



# OWNER'S MANUAL

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TONE GENERATOR

# MOTIF-RACK

MOTIF-RACK

# SPECIAL MESSAGE SECTION

This product utilizes batteries or an external power supply (adapter). DO NOT connect this product to any power supply or adapter other than one described in the manual, on the name plate, or specifically recommended by Yamaha.

**WARNING:** Do not place this product in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

This product should be used only with the components supplied or; a cart, rack, or stand that is recommended by Yamaha. If a cart, etc., is used, please observe all safety markings and instructions that accompany the accessory product.

## **SPECIFICATIONS SUBJECT TO CHANGE:**

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

This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

**IMPORTANT:** The louder the sound, the shorter the time period before damage occurs.

Some Yamaha products may have benches and / or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using.

Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

## **NOTICE:**

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

## **ENVIRONMENTAL ISSUES:**

Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

## **Battery Notice:**

This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

This product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

When installing batteries, do not mix batteries with new, or with batteries of a different type. Batteries MUST be installed correctly. Mismatches or incorrect installation may result in overheating and battery case rupture.

## **Warning:**

Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

## **Disposal Notice:**

Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, please contact Yamaha directly.

## **NAME PLATE LOCATION:**

The name plate is located on the rear of the product. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.

**Model**

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**Serial No.**

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**Purchase Date**

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# FCC INFORMATION (U.S.A.)

**1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

**2. IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

**3. NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which

can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

\* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

(class B)

# PRECAUTIONS

## PLEASE READ CAREFULLY BEFORE PROCEEDING

\* Please keep this manual in a safe place for future reference.



### WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

#### Power supply/AC power adaptor

- Only use the voltage specified as correct for the instrument. The required voltage is printed on the name plate of the instrument.
- Use the specified adaptor (PA-300 or an equivalent recommended by Yamaha) only. Using the wrong adaptor can result in damage to the instrument or overheating.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.
- Do not place the AC adaptor cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.

#### Do not open

- Do not open the instrument or attempt to disassemble the internal parts or modify them in any way. The instrument contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.

#### Water warning

- Do not expose the instrument to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- Never insert or remove an electric plug with wet hands.

#### Fire warning

- Do not put burning items, such as candles, on the unit. A burning item may fall over and cause a fire.

#### If you notice any abnormality

- If the AC adaptor cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the instrument, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the adaptor plug from the outlet, and have the instrument inspected by qualified Yamaha service personnel.



### CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the instrument or other property. These precautions include, but are not limited to, the following:

#### Power supply/AC power adaptor

- When removing the electric plug from the instrument or an outlet, always hold the plug itself and not the cord.
- Unplug the AC power adaptor when not using the instrument, or during electrical storms.
- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet.

#### Location

- Do not expose the instrument to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel discoloration or damage to the internal components.
- Do not use the instrument in the vicinity of a TV, radio, stereo equipment, mobile phone, or other electric devices. Otherwise, the instrument, TV, or radio may generate noise.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected adaptor and other cables.
- Use only the rack specified for the instrument. When attaching the rack, use the provided screws only. Failure to do so could cause damage to the internal components or result in the instrument falling over.

## Connections

- Before connecting the instrument to other electronic components, turn off the power for all components. Before turning the power on or off for all components, set all volume levels to minimum. Also, be sure to set the volumes of all components at their minimum levels and gradually raise the volume controls while playing the instrument to set the desired listening level.

## Maintenance

- When cleaning the instrument, use a soft, dry cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.

## Handling caution

- Do not insert a finger or hand in any gaps on the instrument.
- Never insert or drop paper, metallic, or other objects into the gaps on the panel. If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the instrument inspected by qualified Yamaha service personnel.
- Do not place vinyl, plastic or rubber objects on the instrument, since this might discolor the panel.
- Do not rest your weight on, or place heavy objects on the instrument, and do not use excessive force on the buttons, switches or connectors.
- Do not operate the instrument for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.

## Saving data

### Saving and backing up your data

- Voice/Multi parameter settings are lost when you turn off the power to the instrument without saving. Make sure to save important data to internal (User) memory (see page 57).

Saved data may be lost due to malfunction or incorrect operation. Save important data to external media such as the Yamaha MDF3 MIDI data filer.

Never attempt to turn off the power while data is being written to internal memory (while an "Executing..." or "Please keep power on" message is shown). Turning the power off in this state results in loss of all user data.

When you exit from the Utility mode, Effect Bypass mode, or Favorite Category function, the parameter you changed in the display is automatically stored. However, this edited data is lost if you turn off the power without properly exiting from the display.

### Backing up the external media

- To protect against data loss through media damage, we recommend that you save your important data onto two external media.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.

Always turn the power off when the instrument is not in use.

Even when the power switch is in the "STANDBY" position, electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

# Introduction

Thank you for purchasing the Yamaha MOTIF-RACK Tone Generator. In order to get the most out of your new MOTIF-RACK and its sophisticated functions, we suggest you read through this manual thoroughly. Also keep it in a safe, convenient place so that you can regularly refer to it when necessary.

## Package Contents

- AC Adaptor\*
- CD-ROM
- Installation Guide
- Owner's Manual
- Data List

\*May not be included in your area. Please check with your Yamaha dealer.

### About the Included CD-ROM

Application software for your MOTIF-RACK is included on this CD-ROM. The Voice Editor lets you edit the Voices of the MOTIF-RACK with a highly intuitive graphical interface. With the included sequencing software (Windows only), you can easily create and edit your own original songs on your computer. For details, refer to the separate Installation Guide or the on-line manual included with the software.

## Main Features

### ■ Wide range of dynamic and authentic voices — in a 1U rack-mounted tone generator

- A huge total of 896 normal voices and 59 drum kits — including most of the sounds from Yamaha's top-of-the-line Synthesizer MOTIF — give you whatever sound you need, for any musical style.
- Comprehensive effect processing, including Insertion effects for up to four parts, independent three-band Part Equalizers for each Part and high-quality Reverb effects, provides pro-level sound enhancement for your music creation and performance.

### ■ Easy, wide-ranging sound expansion — Plug-in Boards

- Thanks to the two Modular Synthesis Plug-in System connectors and the optional Plug-in Boards, you can upgrade the MOTIF-RACK with completely new sound-processing engines. These Plug-in Boards give you more voices, more effects, more polyphony and more instrument parts. Plus, special Plug-in voices have already been programmed and stored to the MOTIF-RACK, ready to be played as soon as you install the proper board.

### ■ Simple, intuitive panel layout

- A detailed 160x64 dot graphic display provides comprehensive and easy-to-understand control over virtually all operations. Use the PAGE buttons, cursor buttons, and the data dial to quickly and easily edit any of the parameters.

### ■ Large selection of versatile Voice sets for instant setups — Multi Library

- The MOTIF-RACK also features a library of 124 different Multis, each specially programmed with its own effect, equalizer and other settings, and each designed particularly for a specific style of music or application. Since they are categorized according to music type, you can quickly and easily call up the settings you need. They also serve as convenient templates to create new, original Multis - just select a Multi, then tweak it and customize it as needed.

### ■ Wide variety of output terminals

- Four ASSIGNABLE OUTPUT jacks let you output different Parts of the MOTIF-RACK to external devices and processors. Moreover, two digital output jacks (DIGITAL and OPTICAL) ensure completely noise-free, distortion-free sound output.
- Use the USB terminal to easily and directly connect the MOTIF-RACK to your computer. You can also conveniently edit the MOTIF-RACK's voices from your computer with the Voice Editor software for the MOTIF-RACK (included in the CD-ROM).

# About This Manual

This manual consists of the following sections.

## ■ Before Using (page 12)

This section explains how to set up the MOTIF-RACK and connect external equipment.

## ■ Basics Section (page 18)

This section provides an overview of the main functions and features of the MOTIF-RACK and introduces you to the basic operating conventions.

## ■ Quick Guide (page 34)

This section explains how to use the basic functions.

## ■ Reference (page 59)

The MOTIF-RACK encyclopedia. This section explains all functions and parameters.

## ■ Appendix (page 76)

This section contains detailed information on the MOTIF-RACK such as MIDI, instructions for installing optional Plug-in board, Display Messages, Troubleshooting and Specifications.

## ■ Installation Guide (separate booklet)

Refer to this for instructions on installing the included software programs (on the CD-ROM) to your computer.

## ■ Data List (separate booklet)

This contains various important lists such as the Voice List, Wave List, Multi List, and MIDI Implementation Chart.

### About the Reference Numbers

In addition to the regular page references, this manual also includes special Reference Numbers (e.g., Ref. #15). These let you easily and quickly cross-reference the corresponding parameters in the Function List on page 63.

- Copying of commercially available music sequence data and/or digital audio files for any purpose other than your own personal use, is strictly prohibited.
- This product incorporates and bundles computer programs and contents in which Yamaha owns copyrights or with respect to which it has license to use others' copyrights. Such copyrighted materials include, without limitation, all computer software, styles files, MIDI files, WAVE data and sound recordings. Any unauthorized use of such programs and contents outside of personal use is not permitted under relevant laws. Any violation of copyright has legal consequences. DON'T MAKE, DISTRIBUTE OR USE ILLEGAL COPIES.
- The illustrations and LCD screens as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.
- The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

# Application index

This convenient, easy-to use index is divided into general categories to help you when you want to find information on a specific topic or function.

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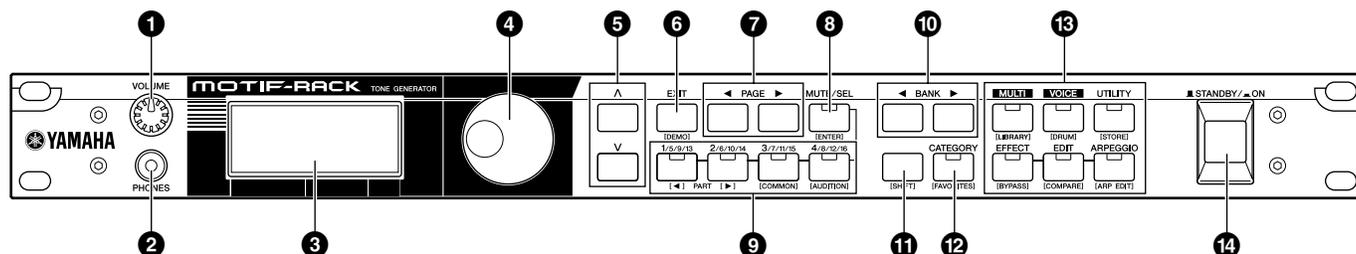
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## The Controls & Connectors

### Front Panel



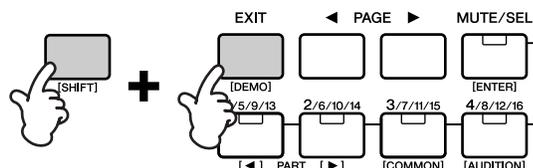
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- ❿ BANK [◀] [▶] buttons (page 35)
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#### Dual-function buttons (Using the [SHIFT] button)

Some of the panel buttons have two functions. The primary one is printed above the button and the secondary one is printed below. Use the [SHIFT] button (❾) to select the secondary function — by simultaneously holding down [SHIFT] and pressing the relevant button.

For example, the [EXIT] button (❻) has two functions: EXIT and DEMO. To select the Exit function, press the [EXIT] button. To select the Demo function, hold down the [SHIFT] button and press the [EXIT] button.

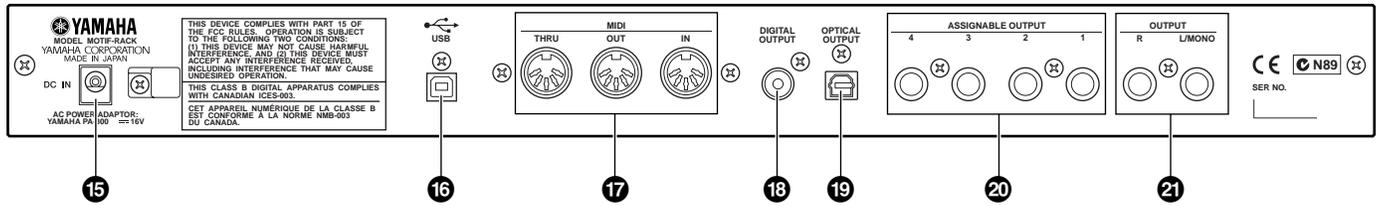
Throughout this manual, the secondary name of a button is used when describing the secondary function. For example, a description of the Demo function may contain the sentence, “Hold down the [SHIFT] button and press the [DEMO] button.”



#### Dual-function buttons

- ❻ [EXIT] button → [DEMO] button
- ❽ [MUTE/SEL] button → [ENTER] button
- ❾ [1/5/9/13] button → PART [◀] button
- [2/6/10/14] button → PART [▶] button
- [3/7/11/15] button → [COMMON] button
- [4/8/12/16] button → [AUDITION] button
- ⓬ [CATEGORY] button → [FAVORITES] button
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- [VOICE] button → [DRUM] button
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- [ARPEGGIO] button → [ARP EDIT] button

# Rear Panel



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## USB

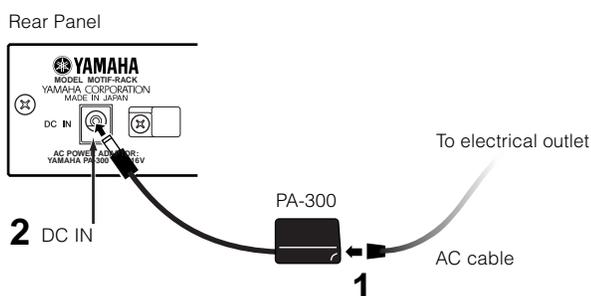
USB is an abbreviation for Universal Serial Bus. It is a serial interface for connecting a computer with peripheral devices, and allows “hot swapping” (connecting peripheral devices while the power to the computer is on).

# Setting Up

## Power Supply

Make sure that the MOTIF-RACK's [STANDBY/ON] switch is set to the STANDBY (off) position.

- 1 Connect one end of the AC cable to the PA-300.
- 2 Connect the PA-300's DC plug to the MOTIF-RACK's DC IN terminal on the instrument's rear panel.
- 3 Connect the other end (normal AC plug) to the nearest electrical outlet.



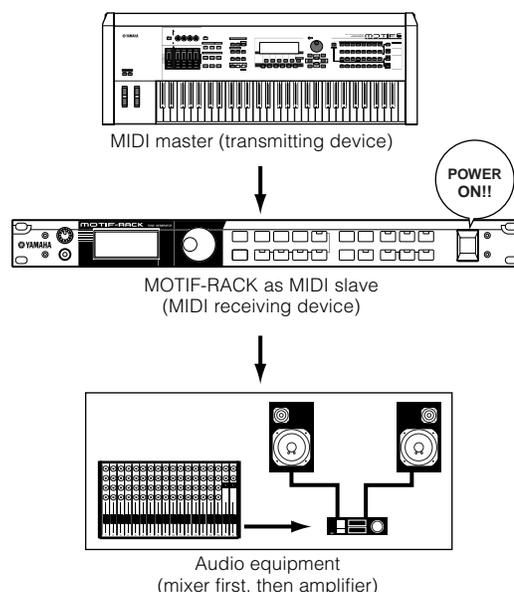
- ⚠ Use only the AC power adaptor supplied with the MOTIF-RACK or an equivalent recommended by Yamaha. The use of an inappropriate replacement can pose a fire and shock hazard!
- ⚠ Make sure your MOTIF-RACK is rated for the AC voltage supplied in the area in which it is to be used (as listed on the rear panel). Connecting the unit to the wrong AC supply can cause serious damage to the internal circuitry and may even pose a shock hazard!
- ⚠ Even when the switch is in the "STANDBY" position, electricity is still flowing to the instrument at the minimum level. When not using the MOTIF-RACK for an extended period of time, be sure to unplug the AC power adaptor from the wall AC outlet.

## Power-on Procedure

Once you've made all the necessary connections (page 15) between your MOTIF-RACK and any other devices, make sure that all volume settings are turned down all the way to zero, then turn on the every device in your setup in the order of MIDI masters (senders), MIDI slaves (receivers), then audio equipment (mixers, amplifiers, speakers, etc.). This ensures smooth signal flow from the first device to the last (first MIDI, then audio).

**NOTE** When powering down the setup, first turn down the volume for each audio device, then switch off each

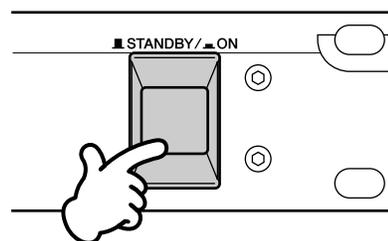
device in the reverse order (audio devices first, then MIDI).



## Turning on the MOTIF-RACK

- ⚠ Before you switch your MOTIF-RACK on or off, turn down the volume of any connected audio equipment.

- 1 Press the [STANDBY/ON] switch.



After a while, the default display appears (as set in the Utility parameter, Power On Mode display).

**NOTE** If the LCD is difficult to read, you may need to adjust the display contrast. To do this, simultaneously hold down the [UTILITY] button and turn the data dial.

- 2 Raise the sound system volume to a reasonable level.
- 3 Turn the MOTIF-RACK's [VOLUME] knob clockwise to set an appropriate volume level.

# Connections

## Connecting to External Audio Equipment

Since the MOTIF-RACK has no built-in speakers, you'll need an external audio system or a set of stereo headphones to properly monitor it. Alternatively, you could use a pair of headphones.

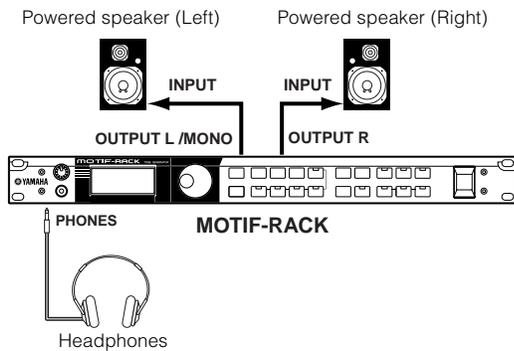
There are several methods of connecting to external audio equipment, as described in the following illustrations. The following illustrations show various connection examples; use the one most similar to your intended setup.

**NOTE** To use the MOTIF-RACK, you'll also need a proper MIDI controller (such as a keyboard) or other MIDI device (such as a sequencer or computer). For MIDI connections, see the next section.

## Connecting Stereo Powered Speakers

A pair of powered speakers can accurately produce the instrument's rich sounds with their own pan and effect settings.

Connect your powered speakers to the OUTPUT L/MONO and R jacks on the rear panel.



**NOTE** When using just one powered speaker, connect it to the OUTPUT L/MONO jack on the rear panel.

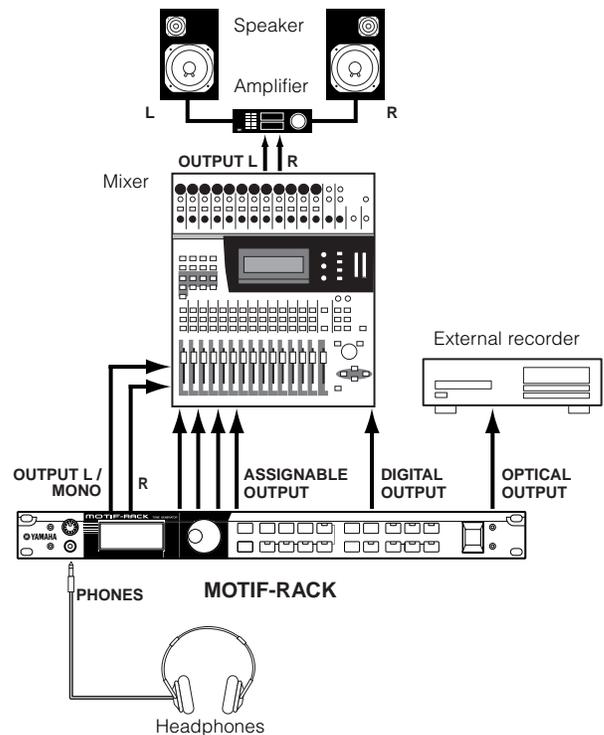
## Connecting to a mixer

There are extra audio outputs in addition to the OUTPUT (L/MONO and R) jacks. Connect these outputs to a mixer for separately controlling the outputs of up to six Parts in the Multi mode (page 31). You can specify the output routing of each Part in the Multi Edit Mode (Ref. #96).

If your mixer or other audio device features digital input connections, we recommend using the DIGITAL OUTPUT (coaxial) terminal or the OPTICAL OUTPUT terminal. These ensure completely noise-free, distortion-free sound output.

**NOTE** Using the DIGITAL OUTPUT/OPTICAL OUTPUT, you can record the performance of the MOTIF-RACK to external media (e.g. MD recorder) with exceptionally high-quality sound.

**NOTE** The sounds from the DIGITAL OUTPUT and OPTICAL OUTPUT jacks are the same as those from the OUTPUT L/MONO and R jacks.



**NOTE** Connecting a pair of headphones does not affect audio output from the OUTPUT (L/MONO and R) jacks. You can monitor the same sounds via headphones and at the OUTPUT jacks. However, you cannot monitor the sounds from the ASSIGNABLE OUTPUT 1-4 with headphones.

**NOTE** System effects and Master equalizer settings are not applied to the sounds output from the ASSIGNABLE OUTPUT 1-4 jacks.

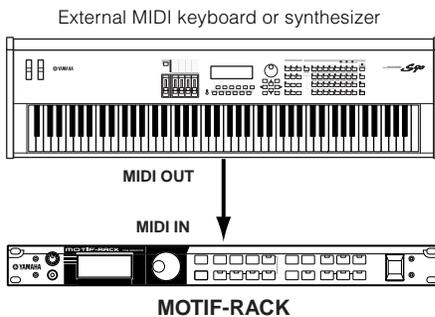
**NOTE** The Volume Knob does not affect the signals at the DIGITAL OUTPUT, OPTICAL OUTPUT and ASSIGNABLE OUTPUT.

## Connecting External MIDI Equipment

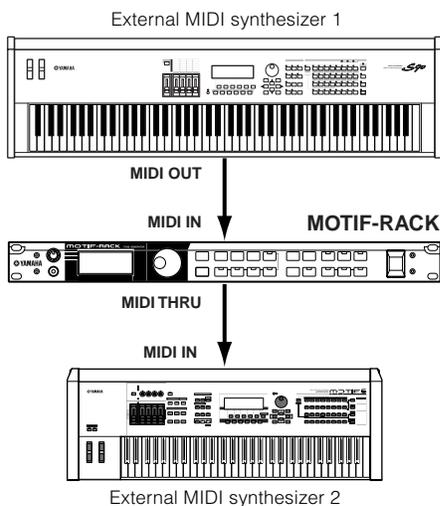
Using a standard MIDI cable (available separately), you can use an external MIDI device (such as a keyboard or sequencer) to control the sounds on the MOTIF-RACK. Below are several different MIDI connection examples; use the one most similar to your intended setup.

**NOTE** The “MIDI IN/OUT” parameter (UTILITY MIDI display) should be set to “MIDI.” Otherwise, MIDI data will not be transmitted from the MOTIF-RACK’s MIDI OUT connector.

### Controlling from an External MIDI Keyboard

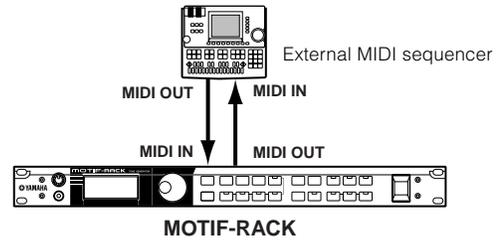


### Controlling another MIDI device via MIDI THRU



In the above setup, Synthesizer 1 plays Synthesizer 2 (via MIDI THRU).

## Playback using an external MIDI sequencer



**NOTE** Set “Echo Back” (or “MIDI Echo,” etc.) on your sequencer on or off as necessary, depending on your MIDI setup. For details, refer to the owner’s manual of your particular sequencer.

## Connecting to a Personal Computer

By connecting a computer, you can transfer data between the MOTIF-RACK and the computer via MIDI, and use the computer to control, edit and organize data on the MOTIF-RACK. For example, you can use the included Voice Editor program to edit the MOTIF-RACK’s voices.

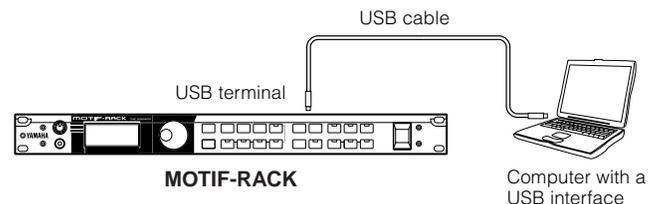
There are two ways to connect your MOTIF-RACK to a computer:

1. USB connection
2. MIDI connection

Depending on your particular computer, the connections may differ. (See below.)

### 1. USB connection

When using the USB terminal on the MOTIF-RACK, set the “MIDI IN/OUT” parameter to “USB” in the Utility mode.



**NOTE** When connecting the MOTIF-RACK to a computer with a USB cable, make sure that the USB cable is properly connected before turning on the power. Be careful not to turn off the power of the MOTIF-RACK if an application using the USB/MIDI connection is currently running.

**NOTE** Once connected via USB, the MOTIF-RACK begins communication after a short time.

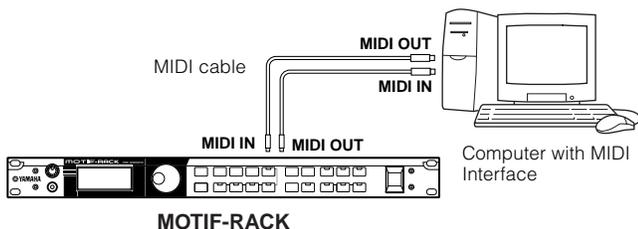
**NOTE** When connecting the MOTIF-RACK and your computer via USB, make sure to connect them directly without routing through a USB hub.

**NOTE** The USB connection can only be used for transfer of MIDI data. No audio data can be transferred via USB.

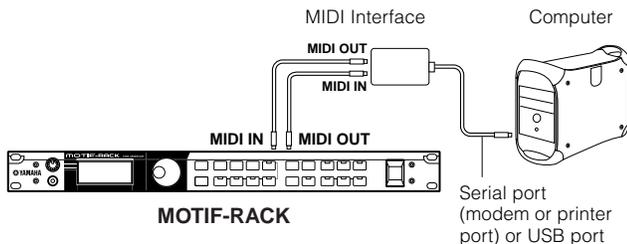
## 2. Using a MIDI interface

When using MIDI terminals on the MOTIF-RACK, set the “MIDI IN/OUT” parameter to “MIDI” in the Utility mode.

### Using the computer’s MIDI interface



### Using an external MIDI interface



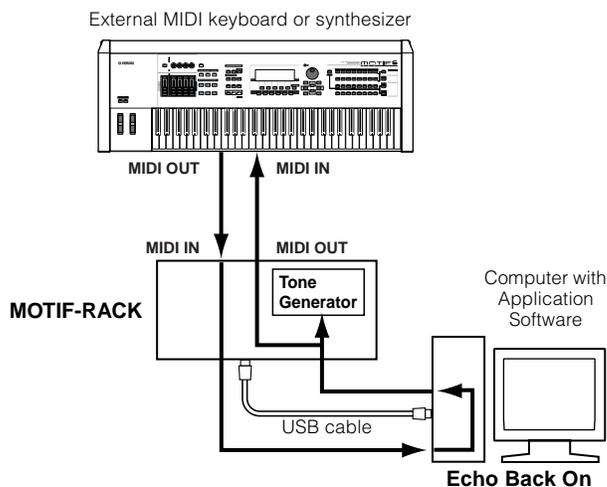
**NOTE** Make sure to use the appropriate MIDI interface for your computer.

**NOTE** If you are using a computer that has a USB interface, make sure to connect the computer and the MOTIF-RACK by USB. (The data transfer rate is faster than MIDI and you'll have access to multiple MIDI ports.)

## Using with a computer and an external MIDI keyboard

If you are using a computer with sequencing software to control the MOTIF-RACK, you can connect an external MIDI keyboard to record note and other data (and even play back recorded data). Use the setting suggestions below as a guideline; specific instructions may differ depending on your computer and the software used.

**NOTE** Make sure to set the “MIDI IN/OUT” parameter (Ref. #160) to “USB.”



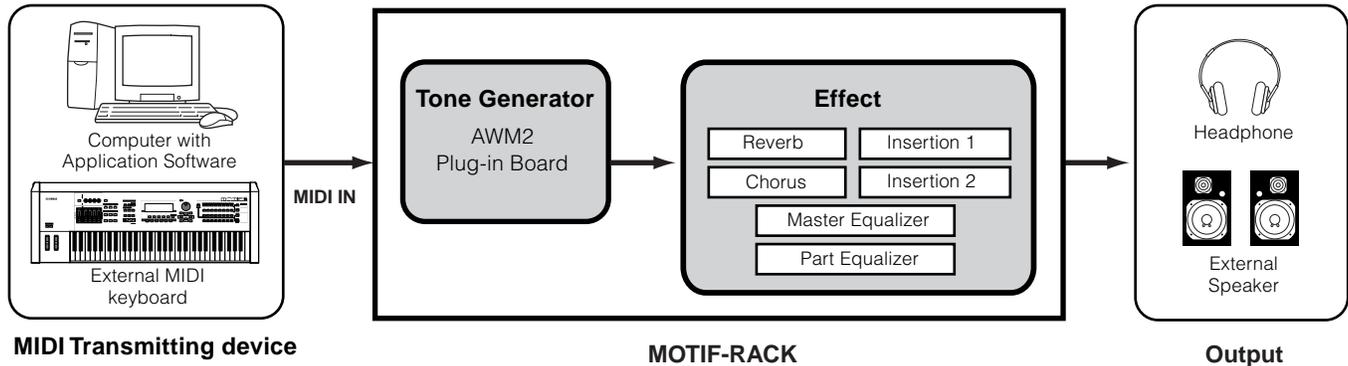
**NOTE** When using the USB terminal (“MIDI IN/OUT” is set to “USB”), the MOTIF-RACK also receives and relays any data received via the MIDI IN terminal.

\*MIDI “Echo” is a function on sequencers that takes any data received via the MIDI IN and “echoes” it (or sends it as is) through the MIDI OUT. In some software, this function is also called “MIDI Thru.”

**NOTE** Refer to the owner’s manual of your particular software for specific instructions.

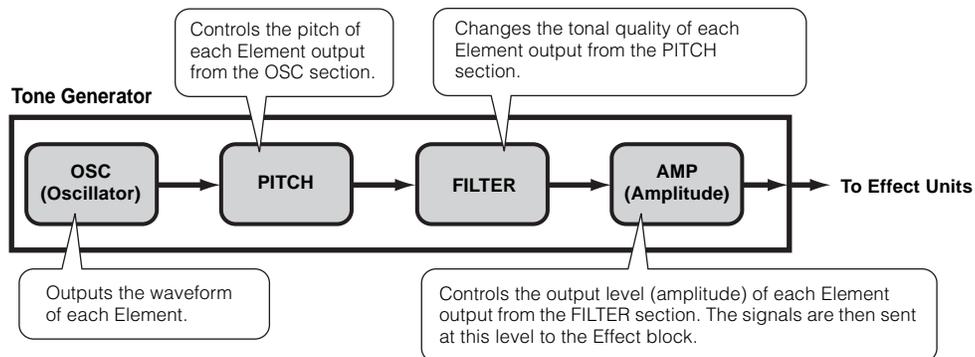
## Overview of the MOTIF-RACK

This section gives you an overview of the MOTIF-RACK's features. The following diagram shows the various component sections or "blocks" of the MOTIF-RACK.



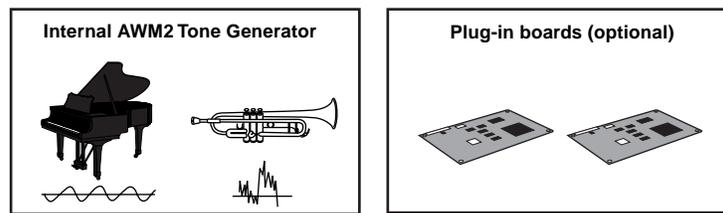
## Tone Generator

This block plays back sounds according to MIDI data received from the external keyboard or sequencer. The following example illustrates the path taken by the signal from an Element in the Voice Mode (page 25).



# Internal AWM2 Tone Generator and optional Plug-in board

The tone generator block in the MOTIF-RACK consists of the built-in AWM2 and optional Plug-in units.



## ● AWM2 (Advanced Wave Memory 2) & Waveform

AWM2 (Advanced Wave Memory 2) is a synthesis system based on sampled waves (sound material), and is used in many Yamaha synthesizers. For extra realism, each AWM2 Voice uses multiple samples of a real instrument's waveform. Furthermore, a wide variety of envelope generator, filter, modulation, and other parameters can be applied to the basic waveform.

**NOTE** AWM2 is not just limited to general musical instruments (Normal Voices). It can also be used for setting up percussive instruments (Drum Voices). For details on Normal and Drum Voices, see page 25.

## ● Plug-in Boards

Plug-in Boards give you an enormous amount of additional sonic flexibility and power. When installed, they work seamlessly and transparently within the system of the MOTIF-RACK – meaning that you can use their sounds and functions just as if they were built right into the MOTIF-RACK at the factory.

Up to two Plug-in Boards can be installed to the MOTIF-RACK (see box below for available boards). These boards are not simply a source of more Voices; they are also tone generators in their own right and extend the system-level specifications such as maximum polyphony. In addition, they allow you to use synthesis systems besides AWM2. You can play Plug-in Voices just like ordinary internal Voices and use them as Parts in a Multi (page 30). The MOTIF-RACK is compatible with the Modular Synthesis Plug-in System. Two types of Modular Synthesis Plug-in System-compatible Plug-in Boards can be installed to the MOTIF-RACK: Single Part and Multi-Part Plug-in Board. Using these, you can build your own system based on the sounds you want or need.

**NOTE** The Effect Plug-in Board cannot be used with the MOTIF-RACK.

### Plug-in board line-up

#### Single Part Plug-in Boards

- **Analog Physical Modeling Plug-in Board (PLG150-AN)**  
Using Analog Physical Modeling (AN) synthesis, the very latest digital technology is used to accurately reproduce the sound of analog synthesizers. With this board installed, you have real-time control over the playback of vintage synthesizer sounds as well as the very latest sounds heard in today's dance and pop music.
- **Piano Plug-in Board (PLG150-PF)**  
A massive amount of waveform memory is dedicated to the reproduction of piano sounds. This board offers 136 stereo sounds, including a number of acoustic and electric pianos, and up to 64-note polyphony. You can even install two of these boards to double the polyphony to 128 notes.
- **Advanced DX/TX Plug-in Board (PLG150-DX)**  
The sounds of the DX7 are available on this Plug-in Board. Unlike with PCM-based tone generators, this board uses the powerful FM Synthesis system— the same as found on DX-series synthesizers— for extraordinarily versatile and dynamic sound shaping potential. Sounds are compatible with those of the DX7, and the board can even receive DX7 data via MIDI bulk dump.
- **Virtual Acoustic Plug-in Board (PLG150-VL)**  
With Virtual Acoustic (VA) synthesis, the sounds of real instruments are modeled (simulated) in real time, giving a degree of realism that cannot be achieved using conventional PCM-based synthesis techniques. When playing these sounds using an optional MIDI Wind Controller (WX5), you can even capture some of the physical feel of woodwind instruments.
- **Drums Plug-in Board/Percussion Plug-in Board (PLG150-DR/PLG150-PC)**  
Incorporates the highly-acclaimed AWM2 engine dedicated to the reproduction of drum/percussion sounds. This board also has its own dedicated effects processing. This means that you can apply Reverb and insertion effect to the voice, letting you use all of the effects on the “mother” device for the other Parts.

## Multi-Part Plug-in Board

Multi-Part Plug-in Boards let you expand the voice polyphony of the MOTIF-RACK by providing an additional sixteen independent instrument parts. This is an ideal way to play back song data from a sequencer (from the Multi-Part board), yet have full polyphony left over on the MOTIF-RACK for your live performance parts.

- **XG Plug-in Board (PLG100-XG)**

This Plug-in Board is a 16-part XG sound generator. You can play back XG/GM song files using the rich variety of sounds and effects on this board.

## MODULAR SYNTHESIS PLUG-IN SYSTEM

### About MODULAR SYNTHESIS PLUG-IN SYSTEM

The Yamaha Modular Synthesis Plug-in System offers powerful expansion and upgrade capabilities for Modular Synthesis-Plug-in-compatible synthesizers, tone generators and sound cards. This enables you to easily and effectively take advantage of the latest and most sophisticated synthesizer and effects technology, allowing you to keep pace with the rapid and multi-faceted advances in modern music production.

## Maximum Polyphony

The maximum sonic polyphony is 128 for AWM2, plus the polyphony of the Plug-in Board(s) (if installed). The actual note polyphony will vary depending on the type of tone generator unit used, the number of Elements in the Voice, and the note polyphony of the Plug-in Board.

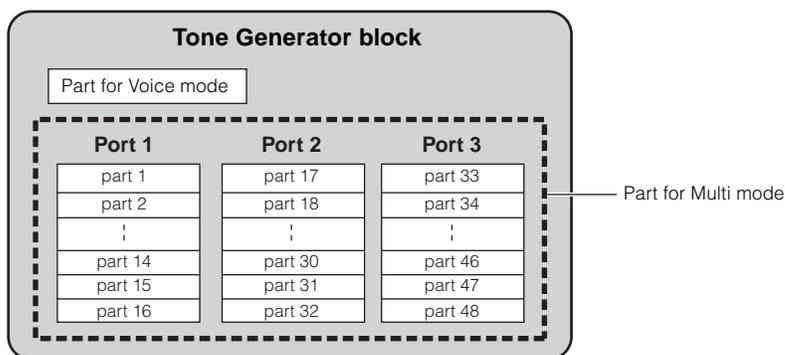
In the case of AWM2 Voices, the polyphony figure of 128 is divided by the number of Elements in the Voice.

## Part structure of the Tone Generator block

The MOTIF-RACK plays its sounds (with the Tone Generator block) in response to MIDI data, received from the external keyboard or sequencer.

MIDI data is assigned to one of sixteen channels, and the MOTIF-RACK is capable of simultaneously playing sixteen separate parts, via the sixteen MIDI channels. However, we can overcome the sixteen-channel limit by using separate MIDI “ports,” each supporting sixteen channels.

The multiple sound sources of the MOTIF-RACK (internal tone generator and Plug-in Boards) take advantage of the three MIDI ports included on the instrument.



As shown in the above illustration, up to 48 parts can be used in the modes in the Multi mode. However, the number of parts that are actually used a maximum of 33 (as shown in the example on the next page).

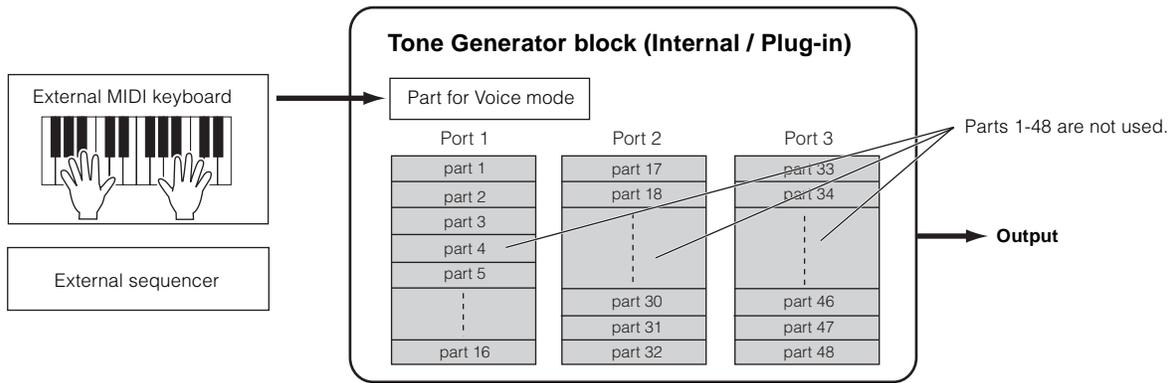
**NOTE** See page 31 for details about the modes.

**NOTE** The USB connection supports up to eight separate MIDI ports. The tone generator of the MOTIF-RACK supports three separate MIDI ports, as shown above. However, you can control an external tone generator with a fourth port by using the Thru Port function to relay MIDI data from one of the ports to the MIDI OUT terminal.

**NOTE** A single MIDI cable connection cannot handle multiple port data.

# Part Structure - Voice/Multi Modes

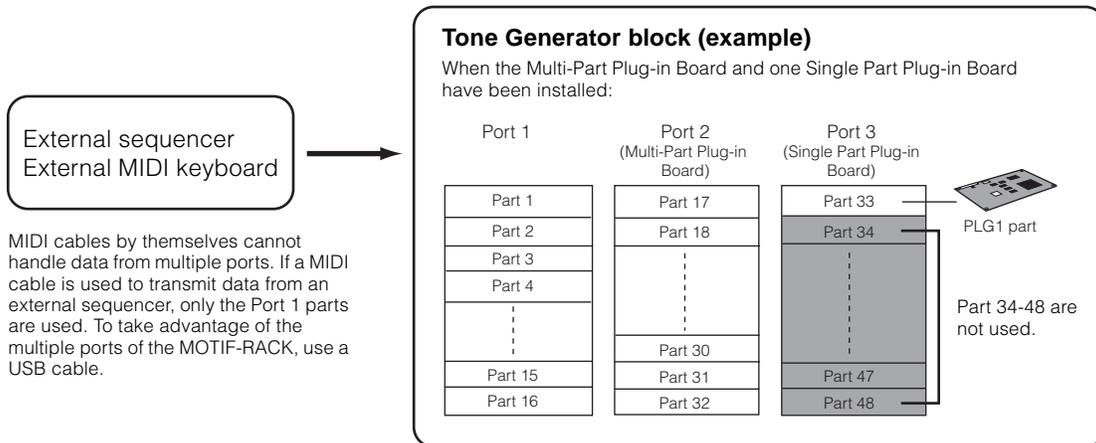
## ● Voice mode



**NOTE** In the Voice mode, the MIDI port number is 1.

**NOTE** The Multi-Part Plug-in Board cannot be used in the Voice mode. Only Single-Part Plug-in Boards can be used.

## ● Multi mode



**NOTE** The Multi-Part Plug-in Board (PLG100-XG) can be installed only to PLG2.

**NOTE** The MIDI port number for Parts 1-16 is 1.

**NOTE** You can assign the PLG1/PLG2 part to any of the available ports with the Port Number parameter (Ref. #176).

# Effects

The effects of the MOTIF-RACK employ sophisticated DSP (digital signal processing) technology, letting you enhance or dramatically change the sound. In the final stages of programming, you can set the effects parameters to further change the sound's character.

The MOTIF-RACK's effect processing features the following four effect units: System effects, Insertion effects, Part equalizer, and Master equalizer.

## ● System Effects (Reverb, Chorus)

System Effects are applied to the overall sound, whether it be a voice, or an entire multi setup.

With System effects, the sound of each part is sent to the effect according to the effect Send Level for each part. The processed sound (referred to as “wet”) is sent back to the mixer, according to the Return Level, and output — after being mixed with the unprocessed “dry” sound. This arrangement lets you prepare an optimum balance of the effect sound and the original sound of the parts.

### Reverb

The Reverb effects add a warm ambience to the sound, simulating the complex reflections of actual performance spaces, such as a concert hall or a small club.

A total of 20 different Reverb types are available.

### Chorus

The Chorus effects provide a wide variety of sound transformations and enhancements. A total of 44 different Chorus types are available.

## ● Insertion Effects (1, 2)

Insertion effects can be applied individually to each part.

Insertion effects are mainly used to directly process a single part. The depth of the effect is adjusted by setting the dry/wet balance. Since an Insertion effect can only be applied to one particular part, it should be used for sounds you want to drastically change. You can also set the balance so that only the effect sound is heard, by setting Wet to 100%. The MOTIF-RACK features two Insertion effect systems (Insertion 1 and 2) — each with a total of 107 internal effect types.

## ● Part Equalizer

The Part Equalizer is used to correct the tonal balance of Voices assigned to each Part by raising or lowering three frequency bands.

In other words, this lets you fine-tune the sound of each Part to make it “sit better” in the overall mix. For example, you can emphasize an important Part in the mix by making it brighter or boosting the mid range, while making other sounds around it softer. Or if a bass Part and piano Part are competing in the mix, you can make the two sound better by cutting the low range of the piano.

## ● Master Equalizer

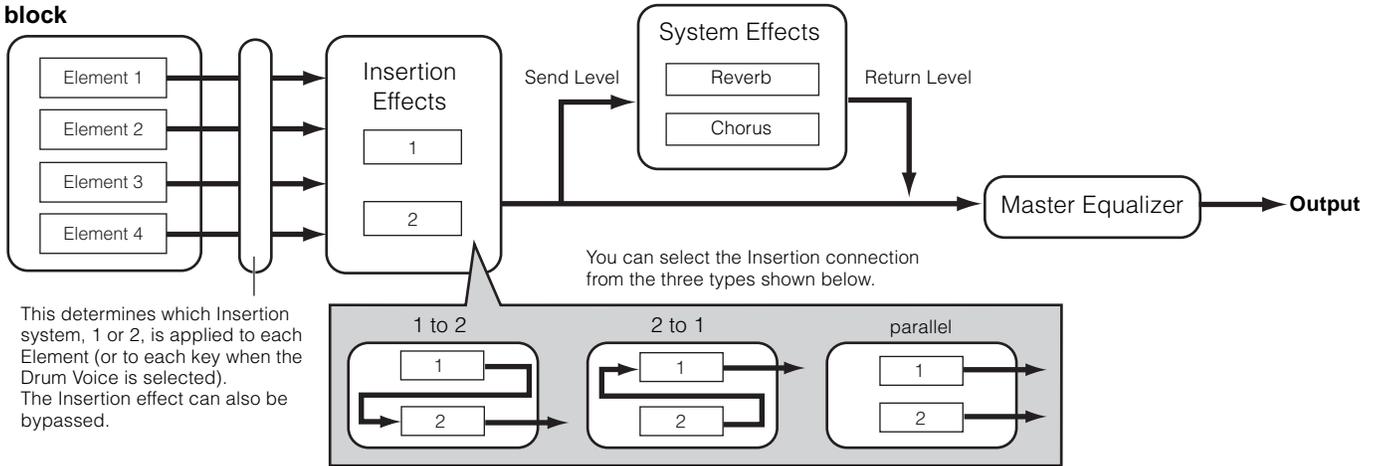
Usually an equalizer is used to correct the sound output from amps or speakers to match the special character of the room. The sound is divided into several frequency bands, then by raising or lowering the level for each band, the correction is made. The MOTIF-RACK has a high-quality five-band digital equalizer that lets you adjust the overall sound according to the type of music you play — classical music being more refined and soft, pop music more crisp, and rock music more dynamic. This allows you to emphasize the special characteristics of the music and make your performance more enjoyable.

# Effect connection

## ● In the Voice mode:

Three different Insertion connection types are available, as shown below.

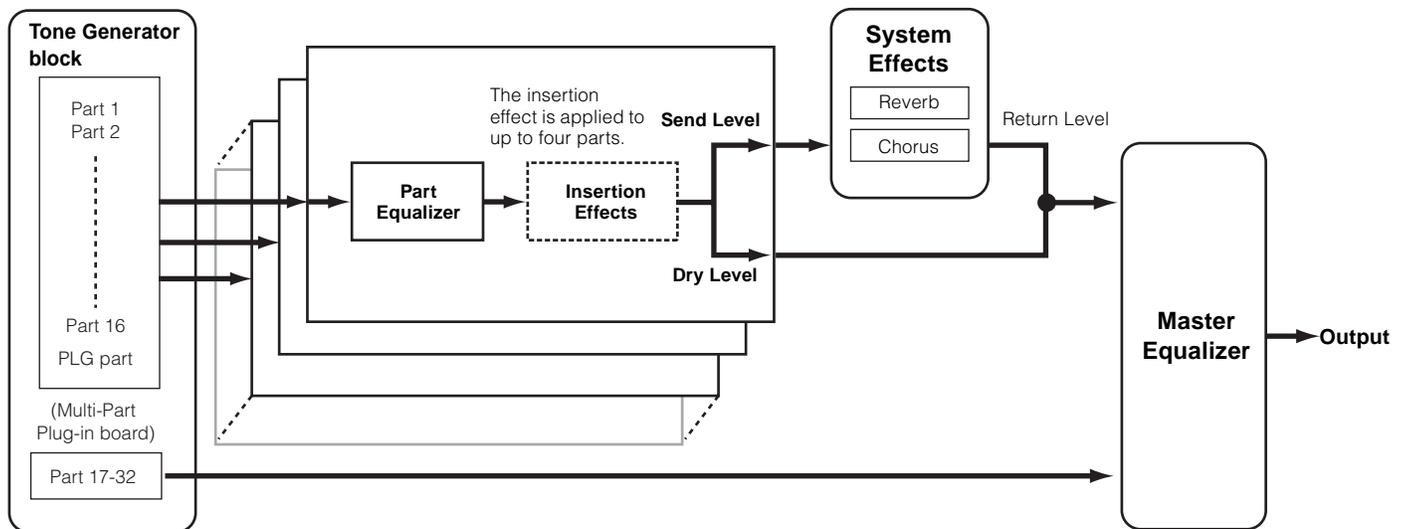
### Tone Generator block



**NOTE** The parallel connection type is not available for Plug-in voices.

## ● In the Multi mode:

The diagram below indicates the connection when the Multi-Part Plug-in Board (PLG100-XG) is installed to PLG2.



\* Insertion Effect settings differ depending on the particular Voice assigned to the selected part.

**NOTE** The Part Equalizer is not applied to the Parts of Plug-in board.

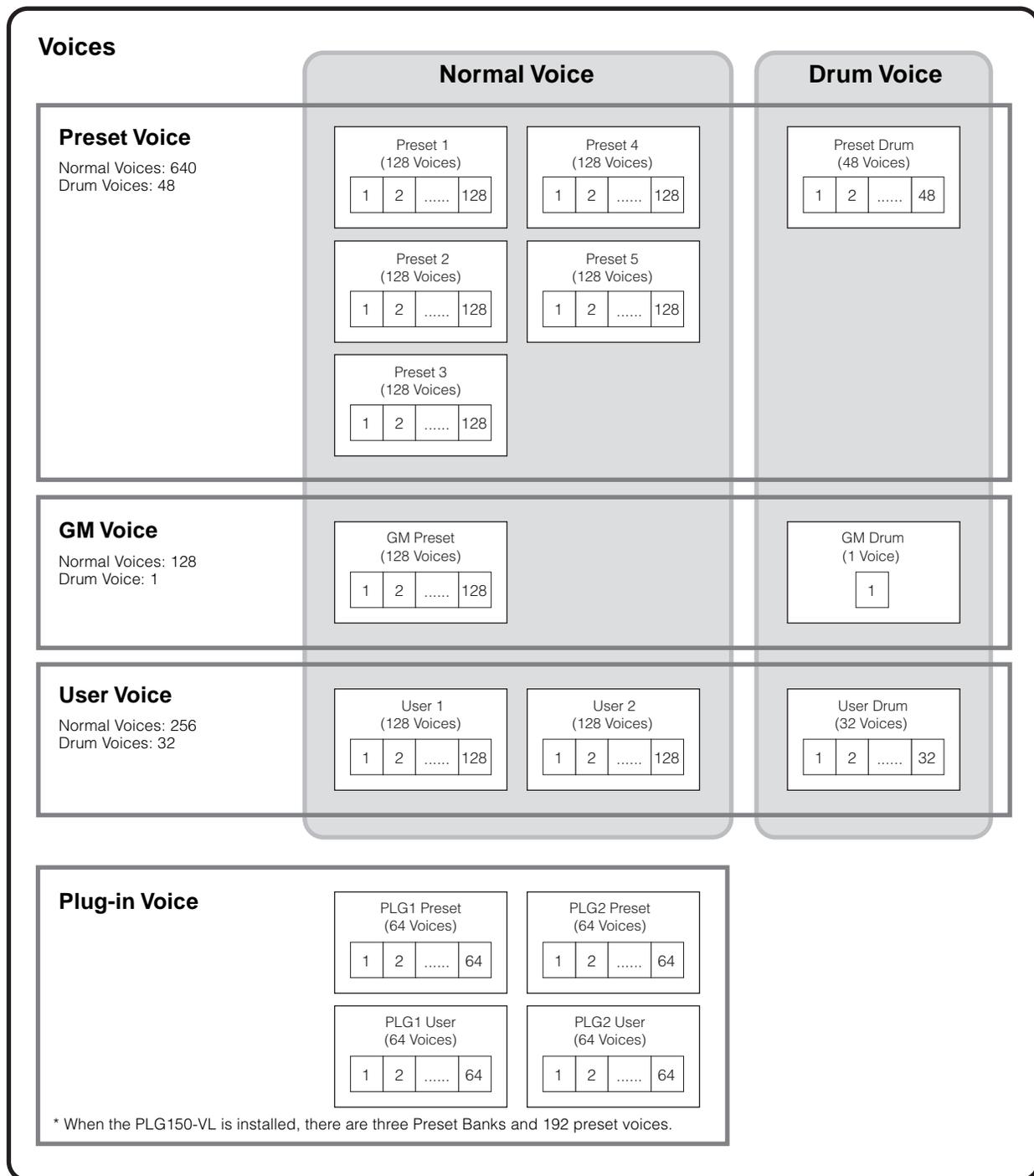
**NOTE** The Insertion effects and System effect are not applied to the Parts of the Multi-part Plug-in board.

# Voices & Multis

## Voice Structure

### Memory Structure

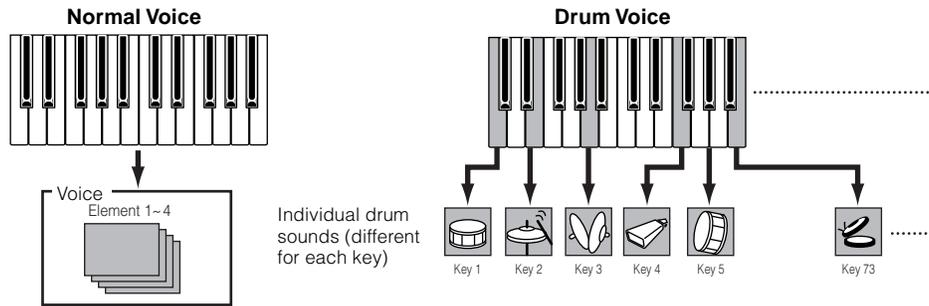
A Voice is a single instrument sound, created by using the Elements and setting various parameters. In the Voice Play mode (page 35), you can select and play any of these Voices.



Basics Section

## Normal Voices & Drum Voices

Internally, there are two Voice Types: Normal Voices and Drum Voices. Normal Voices are mainly pitched musical instrument-type sounds that can be played over the range of the keyboard. Drum voices are mainly percussion/drum sounds that are assigned to individual notes on the keyboard. A collection of assigned percussion/drum waves or Normal Voices is known as a Drum Kit.

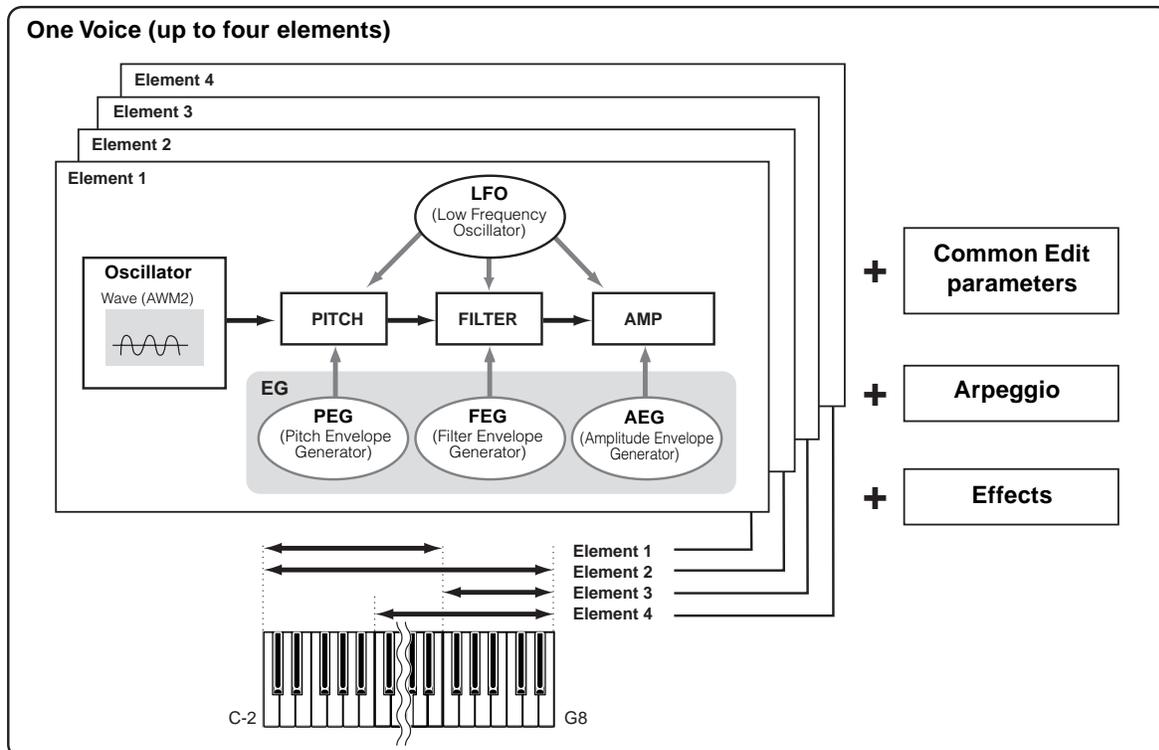


## GM voices

GM is a worldwide standard for Voice organization and MIDI functions of synthesizers and tone generators. It was designed primarily to ensure that any song data created with a specific GM device would sound virtually the same on any other GM device — no matter the manufacturer or the model. The GM Voice bank on the MOTIF-RACK is designed to appropriately play back GM song data. However, keep in mind that the sound may not be exactly the same as played by the original tone generator.

## Normal Voices & Elements

Each Normal Voice can consist of up to four Elements. Each Element itself is a high-quality waveform or instrument sound. Since you can combine up to four Elements together in a voice, highly expressive and richly textured sounds are possible. You can also split different instrument sounds across the external keyboard to be playable separately with your left and right hands – without having to specially set up a Multi program.

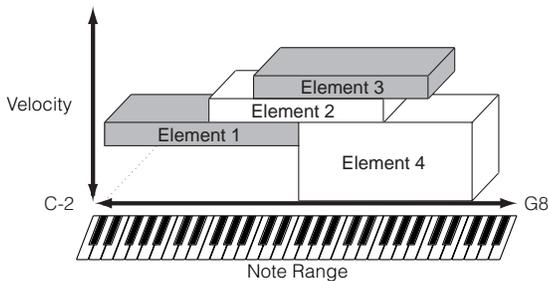


# Voice Edit Structure

One voice consists of Oscillator, Pitch, Filter, Amplitude, LFO and various parameters as shown on page 25. You can create the basic voice character by setting these five parameters.

## ● Oscillator

This unit outputs the wave of each Element. You can set the note range for Element (the range of notes on the keyboard over which the Element will sound) as well as the velocity response (the range of note velocities within which the Element will sound). For example, you could set one Element to sound in an upper range of the keyboard, and another Element to sound in a lower range. Thus, even within the same Voice, you can have two different sounds for different areas of the keyboard or you can make the two Element ranges overlap so that their sounds are layered over a set range. Furthermore, you can set each Element to respond to different velocity ranges so that one Element sounds for lower note velocities, whereas another Element sounds for higher note velocities.

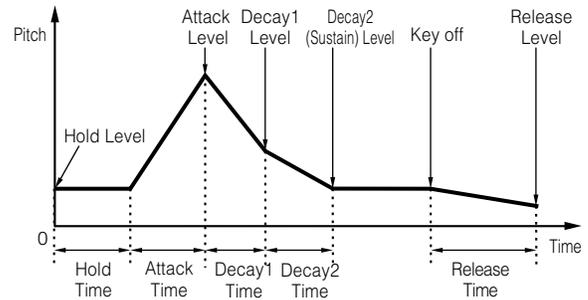


## ● PITCH

This unit controls the pitch of each Element output from OSC. You can detune separate Elements, apply Pitch Scaling and so on. Also, by setting the PEG (Pitch Envelope Generator), you can control how the pitch changes over time.

### PEG (Pitch Envelope Generator)

Using the PEG, you can control the transition in pitch from the moment a Note On message is received to the point at which the sound stops. As illustrated below, the Pitch Envelope consists of five Time (transition speed) parameters and five Level (pitch) parameters. This is useful for creating automatic changes in pitch. Furthermore, different PEG parameters can be set for each Element.

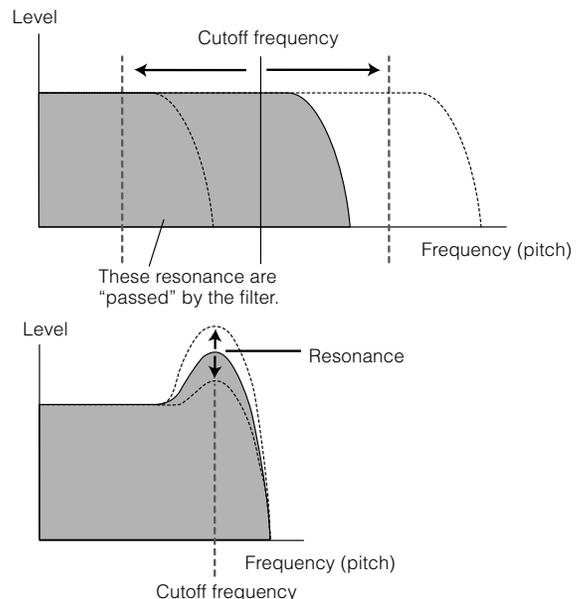


## ● Filter

This unit modifies the tone of each Element output from Pitch by cutting the output of a specific frequency portion of the sound. You can also set the Filter Envelope Generator (FEG), to control how the filter works over time — letting you set up dynamic changes in tone.

### Cutoff Frequency and Resonance

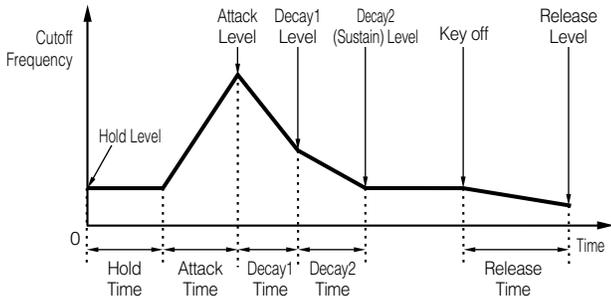
Filters work by allowing the portion of the signal lower than a given frequency to pass, and cutting the portion of the signal above that frequency. This frequency is referred to as the cutoff frequency. You can produce a relatively bright or darker sound by setting the cutoff. Resonance is a parameter that boosts the level of the signal in the area of the cutoff frequency. By emphasizing the overtones in this area, this can produce a distinctive “peaky” tone, making the sound brighter and harder.



**NOTE** About the filter types of the MOTIF-RACK, see page 27.

## FEG (Filter Envelope Generator)

Using the FEG, you can control the transition in tone from the moment a Note On message is received to the point at which the sound stops. As illustrated below, the Filter Envelope consists of five Time (transition speed) parameters and five Level parameters (for the amount of filtering). When you press a note on the keyboard, the cutoff frequency will change according to these envelope settings. This is useful for creating automatic wah effects, for example. Furthermore, different FEG parameters can be set for each Element.



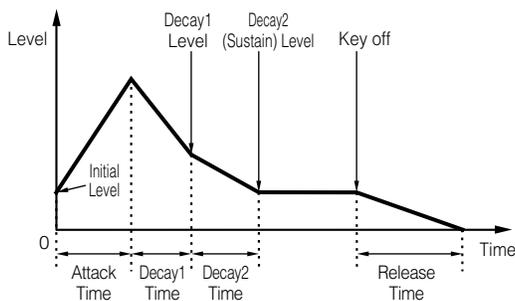
## ● Amplitude

This unit controls the output level (amplitude) of each Element output from Filter.

The signals are then sent at this level to the Effect block. Also, by setting the AEG (Amplitude Envelope Generator), you can control how the volume changes over time.

## AEG (Amplitude Envelope Generator)

Using the AEG, you can control the transition in volume from the moment a Note On message is received to the point at which the sound stops. As illustrated below, the Amplitude Envelope consists of four Time (transition speed) parameters and three Level parameters (for the amount of filtering). When you press a note on the keyboard, the volume will change according to these envelope settings. Furthermore, different AEG parameters can be set for each Element.



## ● LFO (Low Frequency Oscillator)

As its name suggests, the LFO creates waveforms of a low frequency.

These waveforms can be used to vary the pitch, filter or amplitude of each Element to create effects such as vibrato, wah and tremolo. These waveforms can be used to vary the pitch, filter or amplitude of each Element to create effects such as vibrato, wah and tremolo. LFO can be set independently for each Element; it can also be set globally for all Elements.

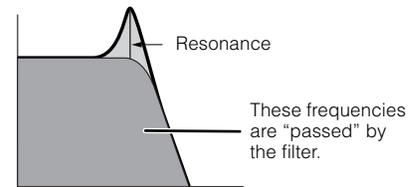
## About the Filter Type of the MOTIF-RACK

### Low Pass Filter

This only passes signals below the Cutoff frequency. You can then use the Resonance parameter to add further character to the sound. The MOTIF-RACK features six Low Pass filter types as follows.

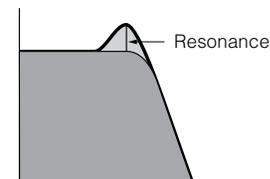
#### LPF24D (Low Pass Filter 24dB/oct Digital)

A 4-pole (-24db/oct) dynamic LPF with a strong Resonance.



#### LPF24A (Low Pass Filter 24dB/oct Analog)

A 4-pole (-24db/oct) dynamic LPF with a character similar to those found on analog synthesizers.

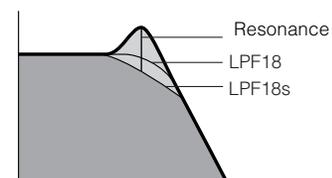


#### LPF18 (Low Pass Filter 18dB/oct)

A 3-pole (-18db/oct) dynamic LPF.

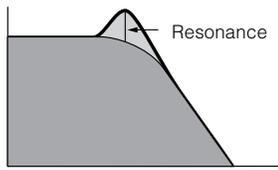
#### LPF18s (Low Pass Filter 18dB/oct Staggered)

A 3-pole (-18db/oct) dynamic LPF, but with a shallower frequency curve.



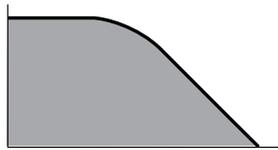
### LPF12 (Low Pass Filter 12dB/oct)

A 2-pole (-12db/oct) dynamic LPF, designed to be used in combination with an HPF (High Pass Filter).



### LPF6 (Low Pass Filter 6dB/oct)

A 1-pole (-6db/oct) dynamic LPF with no resonance, designed to be used in combination with an HPF (High Pass Filter).

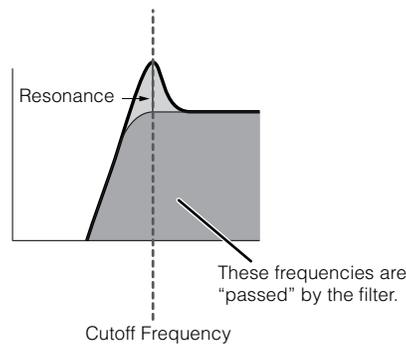


## High Pass Filter

This only passes signals above the Cutoff frequency. You can then use the Resonance parameter to add further character to the sound. The MOTIF-RACK features two High Pass filter types as follows.

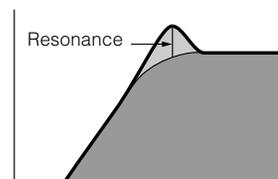
### HPF24D (High Pass Filter 24dB/oct Digital)

A 4-pole (-24db/oct) dynamic HPF with a strong Resonance.



### HPF12 (High Pass Filter 12dB/oct)

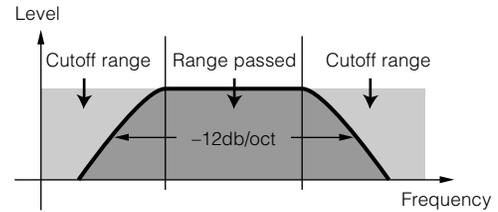
A 2-pole (-12db/oct) dynamic HPF.



## Band Pass Filter

This only passes a band of signals around the Cutoff frequency. The width of this band can be varied. The MOTIF-RACK features four Band Pass filter types as follows.

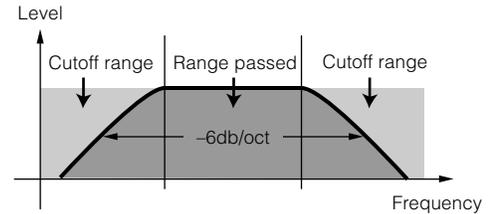
### BPF12D (Band Pass Filter 12dB/oct Digital)



### BPF12s (Band Pass Filter 12dB/oct Staggered)

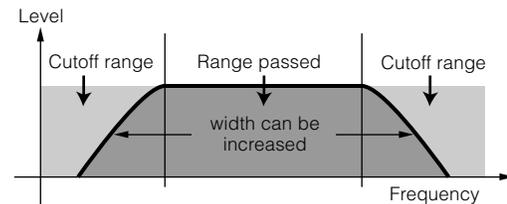
Basically same as BPF12D, but with a shallower frequency curve.

### BPF6 (Band Pass Filter 6dB/oct)



### BPFw (Band Pass Filter Wide)

Also the combination of a -12dB/oct HPF and LPF, but allows a wider frequency band.

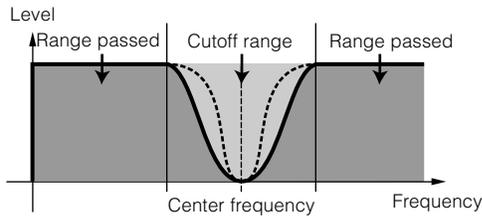


## Band Elimination Filter

This attenuates a band of signals around the Cutoff frequency, but passes everything else. The MOTIF-RACK features two Band Elimination Filter types as follows.

### BEF12 (Band Elimination Filter 12dB/oct)

### BEF6 (Band Elimination Filter 6dB/oct)

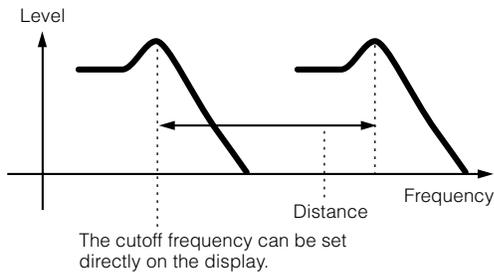


## Other filter types

MOTIF-RACK also has the filters made combining two filters. If “thru” is selected, the filters are bypassed.

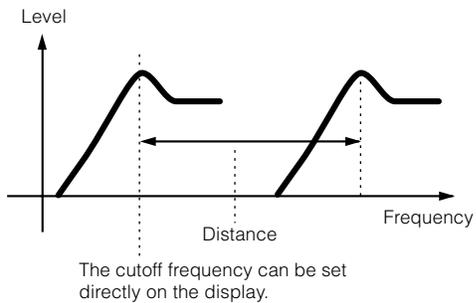
### Dual LPF

A combination of two sets of -12dB/oct LPF in parallel.



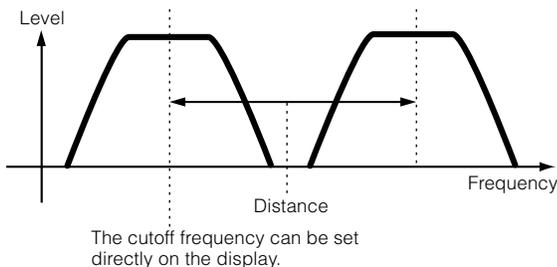
### Dual HPF

A combination of two sets of -12dB/oct HPF in parallel.



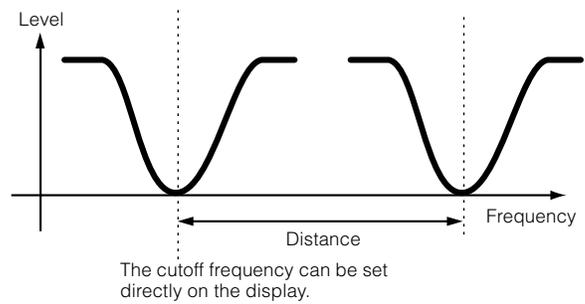
### Dual BPF

A combination of two sets of -6dB/oct BPF in parallel.



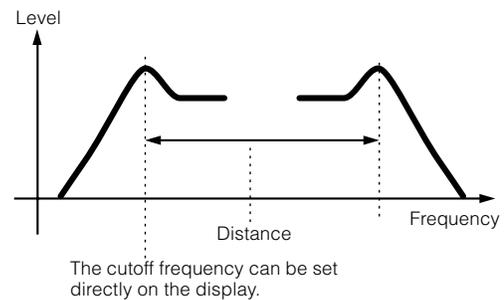
### Dual BEF

A combination of two sets of -6dB/oct BEF in series.



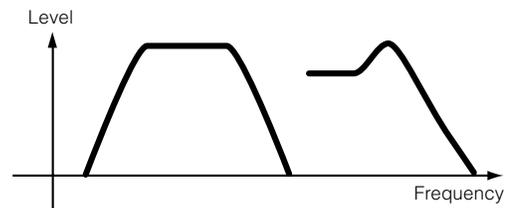
### LPF12 (Low Pass Filter 12dB/oct) + HPF12 (High Pass Filter)

A combination of a LPF and HPF.



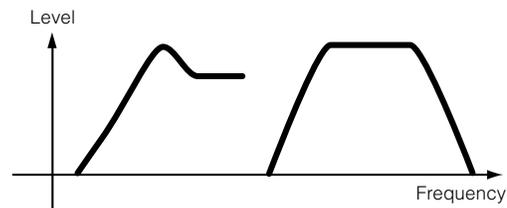
### LPF12 (Low Pass Filter 12dB/oct) + BPF6 (Band Pass Filter)

A combination of a LPF and BPF.



### HPF12 (High Pass Filter 12dB/oct) + BPF6 (Band Pass Filter)

A combination of a HPF and BPF.



### thru

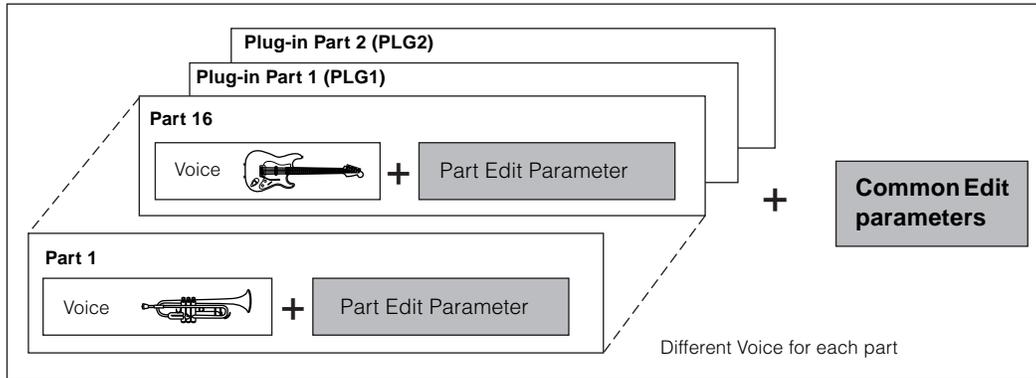
The filters are bypassed and the entire signal is unaffected.

**NOTE** Filter parameters are also available in Part editing in Multi mode.

# Multi Structure

A Multi consists of up to 16 Parts, each of which can play a Normal Voice or Drum Voice Part. By assigning different Voices and MIDI channels to each part, and by using a sequencer or computer for song data playback, you can have a complete ensemble of 16 independent instrument sounds. You can also play Multis from the external keyboard. This allows you to set up layers of different Voices, or special key splits in which your right and left hands can play separate Voices.

One Multi (Up to 16 parts and Plug-in Part 1, 2)



## Plug-in part (PLG 1, PLG 2)

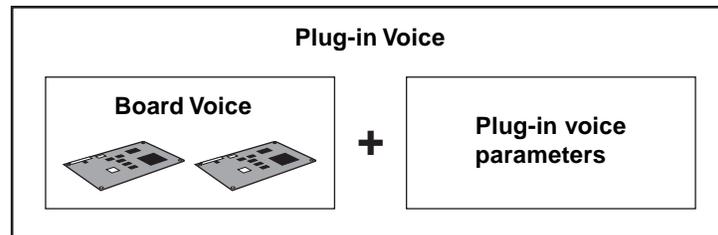
PLG 1 Part and PLG 2 Part are the parts to which the Plug-in board voices are assigned when a Single part Plug-in Board is installed. For details, refer to page 21.

**NOTE** For details on assigning a Voice to a Part, see page 44.

### Plug-in Board Voices

#### ● Plug-in Voices and Board Voices

The Voices built into and used directly from the Plug-in Board are referred to as “Board Voices,” while the Plug-in Board Voices that are processed with the parameters (Plug-in voice parameters) of the MOTIF-RACK are referred to as “Plug-in Voices.” If the Plug-in Board has been correctly installed, the Voice data appropriate for the installed board is set up automatically as preset Plug-in Voices and you can select the Plug-in bank as well as the built-in Voice bank. You can also edit the Plug-in Board Voices and store them as Plug-in User Voices.



To select a desired Plug-in Voice in the Voice mode, first select the appropriate bank, PLG1 or PLG2. These banks contain the preset Plug-in Voices, Plug-in User Voices, and Board Voices. When you select the Board Voices, the Plug-in voice parameters are reset. For details on selecting Board Voices, see page 35.

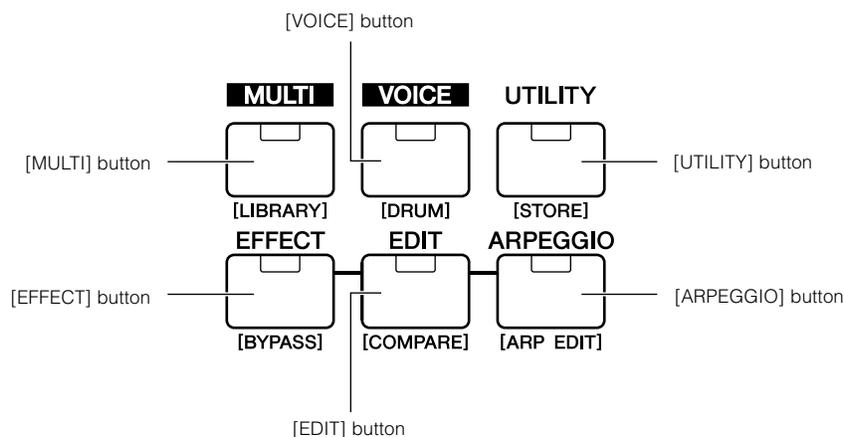
In the Multi mode, you can select the Board Voice bank as well as preset Plug-in Voice banks.

**NOTE** The Board voices can be edited by a computer connected to the MOTIF-RACK, using special editing software included with the Plug-in board. The edited voices can be saved in MOTIF-RACK’s internal memory with the Plug-in Save function (page 56).

# Basic Operations

In this section, you'll learn about the structure of the modes of the MOTIF-RACK, its panel display indications and its fundamental operations.

## Modes



Mode			Selecting a mode	Display Indications (P.32)
<b>VOICE Mode</b>	Play	Play a Voice	[VOICE]	(A)
	Edit	Edit a Voice	[VOICE]→[EDIT]	(B)
	Effect Edit	Edit the Voice Effect settings	[VOICE]→[EFFECT]	(G)
	Arpeggio Edit	Edit the Arpeggio settings	[VOICE]→[SHIFT]+[ARPEGGIO]	(H)
<b>MULTI Mode</b>	Play	Play a Multi	[MULTI]	(C)
	Multi Library	Use the Multi Library	[SHIFT]+[MULTI]	(D)
	Mixing Edit	Edit a Multi (simple mixing)	[MULTI](→[MULTI])	(E)
	Edit	Edit a Multi (detailed mixing)	[MULTI]→[EDIT]	(F)
	Effect Edit	Edit the Multi Effect settings	[MULTI]→[EFFECT]	(G)
	Arpeggio Edit	Edit the Arpeggio settings	[MULTI]→[SHIFT]+[ARPEGGIO]	(H)
<b>Other modes</b>	Utility	Global settings for the entire system	[UTILITY]	(I)
	Effect Bypass	Set the Effect Bypass	[SHIFT]+[EFFECT]	(J)

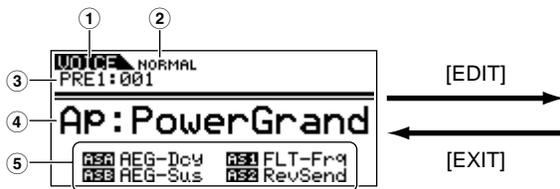
**NOTE** Parameters are divided into two basic groups: (1) functions that are related to each Voice and Multi, and (2) functions that affect all Voices and Multis. The former are set in the Edit mode and latter in the Utility mode.

**NOTE** The parameter settings in the Voice/ Multi mode can be saved to User memory with the store function (page 57).

**!** Utility/Effect Bypass mode settings will be saved when exiting from the mode. (Never attempt to turn off the power while an “Executing...” or “Please keep power on” message is shown.) If you turn off the power without exiting from Utility/Effect Bypass mode, your custom settings will be lost.

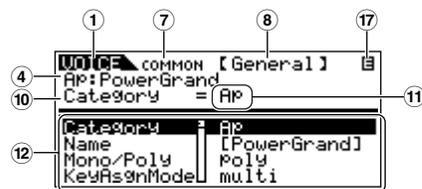
# Mode selection and Display indications

## (A) Voice Play

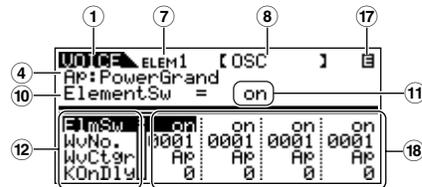


## (B) Voice Edit

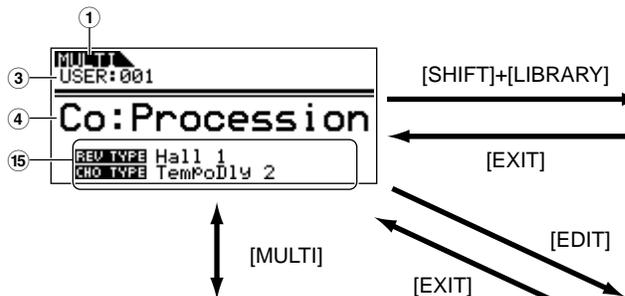
Common Edit ([SHIFT]+[COMMON])  
Drum Key Edit ([SHIFT]+PART[ < > ])



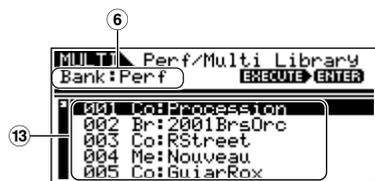
Element Edit ([1/5/9/13]-[4/8/12/16])



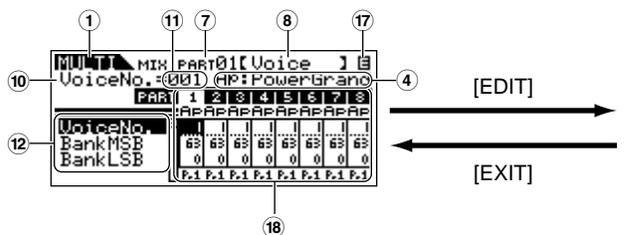
## (C) Multi Play



## (D) Multi Library

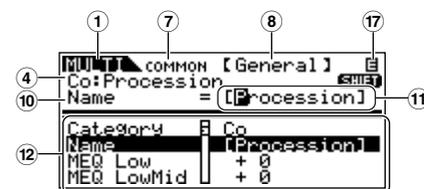


## (E) Mixing Edit

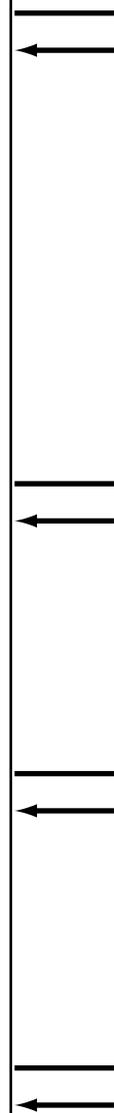
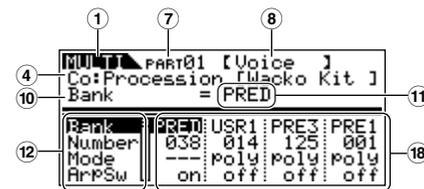


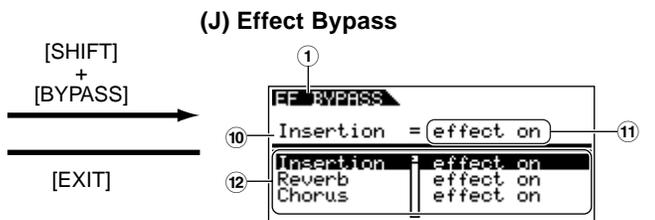
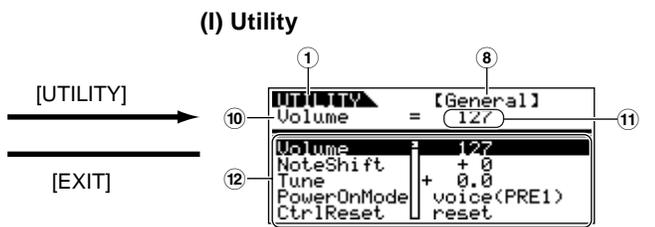
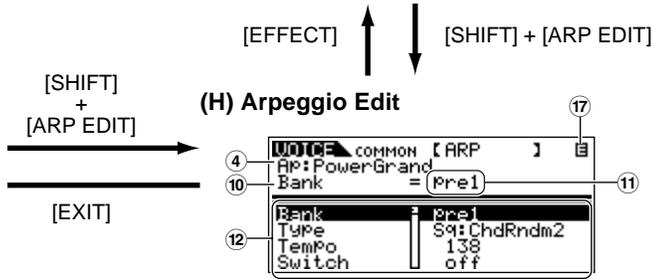
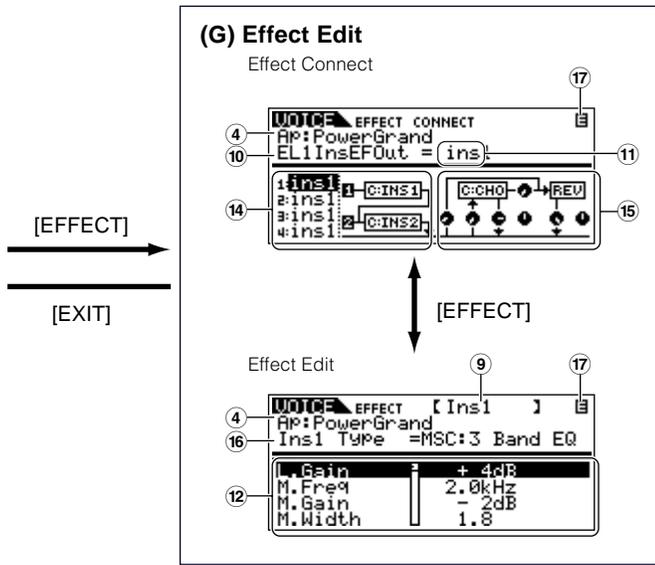
## (F) Multi Edit

Common Edit ([SHIFT]+[COMMON])



Part Edit ([1/5/9/13]-[4/8/12/16])



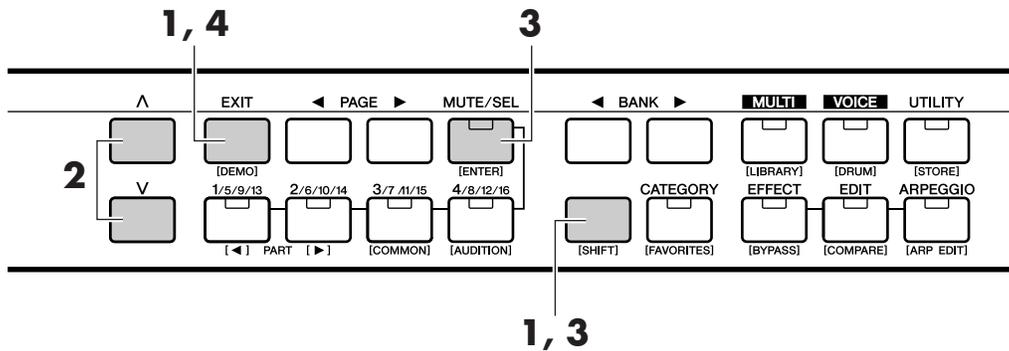


- ① Mode
- ② Voice: NORMAL/DRUM
- ③ Bank/Number
- ④ Category/Name
- ⑤ Functions assigned to the ASSIGN A/B/1/2
- ⑥ Library bank: Perf/Multi (selected via BANK [◀][▶] buttons)
- ⑦ Edit type: COMMON/ELEM1-4/KEY/PART01-16
- ⑧ Edit-display name (selected via PAGE [◀][▶] buttons)
- ⑨ Effect name being edited (selected via PAGE [◀][▶] buttons)
- ⑩ Parameter name (selected via cursor [^][v] buttons)
- ⑪ Settings (changing values using the data dial)
- ⑫ Parameter list (scroll using the cursor [^][v] buttons)
- ⑬ Library list (scroll using the cursor [^][v] buttons)
- ⑭ Insertion Effect
- ⑮ System Effect
- ⑯ Effect type
- ⑰ Edit indicator (Indicates the current Voice/Multi has been modified but not yet stored. In the Compare condition, the  indicator is shown; page 38.)
- ⑱ Settings of each Element/Part parameter (select the other Element/Part using [1/5/9/13] to [4/8/12/16] buttons)

## Demo playback

The MOTIF-RACK features a variety of demo songs, showcasing its dynamic sound and sophisticated functions. Here's how to play them back.

**NOTE** Make sure the MOTIF-RACK is ready for playback. Details are given in the section “Setting Up” on page 14.



- 1 Press the [DEMO] button while holding [SHIFT] button. DEMO screen is shown in the display.



- 2 Select the song with the cursor [**^**][**V**] buttons.
- 3 Simultaneously hold down the [SHIFT] button and press the [ENTER] button to start playback of the DEMO song.
- 4 To stop playback, press the [EXIT] button. Press it again to exit from the Demo mode.

# Playing the voices

Here, you'll learn how to select and play Voices (instrument sounds) from the PRESET1-5, GM, USER 1-2 and PLG 1-2 memory groups (Banks).

**NOTE** Details about Voices are given on page 24. For information on the Voice List, see the separate Data List.

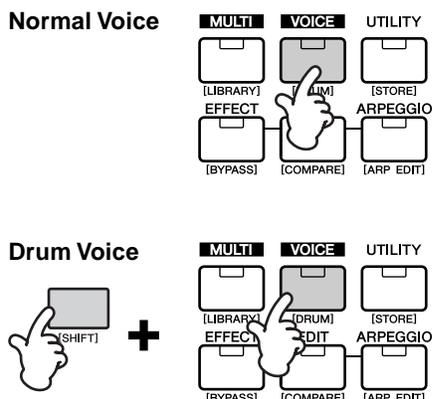
**NOTE** Up to 256 Normal Voices and 32 Drum Voices can be stored to User memory (page 57). The Voice settings can be changed in the Voice Edit mode (page 37).

Let's play some Voices. The example below assumes that you have connected an external MIDI keyboard to the MOTIF-RACK.

## Selecting a voice

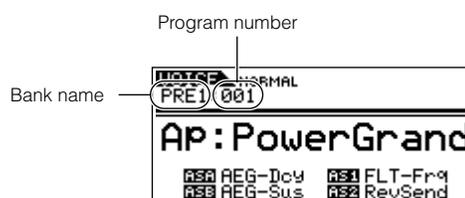
### 1 Enter the Voice Play mode.

Press the [VOICE] button to enter the Voice Play mode. The [VOICE] button LED will light in green, indicating that the Voice Play Mode (Normal voice) is selected. When you select a Drum voice, simultaneously hold down the [SHIFT] button and press the [DRUM] button. The LED will light in orange, indicating that the Voice Play Mode (Drum voice) is selected.



### 2 Select a Voice Bank.

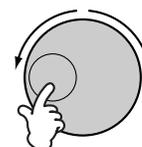
Select a Voice Bank with the BANK [◀][▶] buttons.



There are eight different memory sections for the Normal Voices (page 24): PRE 1-5, GM and USR 1-2. For the Drum Voices, you can select from three different memory sections: PRE, GM and USER. If the Plug-in Board(s) are installed, PLG1 and PLG2 bank can be selected.

**NOTE** You can also select a Board Voice Bank simultaneously holding the [SHIFT] button and using the BANK [◀][▶] buttons. The Bank Select MSB/LSB of the Board voice is shown in the display. For details about the Bank Select MSB/LSB, refer to the Owner's manual that came with your Plug-in Board.

### 3 Select a program number with the data dial.



**NOTE** You can also select numbers with the cursor [^][v] buttons.

### 4 Play the connected keyboard.

The selected Voice is played according as the received MIDI message.

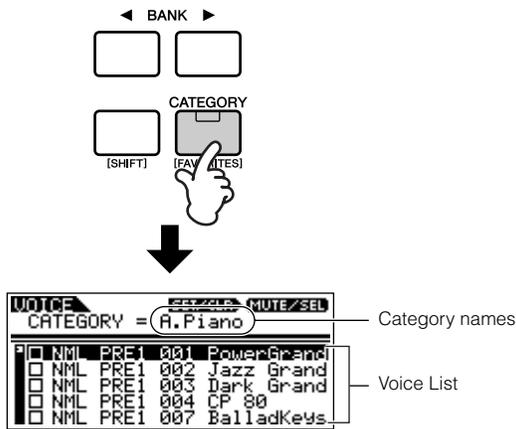
**NOTE** There is an Audition function (page 36) that lets you listen to and audition each Voice as you select it.

# Using the Category Search function

The MOTIF-RACK features a powerful Category search function that gives you quick access to the sounds you want, irrespective of their bank locations. Simply search a voice category, such as A. PIANO or SYN LEAD, and you can browse through all related voices one by one.

## 1 Turn the Category Search function on by pressing the [CATEGORY] button.

The LED will light, indicating that the Category search function is on.



**NOTE** To exit from the Category function, press the [CATEGORY] button again, or press the [EXIT] button.

## 2 Select a Category with the BANK [◀][▶] buttons.

## 3 Select a voice with the cursor [^][v] buttons.

### Favorite Category

Use this convenient function to store all your favorite, often-used voices in a single, easy-to-access location — and call them up by simultaneously holding the [SHIFT] button and pressing the [FAVORITES] button. Select any voice you want, from any desired category, and enter each to the Favorites Category. In this way, you can go directly to all the voices you use the most, without having to

jump around to other Categories — a great aid when playing live.

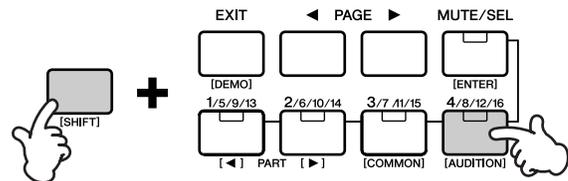
Select the desired voice in the Voice list, and press the [MUTE/SEL] button to checkmark the box next to the voice name. (You can un-checkmark it by pressing the [MUTE/SEL] button again.) Go on to other Categories and continue registering your favorites.



After you've checkmarked all the voice you want, simultaneously hold the [SHIFT] button and press the [FAVORITES] button to store them to the Favorites Category. All the voices you've checkmarked — and only those voices — will be shown in the list. To exit from the Favorites Category, simply press the [CATEGORY] button. Press the [EXIT] button to return the Voice Play mode.

**!** When you exit from the Favorite Category function, the parameter you changed in the display is automatically stored. However, this edited data is lost if you turn off the power without properly exiting from the display.

### Audition function



You can hear Audition phrase played with the selected voice by pressing the [AUDITION] button while holding the [SHIFT] button.

### Editing an Audition Phrase

The phrase type and pitch can be changed in the Voice Edit mode. There is two parameters concerning with the audition phrase in the “General” display in the Voice Common Edit.

- **A.PhraseNo. (Audition phrase number)**  
Selects the type of the Audition phrase.
- **A.PhraseSft (Audition phrase shift)**  
Determines the pitch settings of the Audition phrase in semitones.

**NOTE** Audition Phrase data can be transmitted via MIDI OUT (page 66, Ref. #71), and the transmit channel can also be set (page 66, Ref. #72).

# Voice Editing

The following procedure shows you the fundamentals in creating and editing Voices. All Voice creation and editing is carried out in the Voice Edit Mode. Each Normal Voice consists of up to four Elements. To edit the common parameters (common to all Elements), enter the Common Edit Mode. To edit parameters of individual Elements, enter the Element Edit Mode.

**NOTE** When you select a Drum Voice, enter the Key Edit Mode and edit parameters of individual Keys of the Drum Voice.

Of course, this is just one example; you are free to set any parameters in any way you like. Details about each parameter are given in the Reference section of this manual (page 59).

**NOTE** All parameter settings are stored along with the Voice itself.

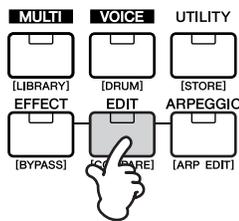
## 1 In the Voice Play Mode, select the Voice you wish to edit.

Enter the Voice Play mode by pressing the [VOICE] button. Select the Voice Number of the Voice you wish to edit (page 35).

**NOTE** When you're creating a Voice by editing an existing one, it helps to select a Voice with a sound that's relatively similar to the one you intend to create. In this way, you can avoid having to make large changes and many parameter edits — allowing you to create a Voice quickly and easily. If you are creating a Voice from scratch, use the convenient Initialize function (in the Utility Job mode) to initialize a Voice in the internal user memory. For details, see page 55.

## 2 Enter the Voice Edit Mode.

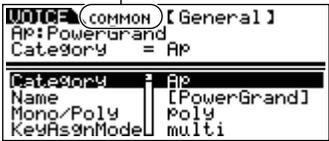
To enter the Voice Edit mode, press the [EDIT] button while in the Voice Play mode. The LED will light, indicating that the Voice Edit Mode is selected.



## 3 Set the Common Parameters.

Simultaneously hold down the [SHIFT] button and press the [COMMON] button to call up the Common Edit screen.

Indicates that the Common Edit Mode is selected.



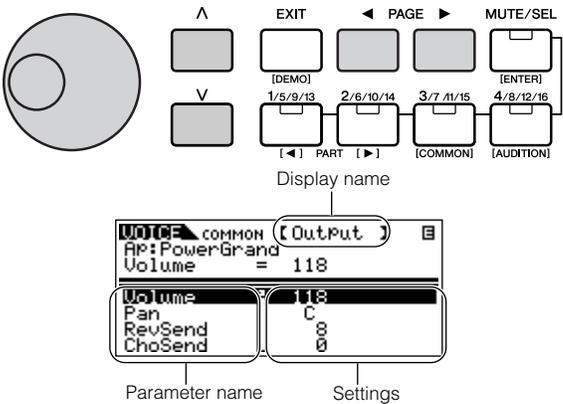
The Common Edit Mode contains the following displays.

**NOTE** The following displays are examples of a Normal voice. If you select a Drum voice or Plug-in voice, the displays will be different.

- General**  
 For setting general parameters in Common Edit, such as the Voice Name.
- Output**  
 For setting the Voice output parameters such as the output level (volume) and pan position.
- EG/FLT (Envelope Generator/Filter)**  
 For setting the time variance of how the pitch, filter, or level changes. You can also change some filter parameters here.
- CtrlSet (Controller Set)**  
 For determining how the MOTIF-RACK performs when the MIDI control change data is received.
- LFO (Low Frequency Oscillator)**  
 For setting the LFO parameters. The LFO uses a low frequency waveform to vary the pitch/filter/amplitude characteristics, and can be used to create vibrato, wah, tremolo and other effects.

**NOTE** For more information about the LFO, see page 27.

To change the display page, use the PAGE [◀][▶] buttons. Select the desired parameter with the cursor [^][v] buttons and change the settings by using the data dial.



## Compare Function

When you're editing a Voice or Multi, this feature lets you quickly and easily hear the effect of the edits you make — allowing you to switch between the original, unedited Voice/Multi and the newly edited settings.

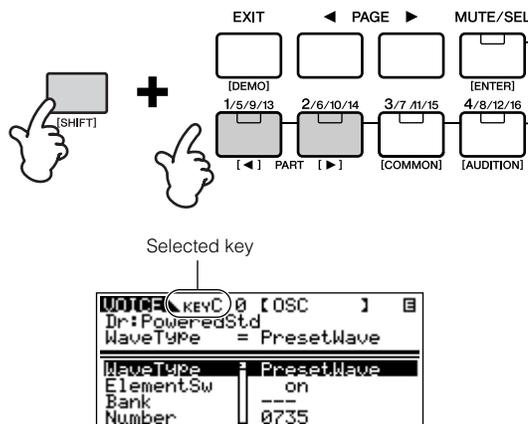
- 1 While in the Edit mode, simultaneously hold down the [SHIFT] button and press the [COMPARE] button.

The EDIT LED will flash and the settings prior to editing are temporarily called up for comparing. (The **E** indicator is shown at the top right of the display in place of the **EDIT** indicator.)

- 2 Simultaneously hold down the [SHIFT] button and press the [COMPARE] button to disable the Compare function and restore your recently edited settings.

**NOTE** The Compare function is also available in the Multi Edit mode.

When editing a Drum Voice, simultaneously hold down the [SHIFT] button and use the PART [◀][▶] buttons to select the desired key.

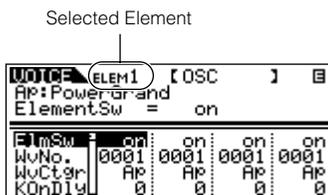
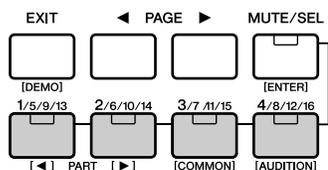


**NOTE** You can also select the desired key by using a connected keyboard (via incoming Note On data). Simultaneously hold down the [SHIFT] button and press the appropriate key on the keyboard.

## 4 Set the Element Parameters.

Select the desired Element with the corresponding Part/Element buttons [1/5/9/13]-[4/8/12/16] (Normal Voice only). For example, press [1/5/9/13] button to select Element 1.

**NOTE** When the [MUTE/SEL] button's status is set to "MUTE" (the LED lights), selecting elements is not available.



## Switching Elements (or Keys) On/Off (Mute)

Each time you press the [MUTE/SEL] button, the on/off status of the LED changes. When the respective LEDs light, the corresponding Part/Element buttons ([1/5/9/13] - [4/8/12/16]) are set to the MUTE function. When the LED is turned off, they have the SELECT function.

When the [MUTE/SEL] button's lamp is lit, you can mute any Element by pressing the corresponding Part/Element button [1/5/9/13] to [4/8/12/16]. For example, you could mute all Elements other than that which you are editing. In this way, you can hear how the edited settings affect just that Element. You can check which Element is muted by checking the lamps of the Part/Element buttons. The LEDs of the muted Element buttons are turned off and the active Element buttons light.

When the [MUTE/SEL] button lamp is off, you can select the desired Element for editing by pressing the corresponding Part/Element button ([1/5/9/13] - [4/8/12/16]).

If you select the muted Element, the LED of the button flashes.

**NOTE** You can also switch the on/off status of each Part in the Multi mode.

The Element (Key) Edit Mode contains the following displays.

**NOTE** If you select a Drum voice or Plug-in voice, the display will be different.

**NOTE** For details about the following parameters, refer to the Basics Section (page 26) and the Reference Section (page 59)

- **OSC (Oscillator)**

For setting the various parameters controlling the waveforms on which the Voice is based. You can select the Wave used for the Element, the volume and note range of each Element and so on.

**NOTE** When you select a Drum Voice, you can output each key independently via the ASSIGNABLE OUTPUT jacks by using the OutputSel parameter (No. 96, on page 67).

- **Pitch, PEG (Pitch Envelope Generator)**

For setting the basic pitch parameters for each Element. Also, by setting the PEG, you can control how the pitch changes over time.

- **Filter, FEG (Filter Envelope Generator)**

For changing the tonal characteristics of each Element, by adjusting overtones included in the waveform of the Element. You can also set the FEG for time variance of how the filter works— in other words, dynamically change the tone and timbre of the sound over time.

- **AMP (Amplitude), AEG (Amplitude Envelope Generator)**

For setting the volume of each Element after the OSC (Oscillator), PITCH and FILTER parameters have been applied, as well as the final overall volume of the signal sent to the outputs. Also, by setting the AEG, you can control how the volume changes over time.

- **Native (Native Part Parameters: Plug-in Voice only)**

For editing the Native Part Parameters. Refer to the Owner's manual of the Plug-in Board.

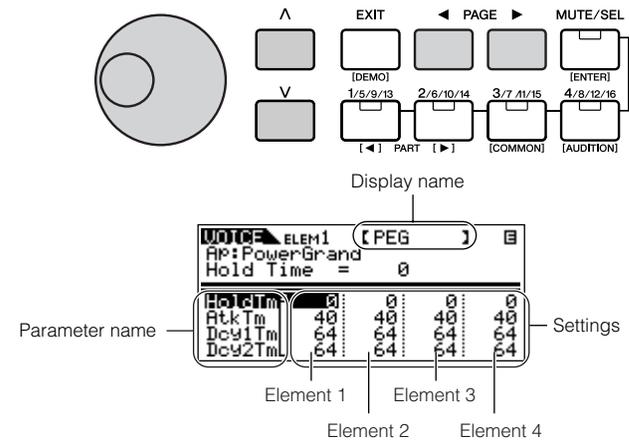
- **LFO (Low Frequency Oscillator)**

For setting the LFO parameters for the Normal Voices.

- **EQ (Part Equalizer)**

For adjusting the tonal qualities of each Element.

To change the display page, use the PAGE [◀] [▶] buttons. Select the desired parameter with the cursor [^][v] buttons and change the settings by using the data dial.

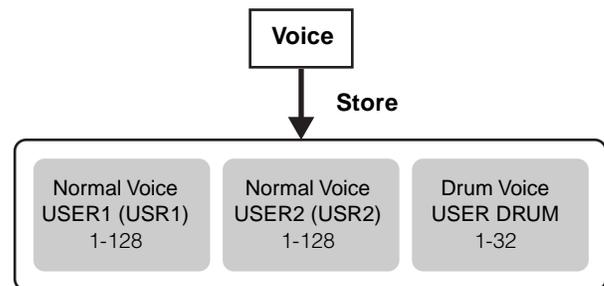


## 5 Set the Effect Parameters.

For an application example showing how to use the effect, see page 41.

## 6 Storing edited Voice.

Up to 256 new/edited Normal Voices and 32 new/edited Drum Voices can be stored to internal user memory.



For details about storing Voices, see page 57.

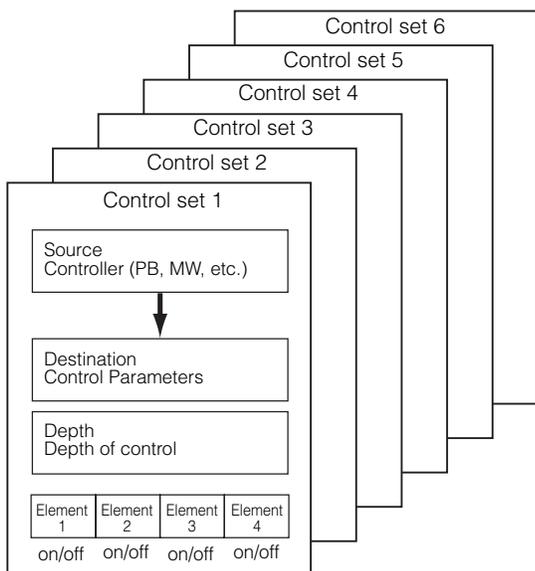


When storing a Voice, any existing data at the storage location will be lost. You should always back up your important data to computer.

## Control Sets

The MOTIF-RACK has no physical controller of its own. However, you can use the controllers (keys, wheels, sliders, switches, etc.) on an connected instrument to affect the sound of the MOTIF-RACK. For example, the Modulation wheel could be assigned to control filter resonance, while aftertouch could be used to apply vibrato. This provides enormous flexibility in controlling parameters and setting up the controllers to suit the kind of sound being played.

These controller assignments are known as Control Sets. As the following illustration shows, you can assign up to six different Control Sets per Voice.



Within each Control Set, the controller is known as the Source and the parameter controlled by the Source is known as the Destination (Dest).

### ● Controlling a Voice

The Voice Common Edit parameters includes a Control Set (CtrlSet) display for setting the Control set parameters.



For example, in the instructions below, we'll control panning with an external Modulation wheel.

- 1 Set the "Set1Source" parameter in the CtrlSet display to "MW (Modulation wheel)".

**NOTE** The following Source parameters are available: AS1/AS2 (Assignable 1/2), PB (Pitch Bend wheel), MW (Modulation wheel), AT (Aftertouch), FC1/FC2 (Foot controller 1/2), FS (Foot switch), BC (Breath controller)

- 2 Set the "Set1Dest" parameter to "ELM-Pan (Element Pan)."

**NOTE** For details on the available Dest parameter settings, refer to the Control List in the separate Data List booklet.

- 3 Set the depth of control by changing the "Set1Depth" parameter setting.

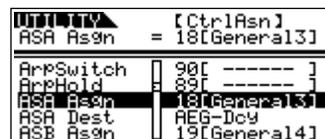
**NOTE** If you are editing a Normal Voice, set the on/off status of the Control Set for each Element with the "Set1ElmSw" parameter.

Repeat Steps 1 and 3 above to assign the remaining Control Sets 2 through 6.

	Source	Dest.	Depth
Set 1	MW	ELM-Pan	+15
Set 2	PB	FLT-Rez	+10
:	:	:	:

### ● Controlling the Common parameters for the MOTIF-RACK

There are two controllers available for controlling parameters common to all Voices and Multis: ASA (Assignable A) and ASB (Assignable B). The relevant Control Set parameters can be set from the Controller Assign (CtrlAsn) display in the Utility mode.



You can select the Destination of the ASA/ASB controllers with the "ASA Dest" and "ASB Dest" parameters.

### ● Assigning Control Change number

Each controller has a pre-assigned Control Change number. When the MOTIF-RACK receives Control Change messages, the corresponding parameter (as determined in the Control Set) is changed, and the degree of change is determined by the set depth. These assignments can be set in the following display (mode).

- To control a Voice: "Voice" display (Utility)
- To control a Multi: "CtrlAsn" display (Multi Common Edit)
- To control the common parameter for the MOTIF-RACK: "CtrlAsn" display (Utility)

**NOTE** The Control Change number assignment made to one Voice affects all Voices. For Multis, each Multi can have its own independent Control Change number assignment.

# Using Voice Effects

In the final stages of programming, you can set the effects parameters to further change the sound's character. In the Voice Mode, you can set up and store the effects with each Voice.

**NOTE** For details of the effect structure, see page 22.

Here we'll show an example of editing effect settings in the Voice Edit Mode.

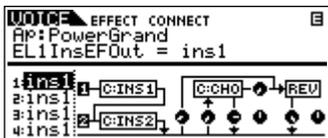
## 1 Select the Voice you wish to edit (page 35).

## 2 Enter the Effect Edit Mode.

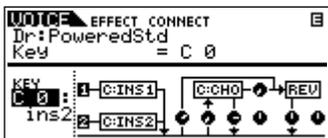
Press the [EFFECT] button to enter the Effect Edit mode.

The LED lights and the following display is shown.

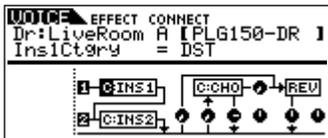
Normal Voice



Drum Voice



Plug-in Voice



**NOTE** If this display is not shown, press the [EFFECT] button again.

## 3 Set the Insertion Effect Parameters.

The following parameters are used to edit the Insertion Effect.

Select the desired parameter with the cursor [^][v] buttons and change the setting by using the data dial.

- **EL1InsEFOut - EL4InsEFOut (Insertion Effect Out)**

Determines which effect (1 or 2) is used to process each individual element. The “thru” setting lets you bypass the Insertion effects for the specific element/key.

**NOTE** When editing the Drum voice, first select the key with the “Ins EFOutKey” parameter, then determine which effect (1 or 2) is used for the selected key.

**NOTE** You can also select the desired key by simultaneously holding down the [SHIFT] button and pressing the appropriate key on the connected keyboard.

- **Ins1CtgrY, Ins2CtgrY (Insertion 1/2 Category)**

Determine the effect type category for Insertion 1 and 2.

- **Ins1Type, Ins2Type (Insertion 1/2 Type)**

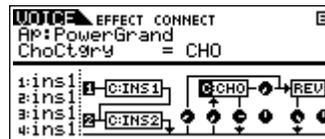
Determine the effect type for Insertion 1 and 2.

- **InsEFCnct (Insertion Effect Connect Type)**

Determines the effect routing for Insertion 1 and 2 (page 23).

## 4 Set the System Effect (Reverb, Chorus) Parameters.

Set the System Effect (Reverb, Chorus) Parameters from the same display as in step 3 above.



The following parameters are used to edit the System Effect. Select the desired parameter with the cursor [^][v] buttons and change the setting by using the data dial.

**NOTE** For information on the Effect Parameters, refer to the separate Data List.

- **ReverbType (Reverb Type)**  
**RevSend (Reverb Send)**  
**ReverbRtn (Reverb Return)**  
**ReverbPan (Reverb Pan)**

Determines the Reverb Effect settings, such as type, send level, return level, panning.

- **ChoCtgy (Chorus Category)**  
**ChoType (Chorus Type)**  
**ChoSend (Chorus Send)**  
**ChoRtn (Chorus Return)**  
**ChoPan (Chorus Pan)**

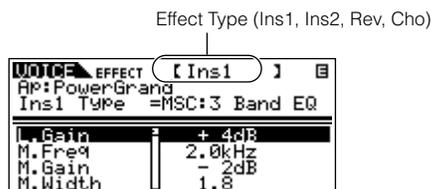
Determines the Chorus Effect settings, such as type, send level, return level, panning.

- **ChoToRev (Chorus to Reverb)**

Determines the send level from Chorus to Reverb.

## 5 Edit the detailed Effect parameters.

Press the [EFFECT] button again to call up the following display.



Use the PAGE [◀][▶] buttons to select the Effect type that you want to edit.

Select the desired parameter with the cursor [^][v] buttons and change the setting by using the data dial.

**NOTE** For information on the Effect Parameters, refer to the separate Data List.

**NOTE** If “thru” is selected for the effect type, none of the effect parameters can be edited.

## 6 Storing edited Voice.

If you wish to save the new settings, store the settings with the other Voice parameters as a single Voice before you leave the selected Voice. For details about storing Voices, see page 57.



If you call up another Voice or another mode without saving, the edited settings may be lost.

# Using the Multi Mode

The Multi Mode lets you set up the MOTIF-RACK as a multitimbral tone generator for use with computer-based music software or external sequencers. If each track in a song file uses a different MIDI channel, you independently assign each of the Parts in a Multi to those MIDI channels. In this way, you can play back the song data on a sequencer with each track playing a different Voice.

## Playing in the Multi mode

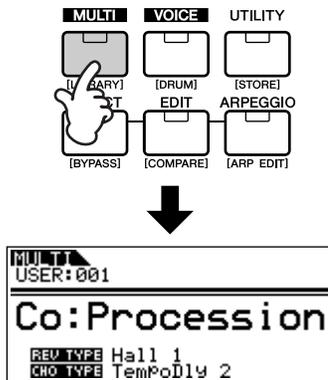
In the Multi Play mode, you can select and play any of the Multis.

**NOTE** For more details about Multis, see page 30.

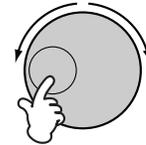
**NOTE** Up to 128 Multis can be stored in the USER (internal) memory. These Multi settings are available in the Mixing Edit mode (page 44) and the Multi Edit mode (page 45).

### 1 Enter the Multi Play mode.

Press the [MULTI] button. The LED lights, indicating that the Multi Play mode is selected. The following display appears.



### 2 Select a Multi number using the data dial.



**NOTE** You can also select numbers with the cursor [ $\wedge$ ][ $\vee$ ] buttons.

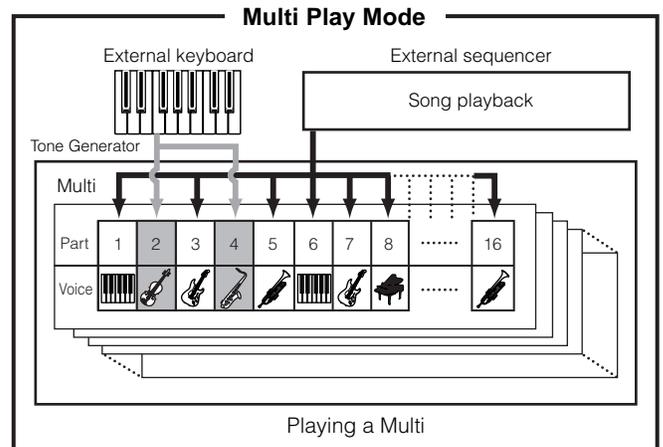
**NOTE** Up to 128 Multis can be stored to User (internal) memory. Internal memory contains the factory default Multis.

**NOTE** The category Search function (page 36) can also be used to select a Multi in the same way as in the Voice play mode. Multi Categories can be edited in the Multi Edit mode (page 45).

### 3 Play the selected Multi.

When a Note On message is received, the corresponding part is played.

For example, when you play a connected external keyboard, the part whose Receive Channel is same as the keyboard's Transmit Channel is played. If the MIDI receive channel parameter is the same for any Parts, those Parts will play in unison.

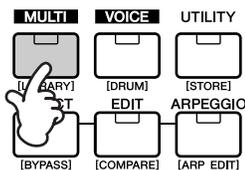


# Simple Mixer functions (Mixing Edit Mode)

The Mixing Edit mode lets you easily edit some basic parameters with a graphic mixer-like layout that allows you to check each part's setting. This mode is useful for changing parameters for each part even while song data is being played back from a connected sequencer. Simple mixing functions and basic parameters are provided in the mode, such as selecting Voices, changing effect settings and so on. If you want to edit a Multi in greater detail, see the Multi Edit mode (page 45).

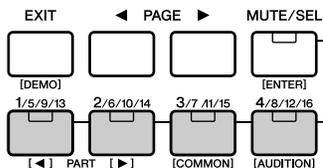
## 1 Enter the Mixing Edit mode.

Press the [MULTI] button in the Multi Play mode. The [MULTI] button LED changed from green to red, indicating that the Mixing Edit mode is selected.



## 2 Select the desired Part.

Select the desired Part with the Part/Element buttons ([1/5/9/13] – [4/8/12/16]).



Repeatedly pressing one of the buttons alternates among the Part numbers. For example, pressing the [1/5/9/13] button repeatedly calls up Parts 1, 5, 9 and 13 in order.

You can also step through the Parts in order by simultaneously holding down the [SHIFT] button and using the PART [◀][▶] buttons.

## 3 Select the desired display.

Select the desired display by using the PAGE [◀][▶] buttons, then edit the parameters in each display.

The Mixing Edit mode has three edit displays: Voice, Output, and Effect.

### • Voice

From this display you can select a Voice for each Part. Select a Voice Bank with the “BankMSB/BankLSB” parameter and select the desired Voice with the “VoiceNo.” parameter.



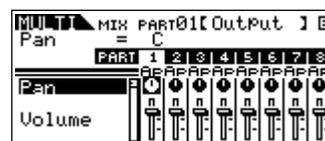
**NOTE** By selecting the BankMSB/BankLSB parameter with the cursor [^][v] buttons and using the data dial, you can call up the Voice Banks listed below.

Normal Voice	Drum Voice	Plug-in Voice
Pr1-5: Preset Banks	PD: Preset Drum Bank	Pp (Pp1-3): Plug-in Preset Bank(s)
GM: GM Bank	GD: GM Drum Bank	Pu1-3: Plug-in User Banks
Us1-2: User Voice Banks	UD: User Drum Bank	PB: Plug-in Board Voice Bank*

\* For details about Plug-in Board Voices, refer to page 30.

### • Output

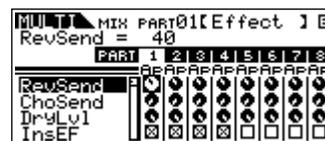
From this display you can set the Pan and Volume for each Part.



Select “Pan” or “Volume” with the cursor [^][v] buttons and use the data dial to change the settings.

### • Effect

From this display you can adjust the Reverb/Chorus effect for each Part. You can also select the Parts to which the Insertion Effect is applied.



For an application example showing how to use effects, see page 47.

## 4 Save the settings.

You can save up to 128 Multis to internal memory. For details about storing Multis, see page 57.

**NOTE** Press the [MULTI] button to return to the Multi Play mode.

**NOTE** Press the [EDIT] button to enter the Multi Edit mode.

### Playing Plug-in Board Voices in the Multi mode

When playing a Plug-in Voice or Board Voice, be sure to make the following appropriate settings.

- Assign the desired Board Voice or Plug-in Voice to the Plug-in Part. In the Voice display of the Mixing Edit mode or Multi Part Edit mode, select the appropriate bank and desired Voice number (pages 44, 46). For example, when you play a Plug-in board Voice installed to PLG1, select PRE1 (preset Plug-in voice bank 1) or Pp1 (Board voice bank 1) in the Bank parameter.

**NOTE** In the Mixing Edit/ Multi Part Edit mode, you can select Parts in succession by simultaneously holding the [SHIFT] button and using the PART [◀] [▶] buttons. The Plug-in Parts can be selected following Part 16.

- Set the Receive Channel of the Plug-in Part to the same channel as the Transmit Channel of the track of the connected device (such as a sequencer) from which the data is to be played. This setting can be changed from the ReceiveCh parameter (Ref. # 32, page 64) in the Voice display of the Multi Part Edit mode. The default settings are 1 for PLG1 part, and 2 for PLG2.

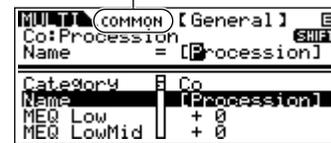
**NOTE** You can assign the Plug-in Part to any of the available ports with the PortNo. parameter in the PLG1Sys/PLG2Sys display of the Utility mode (page 21).

## Detailed Mixing function (Multi Edit Mode)

The Multi Edit mode has a detailed mixing function that lets you change the Multi parameter settings in the same way as the Voice Edit mode.

There are two types of Multi Edit displays: those for Common Edit, and those for editing individual parts (Part Edit). Use Common Edit to edit the settings common to all Parts and Part Edit to edit the settings for individual Parts.

Indicates a Common Edit (all Parts) display.



Indicates a display for editing Part parameters.



**NOTE** Common Edit operations cannot be performed on the Multi-part Plug-in Parts 17 - 32.

**NOTE** You can hear the difference between the newly edited Multi and the same Multi prior to editing (Compare) (page 38).

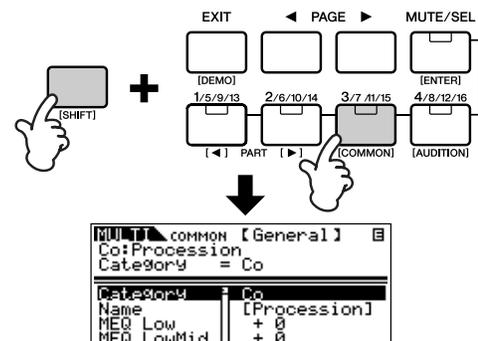
**NOTE** The particular part(s) can be switched on/off temporarily (Mute) (page 38).

### 1 Enter the Multi Edit mode.

Press the [EDIT] button in the Multi Play mode or the Mixing Edit mode. The LED lights, indicating that the Multi Edit mode is selected.

### 2 Set the Common parameters.

Simultaneously hold down the [SHIFT] button and press the [COMMON] button to call up the Common Edit display.



The Common Edit mode contains the following displays, which can be selected by using the PAGE [◀] [▶] buttons.

- **General**

For setting general parameters in Common Edit, such as the Multi Name.

- **MEQ (Master Equalizer)**

For setting the Master Equalizer parameters for the Multi (page 22). To select the frequency bands you wish to edit, use the PAGE [◀] [▶] buttons.

- **CtrlAsn (Control Assign)**

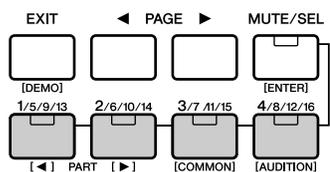
For determining how the MOTIF-RACK handles control change data.

Select the parameter you wish to edit using the cursor [^][v] buttons and change the settings by using the data dial.

### 3 Set the Part parameters.

Select the desired using the Part/Element buttons ([1/5/9/13] - [4/8/12/16]). The Part Edit display of the selected Part appears.

**NOTE** When the [MUTE/SEL] button's status is set to "MUTE" (the LED lights), selecting parts is not available (page 38).



**NOTE** You can select Parts in succession by simultaneously holding the [SHIFT] button and using the PART [◀] [▶] buttons. When a plug-in board is installed, the Plug-in part can be selected following Part 16.

**NOTE** When the [MUTE/SEL] button is lit, the Part/Element buttons ([1/5/9/13] - [4/8/12/16]) have the Mute function for the corresponding Part.

The Part Edit mode contains the following displays that can be selected with the PAGE [◀] [▶] buttons.

- **Voice**

For setting the Voice parameters to assigned to each Part.

**NOTE** You can also use the Category Search function (page 36) to select the desired Voice for assigning to each Part.

- **Output**

For setting the output parameters of the Voice assigned to each Part such as the output level (volume) and pan position.

**NOTE** You can output each part independently via the ASSIGNABLE OUTPUT jacks by using the OutSel parameter (No. 96, on page 67).

- **Tone**

For setting the tonal parameter settings of the Voices assigned to each Part. In this display, you can edit the parameters related to pitch, filter, and the envelope generator.

- **EQ (Equalizer)**

For setting the Part Equalizer parameters (three frequency bands).

- **RcvSw (Receive Switch)**

For setting whether each Part receives Control Change and Program Change messages or not.

Select the parameter you wish to edit using the cursor [^][v] buttons and change the settings by using the data dial.

### 4 Set the Effect Parameters.

For an application example showing how to use effects, see page 49.

### 5 Storing edited Multis.

You can save up to 128 Multis to internal memory. For details about storing Multis, see page 57.

**NOTE** Please note that the Multi-Part plug-in part (17-32) settings cannot be stored.

**!** When you perform this, the settings for the destination data will be overwritten. You should always back up important data to computer (page 56).

# Multi Library

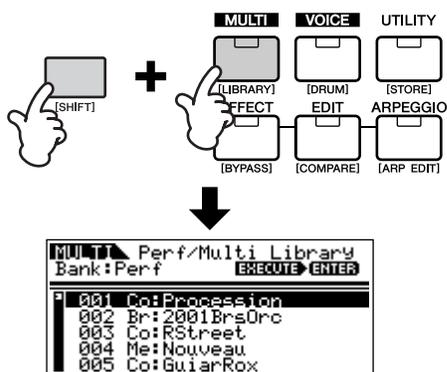
There are 124 preset multis in the Multi Library divided into two banks. In one bank, Parts of the Multis have the same Receive channel and can be played by layered voices from a connected keyboard. In the other bank, each Part has been set for optimum use as a multi-part, ensemble performance. When you want to create a new Multi, just select a Multi from the Multi Library and customize it as needed.

**NOTE** For information on the Multi Library, refer to the separate Data List.

Here we'll show how to use the Multi Library.

## 1 Enter the Multi Library.

Simultaneously hold down the [SHIFT] button and press the [LIBRARY] button to enter the Multi Library.



## 2 Select the desired Multi with the BANK [◀][▶] buttons in the Multi Library.

The Perf (Performance) bank and Multi bank are available.

### • Perf (Performance) bank

The Multis in this bank are convenient for playing layered voices with a connected keyboard, since all Parts of the Multi (up to four) are assigned the same receive channel.

**NOTE** MIDI Receive Channel is set with the “BasicRcvCh” parameter (Ref. #152) in the Utility mode.

**NOTE** The Receive Channels for Parts 5 to 16 are set to off automatically. If you want to use Parts 5 - 16, make sure to set appropriate receive channel with the “RcvCh” parameter (Ref. #32) in the Multi Part Edit mode.

**NOTE** When you play the Performance with the connected keyboard, the volume is controlled in two ways. Reception of MIDI Main Volume messages (Control #7, page 78) sets the volume of all Parts to the same value, and reception of MIDI Expression messages (Control #11, page 78) independently adjusts the volume of each Part while maintaining the overall Part balance.

### • Multi bank

Multis in this bank are designed for use with an external sequencer in playing back song data. The Parts of the Multi in this bank are assigned to different MIDI Receive Channels.

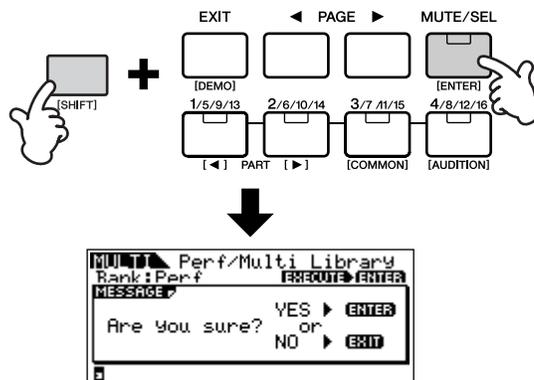
**NOTE** For details about MIDI Channel, refer to page 77.

## 3 Select the desired Multi with the cursor [^][v] buttons.

**NOTE** If a Note On message is received from a connected keyboard or sequencer, you can hear the selected Multi.

## 4 Copy the selected Multi to the edit buffer.

Simultaneously hold down the [SHIFT] button and press the [ENTER] button. A confirmation message appears, prompting you to execute the copy operation or cancel it.



Simultaneously hold down the [SHIFT] button and press the [ENTER] button again to execute the operation. (A “Completed” message appears when finished.)

## 5 Change the settings as desired.

You can change the selected Multi settings in the Multi Edit Mode (press the [EDIT] button to enter the Multi Edit Mode), Effect Edit Mode (press the [EFFECT] button), and Arpeggio Edit Mode (simultaneously hold the [SHIFT] button and press the [ARP EDIT] button).

For example, in the instructions below, you can change the voice assigned to Part 1 to another voice – for example, from Power Grand to Jazz Grand.

- 1 Press the [EDIT] button to enter the Multi Edit Mode.
- 2 Enter the Part Edit Mode and select the desired (Power Grand) Part by using the Part/Element buttons ([1/5/9/13]-[4/8/12/16]).
- 3 Use the PAGE [◀][▶] buttons to select the “Voice” display and select the “Number” parameter with the cursor [^][v] buttons.
- 4 Press the [CATEGORY] button to set the Category Search function to on (page 36).  
The Category Search function is convenient when you want to change the voice to another one in the same category (e.g., A.PIANO, GUITAR, ORGAN, etc.).
- 5 Select the desired voice (Jazz Grand) by using the cursor [^][v] buttons.

## 6 Store the Multi in User memory.

For details about storing Multis, see page 57.

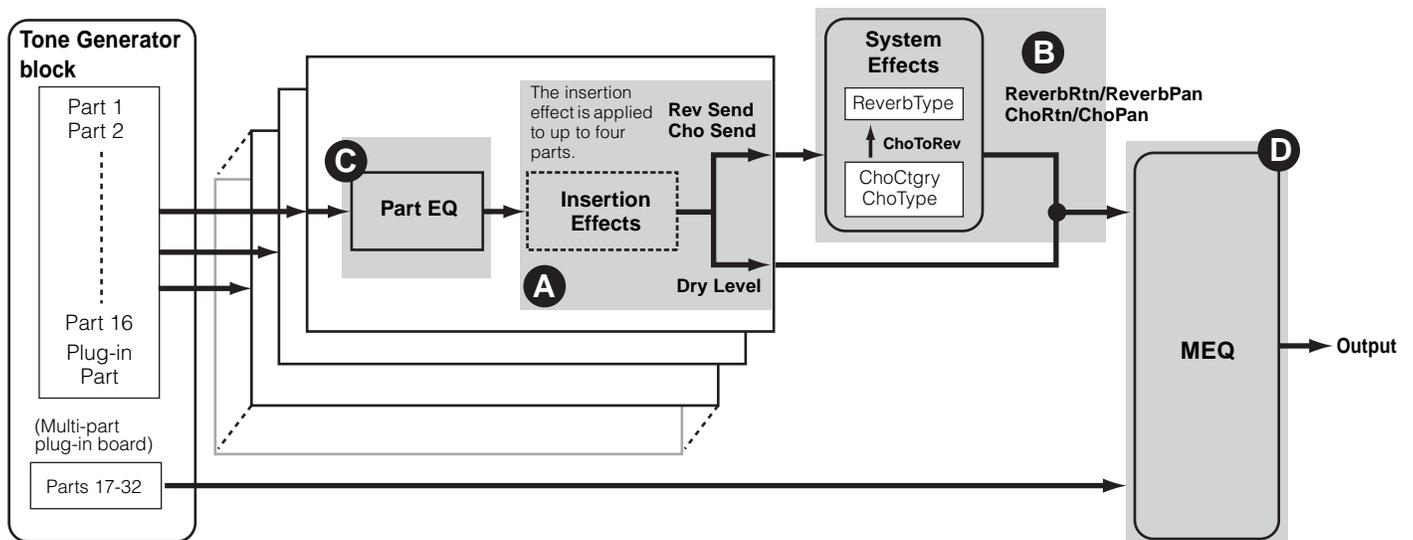
# Using Multi Effects

In the final stages of programming and creating sounds, you can use effects to further enhance and change the character of the sound — such as by applying a deep, ambient reverb, or by using chorus to make certain sounds richer and more animated.

When you edit Multi Effect parameters, keep in mind that there are two different types:

- 1 Parameters common to all Parts, which include:
  - System effect settings edited in the Effect Edit mode (B)
  - Master Equalizer settings edited in the Multi Common Edit mode (D)
- 2 Parameters specific to individual Parts, which include:
  - Part Equalizer settings edited in the Multi Part Edit mode (C)
  - On/off status of Insertion effects and Send Level settings for System effects edited in the Mixing Edit mode (A)

## Effect setting flow in the Multi mode



**NOTE** The Part Equalizer is not applied to the Parts of Plug-in Board.

**NOTE** The Insertion effects and System effect are not applied to the Parts of the Multi-part Plug-in board.

Here we'll show an example of editing effect settings in the Multi Mode.

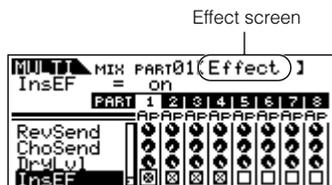
### 1 Select a Multi you wish to edit in the Multi mode (page 43).

### 2 Press the [MULTI] button to enter the Mixing Edit mode (page 44).

The effects applied to each Part are set in the Mixing Edit Mode.

### 3 Select the desired Part(s) (up to four) to which the Insertion Effects are to be applied (page 49, A).

Use the PAGE [◀][▶] buttons to select the "Effect" screen and select the "InsEF" parameter using the cursor [^][v] buttons.

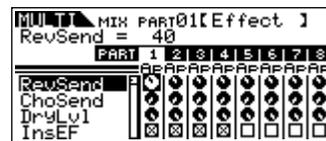


Use the Part/Element buttons ([1/5/9/13]-[4/8/12/16]) to select the desired Part for the Insertion Effects and checkmark the box using the data dial.

**NOTE** The parameter settings of each Insertion Effect is determined in the Voice Effect Edit of the assigned Voice.

### 4 Set the Reverb/Chorus Effect Level for each Part (page 49, A).

There are three parameters: RevSend (Reverb Send), ChoSend (Chorus Send), and DryLevel.



Select the desired parameter using the cursor [^][v] buttons and select the Part you wish to edit by using the Part/Element buttons ([1/5/9/13]-[4/8/12/16]). Then use the data dial to set the Effect Send Level for each Part.

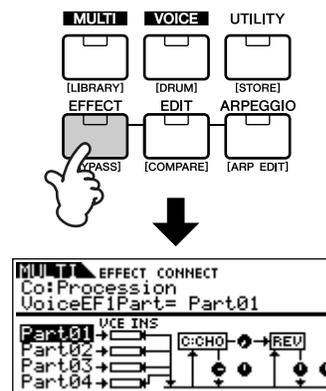
For example, in the instructions below, we'll increase the depth of the Reverb effect for Part 7.

1. Select "RevSend" with the cursor [^][v] buttons.
2. Use the [3/7/11/15] button to select Part 7.
3. Turn the data dial clockwise to increase the Reverb Send Level.

**NOTE** The Reverb/Chorus Effect is not applied to any Part for which RevSend or ChoSend is set to 0.

### 5 Enter the Effect Edit mode by pressing the [EFFECT] button.

The [EFFECT] button LED lights and the following display is shown.



In this display, the System Effect settings can be edited.

**NOTE** If this display is not shown, press the [EFFECT] button again.

## 6

### Set the System Effect parameters (Reverb, Chorus) (page 49, ③).

The following parameters are used to edit the System Effect.

First select the Reverb/Chorus type, then set the return level and panning.

**NOTE** For information on the Reverb/Chorus types, refer to the separate Data List.

- **ReverbType (Reverb Type)**  
**ReverbRtn (Reverb Return)**  
**ReverbPan (Reverb Pan)**

For setting the Reverb Effect Parameters.

- **ChoCtgr (Chorus Category)**  
**ChoType (Chorus Type)**  
**ChoRtn (Chorus Return)**  
**ChoPan (Chorus Pan)**

For setting the Chorus Effect Parameters.

- **ChoToRev (Chorus to Reverb)**

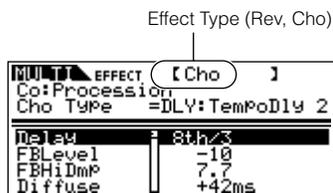
For adjusting the Send Level from the Chorus Effect to Reverb Effect.

Select the desired parameter for editing by using the cursor [^][v] buttons and change the settings with the data dial.

## 7

### Set the detailed effect parameters as necessary.

Press the [EFFECT] button to call up the Effect Edit display. You can edit detailed parameters from this display.



The PAGE [◀][▶] buttons can be used to switch between effect types.

Select the desired parameter for editing by using the cursor [^][v] buttons and change the settings with the data dial.

**NOTE** For information on the Effect Parameters, refer to the separate Data List.

**NOTE** If “thru” or “off” is selected for the effect type, none of the effect parameters can be edited.

## 8

### Set the Equalizer parameters (page 49, ④ and ⑤).

The MOTIF-RACK has two types of equalization: independent three-band equalizers for each Part and a five-band equalizer that is applied to all Parts. These are edited in the Multi Edit mode (page 45).

**NOTE** For details about the equalizers, see page 22.

First, set the Part Equalizer settings in the EQ display in the Multi Part Edit (page 46).

L.Freq	62.5	62.5	62.5	62.5
L.Gain	+0	+0	+0	+0
M.Freq	675.1	675.1	675.1	675.1
M.Gain	+0	+0	+0	+0

Then, set the Master Equalizer settings in the MEQ display in the Multi Common Edit (page 45).

	LOW	LOWMID	MID	HIGHMID
Shape	shW			
Freq	80	200	500	3.2k
Gain	+0	+0	+0	+0
Q	0.7	0.7	0.7	0.7

**NOTE** For details about each parameter, refer to the reference section.

## 9

### Store the edited Multi.

If you wish to save the new settings, store the settings with the other Multi parameters as a single Multi before you leave the selected Multi. For details about storing Multis, see page 57.

**NOTE** If you call up another Multi or another mode without saving, the edited settings may be lost.

# Using the Arpeggio function

## What is the Arpeggio function?

This function automatically triggers preset arpeggio phrases, riffs, and rhythmic patterns according to the notes you play. It is particularly useful in playing dance, pop, and techno music styles. You can assign the desired Arpeggio Types to each Voice/Multi, and adjust the tempo. You can also set the Arpeggio playback method, Velocity range and Play Effects to create your own original grooves.

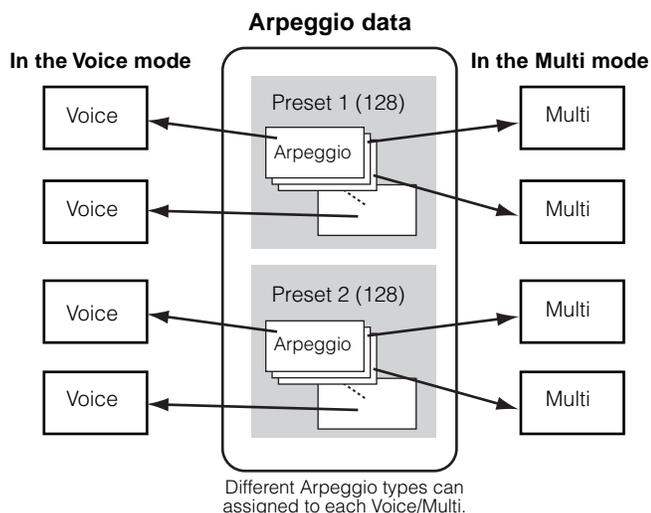
What's more, Arpeggio playback can be transmitted through the MIDI Out, letting you record the Arpeggio data to a sequencer.

**NOTE** To transmit the Arpeggio through the MIDI Out, use the following parameters.

- To transmit Voice Arpeggio: ArpOutSw (set in the Utility mode)
- To transmit Multi Arpeggio: OutputSw (set in the Arpeggio Edit mode)

## Arpeggio structure

The following illustration shows the Arpeggio structure.



### Arpeggio on/off during Song playback

When a song data is played back with the external sequencer, Arpeggio On/Off can be set individually for each part of a Song.

This inserts Arpeggios in the playback part of song sequence data.

## Four playback categories of Arpeggio

Arpeggio types are divided into the four following categories.

### **Sq: Sequence**

Creates conventional arpeggio phrases — mainly octave up/down.

### **Ph: Phrase**

Creates phrases that are more musical and rhythmically varied than Sequence. Starting with "Techno," there are phrases for a wide variety of musical genres, and for creating backing tracks for guitar, piano and other instruments.

### **Dr: Drum pattern**

Creates drum pattern phrases. Any note produces the same drum pattern. This type is ideal for use with drum and percussion sounds.

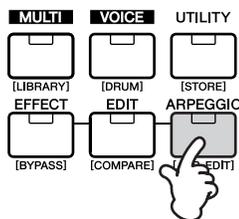
### **Ct: Control**

Creates dynamic tonal changes and volume changes by using control change data. No note data is created — the tonal variations affect the played notes.

# Arpeggio playback

**1** Select a Voice/Multi (pages 35, 43).

**2** Turn the Arpeggio on by pressing the [ARPEGGIO] button.



The LED lights, indicating that Arpeggio is set to on.

**NOTE** If Arpeggio is switched on and ready for use, the [ARPEGGIO] button LED will light when you select the Voice or Multi.

**NOTE** The on/off status of the [ARPEGGIO] button can be stored as part of each Voice or Multi setup (page 57).

**3** Play back the arpeggio.

Hold down a key or keys on the connected keyboard (or use note data from a sequencer) to play back the Arpeggio. The Arpeggio plays back according to the note number, Arpeggio type, tempo, note limit settings, and so on.

**NOTE** In the Voice Mode, the Arpeggio is played back via the selected voice.

**NOTE** In the Multi Mode, the Arpeggio is played back via the voice assigned to the selected part when the “ArpSwitch” parameter (page 54) of the selected part is set to on.

**NOTE** When you play back arpeggios that include control change data, the Voice may be changed and the edit indicator may appear in the top right of the display.

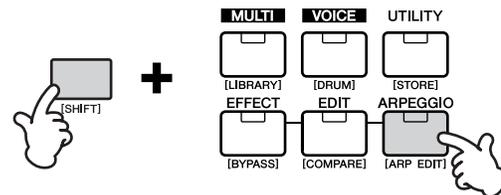
# Change the Arpeggio settings

A variety of Arpeggio types are provided with the MOTIF-RACK. You can change the tempo of the Arpeggio as desired. The Arpeggio function is available in both the Voice and Multi modes.

The explanation below applies to the Multi mode.

**1** Call up the ARP (Arpeggio) screen.

In the Voice/Multi mode, simultaneously hold down the [SHIFT] button and press the [ARP EDIT] button.



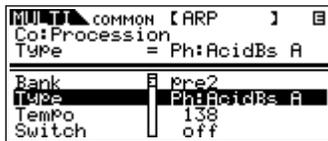
**2** Select an Arpeggio Bank.

Move the cursor to the “Bank” parameter (use the cursor [^][v] buttons) and select the bank with the data dial. There are two Arpeggio banks: pre1 (preset 1) and pre2 (preset 2).



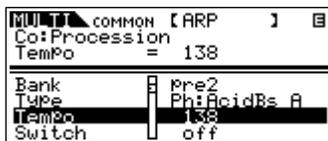
### 3 Select an Arpeggio Type.

Move the cursor to the “Type” parameter (use the cursor [^][v] buttons) and select the Arpeggio type with the data dial.



### 4 Set the Tempo for Arpeggio playback.

Move the cursor to the “Tempo” parameter (use the cursor [^][v] buttons) and set the Arpeggio tempo with the data dial.



### 5 Make other settings for the Arpeggio as desired.

Use the cursor [^][v] buttons to move to the desired parameter (Note limit, Velocity limit, and so on) and set it. For details about each parameter, refer to the Reference section.

### 6 Set the Arpeggio part switch (Multi only).

You can set Arpeggio playback on or off for each part. This parameter can be set in the Multi Part Edit mode. Enter the Multi Part Edit mode (page 46) and select the “ArpSw” parameter in the “Voice” screen. Use the data dial to turn the desired part on.



### 7 Store the Arpeggio settings.

The Arpeggio settings can be stored with each Voice/Multi. For details about storing Voices/Multis, see page 57.

# Using the Jobs

There are six data-related operations (Jobs) in the Utility mode; Initialize, Copy, Bulk Dump, Plug-in Save, Plug-in Load and Factory Set. For example, you can initialize Voices/Multis to their original settings (including those currently being edited) or copy Elements/Parts.

## Performing a Job

- 1 In each mode, select the Voice/Multi you wish to perform the Job on.
- 2 Press the [UTILITY] button to enter the Utility mode.
- 3 Use the PAGE [◀][▶] buttons to select the “JobSel” display (the last page), then select the desired Job with the cursor [^][v] buttons.
- 4 Simultaneously hold down the [SHIFT] button and press the [ENTER] button.  
The selected Job will be displayed.
- 5 If “Initialize”, “Copy”, “Bulk Dump” or “Plug-in Save” is selected, change the settings with the cursor [^][v] buttons and the data dial.
- 6 Simultaneously hold down the [SHIFT] button and press the [ENTER] button.
- 7 At the prompt, simultaneously hold down [SHIFT] and press enter again to execute the Job, or press the [EXIT] button to cancel.

A “Completed” Message appears when the Job has been completed.

 For Jobs that take longer to process, an “Executing...” message appears during processing. Never attempt to turn off the power while data is being written to internal memory (while an “Executing...” or “Please keep power on” message is shown). Turning the power off in this state results in loss of all user data.

- 8 Press the [EXIT] button to return to the Utility Mode.  
To exit back to the previous mode, press the [EXIT] button again.

## Initialize (Resetting parameters of a Voice/Multi to their default settings)

This is useful for setting up a “blank slate” when you want to build a completely new Voice/Multi from scratch. Keep in mind that this does not return the Voice/Multi to its original state prior to editing.

Select the target data (you wish to initialize) with the cursor [^][v] buttons and turn the data dial to checkmark the box next to the data.



## Parameter Type to be initialized

### Voice Mode

All User Voice:	All Voices in the user memory
Current 1 Voice (All):	Whole currently selected Voice
Common:	Common data for currently selected Voice
EL 1-4:	(Normal Voice) Element data for currently selected Voice
EL C0-C6:	(Drum Voice) Key data for currently selected Voice

### Multi Mode

All User Multi:	All Multis in the user memory
Current 1 Multi (All):	Whole currently selected Multi
Common:	Common data for currently selected Multi
P1-16:	Part data for currently selected Multi
PLG1-2:	Plug-in Part data for currently selected Multi

**NOTE** You can also use the Part/Element buttons ([1/5/9/13]-[4/8/12/16]) to select the Part or Element.

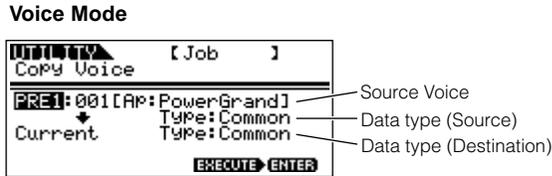
 When “All User Voice” or “All User Multi” is checkmarked, executing the initialize operation results in loss of all user Voice/Multi data. Be careful not to initialize any important data.

## Using the Copy function

From this display you can copy the Element/Key/Part parameter settings from any Voice/Multi to Voice/Multi you are editing. In the Multi mode, you can also copy the effect settings.

**NOTE** If you wish to copy an entire Voice/Multi, use the Store function (page 57).

Move the cursor to select the parameter (the source Voice/Multi, the data type of source, and destination) and change the settings by using the data dial.



## Data type to be copied

### Voice Mode

Common  
Elem1-4 (Normal Voice)  
Key C0-C6 (Drum Voice)

### Multi Mode

Part01-16, PartP1, PartP2  
Arp  
Effect

**NOTE** If you choose to copy Common parameters from the source, this display will change to “Common.”

## Saving Data to an External Device (Bulk Dump)

You can backup your custom MOTIF-RACK settings by using the Bulk Dump function to transmit the data to your computer or some other external MIDI device. Select the target data (the data to be transmitted) with the cursor [^][v] buttons and turn the dial to checkmark the box next to the data.

### Data Type to be transmitted

All Bulk Dump: All User Voices, All User Multis, and System data  
Current 1 Voice (Multi): All currently selected Voices (Multi)

**NOTE** In order to properly use Bulk Dump, the appropriate MIDI Device Number (Ref. #154) must be set.

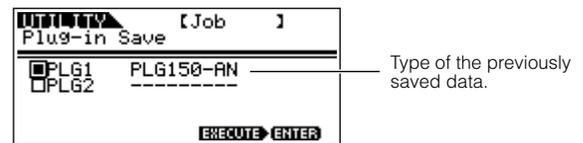
## Saving Board voices (Plug-in Save)

This lets you save the Board voices edited on computer – called Board Custom voices – to MOTIF-RACK’s internal memory.

Because the Plug-in boards do not have user memory and the edited voice data will be lost when turning the power off, the edited Board Custom voice data should be saved with this operation.

**NOTE** For details about Board voices, refer to page 30.

Select the destination (to which you wish to save the settings) with the cursor [^][v] buttons and turn the dial to checkmark the box next to the data. PLG1 and/or PLG2 can be selected.



## Plug-in Load

This lets you load the Plug-in Board parameter settings saved with the Plug-in Save operation to the installed board. The saved data type is shown in the display.

**NOTE** This operation is available only when the saved data type matches that of the installed board. If the two do not match, the data type is shown in parentheses.

## Factory Set (Restore Factory Defaults)

This lets you restore the synthesizer’s default Internal Voices (User Memory) and Multis, as well as its System and other settings.

Once you edit any settings, the corresponding factory defaults will be overwritten and lost.

Use the Factory Set job to restore the factory default settings.



When you restore the factory default settings, all the current settings for the all the Multis and User Voices will be overwritten with the factory defaults. Make sure you are not overwriting any important data. You should back up any important data to your computer beforehand.

# Saving the Settings (Store)

You can store (save) your original parameter settings to User memory, as shown below.

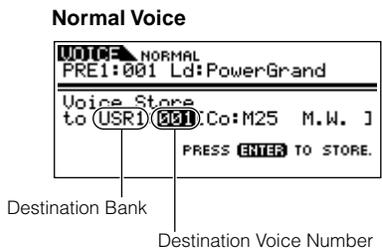
 When you perform this, the settings for the destination data will be overwritten. Important data should always be backed up to computer or some other storage device (page 56).

When changing the Voice/Multi name, refer to page 58.

## 1 Enter the Store mode.

Once you've edited a Voice or Multi, simultaneously hold down the [SHIFT] button and press the [STORE] button.

The Store display appears.

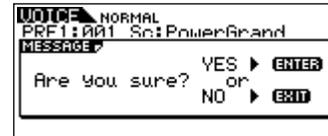


## 2 Select the destination Bank with the BANK [ ◀ ] [ ▶ ] buttons (Normal Voice only).

## 3 Select the destination Voice/Multi number by using the data dial.

## 4 Execute the Store operation.

Simultaneously hold down the [SHIFT] button and press the [ENTER] button. At the prompt, simultaneously hold down [SHIFT] and press enter again to execute the Job, or press the [EXIT] button to cancel.



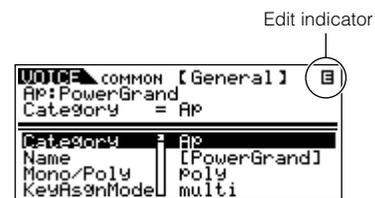
A “Completed” Message appears when the data has been stored, and operation returns to the original display.

**NOTE** You can press the [EXIT] button to cancel the Store operation and return to the original screen.

 Never attempt to turn off the power while data is being stored (while an “Executing...” or “Please keep power on” message is shown). Turning the power off in this state results in loss of all user data.

### Edit Indicator

If you alter any parameters, the  indicator will appear in the top right of the display. This indicates that the current Voice/Multi has been modified but not yet stored.

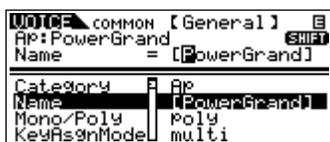


 When you select another program number or another mode, the  indicator will disappear and all edited data will be lost. You should always save your edited data with the Store function.

## Voice/Multi Name settings (Entering Characters)

In the General display of the Voice/Multi Common Edit mode is a Name parameter that allows you to assign names to your data. In this section you'll see how to enter characters in the Name display (Voice/Multi Edit mode).

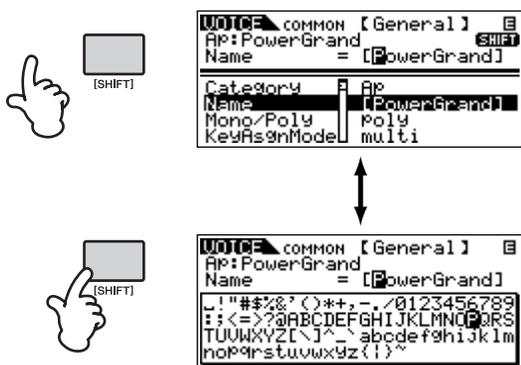
- 1 Select the "Name" parameter in the Voice/Multi Common Edit mode (pages 37, 45).



- 2 Use the BANK [ ◀ ] [ ▶ ] buttons to move the cursor to the position of the first character.
- 3 Use the data dial to enter the desired character.
- 4 Use the BANK [ ◀ ] [ ▶ ] buttons to move the cursor to the position of the next character.
- 5 Repeat Steps 2 and 4 until the desired name is entered.

## Using the Character list

When entering characters, you can call up a special pop-up Character list by pressing and holding down the [SHIFT] button. To return back to the original display, release the [SHIFT] button.

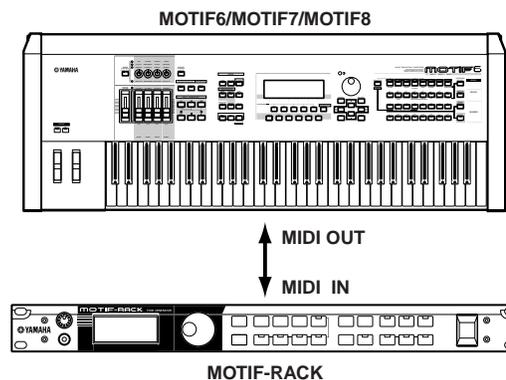


To select characters from the Character list, simultaneously hold down the [SHIFT] button and use the BANK [ ◀ ] [ ▶ ] buttons or the data dial.

## Using MOTIF6/MOTIF7/MOTIF8 voices on the MOTIF-RACK

You can transfer data from the MOTIF6/MOTIF7/MOTIF8 to the MOTIF-RACK via MIDI. The following data can be transmitted.

- User Voices
- User Performances
- Song Mixing Templates



**NOTE** Performance data on the MOTIF6/MOTIF7/MOTIF8 is converted to Multi data for the MOTIF-RACK.

**NOTE** If you wish to save the received data, execute the store operation (page 57).

The MOTIF-RACK has high-quality Reverb Effect, Insertion Effects for up to four parts and the three-band Part EQ for each Part. You can edit the received MOTIF6/MOTIF7/MOTIF8 Voices or Multis by using these parameters.

**NOTE** The received voice or multi may not sound the same as on the original instrument.

**NOTE** The following data of the MOTIF6/MOTIF7/MOTIF8 is not compatible with the MOTIF-RACK.

- User waves and User arpeggios in User Voices
- Variation Effects in User Performances and Song Mixing templates

This section clearly and concisely explains the function of every parameter. Find the desired parameter in the Function Tree below and check that function in the Function List.

**NOTE** For details about the operations, refer to Basic Operations (page 31) and the Quick Guide section (page 34)

## Function Tree

The Reference Numbers let you easily and quickly cross-reference the corresponding parameters in the Function List (page 63).

### VOICE MODE

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>■ Voice Play Mode</b>			
	(BANK)	-	35
	(Program No.)	-	35
	(Category search)	-	36
<b>■ Voice Edit Mode (Normal)</b>			
<b>Common</b>			
<b>General</b>			
	Category	1	63
	Name	2	63
	Mono/Poly	3	63
	KeyAsgnMode	4	63
	M.TuningNo.	5	63
	MEQ Low	6	63
	MEQ LowMid	6	63
	MEQ HighMid	6	63
	MEQ High	6	63
	PortaSwitch	7	63
	PortaTime	8	63
	PortaMode	9	63
	PortaT.Mode	10	63
	PB Upper	11	63
	PB Lower	11	63
	A.PhraseNo.	12	63
	A.PhraseSlt	13	63
	AssignA	14	63
	AssignB	14	63
	Assign1	14	63
	Assign2	14	63
<b>Output</b>			
	Volume	33	64
	Pan	34	64
	RevSend	36	64
	ChoSend	37	64
<b>EG/FLT</b>			
	AEG Attack	131	68
	AEG Decay	131	68
	AEG Sustain	132	68
	AEG Release	131	68
	FEG Attack	129	68
	FEG Decay	129	68
	FEG Release	129	68
	FEG Depth	128	68
	Cutoff	133	68
	Resonance	133	68
<b>CtrlSet</b>			
	Set1-6ElmSw	97	67
	Set1-6Source	98	67
	Set1-6Dest	99	67
	Set1-6Depth	100	67
<b>LFO</b>			
	Wave	134	68
	Speed	135	68
	TempoSync	136	68
	TempoSpeed	137	68
	KeyReset	138	68
	Phase	139	68
	Delay	141	69
	Fadeln	142	69
	Hold	143	69
	FadeOut	144	69
	Dest1-3ElmSw	145	69
	Dest1-3Dest	146	69
	Dest1-3Depth	147	69

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>ARP</b> (select with the [SHIFT]+[ARP EDIT] buttons)			
	Bank	59	65
	Type	60	65
	Tempo	61	65
	Switch	62	65
	Hold	63	65
	KeyMode	64	65
	VelMode	65	65
	NoteLimit	66	65
	VelLimit	67	65
	UnitMitPly	68	66
	VelocityRt	69	66
	GateTimeRt	70	66
<b>EFFECT CONNECT</b> (select with the [EFFECT] button)			
	EL1-4InsEFOut	163	69
	Ins1Ctgr	165	70
	Ins1Type	165	70
	InsEFCnct	164	70
	Ins2Ctgr	166	70
	Ins2Type	166	70
	ReverbSend	168	70
	ChoCtgr	173	70
	ChoType	173	70
	ChoSend	168	70
	ChoRtn	169	70
	ChoToRev	171	70
	ChoPan	170	70
	ReverbType	167	70
	ReverbRtn	169	70
	ReverbPan	170	70
	(effect parameters)	174	70
<b>EFFECT</b> (select with the [EFFECT] button)			
<b>Element</b>			
<b>OSC</b>			
	ElmSw	19	64
	WwNo.	20	64
	WwCtgr	20	64
	KOnDly	21	64
	InsEF	163	69
	NtLmtL	22	64
	NtLmtH	22	64
	VlLmtL	23	64
	VlLmtH	23	64
	CrsFd	24	64
<b>Pitch</b>			
	Coarse	44	65
	Fine	45	65
	Random	46	65
	VelSns	51	65
	FlwSns	55	65
	CntrKy	56	65
<b>PEG</b>			
	HoldTm	52	65
	AtkTm	52	65
	Dcy1Tm	52	65
	Dcy2Tm	52	65
	RelTm	52	65
	HoldLv	53	65
	AtkLv	53	65
	Dcy1Lv	53	65
	Dcy2Lv	53	65
	RelLv	53	65
	Depth	54	65
	TmVel	47	65
	Segmnt	48	65

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>Filter</b>			
	LvlVel	49	65
	CrvVel	50	65
	FlwSns	57	65
	CntrKy	58	65
	Type	74	66
	Gain	75	66
	Cutoff	76	66
	Reso	77	66
	(Width)	78	66
	Dstnce	79	66
	CtofVl	85	66
	ResoVl	86	66
	FlwSns	90	66
	BP1	94	67
	BP2	94	67
	BP3	94	67
	BP4	94	67
	Ofst1	95	67
	Ofst2	95	67
	Ofst3	95	67
	Ofst4	95	67
	HPCtof	80	66
	HP Flw	81	66
<b>FEG</b>			
	HoldTm	87	66
	AtkTm	87	66
	Dcy1Tm	87	66
	Dcy2Tm	87	66
	RelTm	87	66
	HoldLv	88	66
	AtkLv	88	66
	Dcy1Lv	88	66
	Dcy2Lv	88	66
	RelLv	88	66
	Depth	89	66
	TmVel	82	66
	Segmnt	83	66
	LvlVel	84	66
	CrvVel	91	66
	FlwSns	92	66
	CntrKy	93	67
<b>AMP</b>			
	Level	111	67
	Pan	34	64
	AltPan	112	67
	RdmPan	113	67
	SciPan	114	67
	FlwSns	121	68
	BP1	124	68
	BP2	124	68
	BP3	124	68
	BP4	124	68
	Ofst1	125	68
	Ofst2	125	68
	Ofst3	125	68
	Ofst4	125	68
<b>AEG</b>			
	AtkTm	119	68
	Dcy1Tm	119	68
	Dcy2Tm	119	68
	RelTm	119	68
	InitLv	120	68

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀] [▶] buttons	Select with the Select with the cursor [^][v] buttons		
	Dcy1Lv	120	68
	Dcy2Lv	120	68
	TrmVel	115	67
	Segmnt	116	67
	LvVel	117	68
	CrvVel	118	68
	FlwSns	122	68
	CntrKy	123	68
<b>LFO</b>	Wave	134	68
	Speed	135	68
	KOnSyn	140	68
	KOnDly	141	69
	PMod	148	69
	FMod	149	69
	AMod	150	69
<b>EQ</b>	Type	178	70
	Freq1	179	70
	Gain1	179	70
	Q	184	70
	Freq2	181	70
	Gain2	181	70

### ■ Voice Edit Mode (Drum)

Common			
<b>General</b>	Category	1	63
	Name	2	63
	MEQ Low	6	63
	MEQ LowMid	6	63
	MEQ HighMid	6	63
	MEQ High	6	63
	PB Upper	11	63
	PB Lower	11	63
	A.PhraseNo.	12	63
	A.PhraseSft	13	63
	AssignA	14	63
	AssignB	14	63
	Assign1	14	63
	Assign2	14	63
<b>Output</b>	Volume	33	64
	Pan	34	64
	RevSend	36	64
	ChoSend	37	64
	InsRevSend	38	64
	InsChoSend	39	64
<b>EG/FLT</b>	AEG Attack	131	68
	AEG Decay	131	68
	Cutoff	133	68
	Resonance	133	68
<b>CtrlSet</b>	Set1-6Source	98	67
	Set1-6Dest	99	67
	Set1-6Depth	100	67
<b>ARP</b> (select with the [SHIFT]+[ARP EDIT] buttons)	Bank	59	65
	Type	60	65
	Tempo	61	65
	Switch	62	65
	Hold	63	65
	KeyMode	64	65
	VelMode	65	65
	NoteLimit	66	65
	VelLimit	67	65
	UnitMitPly	68	66
	VelocityRt	69	66
	GateTimeRt	70	66
<b>EFFECT CONNECT</b> (select with the [EFFECT] button)	Key	162	69
	InsEFOut	163	69
	Ins1Ctgr	165	70
	Ins1Type	165	70
	InsEFCnct	164	70
	Ins2Ctgr	166	70
	Ins2Type	166	70
	ReverbSend	168	70
	ChoCtgr	173	70
	ChoType	173	70
	ChoSend	168	70
	ChoRtn	169	70
	ChoToRev	171	70
	ChoPan	170	70
	ReverbType	167	70
	ReverbRtn	169	70
	ReverbPan	170	70
<b>EFFECT</b> (select with the [EFFECT] button)	(effect parameters)	174	70

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀] [▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>Key</b>			
<b>OSC</b>	WaveType	25	64
	ElementSw	19	64
	Bank	26	64
	Number	20	64
	WaveCtgr	20	64
	InsEFOut	163	69
	RevSend	36	64
	ChoSend	37	64
	OutputSel	96	67
	KeyAsgnMode	4	63
	RcvNoteOff	27	64
	AltnateGrp	28	64
<b>Pitch</b>	CoarseTune	44	65
	FineTune	45	65
	PitchVelSns	51	65
<b>Filter</b>	Cutoff	76	66
	Resonance	77	66
	CutoffVelSns	85	66
	HPF Cutoff	80	66
<b>AMP</b>	Level	111	67
	Pan	34	64
	AltnatePan	112	67
	RamdomPan	113	67
	AttackTime	119	68
	Decay1Time	119	68
	Decay1Lvl	120	68
	Decay2Time	119	68
	LvVelSns	117	68
<b>EQ</b>	Type	178	70
	L.Freq	179	70
	L.Gain	179	70
	H.Freq	181	70
	H.Gain	181	70
	Freq	182	70
	Gain	183	70
	Q	184	70

### ■ Voice Edit Mode (Plug-in)

Common			
<b>General</b>	Category	1	63
	Name	2	63
	Mono/Poly	3	63
	KeyAsgnMode	4	63
	MEQ Low	6	63
	MEQ LowMid	6	63
	MEQ HighMid	6	63
	MEQ High	6	63
	PortaSwitch	7	63
	Porta Time	8	63
	PB Range	11	63
	A.PhraseNo.	12	63
	A.PhraseSft	13	63
	AssignA	14	63
	AssignB	14	63
	Assign1	14	63
	Assign2	14	63
<b>Output</b>	Volume	33	64
	Pan	34	64
	RevSend	36	64
	ChoSend	37	64
<b>EG/FLT</b>	AEG Attack	131	68
	AEG Decay	131	68
	AEG Release	131	68
	Cutoff	133	68
	Resonance	133	68
<b>CtrlSet</b>	Set1-2Source	98	67
	Set1-2Dest	99	67
	Set1-2Depth	100	67
	MW Filter	101	67
	MW PMod	102	67
	MW FMod	103	67
	MW AMod	104	67
	AT Pitch	105	67
	AT Filter	101	67
	AT PMod	102	67
	AT FMod	103	67
	AT AMod	104	67
	AC Source	106	67
	AC Filter	101	67
	AC PMod	102	67
	AC FMod	103	67
	AC AMod	104	67

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀] [▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>ARP</b> (select with the [SHIFT]+[ARP EDIT] buttons)	Bank	59	65
	Type	60	65
	Tempo	61	65
	Switch	62	65
	Hold	63	65
	KeyMode	64	65
	VelMode	65	65
	NoteLimit	66	65
	VelLimit	67	65
	UnitMitPly	68	66
	VelocityRt	69	66
	GateTimeRt	70	66
<b>EFFECT CONNECT</b> (select with the [EFFECT] button)	Ins1Ctgr	165	70
	Ins1Type	165	70
	InsEFCnct	164	70
	Ins2Ctgr	166	70
	Ins2Type	166	70
	ReverbSend	168	70
	ChoCtgr	173	70
	ChoType	173	70
	ChoSend	168	70
	ChoRtn	169	70
	ChoToRev	171	70
	ChoPan	170	70
	ReverbType	167	70
	ReverbRtn	169	70
	ReverbPan	170	70
<b>EFFECT</b> (select with the [EFFECT] button)	(Effect parameters)	174	70
<b>Element</b>			
<b>OSC</b>	Bank	26	64
	Number	20	64
	VelSensDpt	29	64
	VelSensOfs	30	64
	NoteShift	31	64
<b>PEG</b>	AttackTime	52	65
	ReleaseTime	52	65
	InitLvl	53	65
	ReleaseLvl	53	65
<b>Filter</b>	HPF Cutoff	80	66
<b>Native</b>	(native parameters)	126	68
<b>LFO</b>	Speed	135	68
	KeyOnDelay	141	69
	PMod	148	69
<b>EQ</b>	LowFreq	179	70
	LowGain	179	70
	HighFreq	181	70
	HighGain	181	70

## MULTI MODE

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>Multi Play Mode</b>			
	(Multi No.)	-	43
	(Category search)	-	36
<b>Multi Library</b>			
	(Bank)	-	47
	(ProgramNo.)	-	47
<b>Mixing Edit Mode</b>			
<b>Voice</b>	VoiceNo.	-	44
	BankMSB/BankLSB	-	44
<b>Output</b>	Pan	34	64
	Volume	33	64
<b>Effect</b>	RevSend	36	64
	ChoSend	37	64
	DryLvl	41	64
	InsEF	172	70
<b>Multi Edit Mode</b>			
<b>Common</b>			
<b>General</b>	Category	1	63
	Name	2	63
	MEQ Low	6	63
	MEQ LowMid	6	63
	MEQ HighMid	6	63
	MEQ High	6	63
	AssignA	14	63
	AssignB	14	63
	Assign1	14	63
	Assign2	14	63
<b>MEQ</b>	LowShape	40	64
	LowFreq	40	64
	LowGain	40	64
	LowQ	40	64
	LowMidFreq	40	64
	LowMidGain	40	64
	LowMidQ	40	64
	MidFreq	40	64
	MidGain	40	64
	MidQ	40	64
	HighMidFreq	40	64
	HighMidGain	40	64
	HighMidQ	40	64
	HighShape	40	64
	HighFreq	40	64
	HighGain	40	64
	HighQ	40	64
<b>CtrlAsn</b>	BC	73	66
	AS1	73	66
	AS2	73	66
	FC1	73	66
	FC2	73	66
<b>ARP</b> (select with the [SHIFT]+[ARP EDIT] buttons)	Bank	59	65
	Type	60	65
	Tempo	61	65
	Switch	62	65
	Hold	63	65
	KeyMode	64	65
	VelMode	67	65
	NoteLimit	66	65
	VelLimit	67	65
	UnitMltPly	68	66
	VelocityRt	69	66
	GateTimeRt	70	66
	OutputSw	71	66
	TransmitCh	72	66
<b>EFFECT CONNECT</b> (select with the [EFFECT] button)	VoiceEF1-4Part	172	70
	ChoCtgry	173	70
	ChoType	173	70
	ChoRtn	169	70
	ChoPan	170	70
	ChoToRev	171	70
	ReverbType	167	70
	ReverbRtn	169	70
	ReverbPan	170	70
<b>EFFECT</b> (select with the [EFFECT] button)	(effect parameters)	174	70

## Other Modes

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>Part</b>			
<b>Voice</b>	Bank	26	64
	Number	20	64
	Mode	3	63
	ArpSw	62	65
	RcvCh	32	64
	NtLmtL	22	64
	NtLmtH	22	64
	VlLmtL	23	64
	VlLmtH	23	64
	PrtSw	7	63
	PrtTm	8	63
	PrtMd	9	63
	PB Up	11	63
	PB Low	11	63
	VelDpt	29	64
	VelOfs	30	64
<b>Output</b>	Volume	33	64
	Pan	34	64
	ELPan	35	64
	RevSnd	36	64
	ChoSnd	37	64
	DryLvl	41	64
	OutSel	96	67
<b>Tone</b>	NTShtft	31	64
	Detune	127	68
	Cutoff	133	68
	Reso	133	68
	FEGDpt	128	68
	FEGAtk	129	68
	FEGDcy	129	68
	FEGSus	130	68
	FEGRel	129	68
	AEGAtk	131	68
	AEGDcy	131	68
	AEGSus	132	68
	AEGRel	131	68
<b>EQ</b>	L.Freq	179	70
	L.Gain	179	70
	M.Freq	180	70
	M.Gain	180	70
	M.Q	184	70
	H.Freq	181	70
	H.Gain	181	70
<b>RcvSw</b>	BnkSel	155	69
	Pgm	156	69
	CC	157	69
	PB	151	69
	MW	151	69
	ChAT	151	69
	BC	151	69
	AS1	151	69
	AS2	151	69
	FC1	151	69
	FC2	151	69
	Volume	151	69
	Pan	151	69
	Sus	151	69
	FS	151	69

Display name	Parameter name	Ref. #	Page
Select with the Select with the PAGE [◀][▶] buttons	Select with the Select with the cursor [^][v] buttons		
<b>Effect Bypass Mode</b>			
<b>EF Bypass</b>	Insertion	15	63
	Reverb	15	63
	Chorus	15	63
<b>Utility Mode</b>			
<b>General</b>	Volume	33	64
	NoteShift	31	64
	Tune	185	70
	PowerOnMode	16	63
	CtrlReset	17	63
	LCD Cntrst	18	64
<b>Output</b>	L&R Gain	42	65
	Asn1/2Gain	43	65
	Asn3/4Gain	43	65
<b>MEQ</b> (Displayed only when entering from Voice mode.)	LowShape	40	64
	LowFreq	40	64
	LowGain	40	64
	LowQ	40	64
	LowMidFreq	40	64
	LowMidGain	40	64
	LowMidQ	40	64
	MidFreq	40	64
	MidGain	40	64
	MidQ	40	64
	HighMidFreq	40	64
	HighMidGain	40	64
	HighMidQ	40	64
	HighShape	40	64
	HighFreq	40	64
	HighGain	40	64
	HighQ	40	64
<b>Voice</b> (Displayed only when entering from Voice mode.)	ArpOutSw	71	66
	ArpTransCh	72	66
	AS1 Assign	73	66
	AS2 Assign	73	66
	BC Assign	73	66
	FC1 Assign	73	66
	FC2 Assign	73	66
<b>CtrlAsn</b>	ArpSwitch	107	67
	ArpHold	107	67
	ASA Asgn	108	67
	ASA Dest	109	67
	ASB Asgn	108	67
	ASB Dest	109	67
	FS Asgn	110	67
<b>MIDI</b>	BasicRcvCh	152	69
	TransmitCh	153	69
	DeviceNo.	154	69
	BankSelSw	155	69
	PgmChangeSw	156	69
	CC Mode	157	69
	RcvBulkSw	158	69
	MIDI Sync	159	69
	MIDI IN/OUT	160	69
	ThruPort	161	69
<b>PLG1Sys</b> (Displayed only when a Plug-in Board is installed to PLG1.)	PolyExpand	175	70
	DeviceNo.	154	69
	PortNo.	176	70
	(native parameters)	126	68
<b>PLG2Sys</b> (Displayed only when a Plug-in Board is installed to PLG2.)	PolyExpand	175	70
	DeviceNo.	154	69
	PortNo.	176	70
	RcvGM/XG	177	70
	(native parameters)	126	68
<b>JobSel</b>	Initialize	-	55
	Copy	-	56
	BulkDump	-	56
	Plug-in Save	-	56
	Plug-in Load	-	56
	Factory Set	-	56

# Parameter/Display List

## Using this list

This list lets you easily and quickly find the display name containing the parameter you wish to edit. The mode names are abbreviated as follows.

**VC:** Voice Common edit  
**VE:** Voice Element/Key edit

**MC:** Multi Common edit  
**MP:** Multi Part edit

**ME:** Mixing edit  
**U:** Utility

	Parameter name	Display name (mode)	
<b>A</b>	A.PhraseNo.	General (VC)	
	A.PhraseSft	General (VC)	
	AC Source	CtrlSet (VC)	
	AEG Attack/Decay/Release	EG/FLT (VC), Tone (MP)	
	AEG Sustain	EG/FLT (VC), Tone (MP)	
	AltnateGrip	OSC (VE)	
	AltnatePan	AMP (VE)	
	AMod (CtrlSet)	CtrlSet (VC)	
	AMod (LFO)	LFO (VE)	
	ArpHold	CtrlAsn (U)	
	ArpOutSw	Voice (U)	
	ArpSw	Voice (MP)	
	ArpSwitch (CtrlAsn)	CtrlAsn (U)	
	ArpTransCh	Voice (U)	
	ASA/ASB Asgn	CtrlAsn (U)	
	ASA/ASB Dest	CtrlAsn (U)	
	Asn1-4Gain	Output (U)	
AssignA/B/1/2	General (VC/MC)		
AT Pitch	CtrlSet (VC)		
<b>B</b>	Bank	OSC (VE), Voice (MP)	
	Bank (ARP)	ARP (VC/MC)	
	BankSelSw	MIDI (U)	
	BasicRcvCh	MIDI (U)	
	BC/AS1/AS2/FC1/FC2	Voice (U)	
	BnkSel	RcvSw (MC)	
	BP (AMP)	AMP (VE)	
	BP (Filter)	Filter (VE)	
	<b>C</b>	Category	General (VC/MC)
		CC Mode	MIDI (U)
ChoCtgr		Effect (VC/MC)	
ChoSend		OSC (VE), Output (VC/MP), Effect (ME)	
ChoToRev		Effect (VC/MC)	
ChoType		Effect (VC/MC)	
CntrKy (AEG)		AEG (VE)	
CntrKy (FEG)		FEG (VE)	
CntrKy (PEG)		PEG (VE)	
CntrKy (Pitch)		Pitch (VE)	
CoarseTune		Pitch (VE)	
CrsFd		OSC (VE)	
CrvVel (AEG)		AEG (VE)	
CrvVel (FEG)		FEG (VE)	
CrvVel (PEG)		PEG (VE)	
CtrlReset		General (U)	
Cutoff		Filter (VE)	
Cutoff (offset)	EG/FLT (VC), Tone (MP)		
CutoffVelSns	Filter (VE)		
<b>D</b>	Depth (CtrlSet)	CtrlSet (VC)	
	Depth (FEG)	FEG (VE)	
	Depth (LFO)	LFO (VC)	
	Depth (PEG)	PEG (VE)	
	Dest (CtrlSet)	CtrlSet (VC)	
	Dest (LFO)	LFO (VC)	
	Detune	Tone (MP)	
	DeviceNo.	MIDI (U), PLG1Sys (U), PLG2Sys (U)	
	DryLvl	Output (MP), Effect (ME)	
	Dstnce	Filter (VE)	
<b>E</b>	EF Bypass	EFBypass	
	ElementSw	OSC (VE)	
	ElmSw (CtrlSet)	CtrlSet (VC)	
	ElmSw (LFO)	LFO (VC)	
	ELPan	Output (MP)	
<b>F</b>	FadeIn	LFO (VC)	
	FadeOut	LFO (VC)	
	FEG Attack/Decay/Release	EG/FLT (VC), Tone (MP)	
	FEG Sustain	Tone (MP)	
	FEGDepth	EF/FLT (VC), Tone (MP)	
	FineTune	Pitch (VE)	
	FlwSns (AEG)	AEG (VE)	

	Parameter name	Display name (mode)		
<b>F</b>	FlwSns (AMP)	AMP (VE)		
	FlwSns (FEG)	FEG (VE)		
	FlwSns (PEG)	PEG (VE)		
	FlwSns (Filter)	Filter (VE)		
	FlwSns (Pitch)	Pitch (VE)		
	FMod (CtrlSet)	CtrlSet (VC)		
	FMod (LFO)	LFO (VE)		
<b>G</b>	Freq (MEQ)	MEQ (MC/U)		
	Freq (Type=P.EQ)	EQ (VE)		
	FS Asgn	CtrlAsn (U)		
	<b>H</b>	Gain (Filter)	Filter (VE)	
Gain (MEQ)		MEQ (MC/U)		
Gain (Type=P.EQ)		EQ (VE)		
GateTimeRt		ARP (VC/MC)		
<b>I</b>	H.Freq/Gain	EQ (VE/MP)		
	Hold (ARP)	ARP (VC/MC)		
	Hold (LFO)	LFO (VC)		
	HPF Cutoff	Filter (VE)		
	HP Flw	Filter (VE)		
<b>J</b>	Ins1Ctgr/Type	Effect (VC)		
	Ins2Ctgr/Type	Effect (VC)		
	InsChoSend	Output (VC)		
	InsEF	Effect (ME)		
	InsEFCnct	Effect (VC)		
	InsEFOut	Effect (VC), OSC (VE)		
	InsRevSend	Output (VC)		
<b>K</b>	Key	Effect (VC)		
	KeyAsgnMode	General (VC), OSC (VE)		
	KeyMode	ARP (VC/MC)		
	KeyOnDelay	OSC (VE)		
	KeyOnDelay (LFO)	LFO (VC/VE)		
<b>L</b>	KeyReset	LFO (VC)		
	KOnSyn	LFO (VE)		
	<b>M</b>	L&R Gain	Output (U)	
		L.Freq/Gain	EQ (VE/MP)	
		LCD Cntrst	General (U)	
		LEVEL (AEG)	AEG (VE)	
		Level (AMP)	AMP (VE)	
LEVEL (FEG)		FEG (VE)		
LEVEL (PEG)		PEG (VE)		
LvlVel (AEG)	AEG (VE)			
LvlVel (FEG)	FEG (VE)			
LvlVel (PEG)	PEG (VE)			
<b>N</b>	M.Freq/Gain	EQ (MP)		
	M.TuningNo.	General (VC)		
	M.Q	EQ (MP)		
	MEQ	MEQ (MC)		
	MEQ OFFSET	General (VC/MC)		
	MIDI IN/OUT	MIDI (U)		
	MIDI Sync	MIDI (U)		
	Mode	Voice (MP)		
	Molo/Poly	General (VC)		
	MW/AT/AC (CtrlSet)	CtrlSet (VC)		
<b>O</b>	Name	General (VC/MC)		
	Native Parameters	Native (VE), PLG1Sys (U), PLG2Sys (U)		
	NoteLimit (ARP)	ARP (VC/MC)		
	NoteShift	OSC (VE), Tone (MP), General (U)		
	NlLmt (L/H)	OSC (VE), Voice (MP)		
<b>P</b>	Number	Voice (MP)		
	Ofst (AMP)	AMP (VE)		
	Ofst (Filter)	Filter (VE)		
	OutputSel	OSC (VE), Output (MP)		
<b>Q</b>	OutputSw	ARP (MC)		
	<b>R</b>	Pan	AMP (VE), Output (VC/MP/ME)	
		PartReceive Switch	RcvSw (MP)	
		PB Lower/Upper	General (VC), Voice (MP)	
		PB Range	General (VC)	
		PgmChangeSw	MIDI (U)	
		Phase	LFO (VC)	
		<b>S</b>	RandomPan	AMP (VE)
			RandomTune	Pitch (VE)
			RcvBulkSw	MIDI (U)
RcvGM/XG			PLG2Sys (U)	
RcvNoteOff	OSC (VE)			
RcvCh	Voice (MP)			
Resonance	Filter (VE)			
Resonance (offset)	EG/FLT (VC), Tone (MP)			
ResoVI	Filter (VE)			
Reverb/ChoPan	Effect (VC/MC)			
Reverb/ChoRtn	Effect (VC/MC)			
Reverb/ChoSend	Effect (VC)			
ReverbType	Effect (VC/MC)			
RevSend	OSC (VE), Output (VC/MP), Effect (ME)			
<b>T</b>	ScalingPan	AMP (VE)		
	Segmnt (AEG)	AEG (VE)		
	Segmnt (FEG)	FEG (VE)		
	Segmnt (PEG)	PEG (VE)		
	Shape (MEQ)	MEQ (MC/U)		
	Source	CtrlSet (VC)		
	Speed	LFO (VC/VE)		
	Switch	ARP (VC/MC)		
	<b>U</b>	Tempo (ARP)	ARP (VC/MC)	
		TempoSpeed	LFO (VC)	
TempoSync		LFO (VC)		
ThruPort		MIDI (U)		
TIME (AEG)		AEG (VE), AMP (VE)		
TIME (FEG)		FEG (VE)		
TIME (PEG)		PEG (VE)		
TmVel (AEG)		AEG (VE), AMP (VE)		
TmVel (FEG)		FEG (VE)		
TmVel (PEG)		PEG (VE)		
TransmitCh	MIDI (U)			
TransmitCh (ARP)	ARP (MC)			
Tune	General (U)			
Type (ARP)	ARP (VC/MC)			
Type (EQ)	EQ (VE)			
Type (Filter)	Filter (VE)			
<b>V</b>	UnitMltply	ARP (VC/MC)		
	<b>W</b>	VelLimit (ARP)	ARP (VC/MC)	
		VelMode	ARP (VC/MC)	
		VelocityRt	ARP (VC/MC)	
		VelSns (Pitch)	Pitch (VE)	
		VelSnsDpt	OSC (VE), Voice (MP)	
		VelSnsOfs	OSC (VE), Voice (MP)	
		VlLmt (L/H)	OSC (VE), Voice (MP)	
		VoiceEF1-4Part	Effect (MC)	
		Volume	General (U), Output (VC/MP/ME)	
<b>W</b>		Wave	LFO (VC/VE)	
	WaveType	OSC (VE)		
	Width	Filter (VE)		
	WwCtgr	OSC (VE)		
WwNo.	OSC (VE)			

Reference

# Function List

This list clearly and concisely explains the function of every parameter. Following the table are various footnotes, providing further details and explanations for those items marked with an asterisk (\*). The “Related Page” column also provides cross-references for operation examples, other details and relevant parameters. The Reference Numbers in the manual correspond to the relevant items in the Function Tree (page 59). By checking the Reference Numbers, you can quickly and easily find the corresponding function and parameter in the charts.

**NOTE** For information on the Display Indications and mode selection, see page 32. For information on the Play mode, see pages 35, 43)

Ref. #	Display	Parameter Name	Explanation	Related Page	
1	Category	Category	Sets the Name (up to 10 characters) and Categories.	36, 58	*1
2	Name	Name			
3	Mono/Poly (Mode)	Mono/Poly	Selects whether a voice/part is played back monophonically (single notes only) or polyphonically (multiple simultaneous notes).	-	
4	KeyAsgnMode	Key Assign Mode	This setting applies when the same note number (key) is received by the tone generator. When set to “single,” the previous sound is cut off to accommodate the next. When set to “multi,” the note sounds for its original duration. When the AltnateGrp Parameter is set to a setting other than “off,” this parameter is unavailable (Drum Key Edit).	-	
5	M.TuningNo.	Micro Tuning Number	Determines the tuning system for the voice. Normally, this should be set to 00 (Equal temperament); however thirty-one additional tuning systems are available for a variety of tuning applications and effects.	-	*2
6	(MEQ OFFSET)	Master EQ Offset	Adjusts the master (global) EQ settings. The settings made here are applied as offsets to the EQ settings (with the exception of “MID”).	-	*3
7	PortaSwitch (PrtSw)	Portamento Switch	Determines whether Portamento (a smooth transition in pitch from one note to the next) is on or off.	-	*4
8	PortaTime (PrtTm)	Portamento Time	Determines the Portamento pitch transition time. Higher values result in longer transition times. The effect is applied according to the “TimeMode” setting.	-	
9	PortaMode (PrtMd)	Portamento Mode	With the “fingered/fingr” setting, Portamento is only applied when you play legato (playing the next note before releasing the previous one). With the “fulltime/full” setting, Portamento is always applied.	-	*4 *5
10	PortaT.Mode	Portamento Time Mode	When “TimeMode” is set to “rate (normal voice),” the transition time will vary in proportion to the interval from one note to next. Setting this to “time” makes the parameter a true time scale setting, specified by the “Time” parameter.	-	*4 *5
11	PB Upper/Lower, PB Range	Pitch Bend Range	Determines the amount (in semitones; 12: one octave) by which the pitch is varied when the MOTIF-RACK receives a Pitch Bend change message. When selecting a Plug-in Voice, the Upper and Lower ranges cannot be independently set here.	-	
12	A.PhraseNo.	Audition Phrase No.	Determines the Audition Phrase settings assigned to each voice.	36	
13	A.PhraseSft	Audition Phrase Note Shift			
14	AssignA/B/1/2	Assign A/B/1/2	Sets the value for each Assign Controller (A, B, 1, and 2).	40	
15	(EF Bypass)	Effect Bypass	Sets the specific effect(s) to be bypassed or not.	31	
16	PowerOnMode	Power On Mode	Determines the default power-on mode (and memory bank) — letting you select which condition is automatically called up when you turn the power on. The first program number of the specified bank is selected automatically.	-	*6
17	CtrlReset	Controller Reset	Determines whether the current condition of the controller (Modulation Wheel, Foot Controller, Aftertouch, etc.) is maintained or reset when you switch between Voices.	-	

Ref. #	Display	Parameter Name	Explanation	Related Page	
18	LCD Cntrst	LCD Contrast	Adjusts the display contrast.	-	
19	ElementSw (ElmSw)	Element Switch	Determines the method by which each Element/Key/Part is output. In the Drum Key edit mode, this is only available when the "Type" is set to "PresetWave."	-	
20	WvNo./WvCtgr/Number	Wave Number/Wave Category/Voice Number	Normal Element Edit...Select the desired wave/category (page 39) used for the Element. Drum Key Edit...Select a Wave/Normal Voice Number/Category. Multi Part Edit...Selects the desired voice number used for each Part (see the separate Data List). Plug-in Element Edit...Select the desired Board voice number	-	*7
21	KOnDly	Key On Delay	Determines the time (delay) between the moment a note on message is received and the point at which the sound is played.	-	
22	NtLmt (L/H)	Note Limit Low/High	Determines the lowest and highest notes of the keyboard range (the note range over which the MOTIF-RACK responds).	26	*8
23	VLmt (L/H)	Velocity Limit Low/High	Determines the minimum and maximum values of the velocity range within which each Element will respond.	26	*9
24	CrsFd	Velocity Limit Cross Fade	Determines how smoothly or abruptly Elements switch between each other in response to velocity. (This only applies to Elements that have been set for velocity splits with Velocity Limit above.) Minimum values create an abrupt change between Elements, while maximum values let you smoothly change Elements depending on your playing strength.	-	
25	WaveType	Wave Type	Determines whether a Wave or a Normal voice is to be used for the selected key.	-	*10
26	Bank	Bank	Drum Key Edit...This parameter is available when Type (above) is set to "voice." Any of the Normal voice banks can be selected. Plug-in voices cannot be selected. Plug-in Element Edit...Determines the Board Voice Bank. Multi Part Edit...Determines the Voice Bank (page 24) for each part.	-	
27	RcvNoteOff	Receive Note Off	Determines whether Note Off (Key Off) messages are received (on) or not (off).	-	*12
28	AltnateGrp	Alternate Group	Assigns the same number to the drum notes you don't want to have sound simultaneously (such as open and closed hi-hats).	-	
29	VelSensDpt (VelDpt)	Velocity Sensitivity Depth	Determines the velocity sensitivity, or how much the level of the voice changes in response to the received velocity.	-	*14
30	VelSensOfs (VelOfs)	Velocity Sensitivity Offset	Determines the amount by which received velocities are adjusted for the actual velocity effect.	-	
31	NoteShift (NTShft)	Note Shift	Determines the pitch (key transpose) setting in semitones (12: one octave). This doesn't affect the transmitted MIDI data.	-	
32	RcvCh	Receive Channel	Each Part receives MIDI messages according to the channel set here. Select "off" for Parts that you do not want to respond to MIDI.	43	
33	Volume	Volume	Adjusts the output level.	-	
34	Pan	Pan	Determines the stereo pan position. L63 (hard left) -C (Center) -R63 (hard right)	-	*16
35	ELPan	Voice Element Pan	Determines whether the individual pan settings for each Element (made in the Voice Edit mode) are applied or not.	-	*17
36	RevSend (RevSnd)	Reverb Send	Determines the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect.	-	*11
37	ChoSend (ChoSnd)	Chorus Send	Determines the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect.	-	
38	InsRevSend	Insertion Reverb Send	Determines the Send level for the entire Drum voice (all keys), sent from Insertion Effect 1/2 to the Reverb effect.	-	*15
39	InsChoSend	Insertion Chorus Send	Determines the Send level for the entire Drum voice (all keys), sent from Insertion Effect 1/2 to the Chorus effect.	-	
40	(MEQ) Shape/Freq/Gain/Q	Master EQ Shape/Frequency/Gain/Q	Adjusts the tonal qualities of the sound. You can apply five-band equalization to all parts of the selected part or all elements of the selected voice.	51	*18 *19
41	DryLvl	Dry Level	Determines the level of the unprocessed (dry) sound of the selected part, letting you control the overall effect balance among the parts.	47	

Ref. #	Display	Parameter Name	Explanation	Related Page	
42	L&R Gain	L&R Gain	Set the output gain of each jack. When this is set to a lower value, you can control the fine volume by using the [VOLUME] Knob.	-	
43	Asn1-4Gain	Assignable Out 1-4 Gain			
44	Coarse (Tune)	Coarse Tune	Determines the pitch setting in semitones (12: one octave).	-	*13
45	Fine (Tune)	Fine Tune	Determines the fine tuning.	-	
46	Random (Tune)	Random Tune	Randomly varies the pitch of the Element for each Note On message received. 127...maximum pitch change 0...no pitch change.	-	
47	TmVel	PEG Time Velocity Sensitivity	Determines the degree to which velocity affects the pitch change of the Pitch EG. Positive settings will cause the pitch change to become faster for a large Velocity value. Negative values will have the opposite effect. This affects only the specified Segments.	-	*21
48	Segmnt	PEG Time Segment Velocity Sensitivity		-	*20
49	LvlVel	PEG Level Velocity Sensitivity	Determines the sensitivity of the PEG Level (the width of the PEG change) to velocity. The Curve parameter lets you select from five different preset velocity curves (graphically indicated in the display), each determining how velocity affects the Pitch EG.	-	*21
50	CrvVel	Velocity Sensitivity Curve		-	*54
51	PitchVelSns (VelSns)	Pitch Velocity Sensitivity	Determines the sensitivity of the PEG Level (the degree of the PEG change) to velocity.	-	
52	(PEG) TIME	PEG Time	Determines the transition in pitch from the moment a Note On message is received to the point at which the sound stops.	26	
53	(PEG) LEVEL	PEG Level			
54	(PEG) Depth	PEG Depth			
55	FlwSns	Pitch Key Follow Sensitivity	Determines the sensitivity of the Key Follow effect (the interval of adjacent notes). At +100, adjacent notes are pitched one semitone (100 cents) apart. At 0, all notes are the same pitch (for the percussion sounds, etc.). At +50, one octave is stretched out over twenty-four notes. For negative values, the settings are reversed.	-	*22
56	CntrKy	Pitch Key Follow Center Key	Determines the basic pitch (note number) used by the PitchSens parameter (above). The note number in this setting is the same pitch as normal (100%).	-	*22
57	FlwSns	PEG Time Key Follow Sensitivity	Determines the sensitivity of the PEG time (the speed of the PEG change) to velocity.	-	*22
58	CntrKy	PEG Time Key Follow Center Key	Determines the basic pitch (note number) used by the EGTimeSens parameter (above). When the center note is played, the PEG time behaves according to its actual settings. For other notes, the speed varies in proportion to the key played and its interval away from the center key.	-	*22
59	Bank	Arpeggio Type Bank	Determines the Arpeggio bank. pre1: preset 1, pre2: preset 2	53	
60	Type	Arpeggio Type	Determines the Arpeggio type. The two-letter prefix before the name indicates the general Arpeggio category.	54	*27
61	Tempo	Arpeggio Tempo	Determines the Arpeggio Tempo. When MIDI sync set in the Utility mode is turned on, "MIDI" is displayed here and cannot be set.	54	
62	Switch (ArpSwitch)	Arpeggio Switch	Determines whether Arpeggio is on or off.	54	*23
63	Hold	Arpeggio Hold	Determines whether Arpeggio playback is "held" or not. When set to "on," the Arpeggio cycles automatically, even if a Note Off message is received, and it continues to cycle until the next Note On message is received.	-	*24
64	KeyMode	Arpeggio Key Mode	Determines how the Arpeggio plays back when receiving a Note On message.	-	*25 *26 *27
65	VelMode	Arpeggio Velocity Mode	Determines the playback velocity of the Arpeggio, or how it responds to the received velocity value.	-	*28
66	NoteLimit	Arpeggio Note Limit Low/High	Determines the lowest and highest notes in the Arpeggio's note range.	54	*29
67	VelLimit	Arpeggio Velocity Limit Low/High	Determines the lowest and highest velocity in the Arpeggio's velocity range.	54	*9

Ref. #	Display	Parameter Name	Explanation	Related Page	
68	UnitMltPly	Arpeggio Unit Multiply	Determines the Arpeggio playback time. For example, if you set a value of 200%, the playback time will be doubled and the tempo halved. If you set a value of 50%, the playback time will be halved and the tempo doubled.	-	
69	VelocityRt	Arpeggio Velocity Rate	Determines how much the Velocity of the Arpeggio playback is offset from the original value. For example, a setting of 100% means the original values are used.	-	*30 *31
70	GateTimeRt	Arpeggio Gate Time Rate	Determines how much the Gate Time (length) of the Arpeggio notes is offset from the original value. A setting of 100% means the original values are used.	-	*30
71	OutputSw (ArpOutSw)	Arpeggio MIDI Out Switch	When set to on, Arpeggio playback and Audition Phrase playback data are output from the MIDI terminal.	36, 52	
72	TransmitCh (ArpTransCh)	Arpeggio MIDI Transmit Channel	Determines the MIDI transmit channel for Arpeggio playback and Audition Phrase playback data. TCh...Arpeggio playback data is transmitted by TransmitCh in the Utility mode.	-	*32
73	BC/AS1/AS2/FC1/ FC2	BC/Assign1/Assign2/FC1/ FC2 Control Number	Sets the control number for the Breath Controller (BC), Assign 1/2 controllers (AS1/2), and Foot Controllers 1/2 (FC1/2).	40	*32
74	Type	Filter Type	Determines the filter type. The parameters differ depending on the selected type.	27	
75	Gain	Filter Gain	Determines the Gain (the amount of boost applied to the signal sent to the Filter).	-	
76	Cutoff	Filter Cutoff Frequency	Determines the cutoff frequency for the Filter, or the central frequency around which the Filter is applied.	26	*34
77	Resonance (Reso)	Filter Resonance	Determines the amount of Resonance (harmonic emphasis) applied to the signal at the cutoff frequency.	26	*33
78	Reso (Width)	Filter width	With the BPFw, this parameter is used to adjust the width of the band of signal frequencies passed by the filter.	-	*33
79	Dstnce	Distance	Determines the distance between the Cutoff frequencies, for the Dual Filter types. (The two filters in combination are connected in parallel fashion.)	29	
80	HPF Cutoff (HPCtof)	HPF Cutoff Frequency	Determines the central frequency for the Key Follow parameter (below) of the HPF. This parameter is available only when a filter type "LPF12" or "LPF6" is selected (Normal Voice).	28	
81	HP Flw	HPF Cutoff Frequency Key Follow	Determines the Key Follow setting for the HPF Cutoff frequency (Type=LPF12/LPF6 only). This parameter varies the center frequency according to the note number. Positive settings raise the center frequency for higher notes and lower it for lower notes. Negative settings have the opposite effect.	-	
82	TmVel	FEG Time Velocity Sensitivity	Determines the degree to which velocity affects the pitch change of the Filter EG. Positive settings cause the pitch change to become faster for a large Velocity value. Negative values have the opposite effect. This affects only the specified Segments.	-	*21
83	Segmnt	FEG Time Segment		-	*20
84	LvlVel	FEG Level Velocity Sensitivity	Determines the sensitivity of the PEG Level (the width of the FEG change) to velocity. The Curve parameter lets you select from five different preset velocity curves (graphically indicated in the display), each determining how velocity affects the Filter EG.	-	*21
85	CutofVelSns (CtofVI)	Filter Cutoff Velocity Sensitivity	Determines the sensitivity of the Cutoff frequency to velocity.	-	
86	ResoVI	Filter Resonance Velocity Sensitivity	Determines the sensitivity of the Resonance to velocity.	-	
87	(FEG) TIME	FEG Time	Determines the transition in tone (cutoff frequency) from the moment a Note On message is received to the point at which the sound stops.	27	
88	(FEG) LEVEL	FEG Level		27	
89	(FEG) Depth	FEG Depth		27	
90	FlwSns	Filter Cutoff Key Follow Sensitivity	Determines the Filter Key Follow (Filter Scaling) Sensitivity, or how much the level of the cutoff frequency changes in response to the note number.	-	
91	CrvVel	FEG Level Velocity Curve	Determines the sensitivity of the FEG Level to velocity. This parameter lets you select from five different preset velocity curves, each determining how velocity affects the Filter EG.	-	*54
92	FlwSns	FEG Time Key Follow Sensitivity	Determines the sensitivity of the FEG Rate settings (the speed of the FEG change) to note position.	-	*22

Ref. #	Display	Parameter Name	Explanation	Related Page	
93	CntrKy	FEG Time Key Follow Center Key	Determines the basic pitch (note number) used by the EGTimeSens parameter (above). When the center note is played, the FEG time behaves according to its actual settings. For other notes, the speed varies in proportion to the note number and its interval away from the center key.	-	*22
94	BP1-4	Filter Cutoff Scaling Break Point	Determines the Break Points for Filter Scaling (how the filter cutoff frequency responds to note position) and Offset Levels.	-	*35 *37
95	Ofst1-4	Filter Cutoff Scaling Offset		-	*35 *37
96	OutputSel (OutSel)	Output Select	Determines the specific output(s) for the individual part (Multi Part Edit). Determines the specific output(s) for the individual Drum key signal (Drum Key Edit).	-	*11 *38
97	(Set1-6) ElmSw	Controller Set 1-6 Element Switch	Determines whether or not the selected controller affects each individual element. “-”...disabled.	40	*39
98	(Set1-6) Source	Controller Set 1-6 Source	Determines which controller is to be assigned and used for the selected Set. This controller then is used to control the parameter set in Destination below.	40	*40 *41
99	(Set1-6) Dest	Controller Set 1-6 Destination	Determines the parameter that is controlled by the Source controller (above).	40	*42
100	(Set1-6) Depth	Controller Set 1-6 Depth	Determines the degree to which the Source controller affects the Destination parameter.	40	
101	MW/AT/AC Filter	MW/AT(CAT)/AC(AC1) Filter Control	Determines the depth of control of the Modulation Wheel/Aftertouch/ Assignable Controller over the filter cutoff frequency.	-	
102	MW/AT/AC PMod	MW/AT(CAT)/AC(AC1) LFO Pitch Modulation Depth	Determines the depth of control of the Modulation Wheel/Aftertouch/ Assignable Controller has over pitch modulation (vibrato effect).	-	
103	MW/AT/AC FMod	MW/AT(CAT)/AC(AC1) LFO Filter Modulation Depth	Determines the depth of control of the Modulation Wheel/Aftertouch/ Assignable Controller has over filter cutoff modulation (wah effect).	-	
104	MW/AT/AC AMod	MW/AT(CAT)/AC(AC1) LFO Amplitude Modulation Depth	Determines the depth of control of the Modulation Wheel/Aftertouch/ Assignable Controller has over amplitude modulation (tremolo effect).	-	
105	AT Pitch	AT (CAT) Pitch Control	Determines the degree to which aftertouch messages affect pitch, over a range of two octaves (in semitones).	-	
106	AC Source	AC Source (AC1 Control Number)	Determines the MIDI Control number used to control the filter, PMod, FMod, and Amod.	-	
107	ArpSwitch/Hold	Arpeggio Switch/Hold Control Number	Determines the Control Number that controls the Arpeggio playback on/off and Arpeggio Hold on/off.	-	
108	ASA/ASB Asgn	Assignable A/B Controller Control Number	Determines the Control number to be controlled by ASSIGN A/B. This is available when controlling an external MIDI device.	40	
109	ASA/ASB Dest	Assignable A/B Controller Destination	Determines the function to be controlled by the Control Change number set above. See the separate Data List.	40	*42
110	FS Asgn	FS Control Number/ FS Function Assignment	Assign a specific function and control number to the Footswitch.	40	
111	Level	Element Level	Adjusts the output level for the selected Element/drum key, letting you control the level balance among the Elements/keys.	-	
112	AltnatePan (AltPan)	Alternate Pan Depth	Determines the amount by which the sound of the selected Element is panned alternately left and right for each note played. The Pan setting is used as the basic Pan position.	-	*12
113	RandomPan (RdmPan)	Random Pan Depth	Determines the amount by which the sound of the selected Element is panned randomly left and right for each note played. The main Pan setting is used for the basic Pan position.	-	
114	ScalingPan (SciPan)	Scaling Pan Depth	Determines the degree to which the notes (specifically, their position or octave range) affect the Pan position, left and right, of the selected Element. At note C3, the main Pan setting is used for the basic Pan position.	-	
115	TmVel	AEG Time Velocity Sensitivity	Determines the degree to which velocity affects the Amplitude EG. Positive settings cause the AEG change to become faster for a large Velocity value. Negative values have the opposite effect. This affects only the specified Segments.	-	*21
116	Segmnt	AEG Time Segment		-	*20

Ref. #	Display	Parameter Name	Explanation	Related Page	
117	LvlVel	Level Velocity Sensitivity	Determines the sensitivity of the AEG Level (the volume of the AEG change) to velocity. The Curve parameter lets you select from five different preset velocity curves (graphically indicated in the display), each determining how velocity affects the Amplitude EG.	-	*21
118	CrvVel	Velocity Sensitivity Curve		-	*54
119	(AEG) TIME	AEG Time	Determines the transition in volume (Amplitude) from the moment a Note On message is received to the point at which the sound stops. This lets you reproduce many characteristics of natural acoustic instruments — such as the quick attack and decay of percussion sounds, or the long release of a sustained piano tone. Keep in mind that different sounds have varying degrees of natural decay. For example, a piano sound gradually decreases in volume; however, an organ sound stays at the same volume. Also, the larger the value of the AEG Release Time, the longer the sustain.	27	
120	(AEG) LEVEL	AEG Level		27	
121	FlwSns	Amplitude (Level) Key Follow Sensitivity	Determines the Level Key Follow (Level Scaling) Sensitivity, or how much the volume changes in response to the particular note number.	-	*22
122	FlwSns	AEG Time Key Follow Sensitivity	Determines the sensitivity of the AEG time (the speed of the AEG change) to velocity.	-	
123	CntrKy	AEG Time Key Follow Center Key	Determines the basic pitch (note number) used by the EGTimeSens parameter (above). When the center note is played, the AEG time behaves according to its actual settings. For other notes, the speed varies in proportion to the note played and its interval away from the center key.	-	*22
124	BP1-4	Level Scaling Break Point	Determines the Break Points for Amplitude Scaling (how the volume responds to note position) and Offset Levels.	-	*36 *37
125	Ofst1-4	Level Scaling Offset		-	*36 *37
126	(Native Parameters)	Plug-in Native Parameters	For editing the native parameters (those parameters exclusive to the particular board). Use the [^] [v] buttons to scroll through the display. The parameters will vary depending on the Plug-in Board. For details about each parameter and its functions, refer to the Owner's Manual or the on-line help that came with your Plug-in Board. For details on the current lineup of available Plug-in Boards, see page 19.	-	
127	Detune	Detune	Determines the fine tuning.	-	
128	FEGDepth	FEG Depth	Determines the Filter Envelope Generator depth (amount of Cutoff frequency) for each part.	-	*43
129	FEG Attack/Decay/Release	FEG Attack/Decay/Release Time	Set the FEG (Filter Envelope Generator)/AEG (Amplitude Envelope Generator) parameters for each part. The parameters offset the same parameters in Voice Element Edit.	-	*44
130	FEG Sustain	FEG Sustain Level		-	
131	AEG Attack/Decay/Release	AEG Attack/Decay/Release Time		-	*45
132	AEG Sustain	AEG Sustain Level		-	
133	Cutoff/Resonance	Cutoff/Resonance Offset	The settings made here are applied as offsets to the filter cutoff frequency/resonance.	-	
134	Wave	LFO Wave	Determines the LFO waveform used to vary the sound. The "user" setting applies the user wave edited from the Voice Editor (see the separate Installation Guide). For details, see the Voice Editor Owner's Manual (PDF).	27	*46
135	Speed	LFO Speed	Determines the speed of the LFO waveform. The higher the value, the faster the speed.	-	*47
136	TempoSync	LFO Tempo Sync	Determines whether or not the LFO is synchronized to the tempo of the Arpeggio.	-	
137	TempoSpeed	LFO Tempo Speed	Allows you to make detailed note value settings that determines how the LFO pulses in sync with the Arpeggio when the TempoSync parameter above is set to on.	-	*48
138	KeyReset	LFO Key On Reset	Determines whether or not the LFO is reset each time a Note On message is received. Three settings are available (Voice Edit Common).	-	*49
139	Phase	LFO Phase	Determines the starting phase point for the LFO Wave when a Note On message is received.	-	*50
140	KOnSyn	Key On Sync	When this is set to on, the LFO waveform is reset every time a Note On message is received.	-	

Ref. #	Display	Parameter Name	Explanation	Related Page	
141	KeyOnDelay (KONdly)	LFO (Key On) Delay Time	Determines the delay time before the LFO comes into effect.	-	
142	FadeIn	LFO Fade-in Time	Determines the amount of time for the LFO effect to fade in (after the Delay time has elapsed). A higher value results in a slower fade-in.	-	*51
143	Hold	LFO Hold Time	Determines the length of time during which the LFO is held at its maximum level.	-	
144	FadeOut	LFO Fade-out Time	Determines the amount of time for the LFO effect to fade out (after the Delay time has elapsed).	-	
145	Dest1-3ElmSw	LFO Destination Element Switch	Determines whether or not each element is to be affected by the LFO. The element number (1 - 4) is shown when the LFO is enabled; a dash (-) indicates the LFO is disabled for that element.	-	
146	Dest1-3Dest	LFO Destination	Determines the parameters which are to be controlled (modulated) by the LFO Wave.	-	
147	Dest1-3Depth	LFO Depth	Determines the LFO Wave Depth.	-	
148	PMod	LFO Pitch Modulation Depth	Determines the amount (depth) by which the LFO waveform varies (modulates) the pitch of the sound.	-	
149	FMod	LFO Filter Modulation Depth	Determines the amount (depth) by which the LFO waveform varies (modulates) the Filter Cutoff frequency.	-	
150	AMod	LFO Amplitude Modulation Depth	Determines the amount (depth) by which the LFO waveform varies (modulates) the amplitude of the sound.	-	
151	(Part Receive Switch)	Part Receive Switch	Set how each individual part responds to various MIDI messages, such as Control Change and Program Change messages.	-	*61
152	BasicRcvCh	Basic Receive Channel	Determines the MIDI channel over which the MOTIF-RACK receives MIDI data (from an external MIDI device). When this is set to "omni," the data of any channel can be received. This parameter is available for the Voice mode.	-	*62
153	TransmitCh	Transmit Channel	Determines the MIDI channel over which the MOTIF-RACK sends MIDI data (to an external MIDI device). This parameter is available for the Voice mode.	-	
154	DeviceNo.	Device No.	Determines the MIDI Device Number. This number must match the Device Number of the external MIDI device when transmitting/receiving system exclusive messages.	-	
155	BankSelSw (BnkSel)	Transmit/Receive Bank Select Switch	This switch enables or disables Bank Select/Program Change messages, both in transmission and reception. When this is set to "on," the MOTIF-RACK responds to incoming Bank Select messages, and it also transmits appropriate Bank Select messages (when using the panel).	-	
156	PgmChangeSw (Pgm)	Transmit/Receive Program Change Switch		-	
157	CC Mode (CC)	Control Change Switch (AEG Sustain)	Lets you set the MOTIF-RACK to properly respond to either type of GM System data, Level 1 or Level 2 — particularly regarding AEG Sustain. When using GM Level 2, set this to Mode 1, and the MOTIF-RACK responds to the messages as parameter change data. When using GM Level 1, set this to Mode 2, and the MOTIF-RACK responds to the messages as control change data.	-	
158	RcvBulkSw	Receive Bulk Dump	Determines whether or not Bulk Dump data can be received. protect...not received, on...received	-	
159	MIDI Sync	MIDI Sync	Determines whether Arpeggio playback is synchronized to the MOTIF-RACK's internal clock (int) or an external MIDI clock (MIDI).	-	
160	MIDI IN/OUT	MIDI IN/OUT	Determines which physical output terminal(s) will be used for transmitting/receiving MIDI data: MIDI IN/OUT/THRU or USB.	16	
161	ThruPort	Thru Port	Many computer sequencers are capable of transmitting data over several MIDI ports, effectively breaking the 16-channel barrier. When using the USB terminal for MIDI reception, MIDI messages received via the USB connector can be passed through the MIDI OUT connector of the MOTIF-RACK to other connected devices. Set the port number here. This is available when the MIDI IN/OUT is set to "USB."	20	
162	Key	Insertion Effect Out Key	Selects the key to which the Insertion effect is applied.	41	
163	InsEFOut (InsEF)	EL 1-4/KEY Insertion Effect Out	Determines which Insertion effect (1 or 2) is used to process each individual element/key. The "thru" setting lets you bypass the Insertion effects for the specific element/key.	41	

Ref. #	Display	Parameter Name	Explanation	Related Page	
164	InsEFCnct	Insertion Effect Connection Type	Determines the effect routing for Insertion effects 1 and 2. The setting changes are shown on the diagram in the display, giving you a clear picture of how the signal is routed. para...parallel	23	*52
165	Ins1Ctgr/Type	Insertion 1 Category/Type	Determines the effect type for Insertion 1 and 2. Refer to the Effect Types List in the separate Data List.	41	
166	Ins2Ctgr/Type	Insertion 2 Category/Type		41	
167	ReverbType	Reverb Type	Determines the effect type for Reverb. Refer to the Effect Types List in the separate Data List.	42, 51	
168	Reverb/ChoSend	Reverb Send/Chorus Send	Determines the level of the sound (from Insertion 1 or 2, or the bypassed signal) that is sent to Reverb/Chorus effect. A setting of "0" results in no Reverb/Chorus processing of the sound.	42, 50	
169	Reverb/ChoRtn	Reverb Return/Chorus Return	Determines the Return level of the Reverb/Chorus Effect.	42, 51	
170	Reverb/ChoPan	Reverb Pan/Chorus Pan	Determines the pan position setting for the Reverb/Chorus effect. L64 (hard left) ~ c (center) ~ R63 (hard right)	42, 51	
171	ChoToRev	Send Chorus to Reverb	Determines the Send level of the signal sent from the Chorus Effect to the Reverb Effect.	42, 51	
172	VoiceEF1-4Part/ InsEF	Insertion Effect Part (Voice)	Determines the part to which the Insertion effect is applied. The Insertion connection type (page 23) depends on the voice of the selected part.	50	
173	ChoCtgr/Type	Chorus Category/Type	Determines the Chorus effect type. Refer to the Effect Types List in the separate Data List.	42, 51	
174	(Effect Parameters)	Effect Parameters	The number of parameters and values available differs depending on the currently selected effect type. For more information, see the Effect Parameter List in the separate Data List.	-	
175	PolyExpand	Poly Expand	This parameter is accessible only when you have two identical Plug-in boards installed. The "off" setting enables two boards to work separately (you can select them in two different Parts). When this is set to "on," the two boards effectively function together as one board (used in a single part) — giving you double the amount of polyphonic notes you can play at one time.	-	
176	PortNo.	Port No.	Determines the MIDI Port number over which the Plug-in board receives MIDI data. One port can be set for the Multi-part Plug-in board and one port can be set for the Single part Plug-in board.	21	
177	RcvGM/XG	Receive GM/XG	Determines whether "GM on" and "XG on" messages are recognized (on) or not (off). This parameter is available only when the Multi-part Plug-in board has been installed to PLG2.	-	
178	Type	EQ Type	Determines the Equalizer Type. The MOTIF-RACK features a wide selection of various equalizer types, which can be used not only to enhance the original sound, but even completely change the character of the sound. The particular parameters and settings available depend on the specific Equalizer Type that is selected.	-	*53
179	L.Freq/Gain (Freq1/Gain1) (Type=EQ L/H)	EQ Low Frequency/Low Gain		-	*12
180	M.Freq/Gain	EQ Mid Frequency/Mid Gain		-	
181	H.Freq/Gain (Freq2/Gain2) (Type=EQ L/H)	EQ High Frequency/High Gain		-	
182	Freq (Type=PEQ)	Frequency		-	
183	Gain (Type=PEQ)	Gain		-	
184	Q (Type=PEQ)/ M.Q	EQ Resonance/ Mid Q		-	
185	Tune	Master Tune		Determines the pitch of the MOTIF-RACK in fine one-cent steps (100 cents: one semitone).	-

**\*1**

LCD	Category	LCD	Category
-	Unassigned	Ld	Synth Lead
Ap	Acoustic Piano	Pd	Synth Pad
Kb	Keyboard	Sc	Synth Comping
Or	Organ	Cp	Chromatic Percussion
Gt	Guitar	Dr	Drums
Ba	Bass	Se	Sound Effects
St	Strings/Orchestral	Me	Musical Effects
Br	Brass	Co	Combination
Rp	Reed/Pipe		

**\*2**

**Micro Tuning Type**

No.	Type	Key	Comments
00	Equal temperament		The "compromise" tuning used for most of the last 200 years of Western music, and found on most electronic keyboards. Each half step is exactly 1/12 of an octave, and music can be played in any key with equal ease. However, none of the intervals are perfectly in tune.
01-12	Pure major	C-B	This tuning is designed so that most of the intervals (especially the major third and perfect fifth) in the major scale are pure. This means that other intervals will be correspondingly out of tune. You need to specify the key (C-B) you will be playing in.
13-24	Pure minor	A-G	The same as Pure Major, but designed for the minor scale.
25	Werckmeister		Andreas Werckmeister, a contemporary of Bach, designed this tuning so that keyboard instruments could be played in any key. Each key has a unique character.
26	Kirnberger		Johann Philipp Kirnberger was also concerned with tempering the scale to allow performances in any key.
27	Vallotti & Young		Francescatonio Vallotti and Thomas Young (both mid-1700s) devised this adjustment to the Pythagorean tuning in which the first six fifths are lowered by the same amount.
28	1/4 shifted		This is the normal equal tempered scale shifted up 50 cents.
29	1/4 tone		Twenty-four equally spaced notes per octave. (Play twenty-four notes to move one octave.)
30	1/8 tone		Forty-eight equally spaced notes per octave. (Play forty-eight notes to move one octave.)
31	Indian	C-B	Usually observed in Indian music (white keys [C-B] only).

**\*3**

**Voice** .....Offsets to the EQ settings in the Utility mode.

**Multi** .....Offsets to the Master EQ settings.

**\*4**

These Portamento parameters are not available for the part to which the Drum voice is assigned.

**\*5**

The Mode setting is not available for the Plug-in part.

**\*6**

**Power On Mode Settings**

Display	Mode	Program
multi	Multi Play	USER: 001
voice (USER)	Voice Play	USER: 001
voice (PRE1)	Voice Play	PRE1: 001
GM	Voice Play	GM: 001

**\*7**

These settings depend on the particular Plug-in board; refer to the relevant owner's manual for details.

**\*8**

You can also create a lower and an upper range with a "hole" in the middle, by specifying the highest note first. For example, setting a Note Limit of "C5 - C4" lets you play the element from two separate ranges: C-2 to C4 and C5 to G8. Notes played between C4 and C5 do not play the selected element/part/zone.

**\*9**

You can also create separate low and high ranges, with a velocity "hole" in the middle, by specifying the maximum value first. For example, setting a Velocity Limit of 93 - 34 lets you play the element from two separate velocity ranges: soft (1 - 34) and hard (93 - 127). Notes played at middle velocities between 35 and 92 do not play the selected element/part/zone.

**\*10**

When you have selected "voice" here, some parameters cannot be set.

**\*11**

In Drum Key edit, this is available only when Insertion Effect Output is set to "thru."

**\*12**

This parameter is effective for Waves (pre wav) selected in the Drum Key Oscillator Wave display (Drum Key edit).

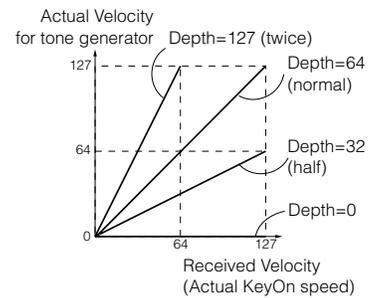
**\*13**

If a Normal voice has been assigned to the key, this parameter adjusts the position of its note (not its pitch) relative to note C3. For example, let's assume the original Voice consists of a two-Element piano-like sound up to note C3 and a two-Element string-like sound from note C#3 upwards. Adjusting this Coarse setting by +1 would not change the pitch of the piano-like sound to C#3. Instead, note C#3 of the original Voice (i.e., the string-like sound) would be used.

**\*14**

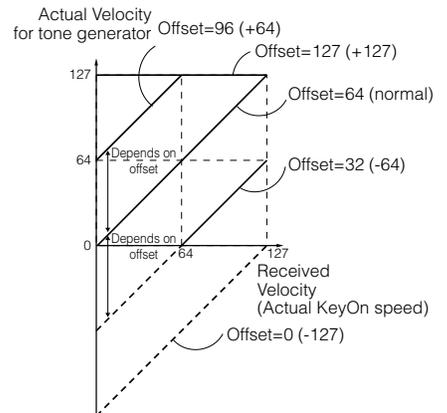
**Changes to velocity curve according to VelDepth (with Offset set to 64)**

**Velocity Depth**



**Changes to velocity curve according to VelOffset (with Depth set to 64)**

**Velocity Offset**



**\*15**

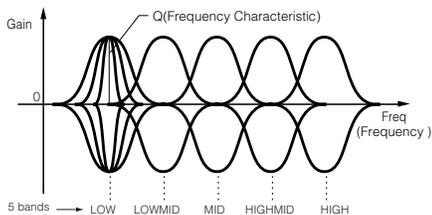
Send level (to Reverb and Chorus) cannot be set independently for each Drum key; the value is fixed at 127 (maximum).

**\*16**

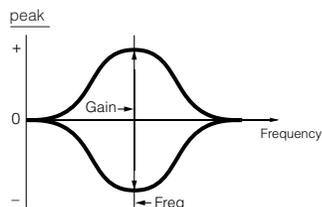
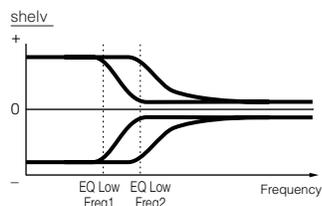
A setting of "C" (center) maintains the individual Pan settings of each Element/Part (Common edit).

**\*17**

This parameter is not available for the Plug-in parts.

**\*18****MEQ (Master Equalizer)****Shape**

Determines whether the equalizer type used is Shelving (shelv) or Peaking (peak). The Peaking type attenuates/boosts the signal at the specified Frequency setting, whereas the Shelving type attenuates/boosts the signal at frequencies above or below the specified Frequency setting. This parameter is available for LOW, MID, and HIGH.

**Freq (Frequency)**

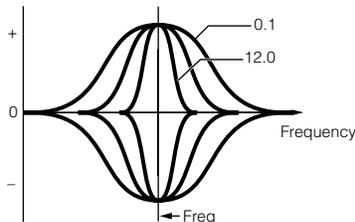
Determines the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

**Gain**

Determines the level gain for the Frequency (set above), or the amount the selected frequency band is attenuated or boosted.

**Q (Frequency Characteristic)**

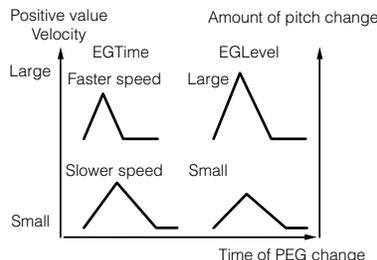
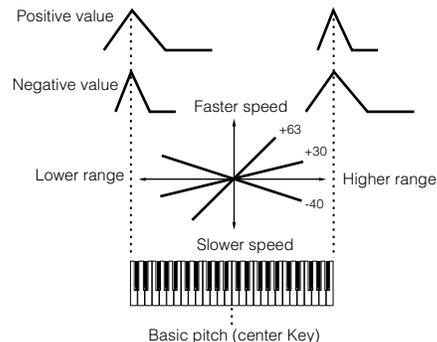
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

**\*19**

You can set the parameters related Voice only when entering the Utility mode from the Voice mode.

**\*20**

Settings (Display)	Available Segment for EGTime
atk	attack time
atk+dcy	attack time/decay time
dcy	decay time
atk+rls	attack time/release time
all	all time

**\*21****Element control according to Velocity (ex. PEG)****\*22****Element control according to the note position on the keyboard (ex. PEG Time: Speed of PEG change)****\*23**

You can also turn Arpeggio on/off from the front panel with the [ARPEGGIO] button (Voice Edit). Arpeggio Switch is not available for the Multi Plug-in Parts 17-32.

**\*24****sync-off**

The first time you press a key, the first note of the arpeggiator pattern is played. From the second and subsequent key presses, the arpeggiator note that is played back depends on the arpeggiator tempo and the timing of the arpeggio pattern. For example, in the case of a 1-bar arpeggio pattern, if the second key press falls on the third beat of the bar, the arpeggio pattern plays back from the third beat onward. In other words, the first key press is used to start the arpeggio pattern and thereafter you can use the key to "mute" or "un-mute" the pattern by, respectively, holding it down or releasing it. This is particularly useful when the arpeggiator is being used to generate drum patterns.

**\*25****sort**

Plays back notes in ascending order from the lowest Note On message received to the highest.

**thru**

Plays back notes in the order in which the Note On messages are received.

**direct**

Plays back the notes exactly as you play them. If changes to Voice parameters (such as Pan or Cutoff frequency) are included in the Arpeggio sequence data, they will be applied and reproduced whenever the Arpeggio plays back.

**\*26**

With the “sort” and “thru” settings, the order in which notes are played back will depend on the Arpeggio sequence data.

**\*27**

If the Arpeggio Category is set to Ct, you will not hear any sounds unless you select “direct” here.

**\*28**

**original**

The Arpeggio plays back at the preset velocities.

**thru**

The Arpeggio plays back according to the velocity values received. In other words, high velocity values increase the volume of Arpeggio playback.

**\*29**

You can also create a lower and an upper trigger range for the Arpeggio, with a “hole” in the middle, by specifying the highest note first. For example, setting a Note Limit of “C5-C4” lets you trigger the Arpeggio by playing notes in the two ranges of C -2 to C4 and C5 to G8; notes played between C4 and C5 have no effect on the Arpeggio.

**\*30**

The Velocity/Gate Time cannot be decreased beyond its normal minimum of 1; any values outside that range will automatically be limited to the minimum.

**\*31**

The Velocity cannot be decreased or increased beyond its normal range of 1 to 127; any values outside that range will automatically be limited to the minimum or maximum.

**\*32**

You can set the parameters related Voice only when entering the Utility mode from the Voice mode.

**\*33**

This parameter’s function varies according to the selected Filter Type. If the selected filter is an LPF, HPF, BPF (excluding the BPFw), or BEF, this parameter is used to set the Resonance. For the BPFw, it is used to adjust the Width of the band.

**\*34**

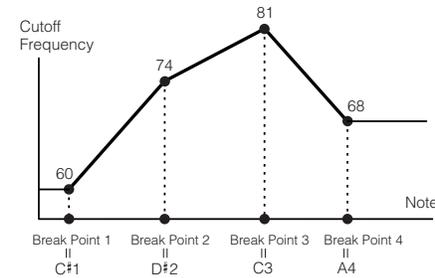
This parameter is available for the LPF when the filter used by the part is a combination type of LPF and HPF (Multi Part Edit).

**\*35**

**Filter Scaling Settings**

The best way to understand Filter Scaling is by example. For the settings shown in the example table below, the basic Cutoff frequency value is 64, and the various Offset values at the selected Break point settings change that basic value accordingly. The specific changes to the Cutoff frequency are shown in the diagram below. The Cutoff frequency changes in a linear fashion between successive Break Points as shown.

	1	2	3	4
BREAKPOINT	C#1	D#2	C3	A4
OFFSET	-4	+10	+17	+4

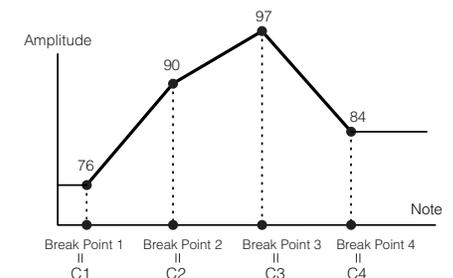


**\*36**

**Amplitude Scaling Settings**

The best way to understand Amplitude Scaling is by example. For the settings shown in the example table below, the basic Amplitude (volume) value for the selected element is 80, and the various Offset values at the selected Break point settings change that basic value accordingly. The specific changes to the Amplitude are shown in the diagram below. The Amplitude changes in a linear fashion between successive Break Points as shown.

	1	2	3	4
BREAKPOINT	C1	C2	C3	C4
OFFSET	-4	+10	+17	+4



**\*37**

BP1 to BP4 will be automatically be arranged in ascending order across the keyboard.

Regardless of the size of these Offsets, the minimum and maximum Cutoff/Volume limits (values of 0 and 127, respectively) cannot be exceeded.

Any note played below the BP1 note results in the BP1 Level setting. Likewise, any note played above the BP4 note results in the BP4 Level setting.

**\*38**

**L&R**.....OUTPUT L&R, DIGITAL OUTPUT, and OPTICAL OUTPUT

**as12**.....ASSIGNABLE OUTPUT 1&2

**as34**.....ASSIGNABLE OUTPUT 3&4

**as1/2/3/4**.....ASSIGNABLE OUTPUT 1/2/3/4

**drum**.....This setting is for Drum voice parts. When this is selected, the output destination settings for each Drum key are enabled.

**\*39**

This parameter is disabled if the Destination parameter below is set to a value from 00 to 33.

**\*40**

PB	Pitch Bend Wheel
MW	Modulation Wheel
AT	Aftertouch
FC1/2	Foot Controller 1/2
FS	Foot Switch
BC	Breath Controller
AS1/2	ASSIGN 1/2

**\*41**

The ASSIGN A and B controls can each be assigned to one common function for the entire Voice mode, and not to different functions for each individual voice. Also see the Utility mode.

**\*42**

For a complete list of the available parameters/controls, refer to the separate Data List.

**\*43**

This parameter is not available for the Plug-in parts.

**\*44**

This parameter is not available for Plug-in parts or parts to which Drum voices have been assigned.

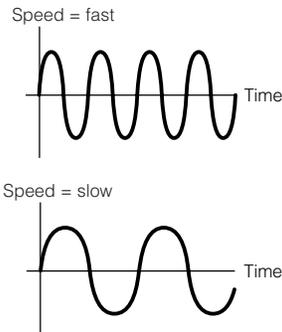
**\*45**

The Sustain Level/Release Time setting is not available for Plug-in parts or parts to which Drum voices have been assigned.

**\*46****LFO Wave**

- tri** ..... triangle wave
- saw** ..... sawtooth wave
- sq** ..... square wave
- trpzd** .... trapezoid wave
- S/H** ..... sample & hold (random)

In Element Edit, the “trpzd” and “S/H” parameters are not available.

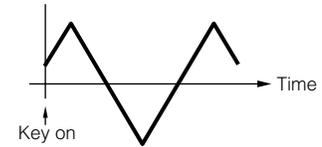
**\*47****LFO Speed****\*48****LFO Tempo Speed settings**

16th	sixteenth notes
8th/3	eighth-note triplets
16th.	dotted sixteenth notes
8th	eighth notes
4th/3	quarter-note triplets
8th.	dotted eighth notes
4th	quarter notes
2nd/3	half-note triplets
4th.	dotted quarter notes
2nd	half notes
whole/3	whole-note triplets
2nd.	dotted half notes
4thx4	quarter-note quadruplets; four quarter notes to the beat
4thx5	quarter-note quintuplets; five quarter notes to the beat
4thx6	quarter-note sextuplets; six quarter notes to the beat
4thx7	quarter-note septuplets; seven quarter notes to the beat
4thx8	quarter-note octuplets; eight quarter notes to the beat

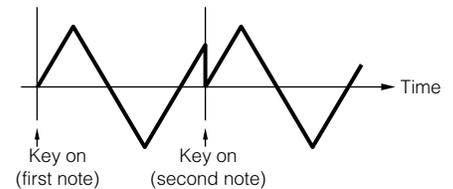
The actual length of the note depends on the internal or external MIDI tempo setting.

**\*49****Key On Reset****off**

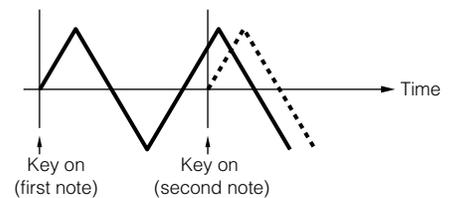
The LFO cycles freely with no key synchronization. Pressing a key starts the LFO wave at whatever phase the LFO happens to be at that point.

**on (Element Edit)****each-on (Common Edit)**

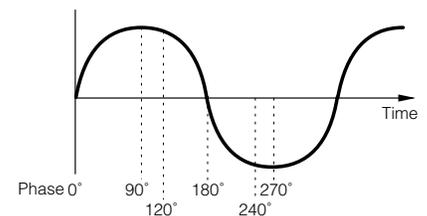
The LFO resets with each note you play and starts a waveform at the phase specified by the Phase parameter.

**1st-on (Common Edit)**

The LFO resets with every note you play and starts the waveform at the phase specified by the Phase parameter (below). However, if you play a second note while the first is being held, the LFO continues cycling according to the same phase as triggered by the first note. In other words, the LFO only resets if the first note is released before the second is played.

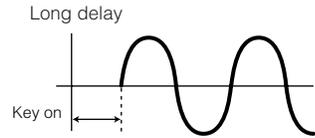
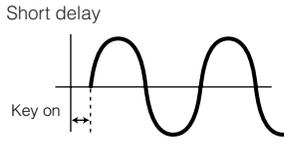
**\*50****LFO Phase**

Determines the starting phase point for the LFO Wave when a note is played.

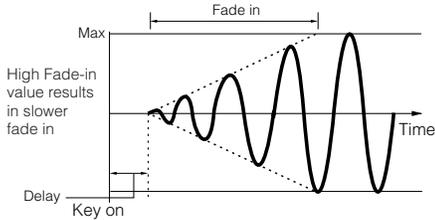
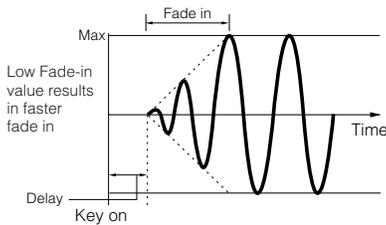


**\*51**  
**LFO Delay**

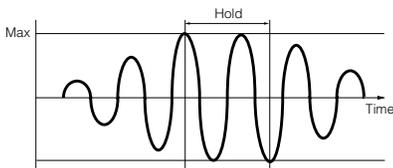
**Delay**



**Fade-in Time**

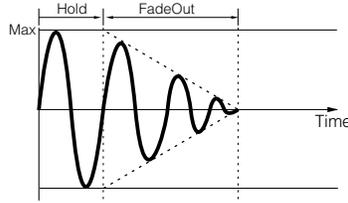


**Hold Time**

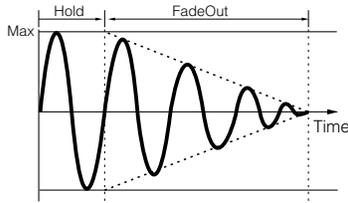


**Fade Out**

Low Fade-out value results in faster fade out



High Fade-out value results in slower fade out



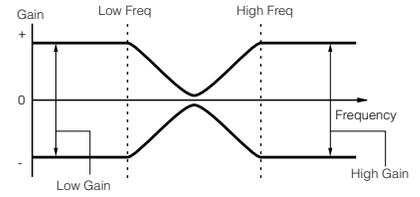
**\*52**

The “para (parallel)” parameter is not available for the Plug-in voice.

**\*53**  
**EQ (Equalizer)**

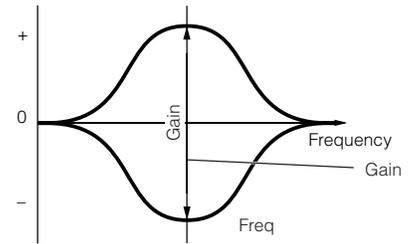
**EQ L/H (Low/High), Plug-in Element EQ**

This is a “shelving” equalizer, which combines separate high and low frequency bands.



**P.EQ (Parametric EQ)**

The Parametric EQ is used to attenuate or boost signal levels (gain) around the Frequency. This type features 32 different “Q” settings, which determine the frequency band width of the equalizer.



Q (Frequency Characteristic)

**Boost6 (Boost 6dB)/Boost12 (Boost 12dB)/Boost18 (Boost 18dB)**

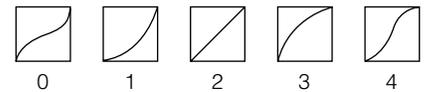
These can be used to boost the level of the entire signal by 6dB, 12dB and 18dB, respectively.

**thru**

If you select this, the equalizers are bypassed and the entire signal is unaffected.

**\*54**

**Curve Type**



## Display Messages

Messages	Information
<b>Are you sure?</b>	Confirms whether you want to execute a specified operation or not.
<b>Bulk protected.</b>	Bulk data was received when RcvBulkSw was set to "protect." (Utility mode, Ref. #158)
<b>Completed.</b>	The specified save, format, or other job has been completed.
<b>Device number is off.</b>	Bulk data cannot be transmitted/received since the device number is off.
<b>Device number mismatch.</b>	Bulk data cannot be transmitted/received since the device numbers don't match.
<b>Effect plug-in is not supported.</b>	The Effect Plug-in board cannot be used with the MOTIF-RACK.
<b>Executing...</b>	Never attempt to turn off the power while data is being written to internal memory. Turning the power off in this state results in loss of all user data and may cause the system to freeze.
<b>MIDI buffer full.</b>	Failed to process the MIDI data because too much data was received at one time.
<b>MIDI checksum error.</b>	An error occurred when receiving bulk data.
<b>MIDI data error.</b>	An error occurred when receiving MIDI data.
<b>Multi plug-in is not in PLG2.</b>	The Multi-Part Plug-in board does not work because it has not been installed to PLG2. The Multi-Part Plug-in board should be installed to PLG2.
<b>Now checking plug-in board.</b>	The MOTIF-RACK is checking the Plug-in board installation status when powering the MOTIF-RACK on.
<b>Please keep power on.</b>	Never attempt to turn off the power while data is being written to internal memory. Turning the power off in this state results in loss of all user data.
<b>Plug-in 1 communication error.</b>	The Plug-in board that has been installed to PLG1 does not work.
<b>Plug-in 2 communication error.</b>	The Plug-in board that has been installed to PLG2 does not work.
<b>Receiving MIDI bulk...</b>	The MOTIF-RACK is receiving MIDI bulk data.
<b>System memory crashed.</b>	Writing data to internal memory has failed because the power was turned off during the operation. User data has been initialized automatically. Turn the power off, then turn the power on again.
<b>Too many favorites.</b>	You've attempted to assign more than 256 voices to the Favorite category.
<b>Transmitting MIDI bulk...</b>	The MOTIF-RACK is transmitting MIDI bulk data.

# About MIDI

MIDI is an acronym that stands for Musical Instrument Digital Interface, which allows electronic musical instruments to communicate with each other, by sending and receiving compatible Note, Control Change, Program Change and various other types of MIDI data, or messages.

The MOTIF-RACK can control a MIDI device by transmitting note related data and various types of controller data. The MOTIF-RACK can be controlled by the incoming MIDI messages which automatically determine tone generator mode, select MIDI channels, voices and effects, change parameter values, and of course play the voices specified for the various Parts.

Many MIDI messages are expressed in hexadecimal or binary numbers. Hexadecimal numbers may include the letter “H” as a suffix. The letter “n” indicates a certain whole number.

The chart below lists the corresponding decimal number for each hexadecimal/binary number.

Decimal	Hexadecimal	Binary
0	00	0000 0000
1	01	0000 0001
2	02	0000 0010
3	03	0000 0011
4	04	0000 0100
5	05	0000 0101
6	06	0000 0110
7	07	0000 0111
8	08	0000 1000
9	09	0000 1001
10	0A	0000 1010
11	0B	0000 1011
12	0C	0000 1100
13	0D	0000 1101
14	0E	0000 1110
15	0F	0000 1111
16	10	0001 0000
17	11	0001 0001
18	12	0001 0010
19	13	0001 0011
20	14	0001 0100
21	15	0001 0101
22	16	0001 0110
23	17	0001 0111
24	18	0001 1000
25	19	0001 1001
26	1A	0001 1010
27	1B	0001 1011
28	1C	0001 1100
29	1D	0001 1101
30	1E	0001 1110
31	1F	0001 1111
32	20	0010 0000
33	21	0010 0001
34	22	0010 0010
35	23	0010 0011
36	24	0010 0100
37	25	0010 0101
38	26	0010 0110
39	27	0010 0111
40	28	0010 1000
41	29	0010 1001
42	2A	0010 1010
43	2B	0010 1011
44	2C	0010 1100
45	2D	0010 1101
46	2E	0010 1110
47	2F	0010 1111
48	30	0011 0000
49	31	0011 0001
50	32	0011 0010
51	33	0011 0011
52	34	0011 0100
53	35	0011 0101
54	36	0011 0110
55	37	0011 0111
56	38	0011 1000
57	39	0011 1001
58	3A	0011 1010
59	3B	0011 1011
60	3C	0011 1100
61	3D	0011 1101
62	3E	0011 1110
63	3F	0011 1111

Decimal	Hexadecimal	Binary
64	40	0100 0000
65	41	0100 0001
66	42	0100 0010
67	43	0100 0011
68	44	0100 0100
69	45	0100 0101
70	46	0100 0110
71	47	0100 0111
72	48	0100 1000
73	49	0100 1001
74	4A	0100 1010
75	4B	0100 1011
76	4C	0100 1100
77	4D	0100 1101
78	4E	0100 1110
79	4F	0100 1111
80	50	0101 0000
81	51	0101 0001
82	52	0101 0010
83	53	0101 0011
84	54	0101 0100
85	55	0101 0101
86	56	0101 0110
87	57	0101 0111
88	58	0101 1000
89	59	0101 1001
90	5A	0101 1010
91	5B	0101 1011
92	5C	0101 1100
93	5D	0101 1101
94	5E	0101 1110
95	5F	0101 1111
96	60	0110 0000
97	61	0110 0001
98	62	0110 0010
99	63	0110 0011
100	64	0110 0100
101	65	0110 0101
102	66	0110 0110
103	67	0110 0111
104	68	0110 1000
105	69	0110 1001
106	6A	0110 1010
107	6B	0110 1011
108	6C	0110 1100
109	6D	0110 1101
110	6E	0110 1110
111	6F	0110 1111
112	70	0111 0000
113	71	0111 0001
114	72	0111 0010
115	73	0111 0011
116	74	0111 0100
117	75	0111 0101
118	76	0111 0110
119	77	0111 0111
120	78	0111 1000
121	79	0111 1001
122	7A	0111 1010
123	7B	0111 1011
124	7C	0111 1100
125	7D	0111 1101
126	7E	0111 1110
127	7F	0111 1111

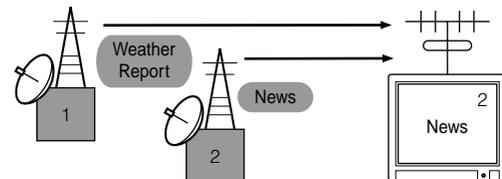
**NOTE** • For example, 144 - 159(Decimal)/9nH/1001 0000 - 1001 1111(Binary) indicate the note-on messages for the channels 1 through 16 respectively. 176 - 191/BnH/1011 0000 - 1011 1111 indicate the control change messages for the channels 1 through 16 respectively. 192 -207/CnH/1100 0000 - 1100 1111 indicate the program change messages for the channels 1 through 16 respectively. 240/F0H/1111 0000 is positioned at the beginning of data to indicate a system exclusive message. 247/F7H/1111 0111 is positioned at the end of the system exclusive message.

- aaH(Hexadecimal)/0aaaaaaaa(Binary) indicates the data addresses. The data address consists of High, Mid and Low.
- bbH/0bbbbbbb indicates byte counts.
- ccH/0ccccccc indicates check sums.
- ddH/0ddddddd indicates data/value.

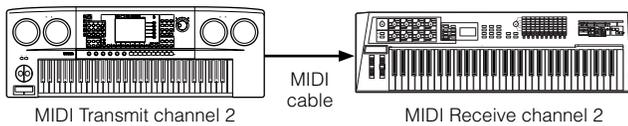
## MIDI channels

MIDI performance data is assigned to one of sixteen MIDI channels. Using these channels, 1 - 16, the performance data for sixteen different instrument parts can be simultaneously sent over one MIDI cable.

Think of the MIDI channels as TV channels. Each TV station transmits its broadcasts over a specific channel. Your home TV set receives many different programs simultaneously from several TV stations and you select the appropriate channel to watch the desired program.



MIDI operates on the same basic principle. The transmitting instrument sends MIDI data on a specific MIDI channel (MIDI Transmit Channel) via a single MIDI cable to the receiving instrument. If the receiving instrument’s MIDI channel (MIDI Receive Channel) matches the Transmit Channel, the receiving instrument will sound according to the data sent by the transmitting instrument.



The MOTIF-RACK is a fully multi-timbral tone generator, allowing you to sound several different instrument parts simultaneously — from just the MOTIF-RACK — by assigning a different MIDI channel to each part.

## MIDI Messages Transmitted/Received by the MOTIF-RACK

MIDI messages can be divided into two groups: Channel messages and System messages. Below is an explanation of the various types of MIDI messages which the MOTIF-RACK can receive/transmit.

### CHANNEL MESSAGES

Channel messages are the data related to the performance on the keyboard for the specific channel.

#### ■ Note On/Note Off (Key On/Key Off)

Messages which are generated when the keyboard is played.

Reception note range = C-2 (0) - G8 (127), C3 = 60

Velocity range = 1 - 127 (Only the Note On velocity is received)

Note On: Generated when a key is pressed.

Note Off: Generated when a key is released.

Each message includes a specific note number which corresponds to the key which is pressed, plus a velocity value based on how hard the key is struck.

#### ■ Control Change

Control Change messages let you select a voice bank, control volume, panning, modulation, portamento time, brightness and various other controller parameters, through specific Control Change numbers which correspond to each of the various parameters.

##### Bank Select MSB (Control #000)

##### Bank Select LSB (Control #032)

Messages which select variation voice bank numbers by combining and sending the MSB and LSB from an external device.

MSB and LSB functions differently depending on the tone generator mode.

MSB numbers select voice type (Normal Voice or Drum Voice), and LSB numbers select voice banks.

(For more information about Banks and Programs, see Voice List in the “Data List” book.)

A new bank selection will not become effective until the next Program Change message is received.

**NOTE** When only the Program Change is received after entering any of the mode, the corresponding voice in the currently selected Type/Memory is called up.

#### Modulation (Control #001)

Messages which control vibrato depth using the Modulation Wheel.

Setting the value to 127 produces maximum vibrato and 0 results in vibrato off.

#### Portamento Time (Control #005)

Messages which control the duration of portamento, or a continuous pitch glide between successively played notes. When the parameter Portamento Switch (Control #065) is set to on, the value set here can adjust the speed of pitch change.

Setting the value to 127 produces maximum portamento time and 0 results in minimum portamento time.

#### Data Entry MSB (Control #006)

#### Data Entry LSB (Control #038)

Messages which set the value for the parameter specified by RPN MSB/LSB (page 80) and NRPN MSB/LSB (page 79).

Parameter value is determined by combining MSB and LSB.

#### Main Volume (Control #007)

Messages which control the volume of each Part.

Setting the value to 127 produces maximum volume and 0 results in volume off.

#### Pan (Control #010)

Messages which control the stereo panning position of each Part (for stereo output).

Setting the value to 127 positions the sound to the far right and 0 positions the sound to the far left.

#### Expression (Control #011)

Messages which control intonation expression of each Part during performance.

Setting the value to 127 produces maximum volume and 0 results in volume off.

#### Hold1 (Control #064)

Messages which control sustain on/off.

Setting the value between 64 - 127 turns the sustain on, between 0 - 63 turns the sustain off.

#### Portamento Switch (Control #065)

Messages which control portamento on/off.

Setting the value between 64 - 127 turns the portamento on, between 0 - 63 turns the portamento off.

### **Sostenuto (Control #066)**

Messages which control sostenuto on/off.  
Holding specific notes and then pressing and holding the sostenuto pedal will sustain those notes as you play subsequent notes, until the pedal is released.  
Setting the value between 64 -127 turns the sostenuto on, between 0 - 63 turns the sostenuto off.

### **Harmonic Content (Control #071)**

Messages which adjust the filter resonance set for each Part.  
The value set here is an offset value which will be added to or subtracted from the voice data.  
Higher values will result in a more characteristic, resonant sound.  
Depending on the voice, the effective range may be narrower than the range available for adjustment.

### **Release Time (Control #072)**

Messages which adjust the AEG release time set for each Part.  
The value set here is an offset value which will be added to or subtracted from the voice data.

### **Attack Time (Control #073)**

Messages which adjust the AEG attack time set for each Part.  
The value set here is an offset value which will be added to or subtracted from the voice data.

### **Brightness (Control #074)**

Messages which adjust the filter cutoff frequency set for each Part.  
The value set here is an offset value which will be added to or subtracted from the voice data.  
Lower values will result in a softer sound.  
Depending on the voice, the effective range may be narrower than the range available for adjustment.

### **Decay Time (Control #075)**

Messages which adjust the AEG decay time set for each Part. The value set here is an offset value which will be added to or subtracted from the voice data.

### **Effect1 Depth (Reverb Send Level) (Control #091)**

Messages which adjust the send level for the Reverb effect.

### **Effect3 Depth (Chorus Send Level) (Control #093)**

Messages which adjust the send level for the Chorus effect.

### **Data Increment (Control #096)**

#### **Decrement (Control #097) for RPN**

Messages which increase or decrease the MSB value of pitch bend sensitivity, fine tune, or coarse tune in steps of 1. You are required to assign one of those parameters using the RPN in the external device in advance.  
The data byte is ignored.  
When the maximum value or minimum value is reached, the value will not be incremented or decremented further. (Incrementing the fine tune will not cause the coarse tune to be incremented.)

#### **NRPN (Non-Registered Parameter Number)**

##### **LSB (Control #098) (Plug-in Board only)**

##### **NRPN (Non-Registered Parameter Number)**

##### **MSB (Control #099) (Plug-in Board only)**

Messages which adjust a voice's vibrato, filter, EG, drum setup or other parameter settings.  
First send the NRPN MSB and NRPN LSB to specify the parameter which is to be controlled. Then use Data Entry (page 78) to set the value of the specified parameter. Note that once the NRPN has been set for a channel, subsequent data entry will be recognized as the same NRPN's value change. Therefore, after you use the NRPN, you should set a Null (7FH, 7FH) value to avoid an unexpected result.  
For details, refer to the owner's manual of the relevant Plug-in Board.

### RPN (Registered Parameter Number) LSB (Control #100)

### RPN (Registered Parameter Number) MSB (Control #101)

Messages which offset, or add or subtract values from a Part's pitch bend sensitivity, tuning, or other parameter settings.

First send the RPN MSB and RPN LSB to specify the parameter which is to be controlled. Then use Data Increment/Decrement (page 79) to set the value of the specified parameter.

Note that once the RPN has been set for a channel, subsequent data entry will be recognized as the same RPN's value change. Therefore after you use the RPN, you should set a Null (7FH, 7FH) value to avoid an unexpected result.

The following RPN numbers can be received.

RPN MSB	RPN LSB	PARAMETER
00	00	Pitch Bend Sensitivity
00	01	Fine Tune
00	02	Coarse Tune
7F	7F	Null

## ■ Channel Mode Messages

The following Channel Mode Messages can be received.

2nd BYTE	3rd BYTE	MESSAGE
120	0	All Sounds Off
121	0	Reset All Controllers
123	0	All Notes Off
126	0 ~ 16	Mono
127	0	Poly

### All Sounds Off (Control #120)

Clears all sounds currently sounding on the specified channel. However, the status of channel messages such as Note On and Hold On is maintained.

### Reset All Controllers (Control #121)

The values of the following controllers will be reset to the defaults.

CONTROLLER	VALUE
Pitch Bend Change	0 (center)
Aftertouch	0 (off)
Polyphonic Aftertouch	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold1	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft Pedal	0 (off)
Portamento Control	Cancels the Portamento source key number
RPN	Number not specified; internal data will not change
NRPN	Number not specified; internal data will not change

### All Notes Off (Control #123)

Clears all notes currently on for the specified channel. However, if Hold1 or Sostenuto is on, notes will continue sounding until these are turned off.

### Mono (Control #126)

Performs the same function as when an All Sounds Off message is received, and if the 3rd byte (mono number) is in the range of 0 - 16, sets the corresponding channel to Mono Mode (Mode 4:  $m = 1$ ).

### Poly (Control #127)

Performs the same function as when an All Sounds Off message is received, and sets the corresponding channel to Poly Mode.

## ■ Program Change

Messages which determine which voice to select for each Part. With a combination of Bank Select, you can select not only basic voice numbers, but also variation voice bank numbers.

## ■ Pitch Bend

Pitch Bend messages are continuous controller messages that allow the pitch of designated notes to be raised or lowered by a specified amount over a specified duration.

## ■ Channel Aftertouch

Messages which let you control the sounds by the pressure you apply to the keys after the initial striking of the keys, over the entire channel.

The MOTIF-RACK does not transmit this data from the keyboard; however, the MOTIF-RACK does properly respond to this data when received from an external device.

## ■ Polyphonic Aftertouch

Messages which let you control the sounds by the pressure you apply to the keys after the initial striking of the keys, for each individual key.

## SYSTEM MESSAGES

System messages are the data related to the overall system of the device.

### ■ System Exclusive Messages

System Exclusive messages control various functions of the MOTIF-RACK, including master volume and master tuning, tone generator mode, effect type and various other parameters.

#### General MIDI (GM) System On (Sequence Play mode only)

When “General MIDI system on” is received, the MOTIF-RACK will receive the MIDI messages which are compatible with GM System Level 1, and consequently will not receive NRPN and Bank Select messages.

#### F0 7E 7F 09 01 F7 (Hexadecimal)

**NOTE** Make sure that the interval between this message and the first note data of the song is at least a quarter note or greater in length.

#### Master Volume

When received, the Volume MSB will be effective for the System Parameter.

#### F0 7F 7F 04 01 ll mm F7 (Hexadecimal)

\* mm (MSB) = appropriate volume value,  
ll (LSB) = ignored

### ■ System Realtime Messages

#### System Realtime messages

Control the sequencer, including MIDI clock (F8H) and Active Sensing messages (see below).

#### Active Sensing

Once FEH (Active Sensing) has been received, if no MIDI data is subsequently received for longer than an interval of approximately 300msec, the MOTIF-RACK will perform the same function as when All Sounds Off, All Notes Off, and Reset All Controllers messages are received, and will then return to a status in which FEH is not monitored

**NOTE** Refer to the MIDI Data Format in the “Data List” book for more information on the various messages.

# Optional Plug-in Board Installation

A variety of optional Plug-in boards (page 19) sold separately let you expand the voice library of your instrument.

The following types of Plug-in boards can be used with your instrument.

- PLG150-AN
- PLG150-PF
- PLG150-VL
- PLG150-DX
- PLG150-DR
- PLG150-PC
- PLG100-XG

## Installation Precautions

Before installing the optional hardware, make sure you have a Philips screwdriver.



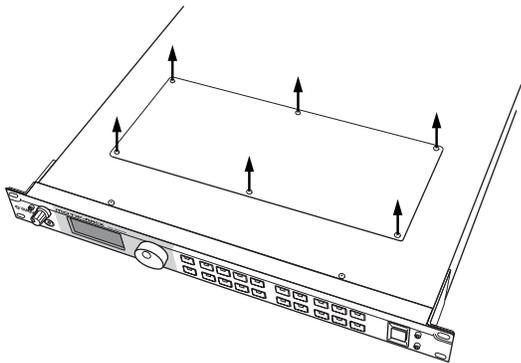
- Before beginning installation, switch off the power to the MOTIF-RACK and connected peripherals, and unplug them from the power outlet. Then remove all cables connecting the MOTIF-RACK to other devices. (Leaving the power cord connected while working can result in electric shock. Leaving other cables connected can interfere with work.)
- Be careful not to drop any screws inside the instrument during installation (this can be prevented by keeping the optional units and cover away from the instrument while attaching). If this does happen, be sure to remove the screw(s) from inside the unit before turning the power on. Loose screws inside the instrument can cause improper operation or serious damage. If you are unable to retrieve a dropped screw, consult your Yamaha dealer for advice.
- Install the optional units carefully as described in the procedure below. Improper installation can cause shorts which may result in irreparable damage and pose a fire hazard.
- Do not disassemble, modify, or apply excessive force to board areas and connectors on optional units. Bending or tampering with boards and connectors may lead to electric shock, fire, or equipment failures.



- It is recommended that you wear gloves to protect your hands from metallic projections on optional units and other components. Touching leads or connectors with bare hands may cause finger cuts, and may also result in poor electrical contact or electrostatic damage.
- Handle the optional units with care. Dropping or subjecting them to any kind of shock may cause damage or result in a malfunction.
- Be careful of static electricity. Static electricity discharge can damage the IC chips on the Plug-in board. Before you handle the optional Plug-in board, to reduce the possibility of static electricity, touch the metal parts other than the painted area or a ground wire on the devices that are grounded.
- Do not touch the exposed metal parts in the circuit board. Touching these parts may result in a faulty contact.
- When moving a cable, be careful not to let it catch on the circuit Plug-in board. Forcing the cable in anyway may cut the cable, cause damage, or result in a malfunction.
- Be careful not to misplace any of the screws since all of them are used.
- Do not use any screws other than what are installed on the instrument.

# Installing the Plug-in Board

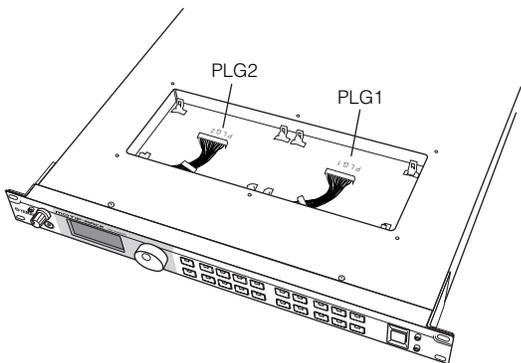
- 1 Turn the MOTIF-RACK power off, and disconnect the power cord. Also, if the MOTIF-RACK is connected with other external device(s), disconnect the device(s).
- 2 Move to a position facing the front panel of the device, and remove the screws (six flat-head screws) from the Plug-in board cover at the top panel with a Phillips screwdriver.



**NOTE** Keep the removed (6) screws in a safe place. They will be used when attaching the Plug-in board cover to the device again.

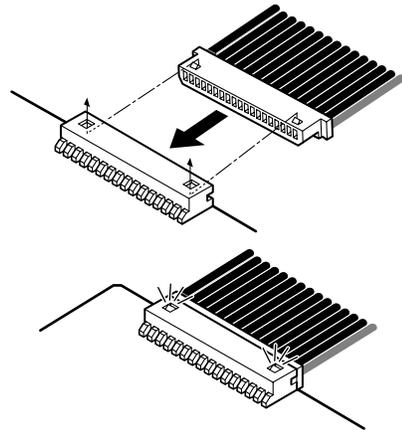
- 3 Remove the Plug-in board cover. Plug-in board plate appears. Two Plug-in boards can be accommodated: PLG1 at the right and PLG2 at the left.

**NOTE** The Multi part Plug-in Board (PLG100-XG) can be installed only to PLG2.



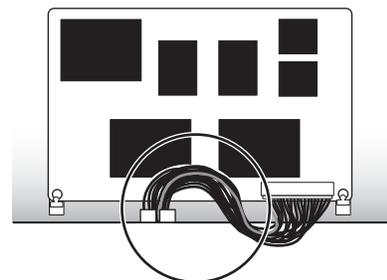
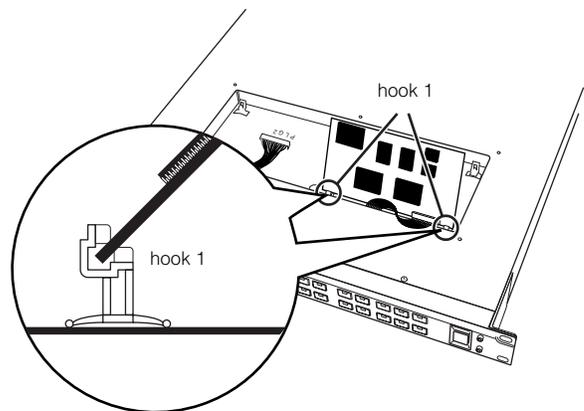
**!** When installing the optional Plug-in board (from when you remove the cover to when the cover is replaced securely) all operations must be done with the AC power cord disconnected.

- 4 Take out the Plug-in board from the anti-static bag. When installing the board, the side with a connector and ICs must be on top.
- 5 Carefully plug the cable connector into the Plug-in board connector until the two notches on the cable connector lock into the sockets on the board as shown in the illustration.

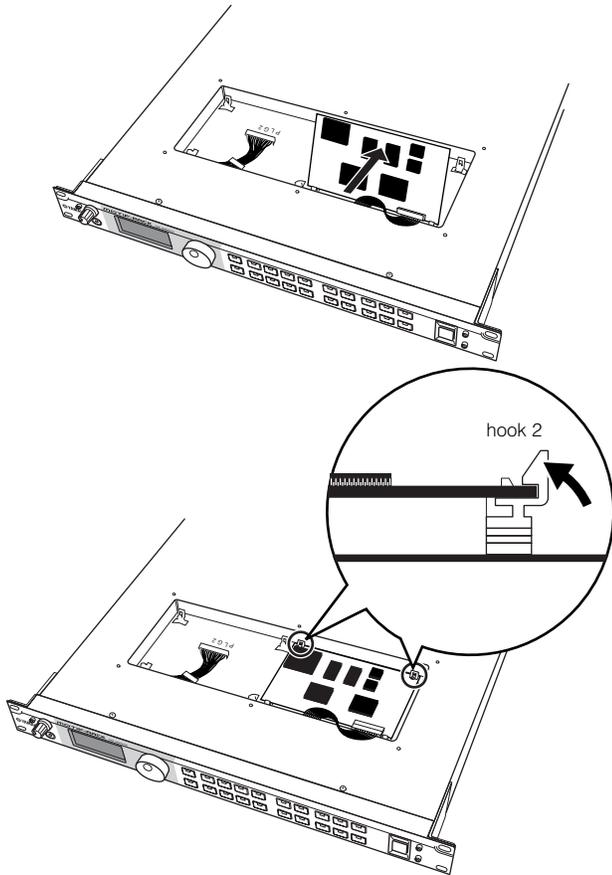


- 6 Mount the Plug-in board onto the plate as detailed in the following steps.

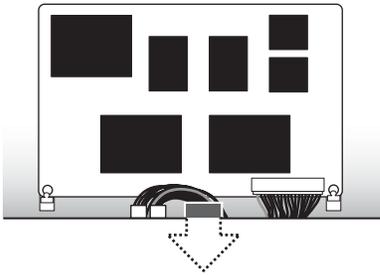
- 6-1 Insert one side of the Plug-in board (the connector side) into the hooks 1 as shown in the illustration, making sure that the cable is above the board.



- 6-2** Press down the other side until it is securely settled on the hooks 2.



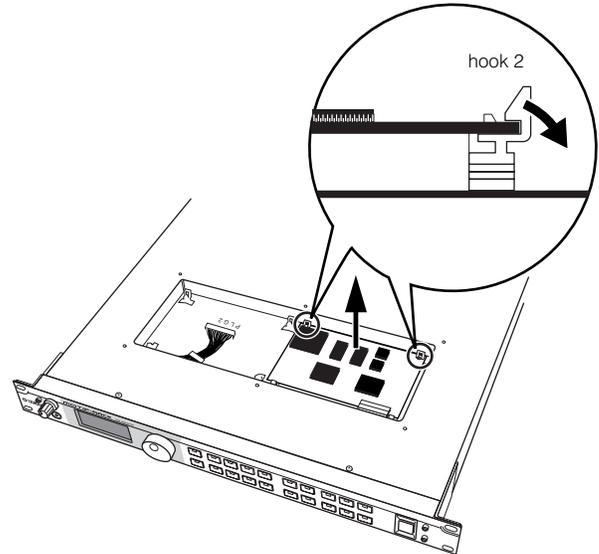
- 6-3** Put the cable into the MOTIF-RACK, making sure that no part of the cable sticks out of the instrument.



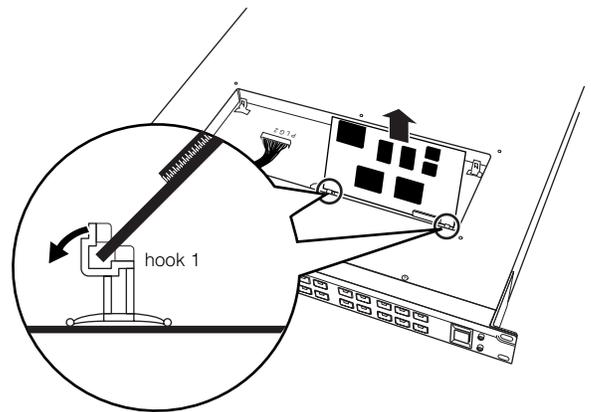
- 7** Replace the Plug-in board cover by fastening the six flat-head screws you removed in the step 2 above.

## **Removing the Plug-in board from the MOTIF-RACK**

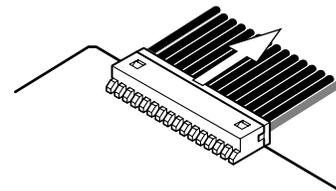
- 1** Press down the hooks 2 in the direction as shown in the illustration and take the board out from the hooks 2 by lifting up the one side.



- 2** Pull out the other side of the board from the hooks 1 while pressing down hook 1 as shown in the illustration.



- 3** Pull out the cable connector from the Plug-in board connector.



# Troubleshooting

No sound? Wrong sound? When a problem like this occurs, please check the following points before assuming that the product is faulty. In many cases you'll find the solution to your problem here. If the problem persists, then contact your Yamaha dealer or service center (Page 91).

## No sound.

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- Is the power of the MOTIF-RACK and any external equipment connected to the MOTIF-RACK turned on? (Page 14)
- Have you made all the appropriate level settings – including the Master Volume on the MOTIF-RACK and the volume settings on any connected external equipment? (Page 14)
- Is the MOTIF-RACK properly connected to related external equipment (e.g., amplifier or speaker) via audio cables? (Page 15)
- When the voice produces no sound, is the volume in the Voice common edit set appropriately? (Ref. #33)
- When the voice produces no sound, are the parameters in the Voice element edit (e.g., level, element switch, note limit, velocity limit) set appropriately? (Page 38)
- When the voice produces no sound, are the effect and filter settings appropriate? (Inappropriate filter cutoff frequency settings can result in no sound.) (Pages 39, 41)
- When the multi produces no sound, has a voice been assigned to each part? (Ref. #20, #26)
- When the multi produces no sound, is the note limit of each part set appropriately? (Ref. #22)
- When the multi produces no sound, is the volume of each part set appropriately? (Ref. #33)
- When the multi produces no sound, is the output select of each part set appropriately? (Ref. #96)
- When the multi produces no sound, are any or all of the parts muted? (Page 38)
- When the multi produces no sound, are the receive channel of each part set appropriately? (Ref. #32)
- When the arpeggio produces no sound, are the note limit and velocity limit set appropriately? (Ref. #66, #67)

## Distorted sound.

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- Are the effect settings appropriate? (Ref. #162-#174)
- Are the filter settings appropriate? (Excessively high filter resonance settings can cause distortion.) (Ref. #76-#79)
- Is the VOLUME set so high that clipping is occurring? (Page 14)
- Is the volume of each element in the Voice mode or the volume of each part in the Multi mode set too high? (Ref. #33, #111)

## Sound level is too low.

---

- Are the MIDI volume or MIDI expression settings too low? (Page 78)
- Is the cutoff frequency of the filters set too high/low? (Ref. #76, #81)

## Sound is cut off.

---

- Are you exceeding the maximum polyphony of the MOTIF-RACK? (Page 20)

## **Pitch or intervals are wrong.**

---

- Is the Master Tune parameter in the Utility mode set at a value other than “0”? (Ref. #185)
- Is the Note Shift parameter in the Utility mode set at a value other than “0”? (Ref. #31)
- When the voice produces a wrong pitch, is the appropriate tuning system selected from Micro Tuning parameter in the Voice Edit mode? (Ref. #5)
- When the voice produces a wrong pitch, is the LFO Pitch Modulation Depth in the Voice Edit mode set too high? (Ref. #148)
- When the multi produces a wrong pitch, is the Note Shift parameter of each part set at a value other than “0”? (Ref. #31)
- When the multi produces a wrong pitch, is the Detune parameter of each part set at a value other than “0”? (Ref. #127)

## **Only one note sounds at a time.**

---

- Is the Mono/Poly parameter in the Voice mode set to “mono”? (Ref. #3)

## **No effect is applied.**

---

- Is the EFFECT BYPASS parameters set to “bypass”? (Ref. #15)
- Have any or all of the elements’ Effect Output parameter been set to “thru”? (Ref. #163)
- Have any or all of the effect types been set to “thru” or “off” (in the Effect Edit display)? (Ref. #165-#167, #173)

## **MIDI bulk data reception won’t work properly.**

---

- Is the Receive Bulk parameter set to “protect” in the Utility mode? (Ref. #158)

## **Plug-in board does not work.**

---

- Has the Multi-part Plug-in board been installed to PLG1? (The Multi-part Plug-in board should be installed to PLG2.) (Page 82)

# Specifications

<b>Tone Generator block</b>	Tone Generator	AWM2 (complying with the Modular Synthesis Plug-in System)
	Polyphony	128 notes + the polyphony of the Plug-in Board (if installed)
	Wave	84 MB (when converted to 16-bit linear format)
<b>Voice</b>	Voice	Preset: 640 normal voices + 48 drum kits GM: 128 normal voices + 1 drum kit User: 256 normal voices + 32 drum kits (includes 128 Preset normal voices and 22 initialized drum kits)
	Plug-in Voice	Preset for the PLG150-AN/DX/PF/DR/PC: 64 Preset for the PLG150-VL: 192 User: 64 for each Plug-in connector
<b>Multi</b>	Multi	User: 128
	Multi Library	Performance: 59 Multi: 65
<b>Effect</b>	Reverb	20 types
	Chorus	44 types
	Insertion 1	107 types
	Insertion 2	107 types
	Master Equalizer	5 bands (High/HighMid/Mid/LowMid/Low)
	Part Equalizer	3 bands (High/Mid/Low)
<b>Arpeggio</b>		Preset 1: 128 types Preset 2: 128 types
<b>Panel Buttons/ Controllers</b>		STANDBY/ON switch, VOLUME knob, Data dial, Cursor buttons, EXIT button, PAGE buttons, MUTE/SEL button, Part/Element buttons, BANK buttons, SHIFT button, CATEGORY button, Mode buttons
<b>Connectors</b>	Front	PHONES
	Rear	DC IN, USB, MIDI IN/OUT/THRU, DIGITAL OUTPUT, OPTICAL OUTPUT, ASSIGNABLE OUTPUT 1-4, OUTPUT L/MONO, R
	Top	PLG1, PLG2
<b>Others</b>	Display	160 x 64 dot graphic backlit LCD
	Supplied Accessories	Power adaptor, Owner's Manual set, CD-ROM
	Power Consumption	17W (maximum; 22W when two plug-in boards are installed)
	Optical/Digital Output	44.1kHz, 24bit
	Dimensions	480(W) x 372.4(D) x 44(H) mm
	Weight	4.1kg

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