Roland

TOTAL PERCUSSION PAD

SPD-11

OWNER'S MANUAL

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SPD-11

Owner's Manual

Introduction

Thank you for purchasing the SPD-11 Total Percussion Pad. The SPD-11 is an electronic percussion unit that has 8 Pads, trigger interfaces, a high-quality digital sound source, and four on-board digital effects.

Since the SPD-11 includes a sound source and effects in one lightweight, compact package, you can use it anywhere, anytime — without having to make MIDI connections. A wide variety of options (Pads, pedals, drum stand, etc.) are available, allowing you to easily create a custom drum kit. By adding sequencers or samplers, you can take advantage of the possibilities of MIDI percussion.

The SPD-11 provides the flexibility and expandability that will be appreciated by every percussionist, from beginner to professional.

To take full advantage of the creative possibilities of the SPD-11, and to enjoy years of trouble-free service, please read this manual carefully.

Main features of the SPD-11

- The SPD-11 contains 255 high-quality, 16-bit digital sounds (Instruments). Volume or timbre (tone color) can be controlled by playing dynamics (the force with which a Pad is struck).

- Each sound can be edited using a wide variety of sound parameters including level, pitch, decay, Pan, Velocity Curve and effect send.

- Using the Pad Bank Layer function, different Velocity Curves can be assigned to each of two sounds, and the two sounds mixed (or switched) by your playing dynamics.

- The on-board digital effects unit (Reverb, Delay, Chorus and Flanger) allows you to set the effect depth independently for each sound assigned to a Pad.

- Four external trigger inputs (stereo) are provided, allowing you to connect Kick Trigger Units (KD-7s; sold separately) or Pads (PD-7s; sold separately), for playing in conjunction with the SPD-11's Pads. This allows you to use playing techniques such as rim shots and cymbal chokes.

- When a Hi-hat Control Pedal (FD-7; sold separately) is connected, you have continuous control (from closed to open) of the Hi-hat sounds.

- Settings for the SPD-11's 8 Pads, 4 external pads, Hi-hat Control Pedal, and the effects unit can be stored as one of 64 Patches. This means that a single SPD-11 is able to store and instantly recall 64 different percussion 'sets,' covering virtually any style of music you can imagine.

- Using the Patch Chain function, you can create and store a sequence of up to 16 Patches which can be selected in the predetermined order (convenient for use within a song). The SPD-11 can store four such Patch Chains.

- For each Pad, you can set two independent MIDI transmit channels and Velocity Curves, so that your playing dynamics can control external *and* internal sound sources.

- The SPD-11 is fully expandable via MIDI, and is especially powerful when used with a sequencer. For example, you might record SPD-11 settings as Bulk data at the beginning of sequencer song data, or allow the sequencer to take care of Patch selection so that you can concentrate on playing.

How to use this manual

This manual explains the many functions of the SPD-11 in an orderly manner. If this is your first time using an electronic drum or a MIDI device, please read the manual from beginning to end. If you are already familiar with electronic percussion and sequencers, there is no need for you to read the entire manual. Glance briefly over Chapters 1 & 2, and refer to other sections as necessary while you experiment with the SPD-11. You will soon learn how the unit works. If you don't understand the meaning of a term or how a function works, use the index to find the appropriate explanation.

Chapter 1 This Chapter explains the overall concept of the SPD-11, and terms which will be used frequently. Be sure to read this Chapter before using the unit.

Chapter 2 Read this Chapter if you wish to use the SPD-11 as a stand-alone unit. (Read Chapter 1 first.)

Chapter 3 Read this Chapter when you wish to connect external pads or the special pedal to the SPD-11. (Read Chapters 1 and 2 first.)

Chapter 4 Read this Chapter when you wish to connect MIDI devices to the SPD-11. (Read Chapters 1 and 2 first.)

Chapter 5 Refer to this Chapter when you run into difficulties. This Chapter also contains tables and an index that will help you get the most out of the SPD-11.

! *If you will be using the SPD-11 by itself, there is no need for you to read Chapters 3 and 4, or the MIDI Implementation section in Chapter 5 (p.77-p.83).*

Conventions used in this manual

Words or symbols enclosed in [square brackets] indicate panel buttons or controls.

Example) [LAYER] : the Layer button

indicates a hint that will help you get the most out of the SPD-11.

! indicates a caution.

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 (e.g. 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.

• Do not expose this unit to temperature extremes (e.g. 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 benzine, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

[Memory Backup]

• The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years.

• When the battery becomes weak, the following message will appear in the display:

bꓒ̄ttErꓵ Lo

• Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored in another MIDI device (e.g. a sequencer), or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

[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.

• Do not remove the screws on the unit's bottom panel. If you play the Pads while the screws are missing, or are not fastened securely, malfunction could result.

• Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.

Table of Contents

Panel Descriptions

Front

Rear

Cord Hook

Wrap the AC adaptor cable around this hook to prevent the plug from being pulled out accidentally.
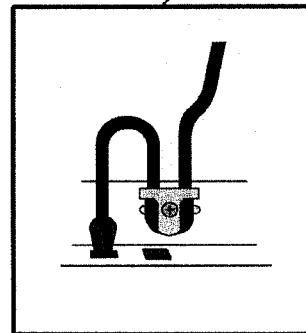
1. Pads 1-8
Play these Pads to trigger the various sounds. The Pads are velocity sensitive and will respond to your playing dynamics.

2. Patch display
This display indicates the Patch number or the value of each parameter.

3. PAD BANK indicator
Indicates the selected Pad Bank (A or B).

4. EFFECT indicator
The LED of the selected effect will light.

5. Parameter List
In the Edit mode, the indicator of the selected parameter will light. Use the |SELECT| (Parameter Group Select) and ▲ ▼ (Parameter Select) buttons to choose parameters.

6. [SELECT](Parameter Group Select) button
In the Edit mode, this button selects the desired parameter group: SOUND, MIDI, FX/PEDAL, or SYSTEM.

7. ▲ ▼ (Parameter Select) buttons
In the Edit mode, these buttons select a parameter within the parameter group.

8. [PATCH CHAIN] button
Use this button when setting up or playing a Patch Chain.

9. [BANK A/B] button
This button switches between Pad Banks A and B (p.16).

10. [COPY] button
Use this button when copying data from one Patch to another (p.31).

11. [LAYER] button
This button allows the sounds assigned to Pad Banks A and B to be played together (p.16).

12. [EDIT] button
This button switches between the edit and Play modes (p.13).

13. [FX ON/OFF] button
This button turns the effects on or off (p.30).

14. [ALL/ENTER] button
Use this button when setting all Pads to the same value, when executing a copy operation, or when storing Patch Chain settings.

15. PATCH/VALUE ▼ ▲ buttons
These buttons are used to select Patches. In the Edit mode they are used to modify parameter values (p.13).

16. VOLUME knob
This knob adjusts the volume of the OUTPUT jacks and PHONES jack (p.20).

17. PHONES jack
A pair of stereo headphones can be connected to this jack. Even if headphones are connected, the OUTPUT jacks will still be active (p.19).

18. OUTPUT (R, L/MONO) jacks
These jacks output the sound of the SPD-11. For monaural output use the L/MONO jack.

19. [HH CONT/EXT 4] select switch
If a Hi-hat Control Pedal (FD-7) is connected to the Hi-hat Control Pedal jack, set this switch to HH CONT. If an external pad is connected, set this switch to EXT 4.

20. HH CONT/EXT 4 jack
A Hi-hat Control Pedal (FD-7; sold separately) can be connected to this jack. If the external input select switch is set to EXT 4, an external pad can be connected to this jack (p.35).

21. EXT INPUT 1—3 jacks
External pads etc. can be connected here (p.33).

22. MIDI IN / OUT connectors
External MIDI devices can be connected here (p.45).

23. PATCH SHIFT jack
A Footswitch can be connected here allowing you to change Patches by remote control. If you use a special cable (PCS-31; sold separately) to connect two FS-5U switches (sold separately), you can move up or down through the Patch numbers. If you connect a DP-2 switch (sold separately), you can move up (but not down) through the Patch numbers. (p.21)

24. AC adaptor jack
Connect the included AC adaptor here (p.19).

⚠ **Use only the included AC adaptor. Use of any other AC adaptor may cause damage or malfunction.**

25. POWER switch
This switch turns the unit on/off (p.19).

Attaching the SPD-11 to a drum stand

If you wish to attach the SPD-11 to a drum stand, you will need an all-purpose clamp set (APC-33; sold separately). The procedure is as follows.

1. Remove the four screws from the bottom of the SPD-11.
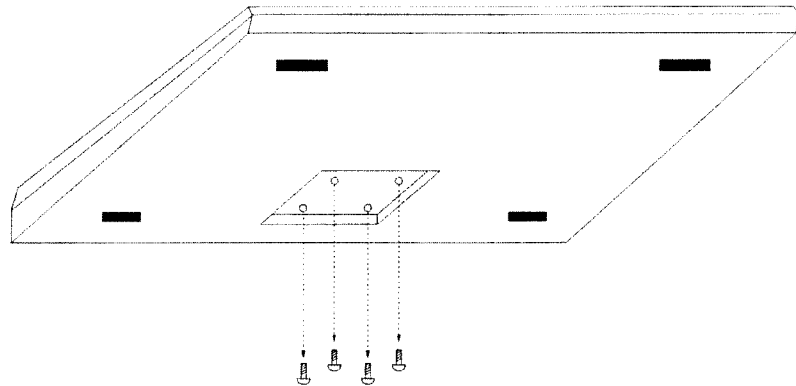
2. Use the four screws you removed in step 1 to attach the stand holder of the All-Purpose Clamp Set (APC-33) to the bottom of the SPD-11.
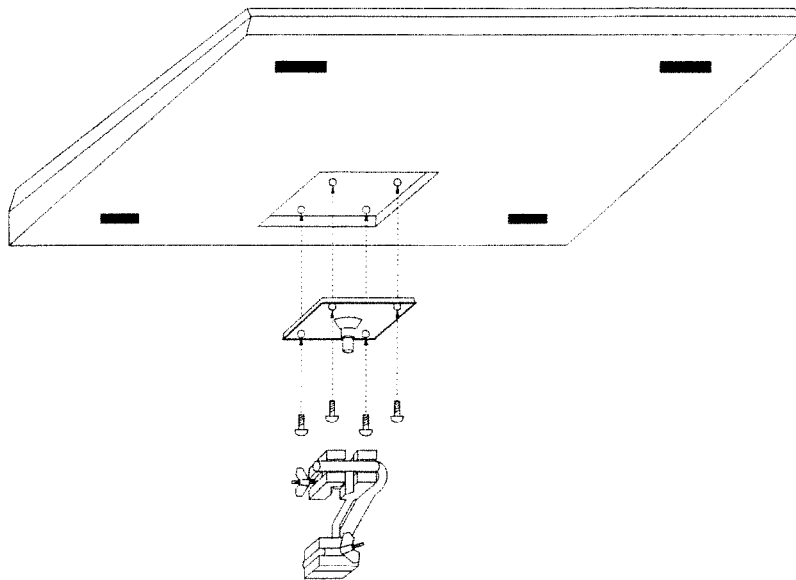
! *The screws included with the APC-33 cannot be used.*
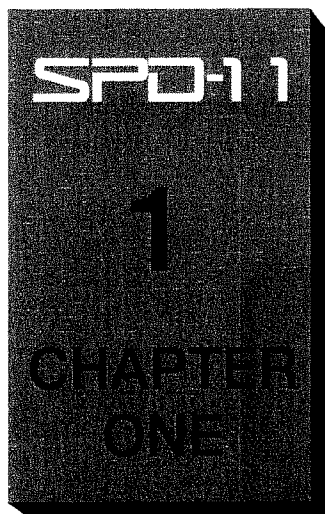
Before You Start Playing

This Chapter explains the basic structure of the SPD-11 and how it functions. Before you get into details, you should have an overall understanding of the unit.

[1] About the SPD-11

1. What kind of Instrument is the SPD-11?

The SPD-11 is an electronic percussion instrument that produces sound when its Pads are struck. This type of device is usually called a MIDI Pad controller. The SPD-11 includes a sound source(255 sounds with 16-bit dynamic range!) and digital effects unit in a compact and lightweight package. By connecting external pads or pedals (sold separately), you can play the SPD-11 with the same musical seneitivity you would use with an acoustic drum kit. In addition, the SPD-11 is MIDI compatible, meaning that it can be connected to any other MIDI-compatible devices (sequencer, sampler, etc.) regardless of the manufacturer. This allows you to create very powerful music systems.

Product outline:

• Self-contained compact MIDI Pad controller
• 8 dynamics-sensitive Pads
• 255 sounds with 16-bit dynamic range
• Built-in digital effects
• Expansion with external pads/pedals
  (such as the PD-7, KD-7 and FD-7)
• Expansion with various MIDI units
  (such as sequencer, sampler, etc.)

2. Internal organization

The SPD-11 can be divided into the following sections:
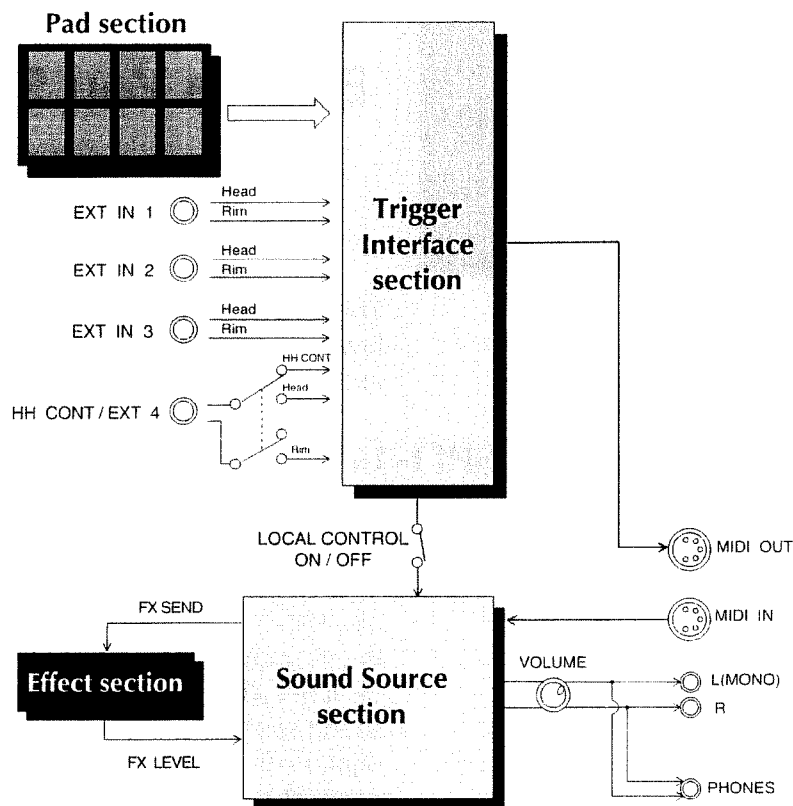
Pad section

a. Pad section
This section has 8 velocity sensitive Pads that respond to changes in your playing dynamics.

b. Trigger Interface section
This section sends the trigger signals (analog signals produced when you strike a Pad) to the Sound Source section.

c. Sound Source section
This section receives signals from the trigger interface or MIDI IN, and produces sound in response. The SPD-11 contains 255 sounds and up to 14 can be played simultaneously.

d. Effects section
This section adds effects (Flanger, Chorus, Reverb, Delay) to the sound from the sound source. You can select from 25 effects combinations.

3. How to switch modes

a. Two modes

The SPD-11 has two modes; the Play mode and the Edit mode. Press [EDIT] to switch between them.

Play mode   Edit mode

(the display is lit)   (the display is flashing)
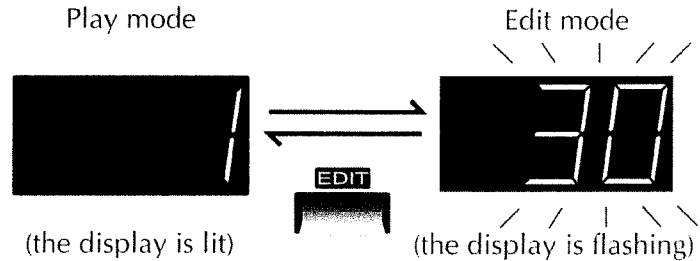
Play mode:
In this mode you can strike the Pads and select Patches. In the Play mode, the display will show the Patch number.

Edit mode:
In this mode you can make settings for the various parameters. In the Edit mode, the display will show the parameter value (which will be flashing).

4. How to Edit

To modify parameter values you must be in the Edit mode. The names of all the parameters you can modify are in the Parameter List printed on the front panel.

a. How to read the parameter list

The parameter list has four indicators arranged horizontally and seven indicators arranged vertically. In the Edit mode, one of the horizontal indicators and one of the vertical indicators will always be lit. This shows which parameter is being edited; i.e., the inter section of the indicated column and row is the currently selected parameter. The display shows the value of this parameter. To edit a particular parameter, refer to the parameter list and use the [SELECT] and ▲ ▼ buttons to select it.

Selected Parameter
Value(flashing)

The intersection of the indicated column and row

INST	TX CH	FX TYPE	BASIC CH
LEVEL	NOTE #	FX TIME	BULK DUMP
PITCH	GT TIME	FX LEVEL	PATCH EXPAND
DECAY	PAN	PDL CONT	TRIG SENS
PAN	CURVE	PDL LEVEL	TRIG THRESHOLD
CURVE	SENS		TRIG MASK TIME
FX SEND	PGM CHG		TRIG SCAN TIME

↓   ↓   ↓
can be set   can be set to   can be set to
to each pad   each Patch   the entire system

Use PATCH/VALUE ▼ ▲ to modify the parameter value.

b. How to edit

1. Press [EDIT] to enter the Edit mode.

2. Select the parameter you wish to edit. Press [SELECT] to move the indicator in the horizontal row. Use ▲ ▼ to move the indicator in the vertical column. (The display will show the value of the selected parameter.)

[SELECT] chooses the parameter group. The parameters of the SPD-11 are organized into four groups: SOUND, MIDI, FX/PEDAL, and SYSTEM. Each time you press [SELECT] the indicator will move to the right in these four groups.

▲ and ▼ select a parameter within the group. Pressing ▲ moves the indicator upward, and pressing ▼ moves the indicator downward.

INST	TX CH	FX TYPE	BASIC CH
LEVEL	NOTE #	FX TIME	BULK DUMP
PITCH	GT TIME	FX LEVEL	PATCH EXPAND
DECAY	PAN	PDL CONT	TRIG SENS
PAN	CURVE	PDL LEVEL	TRIG THRESHOLD
CURVE	SENS		TRIG MASK TIME
FX SEND	PGM CHG		TRIG SCAN TIME
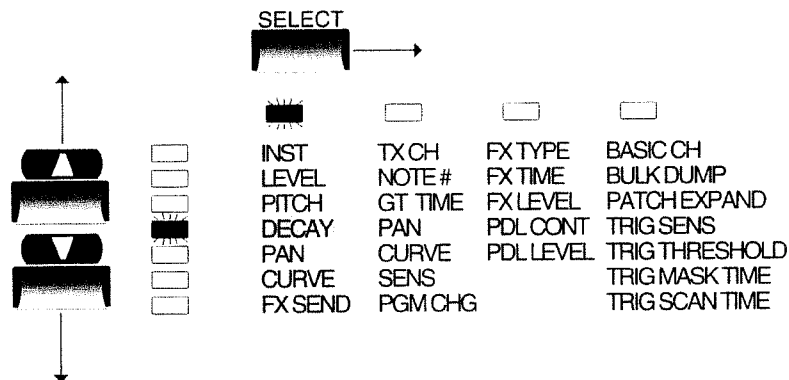
In this illustration, the DECAY parameter in the SOUND parameter group is selected.

3. Use PATCH/VALUE ▼ or ▲ to set the value. The previous value of the parameter will be lost. In the case of a numerical value, ▲ increases and ▼ decreases the value.

You can speed up the change in values by pressing ▲ (▼) while holding down ▼ (▲).

4. If you wish to edit another parameter, repeat steps 1—3 as necessary. When you finish editing, press [EDIT] to return to the Play mode. (The parameter list indicators will go out, and the display will once again show the Patch number.

5. What is a Patch?

A Patch contains data that determines how each Pad sounds, settings for the effects, Hi-hat Control Pedal and also MIDI settings. The SPD-11 can store 64 different Patches.
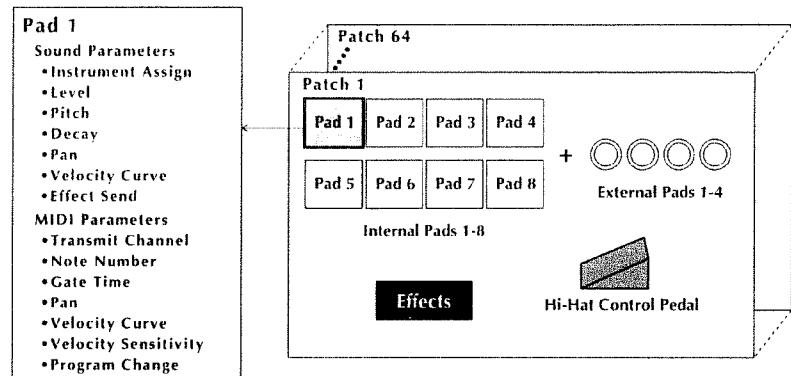
When you select a Patch, the settings for each Pad are instantly changed. You can also select Patches using a Footswitch. The Patch settings you make will depend on the combination of pedals, Pads, and MIDI devices you are using.

You can also use MIDI Exclusive messages to store Patch data in an external sequencer or other device (p.62).

6. What is a Patch Chain?

A Patch Chain is a sequence (that you create) of up to 16 Patches. The SPD-11 can store 4 of these Patch Chains. It is often convenient to create a Patch Chain for a song or a concert performance.
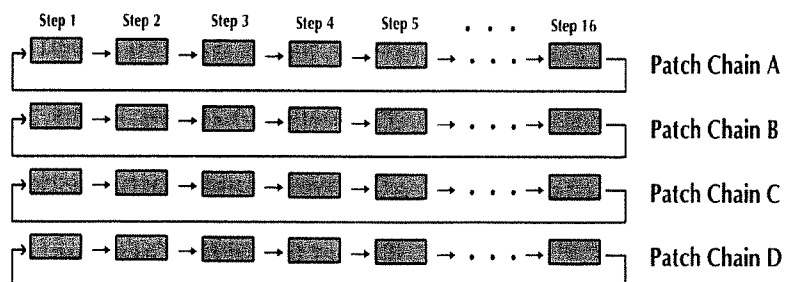
7. What is a Pad Bank?

The 8 Pads of the SPD-11 together with 4 external pads (plus the 4 rims)—for a total of 16 Pads—are referred to as a Pad Bank. Each Patch contains two Pad Bank settings, A and B.
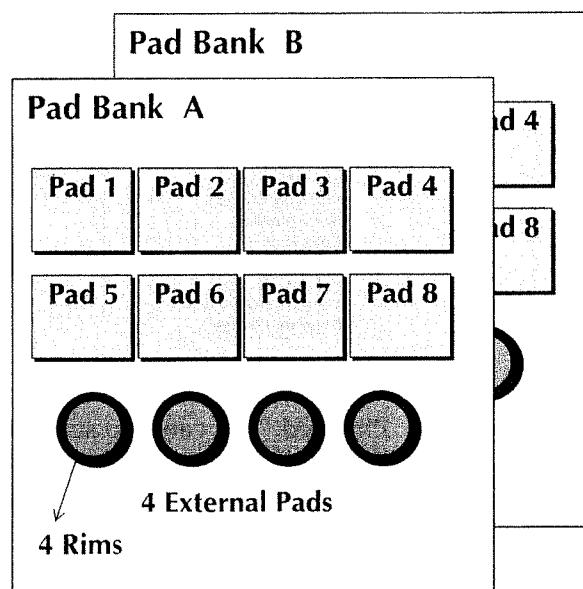
When you select a Patch, the PAD BANK indicator will show which bank the Patch uses. If the Layer function (explained below) is used in that Patch, both PAD BANK indicators (A and B) will be lit.

8. What is the Layer function?

Layer means that two sounds are played simultaneously. The Layer setting is stored as part of each Patch. A Patch for which Layer is enabled will simultaneously play the sounds of both Pad Banks (A and B). In this case, however, you will only be able to play half as many notes simultaneously (a maximum of 7). Layer sounds opens the door for really creative expressions.

[*Ways to use the Layer function*]

By assigning different Instruments to Pad Banks A and B, and setting Pad Banks A and B to different Velocity Curves, your playing dynamics can cross-fade or switch between the two sounds.

Velocity Mix: Playing dynamics will determine the mix of the two sounds.

Pad Bank A   Pad Bank B
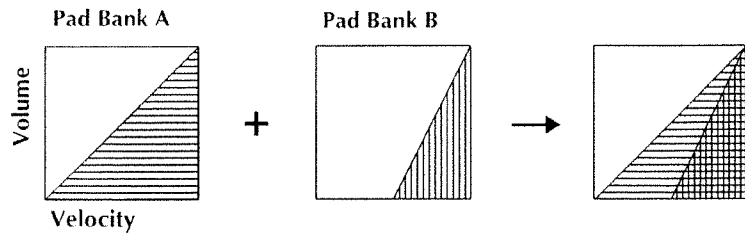
Velocity

Velocity Switch: Playing dynamics will switch between the two sounds.

Pad Bank A   Pad Bank B
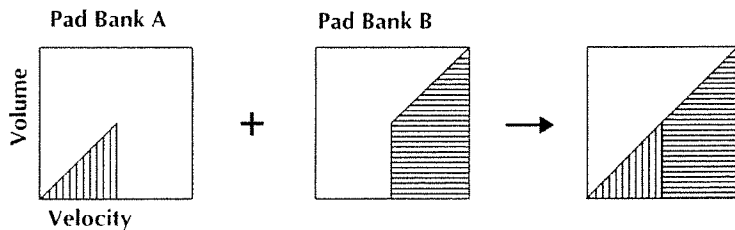
Velocity

Velocity Crossfade: Playing dynamics will cross-fade between the two sounds.

Pad Bank A   Pad Bank B

Velocity
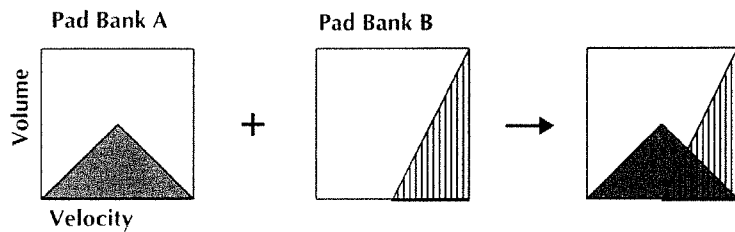
[2] How to restore the factory settings (System Initialize)

When the SPD-11 is shipped, it contains 64 Patches in memory. You can freely overwrite this data. However, the same data is also preserved in ROM, and can be restored at any time. This procedure is called System Initialize.

ROM: This is an abbreviation for **R** ead **O** nly **M** emory, which is a type of memory that can only be read; modification or deletion is not possible.

The explanations in this manual assume that the SPD-11 is still in its factory initialized state. We recommend that before you begin using the unit, you perform this System Initialize operation.

■ *When you execute the System Initialize operation, all your edited data will be lost. If your SPD-11 contains important edited data, you should make a note of the settings or store the data in an external device such as a sequencer (p.62).*

1. While holding ◼▼ and [ALL/ENTER], turn the power on.

The following display will appear.

2. Press [ALL/ENTER] and the data will be initialized.

If you wish to quit without initializing, press any key other than [ALL/ENTER].
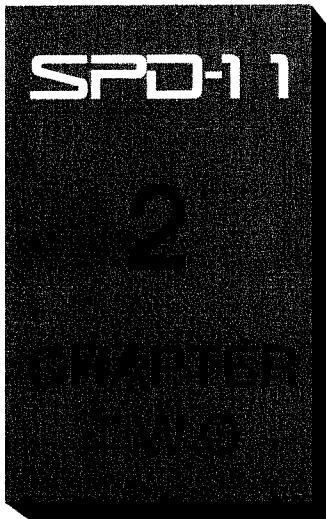
Using the SPD-11 by itself

Unlike many other MIDI devices, the SPD-11 does not have a complicated hierarchical parameter structure. All parameters are printed on the front panel for easy operation. In addition, the SPD-11 is a portable and self-contained unit which can be easily carried into a studio or played in your own room at any time. This Chapter will discuss using the SPD-11 on its own.

[1] Connection to audio equipment

With the SPD-11, you can produce realistic sounds simply by connecting an audio system. You can also use headphones.

AC adaptor

Stereo Headphones

Special cable (PCS-31)

Audio equipment (Stereo set)

Footswitches (FS-5U)
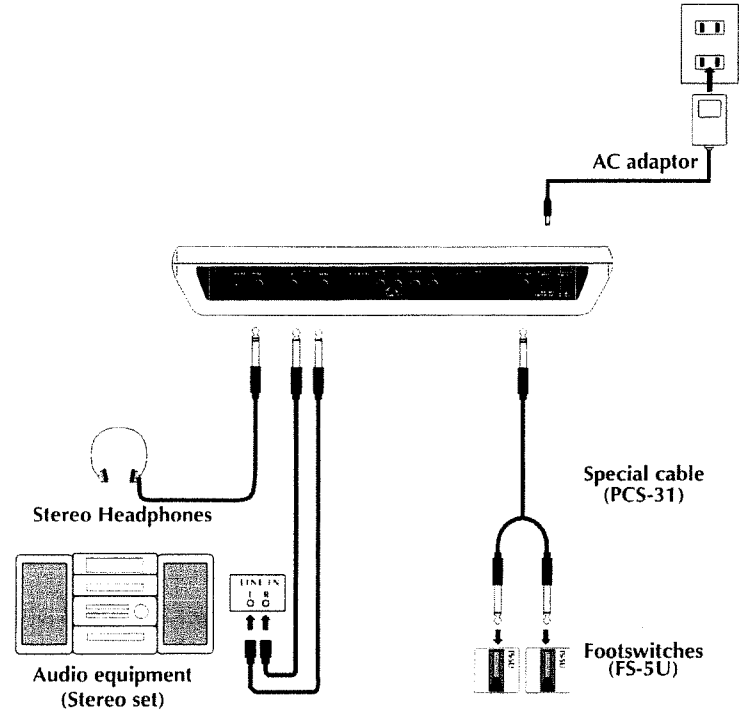
> ❗ *Make all connections with the power turned off. If the power is on while you make connections, you may damage your speakers.*

[2] Playing the Pads

When connections are complete, you can play the SPD-11.

1. Turning the power on

The POWER switch is on the rear panel.

1. Check that all connections with other devices are correct, and that everything is off.

2. Press the power switch to turn the unit on.

ON   OFF
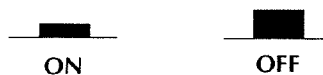
When the power is turned on, the SPD-11 will be in the Play mode. This is the mode in which you will play the SPD-11.

! *If you turn the power on when a Hi-hat Control Pedal (FD-7) is connected, make sure that the pedal is fully open. When you turn the power on, a message (Fd7) will be displayed briefly. (For details see p.37.) Do not press the pedal until this message will be displayed.*

3. Turn on the other devices, but turn the power amp on last.

! *After you turn the power on, do not strike the Pads or press the pedals until the Patch number is displayed.*

2. Turning the power off

Power down your system in the reverse order.

When the power is turned off, the following three functions will be reset to their factory settings.

Function	Factory setting
Local Control (p.60)	on
Patch Shift jack (p.21, 54)	Patch shift
HH Control Pedal sensing (p.37)	not set

* Functions and parameter settings other than these are retained even when the power is turned off.

3. Adjusting the volume

When you strike a Pad, it will trigger the sound that has been assigned to it. Playing harder will produce a louder sound. As you play, adjust the overall volume by rotating the VOLUME knob located on the rear panel.

VOLUME

! *Excessive volume can damage your audio equipment and your hearing. Take care, especially when using headphones.*

4. Selecting a Patch

When you select a Patch, the sound assigned to each Pad and the settings for MIDI, effect and pedal will all change instantly. Try each of the 64 factory-preset Patches to hear the different possibilities.

To select Patches first make sure you are in the Play mode. Then use the PATCH/VALUE ▼ ▲ buttons to select Patches. The number of the selected Patch will appear in the display.

The change in value will be more rapid if you press ▼ while you hold ▲ (or vice versa).

The factory settings are listed on p.75.

By using a special cable (PCS-31; sold separately) to connect two footswitches (FS-5U; sold separately) to the PATCH SHIFT jack, you can select Patches by remote control. When you press Footswitch 1 you will advance to the next Patch number, and when you press Footswitch 2 you will go back to the previous Patch number. If you connect a DP-2, you can move up (but not down) through the Patch numbers.
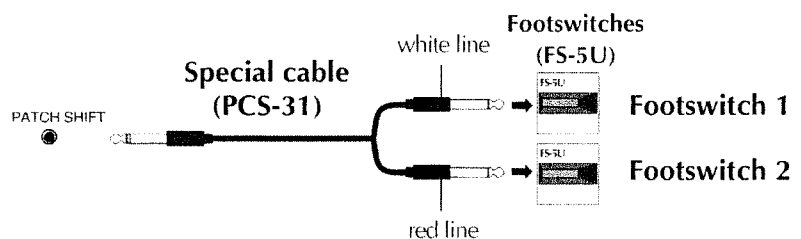
Connect the two mono cables of the PCS-31 to the two footswitches. The plug with the white line is for Footswitch 1, and the plug with the red line is for Footswitch 2.

5. Comparing layered sounds

Most of the factory-preset Patches use Layer. Select a layered Patch and listen to the sounds of banks A and B. When you select a layered Patch, both bank indicators (A and B) will light.

1. Select a Patch.

2. In the Play mode, press [LAYER] to turn Layer off. Bank indicator B will go out. Now you can play the Pads to hear the sound of bank A.

3. To hear the sound of bank B, press [BANK A/B] so that bank indicator B lights. Play the Pads.

Each time you press (BANK A/B), bank indicators A and B will light alternately.

6. Using a Patch Chain

By setting up a Patch Chain that contains all the Patches you need for a stage set or a song, you can quickly and easily select the Patches you need. The SPD-11 can store four Patch Chains (A—D), and each Chain can contain up to 16 Patches. In this section, we will give you an example of a Patch Chain using the factory-preset Patches.

a. Setting up a Patch Chain

1. In the Edit mode, press [PATCH CHAIN] to select a Chain (A—d).

2. Use the PATCH/VALUE ▼ ▲ buttons to select the first Patch number (1—64).

You can also select Patch numbers using a Footswitch connected to the PATCH SHIFT jack.

3. Press [ENTER].

4. Repeat steps 1—3 to create a Chain of Patches.

Each Chain can consist of up to 16 Patches. If you attempt to specify a 17th Patch, the display will show "FUL".

5. When you are finished, press [ALL/ENTER].

! *If you press (PATCH CHAIN) to select another Chain before pressing (ALL/ENTER), the Patch Chain settings you just made will be lost.*

6. If you wish, you may make settings for another Patch Chain.

7. When you finish making Patch Chain settings, press [EDIT] to return to the Play mode.

b. Using a Patch Chain to select Patches

Here's how to step through the Patches in a Patch Chain.

1. In the Play mode, press [PATCH CHAIN] to select the Patch Chain you wish to use (A—d).

Chain(A—d)

! *A Patch Chain which does not contain any data will not be displayed.*

2. Each time you press PATCH/VALUE ▼ ▲ the next Patch in the Chain will be selected.

After the last Patch in the Chain, you will return to the first Patch.

A Footswitch connected to the PATCH SHIFT jack can also be used to select Patches.

3. Press [PATCH CHAIN] several times to return to the Play mode.

c. Erasing a Patch Chain

Here's how to erase the current Patch Chain settings.

1. Press [EDIT] to enter the Edit mode.

2. Use [PATCH CHAIN] to select a Patch Chain, and press [ALL/ENTER] to erase it. The following display will appear.

3. Press [EDIT] once again to return to the Play mode.

! *After all chains are cleared, the Patch Chain cannot be used, even if you press (PATCH CHAIN) in the Play mode.*

[3] Editing a sound (Sound Parameters)

The parameters in the SOUND group (the sound parameters) allow you to modify the sound assigned to each Pad.

1. How the sound parameters work

The SOUND group contains 7 parameters: INST, LEVEL, PITCH, DECAY, PAN, CURVE and FX SEND.

a. Selecting a sound (INST)

Each sound assigned to a Pad is called an Instrument. The SPD-11 contains 255 such Instruments, and the Instrument assign settings determine which sounds will be played. The 255 Instruments are grouped into the following categories.

•b01 — b21		Kick Drum (bass drum)
•S01 — S43		Snare Drum
•t01 — t11		Tom
•H01 — H18		Hi-hat Cymbal
•C01 — C09		Ride/Crash Cymbal
•L01 — L37		Latin Percussion
•P01 — P31		Orchestral / Ethnic percussion
•A01 — A11		Analog percussion
•M01 — M20		Melodic percussion
•E01 — E37		Effect sounds
•r01 — r09		Reversed sounds
•PH1 — PH8		Hi-hat for pedal control
•oFF		Off

! *Instruments PH1—PH8 can be used effectively only when a Hi-hat controller (FD-7; separately sold) is used.*

IF you assign the"M15 Vibraphone" to the Pad you wish to play and set the Hold Pedal setting(p.54) for it, notes you play can be sustained(held). This effect is accesible only to the "M15 Vibraphone."

⬦ *If the Instrument assign setting for any Pad is set to "oFF", there will be no sound when you strike that Pad.*

b. Adjusting the volume (LEVEL)

This parameter determines the volume (0—15). At a setting of 0 there will be no sound.

c. Adjusting the pitch (PITCH)

This parameter determines the pitch of the Instrument (-24—24). Each step will change the pitch by a semi-tone (100 cents).

❗ *For some Instruments, raising the pitch beyond a certain point will not be possible.*

d. Adjusting the decay (DECAY)

This parameter adjusts the decay of the Instrument (-31—31). Higher settings will result in a longer decay time.
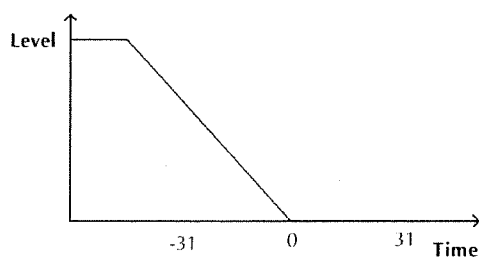
❗ *When the connected pedal is assigned to "HH"(p.41), the decay parameter has no effect on Instruments PH1—PH8.*

e. Adjusting the stereo position (PAN)

This parameter determines the stereo position of the Instrument (L7—Ctr—R7/rnd). A setting of L7 is far left, Ctr is center, and R7 is far right. At the 'rnd' setting, the stereo position will change randomly each time you strike the Pad.

Left Speaker   Right Speaker

L7 ⟵————— 0 —————⟶ R7
          (Center)
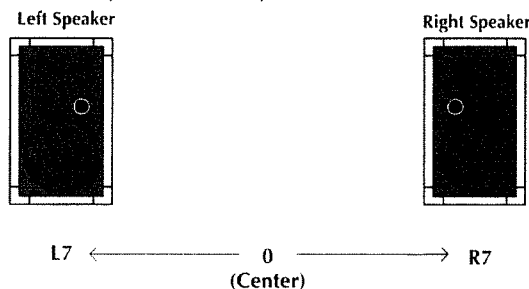
❗ *This parameter is meaningful only when the SPD-11 is connected to a stereo audio system.*

f. Adjusting the dynamic volume response (CURVE)

This parameter determines how the Instrument volume will change in response to your playing. You can choose from 16 response curves.

$L \, nr$ Linear	$EP \, l$ Exponential 1	$EP2$ Exponential 2	$EP3$ Exponential 3
$EP4$ Exponential 4	$SP \, l$ Spline 1	$SP2$ Spline 2	$SF \, l$ Soft 1
$SF2$ Soft 2	$SF3$ Soft 3	$SF4$ Soft 4	$Hd \, l$ Hard 1
$Hd2$ Hard 2	$Hd3$ Hard 3	$Hd4$ Hard 4	CSt Constant
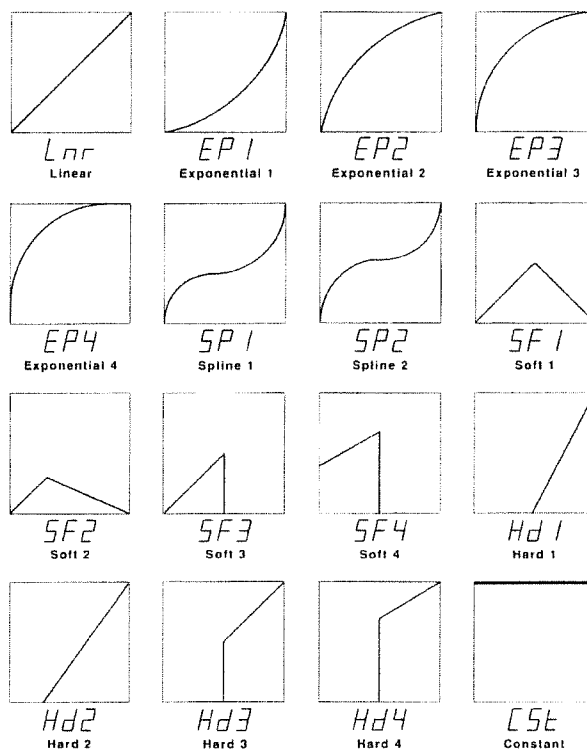
g. Adjusting the effect depth (FX SEND)

This parameter determines the depth (0—15) of the effect applied to each Instrument assigned to the Pad. Higher settings will result in a deeper effect. With a setting of 0 there will be no effect. The overall effects level for a Patch is determined by FX LEVEL in the FX/PEDAL parameter group (p.30).

EFFECT SEND

Effect Section

EFFECT LEVEL

Sound Source Section

LEVEL

PAN

OUTPUT

L/MONO

R
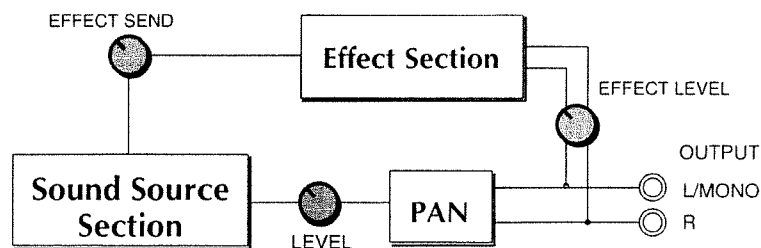
! *This effect send parameter will have an audible result only if the (FX ON/OFF) setting is on, and FX LEVEL in the FX/PEDAL para 2. How to edit sound parameters*

It is not possible to simultaneously edit the sound parameters of Pad Banks A and B. Use [BANK A/B] to switch between the two Pad Banks, and edit each bank separately.

a. Editing a sound parameter

If you are editing a sound parameter in a Patch that is not layered, omit step 4 of this procedure.

1. In the Play mode, use the PATCH/VALUE ▼ ▲ buttons to select the Patch (1—64) to edit.

2. Press [EDIT] to enter the Edit mode.

3. Strike the Pad you wish to edit.

4. Turn Layer on or off if necessary.

5. Press [BANK A/B] to select the bank you wish to edit.

* When the Layer is on, selected Pad Bank indicator will be flashing.

6. Press [SELECT] to select the SOUND parameter group.

7. Use ▲ ▼ to select the parameter you wish to edit.

8. Use PATCH/VALUE ▼ ▲ to set the value.

For a numerical parameter, pressing ▼ will decrease the value, and pressing ▲ will increase the value.

The change in value will be more rapid if you press ▼ while you hold ▲ (or vice versa). However, when you have selected "INST" in step 7, pressing ▼ (▲) while holding ▲ (▼) will move you to the next Instrument group.

9. To edit the other bank of the layered sound, repeat steps 5—8.

10. When you finish making settings, press [EDIT] to return to the Play mode.

By using a special cable (PCS-31; sold separately) to connect two footswitches (FS-5U; sold separately) to the PATCH SHIFT jack, you can change parameter values by remote control. When you press Footswitch 1 you will advance to the next Patch number, and when you press Footswitch 2 you will go back to the previous Patch number. If you connect a DP-2,

b. Setting all Pads to the same parameter value

If you press [ALL/ENTER] after step 8, the displayed parameter value will be set for all Pads of the currently selected Pad Bank.

* *If you are making settings for one of the SPD-11's Pad, the settings will be applied to all 8 Pads. If you are making settings for an external pad, the settings will be applied to all 4 of the external pads and all 4 of the external rims.*

By assigning the same Instrument to all the Pads and setting a different pitch for each, you can play melodies. The following procedure is an example using a melodic percussion Instrument (M01—M20). Set the INST parameter in the SOUND parameter group to the desired Instrument, and then press (ALL/ENTER) to set all Pads to the same sound. Then adjust the PITCH parameter for each Pad.

3. Adjusting the Pad Sensitivity (TRIG SENS)

By adjusting the TRIG SENS in the SYSTEM parameter group you can adjust the Seneitivity of the Pad when it is struck (the range of adjustment is 1—8). Higher settings result in higher Seneitivity, so that the Pad will produce a loud volume even when struck softly. This parameter applies to all 8 Pads.

* *This parameter is set for all 8 Pads, i.e., the same value applies to all Pads. However, this parameter can be set independently for each connected external pad (p.38).*

1. Press [EDIT] to enter the Edit mode.

2. Press [SELECT] to select the SYSTEM parameter group.

3. Use ▲ ▼ to select TRIG SENS.

4. Strike one of the 8 Pads.

♪ *Each time you strike a Pad, the striking force will be displayed (1-127). Adjust this setting so that a value close to 127 is displayed for your strongest hits.*

5. Use PATCH/VALUE ▼ ▲ to set the value.

4. Preventing accidental Pad triggering (TRIG THRESHOLD)

By adjusting the TRIG THRESHOLD in the SYSTEM parameter group you can have a Pad produce a trigger signal *only* when struck with more than a certain level of force (a "threshold"). This can be used to prevent a Pad from sounding in response to extraneous vibrations from another Pad. However, if you strike the Pad with a force *less* than the TriggerThreshold, it will not sound. In the diagram below, the Pad will sound for (2), but not for (1) or (3). This parameter can be set over a range of 1—16.
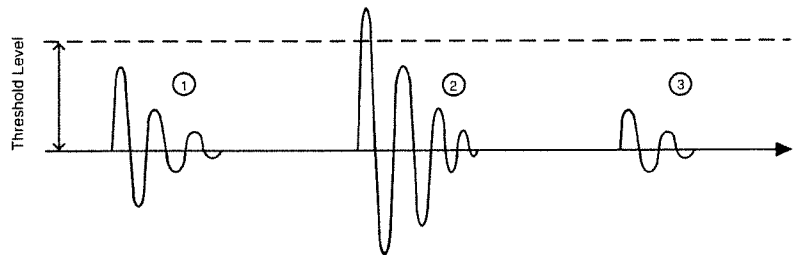
1. In the Edit mode, select the SYSTEM parameter group (p.14).

2. Use ◄▲► ◄▼► to select TRIG THRESHOLD.
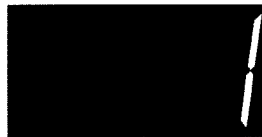
3. Strike one of the 8 Pads.

4. Use PATCH/VALUE ▼ ▲ to set the value.

[4] Editing the effect used by a Pad (editing effect parameters)

The SPD-11 has four on-board effects: Reverb, Delay, Chorus and Flanger. Effect settings are stored independently for each Patch, so that you can specify the ideal effect for each Patch. There are three effect parameters: FX TYPE, FX TIME and FX LEVEL.

Chapter 5 includes a section on "Taking advantage of the on-board effects" (p.65), and we suggest that you read this as well.

1. How the Effect parameters work

The FX/PEDAL effect parameters (FX TYPE, FX TIME, FX LEVEL) work as follows.

a. Select an effect (FX TYPE)

This parameter selects one of the 25 effects combinations (1—25). For details on each effect type, refer to the page 65.

b. Adjust the "sound" of an effect (FX TIME)

This parameter adjusts the "sound" of the effect (1—32). The result will be different depending on the type of effect. Refer to the page 65.

c. Adjust the effect depth for the entire Patch (FX LEVEL)

This parameter corresponds to the effect return level on a mixer, and higher settings will result in a deeper effect (0—15). At a value of 0 there will be no effect.
The depth of the effect applied to each Instrument (assigned to a Pad) is determined by the FX SEND in the SOUND parameter group.

This effect level parameter will have an audible result only if the (FX ON/OFF) setting is on, and if the Instrument parameter FX SEND for a Pad is set above 0.

2. How to edit effect parameters

1. In the Play mode, use PATCH/VALUE ▼ ▲ to select a Patch (1—64).

2. Press [EDIT] to enter the Edit mode.

3. Press [SELECT] to select the FX/PEDAL parameter group (p.65).

4. Press ◀▲▶ ◀▼▶ to select the effect parameter you wish to edit.

5. Use PATCH/VALUE ▼ ▲ to set the value.

6. Repeat steps 1—5 to finish making the effect settings for the Patch.

7. If you wish to adjust the effect depth independently for each Pad, make the appropriate settings for the FX SEND in the SOUND parameter group for each Pad (p.26).

[5] Copying a Patch (COPY)

This operation copies Patch settings to another Patch. If you need another Patch that is only slightly different from an existing one, copy that Patch and then make the changes that you need.

1. In the Play mode, use PATCH/VALUE ▼ ▲ to select the copy destination Patch (1—64).

2. Press [EDIT] to enter the Edit mode.

3. In the Edit mode, press [COPY] (p.13).

4. Use PATCH/VALUE ▼ ▲ to select the copy source Patch.

The copy source Patch can be selected from user Patches (U1—U64) or factory-preset Patches (P1—P64).

Play the Pads to check the selected copy source Patch.

5. Press [ALL/ENTER] and the Patch will be copied.

To quit without copying, press [COPY].

* Settings for external pads (connected to the EXT INPUT jacks ; p.38) and effect settings will also be copied at the same time (p.30).

6. Press [EDIT] once again to return to the Play mode.
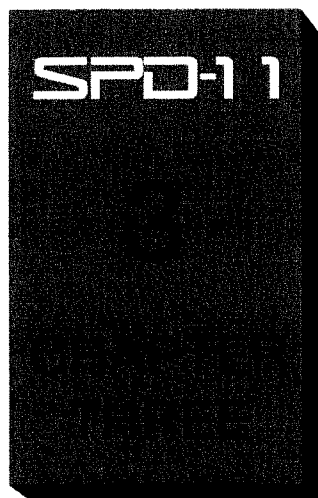
Connecting external pads or pedals

With earlier types of electronic drums, users sometimes expressed discontentment—especially with the Hi-hat and cymbal sounds. The SPD-11 has been designed so that special Pads or a Hi-hat Control Pedal can be connected, allowing for very realistic performances.

[1] Connecting external pads or the special pedal

example 1) Percussion Set

Configure a standing setup perfect for percussionists by connecting the SPD-11 to four PD-7 Pads and mounting them on an MDS-7 Compact Drum Stand. The SPD-11 unit can be secured using the TD-7 holder that comes as part of the MDS-7 package.

Pad(PD-7)   Pad(PD-7)   Pad(PD-7)   Pad(PD-7)

AC Adaptor

Stereo Headphones

Special Cable
(PCS-31)

LINE IN
L R

Audio Equipment
(Stereo Set)

Footswitches
(FS-5U)
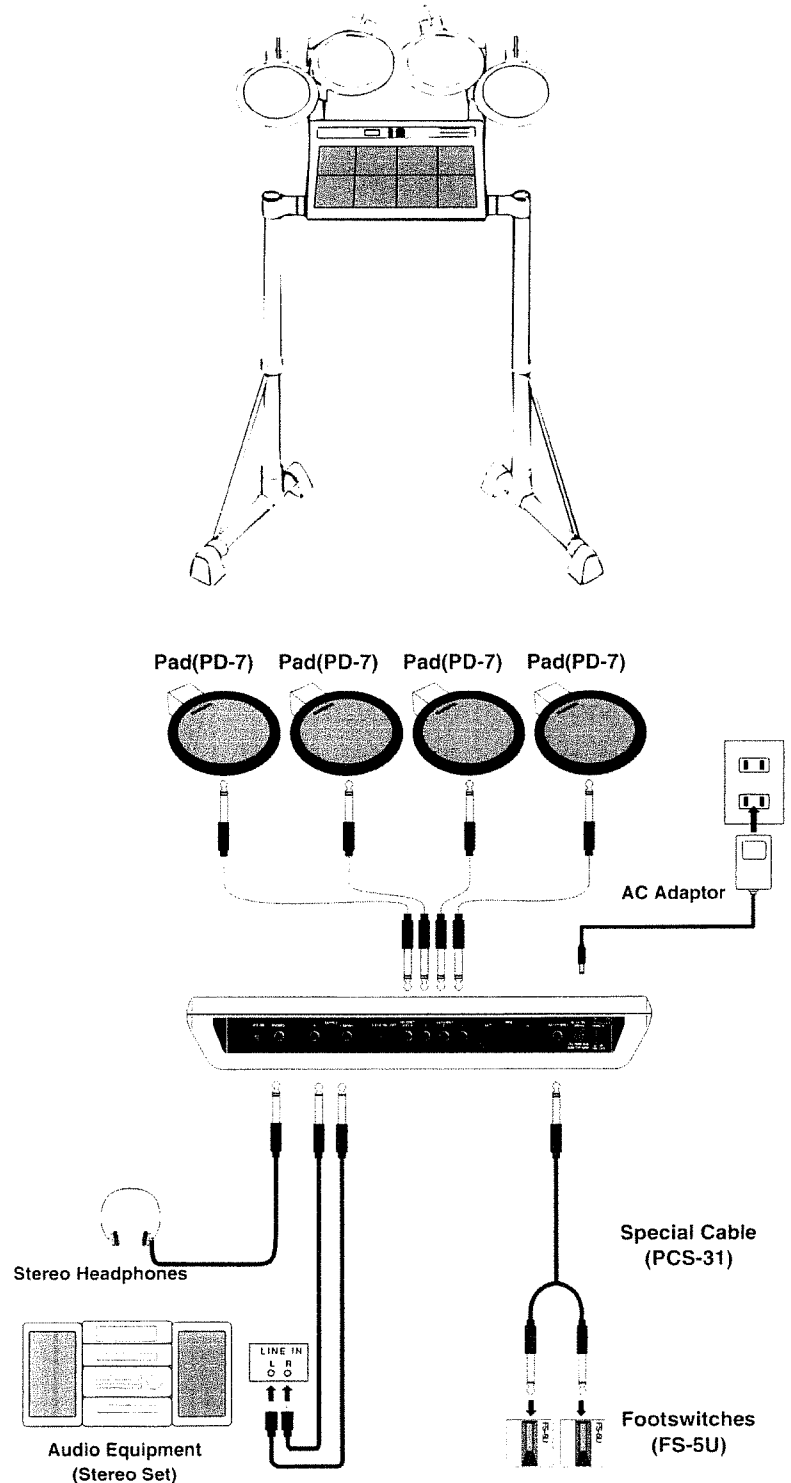
example 2) Compact Drum Kit

If you wish to connect a Hi-hat Control Pedal to the HH CONT/
EXT 4 jack, set the External input select switch (p.35) to HH
CONT. If you wish to connect an external pad, set the switch to
EXT 4.

Hi-hat Control
Pedal(KD-7)

Hi–hat
Pad(PD-7)

Snare
Pad(PD-7)

Kick Trigger
Unit(KD-7)
& Kick Pedal

AC adaptor

Stereo Headphones

Audio Equipment
(Stereo Set)

Special Cable
(PCS-31)

Footswithes
(FS-5U)
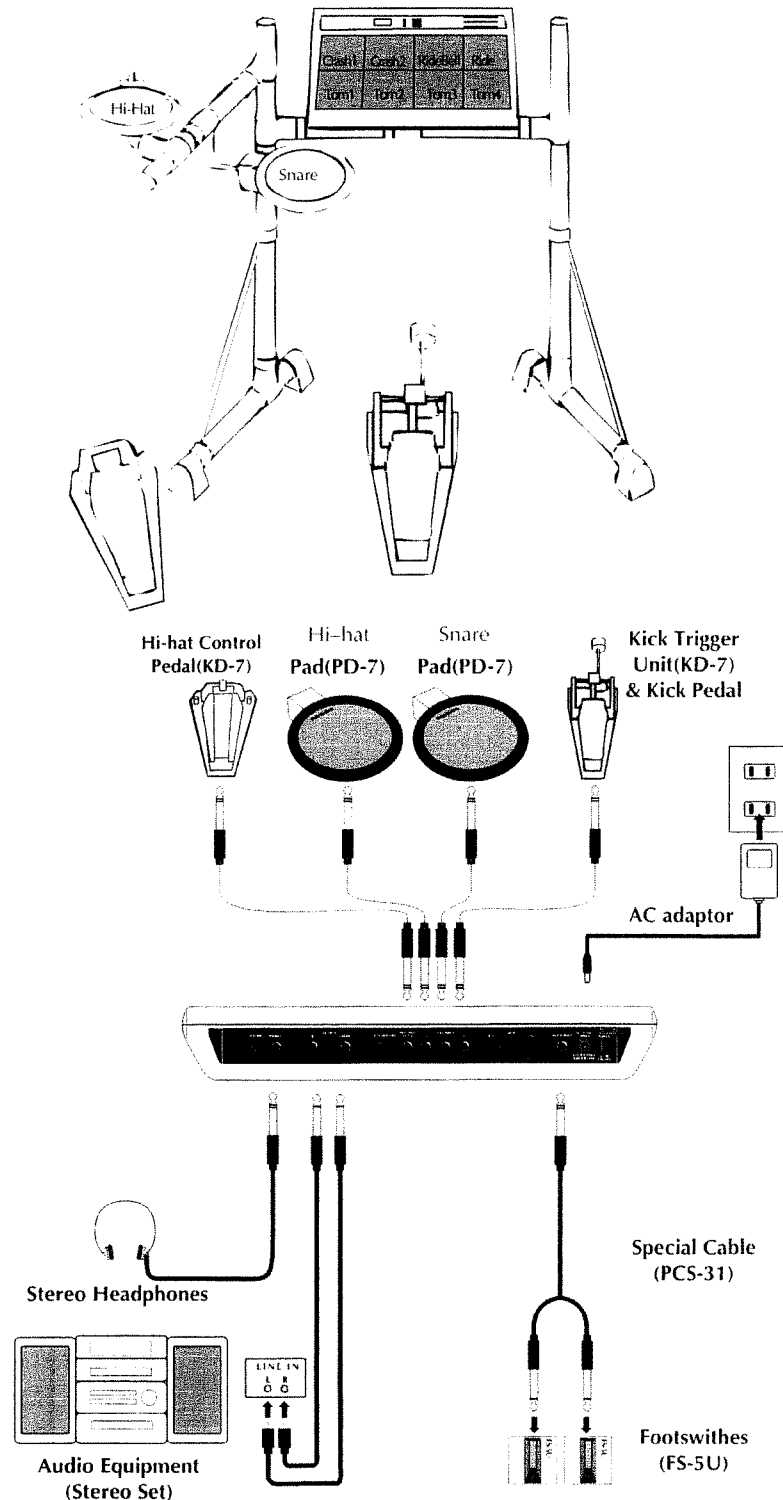
1. Precautions when connecting a Pad
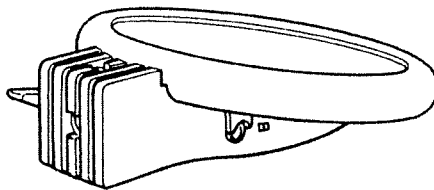
PD-7

Connect external pads to EXT INPUT jacks 1—3, or to the HH CONT/EXT 4 jack. (However, in the later case, be sure to set the external input select switch to EXT 4.) All four jacks are stereo so that the *drum pad* signal and the *rim shot* signal can be processed independently. For the greatest expressive possibilities, we recommend that you connect the specially designed PD-7 Pads (sold separately).

! *You may hear a brief sound when you change the position of this switch. However, this is not a malfunction.*

If you are using an external pad other than a PD-7 (or if you have connected a PD-7 using a mono cable), the MIDI data which indicates that the rim has been pressed (polyphonic key pressure) may sometimes be transmitted. If this happens, connect the external pads before turning the SPD-11 power on.

When using a PD-7, set the Polarity Switch on the PD-7 to the "-" (negative) side, and make connections using the cable included with the PD-7.

If a PD-7 is connected, you will be able to use rim shot and 'choke' playing technique.

Center of Pad   Rim Shot
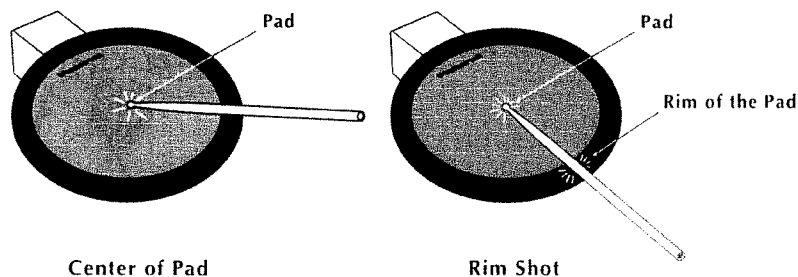
* *A Rim Shot is a playing technique in which both the actual pad and the rim of the pad are struck simultaneously.*

You can make independent settings for the trigger signal from head and the trigger signal from rim of a connected PD-7. For this reason, you can control two different groups of sounds.
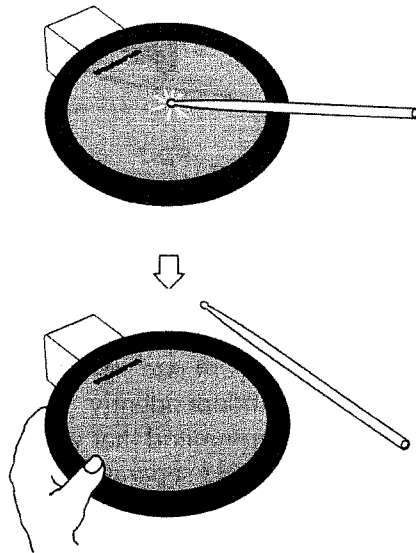
Choke effect

* If immediately after striking the Pad you grab hold of the rim, the sound currently being played will be muted.

2. Precautions when connecting a Hi-hat Control Pedal

Connect the Hi-hat Control Pedal to the HH CONT/EXT 4 jack, and set the External input switch to HH CONT. For the SPD-11, please use the special Hi-hat Control Pedal (FD-7; sold separately). When using an FD-7 you will be able to control various Instrument parameters in realtime.
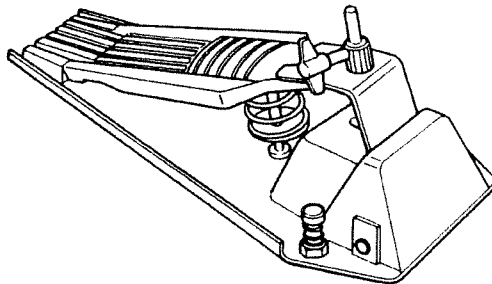
FD-7

Simply connecting an FD-7 to the SPD-11 is not enough to make it function correctly. The SPD-11 needs to be *aware* of the FD-7 so that it can automatically make the appropriate settings.

[How to set the Hi-hat Control Pedal for the best possible performance results]

1. Using the cable included with the FD-7, connect the FD-7 to the HH CONT/EXT 4 jack.

2. Make sure that the pedal is fully open.

■ *If the pedal is depressed, settings will not be made correctly.*

3. Move the external input select switch to EXT 4 and then move it back to HH CONT. When the switch is moved back to HH CONT the following display will appear. This indicates that the FD-7 has been 'recognized' by the SPD-11 and will now function correctly.

■ *You may hear a brief sound when you change the position of this switch. However, this is not a malfunction.*

■ *Be very careful not to depress the pedal until the above message will be displayed.*

The appropriate settings will be made automatically and the same message will be displayed whenever the power is turned on with the FD-7 already plugged in.

3. Precautions when connecting a Kick pedal (Kick Trigger Unit)

In order to connect a Kick pedal you will need a special Kick Trigger Unit (KD-7; sold separately). A connecting cable and beater are included with the KD-7, and you may use a favorite bass drum pedal to control the SPD-11 sounds. The KD-7 can be connected to an EXT INPUT jack (1—3), or to the HH CONT/EXT 4 jack. (However, in the later case, be sure to set the External input select switch to EXT 4.)

◇ *By connecting two sets of units and pedals, you can use dual bass drum techniques. There are two ways to do this. You can use the mix in jack of one KD-7 and connect the two sets in parallel to one SPD-11 input, or you can connect each KD-7*

to its own SPD-11 Trigger input. The first method uses only one SPD-11 EXT INPUT, and the second method uses two SPD-11 EXT INPUTs. However, the second method allows you to control two different Instruments, so that you can assign different-sounding Kick Drums to each side, and change the pitch and Pan settings for a more expressive sound.

Playing a sound from a Footswitch:
It is also possible to play a sound from a Footswitch connected to an EXT INPUT jack. In this case, however, it will not be possible to control dynamics by velocity. To raise the Sensitivity, adjust TRIG SENS, and to decrease the volume, adjust the LEVEL in the SOUND parameter group. When using MIDI to play an external sound source, adjust the volume using the SENS in the MIDI parameter group.

[2] Settings for external pads or Kick Trigger Units

Sound and MIDI parameters can be set for external pads or Kick Trigger Units (connected to the EXT INPUT jacks) in the same way as for the on-board Pads.
If a PD-7 is connected, each parameter can be set independently for the head and rim.

Make settings while referring to the section "How to edit sound parameters" (p.27). To make settings for the head, strike only the head. To make settings for the rim, simultaneously strike the rim and head. (Rim settings can be made only for the PD-7, *not* for external pads other than the PD-7 or for a Kick Trigger Unit.) To make settings for a Kick Trigger Unit, depress the connected pedal.

In addition to the above parameters, the SPD-11 provides four more parameters (TRIG SENS, TRIG THRESHOLD, TRIG MASK TIME and TRIG SCAN TIME) to enhance your performances.

Some of these parameters are available for all Pads (on-board as well as external), and others are available only for external pads.

Parameter	On-board Pads	External pads
TRIG SENS	The same value applies to all eight Pads.	Can be set independently for each external pad.
TRIG THRESHOLD	same as above	same as above
TRIG MASK TIME	cannot be set (---) will be displayed.	same as above
TRIG SCAN TIME	cannot be set (---) will be displayed.	The same value applies to all four pads.

a. Adjusting the Seneitivity of a Pad or Kick Trigger Unit (TRIG SENS)

This parameter adjusts the Seneitivity of a Pad or Kick Trigger Unit. Higher values will result in higher Seneitivity(setting range: 1—16). When external pads are connected, you should adjust the relative Seneitivity between the external and on-board Pads so as to provide a balanced feel for the entire drum kit.

1. In the Edit mode, select the SYSTEM parameter group (p.14).

2. Use ⬛▲ ⬛▼ to selectTRIG SENS.

3. Strike the Pad (or depress the Kick Trigger Unit) you wish to edit. Each time you strike the Pad/depress the pedal, the force (1—127) will be shown in the display.

* If a PD-7 is connected, this parameter can be set independently for the head and rim. To make settings for the rim, simultaneously strike the rim and head.

4. Use PATCH/VALUE ▼ ▲ to set the value.

Adjust this setting so that forceful strikes produce a display of near 127 (maximum).

b. Preventing accidental triggering of a Pad or Kick Trigger Unit (TRIG THRESHOLD)

By setting this parameter, you can make the Pad respond with a trigger signal *only* when it is struck with a force *above* a Threshold level. This allows you to prevent the Pad from picking up extraneous vibrations from neighboring Pads. If the striking force is *less* than the Threshold, the Pad will not sound. In the following diagram, only (2) will produce sound(setting range: 1—16.)
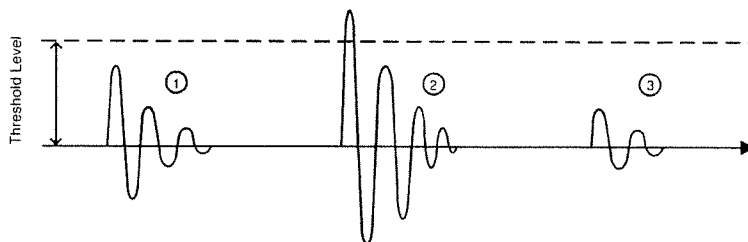
1. In the Edit mode, select the SYSTEM parameter group (p.14).

2. Use ⬛▲ ⬛▼ to select TRIG THRESHOLD.

3. Strike the Pad (or depress the Kick Trigger Unit) you wish to edit.

For a connected PD-7, settings can be made independently for the Pad and rim. If you wish to make settings for the rim, simultaneously strike the head and rim.

4. Use PATCH/VALUE ▼ ▲ to set the value.

c. Preventing accidental double-triggering of a Pad or Kick Trigger Unit (TRIG MASK TIME)

You will set this parameter only when you need to stop accidental 'bouncing' for a Pad or Kick Trigger Unit. (Bouncing refers to a single strike which inadvertently produces multiple triggers.) If multiple triggers occur within the time specified by this parameter, the later ones will be ignored. In the diagram below, (1) and (3) will produce sound, but (2) will not. This parameter can be adjusted over a range of 0—124, with each step representing 4 milliseconds.
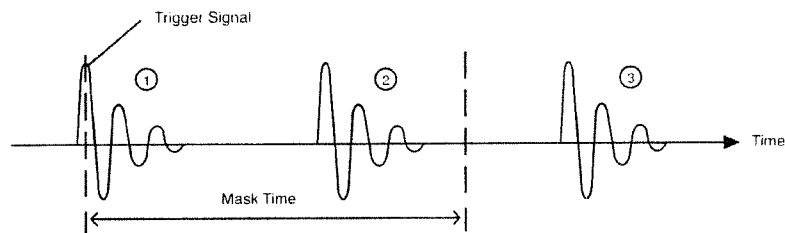
1. In the Edit mode, select the SYSTEM parameter group (p.14).

2. Use ⬛▲ ⬛▼ to select TRIG MASK TIME.

3. Strike the Pad (or depress the Kick Trigger Unit) you wish to edit.

For a connected PD-7, settings can be made independently for the Pad and rim. If you wish to make settings for the rim, simultaneously strike the head and rim.

4. Use PATCH/VALUE ▼ ▲ to set the value.

d. Adjusting volume changes to Pad dynamics (TRIG SCAN TIME)

This parameter sets the time (0.0—3.0 milliseconds) over which the trigger signal is detected. Longer settings will result in a longer scanning time, which means that detection will be more accurate and Pad playing dynamics will be accurately interpreted as changes in volume.
Various Pads, such as those made by other manufacturers, differ slightly in the time Delay between when the Pad is struck and when the trigger signal is output. In this case, the volume response may not be exactly what you expect, even for Pad strikes you intended to have the same force.

Set this parameter to the lowest value in which an appropriate volume change can be obtained. When using a PD-7, set this parameter to 00.

1. In the Edit mode, select the SYSTEM parameter group (p.14).

2. Use ▲ ▼ to select TRIG SCAN TIME.

3. Strike the Pad (or depress the Kick Trigger Unit) you wish to edit.

Each time you strike the Pad/depress the pedal, the force (1—127) will be displayed.

4. Use PATCH/VALUE ▼ ▲ to set the value.

[3] Settings for an external Hi-hat unit

Various functions can be assigned to a connected Hi-hat Control Pedal to control different aspects of the sound.

1. Functions that can be controlled by a Hi-hat Control Pedal

A Hi-hat Control Pedal can control the following functions (HH, EFS, U07/U12/U24/d05/d12/d24).

a. Control the Hi-hat sound(HH)

When this function is assigned, the Hi-hat Control Pedal will control the Hi-hat sound (PH1—PH8) which has been assigned to the Pad. If you strike the Pad while depressing the pedal, you can make the sound change continuously from open to closed, and even half-open sounds can be played. As you depress the pedal, the decay will also change in relation to the angle of the pedal. When you depress the pedal completely, the closed Hi-hat sound will be heard. If you quickly release the pedal immediately after depressing it, the open Hi-hat sound will be heard.

The pedal volume can be adjusted as explained later in the section, "Adjusting the volume of the Hi-hat sound" (p.43).

The factory-preset Patches 1—22 have the PDL CONT assigned to HH, so we suggest you take a moment to try them out.

If a Hi-hat sound (PH1—PH8) is assigned to two or more Pads, the pedal Hi-hat will sound for the highest-priority Pad as shown below:

high priority

Pad Bank A INT1 → INT2 → INT3 → INT4 → INT5 → INT6 → INT7 → INT8

EXT1 (Head) → EXT2 (Head) → EXT3 (Head) → EXT4 (Head) → EXT1 (Rim) → EXT2 (Rim) → EXT3 (Rim) → EXT4 (Rim)

Pad Bank B INT1 → INT2 → INT3 → INT4 → INT5 → INT6 → INT7 → INT8

EXT1 (Head) → EXT2 (Head) → EXT3 (Head) → EXT4 (Head) → EXT1 (Rim) → EXT2 (Rim) → EXT3 (Rim) → EXT4 (Rim)

low priority
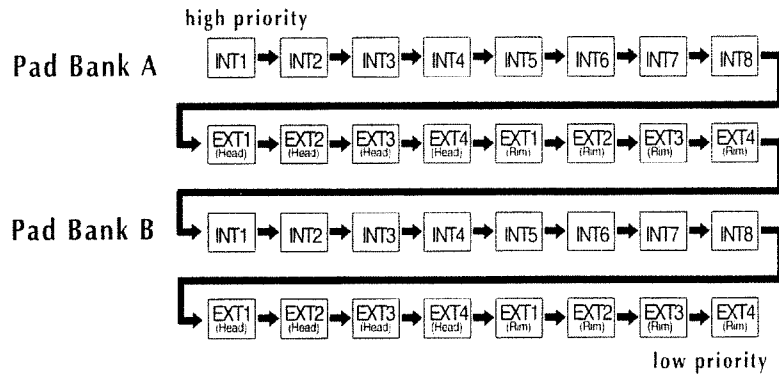
! *The Velocity Curve (p.26) and layer (p.16) settings do not affect the pedal Hi-hat sound.*

b. Control the effect applied to an Instrument (EFS)

When this function is assigned, the Hi-hat Control Pedal will control the effect send of an Instrument. When the pedal is released, the effect send value will be the same as specified by the parameter setting. When the pedal is depressed, the effect send value will be increased proportionally to the angle of the pedal.

c. Control Instrument pitch (U07/U12/U24/d05/d12/d24)

When this function is assigned, the Hi-hat Control Pedal will control the pitch of an Instrument. When the pedal is released, the pitch will be as specified by the Pad setting. When the pedal is depressed, the pitch will be modified proportionally to the angle of the pedal.

The maximum pitch changes are shown as follows:

U07	up 700 cents	(a perfect fifth)
U12	up 1200 cents	(one octave)
U24	up 2400 cents	(two octaves)
d05	down 500 cents	(a perfect fourth)
d12	down 1200 cents	(one octave)
d24	down 2400 cents	(two octaves)

Depending on the type of Instrument or on the sound parameter pitch settings, there may be a point above which the pitch cannot be raised.

2. Selecting the function to be controlled

1. In the Edit mode, select the FX/PEDAL parameter group.

2. Use ◀▲ ◀▼ to select PDL CONT.

3. Use PATCH/VALUE ▼ ▲ to select the function you wish to control.

3. Adjusting the volume of the Hi-hat sound

This parameter determines the volume of the Hi-hat sound played by the Hi-hat Control Pedal when the PH1—8 sound is assigned to a pad. Higher values will result in a louder sound. At a setting of 0, there will be no sound.

1. In the Edit mode, select the FX/PEDAL parameter group.

2. Use ◀▲ ◀▼ to select PDL LEVEL.

3. Use PATCH/VALUE ▼ ▲ to set the volume (0—15).
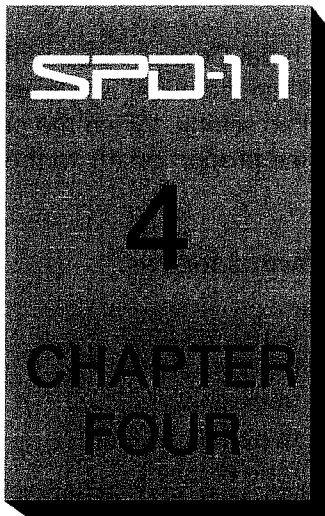
Connecting MIDI devices

When connected to other MIDI devices, the SPD-11 can be used in a wide variety of musically creative ways. For example, it can be connected to a sequencer as a Pad controller for realtime input, and its on-board sound source can be layered with external sound sources. Other applications include using a sequencer to automatically select SPD-11 Patches, or to store SPD-11 data in a sequencer or other MIDI Bulk storage device.

[1] MIDI connections
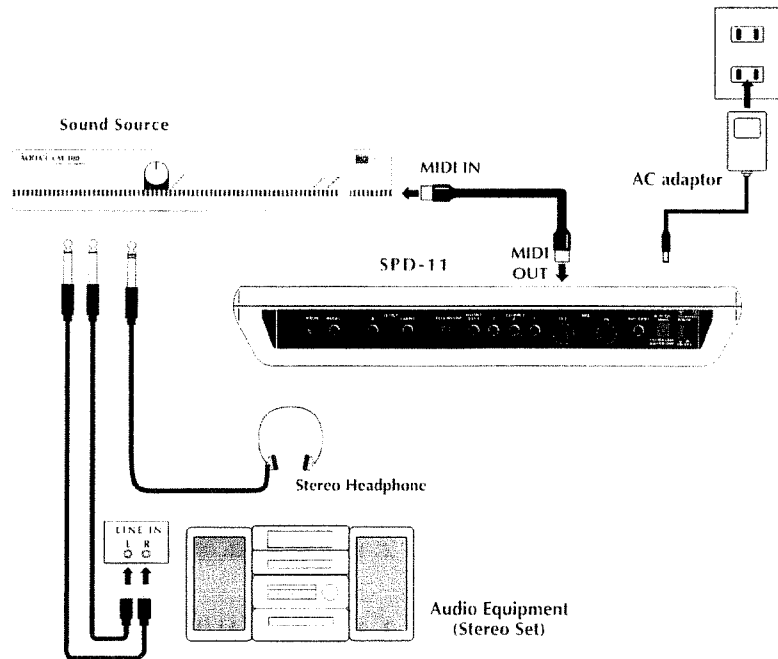
[2] About MIDI

MIDI is an acronym for Musical Instrument Digital Interface, and is a standard by which electronic musical Instruments and computers can exchange musical data. The SPD-11 conforms to the MIDI specification and can be connected to other devices to either control, or be controlled.

1. How MIDI data is sent and received

First, we will briefly explain how MIDI data is sent and received.

a. MIDI terminals

MIDI data is sent and received through the following terminals. Use a MIDI cable to connect these terminals to other devices.

MIDI IN   : receives data from other MIDI devices

MIDI OUT : transmits data to other MIDI devices

MIDI THRU: re-transmits the data received via MIDI IN
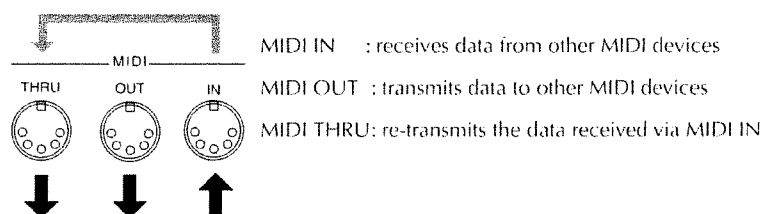
* The SPD-11 does not have a MIDI THRU terminal.

! *It is possible to connect ("daisy chain") several MIDI devices using the MIDI THRU connectors, but you should keep the total length of MIDI cables should be within 10 meters, so as to prevent the possible reception errors.*

b. MIDI channels

MIDI allows you to independently control two or more devices over a single MIDI cable. This is possible because MIDI provides for multiple channels of control. You can think of MIDI channels as being similar to television channels. Although many broadcast channels are in the air at any one time (many channels of MIDI data are moving through a single cable), a television set receives only the channel to which it is set (the MIDI device receives only the channel to which it is set).

TV messages from various TV Stations are sent through the antenna's cable.

Select the channel of the TV Station you wish to watch.
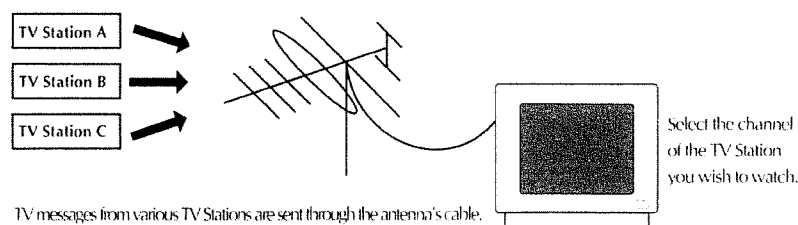
MIDI provides sixteen channels, 1—16, and the receiving device will only receive data when its receive channel matches the Transmit Channel. In the following diagram, playing the keyboard will cause only sound source B to play.
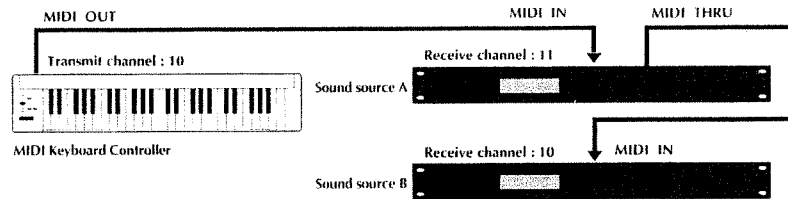
2. Main types of MIDI data used by the SPD-11

A wide variety of musical data can be transmitted by MIDI, with a different type of MIDI message provided for each type of data. MIDI messages can be broadly categorized into two groups: information that is differentiated by channel (Channel messages) and information that is not differentiated by channel (System messages).

a. Data differentiated by channel (Channel messages)

These messages carry musical performance data. Normally, these messages do most of the work. The result that each type of message produces will depend on the settings of the sound source.

• **Note messages**
These messages notify the sound source that a Pad has been struck. (A keyboard would transmit these messages when keys are played.) Note messages convey the following information.

Note Number: Each note message (Note On or Note Off) carries the Note Number which was assigned to that Pad (a number indicating the note position on a keyboard).

Note on: This message is transmitted when a Pad is struck (when a key is played).

Note Off: This message is transmitted when the specified Gate Time has elapsed after the Note On message (when a key is released).

Velocity: Each note message contains data indicating how strongly the Pad was struck (how strongly the key was played).

* The Note Numbers fall within the range of 0—127, with middle C (C4) as number 60.

Note numbers usually specify the pitch of the sound to be produced, but for rhythm sound sources, they specify the *type* of drum sound (the Instrument) which is to be played.

• Aftertouch messages

Aftertouch messages are transmitted by some keyboards when you press down on the keyboard *after* playing a note. The degree of pressure (aftertouch) can thus be used to control various aspects of the sound. There are two types of aftertouch messages. Data which is transmitted independently for each key is called Polyphonic Key Pressure, and data which is transmitted for the overall keyboard (without differentiating between individual keys) is called Channel Key Pressure.

❢ *The SPD-11 transmits Polyphonic Key Pressure messages when the rim area of a Pad is squeezed or released. When the SPD-11 receives Polyphonic Key Pressure messages from another MIDI device, its sound will be affected in the same way as when the rim area of a Pad is squeezed.*

• Program Change messages (1—128)

These messages are usually used to select sounds.

❢ *The SPD-11 can transmit Program Change messages to select Patches on external sound sources. When the SPD-11 receives a Program Change message from another MIDI device, the Patch will change.*

• Control change messages

These messages convey various types of information that make a musical performance more expressive. Each message carries a control number that indicates which function it is to control. The result will depend on the MIDI device.

❢ *The SPD-11 transmits movements of the Hi-hat Control Pedal as Control Change messages. When it receives Control Change messages from another MIDI device, its sound will be affected in the same way as when the pedal is moved.*

b. Data not differentiated by channel (System messages)

System messages include Exclusive messages as well as other messages that keep a MIDI system running smoothly.

• Exclusive messages

Exclusive messages are used to transmit and receive data which is unique to a particular device (such as Patch data). This type of data can be received and transmitted between devices of identical type and manufacturer. For details, refer to the MIDI Implementation (p.79).

• Active sensing

These messages are used to monitor the integrity of MIDI connections. If no MIDI messages are received within a specific length of time, the device assumes that the connection has been broken (e.g., a cable disconnected) and will reset itself according to a specific procedure.

c. MIDI Implementation Charts

MIDI has made it possible for a wide variety of devices to exchange information, but it is not always true that all types of MIDI messages can be exchanged between all types of devices. To help you quickly determine what types of MIDI messages can be exchanged between master and slave, the manual of each MIDI device includes a MIDI Implementation chart. By looking at this chart, you can quickly see what messages the device is able to transmit and receive. MIDI Implementation charts are standardized, so you can fold the charts together to see at a glance how the two devices will communicate.
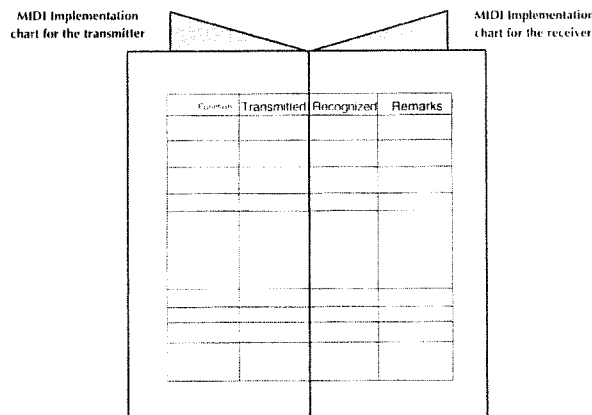
* A MIDI Implementation chart for the SPD-11 is included in page 83 .

[3] MIDI parameter settings

If you wish to use the SPD-11 to control another MIDI sound source, or use another MIDI device to control the SPD-11, you will need to set the MIDI parameters.

MIDI parameters can be set independently for Pad Banks A and B, so you can use playing dynamics to control two external sound sources. MIDI parameters are stored as part of a Patch.

1. How the MIDI parameters work

a. Transmit Channel (TX CH)

Set this parameter to match the receive channel of the MIDI sound source you have connected (1—16/oFF). If you want a Pad to play only the SPD-11's sounds, set this parameter to "oFF".

b. Note Number (NOTE #)

Set this parameter to the sound (note) of the MIDI sound source you want to play from that Pad (0—127/oFF).

Correspondence between
Note Numbers and Note Names

Note Name : (-1)←— A0 ←—————————————— C4 —————————————→ C8 ——→ G9

Note Number : 0 ←— 21 ←—————————————— 60 —————————————→ 108 ——→ 127
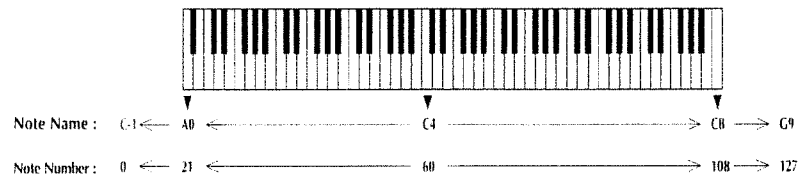
Normally each Pad will be assigned one Instrument and one Note Number. However, a Hi-hat sound (PH1—PH8) controlled by a Hi-hat Control Pedal will automatically be given three note numbers; the displayed Note Number and the two note numbers immediately below it. Only the highest Note Number will be displayed.

Sound of an Instrument

Pad

```
5 0 1
```
Note # 3 8

Hi-hat sound controlled
by a Pedal

Pad

```
P H 1
```
Note # 4 6 ←— Only the highest
4 4   note number will
4 2   be shown.

For example, suppose that PH1 has Note Number 46 assigned to it. With the pedal depressed, if you strike the Pad to which PH1 is assigned, Note Number 42 will be sent. If you strike the Pad without depressing the pedal, Note Number 46 will be sent. If you depress the pedal without striking the Pad, Note Number 44 will be sent.

c. Gate Time (GT TIME)

This parameter determines the length of time that the MIDI
sound source will produce sound (0.1 second—4.0 seconds).
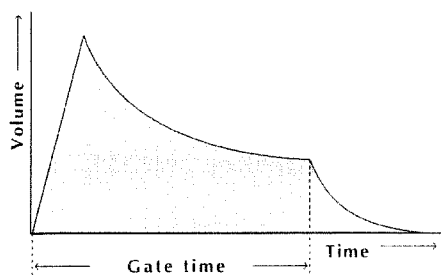
This Gate Time parameter corresponds to the length of time a
note is held (on a MIDI keyboard) before it is released.

! *If the MIDI sound source ignores Note Off messages, this Gate
Time parameter will not affect the length of the note.*

*If you are using a Pad to play a sound that has a slow attack,
the note may be too quiet or may be cut off too quickly. If so,
increase the Gate Time.*

* The actual length of time the note sounds will depend on
the settings of the MIDI sound source.

d. Pan (PAN)

If you have connected a MIDI sound source that can receive
Pan Control Change messages (control number 10), this param-
eter allows you to specify the stereo position (L7—Ctr—R7/rnd/
oFF). With a setting of "rnd" the stereo position will change
randomly each time you strike the Pad. With a setting of "oFF",
Pan messages will not be transmitted.

Left Speaker   Right Speaker

L7 ←——————— 0 ———————→ R7
                 (Center)
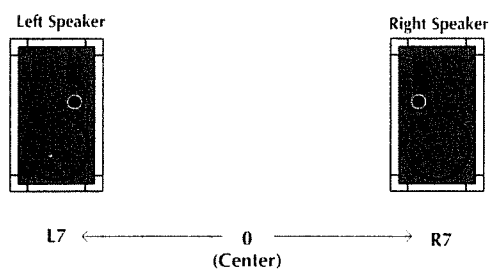
e. Velocity Curve (CURVE)

You can choose from 16 curves to specify how the volume will
change in response to your playing dynamics.

$L \sqcap \sqcap$ Linear	$EP \; I$ Exponential 1	$EP\mathcal{C}$ Exponential 2	$EP\mathcal{J}$ Exponential 3
$EP\mathcal{H}$ Exponential 4	$5P \; I$ Spline 1	$5P\mathcal{C}$ Spline 2	$5F \; I$ Soft 1
$5F\mathcal{C}$ Soft 2	$5F\mathcal{J}$ Soft 3	$5F\mathcal{H}$ Soft 4	$H\sigma \; I$ Hard 1
$H\sigma\mathcal{C}$ Hard 2	$H\sigma\mathcal{J}$ Hard 3	$H\sigma\mathcal{H}$ Hard 4	$[5t$ Constant
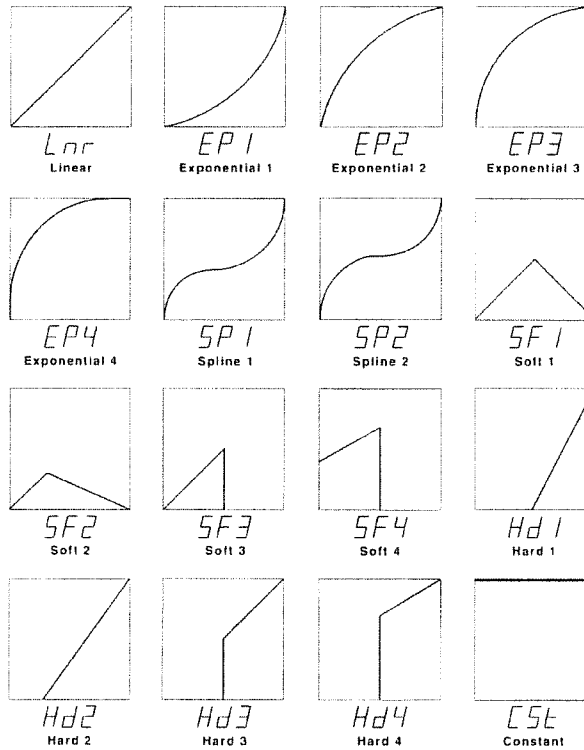
If this parameter is set to "CSt" (constant), the volume will be the same for each note—regardless of how strongly or softly you strike the Pad. In this case, you will adjust the velocity Seneitivity parameter to set the volume.

f. Velocity Seneitivity (SENS)

This parameter determines the Seneitivity of the Pad (1—15). Higher settings will result in higher Seneitivity, so that even playing softly will produce a loud sound.

If the Velocity Curve parameter has been set to "CSt", velocity will be transmitted with the following value.

Sensitivity	Velocity	Sensitivity	Velocity
1	1	9	73
2	10	10	82
3	19	11	91
4	28	12	100
5	37	13	109
6	46	14	118
7	55	15	127
8	64		

g. Program Change (PGM CHG)

By transmitting Program Change messages, the SPD-11 can select sounds on another MIDI device. This parameter specifies which Program Number is to be transmitted. (1—128 /oFF). In the Edit mode, each time you modify this parameter, a Program Change message will be transmitted immediately from MIDI OUT, so that you can then strike the Pad to check the external sound source. If you do not wish to transmit Program Change messages, set this parameter to "oFF".

Each Pad will transmit a Program Change message on its assigned MIDI channel whenever a Patch is selected in the Play mode. If two or more Pads are assigned to the same MIDI channel and have been set to transmit different Program Numbers, only the highest-priority Pad will transmit the Program Change (p.42).

! *If while editing you attempt to make such a conflicting setting, the display will flash more rapidly to warn you. Also, Program Change messages of lowest-priority pad will not be transmitted from the conflicting Pad during editing.*

The following table shows how the numeric display (1—128) corresponds to the GBN (Group / Bank / Number) Program Number scheme used in Roland devices.

< Group A >
Number

	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15	16
3	17	18	19	20	21	22	23	24
4	25	26	27	28	29	30	31	32
5	33	34	35	36	37	38	39	40
6	41	42	43	44	45	46	47	48
7	49	50	51	52	53	54	55	56
8	57	58	59	60	61	62	63	64

< Group B >
Number

	1	2	3	4	5	6	7	8
1	65	66	67	68	69	70	71	72
2	73	74	75	76	77	78	79	80
3	81	82	83	84	85	86	87	88
4	89	90	91	92	93	94	95	96
5	97	98	99	100	101	102	103	104
6	105	106	107	108	109	110	111	112
7	113	114	115	116	117	118	119	120
8	121	122	123	124	125	126	127	128

GBN system:
This is a way of organizing Patch memory select buttons into Groups (A/B), Banks (1—8) and Numbers (1—8), which is used on many Roland synthesizers and sound modules.

2. Setting MIDI parameters

Since MIDI parameters can be set independently for each Pad Bank (A and B), each Pad can control two external sound sources.

1. In the Play mode, use PATCH/VALUE ▼ ▲ to select the Patch (1—64) for which you wish to make settings.

2. Press [EDIT] to enter the Edit mode.

3. Use [SELECT] to select the MIDI parameter group.

4. Use ⬆️ ⬇️ to select the parameter you wish to set.

5. Press [BANK A/B] to select the Pad Bank you wish to set.

6. Strike the Pad you wish to set.

For a connected PD-7 you can make settings independently for the Pad and the rim. If you wish to make MIDI parameter settings for the rim, strike the rim.

7. Use PATCH/VALUE ▼ ▲ to set the parameter value.

The value will change more rapidly if you press ▼ (▲) while holding ▲ (▼).

> **If you press [ALL/ENTER] at this point, the currently displayed value will be set for all Pads.**

* *If you are making settings for an internal Pad, this will apply to all 8 internal Pads. If you are making settings for an external pad, this will apply to the 4 external pads and rims.*

You can strike the Pad to hear the edited sound. If you have layered two sounds, it is probably a good idea to press (LAYER) to turn Layer off.

8. To set parameters for the other Pad Bank, repeat steps 5—7.

9. If you wish to set the same parameters for other Pads, repeat steps 6—7. If you wish to set different parameters for the other Pads, repeat steps 4—8.

10. When you finish making settings, press [EDIT] once again to return to the Play mode.

[Layer]

When Layer is on, two note messages will be transmitted each time you strike a Pad. By making appropriate MIDI Velocity Curve settings for each Pad Bank (A and B), you can create effects such as velocity crossfades for external sound sources.

If you set Layer to Velocity Switch, be sure that the SENS parameter is set to the same value for both Pad Banks (A/B). By changing the SENS value, you can shift the switching point of two sounds otherwise.

[*Another way to use a Footswitch*]

A Footswitch (DP-2/FS-5U; sold separately) connected to the PATCH SHIFT jack can be used as a hold (sustain) pedal to control external MIDI sound sources. When you depress the pedal, a Control Change message (Hold) will be transmitted, instructing the MIDI sound sources to continue sounding the notes which are currently being played.

* As far as internal sound source is concerned, only the "M15 Vibraphone" can be sustained.

! *This may not work properly for some MIDI sound sources or some sounds.*

If you turn the SPD-11 on while the Footswitch is depressed, the following message will **scroll** across the display and the Footswitch will act as a hold pedal.

SEt HoLd PEdaL
If you are using an FS-5U, Footswitch 1 with PCS-31 will act as the hold pedal, and Footswitch 2 will increase the Patch number.

* The SPD-11's display can only show 3 characters at once. To 'scroll' means that the characters automatically move across the display to show a longer message. The SPD-11 will sometimes scroll error messages or other helpful information.

! *When the power is turned off this setting is canceled.*

[5] Using the SPD-11 as a MIDI sound source

Incoming MIDI messages from an external device can also trigger the SPD-11's sounds. The Instruments specified by the sound parameters for each Pad will be played by incoming note messages of the Note Number specified for each Pad. Incoming note messages are received on the Basic Channel.

1. Setting the receive channel (Basic Channel)

The SPD-11 receives MIDI messages (note messages, Program Change messages, Control Change messages) on its Basic Channel. When using an external MIDI device to play the SPD-11's sound source, set the Transmit Channel of the external MIDI device to match the Basic Channel of the SPD-11.

1. In the Edit mode, press [SELECT] to select the SYSTEM parameter group.

2. Use ▲ ▼ to select BASIC CH.

3. Use PATCH/VALUE ▼ ▲ to specify the channel number (1—16).

4. Press [EDIT] to return to the Play mode.

█ *In the SPD-11, the Basic Channel number is also used as the Device ID number (p.62).*

2. Settings for each Pad

Here's how to specify the Instrument (and its Note Number) that will be played by incoming MIDI messages.

1. In the Play mode, use PATCH/VALUE ▼ ▲ to select the Patch (1—64) for which you wish to make settings.

2. Press [EDIT] to enter the Edit mode.

3. Strike the Pad you wish to set.

4. Select an Instrument using INST in the SOUND parameter group (p.24).

5. Select the note number (0—127) by using NOTE # in the MIDI parameter group (p.49).

Now when the specified Note Number is received from the external device, you will be able to check the sound.

6. If you wish to make settings for other Pads, repeat steps 3—5.

7. Press [EDIT] to return to the Play mode.

█ *If you have specified the same Note Number for two or more Pads, each Pad will transmit the same Note Number.*

However, if a note message of that number is received, only the Instrument assigned to the highest-priority Pad will sound (p.42). If you attempt to make such a conflicting setting, the display will flash more rapidly to inform you that the setting is invalid.

! *If the Patch Expand function is on and more than two same note numbers are included in these five Patches, the display will also flash more rapidly.*

! *Remember that three note numbers are assigned to each sound PH1—PH8. If even one of these three note numbers coincides with a Note Number assigned to another Pad, only the highest-priority Pad will sound. For example, if Note Number 38 has been assigned to the S05 sound for Pad number 1, and Note Number 42 has been assigned to the PH1 sound for Pad number 2, the PH1 sound will not be heard. If you attempt to make such a conflicting setting, the display will flash more rapidly to inform you that the setting is invalid.*

! *By switching the Layer on/off, the way of note message processing will be changed;*

Layer off : the note numbers set for Pad Banks A and B will sound.

Layer on : incoming note messages for Pad Bank B will not sound. (Only the note messages for Pad Bank A will sound.)

3. How to trigger the SPD-11's sound source from an external device

1. Set the Transmit Channel for the external MIDI device to match the Basic Channel of the SPD-11 (p.55).

2. If necessary, use PATCH/VALUE ▼ ▲ to select a Patch.

3. When you play the external MIDI device, the SPD-11 will sound.

When a note message is received from the external MIDI device, the Instrument selected for the Pad set to the corresponding Note Number will sound.

If a Program Change message is received on the Basic Channel (p.55), the corresponding Patch (1—64) will be selected. (Only in the Play mode.)

! *The Patch will not change in response to incoming Program Numbers 65—128.*

4. Patch expand

For each Patch of the SPD-11, 32 sounds can be selected. (If Layer is on, 16 sounds.)

However, when the SPD-11 is being played from an external MIDI device, it is frustrating to have so few sounds available. Therefore, the Patch Expand function is provided to make more sounds available for control from an external MIDI device. When Patch Expand is turned on, the sounds selected for Patches 61—64 will also be available, in addition to the currently selected Patch. (This provides a total of five Patches that can be played simultaneously via MIDI.)

! *The settings for the FX/PEDAL and FX/ON OFF will apply to the settings of currently selected Patch. You can layer the Patches(61—64) for the Patch Expand.*

a. How to turn the Patch Expand function on

1. In the Edit mode, press [SELECT] to select the SYSTEM parameter group.

2. Use ▲ ▼ to select PATCH EXPAND.

3. Use PATCH/VALUE ▼ ▲ to turn the Patch Expand function on or off.

4. Press [EDIT] to return to the Play mode.

When the Patch Expand function is on, an "E" will be displayed to the left of the Patch number when you are in the Play mode.

! *When you make settings for the Patch Chain while the Patch Expand function is on, the display will indicate the selected chain(A-d) only.*

b. Contents of the Patches used for the Patch Expand function

The contents of the Patches used for the Patch Expand function(Patch numbers 61—64) are initially set as follows:

Patch Number 61		
pad	#	instrument
A01	27	E09 High Q 1
A02	28	E28 Shot 4
A03	29	E22 Scratch Push
A04	30	E23 Scratch Pull
A05	31	S42 Hall Side Stick
A06	32	A01 DR-55 Claves
A07	33	A03 CR-78 Metallic Beat
A08	34	A03 CR-78 Metallic Beat
B01	35	b08 Mondo Kick
B02	36	b04 Dry Kick
B03	37	S41 Ambient Side Stick
B04	38	S20 L.A. Fat Snare
B05	39	E07 Hand Clap 1
B06	40	S32 Rock Snare
B07	41	t05 Real Tom 2
B08	42	H01 Pop Closed Hi-Hat Inner

Patch Number 63		
pad	#	instrument
A01	59	C05 Brush Ride Cymbal
A02	60	L01 Bongo High
A03	61	L02 Bongo Low 1
A04	62	L04 Conga High Mute
A05	63	L06 Conga High Open
A06	64	L07 Conga Low Open 1
A07	65	L18 Timbale High
A08	66	L19 Timbale Low
B01	67	L22 Agogo
B02	68	L22 Agogo
B03	69	L23 Cabasa
B04	70	L15 Maracas
B05	71	L36 Whistle Short
B06	72	L37 Whistle Long
B07	73	L13 Guiro Short
B08	74	L14 Guiro Long

Patch Number 62		
pad	#	instrument
A01	43	t05 Real Tom 2
A02	44	H05 Pop Pedal Closed Hi-Hat
A03	45	t05 Real Tom 2
A04	46	H04 Pop Open Hi-Hat Outer
A05	47	t04 Real Tom 1
A06	48	t04 Real Tom 1
A07	49	C01 Crash Cymbal 1
A08	50	t04 Real Tom 1
B01	51	C07 Ride Cymbal
B02	52	C03 Chinese Cymbal 1
B03	53	C08 Ride Bell Cymbal
B04	54	L17 Tambourine
B05	55	C02 Crash Cymbal 2
B06	56	L09 Cowbell 1
B07	57	C02 Crash Cymbal 2
B08	58	L21 Vibra-Slap

Patch Number 64		
pad	#	instrument
A01	75	L11 Claves 1
A02	76	P12 Wood Block
A03	77	P12 Wood Block
A04	78	L24 Cuica Mute 1
A05	79	L26 Cuica Open
A06	80	P10 Triangle Mute
A07	81	P11 Triangle Open
A08	82	L16 Shaker
B01	83	P08 Sleigh Bell
B02	84	P01 Bell Tree
B03	85	P02 Castanets
B04	86	L32 Surdo Mute
B05	87	L33 Surdo Open
B06	88	L05 Conga High Slap
B07	89	P07 Gong Small
B08	90	P06 Gong Large

In the contents of Patch Expand Patches, note numbers 35—81 are compatible with GM Percussion Map which can be used to select Percussion sounds under the General MIDI System, and note numbers 27—87 are compatible with GS Standard Set which can be used under the GS Format.

General MIDI System:
The General MIDI System is a set of recommendations which seek to provide a way for going beyond the limitations of proprietary designs, and standardize the MIDI capabilities provided by sound generating devices.
General MIDI supports the GM Percussion Map in channel 10.

GS Format:
The GS Format is Roland's universal set of specifications which were formulated in the interest of standardizing the way in which sound generating devices will operate when MIDI is used for the performance of music.
Song data for the GM sound generating device(GM Score) can be accurately reproduced.
The GS Standard set is one of the percussion sets which can be used in GS drum part.(default;ch 10.)

* The contents of the Patches used by the Patch Expand function (Patches 61—64) can be modified in the same way as other Patches.

3. Sounding Priority when Patch Expand is On

If more than two sounds are set to the the same note number and they receive the corresponding note number, only one sound will play, in the priority shown in the following diagram.
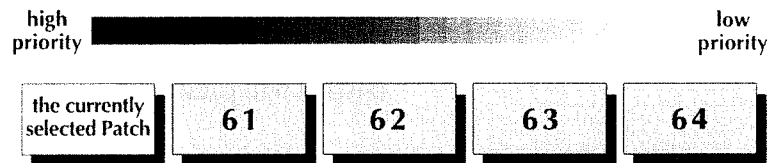
[5] How to use a Sequencer or a Computer to record/ playback your performance

When you wish to record or playback the musical performance of your SPD-11, you must make connections properly and make settings (such as Local Control off,whatever) before you begin recording.

1. Connecting a Computer(or a Sequencer)
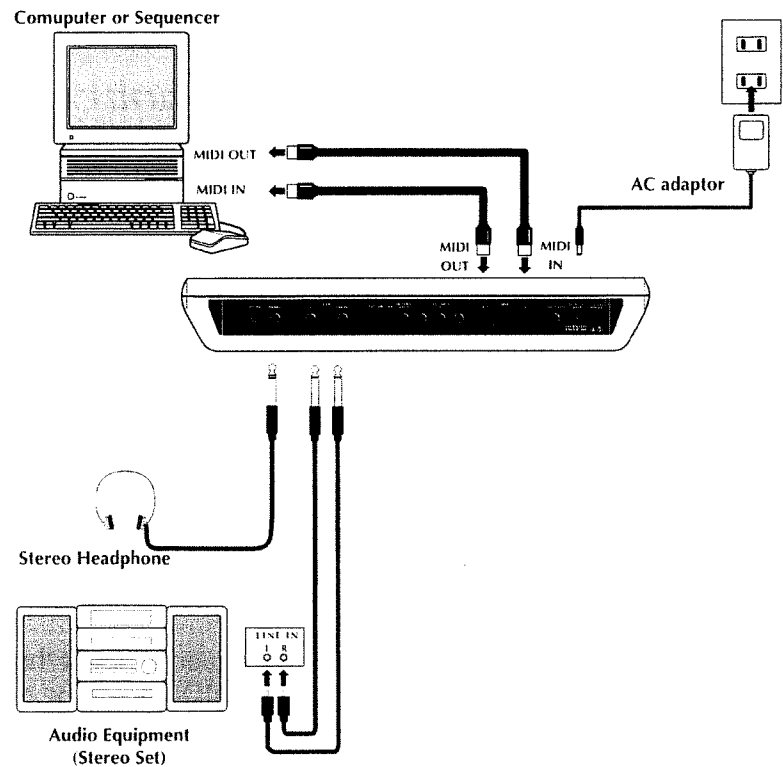
2. How to set the Local Off

The Local Control setting allows you to disconnect the Pad section from the sound source section. When you wish to record and playback your SPD-11 performances using a MIDI sequencer or computer, set Local Control to off(Local Off). When the SPD-11 is turned on, this setting will always be at on (Local On). When local control is on, the Pads are connected to the sound source so that striking the Pads (or operating the pedals) will produce sound.

SPD-11
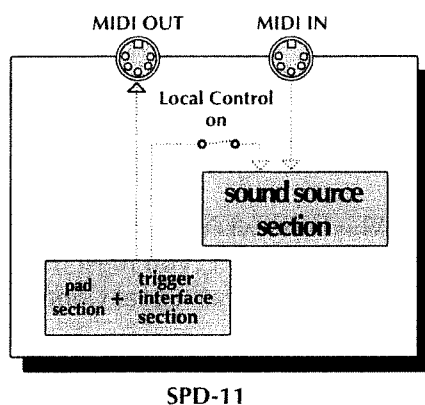
If you turn the power on while holding down [PATCH CHAIN], the following message will scroll across the display, and Local Control will be turned off.

LocɑL ControL oFF

When Local Control is off, the MIDI indicator will light when the unit is in the Play mode.

Regardless of the Local Control setting, messages received at MIDI IN will play the internal sound source, and the Pads and pedals will transmit messages from MIDI OUT.

If you have connected the SPD-11 to a MIDI sequencer (or a personal computer running MIDI sequencing software) that has a "soft(ware) thru" function, set the SPD-11 to Local Off.

"Soft thru" is a function (provided in most MIDI sequencers) in which the messages received at MIDI IN of the sequencer are re-transmitted from MIDI OUT. (For details, refer to the manual of your sequencer or sequencer software.)

When the sequencer's soft thru is turned on, messages it receives at its MIDI IN will be re-transmitted from its MIDI OUT. If the connected SPD-11 is set to Local On, it would sound each note twice: once in response to the message from the Pad section, and once again in response to the MIDI message sent via the software thru function of the sequencer.

MIDI OUT   MIDI IN   MIDI OUT   MIDI IN

Local Control
Off
o o

Soft Thru
On
o o

Sound Source Section

Internal Memory

Pad Section + Trigger Interface Section

SPD-11   **MIDI Sequencer**
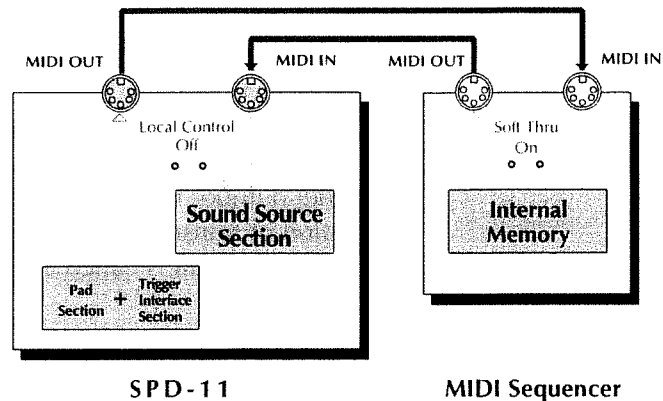
It is also useful to set Local Off when using the SPD-11 as a pad controller to play only external sound sources.

When the power is turned on, the local setting will be set to Local On. If you are using the SPD-11 with a sequencer that does not transmit a Local Off message, remember to depress and hold (PATCH CHAIN) while you turn on the SPD-11.

3. How to make Settings for the SPD-11

If you wish to record and playback an SPD-11 performance on a MIDI sequencer or computer, make the following settings. (these are the factory settings.)

• For each pad you wish to use, set TX CH (p.41) to the same channel as the Basic Channel (p.55).
• For each pad you wish to use, set Note # (p.49) for the pads so that they don't overlap.
• For each pad you wish to use, set CURVE(p.50) to "Lnr".
• For each pad you wish to use, set SENS(p.51) to 8.

If you wish to record and playback Patch changes made during a performance, you will need to make the following settings as well. (These are not the factory settings.)

• For only one pad, set a Program Number that matches the Patch number.

If you wish to record and playback the pedal controller hi-hat sound (PH1-PH8) layered with another instrument, following setting will be necessary.

• Assign an instrument PH1-PH8 to bank A.

If you assign these instruments to bank B, recording will be correct, but since the SPD-11 ignores incoming note messages for bank B, the Pedal Hi-hat will not be heard during playback.

[6] Data transmission by Exclusive message

The Patch data in the SPD-11 can be transmitted either singly or collectively to another SPD-11 (or to a sequencer). SPD-11 data is transmitted and received according to the Device ID number which has been set for each unit. (In the SPD-11, the Basic Channel number is also used as the Device ID number.) The operation of transmitting this data is called a 'Bulk Dump;' receiving this data is called a 'Bulk Load.'

1. What is Device ID

According to the explanation on page 47 of this manual, Exclusive data is not differentiated by channel. However, this would mean that in a complex MIDI system that contained two or more SPD-11s, it would not be possible to transmit Exclusive data to only a specific SPD-11. To get around this problem, each SPD-11 has its own Device ID number (1—16) on which it transmits and receives Exclusive data. Exclusive data can be received only when the Device ID number of the receiving device matches the Device ID number of the transmitting device. In the SPD-11, the Basic Channel number is also used as the Device ID number.

! *In some devices, the MIDI channel number and the Device ID number can be set independently, and will not necessarily be the same. When transferring Bulk data to another device, refer to the operation manual for that device.*

If you are using a sequencer to control two or more SPD-11s, you can set each unit to a different Device ID so that select data can be sent to each unit. But remember that the Basic Channel numbers will also be different.

2. How to transmit (Bulk Dump)

Here's how to transmit the memory data of the SPD-11.
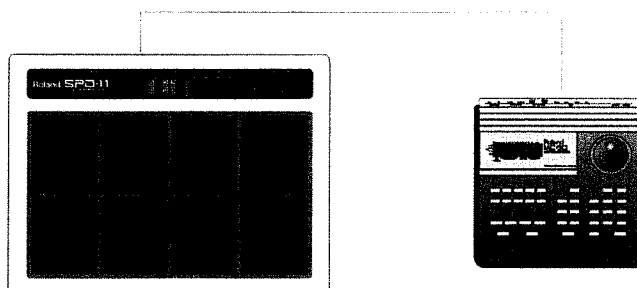
Connect the MIDI OUT of the SPD-11 to the MIDI IN of the sequencer.

1. Use the procedure explained on page 55 to set the Device ID number (on which Exclusive data will be sent).

2. Use ⬛▲ ⬛▼ to select the BULK DUMP in the SYSTEM parameter group.

3. Use PATCH/VALUE ▼ ▲ to select the Patch data you wish to transmit (ALL/1—64). If ALL is selected, all Patch data, Patch Chain data, and system parameter data will be transmitted at once.

4. Set the receiving MIDI device so that it will be able to receive Exclusive messages.

5. Press [ALL/ENTER] and data transmission will begin.

If you wish to stop the operation during transmission, press [EDIT].

6. If you wish to transmit other Patch data, repeat steps 3—5.

7. Press [EDIT] to return to the Play mode.

3. How to receive (Bulk Load)

Here's how to receive Patch data that was stored in another SPD-11 (or in a sequencer).
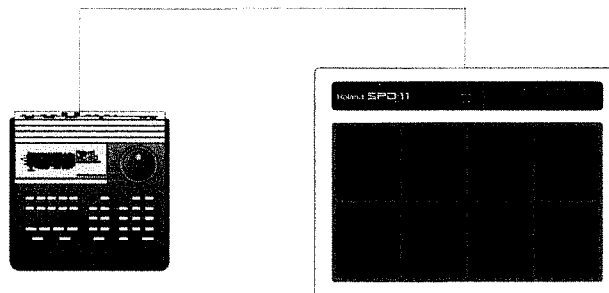
Connect the MIDI OUT of the transmitting device to the MIDI IN of the SPD-11.

! When data is received, the previous settings will be lost.

1. Make sure that the MIDI channel of the transmitting device matches the Basic Channel of the receiving SPD-11 (p.55).

If you transfer Exclusive data from another SPD-11, set the basic channels on both units match. If you receive the Exclusive data that was stored in a sequencer, set the basic channel to match the same number which was set when you saved data in the sequencer

2. Transmit the Exclusive data from the other MIDI device. When reception begins, the following display will appear.

! *Exclusive data transmission and reception requires a great deal of processing, so it is best to avoid playing or editing while transmission is going on. Also, Exclusive data transmission can require a significant amount of time, so allow a reasonable time for these operations. Data cannot be transmitted while incoming Bulk data is being processed, nor can data be received while Bulk data is being transmitted.*

SPD-11

5
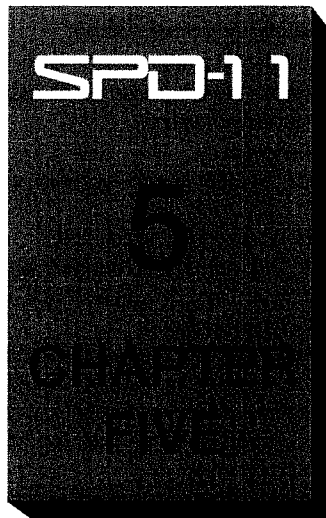
Supplementary materials

Taking advantage of the on-board effects

Effect list

No. Name	Explanation	The parameter affected by "Time"
1. Room (Bright)	a bright-sounding room Reverb	Reverb Time
2. Room (Standard)	a standard room Reverb	Reverb Time
3. Room (Dark)	a dark-sounding room Reverb	Reverb Time
4. Hall (Bright)	a bright-sounding hall Reverb	Reverb Time
5. Hall (Standard)	a standard hall Reverb	Reverb Time
6. Hall (Dark)	a dark-sounding hall Reverb	Reverb Time
7. Plate (Bright)	a bright-sounding plate Reverb	Reverb Time
8. Standard Plate	a standard plate Reverb	Reverb Time
9. Chorus + Reverb	Chorus and Reverb	Reverb Time
10. Tremolo Reverb	Tremolo and Reverb	Reverb Time
11. Chorus	a standard Chorus	Chorus Rate
12. Chorus + Room	Chorus and room Reverb	Reverb Time
13. Chorus + Hall	Chorus and hall Reverb	Reverb Time
14. Chorus + Plate	Chorus and plate Reverb	Reverb Time
15. Flanger	a standard Flanger	Flanger Rate
16. Flanger Reverb	Flanger and Reverb	Reverb Time
17. Flanger + Reverb	Flanger and Reverb	Flanger Rate
18. Pitched Delay + Reverb	pitch-shifted Delay and Reverb	Delay Pitch
19. Pitched Delay + Reverb	pitch-shifted Delay and Reverb	Delay Rate
20. Stereo Delay	stereo Delay (without feedback)	Delay Time
21. Stereo Delay	stereo Delay (with feedback)	Delay Time
22. Panning Delay	panned Delay (without feedback)	Delay Time
23. Panning Delay	panned Delay (with feedback)	Delay Time
24. Chorus + Delay	Chorus+stereo Delay (without feedback)	Delay Time
25. Chorus + Delay	Chorus+stereo Delay (with feedback)	Delay Time

Explanation of terms:

Room Reverb — A simulation of the Reverberation in a small room.

Hall Reverb — A simulation of the Reverberation in a room with a high ceiling.

Plate Reverb — A simulation of a plate Reverb (a Reverb device which uses a metal plate), producing bright Reverberation.

Chorus — An effect of enhanced spaciousness.

Flanger — An effect blending sounds reminiscent of a jet ascending and descending.

Pitched Delay — An effect in which the Delayed sound is pitch-shifted.

Delay Feedback — This term refers to when the Delayed signal is returned to the input of the circuit. Delay effects marked "with feedback" will have more repetitions of the Delayed sound.

Panning Delay — The delayed sound will be panned back and forth between the left and right speakers (if you are listening in stereo). Even if you select a Panning Delay marked "without feedback", there will be one Delay for each position of right, center, and left.

Reverb Time — This sets the length of the Reverberation.

Chorus Rate — This sets the modulation speed of the Chorus effect. Higher settings result in faster Chorusing.

Flanger Rate — This sets the modulation speed of the Flanger effect. Higher settings result in faster flanging.

Pitched Delay Pitch — This sets the amount of pitch change applied to the Delayed sound. Higher settings result in greater pitch change.

Pitched Delay Rate — This sets the modulation speed of the Delayed sound. Higher settings result in faster modulation.

Delay Time — This sets the Delay time. Higher settings result in a longer Delay. For the exact Delay times, refer to the table below.

Delay time : 0—450 (msec)

time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
msec	5	10	20	30	45	60	75	90	105	120	135	150	165	180	195	210

time	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
msec	225	240	255	270	285	300	315	330	345	360	375	390	405	420	435	450

Hints on using Reverb:

Reverb gives presence and spaciousness to any sound, whether solo or background. However, excessively high effect levels and long effect times may make the performance difficult to follow (because sounds are smeared), or make the rhythm less precise. Here are two hints on using Reverb.

- If the effect time is long, decrease the effect level.
- If the effect level is high, shorten the effect time.

Hints on using Delay:

While Reverb creates a lingering resonance, Delay creates quite a different effect. For Delay effects, the effect time setting can create significant differences in the resulting sound. For example, when playing a melodic solo using a mallet-type Instru-

ment, an extremely short Delay time can be used to thicken the sound. On the other hand, a longer repeating Delay can be set to a Delay time of a half-note or quarter-note that matches the tempo of the song.

If you are listening to the SPD-11 in stereo, it can also be interesting to select effect type 22 or 23 (Panned Delay) and select a Pan setting of "random".

Hints on using Chorus/Flanger:

For Chorus/Flanger effects, the Time parameter determines the rate (the speed of modulation).

For Chorus, lower settings of the time parameter will result in a more spacious sound, and higher settings will result in a more tremolo-like effect. Flanging is often used on metallic sounds such as cymbals or hi-hats to produce a frequently-heard effect.

Hints on making parameter settings:

Effects provide many possibilities, but if you always use the same heavily-applied Reverb or Chorus, all the Patches will sound the same. It is important to choose effect settings that are appropriate for the song or suited to the role of the Instrument (solo, backing, special effects, etc.).

The FX SEND in the SOUND parameter group allows you to set the effect depth independently for the Instrument assigned to each Pad, so it is possible, for instance, to apply flanging only to the cymbals. In the case of Reverb, higher settings of FX SEND will create the impression of the Instrument being played further away, so you might set the FX SEND parameter to a different value for each Instrument to create spatial contrast. By utilizing the Pan setting (the stereo position) and the Chorus effect, you can control a vast performance space.

Hints on *not* using effects:

Speaking of contrast, it can also be very "effective" to *not* use effects. Some possibilities are as follows.

- **To apply effects to certain Instruments and not to others.**
- **To switch to a non-effect Patch at a strategic moment.**

As an example of the first possibility, you might try using an ethnic percussion Instrument—such as a surdo—without any effects for a feeling of authenticity. As an example of the second possibility, you could switch from a Patch with deep Reverb to a Patch with no effects (or vice versa) to reinforce musical movement or development within a song.

Troubleshooting

When playing the internal sound source

• No sound

Is the volume set to 0?
-> Check the SPD-11 volume, and the volume of the amp system and mixer.

Is there sound in the headphones?
-> If there is sound in the headphones, the problem may be that a connecting cable is damaged, or there is a problem with the amp or mixer. Check the amplification system and the audio connections.

Are LEVEL in the SOUND parameter group set to 0?
-> Set the levels to an appropriate value (p.25).

Is INST(Instrument Assign) in the SOUND parameter group set to "oFF"?
-> A Pad will not sound if its Instrument assign parameter is set to "oFF" (p.24).

Is Local Control turned off?
-> If Local Control is turned off, the Pad section is disconnected from the sound source, so playing the Pads will not produce sound (p.60).

Is the layer function on?
->When the layer function is on, note messages assigned to bank B will be ignored. Turn the layer function off.

• No power / Power on, but unit does not operate
-> Are you using the supplied AC adaptor? Other AC adaptors may not work properly. If the SPD-11 does not operate even with the correct AC adaptor, check whether the correct AC line voltage is being supplied. (It is best to avoid connecting many devices of high power consumption to the same AC outlet, or using an excessive number of AC outlet expansion plugs.)

• The volume is too low

Is the volume turned down?
-> Check the SPD-11 volume, and the volume of the amp system and/or mixer.

Are LEVEL in the SOUND parameter group set too low?
-> Set the LEVEL to appropriate levels (p.25).

Is CURVE(Velocity Curve) in the SOUND parameter group inappropriate?
-> Make appropriate settings for the Velocity Curve parameter (p.26).

Is SENS(Velocity Sens) in the MIDI parameter group set too low?
-> Make appropriate settings for the Velocity Seneitivity parameter (p.26).

• The sound is wrong
Are the SOUND parameters set correctly?
-> Modify the SOUND parameters (p.24).

• You hear sounds that you did not select
Is an external MIDI sound source being played from that Pad?
-> If you do not wish to trigger an external MIDI sound source, set the Transmit Channel in the MIDI parameter to "oFF" (p.49).

• Soft strikes does not produce sound
Is the TRIG THRESHOLD setting too high?
-> Set TRIG THRESHOLD to an appropriate value (p.29).

When external pads are connected

• Rapid strikes does not trigger sounds
Is TRIG MASK TIME set too high?
-> Set TRIG MASK TIME to an appropriate value (p.40).

• Hard to control the volume changes by pad dynamics
-> Adjust TRIG SCAN TIME(p.41).
-> Adjust TRIG SENS(p.39).

When playing external MIDI sound sources

• No sound
Are MIDI connections correct?
-> Check that the SPD-11 MIDI OUT is connected to the MIDI IN of the external sound source, and that the MIDI cable is not damaged.

Is the volume of the MIDI sound source turned down?
-> Raise the volume.

Is TX CH(Transmit Channel) in the MIDI parameter group set correctly?
Make sure that the Transmit Channel is not set to "oFF" and that the MIDI channel of the Pad and the sound source match (p.49).

Is NOTE #(Note Number) in the MIDI parameter group set correctly?
-> Check the note numbers of the MIDI sound source (p.49).

• The sound is too soft

Is GT TIME(Gate Time) set too low?
-> If you are playing a sound with a soft attack, set a longer Gate Time.

Is CURVE in the MIDI parameter group set to an inappropriate value?
-> Set Velocity Curve to an appropriate value (p.51).

Is SENS in the MIDI parametergroup too low?
-> Set Velocity Seneitivity to an appropriate value (p.51).

• The volume does not change in response to playing dynamics

Is CURVE in the MIDI parameter group set to "CSt"?
-> Set Velocity Curve to an appropriate value (p.51).

• The note duration of the MIDI sound source does not change even though you adjusted GT TIME

Does the MIDI sound source recognize Note Off messages? Or has it been set to a mode in which it does not recognize Note Off messages?
-> Refer to the operation manual of the MIDI sound source.

• When you select a Patch, the sound of the MIDI sound source also changes.

Has PGM CHG(Program Change) in the MIDI parameter grop been set for a Pad?
-> Set Program Change to "oFF" (p.52).

• The MIDI sound source does not change sounds in response to Program Change messages.

Is PGM CHG in theMIDI parameter group set to "oFF"?
-> Make Program Change settings (p.52).

Are the Transmit Channel of the Pad and the MIDI channel of the MIDI sound source set appropriately?
-> Check the Transmit Channel of the Pad and the MIDI channel of the MIDI sound source (p.49).

Is the MIDI sound source able to respond to Program Change messages? Or is it set to a mode in which it does not recognize Program Change messages?
-> Refer to the operation manual of the MIDI sound source.

When playing the internal sound source of the SPD-11

• No sound
Does the Basic Channel of the SPD-11 match the Transmit Channel of the external MIDI device?
-> Set both devices to the same channel (p.55).

Is the Instrument you wish to play assigned to a Pad?
-> Assign the Instrument to a Pad (p.24).

Is the Note Number set correctly?
-> The SPD-11 will not produce sound if it receives a Note Number which has not been assigned to a Pad. Modify the Note Number, or select a Patch which has different note numbers assigned to it (p.49).

Have you assigned the same Note Number to more than one Pad?
-> Even if you assign the same Note Number to more than one Pad, only one Instrument will sound. Set different note numbers for each Pad (p.49).

• Sound is heard for a note number not assigned in the patch.
-> Is Patch Expand turned on?
Turn Patch Expand off(p.57).

When a Footswitch is connected

• The Footswitch does not work
Is the Footswitch connected correctly?

• The MIDI sound source does not sustain notes when you press the Footswitch
Is the Hold Pedal function set?
-> Turn on the Hold Pedal function (p.54).

Is the MIDI sound source able to respond to Hold messages?
-> Refer to the operation manual of the MIDI sound source.

•The internal sound source does not hold.
Are you trying to play an instrument other than M15 Vibraphone?
-> M15 Vibraphone is the only internal instrument which can be held.

• The Patch you set in a Patch Chain is not selected

Is the Patch Chain set correctly?

-> Check whether the Patch Chain is set correctly.

Is the SPD-11 in the Play mode?

-> The Patch Chain function works only in the Play mode.

Is the SPD-11 in the Patch Chain Play mode?

• Exclusive messages are not received

Does the Transmit Channel of the transmitting MIDI device match the Device ID number of the SPD-11?

-> Set the basic channel (p.55).

Does the currently set Device ID match the Device ID which was set when you saved data in the sequencer?

-> Set the basic channel (p.55).

Is the Device ID set differently than the Device ID of the transmitting SPD-11 (the other unit)?

-> Set the basic channel (p.55).

•The effect does not work.

Is [FX ON/OFF] turned off?

-> Press [FX ON/OFF] to on.

Is the FX LEVEL at 0?

-> Set the FX LEVEL to an appropriate level(p.30).

Is the FX SEND at 0?

-> Set the FX SEND LEVEL to an appropriate level(p.26).

• In edit mode, the flashing note number display indicates a note which has not been assigned in the patch.

-> When patch expand is on, the corresponding note number will be found from among all note numbers of the five patches.

Error messages

If a problem occurs during operation, an error message will be displayed. Take the appropriate action as described in this section.

$Rc{\sqsubset}$ $5En5$ Err

A MIDI cable is not connected properly or may be damaged.
-> Check the MIDI cable(s) and the connections with the other device(s).

$Lo{\sqcap}d$ Err

Data loading was not successful.
-> Try loading once again. Pressing any button will return to the previous display.

$5Er_1$ dL Err

MIDI data was received incorrectly.
Press any button on the front panel and the previous display will appear.
-> If this message appears repeatedly, consult your dealer or the nearest Roland service center.

$bUFFEr$ $FULL$

Too much MIDI data was received from another MIDI device.
-> Reduce the amount of MIDI data transmitted by the other device. Or, re-transmit the data after an interval to reduce the amount of MIDI data transmitted in a short time. Pressing any button will return to the previous display.

$r{\sqcap}{\sqcap}$ $tE5t$ Err

The internal memory data has been lost.
Press any button on the front panel. All data will be initialized, and the previous display will reappear.

* If this happens, all the data in the SPD-11 will be reset to the factory presets.

$Rnd{\bot}o6$ $tE5t$ Err

This message indicates that there is an irregularity in the voltage of the Pad detection circuit. Press any button on the front panel and the previous display will reappear.
-> If the previous display does not reappear, no matter which button you press, contact the nearest Roland service center. Sometimes this error message will appear if you strike a Pad while turning on the power. In this event, turn the power off and then on again.

bAttErY Lo

The memory-backup battery is exhausted.

-> If the backup battery runs down completely, the internal memory data will be lost. Contact your dealer or the nearest Roland service center as soon as possible to have the battery replaced.

PATCH PARAMETER BLANK CHART

#		NAME	

LAYER	ON/OFF	
PAD BANK	A/B	

F X	ON/OFF	
	TYPE	
	TIME	
	LEVEL	

PEDAL	CONTROL	
	LEVEL	

INTERNAL PAD

		1 A	1 B	2 A	2 B	3 A	3 B	4 A	4 B	5 A	5 B	6 A	6 B	7 A	7 B	8 A	8 B
SOUND	INST																
	LEVEL																
	PITCH																
	DECAY																
	PAN																
	CURVE																
	FX SEND																
MIDI	TX CH																
	NOTE #																
	GT TIME																
	PAN																
	CURVE																
	SENS																
	PGM CHG																

EXTERNAL PAD

		HEAD 1 A	HEAD 1 B	RIM1 A	RIM1 B	HEAD2 A	HEAD2 B	RIM2 A	RIM2 B	HEAD3 A	HEAD3 B	RIM3 A	RIM3 B	HEAD4 A	HEAD4 B	RIM4 A	RIM4 B
SOUND	INST																
	LEVEL																
	PITCH																
	DECAY																
	PAN																
	CURVE																
	FX SEND																
MIDI	TX CH																
	NOTE #																
	GT TIME																
	PAN																
	CURVE																
	SENS																
	PGM CHG																

PATCH NAME LIST

1 Standard	9 CR-78 & TR-909	17 Ambient	25 Orchestra 1	33 Brazilian 3	41 Effect 1	49 Marimba	57 Melodic 1
2 Room	10 Dynamic	18 Dry	26 Orchestra 2	34 African 1	42 Effect 2	50 Kalimba	58 Melodic 2
3 Power 1	11 Dance 1	19 Heavy	27 Orchestra 3	35 African 2	43 Effect 3	51 Glockenspiel	59 Melodic 3
4 Jazz 1	12 Dance 2	20 Light	28 Cuban 1	36 Asian 1	44 Effect 4	52 Vibraphone	60 Melodic 4
5 Brush	13 Rock	21 Real	29 Cuban 2	37 Asian 2	45 Effect 5	53 Steel Drum	61 for Patch Expand 1
6 Electronic	14 Funk	22 Power 2	30 Cuban 3	38 Asian 3	46 Effect 6	54 Timpani	62 for Patch Expand 2
7 Techno	15 Rap	23 Dopey	31 Brazilian 1	39 Analog 1	47 Effect 7	55 Xylophone	63 for Patch Expand 3
8 TR-808	16 House	24 Jazz 2	32 Brazilian 2	40 Analog 2	48 Effect 8	56 Glass	64 for Patch Expand 4

INSTRUMENT NAME LIST

Name
b01 Dance Kick
b02 Deep Kick
b03 Deep Reverb Kick
b04 Dry Kick
b05 Electronic Kick
b06 House Kick
b07 Mondo Reverb Kick
b08 Mondo Kick
b09 Mondo Deep Kick
b10 Pillow Kick
b11 Rap Kick
b12 Real Kick
b13 Reverb Kick
b14 Room Kick 1
b15 Room Kick 2
b16 Solid Kick
b17 TR-808 Kick
b18 TR-909 Kick
b19 Reverb Solid Kick
b20 808 Electronic Kick
b21 909 Hard Kick

S01 Acoustic Snare
S02 Big Shot Snare
S03 Brush Roll Snare 1
S04 Brush Roll Snare 2
S05 Brush Slap Snare 1
S06 Brush Slap Snare 2
S07 Brush Slap Snare 3
S08 Brush Swish Snare
S09 Cracker Snare
S10 Cruddy Snare
S11 Digital Snare
S12 Dopin' Snare
S13 Electronic Snare
S14 Fat Snare
S15 FX Snare
S16 House Snare

Name
S17 House Dopin' Snare
S18 Hyper Snare
S19 L.A. Snare
S20 L.A. Fat Snare
S21 Light Snare
S22 Loose Snare
S23 Rocker Snare
S24 Rockin' Snare
S25 Rock Light Snare
S26 Rock Rim Shot Snare
S27 Rock Splatter Snare
S28 Real Snare
S29 Reggae Snare 1
S30 Reggae Snare 2
S31 Ring Snare
S32 Rock Snare
S33 Roll Snare
S34 Splatter Snare
S35 Super Light Snare
S36 Super Whack Snare
S37 Swing Snare
S38 TR-808 Snare
S39 TR-909 Snare
S40 90's Snare
S41 Ambient Side Stick
S42 Hall Side Stick
S43 TR-808 Side Stick

t01 Rock Tom 1
t02 Rock Tom 2
t03 TR-808 Tom
t04 Real Tom 1
t05 Real Tom 2
t06 Double Head Tom 1
t07 Double Head Tom 2
t08 Brush Slap Tom 1
t09 Brush Slap Tom 2
t10 Acoustic Tom 1

Name
t11 Acoustic Tom 2

H01 Pop Closed Hi-Hat Inner
H02 Pop Closed Hi-Hat Outer
H03 Pop Open Hi-Hat Inner
H04 Pop Open Hi-Hat Outer
H05 Pop Pedal Hi-Hat
H06 Real Closed Hi-Hat Inner
H07 Real Closed Hi-Hat Outer
H08 Real Open Hi-Hat Inner
H09 Real Open Hi-Hat Outer
H10 Real Pedal Hi-Hat
H11 TR-808 Closed Hi-Hat Inner
H12 TR-808 Closed Hi-Hat Outer
H13 TR-808 Open Hi-Hat Inner
H14 TR-808 Open Hi-Hat Outer
H15 CR-78 Closed Hi-Hat
H16 CR-78 Open Hi-Hat
H17 Brush Closed Hi-Hat
H18 Brush Open Hi-Hat

C01 Crash Cymbal 1
C02 Crash Cymbal 2
C03 Chinese Cymbal 1
C04 Chinese Cymbal 2
C05 Brush Ride Cymbal
C06 Hand Cymbals
C07 Ride Cymbal
C08 Ride Bell Cymbal
C09 TR-808 Cymbal

#	Name	#	Name	#	Name
L01	Bongo High	P17	Talking Drum	E06	Emergency
L02	Bongo Low 1	P18	Tabla Na 1	E07	Hand Clap 1
L03	Bongo Low 2	P19	Tabla Na 2	E08	Hand Clap 2
L04	Conga High Mute	P20	Tabla Tun	E09	High Q 1
L05	Conga High Slap	P21	Tabla Te	E10	High Q 2
L06	Conga High Open	P22	Baya Ge	E11	Metal 1
L07	Conga Low Open 1	P23	Darbuk	E12	Metal 2
L08	Conga Low Open 2	P24	Monster Drum	E13	Metal Side Stick
L09	Cowbell 1	P25	Taiko 1	E14	Noise Accent 1
L10	Cowbell 2	P26	Taiko 2	E15	Noise Accent 2
L11	Claves 1	P27	Taiko Rim	E16	Noise Accent 3
L12	Claves 2	P28	Tsuzumi	E17	Noise Accent 4
L13	Guiro Short	P29	Can Drum	E18	Random Noise 1
L14	Guiro Long	P30	Matsuri	E19	Random Noise 2
L15	Maracas	P31	Rattle	E20	Random Noise 3
L16	Shaker			E21	Random Noise 4
L17	Tambourine	A01	DR-55 Claves	E22	Scratch Push
L18	Timbale High	A02	CR-78 Cowbell	E23	Scratch Pull
L19	Timbale Low	A03	CR-78 Metallic Beat	E24	Scratch Stereo
L20	Timbale Paila	A04	CR-78 Guiro	E25	Shot 1
L21	Vibra-Slap	A05	CR-78 Tambourine	E26	Shot 2
L22	Agogo	A06	CR-78 Maracas	E27	Shot 3
L23	Cabasa	A07	TR-808 Conga	E28	Shot 4
L24	Cuica Mute 1	A08	TR-808 Claves	E29	Snaps
L25	Cuica Mute 2	A09	TR-808 Maracas	E30	Stick Hit
L26	Cuica Open	A10	TR-808 Hand Clap	E31	Uut?
L27	Pandiero Mute	A11	TR-808 Cowbell	E32	Woody 1
L28	Pandiero Slap			E33	Woody 2
L29	Pandiero Open 1	M01	Anvil	E34	Kick Ambience
L30	Pandiero Open 2	M02	Bamboo	E35	Snare Ambience
L31	Surdo Rim	M03	Drip	E36	Tom Ambience
L32	Surdo Mute	M04	Gamelan 1	E37	Concert Ambience
L33	Surdo Open	M05	Gamelan 2		
L34	Tamborim 1	M06	Glass	r01	Reverse Ambience
L35	Tamborim 2	M07	Glockenspiel	r02	Reverse Beat
L36	Whistle Short	M08	Kalimba	r03	Reverse Clap
L37	Whistle Long	M09	Log Drum	r04	Reverse Cymbal
		M10	Marimba 1	r05	Reverse High Q
P01	Bell Tree	M11	Marimba 2	r06	Reverse Kick
P02	Castanets	M12	Steel Drum 1	r07	Reverse Shot
P03	Castanets with Hall Ambience	M13	Steel Drum 2	r08	Reverse Snare
P04	Concert Bass Drum Mute	M14	Timpani	r09	Reverse Tom
P05	Concert Bass Drum Open	M15	Vibraphone		
P06	Gong Large	M16	Xylophone	PH1	Pop Hi-Hat Inner (pedal controlled)
P07	Gong Small	M17	Brass Hit Short	PH2	Pop Hi-Hat Outer (pedal controlled)
P08	Sleigh Bell	M18	Brass Hit Long	PH3	Real Hi-Hat Inner (pedal controlled)
P09	Timpani Bend	M19	Orchestra Hit 1	PH4	Real Hi-Hat Outer (pedal controlled)
P10	Triangle Mute	M20	Orchestra Hit 2	PH5	Brush Hi-Hat (pedal controlled)
P11	Triangle Open			PH6	TR-808 Hi-Hat Inner (pedal controlled)
P12	Wood Block	E01	Chink	PH7	TR-808 Hi-Hat Outer (pedal controlled)
P13	Chekere	E02	Chop	PH8	CR-78 Hi-Hat (pedal controlled)
P14	Djembe 1	E03	Crash 1		
P15	Djembe 2	E04	Crash 2	oFF	Off
P16	Djembe 3	E05	Drop		

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 version 1.0).

• Manufacturer ID: 41H

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

• Device ID: DEV

The Device ID contains a unique value that identifies individual devices in the implementation of several 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 several basic channels.

• Model ID: MDL

The Model ID contains a value that 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 content 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 to the transfer of a small amount of data. It sends out an Exclusive message completely independent of the receiving device's status.

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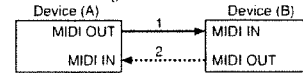
Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

• Handshake-transfer procedure

(This device does not use 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
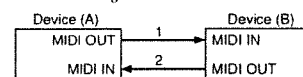
Connection at points 1 and 2 is essential.

Notes on the above 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 until it has all been sent and is used when the messages are so short that answerbacks need not be checked.
For longer messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts 20 milliseconds intervals.

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

won't send out anything.

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

* 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 last 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 bits of 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 devices that support a "soft-thru" function. 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 Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
↓	↓
↓	↓
	LSB
ddH	Data MSB
↓	↓
↓	↓
	LSB
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 last 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 (A)		Device (B)
[Data set 1]	⟶	
	* More than 20m sec time internal.	
[Data set 1]	⟶	
[Data set 1]	⟶	
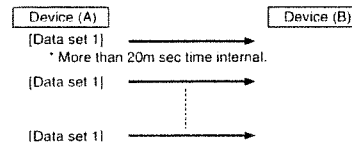
• Device B requesting data from Device A

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

Device (A)		Device (B)
[Data set 1]	⟵	[Request data]
[Data set 1]	⟶	
	* More than 20m sec time internal.	
[Data set 1]	⟶	
[Data set 1]	⟶	
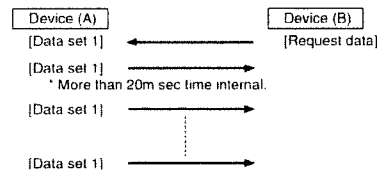
1. TRANSMITTED DATA

[Channel Voice Message]

(1) Note off

Status	Second	Third
9nH	kkH	00H

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

(2) Note on

Status	Second	Third
9nH	kkH	vvH

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

The SPD-11 transmits at channel of each pad
"GT TIME" refers to the period between a Note On and the subsequent Note Off message. If, however, another note is turned on by the same pad before the Note Off for the previous note is sent, a Note Off for the previous note will be sent before the new Note On.
When the "LAYER" is set at "ON", the note number of "BANK A" and "BANK B" are transmitted.

(3) Polyphonic Key Pressure

Status	Second	Third
AnH	kkH	vvH

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

This message is transmitted with value 7FH when grab the rim of the pad or value 00H when release the rim.
Note number to be transferred is content of the head/rim of grabbed pad.

When the "SOUND" is set from "PH1" to "PH8", the note number of the head, rim, note number of head minus 2, note number of head minus 4, note number of rim minus 2, note number of rim minus 4 are transferred.

When the "LAYER" is set at "ON", the note number of "BANK A" and "BANK B" are transmitted.

(4) Control Change

• Modulation Depth

Status	Second	Third
BnH	01H	vvH

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

The SPD-11 transmits a value corresponding to the position of the Hi-hat Control Pedal on the basic channel.

• Hold1

Status	Second	Third
BnH	40H	vvH

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

Transmit vv=7FH when press footswitch and vv=00H when release footswitch if Footswitch mode is set to "Hold Pedal"

• Panpot

Status	Second	Third
BnH	0AH	vvH

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

The Panpot messages you set will be transmitted when a pad is hit.

The Panpot value.

MIDI PAN	vv
L7	0
L6	9
L5	18
L4	27
L3	36
L2	45
L1	54
Ctr	64
R1	73
R2	82
R3	91
R4	100
R5	109
R6	118
R7	127
rnd	one of upper value

(5) Program Change

Status	Second
CnH	ppH

n=MIDI channel   :0H - FH (ch.1 - ch.16)
pp=Program number   :00H - 7FH (prog.1 - prog.128)

When a patch is selected, the corresponding program change number will be transmitted.

[System Exclusive Message]

Status	
F0H	ÅF System Exclusive
F7H	ÅF EOX (End Of Exclusive)

With the SPD-11, the System Exclusive Message can be used to transmit Bulk Dump of patch data, instrument data, system data, chain data and sequence data. For details refer to "3. Exclusive Communications" and "Roland Exclusive Messages."

[System Real Time Message]

Active Sensing

Status
FEH

Transmitted for checking MIDI connection between SPD-11 and external equipment.

2. RECEIVED DATA

[Channel Voice Message]

(1) Note On

```
Status    Second    Third
9nH       kkH       vvH
```

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

The SPD-11 receives Note on messages on the basic channel.
If the received Note number is assigned to any pad, the instrument which is assigned to that pad will sound.
If there are two (or more) pads whitch are assigned the same Note number, the instrument priority is given to the lower (lowest) pad number.

When the Layer is set at "ON", the note number of "BANK B" is ignored.

(2) Polyphonic Key Pressure

```
Status    Second    Third
AnH       kkH       vvH
```

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

The SPD-11 receives the message on the basic channel.
If the value is greater than or equal to 40H(64), the decay of the instrument whitch corresponds to the Note number is made shorter.

(3) Control Change

• **Modulation Depth**

```
Status    Second    Third
BnH       01H       vvH
```

n=MIDI channel   :0H - 0FH (ch.1 - ch.16)
vv=Parameter value :00H - 7FH (0 - 127)

The SPD-11 receives the message on the basic channel.
The result of receiving the message depends on the parameter of "PDL CONT".

• **Hold 1**

```
Status    Second    Third
BnH       40H       vvH
```

n=MIDI channel   :0H - 0FH (ch.1 - ch.16)
vv=Parameter value :00H - 3FH, 40H - 7FH (0 - 63 : OFF, 64 -127 : ON)

The SPD-11 receives the message on the basic channel.

(4) Program Change

```
Status    Second
CnH       ppH
```

n=MIDI channel   :0H - 0FH (ch.1 - ch.16)
pp=Program number   :00H - 3FH (0 - 63)

The SPD-11 receives the message on the basic channel.
The program change number 0-63 correspond to the patch number 1-64.

[Channel Mode Message]

(1) Reset All Controllers

```
Status    Second    Third
BnH       79H       00H
```

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

The SPD-11 receives the message on the basic channel.
The SPD-11 initializes the controller on receiving this message.

Modulation Depth 0
Hold 1   0

[System Real Time Message]

(1) Active Sensing

```
Status
FEH
```

Whenever the SPD-11 receives this message, it monitors the interval of the coming data. If the subsequent message has not arrived within 300ms after the previous data, it process as though it has received Reset All Controllers and stops monitoring receiving interval.

[System Exclusive Message]

```
Status
F0H    : System Exclusive
F7H    : EOX (End Of Exclusive)
```

The SPD-11 can receive System Exclusive messages in the Edit mode.

For details refer to "Roland Exclusive Messages" and paragraph "3. Exclusive Communications."

3. Exclusive Communications

[General]

SPD-11 can do one-way communications to send and receive parameters for sequence and setup.

Model ID included in the exclusive message should be 60H. The device ID code should be BASIC CH of System. Note that the actual value that set in the device ID field is smaller by one than the value set at parameter BASIC CH of System.

[One Way Communications]

Request data RQ1 11H

```
Byte    Description

F0H     Exclusive status
41H     Manufacturer's ID (Roland)
DEV     Device ID (00H-0FH)
60H     Model ID (SPD-11)
11H     Command ID (RQ1)
aaH     Address MSB
aaH     Address
aaH     Address
aaH     Address LSB
ssH     size MSB
ssH     size
ssH     size
ssH     size LSB
sum     Check sum
F7H     EOX (End of Exclusive)
```

Data set DT1 12H

```
Byte    Description

F0H     Exclusive status
41H     Manufacturer's ID (Roland)
DEV     Device ID (00H-0FH)
60H     Model ID (SPD-11)
12H     Command ID (DT1)
aaH     Address MSB
aaH     Address
aaH     Address
aaH     Address LSB
ddH     data
 .
 .
sum     Check sum
F7H     EOX (End of Exclusive)
```

[Transmission]

The SPD-11 transmit exclusive messages only when MIDI Bulk dump is performed by panel operation on menu of System function.

[Receive]

Bulk dump is not performed.

4. Parameter address map

Addresses are shown in every 7-bit hexadecimal.

```
+-------------------------------------------------------------------+
| Address  |  MSB  |        |        |  LSB  |
|----------+-----------+-----------+-----------+-----------|
| Binary   | 0aaa aaaa | 0bbb bbbb | 0ccc cccc | 0ddd dddd |
| 7-bit hex. |   AA    |    BB    |    CC    |    DD    |
+-------------------------------------------------------------------+
```

[Parameter base addresses]

Start Address	Description	
00 00 00 00	Patch parameters	*4-1
:	:	
01 00 00 00	System parameters	*4-2
:	:	
02 00 00 00	Chain setup	*4-3

Table 4-1 Patch parameters

```
* p :  Patch No.(0-63)
  t :  Pad No.  (1-32)
```

The correspondence of the "t" value to internal and external pads is as follows.

```
1:BANK A INTERNAL PAD1
|
8:BANK A INTERNAL PAD8

9:BANK A EXTERNAL HEAD1
|
12:BANK A EXTERNAL HEAD4

13:BANK A EXTERNAL RIM1
|
16:BANK A EXTERNAL RIM4

17:BANK B INTERNAL PAD1
|
24:BANK B INTERNAL PAD8

25:BANK B EXTERNAL HEAD1
|
28:BANK B EXTERNAL HEAD4

29:BANK B EXTERNAL RIM1
|
32:BANK B EXTERNAL RIM4
```

Offset Address	Description	
pp 00 00	BANK A/B	0 - 1(0:A 1:B)
00 01	LAYER	0 - 1(0:OFF 1:ON)
00 02	FX ON/OFF	0 - 1(0:OFF 1:ON)
00 03	FX TYPE	0 - 24
00 04	FX TIME	0 - 31
00 05	FX LEVEL	0 - 15
00 06	PDL CONT	0 - 7(0:HH 1:EFS 2:U07 3:U12 4:U24 5:d05 6:d12 7:d24)
00 07	PDL LEVEL	0 - 15
tt 00	SOUND INST Upper4bits	0 - 255
tt 01	SOUND INST Lower4bits	0 - 255
tt 02	SOUND LEVEL	0 - 15
tt 03	SOUND PITCH	0 - 48
tt 04	SOUND DECAY (31 - +31)lower7bits of 2's complement	
tt 05	SOUND PAN	0 - 15(0:L7-14:R7 15:RND)
tt 06	SOUND CURVE	0 - 15
tt 07	SOUND FX SEND	0 - 15
tt 08	MIDI TX CH	0 - 16(16:OFF)
tt 09	MIDI NOTE #	0 - 127
tt 0A	MIDI NOTE #	0 - 1(1:OFF)
tt 0B	MIDI GT TIME	1 - 40
tt 0C	MIDI PAN	0 - 16(0:L7 14:R7 15:RND 16:OFF)
tt 0D	MIDI CURVE	0 - 15
tt 0E	MIDI SENS	0 - 14
tt 0F	MIDI PGM CHG	0 - 127
tt 10	MIDI PGM CHG	0 - 1(1:OFF)

Table 4-2 System parameters

Offset Address	Description
00 PATCH EXPAND	0 - 1(0:OFF 1:ON)
01 TRIG SCAN TIME	0 - 30
02 TRG SENS (INTERNAL)	0 - 7
03 TRIG THRESHOLD (INTERNAL)	0 - 15
04 EXT HEAD1 TRG SENS	0 - 15
05 EXT HEAD1 TRG MASK TIME	0 - 31(0-124)
06 EXT HEAD1 TRG THRESHOLD	0 - 15
07 EXT RIM1 TRG SENS	0 - 15
08 EXT RIM1 TRG MASK TIME	0 - 31(0-124)
09 EXT RIM1 TRG THRESHOLD	0 - 15
0A EXT HEAD2 TRG SENS	0 - 15
0B EXT HEAD2 TRG MASK TIME	0 - 31(0-124)
0C EXT HEAD2 TRG THRESHOLD	0 - 15
0D EXT RIM2 TRG SENS	0 - 15
0E EXT RIM2 TRG MASK TIME	0 - 31(0-124)
0F EXT RIM2 TRG THRESHOLD	0 - 15
10 EXT HEAD3 TRG SENS	0 - 15
11 EXT HEAD3 TRG MASK TIME	0 - 31(0-124)
12 EXT HEAD3 TRG THRESHOLD	0 - 15
13 EXT RIM3 TRG SENS	0 - 15
14 EXT RIM3 TRG MASK TIME	0 - 31(0-124)
15 EXT RIM3 TRG THRESHOLD	0 - 15
16 EXT HEAD4 TRG SENS	0 - 15
17 EXT HEAD4 TRG MASK TIME	0 - 31(0-124)
18 EXT HEAD4 TRG THRESHOLD	0 - 15
19 EXT RIM4 TRG SENS	0 - 15
1A EXT RIM4 TRG MASK TIME	0 - 31(0-124)
1B EXT RIM4 TRG THRESHOLD	0 - 15

Table 4-3 Chain setup

If you want to send Data Request to the SPD-11 in this area, set the address and the size as follows.

```
address = 02 00 00 00
size    = 00 00 00 40
```

```
----------------------------------- Address Map -----------------------------------

         Address        Block        Sub block      Reference
       ==========     =========    ==========     ========
       00 00 00 00    +----------+.....+-----------+.....+----------+
                      | Patch Param |   | Patch#0  |     |  4-1   |
                      +----------+.....+-----------+.....+----------+
                      |          |.    | Patch#1  |
                      |          |.    +-----------+
                      |          |.    |  :       |
                      |          |.    +-----------+
                      |          |.    | Patch#63 |
                      |          |    .+-----------+
                      |          |    .| Patch#64 |
                      |          |     +-----------+
       01 00 00 00    +----------+.....................+----------+
                      |System setup|                   |  4-2   |
       02 00 00 00    +----------+.....................+----------+
                      | Chain setup |                  |  4-3   |
                      +----------+                      +----------+
```

5. Useful Information

Decimal and Hexadecimal

It is common to use 7-bit Hexadecimal numbers in MIDI communication. The following is a conversion table between decimal numbers and 7-bit Hexadecimal numbers.

Decimal	Hexa-decimal	Decimal	Hexa-decimal	Decimal	Hexa-decimal	Decimal	Hexa-decimal
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

* To indicate a decimal number for the MIDI channel and Program number, add 1 to the Decimal number in the table.

* The resolution of 7-bit Hexadecimal numbers is 128. Use several bytes for values which require more resolution.
   i.e. The number "aa bbH" in 7-bit Hexadecimal is "aa x 128 + bb" in Decimal form.

* A signed number is indicated as 00H = -64, 40H = ±0, 7FH = +63.
   So the signed number "aaH" in 7-bit Hexadecimal is "aa - 64".
   A signed number using two bytes is indicated as 00 00H = -8192, 40 00H = ±0, 7F 7FH = +8191.
   So the signed number "aa bbH" in 7-bit Hexadecimal is "aa bbH - 40 00H = aa x 128 + bb - 64 x 128".

* The data indicated as "nibbled" is a 4-bit Hexadecimal number.
   i.e. "0a 0bH" is "a x 16 + b".

<EXAMPLE 1> Convert "5AH" in Hexadecimal to a Decimal number.
            (By using the table) 5AH = 90

<EXAMPLE 2> Convert "12 34H" in 7-bit Hexadecimal to a Decimal number.
            (By using the table) 12H = 18, 34H = 52
            So,   18 x 128 + 52 = 2356

<EXAMPLE 3> Convert "0A 03 09 0D" in nibblized form to a Decimal number.
            (By using the table) 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
            So,   ((10 x 16 + 3) x 16 + 9) x 16 + 13 = 41885

• Example of actual MIDI messages

<EXAMPLE>   C9   49
            "Cn" is a status of a Program change message, and "n" is a MIDI channel number.
            The second byte is a Program number.
            9H = 9, 49H = 73
            So, this is a Program change message of MIDI channel=10, Program number= 74.

Checksum of Roland System Exclusive messages

Roland System Exclusive messages (RQ1 and DT1) have a Checksum at the end of the data (before EOX) to be able to check for communication errors. The Checksum results from address and data (or size) included in the message.

• How to calculate Checksums ("H" indicates Hexadecimal.)

The error checking process uses a Checksum and provides a bit pattern where the last significant 7 bits are zero when values for an address, data (or size) and the Checksum are summed.

If the address is "aa bb ccH" and the data(or the size) is "dd ee ffH"

    aa + bb + cc + dd + ee + ff = sum
    sum ÷ 128 = quotient ··· remainder
    128 - remainder = checksum

<EXAMPLE 1> Set "FX TYPE" of patch2 to 10

See the "Parameter address map"
    Address : 00 01 00 03H   the value of FX TYPE=10 is 09H

    F0   41 09 60 12 00 01 00 03   09   ??   F7
    (1) (2) (3) (4) (5)   adress   data checksum (6)

    (1)ExclusiveStatus   (4)Model ID (SPD-11)
    (2)ID   (Roland)   (5)Command ID (DT1)
    (3)Device ID (10)   (6)End of Exclusive

    The Checksum is :
        00H + 01H + 00H + 03H + 09H = 0 + 1 + 0 + 3 + 9 = 13(sum)
        13(sum) ÷ 128 = 0(quotient) ··· 13(remainder)
        checksum = 128 - 13(remainder) = 115 = 73H

    Therefore, the message to send is : F0 41 09 60 12 00 01 00 03 09 73 F7.

<EXAMPLE 2> Request to transfer the "MIDI CH" of Pad2(BANK A), Patch 3.

See the "Parameter address map"
    Address : 00 02 01 08H
    Size   : 00 00 00 01H

See the "Parameter address map"
    Address : 00 01 00 03H   the value of FX TYPE=10 is 09H

    F0   41 09 60 11 00 02 01 08 00 00 00 01   ??   F7
    (1) (2) (3) (4) (5)   adress   data   checksum (6)

    (1)ExclusiveStatus   (4)Model ID (SPD-11)
    (2)ID   (Roland)   (5)Command ID (RQ1)
    (3)Device ID (10)   (6)End of Exclusive

    The Checksum is :
        00H + 02H + 01H + 08H + 00H + 00H + 00H + 01H = 0 + 2 + 1 + 8 + 0 + 0 + 0 + 1 = 12(sum)
        12(sum) ÷ 128 = 0(quotient) ···12(remainder)
        checksum = 128 - 12(remainder) = 116 = 74H

    Therefore, the message to send is : F0 41 09 60 12 00 02 01 08 00 00 00 01 74 F7.

TOTAL PERCUSSION PAD
Model SPD-11

MIDI Implementation Chart

Date:Nov. 27, 1992
Version:1.00

	Function•••	Transmitted	Recognized	Remarks
Basic Channel	Default	Off, 1—16 * 1	1-16	Memorized
	Changed	Off, 1—16 * 1	1-16	(Non-volatile)
Mode	Default	Mode 3	Mode 3	
	Messages	x	x	
	Altered	:######:		
Note Number		Off, 0 — 127 * 2	Off, 0 — 127 * 2	
	True Voice	:######:		
Velocity	Note ON	o 9n v = 1 — 127	o 9b v = 1 — 127	n = Pad ch.
	Note OFF	x 9n v = 0	x	b = Basic ch.
After Touch	Key's	0, 127	o 0 — 127	
	Ch's	x	x	
Pitch Bend		x	x	
Control Change	1	o * 3	o	Modulation
	10	o * 1	x	Panpot
	64	x * 4	o	Hold 1
	121	x	o	Reset all controllers
Prog Change		o * 1	o	
	True #	Off, 0 —127	0 — 63	
System Exclusive		o	o * 5	
System Common	Song Pos	x	x	
	Song Sel	x	x	
	True	x	x	
System Real Time	Clock	x	x	
	Commands	x	x	
AUX Messages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sense	o	o	
	Reset	x	x	
Notes		* 1 Can be set and stored for each pad.		
		* 2 Common to "Transmitted" and "Recognized".		
		* 3 On using "FD-7".		
		* 4 Transmitted when Footswitch is set to "Hold pedal".		
		* 5 In the Edit mode only.		

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   o : Yes
Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   x : No

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How to read a MIDI Implementation Chart

O: MIDI messages that can be transmitted or received
X: MIDI messages that cannot be transmitted or received

•Basic Channel
This is the range of MIDI channels on which MIDI messages can be transmitted (received). The MIDI channel setting will be retained even when the power is turned off.

•Mode
Most keyboards today use mode 3 (omni off, poly). This means that MIDI messages will only be received on a specific MIDI channel, and will be played polyphonically.
* The MIDI "mode" setting is relevant only to reception.

•Note Number
This is the range of note numbers that can be transmitted (received). Note Number 60 is middle C (C4).

•Velocity
This is the range of velocity values which can be transmitted (received) as part of each Note On or Note Off message.

•Aftertouch
Polyphonic: aftertouch is independent for each key in the channel.
Channel: aftertouch applies equally to all keys in the channel.

•Pitch bend
The SPD-11 does not transmit/receive this data.

•Control Change
These are the Control Change numbers which can be transmitted (received), and the control functions they can have. For details refer to the MIDI Implementation.

•Program Change
The Program Numbers in the chart are the actual data values. The Patch numbers will be one number higher.

•Exclusive
Patch data can be transmitted and received as an Exclusive message.

•Common, Realtime
These MIDI messages are used by sequencers and rhythm machines to maintain synchronization. The SPD-11 does not use these messages.

•Other
This category includes messages such as Active Sensing (to monitor the integrity of MIDI connections), which help keep a MIDI system running properly.

SPECIFICATIONS

SPD-11:Total Percussion Pad

•Pads
Built-in Pads:8
External Pads (optional):4

•Maximum Polyphony
14 voices

•Instruments
255

•Memory
Patches:32
Patch Chains:4

•Effect
Reverb/Dalay/Chorus/Flanger

•Display
7-segment LEDx3

•Connectors
Stereo Output Jacks (L(MONO),R)
Headphone Jack
MIDI Connectors (IN,OUT)
External Pad Input Jacks (Stereo)
HH CONT/EXT 4 Jack (Stereo)
Patch Shift Jack (Stereo)

•Power Supply
AC12V:AC Adaptor

•Current Draw
320mA

•Dimensions
450 (W) x 350(D) x 70(H) mm
17-3/4(W) x 13-13/16(D) x 2-13/16(H) inches

•Weight
28 Kg / 6 lbs. 3 oz.(except AC Adaptor)

•Supplied Accessories
Owner's Manual
AC Adaptor (BRA Series)

•Options
Pad (PD-7)
Kick Trigger Unit (KD-7)
Hi-Hat Control Pedal (FD-7)
Footswitch (DP-2,FS-5U)
Footswitch Cable (PCS-31)
Compact Drum Stand (MDS-7)
All-purpose Clamp Set (APC-33)

* The specifications for this product aresubject to change without prior notice.

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Patch editing

While playing

Footswitch

Hi-hat Control Pedal

Effect

Other

Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

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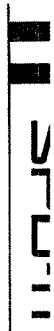INDONESIA
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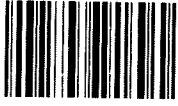Claremont 7700
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