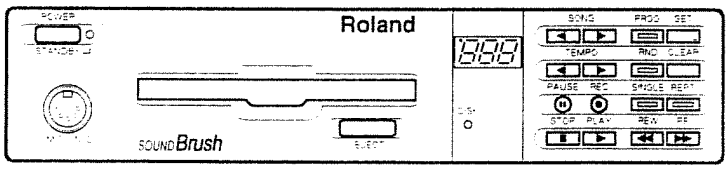
Roland

OWNER'S MANUAL

SOUND Brush

MIDI FILE PLAYER SB-55



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As of FEB 14, 1991

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Introduction

Thank you for purchasing the Roland SB-55 "Sound Brush" sequencer. The Sound Brush is a MIDI sequencer that can read and write standard MIDI files. In order to take full advantage of the Sound Brush's capabilities, and to enjoy long and trouble-free service, please read this manual carefully before use.

Main features

- The Sound Brush is a MIDI sequencer that can read and write standard MIDI files. You can of course, playback song data recorded by the Sound Brush, and also song data that was recorded by other MIDI sequencers.
- The Sound Brush allows you to easily record and playback performances from MIDI synthesizers and other types of MIDI instruments.
- The compact half-rack size allows for easy transport.
- A wide variety of playback functions are provided, such as Programmed Performance which lets you play your performances in random or specified order.
- By using the included Remote Control unit, you can start/stop playback or select songs without touching the main unit.

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IMPORTANT NOTES

Be sure to use only the adaptor supplied with the unit. Use of any other power adaptor could result in damage, malfunction, or electric shock.

[Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.

[Placement]

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.
- Observe the following when using the unit's disk drive. For further details, refer to "Before Using Disks".
  - Do not place the unit near devices that produce a strong magnetic field (eg. loudspeakers).
  - Install the unit on a solid, level surface.
  - Do not move the unit or subject it to vibration while it is operating.
- Do not expose this unit to temperature extremes (eg. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

[Maintenance]

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

[Additional Precautions]

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.
- To prevent the risk of electric shock, do not open the unit or its AC adaptor.

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[Before Using Disks]

Handling of the drive

●Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure that the angle of installation falls within the tolerance range (upward; 20: downward; 20).

●Avoid using the drive in areas of high humidity (eg. condensation). High levels of moisture can adversely affect the operation of the drive and/or damage disks. When the unit has been transported, allow it to warm to room temperature before operating.

●To insert a disk, push it firmly into the drive. To remove a disk, press the eject button firmly. Do not use excessive force to remove a disk which is lodged in the drive.

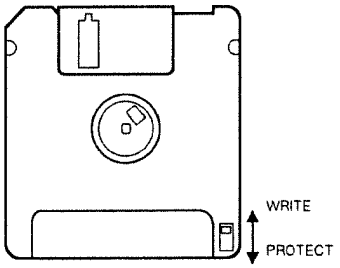
●Never remove a disk from the drive while it is operating; damage could result to both the disk and the drive.

●Before powering up or powering down, remove any disk from the drive.

Handling Disks

●Disks contain a plastic disk coated with magnetic particles. Observe the following when handling disks:
- Never touch the magnetic surface of the disk.
- Do not subject disks to temperature extremes (eg. direct sunlight in an enclosed vehicle). Recommended temperature range: 10 to 50℃.
- Do not expose disks to strong magnetic fields such as those generated by loudspeakers.

●Floppy disks contain a 'write protect' switch which can protect a disk from accidental erasure. It is recommended that the switch be kept in the 'protect' position and moved only when you wish to write new data onto the disk.



●All important data should be copied onto backup disks. This provides a complete duplicate of the data should the original disk be lost or damaged.

●Identification labels should be firmly fixed to the disks. Should a label come loose while the disk is in the drive, it may be difficult to remove the disk.

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FRONT AND REAR PANELS

Front Panel

● SET button
Press this button to set System functions.

● PROGRAM button
Press this button to make program playback settings.

● REPEAT button
Press this button to have a song played back repeatedly.

● CLEAR button
Press this button to cancel or delete various settings and operations.

● RANDOM button
Press this button to playback songs in random order.

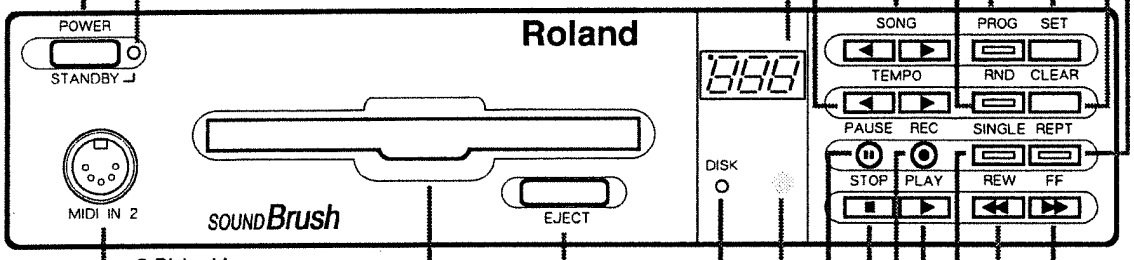
● SONG button
Press this button to select songs.

● TEMPO button
Press this button to adjust the playback tempo.

● POWER switch
Press this button to turn the power on or off (standby).

● Display
This display shows the song number, performance tempo, and other settings.

● Standby indicator
This indicator shows that the AC adaptor is connected, and the Sound Brush is in the standby mode, even though the POWER Switch is off.



● Disk drive

● EJECT button
Press this button to remove the floppy disk from the disk drive.

● Disk indicator
This light will be on when the disk drive is operating.

● Remote sensor
The Sound Brush receives signals from the Remote Control unit through this sensor.

● MIDI IN 2 connector
Messages received through this connector are combined with those received through the MIDI IN 1 connector on the rear panel.

● SINGLE button
Press this button for Single playback.

● RECORD button
Press this button when you want to record.

● PAUSE button
Press this button to pause playback.

● STOP button
Press this button to stop playback.

● PLAY button
Press this button to begin playback.

● REWIND button
Press this button to rewind.

● FF (fast forward) button
Press this button to advance.

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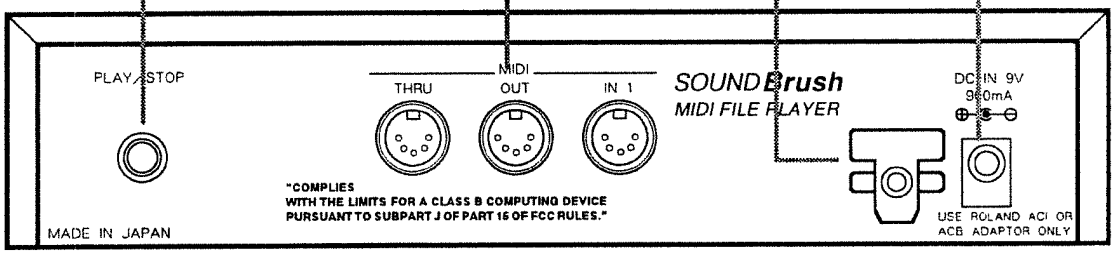
● Rear panel

● PLAY／STOP jack
A DP-2 foot pedal can be connected to this jack to control the Play／Stop operations.

● Cable hook
By looping the AC adaptor cable around the cable hook, you can prevent the plug from accidentally being disconnected.

● MIDI connectors (IN 1, OUT, THRU)
These connectors are for exchanging MIDI messages with other MIDI devices.

● AC adaptor jack
This jack is for connecting the included AC adaptor.

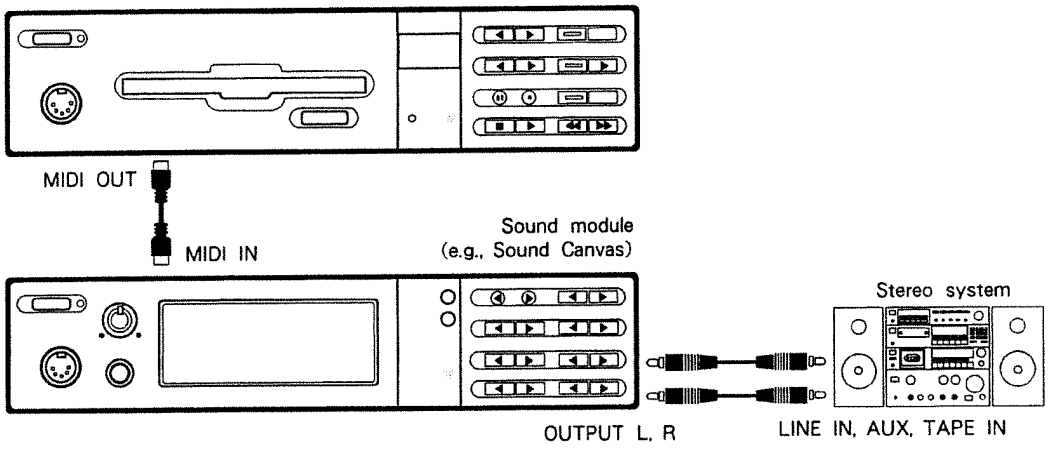


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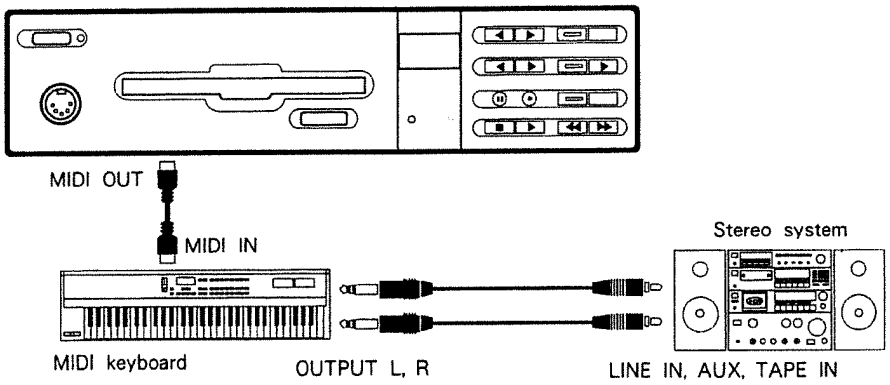
■ CONNECTIONS AND POWER

□ Connections

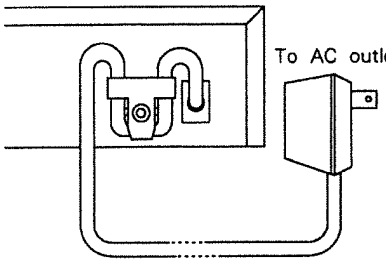
● When using this unit with a sound module



● When using this unit with a MIDI keyboard



● Connecting the AC adaptor



Connect the included AC adaptor to the Sound Brush, and then plug it into an AC outlet. By looping the AC adaptor cable around the cable hook, you can prevent the plug from accidentally being disconnected.

Note : Use only the included AC adaptor. Using other AC adaptors can result in damage or malfunction.

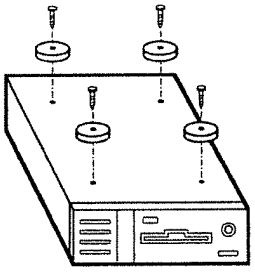
⇨The power will be on when you connect the AC adaptor.

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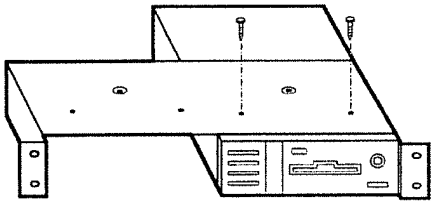
● Installing the Sound Brush in a rack

Install the Sound Brush into the RAD-50 Rack Mount Adaptor (sold separately) as shown in the following illustration. Other half-rack size devices, such as the Sound Canvas, can also be installed.

① Using a screwdriver, carefully remove the four rubber feet from the bottom of the unit.



② Attach the RAD-50 adaptor to the Sound Brush using the screw holes located nearest the front of the unit, using the screws from the rubber feet. Do not re-attach the rubber feet.



* When re-attaching the rubber feet to the unit, be sure to use the same screws that you used to attach the unit to the rack mount. Use of a different type of screw could result in damage or malfunction.

□ Turn the power on

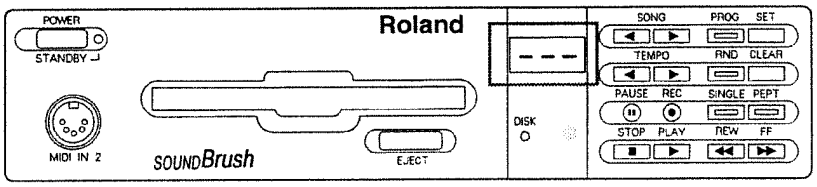
① Before you turn the power on, check the following points:

Is the Sound Brush correctly connected to the other devices?

Is the volume of the amp or sound system turned down?

② Turn the power of each device on.

The STANDBY indicator will go out and the display will be as shown in the following illustration. The Sound Brush is now ready to play.

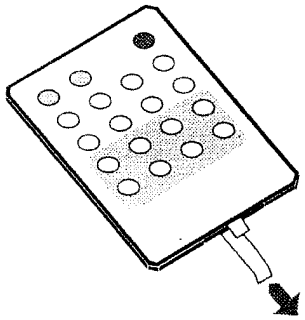


⇨The STANDBY indicator will be lit when the power is off.

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■ HOW TO USE THE REMOTE CONTROL

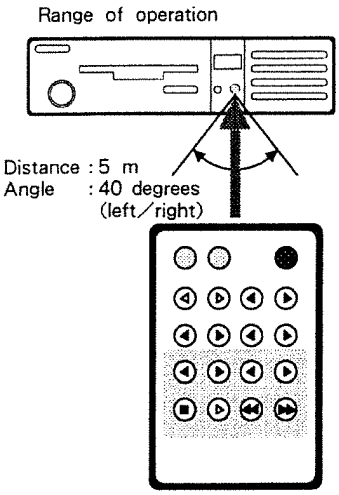
● Before using



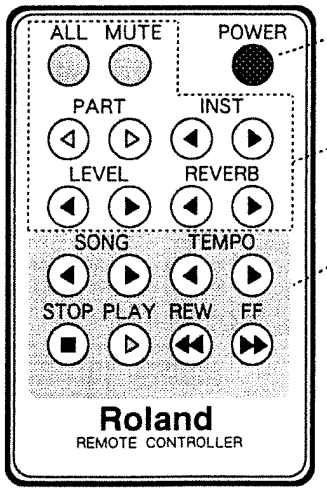
The remote control unit contains a lithium battery. An insulation sheet is inserted to keep the battery from discharging. You must remove this insulation sheet before using the remote control. Grasp the tab and pull the sheet out.

● How to use the remote control

When using the remote control, do not exceed the specified range of operation (5 m). Always aim it towards the Remote Sensor on the front panel of the Sound Brush. The remote control can also be used to control the SC-55 (Sound Canvas MIDI sound module, sold separately).



Each button on the remote control has the following function:



POWER button :
This button simultaneously controls the power for the Sound Brush and the Sound Canvas.

Sound Canvas buttons :
These buttons control various functions of the Sound Canvas sound module.

Sound Brush buttons :
These buttons duplicate the functions of the Sound Brush's front panel buttons.

Note : The remote control is able to transmit only one operation at a time.

* The remote control may not operate even within the range of operation if there is an obstacle between it and the main unit.
* Using the remote control near other equipment that uses remote control systems may result in operational errors.
* The life of the lithium battery depends on the amount and conditions of use. If after a while the operational range of the remote control decreases, change the lithium battery.
* If you will not be using the remote control for a long period of time, remove the lithium battery.

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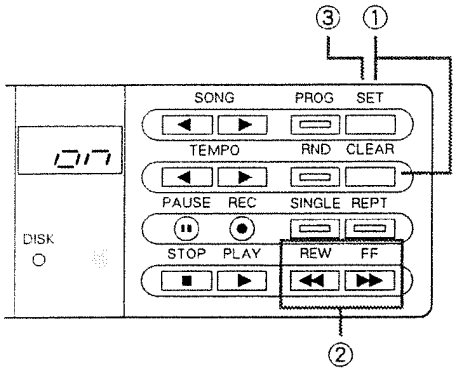
< Using the Sound Brush together with the Sound Canvas sound module >

When you use the Sound Brush together with the Sound Canvas sound module, the remote control of the Sound Brush can turn the power to both units ON and OFF simultaneously. When you use the remote control with both units, be sure they are located within the range of operation.

When you want to control only one of the units, turn off the remote control receiving switch of the unit that you do not want to control.

*When using the remote control to operate both units, be sure that both units are ON or OFF. If only one unit is ON when you begin, one unit will always be ON while the other is OFF.

● When you don't want to use the remote control (remote control reception switch on/off)



① While holding [SET], press [CLEAR].
The display will read "on".

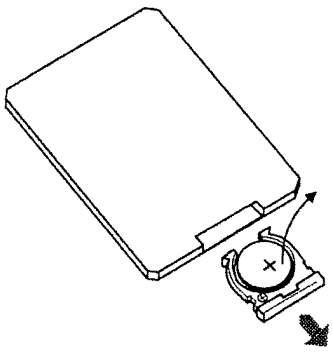
② When you press [REW], the display will show "oFF".
To return to "on", press [FF].

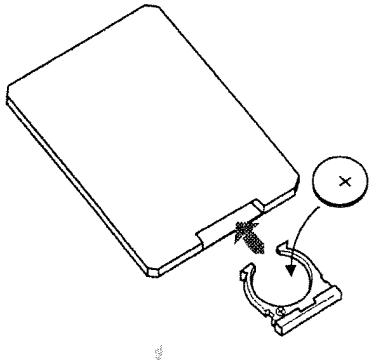
③ When you are finished, press [SET].

● How to change the lithium battery

① Insert a fingernail into the groove on the back of the remote control and pull out the battery holder.

② Put the lithium battery into the battery holder (positive "+" side up), and insert the battery holder back into the remote control.





Note : Improper use of the lithium battery may cause leakage or explosion. Observe the following precautions:

- Use only the specified lithium battery (CR 2025).
- Ensure the polarity is correctly set (positive "+" side up).
- Do not short circuit the battery, attempt to dismantle it, or throw it into a fire.

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■ HOW TO HEAR THE DEMO SONGS

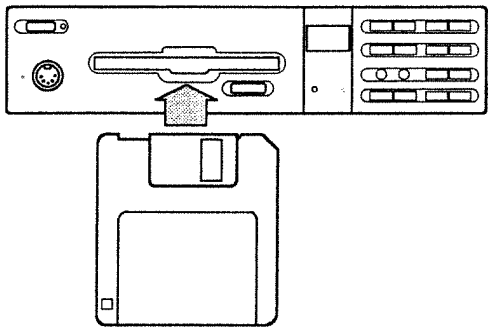
The floppy disk included with the Sound Brush contains song data for use with the Sound Canvas sound module (sold separately).

⇨Before you use the disk drive, read the precautions on P.5.
⇨The included leaflet describes the demo songs on the disk.

① Connect the Sound Brush, Sound Canvas, and your stereo set (☞P.8).

② Insert the disk into the disk drive.

Be sure to insert the disk in the correct direction, with the correct side facing upward.



When you insert the disk, playback will begin automatically.

The display will show the song number of the currently selected song.

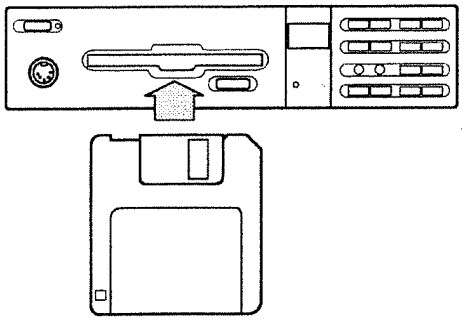
⇨For a short time before playback begins, the Sound Canvas display will indicate the song name.
⇨To stop playback, press [STOP].
⇨To remove the disk, stop playback, and then press [EJECT].

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PLAYBACK

Now we will explain the basic playback functions. Before playing back song data from your own disk, refer to "Playing your own song data" (☞P.21).

● Inserting the disk

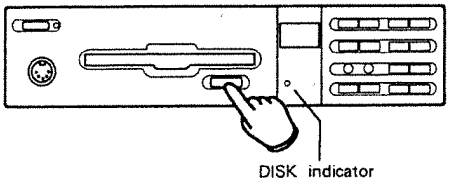


Insert the disk into the disk drive.

Be sure not to insert the disk backwards or upside down.

⇨The Sound Brush is initially set up to start playing automatically when you insert a disk. If you do not want it to start automatically, refer to "Auto Play Function" (☞P.29).

● Removing the disk

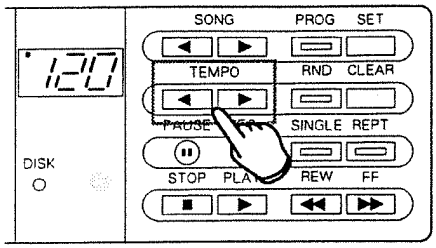


Make sure that the Sound Brush is not playing, and then press [EJECT].

If the Sound Brush is playing, first press [STOP], and then press [EJECT].

＊The DISK indicator indicates that the disk drive is operating. Never attempt to remove a disk while the disk drive is operating.

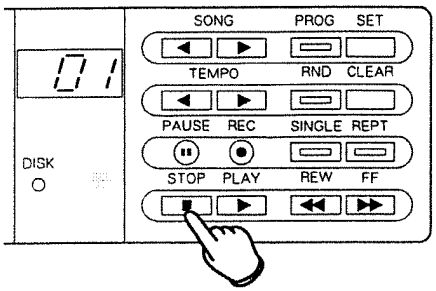
● To adjust the tempo



Adjust the tempo by pressing the TEMPO [◀] [▶] buttons.

While adjusting the tempo, the tempo will be shown in the display. (The tempo range is ♩=5—260 beats per minute.)

● To stop playback



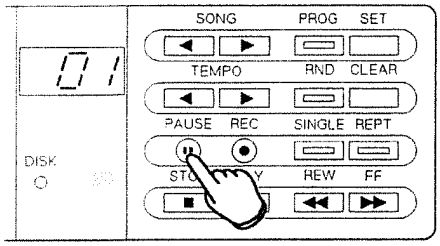
Press [STOP].

When you press [STOP], the song position will automatically return to the beginning of the song. You can listen to the song from the beginning by pressing [PLAY].

⇨If you want to stop at a certain point without returning to the beginning, please refer to "Auto Rewind function" (☞P.29).

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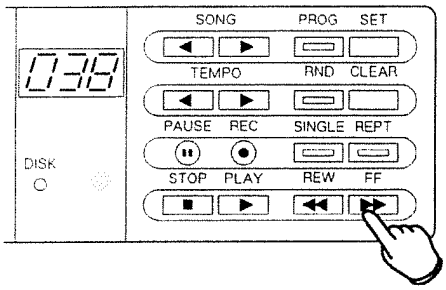
● Pause



Press [PAUSE].

Playback will stop. To resume playing, press either [PLAY] or [PAUSE], and playback will resume from the pause point.

● Fast forward

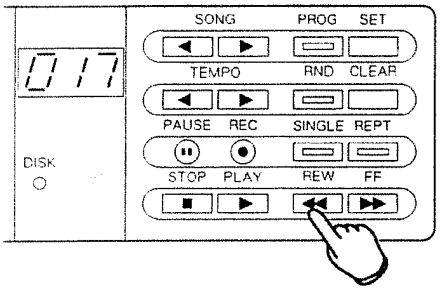


Press and hold [FF].

While this button is pressed, the song will rapidly advance. (The bar numbers will be displayed)

⇨You can use this Fast Forward function during STOP, PAUSE, or PLAY.

● Rewind

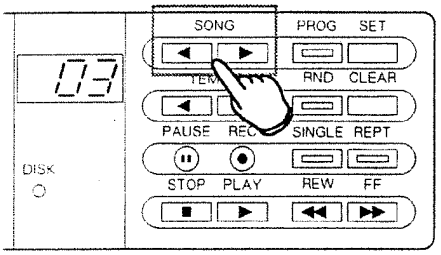


Press and hold [REW].

While this button is pressed, the song will rapidly rewind. (The bar numbers will be displayed.)

⇨You can use this Rewind function during STOP, PAUSE, or PLAY.

● Selecting a song



Select a song by pressing the SONG [◄][►] buttons.

The song number will be shown in the display.

⇨You can select a song during STOP, PAUSE, or PLAY.

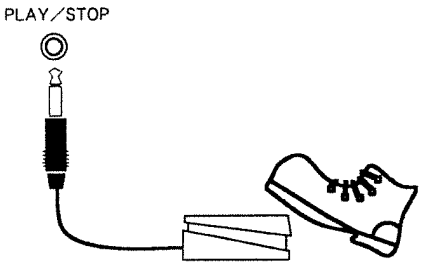
If you select a song while a song is currently playing, the newly selected song will begin as soon as the current song finishes.

<About song numbers>

Songs on a disk are distinguished by their song title. The Sound Brush arranges the song titles in alphabetical order, and assigns a number to each song. When using another sequencer to create songs for playback by the Sound Brush, it may be convenient to begin each song name with a numeral.

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● Controlling PLAY/STOP with a pedal switch



Connect a pedal switch to the PLAY/STOP jack on the rear panel of the Sound Brush. You can now control PLAY/STOP by pressing the pedal switch.

● Convenient functions

Adjust tempo up (down) quickly: While holding TEMPO [◄] ([►]), press [►] ([◄]).
Move to a lower (higher) song number: While holding SONG [◄] ([►]), press [►] ([◄]).
Fast Forward (Rewind) more quickly: While holding [FF] ([REW]), press [REW] ([FF]).
Move to the beginning (end) of a song: While holding [STOP], press [REW] ([FF]).
Return to the initial tempo of a song: While holding [CLEAR], press TEMPO [►] or [◄].

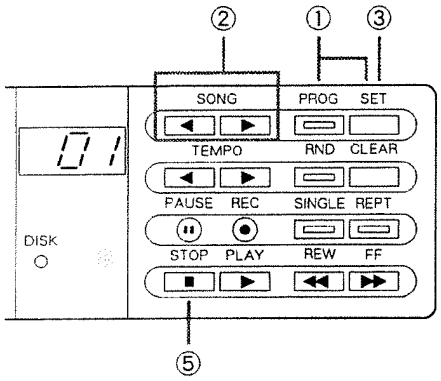
*These above functions cannot be performed with the remote control.

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■ PROGRAM PLAYBACK AND RANDOM PLAYBACK

"Program Playback" makes two or more songs automatically playback in the order you specify.
"Random Playback" makes the Sound Brush play songs in random order.

● Program settings



① While holding [SET], press [PROG].
The button indicator will blink, indicating that you can now make settings.

② Use SONG [◄] [►] to select the song you want the Sound Brush to play first.

③ Press [SET] to store the song you selected.

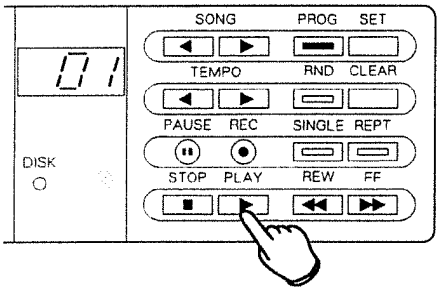
④ Repeat steps ② and ③ to specify the order of the songs.

⑤ When you finish setting the song order, press [STOP] (or [PLAY]).
The [PROG] button indicator will light to show that you are now in the Program Playback mode.

⇨You can specify a program of up to 99 songs.

* The song order you have set will remain in the Sound Brush's memory even after you turn the power off.
* If you don't cancel an old program, newly programmed songs will be added at the end of the old program. If you don't want this to happen, be sure to cancel the old program.

● Program playback



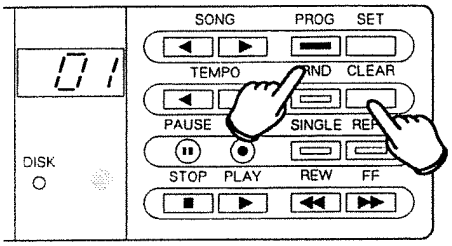
While the [PROG] indicator light is on, press [PLAY].
Program playback will begin, and will stop when the Sound Brush has finished playing all the songs you programmed. Playback will also stop if you press [STOP].

⇨To return to regular playback mode, press [PROG] and the indicator will go out.
⇨If you press [PROG] during regular playback, programmed playback will begin when the song currently playing finishes.

* If you insert a disk which is different from the disk for which you created the program, program playback will not function.

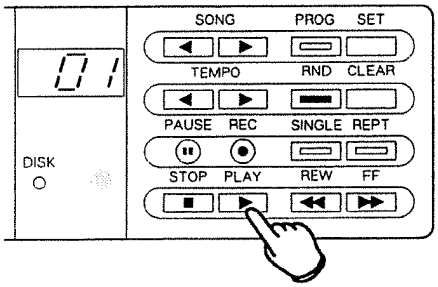
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● To cancel program settings



When the PROG indicator is on, press and hold CLEAR.
While continuing to press CLEAR, press PROG.
The PROG indicator will go out and the program will be canceled.

● Random playback

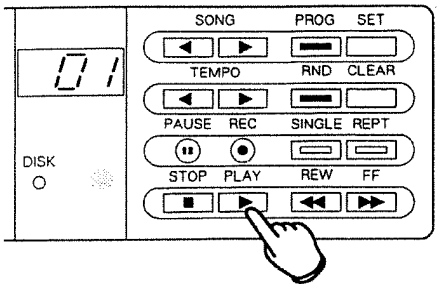


Press RND (the indicator will light), and then press PLAY.
Random playback will begin, and will stop when all the songs on the disk have been played. You can also stop playback by pressing STOP.

⇨To return to regular playback, press RND (the indicator will go out).

* If you press RND during regular playback, random playback will begin when the song currently playing finishes.

● Random playback of programmed songs



Press PROG and RND (both indicators will light), then press PLAY.
The songs in the program you created will be played in a random order. Playback will stop when all the songs in the program have been played. You can also stop playback by pressing STOP.

< For example, if you program 3 → 1 → 4 >

○ : on
× : off

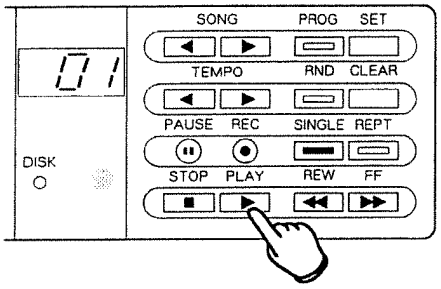
Program playback	Random playback	Play order
○	×	3 → 1 → 4
×	○	1 → 3 → 4 → 2 → ••• (songs on the disk played at random)
○	○	4 → 3 → 1 (programmed songs played at random)

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■ PLAYING SONGS ONE AT A TIME
(SINGLE PLAYBACK)
PLAYING SONGS MANY TIMES
(REPEAT PLAYBACK)

Single Playback will stop at the end of each song. Repeat Playback will repeatedly playback songs.

● Single playback

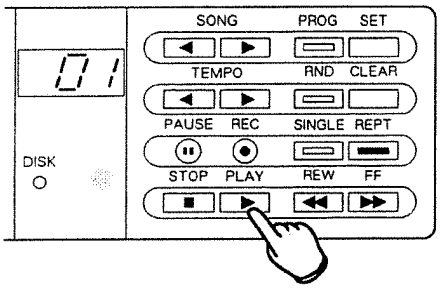


Press [SINGLE]. The indicator will light. Then press [PLAY].

Single playback will begin and will stop when it reaches the end of the song.

⇨To return to regular playback, press [SINGLE]. The indicator will go out.

● Repeat playback



Press [REPT]. The indicator will light. Then press [PLAY].

Repeat performance will begin and will continue until you press [STOP] or [PAUSE].

⇨To return to regular playback, press [REPT]. The indicator will go out.

<How playback functions can be combined in various ways>

○ : on
× : off

Single playback	Repeat	Programmed	Random	
○	×	○	×	Playback will stop at the end of each song. After stopping, the song which is next in the program order will begin playing.
○	×	×	○	Playback will stop at the end of each song. After stopping, the next song will be chosen at random.
○	×	○	○	Playback will stop at the end of each song. After stopping, a song will be chosen at random from the program.
×	○	○	×	The program will be repeated.
×	○	×	○	After finishing random playback of all songs on the disk, random playback will start again.
×	○	○	○	After finishing random playback of all songs in the program, random play of the program will start again.

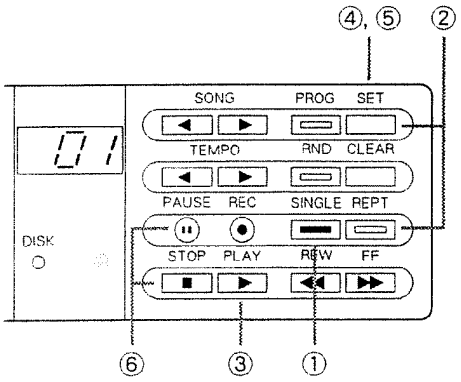
* During Single or Repeat playback, the currently selected song will play or repeat, regardless of the Programmed or Random playback setting. When you want to repeat a certain section of a song, refer to Block Repeat playback (☞P.19).

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■ REPEATING A SPECIFIED SECTION (BLOCK) OF A SONG (BLOCK REPEAT PLAYBACK)

"Block Repeat" playback makes a specified section of a song repeat. (This is valid only in Single Playback mode.)
It is sometimes convenient to use this function to repeat a certain phrase over and over when practicing.

● Setting and using Block Repeat (during playback)



① Press [SINGLE] to enter the Single playback mode (the button indicator will light).

② While holding [SET], press [REPT].
The button indicator will begin blinking. Now you can specify the area for Block Repeat.

③ Press [PLAY] to begin playback.

④ At the beginning of the section (block) you want to repeat, press [SET].

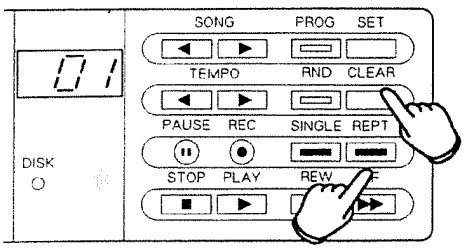
⑤ At the end of the section (block) you want to repeat, press [SET] again.
The indicator will light steadily and Block Repeat playback will begin.

⑥ To stop Block Repeat playback, press [STOP] (or [PAUSE]).

⇨To return to regular playback, press [REPT] and [SINGLE]. The indicators will go out.

* The time it takes for the Sound Brush to return to the starting point of a repeat section will depend on the song data.
* Block Repeat settings will remain in the memory of the Sound Brush even after the power is turned off.
* If you specify a repeat block while another repeat block already exists, the original repeat block will be erased.

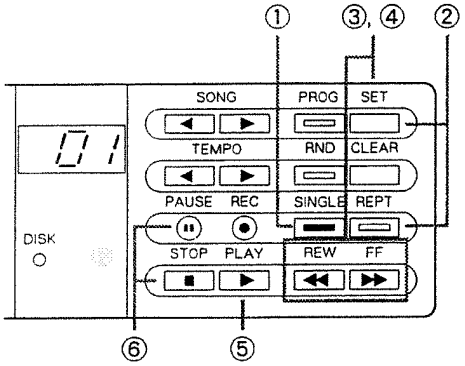
● How to cancel Block Repeat settings



While holding [CLEAR], press [REPT].
The button indicator will go out and the Block Repeat setting will be canceled.

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● Setting and using Block Repeat (while stopped or paused)



① Press [SINGLE] to enter the Single performance mode (the button indicator will light).

② While holding [SET], press [REPT].
The button indicator will begin blinking. Now you can specify the area for Block Repeat.

③ Use the [FF] and [REW] buttons to move to the first bar of the section you want to repeat, and then press [SET].

④ Use the [FF] and [REW] buttons to move to the last bar of the section you want to repeat, and then press [SET].

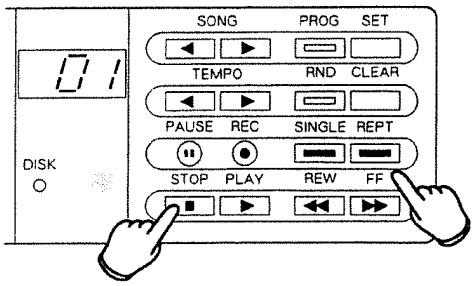
⑤ Press [PLAY] to begin Block Repeat playback.

⑥ To stop Block Repeat playback, press [STOP] (or [PAUSE]).

⇨To return to regular playback, press [REPT] and [SINGLE]. The indicators will go out.

* The time it takes for the Sound Brush to return to the starting point of a repeat block will depend on the song data.
* Block Repeat settings will remain in the memory of the Sound Brush even after the power is turned off.
* If you specify a repeat block while another repeat block already exists, the original repeat block will be erased.

● How to move to the repeat section



While holding [STOP], press [REPT] to move to the beginning point of the repeat section. While holding [STOP], press [REPT] once again to move to the end of the repeat section.

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PLAYING YOUR OWN SONG DATA

You can play song data that was created on other computers or sequencers, if it is in the standard MIDI file format (see below). The Sound Brush uses 2DD format disks only. If you have another type of disk that contains song data that you want to play on the Sound Brush, please copy the data to a 2DD format disk.

⇨Disks that have been formatted by IBM, ATARI, or NEC computers can be used. Disks that have been initialized by Roland MC series sequencers can also be used.

⇨If you have a Macintosh IIcx, IIci, IIfx, IIsi, IIx, SE-30, Portable, or Classic, use the "APPLE FILE EXCHANGE" software to format a disk to 2DD IBM-PC format. If you have a different type of Macintosh computer, use a "Dayna File" disk drive to format a disk in 2DD IBM-PC format.

⇨If you want to play song data that was created on a ROLAND MC-50, MC-500 mkII, MC-300, or MC-500, please use the MRM-500 Standard MIDI File Converter (sold separately) to convert the data to standard MIDI file format.

⇨If you want to play song data that is not in the Standard MIDI File format, you re-record data into the Sound Brush (☞P.22).

* Macintosh is a registered trademark of Apple Inc.
* Dayna File is a trademark of Dayna Communication Inc.

⇨When using song data in format 1, the Rewind and Fast Forward functions will be slightly slower than for song data in format 0. To convert song data from format 1 to format 0, please read P.38.

⇨The Sound Brush sorts the song names (file names) in ASCII code order, and assigns song numbers corresspondingly.

! # $ % & ' ( ) − 0 ··· 9 A ··· Z a ··· z ^ _ { } ~

< What are Standard MIDI Files >

Computer and sequencer song data differs depending on equipment and software. You cannot play your song data on another type of equipment unless it is compatible with your equipment. The Standard MIDI File format was created to allow different devices to share the same data. Many recent devices and software are able to save and load data in Standard MIDI File format.

The Sound Brush can use the following types of Standard MIDI File :

- Format 0 : Multiple channels of MIDI data are stored on one track.
- Format 1 : Multiple tracks are used, with multiple channels of MIDI data on each track. (The Sound Brush is able to use up to 17 tracks.)

⇨ Data will be recorded by the Sound Brush in Format 0.

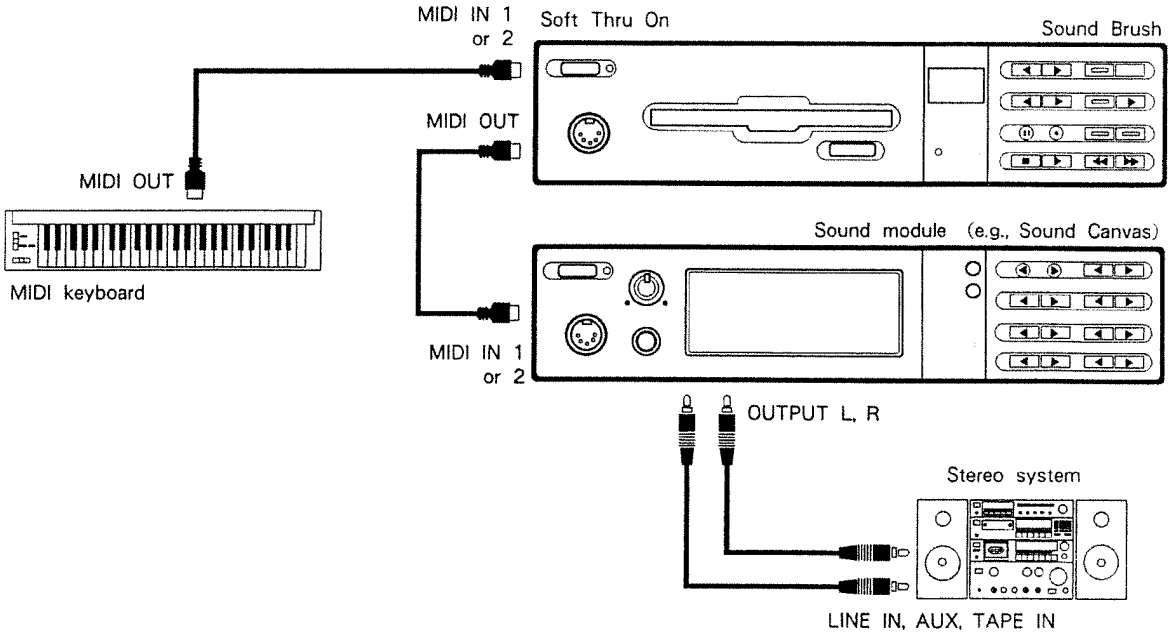
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■ RECORDING

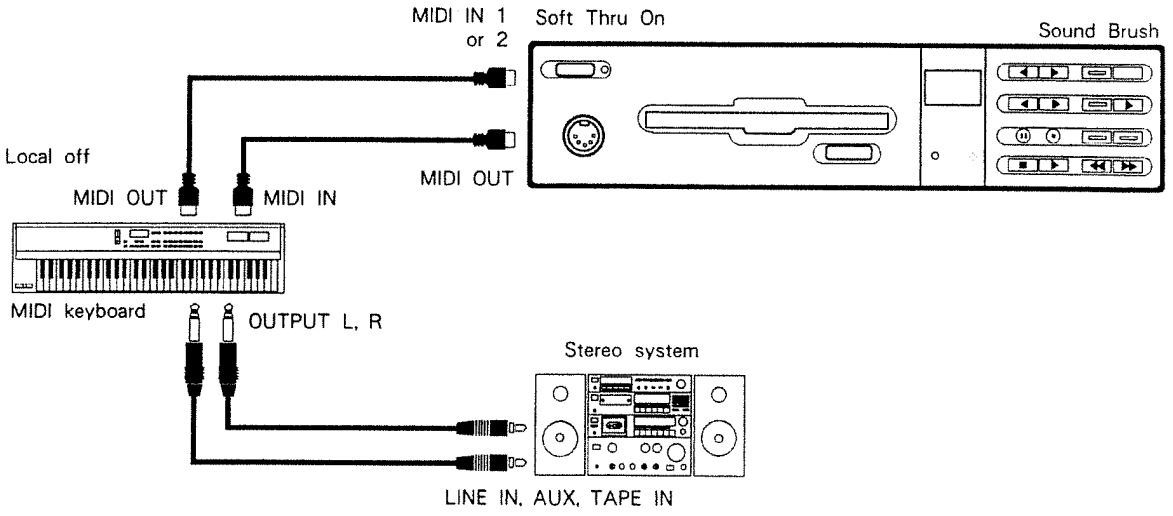
Here's how to use a MIDI keyboard to record a musical performance.

● Connections

When using a MIDI keyboard controller and an external sound module



When using a MIDI keyboard that has a built in sound source



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<Local Control and Soft Thru>

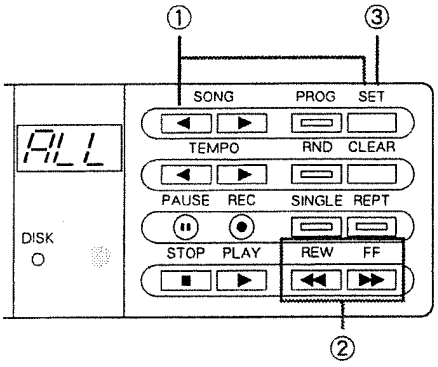
Local Control is a switch provided on most MIDI keyboard instruments that allows you to disconnect the keyboard from the internal sound source. Normally you will leave this set to "local on" so that the sound source will be heard when you play the keyboard. However, when using an external sequencer to control the sound source, you may wish to set this switch to "local off". For more details, please read "About MIDI" (☞P.48).

Most sequencers have a function called "soft thru" which allows messages received at MIDI IN to be re-transmitted from MIDI OUT. This will usually be set to "Thru on".

On the Sound Brush, both MIDI IN 1 and 2 are initially set to "Soft thru on" when the unit leaves the factory.

＊Please read the Local Control section of your MIDI keyboard manual for setting instructions.

● Soft Thru settings



Depending on how you use the Sound Brush, you may find it necessary to set MIDI IN 1 or 2 (or both) to Soft Thru Off. Use the following procedure:

① While holding [SET], press SONG [◀].

The present setting will appear in the display.

② Use the [REW] and [FF] buttons to set the Soft Thru status.

oFF : Both MIDI IN 1 and 2 ports are set to Soft Thru Off.

in1 : Only MIDI IN 1 is set to Soft Thru On.

in2 : Only MIDI IN 2 is set to Soft Thru On.

ALL: Both MIDI IN 1 and 2 ports are set to Soft Thru On.

③ Press [SET] to finish the operation.

< What is a sequencer ? >

The Sound Brush is a sequencer that records and plays back MIDI data, the common language of electronic musical instruments.

Instead of recording sound itself as tape recorders do, sequencers record musical data (MIDI messages). Common MIDI messages include "note messages" that indicate which notes were played, for how long, and how strongly.

Sequencers differ from tape recorders in the following ways :

1) Since the sound itself is not being recorded, there is no loss in sound quality.
2) The tempo can be changed without affecting the pitch.
3) It is not possible to record vocals or acoustic instruments on a sequencer.
4) Some type of MIDI sound source is required in order to produce sound.

⇨ Please read "About MIDI" (☞P.47) to learn about the basic ideas and applications of MIDI.

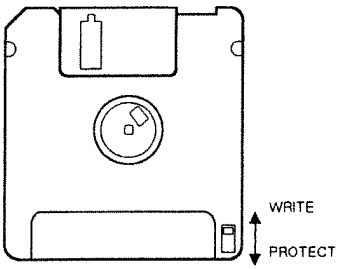
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● Before you begin recording

When you record on the Sound Brush, the recorded data is stored directly onto floppy disk. You must prepare a disk before you begin recording.

<If you are using a new disk>

Before the Sound Brush can use a newly-purchased disk, the disk must be initialized (formatted) using the following procedure.



① Set the write protect tab of the disk to the "WRITE" position, and insert it into the Sound Brush.
Be sure not to insert the disk backwards or upside down (☞P.12).

② Press [REC], and the disk will be initialized.
The button indicator will light for a while, and then go out. Initialization has been completed.

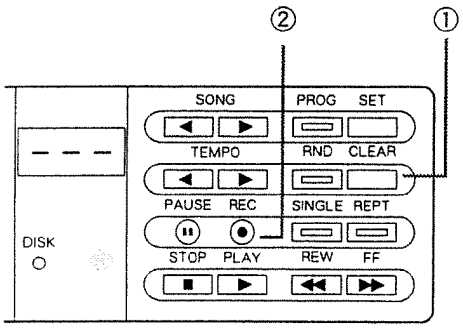
<If you have a computer>

Disks that have been formatted by an IBM, Atari, or NEC computer in 2DD format can be used just as they are. Disks that have been formatted by a Roland MC series sequencer can also be used just as they are.

<If you wish to use other types of disks>

Before the Sound Brush can use a disk formatted by another device (i.e., a device other than an IBM, Atari, or NEC computer, or a Roland MC series sequencer), the disk must be initialized (formatted) using the following procedure. This procedure can also be used to erase all songs from a disk used by the Sound Brush.

Warning : When you initialize a disk, all data that was on that disk will be lost. Before you initialize a disk, make sure that it does not contain important data you wish to keep.

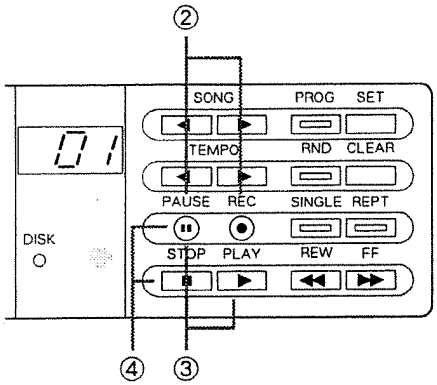


① While holding [CLEAR], insert the disk (with the protect tab at "WRITE") into the disk drive.

② Press [REC].
When the disk has been initialized, the display will read " – – – ".

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● How to record



① Insert a formatted disk into the drive.

②While holding [PAUSE], press [REC].

The song number of the song you are about to record will be displayed. The Sound Brush will enter the record ready mode.

⇨If this is the first song to be recorded on the disk, it will be song number 1 (displayed as song number 01). If the disk already contains song data, the newly recorded song will be numbered after the last song. However, if the disk contains song data that was created on another sequencer, the song numbers may be different, depending on the song names.

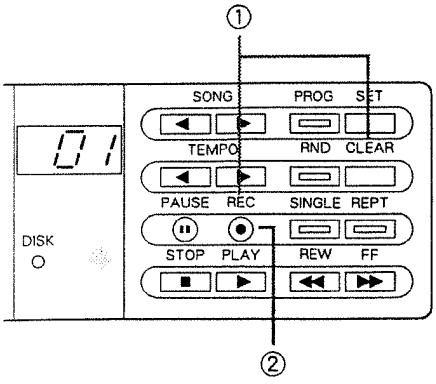
③ When you begin playing the keyboard, recording will start.

You can also start recording by pressing [PLAY] (or [PAUSE]).

④ When you finish your performance, press [STOP] (or [PAUSE]).

⇨If you pressed [PAUSE], you can press [PLAY] (or [PAUSE]) once again to resume recording from the pause point.

● How to re-record (clear song data)

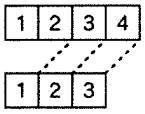


① While holding [REC], press [CLEAR].

② Press [REC] once again.

The song you recorded will be cleared (erased). Re-record the song using the procedure above.

⇨This operation can be used to clear not only the song you just recorded, but also other songs on the disk. To clear another song, select the song number, and perform the above operation. When you clear a song, the following song numbers will be renumberd.



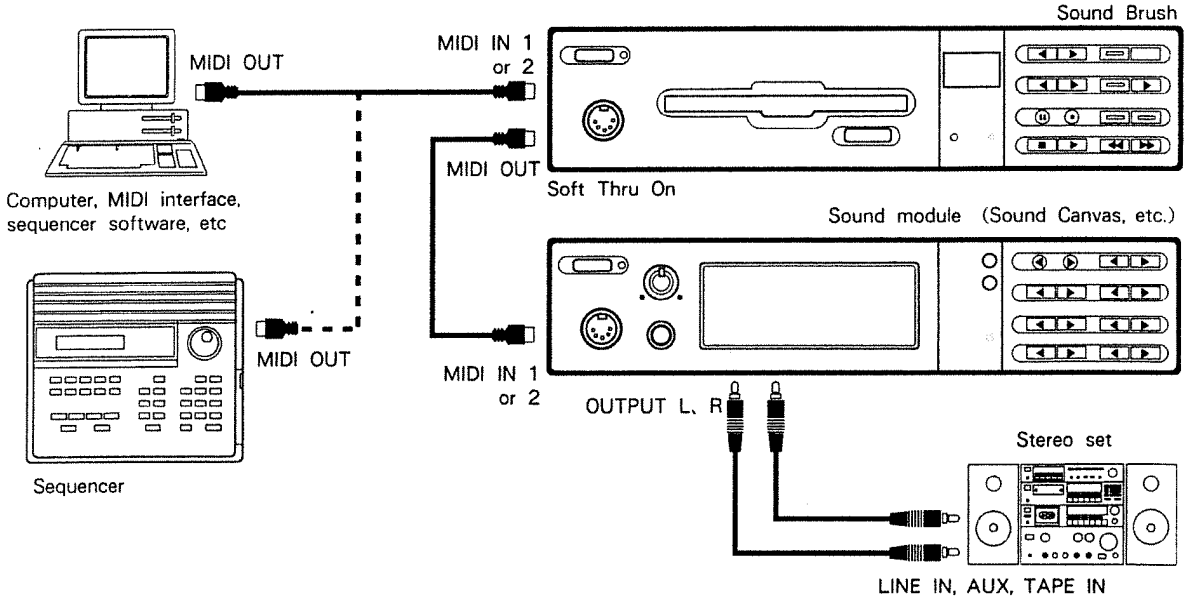
When song number 2 is cleared

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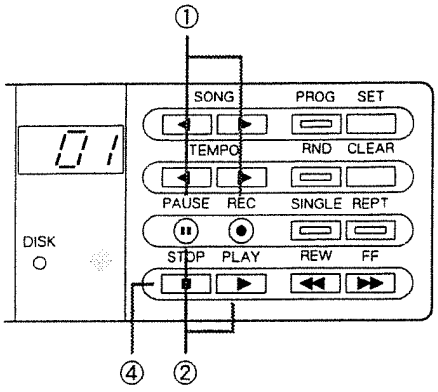
■ RECORDING SONG DATA FROM ANOTHER DEVICE INTO THE SOUND BRUSH

Song data that was created on a computer or other sequencer can be recorded into the Sound Brush as explained below. If you wish to play song data that is not in Standard MIDI File format, use this procedure to re-record the data into the Sound Brush.

● Connections



● Recording



① While holding [PAUSE], press [REC].
You will enter the record the ready mode.

② Press [PLAY] (or [PAUSE]) to begin recording.

③ Start playback on your computer or other sequencer.
The data will be recorded.

④ When recording is complete, press [STOP].

⇨If you set the Sound Brush MIDI Clock parameter to "Remote", the Sound Brush will play/stop in responce to operation of the other device (computer or sequencer) (☞ P.37).

* If the song data contains a large number of Exclusive messages, they may not be recorded.

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■ RECORDING SONG DATA FROM THE SOUND BRUSH INTO ANOTHER DEVICE

Before using the Sound Brush to record data that will be played back on a computer or other sequencer, set the Time Base to match that of the device which will be used for playing back the data.

Time Base settings (calculated for a quarter note)

Time Base of the Sound Brush	Time Base of the other device
192	24, 48, 96, 192, 384
240	30, 60, 120, 240, 480

The Time Base (also called "Resolution" on some devices) determines the timing resolution at which data will be recorded. This will be different for each device.

The Sound Brush allows you to select a Time Base of 192/240 when recording. Refer to the chart on the left, and set the Time Base to match that of the other device you will be using. If the Time Base is incorrect, the timing of notes will be incorrect, and the playback will not sound as expected.

⇨When shipped, the Sound Brush is set to a Time Base of 192.

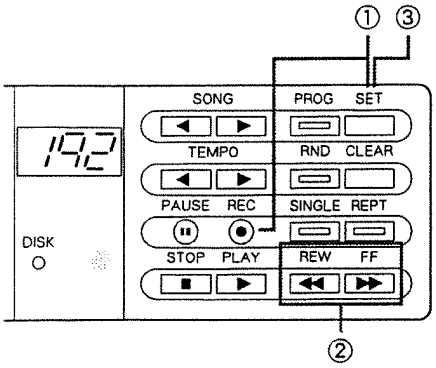
⇨Time Base settings have effect only when recording. When using the Sound Brush to playback song data that was recorded on other devices, the required Time Base will automatically be detected, and the Time Base settings have no effect.

⇨A song recorded by the Sound Brush will automatically be named "_00000". If two or more songs are recorded on a disk, they will be named "_00000", "_00001", "_00002", etc., in the order in which they were recorded.

⇨Song data files created by the Sound Brush will be given a filename extension of ".MIDI".

_00000.MID

● Selecting the Time Base



① While holding [SET], press [REC].
The display will show the current Time Base.

② Use [REW] [FF] to select the Time Base (192/240).

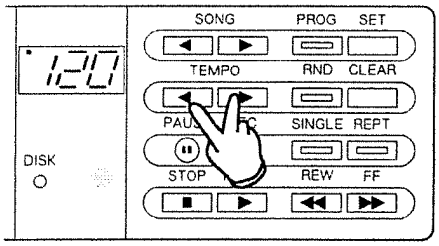
③ Press [SET] to complete the operation.

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SELECTING THE DISPLAY

The display normally indicates the Song Number, but you can change the display to show the Tempo or the Measure Number. Set the display to whichever you like.

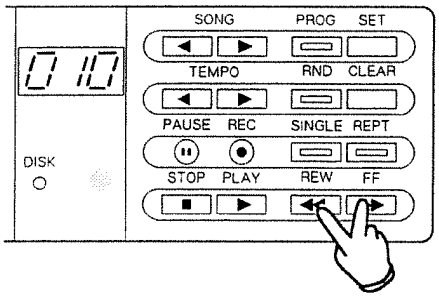
● Select the Tempo display



Press both TEMPO [◄] [►] simultaneously.

⇨The "•" in the upper left corner of the display indicates that Tempo is displayed.

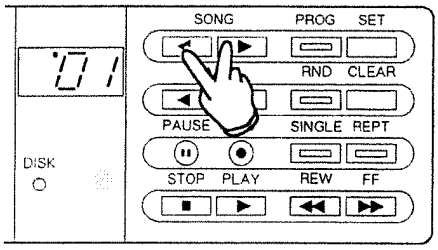
● Select the Measure Number display



Press [REW] and [FF] simultaneously.

⇨The measure number will be displayed using three digits.

● Select the Song Number display



Press both SONG [◄] [►] simultaneously.

⇨The song number will be displayed using two digits.

⇨The absence of a "." in the upper center part of the display indicates that the song is using high-speed correspondence data (☞P.38).

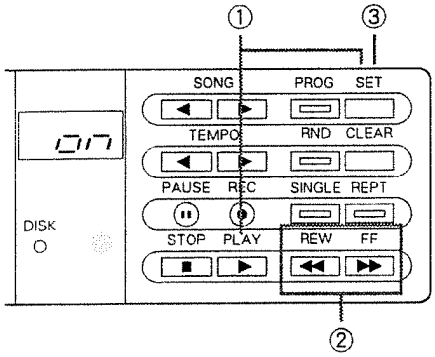
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■ SETTING THE PLAYBACK FUNCTIONS

Use the following playback functions when necessary.

Auto Play : Playback will automatically begin when you insert a disk.
Song Interval Time: Specify the time interval between played songs during continuous playback.
Auto Rewind : When you press [STOP], playback will stop at the precise location where you pressed the button.

● Turning off Auto Play

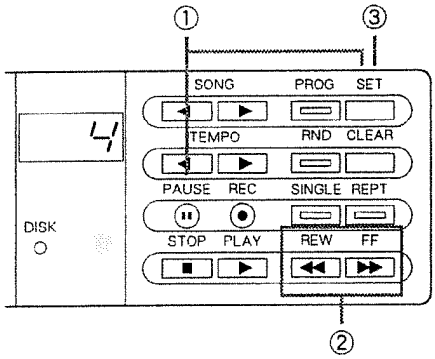


① While holding [SET], press [PLAY].
The display will show the current setting.

② Press [REW] to turn Auto Play "oFF".
To turn Auto Play on again, press [FF].

③ Press [SET] to complete the operation.

● Changing the Song Interval Time (0 — 99 seconds in 1 second steps)

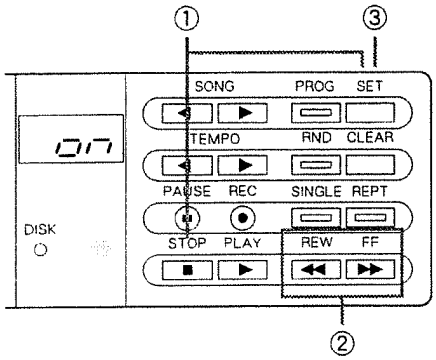


① While holding [SET], press [PAUSE].
The display will show the current Song Interval Time.

② Use [REW] [FF] to specify the Song Interval Time.

③ Press [SET] to complete the operation.

● Turning off Auto Rewind



① While holding [SET], press [STOP].
The display will show the current setting.

② Press [FF] to turn Auto Rewind "oFF".
To turn Auto Rewind on again, press [REW].

③ Press [SET] to complete the operation.

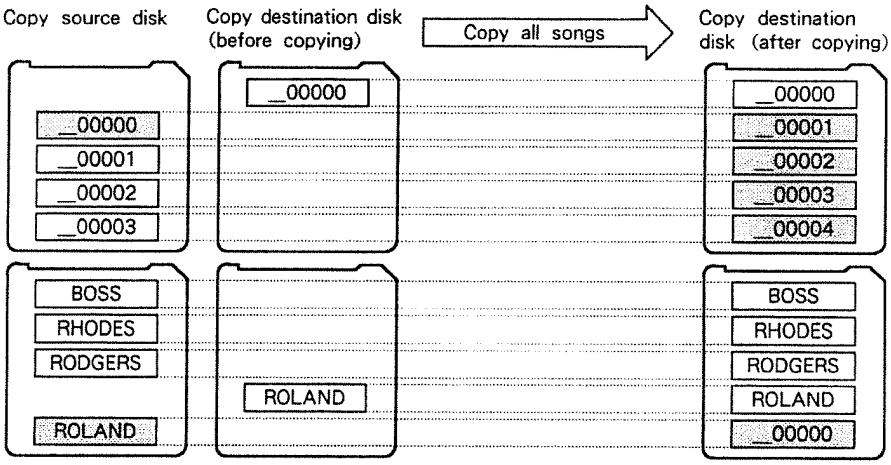
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■ COPYING SONG DATA

You can copy song data to other disks. This allows you to collect songs from different disks onto a single disk for convenient playback.

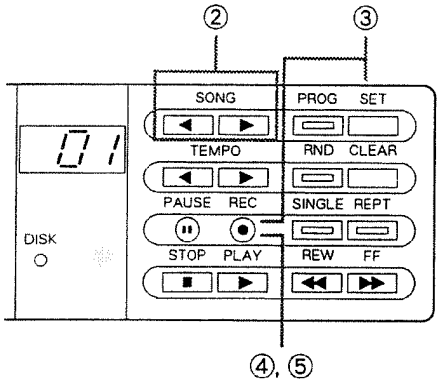
There are two ways to copy song data; copy only a single song, or copy an entire disk.

Warning : If the copy destination disk contains song data with the same name as the copied data, be sure to change the name of the song data before you copy it.



* Some songs have a Copyright Notice (data for protecting the composer's copyright) stored to them. The data of these songs can be copied from the master as many times as you want but another copy cannot be made from the data that was copied from the master.

● Copy only one song



① Insert the copy source disk.

② Use the SONG [◄] [►] to select the song you wish to copy.

③ While holding [REC], press [SET].
The display will ask "Sur" (Sure: "are you sure you want to copy?").

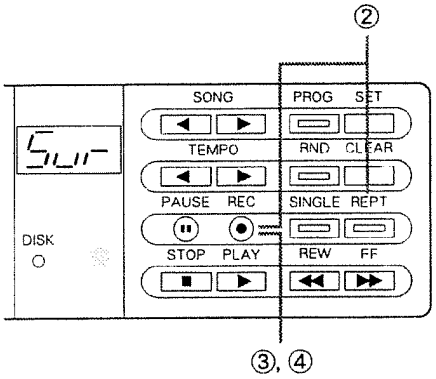
④ Press [REC].
After a while, the display will ask "dSt" (Destination: the copy destination disk).

⑤ Insert the copy destination disk, and press [REC].
When copying is completed, the song number of the copied song will be displayed.

If the amount of data is large and cannot be copied in a single pass, the display will ask "Src" (Source: the copy source disk). Insert the copy source disk, and repeat steps ④ and ⑤ until copying is completed.

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● Copy all songs



① Insert the copy source disk.

② While holding REC, press REPT.

The display will ask "Sur" (Sure: "are you sure you want to copy?").

③ Press REC.

After a while, the display will ask "dSt" (Destination: the copy destination disk).

④ Insert the copy destination disk, and press REC.

If the amount of data is large and cannot be copied in a single pass, the display will ask "Src" (Source: the copy source disk). Insert the copy source disk, and repeat steps ③ and ④ until copying is completed.

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■ MIDI DATA ASSIGNMENT

(THE MIDI PACKET FUNCTION)

Using the MIDI Packet function, MIDI data received from an external device can be assigned to one of four Sound Brush buttons; SONG [◄][►] or TEMPO [◄][►]. You can then press one of these buttons to transmit the data that was assigned to it.

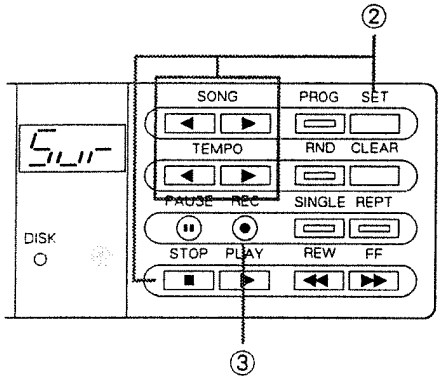
It is also possible to have the assigned MIDI data be transmitted automatically when the power is turned on (the Auto MIDI Packet function).

Here are some ways to use the MIDI Packet function. You will probably find other applications as well.

1) Assign the appropriate Program Change messages to select the sounds you wish to use, so that the correct sounds will be selected before you begin playing.
2) Assign an A4 (440 Hz) note (Note message) to be transmitted, to help you tune your other instruments.
3) Store a simple musical phrase for future use.
4) Use the Auto MIDI Packet function to select the correct programs on your sound modules whenever the power is turned on.

⇨For more about MIDI, refer to "About MIDI" (☞P.47).

● How to assign a MIDI Packet



① Record the MIDI data you wish to assign (☞P.22).

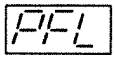
② While holding [STOP], hold [SET] and press the button you wish to assign the data to (SONG[◄][►], TEMPO[◄][►]).

The display will ask "Sur" (Sure: "are you sure you want to assign?").

③ Press [REC] and the data will be assigned to that button. (To quit without assigning, press [STOP].)

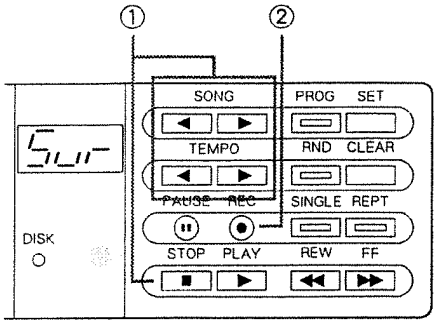
When the operation is complete, the previous display will reappear.

⇨If the amount of MIDI data is too large, or if a large amount of data has been assigned to another button, the following display will appear for a while. This indicates indicating that the operation was not possible.



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● How to transmit a MIDI Packet



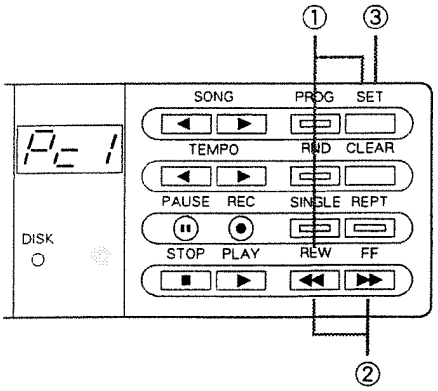
① While holding [STOP], press the button for the MIDI data you wish to transmit.

The display will ask "Sur" (Sure: "are you sure you wish to transmit?").

② Press [REC] and the data will be transmitted. (To quit without transmitting, press [STOP].)

When transmission is complete, the previous display will appear.

● How to turn on Auto MIDI Packet



① While holding [SET], press [REW].

② Use [REW] [FF] to select the button for the MIDI data you want to transmit automatically.

The display will indicate the selected button.

Pc1: SONG [◀], Pc2: SONG [▶]

Pc3: TEMPO [◀], Pc4: TEMPO [▶]

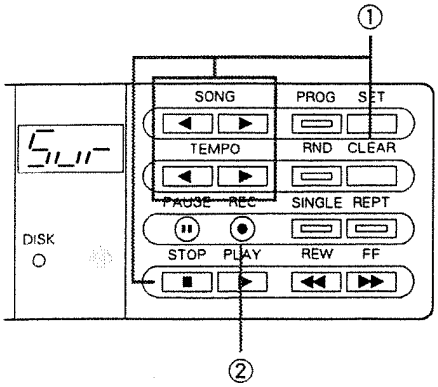
⇨If you do not want to use the Auto MIDI Packet function, set this to "oFF".

⇨It is also possible to use SONG [◀] [▶] or TEMPO [◀] [▶] to select the MIDI data directly.

③ Press [SET] to complete the operation.

The Auto MIDI Packet function is now On. The next time you turn the power on, the specified MIDI data will be transmitted automatically.

● How to cancel a MIDI Packet assignment



① While holding [STOP], press and hold [CLEAR], and press the button for which you want to clear the MIDI Packet assignment.

The display will ask "Sur" (Sure: "are you sure you want to cancel?").

② Press [REC] to cancel the MIDI Packet assigned for that button. (To exit without canceling, press [STOP].)

When the assignment has been cancelled, the previous display will appear.

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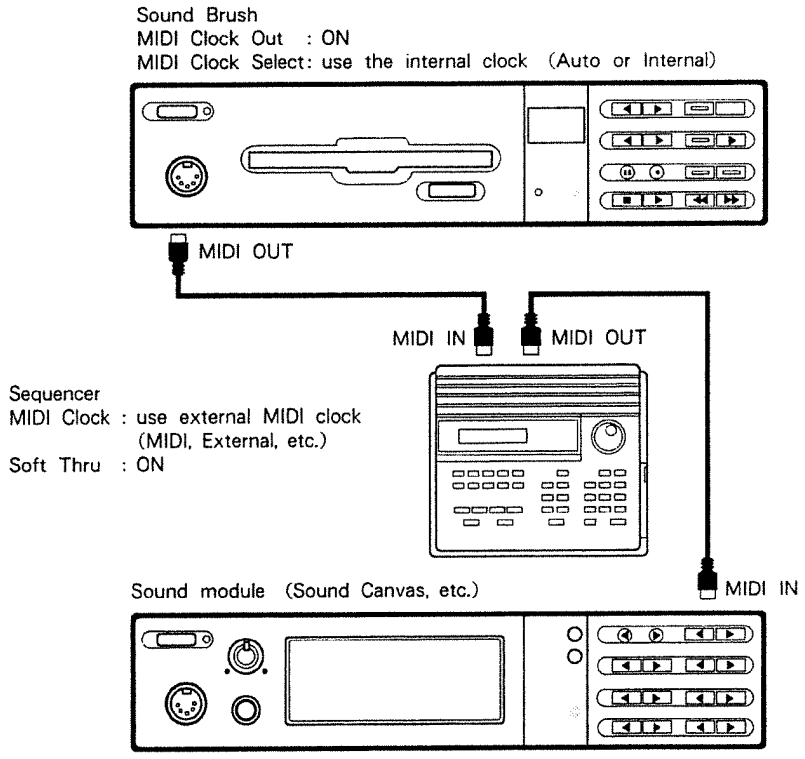
■ SYNCHRONIZED PLAYBACK WITH OTHER MIDI DEVICES

The Sound Brush is able to playback in synchronization with other sequencers and computers. This allows you to play a song using two or more sequencers at once.

● Synchronize other devices to the Sound Brush

<Connections and preparation>

If you wish to synchronize other devices to the Sound Brush, make connections as shown below. Set the other sequencer to use incoming MIDI Clock messages as its timing source.



⇨The Sound Brush is already set to operate on its own internal clock and to transmit MIDI Clock messages, so there is no need to change the settings.

<Synchronized playback>

Prepare the Sound Brush and the other sequencer for playback, and start playback on the Sound Brush. When playback begins, the other sequencer will begin playing back in synchronization with the MIDI Clock messages from the Sound Brush. You can adjust the playback tempo on the Sound Brush.

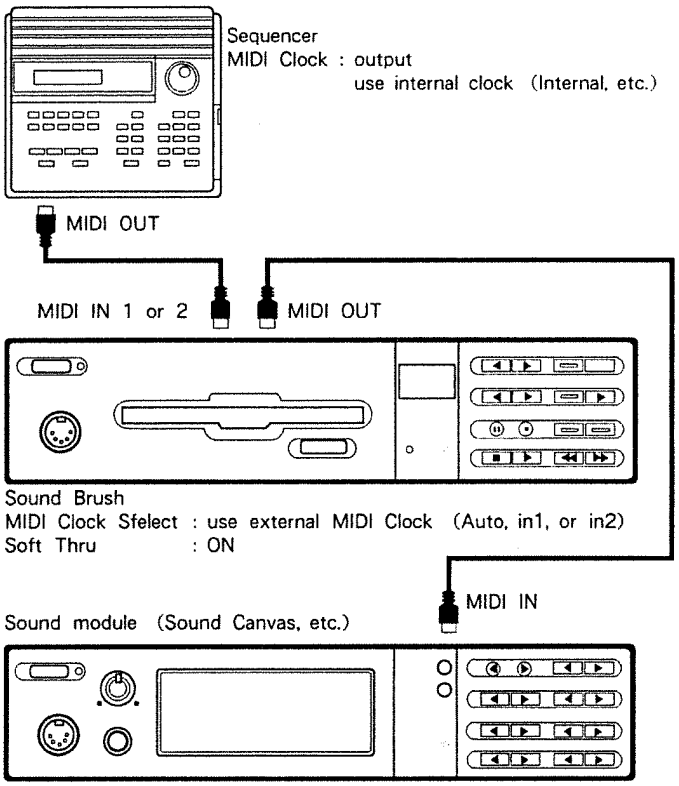
⇨If you wish to temporarily cancel synchronization, turn off the MIDI Clock Out (☞P.36).

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● Synchronize the Sound Brush to other devices

<Connections and preparation>

If you wish to synchronize the Sound Brush to other devices, make connections as shown below. Set the other sequencer to use its own internal clock as its timing source.



⇨When not already playing back, the Sound Brush will respond to incoming MIDI Start and MIDI Clock messages by playing back in synchronization with the external device, so there is no need to change the settings.

<Synchronized playback>

Prepare the Sound Brush and the other sequencer for playback, and start playback on the other sequencer. When playback begins, the Sound Brush will begin playing back in synchronization with the MIDI Clock messages from the other sequencer. You can adjust the playback tempo on the other sequencer.

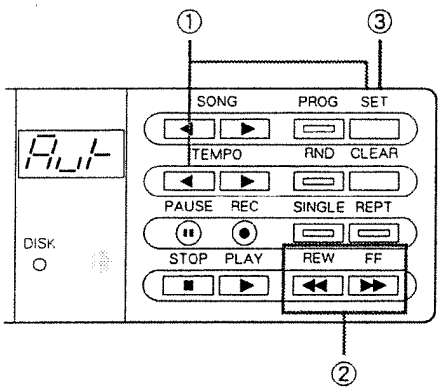
＊Depending on the device that is controlling the Sound Brush, this may not work correctly. In this case, set the Sound Brush MIDI Clock to use MIDI Clock messages from an external MIDI device (see the following page).

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● MIDI Clock Select

These settings determine how the Sound Brush handles MIDI Clock messages. Normally you will leave this set to Auto, but in some cases you may need to change it.

Value (display)	Operation
Auto (Aut)	Normally use the internal clock. If Start and MIDI Clock messages are received from an external MIDI device, playback will occur in synchronization with the MIDI Clock from the external MIDI device.
Internal (int)	Use the internal clock. MIDI Clock messages from an external MIDI device will be ignored.
MIDI (in1)	Use MIDI Clock messages from the MIDI IN 1 connector. MIDI Clock messages from MIDI IN 2 will be ignored.
MIDI (in2)	Use MIDI Clock messages from the MIDI IN 2 connector. MIDI Clock messages from MIDI IN 1 will be ignored.
Remote (rEt)	Use the internal clock. However, play/stop can be controlled from an external MIDI device. (☞P.37)

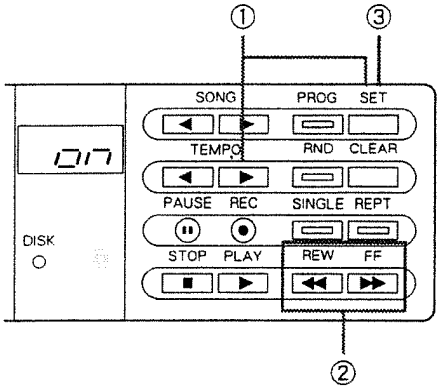


① While holding [SET], press TEMPO [◀].
The display will show the current setting.

② Use [REW] [FF] to select the setting.

③ Press [SET] to complete the operation.

● MIDI Clock Out on/off



① While holding [SET], press TEMPO [▶].
The display will show the current setting.

② Use [FF] [REW] to turn MIDI Clock Output on or oFF.

③ Press [SET] to complete the operation.

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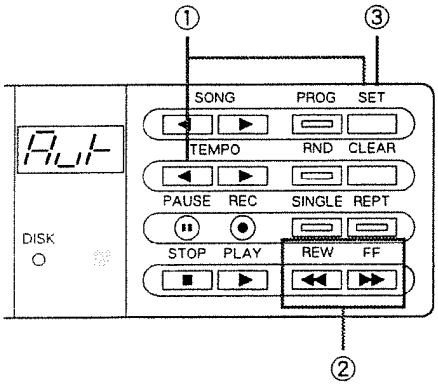
■ CONTROLLING PLAY/STOP FROM AN EXTERNAL MIDI DEVICE

You can control the [STOP] and [PLAY] functions of the Sound Brush from an external MIDI device.
For example, if you are using a MIDI keyboard that has a built-in sequencer, or a MIDI keyboard that is able to transmit start/stop messages (such as the A-50/A-80), you can remotely control Sound Brush playback from the play/stop buttons of your MIDI keyboard.
When using an external MIDI device to control the Sound Brush, set MIDI Clock to "Remote".

⇨If you wish to begin playback by remote control from the point where playback stopped, set the Auto Rewind function to Off (☞P.29).

＊When Remote is selected, the Sound Brush will use its own internal clock, and will not synchronize to MIDI Clock messages from an external MIDI device.

● Set MIDI Clock to "Remote"



① While holding [SET], press TEMPO [◀].
The display will show the current setting.

② Use [REW] [FF] to select "rEt" (Remote).

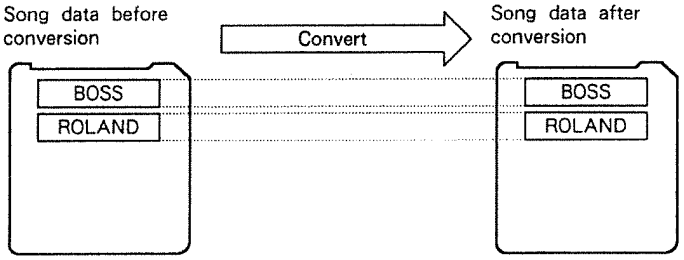
③ Press [SET] to complete the operation.

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■CONVERTING TO HIGH-SPEED CORRESPONDENCE

This function enables bar data to be transferred to another location in the song when using Fast-Forward or Rewind. Two types of conversion are provided; converting only one song, or converting all songs on a disk.

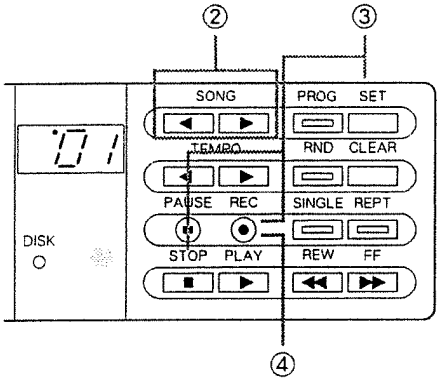
The previous song data will be erased so be sure to copy (☞ P.30) any important data before executing the function.



⇨In some cases, data cannot be changed depending on the data.

⇨If you execute this procedure, the maximum number of songs that you can store to disk will be less than 99.

● Converting only one song



① Insert the disk.

② Use the SONG [◄][►] to select the song you wish to convert.

③ While holding [REC], press and hold [STOP], and then press [SET].

The display will ask "Sur" (Sure: "are you sure you want to convert?").

④ Press [REC].

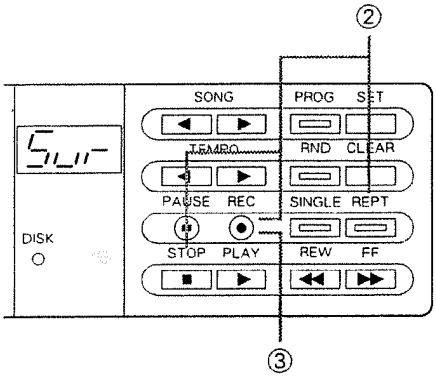
When conversion is complete, the song number of the converted song will be displayed.

* If high-speed correspondence is being used, the following display will be shown.



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● Converting all songs on a disk



① Insert the disk.

② While holding [REC], press and hold [STOP], and then press [REPT].
The display will ask "Sur" (Sure: "are you sure you want to convert?").

③ Press [REC].

* This function converts the song data of format 1 to format 0 and at the same time, creates a file to manage the converted data. Therefore, in some cases the maximum number of songs you can store to disk will be less than 99.
* If you use another sequencer or computer to edit converted data, please operate this procedure again.
* The changeable standard MIDI file of format 1 must be within 17 tracks.

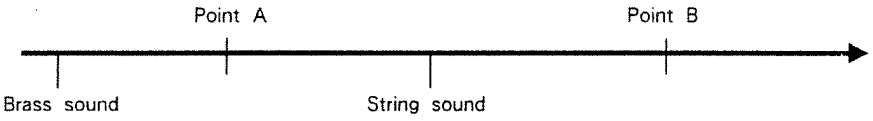
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■ MIDI UPDATE

The Sound Brush provides a MIDI Update function that ensures that even when you resume playback from the middle of a song (e.g., after fast-forward, rewind, or block repeat), playback will resume correctly.

Song data contains many types of MIDI messages in the sequence of playback. When song data is played back from the beginning, it transmits these MIDI messages in the correct order to play the MIDI sound source. However, if you use fast-forward or rewind, etc. to change the location from which playback begins, the MIDI messages that were skipped over (Program Change messages, Control Change messages, etc.) will not be transmitted to the MIDI sound source. This means that when playback resumes, the sound may not be correct.

For example, if the song data contains Program Change messages (messages that select a sounds) as shown below, when you rewind from point B to point A and then begin playback from point A, the string sound will be heard even though the brass sound should be selected.

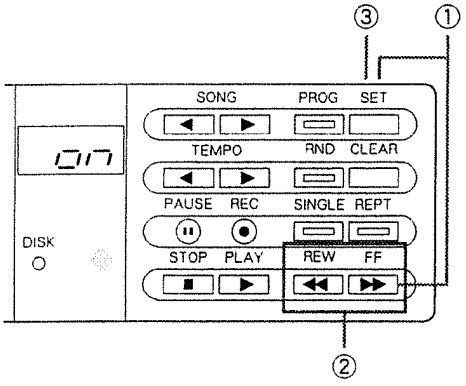


To avoid such problems, the Sound Brush provides a MIDI Update function. If MIDI Update is turned on, the song data will be checked from the beginning and the appropriate messages will be transmitted to ensure that the sound source will have the correct settings, even if you change the point from which to begin playback.

When the Sound Brush is shipped, MIDI Update is turned on, and in most cases this will be the setting you want. However, if the amount of song data is fuge, in some cases it will not be possible to process the data correctly. In this case, pressing [STOP] while continuing to press [CLEAR], will transmit all MIDI messages (except note messages) from the head of the song to the current position.

The MIDI Update function can be turned "Off" if necessary.

● MIDI Update on/off



① While holding [SET], press [FF].
The display will show the current setting.

② Press [REW] to turn MIDI Update "oFF".
To turn it on, press [FF].

③ Press [SET] to complete the operation.

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■ HOW TO RESTORE THE FACTORY SETTINGS FOR THE SYSTEM FUNCTIONS

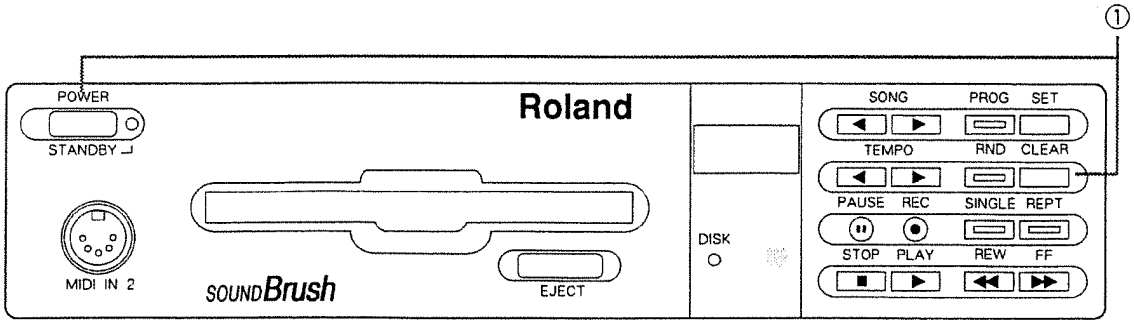
If you wish to restore the System functions (settings that determine how the Sound Brush will operate), use the procedure given below.

The factory settings for the System function are as follows.

Function	Factory setting
Soft Thru (☞P.23)	ALL
Active Sensing message transmission (☞P.49)	On
MIDI Clock Select (☞P.36)	Auto
MIDI Clock Out (☞P.36)	On
Auto Rewind (☞P.29)	On
Auto Play (☞P.29)	On
Time Base (☞P.27)	192
Song Interval Time (☞P.29)	4 seconds
Remote Control reception switch (☞P.11)	On
Auto MIDI Packet (☞P.32)	Off
MIDI Update (☞P.40)	On

● To restore the factory settings

① While holding CLEAR, turn the power on.



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Appendix

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TROUBLESHOOTING

If the Sound Brush does not perform as expected, refer to this section. If you can not solve the problem, discontinue use immediately, contact your Roland dealer or a near by Roland service station as soon as possible.

⇨If an error message appears in the display during operation, refer to the Error Message table on the following page.

- Cannot turn the power on
- The disk drive will not work

  Be sure to use only the included AC adaptor.

- No sound

  Make sure that the power to all sound sources and amplifiers is turned on.

  Is Soft Thru turned off ? (☞P.23)

  Are you using a MIDI device that is not able to correctly handle Active Sensing messages? If so, turn off Active Sensing Transmission (☞P.49).

- When you play a connected MIDI keyboard, it does not sound correctly.

  Is the Local Control of the MIDI keyboard set to On?

- Playback does not begin when you insert a disk.

  Is the Auto Play function turned off ? (☞P.29)

- Cannot record.

  Are the external MIDI devices connected correctly ? (☞P.22)

- The remote control unit does not work.

  Are you using the remote control unit beyond its range ? (☞P.10)

  Is the Remote Control Reception switch turned off ? (☞P.11)

  Has the remote control unit's lithium battery run down ? (☞P.11)

- Cannot use Block Repeat playback.

  Are the [REPT] and [SINGLE] indicators lit? If they are not, press the buttons. (the indicators should light)

  Have you selected a song for which a repeat area has been specified?

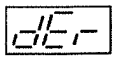
- The sound is incorrect when you begin playback from the middle of the song.

  Has the MIDI Update function been turned off ? (☞P.40)

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ERROR MESSAGES

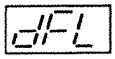
If you attempt to execute an incorrect operation or if an unexpected condition occurs, one of the following error messages will appear in the display. Refer to this list, and take the appropriate action.



Disk Error

Reason : It is possible that the data on the disk has been damaged, or that the disk itself has been damaged.

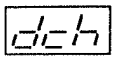
Action : Initialize the disk once again (☞P.24). If the disk is still not usable, throw it away.



Disk Full

Reason : No more data can be stored on the disk.

Action : Either delete unneeded song data (☞P.25), or use another disk.



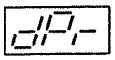
Disk Changed

Reason 1 : You changed disks during use.

Action 1 : Insert the original disk.

Reason 2 : During a Copy operation, you inserted the wrong disk.

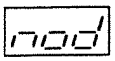
Action 2 : Insert the correct disk.



Disk Protected

Reason : The protect tab of the disk is set to the PROTECT position.

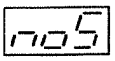
Action : Set the protect tab of the disk to the WRITE position.



No Disk

Reason : There is no disk in the drive.

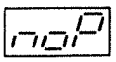
Action : Insert a disk into the drive.



No Song

Reason : The disk does not contain any song data.

Action : Insert a disk that contains song data.



No Play

Reason 1 : The song data uses a Time Base that cannot be used by the Sound Brush.

Action 1 : If your sequencer or computer allows you to change the time base of a song, change it to a Time Base (☞P.27) that the Sound Brush is able to use.

Reason 2 : The song data may be damaged.

Action 2 : Delete the song data (☞P.25).

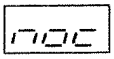
Reason 3 : The song data is a Standard MIDI File with a format other than 0 or 1 (of 17 tracks or less).

Action 3 : The Sound Brush cannot play this data. Use your sequencer or computer to convert it to a format 0 or 1 (of 17 tracks or less).

Reason 4 : The song data is in Format 1 and contains 18 or more tracks.

Action 4 : Use your computer or sequencer to modify the song data to 17 tracks or less.

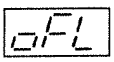
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No Copy

Reason : The specified song data cannot be copied because it has the Copyright Notice stored to it. Song data that contains the Copyright Notice can be copied from the master as many times as you want but another copy cannot be made from the data that was copied from the master.

Action : Press [STOP] to cancel the operation. In the event that you want to copy the data of more than one song, press [REC] to copy the data of the next song.



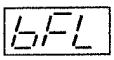
MIDI Off Line

Reason 1 : The MIDI device connected to MIDI IN has been turned off.

Action 1 : This is not a malfunction.
Turn the MIDI device on again.

Reason 2 : It is possible that the MIDI cable connected to MIDI IN has been disconnect or damaged.

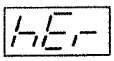
Action 2 : Check the MIDI cable connections.



MIDI Buffer Full

Reason : A large amount of MIDI data was received in a short time, and could not be processed.

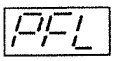
Action : Check that the transmitting device is not transmitting excessive amounts of MIDI data.



MIDI Hard Error

Reason : The MIDI cable connected to MIDI IN is not connected securely.

Action : Check the MIDI cable connections.



MIDI Packet Full

Reason : The MIDI Packet data area is full, and no more data can be stored.

Action : Either reduce the amount of data that you are assigning, or delete the MIDI data that has been assigned to another button (☞P.33).



Error 1, Error 2

Action : Contact your nearest Roland service station.

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■ ABOUT MIDI

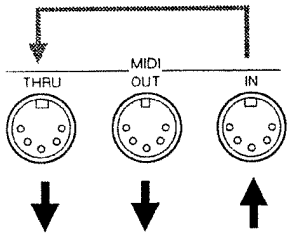
MIDI (Musical Instrument Digital Interface) is a world-wide standard that provides a way for electronic musical instruments to communicate. Instruments that has MIDI connectors can be connected to any other MIDI device, regardless of the manufacturer or model, and exchange musical data known as "MIDI messages".

□ How MIDI messages are transmitted and received

First, we will give a simple explanation of how MIDI messages are transmitted and received.

● MIDI connectors

Three connectors are used to transmit and receive MIDI messages. Depending on your setup, you can use MIDI cables to connect your equipment in various ways.

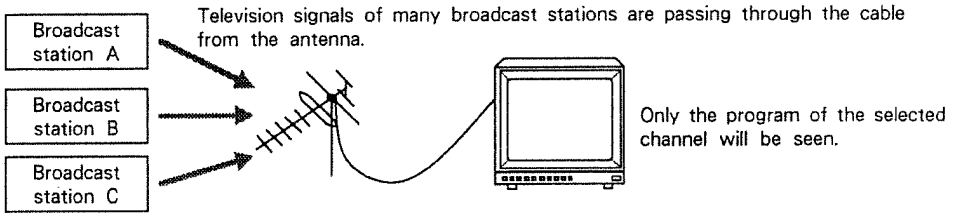


MIDI IN : This connector receives messages from another MIDI device.
MIDI OUT : This connector transmits messages from the device.
MIDI THRU : This connector re-transmits the messages from MIDI IN, exactly as they were received.

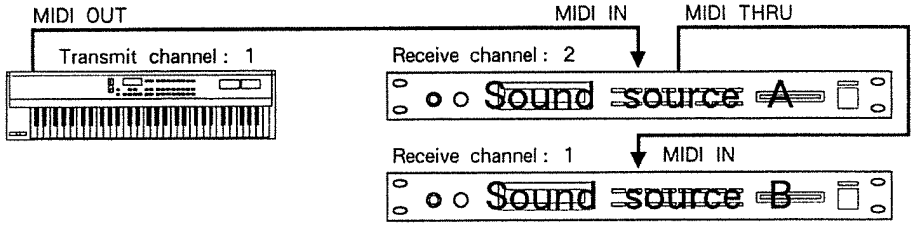
* MIDI THRU connectors can be used to "daisy-chain" any number of MIDI devices. However in practice, four or five units is the limit. When the MIDI signal is passed through many THRU connectors, it may become unreadable.

● MIDI channels

MIDI uses "channels" to independently control many devices through a single cable. You may think of MIDI channels as being similar to television channels. Electrical signals come into a television set from the antenna on many different channels at once. However, but only the channel to which the TV set is tuned will be received.



MIDI provides sixteen channels (1 — 16) on which messages can be sent. Messages will be received only when the receive channel matches the transmit channel. For example, with the MIDI channel settings in the following illustration, playing the keyboard will play only sound source B.

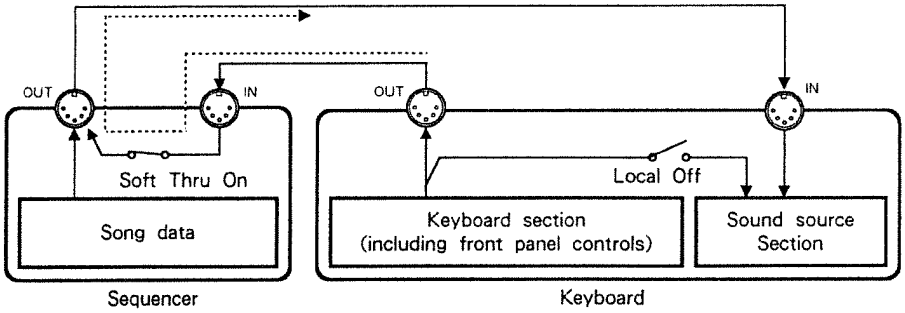


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●Soft Thru and Local Control

Most sequencers have a Soft Thru function. This is a switch that determines whether the MIDI messages received at MIDI IN will be re-transmitted from MIDI OUT. (See following illustration)

If a keyboard is connected as shown in the following illustration, you can set the sequencer to Soft Thru On, and the keyboard to Local Off, and then record while hearing both the notes played by the sequencer and the notes you play on the keyboard.



⇨Local Control is a switch found on most keyboards, and determines whether or not the keyboard will be connected to its internal sound source. Normally you will leave this set to Local On. However when using a sequencer, or when you wish to use the keyboard to play only external MIDI sound sources, set this to Local Off.

□MIDI messages used by the Sound Brush

The various types of data transmitted and received via MIDI are called "MIDI messages". MIDI messages can be broadly divided into two categories; messages that are transmitted on a specific channel (Channel messages), and messages that carry information which applies to an entire MIDI system (System messages).

●Channel messages

Channel messages are used to convey musical actions, such as notes you play and controllers you move. Most MIDI messages fall into this category. The settings of the sound source will determine how it will produce sound in response to these messages.

Note messages

Note messages are transmitted when you play the keyboard. Each message contains information telling which key was pressed (the note number) and how strongly it was pressed (the velocity). When you release a key, a similar message is sent, telling which key was released.

Note number	A number indicating the note (key) that was pressed or released.
Note on	A message indicating that a note was pressed.
Note off	A message indicating that a note was released.
Velocity	A number indicating how strongly the note was pressed.

Notes are numbered from 0 — 127, with middle C (C4) as 60. Rhythm sound sources usually assign a different drum sound to each note number. In other words, the note number will determine the drum sound that is played.

Pitch Bend messages

Pitch Bend messages are transmitted when you move the bender lever found on most synthesizers.

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Aftertouch messages

Aftertouch messages are transmitted when you press down on the keyboard (of a synthesizer that is able to transmit aftertouch messages) after playing a note. There are two types of aftertouch; Channel Aftertouch and Polyphonic Aftertouch.

Channel Aftertouch is transmitted as a single value for the entire keyboard, and applies to an entire MIDI channel. All notes receiving that MIDI channel will respond in the same way, regardless of which key you apply pressure to.

Polyphonic Aftertouch is transmitted independently for each key (note). Even for the same MIDI channel, only the note to which you apply pressure will be affected.

Program Change messages

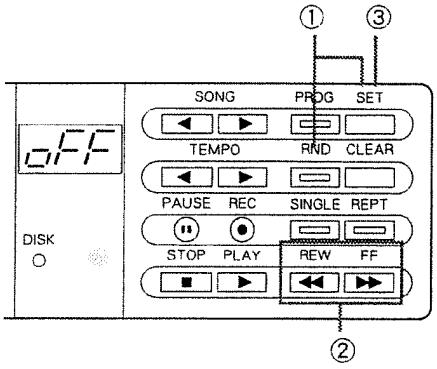
Program Change messages contain a program number 1 — 128 to select sounds or programs. The actual sound that is selected will depend on the receiving device. Refer to the manual for that device to see how it receives Program Change messages.

Control Change messages

Control Change messages allow you to make a musical performance more expressive by controlling vibrato, hold, volume, pan, and other parameters of the sound source. Control Change messages carry a control number to indicate the function they are intended to control. The parameters that can be controlled will depend on the receiving MIDI device.

< Auto Transmission of the On/Off status of All Notes Off messages >

When the notes of a particular MIDI channel go off completely (all notes are Note Off), the following procedure will turn "on" or "off" the transmission of All Notes Off messages to that MIDI channel, from the MIDI OUT connector. Usually this function is set to "off". However, if you set the function to "on", you can prevent such problems as "stuck notes" or notes that continue to sound longer than was intended, from an external MIDI sound source.



① After pressing [SET], press [RND].
The display will show the current setting.

② Press [FF] to turn the function on.
To return to "off", press [REW].

③ Press [SET] to complete the operation.

●System messages

This category of messages includes Exclusive messages, and various types of message used in synchronization.

Common messages

These messages include Song Select messages that select a song, and Song Position Pointer messages that specify the location within a song.

Realtime messages

These messages are used for synchronized playback. They include MIDI Clock messages to determine the tempo, and messages to Start, Stop, and Continue playback (i.e., resume from the stopped location).

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Exclusive messages

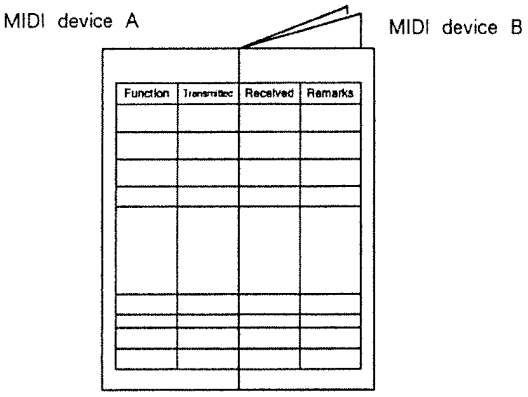
Exclusive messages contain data that is unique to a specific family of devices made by a manufacturer, and are used to transfer sound data, etc.

The Sound Brush can receive Exclusive messages to store sound data from a MIDI sound module, etc. To store such data, put the Sound Brush in the recording mode, and perform the Bulk Dump operation to transmit the data.

< About MIDI implementation charts >

MIDI allows a wide variety of devices to exchange information, but it is not necessarily the case that all types of messages can be transmitted or received by every device.

For example, if a keyboard that is able to transmit Aftertouch messages is connected to a sound module that is not able to receive Aftertouch messages, the Aftertouch messages transmitted by the keyboard will have no effect. For MIDI messages to be meaningful, they must be transmitted by one device and received by the other. For this reason, a "MIDI Implementation Chart" (☞P.59) is included with every MIDI device, usually in the operating manual. By comparing the charts of two devices, you can determine which messages can be exchanged. Since the charts are a standard size, you can fold the charts of the two devices and put them together as shown below. This makes comparsion much easier.



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TABLE OF OPERATIONS

● Playback

Begin		[PLAY]	P.13
Stop		[STOP]	P.13
Pause		[PAUSE]	P.14
Fast-forward		[FF] ([FF] + [REW]: faster)	P.14
Rewind		[REW] ([REW] + [FF]: faster)	P.14
Jump to beginning of song		[STOP] + [REW]	P.15
Jump to end of song		[STOP] + [FF]	P.15
Select a song		SONG [◀][▶] (SONG [◀] + [▶] or SONG [▶] + [◀]: faster)	P.14
Tempo	Adjust	TEMPO [◀][▶] (TEMPO [◀] + [▶] or TEMPO [▶] + [◀]: faster)	P.13
	Restore the standard	[CLEAR] + TEMPO [◀] ([CLEAR] + TEMPO [▶])	P.15

● Playback functions

Program playback	on/off	[PROG]	P.16
	Set program	[SET] + [PROG] ➡ 《SONG [◀][▶]: Select songs ➡ [SET] 》➡ [STOP] ([PLAY]) : Finish	P.16
	Cancel program	[CLEAR] + [PROG]	P.17
Single playback	on/off	[SINGLE]	P.18
Random playback	on/off	[RND]	P.17
Repeat playback	on/off	[REPT]	P.18
Block Repeat playback	on/off	[REPT] and [SINGLE]	P.19
	Set repeated area	[SET] + [REPT] ➡ [REW][FF]: Move to beginning of area ➡ [SET] ➡ [REW][FF]: Move to end of area ➡ [SET]: Finish	P.20
	Cancel	[CLEAR] + [REPT]	P.19
	Move to specified area	[STOP] + [REPT]: Move between beginning/end of area each time you press	P.20

● Recording

Recording		[PAUSE] + [REC]: Ready to record ➡ Play the keyboard ([PLAY] or [PAUSE]) : recording begins ➡ [STOP] ([PAUSE]) : Finish	P.25
Delete		SONG [◀][▶]: Select a song ➡ [REC] + [CLEAR] ➡ [REC]: Execute	P.25
Copy	One song	Insert the copy source disk ➡ SONG [◀][▶]: Select a song ➡ [REC] + [SET] ➡ 《[REC] ➡ Insert the copy destination disk ➡ [REC]: Execute copying ➡ Insert the copy source disk 》	P.30
	All songs	Insert the copy source disk ➡ [REC] + [REPT] ➡ 《[REC] ➡ Insert the copy destination disk ➡ [REC]: Execute copying ➡ Insert the copy source disk 》	P.31

➡ : Advance to the next step
[A] + [B] : While holding [A], press [B]
[A] + [B] + [C] : While holding [A], press and hold [B], and then press [C]
[A] * [B] : Press [A] and [B] simultaneously
([A]/[B]) : Press either [A] or [B]
« » : Repeat the steps

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● System functions

Display selection	Song number	SONG◀ * SONG▶	P.28
	Tempo	TEMPO◀ * TEMPO▶	P.28
	Measure number	REW * FF	P.28
MIDI Clock Select	Auto, Internal, MIDI 1, MIDI 2, Remote	SET + TEMPO◀➡REW FF: Set ➡SET: Finish	P.36
MIDI Clock Out	on/off	SET + TEMPO▶➡REW FF: Set ➡SET: Finish	P.36
Soft Thru	Off, MIDI 1, MIDI 2, All	SET + SONG◀➡REW FF: Set ➡SET: Finish	P.23
Active Sensing transmission	on/off	SET + SONG▶➡REW FF: Set ➡SET: Finish	P.49
Auto Rewind	on/off	SET + STOP➡REW FF: Set ➡SET: Finish	P.29
Auto Play	on/off	SET + PLAY➡REW FF: Set ➡SET: Finish	P.29
Time Base	192/240	SET + REC➡REW FF: Set ➡SET: Finish	P.27
Song Interval Time	0—99 seconds	SET + PAUSE➡REW FF: Set ➡SET: Finish	P.29
Remote control reception	on/off	SET + CLEAR➡REW FF: Set ➡SET: Finish	P.11
Auto MIDI Packet	on/off	SET + REW➡REW FF: Set ➡SET: Finish	P.33
MIDI Update	on/off	SET + FF➡REW FF: Set ➡SET: Finish	P.40

● Other functions

MIDI Packet function	Assign	Record MIDI data ➡STOP + SET + (SONG◀/▶/ TEMPO◀/▶: Specify the button) ➡REC: Execute	P.32
	Transmit	STOP + (SONG◀/▶/ TEMPO◀/▶: Specify the button) ➡REC: Execute	P.33
	Cancel	STOP + CLEAR + (SONG◀/▶/ TEMPO◀/▶: Specify the button) ➡REC: Execute	P.33
Initialize a disk	New disk	Insert the disk ➡REC: Execute	P.24
	A used disk	CLEAR + Insert the disk ➡REC: Execute	P.24
High-speed Correspondence conversion	One song	Insert the disk ➡REC + STOP + SET ➡REC: Execute	P.38
	All songs	Insert the disk ➡REC + STOP + REPT ➡REC: Execute	P.39
Transmitting all MIDI messages that are necessary for MIDI Update		CLEAR + STOP	P.40
Restore system functions to factory settings		CLEAR + Turn the power on	P.41

➡ : Advance to the next step
A + B : While holding A, press B
A + B + C : While holding A, press and hold B, and then press C
A * B : Press A and B simultaneously
(A / B) : Press either A or B
« » : Repeat the steps

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Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV) :

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version1.0).

Manufacturer-ID : 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer-ID.

Device-ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H – 0FH, a value smaller by one than that of a basic channel, but value 00H – 1FH may be used for a device with multiple basic channels.

Model-ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Command-ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

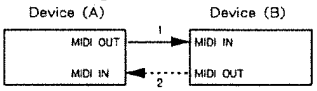
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records-waveform and tone data, switch status, and parameters, for example-to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures : one-way transfer and handshake transfer.

One-way transfer procedure (See Section 3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

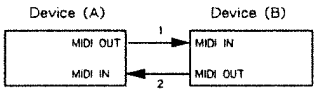


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

Handshake-transfer procedure (This device does not cover this procedure)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above two procedures

* There are separate Command-IDs for different transfer procedures.
* Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data all the way until it stops and is used when the messages are so short that answerbacks need not be checked. For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.
If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

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* The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address dependent order.

The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

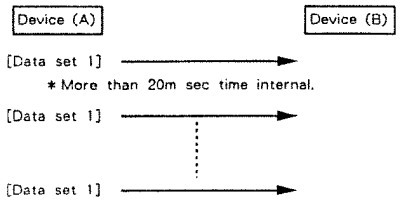
Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

* A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The number of bytes comprising address data varies from one Model ID to another.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

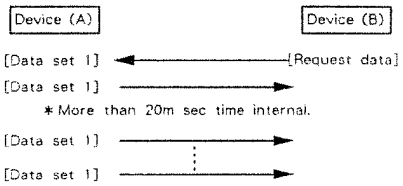
● Device A sending data to Device B

Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A

Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



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MIDI Implementation

1. RECOGNIZED RECEIVE DATA

1.1 Messages stored in RECORD mode

■ Channel Voice Messages

● Note off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
kk = Note number : 00H - 7FH (0 - 127)
vv = Velocity : 00H - 7FH (0 - 127)

● Note on

Status	Second	Third
9nH	kkH	vvH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
kk = Note number : 00H - 7FH (0 - 127)
vv = Velocity : 01H - 7FH (1 - 127)

● Polyphonic key pressure (Polyphonic Aftertouch)

Status	Second	Third
AnH	kkH	vvH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
kk = Note number : 00H - 7FH (0 - 127)
vv = Value : 00H - 7FH (0 - 127)

● Control change

Status	Second	Third
BnH	kkH	vvH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
kk = Control number : 00H - 78H (0 - 120)
vv = Value : 00H - 7FH (0 - 127)

● Program change

Status	Second
CnH	ppH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
pp = Program number : 00H - 7FH (0 - 127)

● Channel pressure (Channel Aftertouch)

Status	Second
DnH	vvH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
vv = Value : 00H - 7FH (0 - 127)

● Pitch bend change

Status	Second	Third
EnH	llH	mmH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
mm,ll = Value : 00H,00H - 7FH,7FH (-8192 - +8191)

■ Channel Mode Messages

● Reset All Controllers

Status	Second	Third
BnH	79H	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

● Local ON/OFF

Status	Second	Third
BnH	7AH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
vv = Value : 00H - 7FH (0 - 127)

■ System Exclusive Messages

Status	data
F0H	iiH,ddH,.....,eeH
F7H	

F0H : System exclusive
ii = ID number : 00H - 7FH (0 - 127)
dd,...,ee = data : 00H - 7FH (0 - 127)
F7H : EOX (End of Exclusive/System common)

■ System Common Messages

● Tune request

Status
F6H

1.2 Messages not stored in RECORD mode

■ Channel mode messages

● All Notes Off

Status	Second	Third
BnH	7BH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*When Sound Brush receives this message, it produces and stores Note off messages for notes still on.

● OMNI OFF

Status	Second	Third
BnH	7CH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*Recognizes only ALL Notes Off.

● OMNI ON

Status	Second	Third
BnH	7DH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*Recognizes only ALL Notes Off.

● MONO

Status	Second	Third
BnH	7EH	mmH

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16
mm = Mono number : 00H - 10H (0 - 16)

*Recognizes only ALL Notes Off.

● POLY

Status	Second	Third
BnH	7FH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*Recognizes only ALL Notes Off.

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1.3 Recognized Sync Messages

Recognized when Clock Select (in the System Function) is set to MIDI1, MIDI2, or AUTO. If Clock Select is set to AUTO, and no system realtime messages (ie., start or continue commands) are received from an external device, pressing the SB-55's PLAY button will allow the unit to function as a Master (as if Clock Select was set to INTERNAL).
If, however, the SB-55 receives a Start or Continue command at either MIDI IN 1 or MIDI IN 2, it will function as a Slave device (responding to the incoming timing clocks).

■ System Common Messages

● Song Position Pointer

Status	Second	Third
F2H	mmH	llH

mm,ll = Value : 00H, 00H - 7FH, 7FH (0 - 16383)

*Recongnized when Sound Brush is in STOP or PAUSE mode.
*When the Sound Brush receives a Song Position message, it will require a few seconds to locate the specified song position. Therefore, please wait a few seconds before sending a Continue message (by pressing PAUSE or PLAY).

● Song select

Status	Second
F3H	ssH

ss = Value : 00H - 62H (0 - 98)

*Recongnized when Sound Brush is in STOP or PAUSE mode.

■ System Realtime Messages

● Timing clock

Status
F8H

● Start

Status
FAH

*Recongnized when Sound Brush is in STOP or PAUSE mode.

● Continue

Status
FBH

*Recongnized when Sound Brush is in STOP or PAUSE mode.
*When Auto Rewind in System function is ON, playback will begin from the beginning of the song.

● Stop

Status
FCH

*Recongnized when Sound Brush is in PLAY or RECORD mode.
*When Auto Rewind in System function is ON, the playback will stop. Song position automatically resets to the beginning of the song.

1.4 Recognized messages from remote controller

Recognized when Clock select is set to REMOTE.

■ System Common Messages

● Song position pointer

Status	Second	Third
F2H	mmH	llH

mm,ll = Value : 00H, 00H - 7FH, 7FH (0 - 16383)

*Recongnized when Sound Brush is in STOP or PAUSE mode.
*When the Sound Brush receives a Song Position message, it will require a few seconds to locate the specified song position. Therefore, please wait a few seconds before sending a Continue message (by pressing PAUSE or PLAY).

● Song select

Status	Second
F3H	ssH

ss = Value : 00H - 62H (0 - 98)

*Recongnized when Sound Brush is in STOP or PAUSE mode.

■ System Realtime Messages

● Start

Status
FAH

*Recongnized when Sound Brush is in STOP or PAUSE mode.

● Continue

Status
FBH

*Recongnized when Sound Brush is in STOP or PAUSE mode.
*When Auto Rewind in System function is ON, playback will begin from the beginning of the song.

● Stop

Status
FCH

*Recongnized when Sound Brush is in PLAY or RECORD mode.
*When Auto Rewind in System function is ON, the playback will stop. Song position automatically resets to the beginning of the song.

1.5 Messages received for detecting trouble in MIDI connection

■ System Realtime Message

● Active sensing

Status
FEH

*Active sensing messages, monitor the integrity of MIDI connections.
After the first Active sensing message has been received, the Sound Brush expects to continue receiving these messages within 300 msec intervals. If the interval between messages exceeds 300 msec, the Sound Brush will judge that there is a poblem in the MIDI path (eg., a disconnected cable) and will transmit a Note Off message for all notes currently on. If the problem occurs while recoding, the Note Off messages will be recorded.
In the event of such an occurence, monitoring of incoming messages will cease.

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2.TRANSMITTED DATA

2.1 Transmitted messages in playback mode

The stored messages are transmitted when song data is played back.

2.2 Transmitted messages which are received

In System function, when THRU (Soft THRU) is set to ALL, MIDI1 or MIDI2, transmits received message (except All Note Off : Channel Mode message).

■System Common Messages

● Song Position Pointer

Status	Second	Third
F2H	mmH	llH

mm,ll = Value : 00H, 00H - 7FH, 7FH (0 - 16383)

*Transmited when Clock Select is MIDI1 or MIDI2, and Clock Out is ON in System function.

● Song select

Status	Second
F3H	ssH

ss = Value : 00H - 7FH (0 - 128)

*Transmited when Clock Select is MIDI1 or MIDI2, and Clock Out is ON in System function.

■System Realtime Messages

● Timing clock

Status
F8H

*Transmited when Clock Select is MIDI1, MIDI2 or AUTO (synchronize to other devices), and Clock Out is ON in System function.

● Start

Status
FAH

*Transmited when Clock Select is MIDI1, MIDI2 or AUTO, and Clock Out is ON in System function.

● Continue

Status
FBH

*Transmited when Clock Select is MIDI1, MIDI2 or AUTO, and Clock Out is ON in System function.

● Stop

Status
FCH

*Transmited when Clock Select is MIDI1, MIDI2 or AUTO (synchronize to other devices), and Clock Out is ON in System function.

2.3 Created message

■Channel Mode Messages

● All Notes off

Status	Second	Third
BnH	7BH	00H

n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*Transmitted when all notes are turned off in a specific channel.

● OMNI OFF

Status	Second	Third
BnH	7CH	vvH

vv = Value : 00H - 7FH (0 - 127)
n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*When Sound Brush is turnd on, these messages are transmitted on all channels (1 - 16).

● POLY

Status	Second	Third
BnH	7FH	vvH

vv = Value : 00H - 7FH (0 - 127)
n = MIDI channel number : 0H - FH (0 - 15) 0 = ch.1 15 = ch.16

*When Sound Brush is turnd on, these messages are transmitted on all channels (1 - 16).

■System Realtime Message

● Active sensing

Status
FEH

*Transmitted when Active Sensing in System function is ON.

■System Exclusive Message

Status	data
F0H	iiH,ddH,.....,eeH
F7H	

F0H : System exclusive
ii = ID number : 00H - 7FH (0 - 127)
dd.....ee = data : 00H - 7FH (0 - 127)
F7H : EOX (End of Exclusive/System common)

*The messages listed below are transmitted to indicate the Song Title to the Sound Canvas. However, if a Song Title is not written as "delta time = 0" in "Sequencer/Track Name (Meta-Event)" format at the beginning of the first Track Chunk on the song data in Standard MIDI file, the Sound Brush will not transmit these messages. For details, refer to the Sound Chanvas's MIDI Implementation.

F0 41 10 45 12 10 00 00 ... F7

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2.4 Created messages for sync

■ System Common Messages

● Song position pointer

Status	Second	Third
F2H	mmH	llH

mm,ll = Value : 00H, 00H - 7FH, 7FH 0 - 16383

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

● Song select

Status	Second
F3H	ssH

ss = Value : 00H - 62H (0 - 98)

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

■ System Realtime Messages

● Timing clock

Status
F8H

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

● Start

Status
FAH

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

● Continue

Status
FBH

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

● Stop

Status
FCH

*Transmited when Clock Select is INTERNAL, REMOTE or AUTO (as INTERNAL), and Clock Out is ON in System function.

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MIDI File Player

Model SB-55

MIDI Implementation Chart

Date : Dec. 12 1990

Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	ALL Ch	ALL Ch	not Basic Ch
	Changed	×	×	
Mode	Default	Mode 3	×	
	Messages	OMNI OFF, POLY	×	*2
	Altered	*********		
Note Number	True Voice	0 – 127	0 – 127	
		*********	0 – 127	
Velocity	Note ON	○	○	
	Note OFF	○	○	
After Touch	Key's	○	○	
	Ch's	○	○	
Pitch Bender		○	○	
Control Change	0 – 120	○	○	
	121	○	○	Reset All Controllers
Prog Change	True #	○	○	
		*********	0 – 127	
System Exclusive		○	○	
System Common	Song Pos	*1	*3	
	Song Sel	*1	*3	
	Tune	*1	○	
System Real Time	Clock	*1	*4	
	Commands	*1	*3	
Aux Messages	Local ON/OFF	○	○	
	All Notes OFF	○ (123)	○ (123 – 127)	
	Active Sense	*1	○	
	Reset	×	×	

Notes

*1 Can be set and stored as ○ or ×.

*2 When booted up, OMNI OFF and POLY ON are sent on all channels (1 – 16).

*3 When Clock Select is AUTO, MIDI1, MIDI2 or REMOTE, it can receive data.

*4 When Clock Select is AUTO, MIDI1 or MIDI2, it can receive data.

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

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SPECIFICATIONS

Sound Brush SB-55

☐ Sound Brush

● Number of tracks
Format 0 : 1 (16 channels)
Format 1 : 17 (16 channels per track)

● Time base (during recording)
192, 240

● Data format
Playback : Standard MIDI File (format 0 or 1)
Recording : Standard MIDI File (format 0)

● Tempo
5 — 260 beat per minute

● Time signature (when recording)
4/4

● Maximum simultaneous input notes (when recording)
unlimited

● Maximum simultaneous output notes (during playback)
unlimited (per track)

● Disk drive
3.5 inch ;2DD micro floppy disks only

● Display
LED (3-character)

● Terminals
MIDI connectors (IN × 2, OUT, THRU)
Play/Stop jack

● Power supply
DC9V (AC adaptor)

● Power consumption
900 mA

● Dimensions
218 (W) × 233 (D) × 44 (H) mm
8-9/16(W) × 9-3/16(D) × 1-3/4(H) inches
half-rack size

● Weight
1.7 kg
3.7 lbs

☐ Remote control unit

● Operating range
Distance : approximately 5 m
Angle : 40 degrees

● Power supply
DC 3V (CR2025 lithium battery)

● Dimensions
54 (W) × 4.9 (D) × 85.5 (H) mm
2-1/8(W) × 3/16(D) × 3-3/8(H) inches

☐ Disk

Disk capacity (formatted) ····· 720 Kbytes
Maximum number of songs (Standard MIDI Files) ····· 99 songs
Maximum number of notes ····· approximately 90,000 notes

☐ Included items

Owner's manual
AC adaptor
Remote control unit
Lithium battery (CR2025)
Demo disk
MIDI cable (1 m) × 1

* The included MIDI cable is for MIDI only. It cannot be used for other purposes.

☐ Optional items

Rack mount adaptor (RAD-50)

* In the interest of product improvement, the specifications of this unit are subject to change without prior notice.

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Demo Song List

This is a list of the Demo songs that are stored on the included floppy disk (for use with a separately sold Sound Canvas sound module). When you want to hear the Demo songs, refer to "How to hear the Demo songs" (☞P.12 of the owner's manual.)

Song No.	Song Title	
1	Star Games	Music by John Campbell, Copyright ©1991, John Campbell
2	Jazz Lagoon	
3	Sorcery	Music by Chas Smith, Copyright ©1991, Roland UK
4	La fille aux cheveux de lin	Music by Claude Achille Debussy, Arranged by Masashi Hirashita & Kazuko Hirashita
5	B. Y. T.	Music by Mitsuru Sakaue, Copyright ©1991, Roland
6	Leya's Song	Music by Adrian Scott, Copyright ©1991, Adrian Scott
7	INSIDER	Music by Mitsuru Sakaue, Copyright ©1991, Roland
8	Le cygne	Music by Charles Saint-Saëns, Arranged by Masashi Hirashita & Kazuko Hirashita
9	2nd time Foreground	Music by Mitsuru Sakaue, Copyright ©1991, Roland
10	AQABA	
11	Martians In Love	Music by John Campbell, Copyright ©1991, John Campbell
12	La primavera	Music by Antonio Vivaldi, Arranged by Masashi Hirashita & Kazuko Hirashita
13	Symphonie No.5	Music by Ludwig van Beethoven, Arranged by Noboru Murakami

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Biographies of Composers/Arrangers

John Campbell
John Campbell is an award-winning Los Angeles, California based composer, keyboardist and producer. As a keyboard player, his long list of credits include working with artists such as Philip Bailey, Larry Carlton, Mel Torme, and the group "Chicago". As a composer, John has written music for a wide variety of television, film and radio projects. John has become a regular spokesperson for the Roland Corporation combining his experience as a dynamic performing musician, composer, and educator.

Chas Smith
Roland UK's Senior Product Specialist/Demonstrator joined the company in 1987, after a free-lance career playing in rock bands. He is an active composer, principally for the jingle market. His particular interests lie in the use of the latest sampling technology, and in programming synthesizers.

Adrian Scott
Adrian Scott formerly handled the vocals and keyboards for the popular group from Australia, "Air Supply". Since following the solo path, he in 1984 won the Silver Prize at the "World Song Festival Tokyo '84". Currently, he is involved as a producer of commercial music and music for films. In addition, as a session player, he has performed along with a number of Australia's top musicians, including John Farnham and Kylie Minogue. He lives in Melbourne, Australia.

Mitsuru Sakaue
Mitsuru Sakaue began composing and doing arrangements for commercials and videos while still in school. In particular, his studio work earned for him a solid reputation. Currently, as a chief producer within Idecs, Inc., he produces commercial musics and jingles for FM stations. His range of activity is broad, and includes his work as an instructor and expert on musical instruments/computer music for the Roland Learning Center (Japan), as well as for other schools. In addition, he has had numerous other opportunities for displaying his talents well while serving as demonstrator/product specialist for Roland.

Masashi Hirashita, Kazuko Hirashita
Masashi and Kazuko Hirashita have been studying classical piano since early childhood. During their college days they majored in music composition and became active keyboardists and composers. While taking an active part in various types of music such as jazz, fusion, pops, and working as studio session players and support musicians, they also handle music for television commercials, animated videos, musicals, and FM radio programs. In addition to composing and performing, they are currently involved in such activities as the co-operative production of computer music software data.

Noboru Murakami
Noboru Murakami is a representative of Music Production, Internet Corporation. He is involved as an expert in computer music in such areas as composing, arranging, synthesizer programming, and the production and development of music software.

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デモ曲一覧表

サウンド・ブラッシュ付属のディスクに記録されているデモ曲(別売のサウンド・キャンバス用)の一覧表です。デモ曲をお聞きになりたいときは、取扱説明書の「デモ曲をきく」(☞P.12)をご覧ください。

曲番号	曲名	
1	Star Games	Music by John Campbell, Copyright © 1991, John Campbell
2	Jazz Lagoon	
3	Sorcery	Music by Chas Smith, Copyright © 1991, Roland UK
4	亜麻色の髪の乙女(La fille aux cheveux de lin)	Music by Claude Achille Debussy, Arranged by Masashi Hirashita & Kazuko Hirashita
5	B. Y. T.	Music by Mitsuru Sakaue, Copyright © 1991, Roland
6	Leya's Song	Music by Adrian Scott, Copyright © 1991, Adrian Scott
7	INSIDER	Music by Mitsuru Sakaue, Copyright © 1991, Roland
8	白鳥<動物の謝肉祭より>(Le cygne)	Music by Charles Saint-Saëns, Arranged by Masashi Hirashita & Kazuko Hirashita
9	2nd time Foreground	Music by Mitsuru Sakaue, Copyright © 1991, Roland
10	AQABA	
11	Martians In Love	Music by John Campbell, Copyright © 1991, John Campbell
12	春<四季より>(La primavera)	Music by Antonio Vivaldi, Arranged by Masashi Hirashita & Kazuko Hirashita
13	運命(Symphonie No.5)	Music by Ludwig van Beethoven, Arranged by Noboru Murakami

※ これらのデモ曲を個人で楽しむ以外に権利者の許諾なく使用することは、法律で禁じられています。

作曲者／編曲者のプロフィール

ジョン・キャンベル (John Campbell)
ロサンゼルスを中心に活躍するキーボード・プレーヤーとして、数多くのアーティストと共演している。フィリップ・ベイリー (Philip Bailey)、ラリー・カールトン (Larry Carlton)、メル・トーメ (Mel Torme)、シカゴ (Chicago) など著名ミュージシャンのアルバムにもジョン・キャンベルの名がクレジットされている。また、映画やテレビ／ラジオ番組の音楽制作など、作曲家としても幅広く活動している。最近ではその豊富なキャリアを生かし、ローランド製品のデモ・プレーヤーとしてレギュラー出演するかたわら、電子楽器クリニックのインストラクターも担当している。

チャス・スミス (Chas Smith)
フリーのロック・ミュージシャンとしての活動後、1987年ローランドUK入社。現在ローランドUKのプロダクト・スペシャリスト／デモンストレーターとして活躍中。サンプラーのオペレーションやシンセサイザーのプログラミングのエキスパートである。テレビのコマーシャル・ソングなどの作曲も手がけている。

エイドリアン・スコット (Adrian Scott)
数々のヒット曲を生んだオーストラリアのポップ・グループ "エアー・サプライ" でキーボードとボーカルを担当。ソロ活動に転じてからは、1984年に "World Song Festival Tokyo '84" で銀賞受賞。現在、コマーシャル音楽や映画音楽のプロデューサーとして活躍している。また、セッション・ミュージシャンとしてジョン・ファーナム (John Farnham) やカイリー・ミノーグ (Kylie Minogue) など、数多くのオーストラリアの有名ミュージシャンと共演している。オーストラリア、メルボルン在住。

坂上暢 (Mitsuru Sakaue)
学生時代よりCM、ビデオ等の作曲、アレンジを手掛け、特にスタジオ・ワークで高い評価を得る。現在、株式会社アイデックス (Idecs) のチーフ・プロデューサーとして、CMやFM局ジングルなどの制作をはじめ、楽器／コンピューター・ミュージックのエキスパートとしてローランド・ラーニング・センター (Japan) や専門学校のインストラクターを務めるなど幅広く活躍中。また、ローランドのデモンストレーター／プロダクト・スペシャリストとしてもその才能を発揮している。

平下政志 (Masashi Hirashita)、平下和子 (Kazuko Hirashita)
幼少の頃よりクラシック・ピアノを学び、大学時代には作曲を専攻するとともに、キーボーディスト／作曲家としての活動を始める。ジャズ、フュージョンやポップスなど、様々な音楽ジャンルのスタジオ・セッションやサポート・ミュージシャンとして活動するかたわら、テレビ・コマーシャル／アニメーション・ビデオ／ミュージカル／FM番組などの音楽も手掛ける。現在は、作曲／演奏活動に加え、コンピューター・ミュージックのデータ・ソフトを共同プロデュースするなど、幅広く活躍中である。

村上昇 (Noboru Murakami)
ミュージック・プロダクション、(有) インターネット代表。ミュージック・ソフトウェアの制作／開発をはじめ、作曲／アレンジ／シンセサイザーのプログラムなど、コンピューター・ミュージックのエキスパートとして幅広く活躍している。また、ローランドの新製品のデモ曲、ミュージック・データの制作も手掛けている。

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For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VARNING!

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri – Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Roland Sound Brush SB-55

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non-Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio — TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

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SOUND Brush MIDI FILE PLAYER SB-55

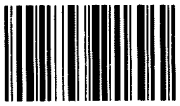
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