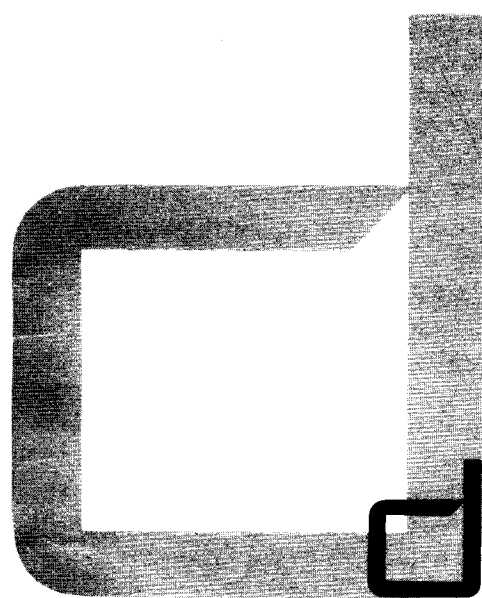


YAMAHA



*Owner's manual
Manuel d'utilisation
Bedienungsanleitung
Manuale di istruzioni
Manual de Instrucciones*

disklavier

GRAND PIANO

IMPORTANT SAFETY AND INSTALLATION INSTRUCTIONS

INFORMATION RELATING TO POSSIBLE PERSONAL INJURY, ELECTRIC SHOCK AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

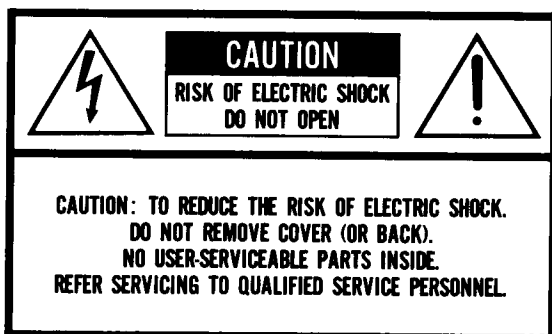
WARNING — When using electronic products, basic precautions should always be followed, including the following:

1. Read all Safety and Installation Instructions, Supplemental Marking and Special Message Section data, and assembly instructions (where applicable) BEFORE using your Yamaha electronic keyboard. Check unit weight specifications before you attempt to move this instrument!
2. Main Power Supply Verification: Your Yamaha electronic keyboard has been manufactured specifically for the main supply voltage used in your area. If you should move, or if any doubt exists, please contact your dealer for instructions. The main supply voltage required by your electronic keyboard is printed on the name plate. For name plate location see graphic in Special Message Section.
3. This product may be equipped with a polarized line plug (one blade wider than the other). If you are unable to insert the plug into the outlet, contact an electrician to have your obsolete outlet replaced. Do NOT defeat the safety purpose of the plug. Yamaha products not having polarized plugs incorporate construction methods and designs that do not require line plug polarization.
4. **WARNING** — Do NOT place objects on your electronic keyboard's power cord or place the unit in a position where anyone could trip over, walk over, or roll anything over cords of any kind. Do NOT allow your electronic keyboard or its bench to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.
5. Environment: Your electronic keyboard should be installed away from heat sources such as a radiator, heat registers and/or other products that produce heat. Additionally, the unit should not be located in a position that exposes the cabinet to direct sunlight, or air currents having high humidity or heat levels.
6. Your Yamaha electronic keyboard should be placed so that its location or position does not interfere with its proper ventilation.
7. Some Yamaha electronic keyboards may have benches that are either a part of the product or supplied as an optional accessory. Some of these benches are designed to be dealer assembled. Please make sure that the bench is stable before using it. The bench supplied by Yamaha was designed for seating only. No other uses are recommended.
8. Some Yamaha electronic keyboards can be made to operate with or without the side panels or other components that constitute a stand. These products should be used only with the components supplied or a cart or stand that is recommended by the manufacturer.
9. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
10. Do not use your Yamaha electronic keyboard near water or in wet environments. For example, near a swimming pool, spa, or in a wet basement.
11. Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through openings.
12. Your Yamaha electronic keyboard should be serviced by a qualified service person when:
 - a. The power-supply cord or plug has been damaged; or
 - b. Objects have fallen, or liquid has been spilled into the product; or
 - c. The product has been exposed to rain; or
 - d. The product does not operate, exhibits a marked change in performance; or
 - e. The product has been dropped, or the enclosure of the product has been damaged.
13. When not in use, always turn your Yamaha electronic keyboard "OFF". The power-supply cord of the product should be unplugged from the outlet when it is to be left unused for a long period of time. Note: In this case, some units may lose some user programmed data. Factory programmed memories will not be affected.
14. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.
15. Electromagnetic Interference (RFI). This series of Yamaha electronic keyboards utilizes digital (high frequency pulse) technology that may adversely affect Radio/TV reception or the operation of other devices that utilize digital technology. Please read FCC Information (on the outside back cover) for additional information.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE!

SUPPLEMENTAL MARKING INFORMATION SPECIAL MESSAGE SECTION

Yamaha Electronic Keyboard Products will have either a label similar to the graphic shown below or a molded/stamped facsimile of the graphic on its enclosure. The explanation of these graphics appears on this page. Please observe all cautions indicated.



SEE BOTTOM OF PIANO ENCLOSURE
FOR GRAPHIC SYMBOL MARKINGS

ELECTROMAGNETIC INTERFERENCE (RFI): Your Yamaha Electronic Keyboard Product has been type tested and found to comply with all applicable regulations. However, if it is installed in the immediate proximity of other electronic devices, some form of interference may occur. For additional RFI information see FCC information section located in this manual.

IMPORTANT NOTICE: This product has been tested and approved by independent safety testing laboratories in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. **DO NOT** modify this unit or commission others to do so unless specifically authorized by Yamaha. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty may be denied if the unit is/has been modified. Implied warranties may also be affected.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. Yamaha reserves the right to change or modify specifications at any time without notice or obligation to update existing units.

NOTICE: Service charges incurred due to a lack of knowledge relating to how a function or effect works (when the unit is operating as designed), are not covered by the manufacturer's warranty. Please study this manual carefully before requesting service.

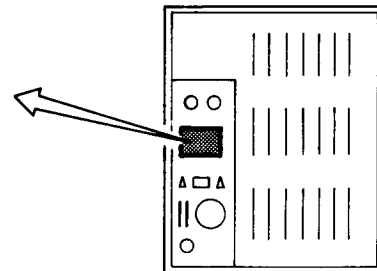
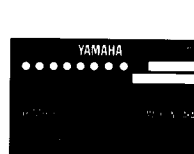
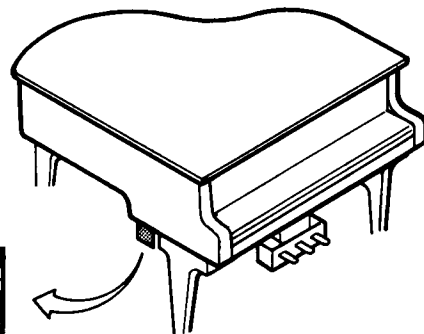


The Exclamation point within an equilateral triangle is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



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

NAME PLATE LOCATION: The graphic below indicates the location of the Name Plate on your Yamaha Electronic Keyboard. The Model, Serial Number, Power requirements, etc., are indicated on this plate. You should note the model, serial number and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____
Serial No. _____
Purchase Date _____

Thank you for purchasing the Yamaha Disklavier. This newly developed device is a highly musical performance system that combines Yamaha's advanced electronics technology with our decades of experience in manufacturing musical instruments.

In order to be able to make full use of the Disklavier's large variety of functions and superior performance as well as to obtain many years of trouble-free enjoyment, please read this instruction manual carefully.

FEATURES

- Using micro-floppy disks as a recording medium, this digital device plays the piano itself during playback, thus ensuring that tonal irregularities, noise and distortion are completely avoided.
- Even the most delicate nuances of touch, from pianissimo to fortissimo, and effects using the sustain/soft/sostenuto pedals are faithfully recorded and reproduced.
- During playback, volume and tempo adjustment as well as transposition can be carried out as desired. Changing the tempo does not influence the pitch.
- Speedy music selection as well as "fast forward" and "fast backward" operations, and various playback settings such as programming, auto play, repeat functions, etc are possible.
- Playing simultaneously with the playback of recorded music is possible.
- A metronome function is built in, thus making it possible to record while listening to the metronome sound.
- Separate recording and playback of parts for the left and right hand, and overdub/punch-in recording are also possible.
- MIDI functions are built in. This means that an external MIDI instrument may be played automatically during playback as well as allowing a large variety of MIDI control configurations using sequencers and rhythm machines.

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Warnings with Regard to Use of Your Disklavier



Location

Avoid using your Disklavier in the following locations as this may lead to malfunctions or damage.

- Near windows or other places exposed to direct sunlight.
- Extremely hot locations such as next to heating appliances.
- Extremely moist or dry places.
- Locations exposed to dust or vibrations.



AC Power Connection

- Disconnect the Disklavier from the AC power source when not using it for an extended period of time.



Floppy Disks

Handle floppy disks with care. (See page 10.)



Do Not Take off the Rear Panel of the Control Wagon, the Fall Board or the Solenoid Cover!

If necessary, contact the dealer where you purchased.



Handle With Care!

- Do not use excessive force when operating switches and buttons. Avoid applying pressure on the cabinet.
- Do not place anything on top of the cabinet.
- Take care that cords and cables do not get stuck under the piano and the Control Wagon.
- Be sure to turn off the power when connecting or removing cords and cables.
- In order to prevent short circuits and wire breakage, always disconnect cords by pulling them out by their plugs.



Beware of Lightning!

During thunderstorms when there is a danger of lightning strikes, disconnect the power plug.



In Case of Water Leakage...

If the Disklavier has been rained upon or has had a vase spilled on it, disconnect the power cable and contact your dealer.



Relocation

When relocating or moving the Disklavier, be sure to disconnect all cords and cables so as to avoid short circuits or wire breakage.



Cleaning

- Clean the exterior with a soft, dry cloth.

Wiping the exterior with benzene, thinner or similar chemicals or using aerosols near it may damage the finish and should be avoided.



Interference Noise in Other Appliances

The Disklavier uses digital circuitry throughout so it may cause interference noise in radios, television sets, etc., when these are used very close to the unit at the same time. Therefore be sure to keep the Disklavier at some distance from such appliances.



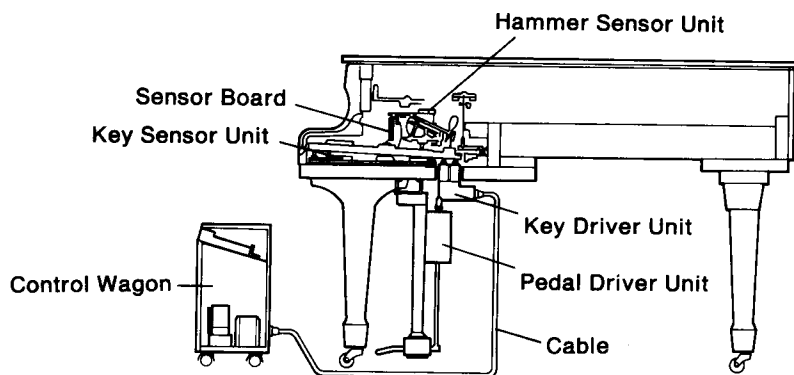
Check Again!

If you think there is something wrong with the Disklavier, please check the items listed on page 55 under "Troubleshooting". You may have made a mistake during operation that can be corrected easily.

Introducing the Disklavier Grand Piano

● Structure

The Disklavier Grand Piano consists of a grand piano and a Control Wagon. The grand piano is equipped with a sensor unit for recording and a drive unit for playback. The Control Wagon is a control unit, controlling recording/playback functions, etc., and a front panel from which various operations can be performed.



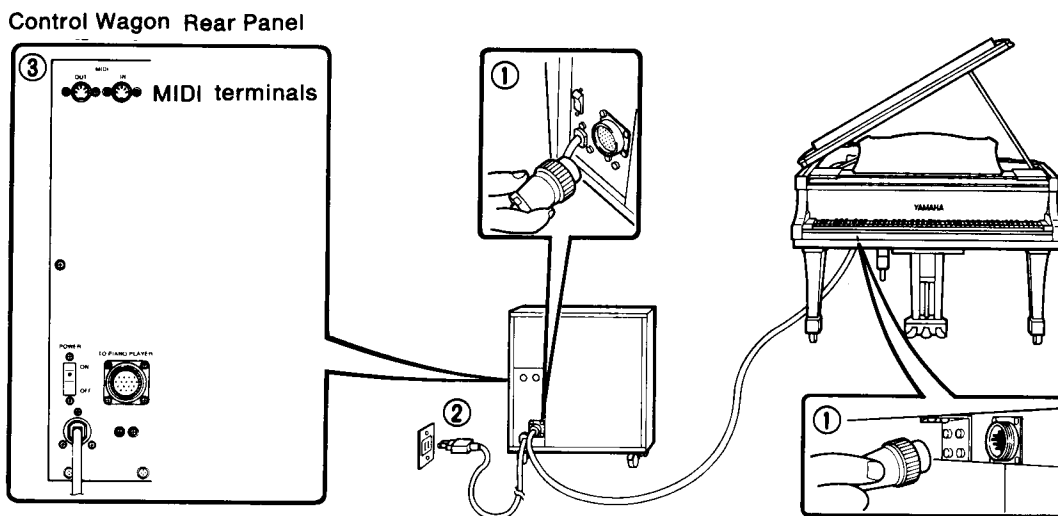
● Connections

① Connect the cable to the Control Wagon and to the electrical part of the piano.

② Plug in the Control Wagon.

③ MIDI jacks

These jacks are used for MIDI connections. When you want to control other MIDI equipment from the Disklavier or control this unit from other MIDI equipment, these jacks enable MIDI signal communication. (Please refer to the section "MIDI Functions" for more information on MIDI functions.)

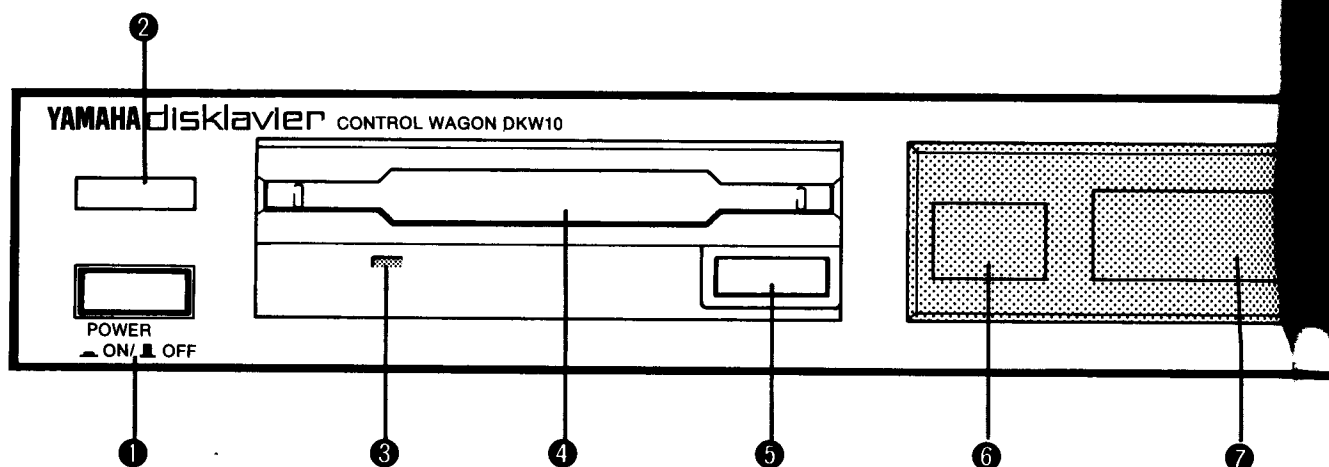


Replacing the battery for memory back-up of the auto-playback control data

The battery for memory back-up of the auto-playback control data is built into the key drive unit. This data enables automatic playback which matches the action and pedals of each piano. Please contact an authorized dealer or service center to have the battery replaced when the battery is weak. (The battery life is several years.)

Names and Functions

● Control Wagon Front Panel



① Power switch

Pressing this button turns the power on, and the power indicator ③ and the Volume button indicator ⑩ light.

② Remote control signal window

Receives the infrared signals transmitted from the remote control unit.

③ Power indicator

Lights up when the power is turned on.

④ Disk slot

Floppy disk is inserted here.

⑤ Disk eject button

Pressed when the disk is removed from the disk slot.

⑥ Piece number indication

Displays the number of the selected piece of music.

⑦ Liquid crystal display (LCD)

Displays various information such as the title of a piece of music, playback and recording levels, operation mode, etc.

⑧ Play/Pause button

Pressed for playback or recording. Also pressed to temporarily stop (pause) or restart a piece of music during playback or recording.

⑨ Song select buttons

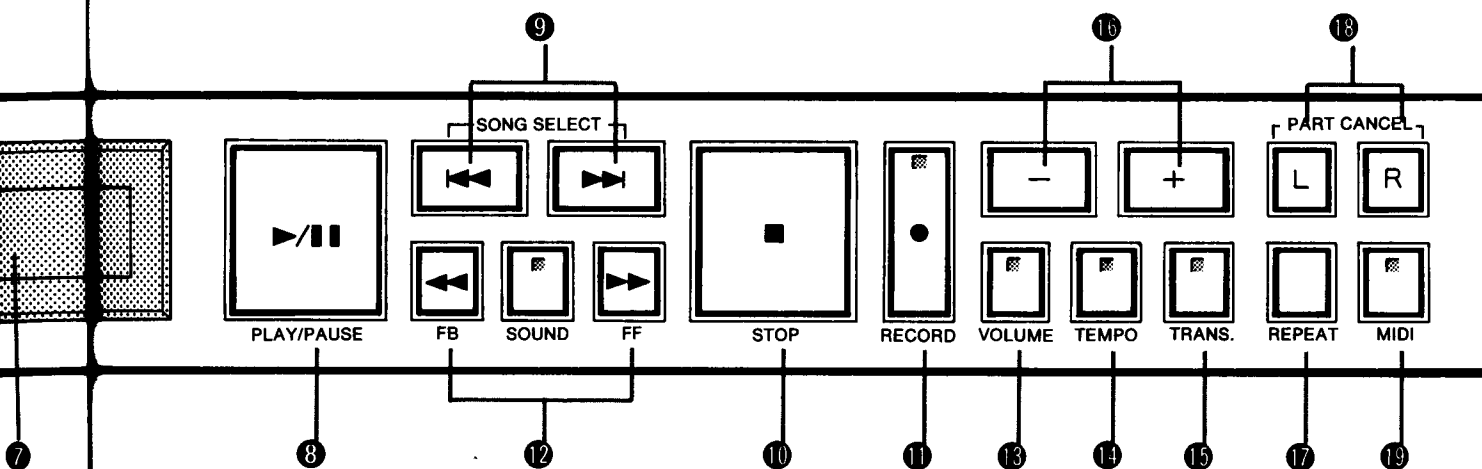
Used to select the piece number.

⑩ Stop button

Stops all operations such as playback and recording, fast forward or fast backward.

⑪ Record button

Pressed to enter the record stand-by mode. Its indicator will be illuminated.



12 Fast Backward / Sound / Fast Forward buttons

Used in stop mode or during playback. Fast forward or fast backward continues while the respective button is being held down.

13 Volume button

Used in conjunction with the + / - buttons 10 so as to adjust playback volume.

14 Tempo button

Used in conjunction with the + / - buttons 10 so as to adjust playback tempo (speed).

15 Transposition button

Used in conjunction with the + / - buttons 10 so as to transpose (change) the keys of a piece of music for playback.

16 + / - buttons

Used to adjust and set volume, tempo, transposition, etc. Pressing the + button increases the values, and pressing the - button decreases them. Keeping either of the buttons pressed changes the values continuously, while pressing either of them one press at a time changes the values by one step.

17 Repeat button

Pressed to repeat a piece or pieces of recorded music.

18 Part cancel buttons

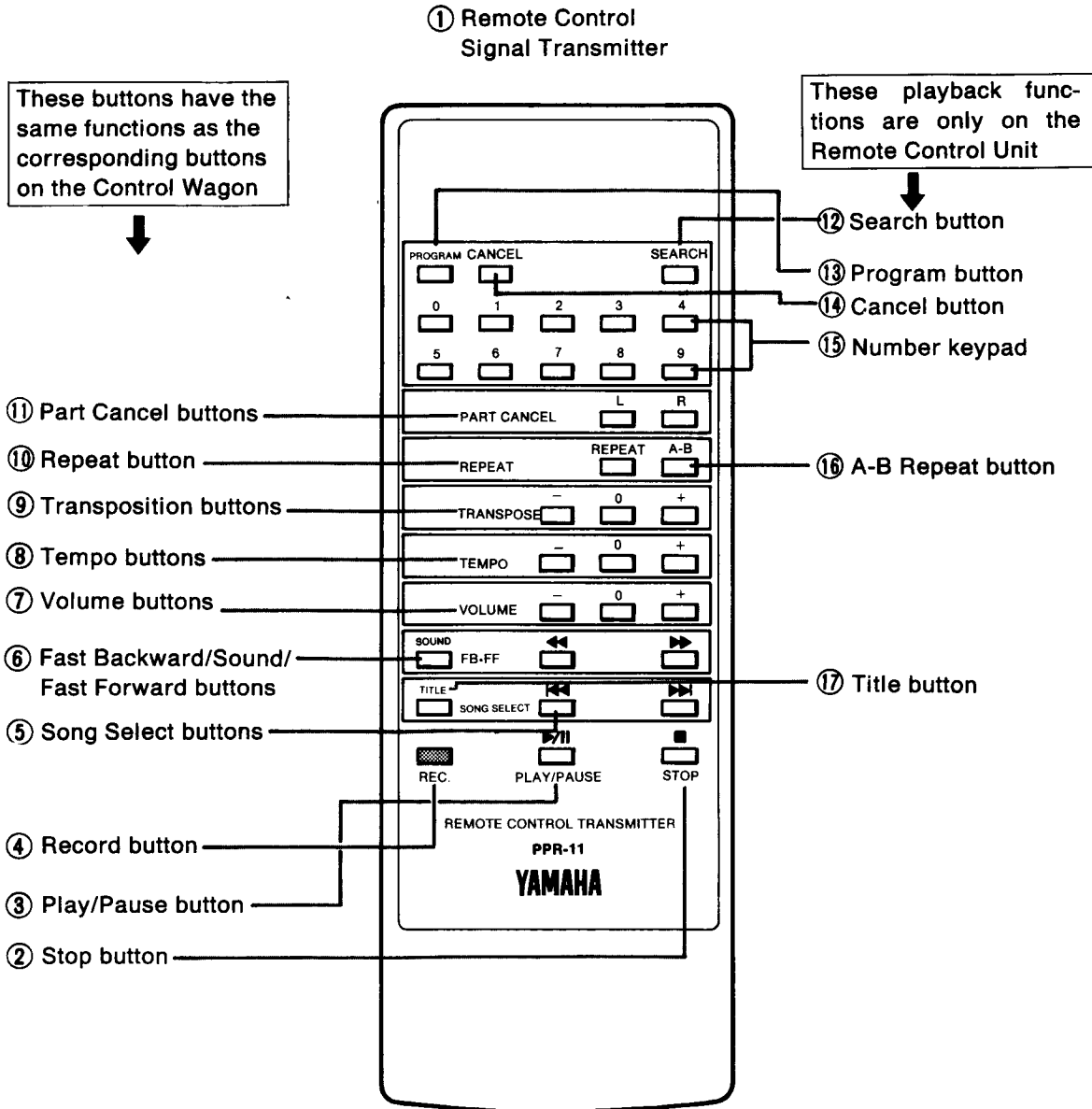
Used to cancel playback of either left-hand part or right-hand part of pieces recorded separately for the left and right hand.

19 MIDI button

Used when setting the MIDI parameters or selecting the song position indication.

• Remote Control Unit

Use the supplied Remote Control Unit after having inserted the two supplied UM-3 batteries. Buttons ②- ⑪ in the figure below have the same functions as the buttons on the Control Wagon. Buttons ⑫- ⑰ provide additional functions.



① Remote control signal transmitter

Operate the remote control, making sure that this transmitter is aimed at the signal window on the front panel of the Control Wagon.

② Stop button

Has the same functions as the Stop button ⑩ on the front panel of the Control Wagon.

③ Play/Pause button

Has the same functions as the Play/Pause button ⑧ on the front panel of the Control Wagon.

④ Record button

Has the same functions as the Record button ⑪ on the front panel of the Control Wagon.

⑤ Song Select buttons

Have the same functions as the Song Select buttons ⑨ on the front panel of the Control Wagon.

⑥ Fast Backward/Sound/Fast Forward buttons

Have the same functions as the Fast Backward/Sound/Fast Forward buttons ⑫ on the front panel of the Control Wagon.

⑦ Volume buttons

Adjust the playback volume level. They are effective in stop mode, during playback or playback pause.

⑧ Tempo buttons

Adjust the tempo of a piece of music for playback. They are effective in stop mode, during playback or playback pause.

⑨ Transposition buttons

Transpose (change the key of) a piece of music for playback. Press these buttons in stop mode, during playback or playback pause.

⑩ Repeat button

Has the same functions as the Repeat button ⑰ on the front panel of the Control Wagon.

⑪ Part Cancel buttons

Have the same functions as the Part Cancel buttons ⑱ on the front panel of the Control Wagon.

⑫ Search button

Used to find a particular position in the piece of music which has been selected through the Song Select button. The position can be specified by minutes/seconds or bar/beat numbers through the number keypad. See page 18.

⑬ Program button

Used to program a sequence of up to 30 songs to be played back. See page 19.

⑭ Cancel button

Used to cancel program settings. See page 19.

⑮ Number keypad

Used to select a piece number, and to input a piece number when programming a sequence of music or searching for a particular position in the piece. See page 18, 19.

⑯ A-B Repeat button

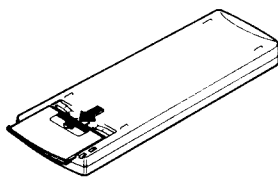
Used to set up repeated playback from a point A in a piece to another point B. See page 16.

⑰ Title button

Pressing this button will confirm the number of the song displayed on the LCD. Pressing it a second time will return to show the original display. See page 18.

● Inserting batteries

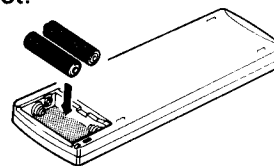
1 Remove the battery cover from the bottom of the Remote Control Unit.



Notes:

- Please make sure that the (+) and (-) poles of the batteries correspond to the schematic drawing in the battery compartment.
- When the Remote Control Unit can no longer be used from greater distances, replace the batteries.

2 Insert two batteries, making sure that the polarity is correct.



3 Reinstall the battery cover.

- Replace the batteries with two new ones of the same type.
- When not using the Remote Control Unit for extended periods, remove the batteries in order to prevent damage from leakage.

Floppy Disks

Floppy disks are a data storage medium using a film coated with magnetic material. Since this magnetic surface is very delicate, please take care when handling floppy disks.

● Types of Floppy Disks

- There are various types of floppy disks available. When purchasing floppy disks for recordings with your Disklavier, please ask for double sided, double density, double track 3.5 inch floppy disks. (We recommend MF2DD disks.)
- Floppy disks must be inserted in the correct direction with the right side up. Please insert them as shown in the illustration on page 11.
- Floppy disks which have been formatted on the Disklavier can be used for recording up to 60 minutes of music per disk for the Disklavier grand piano (60 minutes is a standard length of time, but this may vary according to the content of the music, and the keyboard and pedal action.)

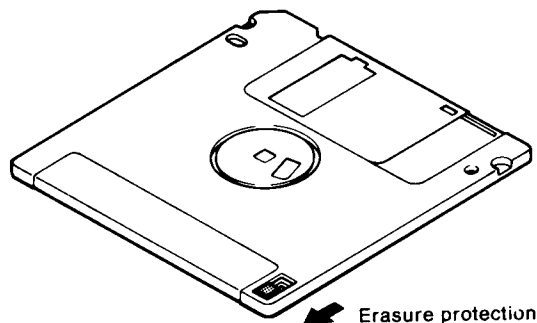
● Handling

- Do not slide open the shutter and touch the disk's magnetic surface. Also protect the disk from smoke and aerosols. If the magnetic surface gets soiled or damaged, the disk may become unusable.
- Please use the disk in a comparatively dust-free environment.
- Avoid placing disks near television or radio sets, speakers or other devices generating magnetic fields.
- Disks can be used in the environmental temperature range from 4°C (40°F) to 52°C (125°F). Please do not store them where it gets colder than 4°C (40°F) or hotter than 52°C (125°F).

● Recording and Erasure Protection

If the write-protect tab is slid in the direction shown by the arrow in the following illustration, recording becomes impossible with that floppy disk. You can thus protect valuable music data recordings from accidental erasure.

By returning the write-protect tab to its original position, you can record again on that disk.



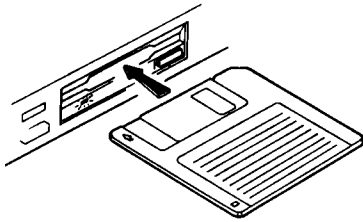
● Formatting

In order to be able to use newly purchased disks with the Disklavier, they first have to be "formatted".

In other words, only disks that have been properly formatted can be used for recording. It is not necessary to format the supplied pre-recorded disk and PIANO SOFT™ disks for Disklavier. (Doing so would erase the recorded music!)

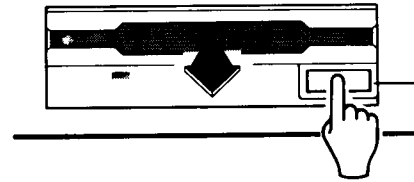
● Inserting and Removing Floppy Disks

1 Inserting



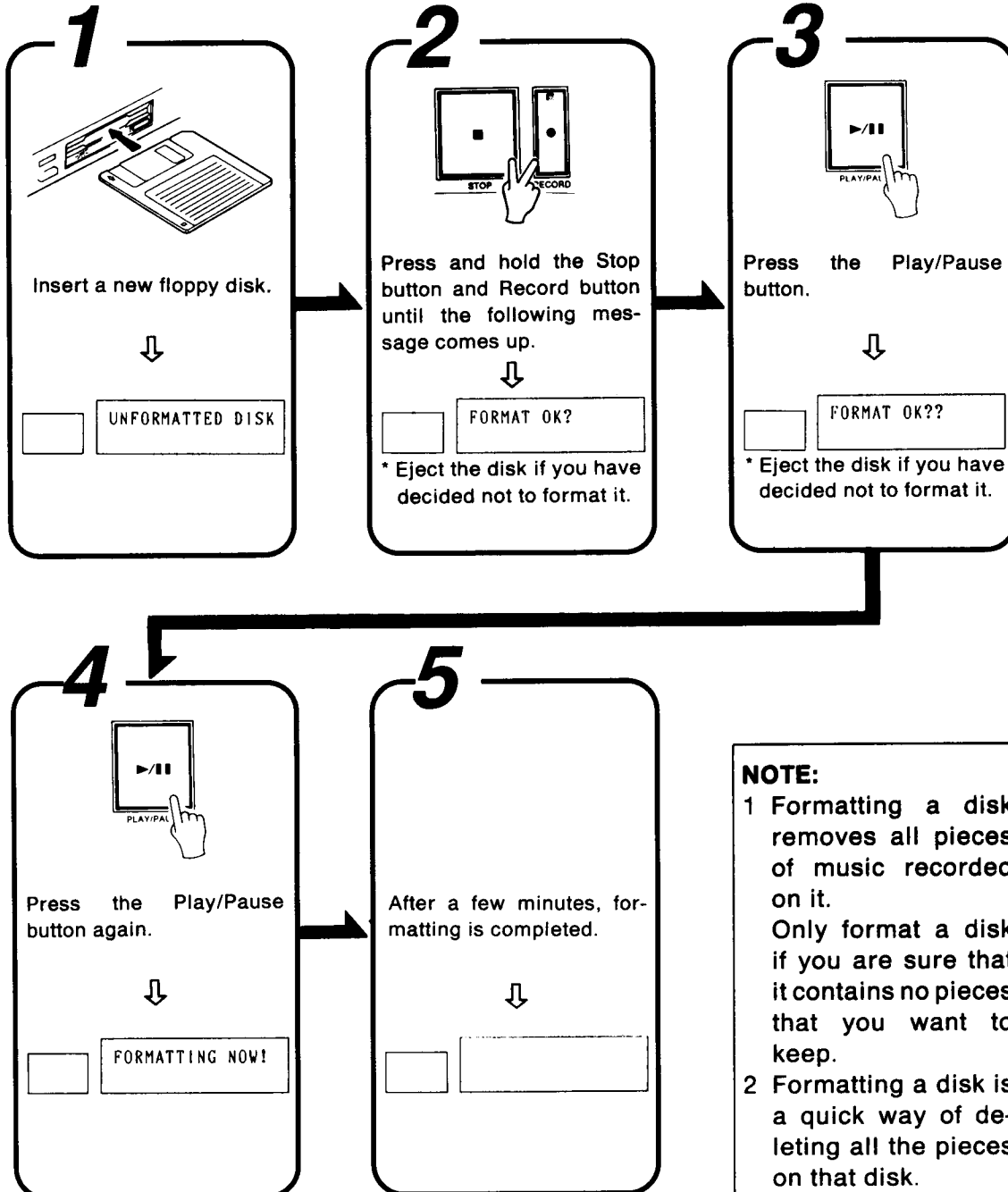
Carefully insert a floppy disk into a disk slot in the direction of the arrow with the label facing upward.

2 Removing



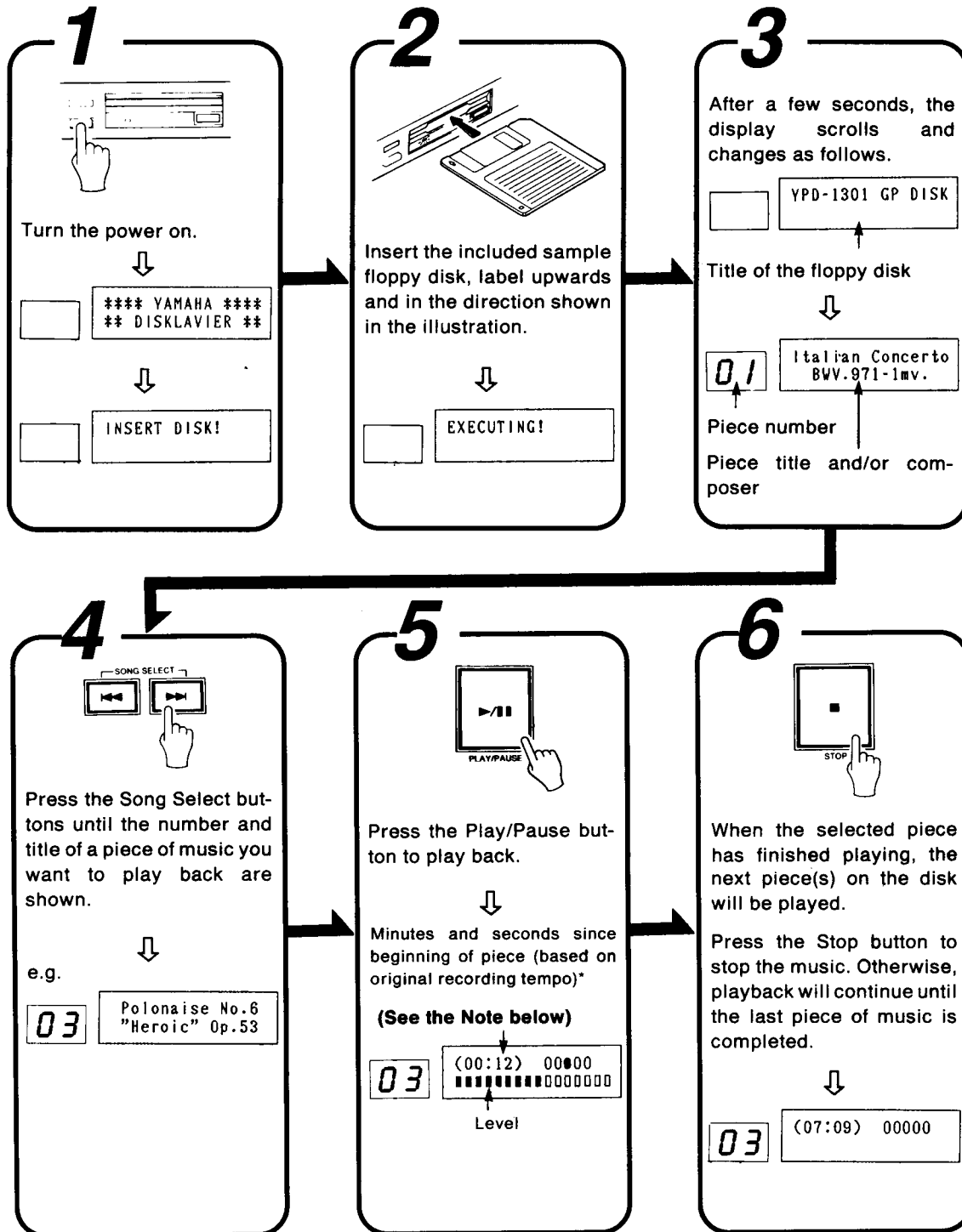
Press this button to remove the disk.

● How to Format Disks



Playback (Basic Operation)

This section explains basic operations, using the sample floppy disk shipped with your Disklavier as an example.



Note: The position of the piece can be indicated by bar/beat. See page 48 for how to set this.

Playback (Additional Operations)

● Volume control

You can adjust the playback volume during playback or while the playback is stopped.

1

Press the Volume button.

↓

03 (01:46) 00000
VOLUME 00

"00" is normal volume (the volume at which the piece was recorded)
(See the Note below.)

2

Press the +/- buttons to set the desired listening level.

↓

03 (01:50) 00000
VOLUME +02

The volume can be adjusted in 13 steps (-10, -9, -8, -7, -6, -5, -4, -3, -2, -1, 00, +01, +02).
* The previous display will be shown about 10 seconds after volume adjustment.

● Tempo control

1

Press the Tempo button.

↓

03 (02:30) 00000
TEMPO 00%

Normal tempo (the tempo at which the piece was recorded)
(See the Note below.)

2

Press the +/- buttons to set the desired tempo. The tempo can be adjusted in 10 steps (-50%, -40%, -30%, -20%, -10%, -05%, 00%, +05%, +10%, +20%).
* The previous display will be shown about 10 seconds after tempo adjustment.

Note: * The display will change to the previous one in about 10 seconds. In this case, press the relevant button again.

● Trans button

You can transpose (change) the key of a piece of music for playback.

1

Press the Trans button, and the green indicator will light.

↓

01 (00:00) 00000
TRANS normal

2

Press the +/- button to transpose.
e.g.

↓

01 (00:00) 00000
TRANS 3key-up

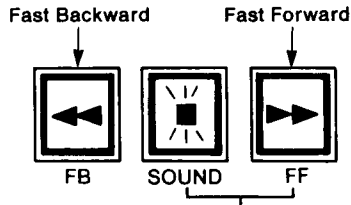
"Normal" indicates no transposition.

Range

Display	Scale example (from C3)
-2 oct down	C1
-1 oct down	C2
-6 key down	G ^b
-5 key down	G
-4 key down	A ^b
-3 key down	A
-2 key down	B ^b
-1 key down	B
normal	C3
1 key up	C [#]
2 key up	D
3 key up	D [#]
4 key up	E
5 key up	F
6 key up	F [#]
+1 oct up	C4
+2 oct up	C5

● Fast Backward/Sound/Fast Forward buttons

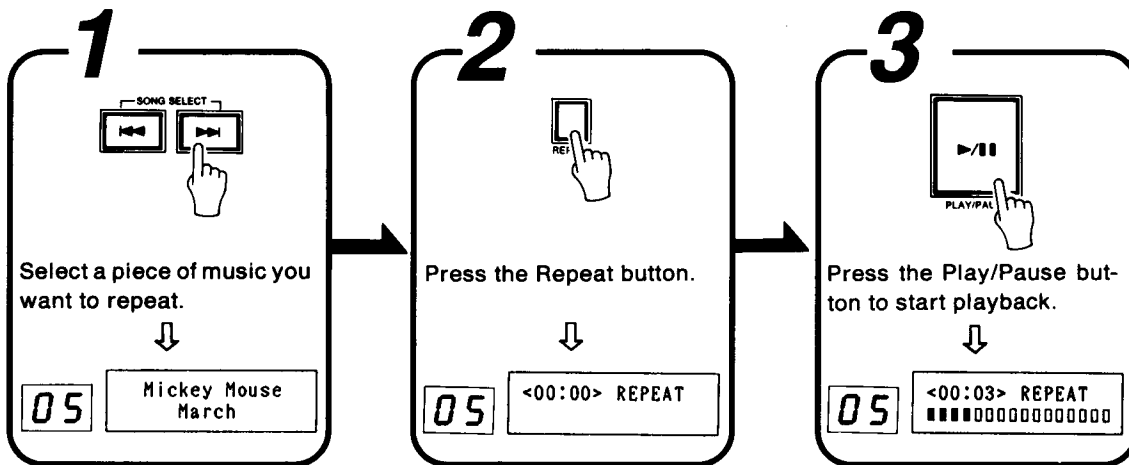
Press and hold down the FB button or FF button to move to a previous or later part of the music during playback. Fast backward/forward operation will be stopped when the beginning of the current/next piece is reached.



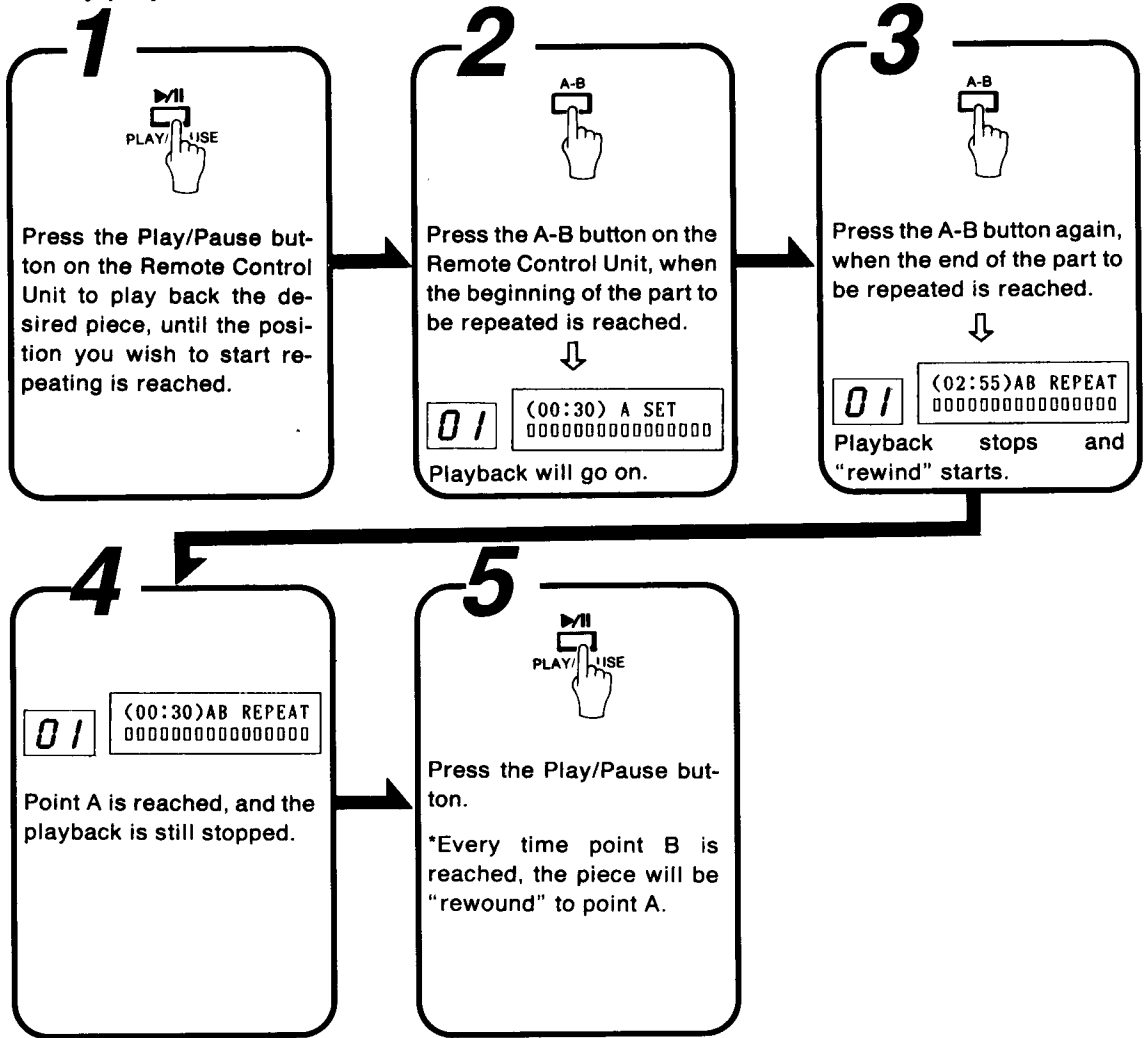
- 1 Press the Sound button, and the green indicator on the Sound button will light up. Press and hold down the FF button to go fast forward while listening to the music being played back.
- 2 After the green indicator on the Sound button has been illuminated, pressing the FF button one press at a time plays the piece step by step.

● Repeat Playback

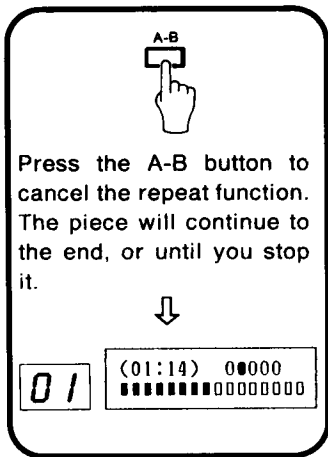
Ⓐ Single repeat - Only a single piece will be repeatedly played back.



Ⓔ **A-B repeat** - Part of a single piece between designated points A and B can be repeatedly played back. << ONLY POSSIBLE WITH THE REMOTE CONTROL UNIT!! >>

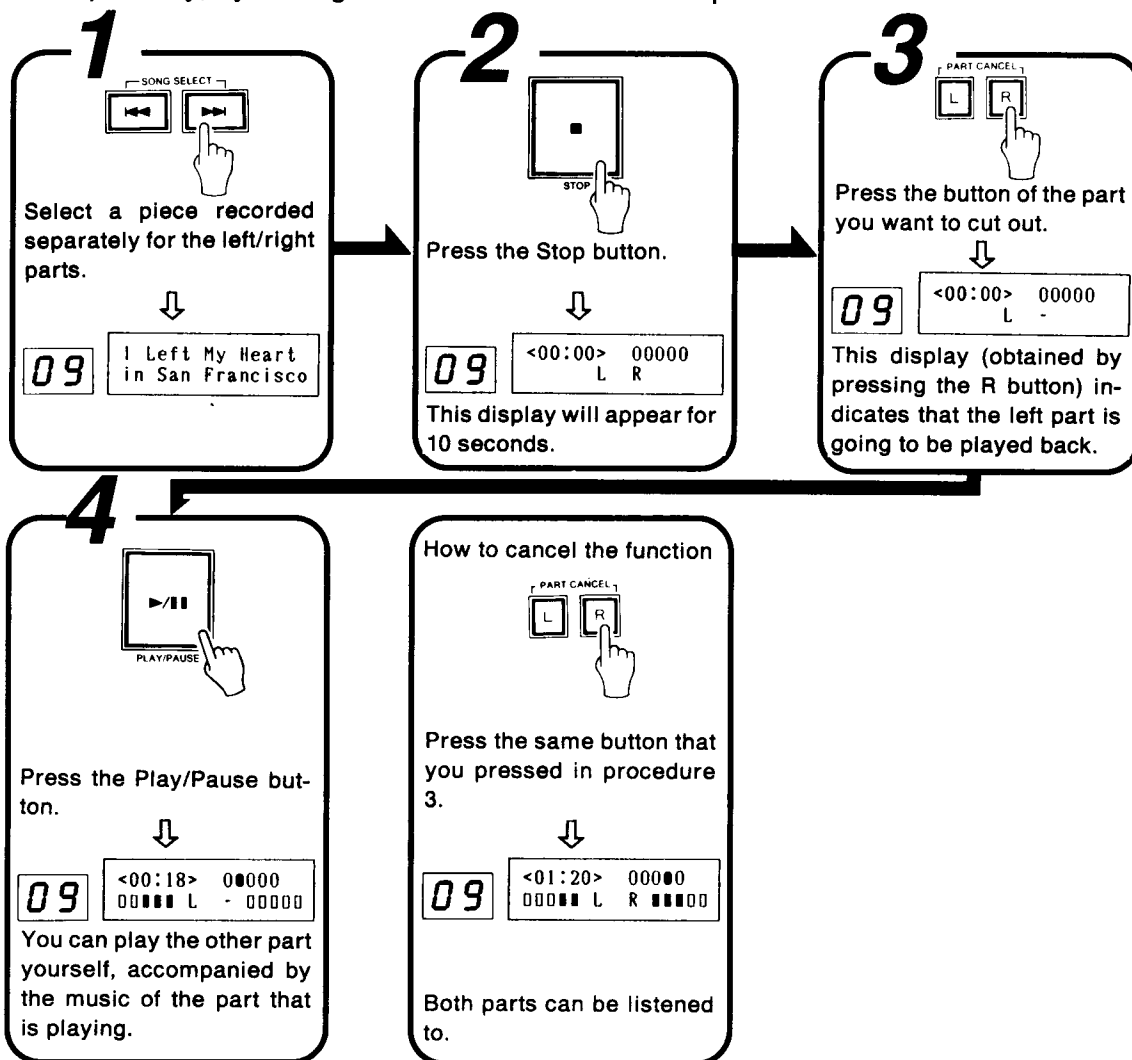


Ⓕ **How to cancel A-B repeat**



● **Part Cancel Function (Playing back music separately for the left/right part)**

Part cancel function enables any piece recorded separately for the left/right parts to be played back separately, by cutting out the sound of the other part.



* Using this function together with connected MIDI keyboards or MIDI tone generators allows even more sophisticated applications. See page 44 for MIDI applications.


● **Playing Back Ensemble Music**

When playing back ensemble pieces that have been recorded with a MIDI recorder such as the YAMAHA QX3, you can choose which part you want played back by the Disklavier. For the procedure, see the MIDI section, page 46.

● **Program button**

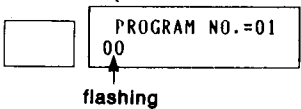
Programming a sequence of up to 30 pieces on the disk to be played back.

1

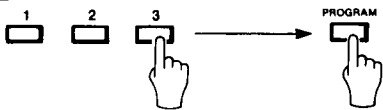


Press the Program button on the remote control unit.

↓



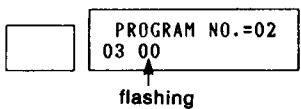
2



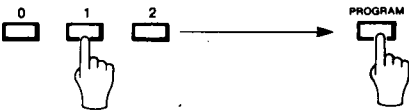
Use the number keypad to input the number of the piece you want to play back first, and then press the program button again.

e.g.

↓

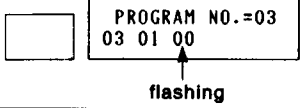


3




Input the number of the piece you want to play back next, and then press the program button. Continue this procedure until all the numbers of the pieces you want to play back have been input.

↓




4




Press the Play/Pause button to start playback in the programmed order.

↓



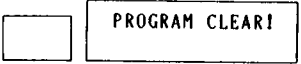
● **Cancel button**

Cancelling the programmed sequence of the pieces



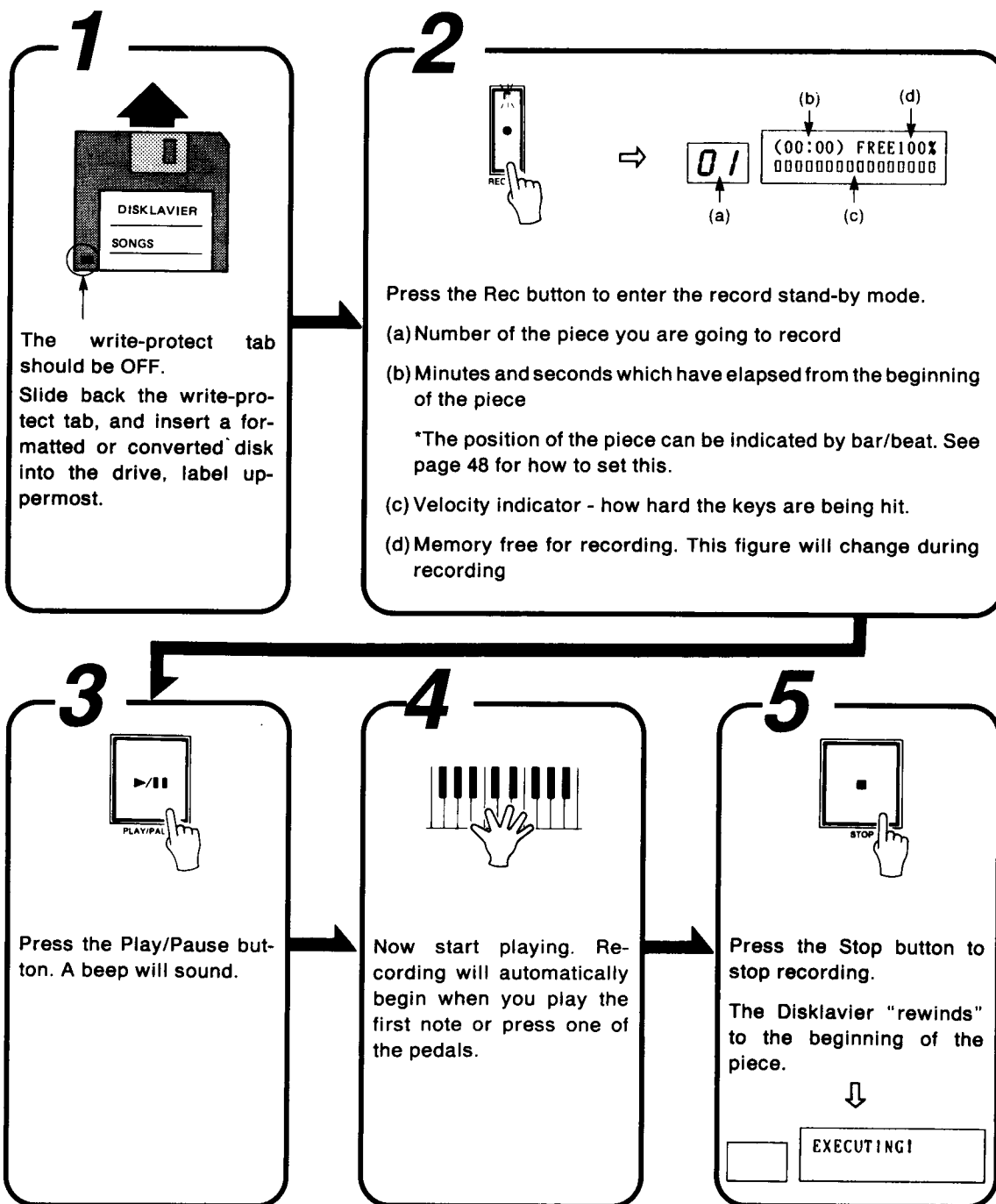
Press the Stop button and then Cancel button to cancel the programmed sequence.

↓

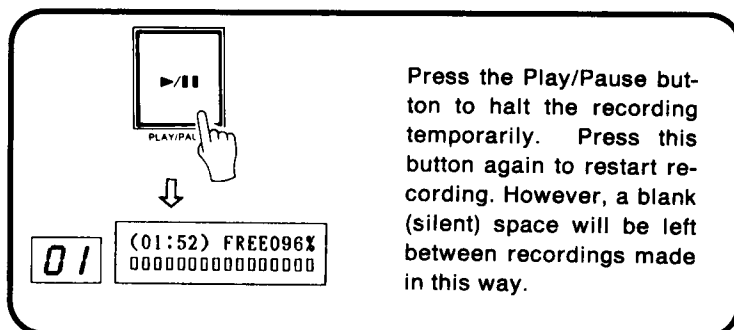


*The programmed sequence will also be cancelled when the disk is removed or the power is turned off.

Recording (Basic Recording Procedure)



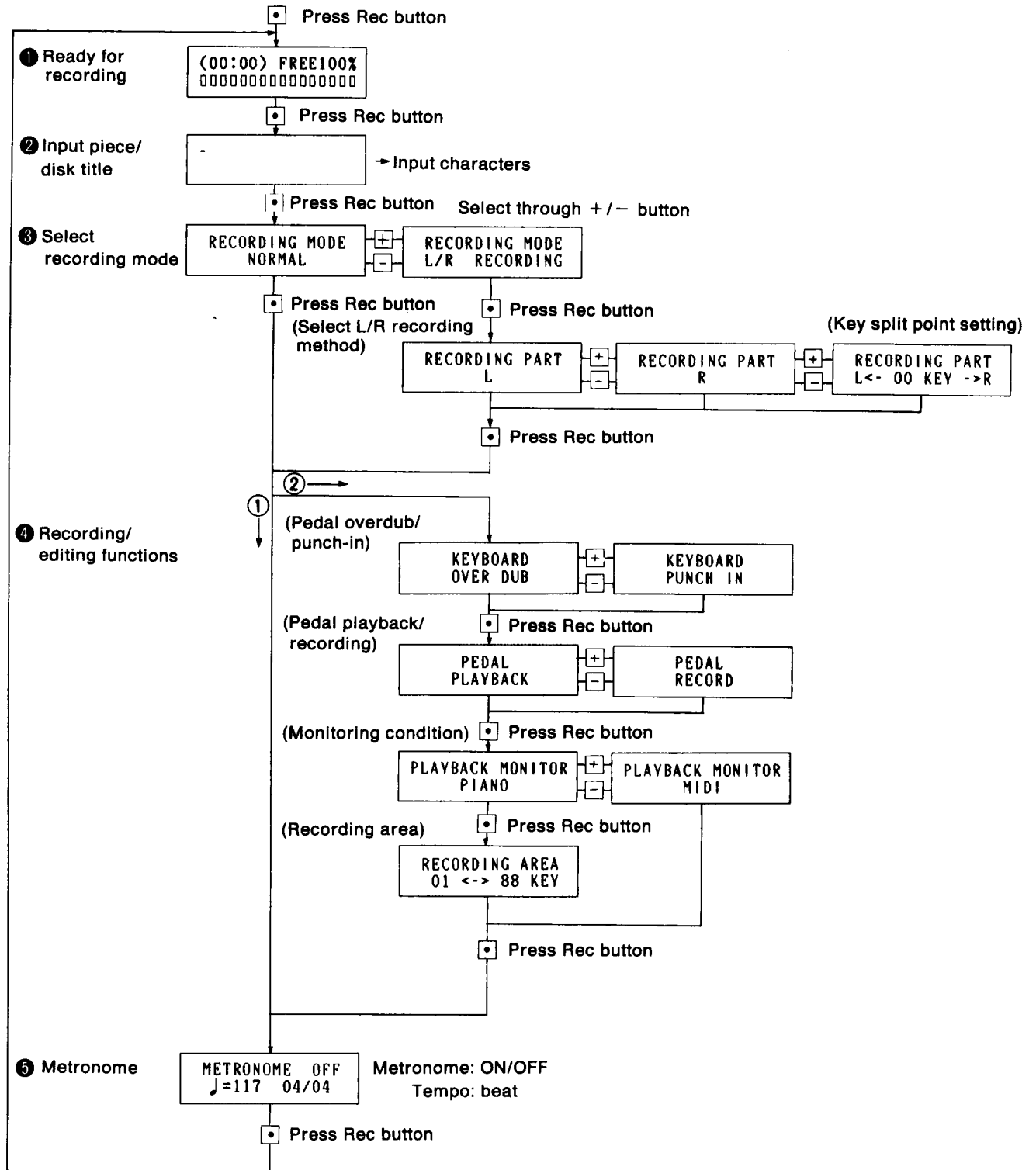
● How to stop the recording temporarily



CAUTION!

Do not remove the disk or turn off the power during recording. Doing so will cause you to lose the music you have just recorded.

● Outline of the various recording functions



① First recording

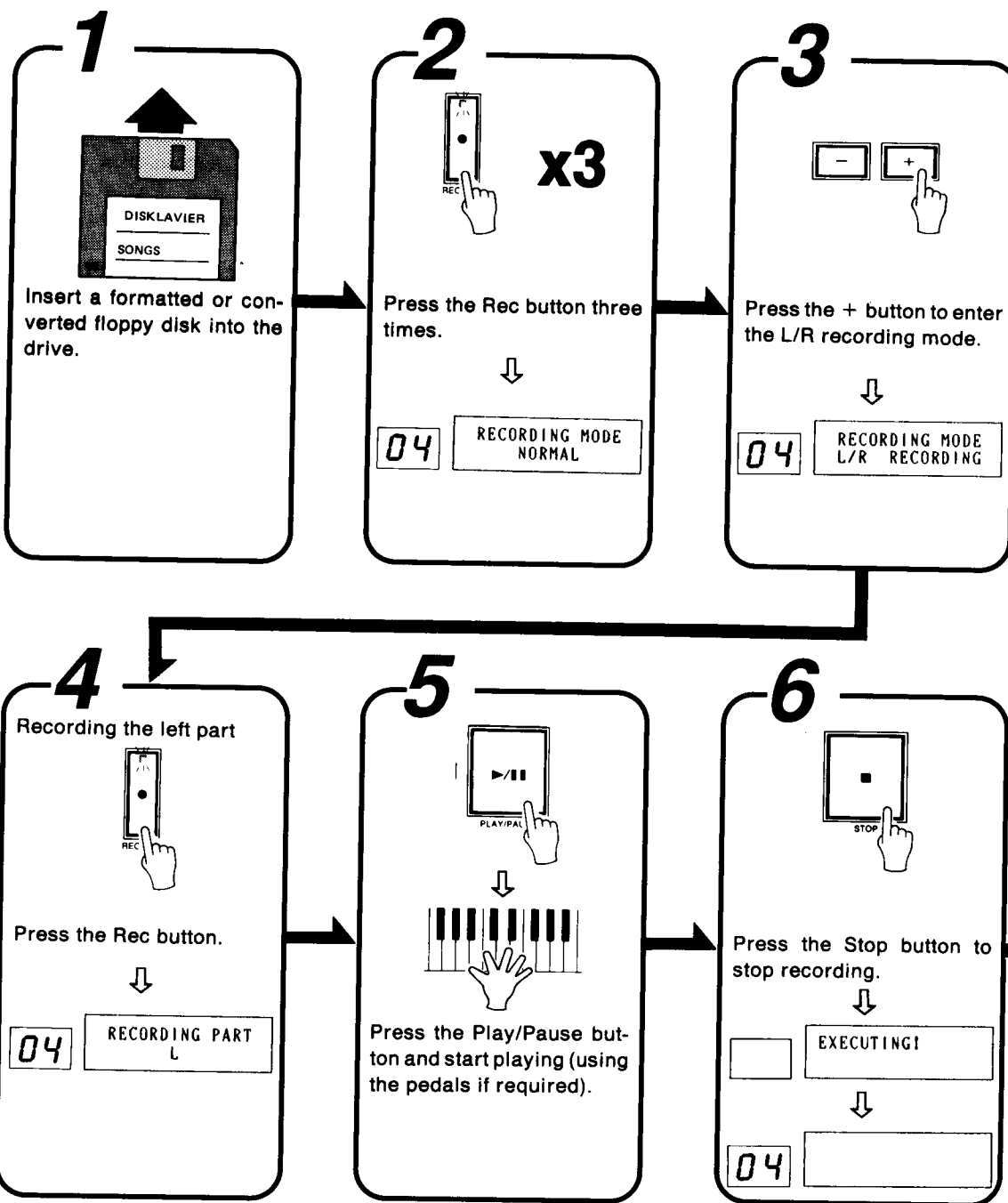
② After first recording (during editing)

Press the Play/Pause button after the conditions are set, and the recording will be started.


Recording (Left and Right-hand Recording)

● Recording Music Separately for the Left and Right Hand Parts

When using this facility, you can record music separately for the left and right parts. If music was recorded in this way, you can listen to either part during playback. (See page 17 for details on Part Cancel Function.) You may want to use this facility to practice or record difficult pieces; accompanying yourself automatically with one hand while playing the other.



7
Recording the right part

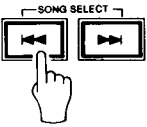


Press the Rec button.

↓

05 (00:00) FREE092%
0000000000000000

8




Press the Song Select button to select the piece of which you have just recorded the left part.

↓

04 (00:00) FREE092%
0000000000000000

9



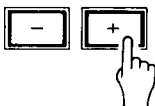
x3

Press the Rec button three times.

↓

04 RECORDING PART
L

10

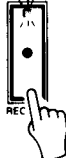


Press the + button to choose the right part.

↓

04 RECORDING PART
R

11




Press the Rec button, and make sure the following display is shown.

↓

04 KEYBOARD
OVER DUB

If not, press the - button to change to the display above.

12



Press the Rec button again, and make sure the following display is shown.

↓

04 PEDAL
PLAYBACK

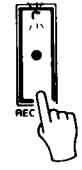
If you want to record pedals along with the right part, press the + button to show the following display. (See Note)

↓

04 PEDAL
RECORD

Note: You can record the pedals only with the left part or right part. If you record the pedals with the right part after recording them with the left part, only the pedals recorded with the right part will remain.

13



Press the Rec button, and make sure the following display is shown.

↓

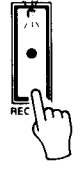
04 PLAYBACK MONITOR PIANO

If you want to monitor the L part using another MIDI device, press the + button to change to the following display.

↓

04 PLAYBACK MONITOR MIDI

14



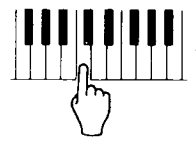
Press the Rec button.

↓

04 RECORDING AREA 01 <-> 88 KEY

↑ flashing

15



Press the lowest key of the range to be recorded. (See Note)

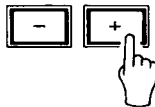
↓

e.g.

04 RECORDING AREA 40 <-> 88 KEY

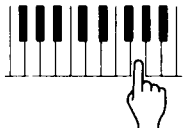
↑ flashing

16



Press the + button, and then press the highest key of the range to be recorded.

↓




e.g.

↓

04 RECORDING AREA 40 <-> 83 KEY


↑ flashing

17

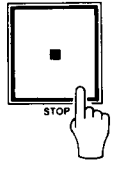


Press the Play/Pause button and start playing.

↓



18



Press the Stop button to stop recording.

↓

EXECUTING!

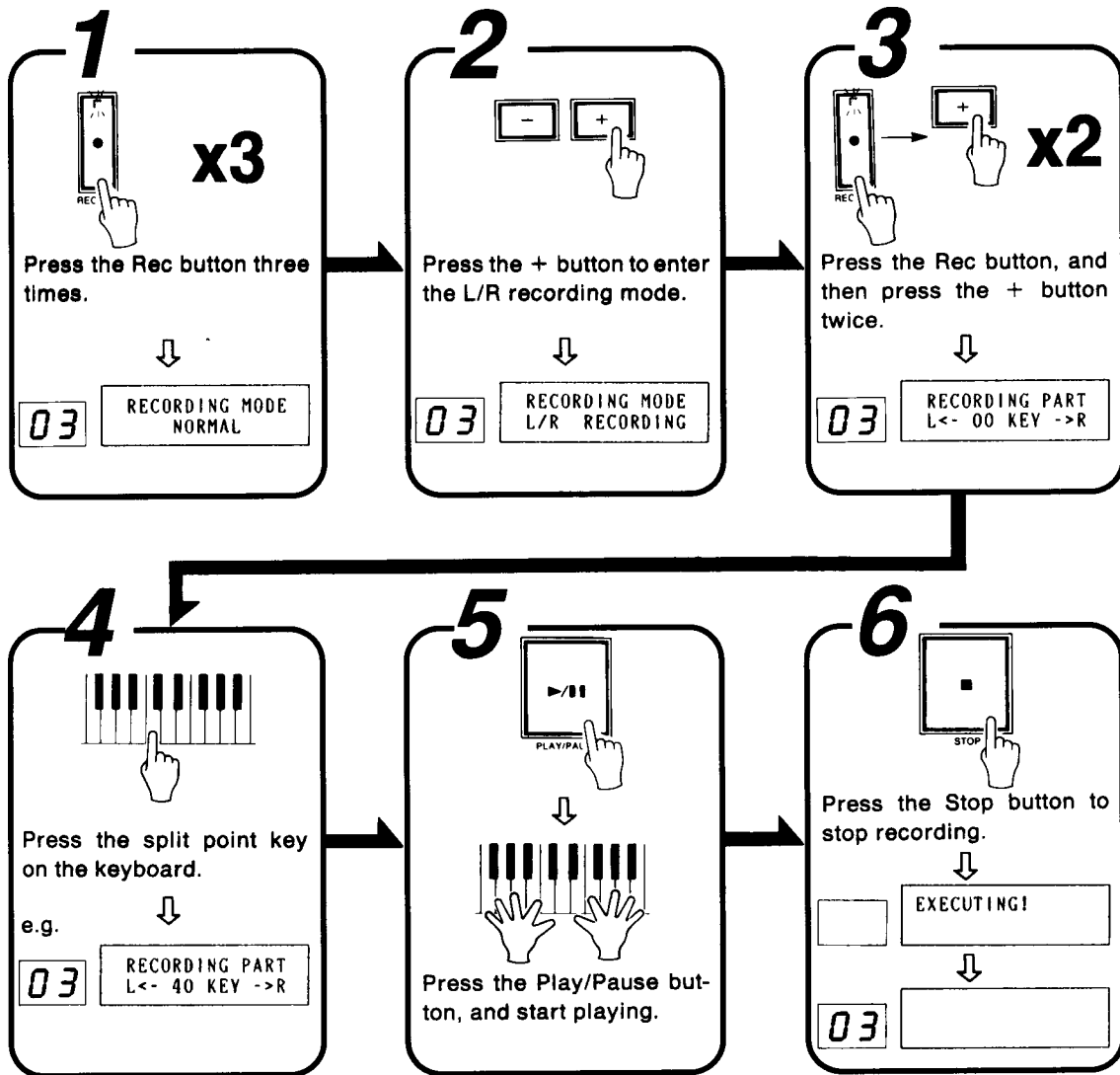
↓

04 (00:00) 00000
L R

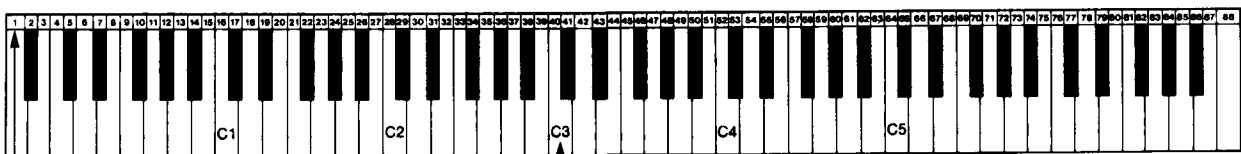
Note: Setting the recording area means that you can monitor the part which has already been recorded using the keys outside this range.

● Recording in the split mode

In the split mode, all the notes above the split point will be recorded as the right part, and vice versa. Any piece recorded in this mode can be replayed or edited in L/R mode.



- Notes:**
- Split key number indicates the uppermost key for the left hand.
 - You can use the L/R buttons on the panel or the number keypad on the remote control unit when inputting the recording area or the split point, instead of pressing the keys. Refer to the illustration below for the key numbers corresponding to the keys.



Key number

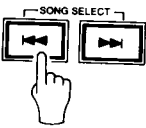
Middle C

Recording (Overdub/Punch-in)

● Overdub Recording

Adding a new layer onto the piece previously recorded.

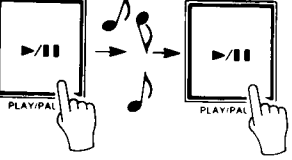
1



Press the Song Select buttons to select a piece you want to overdub.

01 (Song Title)

2




Press the Play/Pause button to play back the piece. Press the Play/Pause button again a little before the point at which you want to start overdubbing.

01 (00:16) 00000
0000000000000000

If the piece has been recorded in normal mode

3a



Press the Rec button three times, and make sure the following display is shown.

01 KEYBOARD OVER DUB


If "PUNCH-IN" is shown, press the — button to change into the overdub display.

If the piece has been recorded in L/R recording mode

Using the metronome function (Refer to page 31 for the operation of the metronome.) You can use the metronome function when overdubbing.

1. In Step 2, play back the piece until the point at which you want to start overdubbing is reached. Follow Steps 3-7.
2. After Step 7, press the Rec button, and press the R button to turn the metronome ON. The metronome will start sounding.
3. Press the Play/Pause button, and the display starts counting in, starting from -2.
4. Start playing when the count reaches (00:00).

3b-1




Press the Rec button three times.

01 RECORDING PART L

* If you want to overdub the right part, press the + button.

3b-2

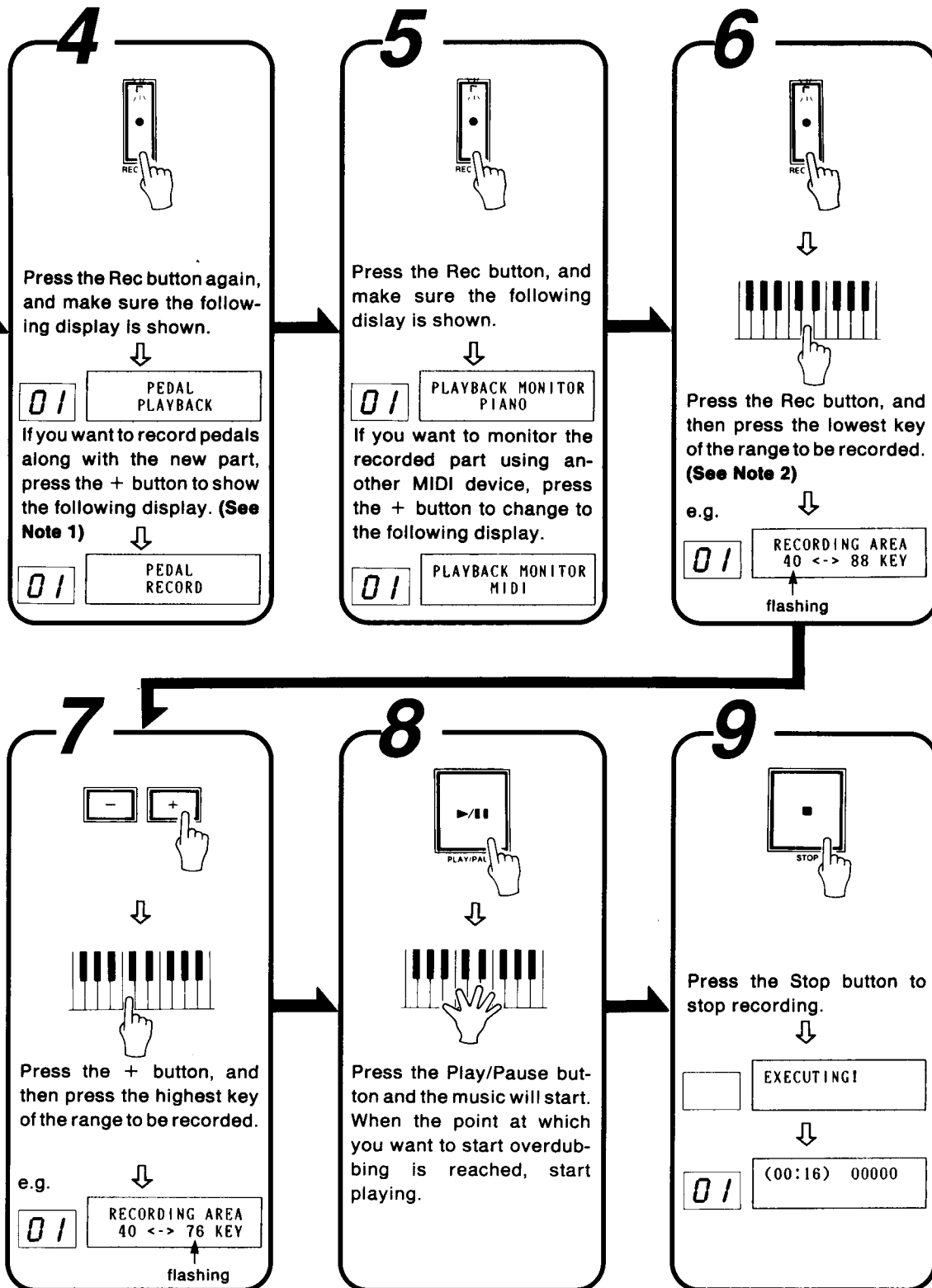


Press the Rec button, and make sure the following display is shown.

01 KEYBOARD OVER DUB

If "PUNCH-IN" is shown, press the — button to change into the overdub display.

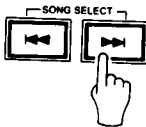
- Notes:**
1. The pedals are not overdubbed. That is, if you rerecord the pedals, the previously recorded pedals will be deleted.
 2. Setting the recording area means that you can monitor the part which has already been recorded, using the keys outside this range.



● Punch-in Recording

Replacing part of the piece previously recorded.

1

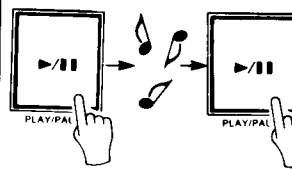


Press the Song Select button to select the piece you want to punch-in.

↓

02 (Song Title)

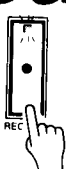
2



Press the Play/Pause button to play back the piece. Press the Play/Pause button again when the point where you want to start the punch-in is reached.

If the piece has been recorded in normal mode

3a



x3

Press the Rec button three times.


↓

02 KEYBOARD OVER DUB

* If the display shows "PUNCH-IN", skip the next step.

If the piece has been recorded in L/R recording mode

3b-1



x3

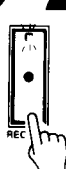
Press the Rec button three times.

↓

02 RECORDING PART L

* If you want to punch-in the right part, press the + button.

3b-2



Press the Rec button.

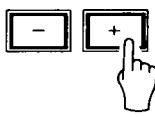
↓

02 KEYBOARD OVER DUB

* If the display shows "PUNCH-IN", skip the next step.

Note

4

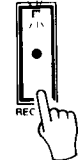


Press the + button to enter the punch-in mode.

↓

02 KEYBOARD PUNCH IN

5



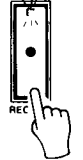
Press the Rec button, and make sure that the following display is shown. (Note 1)

↓

02 PEDAL RECORD

* If the display shows "PEDAL PLAYBACK", press the + button to change to the "PEDAL RECORD" display.

6



Press the Rec button, and make sure the following display is shown.

↓

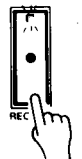
02 PLAYBACK MONITOR PIANO

If you want to monitor the recorded part using another MIDI device, press the + button to change to the following display.

↓

02 PLAYBACK MONITOR MIDI

7




Press the Rec button.

↓

02 RECORDING AREA 01 <-> 88 KEY

flashing

8



Press the lowest key of the range to be punched in. (Note 2)

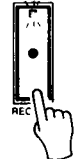
e.g.

↓


02 RECORDING AREA 40 <-> 88 KEY

flashing

9



+



Press the + button, and then press the highest key of the range to be punched in.

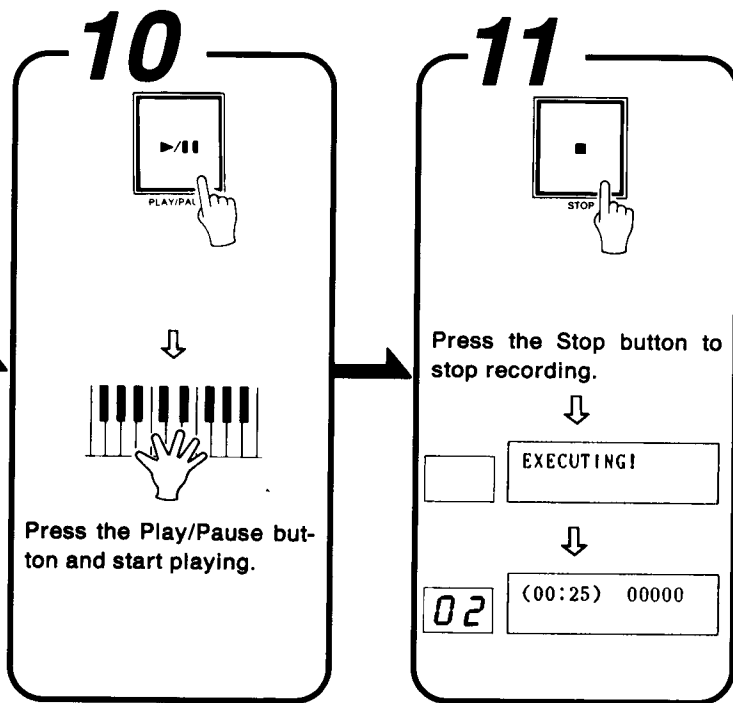
e.g.

↓

02 RECORDING AREA 40 <-> 76 KEY

flashing

- Notes:**
1. Be sure to record the pedals, if applicable, since the previous pedal recording will be deleted.
 2. Setting the recording area means that you can monitor the other part using the keys outside this range, when punching in the piece using L/R recording.



● If there is not enough space before the punch-in point

If there is not enough space before the punch-in point, it may be very difficult to start playing at the same time that the Play/Pause button is pressed. In this case, punch-in a blank (silent) space, and then overdub the part.

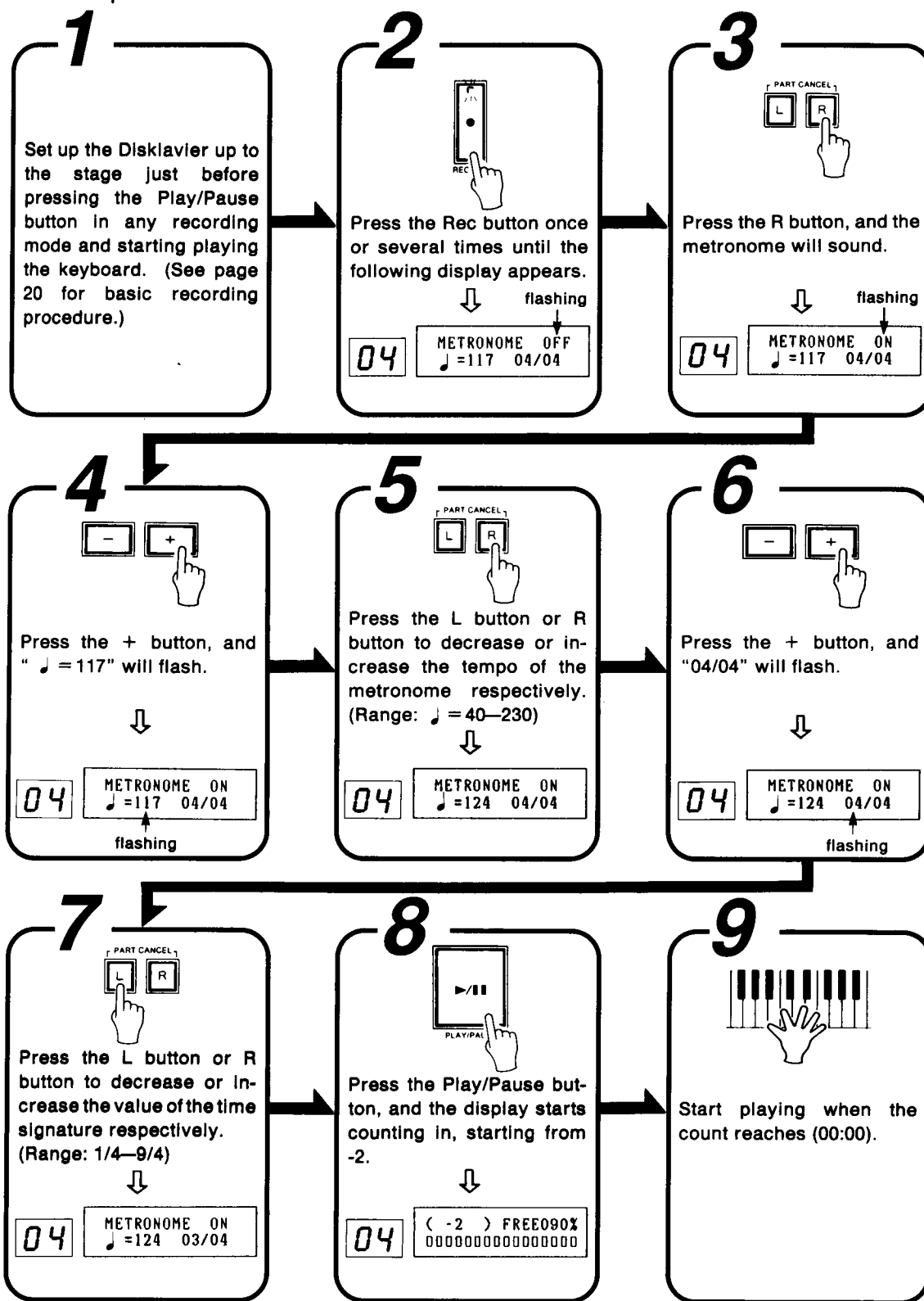
1. Follow the punch-in procedures 1-6 described on the previous page.
2. Input "01←→01KEY" or "88←→88KEY" as a recording area.
3. Press the Play/Pause button, but do not play the keyboard.
4. Press the Stop button to punch-out. Now a silent space has been created between the punch-in and punch-out points.
5. Follow the overdub procedures 2-10.

● Recording Ensemble Music

When recording ensemble pieces, use MIDI recorders such as the YAMAHA QX3. See the MIDI section, page 45.

Recording with the Metronome

You can record a piece or part of piece, accompanied by the metronome sound in any mode. Follow the procedure below.

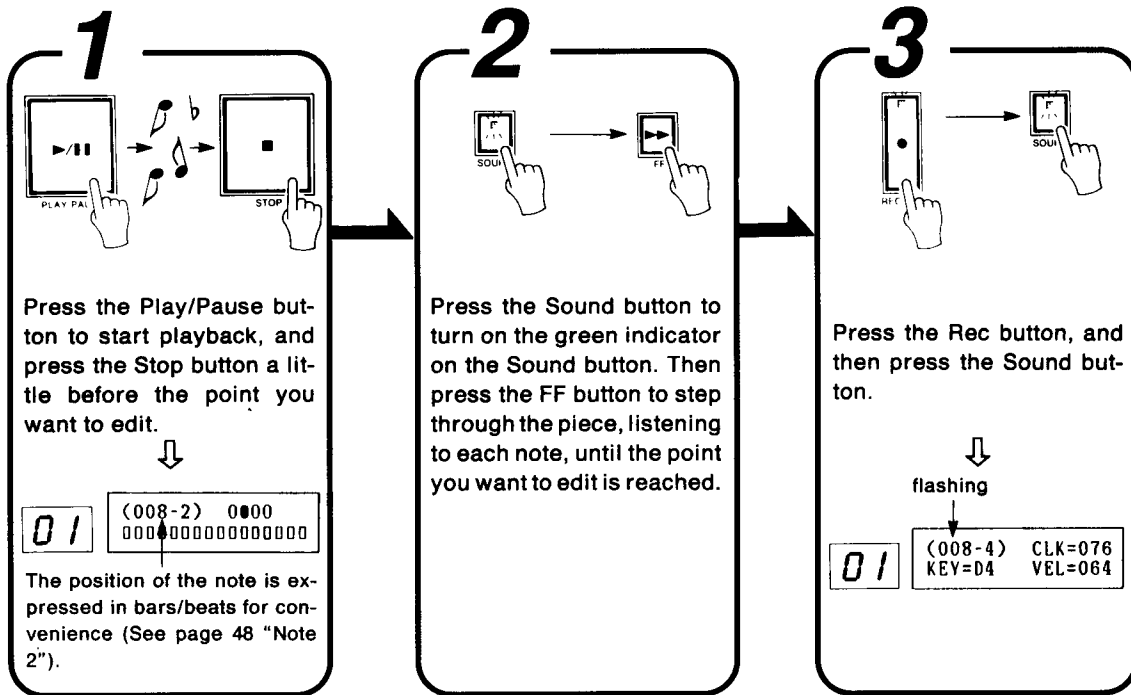


* The time signature may be any of the following: 1/4 through 9/4. There will be a 2-bar count-in to give you the tempo.

Edit Functions

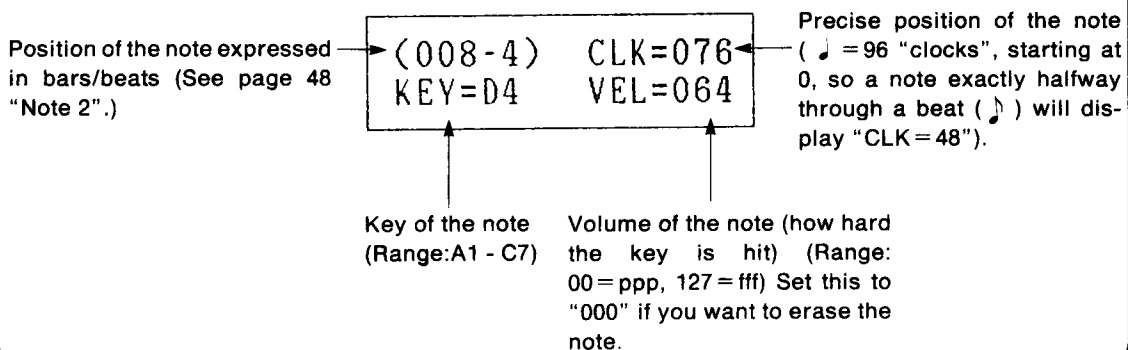
● Editing individual notes

You can edit the piece note by note.

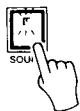


4a Data that can be modified

- * Pressing the +/- buttons will move the flashing figures forward and backward.
- * You can input new data for a flashing figure using the L/R buttons, and keys for the notes.
- * If you want to edit further notes, press the FF button to reach the note to be edited.



4b

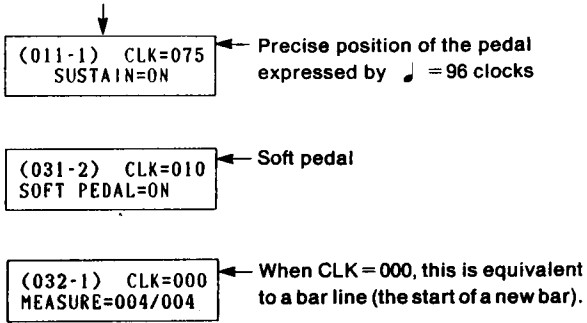


To save edits to individual notes, press the SOUND button. A beep tone indicates the changes have been recorded.

4c

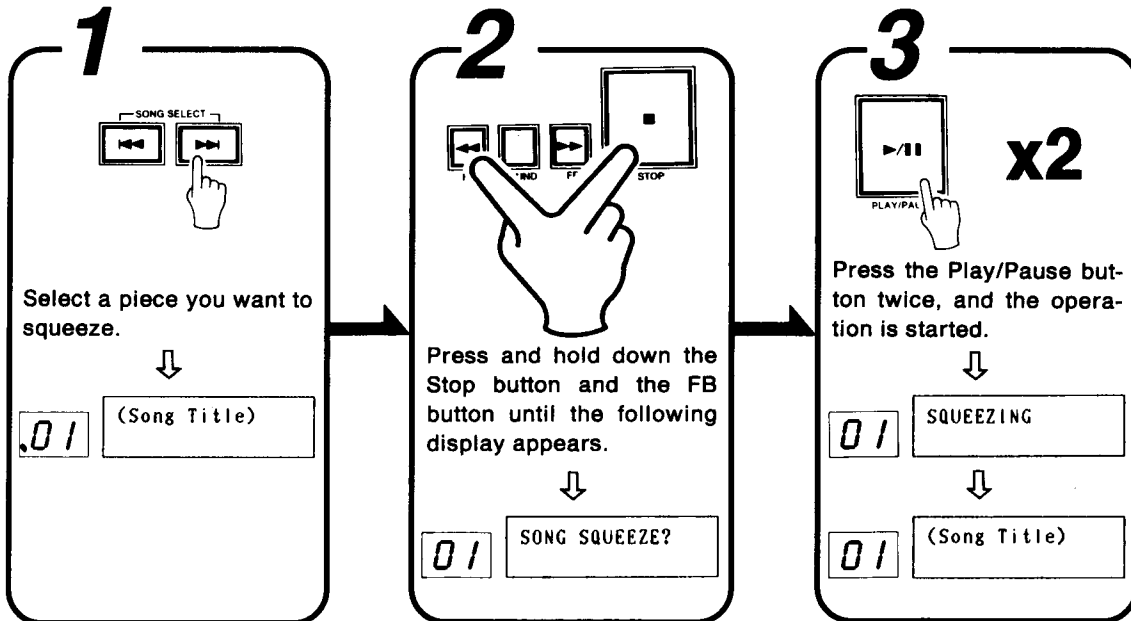
Data that cannot be modified

* If the pedals have been recorded, the following displays appear when you continue to press the FF button after Step 3. Position of the pedal expressed in bars/beats
(Can also be expressed in minutes/seconds. See page 48 "Note 2".)

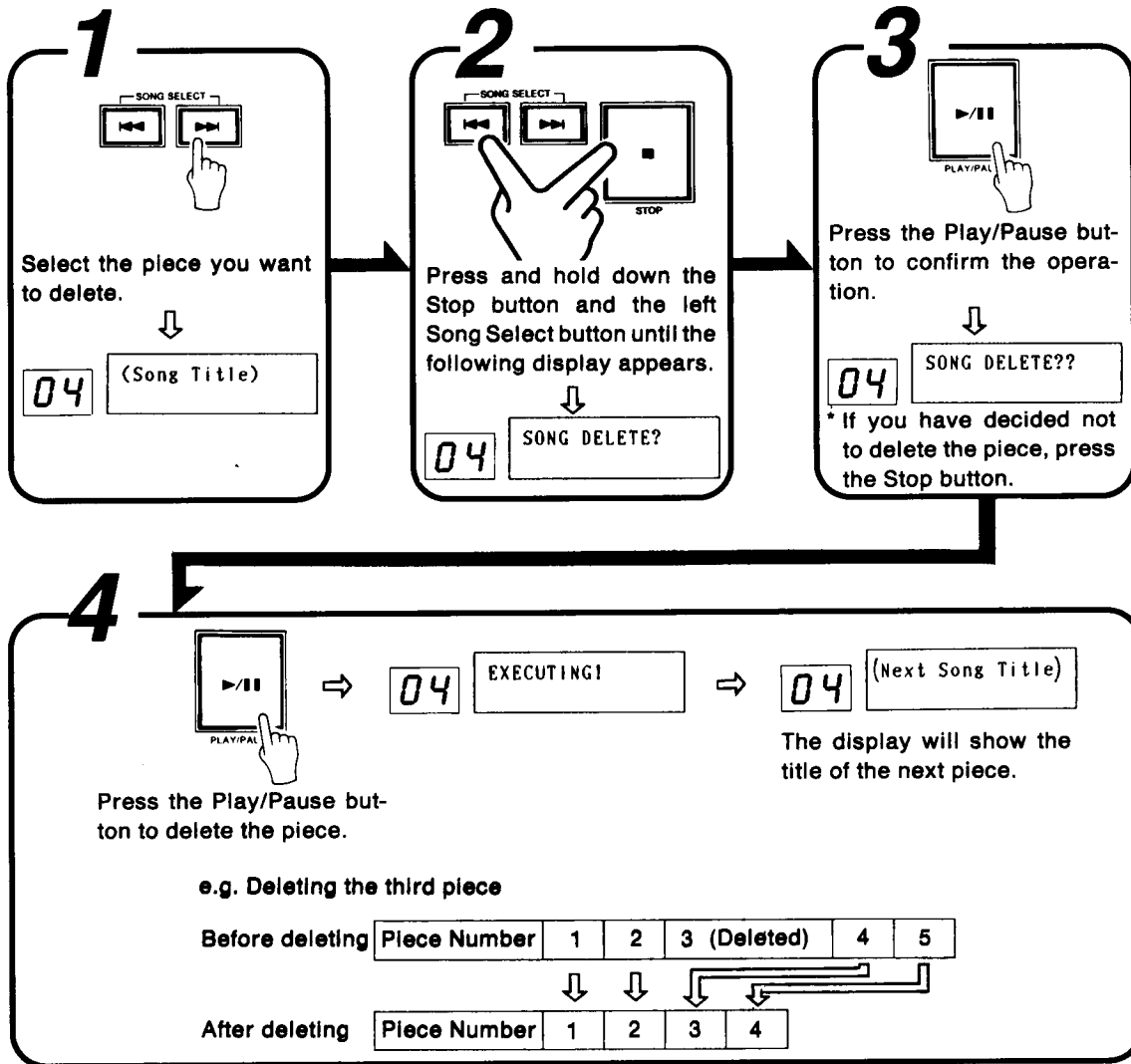


● Squeezing a piece

Overdubbing and punching-in can leave extra unwanted data on a disk. "Squeezing" a piece can get rid of this unwanted data.



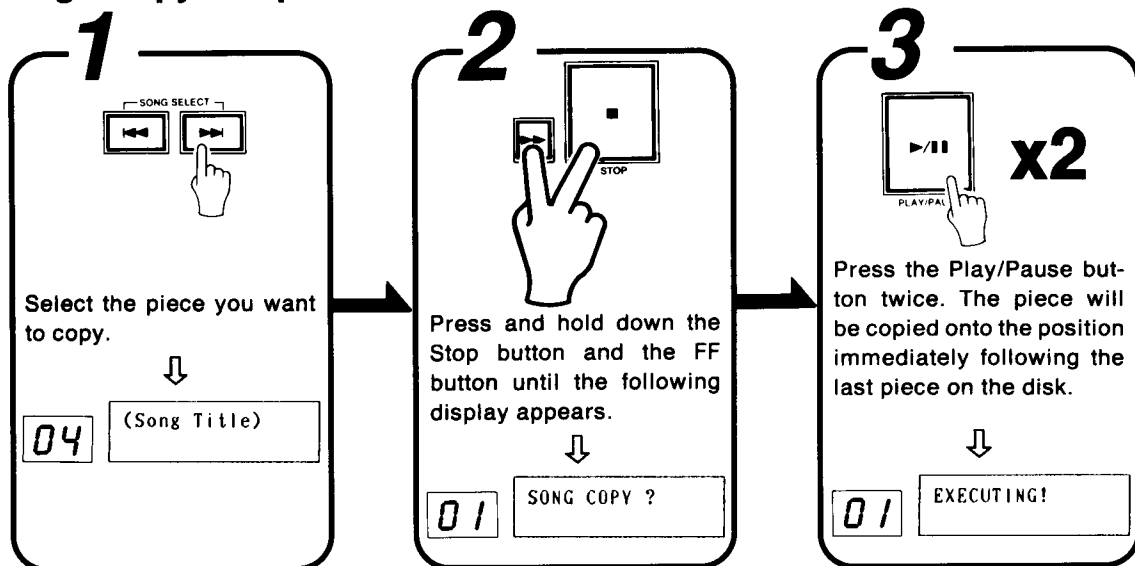
● **Deleting a piece of music**



● **Deleting all the pieces on the disk**

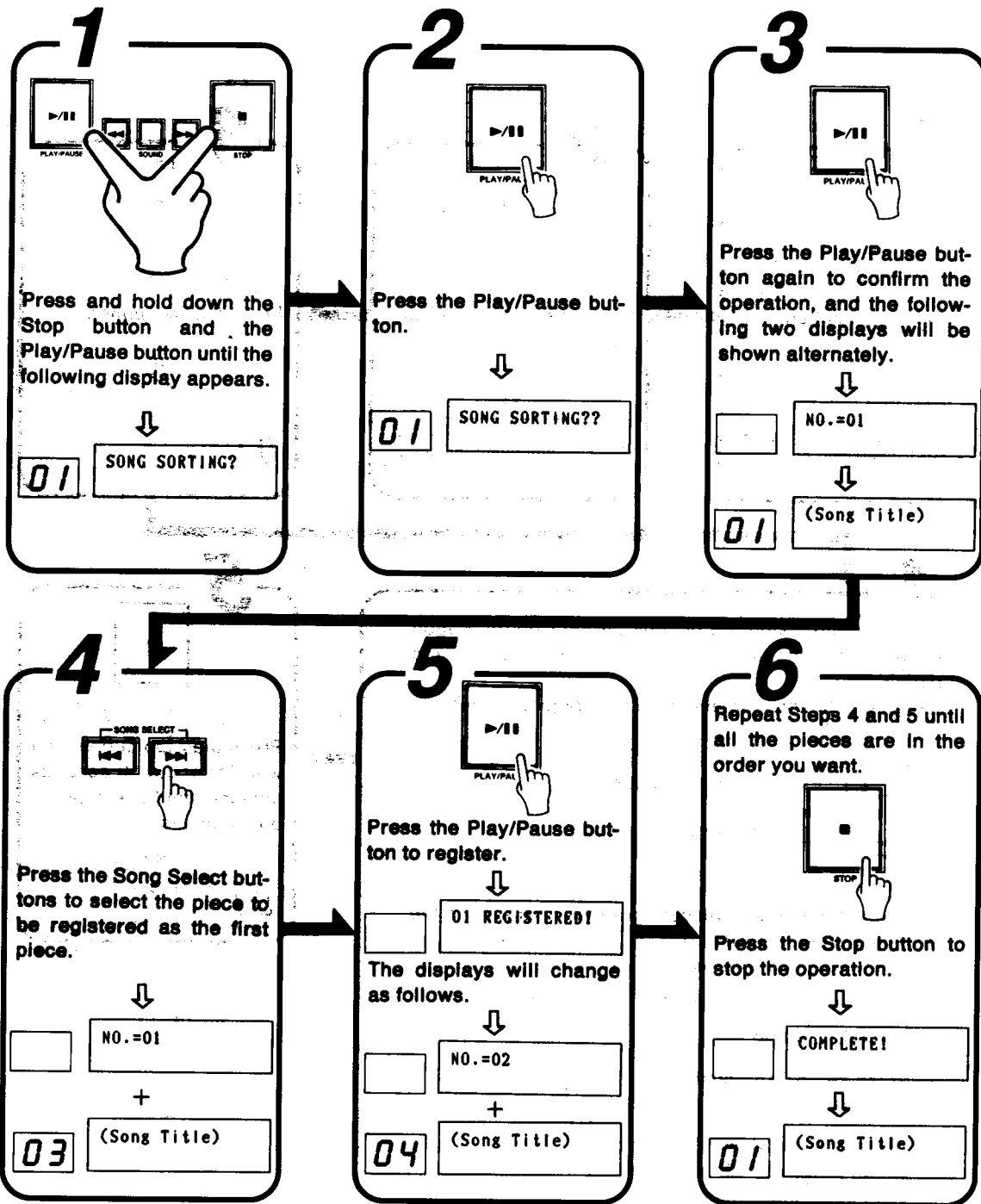
Reformatting the disk will delete all the pieces on the disk. See page 11 for formatting the disk.

● **Making a copy of a piece**



● Changing the order of pieces on a disk (Registration)

Since this operation involves changing the information on a disk, make sure that the disk is not write-protected.

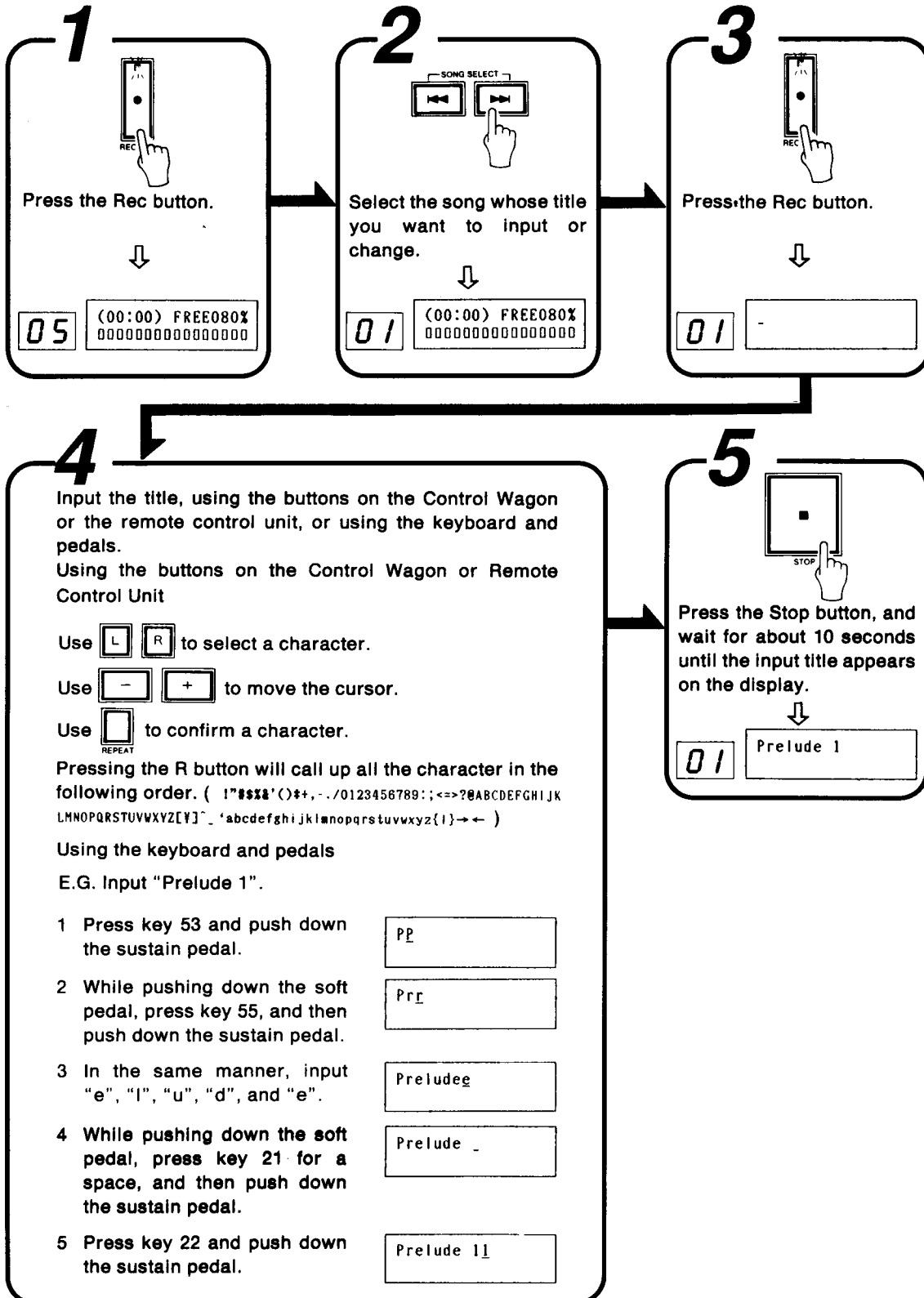


Example: If you want to put the third piece at the beginning of the order, you only have to move the third piece to position No.1. The rest of the pieces will be moved automatically.

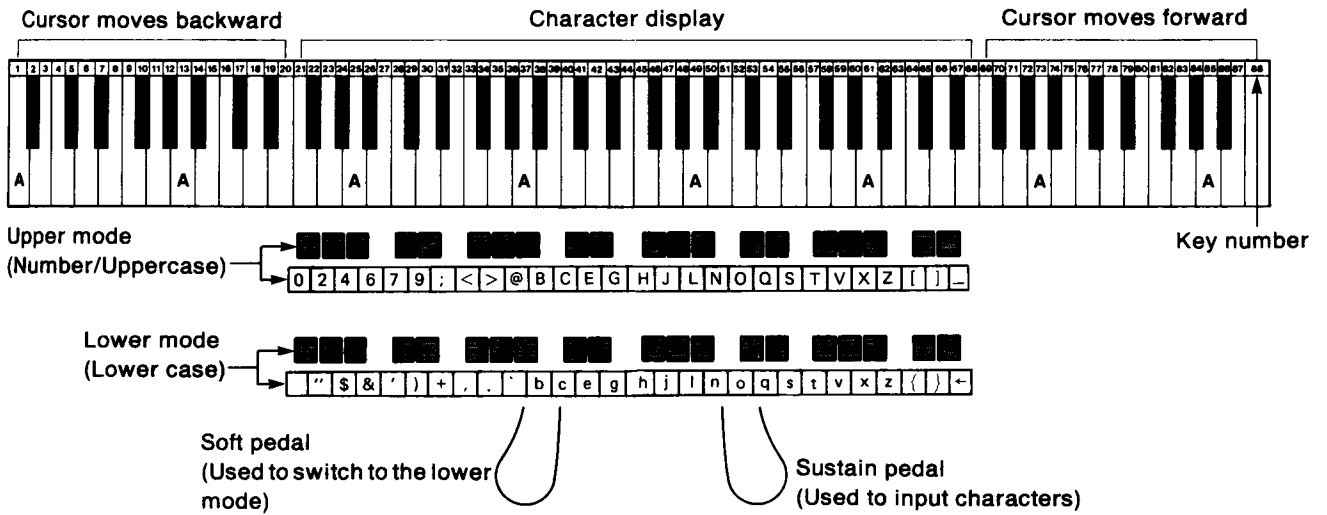
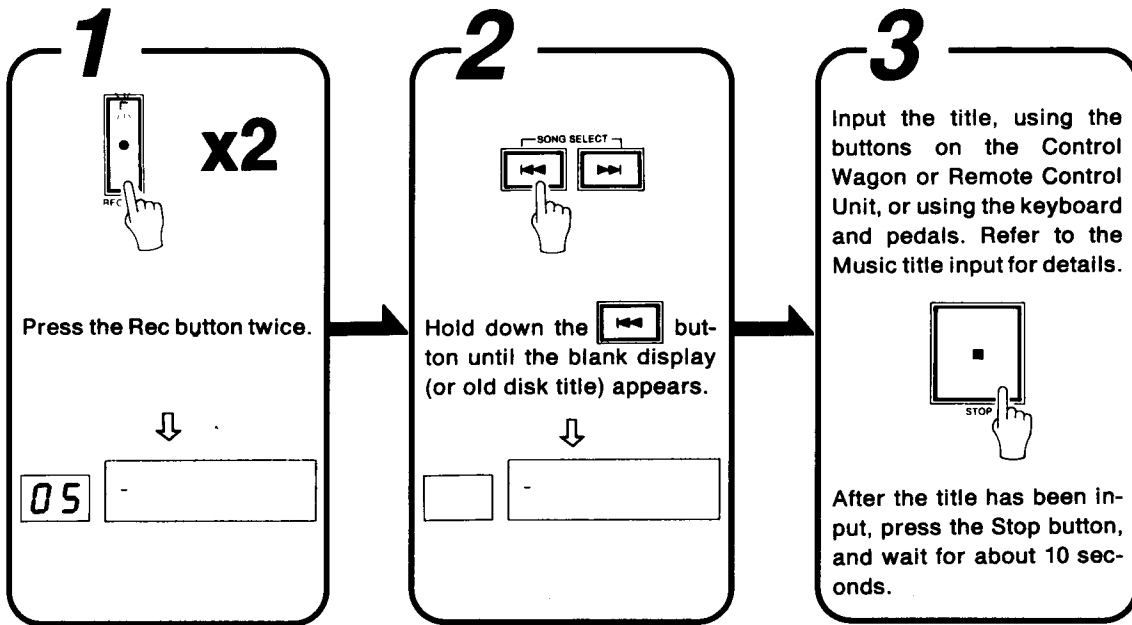
● Input Music Title/Disk Title

You can input/change the title of a piece of music or an entire floppy disk, using up to 32 symbols, through the buttons on the Control Wagon, or Remote Control Unit, or through the keyboard and pedals.

● Music Title



● Disk Title



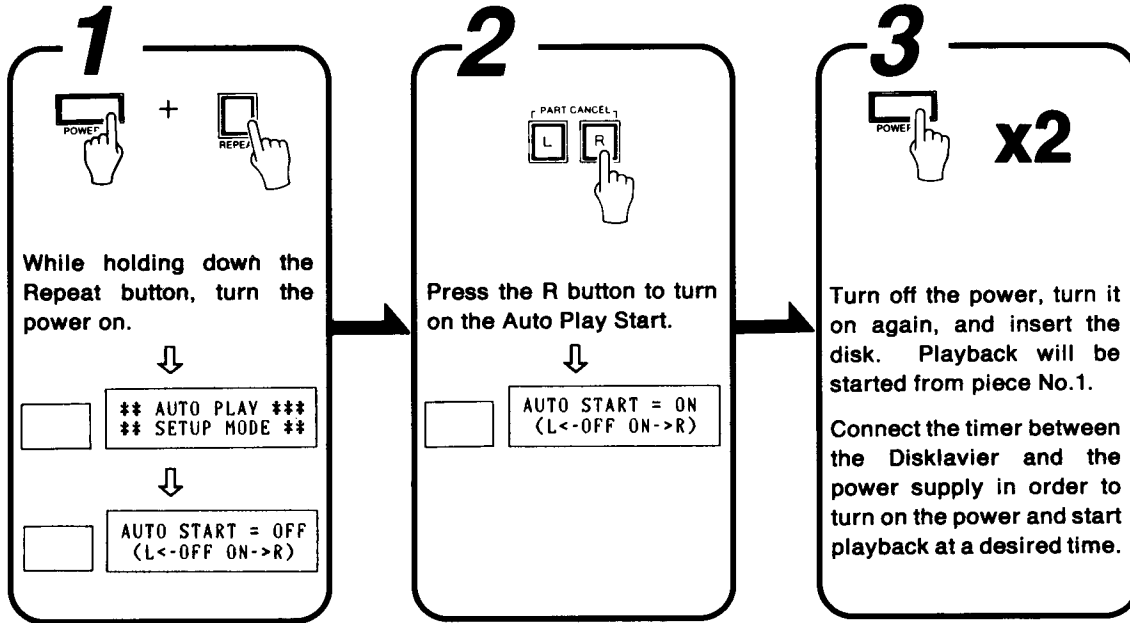
Auto Play Setup

This function is very useful when you want to play back pieces automatically or in a programmed sequence at programmed times. Use a timer when you want the music to start automatically on a desired time.

Note: The Remote Control Unit does not work when setting in this mode.

● Auto Play Start

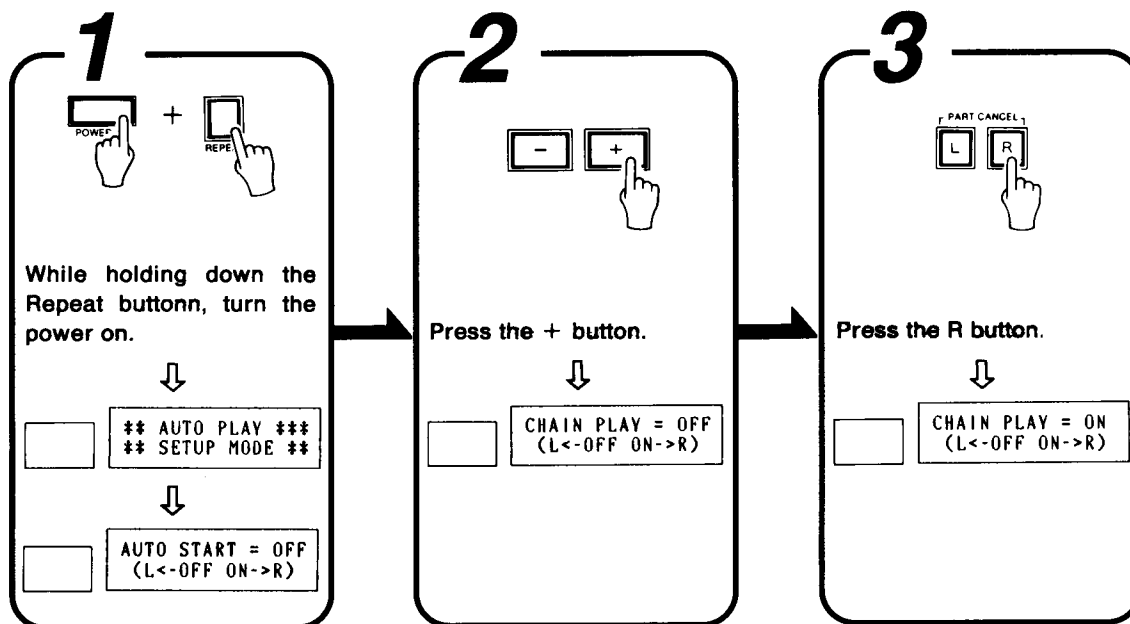
In this setting, as soon as the disk is inserted, playback will start.



Note: To set Auto Play off, with a disk that has been set Auto Play, press the L button in Step 2.

● Chain Play

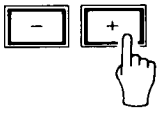
In this setting, pieces will be played back in the programmed sequence with programmed repetition.



Note: Up to 30 separate pieces can be programmed in one chain.


hed
ally

4

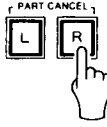


Press the + button twice.

↓



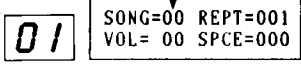
5



Press the R button.

↓

flashing



6

Press the +/- buttons to select the parameter to be changed, and press the L/R buttons to set the value.

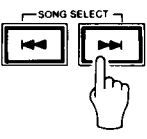
	Piece No.3 will be played back first.	Piece No.3 will be played back twice.
	↓	↓
	SONG=03 REPT=002	SONG=03 REPT=002
	VOL= 00 SPCE=005	VOL= 00 SPCE=005

Number in the chain The level can be changed within the range of -10+2. Interval in minutes between the beginning of the piece and that of the next piece. (Range: 000-300, STOP)

Note:

- * If the piece being played back is shorter than this setting, when this time is reached, the piece will be stopped part of the way through and the next piece will start.
- * Setting this to zero will play back the complete piece, and the next piece in the chain (or its repetition) will be played immediately following.

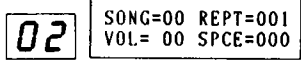
7



Press the Song Select button to change the number in the Chain, and set the parameters according to Step 6.

Repeat Steps 6 and 7 until all the desired chain is set up.

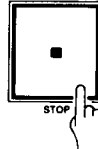
↓



in Step

d re-

8

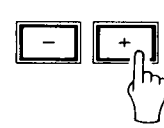


Press the Stop button.

↓

CHAIN PRG EDIT?
(L<-NO YES->R)

9




Press the + button.

↓

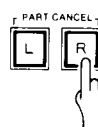
CHAIN PRG SAVE?
(L<-NO YES->R)

10



Insert the disk, with the write-protection tab off.

11



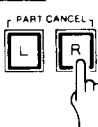
Press the R button to save the chain program.

↓

ARE YOU SURE?
(L<-NO YES->R)

* If you do not want to save the data, press the L button.

12



Press the R button again to proceed with the operation.

↓

EXECUTING!


↓

CHAIN PRG SAVE?
(L<-NO YES->R)

13

Turn off the power, and turn it on again. Chain play will start automatically if the Auto Play Start is on, or press the Play/Pause button to start chain play if the Auto Play Start is off.

↓



03 (00:00) CHAIN01

● Changing the Chain Play

You can change the settings for Chain Play as follows.

1

Turn the power off, and turn on it again while holding down the Repeat button, with the disk inserted.

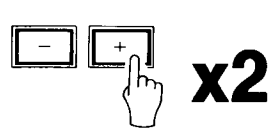
↓

** AUTO PLAY **
** SETUP MODE **

↓

AUTO START = OFF
(L<-OFF ON->R)

2

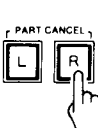


Press the + button twice.

↓

CHAIN PRG LOAD?
(L<-NO YES->R)

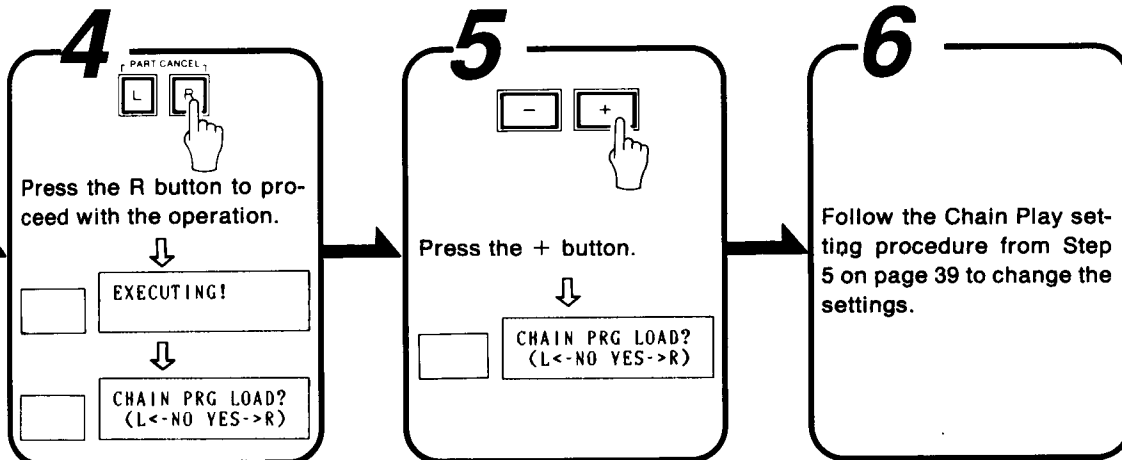
3



Press the R button to load the chain data from the disk.

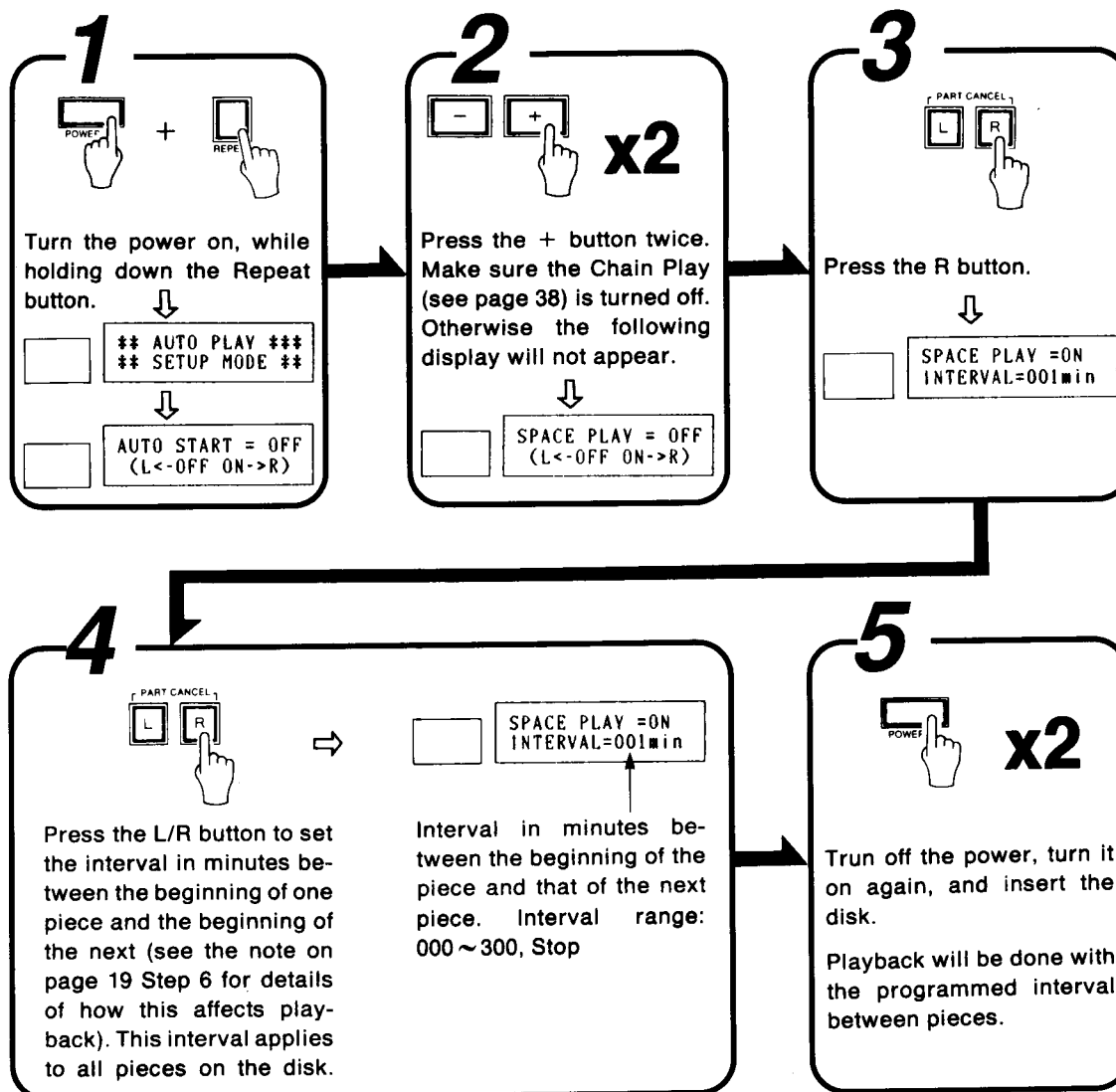
↓

ARE YOU SURE?
(L<-NO YES->R)



● Space Between Pieces

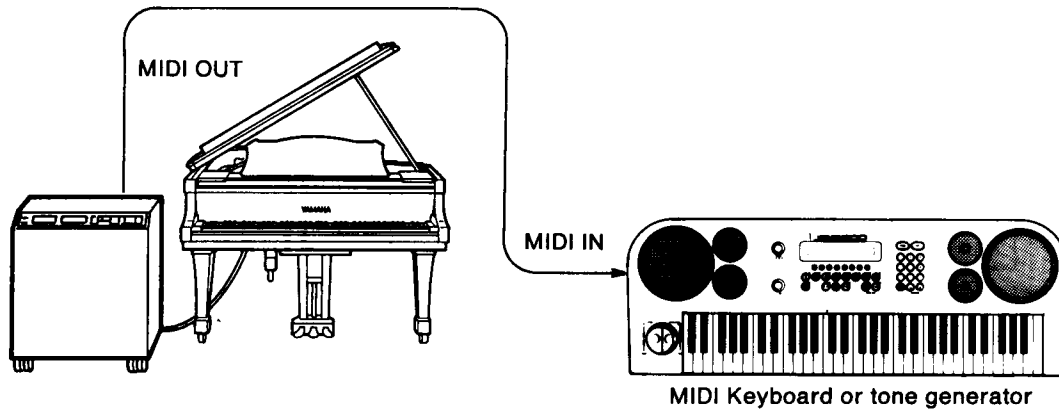
When playing back pieces in the normal way, you can put a space between pieces. This function is not effective when the Chain Play is turned on, as Chain Play has its own spacing function.



MIDI Functions

MIDI functions enable playback of ensemble music, playback with another MIDI keyboard or rhythm machine, etc. Refer to page 48 for details of the MIDI Setup mode.

● Using MIDI OUT



- Ⓐ Playing back a piece on the Disklavier and MIDI instrument at the same time.

Setting on the MIDI instrument

→ Set the MIDI channel of the MIDI instrument to CH 1.

- Ⓑ Playing back music separately on the Disklavier and MIDI instrument for the left/right parts.

Setting on the Disklavier

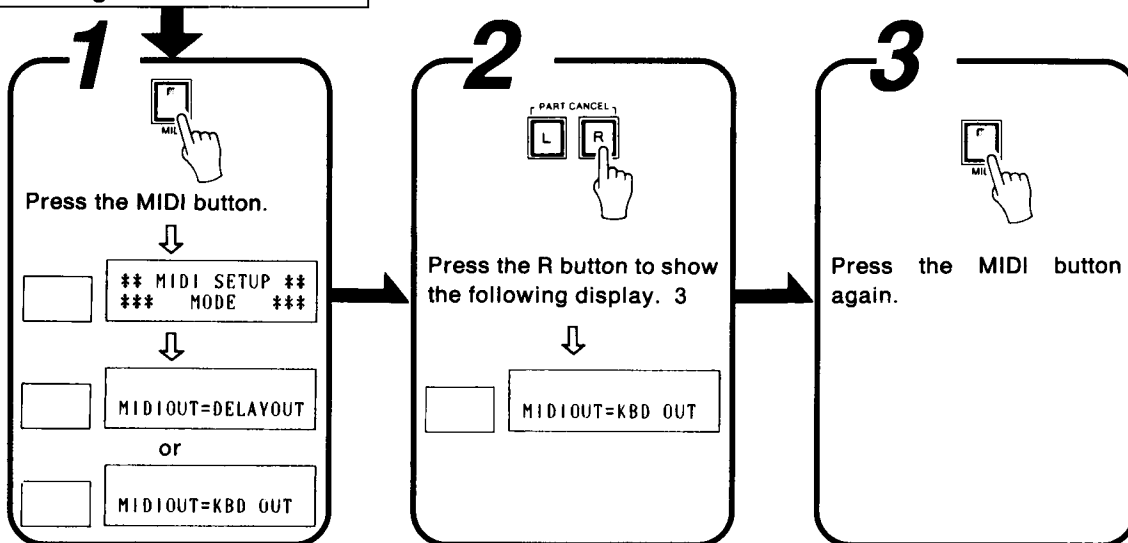
→ Set the Disklavier so that it will play one of the parts (see page 17 for setting).

Setting on the MIDI instrument

→ Set the MIDI channel of the MIDI instrument to CH 1 when the left part is to be played back on this instrument, and to CH 2 when the right part is to be played back.

- Ⓒ Playing the Disklavier, with another MIDI instrument sounding at the same time.

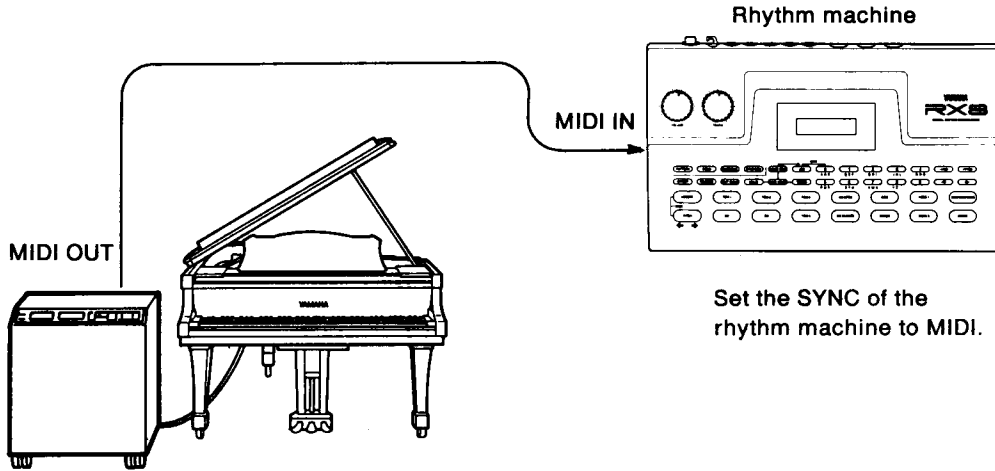
Setting on the Disklavier



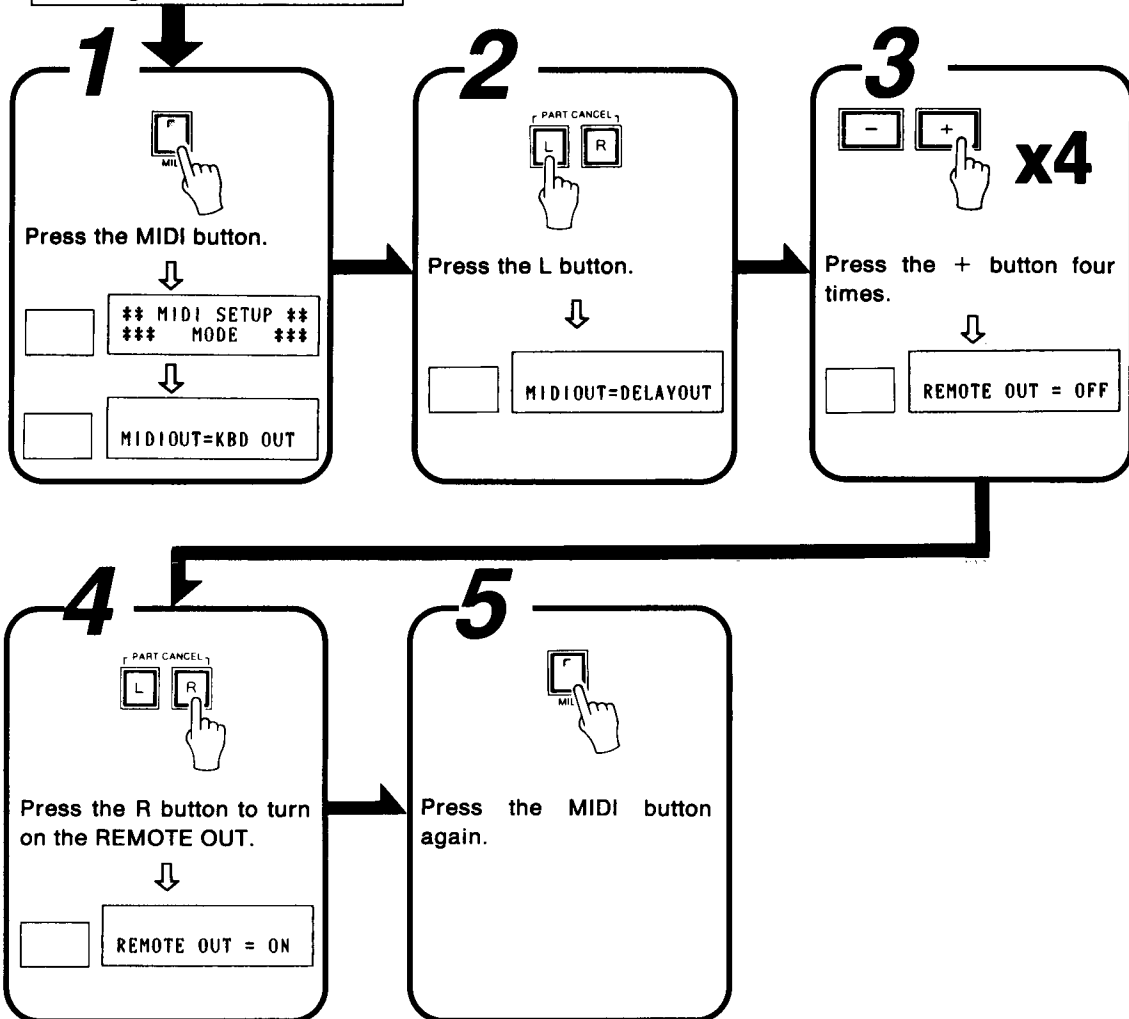
Setting on the MIDI instrument

→ Set the MIDI IN channel of the MIDI instrument to the same number as the MIDI OUT channel of the Disklavier.

④ Playback synchronized to a rhythm machine



Setting on the Disklavier

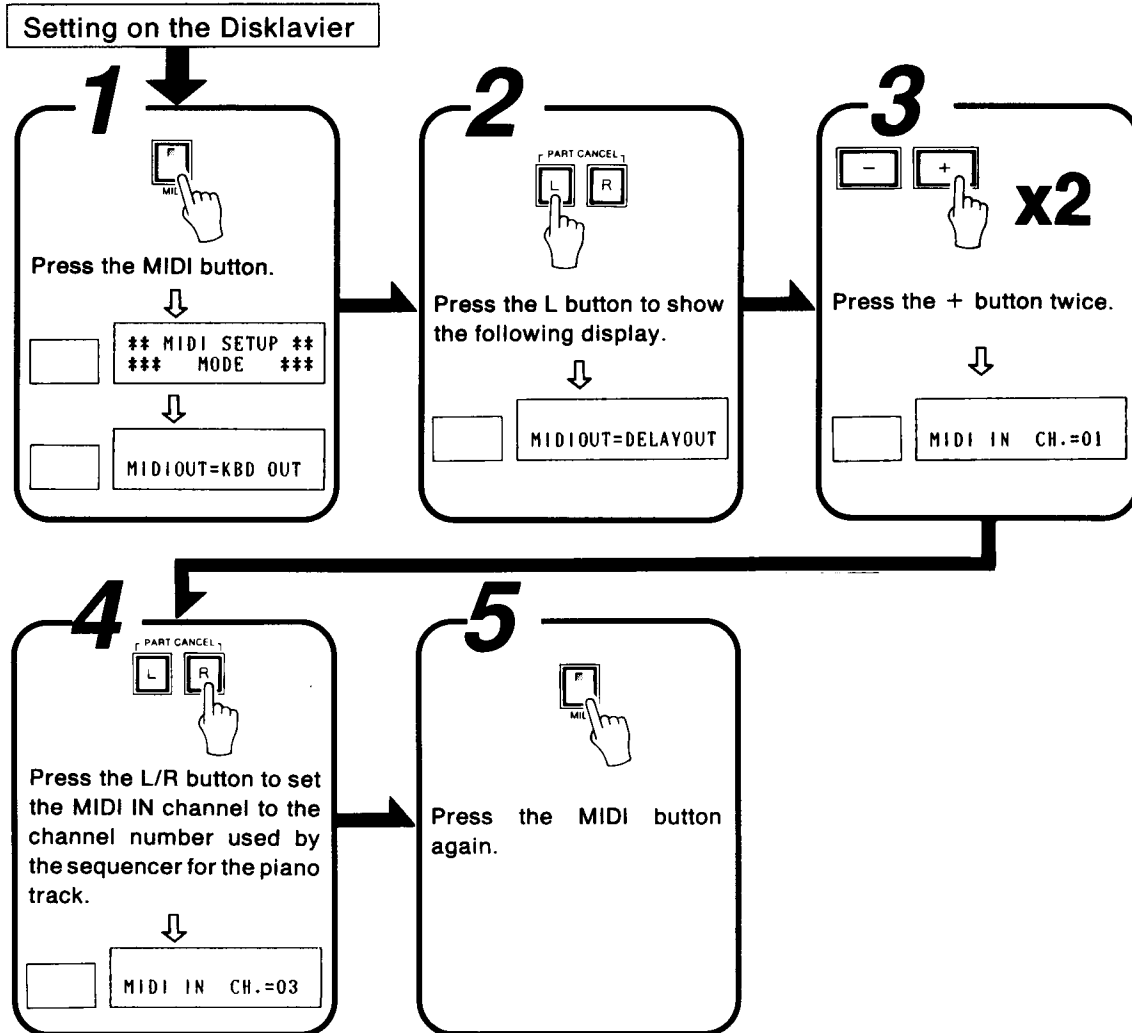
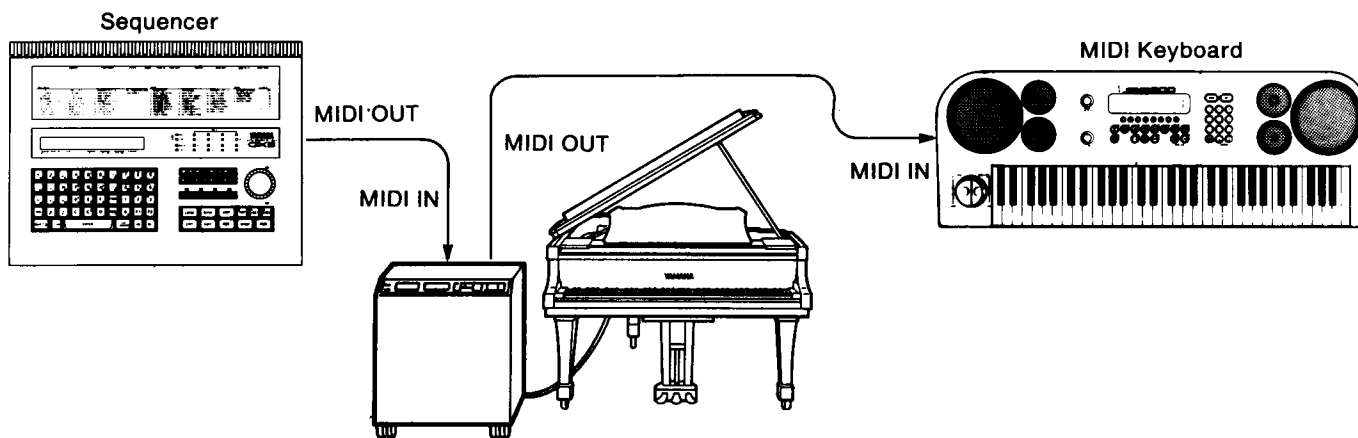


Setting on the rhythm machine

→ Set the SYNC of the rhythm machine to MIDI.

● Using MIDI OUT / MIDI IN

① Playing back the Disklavier and other MIDI instruments from a sequencer

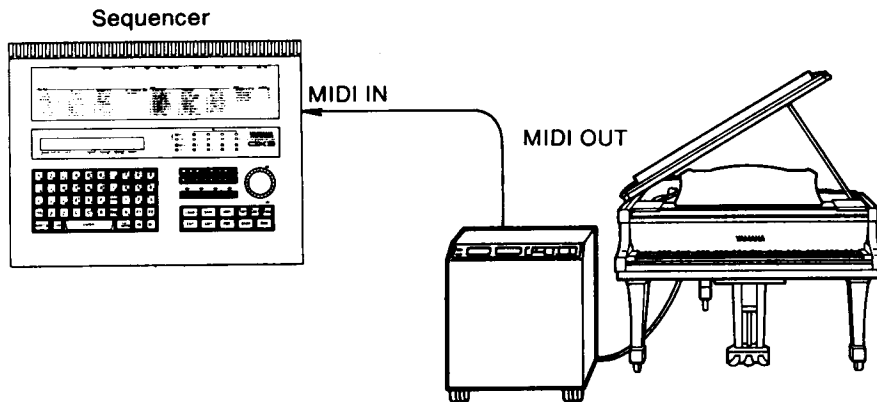


Setting on the MIDI keyboard

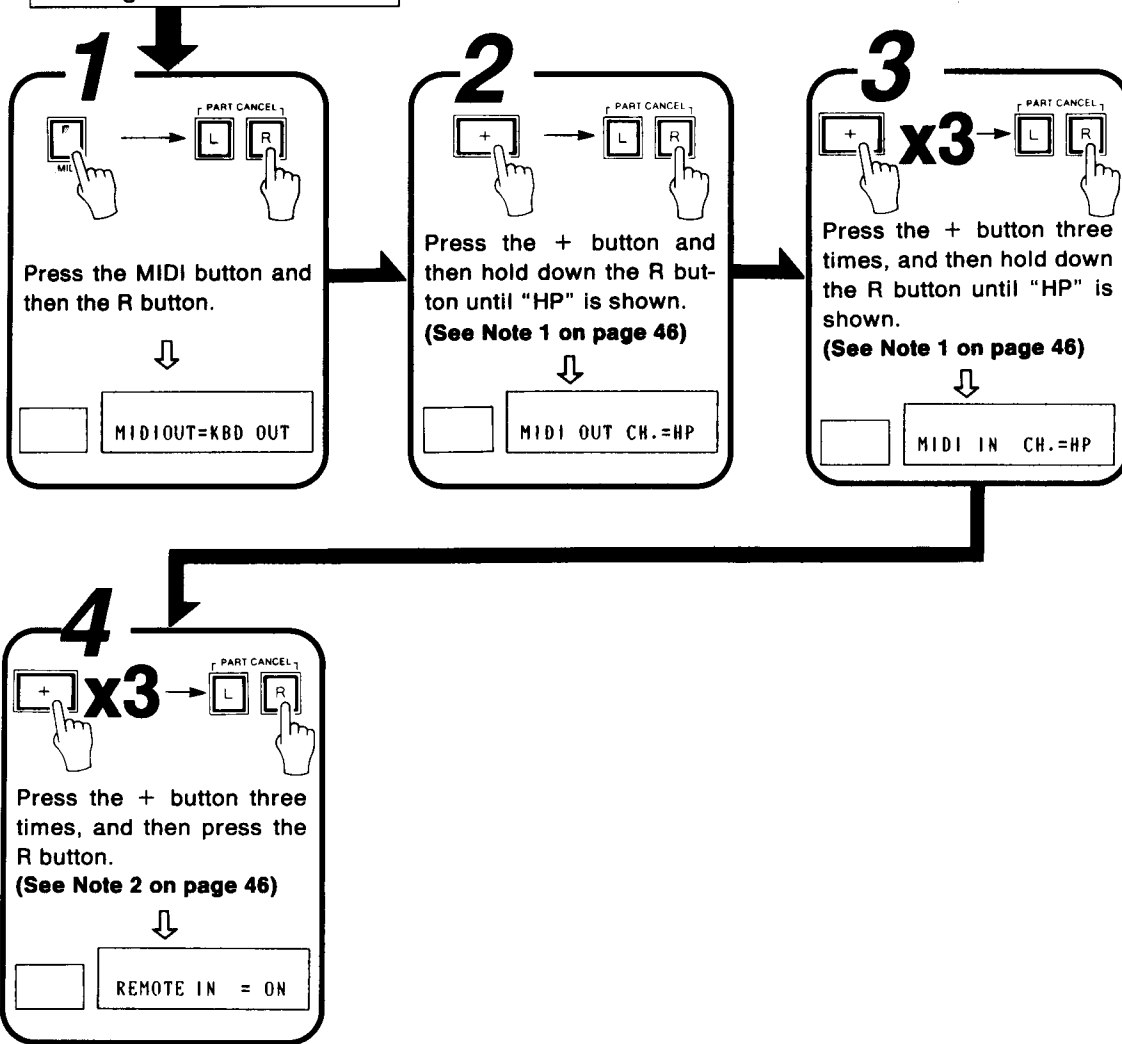
→ Set the MIDI IN channel(s) of the MIDI instrument to the number(s) required by the sequencer.

Note: Because of the Disklavier's delay between receiving a MIDI message and actually implementing it, always place the Disklavier first in the MIDI chain, and set the DELAY OUT to 500ms to compensate for this.

⑥ Using the Disklavier to record to a sequencer

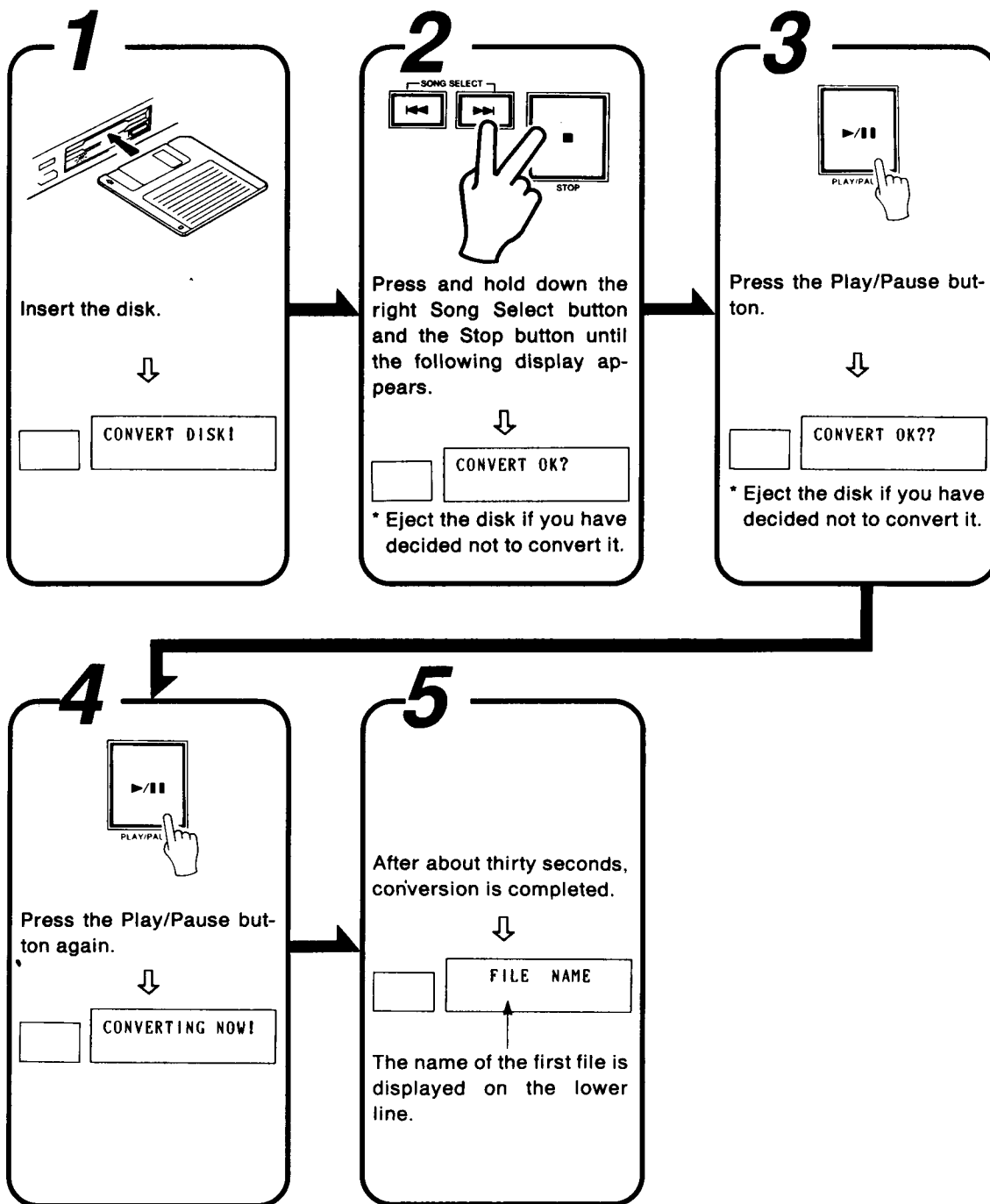


Setting on the Disklavier



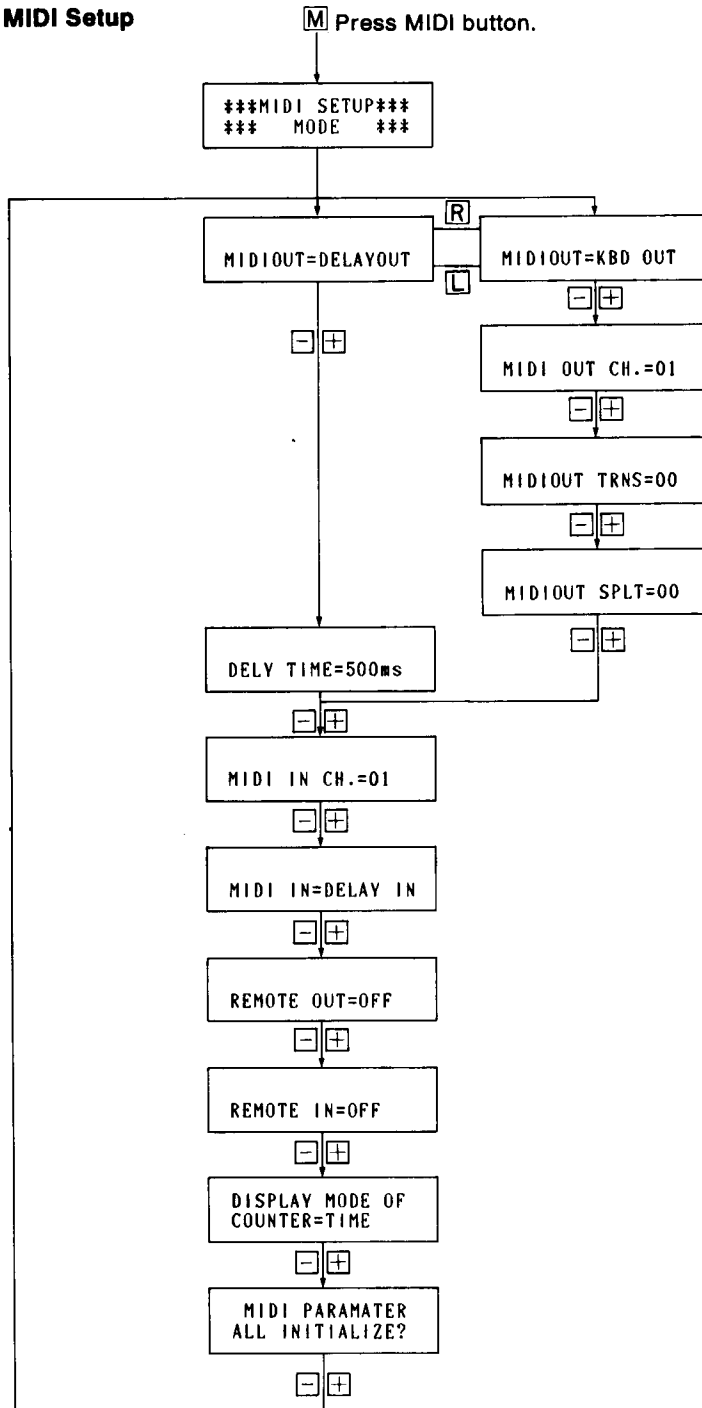
● Converting a Disk

In order to play back pieces that have been recorded on other systems such as the Yamaha QX3, the "Convert" procedure described below must be carried out. Doing so enables not only playback, but recording as with other formatted disks.



● Setting and changing the conditions for transmitting/receiving MIDI signals.

MIDI Setup



MIDI parameter (item/condition)

Item	Initial condition	Range/effective button
MIDIOUT	DELAYOUT	DELAYOUT KBD OUT LR button
MIDI OUT CH.	01	01 ~ 16, HP LR button
MIDIOUT TRNS	00	- 60 ~ + 60 LR button
MIDIOUT SPLT	00	00 ~ 88 LR button
DELAY TIME	500ms	000 ~ 700ms LR button
MIDI IN CH.	01	01 ~ 16, HP LR button
MIDI IN	DELAY IN	DELAY IN REALTIME LR button
REMOTE OUT	OFF	OFF ON LR button
REMOTE IN	OFF	OFF ON LR button
DISPLAY MODE OF COUNTER	TIME	TIME MEASURE LR button
MIDI PARAMETER ALL INITIALIZE?	Press the R button twice and all the parameters will be initialized.	

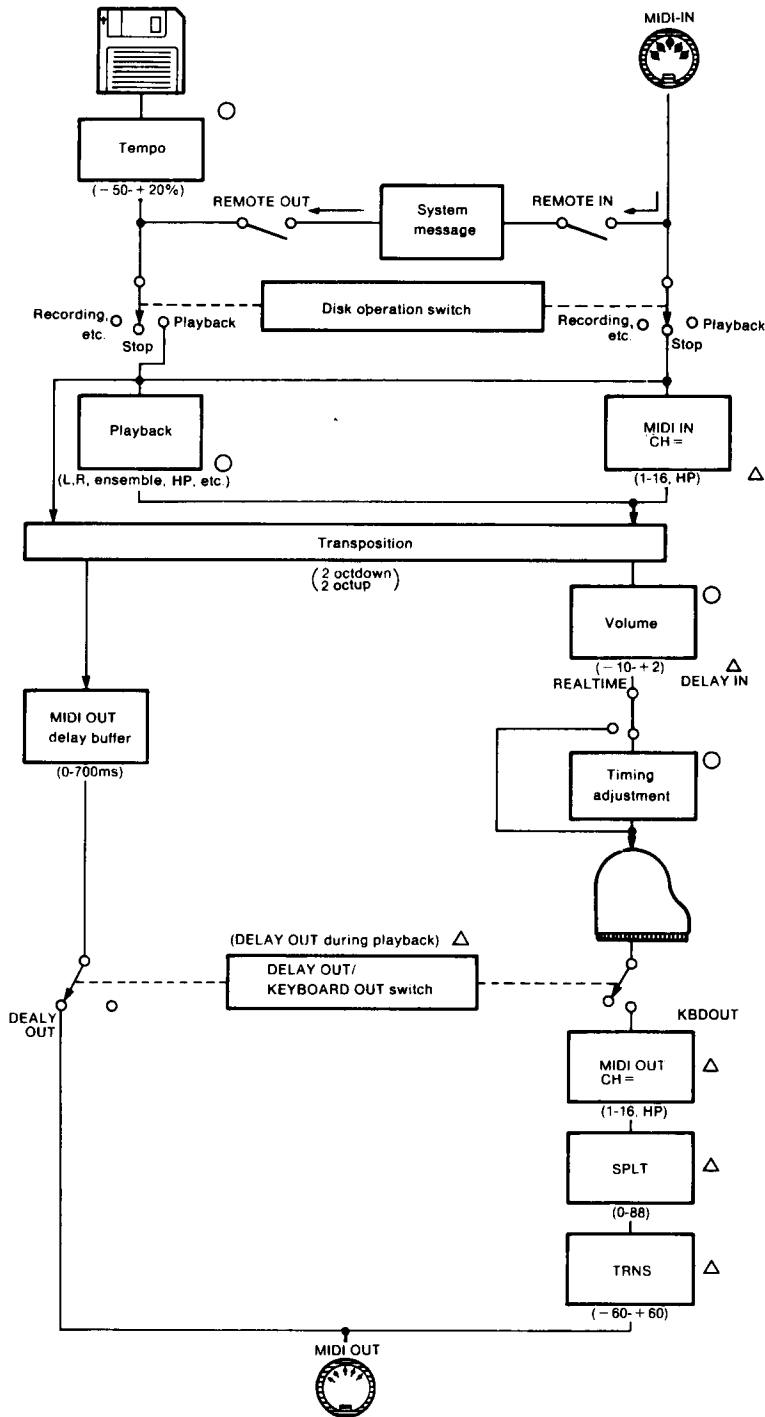
- Note:**
1. Press the MIDI button again to exit the MIDI Setup Mode. After exiting the MIDI Setup Mode, playback/recording will be performed under the conditions for MIDI signal transmission/reception.
 2. To select the display mode of the counter, either Time or Measure, press the MIDI button to enter the MIDI Setup Mode, and press the + button until the display title "DISPLAY MODE OF COUNTER" comes up. Press the L button to select time (Minutes/Seconds). Press the R button to select Measure (Bar/Beat).

● MIDI parameters

Parameter	Description
MIDIOUT Switching the output data	Switching the output data of the Disklavier DELAYOUT: Data is output with a delay of 500ms from a floppy disk or MIDI IN. This is used to match the timing of other external MIDI instruments with that of playback on the Disklavier. KBDOUT (Keyboard out): Data input through the keyboard is detected by the sensor and transmitted to MIDI OUT. This is used to transmit performance data of the Disklavier to MIDI OUT. Note: * During playback, this parameter is automatically set to DELAYOUT.
MIDI OUT CH.	Setting the MIDI transmit channel Transmit channel: 1 - 16, HP HP (In this setting, Channel 1 is used for transmitting Note On/Off information, and the position and speed of the pedal movements are transmitted on Channel 3.) This is available only when the MIDIOUT is set to KBDOUT.
MIDIOUT TRNS	Transposition of MIDI transmit data: Used when you want another MIDI tone generator to sound in different keys from the Disklavier. Transposition range: -60 — +60key How to set: Press the L/R button, or press the key on the keyboard to which you want to transpose the middle C. Setting is available only when MIDIOUT is set to KBDOUT.
MIDIOUT SPLT	Split point of the MIDI transmission data when using two different kinds of tone generator for the different key ranges. Lower key range will be assigned to one MIDI OUT CH and the higher key range assigned to this number plus one for MIDI OUT CH. Split point range: 00 - 88 key (00 means no split point) How to set: Press the L/R button or press the split point key on the keyboard. Setting is available only when MIDIOUT is set to KBDOUT.
DELAY TIME	Changing the delay time for the data transmission in order to adjust the timing of the external MIDI instrument. Range: 000 - 700ms (standard: 500ms) Application: When playing back music on two Disklaviers at the same time, set this to 000ms. Setting this to 500ms will delay the timing of the second piano by 500ms. When playing another MIDI tone generator, set this to 500ms to compensate for timing delays.
MIDI IN CH.	Setting the MIDI receive channel: 1 - 16, HP HP: (In this setting, Channel 1 is used for transmitting Note On/Off information, and the position and speed of the pedal movements are transmitted on Channel 3.) This is available only when MIDIOUT is set to KBDOUT.
MIDI IN Switching the timing	Changing the timing of the MIDI receiving instrument in order to adjust the timing of the Disklavier to the data output of the external instrument as close as possible. DELAY IN: Timing is delayed from the external tone generator by 0.5s (500ms). REAL TIME: The Disklavier sounds in almost the same timing as the external tone generator, although the timing for each note is different depending on the tone volume. When the volume is low, the timing tends to be delayed due to the action of the piano. This parameter is automatically set to DELAY IN during playback.
REMOTE OUT	Transmitting Start, Stop, Continue, Song Position Pointer, Song Select, MIDI Clock. Set the MIDI clock in the Metronome functions.
REMOTE IN	Receiving Start, Stop, Continue, Song Position Pointer, Song Select. MIDI clock cannot be received.
DISPLAY MODE OF COUNTER	Selecting the counting display from either minutes/seconds or bar/beat. TIME: minutes/seconds MEASURE: bar/beat
MIDI PARAMETER ALL INITIALIZE	Initializing all the MIDI parameters

All the parameters above described are memorized after the power is turned off.

● MIDI Block Diagram



() : Can be set in normal playback mode
 Δ : Can be set in MIDI Setup Mode

● Timing adjustment and MIDI OUT 500msec delay buffer

It takes the Disklavier 500msec to produce a sound from the input of the data into the MIDI IN terminal. This function is used to set the interval between the start of the key action and actual sound to 500msec.

When an external MIDI instrument is connected to the MIDI OUT of the Disklavier, it is necessary to set the delay to 500msec. For this purpose, the MIDI OUT delay buffer is usually set to 500msec.

MIDI IN timing is always set to DELAY IN during playback.

● MIDI function troubleshooting

Trouble	Check this
<p>External MIDI instrument does not generate sound even though connected to the MIDI OUT of the Disklavier.</p>	<p>Is the MIDI cable connected securely to the MIDI OUT of the Disklavier and the MIDI IN of the external MIDI instrument? Is the receive channel on the external instrument the same as the transmit channel?</p>
<p>Keys of the Disklavier are not pressed down when playing the external MIDI instrument which is connected to the MIDI IN terminal on the Disklavier.</p>	<p>Is the MIDI cable connected securely to the MIDI OUT of the external MIDI instrument and MIDI IN of the Disklavier? Is the receive channel on the Disklavier the same as the transmit channel on the external MIDI channel? Is the volume setting of the Disklavier too low? Is the cable connected securely between the Control Wagon and the Piano?</p>
<p>Key movement is delayed compared to the input of the data, when playing an external MIDI instrument connected to the MIDI IN terminal of the Disklavier.</p>	<p>It takes the Disklavier approx. 0.5sec to generate sound from the time the data is received. Set the parameter MIDI IN to REAL TIME.</p>
<p>The Disklavier and the external MIDI instrument play at different pitches.</p>	<p>Is the MIDI OUT TRNS function effective?</p>
<p>Only a lower or higher range of the notes sounds for an external MIDI instrument, when playing or playing back on the Disklavier.</p>	<p>Is the piece recorded separately for L/R parts being played back? Is the MIDI OUT SPLIT function effective?</p>
<p>Settings of MIDI OUT SPLIT or MIDI OUT TRNS are not effective on the external MIDI instrument.</p>	<p>Is the MIDI OUT parameter set to the DELAY OUT? (Set this parameter to KEYBOARD OUT). Is the transmit channel of the Disklavier the same as the receive channel of the external MIDI instrument?</p>
<p>External MIDI instrument receives both L and R parts when playing back an ensemble piece.</p>	<p>Is the receive channel of the external MIDI instrument set to OMNI ON?</p>
<p>Data is not transmitted through the assigned MIDI OUT channel.</p>	<p>Is the MIDI OUT parameter set to DELAY OUT? The transmit channel can be changed from the original one. (Only in KEYBOARD OUT) During playback, the parameter is automatically set to DELAY OUT.</p>
<p>*MIDI DATA ERROR* is displayed on the Disklavier, and it is impossible to dump voice data from the keyboard connected to the MIDI IN terminal on the Disklavier onto the keyboard connected to the MIDI OUT terminal of the Disklavier.</p>	<p>When dumping large amount of data, do not send it through the Disklavier.</p>
<p>The ensemble piece is not played back as recorded in terms of rhythm.</p>	<p>It may happen that too large an amount of data causes irregular rhythm. In order to protect the piano, do not input too much data. It is preferred not to input too many continuous repeated or long notes.</p>

Trouble	Check this.
The same key on the Disklavier is pressed many times.	Looped MIDI cable connection?
Rhythm machine or a sequencer does not start using the System Real Time Messages when playback on the Disklavier is started.	Set the REMOTE OUT to ON.
The Disklavier cannot be synchronized with the external sequencer.	The Disklavier does not receive external clock signals even when the REMOTE IN is set to ON. Only Start/Stop are received.

MIDI Implementation Chart

[YAMAHA DISKLAVIER]

Date: 06/09, 1989
Version: 1.0

Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	memorized HP → ch1, 3
Mode	Default Messages Altered	3 x *****	3 x x	
Note Number	True voice	21 - 108 ***** *1	21 - 108 21 - 108	
Velocity	Note ON Note OFF	○ 9nH, V = 1 - 127 x 9nH, V = 0 *1	○ V = 1 - 127 x	
After Touch	Key's Ch's	x x *1	x x	
Picht Bender		x *1	x	
Control Change	64 66 67	○ ○ ○	○ ○ ○	Sustain Pedal Sustenute Pedal Soft Pedal
Prog Change:	True #	x ***** *1	x	
System Exclusive		x *1	x	
System: Common:	Song Pos Song Sel Tune	○ ○ x *2	○ ○ x	*2
System: Real Time:	Clock Commands	○ ○ *2	x ○	*2
Aux : Mes- sages :	Local ON/OFF All Notes OFF Active Sense Reset	x x ○ x	x x ○ x	
Notes	<p>All recognized data are transmitted 500msec (0-700msec) later if controller mode is STOP and DELAYOUT mode is on. *1 = All data are enabled to transmitted as record data if other E-seq disk is used. *2 = Enabled or disabled by command.</p>			

Mode 1: OMNI ON. POLY
Mode 3: OMNI OFF. POLY

Mode 2: OMNI ON. MONO
Mode 4: OMNI OFF. MONO

○: Yes
x: No

Error Messages

T

Display	Causes	Remedy
INSERT DISK!	This appears whenever the power is turned ON.	
DISK WRITE PROTECTED!	Recorded data on the floppy disk is protected.	Before recording or input of the piece/disk title, slide the write-protect tab to OFF on the floppy disk.
UNFORMATTED DISK	An unformatted disk was inserted.	Format a new disk before recording.
CONVERT DISK!	A disk used on another system was inserted.	It is necessary to convert a disk which has been used on another system.
ERROR OCCURRED!! (PUSH STOP KEY!)	Defective disk	Replace the disk.
	Hardware is defective.	Press the Stop key to cancel the error display. Contact the dealer you purchased, if this happens often.
FILE NOT FOUND! RE-CONVERT DISK!	Error occurred during playback or recording.	Convert the disk and try recording again.
	Memory capacity was exceeded by new data during recording.	Try recording again, and re-record onto another disk.
CANNOT FORMAT!	Defective disk	Replace the disk.
DISK FULL!	Memory is full.	Record onto another disk.
CANNOT CONVERT!	Defective disk	Replace the disk.
CANNOT RE-RECORD	Re-recording is not possible on the disk recorded on the MX series and pre-recorded disks.	
EXECUTING!	This appears when the Disklavier is preparing for operation. Do not remove the disk when this is shown.	
CANNOT RECORD MORE SONGS	A 61st song is going to be recorded.	Up to 60 pieces only can be recorded.
PRESS ANY BUTTON!	This appears after the Disklavier has been stopped for 5 minutes.	Press any button to proceed the next operation.

Troubleshooting

Display	Causes	Remedy
The power is not turned on.	The main power switch on the rear panel of the Control Wagon is turned off.	Turn the main power switch on.
	The power plug or the connecting cable is not securely connected.	Insert the power plug securely.
Recording is not possible.	The power plug is not securely connected.	Insert the power plug securely.
	Inappropriate operation	Refer to the section "Error Messages" on page 54.
Playback is not possible.	The power plug is not securely connected.	Insert the power plug securely.
	Inappropriate operation	Refer to the section "Error Messages" on page 54.
	Tried to playback a piece which has already been deleted.	
	The piece is not recorded due to accidental intermission.	Re-record.
A certain piece is repeatedly played back.	Repeat function is in operation.	Cancel the repeat function.
The piece is not played back as recorded in terms of volume, tempo or pitch.		Change the volume, tempo and transposition settings to the normal settings.
Notes which were not recorded were played back.	These are the notes pressed by mistake.	Re-record the performance, trying to play correctly.
Mechanical noise is heard during playback.	Mechanical noise is produced if the volume setting is low, when the driving section moves up against the rear part of the keyboard.	
Some notes are not played back during playback.	This sometimes happens, in particular when triplets or trills which cause the key pressed before it returns to its original position.	
	Tempo is too fast.	Set the tempo slower.
	Volume is too low.	Set the volume higher.
	Keys were pressed with very low velocity when recording the performance.	Re-record the performance, trying to play correctly.
Accents are expressed in a different way from that when recorded.	Keys were pressed with very low velocity when recording the performance.	Re-record the performance, trying to play correctly.

Specifications

Power Supply

Local AC Voltage

Control Unit

Panel button

Play/Pause, Stop, Rec, Song Select, FF, FB, Sound, + -, Part Cancel L R, Volume, Tempo, Trans, Repeat, MIDI

LCD

16 characters x 2

LED

7 segments x 2

Recording Media

3.5 inch Floppy Disk (2DD)

Memory Capacity

Number of pieces: 60 pieces

Memory Capacity: 628Kbyte

Piece Title: 32 characters

Disk Title: 64 characters

Drive Unit

Key drive

88 Keys

Max. Number of notes at a time: 16 notes

Pedal drive

Sustain Pedal, Soft Pedal

Sensor Unit

Hammer Key Sensor

88 Keys

Max. Number of notes at a time: 16 notes

Pedal Sensor

Sustain Pedal, Soft Pedal Sostenute Pedal

Input/Output

MIDI IN/OUT

Accessories

Owner's Manual

Sample Disk

Remote Control Unit

Batteries for Remote Control Unit (AA x 2 pcs.)

Control No.

c=64 Sustain pedal
c=67 Soft pedal
c=66 Sostenute pedal

Control Value

v=0: off, 1 ~ 127: on
v=0: off, 1 ~ 127: on
v=0: off, 127: on

● SYSTEM INFORMATION

1) SYSTEM COMMON MESSAGE

1 Song Position Pointer

Status 11110010

Value (LSB) 0LLLLLLL

Value (MSB) 0hhhhhhh

Received when REMOTE IN is ON.

2 Song Select

Status 11110011

Song No. 0sssssss s=127

Received when REMOTE IN is ON.

2) SYSTEM REALTIME MESSAGES

1 Start

Status 11111010

Received when REMOTE IN is ON.

2 Continue

Status 11111011

Received when REMOTE IN is ON.

3 Stop

Status 11111100

Received when REMOTE IN is ON.

4 Active sensing

Status 11111110

FCC INFORMATION (USA)

While the following statements are provided to comply with FCC Regulations in the United States, the corrective measures listed below are applicable worldwide.

This series of Yamaha Disklavier uses frequencies that appear in the radio frequency range and if installed in the immediate proximity of some types of audio or video devices within three meters (approximately ten feet), interference may occur. This series of Disklavier has been type-tested and found to comply with the specifications set for a class B computer in accordance with those specifications listed in sub-part J, part 15 of the FCC rules. These rules are designed to provide a reasonable measure of protection against such interference. However, this does not guarantee that interference will not occur. If your Disklavier should be suspected of causing interference with other electronic devices, verification can be made by turning your Disklavier off and on. If the interference continues when your Disklavier is off, Disklavier is not the source of interference. If your Disklavier does appear to be the source of the interference, you should try to correct the situation by using one or more of the following measures:

Relocate either Disklavier or the electronic device that is being affected by the interference. Utilize power outlets for Disklavier and the device being affected that are on different branch (circuit breaker or fuse) circuits, or install AC line filters.

In the case of radio-TV interference, relocate the antenna or, if the antenna lead-in is 300 ohm ribbon lead, change the lead-in to a coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact a Yamaha dealer for suggestions and/or corrective measures.

If you can not locate a Yamaha dealer in your general area, please contact the Service Division, Yamaha Corporation of America, 6600 Orangethorpe Ave., Buena Park, CA 90620, U.S.A.

If for any reason, you should need additional information relating to radio or TV interference, you may find a booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet, Stock #004-000-00345-4, is available from the U.S. Government Printing Office, Washington D.C. 20402.

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CANADA

THIS APPARATUS COMPLIES WITH THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.
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YAMAHA

YAMAHA CORPORATION
P.O. Box 1, Hamamatsu, Japan

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DISKLAVIER MIDI DATA RECORDER (MDR) MODE

This mode allows for the direct transfer of all 16 channels of MIDI Music data to a Disklavier disk from another MIDI source such as a sequencer or computer. This mode bypasses both the sensing system and the solenoid system while recording.

[NOTE: This record mode is available only in MX100 & Grand Disklavier pianos]

MX100 MDR MODE PROCEDURE

1. While depressing **VOLUME**, **TEMPO**, and **TRANS/BEAT** buttons, turn the Disklavier power on. (LCD will display message verifying the MDR mode.)
2. To record MIDI data coming into the Disklavier MIDI In port, press **RECORD** button to select the song number for recording (if different from the default of next song available). Press **START/PAUSE** (Disklavier beeps) and recording has begun. Begin the MIDI Music Data playback into the Disklavier. This process is in "real time". A three minute song will take three minutes to be recorded to the Disklavier disk.
3. The bottom row of the LCD display on the Disklavier will show "ghosting" as the data comes into the Disklavier. When the music data transmission is complete, press the **STOP** button.
4. The Disklavier will play this newly recorded performance in the usual way by pressing the **START** button.

NOTE: In order to record to the Disklavier disk using any of the standard recording modes, it will be necessary to turn the power off and back on to exit the MDR mode.

GRAND MDR MODE PROCEDURE

NOTE: In order for the pedals to playback properly when doing an MDR recording in the DKV grand, you must have either incremental pedal data or ON/OFF pedal data on Channel 3, in addition to ON/OFF pedal data (along with note data) on Channel 1. The original MIDI music data you will be sending the Disklavier Grand was probably generated one of two ways – either with the Disklavier grand or with another MIDI device.

Generated with the Disklavier Grand:

If the original MIDI music data is done on the grand and then is transferred (via MIDI) to a sequencer or computer, be sure that your Grand MIDI parameters are set as follows:

MIDI Out	=	KBDOUT
MIDI Out CH	=	HP
MIDI In CH	=	HP
REMOTE IN	=	ON

Also, make sure your sequencer has been set to record data on Channels 1 & 3. By doing so, you will ensure that your High Performance pedal data has been properly recorded in your sequencer. If your sequencer is a DOM30, be sure to use its Multi Timbre Recording Mode (page 13 of the DOM owners manual) when recording the information from the Disklavier grand.

Generated with another sequencer and/or keyboard:

If your original MIDI music data is generated in/with another MIDI device, it is unlikely there will be any incremental pedal data on Channel (Track) 3. As a result, you **MUST** either copy the ON/OFF pedal data from Channel (Track) 1 to Channel (Track) 3, or copy all data (note data and pedal data) from Channel (Track) 1 to Channel (Track) 3. If this is not done, your pedals will **NOT** play back from the MDR recording.

MDR MODE PROCEDURE:

1. While depressing **VOLUME**, **TEMPO**, and **TRANS** buttons, turn the Disklavier power on.
2. To record MIDI data coming into the Disklavier MIDI In port, press the **RECORD** button 3 times. LCD displays:

RECORDING MODE
NORMAL

3. Push the **+** button 2 times. LCD displays:

RECORDING MODE
MDR MODE

2. Select the song number for recording (if different from the default of next song available). Press **START/PAUSE** (Disklavier beeps) and recording has begun. Begin the MIDI Music Data playback into the Disklavier. This process is in "real time". A three minute song will take three minutes to be recorded to the Disklavier disk.
3. The bottom row of the LCD display on the Disklavier will show "ghosting" as the data comes into the Disklavier. When the music data transmission is complete, press the **STOP** button.
4. The Disklavier will play this newly recorded performance in the usual way by pressing the **START** button.

NOTE: To record another song track in the Grand MDR record mode, repeat steps 1 thru 5.

Also, make sure your sequencer has been set to record data on Channels 1 & 3. By doing so, you will ensure that your High Performance pedal data has been properly recorded in your sequencer. If your sequencer is a DOM30, be sure to use its Multi Timbre Recording Mode (page 13 of the DOM owners manual) when recording the information from the Disklavier grand.

Generated with another sequencer and/or keyboard:

If your original MIDI music data is generated in/with another MIDI device, it is unlikely there will be any incremental pedal data on Channel (Track) 3. As a result, you **MUST** either copy the ON/OFF pedal data from Channel (Track) 1 to Channel (Track) 3, or copy all data (note data and pedal data) from Channel (Track) 1 to Channel (Track) 3. If this is not done, your pedals will **NOT** play back from the MDR recording.

MDR MODE PROCEDURE:

1. While depressing **VOLUME**, **TEMPO**, and **TRANS** buttons, turn the Disklavier power on.
2. To record MIDI data coming into the Disklavier MIDI In port, press the **RECORD** button 3 times. LCD displays:

RECORDING MODE
NORMAL

3. Push the **+** button 2 times. LCD displays:

RECORDING MODE
MDR MODE

2. Select the song number for recording (if different from the default of next song available). Press **START/PAUSE** (Disklavier beeps) and recording has begun. Begin the MIDI Music Data playback into the Disklavier. This process is in "real time". A three minute song will take three minutes to be recorded to the Disklavier disk.
3. The bottom row of the LCD display on the Disklavier will show "ghosting" as the data comes into the Disklavier. When the music data transmission is complete, press the **STOP** button.
4. The Disklavier will play this newly recorded performance in the usual way by pressing the **START** button.

NOTE: To record another song track in the Grand MDR record mode, repeat steps 1 thru 5.

DISKLAVIER MIDI DATA RECORDER (MDR) MODE

This mode allows for the direct transfer of all 16 channels of MIDI Music data to a Disklavier disk from another MIDI source such as a sequencer or computer. This mode bypasses both the sensing system and the solenoid system while recording.

[NOTE: This record mode is available only in MX100 & Grand Disklavier pianos]

MX100 MDR MODE PROCEDURE

1. While depressing **VOLUME**, **TEMPO**, and **TRANS/BEAT** buttons, turn the Disklavier power on. (LCD will display message verifying the MDR mode.)
2. To record MIDI data coming into the Disklavier MIDI In port, press **RECORD** button to select the song number for recording (if different from the default of next song available). Press **START/PAUSE** (Disklavier beeps) and recording has begun. Begin the MIDI Music Data playback into the Disklavier. This process is in "real time". A three minute song will take three minutes to be recorded to the Disklavier disk.
3. The bottom row of the LCD display on the Disklavier will show "ghosting" as the data comes into the Disklavier. When the music data transmission is complete, press the **STOP** button.
4. The Disklavier will play this newly recorded performance in the usual way by pressing the **START** button.

NOTE: In order to record to the Disklavier disk using any of the standard recording modes, it will be necessary to turn the power off and back on to exit the MDR mode.

GRAND MDR MODE PROCEDURE

NOTE: In order for the pedals to playback properly when doing an MDR recording in the DKV grand, you must have either incremental pedal data or ON/OFF pedal data on Channel 3, in addition to ON/OFF pedal data (along with note data) on Channel 1. The original MIDI music data you will be sending the Disklavier Grand was probably generated one of two ways – either with the Disklavier grand or with another MIDI device.

Generated with the Disklavier Grand:

If the original MIDI music data is done on the grand and then is transferred (via MIDI) to a sequencer or computer, be sure that your Grand MIDI parameters are set as follows:

MIDI Out	=	KBDOUT
MIDI Out CH	=	HP
MIDI In CH	=	HP
REMOTE IN	=	ON

DKV MX100 & GRAND USER FUNCTION REFERENCE SHEET

USER FUNCTION ITEM	NOTES	MX100 Manual page(s)	Grand Manual page(s)
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↓	Changing MIDI Out DELAY TIME	U.F.*	48 - 49
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↓	Changing Display from minutes to measures	[grand only]	48 - 49

* MX100 UNPUBLISHED FUNCTIONS SHEET