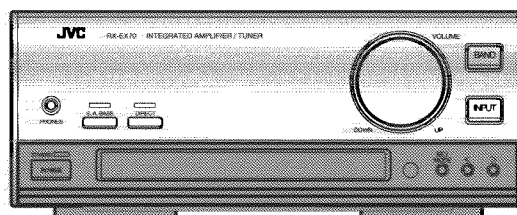
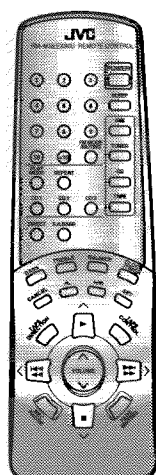


# JVC

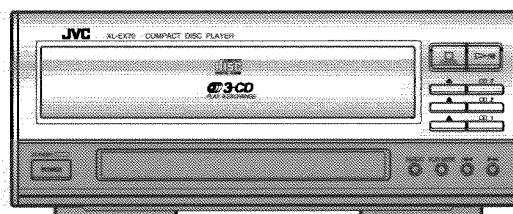
# SERVICE MANUAL

## COMPACT COMPONENT SYSTEM

### CA-EX70 CA-EX70R



RX-EX70



XL-EX70

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

#### Area Suffix

C	-----	Canada
J	-----	U.S.A.
U	-----	Other Areas
UB	-----	Hong Kong
UF	-----	China
US	-----	Singapore
UT	-----	Taiwan
B	-----	U.K
E	-----	Continental Europe
EN	-----	Northan Europe
EE	-----	Eastern Europe

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## Safety Precautions

1. This 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 manufacturer 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.

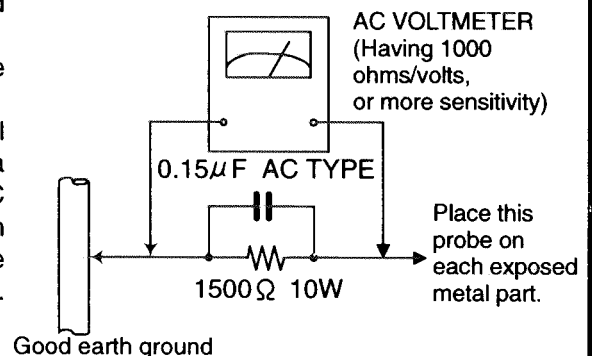
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA 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 $\Omega$  10W 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 voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).

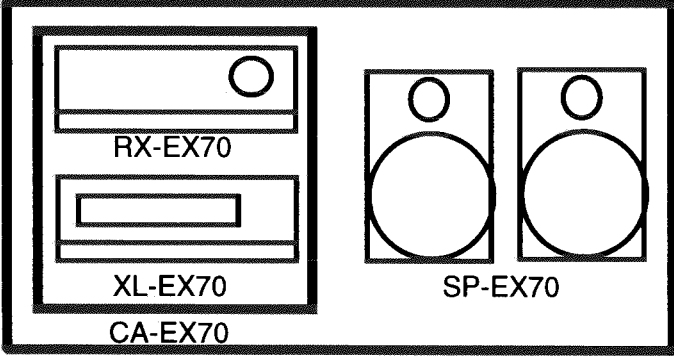
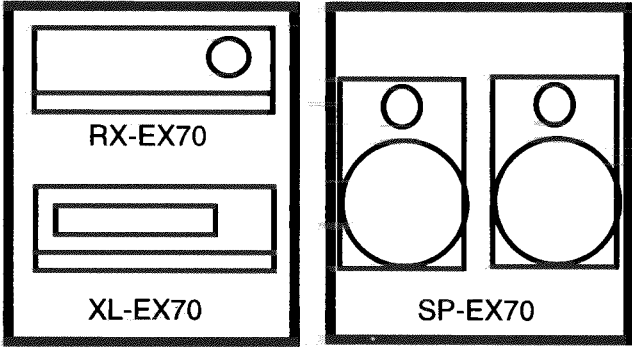
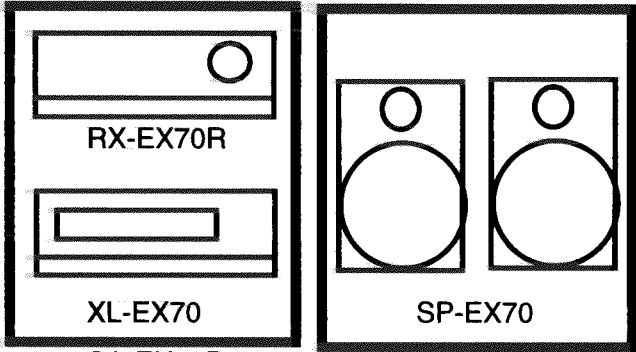
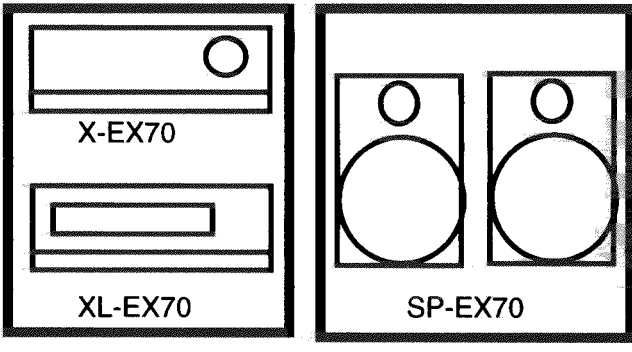


## Warning

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.

**⚠ CAUTION** Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of performing repair of this system.

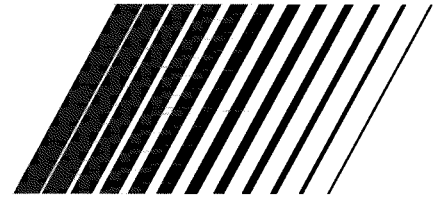
COMPACT COMPONENT SYSTEM UNIT CONSTRUCTION

VERSION	UNIT CONSTRUCTION
J	
C	
B,E,EN,EE	
U,UF,UT US,UB	

CA-EX70/-EX70R

# Instructions

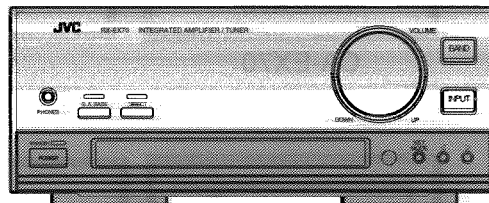
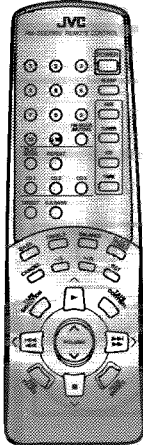
# JVC



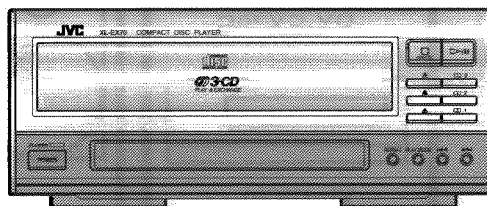
## COMPACT COMPONENT SYSTEM

# CA-EX70

Consists of RX-EX70 and XL-EX70.



INTEGRATED AMPLIFIER/TUNER RX-EX70



COMPACT DISC PLAYER XL-EX70



## INSTRUCTIONS

**For Customer Use:**

Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

LVT0092-001A

[J]

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## Welcome !

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

## Important cautions

### Installation of the Unit

- Select a place which is level, dry and neither too hot nor too cold (Between 41 F-95°F or 5°C and 35°C).
- Leave sufficient distance between the Unit and a TV.
- Be sure to place the Unit in a location with good ventilation.
- Do not use the Unit in a place subject to vibrations.
- Do not place the Unit on a carpet.
- Do not place the Unit on top of another heat-generating piece of equipment.

### Power cord

- Do not handle the power cord with wet hands!
- When unplugging the Unit from the wall outlet, always pull the plug, not the power cord.

### Malfunctions, etc.

- There are no user serviceable parts inside. If anything goes wrong, turn off the power immediately. If the same problem reoccurs when the power is turned on once more, turn off the power again, unplug the power cord and consult your dealer.
- Do not insert any metallic object into the Unit.

## For safe use, observe the following

### Avoid moisture, water and dust

Do not set your machine in moist or dusty places.

### Avoid high temperatures

Do not expose your machine to direct sunlight or set near a heating device.

### Do not block the vents

Poor-ventilation may damage your machine. So do not block the vents or put the unit in a poorly ventilated place.

### When you're away

When away on travel or otherwise for an extended period of time, turn off the power and pull the plug from the electrical socket.

### Do not insert foreign matter into the machine

Do not insert wires, hairpins, coins, etc. into your machine.

### Care of the cabinet

When cleaning your machine, use a soft cloth and follow the relevant instructions on the use of chemically-coated cloths. Avoid applying benzene, thinner or other organic solvents and disinfectants. This may cause deformation or discoloring.

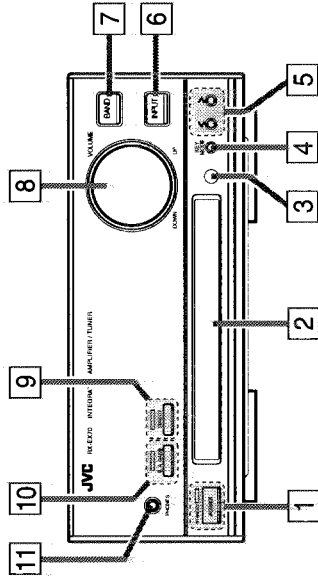
### if water gets inside the machine

Turn off the power and pull the plug from the electrical socket, then call the store where you made your purchase. Using the machine in this state may cause a fire or electrical shock.

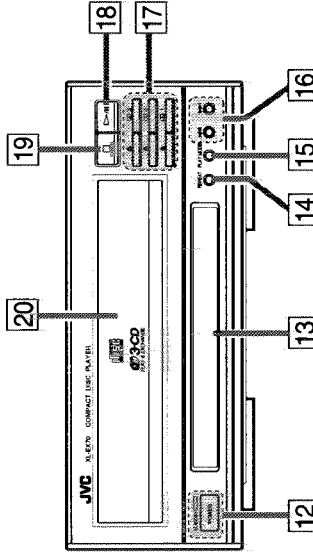
## Parts Index

### Front Panels

#### Amplifier/tuner



#### CD player

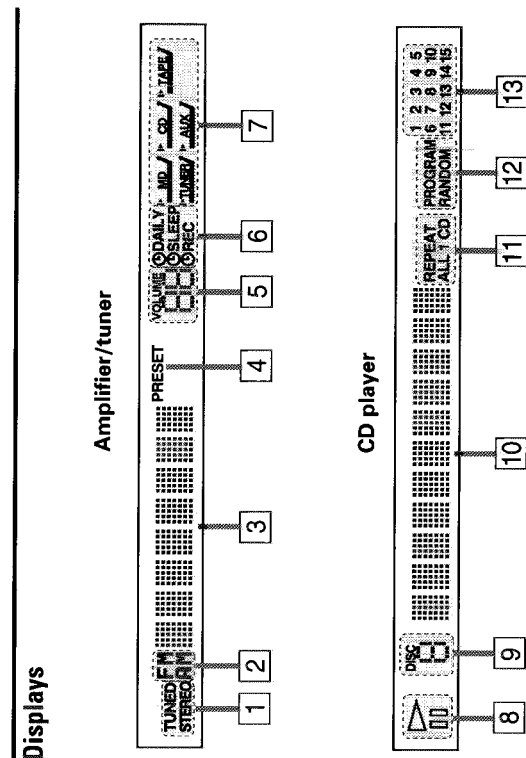


#### CD player front panel

- [12] **POWER button**  
Press to switch the power between ON and STANDBY.
- STANDBY indicator**  
Lights up when the power is in the STANDBY mode. Turns off when power is ON.
- [13] **Display**
- [14] **REPEAT button**  
Press to switch repeat play modes (All disc repeat, 1 disc repeat, 1 track repeat or off).
- [15] **PLAY MODE button**  
Press to switch play modes (continuous play, Program play, or Random play).
- [16] **Cursor buttons**  
Press to skip to the beginning of a desired track or press and hold to search in fast forward or fast reverse.
- [17] **Disc control buttons**  
▲: Press to open or close the respective disc tray.  
▶: Press to start playing the respective CD.
- [18] **H button**  
Press to start or pause CD playback.
- [19] **CANCEL button**  
Press to stop CD playback.
- [20] **Main tray**  
This accommodates three disc trays inside.

#### Amplifier/tuner front panel

- [1] **POWER button**  
Press to switch the power between ON and STANDBY.
- STANDBY indicator**  
Lights up when the power is in STANDBY mode. Turns off when power is ON.
- [2] **Display**
- [3] **Remote sensor**
- [4] **KEY MODE button**  
Press to switch the operation mode of the < and > (cursor) buttons.  
The PRESET indicator in the display lights in the preset tuning mode.  
The PRESET indicator in the display turns off in the auto/manual tuning mode.
- [5] **< > (Cursor buttons)**  
Press to switch preset channels or for auto/manual tuning.
- [6] **INPUT button**  
Press repeatedly to select the desired input source.
- [7] **BAND button**  
Press to switch between the FM and AM radio bands.
- [8] **VOLUME control**  
Rotate to adjust the volume.  
Rotating toward UP increases the volume and toward DOWN decreases it.
- [9] **DIRECT button and indicator**  
Press to turn the direct signal function on or off. This function allows the source signal to bypass the tone control circuitry (BASS, TREBLE, S.A. BASS, and BALANCE) during playback. The indicator lights up when this function is on.
- [10] **S.A. BASS button and indicator**  
Press to turn the bass enhancement function on or off. The indicator lights up when this function is on.
- [11] **PHONES jack**  
Connect headphones with a stereo mini-plug to this jack. No sound comes from the speakers when headphones are connected.



**Displays**

**Amplifier/tuner display**

- 1 **Receiving condition indicators**  
TUNED: Lights up when radio broadcast is received.  
STEREO: Lights up when FM stereo broadcast is received.
- 2 **Receiving band indicators**  
FM: Lights up when the FM band is selected.  
AM: Lights up when the AM band is selected.
- 3 **Character display**  
Shows the selected source, radio frequency, preset channel number, timer setting item and contents.  
Shows the clock in the power STANDBY mode.
- 4 **PRESET indicator**  
Lights up when < and > (cursor buttons) are set to the preset channel selection mode.
- 5 **Volume indicator**  
Shows the volume level.
- 6 **Timer indicators**
  - DAILY: Lights up when the daily timer operation is selected.
  - SLEEP: Lights up when the sleep timer operation is selected.
  - REC: Lights up when the recording timer operation is selected.
- 7 **Source indicators**  
The "I" marking on the left of the selected source lights up.

**CD player display**

- 8 **Play indicators**  
▶: Lights up during CD playback.  
⏸: Lights up during pause.
- 9 **Disc indicator**  
Shows the CD disc number being played or selected.
- 10 **Character display**  
Shows the track number, play time, program sequence, etc.
- 11 **Repeat mode indicators**  
Show the repeat mode.  
REPEAT ALL: Lights up when all tracks in all the CDs loaded in the main tray or all tracks in the program are played repeatedly.  
REPEAT 1 CD: Lights up when a CD is played repeatedly.  
REPEAT 1: Lights up when a single track is played repeatedly.
- 12 **Play mode indicators**  
PROGRAM: Lights up in the program play mode.  
RANDOM: Lights up in the random play mode.
- 13 **Track indicators**  
Shows the number of tracks in the selected or played CD.

**Amplifier/tuner rear panel**

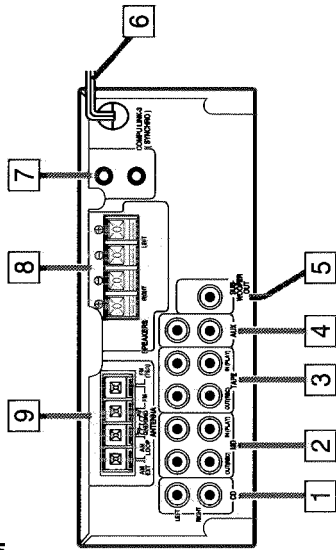
- [1] **CD input jacks**  
Connect to the ANALOG OUT jacks of the CD player.
- [2] **MD input/output jacks**  
Connect to the output/input jacks of the MD recorder.  
OUT (REC): Connect to the IN (REC) jacks of the MD recorder.  
IN (PLAY): Connect to the OUT (PLAY) jacks of the MD recorder.
- [3] **TAPE input/output jacks**  
Connect to the output/input jacks of the cassette deck.  
OUT (REC): Connect to the IN (REC) jacks of the cassette deck.  
IN (PLAY): Connect to the OUT (PLAY) jacks of the cassette deck.
- [4] **AUX input jacks**  
Connect to the audio output jacks of a VCR or TV.
- [5] **SUB-WOOFER OUT jack**  
Connect to the input jack of a subwoofer amplifier or powered subwoofer.
- [6] **Power cord**  
Connect to a wall power outlet.
- [7] **COMPU LINK-3 (SYNCHRO) jacks**  
Connect each jack with the COMPU LINK-3 (SYNCHRO) jack of another component. Either jack can be used for the connection.
- [8] **SPEAKERS terminals**  
Connect speakers with rated impedance of 6 to 16 ohms.
- [9] **ANTENNA terminals**  
Connect the FM and AM antennas.

**CD player rear panel**

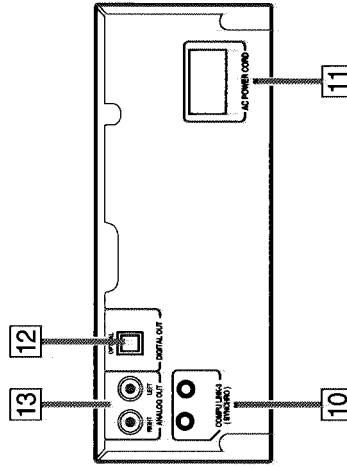
- [10] **COMPU LINK-3 (SYNCHRO) jacks**  
Connect each jack with the COMPU LINK-3 (SYNCHRO) jack of another component. Either jack can be used for the connection.
- [11] **AC POWER CORD receptacle**  
Connect the provided AC power cord.
- [12] **DIGITAL OUT jack**  
Connect to the DIGITAL IN jack of the MD recorder using an optical digital cable. When connecting to the XM-EX90 MD recorder, connect to its DIGITAL IN 1 jack.
- [13] **ANALOG OUT jacks**  
Connect to the CD input jacks on the amplifier/tuner using the provided audio pin cord.

**Rear Panels**

**Amplifier/tuner**

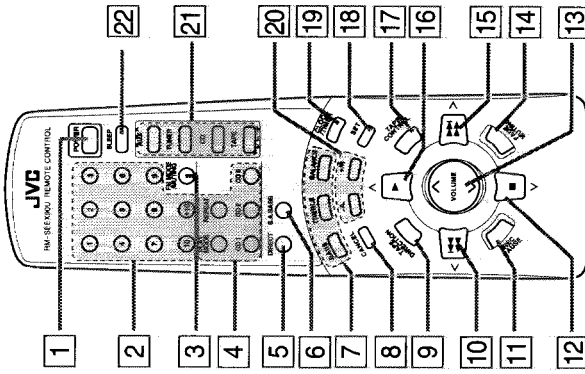


**CD player**





**Remote control**



- 9] **TAPE DIRECTION**  
Press to change the tape direction when using the cassette deck.
- 10] **◀◀ / ▶▶ (skip back) / <**  
  - Press to skip or search backward on the CD player after pressing CD, CD1, CD2, CD3, or PLAY MODE.
  - Press to rewind on the cassette deck after pressing TAPE or TAPE CONTROL.
  - Press to select the preset channel after pressing TUNER.
- 11] **REC PAUSE**  
Press to set the cassette deck to record pause mode.
- 12] **■ (stop) / ∨**  
  - Press to stop playback on the CD player after pressing CD, CD1, CD2, CD3, or PLAY MODE.
  - Press to stop playback or recording on the cassette deck after pressing TAPE or TAPE CONTROL.
  - Press to tune manually to a lower frequency after pressing TUNER.
- 13] **VOLUME**  
Press  $\wedge$  (up) to increase the volume. Press  $\vee$  (down) to decrease the volume.
- 14] **FADE MUTING**  
Press to turn the volume all the way down. To restore the volume, press it again.
- 15] **▶▶ / ▶ (skip forward) / >**  
  - Press to skip or search forward on the CD player after pressing CD, CD1, CD2, CD3, or PLAY MODE.
  - Press to fastforward on the tape deck after pressing TAPE or TAPE CONTROL.
  - Press to select the preset channel after pressing TUNER.
- 16] **▶▶ (play) / ^**  
  - Press to start playback on the CD player after pressing CD, CD1, CD2, CD3 or PLAY MODE.
  - Press to start playback on the cassette deck after pressing TAPE or TAPE CONTROL.
  - Press to automatically tune to higher frequencies after pressing TUNER.
- 17] **TAPE CONTROL**  
Press to set the buttons on the remote to operate the cassette deck.
- 18] **SET**  
Press to set the preset channel, timer, clock, etc.
- 19] **CLOCK/TIMER**  
Press to set the timer or clock.
- 20] **+/R, -/L**  
Press to set the BASS level, TREBLE level, BALANCE, timer, clock, etc.
- 21] **Source buttons**  
AUX: press to select the component connected to the amplifier/tuner's AUX jacks as the sound source.  
TUNER: press to select the tuner as the sound source and set some buttons on the remote to operate the tuner. Press repeatedly to switch the band (FM or AM).  
CD: press to select the CD player as the sound source and make it start playback of a loaded CD. Press to set some buttons on the remote to operate the CD player.  
TAPE: press to select the cassette deck as the sound source and make it start playback of a loaded tape. Press to set some buttons on the remote to operate the cassette deck (when using the cassette deck).
- 22] **SLEEP**  
Press to set or release the sleep timer.

**Remote control**

- 1] **POWER**  
Press to switch the power between ON and STANDBY.
- 2] **Number buttons**
  - Use to select preset channels when listening to the tuner.
  - Use to select tracks after pressing CD, CD1, CD2, CD3 or PLAY MODE.
- 3] **FM MODE/MUTING**  
Press to switch the FM mode between AUTO and MONO.
- 4] **CD controls**  
PLAY MODE: Press repeatedly to select the play mode you desire (PROG, RAM, RANDOM, or off (continuous play)).  
REPEAT: Press repeatedly to select the repeat mode (REPEAT ALL, REPEAT 1 CD, REPEAT 1, or off).  
CD1, CD2, CD3: Press to select a CD tray.
- 5] **DIRECT**  
Press to listen to the original sound of the source.
- 6] **S.A.BASS**  
Press to activate Signal Adaptive BASS function for enhancing the low frequencies.
- 7] **Tone control buttons**  
BASS: Press to adjust low frequencies. After pressing BASS, press +/R or -/L to adjust the bass.  
TREBLE: Press to adjust high frequencies. After pressing TREBLE, press +/R or -/L to adjust the treble.  
BALANCE: Press to adjust the balance. After pressing BALANCE, press +/R or -/L to adjust the balance.
- 8] **CANCEL**
  - Press to cancel a timer operation.
  - Press to erase a CD program step.

# Setting up the System

## Supplied Accessories

Before setting up your system, make sure you received all of the following supplied accessories.

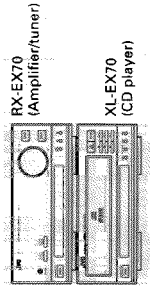
- AC power cord x 1
- Stereo Audio pin cord x 1
- Compu Link cable x 1
- AM loop antenna x1
- FM wire antenna x1
- Batteries (R6P/SUM-3/AA (15F)) x2
- Remote Control x1

## Cautions for Placement

Place the system in the following manner to for proper ventilation and many years of trouble free use.

- Do not place in any of the following areas.
  - Near a heater or other heat emitting appliance.
  - In direct sunlight.
  - Do not place the CD player on top of the amplifier/tuner.
  - In a place warmer than 35°C (or 95°F).
  - In a bathroom, kitchen or other area with steam, humidity, or hot water.
  - In a place with lots of static electricity or dust.
  - In an unstable area.
  - Near appliances that receive electronic wave broadcasts, such as a television or tuner.

**When stacking, place the components as illustrated below.**



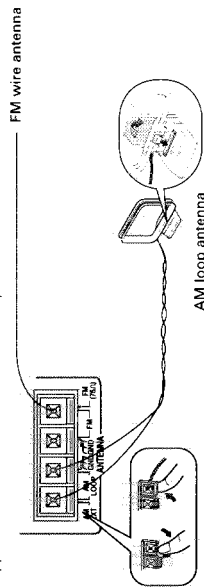
## Connections

### Before Making Any Connections

- Be sure to confirm the locations of the left and right, + and -, and IN and OUT terminals on each component and make connections correctly and firmly. Incorrect or incomplete connections may result in degradation of the stereo effect, or no sound at all. As a general rule, use the red plugs on the connecting cords to connect the right channels and the white plugs to connect the left channels.
- Do not connect the AC power cord until all other connections are complete.

### Connecting the supplied antennas

Connect the supplied FM (wire) antenna and AM loop antenna as shown below.



### FM antenna

Affix the antenna to a wall (etc.) in a position which provides the best reception.

### AM loop antenna

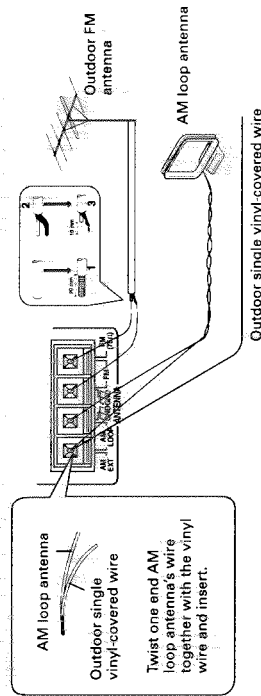
Fold the loop over the base and push in the direction of the arrow. Place in a position which provides the best reception.

### CAUTION

To avoid noise, keep antennas away from this unit's metallic parts, the audio pin cords, and the AC power cord.

### Connecting external antennas

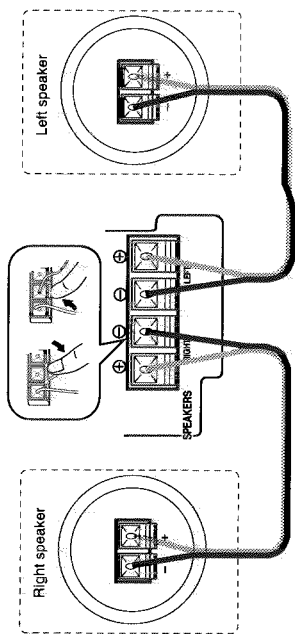
- Connect external antennas if reception is not satisfactory with the supplied antennas.



- To improve reception of FM stations, disconnect the supplied FM wire antenna and connect an 75-Ohm FM antenna wire (not supplied).
- To improve reception of AM stations, connect an vinyl-covered wire (not supplied) to the AM EXT terminal in addition to the supplied AM loop antenna.

### Connecting the Speakers

Connect the left speaker to the LEFT speaker terminals and connect the right speaker to the RIGHT speaker terminals. Be sure that the speaker cords do not touch the rear panel of this unit. This may damage the unit.  
 Be sure to connect this unit's + terminals to the + terminals on the speakers, and connect this unit's - terminals to the - terminals on the speakers.  
 • Refer also to the manual supplied with your speakers.



### IMPORTANT

- Use speakers with the correct impedance only. The correct impedance is indicated on the back panel.
- If a TV is installed near the speakers, the TV may display irregular colors. In this case, move the speakers farther away from the TV.

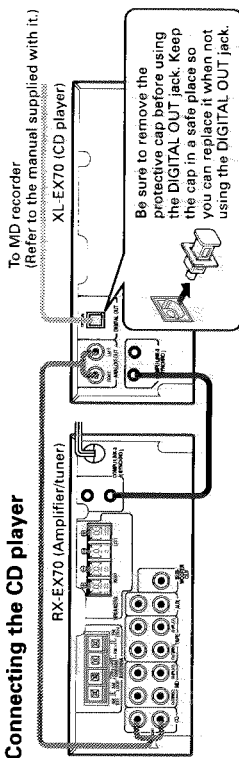
### Connecting the Power Amplifier/Tuner

After completing all other connections, connect the power cord to a wall outlet.

### CD player

After completing all other connections, use the supplied AC power cord to connect the AC POWER CORD terminal on the back of the CD player to a wall outlet.

### Connecting the CD player



### Audio pin cord

Use to connect the CD player's ANALOG OUT jacks to the CD input jacks on the RX-EX70 amplifier/tuner.

Be sure to connect jacks with plugs of the same colors for correct L (Left) and R (Right) connections.

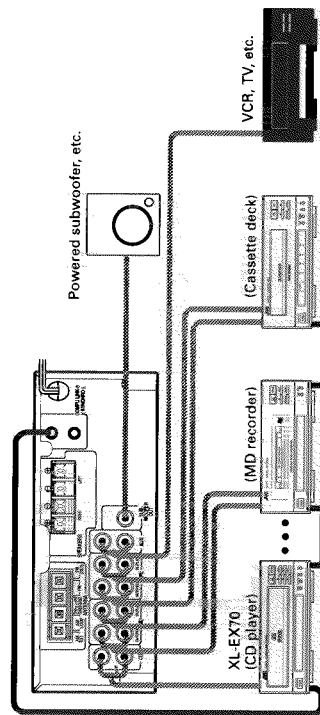
### COMPU LINK cable

Use the supplied COMPU LINK cable to connect one of the CD player's COMPU LINK-3 (SYNCHRO) jacks to either of the COMPU LINK-3 (SYNCHRO) jacks on the amplifier/tuner.

### Optical digital cable (not supplied)

Use to connect the CD player's DIGITAL OUT jack to the optical DIGITAL IN jack of an MD recorder. When making connections to the MD recorder, connect the CD player's DIGITAL OUT jack to the MD recorder's DIGITAL IN jack. Refer to the instructions provided with the MD recorder for details.

### Connecting other components



### Audio pin cord

Be sure to connect jacks with plugs of the same colors for correct L (Left) and R (Right) connections. Connect this unit's OUT (REC) jacks to the IN (REC) jacks on a MD recorder or cassette deck. Connect this unit's IN (PLAY) jacks to the OUT (PLAY) jacks on a MD recorder or cassette deck. Connect this unit's AUX IN jacks to the sound output jacks on your video deck, TV, etc.

### COMPU LINK cable

Use COMPU LINK cables to connect the COMPU LINK-3 (SYNCHRO) jacks of the optional components.

### Optical digital cable

Use to connect the DIGITAL OUT jack of the CD player and DIGITAL IN 1 jack of the MD recorder.

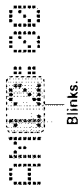
### Setting the Clock

This unit incorporates a clock with a 12-hour display. Be sure to set the clock before operating the unit. The clock can be set either in ON or STANDBY mode of power.

#### Use the remote control unit to set the clock.



(1) Press CLOCK/TIMER.

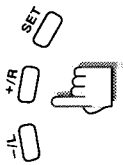


(2) Set the time of the day.

- [1] Set the hour.  
Use +/R or -/L to display the appropriate hour, then press SET.  
Hold down +/R or -/L to change the hour sequentially.



After setting the hour (before pressing SET)



[2] Set the minutes.

- Use +/R or -/L to display the appropriate minute, then press SET.  
Hold down +/R or -/L to change the minutes in 10 minutes steps.



- If you set the clock while the power is on, the display returns to the previous information after completing the clock setting.

#### To set the clock precisely

After setting the minutes, press SET in sequence with the time announcement on the TV, radio or telephone service. This starts the clock counting from 0 seconds of the set minute.

#### Why set the time?

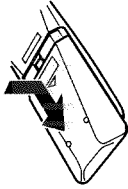
Setting the time allows you to use the daily and recording timer operations. The daily and recording timer operations cannot be set unless the clock has been set. To correct the previously set time, press CLOCK/TIMER repeatedly (9 times) so that the hour blinks to enter the clock set mode.

#### Notes

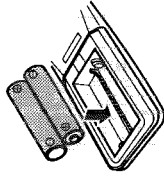
- Pressing buttons other than those described above while setting the clock will cancel the clock setup. If this occurs, resume setting the clock from step (1).
- In case of a power failure (or when the power cord has been unplugged) the clock may show the time of the power failure, or a blinking "AM 0:00". If this occurs, reset the clock to the correct time.

### Remote control batteries

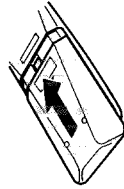
Load the supplied batteries (2) into the remote control.



(1) Open the battery case.  
Push down and pull the lid in the direction of the arrow.



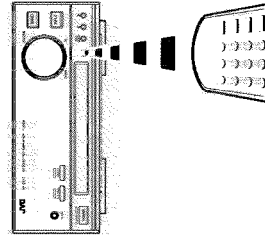
(2) Load the batteries.  
Insert two R6P(SUM-3)/AA(15F) batteries.  
Match the polarity (+ and -) of the batteries with the + and - marks inside the battery compartment.



(3) Close the battery case.

### Operating the Remote Control

Point the remote control toward the remote sensor on the front panel. The signal may not reach the remote sensor if the remote control is used at an angle, or if there are objects between the remote control and the remote sensor.



#### Cautions

- Observe the following to avoid battery leakage or explosion:
  - If the range or effectiveness of the remote control decreases, replace the batteries using R6P(SUM-3)/AA(15F) type dry cells.
  - Do not use an old battery together with a new one.
  - Do not use different types of batteries together.
  - Do not disassemble the batteries or subject them to high temperatures, like an open fire.
  - Remove the batteries if the remote control will not be used for a long time.

# Amplifier Operations

## Adjusting the Sound

### Emphasizing the bass

Front panel



Remote control



Press S.A. BASS. "S.A. BASS" and "ON" appear in the display and the S.A. BASS indicator lights up.



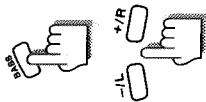
### To cancel the bass emphasis

Press S.A. BASS again. "S.A. BASS" and "OFF" appear in the display and the S.A. BASS indicator goes out.

- The S.A. BASS cannot be adjusted during DIRECT playback.

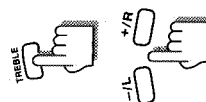
### Adjusting the bass and treble

Use the remote control for these operations.



#### Adjusting the bass

- Press BASS.
  - Press +/- or +/- to adjust the bass level. Press +/- to increase the bass. Press +/- to decrease the bass.
- The bass can be adjusted in 7 steps from -3 to +3.



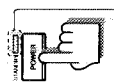
#### Adjusting the treble

- Press TREBLE.
  - Press +/- or +/- to adjust the treble level. Press +/- to increase the treble. Press +/- to decrease the treble.
- The treble can be adjusted in 7 steps from -3 to +3.
  - The BASS, and TREBLE cannot be adjusted during DIRECT playback.



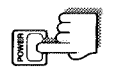
## Turning on the Power

Front panel



Goes out.

Remote control



Press POWER. The STANDBY indicator goes out and "HELLO" appears in the display.

- Pressing POWER of RX-EX70 turns on the source component previously selected.
- Pressing POWER of the other components also turns on the amplifier/tuner.

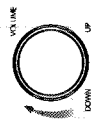
### To turn off the power

Press POWER again. The STANDBY indicator lights up and the display shows "GOOD-BYE", then turns to the clock. If you have made the Compu Link connection (page 40):

- Other components also turns off.

## Adjusting the Volume

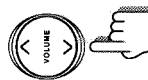
From the front panel



Rotate VOLUME. The volume level appears in the display.

- Rotate to the right (UP) to increase the volume, rotate to the left (DOWN) to decrease the volume.
- Rotate VOLUME quickly to make large changes, rotate slowly to make small changes.

From the remote control



Press VOLUME ^ or v. Press ^ to increase the volume, press v to decrease the volume. Hold down to make a continuous change.

- The volume can be set between 0 and 50.

### Notes

- The volume cannot be changes while the unit is in the STANDBY mode.
- Be sure to turn the volume down before setting the unit to the STANDBY mode.

### To mute the sound

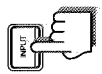
Press FADE MUTING. When you press FADE MUTING, the volume level decreases to 0 (MUTING). Pressing it again restores the volume.



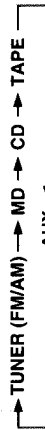
### Selecting a Source

Select the input source to be played.

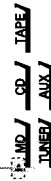
#### From the front panel



Press INPUT repeatedly. The name of the selected source appears in the display. Each press of INPUT switches the input source as shown below.



Example) This indicator lights when MD is selected



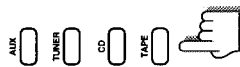
Source indicators

- When the TUNER source is selected, the display shows the frequency of the last received radio station.

#### One touch operation

When the unit is in the STANDBY mode, press INPUT to automatically turn the power on and switch to the last source you listened to.

#### From the remote control



Press AUX, TUNER, CD, or TAPE. The respective input source is selected.

Press TUNER repeatedly to select the band (FM or AM).

#### One touch operation

When the power is in the STANDBY mode, press AUX, TUNER, CD, or TAPE to automatically turn the power on and switch to the selected source.

#### When using other optional components together with this unit via the Compu Link connection (page 40)

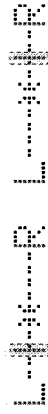
When a source is selected, the selected source component switches ON automatically. If the component is ready for playback, it also starts to play (see page 41).

### Adjusting the Balance

Use the remote control for these operations.

- Press BALANCE.

- Press -/L or +/R to adjust the balance level. Press -/L to shift the sound to the left speaker. Press +/R to shift the sound toward the right speaker.



Moves to the left when you press -/L

Moves to the right when you press +/R

- Even if you shift the balance all the way to the right or left, the sound does not completely disappear from the opposing speaker.
- The BALANCE cannot be adjusted during DIRECT playback.

### Direct Playback

Use this function to listen to the original sound of the sound source without any sound adjustments.

Front panel



Remote control



Press DIRECT. "DIRECT" and "ON" appear in the display and the DIRECT indicator lights up.



#### To cancel the DIRECT playback

Press DIRECT again. "DIRECT" and "OFF" appear in the display and the DIRECT indicator goes out.

- The S.A BASS, BASS, TREBLE and BALANCE cannot be adjusted during DIRECT playback.

### From the remote control



- Press TUNER to select the band you desire (FM or AM).  
In addition to selecting the FM band, this operation also sets the remote control to tuner operation mode. The remote control must be set to the tuner operation mode before proceeding to the following steps, even if the band was previously set to FM using the controls on the front panel.

- Tune in the station you desire.

#### For manual tuning

Press  $\blacktriangle$  (for higher frequencies) or  $\blacktriangledown$  (for lower frequencies) repeatedly to locate the frequency of the station you desire. When a station is received, the TUNED indicator lights up.

#### For automatic tuning

Hold down  $\blacktriangle$  or  $\blacktriangledown$  until the frequencies start to change, then release. When a station is tuned in, the TUNED indicator lights up and the frequency stops changing. If you know the frequency of the station you want to receive, keep holding  $\blacktriangle$  or  $\blacktriangledown$  until the amplifier/tuner nears the frequency you desire (this prevents the amplifier/tuner from stopping at other intermediate stations).



### Stereo and monaural reception

Switching to monaural reception is an effective way to reduce noise when receiving weak FM stereo broadcast.



#### To switch to monaural reception

Press FM MODE/MUTING on the remote control so that "MONO" appears in the display. This switches the reception mode to mono. In this mode, stereo broadcasts are also received in mono.

#### To switch to stereo reception

Press FM MODE/MUTING on the remote control again so that "AUTO" appears in the display. This switches the reception mode to auto tuning. When a program is broadcast in stereo the STEREO indicator lights up and you hear the stereo sound. When in monaural, the STEREO indicator goes off and you hear monaural sound.

**Normally, it is recommended to use Automatic tuning. If clear reception is not possible with the supplied antenna, connect an external antenna (see page 14).**

## Tuner Operations

### Manual and Automatic Tuning

This section shows you how to tune in an FM or AM broadcast.

#### From the front panel



- Press BAND to select the band you desire (FM or AM).  
Each press of BAND switches the band between FM and AM.

#### One touch operation

When the unit is in the STANDBY mode, press BAND to automatically turn the power on and tune in the last station you listened to.

- Press KEY MODE so that "PRESET" does not appear in the display.  
After storing stations in the receiver's preset memory (page 25), you can use the preset tuning feature (page 26).

- Tune in the station you desire.

#### For manual tuning

Press  $\blacktriangleright$  (for higher frequencies) or  $\blacktriangleleft$  (for lower frequencies) repeatedly to locate the frequency of the station you desire. When a station is received, the TUNED indicator lights up.

#### For automatic tuning

Hold down  $\blacktriangleright$  or  $\blacktriangleleft$  until the frequencies start to change, then release.

When a station is tuned in, "TUNED" appears in the display and the frequency stops changing. If you know the frequency of the station you want to receive, keep holding  $\blacktriangleright$  or  $\blacktriangleleft$  until the amplifier/tuner nears the frequency you desire (this prevents the amplifier/tuner from stopping at other intermediate stations).  
When a stereo broadcast is received, the STEREO indicator lights up.



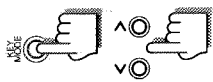
### Presetting Stations

Once stations are preset, they can be called up quickly with preset tuning. You can preset a total of 40 stations, either FM or AM.

#### Listening to Preset Stations

This section explains how to tune in preset stations.

##### From the front panel



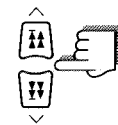
- ① Press KEY MODE so that "PRESET" appears in the display.
- ② Press > (for higher numbers) or < (for lower numbers) repeatedly to select the preset you desire.

##### From the remote control

You can tune in the preset stations from the remote control either, by switching through the presets one by one, or by specifying the preset you desire.



- ① Press TUNER to select the tuner operations. In addition to selecting the FM band, this operation also sets the remote control to tuner operation mode. The remote control must be set to the tuner operation mode before proceeding to the following steps, even if the band was previously set to FM using the controls on the front panel.



- ② Select the preset station you desire.
  - To switch through the preset stations one by one  
Press > (▶▶▶▶▶) (for higher numbers) or < (◀◀◀◀◀) (for lower numbers) repeatedly to select the preset number you desire.
  - To specify the preset stations  
Use the number buttons to select a preset number.
    - For preset number 5, press 5.
    - For preset number 15, press +10 then 5.
    - For preset number 20, press +10 then 10.
    - For preset number 30, press +10, +10, then 10.

- ① Tune in the station you want to preset. Use the buttons on the remote control to tune in the station; otherwise, following operation will not be possible.
- ② Press SET. The unit switches to preset memory mode ("— —" and PRESET blink in the display). Proceed to step ③ during the 4 seconds that "— —" and PRESET are blinking. After 4 seconds, preset memory mode is released. If this happens, press SET again to reactivate it.
- ③ Use the number buttons on the remote control to specify the preset number you desire. The preset number and PRESET blink in the display. Proceed to step ④ during the 4 seconds that the preset number and PRESET are blinking. After 4 seconds, preset memory mode is released. If this happens, start again from step ②.
- ④ Press SET again. "MEMORY" is displayed and the station is stored at the selected preset number. If another station was previously stored at that preset number, that station is erased and the new station is memorized in its place.

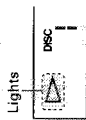




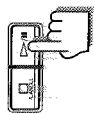
## Basic Operations

The following operations play all 3 CDs once, one after another.

- ① Load CDs.  
See "Loading CDs" on page 27.
- ② Press CD 1, CD 2 or CD 3 for the disc you want to play.  
The amplifier/tuner automatically switches to the CD input and the CD starts to play.  
The  $\triangleright$  indicator lights up.



Press  $\triangleright$ /II instead of CD 1, CD 2 or CD 3 to start playing the CD whose disc number appears in the display.



### One touch operation

When the unit is in the **STANDBY** mode, press CD 1, CD 2 or CD 3 or  $\triangleright$ /II to automatically turn on the power to the CD player and amplifier/tuner, set the amplifier/tuner to the CD input and start playing the CD.

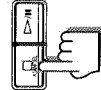
### CD playback sequence

When 3 CDs are loaded, they are played in one of the following sequences:

- When CD 1 is pressed**  
CD 1  $\rightarrow$  CD 2  $\rightarrow$  CD 3 (then stops)
- When CD 2 is pressed**  
CD 2  $\rightarrow$  CD 3  $\rightarrow$  CD 1 (then stops)
- When CD 3 is pressed**  
CD 3  $\rightarrow$  CD 1  $\rightarrow$  CD 2 (then stops)
- \* When only 2 CDs are loaded, they play in the same order, but the disc tray without a CD is skipped.

### To stop playback

Press  $\square$ /CANCEL.  
When playback is stopped, the display shows the total number of tracks and total playing time of the current disc for 4 seconds, then it shows the playing time for track 1.



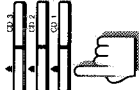
### To pause playback

Press  $\triangleright$ /II. The III indicator lights up.  
Press again to resume playback from the position where it was paused.



### To remove a CD:

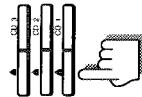
Press the respective  $\blacktriangle$ .



## CD Operations

### Loading CDs

The CD player's unique 3 disc changer mechanism houses 3 individual disc trays inside the main tray.



- ① Press  $\blacktriangle$  (open) for the disc tray (CD 1 to 3) you want to load.  
The main tray opens to the selected disc tray.  
The disc tray number and "OPEN" appear in the display.

DISC OPEN

Example) When CD1  $\blacktriangle$  is pressed

- The disc trays housed in the main tray are numbered CD 1, CD 2, and CD 3 starting from the bottom tray.

### One touch operation

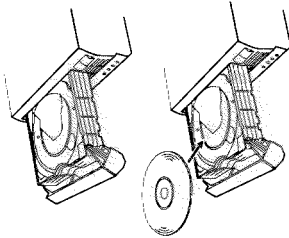
When the unit is in the **STANDBY** mode, press one  $\blacktriangle$  to automatically turn the power on and open to the selected tray.

- ② Place a CD with the label side facing up.  
Place CD singles (8 cm) in the depressed inner circle.
- ③ Press the same  $\blacktriangle$  you pressed in step ①.  
The main tray closes.  
The disc tray number and "CLOSE" appear in the display.

DISC CLOSE

Example) When CD 1  $\blacktriangle$  is pressed

- Repeat steps ① to ③ to load up to 3 CDs.



### Displayed information

When a CD is loaded, the disc number for that CD is displayed and the player reads the disc's data. After the data is read, the display shows the total number of tracks and total playing time of the disc, then switches to show the playing time for the first track.



Reading data

Total number of tracks and total playing time (shown for 4 seconds)

Playing time for track 1

Likewise, when playback is stopped, the display shows the total number of tracks and total playing time of the current disc for 4 seconds, then it shows the playing time for track 1.

### Tip

When loading more than one CD, instead of closing the main tray, press  $\blacktriangle$  for the next tray you want to load, the main tray automatically closes and then reopens to selected disc tray.

### CAUTION

The disc tray will close if pushed inward. Be careful not to push the tray inward when placing a CD.

### Program Play Mode

This play mode lets you play tracks from up to 3 CDs in the order you desire.

- ① Load CDs.  
See "Loading CDs" on page 27.
- ② Press **PLAY MODE** repeatedly to select **PROGRAM**.  
"PROGRAM" appears in the display and the **PROGRAM** indicator lights up.
  - If some tracks were previously programmed, the disc, track, and program numbers of each track are displayed.



Lights



Each time you press **PLAY MODE**, the play modes switch as follows:



- The CD player must be in stop mode when switching the play modes. If necessary, press **DISC/CANCEL** to stop playback before pressing **PLAY MODE**.
- ③ Program the tracks.
    - ① Press CD 1, CD 2 or CD 3 to select the disc containing the track you want to program.



Blinks

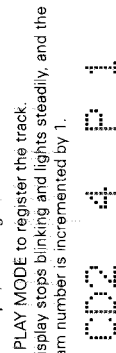
Example) Selecting disc 2.



- ② Select a track number by pressing **◀▶** or **▶▶**.

Blinks

Example) Selecting track 4.



- ③ Press **PLAY MODE** to register the track.

The display stops blinking and lights steadily, and the program number is incremented by 1.

#### Notes

- Repeat steps ① to ③ to program up to 32 tracks. If you attempt to program more than 32 tracks "FULL" appears in the display.
- Perform step ② within 4 seconds of step ①. If 4 seconds elapse between any operations, the unit automatically returns to the previous state.
- When using the remote control, see page 44.

### To exchange CDs during playback of another

Press **▶** corresponding to a disc number not shown in the display to open that disc tray and exchange the CD. When CDs are exchanged during playback, playback stops after playing the last exchanged CD.

### To skip to the beginning of a track

Press **▶▶** once to skip to the beginning of the next track. Press **◀◀** once to skip to the beginning of the current track.

- Each additional press skips to another track.



### To check the playing time of a track

Press **◀◀** or **▶▶** during stop mode to display the desired track number. The playing time for that track is also displayed.

### Fast forward / reverse

Press **◀◀◀** or **▶▶▶** on the front panel. For fast forward, press and hold down **▶▶▶**. For reverse, press and hold down **◀◀◀**. Release the button when the part you wish to listen to is reached.

- These operations cannot be controlled from the remote control unit.

#### Notes

- When CD 1, CD 2 or CD 3 is pressed, if there is no CD in the corresponding disc tray, "NO DISC" appears in the display and the unit enters stop mode.



Example) When disc tray of disc number 2 does not contain CD

- When **▶▶▶** is pressed, if the disc tray corresponding to the disc number shown in the display does not contain a CD, unit checks the other disc trays and automatically plays the first CD it finds. If there are no CDs, the unit enters stop mode when it reaches the last disc tray.

### Random Play Mode

This play mode lets you play tracks from up to 3 CDs at random. You can enjoy listening to the tracks in a different order each time.

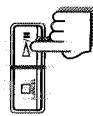
- ① Load CDs.  
See "Loading CDs" on page 27.
- ② Press **PLAY MODE** repeatedly to select **RANDOM**.



Each time you press **PLAY MODE**, the play modes switch as follows:



- The CD player must be in stop mode when switching the play modes. If necessary, press **□/CANCEL** to stop playback before pressing **PLAY MODE**.
- ③ Press **▷/||** to start random playback.  
Random playback stops automatically after playing each track once.
  - The CD player creates an order so that no tracks will be repeated.
  - Random playback stops if the main tray is opened.



#### To cancel random playback

Press **PLAY MODE** repeatedly during stop mode to select a different play mode.

#### To play the track at random repeatedly

Use the repeat play mode in combination with the random play mode. The tracks are played again in a different order after playing each track once.  
For details on the repeat mode, see page 33.

- ④ Press **▷/||** to start program playback.  
Program playback stops automatically after playing all the programmed tracks.

#### To check the programmed tracks

Press **◀/⏮** or **▶/⏭** on the remote control during stop mode. Pressing **▶/⏭** shows programmed track numbers in the programmed order.  
Pressing **◀/⏮** shows them in the reverse order.

- Programmed tracks cannot be checked by pressing **◀/⏮** or **▶/⏭** on the front panel.

#### To remove programmed tracks

Press **□/CANCEL** (or **CANCEL** on the remote control) during stop mode.  
Each time you press the button, a track is removed from the end of the program.

#### If you make a mistake during programming

Press **□/CANCEL** (or **CANCEL** on the remote control) during stop mode repeatedly to remove tracks from the end of the program until you reach the mistake, then reprogram from that point.

#### To cancel program playback

Press **PLAY MODE** repeatedly during stop mode to select a different play mode.  
The program remains in memory even after exiting the program play mode.

- The program is cleared from memory if the power cord is unplugged or there is a power failure.

#### When you remove a disc containing programmed tracks

The tracks from that disc are cleared from the program.

#### To play the program repeatedly

Use the repeat play mode in combination with the program play mode.  
For details on the repeat mode, see page 33.



## Timer Operations

### Introduction

This unit incorporates three different timers. Use the remote control for timer settings.

The timer can also be used to operate other optional components are connected to this unit. To operate the other optional components using the timer, be sure Compu Link cables are connected between the COMPU LINK-3 jacks on each component.

### DAILY timer (Wake-up timer, page 35)

The daily timer operates every day at the same time and can be used as an alarm clock.

- Specify the start time (power ON), the end time (power STANDBY), the source you want to hear, and the volume.

### REC timer (Recording timer, page 37)

This timer operates only once and allows you make an unattended recording at a preset time.

- Set the time you want the recording to start (power ON), the time you want the recording to end (power STANDBY), and the source to be recorded (radio station).

### SLEEP timer (Sleep timer, page 39)

Use this timer when you want to fall asleep listening to music.

- Specify how long you want to listen. When the specified period has elapsed, the power automatically switches to the STANDBY mode.

### Notes:

- Be sure to set the clock before setting the timer.
- Timer sets are stored in memory until they are changed.
- Timer settings may be erased if the power cord is unplugged or if there is a power failure. The timer memory provides for about 2-3 days of backup, but if the settings are lost, please reset them.

## Repeat Play Mode

This play mode lets you repeat the current track, the current CD, or all the tracks on all the CDs.

- Press REPEAT repeatedly to select the repeat mode.

Each time you press REPEAT, the repeat modes switch as follows:



### REPEAT ALL

Repeats all the tracks on all CDs.

This mode can be selected in any play mode.

### REPEAT 1 CD

Repeats all the tracks on the current CD.

This mode can only be selected during the normal (continuous) play mode.

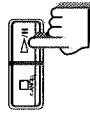
### REPEAT 1

Repeats the current track.

This mode can be selected in any play mode.

- Press  $\blacktriangle$ /M to start repeat playback.

**Note:** The repeat mode can also be selected while playing

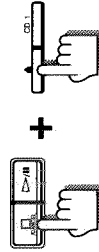


## To cancel repeat playback

Press REPEAT repeatedly to turn off the REPEAT indicator.

## Tray Lock

This function electronically locks the main tray so that it can not be opened simply by pressing one of the  $\blacktriangle$  buttons.



- Set the power to the STANDBY mode.

If the power is presently ON, press POWER.

- Press  $\blacktriangle$  for CD 1 while holding down  $\square$ /CANCEL.

"LOCKED" appears in the display and the main tray is locked.

- When the main tray is locked, the display shows "LOCKED" and the main tray cannot be opened.
- When a  $\blacktriangle$  is pressed, "LOCKED" appears in the display and the unit remains in the STANDBY mode.

## To unlock the tray




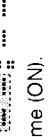
Repeat steps ① and ② above.

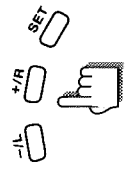
"UNLOCKED" appears in the display and the main tray is unlocked.



- Pressing a  $\blacktriangle$  opens the selected tray.
- When a  $\blacktriangle$  is pressed during the STANDBY mode, the power is turned on and the selected tray opens automatically.

### Daily Timer

Use the remote control to set this timer. It can be set during either power ON or STANDBY. Be sure to set the clock before attempting this operation.

- (1) Press CLOCK/TIMER to display "DAILY".  
  

- (2) Press CLOCK/TIMER again.  

- (3) Set the start time (ON).  
  - 1) Set the hour.  
 Use +/R or -/L to display the appropriate hour, then press SET.  
 Hold down +/R or -/L to change the hour sequentially.
  - 2) Set the minutes.  
 Use +/R or -/L to display the appropriate minute, then press SET.  
 Hold down +/R or -/L to change the minutes in 10 minutes steps.



- (4) Set the end time (OFF).  
 Set the end time (OFF) in the same way you set the start time (ON).  
  
 After setting the minutes (before pressing SET)
- (5) Select the source to be played when the timer activates.  
 Press +/R or -/L repeatedly to select the source, then press SET.  
 Each time +/R or -/L is pressed, the source switches as follows.  


**When selecting TUNER**  
 Press +/R or -/L repeatedly to select desired preset channel, then press SET.

**When selecting MD**  
 Press +/R or -/L repeatedly to select desired track number, then press SET.

- You can select any track number from 1 to 20.
- Pressing SET without selecting a track starts playback from the first track of the MD.

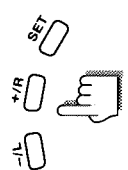
**When CD is selected:**

- 1) Press +/R or -/L repeatedly to select desired disc number, then press SET.
- 2) Press +/R or -/L repeatedly to select desired track number, then press SET.

- You can select any track number from 1 to 20.
- Pressing SET without selecting the disc and track numbers starts playback from the first track of the last disc selected before timer operation.

- (6) Set the volume.  
 Press +/R or -/L repeatedly to set the volume, then press SET.

  - The volume can be set between 0 and 50.



After setting the volume (before pressing SET)  
 After SET is pressed, the display shows the start time, the end time, the source, and the volume settings.

- If the power is ON, press POWER to enter the STANDBY mode once your settings are complete.

### Timer operation

Once set, the DAILY timer operates every day, at the same time, unless the DAILY timer is canceled. When the end time (OFF) arrives, the unit automatically switches to the STANDBY mode.

### Switching the DAILY timer OFF and ON

The DAILY timer settings are stored in memory. To turn off the timer without changing the settings, switch the timer operation OFF. The next time you want to use the timer, switch it back ON (the previous settings are still available).

### Switching OFF

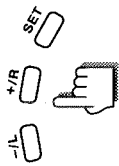
Press CLOCK/TIMER, so that "DAILY" blinks in the display (as described in step 1) of the main operations), then press CANCEL. The DAILY indicator turns off and "OFF" appears in the display.

### Switching ON

Press CLOCK/TIMER, so that "DAILY" blinks in the display (as described in step 1) of the main operations), then press SET. The DAILY indicator lights up and the start time, the end time, the source, and the volume settings appear in the display.



- ⑥ Select the recording component (MD or TAPE).  
Press +/R or -/L so that the desired component is blinking, then press SET.



- The blinking component is selected.

After SET is pressed, the display shows the start time, the end time, the source, and the volume settings.

- If you plan to record while you are away, set the volume to 0 before switching the power to the STANDBY mode.

**Timer operation**

When the start time comes, the power turns on and recording begins.  
When the end time comes, the power automatically switches to the STANDBY mode.

**Switching the REC timer ON and OFF**

The REC timer operates only once, but the settings are stored in memory.

To use the same REC timer again, switch the REC timer ON (the previous settings are still available).

To cancel the REC timer before the start time arrives, switch the REC timer OFF.

**Switching ON**

Press CLOCK/TIMER, so that "REC" blinks in the display (as described in step ① of the main operations), then press SET. The REC indicator lights up and the start time, the end time, the source, and the volume settings appear in the display.



**Switching OFF**

Press CLOCK/TIMER, so that "REC" blinks in the display (as described in step ① of the main operations), then press CANCEL. The REC indicator turns off and "OFF" appears in the display.

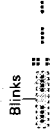
**Recording Timer**

Use the remote control to set this timer. It can be set during either power ON or STANDBY. Be sure to set the clock before attempting this operation.

- ① Press CLOCK/TIMER 3 times to display "REC".



- ② Press CLOCK/TIMER again. "ON" appears in the display.



- ③ Set the start time (ON).

- ① Set the hour.

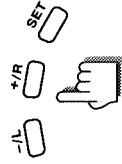
Use +/R or -/L to display the appropriate hour, then press SET.

Hold down +/R or -/L to change the hour sequentially.

- ② Set the minutes.

Use +/R or -/L to display the appropriate minute, then press SET.

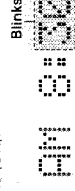
Hold down +/R or -/L to change the minutes in 10 minutes steps.



After setting the minutes (before pressing SET)

- ④ Set the end time (OFF).

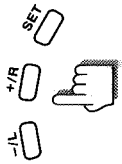
Set the end time (OFF) in the same way you set the start time (ON).



After setting the minutes (before pressing SET)

- ⑤ Select the preset station to be recorded when the timer activates.

Select the radio station. Press +/R or -/L repeatedly to select the desired preset station, then press SET.



# COMPU LINK

## Linked Operation of the Other Optional Components (Compu Link)

The EX series components can be controlled under linked operation provided by the JVC's Compu Link remote control system.

### What is Compu Link

The world of single components, in which you purchase a cassette deck, CD player, amplifier and other components separately and enjoy your own composition, is an effective means for pursuit of high-quality reproduction. However, in terms of operability, the need of controlling components independently makes their control complicated and their linked operation impossible. Then, isn't it possible to combine single components and control them as simply as an integrated audio system? The Compu Link remote control system is the response to such a requirement.

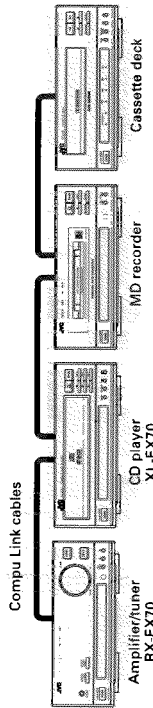
The components in the JVC EX series are equipped with jacks named COMPU LINK-3 (COMPU LINK jacks). By connecting the COMPU LINK jacks of these components, they can be controlled simply with a systematized, linked operation.

### Compu Link connections

Using Compu Link cables, connect the COMPU LINK jacks of EX series components. Connect so that the Compu Link cables can bridge all of the EX series components you have as shown below. The components can be connected in any order.

### Compu Link-3 features

The Compu Link-3 system of the EX series components makes the following operations possible.



### Shortcut playback

Simply selecting an input source of the amplifier/tuner starts playback of the selected source component (CD player, MD recorder or cassette deck). Also, even if you do not touch the amplifier/tuner, starting playback of a source component sets the amplifier's input source automatically to the played component. (See "Shortcut Playback" on page 41.)

### A single remote control unit

The remote control unit provided with the units can also be used to control other EX series components.

### Synchronized recording

Recording can be started automatically in synchronism with the start of playback of a source component. (See "Synchronized Recording" on page 45.)

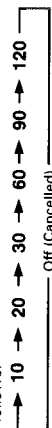
### Timer operation

The timer function built into the amplifier/tuner can be used to start recording or playback of other components at the reserved time of the day or switch the power to the STANDBY mode in the reserved time period.

## Sleep Timer

Use the remote control to set this timer.

- ① Start playing a source.
- ② Press SLEEP repeatedly to set the timer. Each time you press SLEEP the timer changes as follows.



Setting is complete when the SLEEP indicator stops blinking and lights steadily.

When the specified period of time has elapsed, the power automatically switches to the STANDBY mode.

### To change the timer length

After setting the timer, press SLEEP once to display the time remaining.

To change the timer, press SLEEP again to select the length you desire.

### To cancel the SLEEP timer:

After setting the timer, press SLEEP repeatedly until the timer length disappears. The SLEEP indicator turns off and the timer is cancelled.

## Timer Priority

When more than one timer is set for a certain time, this unit operates as shown below.

When more than one timer is set to operate at a given time.

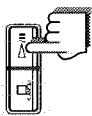
	Setting	Actual operation
Case 1	<p>REC timer: ON (A) OFF</p> <p>SLEEP timer: OFF</p> <p>Timeline: AM 1:00, AM 1:30, AM 2:00</p>	<p>REC timer is given priority.</p> <p>• There is no sound for a few seconds immediately before the REC timer turns on.</p> <p>Timeline: AM 1:00, AM 1:30</p>
Case 2	<p>REC timer: ON (A) OFF</p> <p>DAILY timer: ON (B) OFF</p> <p>Timeline: AM 6:00, AM 6:30, AM 7:00, AM 7:30</p>	<p>Timeline: AM 6:00, AM 6:30, AM 7:30</p>

### Shortcut Playback (From a Source Component)

By starting playback of a source component, the amplifier/tuner's input source is automatically switched to that source and playback can be monitored through it. If playback is started while the amplifier/tuner's power is in the STANDBY mode, it is also switched ON automatically.

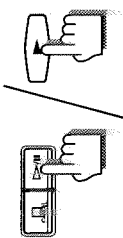
#### CD player operation

Press **▶/II** or CD 1, CD 2, or CD 3. The amplifier/tuner's input source is set to "CD" and CD playback starts. If the amplifier/tuner's power is in the STANDBY mode, it is automatically switched ON.



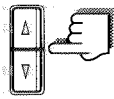
#### MD recorder operation

Press **▶/II** of the MD recorder or **▶** of the remote control unit provided with the MD recorder. The amplifier/tuner's input source is set to "MD" and MD playback starts. If the amplifier/tuner's power is in the STANDBY mode, it is automatically switched ON.



#### Tape deck operation

Press **◀** or **▶**. The amplifier/tuner's input source is set to "TAPE" and tape playback starts. If the amplifier/tuner's power is in the STANDBY mode, it is automatically switched ON.



- It takes about 5 seconds after the amplifier/tuner is turned ON until it can start audio reproduction. In this period, the audio cannot be reproduced even when the source component has started playback. As a result, the beginning of playback may not be heard in this case.
- When another source component is played, the source component which has been played stops automatically in a few seconds.

### Shortcut Playback (From the RX-EX70 Amplifier/tuner)

By simply pressing INPUT of the amplifier/tuner (RX-EX70) to select an input source, the selected source component can automatically be turned on and its playback started.

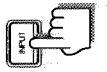
#### Playing CDs

Press INPUT to select "CD".



The CD player is turned on and playback of the CD with the disc number displayed on the CD player starts. If no CD has been loaded in the CD player, its display shows "NO DISC".

- When another input source is selected by pressing INPUT, the CD player stops automatically in a few seconds.



#### Playing an MD

Press INPUT to select "MD".



The MD recorder is turned on, and if an MD has been loaded in it, playback of the MD starts. If no MD has been loaded in the MD recorder, its display shows "NO DISC".

- When another input source is selected by pressing INPUT, the MD recorder stops automatically in a few seconds.



#### Playing a cassette tape

Press INPUT to select "TAPE".



The cassette deck is turned on, and if a tape has been loaded in it, playback of the tape starts.

- When another input source is selected by pressing INPUT, the cassette deck stops automatically in a few seconds.





**Program playback of CD**



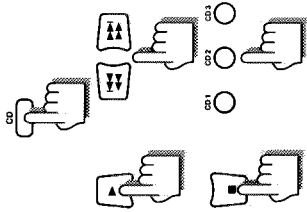
- ① While the CD player is in stop mode, press **PLAY MODE** of the CD player to "PROGRAM".
- ② Specify the disc number.  
Press one of CD1, CD 2 and CD 3.
- ③ Specify a track number using the number buttons.  
Specify while the display is blinking (for 4 sec.).
- ④ Program required tracks by repeating steps ② and ③ for each.
- ⑤ Press **▶**.  
Program playback starts.

**Remote Control of the Other Optional Components**

The remote control provided with the units can be used to control other optional components such as the CD player (XL-EX70) and cassette deck. Operate the remote control by pointing it to the remote sensor of the amplifier/tuner.

**Controlling the CD player (XL-EX70)**

Use the following buttons to remote control the CD player.  
CD: Selects the CD player as the sound source and make it start playback of a loaded CD.



- ▶: Starts playback.
- : Stops playback.
- ◀: Skips to the beginning of a track.
- CD 1: Starts playback of the CD with disc No. 1.
- CD 2: Starts playback of the CD with disc No. 2.
- CD 3: Starts playback of the CD with disc No. 3.

**Shortcut playback**

Pressing CD or one of CD1 to 3 starts playback immediately.

**Number buttons**

- 1 to 10, +10: Used to specify a track number directly after pressing CD, CD1, CD2, CD3 or **PLAY MODE**.
- To select track No. 5: Press 5.
- To select track No. 15: Press +10 then 5.
- To select track No. 20: Press +10 then 10.
- To select track No. 32: Press +10 three times then press 2.

**Recording of cassette deck**



- ① Load the tape for use in recording in the tape tray.
- ② Press **TAPE DIRECTION** to select the tape running direction.
- ③ Press **REC PAUSE**.  
The cassette deck enters the record-pause mode.
- ④ Play the source to be recorded.
- ⑤ Press **▶**.  
Recording starts.

**Controlling the cassette deck**

Use the following button to remote control the cassette deck.

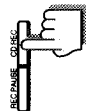
- TAPE**: Selects the cassette deck as the sound source and make it start playback of the inserted tape.
- TAPE CONTROL**: Switches the remote control mode to the tape mode without selecting the cassette deck as the sound source.
- TAPE DIRECTION**: Switches the tape running direction.
- ▶: Starts playback or recording.
- ◀, ▶, ▶▶, ▶▶▶: Press during playback to skip to the beginning of a piece of music.
- : Stops playback or recording.
- REC PAUSE**: Initiates record-pause mode.

**Shortcut playback**

Pressing **TAPE** ( or **TAPE CONTROL**) then **▶** starts playback immediately.

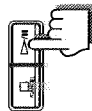
### Recording CD audio onto a cassette tape (1)

- ① Prepare the cassette deck.  
Load a tape for use in recording in the cassette deck.
- ② Prepare the CD player.  
Load the CD to be recorded in the CD player. Program tracks as required.
- ③ Press CD REC of the cassette deck.  
Synchronized recording starts.
  - To stop recording, press □/CANCEL on the CD player or ■ on the cassette deck.
  - Refer also to the instruction manual of the cassette deck.



### Recording CD or MD audio onto a cassette tape (2)

- ① Prepare the cassette deck.  
Load a tape for use in recording in the cassette deck.
- ② Prepare the CD player or MD recorder.  
To record CD: Load the CD to be recorded in the CD player and program tracks as required.  
To record MD: Load the MD to be recorded in the MD recorder and program tracks as required.
- ③ Press REC PAUSE of the cassette deck.  
The cassette deck enters the recording standby mode.
- ④ Press ▷/II of the CD player or MD recorder.  
Synchronized recording starts.
  - Refer also to read the instruction manuals of the other components.

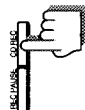


### Synchronized Recording

When recording CD audio onto an MD, CD audio onto a cassette tape or MD audio on a cassette tape, the recording operation can be synchronized with the playback operation.

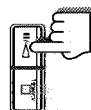
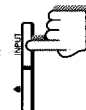
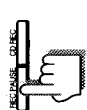
#### Recording CD audio onto an MD (1: Recording the digital input from the CD player)

- ① Prepare the MD recorder.  
Load a recordable MD (Mini Disc) in the MD recorder.
- ② Prepare the CD player.  
Load the CD to be recorded in the CD player. Program tracks if required.
- ③ Press CD REC of the MD recorder.  
Synchronized recording starts.
  - To stop the recording, press □/CANCEL either or the MD recorder or on the CD player.
  - Refer also to the instruction manual of the MD recorder.



#### Recording CD audio onto an MD (2: Recording the analog input from the CD player)

- ① Prepare the MD recorder.  
Load a recordable MD (Mini Disc) in the MD recorder.
- ② Prepare the CD player.  
Load the CD to be recorded in the CD player. Program tracks if required.
- ③ Press REC PAUSE of the MD recorder.  
The MD recorder enters record-pause mode.
- ④ Press INPUT of the MD recorder to select the analog input.
- ⑤ Press ▷/II of the CD player.  
Synchronized recording starts.
  - To stop the recording, press □/CANCEL either or the MD recorder or on the CD player.
  - Refer also to the instruction manual of the MD recorder.



# Additional Information

## Troubleshooting

If you experience any difficulty with your units, check the following list for a possible solution before calling for service. If you cannot solve the problem from the hints given here, or the units have been physically damaged, call a qualified person, such as your dealer, for service.

SYMPTOM	POSSIBLE CAUSE	ACTION
<b>Amplifier/tuner</b> Amplifier/tuner does not respond.	• The AC power cord is disconnected.	• Connect the power.
	• Connections are incorrect or incomplete.	• Refer to "Connections," and make sure all equipment is connected correctly.
	• The speaker cords are not connected.	• Connect the speaker cords.
	• Headphones are connected.	• Disconnect the headphones.
No sound.	• The volume control is turned all the way down.	• Turn VOLUME to the right.
	• The polarity (+, -) of one speaker is reversed.	• Make sure both speakers are connected with the correct polarity.
Sound placement and/or motion is undefined.	• The balance is turned all the way to the right or left.	• Adjust the balance toward the center.
Sound comes from only one speaker.	• A speaker cord is disconnected.	• Make sure the speaker cords are connected securely.
	• Antenna is not connected.	• Make sure the antennas are connected securely.
Noise in broadcast signal makes it difficult to hear.	• The AM loop antenna is too close to the unit.	• Change the location and direction of the AM loop antenna.
	• The FM wire antenna is laying in a pile on the floor.	• Stretch the wire antenna out and pin it in a position that provides good reception.
	• Batteries are exhausted.	• Replace the batteries.
Remote control does not work	• Battery polarity (+, -) is reversed.	• Reinsert batteries correctly.
	• Incorrect operation.	• Point remote control at the remote sensor on the amplifier/tuner.
Remote control does not work	• The remote sensor is in direct sunlight.	• Keep the remote sensor away from direct sunlight.

SYMPTOM	POSSIBLE CAUSE	ACTION
<b>CD player</b> Playback is not possible.	• No disc has been loaded.	• Load a disc (see page 27).
	• The disc was inserted upside-down.	• Load the disc so that the label side faces up in the disc tray.
Sound is intermittent.	• The disc is not flat in the groove on the disc tray	• Load the disc so that it lies flat in the disc tray (see page 27).
	• The playback is paused.	• Press <b>▶/II</b> .
	• The disc is damaged.	• Load a different disc.
	• Moisture has condensed inside the unit.	• Leave the unit turned on until the moisture evaporates.
Disc tray does not open.	• The disc is dirty.	• Wipe the surface disc with a soft cloth.
	• The disc is warped or scratched.	• Replace the disc with a new one.
No sound.	• Connections are incorrect or incomplete.	• Check to make sure the all equipment is connected correctly.
	• Volume control on amplifier/tuner is turned all the way down.	• Adjust the volume on the amplifier/tuner.
Disc tray does not open.	• Power cord is not connected.	• Connect the power cord.
	• Power is not turned on.	• Turn the power on.
CD player does not respond.	• The power cord is disconnected.	• Connect the power cord.
	• The Compu Link cable is not connected.	• Connect the Compu Link cable.
	• Power is not turned on.	• Turn the power on.

**Specifications**

**Amplifier/tuner (RX-EX70)**

**Output Power** 20 watts per channel, min. RMS, both channels driven, into 6 ohms from 70 Hz to 20 kHz, with no more than 0.5% total harmonic distortion, 0.08% at 14 watts output (\* Measured by JVC Audio Analysis System)

**Total Harmonic Distortion** (6 ohms, 1 kHz)

**Audio Input Sensitivity/Impedance** (1 kHz)

CD, MD 260 mV/49 kohms  
TAPE 290 mV/54 kohms  
AUX 370 mV/49 kohms

**Audio output level/Impedance** (1 kHz)

TAPE, MD 210 mV/400 ohms  
SUB-WOOFER OUT 1.8V/1k ohms

**Speaker terminals Impedance**

6 - 16 ohms

**Tuner Section**

FM Tuner 87.5 - 108.0 MHz  
AM Tuner 530 - 1710 kHz

**General**

**Dimensions** 200 x 80 x 323.4 mm (W/H/D)  
(7-7/8 x 3-3/16 x 12-3/4 inches)  
**Mass** 3.3 kg (7.3 lbs)

**Power Specifications**

**Power Requirements** AC 120V~, 60 Hz  
**Power Consumption** 48 watts (at operation)  
13 watts (in standby mode)

**CD Capacity** 3 CDs

**Dynamic Range** 95 dB

**Signal-To-Noise Ratio** 100 dB

**Wow And Flutter** Unmeasurable

**General**

**Dimensions** 200 x 80 x 310 mm (W/H/D)  
(7-7/8 x 3-3/16 x 12-1/4 inches)  
**Mass** 2.8 kg (6.2 lbs)

**Power Specifications**

**Power Requirements** AC 120V~, 60 Hz  
**Power Consumption** 8 watts (at operation)  
3 watts (in standby mode)

**Accessories**

- AC power cord (1)
- Stereo Audio pin cord (1)
- Compu Link cable (1)
- AM loop antenna (1)
- FM wire antenna (1)
- Batteries (R6P/SUM-3/AAA (15F)) (2)
- Remote Control (1)

Design and specifications are subject to change without notice.



**HOW TO LOCATE YOUR JVC SERVICE CENTER**

**TOLL FREE : 1-800-537-5722**

**Dear customer:**  
In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, Call 1-800-537-5722 for your authorized servicer. Remember to retain your Bill of Sale for Warranty Service.

**JVC SERVICE & ENGINEERING COMPANY OF AMERICA**  
DIVISION OF US JVC CORP.

**FACTORY SERVICE CENTER LOCATIONS**

- |   |  |  |  |  |
|---|--|--|--|--|
| 107 Little Falls Road<br>Fairfield, NJ 07004-2105<br>(201) 808-9279 | 1500 Lakes Parkway<br>Lawrenceville, GA 30243-5357<br>(770) 339-2522 | 705 Enterprise Street<br>Aurora, IL 60504-8149<br>(630) 851-7855 | 10760 Hammerly, Suite 110<br>Houston, TX 77043<br>(713) 935-9331 | 890 DuBuque Avenue<br>South San Francisco, CA 94080-1804<br>(415) 871-2866 |
| 5665 Corporate Avenue<br>Cypress, CA 90630-0024<br>(714) 229-8011   | 2969 Mapunapuna Place<br>Honolulu, HI 96819-2040<br>(808) 833-5828   |  |  |  |
| 230 Eliot Street<br>Ashland, MA 0172-2377<br>(508) 881-5923         | 14505 Commerce Way<br>Miami Lakes, FL 33016-1512<br>(305) 362-8252   |  |  |  |

Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level of performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.

**NATIONAL HEADQUARTERS**  
JVC SERVICE & ENGINEERING COMPANY OF AMERICA  
DIVISION OF US JVC CORP.  
107 Little Falls Road  
Fairfield, NJ 07004-2105

**If you ship the product . . .**

Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.

**Don't service it yourself.**

**CAUTION**  
To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.  
Refer servicing to qualified service personnel.

**ACCESSORIES**

To purchase accessories for your JVC product, you may contact your local JVC Dealer. Or from the 48 Continental United States call toll free . 800-862-2345



**LIMITED WARRANTY AUDIO-1**

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below, ONLY TO THE ORIGINAL PURCHASER AT RETAIL TO BE FREE FROM DEFECTIVE MATERIAL AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period.")

PARTS	LABOR
1YR	1YR

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY(50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

**WHAT WE WILL DO:**

If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

**WHAT YOU MUST DO FOR WARRANTY SERVICE:**

Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800)537-5722. If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus and letter of explanation of the problem to the nearest JVC Factory Service Center, (the name and location of which is on the back of the product). If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

**WHAT IS NOT COVERED:**

- This limited warranty provided by JVC does not cover:
- Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to repair and/or service your product; and/or if the product is not provided with the products, or if the model or serial number has been altered, tampered with, deleted or removed;
  - Initial installation and removal for repair;
  - Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
  - Damage that occurs in shipment, due to act of God, and cosmetic damage;
  - Signal reception problems and failures due to line power surge;
  - Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus/Needle) are covered for 90 days from the date of purchase;
  - Accessories;
  - Batteries (except the Rechargeable Batteries are covered for 90 days from the date of purchase);
- There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA  
DIVISION OF JVC CORP.  
41 Slater Drive  
Elmwood Park, New Jersey 07407

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY. THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:

Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_  
 Purchase date \_\_\_\_\_ Name of dealer \_\_\_\_\_



VICTOR COMPANY OF JAPAN, LIMITED



0598TTMWSZOK

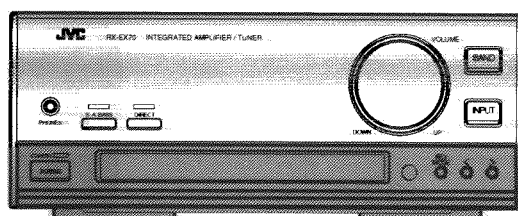
CA-EX70/-EX70R

-MEMO-

## INTEGRATED COMPACT SYSTEM

CA-EX70

CA-EX70R



## Area Suffix

C	-----	Canada
J	-----	U.S.A.
U	-----	Other Areas
UB	-----	Hong Kong
UF	-----	China
US	-----	Singapore
UT	-----	Taiwan
B	-----	U.K.
E	-----	Continental Europe
EN	-----	Northan Europe
EE	-----	Eastern Europe

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Location of P. C. Board Parts	-----	2-19

## Removal of Main Parts

### (1) Removing the top cover

1. Remove the two screws A retaining both sides of the top cover and four screws A retaining the rear sides of the cover.
2. While raising the rear section and slightly spreading the top cover, pull it out from the front panel.

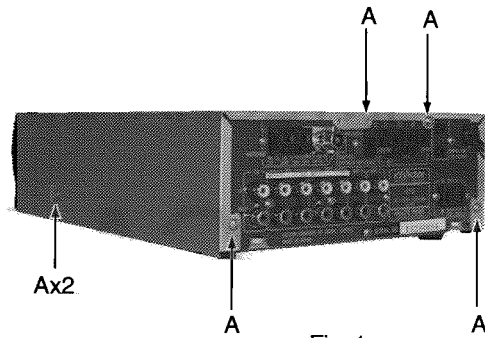


Fig. 1

### (2) Removing the front panel assembly

1. Remove the top cover.
2. From both sides of the bottom of the body, remove the three screws B retaining the front panel assembly.
3. Pull out the card wire (CN701) and flat wire (CN703).
4. By removing the one screw C, disconnect the earth wire.
5. By removing the three hooks, disassemble the front panel assembly.

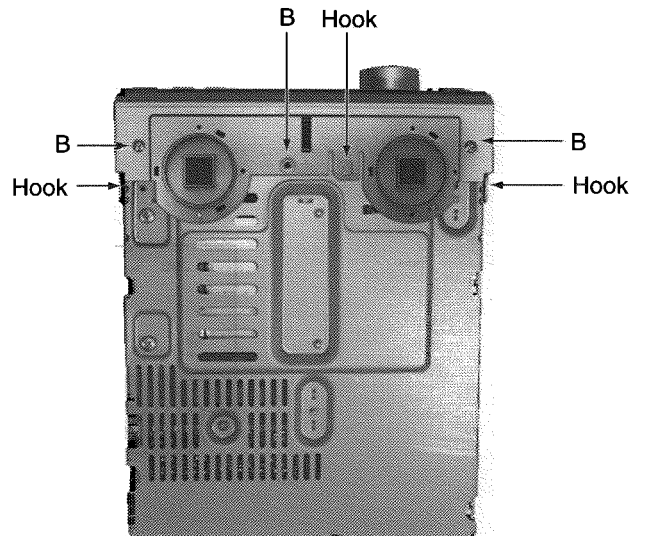


Fig. 2

### (3) Removing the rear panel

1. Remove the top cover.
2. Pull out the cord bushing with cutting pliers, etc.

**CAUTION:** In this case, the cord bushing should be pulled out so carefully as not to cause any damage to the cord by protecting it with a sheet, etc.

3. Remove the eleven screws D retaining the rear panel.

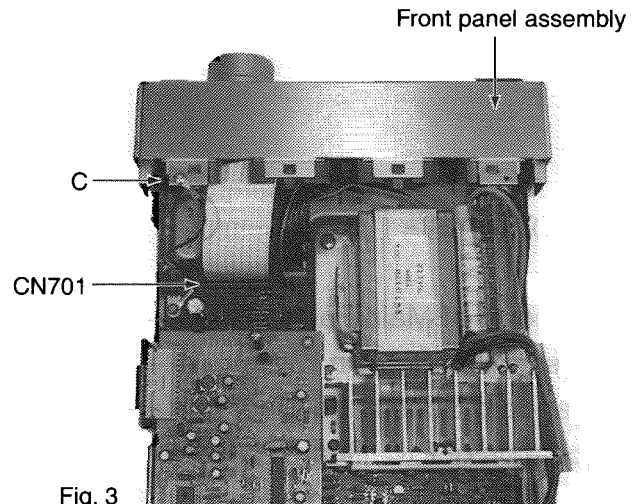


Fig. 3

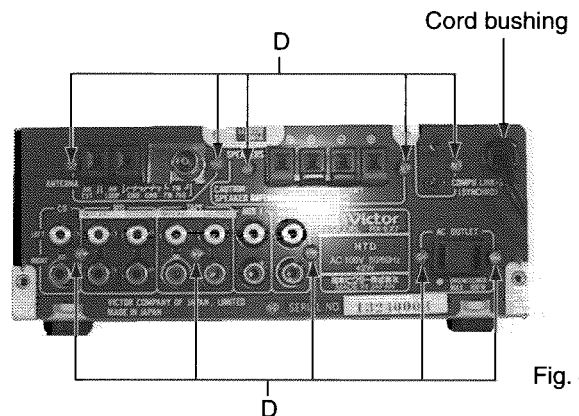


Fig. 4



**(4) Removing the front cover and system control P.C. board**

1. Remove the top cover and front panel.
2. Remove the main volume and the main volume nut.
3. By removing the four screws B retaining the system control P.C. board.
4. After removing the four hooks A, remove the two hooks B. For assembly, on the other hand, set the hooks A after setting the hooks B.

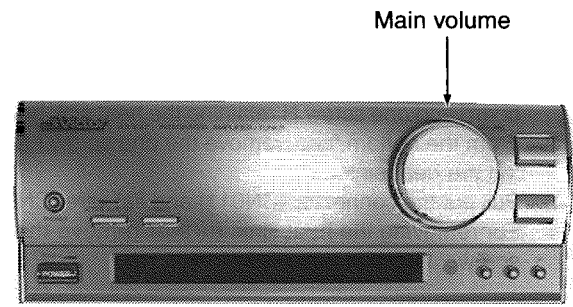


Fig. 5

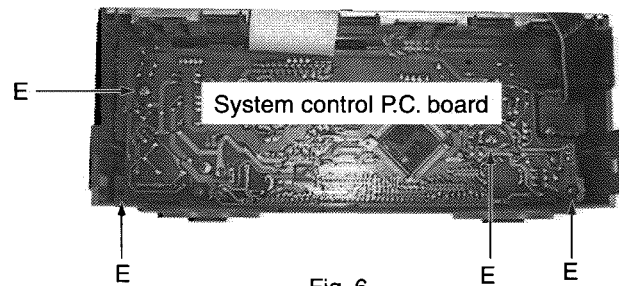


Fig. 6

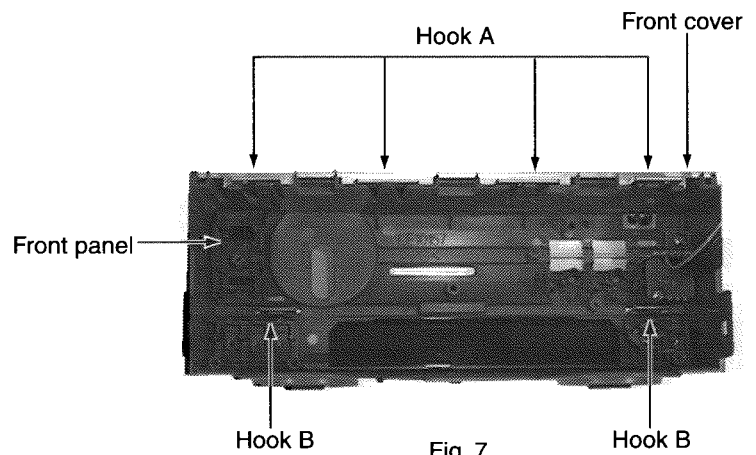


Fig. 7

**(5) Removing the tuner P.C. board**

1. Remove the rear panel.
2. Remove the one screw F retaining the tuner P.C. board.
3. While raising the hook of the connector (CN111), remove the tuner P.C. board.

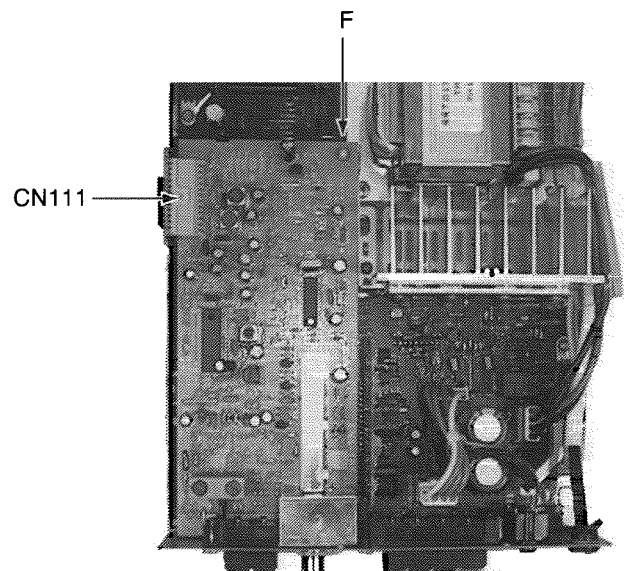


Fig. 8

**(6) Removing the P.C. board**

1. Remove the three screws G retaining the main P.C. board and one screw H retaining the heat sink bracket.
2. From the bottom face, remove the one screw I retaining the heat sink.
3. Pull out the connector (CN011) and flat wire (CN012).
4. For removing the heat sink, further remove the four screws J and one screw M.

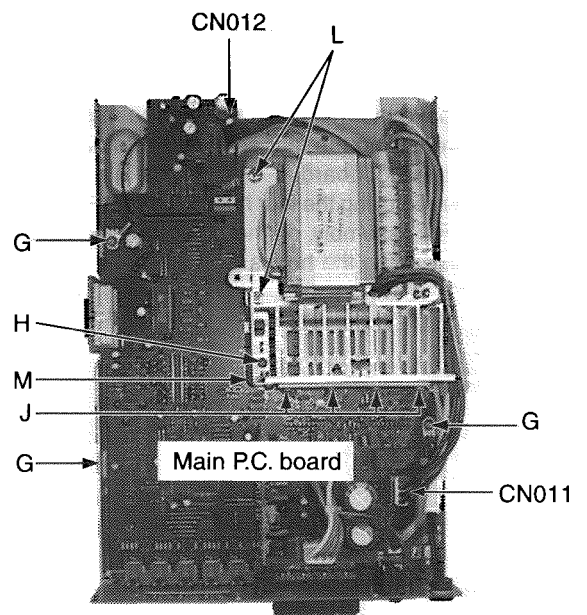


Fig. 9

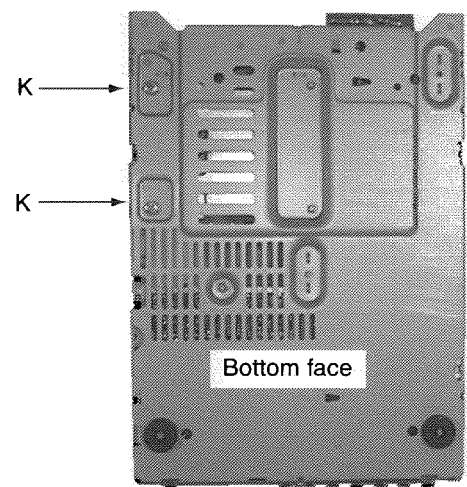
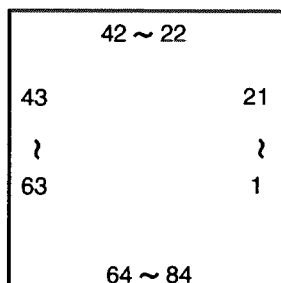


Fig. 10

## Description of Main ICs

### ■ MN173222JABG(IC501): AMP/TUNER/DISPLAY controller

#### 1. External View



#### 2. Key Matrix

	KEY IN 0	KEY IN 1	KEY IN 2	KEY IN 3
KEY OUT 0	POWER	DIRECT	BASS	BAND
KEY OUT 1	INPUT	KEY MODE	◀	▶

#### 3. Terminal Description

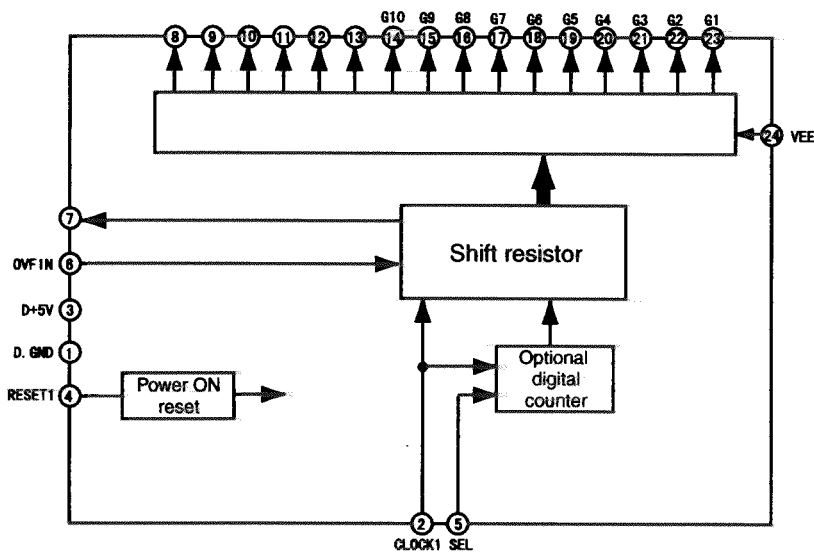
PIN No.	Symbo	I/O	Description of function	PIN No.	Symbo	I/O	Description of function
1~22	S1~S22	O	FL segment control output	60	TMUTE	I/O	AM/FM IF buffer input and mute input
23	-VPP	-	Power supply terminal	61	TDATA	O	Data output terminal to IC121
24~36	S23~S35	O	FL segment control output	62	TCLK	O	Clock signal output terminal to IC121
37		-	Not used	63	TCE	O	Chip enable signal to IC121; ON at "H"
38		-	Not used	64	IFDATA	I	Data signal input terminal from IC121
39		-	Not used	65	DCSO	O	DSC signal output terminal
40	STB	O	Strobe signal output to IC701	66	DCSI	I	DSC signal input terminal
41	CLOCK	O	Clock signal output to IC701	67	BASSI	O	DSC signal output terminal
42	SDA	O	Serial data output to IC708	68	/RESET	I	System reset signal input
43	DATA	O	Data output to IC701	69	X1	-	Connected to GND
44	SCL	O	Serial clock output to IC708	70	X2	-	Not used
45		-	Not used	71	VSS	-	Connected to GND
46		-	Not used	72	OSC2	-	Oscillator terminal (6MHz)
47	/P.ON	O	Standby indicator control "H": ON; "L": OFF	73	OSC1	-	Oscillator terminal (6MHz)
48		-	Not used	74	VDD	-	Power supply terminal
49	/REM	I	Remote control signal input	75	JOG1	I	Jog pulse input 1
50	TKEYI0	I	Key matrix input	76	JOG2	I	Jog pulse input 2
51	TKEYI3	I	Key matrix input	77	/INH	I	Direct inhibit signal input
52	TKEYI2	I	Key matrix input	78	DIRECT	O	To indicator control
53	TKEYI1	I	Key matrix input	79		-	Not used
54	PRT	I	Protector signal input	80	SEL	O	Select signal output to IC502
55	SPK	O	Speaker ON/OFF control	81	RESET1	O	IReset signal output to IC502
56	S.MUTE	O	Source mute signal output	82	CLOCK1	O	Clock signal output to IC502
57	HPSW	I	Headphone signal switch input	83	TKEYO0	O	Key matrix output
58	/STEREO	I	Stereo indicator drive input	84	TKEYO1	O	Key matrix output
59	/TUNED	I	Indicator drive input during tuning				

■ M35501FP(IC502):FL controller

1. External View

D.GND	1	24	-VPP
CLOCK1	2	23	G1
D+5V	3	22	G2
RESET1	4	21	G3
SEL	5	20	G4
	6	19	G5
	7	18	G6
	8	17	G7
	9	16	G8
	10	15	G9
	11	14	G10
	12	13	

2. Block Diagram



3. Terminal Description

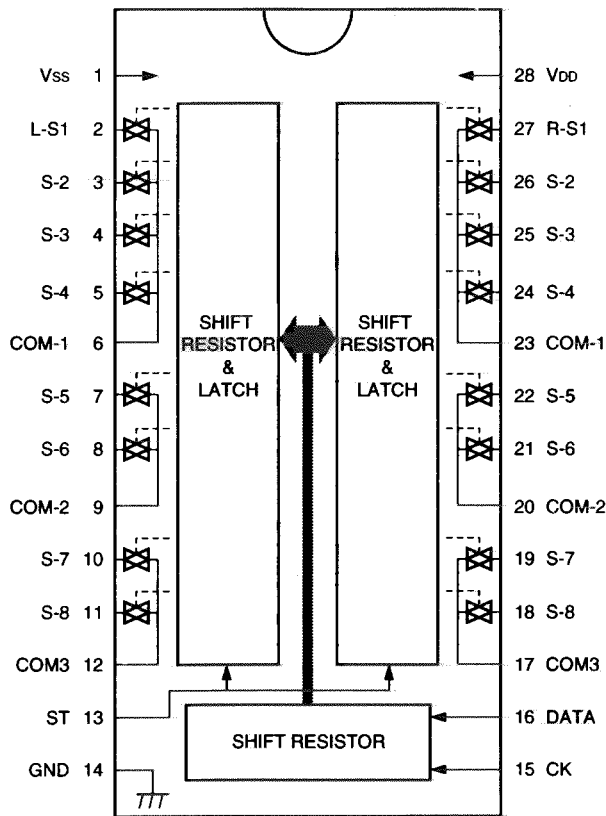
PIN No.	Symbol	I/O	Description of function
1	D.GND	-	Connected to GND.
2	CLOCK1	I	Clock signal input terminal to IC501
3	D+5V	-	Power supply terminal
4	RESET1	I	Reset signal input terminal from IC501
5	SEL	I	Select signal input terminal from IC501
6	OVFIN	I	Overflow signal input terminal
7~13		-	Not used
14~23	G10~G1	O	FL grit control output
24	-VPP	-	Power supply terminal

■ TC9164AN(IC701) : Electronic Volume

1.Function

This volume is designed to switching on and off the switches S1 - S8 according to control from the microcomputer.

2. Terminal Arrangement and Block Diagram



3.Relation between the Respective Switches and Data

The switches S1 - S8 will switch on the position corresponding to "1" depending on bits 1 - 8 of the serial data.

The switches S9 and S10 will turn on the right and left sides, respectively. The TC9162, TC9163 and TC9164 will be identified and selected according to bits 11 - 14.

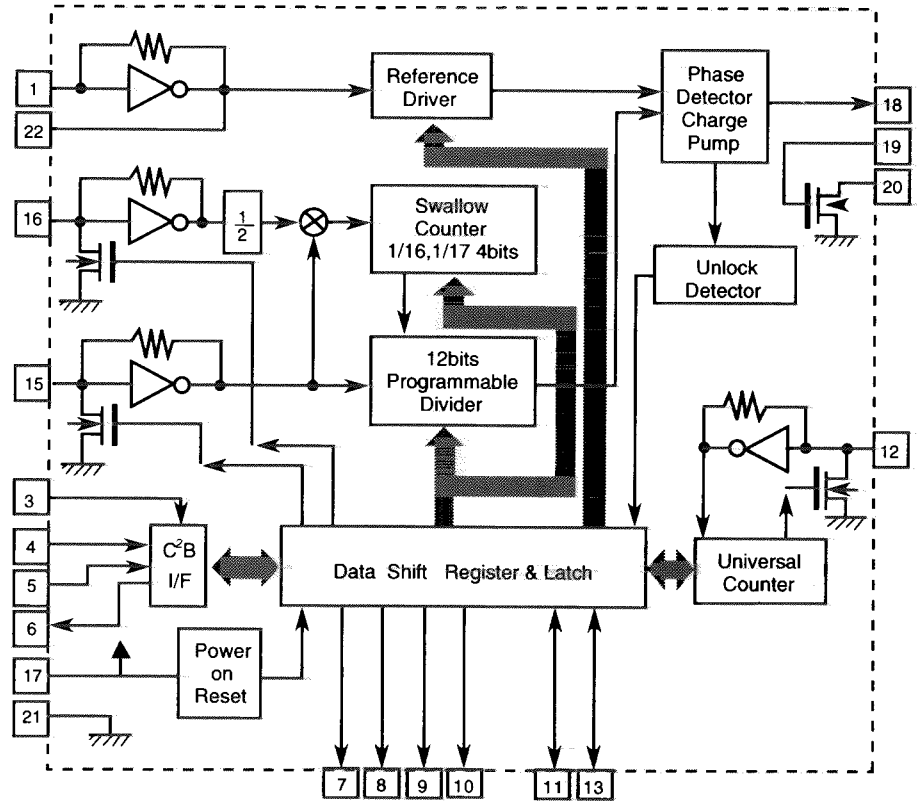
	Switch select bit										Switch select bit			
	S1	S2	S3	S4	S5	S6	S7	Right S8	Left S9	S10	S11	S12	S13	S14
TC9162N	With the switches S-1 - S8, the position corresponding to "1" will be switched on according to bits 1 - 8 of the serial data.										0	0	0	0
TC9163N	With the switches S-1 - S8, the positio corresponding to "1" will be switched on according to bits 1 - 8 of the data.										1	0	0	0
TC9164N	With the switches S-1 - S8, the position corresponding to "1" will be switched on according to bits 1 - 8 of the serial data.										0	1	0	0

■ LC72131(IC121):PLL frequency synthesizer for electronic tuning

1. External View

XIN	1	22	XOUT
CE	3	21	VSS
TDATA	4	20	LPF OUT
CK	5	19	LPF IN
IFDATA	6	18	PD
FM	7	17	VDD
AM	8	16	FM OSC
	9	15	AM OSC
	10	14	IF REQ
AUTOMONO	11	13	FM/AM IF

2. Block Diagram

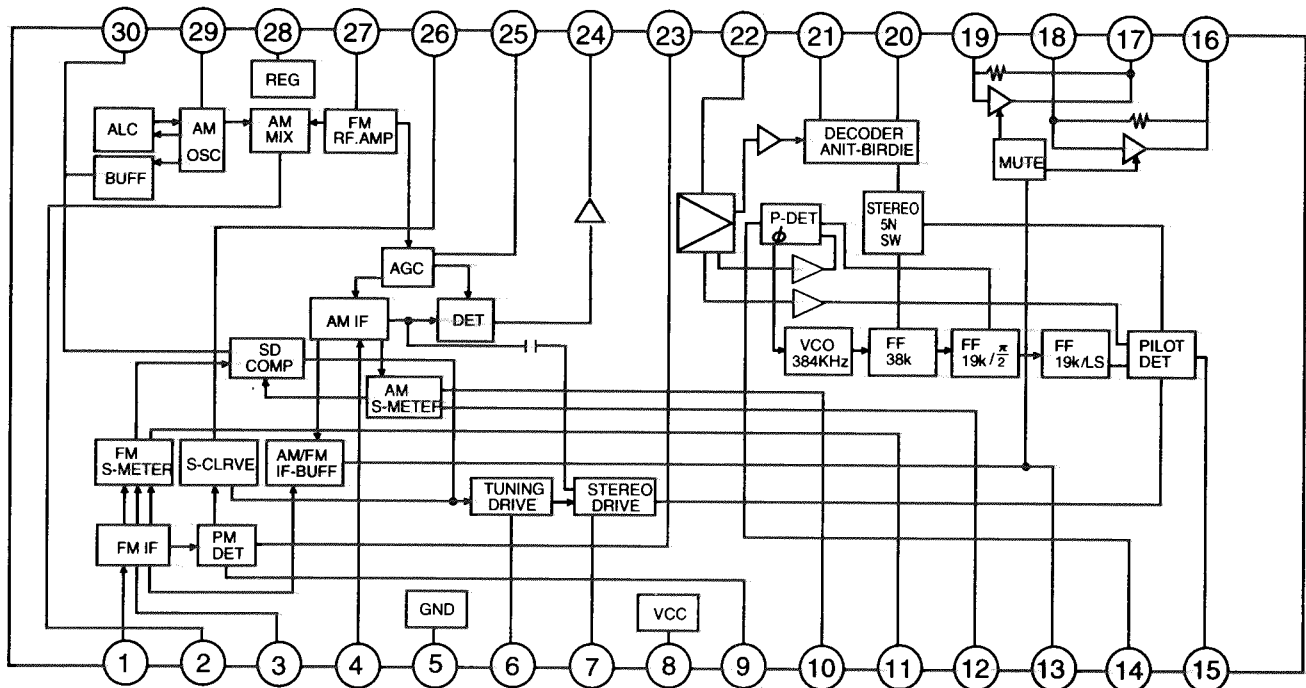


3. Pin Functions

Pin No.	Symbol	I/O	Description of function	Pin No.	Symbol	I/O	Description of function
1	Xin	I	Crystal oscillator connector terminal (7.2MHz)	12	FM/AM IF	I	Universal counter signal input
2		--	Not used	13	IF REQ	O	IF signal request is output.
3	CE	I	"H" when inputting or outputting the data to the #4 pin (inputting) or #6 pin (outputting).	14		I	Not used
4	PLLDA	I	Input terminal for receiving control data from controller	15	AMOSC		AM station section oscillator signal input
5	PLLCK	I	Synchronizing signal input terminal used for exchanging data between controller	16	FM OSC	I	FM station section oscillator signal input
6	IFDATA	O	Output terminal for sending data to controller	17	VDD	O	Power supply terminal
7	FM	O	FM mode at "LOW"	18	PD	O	Charge pump output of PLL. "HIGH" or "LOW" when the station section oscillator frequency is higher or lower than the reference frequency, and floating when the station section oscillator frequency is equal to the reference frequency.
8	MW	O	FM mode at "LOW"	19	LPF IN	I	Input for active low pass filter of PLL
9		O	Not used	20	LPF OUT	O	Output for active low pass filter of PLL
10	AUTO MONO	O	MONO control output to IC102	21	VSS	--	Connected to GND
11		O	Not used	22	X out	O	Crystal oscillator connector terminal (7.2MHz)

■ LA1837(IC102): FM AM IF AMP & detector and FM MPX detector

1. Block Diagram

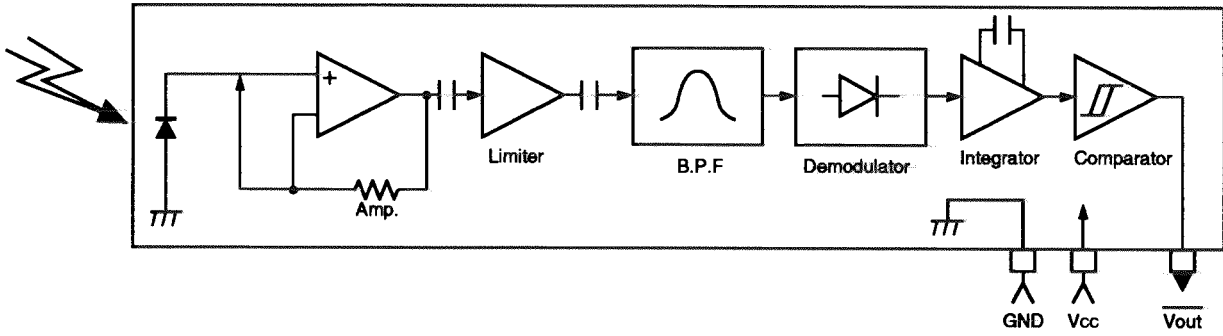


2. Terminal Description

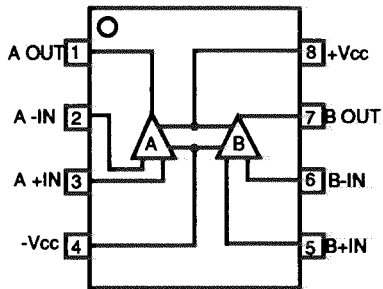
Pin No.	Symbol	I/O	Description of function	Pin No.	Symbol	I/O	Description of function
1	FM IN	I	FM signal input	16	L OUT	O	Left side output
2	AM MIX	O	AM mixer output	17	R OUT	O	Right side output
3	FM IF	I	FM IF bypass	18	L IN	I	Left side post amp. input
4	AM IF	I	AM IF signal input	19	R IN	I	Right side post amp. input
5	GND	-	Ground terminal	20	RO	O	Right side multiplex output
6	TUNED	O	Indicator drive output for tuning	21	LO	O	Left side multiplex output
7	STEREO	O	Stereo indicator drive output "H": Monaural; "L": Stereo	22	IF IN	I	Multiplex signal input
8	VCC	-	Power supply terminal	23	FM OUT	O	FM tuning/tuner output
9	FM DET	-	FM detector coil connector terminal	24	AM DET	O	AM detector output
10	AM SD	-	AM ceramic filter terminal	25	AM AGC	I	AM AGC voltage input
11	FM VSM	O	For determining FM tuning sensitivity	26	AFC	-	Voltage output for FM-AFC (automatic frequency control)
12	AM VSM	O	For determining AM tuning sensitivity	27	AM RF	I	AM RF signal input
13	MUTE	I/O	AM/FM IF buffer output and mute input	28	REG	O	For controlling the band width of FM
14	FM/AM	I	Selection of AM/FM; "H": AM; "L": FM	29	AM OSC	-	AM station section oscillator
15	MONO/ST	O	Monaural and stereo selection; "H": Stereo; "L": Monaural	30	OSC BUFFER	O	AM station section oscillator

# CA-EX70/-EX70R

## ■ GP1U271X(IC520) : Remote control signal receiving IC



## ■ NJM5532D(IC702.IC301):Dual Op. Amp.

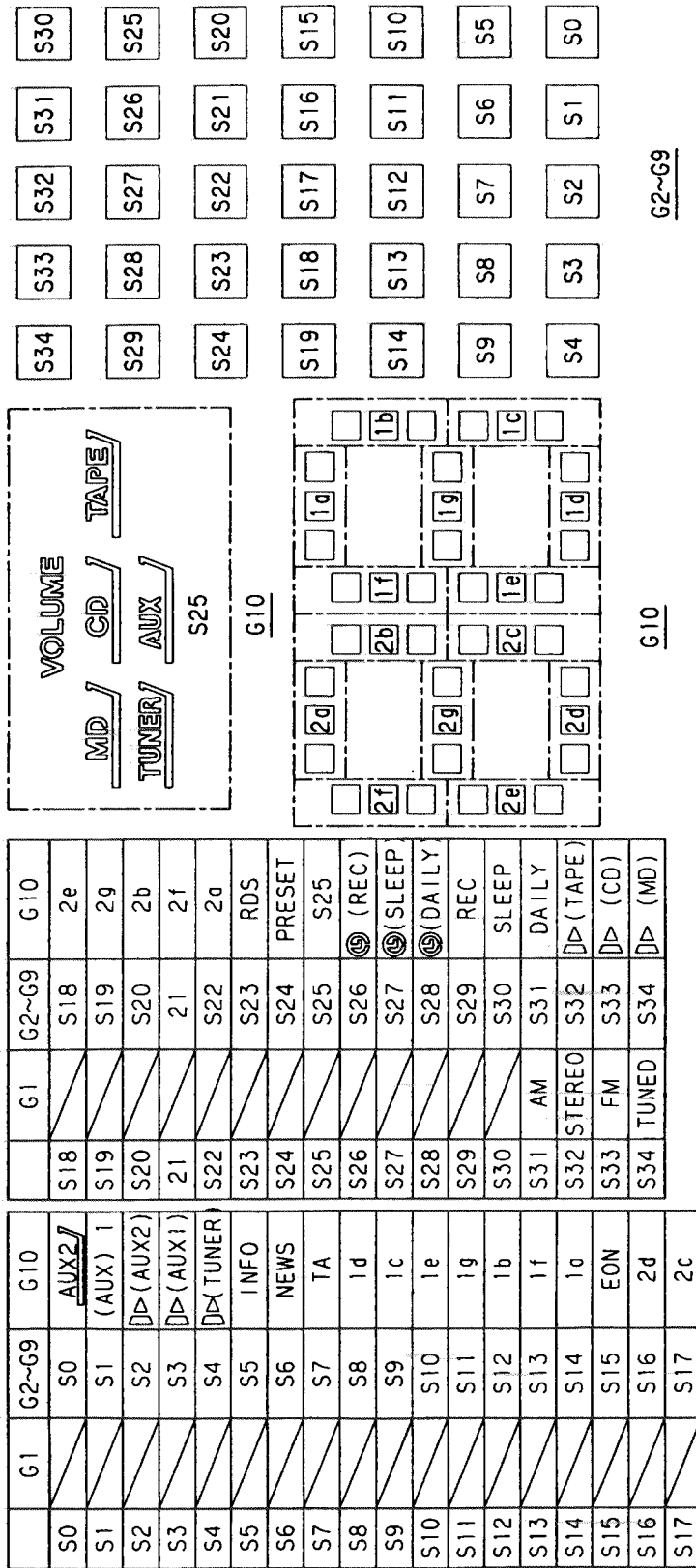
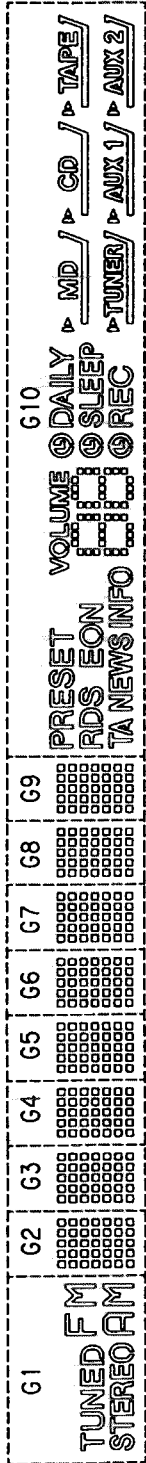




Description of FL indicator tube internals

■ QLF0029-001

1. Splitting and internal connection of grid/segment



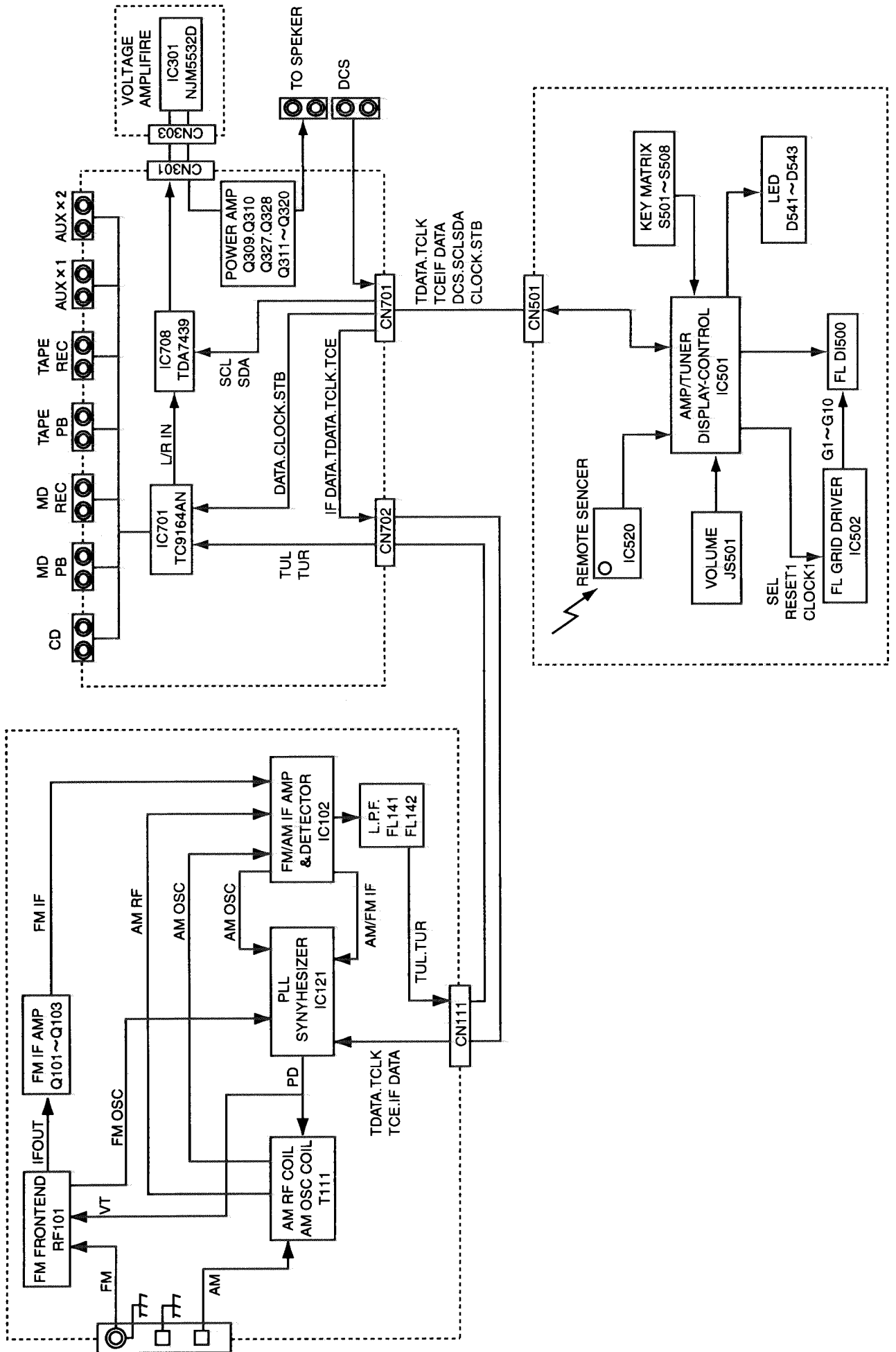
2. Terminal Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Assignment	F1	F1	NL	D	S34	S33	S32	S31	S30	S29	S28	S27	S26	S25	S24	S23	S22	S21	S20	S19	S18	S17	S16	S15	S14	S13	S12
Pin No.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Assignment	S11	S10	S9	S8	S7	S6	S5	S4	S3	S2	S1	S0	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	H	NL	F2	F2

F1, F2: Filament G1~G10: Grid S0~S34: Anode D: Connect externally to F1 NL: No Lead

H: Normal current passing grid

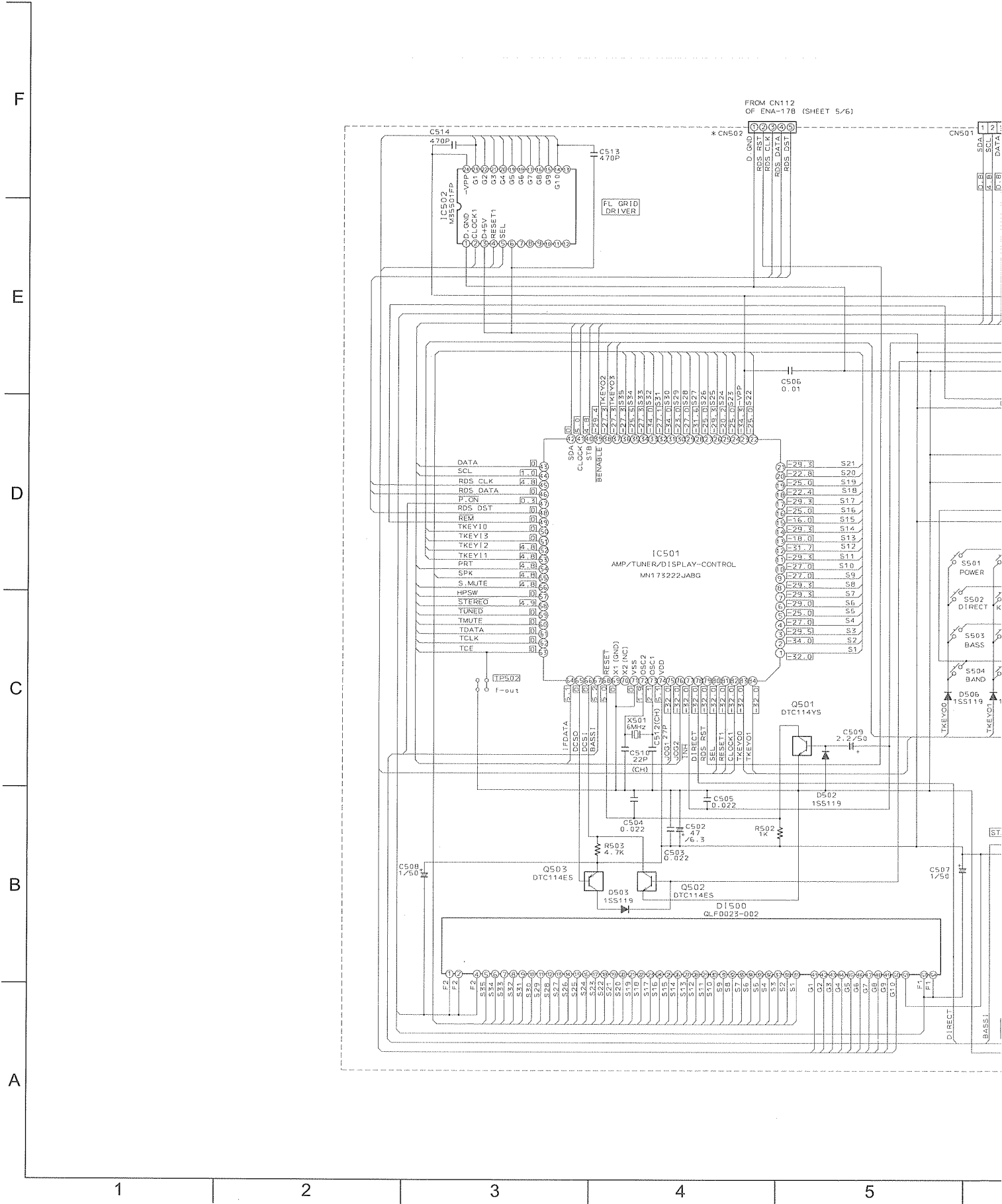
Block Diagram





# Standard Schematic Diagrams

[RX-EX70] System Control



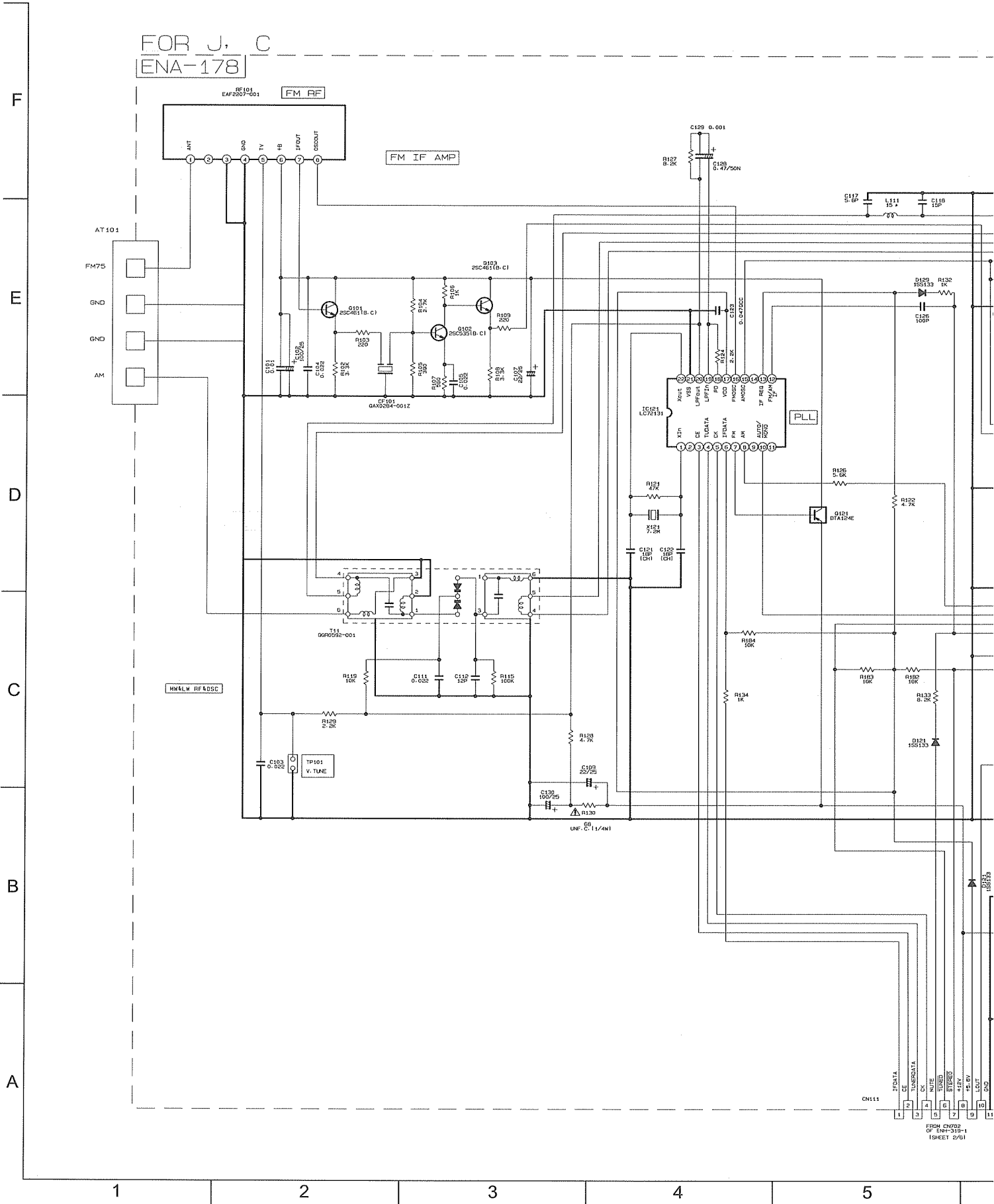






[RE-EX70] Tunner for J. C.

FOR J. C.  
ENA-178



FROM CN702 OF ENA-531P-1 ISSUE 2/74





[RX-EX70] Tunner for B, E, EE, EN

F

E

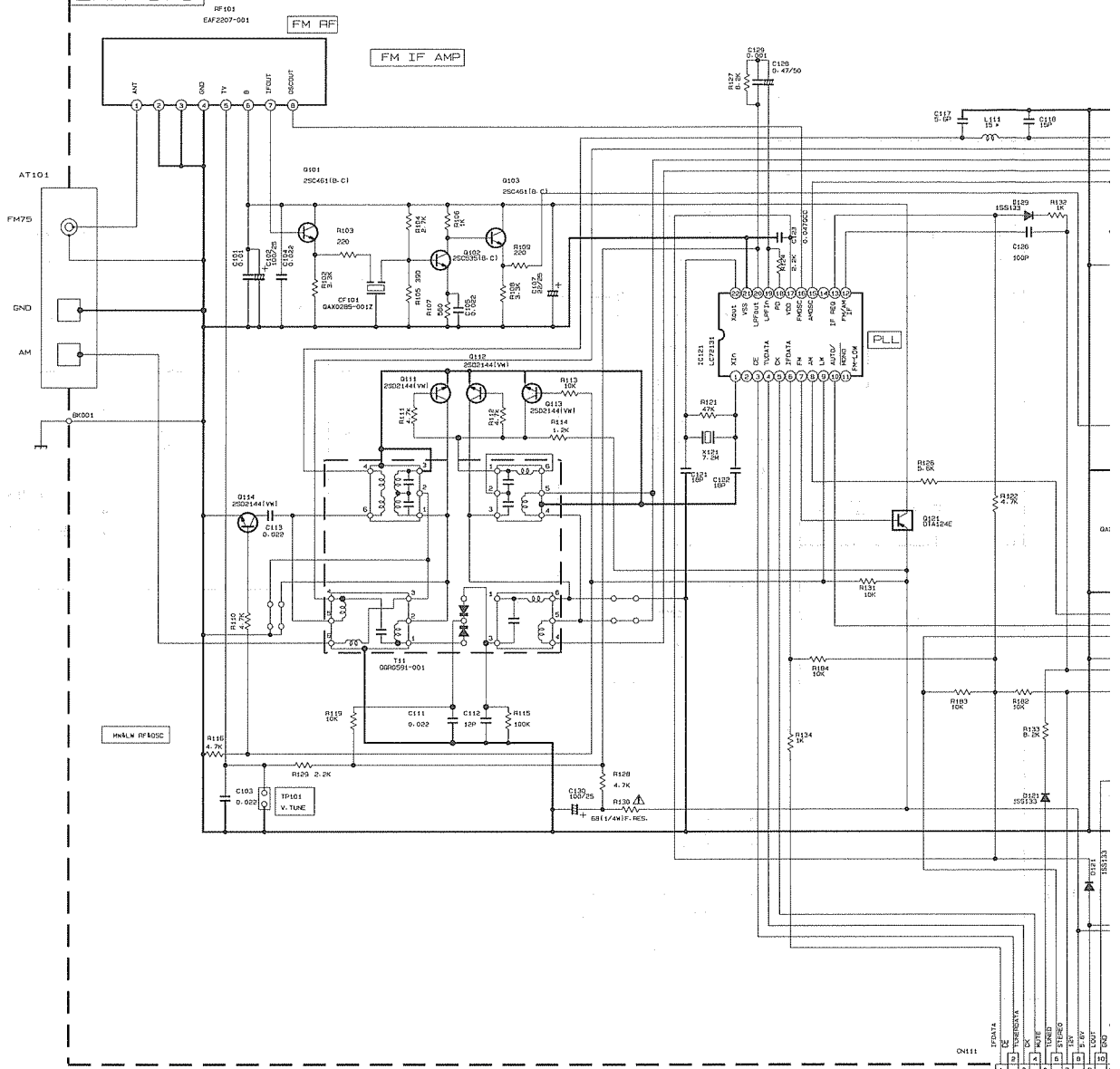
D

C

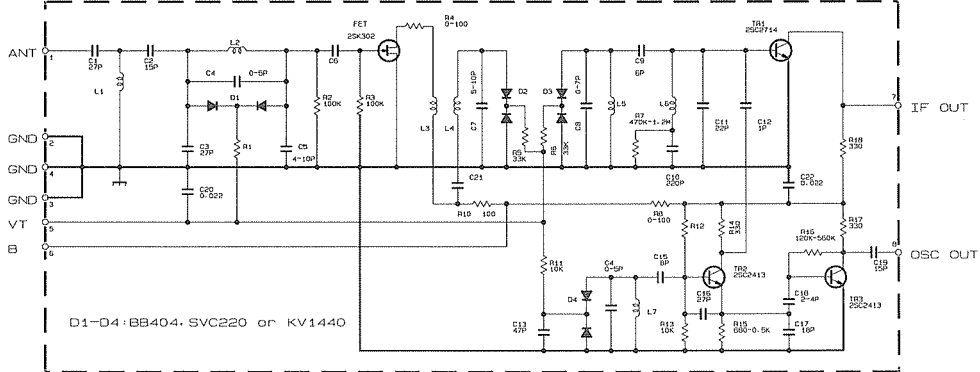
B

A

FOR B, E, EE, EN (WITH) ENA-178



RE 101 GAU005-001



1

2

3

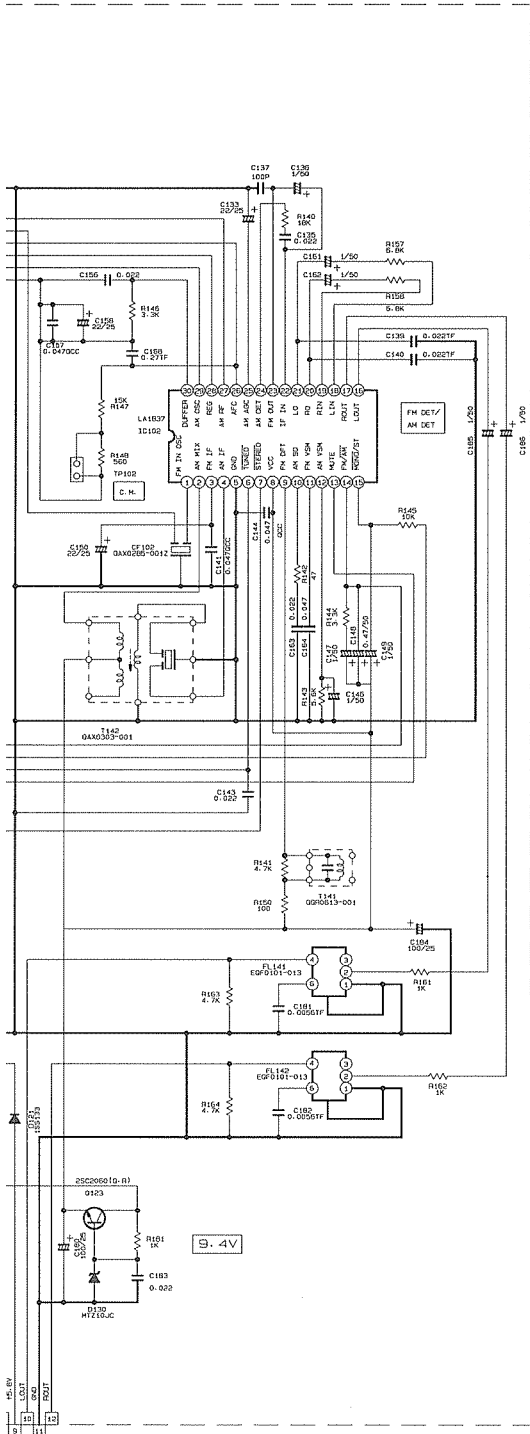
4

5

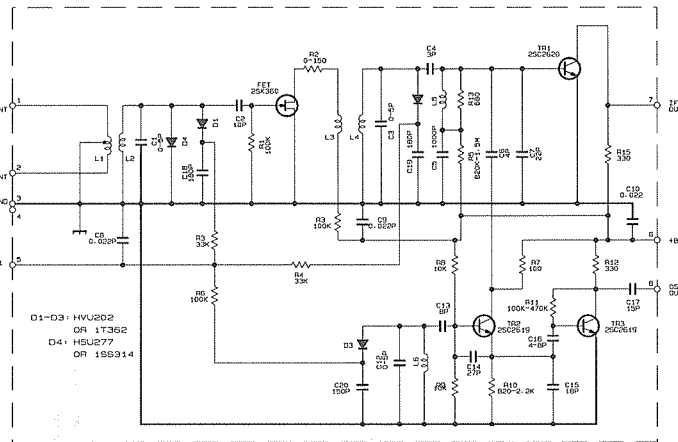




CA-EX70/-EX70R



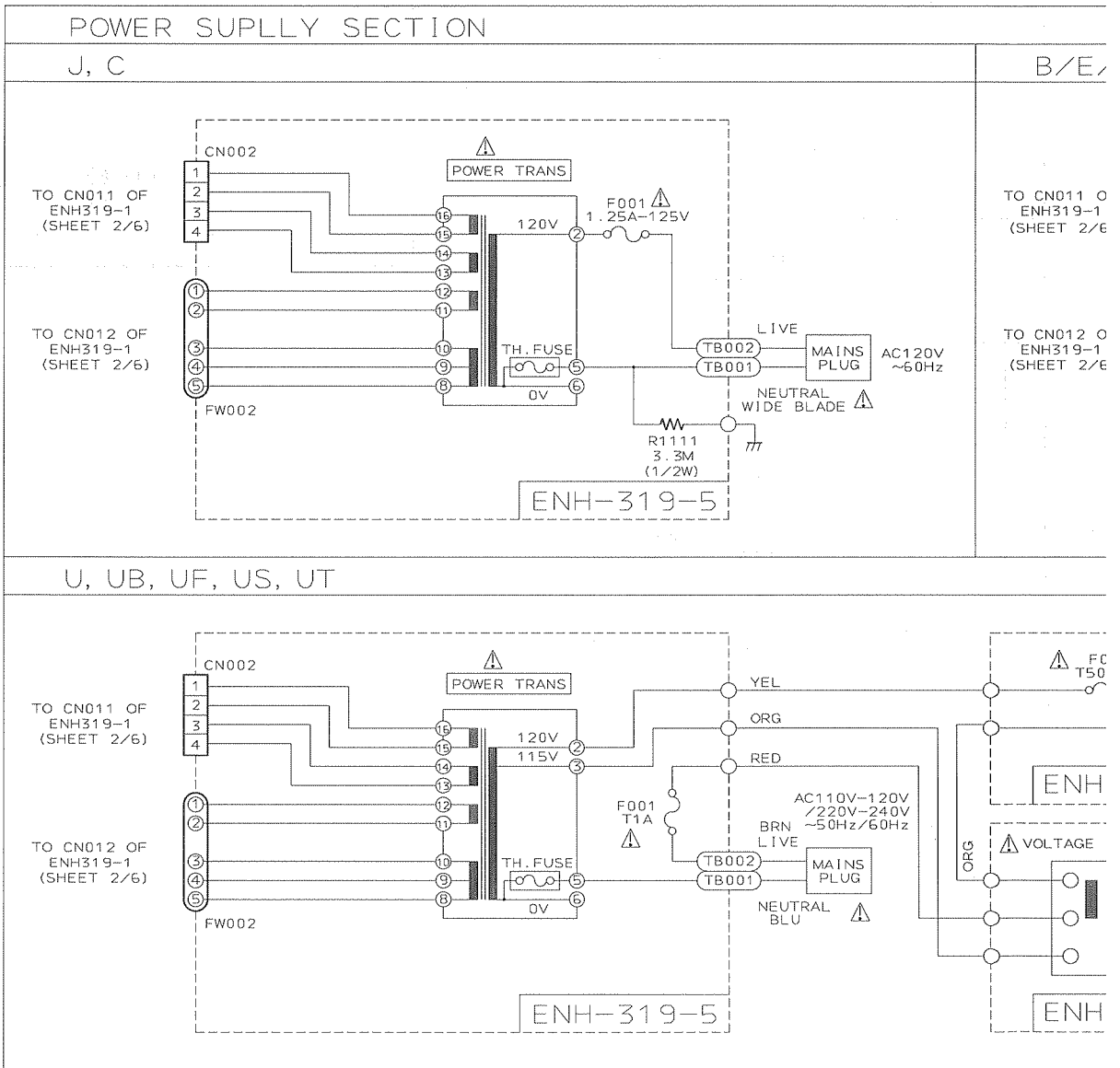
RF 101  
EAF2207-001



[RX-EX70] Power Supply

EXPL  
M

SHEET No.	MODEL No.	CIRCUIT
1/6	RX-EX90/RX-EX90R/RX-EX70/RX-EX70R	PRIMARY
2/6	RX-EX90/RX-EX90R/RX-EX70/RX-EX70R	DC REGUL
3/6	RX-EX90/RX-EX90R/RX-EX70/RX-EX70R	USER COI
4/6	RX-EX90/RX-EX70	TUNER RI
5/6	RX-EX90R/RX-EX70R	TUNER RI
6/6	RX-EX90/RX-EX70	TUNER RI

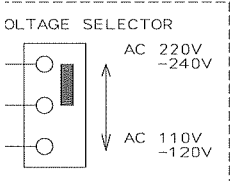
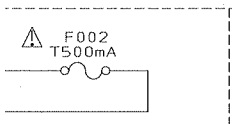
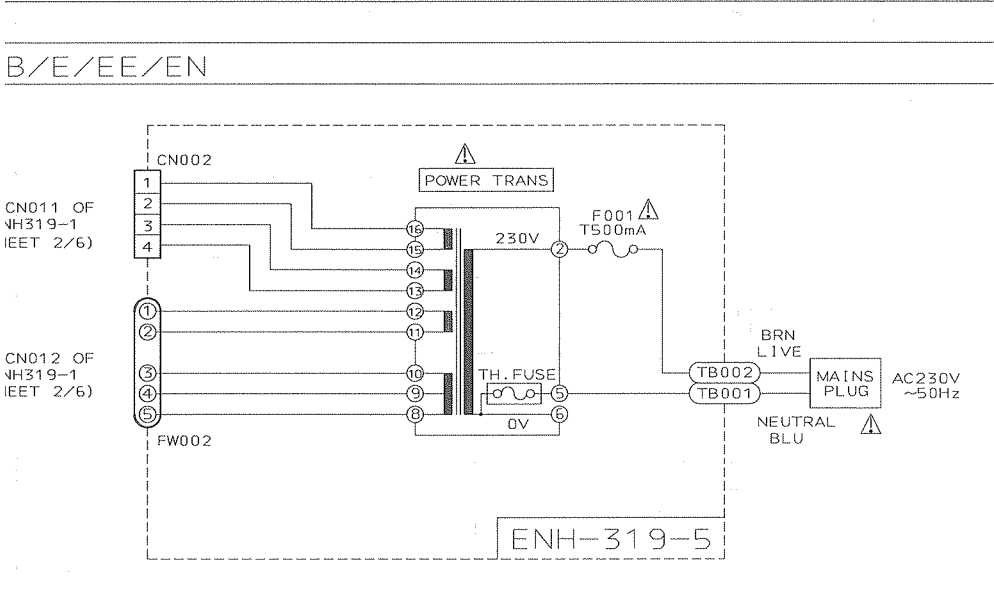


CA-EX70/-EX70R

20 30 40 50 60 70 80 90 100

EXPLANATION OF OVERALL OF SCHEMA  
 MODEL RX-EX90/RX-EX90R/RX-EX70/RX-EX70R

CUITS DESCRIPTION
MARY WITH TRANSFORMER
REGULATORS/AUDIO OUTPUT/EXTERNAL SIGNAL INPUT
R CONTROL KEYS/SYSTEM CONTROL LSI/FL DISPLAY
ER RF/IF/FM MULTIPLEX (ONLY J/C)
ER RF/IF/FM MULTIPLEX (ONLY B/E/EN/EE)
ER RF/IF/FM MULTIPLEX (ONLY U/US/UB/UF/UT)



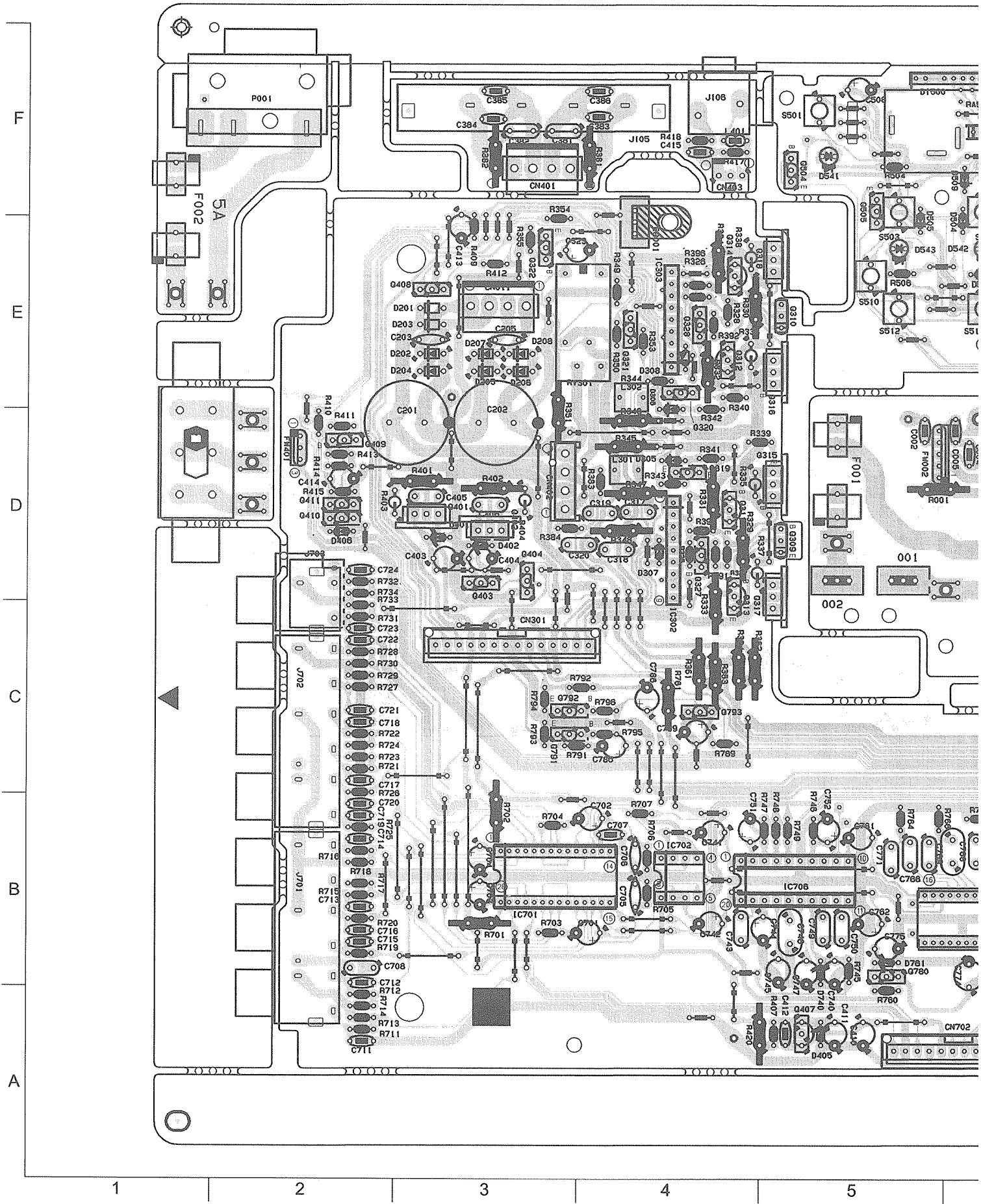
VERSION CODES

- J : U.S.A.
- C : CANADA
- EN : NORDIC COUNTRIES
- E : CONTINENTAL EUROPE
- EE : EASTERN EUROPE
- B : U.K.
- UB : HONKONG
- US : SINGAPORE
- UT : TAIWAN
- UF : CHINA
- U : UNIVERSAL EXCEPT ALL OF ABOVE

NOTE:  
 MARK (\*) IS TO SHOW DEVIATION IN VERSION  
 DETAILS ARE EXPLAINED NEAR MARK.

# Location of P. C. Board Parts

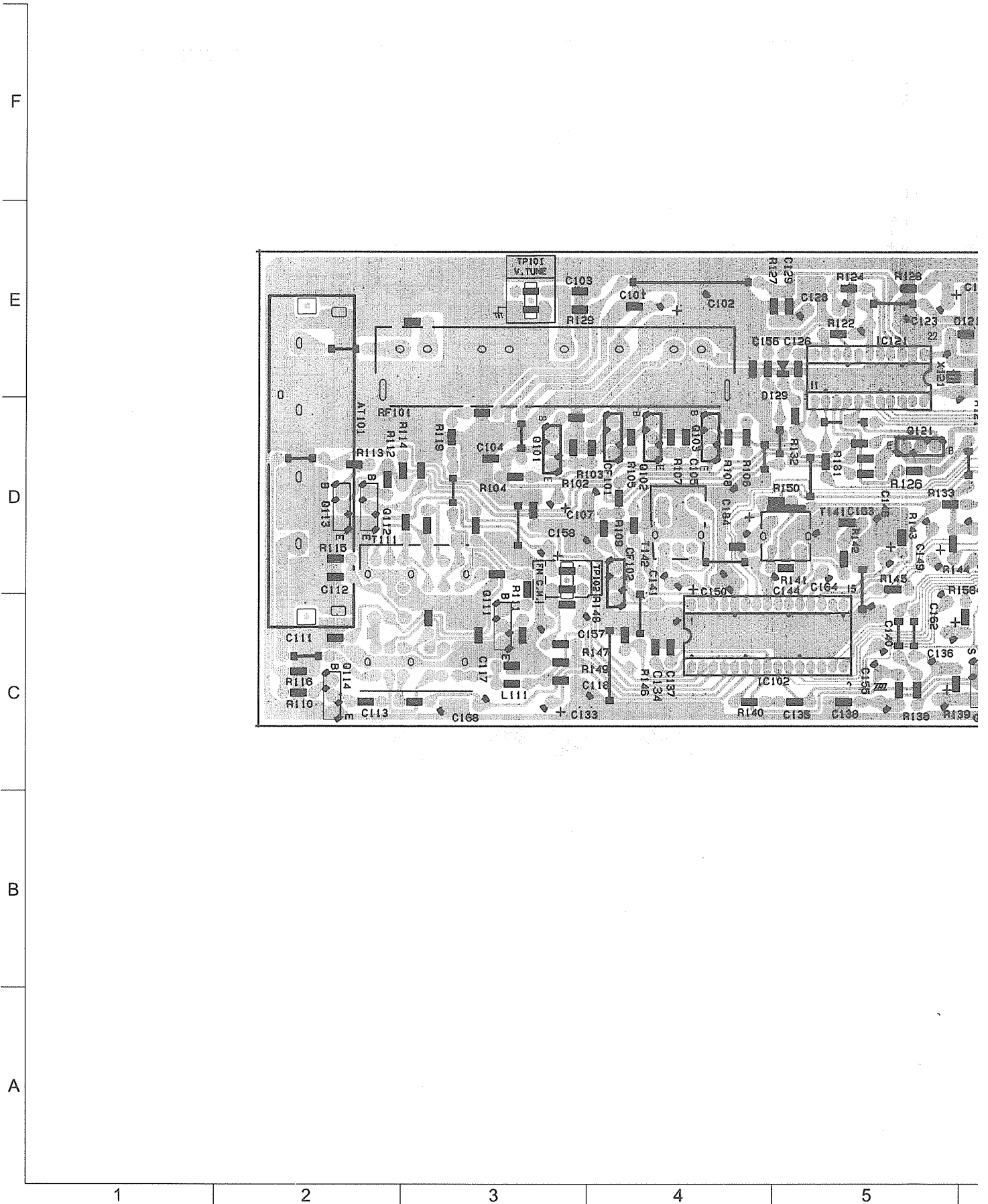
■ Amp. Tuner Display control P.C. board

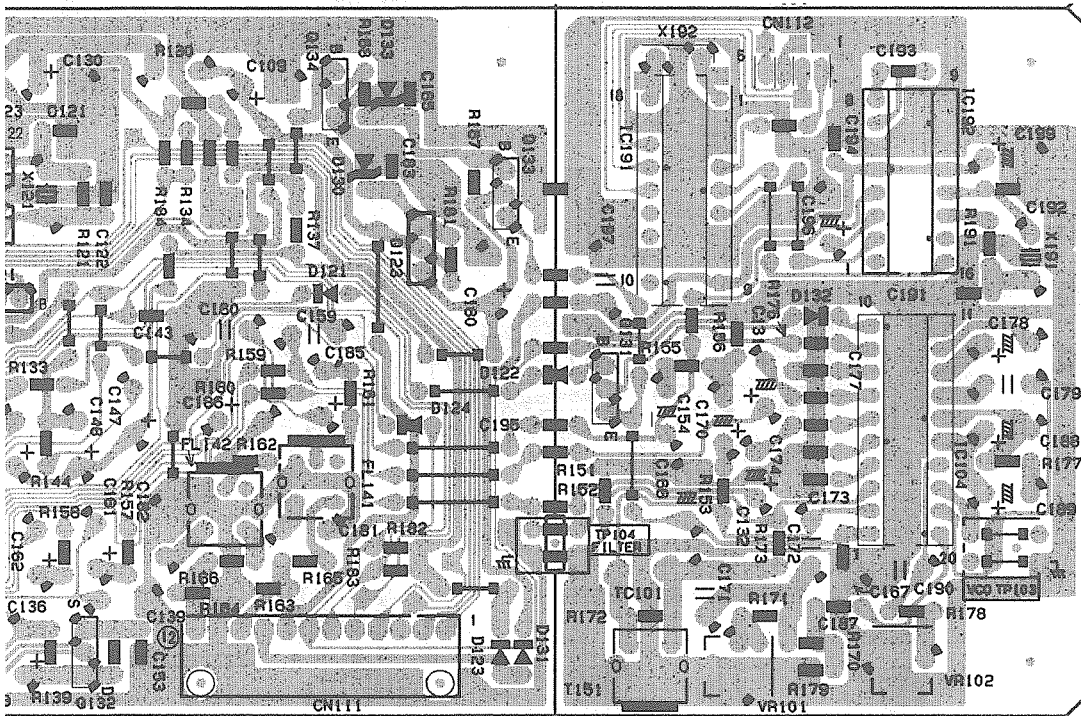






■ Tuner P. C. board








# PARTS LIST

## [ RX-EX70/EX70R ]

1. Those parts can not to sent as a rule that has not printed or be displayed 「—」 on the parts list.
2. The printed circuit board will be not sent as a rule.
3.  Parts are safety assurance parts. When replacing those parts, make sure to use to specified one.
4. All printed circuit boards and its assemblies are not available as service parts.

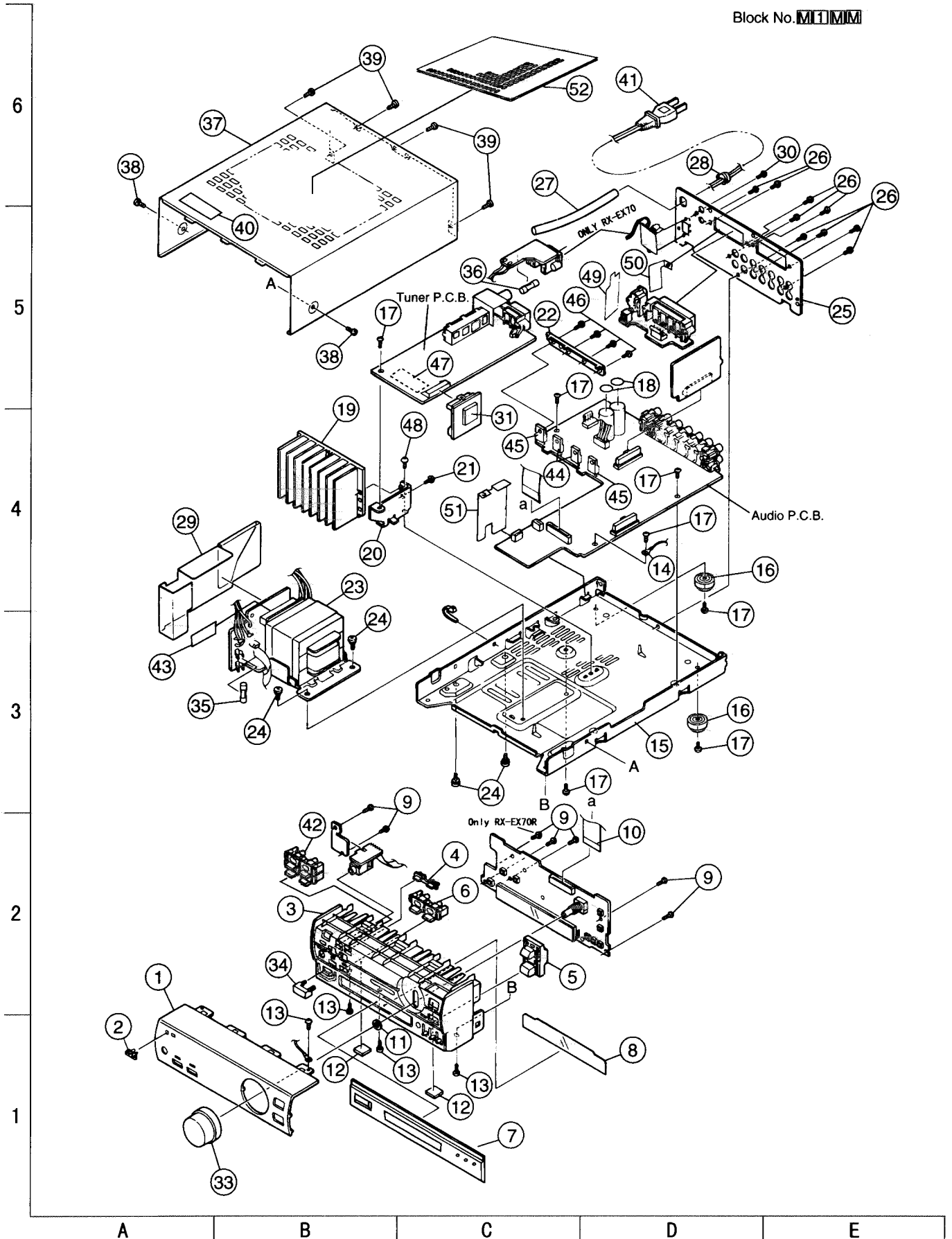
<b>Area Suffix</b>	
<b>RX-EX70</b>	
C	----- Canada
J	----- U.S.A.
U	----- Other Areas
UB	----- Hong Kong
UF	----- China
US	----- Singapore
UT	----- Taiwan
<b>RX-EX70R</b>	
B	----- U.K
E	----- Continental Europe
EN	----- Northan Europe
EE	----- Eastern Europe

### - Contents -

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Tuner P.C.B.(RX-EX70 U/UB/UF/US/UT)-----	3- 10
Tuner P.C.B.(RX-EX70R B/E/EE/EN)-----	3- 11
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# General Exploded View and Parts List

Block No. **M1111**



## Parts List

Block No. **M1M1**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LE20328-002A	FRONT PANEL	1		C J U UB UF US UT
		LE20328-003A	FRONT PANEL	1		B E EE EN
	2	E406971-001SM	JVC MARK	1		
	3	LE10157-002A	FRONT BASE	1		
	4	LE30549-001A	INDICATOR	1		
	5	LE20330-002A	PUSH BUTTON	1		
	6	LE30569-003A	PUSH BUTTON	1		
	7	LE30545-003A	WINDOW SCREEN	1		
	8	LE30550-002A	FL SCREEN	1		
	9	QYSDSF2608Z	SCREW	6		J C U UB UF US UT
		QYSDSF2608Z	SCREW	7		B E EE EN
	10	VWF1225-18008W	FLAT WIRE	1		
	11	E71862-003	VOLUME NUT	1		
	12	E75896-001	SPACER	2		
	13	QYSDSG3006E	T. SCREW	4		
	14	EWT025-003	TERMINAL WIRE	1		
	15	LE10158-001A	CHASSIS BASE	1		
	16	E47227-029	FOOT	2		
	17	QYSBSG3008E	T. SCREW	7		
	18	E75303-003	SHIELD TAPE	2		C U UB UF US UT B E EE EN
	19	LV30509-003A	HEAT SINK	1		
	20	LE30553-001A	HEAT SINK BRACKET	1		
	21	QYSBSG3008E	T. SCREW	1		
	22	LE40351-001A	LEAF SPRING	1		
	23	QQT0178-002	POWER TRANSFORMER	1	T 001	C J
		QQT0178-003	POWER TRANSFORMER	1	T 001	B E EE EN
		QQT0178-004	POWER TRANSFORMER	1	T 001	U UB UF US UT
	24	QYSDSTL4008E	SPECIAL SCREW	4		
	25	LE20332-021A	REAR PANEL	1		J
		LE20332-022A	REAR PANEL	1		C
		LE20332-023A	REAR PANEL	1		U UB UF US
		LE20332-024A	REAR PANEL	1		UT
		LE20332-025A	REAR PANEL	1		B E EN
		LE20332-026A	REAR PANEL	1		EE
	26	QYSBSGY3008E	SPECIAL SCREW	9		
	27	QXTG709-220	PROTECTOR TUBE	1		
	28	QHS3876-162	CORD STOPPER	1		
	29	LV30477-001A	SHIELD COVER	1		
	30	QYSBSG2608M	SCREW	2		U UB UF US UT
	31	LV30064-001A	SPACER	1		
	33	LE30554-001A	VOLUME KNOB ASS'Y	1		
	34	LE30547-001A	POWER CAP	1		C J
		LE30547-002A	POWER CAP	1		U UB UF US UT B E EE EN
	35	OMF51E2-1R0-J1	FUSE	1	F001	U UB UF US UT
		OMF51U1-1R25-J1	FUSE	1	F001	C J
		OMF51E2-R50-J1	FUSE	1	F001	B E EE EN
	36	OMF51E2-R50-J1	FUSE	1	F002	U UB UF US UT
	37	LE20334-005A(S)	METAL COVER	1		C J US B E EE EN
		LE20334-006A(S)	METAL COVER	1		U UB UF UT

## ■ Parts List

Block No. **M1M1**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	38	QYSDSG3006N	T. SCREW	2		
	39	QYSBSGG3008E	T. SCREW	4		
	40	E67000-027	CAUTION LABEL	1		
	41	OMPNI00-200-JD	POWER CORD	1		UB
		OMPRI00-200-JC	POWER CORD	1		UF
△		OMPID00-200H	POWER CORD	1		C J
△		OMP3900-200	POWER CORD	1		U US E EE EN
		OMP5530-0085BS	POWER CORD	1		B
△		OMP7520-200	POWER CORD	1		UT
	42	LV20089-001A	PUSH BUTTON	1		B E EE EN
	43	L75804-001	CAUTION LABEL	1		C
		L75803-001	CAUTION LABEL	1		J
	44	2SC4511/PY/	SI. TRANSISTOR	4	Q315 Q316	
	45	2SA1725/PY/	SI. TRANSISTOR	4	Q317 Q318	
	46	E73525-003	SCREW	4		
	47	LV30064-016A	SPACER	1		B E EE EN
	48	QYSBST3006E	TAP. SCREW	1		
	49	LV40472-001A	SHIELD COVER	1		U UB UF US UT
	50	LV40488-001A	SHIELD COVER	1		U UB UF US UT
	51	LV40471-001A	SHIELD COVER	1		U UB UF US UT
	52	LV30362-001A	PROTECT SHEET	1		U UB UF UT



■ Electrical Parts List (Main P.C.B RX-EX70/70R)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC301	NJM5532D	I. C (MONO-ANALOG)	
	IC501	MN173222JABG	I. C (M)	
	IC502	M35501FP	I. C (M)	
	IC520	GP1U271X	INFRARED DETECT UNIT	
	IC701	TC9164AN	I. C (DIGI-MOS)	
	IC702	NJM5532D	I. C (MONO-ANALOG)	
	IC706	LA2650	I. C (MONO-ANALOG)	
	IC708	TDA7439	I. C (M)	
		DIODES		
	D201	11E2-T5	SILICON	
	D202	11E2-T5	SILICON	
	D203	11E2-T5	SILICON	
	D204	11E2-T5	SILICON	
	D205	11E2-T5	SILICON	
	D206	11E2-T5	SILICON	
	D207	11E2-T5	SILICON	
	D208	11E2-T5	SILICON	
	D211	11E2-T5	SILICON	
	D280	11E2-T5	SILICON	
	D281	11E2-T5	SILICON	
	D282	11E2-T5	SILICON	
	D283	MTZJ30C-T2	ZENER	
	D285	MTZJ5.6C-T2	ZENER	
	D292	1SS133-T2	SI. DIODE	
	D293	MTZJ5.1C-T2	ZENER	
	D295	1SS133-T2	SI. DIODE	
	D301	1SS133-T2	SI. DIODE	
	D302	1SS133-T2	SI. DIODE	
	D303	1SS133-T2	SI. DIODE	
	D304	1SS133-T2	SI. DIODE	
	D305	1SS133-T2	SI. DIODE	
	D306	1SS133-T2	SI. DIODE	
	D307	SLR-342MC-T	L. E. D.	EXCEPT J
	D308	SLR-342MC-T09	L. E. D.	EXCEPT J
	D323	MTZJ24C-T2	ZENER	U UB UF US UT
	D401	MTZJ18C-T2	ZENER	
	D402	MTZJ18C-T2	ZENER	
	D404	MTZJ5.6C-T2	ZENER	
	D405	MTZJ13A-T2	ZENER	
	D406	1SS133-T2	SI. DIODE	
	D407	1SS133-T2	SI. DIODE	
	D408	MTZJ6.2C-T2	ZENER	
	D502	1SS133-T2	SI. DIODE	
	D503	1SS133-T2	SI. DIODE	
	D504	1SS133-T2	SI. DIODE	EXCEPT J
	D505	1SS133-T2	SI. DIODE	U UB UF US UT
	D506	1SS133-T2	SI. DIODE	
	D507	1SS133-T2	SI. DIODE	
	D508	1SS133-T2	SI. DIODE	B E EE EN
	D509	1SS133-T2	SI. DIODE	
	D510	1SS133-T2	SI. DIODE	
	D511	1SS133-T2	SI. DIODE	
	D512	1SS133-T2	SI. DIODE	
	D541	SLR-342VC-T	L. E. D.	
	D542	SLR-342MC-T	L. E. D.	
	D543	SLR-342MC-T	L. E. D.	
	D740	RD9.1JS-B3-T2	ZENER	
	D761	RD9.1JS-B3-T2	ZENER	
		TRANSISTORS		
	Q281	2SB1357.EF/-T	SILICON	
	Q291	DTC144ES	DIGITAL TRANSISTOR	
	Q292	DTC114YS	DIGITAL TRANSISTOR	
	Q301	2SC1775AV.EF/-T	SILICON	
	Q302	2SC1775AV.EF/-T	SILICON	
	Q303	2SA872AV.E/-T	SILICON	
	Q304	2SA872AV.E/-T	SILICON	
	Q305	2SA872AV.E/-T	SILICON	
	Q306	2SA872AV.E/-T	SILICON	
	Q307	2SC1775AV.EF/-T	SILICON	
	Q308	2SC1775AV.EF/-T	SILICON	
	Q309	2SD637.0R.	SILICON	
	Q310	2SD637.0R.	SILICON	

△	Item	Parts Number	Description	Area
	Q311	2SC2235.0Y/-T	SILICON	
	Q312	2SC2235.0Y/-T	SILICON	
	Q313	2SA965.0Y/-T	SILICON	
	Q314	2SA965.0Y/-T	SILICON	
	Q315	2SC4511.PY/	SI. TRANSISTOR	
	Q316	2SC4511.PY/	SI. TRANSISTOR	
	Q317	2SA1725.PY/	SI. TRANSISTOR	
	Q318	2SA1725.PY/	SI. TRANSISTOR	
	Q319	2SC2240.GL/-T	SILICON	
	Q320	2SC2240.GL/-T	SILICON	
	Q321	2SA970.GL/-T	SILICON	
	Q322	2SC1740S.RS/-T	SI. TRANSISTOR	C J
		2SD400MP.EF/-T	SILICON	EXCEPT C J
	Q323	2SD2144S.VW/-T	SILICON	
	Q324	2SD2144S.VW/-T	SILICON	
	Q325	DTA144ES	DIGITAL TRANSISTOR	
	Q327	2SA933S.RS/-T	SILICON	
	Q328	2SA933S.RS/-T	SILICON	
	Q401	2SD1944.JK.	SI. TRANSISTOR	
	Q402	2SB1565.EF/	SILICON	
	Q405	2SD2394.EF/	SILICON	
	Q407	2SD400MP.EF/-T	SILICON	
	Q408	2SC1740S.RS/-T	SI. TRANSISTOR	
	Q409	2SC1740S.RS/-T	SI. TRANSISTOR	
	Q410	2SC1740S.RS/-T	SI. TRANSISTOR	
	Q411	2SA933AS.RS/-T	SILICON	
	Q501	DTC114YS	DIGITAL TRANSISTOR	
	Q502	DTC114ES	DIGITAL TRANSISTOR	
	Q503	DTA114ES	DIGITAL TRANSISTOR	
	Q504	DTC114YS	DIGITAL TRANSISTOR	
	Q505	DTC114YS	DIGITAL TRANSISTOR	
	Q506	DTC144WS-T	SILICON	
	Q780	2SC1775AV.EF/-T	SILICON	
	Q791	2SD2144S.VW/-T	SILICON	
	Q792	2SD2144S.VW/-T	SILICON	
	Q793	DTA144ES	DIGITAL TRANSISTOR	
		CAPACITORS		
	C001	QCF31HZ-223Z	0.022MF 50V CERAMIC	
	C201	QTE1V27-338	AL. E. CAP.	
	C202	QTE1V27-338	AL. E. CAP.	
	C203	QCF31HZ-103Z	0.01MF 50V CERAMIC	
	C205	QCF31HZ-103Z	0.01MF 50V CERAMIC	
	C211	QETB1EM-108	1000MF 25V AL. E. CAP.	
	C281	QETC1EM-227Z	220MF 25V AL. E. CAP.	
	C282	QETB1HM-227	220MF 50V E. CAP.	
	C283	QETB1HM-226E	22MF 50V E. CAP.	
	C284	QETB1HM-226E	22MF 50V E. CAP.	
	C285	QETB1HM-475E	4.7MF 50V E. CAP.	
	C291	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C301	QTE1E28-106Z	E. CAPA. I. M	
	C302	QTE1E28-106Z	E. CAPA. I. M	
	C303	QTE1E28-476Z	E. CAPA. I. M	
	C304	QTE1E28-476Z	E. CAPA. I. M	
	C305	QCS21HJ-221	220PF 50V CER. CAP.	
	C306	QCS21HJ-221	220PF 50V CER. CAP.	
	C307	QTE1E28-226Z	AL. E. CAP.	
	C308	QTE1E28-226Z	AL. E. CAP.	
	C309	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C310	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C311	QCSB1HJ-270Y	27PF 50V CER. CAP.	
	C312	QCSB1HJ-270Y	27PF 50V CER. CAP.	
	C313	QCS21HJ-470	47PF 50V CER. CAP.	
	C314	QCS21HJ-470	47PF 50V CER. CAP.	
	C315	QCS21HJ-470	47PF 50V CER. CAP.	
	C316	QCS21HJ-470	47PF 50V CER. CAP.	
	C317	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C318	QFN31HJ-104Z	0.1MF 50V MYLAR CAP.	
	C321	QFZ0202-103Z	0.01MF M. MYLAR	
	C322	QFZ0202-103Z	0.01MF M. MYLAR	
	C323	QETB1HM-105	1MF 50V AL. E. CAP.	B E EE EN
	C325	QCBB1HK-101Y	100PF 50V CER. CAP.	B E EE EN
	C326	QCBB1HK-101Y	100PF 50V CER. CAP.	B E EE EN
	C381	QFN31HJ-223Z	0.022MF 50V MYLAR CAP.	B E EE EN
	C382	QFN31HJ-223Z	0.022MF 50V MYLAR CAP.	B E EE EN

# CA-EX70/-EX70R

## ■Electrical Parts List(Main P.C.B RX-EX70/70R)

Item	Parts Number	Description	Area
C383	QDXB1CM-222Y	2200PF 16V C CAP.	B E EE EN
C384	QDXB1CM-222Y	2200PF 16V C CAP.	B E EE EN
C385	QCGB1HK-102	1000PF 50V CER. CAP.	B E EE EN
C385	QCGB1HK-102	1000PF 50V CER. CAP.	B E EE EN
C391	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C392	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C393	QDVB1EZ-223Y	0.022MF 25V C CAP.	B E EE EN
C403	QTE1E28-226Z	AL E. CAP.	
C404	QTE1E28-226Z	AL E. CAP.	
C405	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
C406	QFN31HJ-103Z	0.01MF 50V MYLAR CAP.	
C407	QETBOJM-22B	2200MF 6.3V AL E. CAP.	B E EE EN
	QETBOJM-477	470MF 6.3V AL E. CAP.	C J U UB UF US UT
C408	QETC1CM-106Z	10MF 16V AL E. CAP.	
C409	QDYB1CM-103Y	0.01MF 16V C CAP.	
C410	QETC1CM-106Z	10MF 16V AL E. CAP.	
C411	QETC1CM-106Z	10MF 16V AL E. CAP.	
C412	QDYB1CM-103Y	0.01MF 16V C CAP.	
C413	QEKC1HM-225Z	2.2MF 50V ELECTRO	
C414	QETB1EM-476	47MF 25V AL E. CAP.	
C415	QCBB1HK-331Y	330PF 50V CER. CAP.	
C502	QETBOJM-476	47MF 6.3V AL E. CAP.	
C503	QDVB1EZ-223Y	0.022MF 25V C CAP.	
C504	QDVB1EZ-223Y	0.022MF 25V C CAP.	
C505	QDVB1EZ-223Y	0.022MF 25V C CAP.	
C506	QDYB1CM-103Y	0.01MF 16V C CAP.	
C507	QER61HM-105Z	1MF 50V AL E. CAP.	
C508	QER61HM-105Z	1MF 50V AL E. CAP.	
C509	QETB1HM-225	2.2MF 50V AL E. CAP.	
C510	QDC31HJ-220Z	22PF 50V C. CAPA. I. M	
C511	QCSB1HJ-470	47PF 50V CER. CAP.	
C512	QDC31HJ-270Z	27PF 50V ACCAPA. I. M	
C513	QCBB1HK-471Y	470PF 50V CER. CAP.	
C514	QCBB1HK-471Y	470PF 50V CER. CAP.	
C515	QEZ0329-10AZ	ELECTRO	
C521	QDVB1EZ-223Y	0.022MF 25V C CAP.	
C701	QTE1E28-106Z	E. CAPA. I. M	
C702	QTE1E28-106Z	E. CAPA. I. M	
C703	QTE1E28-226Z	AL E. CAP.	
C704	QTE1E28-226Z	AL E. CAP.	
C705	QCS21HJ-101A	100PF 50V CER. CAP.	
C706	QCS21HJ-101A	100PF 50V CER. CAP.	
C707	QCBB1HK-471Y	470PF 50V CER. CAP.	
C711	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C712	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C713	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C714	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C715	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C716	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C717	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C718	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C719	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C720	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C721	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C722	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C723	QCBB1HK-471Y	470PF 50V CER. CAP.	B E EE EN
C740	QTE1C28-476Z	E. CAPA. I. M	
C741	QTE1H28-105Z	E. CAP.	
C742	QTE1H28-105Z	E. CAP.	
C743	QFN31HJ-473ZM	0.047MF 50V MYLAR CAP.	
C744	QTE1H28-475Z	E. CAP.	
C745	QTE1H28-474Z	E. CAPA. I. M	
C746	QFN31HJ-473ZM	0.047MF 50V MYLAR CAP.	
C747	QTE1H28-474Z	E. CAPA. I. M	
C749	QFN31HJ-473ZM	0.047MF 50V MYLAR CAP.	
C750	QFN31HJ-473ZM	0.047MF 50V MYLAR CAP.	
C751	QTE1H28-105Z	E. CAP.	
C752	QTE1C28-476Z	E. CAPA. I. M	
C761	QTE1E28-106Z	E. CAPA. I. M	
C762	QTE1E28-106Z	E. CAPA. I. M	
C763	QFN81HJ-27Z	2700PF 50V METAL MYLAR	
C764	QFN81HJ-27Z	2700PF 50V METAL MYLAR	
C765	QFN31HJ-223ZM	0.022MF 50V MYLAR CAP.	
C766	QFN31HJ-223ZM	0.022MF 50V MYLAR CAP.	

Item	Parts Number	Description	Area
C767	QFVC1HJ-224Z	0.22MF 50V T. FILM	
C768	QFVC1HJ-224Z	0.22MF 50V T. FILM	
C769	QFN31HJ-563Z	0.056MF 50V MYLAR CAP.	
C770	QFN31HJ-563Z	0.056MF 50V MYLAR CAP.	
C771	QFN81HJ-183	0.018MF 50V METAL MYLAR	
C772	QFN81HJ-183	0.018MF 50V METAL MYLAR	
C773	QTE1C28-226Z	E. CAPA. I. M	
C774	QTE1C28-107Z	E. CAPA. I. M	
C775	QTE1C28-226Z	E. CAPA. I. M	
C785	QTE1E28-106Z	E. CAPA. I. M	
C786	QTE1E28-106Z	E. CAPA. I. M	
C789	QETB1HM-475E	4.7MF 50V E. CAP.	
RESISTORS			
R280	QRJ141J-1R0Y	1 1/4W R. NETWORK	EXCEPT J
	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
R281	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	QRZ9006-4R7X	4.7 FUSIBLE	EXCEPT J
R282	QRJ146J-181X	180 1/4W R. NETWORK	J
	QRZ9005-181X	180 FUSIBLE	EXCEPT J
R283	QRE141J-223Y	22K 1/4W R. NETWORK	
R292	QRE141J-103Y	10K 1/4W R. NETWORK	
R293	QRE141J-103Y	10K 1/4W R. NETWORK	
R294	QRE141J-102Y	1K 1/4W R. NETWORK	
R303	QRE141J-623Y	62K 1/4W R. NETWORK	
R304	QRE141J-623Y	62K 1/4W R. NETWORK	
R305	QRE141J-331Y	330 1/4W R. NETWORK	
R306	QRE141J-331Y	330 1/4W R. NETWORK	
R307	QRA14CF-1001Y	1K 1/4W R. NETWORK	
R308	QRA14CF-1001Y	1K 1/4W R. NETWORK	
R309	QRE141J-104Y	100K 1/4W R. NETWORK	
R310	QRE141J-104Y	100K 1/4W R. NETWORK	
R311	QRJ146J-331X	330 1/4W R. NETWORK	J
	QRZ9005-331X	330 FUSIBLE	EXCEPT J
R312	QRJ146J-331X	330 1/4W R. NETWORK	J
	QRZ9005-331X	330 FUSIBLE	EXCEPT J
R313	QRE141J-472Y	4.7K 1/4W R. NETWORK	
R314	QRE141J-472Y	4.7K 1/4W R. NETWORK	
R315	QRE141J-472Y	4.7K 1/4W R. NETWORK	
R316	QRE141J-472Y	4.7K 1/4W R. NETWORK	
R317	QRE141J-151Y	150 1/4W R. NETWORK	
R318	QRE141J-151Y	150 1/4W R. NETWORK	
R319	QRE141J-151Y	150 1/4W R. NETWORK	
R320	QRE141J-151Y	150 1/4W R. NETWORK	
R321	QRE141J-820Y	82 1/4W R. NETWORK	
R322	QRE141J-820Y	82 1/4W R. NETWORK	
R323	QRE141J-820Y	82 1/4W R. NETWORK	
R324	QRE141J-820Y	82 1/4W R. NETWORK	
R325	QRE141J-333Y	33K 1/4W R. NETWORK	
R326	QRE141J-333Y	33K 1/4W R. NETWORK	
R327	QRE141J-621Y	620 1/4W R. NETWORK	
R328	QRE141J-621Y	620 1/4W R. NETWORK	
R329	QRJ146J-221X	220 1/4W R. NETWORK	
R330	QRJ146J-221X	220 1/4W R. NETWORK	
R331	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	QRZ9006-4R7X	4.7 FUSIBLE	EXCEPT J
R332	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	QRZ9006-4R7X	4.7 FUSIBLE	EXCEPT J
R333	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	QRZ9006-4R7X	4.7 FUSIBLE	EXCEPT J
R334	QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	QRZ9006-4R7X	4.7 FUSIBLE	EXCEPT J
R335	QRT01DJ-R22X	0.22 1W R. NETWORK	
R336	QRT01DJ-R22X	0.22 1W R. NETWORK	
R337	QRT01DJ-R22X	0.22 1W R. NETWORK	
R338	QRT01DJ-R22X	0.22 1W R. NETWORK	
R339	QRE141J-822Y	8.2K 1/4W R. NETWORK	
R340	QRE141J-822Y	8.2K 1/4W R. NETWORK	
R341	QRE141J-223Y	22K 1/4W R. NETWORK	
R342	QRE141J-223Y	22K 1/4W R. NETWORK	
R343	QRE141J-223Y	22K 1/4W R. NETWORK	
R344	QRE141J-223Y	22K 1/4W R. NETWORK	
R345	QRJ146J-100X	10 1/4W R. NETWORK	
R346	QRJ146J-100X	10 1/4W R. NETWORK	
R347	QRJ146J-100X	10 1/4W R. NETWORK	

## ■Electrical Parts List(Main P.C.B RX-EX70/70R)

△	Item	Parts Number	Description	Area
	R348	QRJ146J-100X	10 1/4W R. NETWORK	
	R349	QRE141J-104Y	100K 1/4W R. NETWORK	
	R350	QRE141J-823Y	82K 1/4W R. NETWORK	
	R351	QRJ146J-390X	39 1/4W R. NETWORK	C J
		QRZ9005-101X	100 FUSIBLE	U UB UF US UT
		QRZ9005-390X	39 FUSIBLE RES.	B E EE EN
	R353	QRE141J-223Y	22K 1/4W R. NETWORK	
	R354	QRE141J-223Y	22K 1/4W R. NETWORK	
	R355	QRE141J-152Y	1.5K 1/4W R. NETWORK	U UB UF US UT
		QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R361	QRJ146J-681X	680 1/4W R. NETWORK	
	R362	QRJ146J-681X	680 1/4W R. NETWORK	
	R363	QRJ146J-471X	470 1/4W R. NETWORK	
	R364	QRJ146J-471X	470 1/4W R. NETWORK	
	R365	QRE141J-103Y	10K 1/4W R. NETWORK	
	R366	QRE141J-103Y	10K 1/4W R. NETWORK	
	R371	QRE141J-154Y	150K 1/4W R. NETWORK	
	R372	QRE141J-154Y	150K 1/4W R. NETWORK	
	R381	QRJ146J-4R7X	4.7 1/4W R. NETWORK	B E EE EN
	R382	QRJ146J-4R7X	4.7 1/4W R. NETWORK	B E EE EN
	R383	QRE141J-103Y	10K 1/4W R. NETWORK	
	R384	QRE141J-103Y	10K 1/4W R. NETWORK	
	R391	QRE141J-181Y	180 1/4W R. NETWORK	
	R392	QRE141J-181Y	180 1/4W R. NETWORK	
	R395	QRE141J-272Y	2.7K 1/4W R. NETWORK	
	R396	QRE141J-272Y	2.7K 1/4W R. NETWORK	
	R401	QRJ146J-100X	10 1/4W R. NETWORK	J
		QRZ9005-100X	10 FUSIBLE	EXCEPT J
	R402	QRJ146J-470X	47 1/4W R. NETWORK	J
		QRZ9005-470X	47 FUSIBLE	EXCEPT J
	R403	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R404	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R405	QAD0095-4R7Z	4.7Ω POSITIVE THE	EXCEPT J
		QRJ146J-4R7X	4.7 1/4W R. NETWORK	J
	R406	QRE141J-621Y	620 1/4W R. NETWORK	
	R407	QRE141J-561Y	560 1/4W R. NETWORK	
	R408	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R409	QRE141J-103Y	10K 1/4W R. NETWORK	
	R410	QRE141J-103Y	10K 1/4W R. NETWORK	
	R411	QRE141J-473Y	47K 1/4W R. NETWORK	
	R412	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R413	QRE141J-103Y	10K 1/4W R. NETWORK	
	R414	QRE141J-104Y	100K 1/4W R. NETWORK	
	R415	QRE141J-473Y	47K 1/4W R. NETWORK	
	R416	QRE141J-103Y	10K 1/4W R. NETWORK	
	R417	QRE141J-101Y	100 1/4W R. NETWORK	
	R418	QRE141J-101Y	100 1/4W R. NETWORK	
	R420	QRJ146J-100X	10 1/4W R. NETWORK	J
		QRZ9005-100X	10 FUSIBLE	EXCEPT J
	R421	QRE141J-470Y	47 1/4W R. NETWORK	
	R502	QRE141J-103Y	10K 1/4W R. NETWORK	
	R503	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R504	QRE141J-181Y	180 1/4W R. NETWORK	
	R505	QRE141J-271Y	270 1/4W R. NETWORK	
	R506	QRE141J-220Y	22 1/4W R. NETWORK	
	R507	QRE141J-103Y	10K 1/4W R. NETWORK	
	R508	QRE141J-103Y	10K 1/4W R. NETWORK	
	R509	QRE141J-103Y	10K 1/4W R. NETWORK	
	R510	QRE141J-103Y	10K 1/4W R. NETWORK	
	R530	QRE141J-103Y	10K 1/4W R. NETWORK	
	R531	QRE141J-103Y	10K 1/4W R. NETWORK	
	R532	QRE141J-103Y	10K 1/4W R. NETWORK	
	R533	QRE141J-103Y	10K 1/4W R. NETWORK	
	R705	QRE141J-393Y	39K 1/4W R. NETWORK	
	R706	QRE141J-393Y	39K 1/4W R. NETWORK	
	R707	QRE141J-331Y	330 1/4W R. NETWORK	
	R711	QRV14CF-1002Y	10K 1/4W M. FILM	
	R712	QRV14CF-1002Y	10K 1/4W M. FILM	
	R715	QRE141J-103Y	10K 1/4W R. NETWORK	
	R716	QRE141J-103Y	10K 1/4W R. NETWORK	
	R719	QRE141J-331Y	330 1/4W R. NETWORK	
	R720	QRE141J-331Y	330 1/4W R. NETWORK	
	R721	QRE141J-153Y	15K 1/4W R. NETWORK	

△	Item	Parts Number	Description	Area
	R722	QRE141J-153Y	15K 1/4W R. NETWORK	
	R725	QRE141J-331Y	330 1/4W R. NETWORK	
	R726	QRE141J-331Y	330 1/4W R. NETWORK	
	R727	QRE141J-223Y	22K 1/4W R. NETWORK	
	R728	QRE141J-223Y	22K 1/4W R. NETWORK	
	R729	QRE141J-913Y	91K 1/4W R. NETWORK	
	R730	QRE141J-913Y	91K 1/4W R. NETWORK	
	R733	QRE141J-102Y	1K 1/4W R. NETWORK	
	R745	QRE141J-471Y	470 1/4W R. NETWORK	
	R746	QRE141J-224Y	220K 1/4W R. NETWORK	
	R747	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R748	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R749	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R760	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R761	QRJ146J-471X	470 1/4W R. NETWORK	J
		QRL022J-471	470 2W OXIDE METAL	EXCEPT J
	R764	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R765	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R766	QRE141J-392Y	3.9K 1/4W R. NETWORK	
	R767	QRE141J-392Y	3.9K 1/4W R. NETWORK	
	R789	QRE141J-102Y	1K 1/4W R. NETWORK	
	R791	QRE141J-221Y	220 1/4W R. NETWORK	
	R792	QRE141J-221Y	220 1/4W R. NETWORK	
	R793	QRE141J-103Y	10K 1/4W R. NETWORK	
	R794	QRE141J-103Y	10K 1/4W R. NETWORK	
	R795	QRE141J-103Y	10K 1/4W R. NETWORK	
	R796	QRE141J-103Y	10K 1/4W R. NETWORK	
	R1111	QRZ9044-335	3.3M COMPOSITION	C J
		OTHERS		
		EMW10733-103	C1R BOARD	B
		EMW10733-103	C1R BOARD	C
		EMW10733-103	C1R BOARD	E
		EMW10733-103	C1R BOARD	EE
		EMW10733-103	C1R BOARD	EN
		EMW10733-103	C1R BOARD	J
		EMW10733-103	C1R BOARD	U
		EMW10733-103	C1R BOARD	UB
		EMW10733-103	C1R BOARD	UF
		EMW10733-103	C1R BOARD	US
		EMW10733-103	C1R BOARD	UT
		E61380-029	CAUTION LABEL	C J
		E67132-TR50	FUSE LABEL	B E EE EN
	J105	QNB0089-001	SPEAKER TERMINAL	
	J106	QNS0016-001	3.5 JACK	
	J301	QMS3L40-EDOH	PIN JACK	
	J701	QNN0174-001	PIN JACK	
	J702	QNN0174-001	PIN JACK	
	J703	QNN0284-001	PIN JACK	
	L301	QQLZ005-R45	INDUCTOR	
	L302	QQLZ005-R45	INDUCTOR	
	L401	QQL231K-1R0Y	INDUCTOR 1. M	
	S501	QSW0499-001Z	PUSH SW 1. M	
	S502	QSW0499-001Z	PUSH SW 1. M	
	S503	QSW0499-001Z	PUSH SW 1. M	
	S504	QSW0499-001Z	PUSH SW 1. M	
	S505	QSW0499-001Z	PUSH SW 1. M	
	S506	QSW0499-001Z	PUSH SW 1. M	
	S507	QSW0499-001Z	PUSH SW 1. M	
	S508	QSW0499-001Z	PUSH SW 1. M	
	S509	QSW0499-001Z	PUSH SW 1. M	B E EE EN
	S510	QSW0499-001Z	PUSH SW 1. M	B E EE EN
	S511	QSW0499-001Z	PUSH SW 1. M	B E EE EN
	S512	QSW0499-001Z	PUSH SW 1. M	B E EE EN
	X501	QAX0250-001	CRYSTAL	
	CN002	EWS284-010	SOCKET WIRE ASSY	
	CN011	QGA3901C1-04	4P CONNECTOR	
	CN012	QGD2501C1-05Z	SOCKET 1. M	
	CN301	QGB2510J1-14	CONNECTOR	
	CN303	QGB2510K2-14	CONNECTOR	
	CN401	QGA3901C1-04	4P CONNECTOR	
	CN402	EWS284-009	SOCKET WIRE ASSY	
	CN403	QGD2501C1-03Z	SOCKET 1. M	
	CN501	QGF1205F1-25	CONNECTOR	
	CN502	EWS265-A413	SOCKET WIRE ASSY	B E EE EN

# CA-EX70/-EX70R

## ■Electrical Parts List(Main P.C.B RX-EX70/70R)

△	Item	Parts Number	Description	Area
	CN601	QGB2510K2-12	CONNECTOR	
	CN602	QGB2510J1-12	CONNECTOR	
	CN701	QGF1205C1-25	CONNECTOR	
	CN702	QGB2510J1-12	CONNECTOR	
	CN703	QGD2501C1-03Z	SOCKET I.M	
	CN713	QGD2501C1-03Z	SOCKET I.M	
	CN714	QGD2501C1-03Z	SOCKET I.M	
	DI500	QLF0029-002	FLUORESCENT DISPLAY TUBE	
	EP001	QNZ0136-001Z	1M EARTH PLATE	
	EP002	QNZ0136-001Z	1M EARTH PLATE	
	EP003	LV40417-001A	CONNECTOR BRACKET	U UB UF US UT
	FH501	LE30640-001A	FL HOLDER	
	FH502	LE30640-002A	FL HOLDER	
	FS501	E3400-431	FELT SPACER	
	FS502	E3400-431	FELT SPACER	
	FT001	QNG0020-001Z	FUSE CLIP	
	FT002	QNG0020-001Z	FUSE CLIP	
	FT003	QNG0020-001Z	FUSE CLIP	U UB UF US UT
	FT004	QNG0020-001Z	FUSE CLIP	U UB UF US UT
	FW002	EW35B-13LST	FLAT WIRE	
	FW401	EW33B-13LST	FLAT WIRE	
	FW703	EW36B-20LST	FLAT WIRE	
	JS501	QSW0502-001	SW	
	RY301	QSK0042-001	RELAY	
	SP501	VYH7653-001	I. C. PROTECTOR	
	SP502	VYH7653-006	I. C. PROTECTOR	
	SW001	QSW0513-001	SLIDE SW.	U UB UF US UT
	TB001	QNZ0079-001Z	TAB I.M	
	TB002	QNZ0079-001Z	TAB I.M	
	TW007	QUB110-12ZLPP	CONNECTOR WIRE ASSY	C J

## ■ Electrical Parts List(Tuner P. C. B. RX-EX70 C/J)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC102	LA1837	I. C(MONO-ANALOG)	
	IC121	LC72131	I. C(M)	
		DIODES		
	D121	1SS133-T2	SI. DIODE	
	D123	1SS133-T2	SI. DIODE	
	D129	1SS133-T2	SI. DIODE	
	D130	MTZJ10C-T2	ZENER	
		TRANSISTORS		
	Q101	2SC461/BC/-T	SILICON	
	Q102	2SC535/BC/-T	SILICON	
	Q103	2SC461/BC/-T	SILICON	
	Q121	DTA124ES-T	SILICON	
	Q123	2SC2060/QR/-T	SILICON	
		CAPACITORS		
	C101	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C102	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C103	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C104	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C105	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C107	QETC1EM-226ZM	22MF 25V E. CAP.	
	C109	QETC1EM-226ZM	22MF 25V E. CAP.	
	C111	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C112	QDCB1HJ-120Y	12PF 50V C CAP.	
	C117	QCSB1HK-5R6Y	5.6PF 50V CER. CAP.	
	C118	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C121	QDCB1HJ-180Y	18PF 50V C CAP.	
	C122	QDCB1HJ-180Y	18PF 50V C CAP.	
	C123	QDX31EM-473Z	0.047MF 25V C CAP.	
	C126	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C128	QENB1HM-474	0.47MF 50V NP E. CAP.	
	C129	QGBB1HK-102	1000PF 50V CER. CAP.	
	C130	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C133	QETC1EM-226ZM	22MF 25V E. CAP.	
	C134	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C135	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C136	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C137	QCBB1HK-221Y	220PF 50V CER. CAP.	
	C139	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C140	QFLB1HJ-333	0.033MF 50V MYLAR CAP.	
	C141	QDX31EM-473Z	0.047MF 25V C CAP.	
	C143	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C144	QDX31EM-473Z	0.047MF 25V C CAP.	
	C146	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C147	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C148	QETN1HM-474Z	0.47MF 50V AL E. CAP.	
	C149	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C150	QETC1EM-226ZM	22MF 25V E. CAP.	
	C156	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C157	QDX31EM-473Z	0.047MF 25V C CAP.	
	C158	QETC1EM-226ZM	22MF 25V E. CAP.	
	C161	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C162	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C163	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C164	QDX31EM-473Z	0.047MF 25V C CAP.	
	C168	QCZ0205-155	1.5MF 25V C CAP.	
	C180	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C181	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C182	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C183	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C184	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C185	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C186	QETN1HM-105Z	1MF 50V AL E. CAP.	
		RESISTORS		
	R102	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R103	QRE141J-221Y	220 1/4W R. NETWORK	
	R104	QRE141J-272Y	2.7K 1/4W R. NETWORK	
	R105	QRE141J-391Y	390 1/4W R. NETWORK	
	R106	QRE141J-102Y	1K 1/4W R. NETWORK	
	R107	QRE141J-561Y	560 1/4W R. NETWORK	
	R108	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R109	QRE141J-221Y	220 1/4W R. NETWORK	
	R115	QRE141J-104Y	100K 1/4W R. NETWORK	
	R119	QRE141J-103Y	10K 1/4W R. NETWORK	

△	Item	Parts Number	Description	Area
	R121	QRE141J-473Y	47K 1/4W R. NETWORK	
	R122	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R124	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R126	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R127	QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R128	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R129	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R130	QRJ146J-680X	68 1/4W R. NETWORK	
	R132	QRE141J-102Y	1K 1/4W R. NETWORK	
	R133	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R134	QRE141J-102Y	1K 1/4W R. NETWORK	
	R140	QRE141J-183Y	18K 1/4W CARBON RES.	
	R141	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R142	QRE141J-470Y	47 1/4W R. NETWORK	
	R143	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R144	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R145	QRE141J-103Y	10K 1/4W R. NETWORK	
	R146	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R147	QRE141J-153Y	15K 1/4W R. NETWORK	
	R148	QRE141J-561Y	560 1/4W R. NETWORK	
	R150	QRE141J-101Y	100 1/4W R. NETWORK	
	R157	QRE141J-682Y	6.8K 1/4W R. NETWORK	
	R158	QRE141J-682Y	6.8K 1/4W R. NETWORK	
	R161	QRE141J-102Y	1K 1/4W R. NETWORK	
	R162	QRE141J-102Y	1K 1/4W R. NETWORK	
	R163	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R164	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R181	QRE141J-102Y	1K 1/4W R. NETWORK	
	R182	QRE141J-103Y	10K 1/4W R. NETWORK	
	R183	QRE141J-103Y	10K 1/4W R. NETWORK	
	R184	QRE141J-103Y	10K 1/4W R. NETWORK	
		OTHERS		
		EMW10684-004	PRINTED BOARD	
		EMW10684-004	PRINTED BOARD	
	L111	QQL121K-150Y	INDUCTOR 1.5M	
	T111	QQR0592-001	RF COIL	
	T141	QQR0613-001	I. F. TRANSFORMER	
	T142	QAX0303-001	CERAMIC FILTER	
	X121	QAX0251-001Z	RESONATOR 1	
	AT101	QNB0008-001	ANT TERMINAL	
	CF101	QAX0284-001Z	CERAMIC FILTER	
	CF102	QAX0284-001Z	CERAMIC FILTER	
	CN111	QGB2510K1-12	CONNECTOR	
	FL141	QQR0590-001	LOWPASS FILTER	
	FL142	QQR0590-001	LOWPASS FILTER	
	RF101	EAF2207-001	FRONT END	

# CA-EX70/-EX70R

## ■Electrical parts List(Tuner P. C. B. RX-EX70 U/UB/UF/US/UT)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC102	LA1837	I. C (MONO-ANALOG)	
	IC121	LC72131	I. C (M)	
		DIODES		
	D121	1SS133-T2	SI. DIODE	
	D123	1SS133-T2	SI. DIODE	
	D126	1SS133-T2	SI. DIODE	
	D129	1SS133-T2	SI. DIODE	
	D130	MTZJ10C-T2	ZENER	
		TRANSISTORS		
	Q101	2SC461/BC/-T	SILICON	
	Q102	2SC535/BC/-T	SILICON	
	Q103	2SC461/BC/-T	SILICON	
	Q121	DTA124ES-T	SILICON	
	Q123	2SC2060/QR/-T	SILICON	
		CAPACITORS		
	C101	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C102	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C103	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C104	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C105	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C107	QETC1EM-226ZM	22MF 25V E. CAP.	
	C109	QETC1EM-226ZM	22MF 25V E. CAP.	
	C111	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C112	QDCB1HJ-120Y	12PF 50V C CAP.	
	C117	QCBB1HK-5R6Y	5.6PF 50V CER. CAP.	
	C118	QCBB1HJ-150Y	15PF 50V CER. CAP.	
	C121	QDCB1HJ-180Y	18PF 50V C CAP.	
	C122	QDCB1HJ-180Y	18PF 50V C CAP.	
	C123	QDX31EM-473Z	0.047MF 25V C CAP.	
	C126	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C128	QENB1HM-474	0.47MF 50V NP E. CAP.	
	C129	QCCB1HK-102	1000PF 50V CER. CAP.	
	C130	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C133	QETC1EM-226ZM	22MF 25V E. CAP.	
	C134	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C135	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C136	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C137	QCBB1HK-101Y	100PF 50V CER. CAP.	
	C137	QCBB1HK-561Y	560PF 50V CER. CAP.	
	C139	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C140	QFLB1HJ-223	0.022MF 50V MYLAR CAP.	
	C141	QDX31EM-473Z	0.047MF 25V C CAP.	
	C143	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C144	QDX31EM-473Z	0.047MF 25V C CAP.	
	C146	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C147	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C148	QETN1HM-474Z	0.47MF 50V AL E. CAP.	
	C149	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C150	QETC1EM-226ZM	22MF 25V E. CAP.	
	C156	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C157	QDX31EM-473Z	0.047MF 25V C CAP.	
	C158	QETC1EM-226ZM	22MF 25V E. CAP.	
	C161	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C162	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C163	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C164	QDX31EM-473Z	0.047MF 25V C CAP.	
	C168	QCZ0205-155	1.5MF 25V C CAP.	
	C180	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C181	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C182	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C183	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C184	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C185	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C186	QETN1HM-105Z	1MF 50V AL E. CAP.	
		RESISTORS		
	R102	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R103	QRE141J-221Y	220 1/4W R. NETWORK	
	R104	QRE141J-272Y	2.7K 1/4W R. NETWORK	
	R105	QRE141J-391Y	390 1/4W R. NETWORK	
	R106	QRE141J-102Y	1K 1/4W R. NETWORK	
	R107	QRE141J-561Y	560 1/4W R. NETWORK	
	R108	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R109	QRE141J-221Y	220 1/4W R. NETWORK	

△	Item	Parts Number	Description	Area
	R115	QRE141J-104Y	100K 1/4W R. NETWORK	
	R119	QRE141J-103Y	10K 1/4W CARBON RES.	
	R121	QRE141J-473Y	47K 1/4W R. NETWORK	
	R122	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R124	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R126	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R127	QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R128	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R129	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R130	QRZ9005-680X	68 FUSIBLE	
	R132	QRE141J-102Y	1K 1/4W R. NETWORK	
	R133	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R133	QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R134	QRE141J-102Y	1K 1/4W R. NETWORK	
	R140	QRE141J-183Y	18K 1/4W CARBON RES.	
	R141	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R142	QRE141J-470Y	47 1/4W R. NETWORK	
	R143	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R144	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R145	QRE141J-103Y	10K 1/4W CARBON RES.	
	R146	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R147	QRE141J-273Y	27K 1/4W R. NETWORK	
	R148	QRE141J-561Y	560 1/4W R. NETWORK	
	R150	QRE141J-101Y	100 1/4W R. NETWORK	
	R157	QRE141J-682Y	6.8K 1/4W R. NETWORK	
	R158	QRE141J-682Y	6.8K 1/4W R. NETWORK	
	R161	QRE141J-102Y	1K 1/4W R. NETWORK	
	R162	QRE141J-102Y	1K 1/4W R. NETWORK	
	R163	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R164	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R181	QRE141J-102Y	1K 1/4W R. NETWORK	
	R182	QRE141J-103Y	10K 1/4W CARBON RES.	
	R183	QRE141J-103Y	10K 1/4W CARBON RES.	
	R184	QRE141J-103Y	10K 1/4W CARBON RES.	
		OTHERS		
		EMW10684-004	PRINTED BOARD	
	L111	QQL121K-150Y	INDUCTOR 1.5M	
	T111	QQR0592-001	RF COIL	
	T141	QQR0613-001	I. F. TRANSFORMER	
	T142	QAX0303-001	CERAMIC FILTER	
	X121	QAX0251-001Z	RESONATOR 1	
	AT101	QNB0008-001	ANT. TERMINAL	
	CF101	QAX0285-001Z	CERAMIC FILTER	
	CF102	QAX0285-001Z	CERAMIC FILTER	
	CN111	QGB2510K1-12	CONNECTOR	
	FL141	QQR0590-001	LOWPASS FILTER	
	FL142	QQR0590-001	LOWPASS FILTER	
	RF101	EAF2207-001	FRONT END	

## ■Electrical Parts List (Tuner P.C.B. RX-EX70R B/E/EE/EN)

f.	Item	Parts Number	Description	Area
		I. C. S		
	IC102	LA1837	I. C (MONO-ANALOG)	
	IC121	LC72131	I. C (M)	
	IC191	LC7073	I. C (DIGI-MOS)	
	IC192	SAA6579	I. C (M)	
		DIODES		
	D121	1SS133-T2	SI. DIODE	
	D123	1SS133-T2	SI. DIODE	
	D126	1SS133-T2	SI. DIODE	
	D129	1SS133-T2	SI. DIODE	
	D130	MTZJ10C-T2	ZENER	
	D131	1SS133-T2	SI. DIODE	
		TRANSISTORS		
	Q101	2SC461/BC/-T	SILICON	
	Q102	2SC535/BC/-T	SILICON	
	Q103	2SC461/BC/-T	SILICON	
	Q111	2SD2144S-VW/-T	SILICON	
	Q112	2SD2144S-VW/-T	SILICON	
	Q113	2SD2144S-VW/-T	SILICON	
	Q114	2SD2144S-VW/-T	SILICON	
	Q121	D1A124ES-T	SILICON	
	Q123	2SC2060.0R/-T	SILICON	
		CAPACITORS		
	C101	QDYB1CM-103Y	0.01MF 16V C CAP.	
	C102	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C103	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C104	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C105	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C107	QETC1EM-226ZM	22MF 25V E. CAP.	
	C109	QETC1EM-226ZM	22MF 25V E. CAP.	
	C111	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C112	QDCB1HJ-120Y	12PF 50V C CAP.	
	C113	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C117	QCSB1HK-5R6Y	5.6PF 50V CER. CAP.	
	C118	QCSB1HJ-150Y	15PF 50V CER. CAP.	
	C121	QDCB1HJ-180Y	18PF 50V C CAP.	
	C122	QDCB1HJ-180Y	18PF 50V C CAP.	
	C123	QDX31EM-473Z	0.047MF 25V C CAP.	
	C126	QCB1HK-101Y	100PF 50V CER. CAP.	
	C128	QENB1HM-474	0.47MF 50V NP E. CAP.	
	C129	QCB1HK-102	100PF 50V CER. CAP.	
	C130	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C133	QETC1EM-226ZM	22MF 25V E. CAP.	
	C134	QDXB1CM-222Y	2200PF 16V C CAP.	
	C135	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C136	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C137	QCB1HK-391Y	390PF 50V CER. CAP.	
	C139	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	
	C140	QFLB1HJ-473	0.047MF 50V MYLAR CAP.	
	C141	QDX31EM-473Z	0.047MF 25V C CAP.	
	C143	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C144	QDX31EM-473Z	0.047MF 25V C CAP.	
	C146	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C147	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C148	QETN1HM-474Z	0.47MF 50V AL E. CAP.	
	C149	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C150	QETC1EM-226ZM	22MF 25V E. CAP.	
	C156	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C157	QDX31EM-473Z	0.047MF 25V C CAP.	
	C158	QETC1EM-226ZM	22MF 25V E. CAP.	
	C161	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C162	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C163	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C164	QDX31EM-473Z	0.047MF 25V C CAP.	
	C168	QCZ0205-155	1.5MF 25V C CAP.	
	C180	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C181	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C182	QFLB1HJ-562	5600PF 50V MYLAR CAP.	
	C183	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C184	QETC1EM-107Z	100MF 25V AL E. CAP.	
	C185	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C186	QETN1HM-105Z	1MF 50V AL E. CAP.	
	C191	QCB1HK-820Y	82PF 50V CER. CAP.	
	C192	QCSB1HJ-470	47PF 50V CER. CAP.	
	C193	QCB1HK-561Y	560PF 50V CER. CAP.	
	C194	QDVB1EZ-223Y	0.022MF 25V C CAP.	
	C195	QCB1HK-331Y	330PF 50V CER. CAP.	
	C196	QETC1EM-226ZM	22MF 25V E. CAP.	

f.	Item	Parts Number	Description	Area
	C197	QCZ0205-155	1.5MF 25V C. CAP.	
	C199	QETC1EM-226ZM	22MF 25V E. CAP.	
		RESISTORS		
	R102	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R103	QRE141J-221Y	220 1/4W R. NETWORK	
	R104	QRE141J-272Y	2.7K 1/4W R. NETWORK	
	R105	QRE141J-391Y	390 1/4W R. NETWORK	
	R106	QRE141J-102Y	1K 1/4W R. NETWORK	
	R107	QRE141J-561Y	560 1/4W R. NETWORK	
	R108	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R109	QRE141J-221Y	220 1/4W R. NETWORK	
	R110	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R111	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R112	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R113	QRE141J-103Y	10K 1/4W R. NETWORK	
	R114	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R115	QRE141J-104Y	100K 1/4W R. NETWORK	
	R116	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R119	QRE141J-103Y	10K 1/4W R. NETWORK	
	R121	QRE141J-473Y	47K 1/4W R. NETWORK	
	R122	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R124	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R126	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R127	QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R128	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R129	QRE141J-222Y	2.2K 1/4W R. NETWORK	
	R130	QRZ9005-680X	68 FUSIBLE	
	R131	QRE141J-103Y	10K 1/4W R. NETWORK	
	R132	QRE141J-102Y	1K 1/4W R. NETWORK	
	R133	QRE141J-562Y	5.6K 1/4W R. NETWORK	
		QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R134	QRE141J-102Y	1K 1/4W R. NETWORK	
	R140	QRE141J-563Y	56K 1/4W R. NETWORK	
	R141	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R142	QRE141J-470Y	47 1/4W R. NETWORK	
	R143	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R144	QRE141J-332Y	3.3K 1/4W R. NETWORK	
	R145	QRE141J-103Y	10K 1/4W R. NETWORK	
	R146	QRE141J-562Y	5.6K 1/4W R. NETWORK	
	R147	QRE141J-273Y	27K 1/4W R. NETWORK	
	R148	QRE141J-561Y	560 1/4W R. NETWORK	
	R150	QRE141J-101Y	100 1/4W R. NETWORK	
	R157	QRE141J-182Y	1.8K 1/4W R. NETWORK	
	R158	QRE141J-182Y	1.8K 1/4W R. NETWORK	
	R161	QRE141J-102Y	1K 1/4W R. NETWORK	
	R162	QRE141J-102Y	1K 1/4W R. NETWORK	
	R163	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R164	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R181	QRE141J-102Y	1K 1/4W R. NETWORK	
	R182	QRE141J-103Y	10K 1/4W R. NETWORK	
	R183	QRE141J-103Y	10K 1/4W R. NETWORK	
	R184	QRE141J-103Y	10K 1/4W R. NETWORK	
	R191	QRE141J-222Y	2.2K 1/4W R. NETWORK	
		OTHERS		
		EMW10684-004	PRINTED BOARD	
	L111	QQL121K-150Y	INDUCTOR 1.5M	
	T111	QQR0591-001	RF COIL	
	T141	QQR0613-001	I. F. TRANSFORMER	
	T142	QAX0303-001	CERAMIC FILTER	
	X121	QAX0251-001Z	RESONATOR I	
	X191	QAX0263-001Z	CRYSTAL	
	X192	QAX0248-001Z	CERA LOCK	
	AT101	QN00014-001	ANT TERMINAL	
	BK001	E308963-224SM	SHIELD BKT	
	CF101	QAX0285-001Z	CERAMIC FILTER	
	CF102	QAX0285-001Z	CERAMIC FILTER	
	CN111	QGB2510K1-12	CONNECTOR	
	CN112	QGA2001C1-05	5P PLUG ASSY	
	FL141	QQR0590-001	LOWPASS FILTER	
	FL142	QQR0590-001	LOWPASS FILTER	
	RF101	QAU0005-001	FRONT END	
	SC001	QUB112-0724PP	WIRE	

## ■ Accessories List

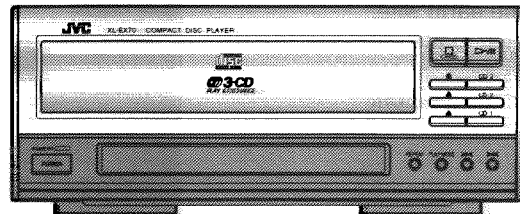
Block No. **M2MM**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LVT0092-001A	INSTRUCTION BOOK	1		J
		LVT0092-002A	INSTRUCTION BOOK	1		B
		LVT0092-003A	INSTRUCTION BOOK	1		C
		LVT0092-004A	INSTRUCTION BOOK	1		E EN
		LVT0092-005A	INSTRUCTION BOOK	1		EN
		LVT0092-006A	INSTRUCTION BOOK	1		EE
		LVT0092-007A	INSTRUCTION BOOK	1		U UB UF US UT
	2	QPC02503510P	POLY BAG	2		
	3	QAL0014-001	LOOP ANTENNA	1		
	4	RM-SEEX90EU	REMOCON	1		U UB UF US UT
		RM-SEEX90U	REMOCON	1		C J
		RM-SEEX90RU	REMOCON	1		B E EE EN
	5	EWP503-001	ANT. WIRE	1		B E EE EN
	6	R6PPTT/2STS	BATTERY	2		
	7	EWP201-011	ANTENNA WIRE	1		C J U UB UF US UT
	8	LV40580-001A	ATTENTION SHEET	1		J
	9	EWP302-023	SIGNAL CORD	1		
	10	EWP805-012	PLUG WIRE ASSY	2		
	11	BT-52002-1	WARRANTY CARD	1		C
		BT-54008-1	WARRANTY CARD	1		B E EN
		BT-59011-1	WARRANTY CARD	1		UF
	12	QMPP060-183-JD	POWER CORD	1		UB
		QMPS020-183-JC	POWER CORD	1		UF
		QMP1F00-183	POWER CORD	1		C J
△		QMP39F0-183	POWER CORD	1		U US E EE EN
		QMP5520-183	POWER CORD	1		B
△		QMP7530-183	POWER CORD	1		UT
	13	QAM0027-001	SIEMENS PLUG	2		UT
		QAM0060-001	SIEMENS PLUG	2		U US
	14	BT-20044G	SAFETY SHEET	1		J
	15	BT-51006-1	REGISTER CARD	1		J
	16	LV30258-026A	UB SHEET	1		UB
		LV30258-025A	UB SHEET	1		UB
	17	E300196-172	ENVELOPE	1	XL-EX90 POWER CORD	



## INTEGRATED COMPACT SYSTEM

## XL-EX70



Area Suffix	
C	----- Canada
J	----- U.S.A.
U	----- Other Areas
UB	----- Hong Kong
UF	----- China
US	----- Singapore
UT	----- Taiwan
B	----- U.K
E	----- Continental Europe
EN	----- Northan Europe
EE	----- Eastern Europe

## - Contents -

Removal of Main Parts .....	4-2
Description of Main ICs .....	4-12
Standard Schematic Diagrams .....	4-19
Location of P. C. Board Parts .....	4-22

## Removal of Main Parts

### (1) Removing the top cover

1. Remove the two screws A retaining both sides of the top cover and the four screws G retaining the rear side.
2. While raising the rear section and spreading the top cover, pull out the cover from the front panel.

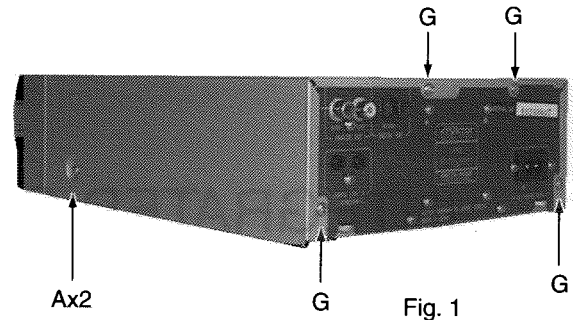


Fig. 1

### (2) Removing the front panel assembly

1. Remove the top cover.
2. From the bottom face side, remove the three screws B retaining the front panel assembly.
3. By removing the screw C, disconnect the earth wire.
4. Pull out the card wire (CN802) connected to the output P.C. board.
5. By removing the three hooks, disassemble the front panel assembly.

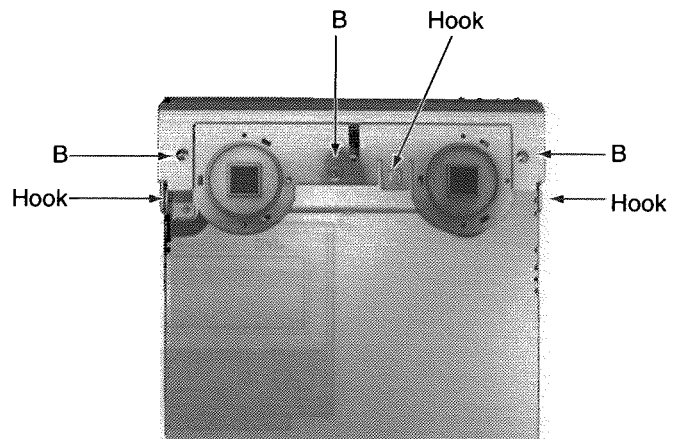


Fig. 2

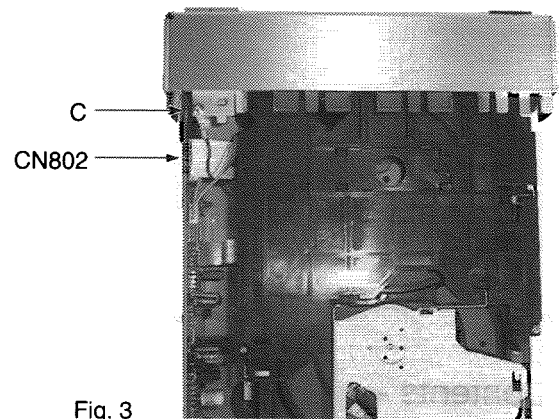


Fig. 3

### (3) Removing the rear panel

1. Remove the top cover.
2. Remove the eleven screws H retaining the rear panel.
3. Remove the internal power transformer from the two hooks.

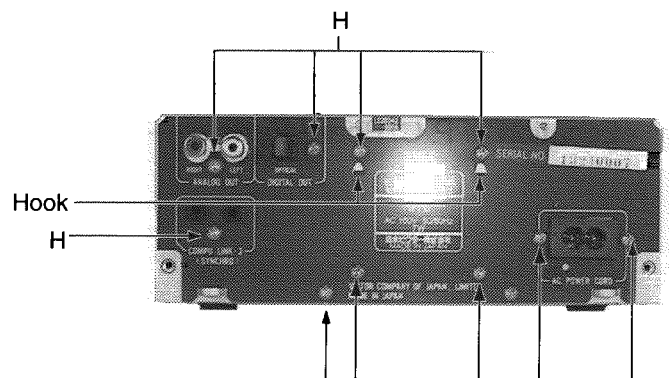


Fig.4

**(4) Removing the front cover and system control P.C. board**

1. Disassemble the front panel assembly.
2. By removing the four screws D retaining the system control P.C. board, remove this P.C. board.
3. After removing the hook A, remove the two hooks B.

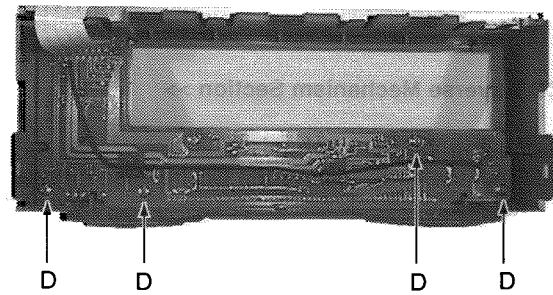


Fig. 5

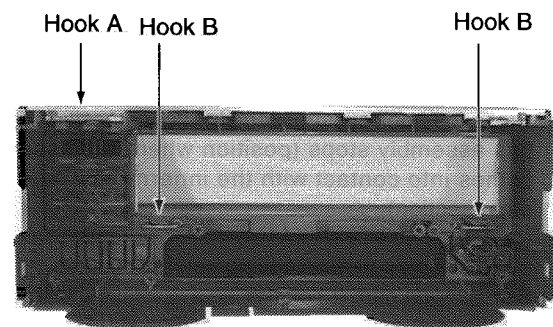


Fig. 6

**(5) Removing the output P.C. board**

1. Remove the top cover and rear panel.
2. Remove the two screws E retaining the output P.C. board.
3. Pull out the card wires (CN805 and CN804) and connector (CN803).
4. After disconnecting the flat wire (CN806) and connector (CN801), remove the power transformer as necessary.

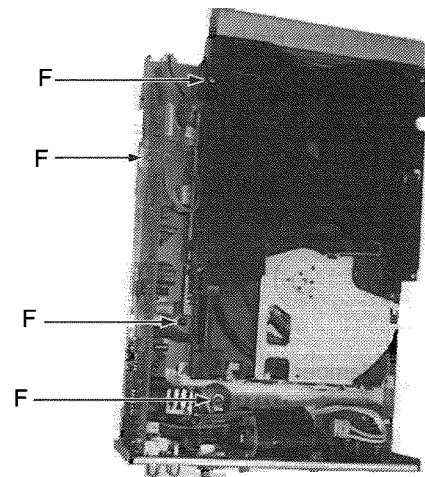


Fig. 7

**(6) Removing the CD mechanism assembly**

Remove the four screws F retaining the CD mechanism assembly.

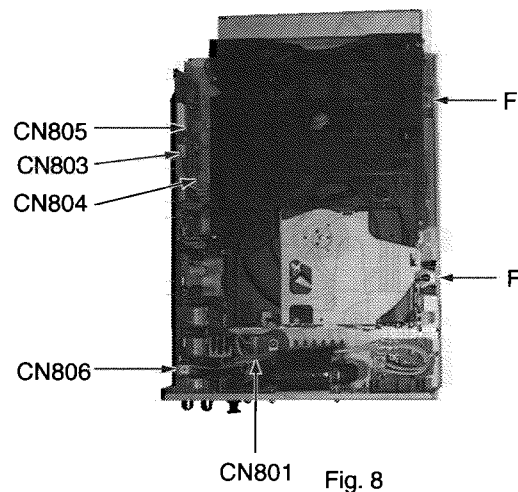


Fig. 8

<< CD Traverse Mechanism Section >>

■ Removing the CD mechanism

1. From the body, remove the CD traverse mechanism assembly.

CAUTION: When this mechanism has been removed from the body (wherein all of the sub trays will be housed in the main tray), either of the three sub trays will be set to a playing condition.

Therefore, set the corresponding sub tray to the waiting position according to the following steps:

- I. Press the hook slider assembly into the position where this assembly stops (position where the assembly comes into contact with the innermost part of the mold section).
- II. Next, the sub tray should be enclosed in the main tray while sliding it until a clinking sound is issued.
- III. Set the slide cam (L) on the left side of the CD traverse mechanism assembly to the position B ([ALL EJECT]) position. Under this condition, the CD traverse mechanism will be kept as it has been hanged down (See Fig.9).

2. Remove the four screws 1 retaining the top cover.
3. Remove the rod from a clamber, and take it out together with the top cover.
4. Take out the main tray (under the conditions where all of the sub trays have been enclosed).

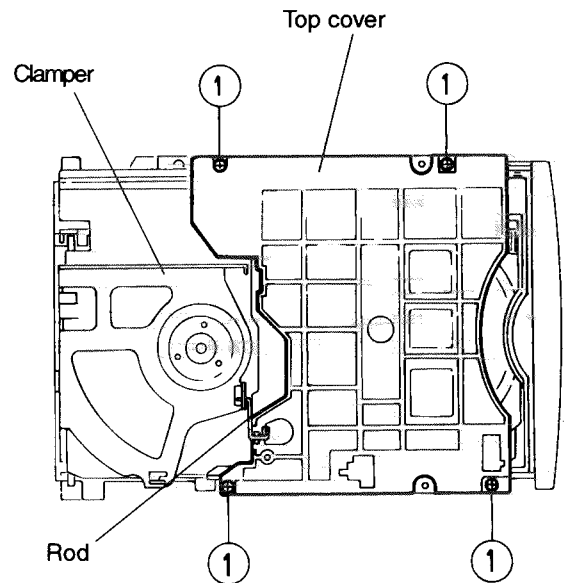
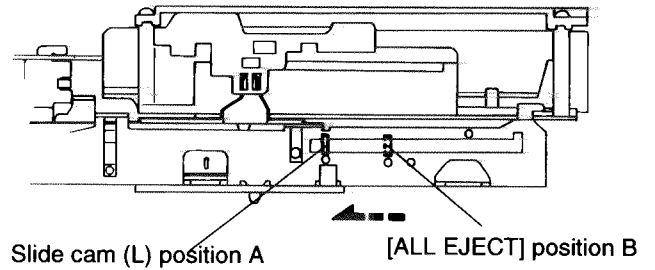


Fig. 10

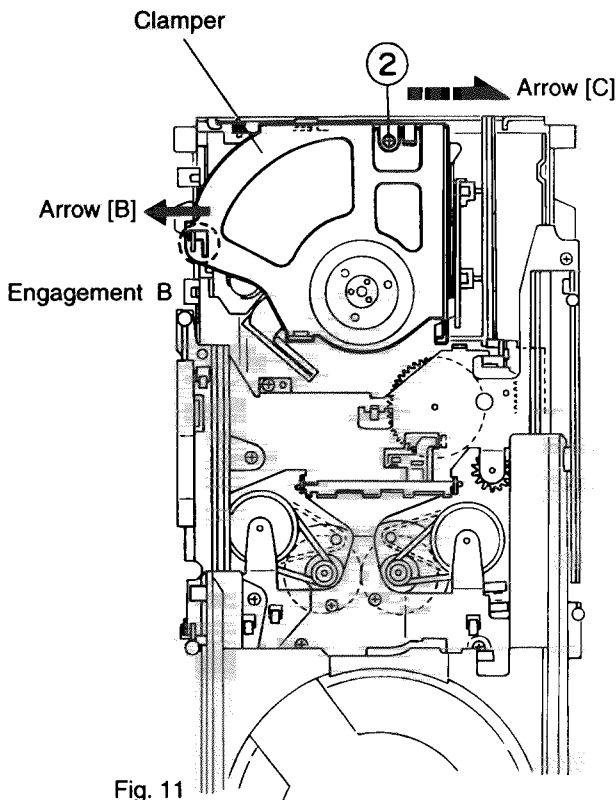
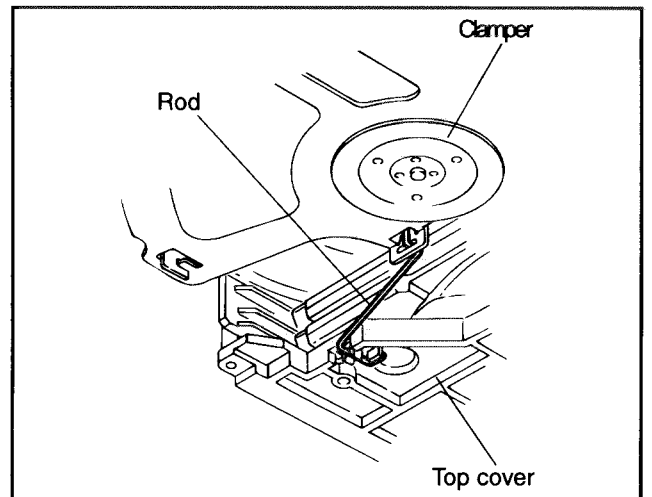


Fig. 11



5. Slide the slide cam (L) to the position A.
6. Remove the two screws 2 retaining the clamber.
7. While moving the clamber in the arrow direction [B] and shifting it in the arrow direction [C], disengage the clamber from the engagement section B.
8. Take out the stopper retaining the CD mechanism while moving the moving the center pawl in the arrow direction [D] as shown in Fig. 12.
9. Take out the three insulators from the CD mechanism by using tweezers.
10. Solder the flexible P.C. board outgoing from the CD mechanism as shown in Fig. 13.
11. Remove the flexible P.C. board from the connector CN601 on the CD traverse mechanism control and servo P.C. board.

**CAUTION:** Since the connection between the flexible P.C. board and CN601 will not be easily disconnected, remove this P.C. board by wrapping cloth, etc. around cutting pliers in order not to cause any damage to the P.C. board.

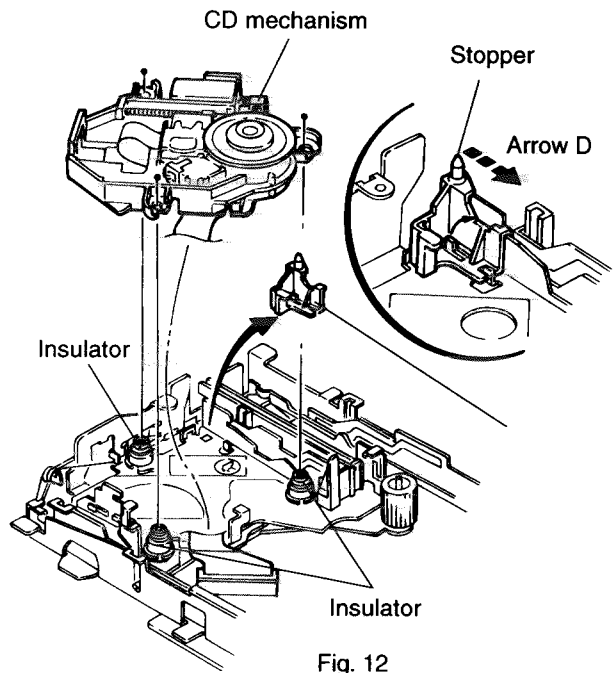


Fig. 12

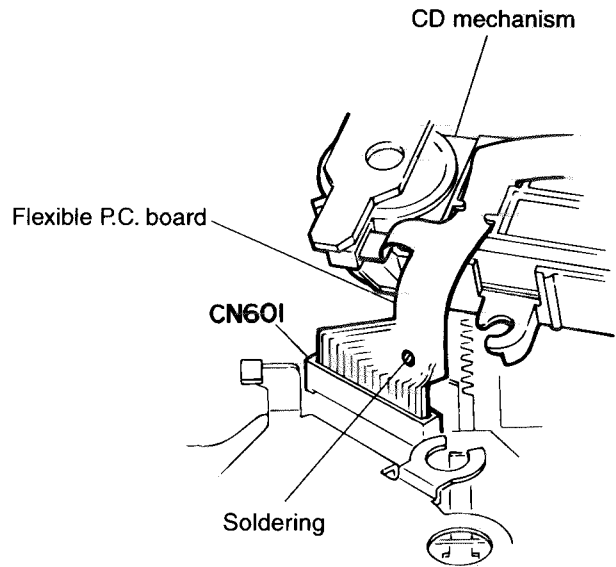


Fig. 13

**■ Procedures for Reassembling the CD Mechanism**

1. In principle, reassemble the CD mechanism according to the opposite order of removing this mechanism. Be sure to remove any soldering formed in Step 9 of the removing method mentioned above.
2. Be sure to mount the stopper and clamber retaining the CD mechanism under the conditions where the CD mechanism has been hanged down.
3. Mount the top cover after aligning the slide cam to the position E.

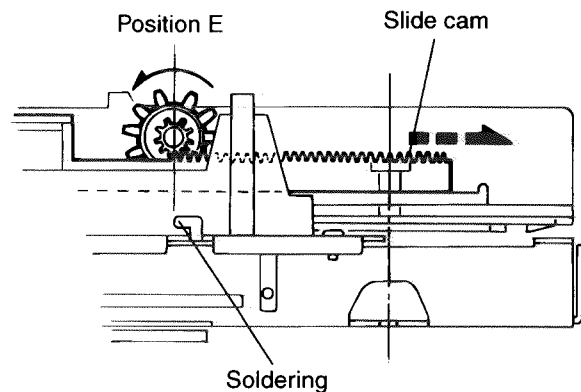


Fig. 14

■ **Removing the CD tray**

1. Remove the top cover.
2. Take out the CD tray.
3. Remove the two screws 3 retaining the CD tray guide (L)unit.
4. Disengage the two engagements D retaining the tray guide (L) unit while moving the unit in the arrow direction [E].
5. After pulling out the engagement E from the mechanism chassis, remove this chassis together with the CD tray.

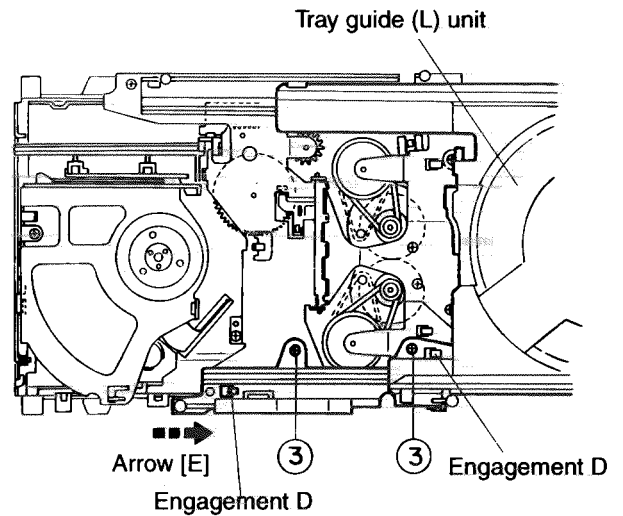


Fig. 15

■ **Removing the CD traverse mechanism control & servo P.C.board**

1. Remove the top cover.
2. Take out the CD tray.
3. Hang the two belts hanged on the tray & cam drive motor again to the motor as shown in Fig. 17.
4. Remove the two screws 4 retaining the tray & cam drive motor.

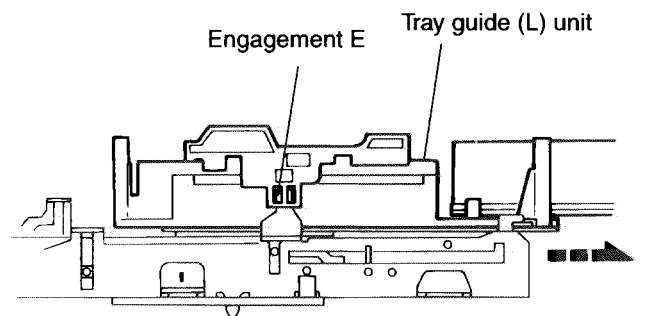


Fig. 16

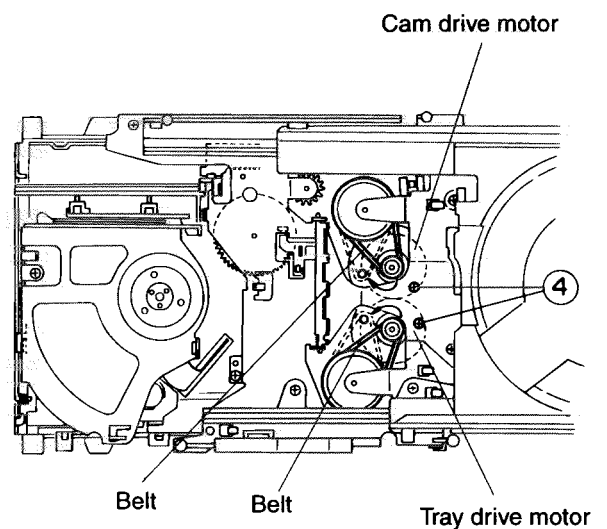


Fig. 17

5. After turning over the CD traverse mechanism, remove the four screws 5 retaining the CD traverse mechanism control & servo P.C. board.
6. While keeping the P.C. board afloat, solder the position on the flexible P.C. board outgoing from the CD pickup unit.
7. After turning the CD traverse mechanism back to the normal position, remove the flexible P.C. board from the connector CN601 on the CD traverse mechanism control & servo P.C. board.
8. Remove the CD traverse mechanism control & servo P.C. board.

CD traverse mechanism control & servo P.C. board

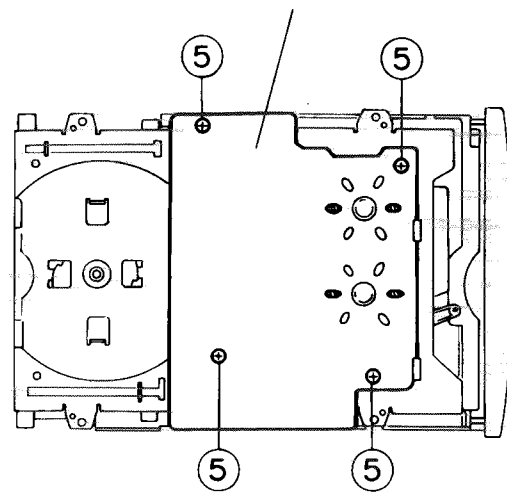


Fig. 18

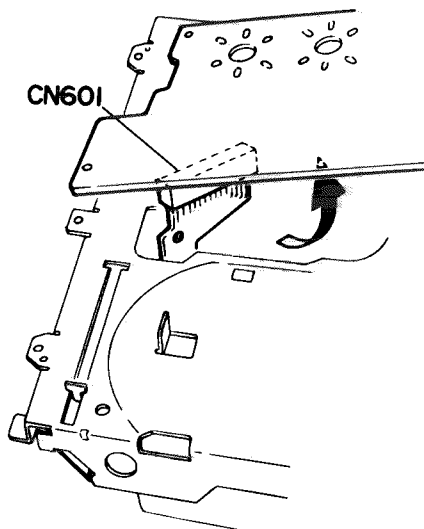


Fig. 19

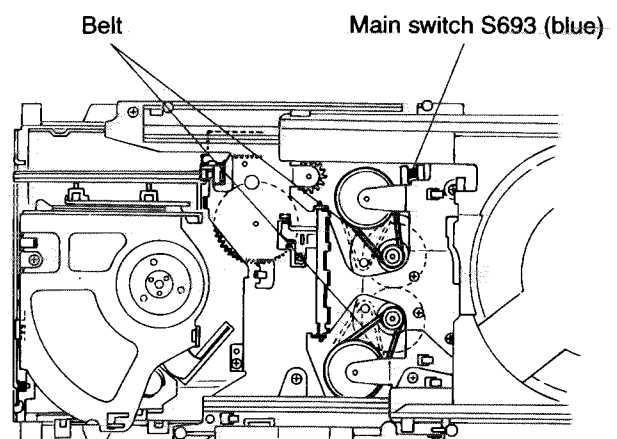


Fig. 20

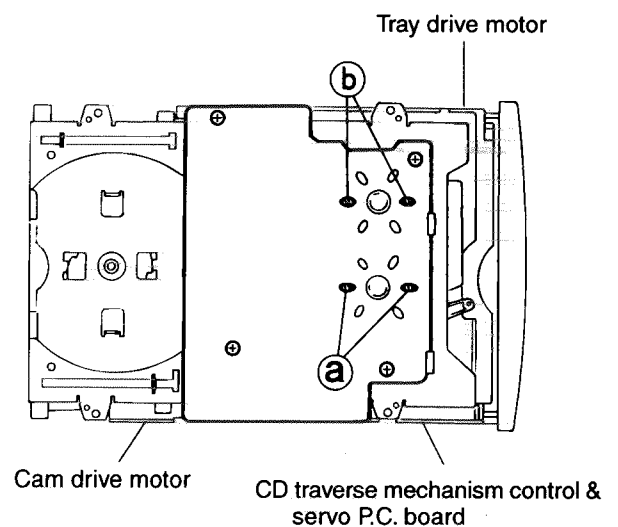


Fig. 21

■ **Removing the CD pickup uni**

1. Remove the top cover.
2. Remove the clamber
3. Remove the CD mechanism.
4. Shift the CD pickup unit in the arrow direction.
5. Remove the one screw 6 retaining the shaft holder.
6. Remove the two screws 7 retaining the rack arm, and dismount the S.S. gear assembly.
7. Solder the position on the flexible P.C. board on the back of the CD pickup unit.
8. Remove the flexible P.C. board from the connector on the back of the CD pickup unit.

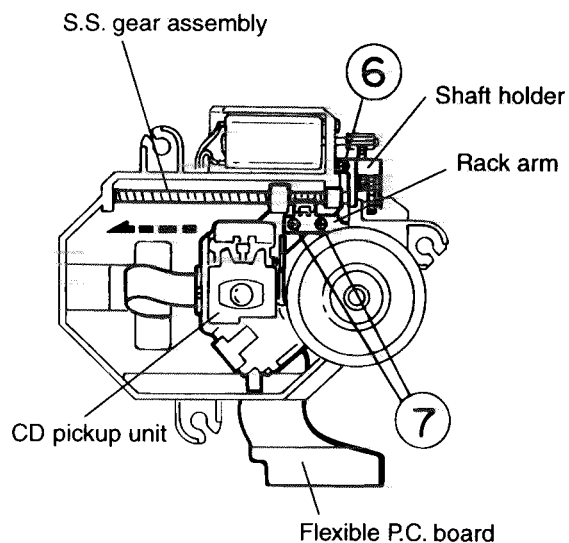


Fig. 22

■ **Procedures for Reassembling the CD Pickup Unit**

In principle, the CD pickup unit should be reassembled according to the opposite steps of removing the unit.

Caution: When mounting the rack arm, the round head screws should be tightened at first.

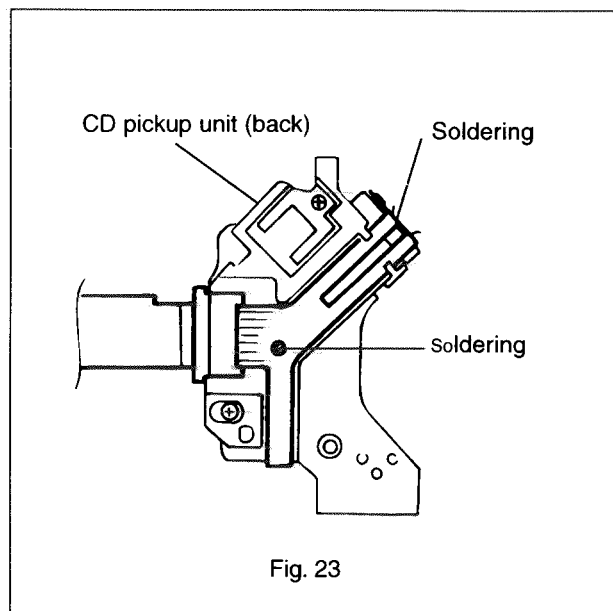


Fig. 23

■ **Removing the feed motor assembly**

1. Remove the top cover.
2. Remove the clamber.
3. Remove the CD mechanism.
4. Remove the one screw 8 retaining the feed motor assembly.

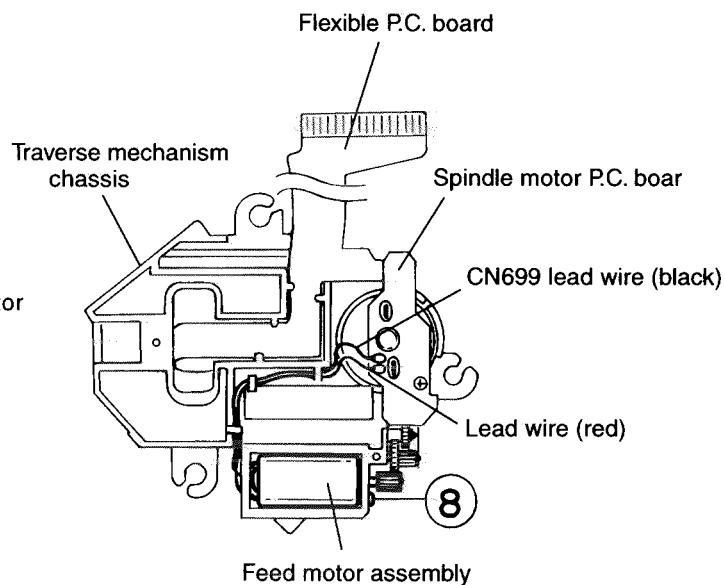


Fig. 24



5. After turning over the CD mechanism, remove this mechanism from the lead wire treating groove of the feed motor assembly.
6. Remove the soldered positions of the lead wires (red and black) from the spindle motor P.C. board.

■ **Removing the traverse mechanism chassis assembly**

1. Remove the top cover.
2. Remove the clamber
3. Remove the CD mechanism.
4. Remove the CD pickup unit.
5. Pull the middle gear.
6. Dismount the feed motor.
7. After turning over the CD mechanism, remove the two soldered portions C on the spindle motor P.C. board.
8. From the connector CN699 on the spindle motor P.C. board, remove the flexible P.C. board and separate it from the traverse mechanism chassis assembly.
9. The spindle motor and turntable will not be supplied individually for changing the parts. Therefore, change the spindle motor and turntable in the form of the traverse mechanism chassis assembly (combination of spindle motor, turntable and mechanism chassis).

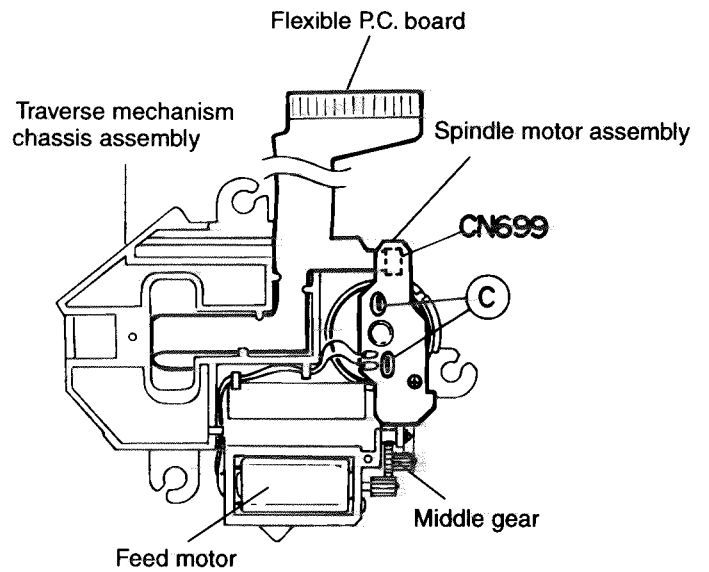


Fig. 25

**CAUTION:** Since the LOCK-TIGHT 460 is used at thpress-fit section of turntable and spindle motor shaft , the spindle motor will sometimes be broken when the shaft has been dismantled carelessly.

■ **Removing the actuator unit**

1. Remove the top cover.
2. Dismount the tray guide (R) together with the CD tray.
3. Remove the four screws 9 retaining the actuator unit.
4. Remove the two screws 10 retaining the tray & cam drive motor.

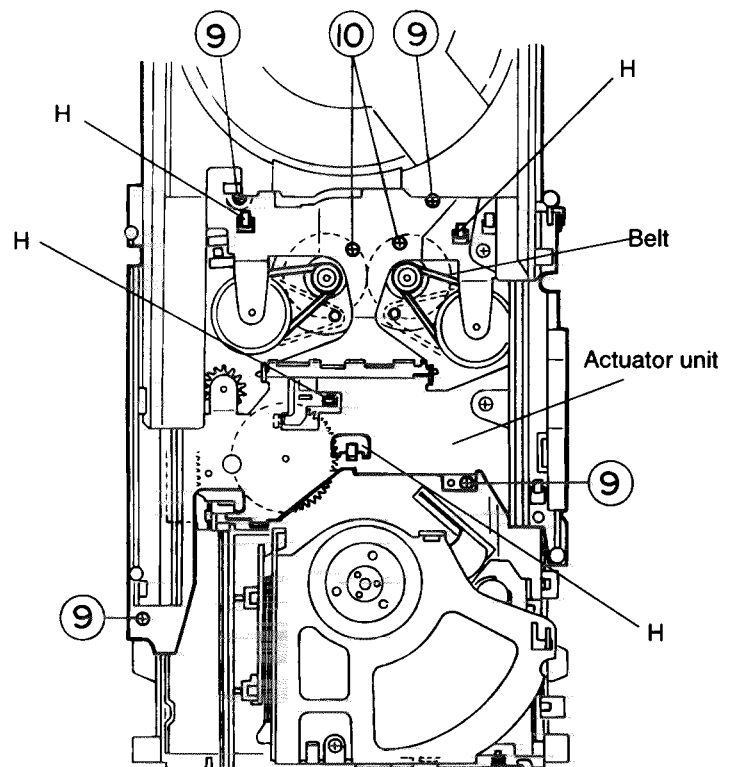


Fig. 26

**Maintenance of CD Pickup**

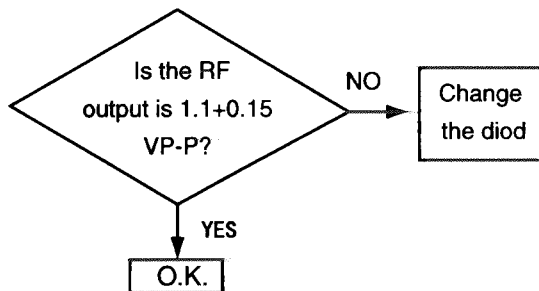
**(1) Cleaning of pickup lens**

1. Prior to changing any pickup lens, be sure to clean the pickup lens.
2. For cleaning the pickup lens, use the following cotton swab immerse in alcohol: Product No. JCB-B4  
Manufacturer: Nippon Cotton Web

**(2) Check of the service life of laserdiode When**

the service life of laserdiode has been exhausted, the following symptoms will appear:

1. The RF output from TP602 (EFM output and eye pattern amplitude) will be decreased.
2. The drive current necessary for light emission from the laser diode will be increased. Therefore, check the service life of the laser diode according to the following flow chart:

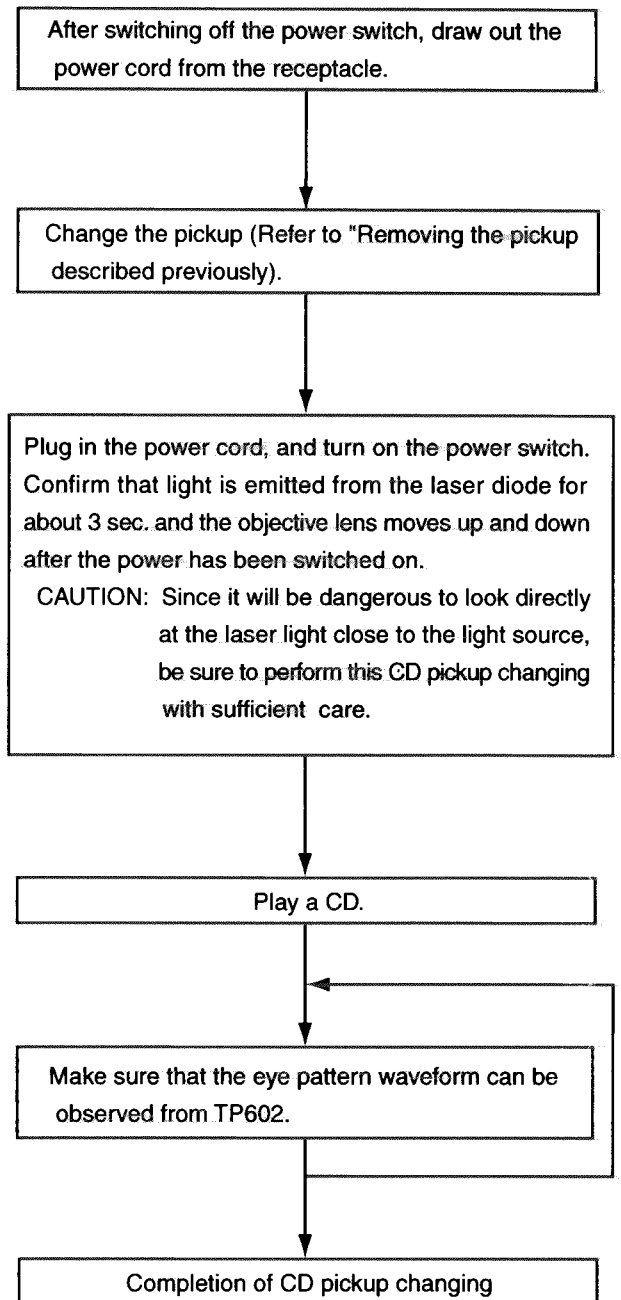


**(3) Semi-fixed resistor on the APC P.C. board**

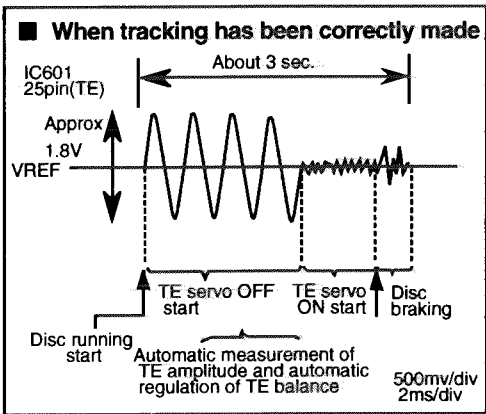
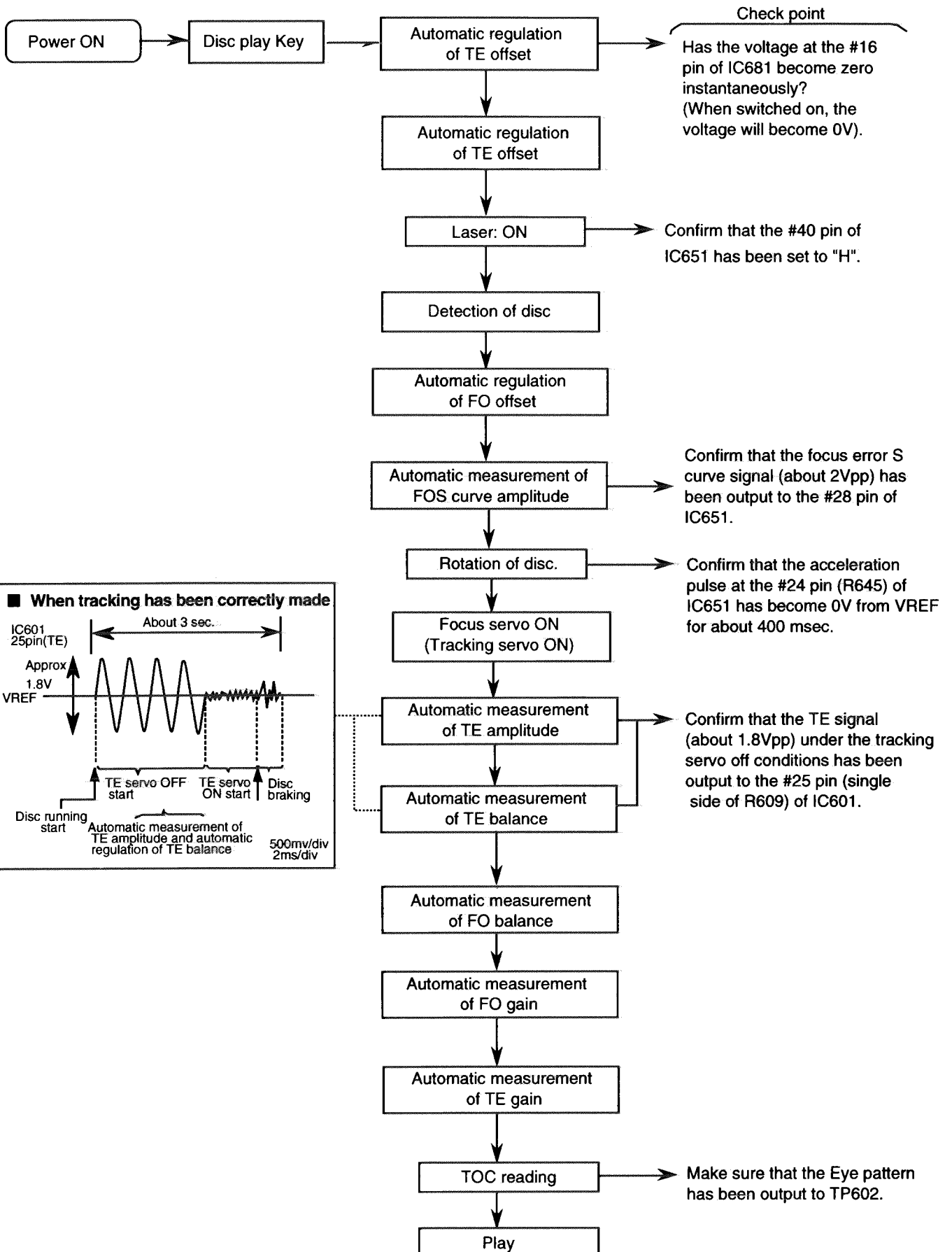
The semi-fixed resistors attached to the pickup on the APC P.C. board is designed for adjusting the laser power. Since these resistors should be adjusted in a pair according to the characteristics of the laser block, be sure not to touch on any of the resistors. If the laser power is too low, the service life of the laser diode will be exhausted. In such a case, change the pickup.

Should any normal semi-fixed resistor of pickup be turned, the pickup can possibly be broken due to overcurrent. Therefore, be sure not to turn such a semi-fixed resistor.

**Procedures for Changing the CD Pickup**



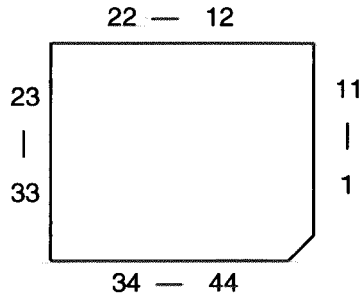
General Flow until Reading TOC



## Description of Main ICs

### ■ MN150837JBR2 (IC681) Changer controller

#### 1. Terminal Layout



#### 2. Description

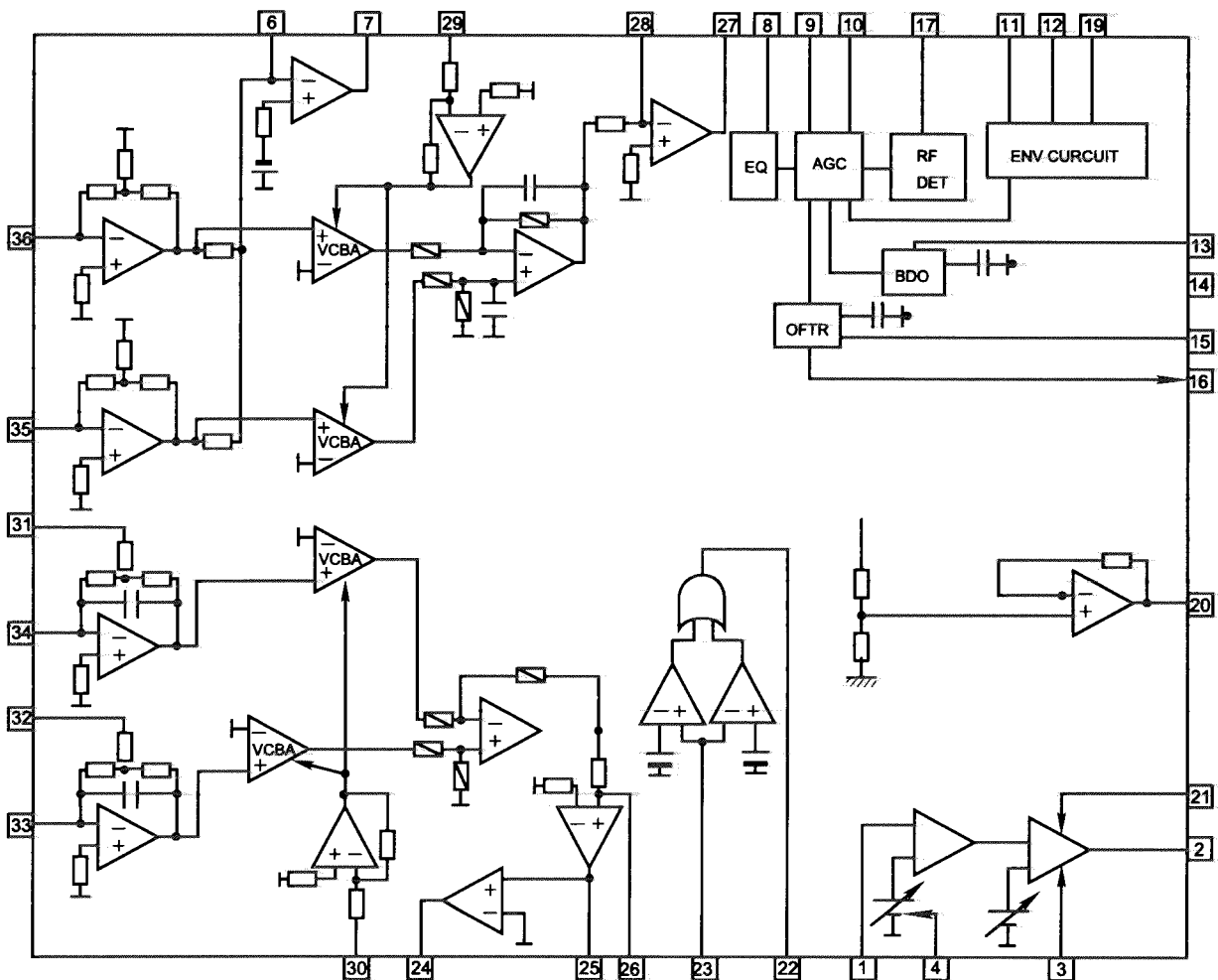
Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	/RESET	I	Reset signal input	23	ST	I	Strobe signal input
2	NC	-	Non connection	24	DATA	I/O	Control/Status data I/
3	WATCH5V	O	+5V	25	CK	O	Clock signal output
4	OPEN	I	/Door open switch detect	26	STATS	I	STATS signal input
5	CLOSE	I	/Door close switch detect	27	/TLOCK	I	TLOCK signal input
6	PHOTOSW	I	/Photo switch detect	28	/FLOCK	I	FLOCK signal input
7	NC	-	Non connection	29	SENSE	I	SENSE signal input
8	TRAY+	O	Tray motor drive + signal output	30	NC	-	NC
9	TRAY-	O	Tray motor drive - signal output	31	SQCK	O	Lock signal for sub-code Q resistor
10	CAM+	O	Cam motor drive + signal output	32	MLD	O	Micon command load signal output
11	CAM-	O	Cam motor drive - signal output	33	MDATA	O	Micon command data output
12	SUBQ	I	Sub-code Q-data output	34	MCLK	O	Micon command clock signal input
13	NC	-	Non connection	35	/RST	-	Reset signal output (L:reset)
14	/INTALSW	I	Initial switch detect	36	NC	-	Non connection
15	/SUBSW	I	Sub tray switch detect	37	NC	I	Non connection
16	/RESETSW	I	Rest switch detect	38	/DRIVERMUTE	O	BTL driver mute signal output
17	NC	-	Non connection	39	Vss	-	Connected to GND
18	NC	-	Non connection	40	OSC2	I/O	Oscillation terminal
19	NC	-	Non connection	41	OSC1	I/O	Oscillation terminal
20	NC	-	Non connection	42	VDD	-	Power supply
21	REQ	O	Output the "CD micon data request"	43	X1	-	Connected to GND
22	BLKCK	I	Subcode/block/clock signal input	44	X0	-	Non connection

■ AN8806SB(IC601):RF&Servo AMP

1. Terminal Layout

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

2. Block Diagram



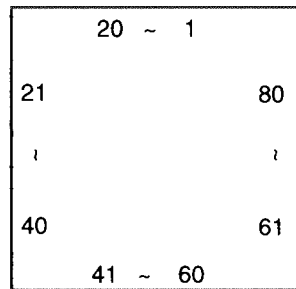
## CA-EX70/-EX70R

### 3. Functions

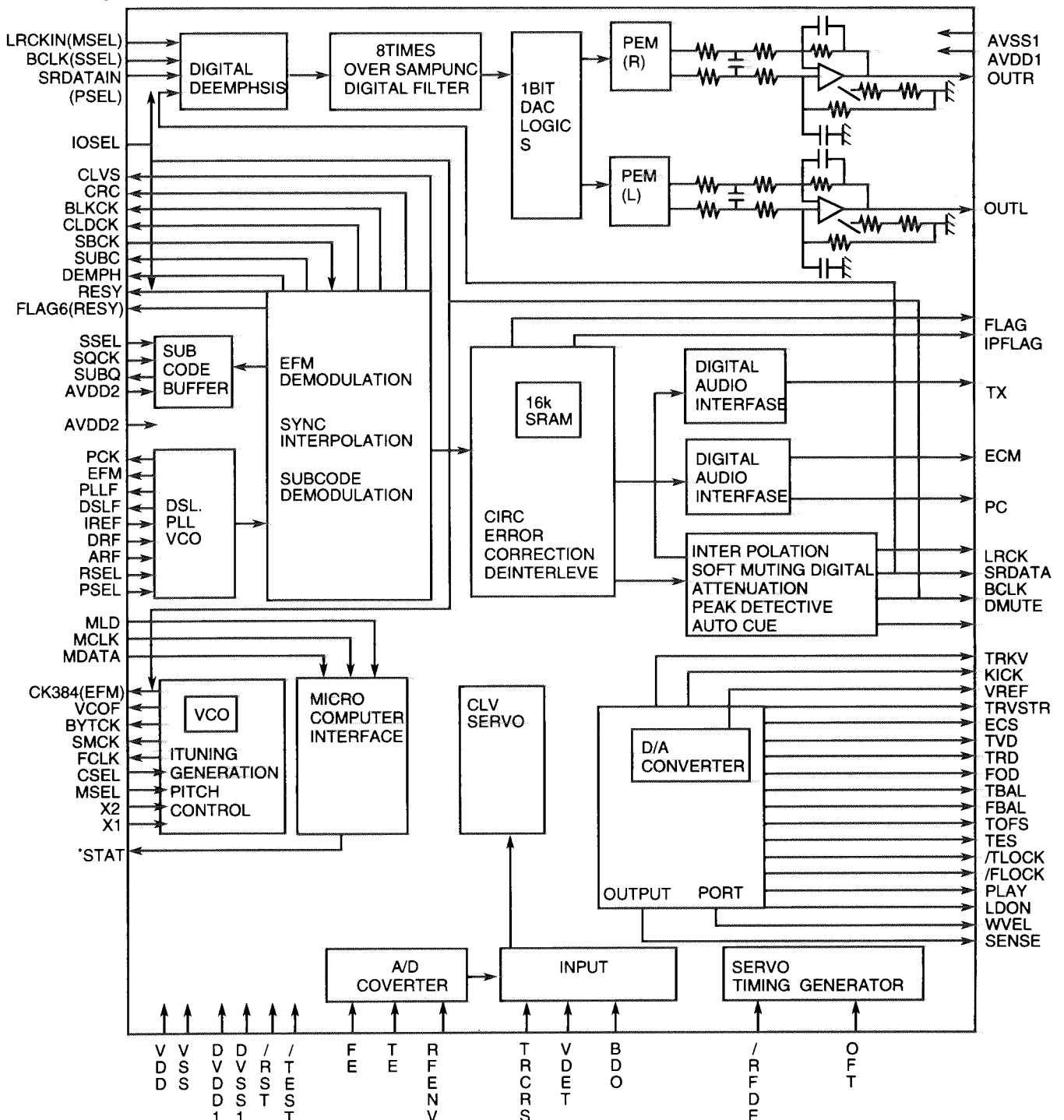
Pin No.	Symbol	I/O	Functions and operations
1	PD	I	APC amp input terminal
2	LD	O	APC amp output terminal
3	LD ON	I	APC ON/OFF control terminal
4	LDP	--	Connect to ground
5	VCC	--	Power supply
6	RF-	I	Inverse input pin for RF amp
7	RF OUT	O	RFamp output
8	RF IN	I	RF input
9	C.AGC	I/O	Connecting pin of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

■ MN35510(IC603):DIGITAL SERVO&DIGITAL SIGNAL PROCESSER

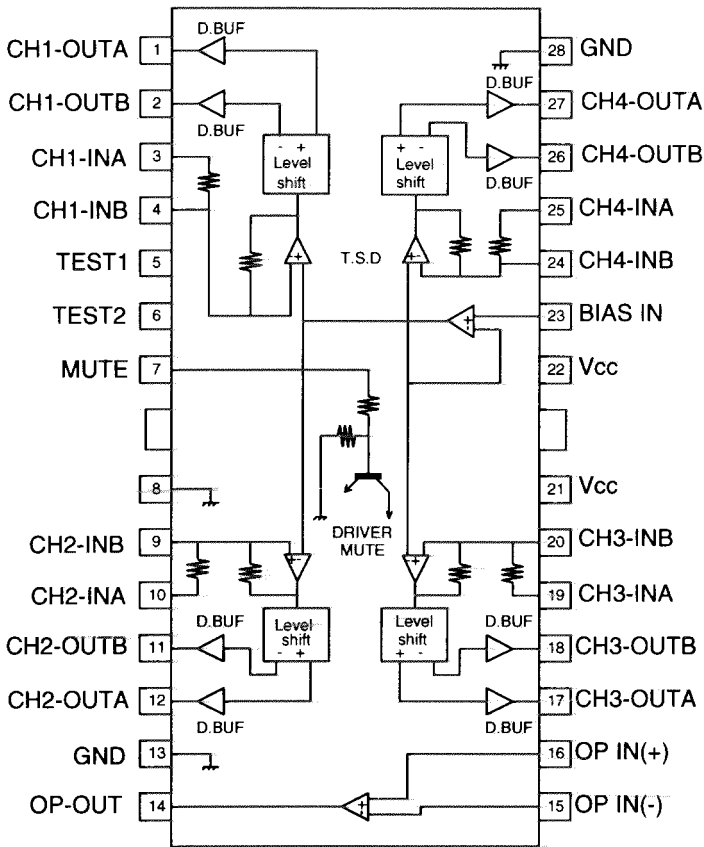
1. Terminal Layout



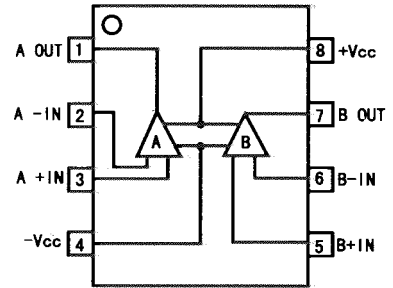
2. Block Diagram



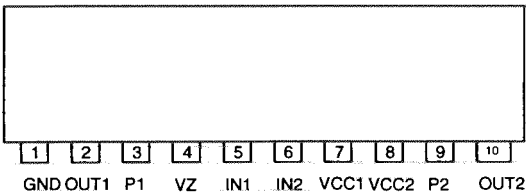
■ BA6897FP-W(IC602) 4channel driver



■ NJM5532D(IC702,IC301):Dual Op. Amp.



■ LB1641(IC501) DC Motor Driver



FUNCTION

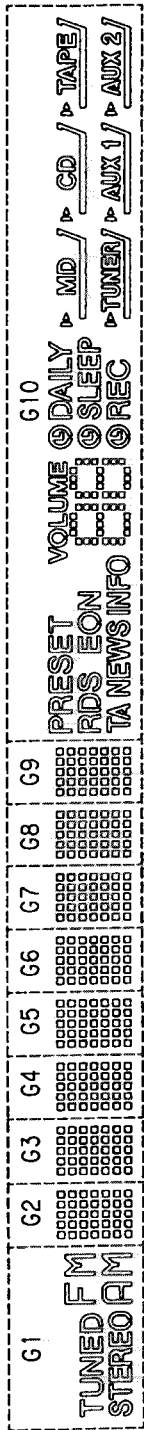
Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake



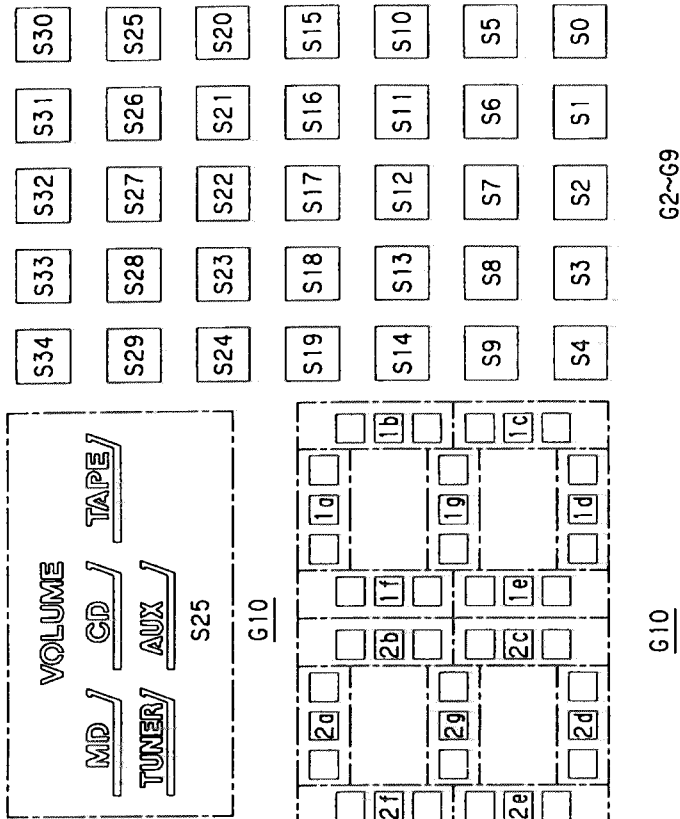
Description of FL indicator tube internals

■ QLF0029-001

1. Splitting and internal connection of grid/segment



G1	G2	G3	G4	G5	G6	G7	G8	G9
TUNED FM	0000	0000	0000	0000	0000	0000	0000	0000
STEREO FM	0000	0000	0000	0000	0000	0000	0000	0000
PRESET	0000	0000	0000	0000	0000	0000	0000	0000
VOLUME	0000	0000	0000	0000	0000	0000	0000	0000
RDS EON	0000	0000	0000	0000	0000	0000	0000	0000
TA NEWS INFO	0000	0000	0000	0000	0000	0000	0000	0000
G SLEEP	0000	0000	0000	0000	0000	0000	0000	0000
G REC	0000	0000	0000	0000	0000	0000	0000	0000
MD	0000	0000	0000	0000	0000	0000	0000	0000
CD	0000	0000	0000	0000	0000	0000	0000	0000
TAPE	0000	0000	0000	0000	0000	0000	0000	0000
TUNER	0000	0000	0000	0000	0000	0000	0000	0000
AUX 1	0000	0000	0000	0000	0000	0000	0000	0000
AUX 2	0000	0000	0000	0000	0000	0000	0000	0000

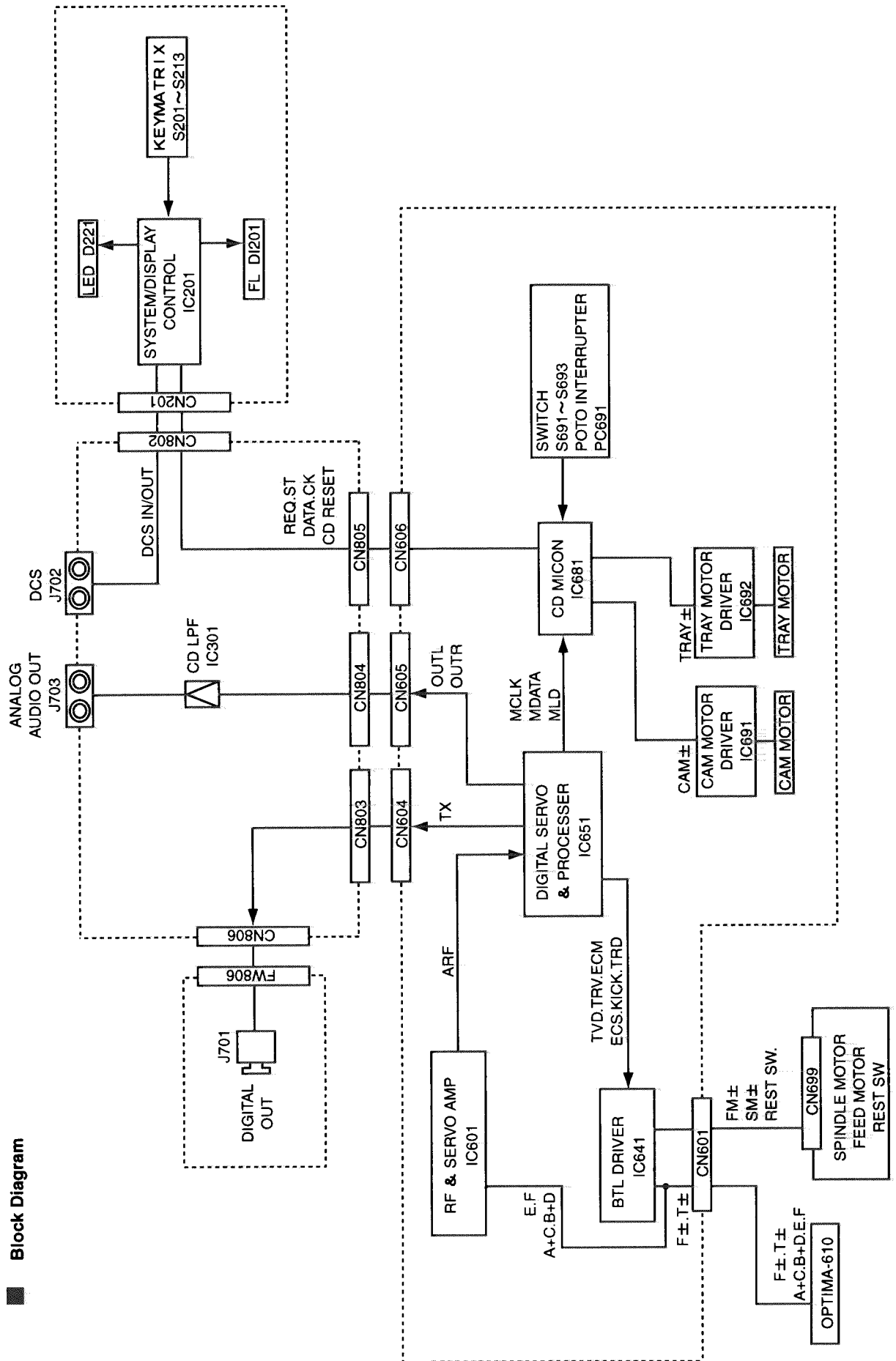


2. Terminal Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Assignment F1	F1	NL	D	S34	S33	S32	S31	S30	S29	S28	S27	S26	S25	S24	S23	S22	S21	S20	S19	S18	S17	S16	S15	S14	S13	S12	
Pin No.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Assignment S11	S10	S9	S8	S7	S6	S5	S4	S3	S2	S1	S0	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	H	NL	F2	F2	

F1, F2: Filament G1~G10: Grid S0~S34: Anode D: Connect externally to F1 NL: No Lead

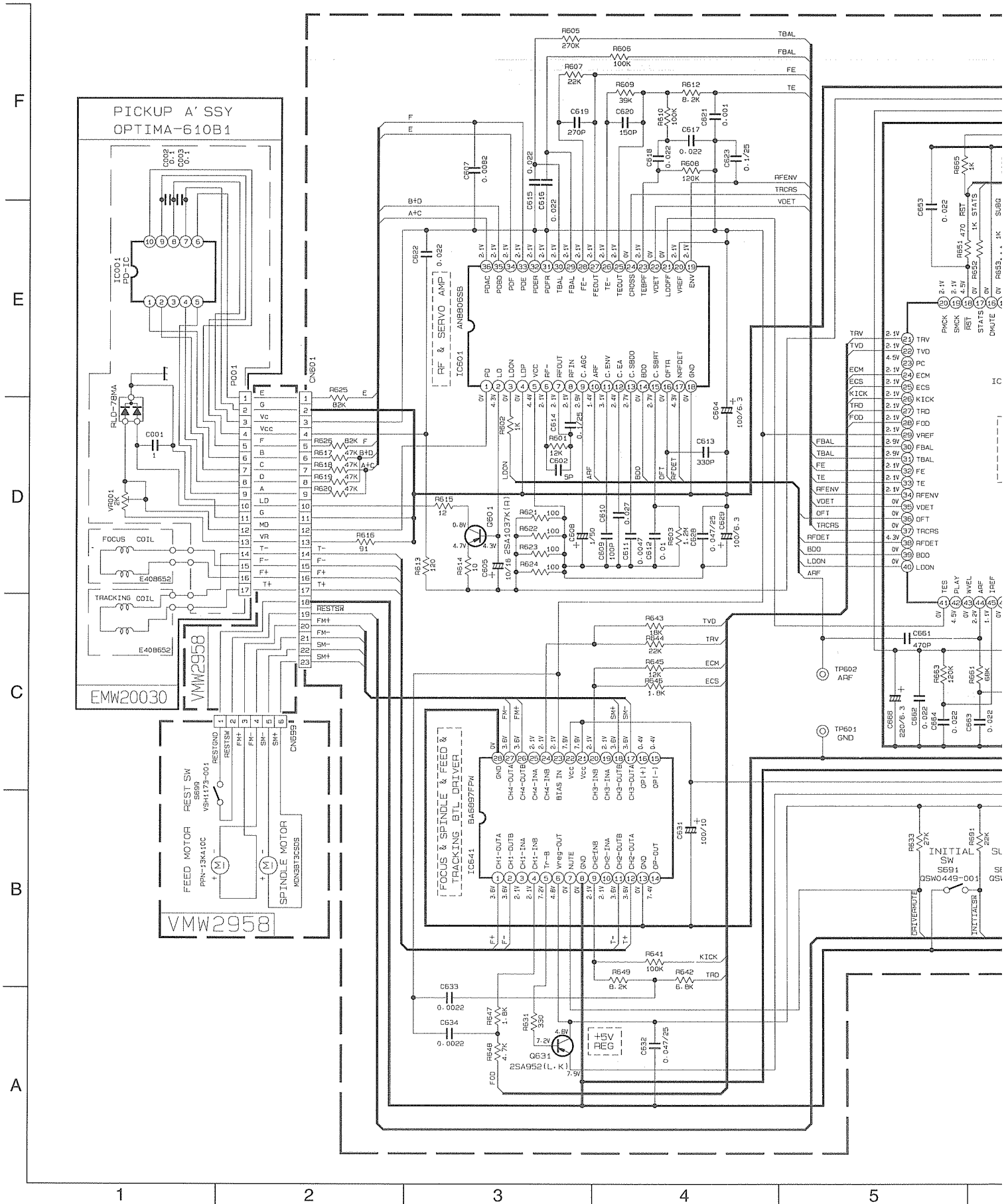
H: Normal current passing grid





# Standard Schematic Diagrams

[XL-EX70] CD Section





[XL-EX70] System Control

F

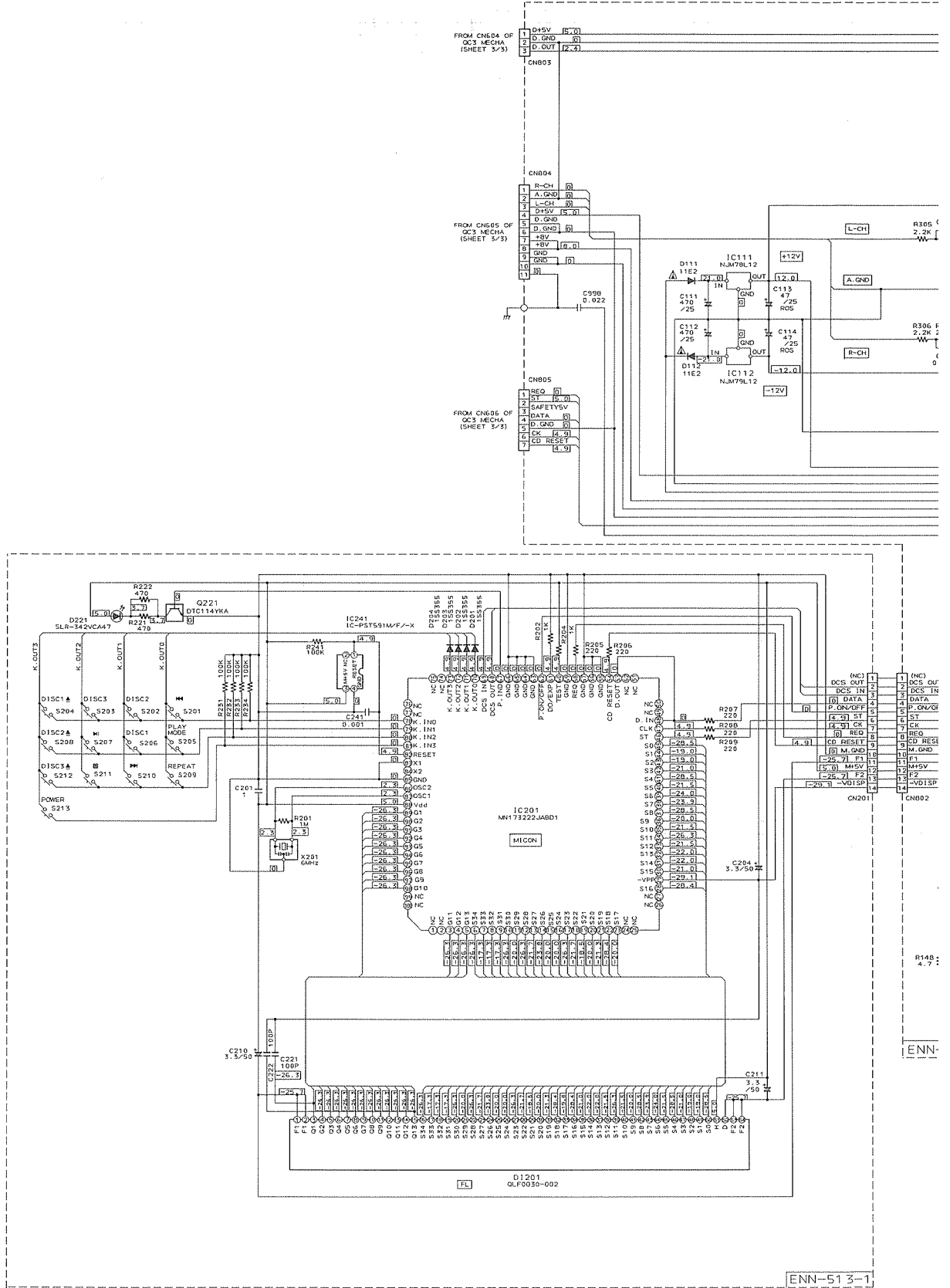
E

D

C

B

A

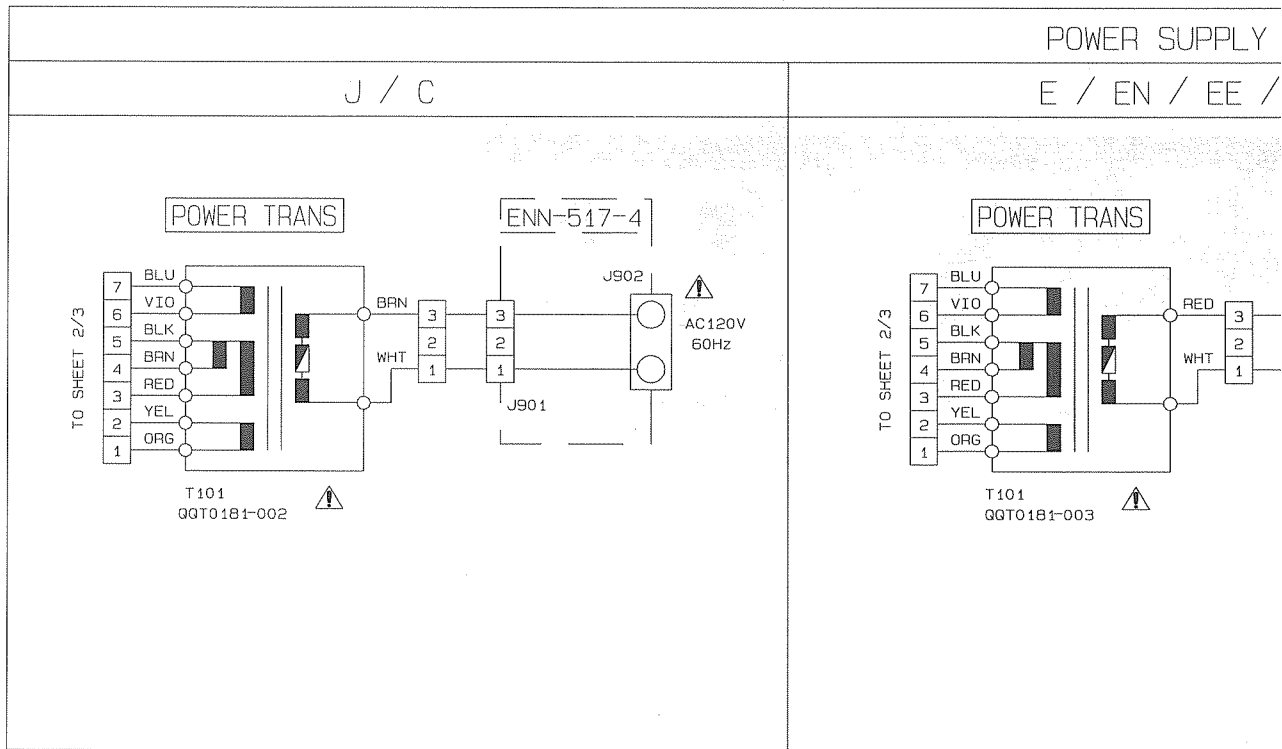




[XL-EX70] Power Supply

EXPLANATION OF OVERALL OF SCHEMA  
 MODEL XL-EX70/XL-EX90

SHEET NUMBER	CIRCUITS DESCRIPTION
1/3	PRIMARY WITH MAINS TRANSFORMER.
2/3	DC REGULATORS. AUDIO OUTPUT/EXTERNAL SIGNAL INPL SYSTEM CONTROL LSI. FL DISPLAY.
3/3	SYSTEM CONTROL LSI FOR CD MECHA. DIGITAL SIGNAL PROCESSOR.



NOTE:  
 MARK(\*) IS TO SHOW DEVIATION IN VERSION.  
 DETAILS ARE EXPLAINED NEAR THE MARK.

1

2

3

4

5

F

E

D

C

B

A



VERSION CODES

- J : U. S. A.
- C : CANADA
- E : CONTINENTAL EUROPE
- EN : NORDIC COUNTRIES
- EE : EASTERN EUROPE
- B : U. K.
- UB : HONGKONG
- UF : CHINA
- US : SINGAPORE
- UT : TAIWAN
- U : UNIVERSAL EXPECT ALL OF ABOVE'S

ER.

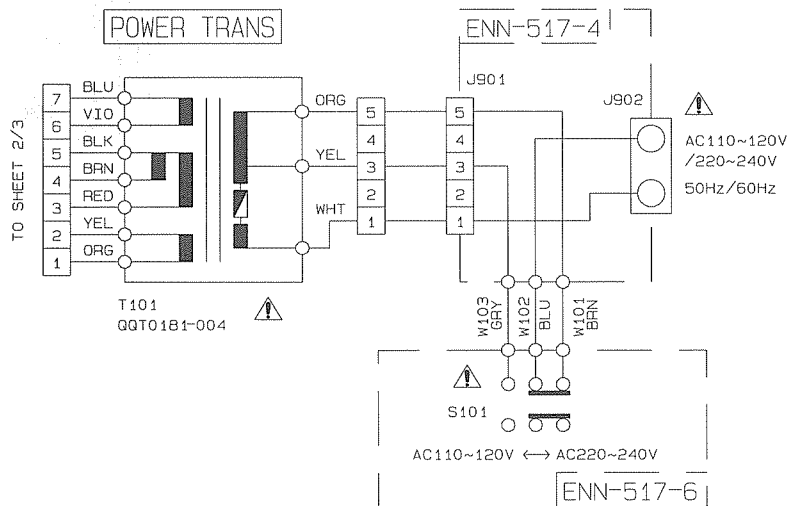
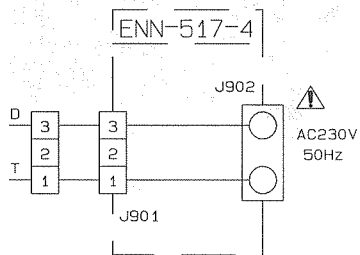
INPUT.

CHA.

APPLY SECTION

EE / B

U / UB / UF / US / UT



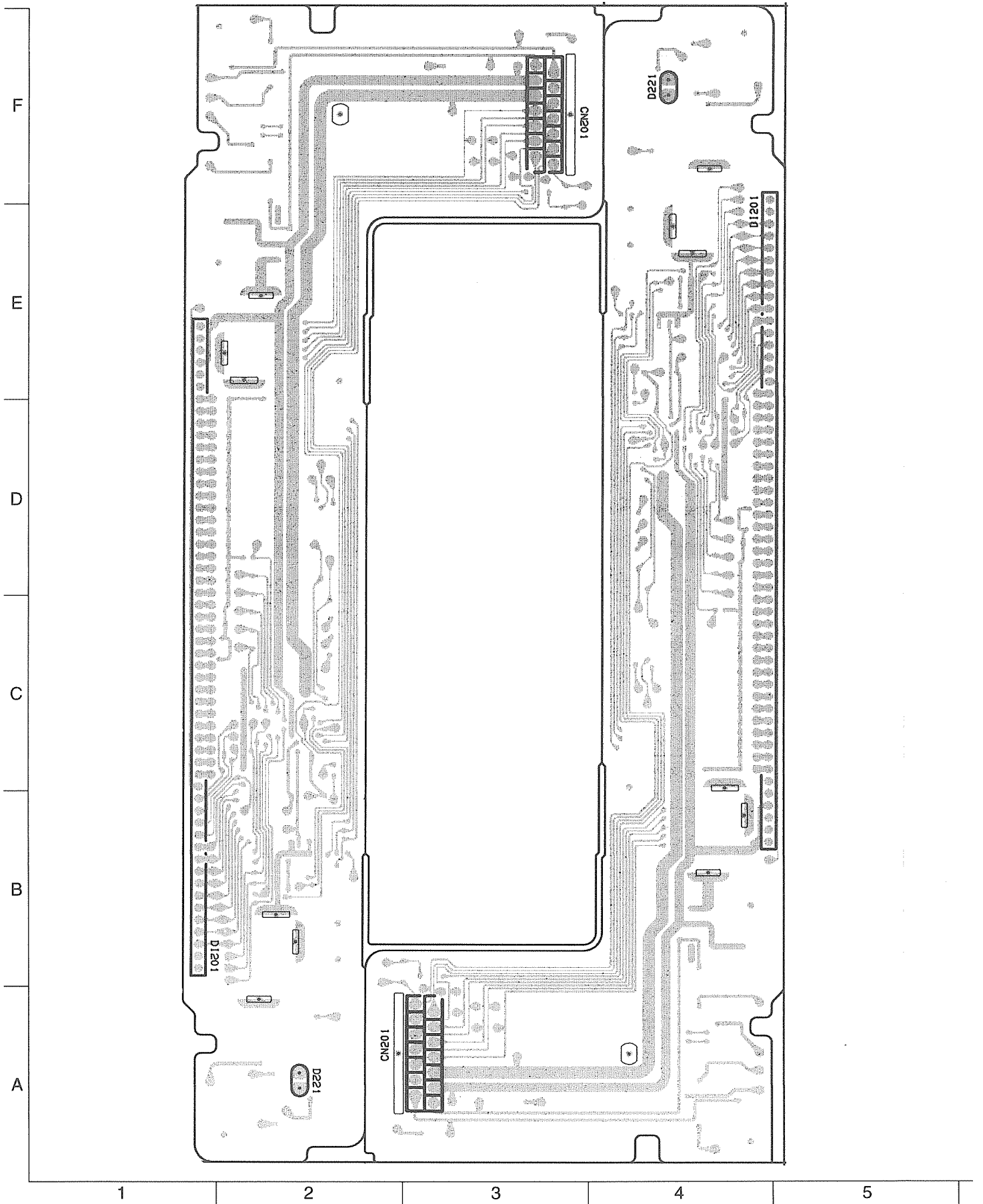


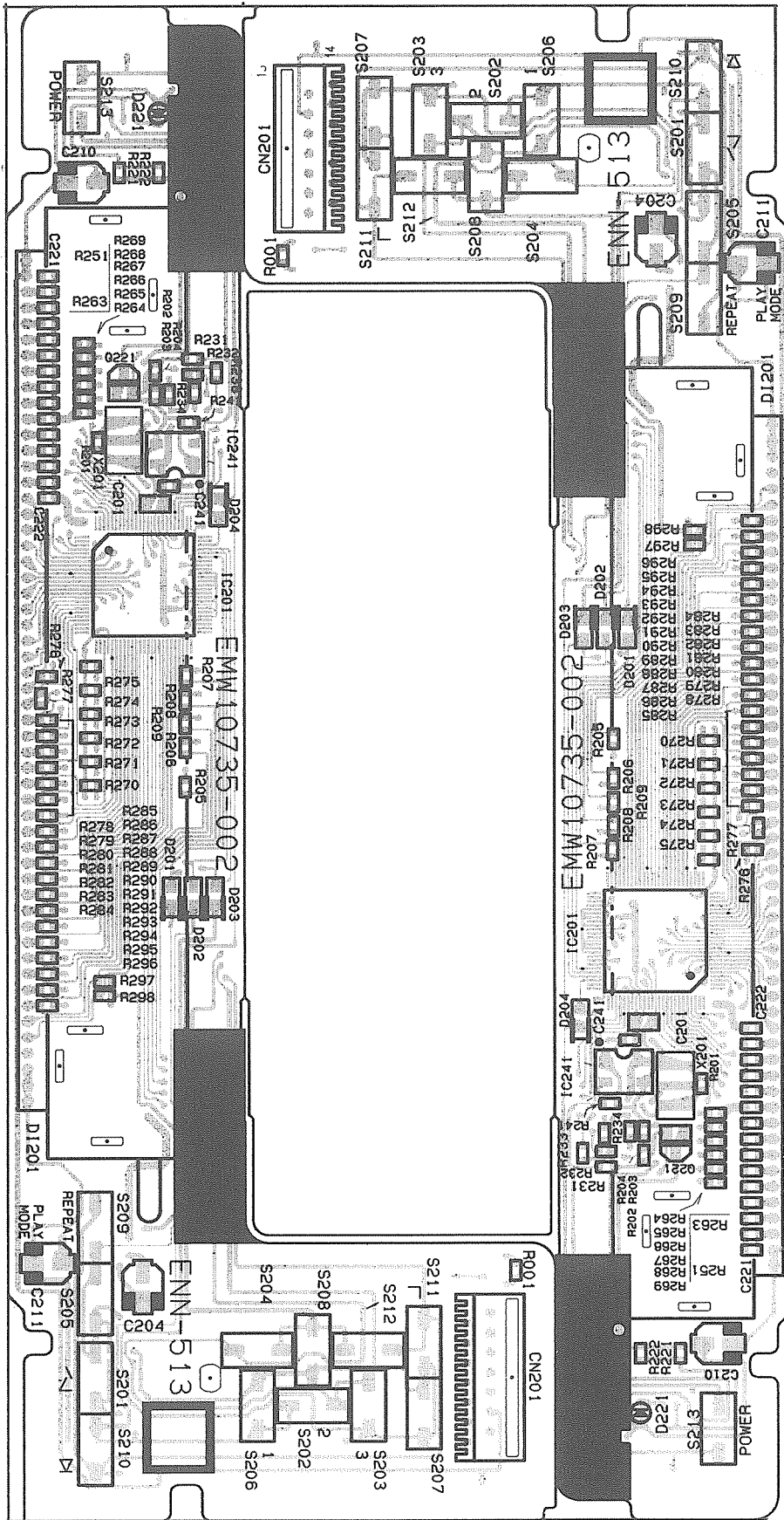






FL System Control









# PARTS LIST

## [ XL-EX70 ]

1. Those parts can not to sent as a rule that has not printed or be displayed 「—」 on the parts list.
2. The printed circuit board will be not sent as a rule.
3. ⚠ Parts are safety assurance parts. When replacing those parts, make sure to use to specified one.
4. All printed circuit boards and its assemblies are not available as service parts.

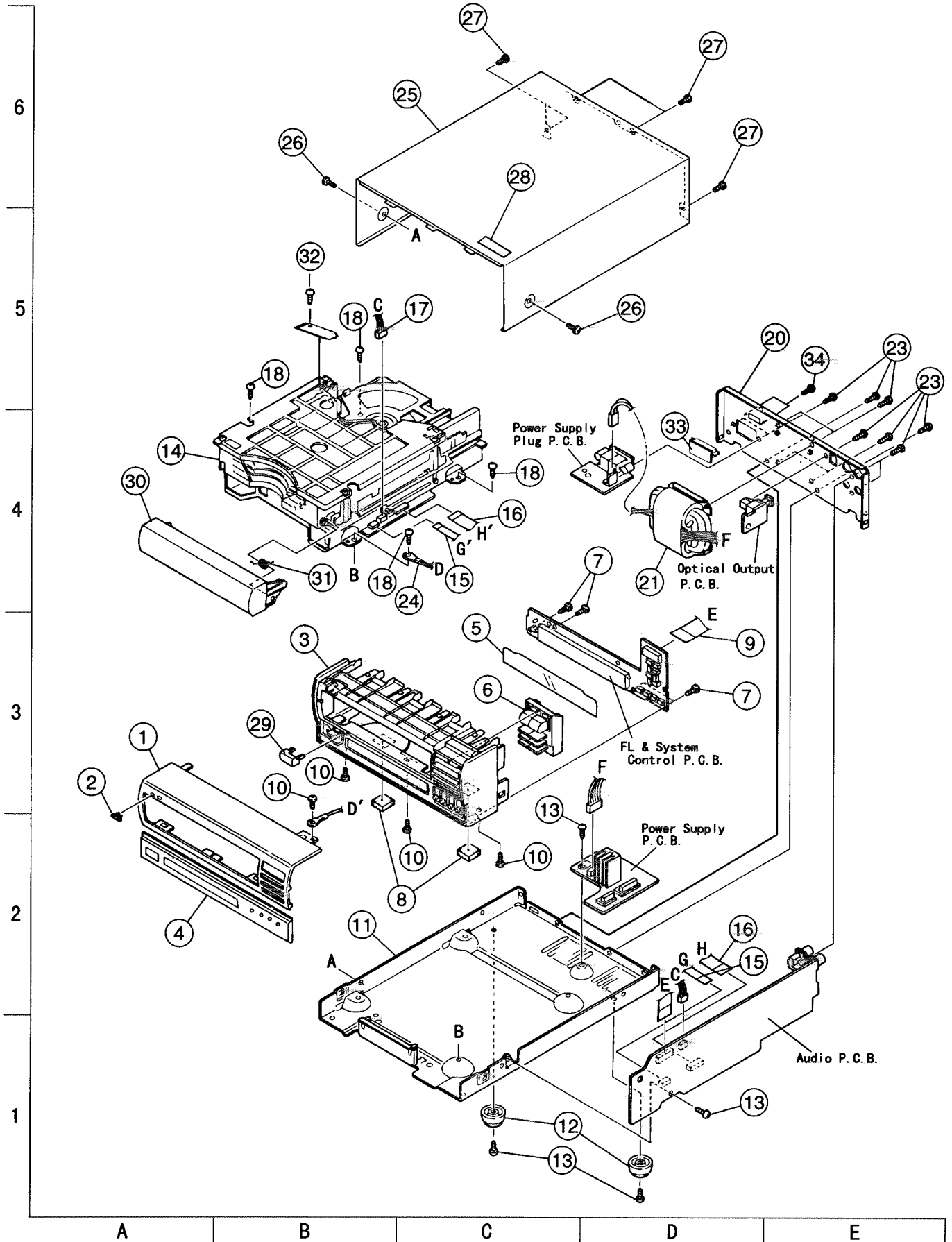
Area Suffix	
C	..... Canada
J	..... U.S.A.
U	..... Other Areas
UB	..... Hong Kong
UF	..... China
US	..... Singapore
UT	..... Taiwan
B	..... U.K
E	..... Continental Europe
EN	..... Northan Europe
EE	..... Eastern Europe

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FL & System Control P.C.B.....	5- 8
CD Servo P.C.B.....	5- 9
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# General Exploded View and Parts List

Block No. **M1MM**



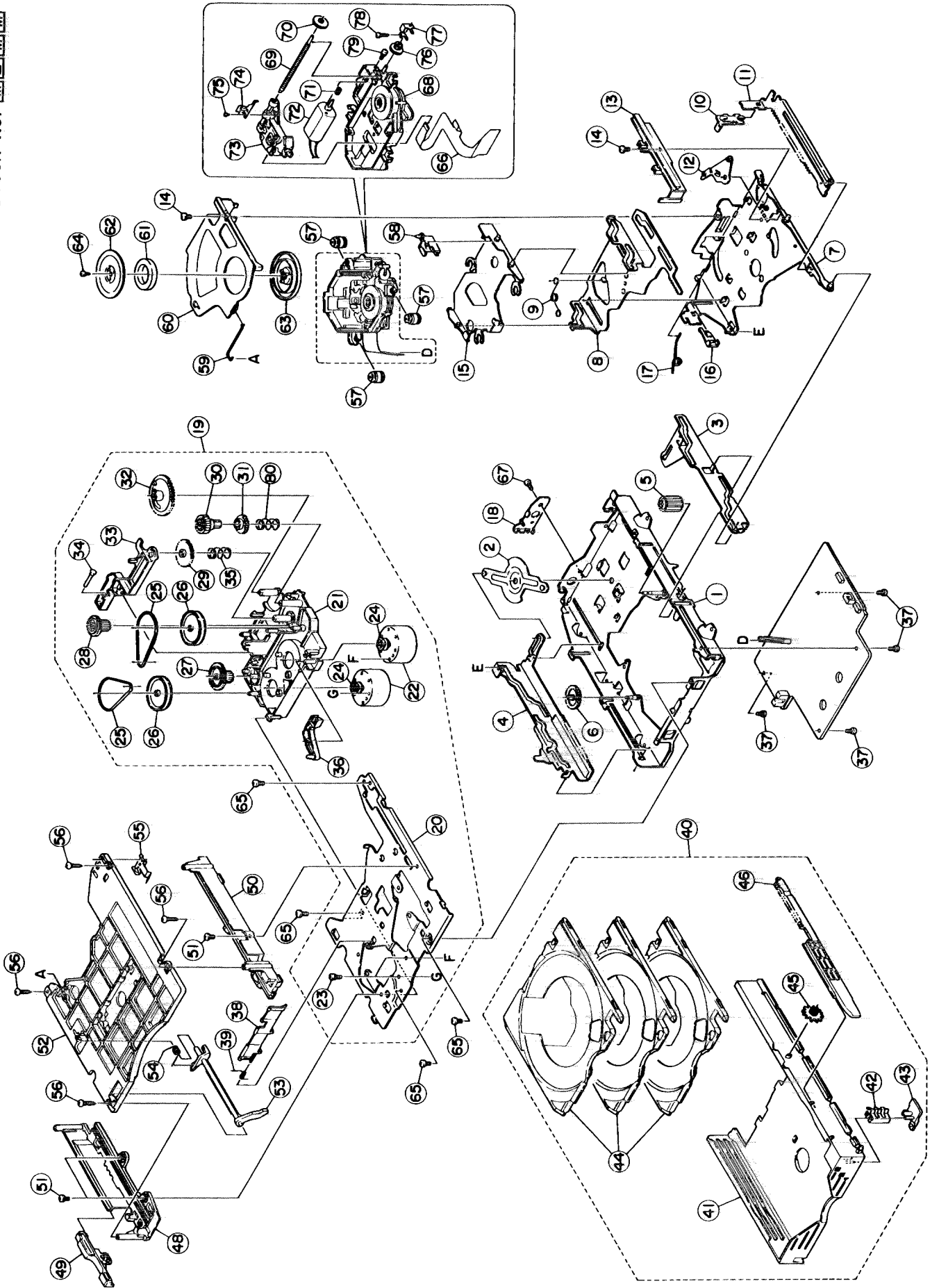
## ■ Parts List

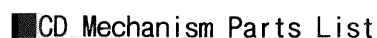

Block No. **M1M1M1**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	LE20338-002A	FRONT PANEL	1		
	2	E406971-001SM	JVC MARK	1		
	3	LE10159-002A	FRONT BASE	1		
	4	LE30556-005A	WINDOW SCREEN	1		
	5	LE30550-002A	FL SCREEN	1		
	6	LE20340-002A	PUSH BUTTON	1		
	7	QYSDSF2608Z	SCREW	4		
	8	E75896-001	SPACER	2		
	9	VWF1214-12TTBX	FLAT WIRE	1	FC802	
	10	QYSDSG3006E	T. SCREW	4		
	11	LE10160-001A	CHASSIS BASE	1		
	12	E47227-029	FOOT	2		
	13	QYSBSG3008E	T. SCREW	4		
	14	-----	CD Mechanism	1	PF	
	15	VWF1007-08TTAX	FLAT WIRE	1	FC616	
	16	VWF1011-08TTAX	FLAT WIRE	1	FC615	
	17	EWS243-092	SOCKET WIRE	1	SC781	
	18	QYSBST3006E	TAP. SCREW	4		
	20	LE20342-006A	REAR PANEL	1		J
	20	LE20342-007A	REAR PANEL	1		C
	20	LE20342-008A	REAR PANEL	1		U UB UF US
	20	LE20342-009A	REAR PANEL	1		UT
	20	LE20342-010A	REAR PANEL	1		B E EN
	20	LE20342-016A	REAR PANEL	1		EE
	21	QQT0181-002	POWER TRANSFORMER	1	T101	J
	21	QQT0181-003	POWER TRANSFORMER	1	T101	B E EE EN
	21	QQT0181-004	POWER TRANSFORMER	1	T101	U UB UF US UT
	21	QQT0181-005	POWER TRANS	1	T101	C
	23	QYSBSGY3008E	SPECIAL SCREW	11		
	24	EWT025-009	TERMINAL WIRE	1		
	25	LE20334-002A	METAL COVER	1		
	26	QYSDSG3006N	T. SCREW	2		
	27	QYSBSGG3008E	T. SCREW	4		
	28	E67000-026	CAUTION LABEL	1		
	29	LE30547-001A	PLAY CAP	1		C J
	29	LE30547-002A	POWER CAP	1		B E EE EN U UB UF US UT
	30	LE20344-003A	CD FITTING	1		
	31	LE40352-001A	SPRING	1		
	32	QYSBSF3006Z	SCREW	1		C J
	33	LV40418-001A	SHIELD COVER	1		U UB UF US UT
	34	QYSBSG2608M	T. SCREW	2		U UB UF US UT

Block No. **M2MM**

CD Mechanism Exploded View and Parts List  
MODEL : QC3-S3YPM




Block No. 

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	VKM3893-00B	CHASSIS ASS'Y	1		
	2	VKL7846-00BKP	CONTROL ARM ASS'Y	1		
	3	VKL2763-001	SLIDE CAM(L)	1		
	4	VKL2764-001	SLIDE CAM(R)	1		
	5	VKS3765-001	HOOK GEAR	1		
	6	VKS3766-001	POSITION GEAR	1		
	7	VKM3895-00CKP	LIFTER BASE ASS'Y	1		
	8	VKL2766-004	LIFTER	1		
	9	VKW5245-003	DIRECTION SPRING	1		
	10	VKS3767-001	HOOK	1		
	11	VKM3896-002KP	HOOK SLIDER	1		
	12	VKM3897-001	LOCK ARM	1		
	13	VKS3768-002KP	GUIDE RAIL	1		
	14	QYSDST2605Z	SCREW(M2.6 X 5)	2		
	15	VKM3898-00C	FLOATING BASE	1		
	16	VKS3769-001	TRAY HOLDER	1		
	17	VKW5250-002	LIFT SPRING	1		
	18	VKL7881-003KP	PROTECTOR	1		
	19	VKS2267-00EKP	ACTUATOR UNIT	1		
	20	VKL2768-001	TRAY BASE	1		
	21	VKS1162-001	ACTUATOR BASE	1		
	22	MSN5G257A	DC MOTOR	2		
	23	QYSPSPL2606Z	SCREW	2		
	24	VKS5548-001	MOTOR PULLEY	2		
	25	VKB3000-177	BELT	2		
	26	VKS5549-001	PULLEY GEAR	2		
	27	VKS5550-001	THIRD GEAR (C)	1		
	28	VKS5551-001	THIRD GEAR (T)	1		
	29	VKS5552-001	ELEVATOR GEAR	1		
	30	VKS5553-002KP	M.T GEAR	1		
	31	VKS5554-001	UP.DOWN GEAR	1		
	32	VKS3770-003KP	SWITCH GEAR	1		
	33	VKS2269-001	ELEVATOR ARM	1		
	34	VKH5783-001	ELEVATOR PIN	1		
	35	VKW5246-001	ELEVATOR SPRING	1		
	36	VKS3772-001	M.T DETECTOR	1		
	37	QYSDST2605Z	SCREW(M2.6 X 5)	4		
	38	VKS3773-001	LID PLATE	1		
	39	VKW5247-003	SPRING	1		
	40	VKS2270-00DKP	TRAY UNIT	1		
	41	VKS1157-002KP	DISC CASE	1		
	42	VKM3900-002KP	CLIC SPRING	1		
	43	VKS3774-001	SPRING COVER	1		
	44	VKS1158-003KP	SUB TRAY	3		
	45	VKS5555-001	PLANET GEAR	1		
	46	VKS3775-001	DOOR LEVER	1		
	48	VKS1159-001	TRAY GUIDE(L)	1		

## ■ CD Mechanism Parts List

Block No. **M2MM**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	49	VKS3777-001	SELECT SW	1		
	50	VKS1160-001	TRAY GUIDE(R)	1		
	51	QYSDST2605Z	SCREW(M2.6 X 5)	3		
	52	VKS1163-003	TOP COVER	1		
	53	VKS3778-001	SELECTOR	1		
	54	VKW5248-001	SELECTOR SPRING	1		
	55	VKM3901-001	CLICK SPRING	1		
	56	QYSBSF2608Z	SCREW(M2.6 X 8)	4		
	57	VKZ4791-001	INSULATOR	3		
	58	VKS3779-001	STOPPER	1		
	59	VKW5249-001	ROD	1		
	60	VKL2769-003KP	CLAMPER BASE	1		
	61	VYH7313-003	MAGNET	1		
	62	VKL7757-001	YOKE PLATE	1		
	63	VKS3780-002KP	CLAMPER	1		
	64	QYSPSF2604Z	SCREW	1		
	65	QYSDST2605Z	SCREW(M2.6 X 5)	4		
	66	VMW3699-001	F.P.C.	1		
	67	QYSDST2605Z	SCREW(M2.6 X 5)	1		
	68	VKS1161-002	T.MECHA CHASSIS	1		
	69	VKZ4781-001	SCREW SHAFT	1		
	70	VKS5556-001	FEED GEAR	1		
	71	VKS5557-001	LOADING GEAR	1		
	72	PPN-13KA10C	DC MOTOR	1		
	73	OPTIMA-610B1	CD PICK UP UNIT	1		
	74	VKM3903-001	RACK ARM	1		
	75	QYSPSPT1714M	SCREW(M1.7 X 1.4)	2		
	76	VKS5558-001	MIDDLE GEAR	1		
	77	VKM3904-001	SHAFT HOLDER	1		
	78	VKZ4248-206	ASS'Y SCREW	1		
	79	QYSPSPL2004Z	SCREW	1		
	80	VKW5314-001	UP DOWN SPRING	1		

## ■Electrical Parts List(Power Supply &amp;Audio P.C.B.)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC101	BA41W12ST-V5	I. C. (M)	
	IC111	NJM78L12A-T	I. C.	
	IC112	NJM79L12A-T	I. C.	
	IC121	NJM78L05A-T	I. C.	
	IC301	NJM5532D	I. C.	
		DIODES		
	D101	11E2-T5	SILICON	
	D102	11E2-T5	SILICON	
	D103	11E2-T5	SILICON	
	D104	11E2-T5	SILICON	
	D111	11E2-T5	SILICON	
	D112	11E2-T5	SILICON	
	D131	11E2-T5	SILICON	
	D132	MTZJ30B-T2	ZENER	
	D361	1SS133-T2	SI. DIODE	
	D362	1SS133-T2	SI. DIODE	
	D363	1SS133-T2	SI. DIODE	
	D411	1SS133-T2	SI. DIODE	
	D412	1SS133-T2	SI. DIODE	
		TRANSISTORS		
	Q101	DTA114YS	DIGITAL TRANSISTOR	
	Q131	2SA934/QR/-T	SILICON	
	Q353	2SD1302/ST/-T	SILICON	
	Q354	2SD1302/ST/-T	SILICON	
	Q361	2SA933S/RS/-T	SILICON	
	Q362	DTC114YS	DIGITAL TRANSISTOR	
	Q411	DTC114YS	DIGITAL TRANSISTOR	
	Q412	DTA114YS	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	QETM1CM-688	6800MF 16V ELECTRO	BCEENJ
	C101	QETM1EM-688	6800MF 25V AL. E. CAP.	UUBUFUSUT
	C102	QFVJ1HJ-334Z	0.33MF 50V T. FILM	
	C105	QTE1C03-476Z	AL. E. CAP.	
	C106	QTE1C03-476Z	AL. E. CAP.	
	C107	QETC1EM-227ZN	220MF 25V AL. E. CAP.	UUBUFUSUT
	C111	QETB1EM-477E	470MF 25V E. CAP.	
	C112	QETB1EM-477E	470MF 25V E. CAP.	
	C113	QTE1E06-476Z	AL. E. CAP.	
	C114	QTE1E06-476Z	AL. E. CAP.	
	C121	QETB1CM-477M	470MF 16V E. CAP.	BCEENJ
	C121	QETM1EM-108	1000MF 25V ELECTRO	UUBUFUSUT
	C122	QETC1CM-227Z	220MF 16V AL. E. CAP.	
	C123	QETM1EM-108	1000MF 25V ELECTRO	UUBUFUSUT
	C131	QETB1HM-107	100MF 50V E. CAP.	
	C132	QETB1HM-226E	22MF 50V E. CAP.	
	C133	QETB1HM-226E	22MF 50V E. CAP.	
	C134	QFVJ1HJ-103Z	0.01MF 50V T. FILM	
	C305	QFLB1HJ-472	4700PF 50V MYLAR CAP.	
	C306	QFLB1HJ-472	4700PF 50V MYLAR CAP.	
	C307	QFLB1HJ-821	820PF 50V MYLAR CAP.	
	C308	QFLB1HJ-821	820PF 50V MYLAR CAP.	
	C309	QTE1H28-106Z	E. CAP.	
	C310	QTE1H28-106Z	E. CAP.	
	C313	QCBB1HK-471Y	470PF 50V CER. CAP.	BEEEN
	C314	QCBB1HK-471Y	470PF 50V CER. CAP.	BEEEN
	C331	QETC1CM-227Z	220MF 16V AL. E. CAP.	
	C332	QETB1EM-476	47MF 25V AL. E. CAP.	
	C351	QDYB1CM-103Y	0.01MF 16V C. CAP.	
	C361	QETB1EM-226N	22MF 25V E. CAP.	
	C362	QETC1EM-227ZN	220MF 25V AL. E. CAP.	
	C411	QCBB1HK-331Y	330PF 50V CER. CAP.	
	C501	QCSB1HJ-470	47PF 50V CER. CAP.	
	C511	QETC1AM-107ZN	100MF 10V E. CAP.	
	C998	QCF31HZ-223Z	0.022MF 50V CERAMIC	
	C999	QCF31HZ-223Z	0.022MF 50V CERAMIC	
		RESISTORS		
	R111	QRJ146J-1R0X	1 1/4W UNF. CARBON R	
	R131	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R133	QRE141J-151Y	150 1/4W R. NETWORK	
	R134	QRE141J-473Y	47K 1/4W R. NETWORK	
	R135	QRJ146J-122X	1.2K 1/4W UNF. CARBON R	
	R143	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R144	QRE141J-122Y	1.2K 1/4W R. NETWORK	
	R149	QRJ146J-4R7X	4.7 1/4W R. NETWORK	
	R150	QRJ146J-4R7X	4.7 1/4W R. NETWORK	
	R305	QRA14CF-2201Y	2.2K 1/4W R. NETWORK	
	R306	QRA14CF-2201Y	2.2K 1/4W R. NETWORK	
	R307	QRA14CF-2201Y	2.2K 1/4W R. NETWORK	
	R308	QRA14CF-2201Y	2.2K 1/4W R. NETWORK	
	R321	QRE141J-221Y	220 1/4W R. NETWORK	
	R322	QRE141J-221Y	220 1/4W R. NETWORK	
	R323	QRA14CF-1003Y	100K 1/4W R. NETWORK	
	R324	QRA14CF-1003Y	100K 1/4W R. NETWORK	
	R333	QRJ146J-221X	220 1/4W R. NETWORK	
	R334	QRJ146J-221X	220 1/4W R. NETWORK	
	R353	QRE141J-103Y	10K 1/4W R. NETWORK	
	R354	QRE141J-103Y	10K 1/4W R. NETWORK	
	R355	QRE141J-684Y	680K 1/4W R. NETWORK	
	R356	QRE141J-473Y	47K 1/4W R. NETWORK	
	R361	QRE141J-822Y	8.2K 1/4W R. NETWORK	
	R362	QRE141J-683Y	68K 1/4W R. NETWORK	
	R363	QRE141J-221Y	220 1/4W R. NETWORK	
	R364	QRE141J-221Y	220 1/4W R. NETWORK	
	R365	QRE141J-221Y	220 1/4W R. NETWORK	
	R411	QRE141J-472Y	4.7K 1/4W R. NETWORK	
	R501	QRE141J-221Y	220 1/4W R. NETWORK	
	R502	QRE141J-221Y	220 1/4W R. NETWORK	
	R503	QRE141J-101Y	100 1/4W R. NETWORK	
	R511	QRE141J-102Y	1K 1/4W R. NETWORK	
	R512	QRE141J-2R2Y	2.2 1/4W R. NETWORK	
	R513	QRE141J-182Y	1.8K 1/4W R. NETWORK	
	R999	QRE141J-102Y	1K 1/4W R. NETWORK	CJ
		OTHERS		
		EMW10734-102	PRINTED BOARD	
		QYSBGS3008E	T. SCREW	
	J701	GP1F32T	OPTICAL JACK	
	J702	QNSD016-001	3.5 JACK	
	J703	QNN0172-001	PIN JACK	
	J901	QGA7901C1-02	CONNECTOR	BCEENJ
	J901	QGA7901C1-03	CONNECTOR	UUBUFUSUT
	J902	QNC0030-001	AC SOCKET	BEEENUUBUFUSUT
	J902	QNC0052-001	AC INLET	CJ
	K501	QQR0601-001Z	F. BEADS I. M	
	S101	QSW0513-001	SLIDE SW.	UUBUFUSUT
	CN801	QGA2501C1-07	7P CONNECTOR	
	CN802	QGF1207F1-14	CONNECTOR	
	CN803	QGA2501F1-03	CONNECTOR	
	CN804	QGF1016C1-11	CONNECTOR	
	CN805	QGF1016C1-07	CONNECTOR	
	CN806	QGD2501C1-03Z	SOCKET I. M	
	CN810	QGB2510J1-07	CONNECTOR	
	CN811	QGB2510J1-05	CONNECTOR	
	CN820	QGB2510K2-07	CONNECTOR	
	CN821	QGB2510K2-05	CONNECTOR	
	EP001	QNZ0136-001Z	1M EARTH PLATE	
	EP002	QNZ0136-001Z	1M EARTH PLATE	
	FS101	E3400-431	FELT SPACER	
	FW806	EWR33B-0BLST	FLAT WIRE	
	HS001	LV40057-H30B	HEAT SINK	

# CA-EX70/-EX70R

## ■Electrical Parts List (FL & System Control P.C.B.)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC201	MN173222JABD1	I. C (M)	
	IC241	IC-PST591M/E/-X	I. C (M)	
		DIODES		
	D201	1SS355-X	SI. DIODE	
	D202	1SS355-X	SI. DIODE	
	D203	1SS355-X	SI. DIODE	
	D204	1SS355-X	SI. DIODE	
	D221	SLR-342VC-T	L. E. D.	
		TRANSISTORS		
	Q221	DTC114YKA-X	DIGITAL TRANSISTOR	
		CAPACITORS		
	C201	NCF21CZ-105X	1MF 16V C CAP.	
	C204	NEA21HM-335NZM	3.3MF 50V E. CAP.	
	C210	NEA21HM-335NZM	3.3MF 50V E. CAP.	
	C211	NEA21HM-335NZM	3.3MF 50V E. CAP.	
	C221	NCS31HJ-101X	100PF 50V C. CAPA. C. M	
	C222	NCS31HJ-101X	100PF 50V C. CAPA. C. M	
	C241	NCS31HJ-102X	1000PF 50V C. CAPA. C. M	
		RESISTORS		
	R201	NRSA63J-105X	MG RES.	
	R202	NRSA63J-102X	RES. C. M	
	R204	NRSA63J-102X	RES. C. M	
	R205	NRSA63J-221X	MG RES.	
	R206	NRSA63J-221X	MG RES.	
	R207	NRSA63J-221X	MG RES.	
	R208	NRSA63J-221X	MG RES.	
	R209	NRSA63J-221X	MG RES.	
	R221	NRSA63J-471X	RES. C. M	
	R222	NRSA63J-471X	RES. C. M	
	R231	NRSA63J-104X	RES. C. M	
	R232	NRSA63J-104X	RES. C. M	
	R233	NRSA63J-104X	RES. C. M	
	R234	NRSA63J-104X	RES. C. M	
	R241	NRSA63J-104X	RES. C. M	
		OTHERS		
		EMW10735-002	PRINTED BOARD	
	S201	NSW0062-001X	TACT SWITCH	
	S202	NSW0062-001X	TACT SWITCH	
	S203	NSW0062-001X	TACT SWITCH	
	S204	NSW0062-001X	TACT SWITCH	
	S205	NSW0062-001X	TACT SWITCH	
	S206	NSW0062-001X	TACT SWITCH	
	S207	NSW0062-001X	TACT SWITCH	
	S208	NSW0062-001X	TACT SWITCH	
	S209	NSW0062-001X	TACT SWITCH	
	S210	NSW0062-001X	TACT SWITCH	
	S211	NSW0062-001X	TACT SWITCH	
	S212	NSW0062-001X	TACT SWITCH	
	S213	NSW0062-001X	TACT SWITCH	
	X201	NAX0192-001X	CRYSTAL	
	CN201	QGF1210G1-14	CONNECTOR	
	D1201	QLF0030-002	FLUORESCENT DISPLAY TUBE	
	FH201	LE30640-001A	FL HOLDER	
	FH202	LE30640-002A	FL HOLDER	
	FS201	E3400-431	FELT SPACER	
	FS202	E3400-431	FELT SPACER	



## ■ Electric Parts List (CD Servo P. C. B.)

Item	Parts Number	Description	Area
	I. C. S		
IC601	AN8806SB	I. C	
IC641	BA6897FPW	I. C	
IC651	MN35510	I. C	
IC681	MN150837J8R3	I. C	
IC691	LB1641	I. C	
IC692	LB1641	I. C	
	DIODES		
D670	MA152WA-TX	DIODE	
D671	MA152WA-TX	DIODE	
	TRANSISTORS		
Q601	2SA1037K (R)	SI. TRANSISTOR	
Q631	2SA952 (L. K)	SI. TRANSISTOR	
	CAPACITORS		
C602	NCS21HJ-5R0	5PF 50V C. CAPACITOR	
C604	QEKFOJM-107Z	100MF 6.3V E. CAPACITOR	
C605	QEK41CM-106	10MF 16V E. CAPACITOR	
C607	NCB21HK-822AY	8200PF 50V C. CAPACITOR	
C608	QEKJ1HM-105Z	1MF 50V D. CAPACITOR	
C609	NCS21HJ-101X	100PF 50V C. CAPACITOR	
C610	NCB21HK-273AY	0.027MF 50V C. CAPACITOR	
C611	NCB21HK-472AY	4700PF 50V C. CAPACITOR	
C612	NCB21HK-103AY	0.01MF 50V C. CAPACITOR	
C613	NCS21HJ-331AY	330PF 50V C. CAPACITOR	
C614	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C615	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C616	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C617	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C618	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C619	NCS21HJ-271AY	270PF 50V C. CAPACITOR	
C620	NCS21HJ-151X	150PF 50V C. CAPACITOR	
C621	NCB21HK-102AY	1000PF 50V C. CAPACITOR	
C622	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C623	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C628	NCB21HK-473AY	0.047MF 50V C. CAPACITOR	
C629	QEKFOJM-107Z	100MF 6.3V E. CAPACITOR	
C631	QEKJ1AM-107ZM	100MF 10V E. CAPACITOR	
C632	NCB21HK-473AY	0.047MF 50V C. CAPACITOR	
C633	NCB21HK-222AY	2200PF 50V C. CAPACITOR	
C634	NCB21HK-222AY	2200PF 50V C. CAPACITOR	
C651	NCS21HJ-120AY	12PF 50V C. CAPACITOR	
C652	NCS21HJ-150AY	15PF 50V C. CAPACITOR	
C653	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C654	NCS21HJ-6R0AY	6PF 50V C. CAPACITOR	
C655	NCB21HK-473AY	0.047MF 50V C. CAPACITOR	
C657	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C658	QEKFOJM-107Z	100MF 6.3V E. CAPACITOR	
C659	QEKFOJM-107Z	100MF 6.3V E. CAPACITOR	
C661	NCS21HJ-471AY	470PF 50V C. CAPACITOR	
C662	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C663	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C664	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C665	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C666	QEKJ0JM-227Z	220MF 6.3V E. CAPACITOR	
C671	NCB21HK-222AY	2200PF 50V C. CAPACITOR	
C672	NCB21HK-222AY	2200PF 50V C. CAPACITOR	
C673	QEK40JM-227	220MF 6.3V E. CAPACITOR	
C674	NCB21HK-223AY	0.022MF 50V C. CAPACITOR	
C675	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C676	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C681	QEK40JM-227	220MF 6.3V E. CAPACITOR	
C687	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C688	NCB21EK-104AYU	0.1MF 25V C. CAPACITOR	
C691	NCB21HK-103AY	0.01MF 50V C. CAPACITOR	
C692	NCB21HK-103AY	0.01MF 50V C. CAPACITOR	
C693	VCP0012-105Z	1MF C. CAPACITOR	

Item	Parts Number	Description	Area
C694	VCP0012-105Z	1MF C. CAPACITOR	
C695	QEK41CM-106	10MF 16V E. CAPACITOR	
	RESISTORS		
R601	NRSA02J-123NY	MG RESISTOR	
R602	NRSA02J-102NY	MG RESISTOR	
R603	NRSA02J-125NY	MG RESISTOR	
R605	NRSA02J-274NY	MG RESISTOR	
R606	NRSA02J-104NY	MG RESISTOR	
R607	NRSA02J-223NY	MG RESISTOR	
R608	NRSA02J-124NY	MG RESISTOR	
R609	NRSA02J-393NY	MG RESISTOR	
R610	NRSA02J-104NY	MG RESISTOR	
R612	NRSA02J-822NY	MG RESISTOR	
R613	NRSA02J-121NY	MG RESISTOR	
R614	NRSA02J-100NY	MG RESISTOR	
R615	NRSA02J-120NY	MG RESISTOR	
R616	NRSA02J-910NY	MG RESISTOR	
R617	NRSA02J-473NY	MG RESISTOR	
R618	NRSA02J-473NY	MG RESISTOR	
R619	NRSA02J-473NY	MG RESISTOR	
R620	NRSA02J-473NY	MG RESISTOR	
R621	NRSA02J-101NY	MG RESISTOR	
R622	NRSA02J-101NY	MG RESISTOR	
R623	NRSA02J-101NY	MG RESISTOR	
R624	NRSA02J-101NY	MG RESISTOR	
R625	NRSA02J-823NY	MG RESISTOR	
R626	NRSA02J-823NY	MG RESISTOR	
R631	NRSA02J-331NY	MG RESISTOR	
R633	NRSA02J-273NY	MG RESISTOR	
R641	NRSA02J-104NY	MG RESISTOR	
R642	NRSA02J-682NY	MG RESISTOR	
R643	NRSA02J-183NY	MG RESISTOR	
R644	NRSA02J-223NY	MG RESISTOR	
R645	NRSA02J-223NY	MG RESISTOR	
R646	NRSA02J-182NY	MG RESISTOR	
R647	NRSA02J-182NY	MG RESISTOR	
R648	NRSA02J-472NY	MG RESISTOR	
R649	NRSA02J-822NY	MG RESISTOR	
R651	NRSA02J-471NY	MG RESISTOR	
R652	NRSA02J-102NY	MG RESISTOR	
R653	NRSA02J-102NY	MG RESISTOR	
R654	NRSA02J-102NY	MG RESISTOR	
R655	NRSA02J-471NY	MG RESISTOR	
R656	NRSA02J-102NY	MG RESISTOR	
R657	NRSA02J-102NY	MG RESISTOR	
R658	NRSA02J-100NY	MG RESISTOR	
R659	NRSA02J-471NY	MG RESISTOR	
R661	NRSA02J-683NY	MG RESISTOR	
R662	NRSA02J-155NY	MG RESISTOR	
R663	NRSA02J-124NY	MG RESISTOR	
R664	NRSA02J-471NY	MG RESISTOR	
R665	NRSA02J-102NY	MG RESISTOR	
R666	NRSA02J-472NY	MG RESISTOR	
R667	NRSA02J-472NY	MG RESISTOR	
R668	NRSA02J-472NY	MG RESISTOR	
R669	NRSA02J-472NY	MG RESISTOR	
R670	NRSA02J-470NY	MG RESISTOR	
R671	NRSA02J-102NY	MG RESISTOR	
R672	NRSA02J-102NY	MG RESISTOR	
R673	NRSA02J-100NY	MG RESISTOR	
R674	NRSA02J-102NY	MG RESISTOR	
R675	NRSA02J-104NY	MG RESISTOR	
R676	NRSA02J-104NY	MG RESISTOR	
R681	NRSA02J-223NY	MG RESISTOR	
R682	NRSA02J-223NY	MG RESISTOR	
R683	NRSA02J-223NY	MG RESISTOR	

# CA-EX70/-EX70R

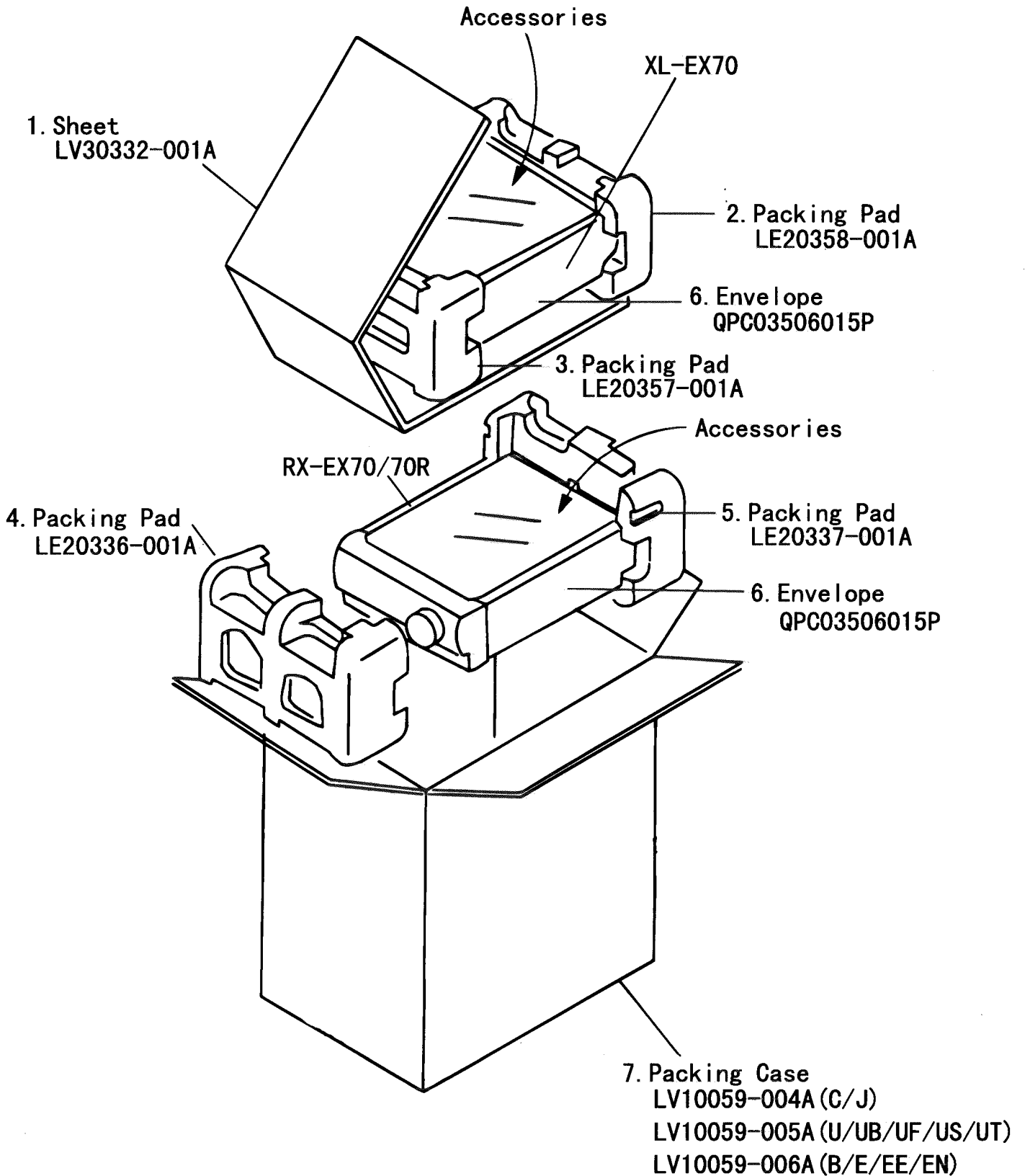
## ■Electric PartsList (CD Servo P. C. B.)

Item	Parts Number	Description	Area
R684	NRSA02J-223NY	MG RESISITOR	
R685	NRSA02J-223NY	MG RESISITOR	
R686	NRSA02J-223NY	MG RESISITOR	
R687	NRSA02J-223NY	MG RESISITOR	
R688	NRSA02J-102NY	MG RESISITOR	
R691	NRSA02J-223NY	MG RESISITOR	
R692	NRSA02J-223NY	MG RESISITOR	
R693	NRSA02J-223NY	MG RESISITOR	
R694	NRSA02J-223NY	MG RESISITOR	
R695	NRSA02J-103NY	MG RESISITOR	
R696	NRSA02J-181NY	MG RESISITOR	
	OTHERS		
	VSH1173-001	SWITCH	
	EMV7169-006R	CONNECT TERMINAL	
B601	NRSA02J-ORONY	MG RESISITOR	
B602	NRSA02J-ORONY	MG RESISITOR	
B603	NRSA02J-ORONY	MG RESISITOR	
B604	NRSA02J-ORONY	MG RESISITOR	
B605	NRSA02J-ORONY	MG RESISITOR	
B606	NRSA02J-ORONY	MG RESISITOR	
B607	NRSA02J-ORONY	MG RESISITOR	
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B612	NRSA02J-ORONY	MG RESISITOR	
B613	NRSA02J-ORONY	MG RESISITOR	
B614	NRSA02J-ORONY	MG RESISITOR	
B615	NRSA02J-ORONY	MG RESISITOR	
B616	NRSA02J-ORONY	MG RESISITOR	
B617	NRSA02J-ORONY	MG RESISITOR	
L691	VQP0033-100Z	INDUCTOR	
L692	VQP0033-100Z	INDUCTOR	
S691	QSW0449-001	SWITCH	
S692	QSW0449-001	SWITCH	
S693	ESS1200-002	SWITCH	
X651	VCX5016-934V	CRYSTAL	
X681	EFO-EC4004T4	CER. RESONATOR	
Z651	VYH7237-003	IC HOLDER	
Z681	VYH7237-001SS	IC HOLDER	
CN601	VMC0332-023	CONNECTOR	
CN604	VMC0040-003	CONNECTOR	
CN605	EMV7171-111R	CONNECTOR	
CN606	EMV7171-107R	CONNECTOR	
PC691	SG-256	I. C (PHOTO-INTERRUPTOR)	

# Packing Materials and Accessories List

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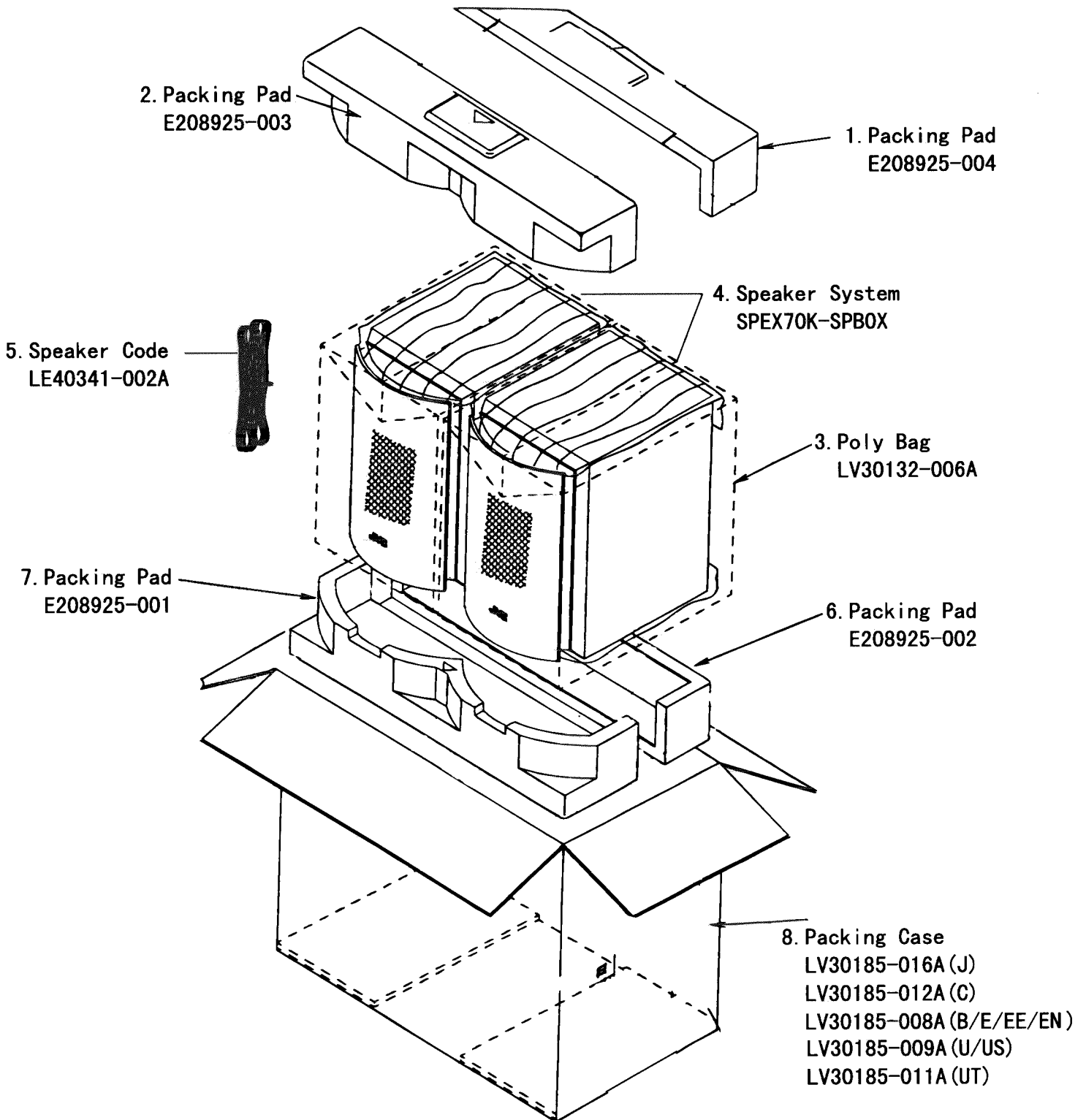


■ SP-EX70

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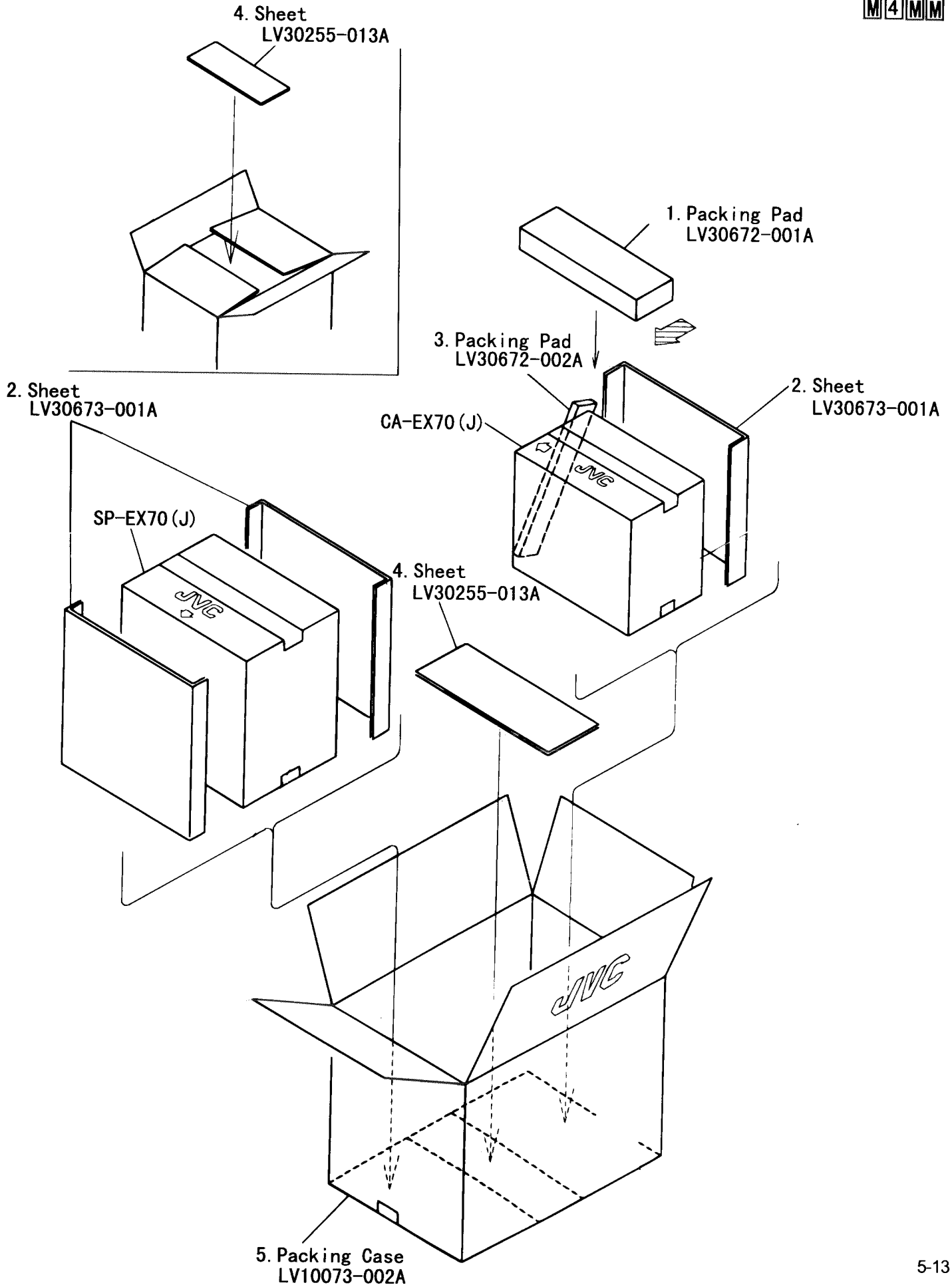
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# Packing Materials and Accessories List

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CA-EX70/-EX70R

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