF 50V METAL.MYLA	



CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	C721	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	G
	C721	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	GI
	C721	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	VX
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	C
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	J
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	U
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UB
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UP
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	US
	C722	QFN82AJ-103	0.01MF	100V	MYLAR CAPA	UT
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	A
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	BS
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	EF
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	EN
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	G
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	GI
	C722	QFN82AJ-104	0.1MF	100V	MYLAR CAPA	VX
	C723	QETM14M-228	2200MF	50V	E.CAPACITO	
	C724	QETM14M-228	2200MF	50V	E.CAPACITO	
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	BS
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	EF
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	EN
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	G
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	GI
	C725	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	VX
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	BS
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	EF
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	EN
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	G
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	GI
	C726	QCXB1CM-222Y	2200PF	16V	CER.CAPACI	VX
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	BS
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	EF
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	EN
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	G
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	GI
	C727	QFN81HJ-223	0.022MF	50V	METAL.MYLA	VX
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	BS
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	EF
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	EN
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	G
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	GI
	C728	QFN81HJ-223	0.022MF	50V	METAL.MYLA	VX
	C736	QETB1CM-476	47MF	16V	AL E.CAPAC	
	C737	QETB1CM-226	22MF	16V	E.CAPACITO	
	C734	QETB1CM-226	22MF	16V	E.CAPACITO	
	C755	QETB1CM-226	22MF	16V	E.CAPACITO	
	C756	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	
	C758	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	
	C760	QETB1CM-226	22MF	16V	E.CAPACITO	
	C762	QCF21HP-103A	0.01MF	50V	CER.CAPACI	
	C763	QETB1CM-226	22MF	16V	E.CAPACITO	
	C764	QETB1CM-226	22MF	16V	E.CAPACITO	
	C765	QCF21HP-103A	0.01MF	50V	CER.CAPACI	
	C766	QETB1CM-226	22MF	16V	E.CAPACITO	
	C767	QETB1EM-106	10MF	25V	AL E.CAPAC	
	C768	QETB1EM-106	10MF	25V	AL E.CAPAC	
	C853	QCHB1E2-223	0.022MF	25V	CER.CAPACI	
	C854	QCT26CH-330	33PF	50V	CER.CAPACI	
	C855	QCVB1CM-103Y	0.01MF	16V	CER.CAPACI	
	C856	QETB1HM-475E	4.7MF	50V	E.CAPACITO	
	C858	QETB1HM-476	4.7MF	50V	E.CAPACITO	
	C859	QETB1AM-107	100MF	10V	AL E.CAPAC	
	C860	QCZ0205-155	1.5MF	25V	C.CAPACITO	
	TC801	ENZ1003-015	0.1MF		TRIMMER CA	

RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R001	QRC128K-275EM	2.7M	1/2W	COMPOSITIO	C
	R001	QRC128K-275EM	2.7M	1/2W	COMPOSITIO	J
	R002	QRD161J-104	100K	1/6W	CARBON RES	U
	R002	QRD161J-104	100K	1/6W	CARBON RES	UB
	R002	QRD161J-104	100K	1/6W	CARBON RES	US
	R002	QRD161J-104	100K	1/6W	CARBON RES	UT
	R002	QRD161J-104	100K	1/6W	CARBON RES	U
	R003	QRD161J-104	100K	1/6W	CARBON RES	UB
	R003	QRD161J-104	100K	1/6W	CARBON RES	US
	R003	QRD161J-104	100K	1/6W	CARBON RES	UT
	R003	QRD161J-104	100K	1/6W	CARBON RES	U
	R004	QRD161J-104	100K	1/6W	CARBON RES	UB
	R004	QRD161J-104	100K	1/6W	CARBON RES	US
	R004	QRD161J-104	100K	1/6W	CARBON RES	UT
	R403	QRD167J-562	5.6K	1/6W	CARBON RES	
	R404	QRD167J-562	5.6K	1/6W	CARBON RES	
	R405	QRD161J-104	100K	1/6W	CARBON RES	
	R406	QRD161J-104	100K	1/6W	CARBON RES	
	R407	QRD161J-273	27K	1/6W	CARBON RES	
	R408	QRD161J-273	27K	1/6W	CARBON RES	
	R409	QRD161J-273	27K	1/6W	CARBON RES	
	R410	QRD161J-273	27K	1/6W	CARBON RES	
	R411	QRD167J-562	5.6K	1/6W	CARBON RES	
	R412	QRD167J-562	5.6K	1/6W	CARBON RES	
	R413	QRD161J-104	100K	1/6W	CARBON RES	
	R414	QRD161J-104	100K	1/6W	CARBON RES	
	R415	QRD167J-153	15K	1/6W	CARBON RES	
	R416	QRD167J-153	15K	1/6W	CARBON RES	
	R417	QRD167J-682	6.8K	1/6W	CARBON RES	
	R418	QRD167J-682	6.8K	1/6W	CARBON RES	
	R419	QRD161J-474	470K	1/6W	CARBON RES	
	R420	QRD161J-474	470K	1/6W	CARBON RES	
	R421	QRD167J-153	15K	1/6W	CARBON RES	
	R422	QRD167J-153	15K	1/6W	CARBON RES	
	R423	QRD161J-243	24K	1/6W	CARBON RES	
	R424	QRD161J-243	24K	1/6W	CARBON RES	
	R425	QRD167J-562	5.6K	1/6W	CARBON RES	
	R426	QRD167J-562	5.6K	1/6W	CARBON RES	
	R427	QRD167J-682	6.8K	1/6W	CARBON RES	
	R428	QRD167J-682	6.8K	1/6W	CARBON RES	
	R429	QRD161J-101	100	1/6W	CARBON RES	
	R430	QRD161J-101	100	1/6W	CARBON RES	
	R431	QRD161J-513	51K	1/6W	CARBON RES	
	R432	QRD161J-513	51K	1/6W	CARBON RES	
	R433	QRD161J-102	1K	1/6W	CARBON RES	
	R434	QRD161J-102	1K	1/6W	CARBON RES	
	R435	QRD167J-153	15K	1/6W	CARBON RES	
	R436	QRD167J-153	15K	1/6W	CARBON RES	
	R437	QRD161J-163	16K	1/6W	CARBON RES	
	R438	QRD161J-163	16K	1/6W	CARBON RES	
	R439	QRD167J-153	15K	1/6W	CARBON RES	
	R440	QRD167J-153	15K	1/6W	CARBON RES	
	R441	QRD161J-473	47K	1/6W	CARBON RES	U
	R441	QRD161J-473	47K	1/6W	CARBON RES	UB
	R441	QRD161J-473	47K	1/6W	CARBON RES	UP
	R441	QRD161J-473	47K	1/6W	CARBON RES	US
	R441	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473	47K	1/6W	CARBON RES	U
	R442	QRD161J-473	47K	1/6W	CARBON RES	UB
	R442	QRD161J-473	47K	1/6W	CARBON RES	UP
	R442	QRD161J-473	47K	1/6W	CARBON RES	US
	R442	QRD161J-473	47K	1/6W	CARBON RES	UT
	R442	QRD161J-473				

# CA-C220

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R453	QRD161J-103	10K	1/6W	CARBON RES	UB
	R453	QRD161J-103	10K	1/6W	CARBON RES	UP
	R453	QRD161J-103	10K	1/6W	CARBON RES	US
	R453	QRD161J-103	10K	1/6W	CARBON RES	UT
	R454	QRD161J-103	10K	1/6W	CARBON RES	U
	R454	QRD161J-103	10K	1/6W	CARBON RES	UB
	R454	QRD161J-103	10K	1/6W	CARBON RES	UP
	R454	QRD161J-103	10K	1/6W	CARBON RES	US
	R454	QRD161J-103	10K	1/6W	CARBON RES	UT
	R455	QRD161J-104	100K	1/6W	CARBON RES	U
	R455	QRD161J-104	100K	1/6W	CARBON RES	UB
	R455	QRD161J-104	100K	1/6W	CARBON RES	UP
	R455	QRD161J-104	100K	1/6W	CARBON RES	US
	R455	QRD161J-104	100K	1/6W	CARBON RES	UT
	R456	QRD161J-104	100K	1/6W	CARBON RES	U
	R456	QRD161J-104	100K	1/6W	CARBON RES	UB
	R456	QRD161J-104	100K	1/6W	CARBON RES	UP
	R456	QRD161J-104	100K	1/6W	CARBON RES	US
	R456	QRD161J-104	100K	1/6W	CARBON RES	UT
	R457	QRD161J-103	10K	1/6W	CARBON RES	U
	R457	QRD161J-103	10K	1/6W	CARBON RES	UB
	R457	QRD161J-103	10K	1/6W	CARBON RES	UP
	R457	QRD161J-103	10K	1/6W	CARBON RES	US
	R457	QRD161J-103	10K	1/6W	CARBON RES	UT
	R458	QRD161J-103	10K	1/6W	CARBON RES	U
	R458	QRD161J-103	10K	1/6W	CARBON RES	UB
	R458	QRD161J-103	10K	1/6W	CARBON RES	UP
	R458	QRD161J-103	10K	1/6W	CARBON RES	US
	R458	QRD161J-103	10K	1/6W	CARBON RES	UT
	R459	QRD161J-104	100K	1/6W	CARBON RES	U
	R459	QRD161J-104	100K	1/6W	CARBON RES	UB
	R459	QRD161J-104	100K	1/6W	CARBON RES	UP
	R459	QRD161J-104	100K	1/6W	CARBON RES	US
	R459	QRD161J-104	100K	1/6W	CARBON RES	UT
	R460	QRD161J-104	100K	1/6W	CARBON RES	U
	R460	QRD161J-104	100K	1/6W	CARBON RES	UB
	R460	QRD161J-104	100K	1/6W	CARBON RES	UP
	R460	QRD161J-104	100K	1/6W	CARBON RES	US
	R460	QRD161J-104	100K	1/6W	CARBON RES	UT
	R463	QRD161J-103	10K	1/6W	CARBON RES	U
	R463	QRD161J-103	10K	1/6W	CARBON RES	UB
	R463	QRD161J-103	10K	1/6W	CARBON RES	UP
	R463	QRD161J-103	10K	1/6W	CARBON RES	US
	R463	QRD161J-103	10K	1/6W	CARBON RES	UT
	R464	QRD161J-103	10K	1/6W	CARBON RES	U
	R464	QRD161J-103	10K	1/6W	CARBON RES	UB
	R464	QRD161J-103	10K	1/6W	CARBON RES	UP
	R464	QRD161J-103	10K	1/6W	CARBON RES	US
	R464	QRD161J-103	10K	1/6W	CARBON RES	UT
	R465	QRD161J-103	10K	1/6W	CARBON RES	U
	R465	QRD161J-103	10K	1/6W	CARBON RES	UB
	R465	QRD161J-103	10K	1/6W	CARBON RES	UP
	R465	QRD161J-103	10K	1/6W	CARBON RES	US
	R465	QRD161J-103	10K	1/6W	CARBON RES	UT
	R466	QRD161J-103	10K	1/6W	CARBON RES	U
	R466	QRD161J-103	10K	1/6W	CARBON RES	UB
	R466	QRD161J-103	10K	1/6W	CARBON RES	UP
	R466	QRD161J-103	10K	1/6W	CARBON RES	US
	R466	QRD161J-103	10K	1/6W	CARBON RES	UT
	R467	QRD161J-104	100K	1/6W	CARBON RES	U
	R467	QRD161J-104	100K	1/6W	CARBON RES	UB
	R467	QRD161J-104	100K	1/6W	CARBON RES	UP
	R467	QRD161J-104	100K	1/6W	CARBON RES	US
	R467	QRD161J-104	100K	1/6W	CARBON RES	UT
	R468	QRD161J-104	100K	1/6W	CARBON RES	U
	R468	QRD161J-104	100K	1/6W	CARBON RES	UB
	R468	QRD161J-104	100K	1/6W	CARBON RES	UP
	R468	QRD161J-104	100K	1/6W	CARBON RES	US
	R468	QRD161J-104	100K	1/6W	CARBON RES	UT
	R471	QRD161J-103	10K	1/6W	CARBON RES	U
	R472	QRD161J-103	10K	1/6W	CARBON RES	UB
	R473	QRD161J-331	330	1/6W	CARBON RES	U
	R474	QRD161J-331	330	1/6W	CARBON RES	UB
	R475	QRD167J-682	6.8K	1/6W	CARBON RES	U
	R476	QRD167J-682	6.8K	1/6W	CARBON RES	UB
	R477	QRD161J-274	270K	1/6W	CARBON RES	U
	R478	QRD161J-274	270K	1/6W	CARBON RES	UB
	R479	QRD167J-511	510	1/6W	CARBON RES	U
	R480	QRD167J-511	510	1/6W	CARBON RES	UB
	R481	QRD161J-472	4.7K	1/6W	CARBON RES	U
	R483	QRD161J-104	100K	1/6W	CARBON RES	U
	R484	QRD161J-104	100K	1/6W	CARBON RES	UB
	R485	QRD167J-153	15K	1/6W	CARBON RES	U
	R486	QRD167J-153	15K	1/6W	CARBON RES	UB
	R487	QRD161J-432	4.3K	1/6W	CARBON RES	U
	R488	QRD161J-432	4.3K	1/6W	CARBON RES	UB
	R491	QRD161J-103	10K	1/6W	CARBON RES	U
	R492	QRD161J-103	10K	1/6W	CARBON RES	UB
	R493	QRD167J-624	620K	1/6W	CARBON RES	U
	R495	QRD161J-105	1M	1/6W	CARBON RES	U
	R496	QRD161J-105	1M	1/6W	CARBON RES	UB
	R510	QRD161J-391	390	1/6W	CARBON RES	U
	R701	QRD161J-102	1K	1/6W	CARBON RES	U
	R702	QRD161J-102	1K	1/6W	CARBON RES	UB
	R703	QRD161J-104	100K	1/6W	CARBON RES	U
	R704	QRD161J-104	100K	1/6W	CARBON RES	UB
	R705	ERD004J-102Z	1K		NETWORK RE	U
	R706	ERD004J-102Z	1K		NETWORK RE	UB
	R707	QRD161J-102	1K	1/6W	CARBON RES	U
	R708	QRD161J-102	1K	1/6W	CARBON RES	UB

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	R709	QRD161J-104	100K	1/6W	CARBON RES	U
	R710	QRD161J-104	100K	1/6W	CARBON RES	UB
	R711	QRD161J-242	2.4K	1/6W	CARBON RES	U
	R712	QRD161J-242	2.4K	1/6W	CARBON RES	UB
	R713	QRD161J-242	2.4K	1/6W	CARBON RES	U
	R714	QRD161J-242	2.4K	1/6W	CARBON RES	UB
	R715	QRX014J-R22	0.22	1W	METAL FILM	U
	R716	QRX014J-R22	0.22	1W	METAL FILM	UB
	R717	QRD14CJ-101S	100	1/4W	UNF. CARBON	C
	R717	QRD14CJ-101S	100	1/4W	UNF. CARBON	J
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	U
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	BS
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	EF
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	EN
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	G
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	GI
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	U
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	UB
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	UP
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	US
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	UT
	R717	QRZ0077-101	100	1/4W	FUSIBLE RE	VX
	R718	QRD14CJ-100SX	10	1/4W	UNF. CARBON	C
	R718	QRD14CJ-100SX	10	1/4W	UNF. CARBON	J
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	A
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	BS
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	EF
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	EN
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	G
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	GI
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	U
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	UB
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	UP
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	US
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	UT
	R718	QRZ0077-100	10	1/4W	FUSIBLE RE	VX
	R719	QRD14CJ-222SX	2.2K	1/4W	UNF. CARBON	U
	R720	QRD14CJ-222SX	2.2K	1/4W	UNF. CARBON	UB
	R721	QRD14CJ-100SX	10	1/4W	UNF. CARBON	U
	R722	QRD14CJ-100SX	10	1/4W	UNF. CARBON	UB
	R723	QRD14CJ-222SX	2.2K	1/4W	UNF. CARBON	C
	R724	QRD14CJ-100SX	10	1/4W	UNF. CARBON	J
	R724	QRD14CJ-100SX	10	1/4W	UNF. CARBON	A
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	BS
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	EF
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	EN
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	G
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	GI
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	U
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	UB
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	UP
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	US
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	UT
	R724	QRZ0077-100	10	1/4W	FUSIBLE RE	VX
	R725	QRD14CJ-100SX	10	1/4W	UNF. CARBON	C
	R725	QRD14CJ-100SX	10	1/4W	UNF. CARBON	J
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	A
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	BS
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	EF
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	EN
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	G
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	GI
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	U
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	UB
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	UP
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	US
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	UT
	R725	QRZ0077-100	10	1/4W	FUSIBLE RE	VX
	R726	QRD161J-472	4.7K	1/6W	CARBON RES	U
	R727	QRD161J-104	100K	1/6W	CARBON RES	U
	R728	QRD161J-104	100K	1/6W	CARBON RES	UB
	R729	QRD161J-823	82K	1/6W	CARBON RES	U
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	BS
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	EF
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	EN
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	G
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	GI
	R731	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	VX
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	BS
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	EF
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	EN
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	G
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	GI
	R732	QRD14CJ-4R7SX	4.7	1/4W	UNF. CARBON	VX
	R738	QRD161J-104	100K	1/6W	CARBON RES	U
	R739	QRD161J-103	10K	1/6W	CARBON RES	U
	R740	QRD161J-104	100K	1/6W	CARBON RES	UB
	R742	QRD161J-222	2.2K	1/6W	CARBON RES	U
	R743	QRD161J-222	2.2K	1/6W	CARBON RES	UB
	R745	QRG022J-561A	560	2W	OXIDE META	A
	R745					

RESISTORS

ITEM	PART NUMBER	DESCRIPTION	AREA
△ R745	QRG022J-681A	680 2W OXIDE META	UB
△ R745	QRG022J-681A	680 2W OXIDE META	UP
△ R745	QRG022J-681A	680 2W OXIDE META	US
△ R745	QRG022J-681A	680 2W OXIDE META	UT
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	A
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	BS
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	EF
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	EN
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	G
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	GI
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	U
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	UB
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	UP
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	US
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	UT
△ R746	QRZ0077-4R7	4.7 1/4W FUSE RESIS	VX
△ R747	QRX014J-222	0.22 1W METAL FILM	C
△ R747	QRX014J-222	0.22 1W METAL FILM	J
△ R749	QRD14CJ-2R2SX	2.2 1/4W UNF. CARBON	C
△ R749	QRD14CJ-2R2SX	2.2 1/4W UNF. CARBON	J
△ R750	QRD167J-152	1.5K 1/6W CARBON RES	
△ R751	QRD161J-472	4.7K 1/6W CARBON RES	
△ R752	QRD161J-103	10K 1/6W CARBON RES	
△ R753	QRD161J-472	4.7K 1/6W CARBON RES	
△ R754	QRD167J-272	2.7K 1/6W CARBON RES	
△ R755	QRD161J-472	4.7K 1/6W CARBON RES	
△ R756	QRD167J-152	1.5K 1/6W CARBON RES	
△ R758	QRD161J-242	2.4K 1/6W CARBON RES	
△ R759	QRD161J-242	2.4K 1/6W CARBON RES	
△ R761	QRD14CJ-681SX	680 1/4W UNF. CARBON	
△ R762	QRD14CJ-681SX	680 1/4W UNF. CARBON	
△ R763	QRD14CJ-681SX	680 1/4W UNF. CARBON	
△ R764	QRD14CJ-681SX	680 1/4W UNF. CARBON	
△ R767	QRD14CJ-8R2S	8.2 1/4W UNF. CARBON	C
△ R767	QRD14CJ-8R2S	8.2 1/4W UNF. CARBON	J
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	A
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	BS
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	EF
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	EN
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	G
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	GI
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	U
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	UB
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	UP
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	US
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	UT
△ R767	QRZ0077-8R2	8.2 1/4W FUSIBLE	VX
△ R768	QRD14CJ-8R2S	8.2 1/4W UNF. CARBON	C
△ R768	QRD14CJ-8R2S	8.2 1/4W UNF. CARBON	J
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	A
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	BS
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	EF
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	EN
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	G
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	GI
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	U
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	UB
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	UP
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	US
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	UT
△ R768	QRZ0077-8R2	8.2 1/4W FUSIBLE	VX
△ R848	QRD161J-331	330 1/6W CARBON RES	
△ R849	QRD161J-331	330 1/6W CARBON RES	
△ R850	QRD161J-331	330 1/6W CARBON RES	
△ R851	QRD161J-331	330 1/6W CARBON RES	
△ R852	QRD161J-331	330 1/6W CARBON RES	
△ R853	QRD161J-331	330 1/6W CARBON RES	
△ R854	QRD161J-331	330 1/6W CARBON RES	
△ R855	QRD161J-222	2.2K 1/6W CARBON RES	
△ R856	QRD161J-201	200 1/6W CARBON RES	A
△ R856	QRD161J-201	200 1/6W CARBON RES	C
△ R856	QRD161J-201	200 1/6W CARBON RES	EF
△ R856	QRD161J-201	200 1/6W CARBON RES	EN
△ R856	QRD161J-201	200 1/6W CARBON RES	G
△ R856	QRD161J-201	200 1/6W CARBON RES	GI
△ R856	QRD161J-201	200 1/6W CARBON RES	U
△ R856	QRD161J-201	200 1/6W CARBON RES	UB
△ R856	QRD161J-201	200 1/6W CARBON RES	UP
△ R856	QRD161J-201	200 1/6W CARBON RES	US
△ R856	QRD161J-201	200 1/6W CARBON RES	UT
△ R856	QRD161J-201	200 1/6W CARBON RES	VX
△ R856	QRD161J-201	200 1/6W CARBON RES	SS
△ R857	QRD161J-103	10K 1/6W CARBON RES	
△ R858	QRD161J-103	10K 1/6W CARBON RES	
△ R859	QRD161J-103	10K 1/6W CARBON RES	
△ R860	QRD161J-103	10K 1/6W CARBON RES	
△ R861	QRD161J-473	4.7K 1/6W CARBON RES	
△ R864	QRD161J-103	10K 1/6W CARBON RES	
△ R865	QRD161J-103	10K 1/6W CARBON RES	
△ R866	QRD161J-102	1K 1/6W CARBON RES	
△ R867	QRD161J-103	10K 1/6W CARBON RES	
△ R8000	QRB049J-222	2.2K 1/10W RESISTOR A	
△ R8001	QRB109J-104	100K 1/10W NETWORK R	
△ VR481	QVDB94B-E15D	100K VARIABLE R	

OTHERS

ITEM	PART NUMBER	DESCRIPTION	AREA
	EMW10542-002	CIRCUIT BOA	A
	EMW10542-002	CIRCUIT BOA	BS
	EMW10542-002	CIRCUIT BOA	EF
	EMW10542-002	CIRCUIT BOA	EN
	EMW10542-002	CIRCUIT BOA	G
	EMW10542-002	CIRCUIT BOA	GI
	EMW10542-002	CIRCUIT BOA	U
	EMW10542-002	CIRCUIT BOA	UB
	EMW10542-002	CIRCUIT BOA	UP
	EMW10542-002	CIRCUIT BOA	US
	EMW10542-002	CIRCUIT BOA	UT
	EMW10542-002	CIRCUIT BOA	VX
	EMW10542-102	CIRCUIT BOA	C
	EMW10542-102	CIRCUIT BOA	J
	E61380-034	FUSE LABEL	UP
	E61380-036	FUSE LABEL	UP
	E67132-T2R0	FUSE LABEL	U
	E67132-T2R0	FUSE LABEL	UB
	E67132-T2R0	FUSE LABEL	US
	E67132-T2R0	FUSE LABEL	UT
	QWE881-08RR	VINYL WIRE	UP
	QWE881-22RR	VINYL WIRE	U
	QWE881-22RR	VINYL WIRE	UB
	QWE881-22RR	VINYL WIRE	US
	QWE881-22RR	VINYL WIRE	UT
	QWE882-22RR	VINYL WIRE	U
	QWE882-22RR	VINYL WIRE	UB
	QWE882-22RR	VINYL WIRE	US
	QWE882-22RR	VINYL WIRE	UT
	QWE883-22RR	VINYL WIRE	U
	QWE883-22RR	VINYL WIRE	UB
	QWE883-22RR	VINYL WIRE	US
	QWE883-22RR	VINYL WIRE	UT
	QWE884-28RR	VINYL WIRE	U
	QWE884-28RR	VINYL WIRE	UB
	QWE884-28RR	VINYL WIRE	US
	QWE884-28RR	VINYL WIRE	UT
	QWE886-22RR	VINYL WIRE	U
	QWE886-22RR	VINYL WIRE	UB
	QWE886-22RR	VINYL WIRE	US
	QWE886-22RR	VINYL WIRE	UT
	QWE888-26RR	VINYL WIRE	U
	QWE888-26RR	VINYL WIRE	UB
	QWE888-26RR	VINYL WIRE	US
	QWE888-26RR	VINYL WIRE	UT
	VYH7653-001	SPRING	
J409	EMN00TV-222AJ2	PIN JACK	
J741	EMB90TV-407AJ4	SPEAKER TER	C
J741	EMB90TV-407AJ4	SPEAKER TER	J
J741	EMB90TV-408AJ4	CONNECT TER	A
J741	EMB90TV-408AJ4	CONNECT TER	BS
J741	EMB90TV-408AJ4	CONNECT TER	EF
J741	EMB90TV-408AJ4	CONNECT TER	EN
J741	EMB90TV-408AJ4	CONNECT TER	G
J741	EMB90TV-408AJ4	CONNECT TER	GI
J741	EMB90TV-408AJ4	CONNECT TER	U
J741	EMB90TV-408AJ4	CONNECT TER	UB
J741	EMB90TV-408AJ4	CONNECT TER	UP
J741	EMB90TV-408AJ4	CONNECT TER	US
J741	EMB90TV-408AJ4	CONNECT TER	UT
J741	EMB90TV-408AJ4	CONNECT TER	VX
L701	EQL0011-R45J1	INDUCTOR	
L702	EQL0011-R45J1	INDUCTOR	
S702	QSR8001-E01U	ROTARY SWIT	U
S702	QSR8001-E01U	ROTARY SWIT	UB
S702	QSR8001-E01U	ROTARY SWIT	US
S702	QSR8001-E01U	ROTARY SWIT	UT
S800	ESP0001-023M	TACT SWITCH	
S801	ESP0001-023M	TACT SWITCH	
S802	ESP0001-023M	TACT SWITCH	
S803	ESP0001-023M	TACT SWITCH	
S804	ESP0001-023M	TACT SWITCH	
S805	ESP0001-023M	TACT SWITCH	
S806	ESP0001-023M	TACT SWITCH	
S807	ESP0001-023M	TACT SWITCH	
S808	ESP0001-023M	TACT SWITCH	
S809	ESP0001-023M	TACT SWITCH	
S810	ESP0001-023M	TACT SWITCH	
S811	ESP0001-023M	TACT SWITCH	
S812	ESP0001-023M	TACT SWITCH	
S813	ESP0001-023M	TACT SWITCH	
S814	ESP0001-023M	TACT SWITCH	
S815	ESP0001-023M	TACT SWITCH	
S816	ESP0001-023M	TACT SWITCH	
X801	ECX0006-000KNJ	CRYSTAL	
CN113	EWS267-F932J	SOCKET WIRE	
CN400	EWS293-0130	SOCKET WIRE	
CN410	EMV5109-003B	CONNECT TER	
CN411	EMV7163-012	CONNECT TER	
CN412	EMV7163-011	CONNECT TER	
CN413	EMV5140-010	VOLUME SOCK	
CN701	VMC0107-R10	CONNECT TER	
CN712	EMV5163-009R	CONNECT TER	
CN713	EMV5163-011R	CONNECT TER	
CN801	VMC0161-036	CONNECT TER	
CN804	EMV7160-014	CONNECT TER	
D1800	ELU0001-201	FLUORESCENT	
FT701	VMZ0087-001Z	FUSE HOLDER	
FT702	VMZ0087-001Z	FUSE HOLDER	
FT703	VMZ0087-001Z	FUSE HOLDER	

# CA-C220

## OTHERS

ITEM	PART NUMBER	DESCRIPTION	AREA
FT704	VMZ0087-001Z	FUSE HOLDER	
FT705	VMZ0087-001Z	FUSE HOLDER	
FT706	VMZ0087-001Z	FUSE HOLDER	
FT707	VMZ0087-001Z	FUSE HOLDER	U
FT707	VMZ0087-001Z	FUSE HOLDER	UB
FT707	VMZ0087-001Z	FUSE HOLDER	US
FT707	VMZ0087-001Z	FUSE HOLDER	UT
FT708	VMZ0087-001Z	FUSE HOLDER	U
FT708	VMZ0087-001Z	FUSE HOLDER	UB
FT708	VMZ0087-001Z	FUSE HOLDER	US
FT708	VMZ0087-001Z	FUSE HOLDER	UT
JS800	9SJ4002-E02	PUSH SWITCH	
RY701	ESK7024-213R	RELAY	
TB701	EMZ4001-001	TAB	
TB702	EMZ4001-001	TAB	



# CA-C220

## CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C163	QETB1HM-225	2.2MF 50V AL E.CAPAC	
	C164	QETB1HM-225	2.2MF 50V AL E.CAPAC	
	C166	QCC21EM-473	0.047MF 25V CER.CAPACI	
	C168	QCC21EM-473	0.047MF 25V CER.CAPACI	
	C169	QFV81MJ-274	0.27MF 50V T.FILM CAP	
	C171	QCG81HK-102	1000PF 50V CER.CAPACI	
	C172	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C183	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C184	QETB1CM-227	220MF 16V AL E.CAPAC	
	C185	QETB1CM-477M	470MF 16V E.CAPACITO	
	C186	QETB1HM-475E	4.7MF 50V E.CAPACITO	

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	R102	QRD167J-332	3.3K 1/6W CARBON RES	
	R103	QRD161J-221	220 1/6W CARBON RES	
	R104	QRD167J-272	2.7K 1/6W CARBON RES	
	R105	QRD161J-391	390 1/6W CARBON RES	
	R106	QRD161J-102	1K 1/6W CARBON RES	
	R107	QRD161J-681	680 1/6W CARBON RES	
	R108	QRD167J-332	3.3K 1/6W CARBON RES	
	R109	QRD161J-221	220 1/6W CARBON RES	
	R110	QRD161J-472	4.7K 1/6W CARBON RES	BS
	R110	QRD161J-472	4.7K 1/6W CARBON RES	EF
	R110	QRD161J-472	4.7K 1/6W CARBON RES	EN
	R110	QRD161J-472	4.7K 1/6W CARBON RES	G
	R110	QRD161J-472	4.7K 1/6W CARBON RES	GI
	R110	QRD161J-472	4.7K 1/6W CARBON RES	VX
	R111	QRD161J-472	4.7K 1/6W CARBON RES	BS
	R111	QRD161J-472	4.7K 1/6W CARBON RES	EF
	R111	QRD161J-472	4.7K 1/6W CARBON RES	EN
	R111	QRD161J-472	4.7K 1/6W CARBON RES	G
	R111	QRD161J-472	4.7K 1/6W CARBON RES	GI
	R111	QRD161J-472	4.7K 1/6W CARBON RES	VX
	R112	QRD161J-472	4.7K 1/6W CARBON RES	BS
	R112	QRD161J-472	4.7K 1/6W CARBON RES	EF
	R112	QRD161J-472	4.7K 1/6W CARBON RES	EN
	R112	QRD161J-472	4.7K 1/6W CARBON RES	G
	R112	QRD161J-472	4.7K 1/6W CARBON RES	GI
	R112	QRD161J-472	4.7K 1/6W CARBON RES	VX
	R113	QRD161J-103	10K 1/6W CARBON RES	BS
	R113	QRD161J-103	10K 1/6W CARBON RES	EF
	R113	QRD161J-103	10K 1/6W CARBON RES	EN
	R113	QRD161J-103	10K 1/6W CARBON RES	G
	R113	QRD161J-103	10K 1/6W CARBON RES	GI
	R113	QRD161J-103	10K 1/6W CARBON RES	VX
	R114	QRD161J-103	10K 1/6W CARBON RES	BS
	R114	QRD161J-103	10K 1/6W CARBON RES	EF
	R114	QRD161J-103	10K 1/6W CARBON RES	EN
	R114	QRD161J-103	10K 1/6W CARBON RES	G
	R114	QRD161J-103	10K 1/6W CARBON RES	GI
	R114	QRD161J-103	10K 1/6W CARBON RES	VX
	R115	QRD161J-104	100K 1/6W CARBON RES	
	R116	QRD161J-222	2.2K 1/6W CARBON RES	
	R121	QRD161J-473	47K 1/6W CARBON RES	
	R122	QRD161J-472	4.7K 1/6W CARBON RES	
	R123	QRD167J-562	5.6K 1/6W CARBON RES	
	R124	QRD161J-222	2.2K 1/6W CARBON RES	
	R125	QRD161J-222	2.2K 1/6W CARBON RES	
	R126	QRD161J-181	180 1/6W CARBON RES	
	R127	QRD167J-822	8.2K 1/6W CARBON RES	
	R128	QRD161J-472	4.7K 1/6W CARBON RES	
	R129	QRD161J-222	2.2K 1/6W CARBON RES	
Δ	R130	QRZ0077-680SX	68 1/4W UNF. CARBON	C
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	J
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	A
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	SS
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	EF
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	EN
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	G
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	GI
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	U
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	UB
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	UP
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	US
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	UT
Δ	R130	QRZ0077-680	68 1/4W FUSIBLE RE	VX
	R132	QRD161J-102	1K 1/6W CARBON RES	
	R141	QRD161J-392	3.9K 1/6W CARBON RES	
	R142	QRD161J-103	10K 1/6W CARBON RES	
	R143	QRD161J-103	10K 1/6W CARBON RES	
	R144	QRD167J-332	3.3K 1/6W CARBON RES	
	R145	QRD161J-103	10K 1/6W CARBON RES	
	R146	QRD161J-222	2.2K 1/6W CARBON RES	
	R147	QRD161J-473	47K 1/6W CARBON RES	A
	R147	QRD161J-473	47K 1/6W CARBON RES	BS
	R147	QRD161J-473	47K 1/6W CARBON RES	EF
	R147	QRD161J-473	47K 1/6W CARBON RES	EN
	R147	QRD161J-473	47K 1/6W CARBON RES	G
	R147	QRD161J-473	47K 1/6W CARBON RES	GI
	R147	QRD161J-473	47K 1/6W CARBON RES	U
	R147	QRD161J-473	47K 1/6W CARBON RES	UB
	R147	QRD161J-473	47K 1/6W CARBON RES	UP
	R147	QRD161J-473	47K 1/6W CARBON RES	US

## RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	R147	QRD161J-473	47K 1/6W CARBON RES	UT
	R147	QRD161J-473	47K 1/6W CARBON RES	VX
	R147	QRD167J-223	22K 1/6W CARBON RES	C
	R147	QRD167J-223	22K 1/6W CARBON RES	J
	R148	QRD161J-561	560 1/6W CARBON RES	
	R149	QRD161J-103	10K 1/6W CARBON RES	A
	R149	QRD161J-103	10K 1/6W CARBON RES	EF
	R149	QRD161J-103	10K 1/6W CARBON RES	EN
	R149	QRD161J-103	10K 1/6W CARBON RES	G
	R149	QRD161J-103	10K 1/6W CARBON RES	GI
	R149	QRD161J-103	10K 1/6W CARBON RES	VX
	R149	QRD167J-223	22K 1/6W CARBON RES	BS
	R149	QRD167J-223	22K 1/6W CARBON RES	C
	R149	QRD167J-223	22K 1/6W CARBON RES	J
	R149	QRD167J-223	22K 1/6W CARBON RES	U
	R149	QRD167J-223	22K 1/6W CARBON RES	UB
	R149	QRD167J-223	22K 1/6W CARBON RES	UP
	R149	QRD167J-223	22K 1/6W CARBON RES	US
	R149	QRD167J-223	22K 1/6W CARBON RES	UT
	R150	QRD167J-332	3.3K 1/6W CARBON RES	
	R151	QRD167J-332	3.3K 1/6W CARBON RES	
	R152	QRD167J-332	3.3K 1/6W CARBON RES	BS
	R152	QRD167J-332	3.3K 1/6W CARBON RES	C
	R152	QRD167J-332	3.3K 1/6W CARBON RES	J
	R152	QRD167J-332	3.3K 1/6W CARBON RES	U
	R152	QRD167J-332	3.3K 1/6W CARBON RES	UB
	R152	QRD167J-332	3.3K 1/6W CARBON RES	UP
	R152	QRD167J-332	3.3K 1/6W CARBON RES	US
	R152	QRD167J-332	3.3K 1/6W CARBON RES	UT
	R152	QRD167J-332	3.3K 1/6W CARBON RES	VX
	R152	QRD167J-822	8.2K 1/6W CARBON RES	EF
	R152	QRD167J-822	8.2K 1/6W CARBON RES	EN
	R152	QRD167J-822	8.2K 1/6W CARBON RES	G
	R152	QRD167J-822	8.2K 1/6W CARBON RES	GI
	R152	QRD167J-822	8.2K 1/6W CARBON RES	VX
	R153	QRD167J-332	3.3K 1/6W CARBON RES	BS
	R153	QRD167J-332	3.3K 1/6W CARBON RES	C
	R153	QRD167J-332	3.3K 1/6W CARBON RES	J
	R153	QRD167J-332	3.3K 1/6W CARBON RES	U
	R153	QRD167J-332	3.3K 1/6W CARBON RES	UB
	R153	QRD167J-332	3.3K 1/6W CARBON RES	UP
	R153	QRD167J-332	3.3K 1/6W CARBON RES	US
	R153	QRD167J-332	3.3K 1/6W CARBON RES	UT
	R153	QRD167J-822	8.2K 1/6W CARBON RES	A
	R153	QRD167J-822	8.2K 1/6W CARBON RES	EF
	R153	QRD167J-822	8.2K 1/6W CARBON RES	EN
	R153	QRD167J-822	8.2K 1/6W CARBON RES	G
	R153	QRD167J-822	8.2K 1/6W CARBON RES	GI
	R153	QRD167J-822	8.2K 1/6W CARBON RES	VX
	R161	QRD161J-473	47K 1/6W CARBON RES	
	R162	QRD161J-222	2.2K 1/6W CARBON RES	
	R181	QRD161J-222	2.2K 1/6W CARBON RES	
	R192	QRD161J-103	10K 1/6W CARBON RES	
	R193	QRD161J-103	10K 1/6W CARBON RES	
	R194	QRD161J-473	47K 1/6W CARBON RES	



OTHERS

ITEM	PART NUMBER	DESCRIPTION	AREA
	EMW10477-005	CIRCUIT BOA	
	FSKL4005-001	SHIELD PLAT	
J103	EMV5109-007A	MALE CONNEC	
L102	EQL4007-150T	INDUCTOR	BS
L102	EQL4007-150T	INDUCTOR	EF
L102	EQL4007-150T	INDUCTOR	EN
L102	EQL4007-150T	INDUCTOR	G
L102	EQL4007-150T	INDUCTOR	GI
L102	EQL4007-150T	INDUCTOR	VX
L121	EQL4007-1R0	INDUCTOR	
L141	EQL2108-392	INDUCTOR	BS
L141	EQL2108-392	INDUCTOR	EF
L141	EQL2108-392	INDUCTOR	EN
L141	EQL2108-392	INDUCTOR	G
L141	EQL2108-392	INDUCTOR	GI
L141	EQL2108-392	INDUCTOR	VX
L181	EQL4007-1R0	INDUCTOR	
T111	EQR7121-006	RF COIL	BS
T111	EQR7121-006	RF COIL	EF
T111	EQR7121-006	RF COIL	EN
T111	EQR7121-006	RF COIL	G
T111	EQR7121-006	RF COIL	GI
T111	EQR7121-006	RF COIL	VX
T111	EQR7121-007	RF COIL	A
T111	EQR7121-007	RF COIL	C
T111	EQR7121-007	RF COIL	J
T111	EQR7121-007	RF COIL	U
T111	EQR7121-007	RF COIL	UB
T111	EQR7121-007	RF COIL	UP
T111	EQR7121-007	RF COIL	US
T111	EQR7121-007	RF COIL	UT
T141	EQT2140-021	I.F. TRANSFO	
T142	ECB1560-010	CERAMIC FIL	
AT101	EMB41YV-302X	ANTENNA TER	
CF101	ECB2118-007R	CERAMIC FIL	BS
CF101	ECB2118-007R	CERAMIC FIL	EF
CF101	ECB2118-007R	CERAMIC FIL	EN
CF101	ECB2118-007R	CERAMIC FIL	G
CF101	ECB2118-007R	CERAMIC FIL	GI
CF101	ECB2118-007R	CERAMIC FIL	VX
CF101	ECB2123-006R	CERAMIC FIL	A
CF101	ECB2123-006R	CERAMIC FIL	C
CF101	ECB2123-006R	CERAMIC FIL	J
CF101	ECB2123-006R	CERAMIC FIL	U
CF101	ECB2123-006R	CERAMIC FIL	UB
CF101	ECB2123-006R	CERAMIC FIL	UP
CF101	ECB2123-006R	CERAMIC FIL	US
CF101	ECB2123-006R	CERAMIC FIL	UT
CF102	ECB2118-007R	CERAMIC FIL	BS
CF102	ECB2118-007R	CERAMIC FIL	EF
CF102	ECB2118-007R	CERAMIC FIL	EN
CF102	ECB2118-007R	CERAMIC FIL	G
CF102	ECB2118-007R	CERAMIC FIL	GI
CF102	ECB2118-007R	CERAMIC FIL	VX
CF102	ECB2123-006R	CERAMIC FIL	A
CF102	ECB2123-006R	CERAMIC FIL	C
CF102	ECB2123-006R	CERAMIC FIL	J
CF102	ECB2123-006R	CERAMIC FIL	U
CF102	ECB2123-006R	CERAMIC FIL	UB
CF102	ECB2123-006R	CERAMIC FIL	UP
CF102	ECB2123-006R	CERAMIC FIL	US
CF102	ECB2123-006R	CERAMIC FIL	UT
EP101	E70225-003SS	EARTH PLATE	
FE101	EAF2203-004	FRONT END	A
FE101	EAF2203-004	FRONT END	C
FE101	EAF2203-004	FRONT END	J
FE101	EAF2203-004	FRONT END	U
FE101	EAF2203-004	FRONT END	UB
FE101	EAF2203-004	FRONT END	UP
FE101	EAF2203-004	FRONT END	US
FE101	EAF2203-004	FRONT END	UT
FE101	EAF2203-005	FRONT END	BS
FE101	EAF2203-005	FRONT END	EF
FE101	EAF2203-005	FRONT END	EN
FE101	EAF2203-005	FRONT END	G
FE101	EAF2203-005	FRONT END	GI
FE101	EAF2302-002	FRONT END	VY
JA101	EMV7140-110R	PIN CONNECT	
LP141	EGF0101-002	LOWPASS FIL	
SP102	VYH7653-002	LOC. SOCKET	
SP121	VYH7653-004	LOC. PROTECT	
XT121	ECX0007-200KWJ1	CRYSTAL	
XT141	ECXPR46-001A	CRYSTAL	
XT142	ECB1001-002	CERAMIC FIL	

# CA-C220

## Deck Amp EQ & NR P.C. Board (ENJ-090)

### TRANSISTORS

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
Q301	2SD2144S(VW)	SI. TRANSIST ROHM	
Q302	2SD2144S(VW)	SI. TRANSIST ROHM	
Q303	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q304	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q305	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q306	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q309	DTC144TS	DIGITAL TRA ROHM	
Q310	DTC144TS	DIGITAL TRA ROHM	
Q326	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q327	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q328	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q329	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	BS
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	EF
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	EN
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	G
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	GI
Q330	2SC1740S(R,S)	SI. TRANSIST ROHM	VX
Q331	DTA144ES	DIGITAL TRA ROHM	BS
Q331	DTA144ES	DIGITAL TRA ROHM	EF
Q331	DTA144ES	DIGITAL TRA ROHM	EN
Q331	DTA144ES	DIGITAL TRA ROHM	G
Q331	DTA144ES	DIGITAL TRA ROHM	GI
Q331	DTA144ES	DIGITAL TRA ROHM	VX
Q341	2SD2144S(VW)	SI. TRANSIST ROHM	
Q342	2SD2144S(VW)	SI. TRANSIST ROHM	

### I. C. S.

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
IC301	BA15218N	I.C(MONO-AN ROHM	
IC302	NJM4580LD	I.C(MONO-AN DAINICHI	
IC303	NJM4580LD	I.C(MONO-AN DAINICHI	
IC304	BA3126N	I.C(MONO-AN ROHM	

### DIODES

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
D290	1SS254	DIODE	
D303	1SS254	DIODE	BS
D303	1SS254	DIODE	EF
D303	1SS254	DIODE	EN
D303	1SS254	DIODE	G
D303	1SS254	DIODE	GI
D303	1SS254	DIODE	VX

### CAPACITORS

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
C301	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C302	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C303	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C304	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C305	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C306	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C307	QCBB1HK-181Y	180PF 50V CER.CAPACI	
C308	QCBB1HK-181Y	180PF 50V CER.CAPACI	
C309	QETB1EM-106	10MF 25V AL E.CAPAC	
C310	QETB1EM-106	10MF 25V AL E.CAPAC	
C311	QCSB1HJ-470	47PF 50V CER.CAPACI	
C312	QCSB1HJ-470	47PF 50V CER.CAPACI	
C313	QETB1CM-476	47MF 16V AL E.CAPAC	
C314	QETB1CM-476	47MF 16V AL E.CAPAC	
C315	QETB1HM-105	1MF 50V AL E.CAPAC	
C316	QETB1HM-105	1MF 50V AL E.CAPAC	
C317	QETB1EM-106	10MF 25V AL E.CAPAC	
C318	QETB1CM-107	100MF 16V AL E.CAPAC	
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	BS
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	EF
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	EN
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	G
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	GI
C319	QCF21HP-103A	0.01MF 50V CER.CAPACI	VX
C320	QFN81HJ-682	6800PF 50V METAL.MYLA	

### CAPACITORS

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
C321	QFN31HJ-332Z	3300PF 50V MYLAR CAPA	
C322	QFN31HJ-332Z	3300PF 50V MYLAR CAPA	
C323	QFN81HJ-183	0.018MF 50V METAL.MYLA	
C324	QFP314J-472Z	4700PF 50V POLYPROP.Y.	
C325	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C326	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	BS
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	EF
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	EN
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	G
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	GI
C327	QCBB1HK-561Y	560PF 50V CER.CAPACI	VX
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	BS
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	EF
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	EN
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	G
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	GI
C328	QCBB1EZ-223	0.022MF 25V CER.CAPACI	VX
C329	QCBB1EZ-223	0.022MF 25V CER.CAPACI	
C331	QCXB1CM-122	1200PF 16V POLYPROP.Y.	
C332	QCXB1CM-122	1200PF 16V POLYPROP.Y.	
C333	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
C334	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
C347	QFN81HJ-682	6800PF 50V METAL.MYLA	
C348	QFN81HJ-682	6800PF 50V METAL.MYLA	
C349	QFN81HJ-103	0.01MF 50V METAL.MYLA	
C350	QFN81HJ-103	0.01MF 50V METAL.MYLA	
C353	QCV21HK-392	3900PF 50V CER.CAPACI	
C354	QCV21HK-392	3900PF 50V CER.CAPACI	
C355	QFN81HJ-822	8200PF 50V METAL.MYLA	
C356	QFN81HJ-822	8200PF 50V METAL.MYLA	
C361	QCF21HP-473A	0.047MF 50V CER.CAPACI	
C362	QCF21HP-473A	0.047MF 50V CER.CAPACI	
C365	QEK51HM-225G	2.2MF 50V AL E.CAPAC	
C366	QEK51HM-225G	2.2MF 50V AL E.CAPAC	
C367	QFN81HJ-682	6800PF 50V METAL.MYLA	
C368	QFN81HJ-682	6800PF 50V METAL.MYLA	
C369	QETB1AM-107	100MF 10V AL E.CAPAC	
C370	QETB1AM-107	100MF 10V AL E.CAPAC	
C371	QEK51HM-225G	2.2MF 50V AL E.CAPAC	
C372	QEK51HM-225G	2.2MF 50V AL E.CAPAC	
C373	QETB1CM-476	47MF 16V AL E.CAPAC	
C374	QEK51CM-476	47MF 16V AL E.CAPAC	
C375	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C376	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C377	QCXB1CM-122	1200PF 16V POLYPROP.Y.	
C378	QCXB1CM-122	1200PF 16V POLYPROP.Y.	
C379	QCBB1HK-331Y	330PF 50V CER.CAPACI	
C380	QCBB1HK-331Y	330PF 50V CER.CAPACI	
C381	QETB1CM-476	47MF 16V AL E.CAPAC	
C385	QFN81HJ-682	6800PF 50V METAL.MYLA	
C386	QFN81HJ-682	6800PF 50V METAL.MYLA	
C387	QETB1AM-107	100MF 10V AL E.CAPAC	
C388	QETB1AM-107	100MF 10V AL E.CAPAC	
C389	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C390	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C391	QETB1CM-476	47MF 16V AL E.CAPAC	
C392	QETB1CM-476	47MF 16V AL E.CAPAC	
C393	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C394	QCBB1HK-101Y	100PF 50V CER.CAPACI	
C395	QCBB1HK-331Y	330PF 50V CER.CAPACI	
C396	QCBB1HK-331Y	330PF 50V CER.CAPACI	
C397	QCBB1HK-392Y	390PF 50V CER.CAPACI	
C398	QCBB1HK-392Y	390PF 50V CER.CAPACI	

### RESISTORS

Δ ITEM	PART NUMBER	DESCRIPTION	AREA
R271	QRD161J-104	100K 1/6W CARBON RES	
R272	QRD161J-104	100K 1/6W CARBON RES	
R280	QRD161J-221	220 1/6W CARBON RES	
R281	QRD161J-224	220K 1/6W CARBON RES	
R282	QRD161J-224	220K 1/6W CARBON RES	
R283	QRD161J-100	10 1/6W CARBON RES	
R284	QRD161J-100	10 1/6W CARBON RES	
R285	QRD161J-393	39K 1/6W CARBON RES	
R286	QRD161J-393	39K 1/6W CARBON RES	
R287	QRD14CJ-6R8SX	6.8 1/4W UNF.CARBON	
Δ R288	QRD14CJ-100SX	10 1/4W UNF.CARBON	C
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	A
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	BS
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	EF
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	EN
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	G
Δ R285	QRZ0077-100	10 1/4W FUSIBLE RE	GI
Δ R283	QRZ0077-100	10 1/4W FUSIBLE RE	U
Δ R288	QRZ0077-100	10 1/4W FUSIBLE RE	UB

RESISTORS

Δ	TEMP	PART NUMBER	DESCRIPTION			AREA
Δ	R288	QRZ0077-100	10	1/4W	FUSIBLE RE	UP
Δ	R288	QRZ0077-100	10	1/4W	FUSIBLE RE	US
Δ	R288	QRZ0077-100	10	1/4W	FUSIBLE RE	UT
Δ	R288	QRZ0077-100	10	1/4W	FUSIBLE RE	VX
	R290	QRD167J-332	3.3K	1/6W	CARBON RES	
	R292	QRD161J-221	220	1/6W	CARBON RES	
	R293	QRD167J-511	510	1/6W	CARBON RES	
	R294	QRD161J-561	560	1/6W	CARBON RES	
	R296	QRD161J-104	100K	1/6W	CARBON RES	
	R297	QRD161J-222	2.2K	1/6W	CARBON RES	
	R298	QRD161J-561	560	1/6W	CARBON RES	BS
	R298	QRD161J-561	560	1/6W	CARBON RES	EF
	R298	QRD161J-561	560	1/6W	CARBON RES	EN
	R298	QRD161J-561	560	1/6W	CARBON RES	G
	R298	QRD161J-561	560	1/6W	CARBON RES	GI
	R298	QRD161J-561	560	1/6W	CARBON RES	VX
	R301	QRD161J-103	10K	1/6W	CARBON RES	
	R302	QRD161J-103	10K	1/6W	CARBON RES	
	R303	QRD167J-153	15K	1/6W	CARBON RES	
	R304	QRD167J-153	15K	1/6W	CARBON RES	
	R315	QRD161J-103	10K	1/6W	CARBON RES	
	R316	QRD161J-103	10K	1/6W	CARBON RES	
	R317	QRD161J-103	10K	1/6W	CARBON RES	
	R318	QRD161J-103	10K	1/6W	CARBON RES	
	R319	QRD161J-103	10K	1/6W	CARBON RES	
	R320	QRD161J-103	10K	1/6W	CARBON RES	
	R321	QRD161J-103	10K	1/6W	CARBON RES	
	R322	QRD161J-103	10K	1/6W	CARBON RES	
	R323	QRD167J-562	5.6K	1/6W	CARBON RES	
	R324	QRD167J-562	5.6K	1/6W	CARBON RES	
	R325	QRD167J-562	5.6K	1/6W	CARBON RES	
	R326	QRD167J-562	5.6K	1/6W	CARBON RES	
	R331	QRD167J-682	6.8K	1/6W	CARBON RES	
	R332	QRD167J-632	6.3K	1/6W	CARBON RES	
	R333	QRD161J-471	470	1/6W	CARBON RES	
	R334	QRD161J-471	470	1/6W	CARBON RES	
	R347	QRD161J-221	220	1/6W	CARBON RES	
	R348	QRD161J-221	220	1/6W	CARBON RES	
	R349	QRD161J-821	820	1/6W	CARBON RES	
	R350	QRD161J-821	820	1/6W	CARBON RES	
	R351	QRD167J-272	2.7K	1/6W	CARBON RES	
	R352	QRD167J-272	2.7K	1/6W	CARBON RES	
	R353	QRD161J-103	10K	1/6W	CARBON RES	
	R354	QRD161J-103	10K	1/6W	CARBON RES	
	R355	QRD161J-243	24K	1/6W	CARBON RES	
	R356	QRD161J-243	24K	1/6W	CARBON RES	
	R357	QRD161J-683	68K	1/6W	CARBON RES	
	R358	QRD161J-683	68K	1/6W	CARBON RES	
	R359	QRD167J-223	22K	1/6W	CARBON RES	
	R360	QRD167J-223	22K	1/6W	CARBON RES	
	R361	QRD161J-393	39K	1/6W	CARBON RES	
	R362	QRD161J-393	39K	1/6W	CARBON RES	
	R363	QRD161J-221	220	1/6W	CARBON RES	
	R364	QRD161J-221	220	1/6W	CARBON RES	
	R365	QRD161J-470	47	1/6W	CARBON RES	BS
	R365	QRD161J-470	47	1/6W	CARBON RES	EF
	R365	QRD161J-470	47	1/6W	CARBON RES	EN
	R365	QRD161J-470	47	1/6W	CARBON RES	G
	R365	QRD161J-470	47	1/6W	CARBON RES	GI
	R365	QRD161J-470	47	1/6W	CARBON RES	VX
	R366	QRD161J-470	47	1/6W	CARBON RES	BS
	R366	QRD161J-470	47	1/6W	CARBON RES	EF
	R366	QRD161J-470	47	1/6W	CARBON RES	EN
	R366	QRD161J-470	47	1/6W	CARBON RES	G
	R366	QRD161J-470	47	1/6W	CARBON RES	GI
	R366	QRD161J-470	47	1/6W	CARBON RES	VX
	R367	QRD161J-274	270K	1/6W	CARBON RES	
	R368	QRD161J-274	270K	1/6W	CARBON RES	
	R369	QRD161J-470	47	1/6W	CARBON RES	
	R370	QRD161J-470	47	1/6W	CARBON RES	
	R371	QRD161J-203	20K	1/6W	CARBON RES	
	R372	QRD161J-203	20K	1/6W	CARBON RES	
	R375	QRD161J-103	10K	1/6W	CARBON RES	
	R376	QRD161J-103	10K	1/6W	CARBON RES	
	R377	QRD161J-221	220	1/6W	CARBON RES	
	R378	QRD161J-221	220	1/6W	CARBON RES	
	R379	QRD161J-912	9.1K	1/6W	CARBON RES	
	R380	QRD161J-912	9.1K	1/6W	CARBON RES	
	R381	QRD161J-221	220	1/6W	CARBON RES	
	R382	QRD161J-221	220	1/6W	CARBON RES	
	R383	QRD161J-470	47	1/6W	CARBON RES	BS
	R383	QRD161J-470	47	1/6W	CARBON RES	EF
	R383	QRD161J-470	47	1/6W	CARBON RES	EN
	R383	QRD161J-470	47	1/6W	CARBON RES	G
	R383	QRD161J-470	47	1/6W	CARBON RES	GI
	R383	QRD161J-470	47	1/6W	CARBON RES	VX
	R384	QRD161J-470	47	1/6W	CARBON RES	BS
	R384	QRD161J-470	47	1/6W	CARBON RES	EF
	R384	QRD161J-470	47	1/6W	CARBON RES	EN
	R384	QRD161J-470	47	1/6W	CARBON RES	G

RESISTORS

Δ	TEMP	PART NUMBER	DESCRIPTION			AREA
	R384	QRD161J-470	47	1/6W	CARBON RES	GI
	R384	QRD161J-470	47	1/6W	CARBON RES	VX
	R385	QRD161J-274	270K	1/6W	CARBON RES	
	R386	QRD161J-274	270K	1/6W	CARBON RES	
	R387	QRD161J-470	47	1/6W	CARBON RES	
	R388	QRD161J-470	47	1/6W	CARBON RES	
	R391	QRD161J-203	20K	1/6W	CARBON RES	
	R392	QRD161J-203	20K	1/6W	CARBON RES	
	VR301	QVPA603-501A	500		TRIMMER RE	
	VR302	QVPA603-501A	500		TRIMMER RE	
	VR303	QVPA603-501A	500		TRIMMER RE	
	VR304	QVPA603-501A	500		TRIMMER RE	
	VR305	QVPA603-104A	100K		TRIMMER RE	
	VR306	QVPA603-104A	100K		TRIMMER RE	
	VR307	QVPA603-104A	100K		TRIMMER RE	
	VR308	QVPA603-104A	100K		TRIMMER RE	
	VR309	QVPA603-104A	100K		TRIMMER RE	
	VR310	QVPA603-104A	100K		TRIMMER RE	
	VR311	QVPA603-503A	50K		VARIABLE R	
	VR312	QVPA603-503A	50K		VARIABLE R	

OTHERS

Δ	TEMP	PART NUMBER	DESCRIPTION			AREA
		EMW10536-002	CIR. BOARD			
		QWE351-07RR	VINYL WIRE			
	K321	ENZ8101-007	INDUCTOR			BS
	K321	ENZ8101-007	INDUCTOR			EF
	K321	ENZ8101-007	INDUCTOR			EN
	K321	ENZ8101-007	INDUCTOR			G
	K321	ENZ8101-007	INDUCTOR			GI
	K321	ENZ8101-007	INDUCTOR			VX
	K392	ENZ8101-007	INDUCTOR			BS
	K392	ENZ8101-007	INDUCTOR			EF
	K392	ENZ8101-007	INDUCTOR			EN
	K392	ENZ8101-007	INDUCTOR			G
	K392	ENZ8101-007	INDUCTOR			GI
	K392	ENZ8101-007	INDUCTOR			VX
	L301	ENZ6002-012	OSCILLATOR			
	L303	EQL2106-562	INDUCTOR			
	L304	EQL2106-562	INDUCTOR			
	L305	EQL2106-223	INDUCTOR			
	L306	EQL2106-223	INDUCTOR			
	CN301	VMC0314-P08	CONNECT TER			
	CN302	VMC0314-P08	CONNECT TER			
	CN331	EMV7155-106R	CONNECT TER			
	CN332	EMV7155-106R	CONNECT TER			

■ CD Servo&Low Pass Filter P.C.Board (ENN-443)

TRANSISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q501	2SA952(L,K)	SI.TRANSIST NEC	
	Q581	2SA952(L,K)	SI.TRANSIST NEC	
	Q591	2SA933S(RS)	SI.TRANSIST	

I. C. S.

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC501	TA8191F	I.C(MONO-AN TOSHIBA	
	IC502	BA6398FP	I.C(MONO-AN ROHM	
	IC601	TC9284BF	I.C(M) TOSHIBA	
	IC604	NJM4580L-S	I.C.	

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C501	QCBB1HK-821V	820PF 50V CER.CAPACI	
	C503	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C504	QETB1EM-106	10MF 25V AL E.CAPAC	
	C511	QCSB1HK-3R9	3.9PF 50V CER.CAPACI	
	C512	QCSB1HJ-270Y	27PF 50V CER.CAPACI	
	C513	QFLB1HJ-104	0.1MF 50V MYLAR CAPA	
	C514	QFN81HJ-472	4700PF 50V MYLAR CAPA	
	C521	QCBB1HK-331Y	330PF 50V CER.CAPACI	
	C522	QFLB1HJ-473	0.047MF 50V MYLAR CAPA	
	C523	QFV81HJ-154	0.15MF 50V THIN FILM	
	C524	QENC1HM-475Z	4.7MF 50V NP E.CAPAC	
	C529	QETB1AM-336	33MF 10V AL E.CAPAC	
	C531	QCVB1CM-822Y	8200PF 16V CER.CAPACI	
	C541	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C542	QFLB1HJ-103	0.01MF 50V MYLAR CAPA	
	C543	QFLB1HJ-393	0.039MF 50V MYLAR CAPA	
	C545	QENC1HM-105Z	1MF 50V NP E.CAPAC	
	C546	QFLB1HJ-223	0.022MF 50V MYLAR CAPA	
	C561	QETB1AM-476	47MF 10V E.CAPACITO	
	C562	QETB1HM-475E	4.7MF 50V E.CAPACITO	
	C581	QETB1AM-477	470MF 10V E.CAPACITO	
	C582	QEK51CM-476	47MF 16V AL E.CAPAC	
	C591	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C592	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C593	QCC21EM-104	0.1MF 25V CER.CAPACI	
	C599	QEK51AM-107	100MF 10V AL E.CAPAC	
	C601	QCSB1HJ-220	22PF 50V CER.CAPACI	
	C602	QCSB1HJ-220	22PF 50V CER.CAPACI	
	C603	QFV81HJ-104	0.1MF 50V THIN FILM	
	C604	QCC21EM-104	0.1MF 25V CER.CAPACI	
	C605	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C606	QCC21EM-473	0.047MF 25V CER.CAPACI	
	C607	QFV81HJ-104	0.1MF 50V THIN FILM	
	C609	QCC21EM-473	0.047MF 25V CER.CAPACI	
	C609	QFV81HJ-104	0.1MF 50V THIN FILM	
	C611	QCS21HJ-101A	100PF 50V CER.CAPACI	
	C612	QFLB1HJ-103	0.01MF 50V MYLAR CAPA	
	C613	QFLB1HJ-103	0.01MF 50V MYLAR CAPA	
	C614	QFN31HJ-332Z	3300PF 50V MYLAR CAPA	
	C615	QFN31HJ-332Z	3300PF 50V MYLAR CAPA	
	C616	QCC21EM-105	0.01MF 25V CER.CAPACI	
	C631	QEK51AM-107	100MF 10V AL E.CAPAC	
	C632	QER90JM-107	100MF 6.3V AL E.CAPAC	
	C651	QEK51AM-107	100MF 10V AL E.CAPAC	
	C652	QEK51CM-226	22MF 16V AL E.CAPAC	
	C661	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C662	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C663	QCS51HJ-270Y	27PF 50V CER.CAPACI	
	C671	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C672	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C673	QCBB1HJ-270Y	27PF 50V CER.CAPACI	

RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	R501	QRD161J-124	120K 1/6W CARBON RES	
	R502	QRD161J-103	10K 1/6W CARBON RES	
	R504	QRD161J-202	2K 1/6W CARBON RES	
	R505	QRD161J-100	10 1/6W CARBON RES	
	R506	QRD161J-101	100 1/6W CARBON RES	
	R507	QRD161J-120	12 1/6W CARBON RES	
	R511	QRD161J-183	18K 1/6W CARBON RES	
	R512	QRD161J-392	3.9K 1/6W CARBON RES	
	R513	QRD167J-332	3.3K 1/6W CARBON RES	
	R514	QRD161J-472	4.7K 1/6W CARBON RES	
	R515	QRD161J-103	10K 1/6W CARBON RES	
	R516	QRD161J-103	10K 1/6W CARBON RES	
	R517	QRD161J-202	2K 1/6W CARBON RES	
	R518	QRD161J-335YT	3.3M 1/6W CARBON RES	
	R521	QRD167J-433	43K 1/6W CARBON RES	
	R522	QRD161J-392	3.9K 1/6W CARBON RES	
	R523	QRD161J-222	2.2K 1/6W CARBON RES	
	R524	QRD161J-331	330 1/6W CARBON RES	
	R525	QRD161J-472	4.7K 1/6W CARBON RES	
	R529	QRD167J-562	5.6K 1/6W CARBON RES	
	R531	QRD161J-473	47K 1/6W CARBON RES	
	R532	QRD161J-104	100K 1/6W CARBON RES	
	R533	QRD167J-153	15K 1/6W CARBON RES	
	R541	QRD161J-123	12K 1/6W CARBON RES	
	R542	QRD167J-332	3.3K 1/6W CARBON RES	
	R543	QRD161J-473	47K 1/6W CARBON RES	
	R544	QRD167J-223	22K 1/6W CARBON RES	
	R545	QRD161J-103	10K 1/6W CARBON RES	
	R548	QRD167J-153	15K 1/6W CARBON RES	
	R549	QRD161J-821	820 1/6W CARBON RES	
	R550	QRD161J-104	100K 1/6W CARBON RES	
	R551	QRD167J-223	22K 1/6W CARBON RES	
	R552	QRD167J-562	5.6K 1/6W CARBON RES	
	R553	QRD161J-821	820 1/6W CARBON RES	
	R555	QRD161J-392	3.9K 1/6W CARBON RES	
	R559	QRD161J-125	1.2M 1/6W CARBON RES	
	R561	QRD167J-562	5.6K 1/6W CARBON RES	
	R562	QRD161J-102	1K 1/6W CARBON RES	
	R563	QRD167J-152	1.5K 1/6W CARBON RES	
	R564	QRD167J-332	3.3K 1/6W CARBON RES	
	R565	QRD161J-683	68K 1/6W CARBON RES	
	R566	QRD161J-273	27K 1/6W CARBON RES	
	R583	QRD161J-101	100 1/6W CARBON RES	
	R584	QRD161J-331	330 1/6W CARBON RES	
	R591	QRD161J-473	47K 1/6W CARBON RES	
	R611	QRD161J-102	1K 1/6W CARBON RES	
	R612	QRD161J-103	10K 1/6W CARBON RES	
	R613	QRD161J-224	220K 1/6W CARBON RES	
	R614	QRD161J-473	47K 1/6W CARBON RES	
	R615	QRD161J-225	2.2M 1/6W CARBON RES	
	R616	QRD161J-333	33K 1/6W CARBON RES	
	R651	QRD161J-820	82 1/6W CARBON RES	
	R652	QRD161J-333	33K 1/6W CARBON RES	
	R653	QRD161J-473	47K 1/6W CARBON RES	
	R661	QRD161J-473	47K 1/6W CARBON RES	
	R662	QRD161J-473	47K 1/6W CARBON RES	
	R663	QRD161J-473	47K 1/6W CARBON RES	
	R664	QRD161J-473	47K 1/6W CARBON RES	
	R665	QRD167J-223	22K 1/6W CARBON RES	
	R666	QRD167J-223	22K 1/6W CARBON RES	
	R671	QRD161J-473	47K 1/6W CARBON RES	
	R672	QRD161J-473	47K 1/6W CARBON RES	
	R673	QRD161J-473	47K 1/6W CARBON RES	
	R674	QRD161J-473	47K 1/6W CARBON RES	
	R675	QRD167J-223	22K 1/6W CARBON RES	
	R676	QRD167J-223	22K 1/6W CARBON RES	
	VR501	GVPA601-154A	150K TRIMMER RE	

OTHERS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	X601	CSA16.93MX2040T	CERAMIC RES	
	#C	VW1364-002X	PRINTED BOA	
	CNS01	EMV7144-015R	CONNECT TER	
	CNS02	EMV5109-006A	CONNECT TER	
	CNS03	VMC0161-R07	CONNECT TER	
	CN601	VMC0161-R09	CONNECT TER	
	SP501	VYH7237-004	I.C.COVER	
	SP502	VYH7653-003	I.C.PROTECT	
	SP601	VYH7237-002	I.C.COVER	

■ CD Changer Mechanism Control P.C. Board

I. C. S.

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC801	UPD65612GB-177	I.C.(M) NEC	
	IC802	TAB409S	I.C.(MONO-AN TOSHIBA	
	IC803	TAB409S	I.C.(MONO-AN TOSHIBA	

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C801	QEK51AM-107	100MF 10V AL E.CAPAC	
	C802	QEK51EM-475	4.7MF 25V AL E.CAPAC	
	C803	QFLC1HJ-102ZM	1000PF 50V MYLAR CAPA	
	C804	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C805	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C806	QEK51CM-476	47MF 16V AL E.CAPAC	
	C807	QEK51CM-476	47MF 16V AL E.CAPAC	
	C808	QFLC1HJ-102ZM	1000PF 50V MYLAR CAPA	
	C809	QCB81HK-151	150PF 50V CER.CAPACI	
	C810	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C811	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C813	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C815	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C816	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C817	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C818	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C819	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C820	QCFB1HZ-104Y	0.1MF 50V CER.CAPACI	
	C821	QCB81HK-102Y	1000PF 50V CER.CAPACI	

RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	R805	QRD161J-102	1K 1/6W CARBON RES	
	R806	QRD161J-471	470 1/6W CARBON RES	
	R807	QRD161J-471	470 1/6W CARBON RES	
	R808	QRD161J-102	1K 1/6W CARBON RES	
	R810	QRD161J-105	1M 1/6W CARBON RES	
	R811	QRD161J-105	1M 1/6W CARBON RES	
	R813	QRD161J-102	1K 1/6W CARBON RES	
	R814	QRD161J-102	1K 1/6W CARBON RES	
	R815	QRD161J-102	1K 1/6W CARBON RES	
	R816	QRD161J-102	1K 1/6W CARBON RES	
	R817	QRD161J-102	1K 1/6W CARBON RES	
	R818	QRD161J-102	1K 1/6W CARBON RES	
	R819	QRD161J-102	1K 1/6W CARBON RES	
	R820	QRD161J-102	1K 1/6W CARBON RES	
	R821	QRD161J-102	1K 1/6W CARBON RES	
	R822	QRD161J-102	1K 1/6W CARBON RES	
	R823	QRD161J-102	1K 1/6W CARBON RES	
	R824	QRD161J-102	1K 1/6W CARBON RES	
	R825	QRD161J-102	1K 1/6W CARBON RES	
	R826	QRD161J-102	1K 1/6W CARBON RES	
	R827	QRD161J-102	1K 1/6W CARBON RES	
	R828	QRD161J-102	1K 1/6W CARBON RES	
	R829	QRD161J-102	1K 1/6W CARBON RES	
	R830	QRD161J-102	1K 1/6W CARBON RES	
	R832	QRD161J-181	180 1/6W CARBON RES	
	R833	QRD161J-102	1K 1/6W CARBON RES	
	R834	QRD161J-102	1K 1/6W CARBON RES	
	R839	QRD167J-332	3.3K 1/6W CARBON RES	
	R840	QRD167J-562	5.6K 1/6W CARBON RES	

OTHERS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
		VMW1377-004X	P.W.B 1/4	
		VMW1378-001X	PW BOARD 1/	
		VYH7237-001	I.C. COVER	
		SBSF2608Z	TAPPING SCR	
		VMC0289-S07K	CONNECTOR	
		QSEC001-E03	LEVER SWITC	
	L801	VQP0018-100	INDUCTOR	
	L802	VQP0033-100Z	INDUCTOR	
	L803	VQP0033-100Z	INDUCTOR	
	L804	VQP0033-100Z	INDUCTOR	
	CN801	VMC0163-R10	CONNECT TER	
	CN802	VMC0289-P07	CONNECT TER	
	CN803	VMC0324-12310	CONNECT TER	

# Accessories List

Symbol No. 

M	5	M	M
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⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	E30580-2306A	INSTRUCTION BOOK	1		A,BS
		E30580-2312A	INSTRUCTION BOOK	1		C
		E30580-2304A	INSTRUCTION BOOK	1		EF,G,GI
		E30580-2313A	INSTRUCTION BOOK	1		EN
		E30580-2303A	INSTRUCTION BOOK	1		J
	2	E30580-2305A	INSTRUCTION BOOK	1		U,UB,US,UT
		E30580-2314A	INSTRUCTION BOOK	1		UP
		E30580-2307A	INSTRUCTION BOOK	1		VX
		BT-51006-1	WARRANTY CARD	1		J
		BT-52002-1	WARRANTY CARD	1		C
		BT-20134	WARRANTY CARD	1		G
		BT-20060	WARRANTY CARD	1		BS
		BT-20066A	WARRANTY CARD	1		BS
		BT-56001-1	WARRANTY CARD	1		A
		BT-56004-2	WARRANTY CARD	1		UP
	3	BT-20044G	SAFETY INST	1		J
		E43486-340A	SAFETY INST	1		BS
	4	BT-20071B	SVC CENTER LIST	1		C
⚠	5	ENZ2202-001	SIEMENS PLUG	1		US
⚠		ENZ2203-001	SIEMENS PLUG	1		U,UT
	6	QPQA025-03505	ENVELOPE	1		
	7	E03614-004V	B.IN ANTENNA	1		Except G
		E67007-001	B.IN ANTENNA	1		G
	8	EQB4001-015J1S	AM LOOP ANTENNA	1		
	9	EMZ2001-014	ADAPTER	1		
	10	RM-SEC220U	REMOTE CONTROL UNIT	1		Except UP
	11	RM-SEC220UP	REMOTE CONTROL UNIT	1		UP
	12	R6PRPA-2STSA	BATTERY	1		

⚠ : Safety Parts

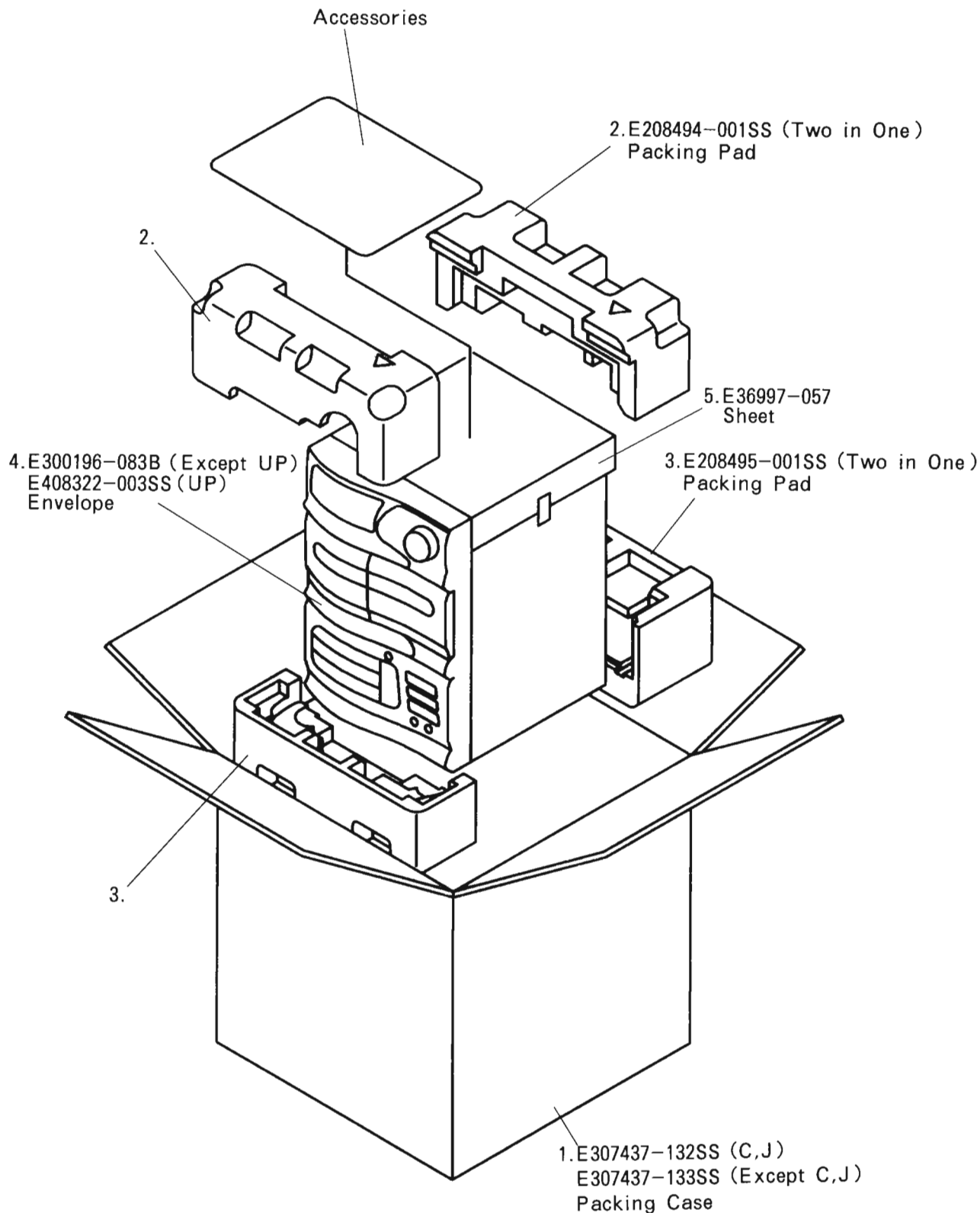
**The Marks for Designated Areas**

- |                     |                        |                             |                            |
|---------------------|------------------------|-----------------------------|----------------------------|
| A ..... Australia   | BS .... the U.K.       | C .... Canada               | EF .... Continental Europe |
| EN .... Scandinavia | GI .... Italy          | G .... Germany              | J .... the U.S.A.          |
| UB .... Hongkong    | U ..... Universal Type | UP ... Korea                | US .... Singapore          |
| UT .... Taiwan      | VX .... East Europe    | No mark indicates all area. |                            |

# Packing Materials and Part Numbers

Symbol No. 

M	6	M	M
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The Marks for Designated Areas			
A .... Australia	BS .. the U.K.	C .... Canada	EF ... Continental Europe
EN .. Scandinavia	GI ... Italy	G .... Germany	J .... the U.S.A.
UB .. Hongkong	U ... Universal Type	UP ... Korea	US ... Singapore
UT .. Taiwan	VX ... East Europe	No mark indicates all areas.	

**JVC**

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