

YAMAHA

Advanced Operation Manual



disklavier™ II

P I A N O S

YAMAHA

disklavier™ II

Advanced Operation Manual

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Introduction

Welcome to the *Advanced Operation Manual*. This introduction provides a brief explanation of the various chapters contained in this manual. Reading this introduction will help you to understand how this manual is organized so that you can quickly access the information that you want.

Chapter 1: Formatting Floppy Disks — page 4

In this chapter we explain what type of floppy disks to use with the Disklavier piano, the floppy disk erasure protection tabs, and how to format floppy disks.

Chapter 2: Recording a Song — page 6

A quick and simple song recording procedure: no details — just the basics.

Chapter 3: Normal & L/R Songs — page 8

Detailed description of Normal and L/R songs including MIDI, pedal information, and playback notes: not essential reading, however, it will provide a basic understanding of Normal and L/R songs and the differences between them.

Chapter 4: Ensemble Songs — page 10

Detailed description of Ensemble songs including MIDI tone generators, Ensemble song playback notes, an Ensemble song's rhythm track, and a few functions that are only for use with Ensemble songs: this chapter will provide a good understanding of Ensemble song playback and it is essential reading for people intending to record their own Ensemble songs.

Chapter 5: Recording — General — page 17

Explains all the functions that can be used with either Normal, L/R, or Ensemble song recording, such as “Song Titling and Title Editing”, and “Recording with the Metronome”: you might not use all of these functions but you will probably use some.

Chapter 6: Recording a Normal Song — page 26

Detailed explanation of Normal song recording.

Chapter 7: Recording an L/R Song — page 28

Detailed explanation of L/R song recording.

Chapter 8: Recording an Ensemble Song — page 38

Detailed explanation of Ensemble song recording.

Chapter 9: Editing Notes — page 50

Explains how to edit notes, that is, edit pitch, velocity, length, timing; how to insert new notes; delete notes; and how to replace a section of a recorded track using the punch-in/punch-out function.

Chapter 10: Editing Tracks — page 62

Explains the various track editing functions such as copy, move, delete, transpose, and mix: mainly for use with Ensemble songs, although it can be used with L/R

songs. The move and transposition functions can also be used with Normal songs.

Chapter 11: Floppy Disk & Song File Utilities — page 72

Explains the various floppy disk and song file management utilities such as copy, delete, and song sort.

Chapter 12: Auto Disk & Space Playback — page 81

Explains the Auto Disk Play function, the Space Play function, and how to use the Disklavier piano with a clock timer for automatic playback starting at a specified time.

Chapter 13: Compiling a Disk Program — page 85

Explains how to compile a disk program, that is, a compilation of songs stored on a disk.

Chapter 14: Song Disk Compatibility — page 89

Explains how to playback and convert E-SEQ song disks on the Disklavier piano. Also how to use song disks that were recorded on an MX100A or MX100B.

Chapter 15: The Disklavier Piano & MIDI — page 92

Explains how the Disklavier piano can be used with other MIDI devices such as a drum machine, MIDI sequencer, tone generator, or synthesizer.

Chapter 16: Using External Foot Controllers — page 103

How to connect foot controllers to the Disklavier piano for starting and pausing playback and recording, punch-in/punch-out recording, and playback tempo control.

Chapter 17: Troubleshooting — page 105

How to resolve operating troubles and understanding LCD error messages.

Chapter 18: Glossary — page 108

A comprehensive explanation of terms used with the Disklavier piano.

Specifications — page 110

Disklavier piano specifications.

MIDI Data Format — page 111

MIDI data format and MIDI implementation chart.

Chapter 1

Formatting Floppy Disks

New floppy disks must be formatted before they can be used with the Disklavier piano. Formatting prepares the disk so that it is ready to store Disklavier piano song data. Formatting a disk erases all the data previously stored on the disk, so always make sure that the disk you are going to format does not contain songs that you want to keep.

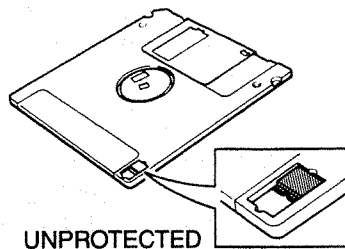
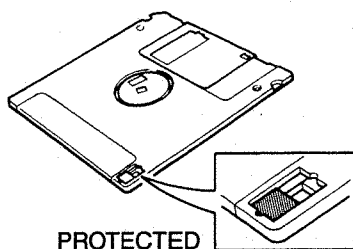
What Type of Floppy Disk

The Disklavier uses MF2-DD (double sided, double density) 3.5 inch floppy disks. If you are not sure which type of disk to buy, please ask your Disklavier dealer.

Accidental Erasure Protection

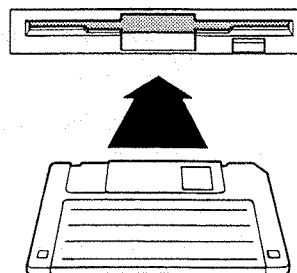
These floppy disks have an erasure protection tab which can be set so that the Disklavier cannot record new data onto the disk. This is useful for protecting valuable song data against accidental erasure and disk formatting. The protection tab is located on the reverse side of the disk, in the bottom right-hand corner.

- With the tab window open recording is not possible (protected).
- With the tab window closed recording is possible (unprotected).



1 Make sure that the disk's erasure protection tab is set to unprotected as shown above.

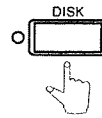
2 Insert the floppy disk into the disk drive.



If the disk has not been formatted, the following display will be shown.

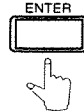
UNFORMATTED DISK

If the disk contains some songs, it might be worth checking them to see if there are any that you want to keep.

3 Press the [DISK] button.

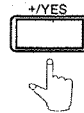
The green DISK indicator will light up and the following display will be shown.

▶FORMAT	*SONG DELETE
(+,+,ENT)	*SONG COPY →

4 Press the [ENTER] button.

The following display will be shown.

==DISK FORMAT==	SURE?
FORMAT START	(YES,NO)

5 Press the [+/YES] button to start the disk formatting process.

If you do not want to continue with the formatting process, press the [-/NO] button and the previous display will be shown.

During the disk formatting process, the following display is shown and the RECORD indicator flashes.

WRITING TO DISK
DO NOT REMOVE DISK!

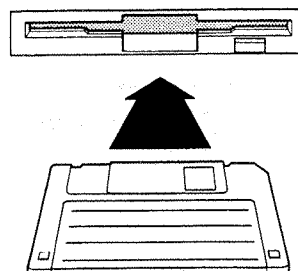
Formatting a disk takes about a minute.

Chapter 2

Recording a Song

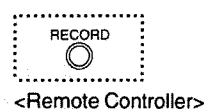
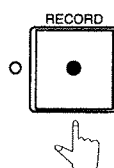
In this section we explain the basic procedure for recording a song.

- 1 Insert a floppy disk into the disk drive.**



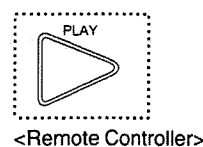
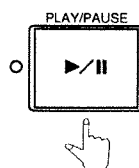
The floppy disk must be formatted before recording. If the disk has not already been formatted, see “Formatting Floppy Disks” on page 4.

- 2 Press the [RECORD] button.**



The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

- 3 Press the [PLAY/PAUSE] button.**

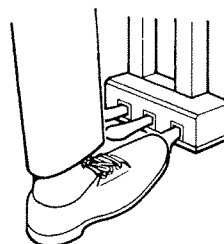
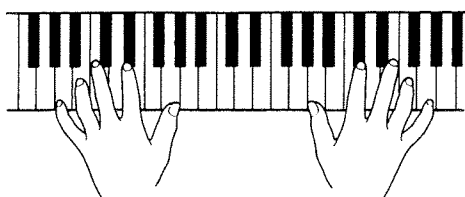


One beep will sound, the PLAY/PAUSE indicator will stop flashing, and the following display will be shown.



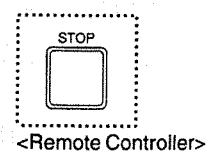
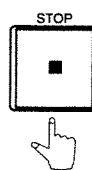
The Disklavier piano is now waiting for you to play.

- 4 Start playing your song and recording will begin.**



As soon as you play the keyboard or press a pedal, recording will start.

5 When you have finished playing your song, press the [STOP] button.



The song will be saved to disk as song No. 1.

- To give the song a title, see “Song Titling and Title Editing” on page 17.
- This procedure serves only as a basic explanation of song recording. For full details about recording, see:

Recording a Normal Song — page 26,

Recording an L/R Song — page 28,

Recording an Ensemble Song — page 38.

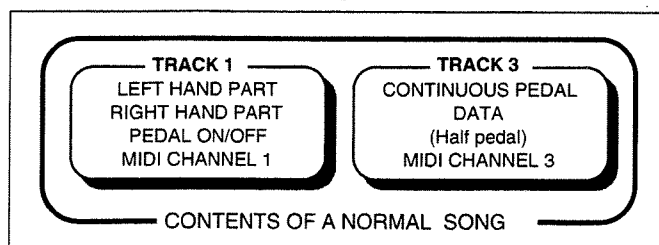
Chapter 3

Normal & L/R Songs

There are three types of Disklavier piano songs: Normal, L/R, and Ensemble. PianoSoft songs and the songs that you record yourself can be any one of these three types. In this chapter we explain Normal and L/R songs. Ensemble songs are explained in the next chapter.

Normal Songs

- Pedal playback can be switched off, if you want to operate the pedals yourself, see “Operating the Pedals Yourself” on page 29 of the *Getting Started & Playback Manual*.
- As a Normal song plays, a note-velocity meter is displayed on the LCD.
- A Normal song can be converted into an L/R song. See “Moving a Track” on page 64.
- A Normal song can be converted into an Ensemble song. See “Converting to an Ensemble Song” on page 25.
- In a Normal song, the left and right-hand piano parts and the pedal on/off data are stored on track 1. Track 1 uses MIDI channel 1.
- Continuous pedal data (half pedal) is stored on track 3, which uses MIDI channel 3.

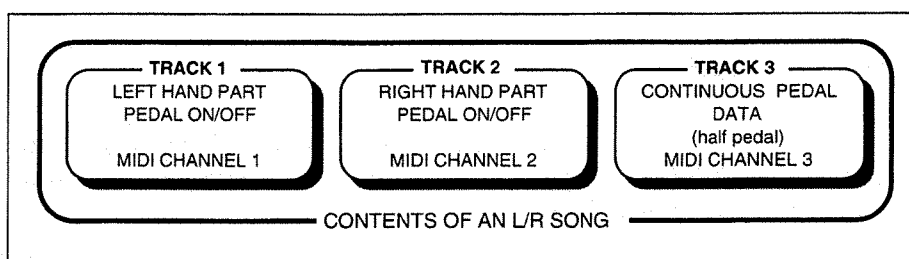


- If an external MIDI tone generator is connected to the Disklavier piano's MIDI OUT connection, the piano parts and the pedal on/off data will be sent on MIDI channel 1. Continuous pedal data (half pedal) will be sent on MIDI channel 3.

L/R Songs

- When an L/R song is selected, the PART SELECT indicators light up. During L/R song playback, you can cancel either the left-hand or right-hand part. See “Cancelling the Left-Hand or Right-Hand Piano Part” on page 32 of the *Getting Started & Playback Manual*.
- Pedal playback can be switched off, if you want to operate the pedals yourself. See “Operating the Pedals Yourself” on page 29 of the *Getting Started & Playback Manual*.
- As an L/R song plays, two note-velocity meters are displayed on the LCD, one for the left-hand part and one for the right-hand part.
- An L/R song can be converted into an Ensemble song. See “Converting to an Ensemble Song” on page 25.
- L/R songs can be recorded with a pedal count-in. See “Recording a Pedal Count-In” on page 36.
- In an L/R song, the left-hand piano part is stored on track 1 and the right-hand piano part is stored on track 2. Track 1 uses MIDI channel 1, and Track 2 uses MIDI channel 2.
- The on/off pedal data is stored on tracks 1 and 2.

- Continuous pedal data (half pedal) is stored on track 3, which uses MIDI channel 3.



Pedal Data

This pedal data applies to L/R songs and Normal songs.

- The following table shows which MIDI Controllers the Disklavier piano uses to record and transmit (playback) pedal data.

	LEFT	CENTER	RIGHT
GRAND	Shift Pedal (67)	Sostenuto Pedal* (66)	Sustain Pedal (64)
UPRIGHT	Soft Pedal (67)	Muffler Pedal	Sustain Pedal (64)

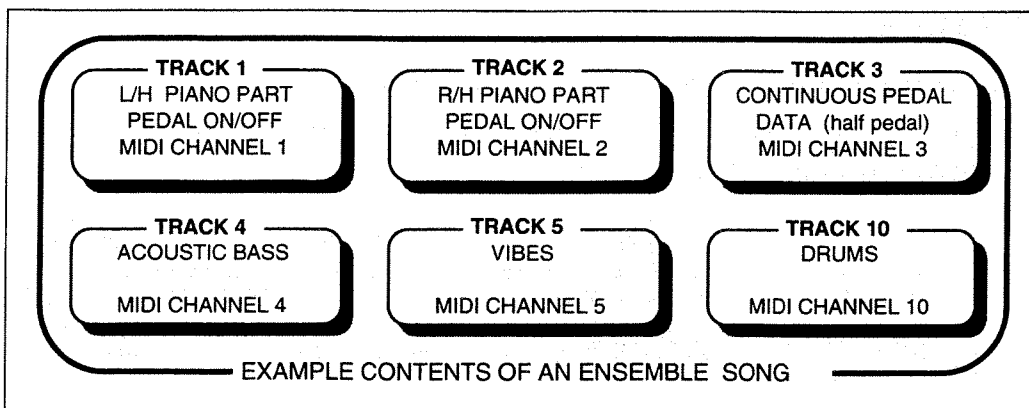
- No pedal data is recorded or transmitted for the Disklavier upright's Muffler pedal or the "bass sustain" pedal fitted to some Disklavier grands.(*)

Chapter 4

Ensemble Songs

An Ensemble song contains the same tracks as an L/R song and in addition, extra tracks for accompanying instruments. Ensemble songs are intended for use with a multi-timbral MIDI tone generator such as the Yamaha TG100.

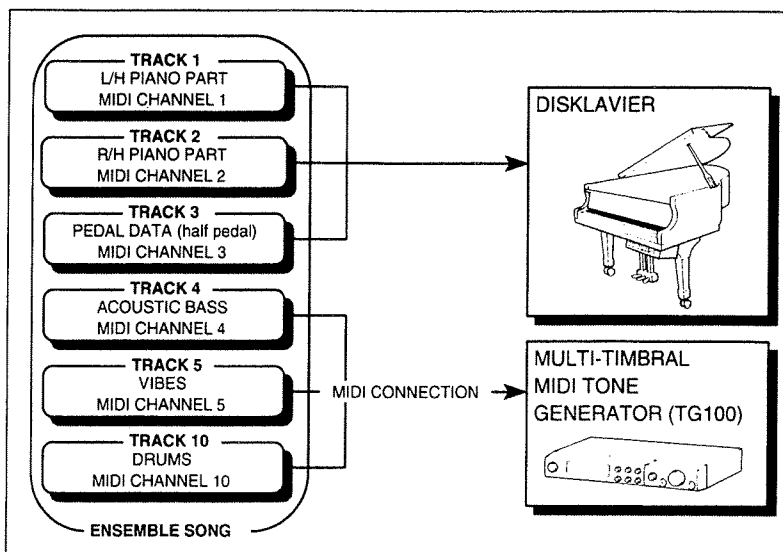
An Ensemble song may contain, for example, left and right-hand parts for the Disklavier piano, track 4 could be an acoustic bass, track 5 some vibes, and track 10 some drums, as shown below.



The L/R piano parts (and pedal data) are played by the Disklavier piano, and the extra accompanying instrument tracks are played by a multi-timbral MIDI tone generator. Multi-timbral means a tone generator that can produce more than one instrument (timbre) at a time. Typical multi-timbral tone generators can produce 6, 8, or like the Yamaha TG100, 16 different instruments simultaneously. Disklavier piano Ensemble songs may contain up to 16 tracks: tracks 1 and 2 for the left and right-hand piano parts, track 3 for the Disklavier piano's continuous pedal data (half pedal) and tracks 4 to 16 for accompanying instruments, including one rhythm track.

When an Ensemble song starts playing, MIDI Program Change messages are sent to the connected tone generator from the Disklavier piano. These Program Change messages tell the tone generator which voices to select for each ensemble track. This ensures that a bass guitar track is always played by a bass guitar, a strings track is always played by a strings voice, etc.

The following illustration shows how ensemble tracks are played.



Using a MIDI Tone Generator

To enjoy the PianoSoft•Plus collection of Ensemble songs, use a Yamaha TG100 Tone Generator.

For recording and playback of your own Ensemble songs, use a multi-timbral tone generator such as the Yamaha TG100.

Note: When an Ensemble song starts playing, MIDI Program Change messages are sent to the tone generator from the Disklavier piano to select the correct voices. On tone generators other than the Yamaha TG100, these Program Change messages may not select the correct voices. In this case, you will have to select them yourself. However, every time a new song starts playing, all the voices that you have just selected will be changed. For this reason you may want to set your tone generator to ignore MIDI Program Change messages. Refer to its *operating manual* for details.

Ensemble Song Playback Notes

- During playback, MIDI data for accompanying instruments is always sent from the Disklavier piano, and this setting cannot be changed.
- Each ensemble track is assigned to the corresponding MIDI channel, that is, Track 1 to MIDI channel 1, Track 2 to MIDI channel 2, etc. This setting cannot be changed.
- MIDI data for the left and right-hand piano parts are not usually sent to the MIDI tone generator, however, this can be changed. See “Sending the Piano Parts to a MIDI Tone Generator” on page 13.
- Pedal playback can be switched off, if you want to operate the pedals yourself, see “Operating the Pedals Yourself” on page 29 of the *Getting Started & Playback Manual*.
- As an Ensemble song plays, two note-velocity meters are displayed on the LCD, one for the left-hand piano part and one for the right-hand piano part.
- If the playback tempo is changed, the abbreviation “ESBL” on the LCD will be replaced by the new tempo value.
- During Fast Preview and Review, only the Disklavier piano will continue to play, no MIDI data will be output until playback is resumed.
- If your MIDI tone generator is set to receive MIDI data on channel 3, it will receive the Disklavier piano’s continuous pedal data (half pedal). This may produce some strange results, so do not use channel 3.

Selecting an Ensemble Song

Ensemble songs are selected in the same way as Normal and L/R songs. See “Selecting Songs” on page 18 of the *Getting Started & Playback Manual*.

When an Ensemble song is selected, the abbreviation “ESBL” is shown on the LCD.

Piano Ensemble (001-1)+
ESBL

Also the Left and Right PART SELECT indicators light up. During Ensemble song playback, you can cancel the left-hand, right-hand, or both piano parts. See “Cancelling the Left-Hand or Right-Hand Piano Part” on page 32 of the *Getting Started & Playback Manual*.

Pressing the [→] cursor button brings up the following display.

```

+<001-1>L=01 R=02 (-,+)
00x00  _ _ _ _ _ (←,→)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

```

Note: While this display is shown, you cannot adjust the volume, tempo, or transposition or set the repeat function from the controller's front panel. If you want to make these adjustments, press the [←] cursor button to return to the first display or use the remote control.

"L=01" and "R=02" indicates that the Disklavier piano will play tracks 1 and 2. You can change which tracks are played by the Disklavier piano. For example, a vibraphone on track 5 could be played by the Disklavier piano, or a marimba on track 7. See "Selecting Ensemble Tracks for the Disklavier Piano" on page 12.

The status of each of the 16 available tracks is shown on the bottom line of the LCD. The meaning of each symbol is explained below.

- ☐ Indicates the tracks that the Disklavier piano will play (note: the Disklavier piano can play two tracks).
- ☐ Indicates that an accompanying instrument part exists on that track.
- ☐ Indicates that this is the rhythm track.
- Indicates that no part exists for that track.
- × Indicates that continuous pedal data (half pedal) exists (track 3 only).

During playback, the above symbols will be filled to show that note data is being output.

Connecting a MIDI Ensemble Setup

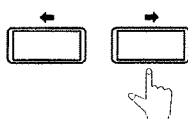
See "Ensemble Song Playback" on page 33 of the *Getting Started & Playback Manual*.

Selecting Ensemble Tracks for the Disklavier Piano

Normally, the Disklavier piano will play tracks 1 and 2, these being the left and right-hand piano parts. However, you can change this so that the Disklavier piano plays different tracks. For example, a vibraphone on track 5, or a marimba on track 7 could be played by the Disklavier piano.

If your Ensemble song was recorded on a MIDI sequencer, such as the Yamaha QX3, and the piano data was recorded on, MIDI channels 4 and 5 (Disklavier piano tracks 4 & 5), this function can be used to set the Disklavier piano to play those tracks. Follow the procedure below.

- 1** With an Ensemble song selected, press the [→] cursor button.



A display similar to the one shown will appear.

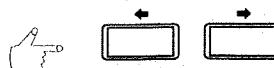
```

+<001-1>L=01 R=02 (-,+)
00_00  _ _ _ _ _ (←,→)

```

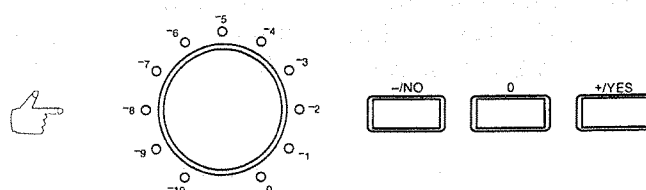
From the above display we can see that the Disklavier piano is currently set to play tracks 1 and 2. That is, "L=01" (track 1), and "R=02" (track 2).

- 2** To select the "L", press the [→] cursor button once
To select the "R", press the [→] cursor button twice.



When you have selected either "L" or "R", a flashing triangle will appear next to the selection.

- 3** Use the Dial or the [-/NO] and [+/YES] buttons to choose a different track.



As you select a track, the  symbol will move across the LCD indicating which track you have chosen. Also, the "L=01", or "R=02" values will indicate which tracks the Disklavier piano will play.

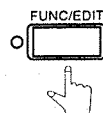
- This setting will be lost when the next song starts to play.
- The Disklavier piano cannot be set to play the rhythm track.

Sending the Piano Parts to a MIDI Tone Generator

For Ensemble song playback, the Disklavier piano will play the left and right-hand piano parts (and the pedal data), and MIDI data for tracks 4 to 16 will be sent to a MIDI tone generator. In this case, MIDI data for the left and right-hand piano parts is not sent to the tone generator.

The following procedure explains how MIDI data for the L and R piano parts can be sent to a MIDI tone generator. You could use this to double up the Disklavier piano parts with a different voice, say strings or vibes. This technique is sometimes referred to as voice layering or unison. You can also use this function to record your piano song data to a MIDI sequencer or MDR (MIDI Data Recorder).

- 1** Press the [FUNC/EDIT] button.



The following display will be shown. If there is no disk in the disk drive, the "TRACK" option is not shown.

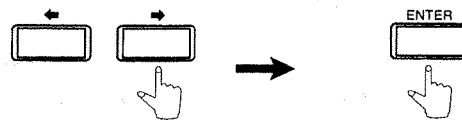
```

▶TRACK
* MIDI SETUP      (←, →, ENT)
    
```

- 2** Select "MIDI SETUP" by pressing the [→] cursor button once, then press [ENTER].

Note: if there is no disk in the disk drive, just press [ENTER].

The following display will be shown.



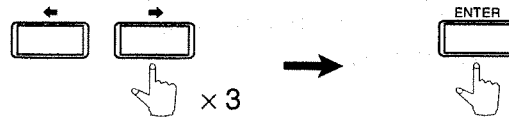
```

MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE

```

- 3** Select "ENSEMBLE" by pressing the [→] cursor button three times, then press [ENTER].

The following display will be shown.

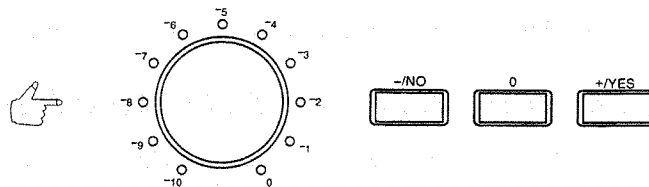


```

PIANO PART MIDI OUT=OFF
>RHYTHM CH=10

```

- 4** Use the Dial or the [+ / YES] button to set the "PIANO PART MIDI OUT" option to "ON".



- MIDI data for the left and right-hand piano parts will now be output via the Disklavier piano's MIDI OUT connection. The left-hand part on MIDI channel 1 and the right-hand part on MIDI channel 2.
- The following table shows which MIDI Controllers the Disklavier piano uses to transmit the pedal on/off data.
- No pedal data is transmitted for the Disklavier upright's Muffler pedal or the "bass sustain" pedal fitted to some Disklavier grand.(*)

	LEFT	CENTER	RIGHT
GRAND	Shift Pedal (67)	Sostenuto Pedal* (66)	Sustain Pedal (64)
UPRIGHT	Soft Pedal (67)	Muffler Pedal	Sustain Pedal (64)

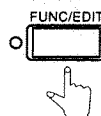
- If your MIDI tone generator is set to receive MIDI data on channel 3, it will receive the Disklavier piano's continuous pedal data (half pedal). This may produce some strange results, so do not use channel 3.

Ensemble Song's Rhythm Track

As explained on page 12, the Rhythm track of an Ensemble song is identified by the symbol . This symbol is intended for use with the rhythm track only, and it protects the rhythm track from the playback transposition function. It needs this protection because transposing a rhythm track causes bizarre results. For example, bass drums become cymbals, hi-hats become snare drums, etc.

- The Disklavier piano, by default, uses track 10 (MIDI channel 10) for rhythm, and this complies with the GM (General MIDI) standard, as used by the Yamaha TG100 Tone Generator.
- PianoSoft•Plus Ensemble songs also use track 10 for rhythm. When a PianoSoft•Plus Ensemble song is played, the Disklavier piano automatically positions this  symbol on track 10.
- If you record your own Ensemble songs using a Yamaha QX3 Sequencer, you should set the  to the track that contains your rhythm data before transposing. Follow the procedure below.

1 Press the [FUNC/EDIT] button.



The following display will be shown. If there is no disk in the disk drive, the "TRACK" option is not shown.

```
▶TRACK
*MIDI SETUP      (←, →, ENT)
```

2 Select "MIDI SETUP" by pressing the [→] cursor button once, then press [ENTER].

Note: if there is no disk in the disk drive, just press [ENTER].

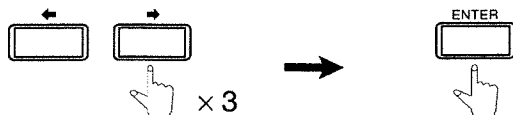
The following display will be shown.



```
▶MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE  →
```

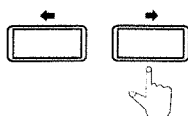
3 Select "ENSEMBLE" by pressing the [→] cursor button three times, then press [ENTER].

The following display will be shown.

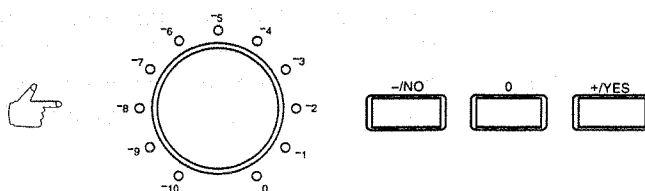


```
▶PIANO PART MIDI OUT=OFF
>RHYTHM CH=10
```

4 Press the [→] cursor button to select "RHYTHM CH".



5 Use the Dial or the [-/NO] and [+ /YES] buttons to set the rhythm channel.



Note: Although the LCD says “RHYTHM CH”, it is in fact the rhythm track that we are selecting: Rhythm Track = Rhythm MIDI Channel.

- Only tracks (MIDI channels) 4 to 16 can be used.
- The ## setting means that no rhythm track is set.
- Tracks that contain no data cannot be set as the rhythm track.

Note: The rhythm track is not protected against the Track Transpose function described in “Transposing Tracks” on page 67.

Chapter 5

Recording – General

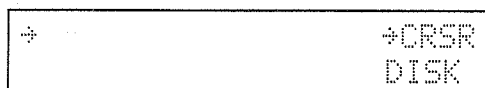
This chapter deals with the general recording functions that apply equally to Normal, L/R, and Ensemble songs, such as song titling, metronome recording, etc. Specific Normal, L/R, and Ensemble song recording functions and operations are explained in the subsequent three chapters.

Note: Before any of the recording functions can be used, you must have a formatted floppy disk in the disk drive. See “Formatting Floppy Disks” on page 4.

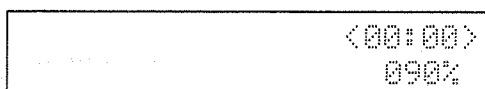
Remaining Disk Space

Disklavier piano floppy disks can store about 60 minutes of song time. However, the exact time will vary depending on the complexity of the songs and the amount of pedal data recorded.

If, when the [RECORD] button is pressed, the amount of free disk space is less than 10%, the word “DISK” will flash on the LCD, as shown below. If your next recording is quite long, it may be worth using a new disk. If you run out of disk space while recording, your song data will be lost.



During recording, the amount of disk space available is shown on the LCD, as shown below.



As the recording progresses, the amount of available disk space will decrease.

Setting the Type of Time Display

Song time is indicated in one of two formats: minutes and seconds or measures and beats. The format used depends on whether or not you use the metronome for recording.

Without the metronome the time format will be minutes and seconds.

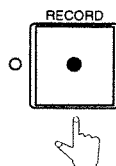
With the metronome the time format will be measures and beats.

Songs recorded with the measures and beats format can be converted to the minutes and seconds format. See “Changing Song Time Format” on page 23.

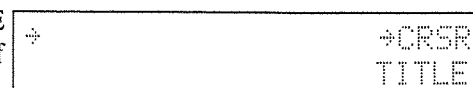
Song Titling and Title Editing

Songs can be titled before or after recording, and the title can be edited at any time.

1 Press the [RECORD] button.

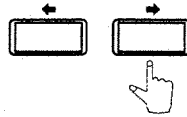


The RECORD indicator will light up and the PLAY/PAUSE indicator will flash. The following display will be shown. If the song already has a title it will be shown on the LCD.



Make sure that the correct song number is selected. If you are titling or editing an existing song, use the [SONG SELECT] buttons to select the song before proceeding.

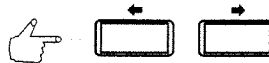
2 Press the [→] cursor button.



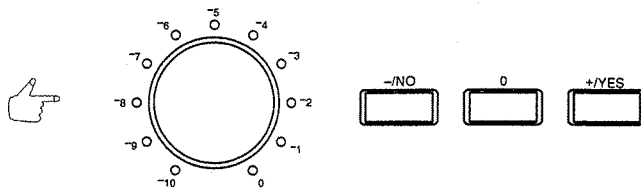
The LCD cursor will appear at the position of the first character in the title, as shown.



3 Use the [←] [→] cursor buttons to position the cursor within the title.



4 Use the Dial or the [–/NO] and [+ /YES] buttons to select a character.



Pressing the [ENTER] button will automatically move the cursor on to the next character.

Song titles can be up to 32 characters long (16 per line) The following table shows which characters are available.

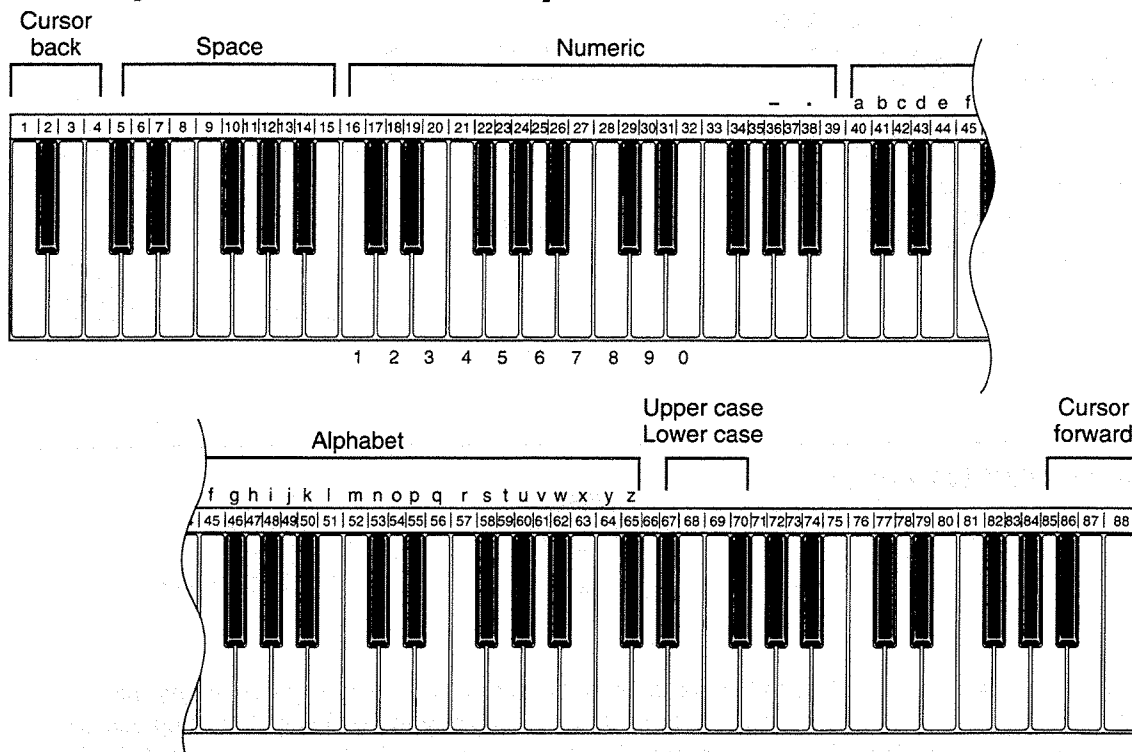
SPACE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d	e
f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
v	w	x	y	z	,	–	.	/	!	“	#	\$	%	&	'
(	)	*	+	:	;	<	=	>	?	0	1	2	3	4	5
6	7	8	9												

5 If you are titling a new song, continue with the recording process. The title will be saved to disk after recording.

If you are titling or editing an existing song, press the [STOP] button. The song title will be written to disk.

- Characters can also be entered using the Disklavier piano keyboard. See the “Keyboard Character Map” on page 19.

Keyboard Character Map

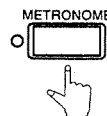


Recording with the Metronome

On page 30 of the *Getting Started & Playback Manual* we looked at using the metronome for practice playback. Here we explain how to use the metronome for recording.

Songs recorded with the metronome use the measures and beats time format.

- 1 To set up the metronome, press the [METRONOME] button.**



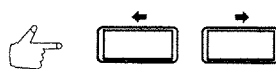
The METRONOME indicator will light up and the following display will be shown.

```
--METRONOME-- (-,+,+,+)
BEEP=ON J117 >4/4 →
```

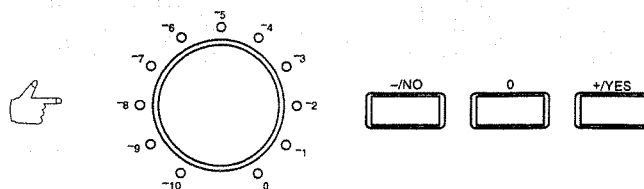
The following table shows which metronome parameters can be set.

PARAMETER	RANGE	NOTES
BEEP	ON/OFF	Switches internal beep on/off. If set to off, the Dial indicators still flash
TEMPO	40 to 230 bpm	bpm (beats per minute), 1 beat = 1 quarter note (crotchet)
TIME SIGNATURE	1/4, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 8/4, 9/4	

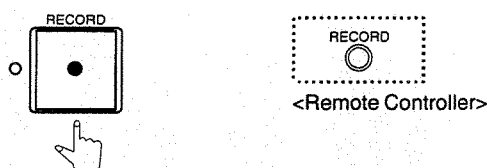
- 2** Use the [←] [→] cursor buttons to select a parameter: tempo, time signature, or beep.



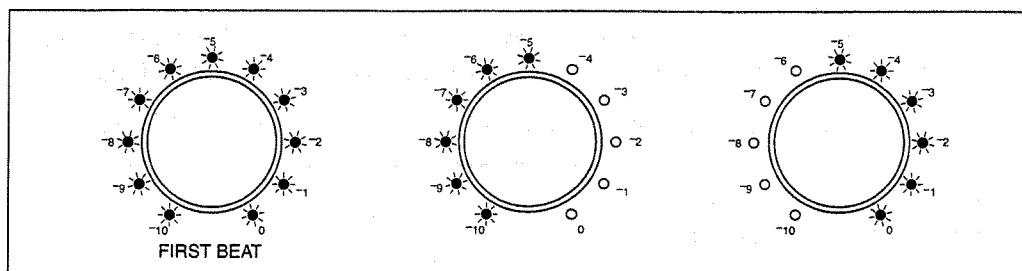
- 3** Use the Dial or the [-/NO] and [+/YES] buttons to set the selected parameter.



- 4** Press the [RECORD] button.



The metronome will start. With each beat of the metronome, a short beep is produced by the controller. The first beat of each measure is indicated by a slightly longer beep. The beep can be turned on and off. As well as the beep, the ring of indicators around the Dial flash too. On the first beat of each measure, all the indicators flash. On the remaining beats, the indicators on either side of the Dial flash alternately.

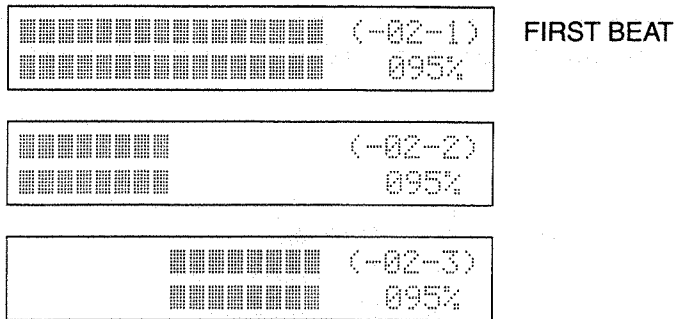


Select the type of song that you want to record. For Normal song recording see page 26, for L/R song recording see page 28, and for Ensemble song recording see page 38.

- 5** Press the [PLAY/PAUSE] button and the metronome will give you a two measure count-in before recording starts.



During the two measure count-in, the metronome beep and Dial indicators will flash and the time indicator will start counting from minus 2 measures (-02-1). Also, the following display will be shown on the LCD.



When recording starts, at (001-1), the metronome beep and Dial indicators will continue to flash and the LCD will return to the normal recording display.

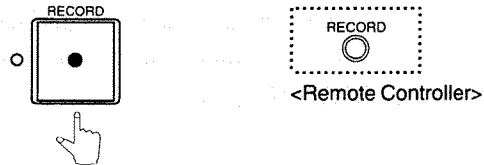
- If recording is paused, the metronome will pause, and then restart when recording is restarted.
- All metronome parameters are reset when the Disklavier piano is switched off.

Starting Recording Using a Foot Switch

Recording usually starts in one of two ways: playing the keyboard/pressing a pedal or with a metronome count-in. With this function you can use an optional Yamaha FC-5 external foot switch to start and pause recording.

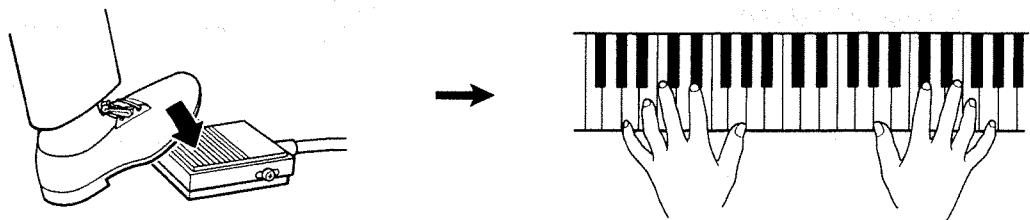
For details about connecting a Yamaha FC-5 foot switch, see “Using a Start/Stop Foot Switch” on page 103. To start recording with a connected foot switch, follow the procedure below.

1 Press the [RECORD] button.

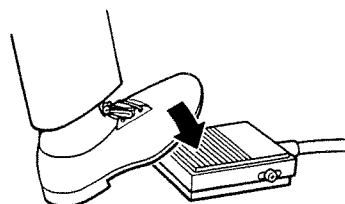


Select the type of song that you want to record. For Normal song recording see page 26, for L/R song recording see page 28, and for Ensemble song recording see page 38.

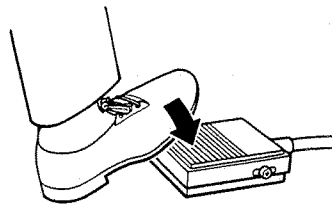
2 Press the foot switch and recording will start.



- 3** To pause recording, press the foot switch. To restart recording, press the foot switch again.



PAUSE PUSH DOWN



RESTART PUSH AGAIN

Changing Song Tempo

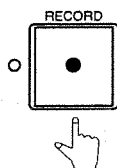
This function allows you to change the tempo of a song. It should not be confused with the playback tempo function described on page 22 of the *Getting Started & Playback Manual*, in which tempo changes are lost when the Disklavier piano is switched off. Tempo changes made using this function are saved to disk for future use.

The tempo of a song can be changed many times and reset to the original tempo at any time. This function could be used when recording a very complex song that is difficult to play at a high tempo. First, record the song at a tempo you can manage, then change the song's tempo using this function. For L/R and Ensemble songs, you could record a difficult left-hand part at a slow tempo, use this function to change the tempo, then record the right-hand part at the normal tempo.

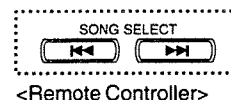
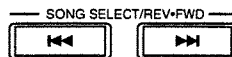
If a song's time format is minutes and seconds, tempo changes are specified as a percentage of the original tempo.

If a song's time format is measures and beats, tempo changes are specified in beats per minute.

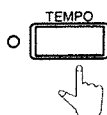
- 1** Press the [RECORD] button.



- 2** Select the song that you want to change using the [SONG SELECT] buttons.



- 3** Press the [TEMPO] button.



```
--METRONOME-- (-,+,+,+)
BEEP=ON J117 >4/4
```

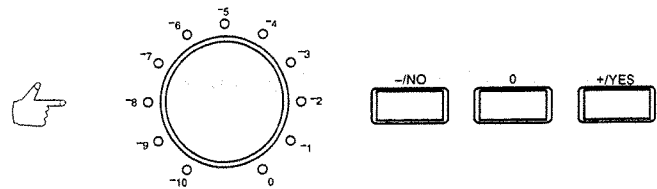
For measures and beats, the current song tempo (bpm) will be shown.

```
TEMPO 000% (-,+)
```

For minutes and seconds, "000%" will be shown.

If the song's tempo has already been changed, the new value will be shown on the LCD.

4 Use the Dial or the [-/NO] and [+ /YES] buttons to change the tempo.

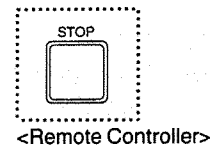
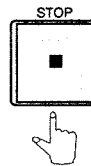


The [-/NO] button decreases the tempo, and the [+ /YES] increases the tempo. The [0] button resets the tempo value to 00% or 117 bpm.

For measure and beats, the tempo range is from 40 to 230 bpm.

For minutes and seconds, the tempo range is from -66% to +97%.

5 Press the [STOP] button to save the tempo change.



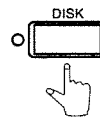
- If the tempo is not changed, pressing the [STOP] button will return you to the normal display.
- To change the tempo again or to reset the original tempo, repeat steps 1 to 5.

Changing Song Time Format

The time display format of a song can be changed from measures and beats (metronome) to minutes and seconds, or vice versa. Follow the procedure below.

Note: If the format is changed from minutes and seconds to measures and beats, the metronome beat will not match the timing of the song.

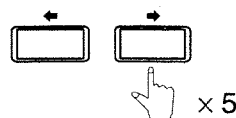
1 Press the [DISK] button.



The DISK indicator will light up and the following display will be shown.

```
*FORMAT      *SONG DELETE
(←,→,ENT)    *SONG COPY →
```

2 Press the [→] cursor button five times so that the asterisk next to the option "COUNTER" (next display) turns into a flashing triangle, as shown.



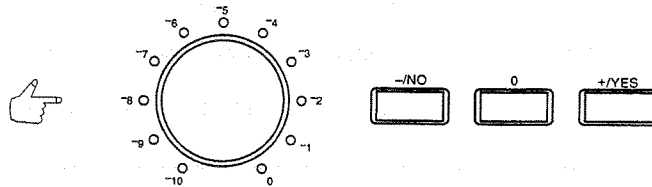
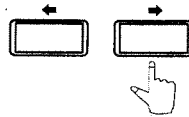
```
←*SONG SORT   *DISK COPY
▷COUNTER      *MX100A&B →
```

3 Press the [ENTER] button.

The following display will be shown.

```

==COUNTER CHANGE== (-,+)
#01 →TIME          (+,→,ENT)
  
```

4 Use the Dial or the [-/NO] and [+ /YES] buttons to select the song whose time format you want to change.**5** When you have selected a song, press the [→] cursor button.

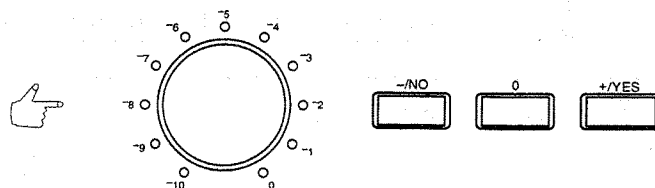
The following display will be shown.

```

==COUNTER CHANGE== (-,+)
>01 →TIME          (+,→,ENT)
  
```

To convert to the minutes and seconds format, select “TIME”.

To convert to the measures and beats format, select “METRONOME”.

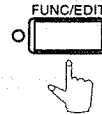
6 Use the Dial or the [-/NO] and [+ /YES] buttons to select “TIME” or “METRONOME”.**7** After making a selection, press the [ENTER] button.

The change will be written to disk.

Converting to an Ensemble Song

Normal and L/R songs can be converted into Ensemble songs. You can then record accompanying instrument tracks for playback by a multi-timbral tone generator. Follow the procedure below.

1 Press the [FUNC/EDIT] button.

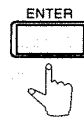


The FUNC/EDIT indicator will light up and the following display will be shown.

```

▶TRACK
*MIDI SETUP      (←,→,ENT)
    
```

2 Press the [ENTER] button.



The following displays will be available.

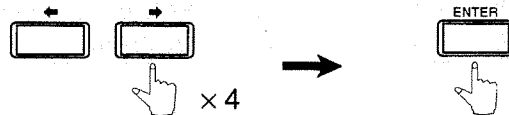
```

▶MIX TRACKS      *MOVE TRACK
*TRANS TRACK     (←,→,ENT)→
    
```

```

←*COPY TRACK *ENSEMBLE
*DELETE TRACK
    
```

3 Select "ENSEMBLE" by pressing the [→] cursor button four times, then press [ENTER].



The following display will be shown.

```

==ENSEMBLE TRACK== SURE?
CREATE ENSMBL TRACK (Y/N)
    
```

4 Press the [+ / YES] button to create an Ensemble song.

If you do not want to create an Ensemble song, press the [- / NO] button and the previous display will be shown.

- This function does not create a new Ensemble song, it converts an existing Normal or L/R song into an Ensemble song. If you want to keep your original Normal or L/R song, make a copy of it first. See "Copying a Song" on page 73.
- If a Normal song is converted, the left and right-hand piano data is stored on track 1.
- If an L/R song is converted, the left-hand part is stored on track 1 and the right-hand part is stored on track 2.

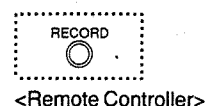
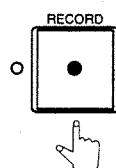
Chapter 6

Recording a Normal Song

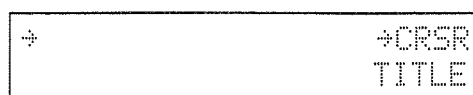
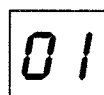
In this chapter we explain how to record a Normal song. For Normal song recording you play the left and right-hand piano parts and the pedals simultaneously.

For a full explanation of what you can do with a Normal song, see “Normal Songs” on page 8.

1 Press the [RECORD] button.



The RECORD indicator will light up, the PLAY/PAUSE indicator will flash, and the following display will be shown.



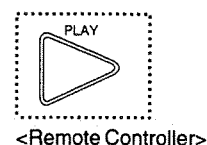
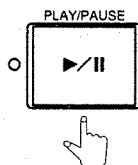
If the disk already contains some songs, a new song number will be created. For example, if the last song to be recorded was No. 6, the new song will be No. 7.

Note: If, when you pressed the [RECORD] button, the currently selected song was an Ensemble song or an L/R song with only one track recorded, a new song number will not be created. In this case, the controller thinks that you want to record some more tracks to that L/R or Ensemble song and the song number will remain the same. To record a new song, repeatedly press the [SONG SELECT ►►] button until the new song number appears on the display.

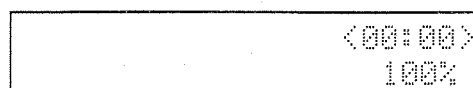
You can title your new song either now or after recording. In either case, see “Song Titling and Title Editing” on page 17. If you want to record a Normal song using the metronome, see “Recording with the Metronome” on page 19.

If you want to start recording using a foot switch, see “Starting Recording Using a Foot Switch” on page 21.

2 Press the [PLAY/PAUSE] button.

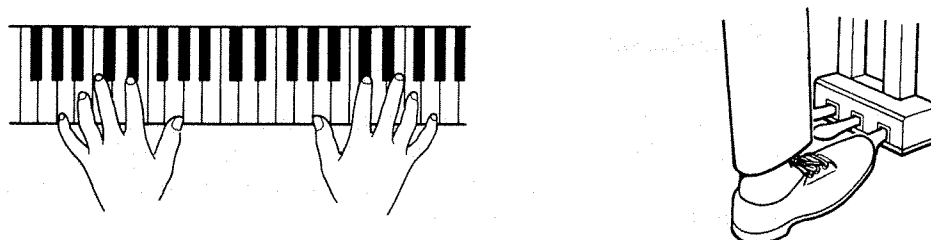


One beep will sound, the PLAY/PAUSE indicator will stop flashing, and the following display will be shown.



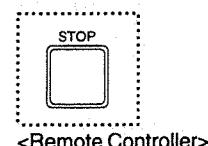
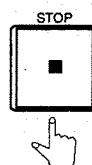
The Disklavier piano is now waiting for you to play.

3 Start playing your song and recording will begin.



As soon as you play the keyboard or press a pedal, recording will start.

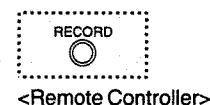
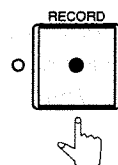
4 When you have finished playing your song, press the [STOP] button.



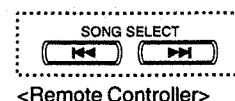
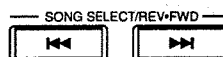
Your new song will be saved to disk.

Re-Recording

1 If you want to re-record a Normal song, press the [RECORD] button.



2 Use the [SONG SELECT] buttons to select the song.



3 Repeat steps 2 to 4 of "Recording a Normal Song" on page 26.

When the [STOP] button is pressed, the following display will be shown.

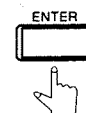
```
SAVE TO DISK?      (←,→)
▶SAVE *NEW *CANCEL(ENT)
```

SAVE will save your new recording with the current song number and delete the previous song data.

NEW will save your new recording with a new song number and leave the previous song on the disk.

CANCEL will discard the new recording and leave the previous song on the disk.

4 Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.



Chapter 7

Recording an L/R Song

In this chapter we explain how to record an L/R song. L/R songs can be recorded in one of two ways: by recording your left and right-hand parts separately or by setting a split point on the keyboard before recording. L/R songs can also be recorded with a pedal count-in. A four-handed piano composition could be recorded as an L/R song.

For a full explanation of what you can do with an L/R song, and how they differ from Normal songs, see "L/R Songs" on page 8.

Note: Before any of the recording functions can be used, you must have a formatted floppy disk in the disk drive. See "Formatting Floppy Disks" on page 4.

Recording the Left & Right Parts Separately

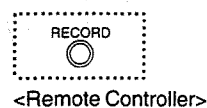
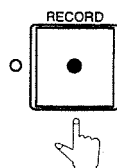
For this type of L/R song recording, the left and right-hand parts are recorded separately. While the second part is being recorded, the first part will play back for monitoring. The playback monitor function can be turned off.

Either part can be recorded first. The pedals can be recorded with either part (the default setting is with the first).

If the left-hand or right-hand part is very difficult to play at normal speed, the first part can be recorded at a slow tempo, the song tempo changed, and then the second part recorded at the normal song speed. See "Changing Song Tempo" on page 22.

Recording the First Part

1 Press the [RECORD] button.



The RECORD indicator will light up, the PLAY/PAUSE indicator will flash, and the following display will be shown.

01

→CRSR
TITLE

If the disk already contains some songs, a new song number will be created. For example, if the last song to be recorded was No. 6, the new song will be No. 7.

Note: If, when you pressed the [RECORD] button, the currently selected song was an Ensemble song or an L/R song with only one track recorded, a new song number will not be created. In this case, the controller thinks that you want to record some more tracks to that L/R or Ensemble song and the song number will remain the same. To record a new song, repeatedly press the [SONG SELECT ►►] button until the new song number appears on the display.

You can title your new song either now or after recording. In either case, see “Song Titling and Title Editing” on page 17. If you want to record your L/R song using the metronome, see “Recording with the Metronome” on page 19.

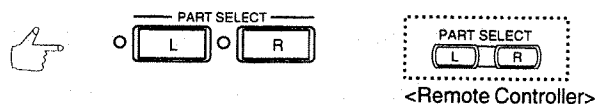
If you want to record a pedal count-in, see “Recording a Pedal Count-In” on page 36. If you want to start recording using a foot switch, see “Starting Recording Using a Foot Switch” on page 21.

2 Press a [PART SELECT] button to select the part that you want to record first.

[PART SELECT L] to select the left-hand part.

[PART SELECT R] to select the right-hand part.

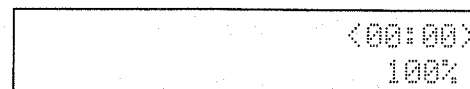
The PART SELECT indicator of the selected part will light up red.



3 Press the [PLAY/PAUSE] button.

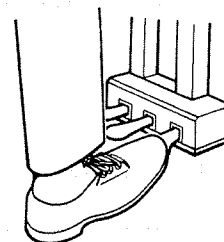
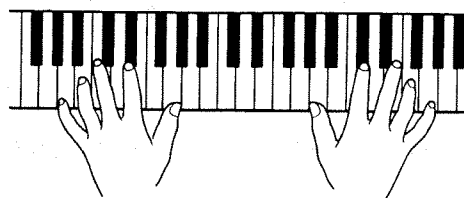


One beep will sound, the PLAY/PAUSE indicator will stop flashing, and the following display will be shown.



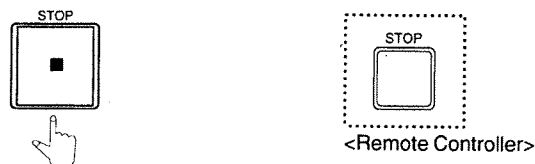
The Disklavier piano is now waiting for you to play the first part.

4 Start playing the first part and recording will begin.



As soon as you play the keyboard or press a pedal, recording will start.

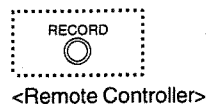
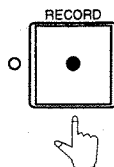
5 When you have finished playing the first part, press the [STOP] button.



The first part will be saved to disk.

Recording the Second Part

1 Press the [RECORD] button.



The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

If you are recording the second part immediately after recording the first part, the same song number will be selected automatically, and the previously recorded part's PART SELECT indicator will light up green.

If you want to change the song's tempo before recording the second part, see "Changing Song Tempo" on page 22.

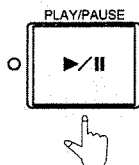
2 Press a [PART SELECT] button to select the next part for recording. [PART SELECT L] to select the left-hand part. [PART SELECT R] to select the right-hand part.



The PART SELECT indicator of the selected part will light up red.

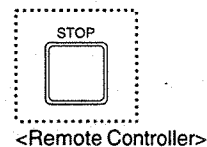
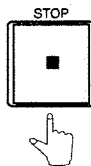
If you don't want to monitor the first part or you want to re-record the pedal part, see step 4 of "Re-Recording One Part" on page 34.

3 To start recording, press the [PLAY/PAUSE] button.



Recording will start immediately, so be sure that you are ready to play the second part.

4 When you have finished playing the second part, press the [STOP] button.



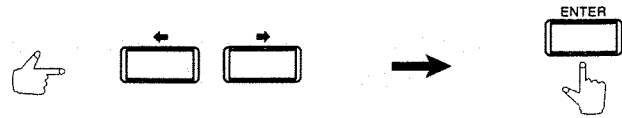
The following display will be shown.

```

SAVE TO DISK?      (←, →)
▶SAVE *NEW *CANCEL(ENT)
  
```

- SAVE will save the second part with the first part using the current song number.
- NEW will save the second part under a new song number. The first part will kept under the previous song number.
- CANCEL will discard the second part. The first part will be kept under the previous song number.

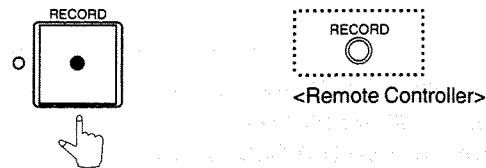
- 5** Use the[←] [→] cursor buttons to select an option, then press the [ENTER] button.



Recording with a Left & Right Split Point

For this type of L/R song recording, a keyboard split point is set before recording, then the left and right-hand parts are played simultaneously. Notes played on the left-hand side of the split point are saved as the left-hand part and notes played on the right-hand side of the split point are saved as the right-hand part.

- 1** Press the [RECORD] button.



The RECORD indicator will light up, the PLAY/PAUSE indicator will flash, and the following display will be shown.



If the disk already contains some songs, a new song number will be created. For example, if the last song to be recorded was No. 6, the new song will be No. 7.

Note: If, when you pressed the [RECORD] button, the currently selected song was an Ensemble song or an L/R song with only one track recorded, a new song number will not be created. In this case, the controller thinks that you want to record some more tracks to that L/R or Ensemble song and the song number will remain the same. To record a new song, repeatedly press the [SONG SELECT ►►] button until the new song number appears on the display.

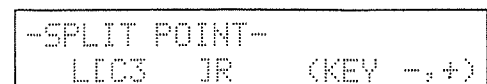
You can title your new song either now or after recording. In either case, see “Song Titling and Title Editing” on page 17. If you want to record your L/R song using the metronome, see “Recording with the Metronome” on page 19.

If you want to record a pedal count-in, see “Recording a Pedal Count-In” on page 36. If you want to start recording using a foot switch, see “Starting Recording Using a Foot Switch” on page 21.

- 2** Press both [PART SELECT] buttons.

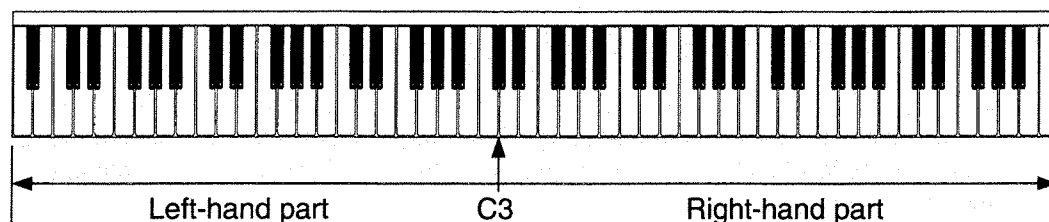


Both PART SELECT indicators will light up red and the following display will be shown.

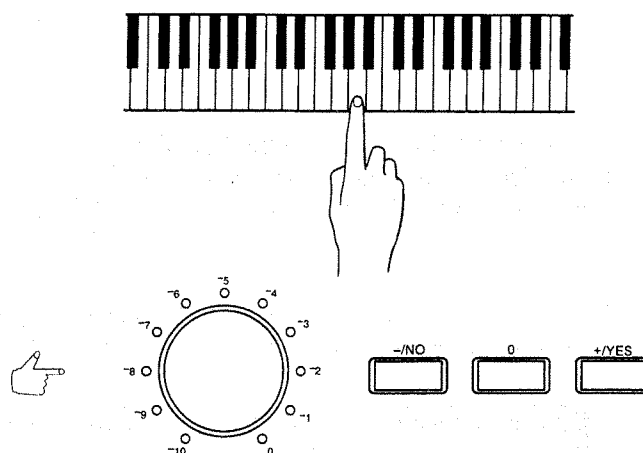


From the above display we can see that the default keyboard split point is note C3, or middle C.

In this case, note C3 and notes below are saved as the left-hand part and note C#3 and above are saved as the right-hand part, as shown below.

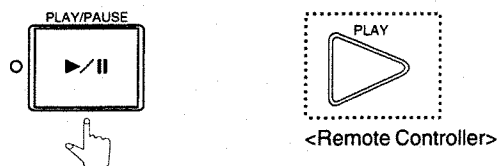


- 3** If you want to change the split point, press a key on the keyboard, use the Dial, or the [-/NO] and [+ /YES] buttons.

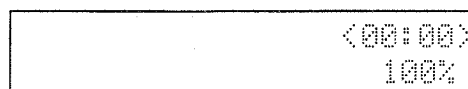


The split point can be set from note A-1 to note C7.

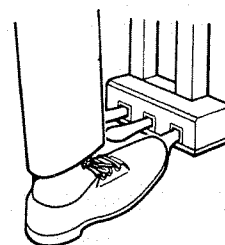
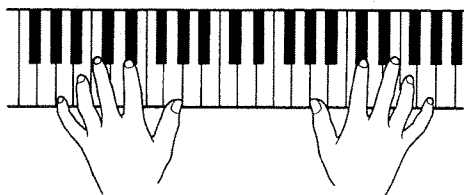
- 4** Press the [PLAY/PAUSE] button.



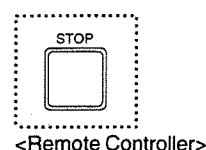
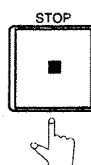
One beep will sound, the PLAY/PAUSE indicator will stop flashing, and the following display will be shown.



The Disklavier piano is now waiting for you to play.

5 Start playing your song and recording will begin.

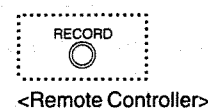
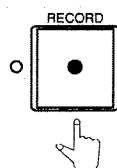
As soon as you play the keyboard or press a pedal, recording will start.

6 When you have finished playing your song, press the [STOP] button.

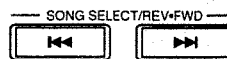
Your new L/R song will be saved to disk.

Re-Recording Both Parts

To re-record both parts of an L/R song, follow the procedure below.

1 Press the [RECORD] button.

The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

2 Use the [SONG SELECT] buttons to select the L/R song.**3 Repeat steps 2 to 6 of "Recording with a Left & Right Split Point" on page 31.**

When the [STOP] button is pressed, the following display will be shown.

```

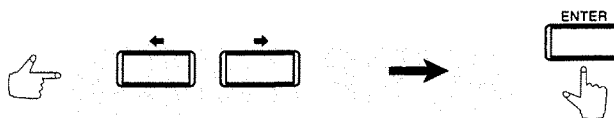
SAVE TO DISK?      (+,+)
▶SAVE *NEW *CANCEL(ENT)
  
```

SAVE will save the new recording using the current song number.

NEW will save the new recording under a new song number. The existing song will be kept under the previous song number.

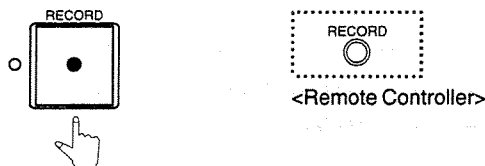
CANCEL will discard the new recording and keep the existing song.

- 4** Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.



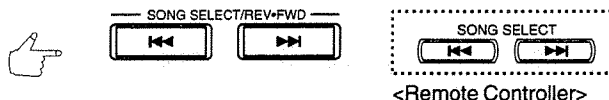
Re-Recording One Part

- 1** Press the [RECORD] button.



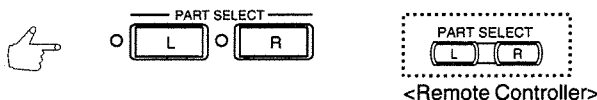
The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

- 2** Use the [SONG SELECT] buttons to select the song.



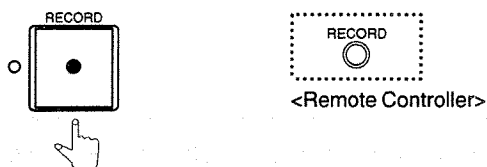
Both PART SELECT indicators will light up green.

- 3** Select the part that you want to re-record.
Press [PART SELECT L] for the left-hand part.
Press [PART SELECT R] for the right-hand part.



The PART SELECT indicator of the selected part will light up red.

- 4** Press the [RECORD] button.



The following display will be shown.

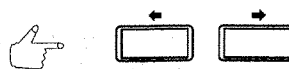
```
PEDAL RECORD MOFF (-,+)
MONITOR PIANO=ON (+,+)
```

There are two options available on this display: Pedal Record on/off and Monitor Piano on/off.

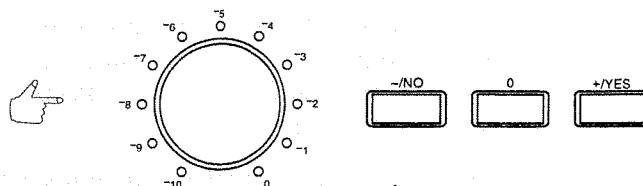
With the Pedal Record option set to OFF, the existing pedal data will be kept. With the Pedal Record option set to ON, new pedal data will be recorded, replacing the existing data.

With the Monitor Piano option set to ON, while one part is re-recorded, the other piano part will playback. With the Monitor Piano option set to OFF, the other piano part will not playback.

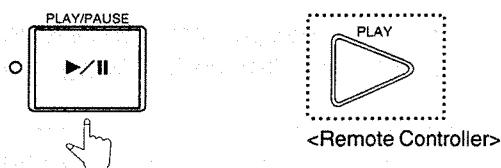
- 5** Use the [←] [→] cursor buttons to select an option.



- 6** Use the Dial or the [-/NO] and [+ /YES] buttons to set the option.

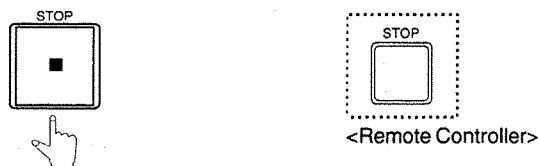


- 7** To start recording, press the [PLAY/PAUSE] button.



Recording will start immediately, so be sure that you are ready to play the part.

- 8** When you have finished playing, press the [STOP] button.

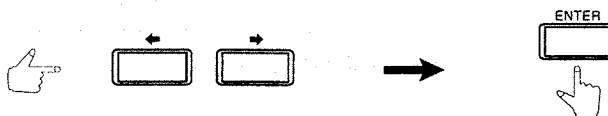


The following display will be shown.

```
SAVE TO DISK?      (+,+)
▶SAVE *NEW  *CANCEL(ENT)
```

- SAVE** will save the re-recorded part with the other existing part using the current song number.
- NEW** will save the re-recorded part under a new song number. The existing parts will be kept under the previous song number.
- CANCEL** will discard the re-recorded part and keep the existing parts.

- 9** Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.



Recording a Pedal Count-In

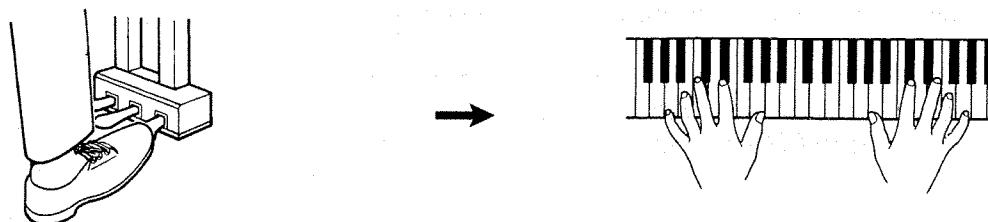
L/R recording usually starts in one of two ways: playing the keyboard/pressing a pedal or with a metronome count-in. With this function, you can use the sustain pedal to record a count-in before you start playing the keyboard. Basically, each press of the sustain pedal before the keyboard is played is recorded as a count-in beat.

When an L/R song with a pedal count-in is played back, the sustain pedal counts you in by depressing itself the same number of times that you pressed it when recording the count-in. Also, the metronome beeps and the ring of indicators around the Dial flashes in synchronization with the sustain pedal movements.

For playback, the sustain pedal and metronome beep count-in can be turned on and off. The Disklavier piano's default setting is off, so you will need to turn the Pedal Count-In function on before starting playback. See "Playback with a Pedal Count-In" on page 36.

1 Select the part that you want to record, left, right, or both, then engage Record Ready mode. See "Recording an L/R Song" on page 28.

2 Count yourself in by pressing the sustain pedal, then start playing the keyboard.



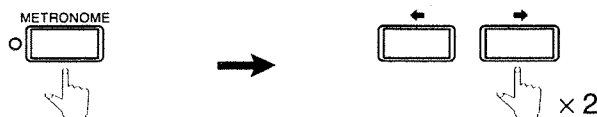
- A pedal count-in can be two beats, three beats, four beats, or any number of beats. Basically, each press of the sustain pedal before the keyboard is played is recorded as a count-in beat.
- Once a key on the keyboard has been played, subsequent sustain pedal presses will not be recorded as count-in beats.

Note: The pedal count-in function can be used with only L/R song recording.

Playback with a Pedal Count-In

For L/R songs recorded with a pedal count-in, the pedal and metronome beep count-in can be turned on and off. The Disklavier piano's default setting is off, so you will need to turn on the pedal count-in function before starting playback. Follow the procedure below.

1 Press the [METRONOME] button, then the [→] cursor button twice.

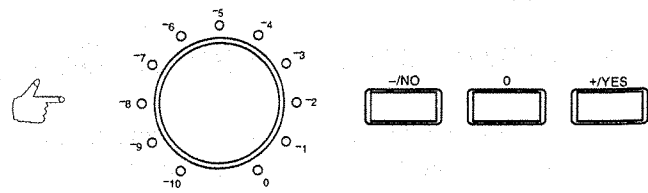


The following display will be shown.

```

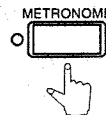
--METRONOME-- (-, +, ←)
+ PEDAL COUNT=OFF
  
```

- 2** Use the Dial or the [-/NO] and [+ /YES] buttons to set the "PEDAL COUNT" option to "ON".



--METRONOME-- (-, +, +)
+ PEDAL COUNT ON

- 3** Press the [METRONOME] button again to return to the normal display.



Chapter 8

Recording an Ensemble Song

In this chapter we explain how to record an Ensemble song. Ensemble songs can be recorded from new or created by converting a Normal or L/R song. See "Converting to an Ensemble Song" on page 25.

An Ensemble song can have 2 piano parts (left and right), up to 12 accompanying instrument tracks, and one rhythm track. See "Ensemble Songs" on page 10 for an explanation of Ensemble song contents.

If you are going to include a rhythm track in your song, then it is best to record this first, see "Recording the Rhythm Track (New Song)" on page 38.

If you are only going to include a piano part and some accompanying instrument tracks, see "Recording the Piano Parts" on page 43.

If you have converted a Normal or L/R song into an Ensemble song, you will already have your piano parts and will probably want to record some accompanying instrument tracks, see "Recording the Accompanying Tracks" on page 46. It is possible to add a rhythm track to a converted Ensemble song, but it may be difficult to keep the timing correct, especially if the original song was recorded without the metronome.

Note: For Ensemble song recording, you must have a multi-timbral MIDI tone generator, such as the Yamaha TG100, connected to the Disklavier piano. Connect the tone generator as shown on page 33 of the *Getting Started & Playback Manual*.

Note: Before any of the recording functions can be used, you must have a formatted floppy disk in the disk drive. See "Formatting Floppy Disks" on page 4.

Recording the Rhythm Track (New Song)

The rhythm track is slightly different from the other accompanying instrument tracks, in that you can record the rhythm track with quantize and overdub. To use the quantize function, you must record the Ensemble song using the metronome. The rhythm track can be built up in stages, that is, first we record the bass drum, then we overdub a snare drum, then some hi-hats, etc.

The diagram illustrates the step-by-step construction of a rhythm track in 4/4 time. Each stage is shown on a five-line staff with a bass clef and a 4/4 time signature.

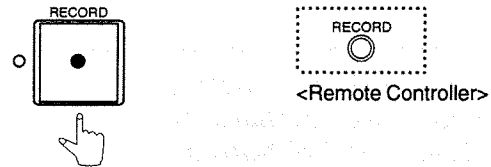
- 1st RECORDING BASS DRUM:** The first staff shows a bass drum pattern with quarter notes on the first and third beats, and eighth notes on the second and fourth beats.
- OVERDUB SNARE DRUM:** The second staff shows a snare drum pattern with quarter notes on the second and fourth beats, and eighth notes on the first and third beats.
- OVERDUB CLOSED HI-HATS:** The third staff shows a closed hi-hats pattern with quarter notes on the first, second, and fourth beats, and eighth notes on the third beat.
- COMPLETED RHYTHM PART:** The fourth staff shows the final completed rhythm track, which is a combination of the patterns from the previous three stages.

In the following procedure we will record a rhythm track for a new Ensemble song and use the quantize function.

Before recording the rhythm track, you must decide which track you want to use. If you are using a GM compatible tone generator such as the Yamaha TG100 Tone Generator, the rhythm track

should be set to track 10. To set the rhythm track, see “Ensemble Song’s Rhythm Track” on page 15.

1 Press the [RECORD] button.



The RECORD indicator will light up, the PLAY/PAUSE indicator will flash, and the following display will be shown.

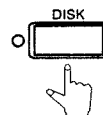


If the disk already contains some songs, a new song number will be created. For example, if the last song to be recorded was No. 6, the new song will be No. 7.

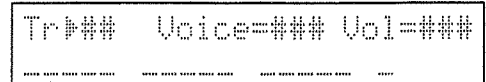
Note: If, when you pressed the [RECORD] button the currently selected song was an Ensemble song or an L/R song with only one track recorded, a new song number will not be created. In this case, the controller thinks that you want to record some more tracks to that L/R or Ensemble song and the song number will remain the same. To record a new song, repeatedly press the [SONG SELECT ►►] button until the new song number appears on the display.

You can title your new song either now or after recording. In either case, see “Song Titling and Title Editing” on page 17.

2 Press the [DISK] button.



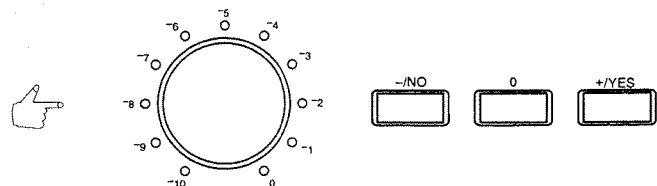
The DISK indicator will light up and the following display will be shown.



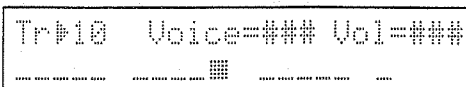
The following table shows the voice and volume parameters that can be set for each track.

PARAMETER	RANGE	NOTES
Tr	1, 2, 4~16	Select the track to record (cannot select track 3).
Voice	1 to 128	Select a voice on the MIDI tone generator.
Vol	0 to 127	Set the volume of the MIDI tone generator's voice.

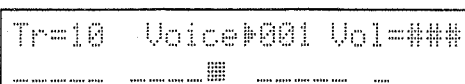
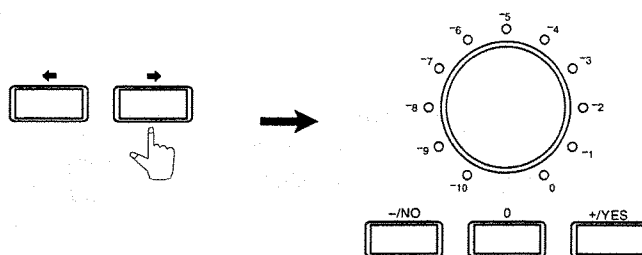
3 Use the Dial or the [-/NO] and [+ /YES] buttons to select track 10 (Tr 10).



The display should look like the one shown. If it doesn't, make sure that you have selected "Channel 10" as the rhythm track. See "Ensemble Song's Rhythm Track" on page 15.

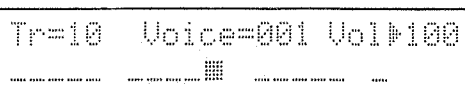
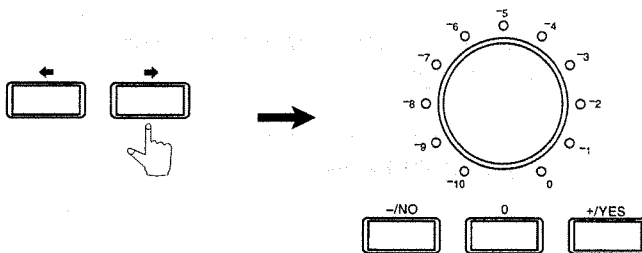


- 4** Press the [→] cursor button once, then use the Dial or the [-/NO] and [+ /YES] buttons to select a voice number.



On a GM-compatible tone generator, track 10 (MIDI channel 10) is always used for drums, so selecting different voice numbers may select various drum kits on the MIDI tone generator. The voice number (MIDI Program Change number) can be set from 1 to 128. Your tone generator's *Operating manual* will show you which voice numbers (MIDI Program Change numbers) select which drum kits.

- 5** Press the [→] cursor button once more, then use the Dial or the [-/NO] and [+ /YES] buttons to set the volume of the rhythm track.

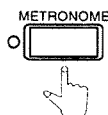


This volume setting will not adjust the overall volume of the tone generator, only the volume of the rhythm track. The volume can be set from 0 to 127.

You should now be able to play the selected drum kit from the Disklavier piano keyboard. If not, check that you have made the correct settings in steps 3 to 5.

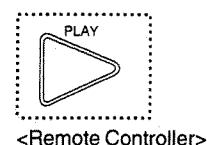
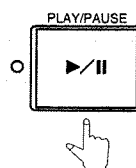
The rhythm track's voice selection and volume setting can be edited after recording. See "Editing a Track's Voice & Volume" on page 48.

- 6** Press the [METRONOME] button.



- 7** See "Recording with the Metronome" on page 19 for details about setting up the metronome.

8 When you have set the metronome, press the [PLAY/PAUSE] button.



The following display will be shown.

```
RHYTHM Tr OVERDUB (-,+)
QUANTIZE=OFF (+,→)
```

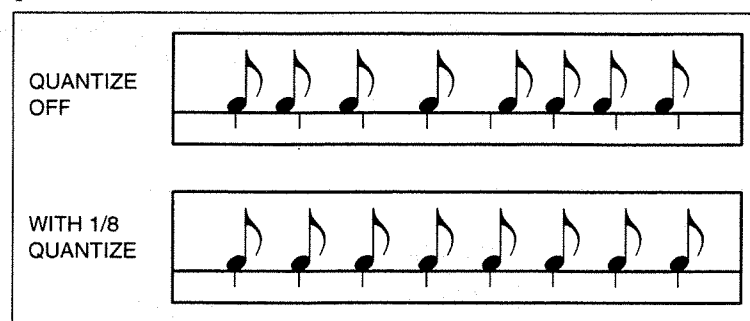
The “RHYTHM Tr” parameter can be set to either “OVERDUB” or “REPLACE”. Because we are recording the rhythm track for the first time, we will use the default setting, “OVERDUB”.

The “QUANTIZE” parameter can be set to any one of the following values.

OFF	1/4	1/6	1/8	1/12	1/16
-----	-----	-----	-----	------	------

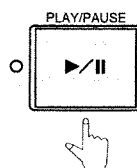
Quantize is a useful function for recording a rhythm track – it helps to correct the timing of drum notes that are played with the Disklavier piano keyboard.

In the example below, a measure of 8th notes is shown recorded first with quantize off, and then with quantize set to 1/8.



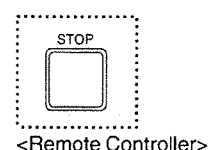
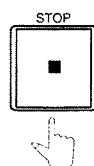
Quantizing is a permanent operation. A quantized rhythm track cannot be played back with the quantize turned off. Each rhythm track overdub can be recorded using a different quantize value.

9 When you have set a quantize value, press the [PLAY/PAUSE] button.



The metronome will give you a two measure count-in, then recording will start.

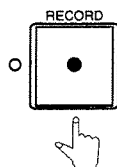
10 When you have finished playing, press the [STOP] button.



Overdubbing the Rhythm Track

Once the rhythm track has been recorded, extra drums can be overdubbed.

1 Press the [RECORD] button.

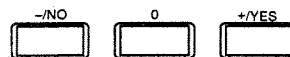
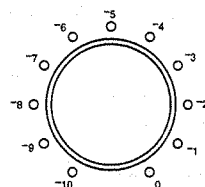


The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

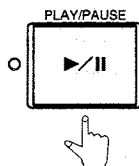
2 Use the [SONG SELECT] buttons to select the Ensemble song.



3 Use the Dial or the [-/NO] and [+ /YES] buttons to select track 10 (Tr 10).



4 Press the [PLAY/PAUSE] button.



The following display will be shown.

```
RHYTHM Tr->OVERDUB (-,+)  
QUANTIZE=OFF (+,+)
```

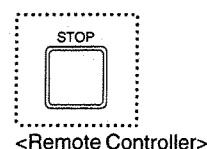
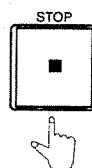
5 Set the quantize option as required. See "Recording the Rhythm Track (New Song)" on page 38.

6 Press the [PLAY/PAUSE] button.



The metronome will give you a two measure count-in, then recording will start.

7 When you have finished playing the overdub, press the [STOP] button.



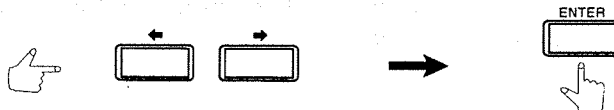
The following display will be shown.

```

SAVE TO DISK?      (+,+)
▶SAVE *NEW *CANCEL(ENT)
  
```

- SAVE** will save the new overdub with the existing rhythm track using the current song number.
- NEW** will save the new overdub under a new song number. The existing rhythm track will be kept under the previous song number.
- CANCEL** will discard the new overdub. The existing rhythm track will be kept under the previous song number.

8 Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.

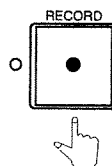


Recording the Piano Parts

The Disklavier piano parts are recorded on tracks 1 and 2. If you want to keep the left and right-hand piano parts separate, record the left-hand part on track 1, then the right-hand part on track 2. If you want to record both hands playing simultaneously, record on track 1.

The following procedure can be used for recording the piano parts to a new Ensemble song or an existing Ensemble song.

1 Press the [RECORD] button.



The RECORD indicator will light up, the PLAY/PAUSE indicator will flash and the following display will be shown.

```

01
  
```

```

÷ TITLE
  
```

If the disk already contains some songs, a new song number will be created. For example, if the last song to be recorded was No. 6, the new song will be No. 7.

Note: If, when you pressed the [RECORD] button the currently selected song was an Ensemble song or an L/R song with only one track recorded, a new song number will not be created. In this case, the controller thinks that you want to record some more tracks to that L/R or Ensemble song and the song number will remain the same. To record a new song, repeatedly press the [SONG SELECT ►►] button until the new song number appears on the display.

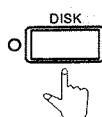
You can title your new song either now or after recording. In either case, see “Song Titling and Title Editing” on page 17. If you want to record using the metronome, see “Recording with the Metronome” on page 19.

If you want to start recording using a foot switch, see “Starting Recording Using a Foot Switch” on page 21.

- 2** If you are recording the piano parts to an existing Ensemble song, a display similar to the one shown on the right will appear.

Tr▶## Voice=### Vol=###
0_ _ _ 0_ _ _

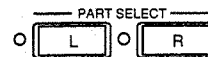
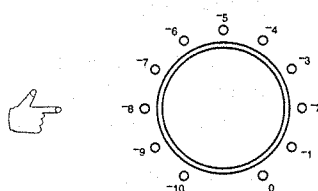
If you are recording a new song, press the [DISK] button.



The DISK indicator will light up and the following display will be shown.

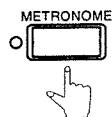
Tr▶## Voice=### Vol=###
_ _ _ _ _ _ _ _ _ _

- 3** Use the Dial or the [PART SELECT L] and [PART SELECT R] buttons to select track 1 (left) or track 2 (right).



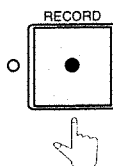
If you are recording the piano parts for an Ensemble song that already exists or you want to use the minutes and seconds time format, ignore steps 4 and 5.

- 4** If you are recording a new song, press the [METRONOME] button.



- 5** See “Recording with the Metronome” on page 19 for details of setting up the metronome.

- 6** Press the [RECORD] button.



<Remote Controller>

The following display will be shown.

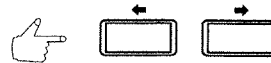
```
PEDAL RECORD  OFF (-,+)  
MONITOR PIANO ON (+,+)
```

There are two options available on this display: Pedal Record on/off and Monitor Piano on/off.

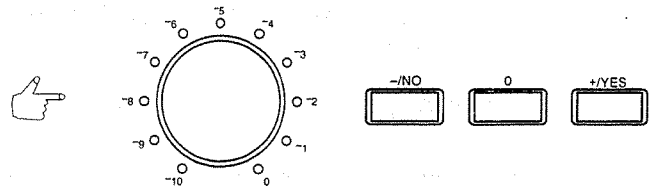
With the Pedal Record option set to OFF, the existing pedal data will be kept. With the Pedal Record option set to ON, new pedal data will be recorded, replacing the existing data.

With the Monitor Piano option set to ON, while one part is re-recorded, the other piano part will play back. With the Monitor Piano option set to OFF, the other piano part will not play back.

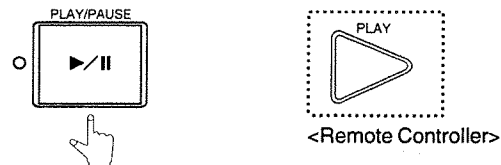
7 Use the [←] [→] cursor buttons to select an option.



8 Use the Dial or the [-/NO] and [+ /YES] buttons to set the option.



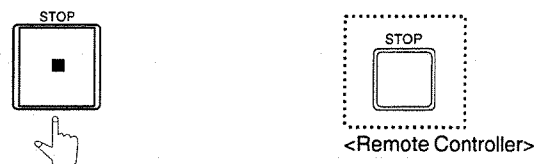
9 Press the [PLAY/PAUSE] button.



For metronome recording, recording will start after a two measure count-in.

For minutes and seconds recording, one beep will sound and the Disklavier piano will wait for you to start playing either the keyboard or the pedals.

10 When you have finished playing the piano part, press the [STOP] button.



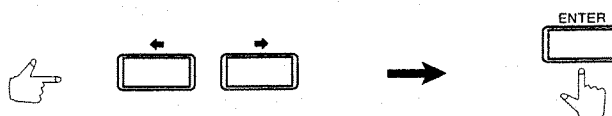
If you are recording a new Ensemble song, it will be saved to disk.

If you are adding piano parts to an existing Ensemble song, the following display will be shown.

```
SAVE TO DISK? (+,+)  
▶SAVE *NEW *CANCEL(ENT)
```

- SAVE** will save the new piano part with the existing tracks using the current song number.
- NEW** will save the new piano part and the existing tracks under a new song number. The existing tracks will also be kept under the previous song number.
- CANCEL** will discard the new piano part. The existing tracks will be kept under the previous song number.

11 Use the [←][→] cursor buttons to select an option, then press the [ENTER] button.

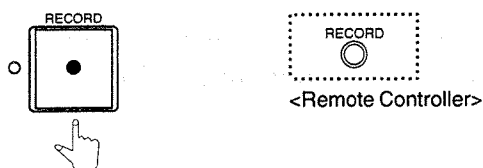


Recording the Accompanying Tracks

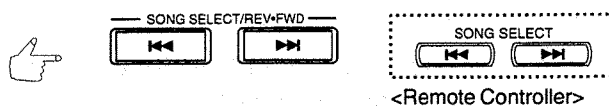
Accompanying instruments can be recorded onto tracks 4 to 16. The voice and volume of each track can be set before recording and edited after recording. See “Editing a Track’s Voice & Volume” on page 48.

The following procedure is for adding accompanying instrument tracks to an Existing Ensemble song.

1 Press the [RECORD] button.



2 Use the [SONG SELECT] buttons to select the Ensemble song.



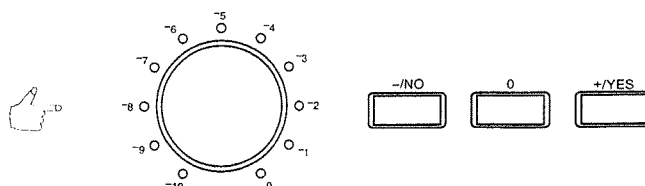
Existing tracks are indicated by the filled symbols on the bottom line of the LCD.

Tr▶### Voice=### Vol=###
0_ _ _ 0_ _ _

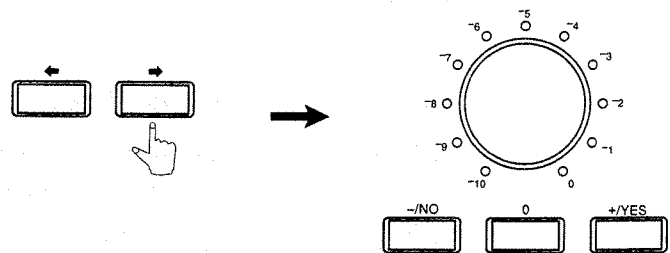
The following table shows the voice and volume parameters that can be set for each track.

PARAMETER	RANGE	NOTES
Tr	1, 2, 4 to 16	Select the track to record (track 3 used for pedal data).
Voice	1 to 128	Select a voice on the MIDI tone generator
Vol	0 to 127	Set the volume of the MIDI tone generator's voice.

3 Use the Dial or the [–/NO] and [+ /YES] buttons to select a track (Tr) that you want to record.

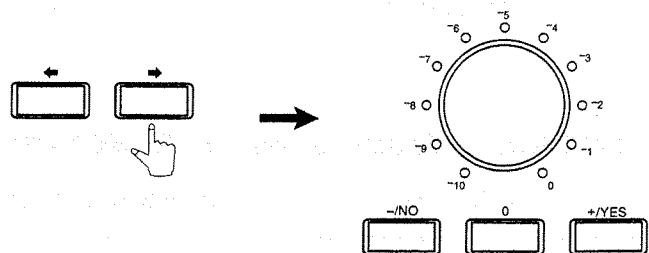


- 4** Press the [→] cursor button once, then use the Dial or the [-/NO] and [+/YES] buttons to select a voice number.



Your tone generator's *Operating manual* will show you which voice numbers (MIDI Program Change numbers) select which voices.

- 5** Press the [→] cursor button once more, then use the Dial or the [-/NO] and [+/YES] buttons to set the track's volume.

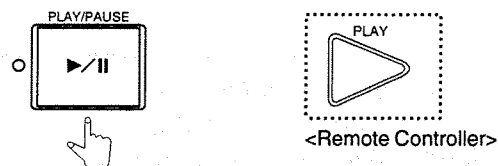


This volume setting will not adjust the overall volume of the tone generator, only the volume of the currently selected track. The volume can be set from 0 to 127.

You should now be able to play the selected voice from the Disklavier piano keyboard. If not, check that you have made the correct settings in steps 3 to 5.

A track's voice selection and volume setting can be edited after recording. See "Editing a Track's Voice & Volume" on page 48.

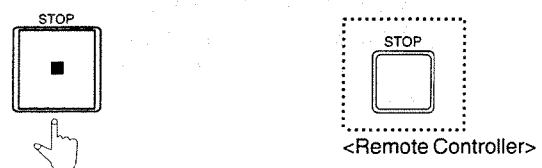
- 6** Press the [PLAY/PAUSE] button.



For metronome recording, recording will start after a two measure count-in.

For minutes and seconds recording, recording will start immediately, so be ready to play the accompanying track.

- 7** When you have finished playing, press the [STOP] button.

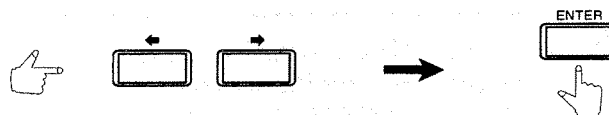


The following display will be shown.

SAVE TO DISK? (+, -)
▶SAVE *NEW *CANCEL(ENT)

- SAVE** will save the new track with the existing tracks using the current song number.
- NEW** will save the new track and the existing tracks under a new song number. The existing tracks will also be kept under the previous song number.
- CANCEL** will discard the new track. The existing tracks will be kept under the previous song number.

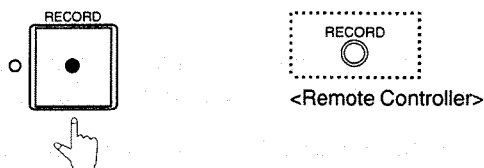
- 8** Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.



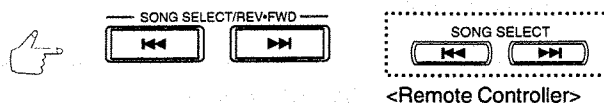
Editing a Track's Voice & Volume

A track's voice selection and volume setting can be changed. Follow the procedure below.

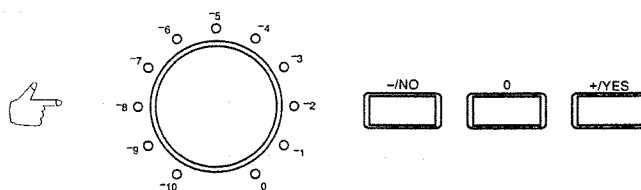
- 1** Press the [RECORD] button.



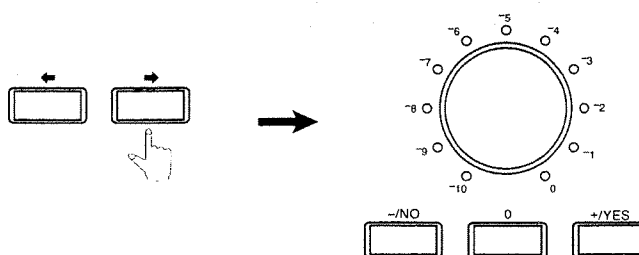
- 2** Use the [SONG SELECT] buttons to select the song.



- 3** Use the Dial or the [-/NO] and [+/YES] buttons to select the track whose voice or volume you want to change.

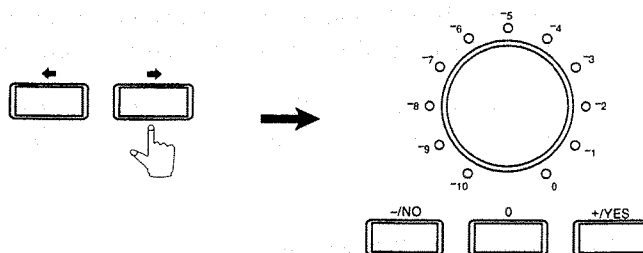


- 4** Press the [→] cursor button once, then use the Dial or the [-/NO] and [+/YES] buttons to change the voice number.



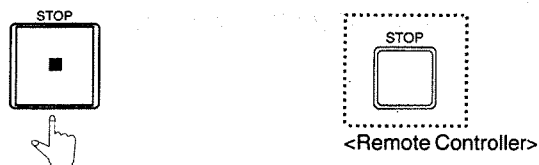
The voice number (MIDI Program Change number) can be set from 1 to 128. Your tone generator's *Operating manual* will show you which voice numbers (MIDI Program Change numbers) select which voices.

- 5** Press the [→] cursor button once more, then use the Dial or the [-/NO] and [+ /YES] buttons to change the track's volume.



This volume setting will not adjust the overall volume of the tone generator, only the volume of the currently selected track. The volume can be set from 0 to 127.

- 6** Press the [STOP] button.

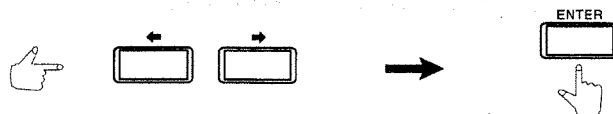


The following display will be shown.

```
SAVE TO DISK?      (←,→)
▶SAVE *NEW  *CANCEL(ENT)
```

- | | |
|--------|---|
| SAVE | will save the voice and volume changes with the existing tracks using the current song number. |
| NEW | will save the voice and volume changes and the existing tracks under a new song number. The existing tracks will also be kept under the previous song number. |
| CANCEL | will discard the voice and volume changes. The existing tracks will be kept under the previous song number. |

- 7** Use the [←] [→] cursor buttons to select an option, then press the [ENTER] button.



Chapter 9

Editing Notes

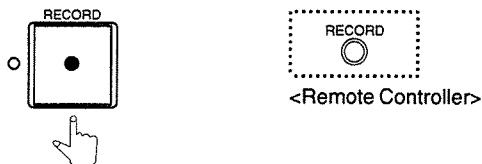
In this chapter we look at note editing. The following note parameters can be edited. Note pitch, velocity, length, and timing. You can also delete notes, insert new notes, and re-record a section of a track using the punch-in/punch-out recording function.

All the editing functions in this chapter are accessed from within Edit mode. The first section explains how to enter Edit mode. This is explained only once, so refer to this section before using the edit functions.

Entering Edit Mode

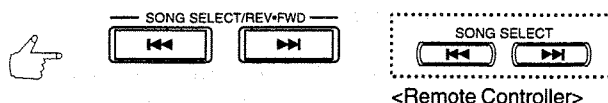
Before editing, you must select a song, select the track you want to edit, and then enter Edit mode. This procedure is similar to that performed before re-recording a track, except that, instead of starting to record, you enter Edit mode. Follow the procedure below.

1 Press the [RECORD] button.

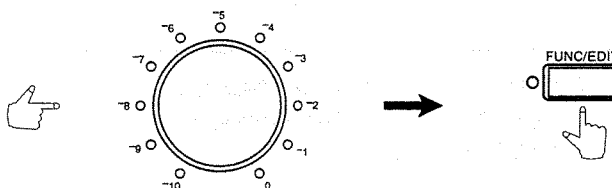


The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

2 Use the [SONG SELECT] buttons to select the song you want to edit.



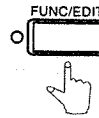
3 If you are editing an Ensemble song, use the Dial to select the track that you want to edit, then press the [FUNC/EDIT] button.



4 If you are editing an L/R song, use the [PART SELECT L] and [PART SELECT R] buttons to select the part that you want to edit, then press the [FUNC/EDIT] button.



5 If you are editing a Normal song, press the [FUNC/EDIT] button.



Whichever type of song you are editing, a display similar to the following will be shown.

```
TOP OF SONG      (00:00.00)
EDIT Tr=01
```

You are now in Edit mode. In the next section we explain how to select notes in Edit mode, the function of various buttons and controls in Edit mode, and how to exit Edit mode.

Selecting Notes in Edit Mode

When you enter Edit mode, a display similar to the one shown below will appear.

```
TOP OF SONG      (00:00.00)
EDIT Tr=01
```

“TOP OF SONG” means at the beginning of the song.

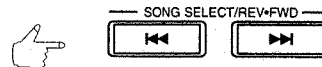
“(00:00.00)” shows the current position in the song.

If the song uses the minutes and seconds time format, the position indicator will show (minutes : seconds : 1/100 of a second).

If the song uses the measures and beats time format, the position indicator will show (measures – beats – 1/96 of a beat), that is 1/96 of a (♩) quarter note (crotchet).

“EDIT Tr=01” means that track 1 is currently selected for editing.

1 Use the [SONG SELECT] buttons to select a note.



As each note is selected it will be played. If you are editing an Ensemble song's accompanying instrument track, the selected note will play on the connected tone generator. As notes are selected, a display similar to the one shown will appear. The small “E” in the bottom left-hand corner of the LCD indicates that the current mode is Edit mode.

```
MF4 >29>00.45(00:01.20)
EAND. *VEL *LNTH *TIME
```

From the above display we can see that note F4 has a velocity of 29, a length of 00.45, and starts at 00:01.20.

The following table shows the parameter settings.

PARAMETER	RANGE	NOTES
NOTE	A-1 to C7	Disklavier piano keyboard range
VELOCITY	00 to 99	00 = no sound, 99 = maximum level.
LENGTH*	00.00 to 59.99	If the song uses the minutes and seconds time format, note lengths will be shown as (seconds : 1/100 of a second) (00.01).
	0000 to 9999	If the song uses the measures and beats time format, note lengths will be shown as (1/96 of a beat), that is, 1/96 of a (♩) quarter note (crotchet).
TIMING (start position)	00:00.00 to end of song	If a song uses the minutes and seconds time format, the position indicator will show (minutes : seconds : 1/100 of a second).
	001-1-00 to end of song	If a song uses the measures and beats time format, the position indicator will show (measures – beats – 1/96 of a beat), that is 1/96 of a (♩) quarter note (crotchet).

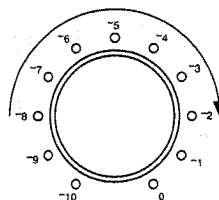
* If a note exceeds 59.99 seconds or 9999 1/96 of a beat, “---” will be shown on the LCD and it will not be possible to edit the note’s length and timing.

Note: The maximum length of a Disklavier piano note is 15 seconds.

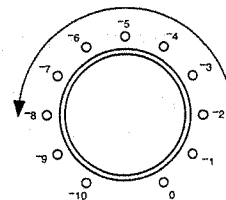
When the end of the song is reached, the following display will be shown.

END OF SONG (01:00.00)

- 2** The Dial can be used to scan quickly through a song. This is useful for finding notes that you want to edit.



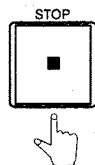
FORWARD SCAN



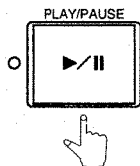
BACKWARD SCAN

This works like the shuttle function on a video recorder. While scanning through a song, notes will be played.

- 3** Press the [STOP] button to return to the top of the song.



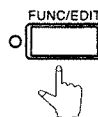
- 4** The [PLAY/PAUSE] button can be used to start and pause playback. This is useful for finding the notes that you want to edit.



While paused, the PLAY/PAUSE indicator will flash. During playback it will remain lit.

Exiting Edit Mode

- 1 When you have finished editing, press the [FUNC/EDIT] button.



The following display will be shown.

```
SAVE TO DISK?      (+,+)
▶SAVE *NEW *CANCEL(ENT)
```

- SAVE will save your edits with the current song using the current song number.
- NEW will save a duplicate copy of the selected song, including your edits, under a new song number. The current song will be kept under the current song number.
- CANCEL will discard your edits. The current song will be kept under the current song number.

Editing Note Pitch

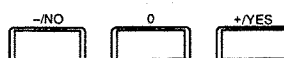
Note pitch can be in the range A-1 to C7 (the Disklavier piano keyboard range). To edit the pitch of a note, follow the procedure below.

- 1 Enter Edit mode as described in "Entering Edit Mode" on page 50.
- 2 Select the note whose pitch you want to edit. See "Selecting Notes in Edit Mode" on page 51.

A display similar to that shown will appear.

```
▶F4 >29>00.45(00:01.20)
▶NO. *VEL *LNGTH *TIME
```

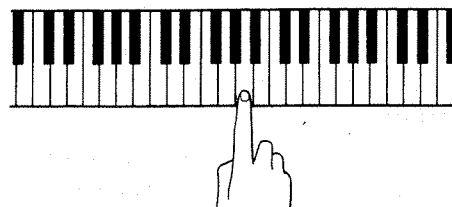
- 3 Use the [-/NO] and [+ /YES] buttons to change the note pitch.



Pressing the [-] button will decrease the note pitch and pressing the [+] button will increase the note pitch. As you change the note pitch, the value will flash on the LCD.

```
▶F4 >29>00.45(00:01.20)
▶NOTE (ENT)
```

- 4 The note pitch can also be changed by playing the keyboard.



Note: In this case the note's velocity will also be changed.

- 5** When you have set the note pitch, press the [ENTER] button.



Note: If you do not press the [ENTER] button before selecting another note, the edited note pitch will not be saved

To edit the value of some more notes, repeat steps 2 to 5.

- 6** To exit Edit mode, see "Exiting Edit Mode" on page 53.

Editing Note Velocity

To edit a note's velocity, follow the procedure below.

A note's velocity can be set from 00 to 99. A setting of 00 produces no sound.

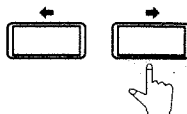
- 1** Enter Edit mode as described in "Entering Edit Mode" on page 50.

- 2** Select the note whose velocity you want to change. See "Selecting Notes in Edit Mode" on page 51.

A display similar to that shown will appear.

```
>F4 >29>00.45(00:01.20)
E>NO. *VEL *LNGTH *TIME
```

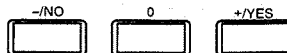
- 3** Press the [→] cursor button to select "VEL" on the LCD.



```
>F4 >29>00.45(00:01.20)
E>NO. *VEL *LNGTH *TIME
```

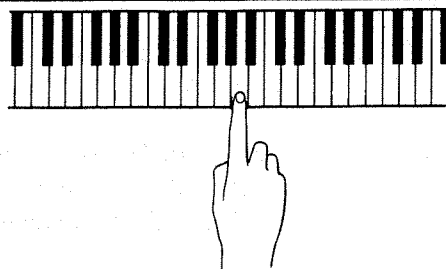
- 4** Use the [-/NO] and [+ /YES] buttons to change the note's velocity.

Pressing the [-] button will decrease the note's velocity and pressing the [+] button will increase the note's velocity. As you change the note's velocity, the value will flash on the LCD.

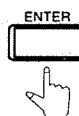


```
>F4 >29>00.45(00:01.20)
E *VELOCITY (ENT)
```

- 5** The note velocity can also be changed by playing the keyboard.



- 6** When you have set the note's velocity, press the [ENTER] button.



Note: If you do not press the [ENTER] button before selecting another note, the edited note velocity will not be saved

To edit the velocity of some more notes, repeat steps 2 to 6.

- 7** To exit Edit mode, see "Exiting Edit Mode" on page 53.

Deleting Notes

Notes cannot actually be deleted from a song. However, by setting a note's velocity to 0, you can prevent the note from being played. Follow the procedure in "Editing Note Velocity" on page 54, and set the note's velocity to "0".

Editing Note Length

To edit the length of a note, follow the procedure below.

- 1** Enter Edit mode as described in "Entering Edit Mode" on page 50.

- 2** Select the note whose length you want to edit. See "Selecting Notes in Edit Mode" on page 51.

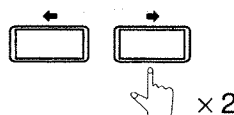
A display similar to that shown will appear.

```

F4  >29>00.45(00:01.20)
E=NO. *VEL *LENGTH *TIME

```

- 3** Press the [→] cursor button twice to select "LNGTH" on the LCD.



```

>F4  >29>00.45(00:01.20)
E=NO. *VEL #LNGTH *TIME

```

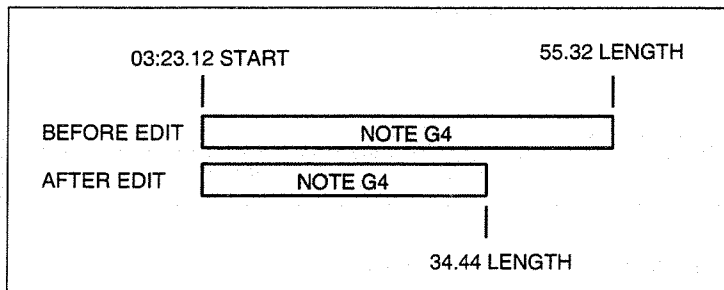
4 Use the [-/NO] and [+ /YES] buttons to edit the note's length.



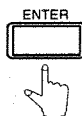
Pressing the [-] button will decrease the note's length and pressing the [+] button will increase the note's length. As you change the note's length, the value will flash on the LCD.

```
>F4 . >29>00.45(00:01.20)
E          >LENGTH (ENT)
```

The following illustration shows how a note's length can be edited.



5 When you have set the note's length, press the [ENTER] button.



Note: If you do not press the [ENTER] button before selecting another note, the edited note length will not be saved

To edit the length of some more notes, repeat steps 2 to 5.

6 To exit Edit mode, see "Exiting Edit Mode" on page 53.

Moving Notes (Timing)

To move a note, follow the procedure below.

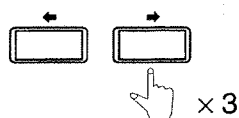
1 Enter Edit mode as described in "Entering Edit Mode" on page 50.

2 Select the note you want to move. See "Selecting Notes in Edit Mode" on page 51.

A display similar to that shown will appear.

```
>F4 . >29>00.45(00:01.20)
E>NO. *VEL *LENGTH *TIME
```

- 3** Press the [→] cursor button three times to select "TIME" on the LCD.



```
>F4 >29>00.45▶00:01.20)
E▶NO. *VEL *LNGTH ▶TIME
```

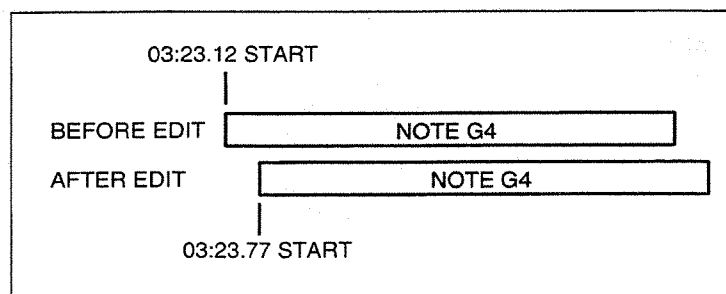
- 4** Use the [-/NO] and [+/YES] buttons to move the note.



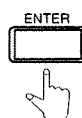
Pressing the [-] button will move the note back and pressing the [+] button will move the note forward. As you move the note, its start time will flash on the LCD. The amount that you move the note is shown on the bottom line of the LCD.

```
>F4 >29>00.45▶00:01.20)
E▶TIMING +00:00.00
```

When a note is moved, its length is not be affected, as shown below.



- 5** When you have moved the note, press the [ENTER] button.



Note: If you do not press the [ENTER] button before selecting another note, the edited note timing will not be saved

To move some more notes, repeat steps 2 to 5.

- 6** To exit Edit mode, see "Exiting Edit Mode" on page 53.

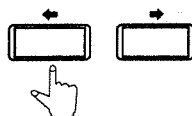
Inserting New Notes

To insert new notes into a track, follow the procedure below.

- 1** Enter Edit mode as described in "Entering Edit Mode" on page 50.

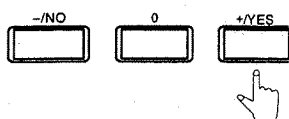
A display similar to the following will appear.

```
▶F4 >29>00.45(00:01.20)
E▶NO. *VEL *LNGTH *TIME
```

2 Press the [←] cursor button.

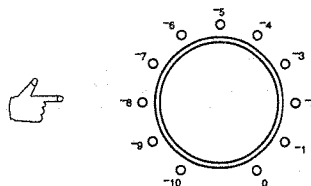
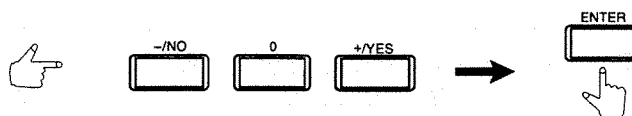
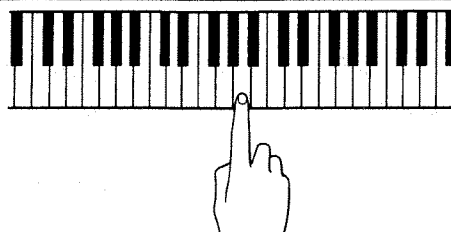
The small “E” character in the bottom left-hand corner of the LCD will flash.

```
>F4 >29>00.45(00:01.20)
E*NO. *VEL *LNGBH *TIME
```

3 Press the [+ / YES] button.

The small “E” will change to “I”, as shown, indicating that the current mode is now Note Insert mode.

```
>F4 >29>00.45(00:01.20)
I*NO. *VEL *LNGBH *TIME
```

4 Use the Dial to select the point at which you want to insert the new note.**5 Use the [- / NO] and [+ / YES] buttons to select a note, then press [ENTER].****6 Notes can also be entered by playing the keyboard.**

If you use the [- / NO] and [+ / YES] buttons, the note will be given a velocity of 80 and a length of 0.25 of a second. If the song uses the measures and beats format, the length will be 48, 1/8 note (a quaver).

If you play the keyboard, the note pitch and velocity will be input simultaneously. The note length will be 0.25 seconds, or 48 (1/8 note), depending on the time format.

If a note already exists at the selected point, only a note of a different pitch may be inserted.

The following table shows the length of notes for the measures and beats format.

24		1/16	semiquaver
32		1/4 triplet	crotchet triplet
48		1/8	quaver
96		1/4	crotchet
192		1/2 note	minim
384		whole note	Semibreve

The length of the note that you enter via the keyboard, playing normally (not staccato or tenuto), will actually be 80% of the length shown above.

If the note length is nearly 100%, it will become a tenuto note. If the note length is less, it will become a staccato note.

To insert some more new notes, repeat steps 2 to 6.

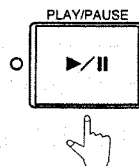
7 To exit Insert mode, see "Exiting Edit Mode" on page 53.

Punch-In/Punch-Out Recording

In Edit mode, a section of a track can be re-recorded using this punch-in/punch-out function.

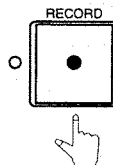
1 Enter Edit mode as described in "Entering Edit Mode" on page 50.

2 Start playback by pressing the [PLAY/PAUSE] button.



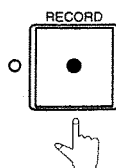
The PLAY/PAUSE indicator will stop flashing and stay on continuously.

3 When the point where you want to punch-in (start re-recording) is reached, press the [RECORD] button or a connected foot switch.



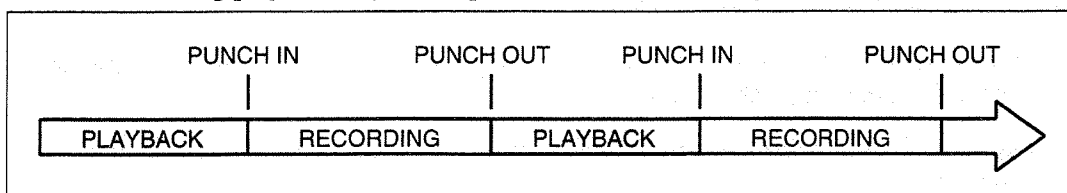
The RECORD indicator will stop flashing and stay on continuously.

- 4** To punch-out, press the [RECORD] button or foot switch again.



The RECORD indicator will start flashing.

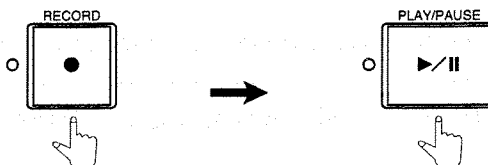
While the song plays back, you can punch-in and out as many times as you like.



Punch-In from Stop Mode

Punch-in recording can also be started from Stop mode (in edit).

- 1** Press the [RECORD] button, then press the [PLAY/PAUSE] button.



Punch-in recording will start when the metronome beeps.

- 2** Pressing the [RECORD] button will punch out, and playback will continue.

Pressing the [PLAY/PAUSE] or [STOP] button will punch out, and stop playback.

Punch-In/Punch-Out & the Rhythm Track

If you are using punch-in/punch-out on the rhythm track, you can select either replace or overdub. However, this setting must be made before you enter Edit mode.

- 1** In step 3 of "Entering Edit Mode" on page 50, select the rhythm track, then press [PLAY/PAUSE].

The following display will be shown.

RHYTHM Tr OVERDUB (-, +)

If the song uses the measures and beats time format the QUANTIZE option will appear on the LCD. The QUANTIZE option must be set to OFF before Edit mode can be entered.

- 2** Set the "RHYTHM Tr" to either "OVERDUB" or "REPLACE".

For full details of the replace and overdub settings, see "Recording the Rhythm Track (New Song)" on page 38.

-
- 3** Continue by pressing the [FUNC/EDIT] button as shown in step 3 of “Entering Edit Mode” on page 50.

Punch-In/Punch-Out & the Piano Parts

If you are using punch-in/punch-out on a piano part, you can turn the pedal record on or off and the monitor piano option on or off. However, these settings must be made before you enter Edit mode.

-
- 1** In step 3 of “Entering Edit Mode” on page 50, select a piano part, then press the [RECORD] button twice.

The following display will be shown.

PEDAL RECORD	OFF	(-,+)
MONITOR PIANO	ON	(+,+)

-
- 2** Set the Pedal Record and Monitor Piano options as required.

For full details of these options, see “Re-Recording One Part” on page 34.

-
- 3** Press the [RECORD] button again, then continue by pressing the [FUNC/EDIT] button as shown in step 3 of “Entering Edit Mode” on page 50.

Chapter 10

Editing Tracks

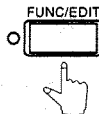
In this chapter we look at track editing. Tracks can be copied, moved, deleted, transposed, and two tracks can be mixed into one. All functions can be used with L/R and Ensemble songs. For Normal songs, only the track move and track transposition functions can be used.

Copying a Track

- 1 Use the [SONG SELECT] buttons to select the song that you want to edit.



- 2 Press the [FUNC/EDIT] button.



The FUNC/EDIT indicator will light up and the following display will be shown.

```
▶TRACK
*MIDI SETUP    (+, +, ENT)
```

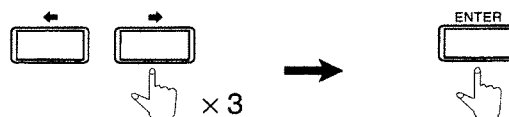
- 3 Press the [ENTER] button.



The following display will be shown.

```
▶MIX TRACKS  *MOVE TRACK
*TRANS TRACK (+, +, ENT)→
```

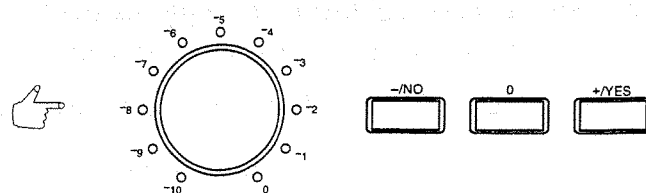
- 4 Select "COPY TRACK" (next display) by pressing the [→] cursor button three times, then press [ENTER].



The following display will be shown.

```
---COPY TRACK---    (-, +)
▶###→###          (+, +, ENT)
```

- 5** Use the Dial or the [-/NO] and [+ /YES] buttons to select the track that you want to copy.

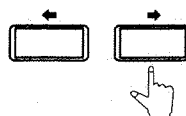


--COPY TRACK-- (-, +)
 >L >## (+, >, ENT)

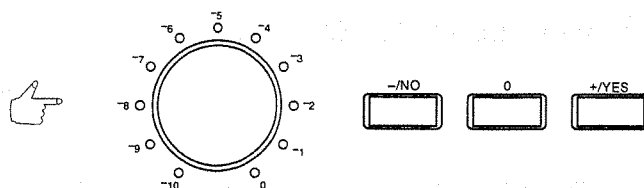
For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

- 6** When you have selected the track that you want to copy, press the [→] cursor button.



- 7** Use the Dial or the [-/NO] and [+ /YES] buttons to select the destination track.



--COPY TRACK-- (-, +)
 >L >12 (+, >, ENT)

For an L/R song, you can select track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

Note: Any data that already exists on the destination track will be overwritten.

- 8** When you have selected the destination track, press the [ENTER] button.



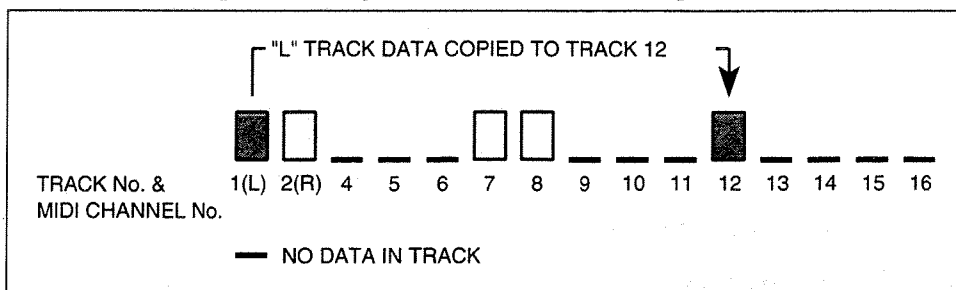
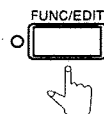
A display similar to the following will appear.

==COPY TRACK== SURE?
 >L >12 (YES, NO)

9 Press the [+ / YES] button to copy the track.

If you do not want to copy the track, press the [- / NO] button to cancel the function.

When a track is copied, the original track remains unchanged, as shown below.

**Moving a Track****1 Use the [SONG SELECT] buttons to select the song that you want to edit.****2 Press the [FUNC/EDIT] button.**

The FUNC/EDIT indicator will light up and the following display will be shown.

```
▶ TRACK
*MIDI SETUP  (←, →, ENT)▶
```

3 Press the [ENTER] button.

The following display will be shown.

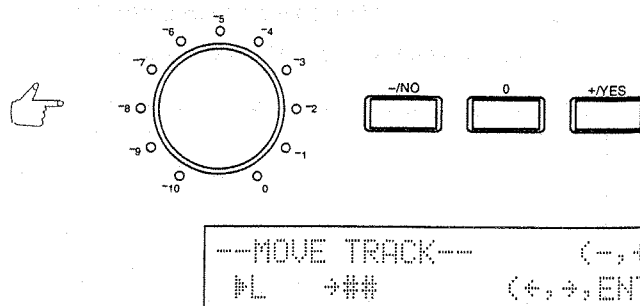
```
▶ MIX TRACKS  *MOVE TRACK
*TRANS TRACK  (←, →, ENT)▶
```

4 Select "MOVE TRACK" by pressing the [→] cursor button, then press [ENTER].

The following display will be shown.

```
— MOVE TRACK —  (←, →)
▶▶▶ ▶▶▶  (←, →, ENT)
```

- 5** Use the Dial or the [-/NO] and [+ /YES] buttons to select the track that you want to move.

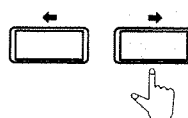


For a Normal song, you can select only NORM (all Disklavier piano data).

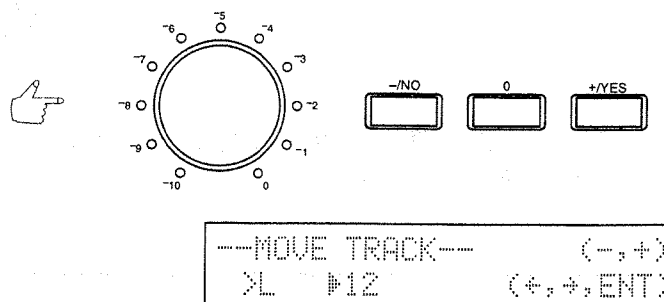
For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

- 6** When you have selected the track that you want to move, press the [→] cursor button.



- 7** Use the Dial or the [-/NO] and [+ /YES] buttons to select the destination track.



For a Normal song, you can select either L or R (this will create an L/R song).

For an L/R song, you can select either track L or track R.

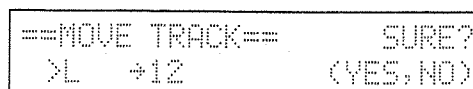
For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

Note: Any data that already exists on the destination track will be overwritten.

- 8** When you have selected the destination track, press the [ENTER] button.



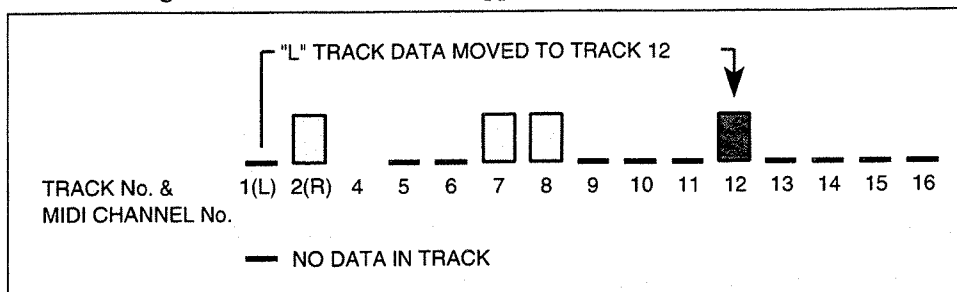
A display similar to the following will appear.



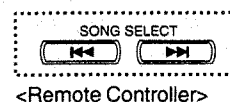
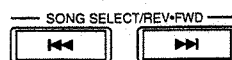
9 Press the [+ / YES] button to move the track.

If you do not want to move the track, press the [- / NO] button to cancel the function.

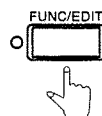
The following illustration shows what happens when a track is moved.

**Deleting a Track**

- 1** Use the [SONG SELECT] buttons to select the song that you want to edit.



- 2** Press the [FUNC/EDIT] button.



The FUNC/EDIT indicator will light up and the following display will be shown.

▶ TRACK
*MIDI SETUP (←, →, ENT)

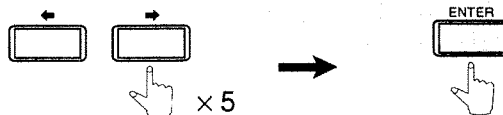
- 3** Press the [ENTER] button.



The following display will be shown.

▶ MIX TRACKS *MOVE TRACK
*TRANS TRACK (←, →, ENT)→

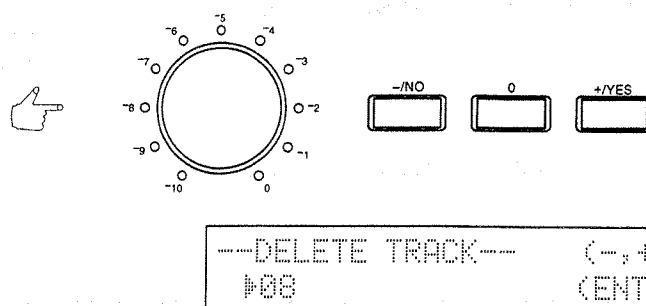
- 4** Select "DELETE TRACK" (next display) by pressing the [←] cursor button five times, then press [ENTER].



The following display will be shown.

--DELETE TRACK-- (←, →)
▶## (ENT)

- 5** Use the Dial or the [-/NO] and [+ /YES] buttons to select the track that you want to delete.



For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

Note: Once a track has been deleted it cannot be restored, so make sure that you select the correct track.

- 6** When you have selected the track, press the [ENTER] button.



A display similar to the following will appear.

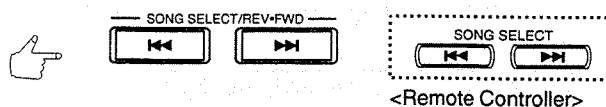
==DELETE TRACK== SURE?
>08 (YES, NO)

- 7** Press the [+ /YES] button to delete the track.

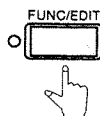
If you do not want to delete the track, press the [-/NO] button to cancel the function.

Transposing Tracks

- 1** Use the [SONG SELECT] buttons to select the song that you want to edit.



- 2** Press the [FUNC/EDIT] button.



The FUNC/EDIT indicator will light up and the following display will be shown.

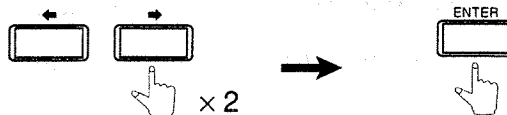
▶TRACK
*MIDI SETUP (+, -, ENT)

3 Press the [ENTER] button.

The following display will be shown.

```

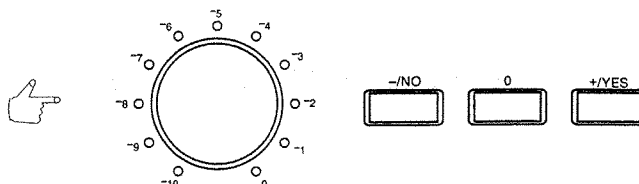
MIX TRACKS  *MOVE TRACK
*TRANS TRACK  (+,+,ENT)+
  
```

4 Select "TRANS TRACK" by pressing the [→] cursor button twice, then press [ENTER].

The following display will be shown.

```

--TRANS TRACK--  (-,+)
MALL ÷ 00  (+,+,ENT)
  
```

5 Use the Dial or the [-/NO] and [+ /YES] buttons to select the track that you want to transpose.

```

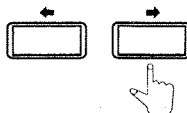
--TRANS TRACK--  (-,+)
M08 ÷ 00  (+,+,ENT)
  
```

For a Normal song, you can select only ALL (all Disklavier piano data).

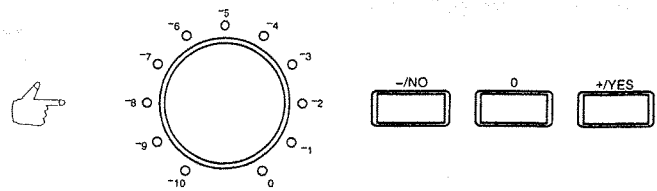
For an L/R song, you can select track L or track R or ALL tracks.

For an Ensemble song, you can select ALL tracks, track L, track R, or from tracks 4 to 16.

Note: If ALL is selected, the rhythm track will be transposed too. This may produce undesirable results. If you want to transpose many tracks, first transpose ALL, then transpose the rhythm track only back to its original pitch.

6 When you have selected the track that you want to transpose, press the [→] cursor button.

- 7** Use the Dial or the [-/NO] and [+ /YES] buttons to set the transposition value.



A track can be transposed in one semitone steps: -60 to +60.

```
--TRANS TRACK--      (-,+)  
>08  +12      (←,→,ENT)
```

- 8** When you have set the transposition value, press the [ENTER] button.



A display similar to the following will appear.

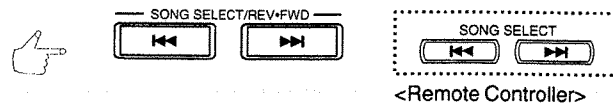
```
==TRANS TRACK==      SURE?  
>08  +12      (YES,NO)
```

- 9** Press the [+ /YES] button to transpose the track.

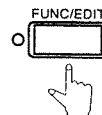
If you do not want to transpose the track, press the [-/NO] button to cancel the function.

Mixing Two Tracks into One

- 1** Use the [SONG SELECT] buttons to select the song that you want to edit.



- 2** Press the [FUNC/EDIT] button.



The FUNC/EDIT indicator will light up and the following display will be shown.

```
▶TRACK  
*MIDI SETUP      (←,→,ENT)
```

- 3** Press the [ENTER] button.



The following display will be shown.

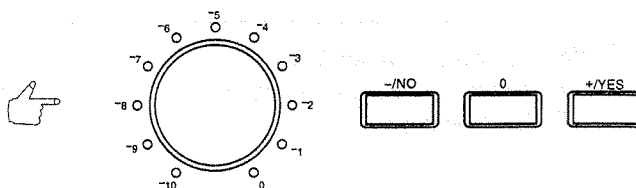
```
▶MIX TRACKS  *MOVE TRACK  
*TRANS TRACK  (←,→,ENT)→
```

4 Press the [ENTER] button.

The following display will be shown.

```

--MIX TRACKS--      (-,+)
>###+##>##          (+,+,ENT)
  
```

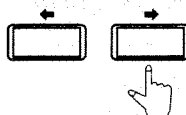
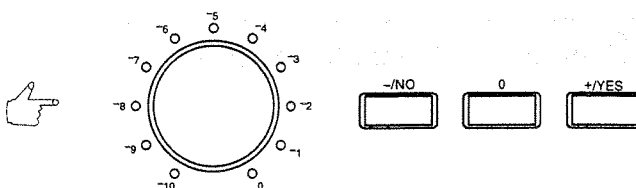
5 Use the Dial or the [-/NO] and [+ /YES] buttons to select the first track that you want to mix.

```

--MIX TRACKS--      (-,+)
>08+##>##          (+,+,ENT)
  
```

For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

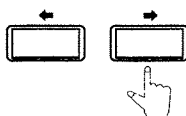
6 When you have selected the first track, press the [→] cursor button.**7** Use the Dial or the [-/NO] and [+ /YES] buttons to select the second track.

```

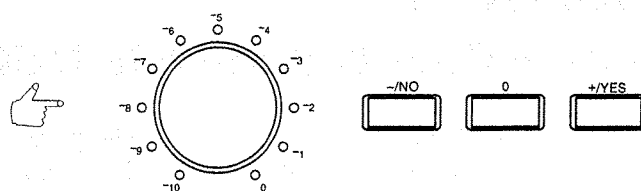
--MIX TRACKS--      (-,+)
>08+12>##          (+,+,ENT)
  
```

For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

8 When you have selected the second track, press the [→] cursor button.

9 Use the Dial or the [-/NO] and [+ /YES] buttons to select the mix destination.



```

--MIX TRACKS--      (-,+)
>08+12+12          (+,+,ENT)
  
```

For an L/R song, you can select either track L or track R.

For an Ensemble song, you can select track L or track R or from tracks 4 to 16.

The mix destination can be a different track or either the first or second track. On the display above, tracks 8 and 12 will be mixed together, then stored as the new track 12. The original tracks, 8 and 12, will be deleted.

The voice and volume data from the first track will be used on the new track. Voice and volume data from the second track will be lost.

Note: Any data that already exists on the destination track will be overwritten.

10 When you have selected the destination track, press the [ENTER] button.



A display similar to the following will appear.

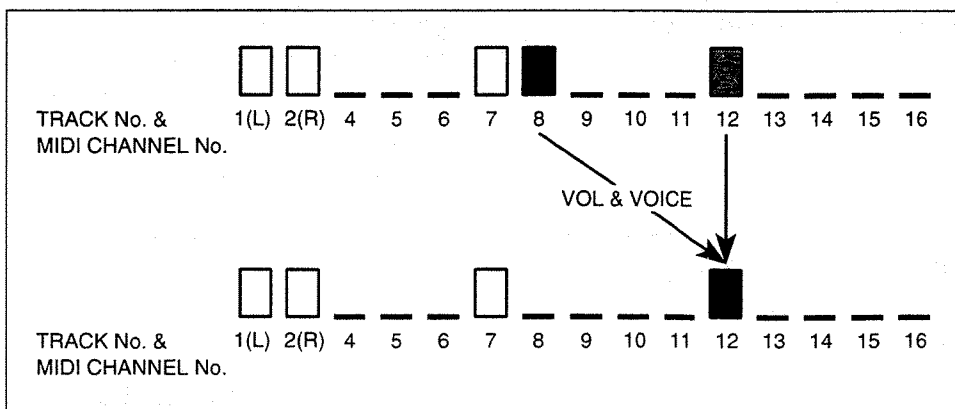
```

==MIX TRACKS==      SURE?
>08+12+12          (YES, NO)
  
```

11 Press the [+ /YES] button to mix the tracks.

If you do not want to mix the tracks, press the [-/NO] button to cancel the function.

The following illustration shows what happens when two tracks are mixed.



Note: If a piano track is mixed with another Ensemble track, the piano track's continuous pedal data (half pedal) will be lost, but the on/off pedal data will be kept.

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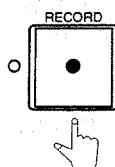
Floppy Disk & Song File Utilities

In this chapter we explain the Disklavier piano's floppy disk and song file management utilities. These include titling disks, copying disks, copying songs, deleting songs, and rearranging the order of songs on a disk.

Titling Disks

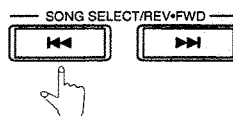
Just like the PianoSoft disks, you can give your own disks titles that will scroll across the LCD when the disk is inserted into the disk drive.

1 Press the [RECORD] button.



The RECORD indicator will light up and the PLAY/PAUSE indicator will flash.

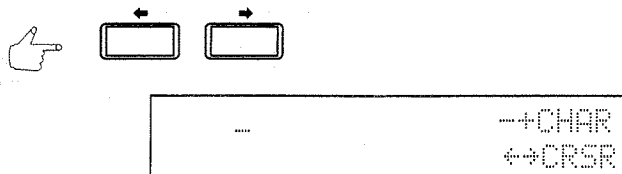
2 Select song No. 1, then press the [SONG SELECT <<] button.



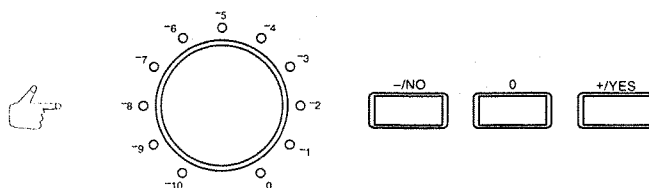
The song number will disappear and the LCD cursor will appear at the position of the first character in the title, as shown. If the disk already has a title, it will be shown on the LCD. An existing disk title can also be edited using the following procedure.



3 Use the [←] [→] cursor buttons to position the cursor within the title.



4 Use the Dial or the [-/NO] and [+ /YES] buttons to select a character.



Pressing the [ENTER] button will move the cursor on to the next character.

Only 16 characters can be displayed at a time. To see the rest of the title, use the [←] [→] cursor buttons.

Disk titles can be up to 64 characters long. The following table shows which characters are available.

space	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d	e
f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
v	w	x	y	z	,	-	.	/	!	"	#	\$	%	&	'
(	)	*	+	:	;	<	=	>	?	0	1	2	3	4	5
6	7	8	9												

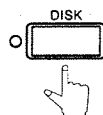
5 When you have entered a disk title, press the [STOP] button and the new title will be written to disk.

- Characters can also be entered using the Disklavier piano keyboard. See the “Keyboard Character Map” on page 19.

Copying a Song

You can make copies of songs onto the same disk. You may do this before you edit a song, for example. If after editing you decide that you prefer the original, you still have it because you have only edited a copy.

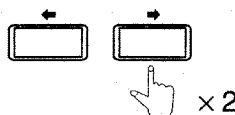
1 Press the [DISK] button.



The DISK indicator will light up and the following display will be shown.

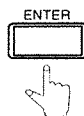
```
*FORMAT      *SONG DELETE
(+,+,ENT)    *SONG COPY →
```

2 Press the [→] cursor button twice so that the asterisk next to the option “SONG COPY” turns into a flashing triangle, as shown.



```
*FORMAT      *SONG DELETE
(+,+,ENT)    *SONG COPY →
```

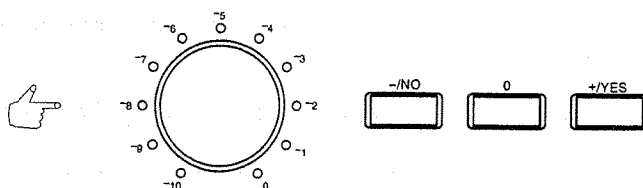
3 Press the [ENTER] button.



The following display will be shown.

```
==SONG COPY==      (-,+)
*01→SAME DISK      (+,+,ENT)
```

- 4** Use the Dial or the [-/NO] and [+ /YES] buttons to select the song that you want to copy.



- 5** When you have selected the song, press the [ENTER] button.



A copy of the selected song will be written to disk with a new song number.

The copy process may take several seconds. The time depends on the size of the song file.

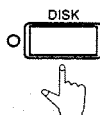
Note: You cannot copy copy-protected songs such as PianoSoft songs.

Copying a Song onto Another Disk

Individual songs can be copied from one disk to another.

Note: Set your source disk to “protected” and the destination disk to “unprotected”. See “Accidental Erasure Protection” on page 4.

- 1** Press the [DISK] button.

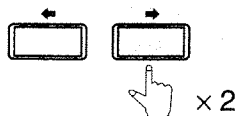


The DISK indicator will light up and the following display will be shown.

```

▶FORMAT      *SONG DELETE
(+,+,ENT)   *SONG COPY  +
  
```

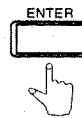
- 2** Press the [→] cursor button twice so that the asterisk next to the option “SONG COPY” turns into a flashing triangle, as shown.



```

*FORMAT      *SONG DELETE
(+,+,ENT)   ▶SONG COPY  +
  
```

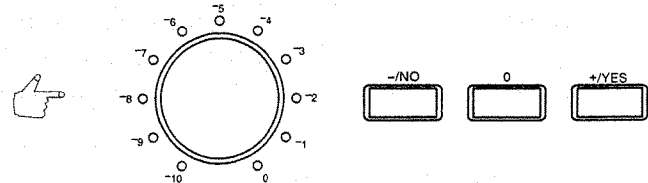
3 Press the [ENTER] button.



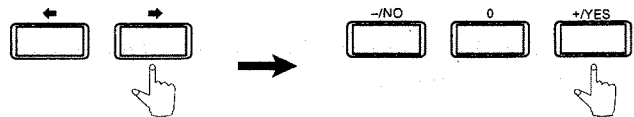
The following display will be shown.

```
==SONG COPY==          (-,+)  
#01→SAME DISK          (+,→,ENT)
```

4 Use the Dial or the [-/NO] and [+/YES] buttons to select the number of the song that you want to copy.



5 When you have selected the song, press the [→] cursor button, then press the [+/YES] button.



The words “SAME DISK” will change to “OTHER DISK” as shown.

```
==SONG COPY==          (-,+)  
>01→OTHER DISK        (+,→,ENT)
```

6 Press the [ENTER] button.



The following display will be shown.

```
INSERT DESTINATION DISK  
01→OTHER DISK
```

7 Insert the destination disk into the disk drive.

The selected song will be copied onto the destination disk with a new song number.

The copy process may take several seconds. The time depends on the size of the song file. If the song file is very large, you might be asked to insert the original disk again, after which, you'll be asked to insert the destination disk again.

Note: If the destination disk has not been formatted in the Disklavier piano, the message “UNFORMATTED DISK” will appear. In this case, cancel the song copy process, then format the disk. See “Formatting Floppy Disks” on page 4.

Note: You cannot copy copy-protected songs such as PianoSoft songs.

- To copy a song onto the same disk, see “Copying a Song” on page 73.

Copying All Songs on a Disk (Disk Copy)

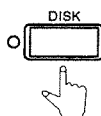
All the songs on a disk can be copied to a destination disk. This is useful for making backup copies of your own song disks.

- 1 Set the source disk's erasure protection tab to "protected" (the source disk is the disk that you want to copy).

- 2 Insert the source disk into the disk drive.

Note: If the source disk's erasure protection tab is not set to protected, the message "SET THE SOURCE DISK'S ERASURE TAB TO PROTECTED" will appear during this procedure and you will not be able to proceed until the erasure tab is set.

- 3 Press the [DISK] button.

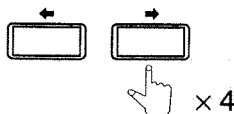


The DISK indicator will light up and the following display will be shown.

```

▶FORMAT          *SONG DELETE
(←,→,ENT)       *SONG COPY →
  
```

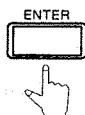
- 4 Press the [→] cursor button four times so that the asterisk next to the option "DISK COPY" (next display) turns into a flashing triangle, as shown.



```

←*SONG SORT      ▶DISK COPY
  *COUNTER       *MX100A&B →
  
```

- 5 Press the [ENTER] button.

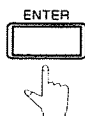


The following display will be shown.

```

==DISK COPY==
                                (ENT)
  
```

- 6 Press the [ENTER] button to start the disk copy process.



The following display will be shown

```

INSERT DESTINATION DISK
  
```

7 Insert the destination disk into the disk drive

Note: Make sure that the destination disk's erasure tab is set to "unprotected".

Note: Any songs currently on the destination disk will be erased.

All songs will be copied onto the destination disk.

The copy process may take several seconds. The time depends on the size of the song files.

If the song files are very large, the message "INSERT SOURCE DISK" may appear. In this case, insert the source disk again, then when prompted, insert the destination disk again. You may have to perform this procedure a few times depending on the size of the song file data.

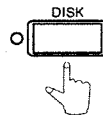
Note: If the destination disk has not been formatted in the Disklavier piano, the message "UNFORMATTED DISK" will appear. In this case, cancel the song copy process, then format the disk. See "Formatting Floppy Disks" on page 4.

Note: You cannot copy a disk that contains copy-protected songs such as PianoSoft and PianoSoft•Plus songs.

Deleting a Song

Songs that you don't want to keep can be deleted from a disk.

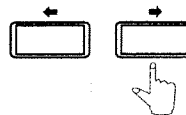
1 Press the [DISK] button.



The DISK indicator will light up and the following display will be shown.

▶FORMAT	*SONG DELETE
(←, →, ENT)	*SONG COPY →

2 Press the [→] cursor button so that the asterisk next to the option "SONG DELETE" turns into a flashing triangle, as shown.



*FORMAT	▶SONG DELETE
(←, →, ENT)	*SONG COPY →

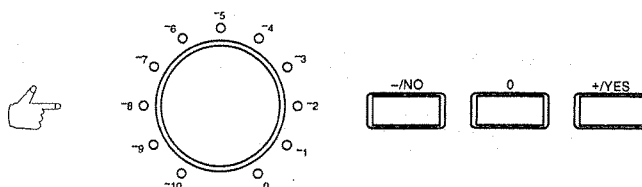
3 Press the [ENTER] button.



The following display will be shown.

--SONG DELETE--	(←, →)
▶01	(ENT)

- 4 Use the Dial or the [-/NO] and [+ /YES] buttons to select the song that you want to delete.**



- 5 When you have selected the song, press the [ENTER] button.**



The following display will be shown.

```

==SONG DELETE==      SURE?
01                   (YES,NO)
  
```

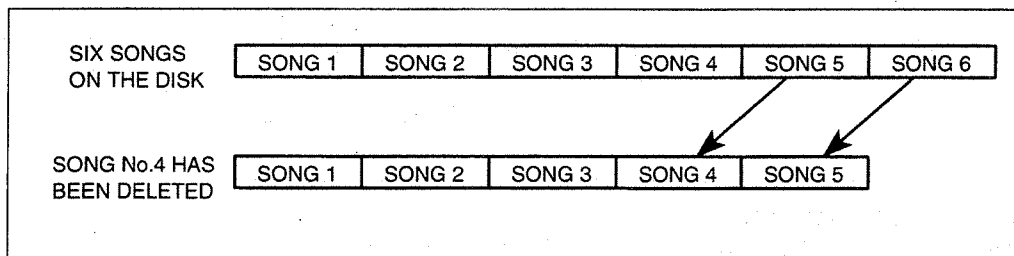
- 6 Press the [+ /YES] button to delete the selected song.**

If you do not want to delete the song, press the [-/NO] button and the previous display will be shown.

The song delete process may take several seconds. The time depends on the size of the song file.

Note: Once deleted, a song cannot be retrieved, so take care when selecting which song to delete.

When a song is deleted, subsequent songs are renumbered. For example, if we have six songs on a disk, and song No. 4 is deleted. Song No. 5 becomes song No. 4 and song No. 6 becomes song No. 5, as shown below.

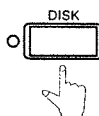


- If you want to delete all the songs on a disk, it may be quicker to re-format the disk. See "Formatting Floppy Disks" on page 4 for details.

Rearranging the Song Order (Song Sort)

The order of songs on a disk can be rearranged, for example, you might want to make song No. 6 the first song on the disk, or song No. 1 the last.

- 1 Press the [DISK] button.**

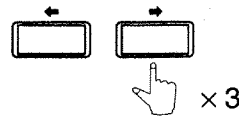


The DISK indicator will light up and the following display will be shown.

```

*FORMAT      *SONG DELETE
(←,→,ENT)   *SONG COPY →
  
```

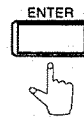
- 2** Press the [→] cursor button three times so that the asterisk next to the option "SONG SORT" (next display) turns into a flashing triangle, as shown.



```

<=>SONG SORT  *DISK COPY
  *COUNTER    *MX100A&B >
  
```

- 3** Press the [ENTER] button.

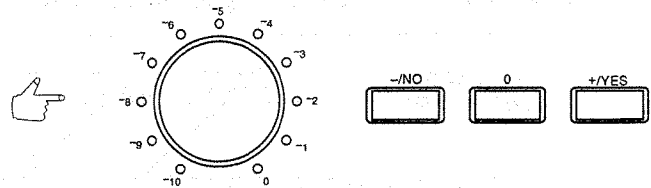


The following display will be shown.

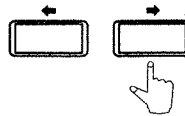
```

--SONG SORT--      (-,+ )
>SONG 01<NO 01(+,+,ENT)
  
```

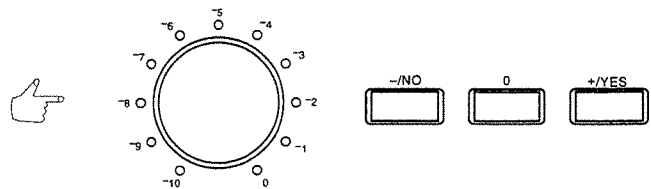
- 4** Use the Dial or the [-/NO] and [+ /YES] buttons to select the song that you want to move.



- 5** When you have selected a song, press the [→] cursor button.



- 6** Use the Dial or the [-/NO] and [+ /YES] buttons to select the destination.



In this example, song No. 3 is being moved to song No. 5.

```

--SONG SORT--      (-,+ )
>SONG 03<NO 05(+,+,ENT)
  
```

7 Press the [ENTER] button.

The following display will be shown.

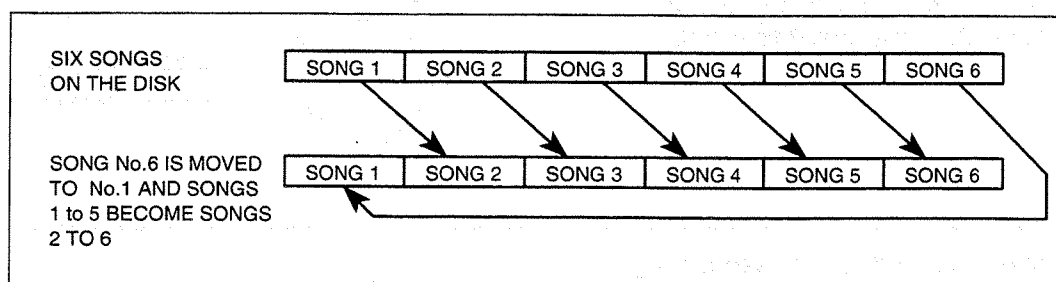
```
CONTINUE SONG SORT?
>      03+  05 (YES,NO)
```

Note: At this point of the procedure, the Disklavier piano has not saved the sorted song data to disk: it is asking you if you want to sort some more songs before saving the sorted song data and exiting the song sort function.

Press the [+ / YES] button if you want to sort some more songs (continue song sort).

8 Press the [- / NO] button to save all the song sort data to disk.

During the song sort process, the selected song is changed to its new song number and all the other songs on the disk are rearranged. For example, the disk shown below contains six songs. If we make song No. 6 the first song on the disk (No. 1), songs 1 to 5 are renumbered songs 2 to 6.



Chapter 12

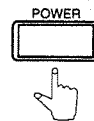
Auto Disk & Space Playback

Setting Auto Disk Playback

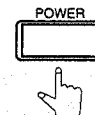
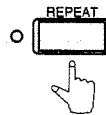
In Auto Disk Play mode, with a disk already in the controller, the Disklavier piano will automatically start playback when the power is turned on. Follow the procedure below.

Used in conjunction with the "Disk Program Playback" function on page 87, and the "Timer Controlled Playback" function on page 83, timer-controlled automatic playback of a disk program is possible.

1 Switch off the controller.



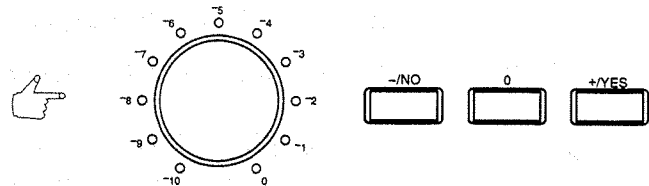
2 Press and hold down the [REPEAT] button, then switch on the controller.



The following display will be shown.

```
▶AUTO START=OFF (-,+)  
>SPACE PLAY=OFF (+,+)
```

3 Use the Dial or the [-/NO] and [+ /YES] buttons to turn the Auto Start function "ON".



```
▶AUTO START=ON (-,+)  
>SPACE PLAY=OFF (+,+)
```

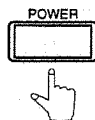
4 To save the settings, turn off the controller.

- If you are using Auto disk Playback with a Disk Program, remember to turn the Disk Program on.
- The Auto Disk Play function settings are stored in the Disklavier piano, not on the disks.

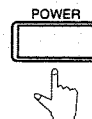
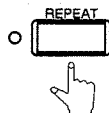
Setting Space Playback

The space playback function allows you to specify the pause time between songs during playback. As well as with manual disk playback, this function could be used with Auto Disk Playback mode. See "Setting Auto Disk Playback" on page 81.

1 Switch off the controller.



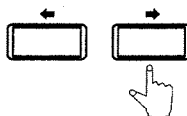
2 Press and hold down the [REPEAT] button, then switch on the controller.



The following display will be shown.

```
▶AUTO START=OFF  (-,+)  
>SPACE PLAY=OFF (+,+)
```

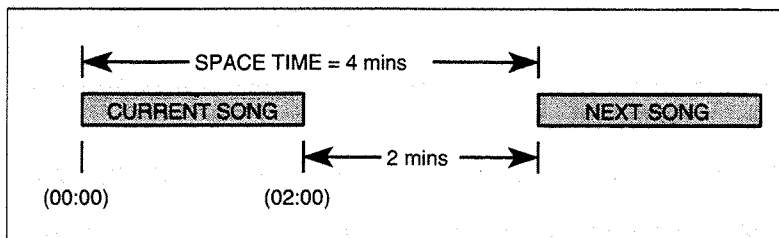
3 Press the [→] cursor button to select "SPACE PLAY".



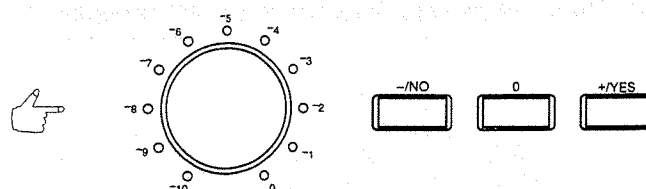
The following settings are available for Space Play.

- OFF Standard pause between songs.
- 1 to 300mins A pause of the specified length.
- STOP Playback will stop at the end of each song.

Note: Space play is not the length of the pause from the end of one song to the beginning of the next – it is the time from the beginning of a song to the beginning of the next song, as shown below.



4 Use the Dial or [-/NO] and [+ /YES] buttons to set the Space Play option.



5 To save the settings, turn off the controller.

- The Space Play setting is stored in the Disklavier piano, not on the disks.

Note: When the Space option is used in a Disk program (see “Compiling a Disk Program” on page 85) this Space Play setting is ignored.

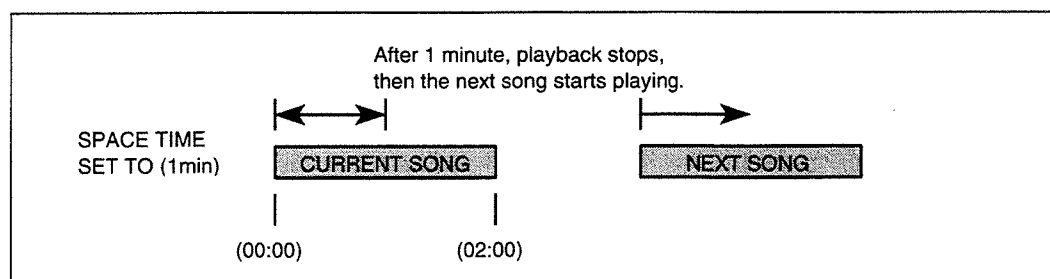
Space Playback

During Space Playback, the Space Play setting is displayed in the top right-hand corner of the LCD, as shown.

Song Title (S=010)

If the Space Play option is set to Stop, “STOP” will be displayed on the LCD.

- If playback is stopped, paused, fast forwarded, or rewind, the current space time will be lost.
- If the space time has elapsed, and the current song is still playing, the current song will stop playing and the next song will start. See the illustration below.



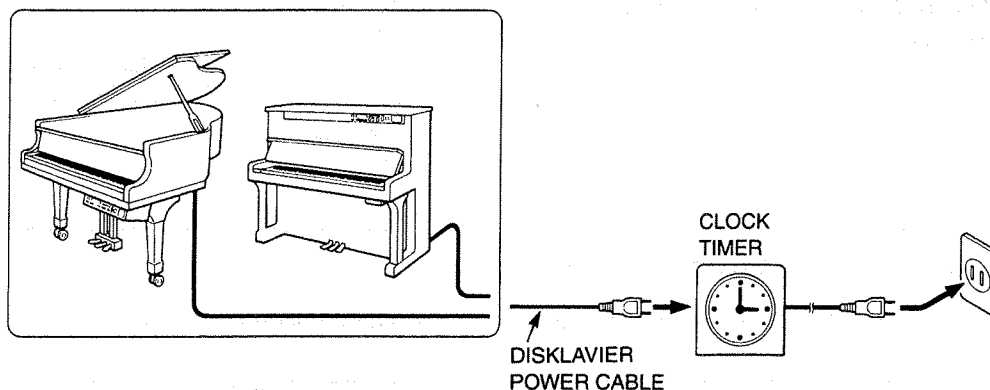
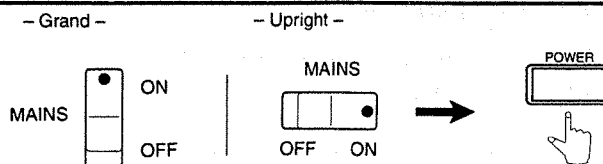
Timer Controlled Playback

Using the Auto Disk Playback function and a clock timer, you can set the Disklavier piano to start playback automatically at a specified time.

Note: The MIDI settings are not saved when the Disklavier piano is disconnected from the AC receptacle via the clock timer.

1 Set the Auto Disk Playback function as described on page 81, “Auto Disk & Space Playback”.

2 Connect the Disklavier piano’s power cable to a clock timer.

3 Connect the clock timer to an AC receptacle.**4** Set the clock timer as required. Refer to its *operating manual* for details.**5** Switch on the Disklavier piano's Mains switch and the controller.

Playback will now start at the time you specified on the clock timer.

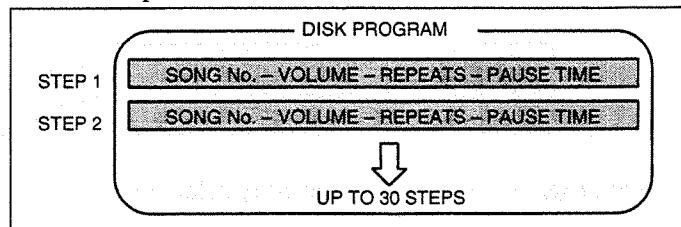
- Depending on the capabilities of your clock timer, you could set the Disklavier piano to come on once, twice, or at regular intervals during the day.

Chapter 13

Compiling a Disk Program

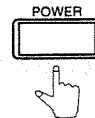
Normally, the songs on a disk play back sequentially until the end of the disk is reached. Using this function, you can choose the order in which songs play back, the volume of each song, the number of times each song is repeated, and the pause time between songs.

The information you enter is stored as a program on the song disk, and a program can contain up to 30 steps. You can turn the disk program playback on and off, edit the program, or erase it completely. PianoSoft disks and disks that you record yourself can be programmed in this way. Follow the procedure below.

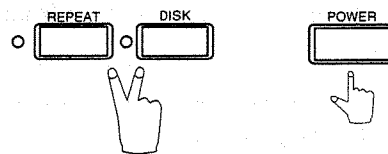


Note: The disk's erasure protection tab must be set to unprotected before a disk program can be saved.

1 Switch off the controller.



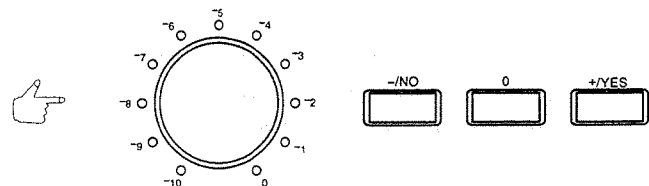
2 Press and hold down the [REPEAT] and [DISK] buttons, then switch on the controller.



The following display will be shown.

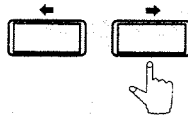
```
--DISK PROGRAM--      (+,+)
▶OFF *EDIT *CLEAR    (ENT)
```

3 Use the Dial or the [-/NO] and [+/YES] buttons to turn the disk program "ON".



```
--DISK PROGRAM--      (+,+)
▶ON *EDIT *CLEAR      (ENT)
```

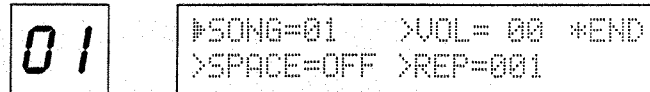
- 4** Press the [→] cursor button to select "EDIT".



- 5** Press the [ENTER] button.



The following display will be shown.



The song number indicator shows that program step No. 1 is currently selected.

For the "SONG" option, song numbers from 0 to 60 can be selected.

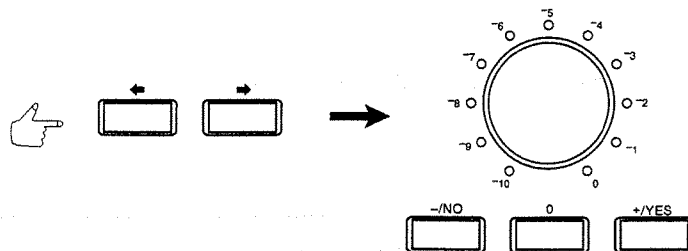
The "VOL" (volume) of a song can be set from 00 to -10, as on the volume Dial.

The "REP" (repeat) option determines how many times the song will play, and can be set from 0 to 255. A setting of "001" means that the song will play once. A setting of "000" means that the song will not play at all.

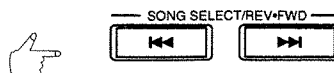
The "SPACE" option allows you to specify the length of the pause between songs. This can be set to off, or from 1 to 255 minutes.

Note: The Space time is not the length of the pause from the end of one song to the beginning of the next — it is the time from the beginning of a song to the beginning of the next song.

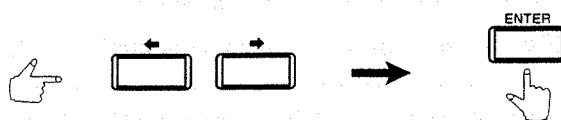
- 6** Use the [←] [→] cursor buttons to select an option, and the Dial or [-/NO] and [+ /YES] buttons to set the value.



- 7** Use the [SONG SELECT] buttons to select subsequent steps.



- 8** When you have set all the required steps, use the [←] [→] cursor buttons to move the cursor to "END", then press [ENTER].



```
>SONG=01 >VOL= 00 ▶END
>SPACE=OFF >REP=000 (ENT)
```

The following display will be shown.

```
DISK PROGRAM SAVE?
(YES, NO)
```

- 9** Press the [+ / YES] button to save the disk program.

If you do not want to save the disk program, press the [- / NO] button and the previous display will be shown.

When the disk program has been saved, the following display will be shown.

```
COMPLETE
Turn OFF, Turn ON again!
```

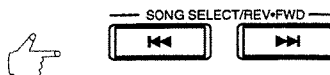
- 10** Turn off the controller.

Disk Program Playback

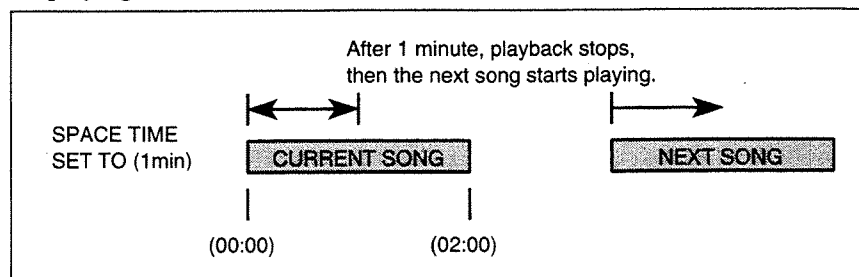
When a disk program is played back, the current program step is displayed in the top right-hand corner of the LCD, as shown.

```
Song Title (PR001)
```

- 1** To select the other steps in the program in Stop mode, use the [SONG SELECT] buttons.



- If playback is stopped, paused, fast forwarded, or rewound, the current space time will be lost.
- If the space time has elapsed, and the current song is still playing, the current song will stop playing and the next song will start. See the illustration below.



Turning the Disk Program Off

If you want to play the songs sequentially (1, 2, 3...), the disk program must be turned off.

-
- 1** Repeat steps 1 to 3 of "Compiling a Disk Program" on page 85, and set the Disk Program option to "OFF". Then continue with step 10.

Deleting the Disk Program

If you want to delete the disk program.

-
- 1** Repeat steps 1 and 2 of "Compiling a Disk Program" on page 85, and select "CLEAR".
-
- 2** Press the [ENTER] button.

Chapter 14

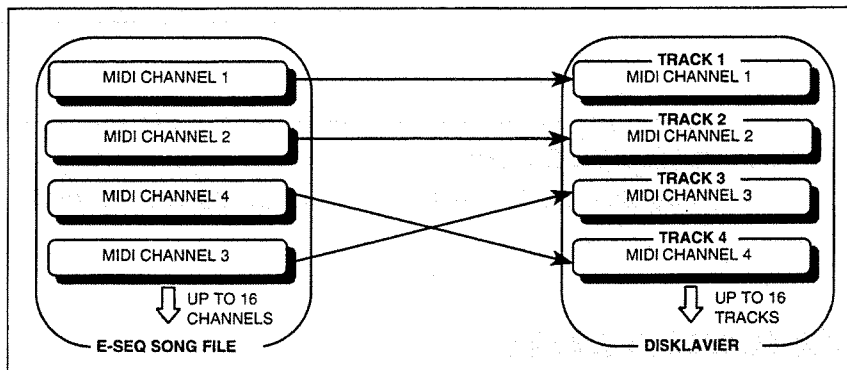
Song Disk Compatibility

E-SEQ Song Files

The E-SEQ song file format is also used by some other Yamaha instruments, including the QX3 MIDI Sequencer. When a E-SEQ song disk is inserted into the Disklavier piano, the following display will be shown.

```
E-SEQ FILE      <001-1>→
File name       ESBL
```

The Disklavier piano will interpret the song as shown below.



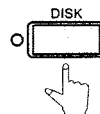
As we can see from the illustration above, the Disklavier piano tracks are derived from the E-SEQ song file's MIDI channels.

If the piano parts were not recorded on MIDI channels 1 and 2, they will not be Disklavier piano tracks 1 and 2. To correct this, see "Selecting Ensemble Tracks for the Disklavier Piano" on page 12.

All the Disklavier piano playback functions can be used with E-SEQ song disks.

Converting E-SEQ Song Disks

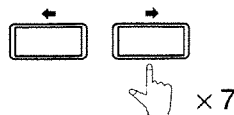
1 Press the [DISK] button.



The DISK indicator will light up and the following display will be shown.

```
▶FORMAT          *SONG DELETE
(+,+,ENT)       *SONG COPY →
```

2 Press the [→] cursor button seven times so that the asterisk next to the option "CONVERT" (next display) turns into a flashing triangle, as shown.



If you want to edit the names of some E-SEQ song files on a disk, this conversion function must be used first. Follow the procedure below.

```

< *SONG SORT      *DISK COPY
 *COUNTER          *MX100A&B >

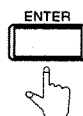
```

```

< ▶ CONVERT

```

3 Press the [ENTER] button.



The following display will be shown.

```

==E-SEQ CONVERT==  SURE?
 CONVERT START?  (YES,NO)

```

4 Press the [+ / YES] button to convert the disk.

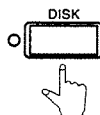
If you do not want to convert the disk, press the [- / NO] button and the disk convert function will be cancelled.

Converting MX100A&B Disks

The MX100A and MX100B Disklavier piano controllers use a slightly different method for recording tempo data. Therefore, if you want to play, re-record, or edit a song disk on this controller that was originally recorded on an MX100A or B, it must first be converted using this function's "from MX100" option.

To play a disk recorded on this controller on an MX100A or B, it must first be converted using this function's "to MX100" option.

1 Press the [DISK] button.



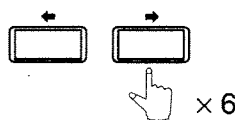
The DISK indicator will light up and the following display will be shown.

```

▶ FORMAT      *SONG DELETE
(+, -, ENT)  *SONG COPY >

```

2 Press the [→] cursor button six times so that the asterisk next to the option "MX100A&B" (next display) turns into a flashing triangle, as shown.

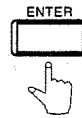


```

< *SONG SORT      *DISK COPY
 *COUNTER          ▶MX100A&B >

```

3 Press the [ENTER] button.



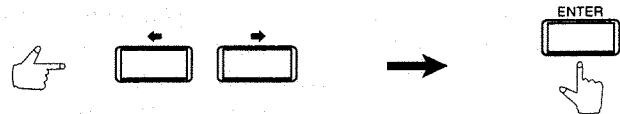
The following display will be shown.

```
--MX100A&B--  (+,+,ENT)
#from MX100  *to MX100
```

To convert an MX100A or B disk for playback, re-recording, and editing using this controller, select the "from MX100" option.

To convert a disk recorded on this controller for playback on an MX100A or B, select the "to MX100" option.

4 Use the [←] [→] cursor buttons to select either "from MX100" or "to MX100", then press the [ENTER] button.



Depending on which option you selected, one of the two following displays will be shown.

```
==from MX100A&B==  SURE?
CONVERT START? (YES,NO)
```

```
==to MX100A&B==    SURE?
CONVERT START? (YES,NO)
```

5 Press the [+ / YES] button to convert the disk.

If you do not want to convert the disk, press the [- / NO] button and the disk convert function will be cancelled.

Chapter 15

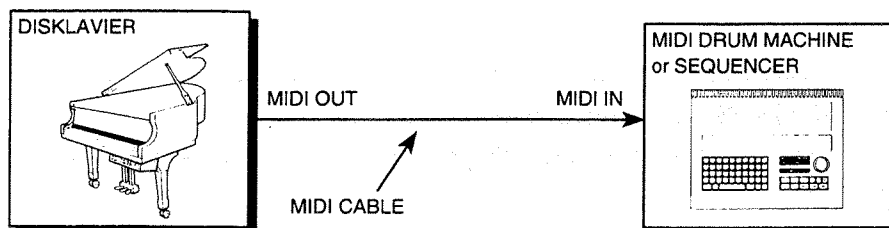
The Disklavier Piano & MIDI

In this chapter we look at how the Disklavier piano can be used with other MIDI devices. The Disklavier piano's MIDI functions are quite flexible, so there are many different connection possibilities. In this chapter we show five different setups: "Start/Stop Control from the Disklavier Piano", "Playing MIDI Instruments from the Disklavier Piano", "Using the Disklavier Piano in a MIDI Setup", "Using the Disklavier Piano with a MIDI Sequencer", and "Controlling the Disklavier Piano in Real Time". Even if your particular application is not one of these, by reading through these setup examples, you should be able to derive the information required to make up your own setup.

Start/Stop Control from the Disklavier Piano

In this setup, song disks are played on the Disklavier piano and a MIDI drum machine or sequencer plays in synchronization with the Disklavier piano. When the Disklavier piano's [PLAY] button is pressed, the MIDI drum machine will start to play. It can also be paused and stopped via the Disklavier piano. In addition, the tempo of the MIDI drum machine will change as the tempo of the Disklavier piano is adjusted. See "Changing the Playback Tempo" on page 22 of the *Getting Started & Playback Manual*.

- 1 Connect the Disklavier piano's MIDI OUT to the MIDI drum machine or sequencer's MIDI IN connection using a MIDI cable.

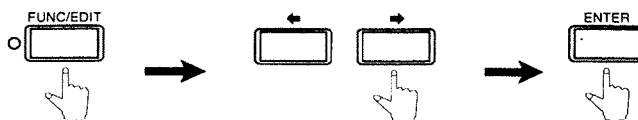


- 2 Set the MIDI drum machine or sequencer to synchronize with the incoming MIDI clock, sometimes called "MIDI SYNC". Refer to its *Operating manual* for details.

- 3 On the Disklavier piano, press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].

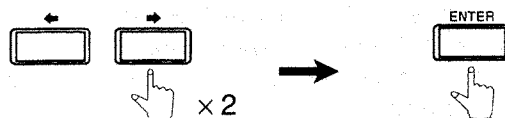
The following display will be shown.



```

  *MIDI IN *MIDI OUT
  *REMOTE *ENSEMBLE
  
```

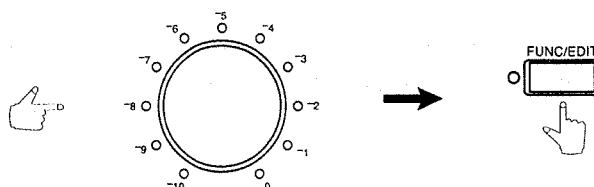
- 4** Press the [→] cursor button twice to select "REMOTE", then press the [ENTER] button.



The following display will be shown.

```
▶REMOTE OUT=OFF
>REMOTE IN=OFF
```

- 5** Use the Dial to set the "REMOTE OUT" option to "ON". Press the [FUNC/EDIT] button to exit the MIDI setup.

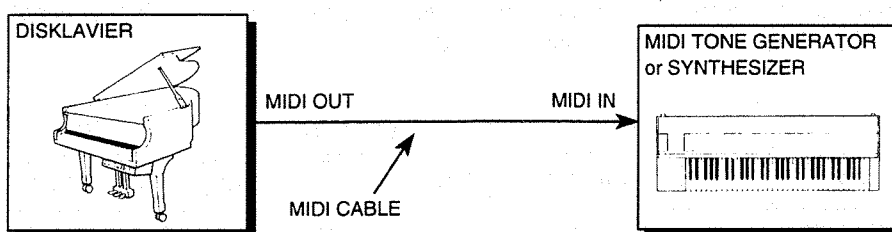


Playing MIDI Instruments from the Disklavier Piano

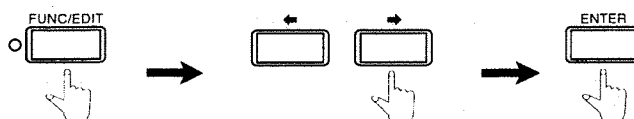
In this setup, as you play the Disklavier piano, a connected MIDI tone generator or synthesizer plays as well. This is sometimes referred to as voice layering or unison and a typical combination may be the Disklavier piano and a strings voice, or the Disklavier piano and a vibes voice. From the Disklavier piano, you can select the tone generator's voice, set its volume, and its transposition.

Note: This setup is not intended for Ensemble song playback, it is intended for manual Disklavier piano playing with a tone generator or synthesizer.

- 1** Connect the Disklavier piano's MIDI OUT to the MIDI tone generator or synthesizer's MIDI IN connection using a MIDI cable.



- 2** On the Disklavier piano, press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

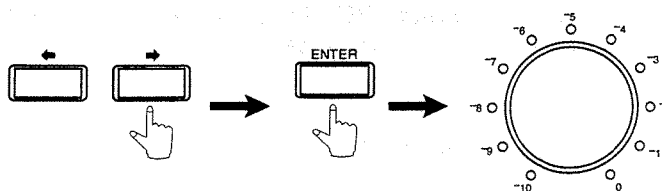


Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].

The following display will be shown.

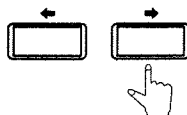
```
▶MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE
```

- 3** Press the [→] cursor button to select "MIDI OUT", then press [ENTER]. Use the Dial to select "KBD OUT".



MIDI OUT=KBD OUT →

- 4** Press the [→] cursor button.



The following display will be shown.

←OUT CH=01 >SPLITOFF]
>TRANS= 00 →

The "OUT CH" option is used to select the MIDI channel on which the Disklavier piano will transmit MIDI data.

The "OUT CH" option can be set to MIDI channels 1 to 16 or HP.

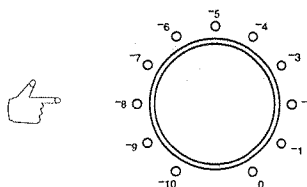
If the MIDI channel is set from 1 to 16, the Disklavier piano keyboard data and on/off pedal data is sent on the selected channel. In this case the pedal data will be of the on/off type. Pedal on/off data is sent as the MIDI controllers shown in the following table. Your MIDI tone generator or synthesizer may automatically respond to these controllers. If not, you may need to set them. Refer to the appropriate *Operating manuals* for details.

No pedal data is recorded or transmitted for the Disklavier upright's Muffler pedal or the "bass sustain" pedal fitted to some Disklavier grands. (*)

	LEFT	CENTER	RIGHT
GRAND	Shift Pedal (67)	Sostenuto Pedal* (66)	Sustain Pedal (64)
UPRIGHT	Soft Pedal (67)	Muffler Pedal	Sustain Pedal (64)

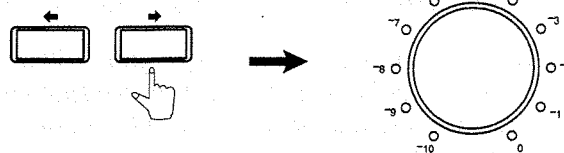
If the "HP" option is selected, keyboard data and on/off pedal data will be sent on channel 1, and continuous pedal data (half pedal) will be sent on channel 3. In this case the pedal data will be continuously variable (half pedal).

- 5** Use the Dial to set the "MIDI CH" option.



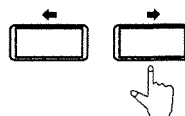
- 6** Set the MIDI tone generator to the same MIDI receive channel. Refer to the tone generator's *operating manual* for details.

- 7** If you want to transpose the MIDI output, press the [→] cursor button to select "TRANS", then use the Dial to set the value.



The MIDI output can be transposed from -60 to +60 in one semitone steps.

- 8** Press the [→] cursor button.



The following display will be shown.

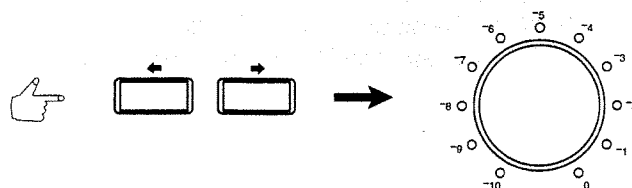
```

<=> VOICE=###
> VOL=###
  
```

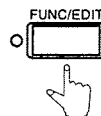
The "VOICE" option can be used to select a voice on the tone generator. Voice numbers from 1 to 128 can be selected. A setting of "###" means no voice selection.

The "VOL" option can be used to set the volume of the tone generator. The volume can be set from 0 to 127. A setting of "###" will not change the tone generator's volume.

- 9** Use the [←] [→] cursor buttons to select an option, and the Dial to set the value.



- 10** Press the [FUNC/EDIT] button to exit the MIDI setup.



Keyboard Split Point

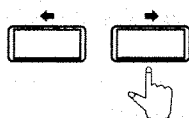
It is also possible to set a split point on the Disklavier piano keyboard, so that, for example, your left-hand part is backed by a Bass Guitar voice and your right-hand part is backed by a marimba. MIDI data from each side of the split point is sent on different MIDI channels, and tone generator voice, volume, and transposition can be set individually for each side.

- 1** Follow the procedure for "Playing MIDI Instruments from the Disklavier Piano" on page 93, up to step 4.

The following display will be shown.

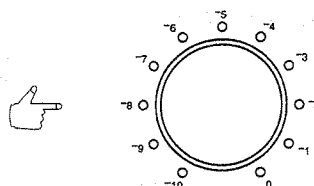
```

<=> OUT CH=01 >SPLIT[OFF] ]
>TRANS= 00 →
  
```

2 Press the [→] cursor button.

A keyboard split point can be set from A-1 to C7.

Data from the left side of the split point will be sent on the MIDI channel specified by the “OUT CH” option. Data from the right side of the split point will be sent on the next MIDI channel up. For example, a setting of “OUT CH=06” means that the left-hand data is sent on channel 6 and the right-hand data on channel 7.

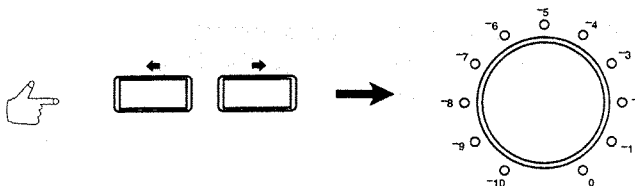
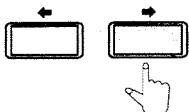
3 Use the Dial to set the split point.

The following display will be shown.

```

<>OUT CH=01 >SPLIT[A-1 ]
TRANS >L= 00 >R= 00  →
  
```

Both side of the split point (L & R) can be transposed independently from -60 to +60 in one semitone steps

4 If you want to transpose the MIDI output, use the [←] [→] cursor buttons to select either “L” or “R”, then use the Dial to set the value.**5 Press the [→] cursor button.**

The following display will be shown.

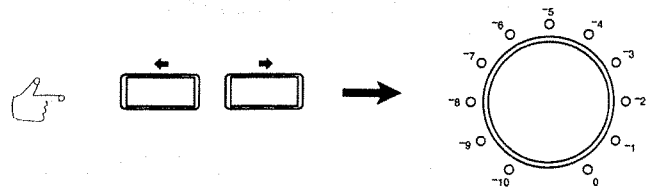
```

<>VOICE >L=### >R=###
VOL >L=### >R=###
  
```

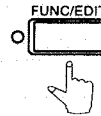
A different voice can be selected for “L” and “R”. Voice numbers from 1 to 128 can be selected. A setting of “###” means no voice selection.

The volume of “L” and “R” can also be set independently. The volume can be set from 0 to 127. A setting of “###” will not change the tone generator’s volume.

- 6** Use the [←] [→] cursor buttons to select an option, and the Dial to set the value.



- 7** Press the [FUNC/EDIT] button to exit the MIDI setup.

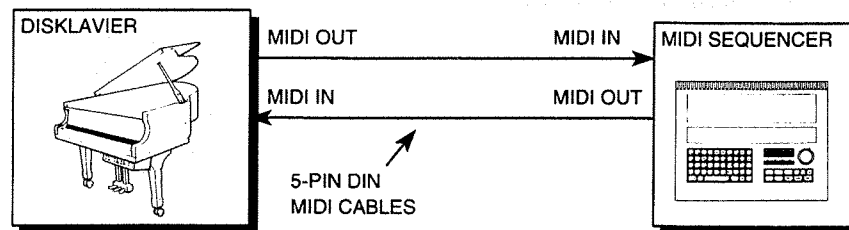


Using the Disklavier Piano with a MIDI Sequencer

In this setup, the Disklavier piano is connected to a MIDI sequencer for song recording and playback. In this way you can use a MIDI sequencer's powerful recording and editing functions for creating your Disklavier piano songs. The sequencer can be a dedicated music sequencer such as the Yamaha QX3, a MIDI data recorder such as the Yamaha MDF2, or a MIDI sequencer program running on a computer.

In this type of setup, you can record Normal, L/R, and Ensemble songs on the sequencer without using the controller.

- 1** Connect the Disklavier piano's MIDI OUT to the MIDI sequencer's MIDI IN, and the sequencer's MIDI OUT to the Disklavier piano's MIDI IN using MIDI cables.

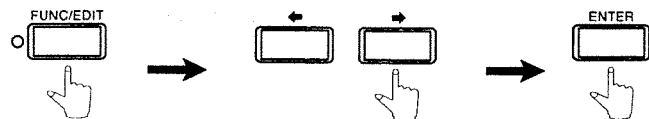


Note: If your MIDI sequencer does not have a MIDI THRU option that can be turned off, do not use the above setup with both MIDI cables connected simultaneously. Connect the top cable when recording, then disconnect it, and connect the bottom cable for playback. With both cables connected MIDI data will travel around in a loop causing strange results. If your MIDI sequencer does have a MIDI THRU option, set it to off. In this case, both cables can be connected simultaneously.

- 2** On the Disklavier piano, press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

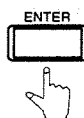
Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].

The following display will be shown.



```
*MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE
```

- 3** Press the [ENTER] button to select "MIDI IN".



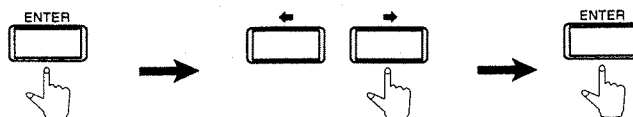
Set the "MIDI IN" option to "HP". That is, piano keyboard data is received on MIDI channel 1 and continuous pedal data (half pedal) is received on MIDI channel 3.

Note: If your MIDI sequencer can only record one track at a time, set the MIDI channel from 1 to 16. In this case, continuous pedal data (half pedal) cannot be recorded.

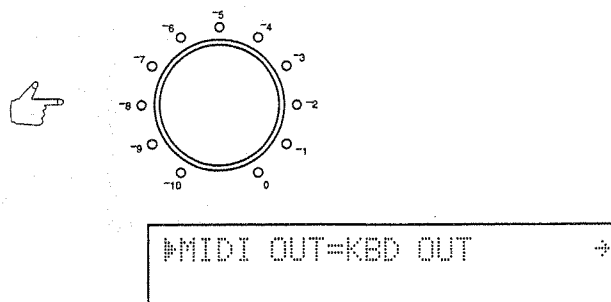
- 4** Set your MIDI sequencer so that data is sent on the same MIDI channel as that set for the Disklavier piano in step 3. Refer to the sequencer's *Operating manual* for details.

- 5** Set your MIDI sequencer's MIDI THRU option to OFF.

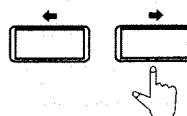
- 6** Press the [ENTER] button, then press the [→] cursor button to select "MIDI OUT". Press the [ENTER] button again.



- 7** Use the Dial to select "KBD OUT".



- 8** Press the [→] cursor button.



The following display will be shown.

```

<=>OUT CH=HP >SPLIT[OFF] ]
>TRANS= 00

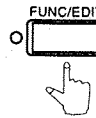
```

Set the "OUT CH" option to "HP". That is, piano keyboard data and pedal on/off data is sent on MIDI channel 1 and continuous pedal data (half pedal) is sent on MIDI channel 3.

Note: If your MIDI sequencer can only record one track at a time, set the MIDI channel from 1 to 16. In this case, continuous pedal data (half pedal) cannot be recorded.

By setting a split point, you can record the left-hand part onto one track and the right-hand part onto another track. See "Keyboard Split Point" on page 95 for details.

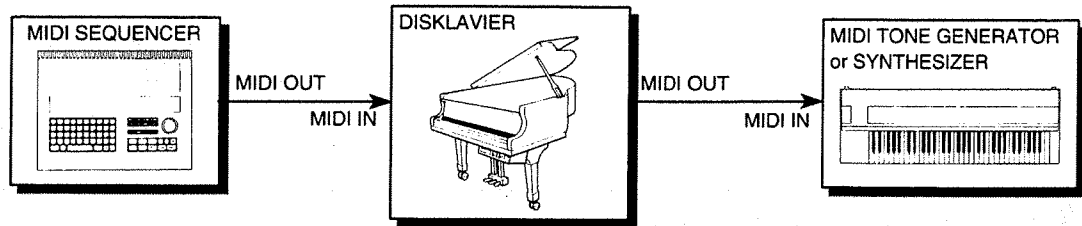
- 9** Press the [FUNC/EDIT] button to exit the MIDI setup.



Using the Disklavier Piano in a MIDI Setup

In this setup, Ensemble songs are played back on a MIDI sequencer and the data is sent first to the Disklavier piano, and then to a MIDI tone generator or synthesizer.

- 1** Connect the sequencer's MIDI OUT to the Disklavier piano's MIDI IN, and the Disklavier piano's MIDI OUT to the tone generator's MIDI IN using 5-PIN DIN MIDI cables.

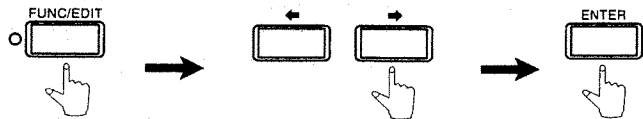


Note: Because the Disklavier piano uses a mechanical system for driving the keys, incoming MIDI data is not played instantly. To ensure that other MIDI devices connected to the Disklavier piano play at the correct time, the MIDI data is delayed for 500 ms before being output from the Disklavier piano. For this reason the Disklavier piano must be the first device connected from the MIDI sequencer.

- 2** On the Disklavier piano, press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].

The following display will be shown.



```

MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE
  
```

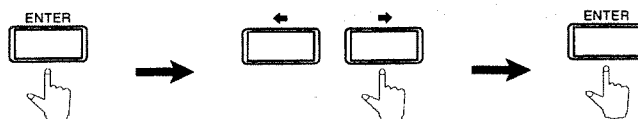
- 3** Press the [ENTER] button to select "MIDI IN".



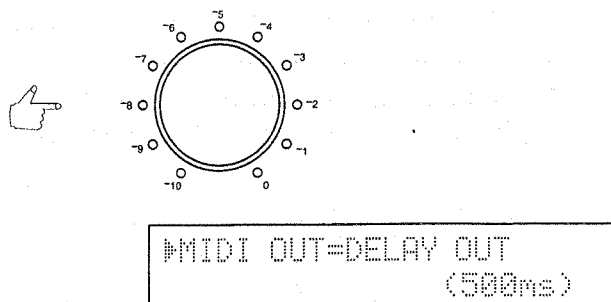
Set the "MIDI IN" option to "HP". That is, piano keyboard data is received on MIDI channel 1 and continuous pedal data (half pedal) is received on MIDI channel 3.

If the piano data is not of the HP type, set the "MIDI IN" option to the same MIDI channel as that used by the sequencer's piano track.

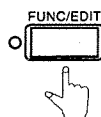
- 4** Press the [ENTER] button, then press the [→] cursor button to select "MIDI OUT". Press the [ENTER] button again.



- 5** Use the Dial to select "DELAY OUT".



- 6** Press the [FUNC/EDIT] button to exit the MIDI setup.

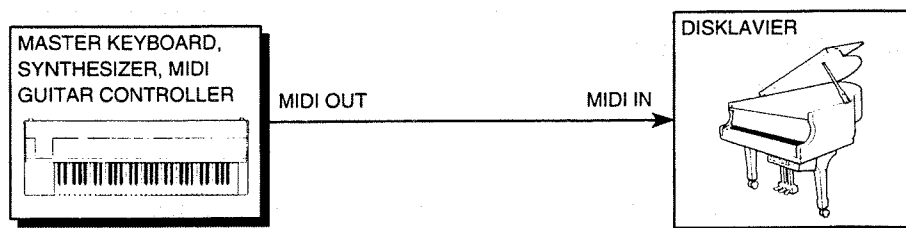


Controlling the Disklavier Piano in Real Time

As the Disklavier piano uses a mechanical system for driving the piano keys, incoming MIDI data cannot be played instantly. For this reason a fixed delay of 500 ms is usually applied to all incoming MIDI data. For most applications this delay will not be a problem. See the "Using the Disklavier Piano in a MIDI Setup" on page 99.

If you want to play the Disklavier piano in "real time" via a MIDI master keyboard, synthesizer, or MIDI guitar controller, this fixed delay can be turned off. However, it will still take the Disklavier piano time to respond to incoming MIDI data and the Disklavier piano response time will vary based on the velocity of the notes and is **not** user controllable.

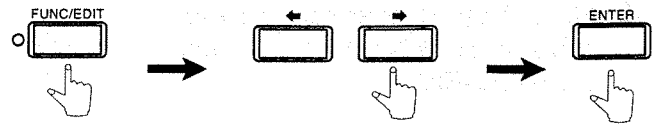
- 1** Connect the MIDI controller's MIDI OUT to the Disklavier piano's MIDI IN using a MIDI cable.



- 2** Press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].

The following display will be shown.



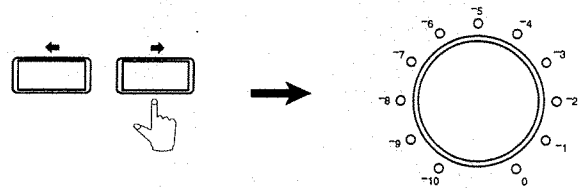
```
>MIDI IN *MIDI OUT
*REMOTE *ENSEMBLE
```

- 3** Press the [ENTER] button to select "MIDI IN".



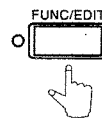
Set the "MIDI IN CH" option to the MIDI channel that the MIDI controller is transmitting on.

- 4** Press the [→] cursor button to select "MIDI IN", then use the Dial to select 'REALTIME'.



```
>MIDI IN CH=01
>MIDI IN=REALTIME
```

- 5** Press the [FUNC/EDIT] button to exit the MIDI setup.

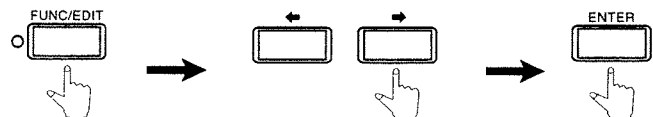


Initializing the MIDI Settings

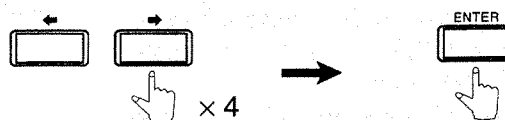
All MIDI settings are stored when the controller is switched off. Note: they are lost if the power cord is disconnected from the AC receptacle. If you want to reset all the MIDI settings to their default (factory) settings, follow the procedure below.

- 1** Press the [FUNC/EDIT] button, then press the [→] cursor button to select "MIDI SETUP". Press the [ENTER] button.

Note: if there is no disk in the disk drive just press [FUNC/EDIT], then [ENTER].



- 2** Press the [→] cursor button four times to select "INITIALIZE", then press [ENTER].



The following display will be shown.

```

==MIDI SETUP==          SURE?
--INITIALIZE--        (YES,NO)
  
```

- 3** Press the [+ / YES] button to reset the MIDI settings.

If you do not want to reset the MIDI settings, press the [- / NO] button and the previous display will be shown.

The default MIDI settings are shown in the table below.

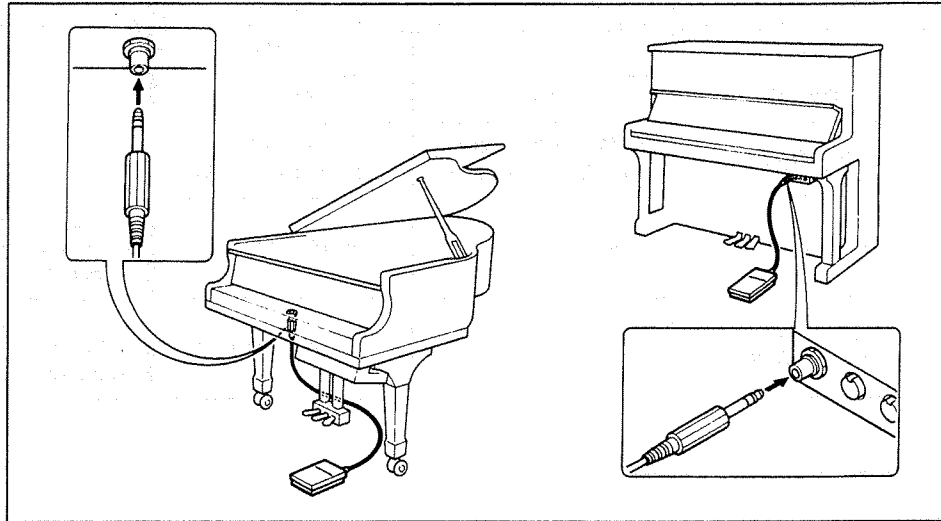
MIDI PARAMETER	DEFAULT SETTING	OPTIONS
MIDI IN CH	01	01~16, HP
MIDI IN DELAY	DELAY IN (500ms)	DELAY IN (500 ms), REALTIME
REMOTE OUT	OFF	ON, OFF
REMOTE IN	OFF	ON, OFF
MIDI OUT DELAY	DELAY OUT	DELAY OUT, KBD OUT
MIDI OUT CH	01	01~16, HP
MIDI OUT TRANS	0	-60 ~ +60
MIDI OUT SPLIT POINT	OFF	OFF, A-1~C7
ENSEMBLE PIANO PART MIDI OUT	OFF	OFF, ON
ENSEMBLE RHYTHM CH	10	04~16

Chapter 16

Using External Foot Controllers

Using a Start/Stop Foot Switch

Various Disklavier piano functions can be controlled using an optional Yamaha FC-4 or FC-5 foot switch. Connect the foot switch as shown below.



The following table shows which functions can be controlled using the foot switch.

Current mode	One press	Press again	SEE PAGE
STOP	PLAY	PAUSE	
PAUSE	PLAY	PAUSE	
RECORD PAUSE	START RECORD	PAUSE RECORD	See "Starting Recording Using a Foot Switch" on page 21.
PUNCH IN/OUT RECORDING	PUNCH-IN	PUNCH-OUT	See "Punch-In/Punch-Out Recording" on page 59.

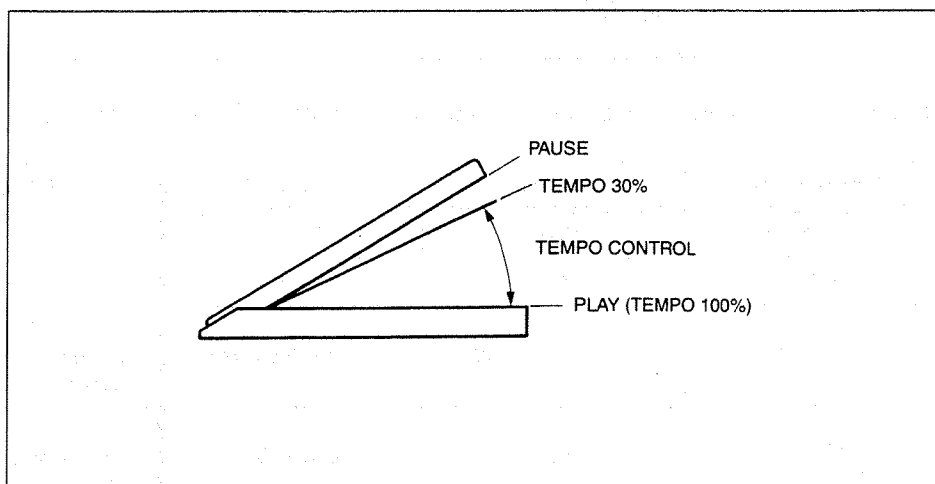
Using a Foot Controller to Control the Tempo

By connecting an optional Yamaha FC-7 controller pedal, the playback tempo can also be controlled.

Connect the FC-7 controller pedal as shown on page 103.

The following table shows which functions can be controlled using the controller pedal.

Current mode	Pedal down	Pedal up	SEE PAGE
STOP	PLAY	PAUSE	
PAUSE	PLAY	PAUSE	
PLAYBACK	PLAY (TEMPO 100%) See illustration below.	PAUSE See illustration below.	
RECORD PAUSE	START RECORD	PAUSE RECORD	See "Starting Recording Using a Foot Switch" on page 21.
PUNCH IN/OUT RECORDING	PUNCH-IN	PUNCH-OUT	See "Punch-In/Punch-Out Recording" on page 59.



Chapter 17

Troubleshooting

If you are having difficulty operating your Disklavier piano and a message is displayed on the LCD, see “LCD Error Messages” on page 107. If no message is displayed, see if any of the symptoms listed below apply to your problem, then follow the recommended remedy.

Symptom	Remedy
The Disklavier piano cannot be powered on.	Make sure the power cord is connected to a suitable AC receptacle.
	Switch on the Disklavier piano’s “MAINS” switch.
	Switch on the controller’s “POWER” switch.
	If the Disklavier piano still cannot be powered up, disconnect it from the AC receptacle, and consult your Disklavier piano dealer.
None of the playback functions can be used.	Insert a Disklavier piano song disk into the disk drive.
The controller does not appear to work correctly.	Power off, wait 5 seconds, then power on.
	If the problem remains, consult your Disklavier piano dealer.
Cannot control the Disklavier piano using the remote control.	Make sure that you are pointing the remote control at the controller’s “Remote control sensor”.
	Make sure that you are within the remote control’s specified operating range.
	Make sure that the remote control’s batteries have been installed correctly.
	Check the condition of the remote control’s batteries.
Song playback is at the wrong tempo or transposition.	Reset the tempo or transposition functions.
	Once the tempo or transposition functions have been set, they will affect playback of all songs until another disk is inserted, or they are reset.
Songs do not playback in the normal song order.	Check that the “RND” and “RPT” repeat functions are off.
	If the disk program function is on and a disk program has been compiled, songs will playback in the order specified in the disk program.
Song playback starts as soon as the Disklavier piano is powered on.	Is the Auto Start function on? See “Setting Auto Disk Playback” on page 81.
During playback, there is a long pause between songs.	Is the Space Play function on? See “Space Playback” on page 83.
A disk program has been compiled, but songs playback in the normal order.	Is the Disk Program function turned on? See “Compiling a Disk Program” on page 85.
MX100A&B song disks cannot be used.	See “Converting MX100A&B Disks” on page 90.
A song is selected using the remote control’s number pad, but the last song on the disk is found.	If a song number higher than the last song number on the disk is specified, the last song will be found.

Symptom	Remedy
A search time is specified using the remote control, but the end of the song is found.	If a time value higher than the total length of the song is specified, the end of the song will be found.
The Disklavier upright's muffler pedal does not move during song playback.	Data for the Disklavier upright's muffler pedal is not recorded, so it will not move during playback.
Your Disklavier upright is powered off and the soft pedal cannot be used.	Power on the Disklavier upright, then switch off the controller's "POWER" switch first, then the "MAINS" switch. If the Disklavier upright's volume level is set to soft mode (soft pedal depressed) and the "MAINS" switch is switched off before the controller's "POWER" switch, the soft pedal will remain depressed. Always switch off the controller first, then the "MAINS" switch.
During playback the pedals do not operate.	Check that the pedal cancel function is not set to "PDoff".
During playback, complex note trills and faint pianissimo passages are occasionally missed.	Increase the Disklavier piano's volume level. The Disklavier piano lowers the playback volume by reducing the force applied to each hammer. So for notes that are already quiet (pianissimo, etc.), when the playback volume is reduced there may not be enough force applied to a hammer for it to strike the strings.
During preview or review, the connected MIDI devices do not play.	This is correct. Only the Disklavier piano continues to play during preview and review. The MIDI devices will continue to play when normal playback is resumed.
During Ensemble song playback, the ensemble tracks are played by the wrong voices.	Set the connected tone generator's voices so that they match the Ensemble song tracks. When an Ensemble song starts playing, MIDI Program Change messages are sent from the Disklavier piano to the connected tone generator. These Program messages tell the tone generator which voices to select for each ensemble track. However, not all tone generators use the same Program Change number to voice assignments, so you may have to set them yourself. A tone generator conforming to the GM (General MIDI) standard should provide the correct voice selections. If you recorded the Ensemble song yourself, you can set the MIDI Program change message for each track. See "Editing a Track's Voice & Volume" on page 48.
For Normal and L/R song playback, the connected tone generator plays in unison with the Disklavier piano, but not for Ensemble song playback.	This is correct. To play a tone generator in unison with an Ensemble song the "PIANO MIDI PART OUT" option must be turned on. See "Sending the Piano Parts to a MIDI Tone Generator" on page 13.
Cannot re-record.	Re-recording is not possible on protected disks such as PianoSoft and PianoSoft•Plus disks.

LCD Error Messages

While operating your Disklavier piano, an error message may appear on the LCD. If an error message does appear, look in the table below for an explanation of the message.

Note: This table does not explain every Disklavier piano error message.

Message	Explanation
CANNOT EXECUTE FILE TYPE	Cannot use this function because the Disklavier piano does not recognize the type of file.
CANNOT EXECUTE OTHER E-SEQ DISK	This function cannot be used on this disk because the Disklavier piano cannot recognize this type of E-SEQ disk.
CANNOT EXECUTE OTHER E-SEQ FILE	This function cannot be used on this file because the Disklavier piano cannot recognize this type of E-SEQ file.
CANNOT EXECUTE PLEASE DO MX100 CONVERT	This disk must be converted (from MX100) before this function can be used. See "Converting MX100A&B Disks" on page 90.
CANNOT EXECUTE PLEASE DO E-SEQ CONVERT	This disk must be converted before this function can be used. See "Converting E-SEQ Song Disks" on page 89.
CANNOT EXECUTE PROTECTED FILE EXIST	Cannot use this function because a protected file exists on the disk.
CANNOT EXECUTE PROTECTED FILE	Cannot use this function on this file because it is a protected file.
CANNOT RECORD MORE SONGS	The floppy disk contains 60 songs (the maximum). Use a new disk.
CANNOT RECORD TO DISK PLEASE DO E-SEQ CONVERT	This disk must be converted before a song can be recorded onto it. See "Converting E-SEQ Song Disks" on page 89.
CANNOT RE-RECORD OTHER E-SEQ FILE	Re-recording cannot be performed on this file because the Disklavier piano cannot recognize this type of E-SEQ file.
CANNOT RE-RECORD PLEASE DO MX100 CONVERT	This disk must be converted (from MX100) before you re-record. See "Converting MX100A&B Disks" on page 90.
DIFFERENT DISK	During disk copy the wrong disk has been inserted. Insert the correct disk. For both copy functions, the source disk should be set to "protected" and the destination disk to "unprotected".
DISK FULL!	No more song data can be recorded onto the disk because it is full. Use a new disk.
DISK WRITE PROTECTED!	The current function can not be performed because the disk's erasure protection tab is set to protected. See "Accidental Erasure Protection" on page 4.
ERROR OCCURRED!! (PUSH STOP KEY!)	An internal error has occurred. Push the [STOP] button to continue normal operation.
NOT ENOUGH DISK SPACE	No more song data can be recorded onto the disk because it is full. Use a new disk.
NOT ENOUGH MEMORY	Cannot copy because the controller's internal memory (RAM) is full.
REPEAT 255 TIMES ALREADY!	255 is the maximum number of song repeats possible for each Repeat mode.
SELECT REC TRACK!	You must select the track you want to record before starting Ensemble song recording or LR song re-recording.
UNFORMATTED DISK	The floppy disk is either new and has not yet been formatted for use with the Disklavier piano or it uses a format not recognized by the Disklavier piano.

Chapter 18

Glossary

Auto Disk Playback: A Disklavier piano function that automatically starts song playback when the power is turned on.

bpm: An abbreviation for beats per minute.

Continuous Pedal: Piano pedals are not always fully up or down, they may be held somewhere in-between. The Disklavier piano can record and play back all pedal movements and this is called continuous pedal data (half pedal).

Cursor: The “” symbol that is used on the LCD to show the currently selected function or option. When entering song or disk titles, the cursor will be the “” symbol.

Dial: The rotary control on the controller’s front panel.

Disk Program: A Disklavier piano function that allows you to compile a program of songs on a disk. See “Compiling a Disk Program” on page 85.

End of Song: A message that appears on the LCD to indicate that the end of the song has been reached. It is shown during editing.

Ensemble Song: A type of Disklavier piano song that can contain 2 piano tracks (L/R), up to 12 accompanying instrument tracks, and a rhythm track.

E-SEQ: E-SEQ is a song file format, developed by Yamaha, that the Disklavier piano uses to save songs onto floppy disk. The Yamaha QX3 MIDI Sequencer also uses the E-SEQ format.

ESBL: A Disklavier piano LCD abbreviation for “Ensemble”.

Fast Preview & Review: Two Disklavier piano functions that allow you to search quickly through a song while the Disklavier piano still plays.

Fast Forward & Reverse: Two Disklavier piano functions that allow you to quickly locate a position within a song. This is faster than preview and review, however, the Disklavier piano does not play.

Floppy Disk: The magnetic storage media that the Disklavier piano uses to save songs. The Disklavier piano uses 3.5 inch 2DD floppy disks.

Foot Controller: A foot operated device, such as the Yamaha FC-5 and FC-7, that can be used to start and pause playback, recording, etc.

Formatting: New floppy disks must be formatted before they can be used with the Disklavier piano. Formatting prepares the disk so that it is ready to store Disklavier piano song data.

GM: General MIDI is an addition to the MIDI 1.0 standard that simplifies the transfer of MIDI based song files between different manufacturers’ instruments.

Half Pedal: See “continuous”.

Insert: While editing a track, new notes or notes that were missed while recording can be inserted (entered).

LCD: Liquid Crystal Display. The controller has a 2-line, 24 character LCD.

LED: Light emitting diode. The controller’s front panel indicators are LEDs.

L/R Song: A type of Disklavier piano song that can contain 2 piano tracks: one for the left-hand part and one for the right-hand part.

MIDI: An acronym for Musical Instrument Digital Interface. MIDI allows electronic musical instruments to communicate with each other.

Metronome: a device designed to mark exact time by a regularly repeated tick. The Disklavier piano contains a metronome that can be used for practice playback and recording.

Multi-Timbral: An instrument (tone generator) that can produce more than one instrument voice (timbre) at a time. The Yamaha TG100 Tone Generator can produce up to 16 different voices at the same time.

Normal Song: A type of Disklavier piano song with only one track. The left and right-hand piano parts are recorded simultaneously.

Overdub: To add to an existing recording. For example, the Disklavier piano's rhythm track can be overdubbed. First record a bass drum, then a snare, then some hi-hats, etc.

Part: Refers to the left and right-hand piano parts of a song. The left-hand piano part is recorded onto track 1 and the right-hand piano part is recorded onto track 2.

PianoSoft: The PianoSoft Disk Collection is a library of prerecorded song disks made by Yamaha, specifically for use with the Disklavier piano.

PianoSoft•Plus: PianoSoft•Plus disks contain Ensemble songs that can be played on the Disklavier piano with a Yamaha TG100 Tone Generator.

Program Change message: A type of MIDI message that is used for selecting programs or voices. When an Ensemble song starts playing, Program Change messages are sent to the connected tone generator to select the correct instrument voices for each ensemble track.

Punch-In/Punch-Out recording: A Disklavier piano function that allows you to re-record (replace) a section of a recorded track. Re-recording starts when you punch-in, and stops when you punch-out.

Quantize: A Disklavier piano function that can be used when recording an Ensemble song's rhythm track. With the quantize function on, the timing of drum notes played using the Disklavier piano keyboard will automatically be corrected to the specified quantize value.

QX3: A 16-track MIDI sequencer made by Yamaha. QX3 songs are stored as E-SEQ files.

Rhythm Track: One track of an Ensemble song designated for recording the accompanying rhythm. The rhythm track is unaffected by the playback transposition function.

Sequencer: A sequencer can be used with the Disklavier piano to playback and record MIDI data. A sequencer, such as the Yamaha QX3, provides many powerful and flexible functions for recording and editing.

Song: A short piece of music with lyrics. However, for clarity in the Disklavier piano manuals, the term "song" is used to refer to any piece of music, be it jazz, classical, or popular.

Song number: All the songs on a Disklavier piano disk are numbered sequentially. The currently selected song number is displayed by the controller's "song number indicator". Songs can be selected directly by entering the song number using the remote control's number pad.

Space Play: A Disklavier piano function that allows you to specify the pause time between songs during playback. See "Space Playback" on page 83.

TG100: The Yamaha TG100 is a multi-timbral tone generator that can be used with the Disklavier piano for playing Ensemble songs. The TG100 can produce up to 16 voices (instruments) at once.

Tone generator: An electronic device, such as the Yamaha TG100 Tone Generator, that can generate tones or instrument voices.

Top of Song: A message that appears on the LCD to indicate that the beginning of the song has been reached. It is shown during editing.

Track: Disklavier piano song data is recorded onto tracks. A Normal song has one track; an L/R song has two tracks, 1 (L) and 2 (R); and an Ensemble song has 15 tracks, 1 (L), 2 (R), and tracks 4 to 16.

Transpose: Changing the pitch (key) of a song. For example, a song in the key of C can be transposed to the key of D by transposing it up 2 semitones.

Velocity: Because the loudness of a piano note is determined by the speed (velocity) with which a string is struck by a hammer, note loudness is referred to as velocity.

Specifications

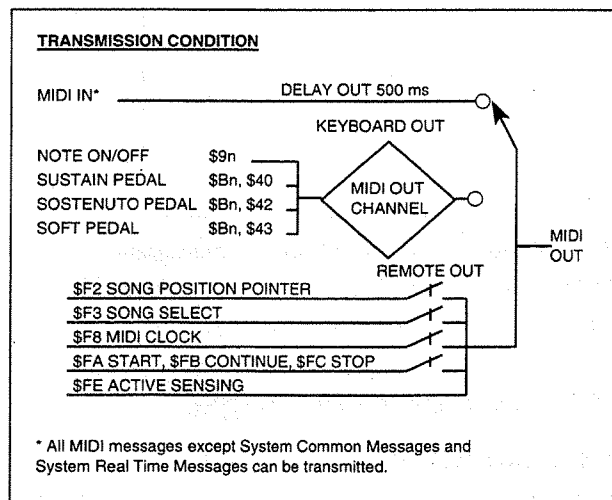
Sensor System	Key Sensor	88 key, speed sensing, single-beam optical sensors	
		Dual key hammer locations	
		16-note polyphonic	
	Pedal Sensor	Sustain	Continuous (half pedal)
		Sostenuto ¹	on/off ²
		Soft (Shift)	Continuous (half pedal)
Drive System	Key Drive	Self-calibrating, long-stroke, key-end solenoids	
	Pedal Drive	Trapwork integrated solenoids	
		Sustain	Continuous (half pedal)
		Sostenuto ¹	
		Soft (Shift)	Continuous (half pedal)
Song Storage	Media	3.5" 2DD floppy disk	
	Capacity	Max 60 songs (depends on song file size)	
	Disk Capacity	720KByte	
	Song File Format	E-SEQ	
Controller	Switches	Power on/off	
	Buttons *with LED Indicator	Song Select Rev•Fwd, Play/Pause*, Stop, Part Select L•R*, Record*, Volume*, Transpose, Tempo*, Repeat*, -/NO, 0, +/YES, <> Cursor, Enter, Disk*, Metronome*, Function/Edit*	
	Controls	Rotary dial with ring of LED indicators	
	LCD	24 character, 2 line	
	Song Number Indicator	7 segment, 2 digit display	
Remote Control	Buttons	Record, Part Select L•R, 0~9 keypad, Search, Repeat, A-B, Transpose -/0/+, Tempo -/0/+, Rev•Fwd, volume -/+, Song Select Rev•Fwd, Play, Pause, Stop	
Metronome	bpm	40~230	
	Time Signature	1/4, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 8/4, 9/4	
	Beep	on/off	
Volume	Disklavier grand	11 steps: 0 ~ -10	
	Disklavier upright	11 steps: 0 ~ -10 (-7 to -10 with soft pedal)	
Transpose		±24 semitones (2 octaves) in 1 semitone steps	
Tempo		-50% ~ +20% in 1% steps	
Titles	Song	Up to 32 characters	
	Disk	Up to 64 characters	
Connections	MIDI	MIDI IN	
		MIDI OUT	
	Foot Controller	FOOT CNTRL	
Grand Piano's Controller Cable		Length: 3 m (fixed at piano end)	

Supplied Accessories	Remote control & batteries
	Disklavier piano sample disk (PianoSoft)
	Blank 3.5" 2DD floppy disk
	<i>Getting Started & Playback Manual</i>
	<i>Advanced Operation Manual</i>
	<i>HOW TO CARE FOR YOUR YAMAHA PIANO</i> guide
Optional Accessories	FC-5 Foot Switch (cable length 1.7m)
	FC-7 Foot Controller (cable length 1.7m)
Location Temperature	5~40°C (41~104°F)
Power Requirement & Consumption	See Disklavier piano's Serial No. plate

1. Data for the Disklavier upright's muffler pedal and a Disklavier grand's "bass sustain" pedal are not recorded or reproduced.
2. For notes held over by the sostenuto pedal, note off will be recorded when the sostenuto pedal is released.

MIDI Data Format

<Transmitted Data>



1. Channel Messages

1.1 Note on/off (\$9n, \$kk, \$vv)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 kk (note number) = \$00...\$7F (0...127) : C-2~G8
 vv (velocity) = \$00...\$7F (0...127) : 0=note off

1.2 Control Change

Volume (\$Bn, \$07, \$vv)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 vv (data) = \$00...\$7F (0...127)

Sustain pedal (\$Bn, \$40, \$vv)

Switch mode

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 vv (data) = \$00, \$7F (0, 127) : channel 1~16

Half pedal mode (add the following messages)

n (MIDI channel) = \$2 (3) : channel 1~16
 vv (data) = \$00...\$7F (0...127)

Soft pedal (Shift pedal) (\$Bn, \$43, \$vv)

Switch mode

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 vv (data) = \$00, \$7F (0, 127) : 0=off, 127=on

Half pedal mode (add the following messages)

n (MIDI channel) = \$2 (3) : channel 3
 vv (data) = \$00...\$7F (0...127)

Sostenuto pedal (\$Bn, \$42, \$vv)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 vv (data) = \$00, \$7F (0, 127) : 0=off, 127=on

1.3 Program Change (\$Cn, \$pp) – Sent only in MIDI setup mode

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16
 pp (program number) = \$00...\$7F (0...127)

2. Channel Mode Messages

2.1 All note off (\$Bn, \$7B, \$00)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

2.2 All sound off (\$Bn, \$78, \$00)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

3. System Information

3.1 System common messages

Song position pointer (\$F2, \$ll, \$hh) – When remote Out is on

ll (value) = \$00...\$7F (0...127)
 hh (value) = \$00...\$7F (0...127)

Song select (\$F3, \$ss) – When remote Out is on

ss (song number) = \$00...\$7F (0...127)

3.2 System real-time messages

Timing clock (\$F8) – When remote Out is on

Start (\$FA) – When remote Out is on

Continue start (\$FB) – When remote Out is on

Stop (\$FC) – When remote Out is on

Active sensing (\$FE) – Always transmitted.

Note: When pause, stop, or eject is selected during playback, the following messages are transmitted.

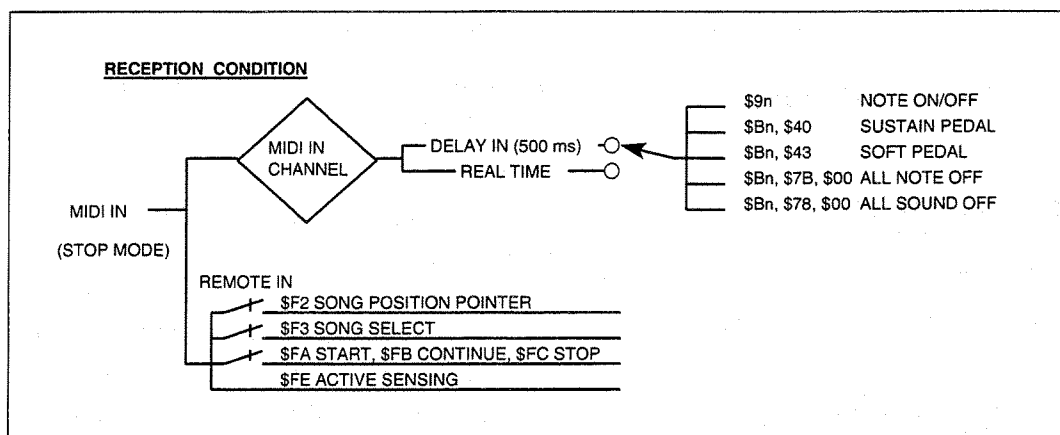
Note off (\$9n, \$kk, \$00) – Only for notes that are on

All sound off (\$Bn, \$78, \$00) – Channel 1~16

All note off (\$Bn, \$7B, \$00) – Channel 1~16

Pedal off (\$Bn, \$40, \$00, \$Bn, \$43, \$00)

<Receive data>



1. Channel Voice Message

1.1 Note off (\$8n, \$kk, \$vv)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

kk (note number) = \$15...\$6C (21...108): A-1~C7

vv (velocity) = \$00...\$7F (0...127)

1.2 Note on/off (\$9n, \$kk, \$vv)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

kk (note number) = \$15...\$6C (21...108): A-1~C7

vv (velocity) = \$00...\$7F (0...127) : 0=note off

1.3 Control change

Sustain pedal (\$Bn, \$40, \$vv)

Switch mode

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

vv (data) = \$00...\$3F, \$40...\$7F (0...63, 64...127)
: 0~63=off 64~127=on

Half pedal mode (add the following messages)

n (MIDI channel) = \$2 (3) : channel 3

vv (data) = \$00...\$7F (0...127)

Soft pedal (Shift pedal) (\$Bn, \$43, \$vv)

Switch mode

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

vv (data) = \$00...\$3F, \$40...\$7F (0...63, 64...127)
: 0~63=off 64~127=on

Half pedal mode (add the following messages)

n (MIDI channel) = \$2 (3) : channel 3

vv (data) = \$00...\$7F (0...127)

2. Channel Mode Messages

2.1 All note off (\$Bn, \$7B, \$00)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

2.2 All sound off (\$Bn, \$78, \$00)

n (MIDI channel) = \$0...\$F (0...15) : channel 1~16

3. System Information

3.1 System common messages

Song position pointer (\$F2, \$ll, \$hh) – When remote In is on

ll (value) = \$00...\$7F (0...127)

hh (value) = \$00...\$7F (0...127)

3.2 Real-time system messages

Start (\$FA) – When remote In is on

Continue start (\$FB) – When remote In is on

Stop (\$FC) – When remote In is on

Active sensing (\$FE) – Always received

MIDI IMPLEMENTATION CHART

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	Memorized HP→ch1, 3
Mode	Default Messages Altered	3 × *****	3 × ×	
Note Number	: True voice	0-127 *****	21-108 21-108	
Velocity	Note ON Note OFF	○ 9nH, v=1-127 × 9nH, v=0 *1	○ v=1-127 ○	
After Touch	Key's Ch's	× × *1	× ×	
Pitch Bend		× *1	×	
Control Change	64 66 67 7 120	○ *3 ○ ○ ○ *1	○ × ○ × ○	Sustain Pedal Sostenuto Pedal Soft Pedal Volume All Sound Off
Prog Change	: True #	○ (0-127) *****	×	
System Exclusive		× *1	×	
Common	: Song Pos : Song Sel : Tune	○ ○ × *2	○ ○ × *2	
System Real Time	: Clock : Commands	○ ○ *2	× ○ *2	
Aux Mes-sages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	× ○ (123) ○ ×	× ○ (123) ○ ×	
Notes All recognized data are transmitted 500msec later if controller mode is STOP and DELAY OUT mode is on. *1=Possible to transmit all data if E-SEQ disk is used. *2=Enabled or disabled using REMOTE functions. *3=Transmit if this model has a Sostenuto Pedal.				

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