Roland®

groovebox MC-303

OWNER'S MANUAL

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (p.2; p.7). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, this manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

Features of the MC-303

High-quality sound set

The MC-303 provides a total of 448 types of sound ideal for today's dance scene, including 40 types of synth bass, 35 types of synth lead, and 33 types of synth pad. 12 different rhythm sets are also provided.

Rich array of powerful patterns

In addition to 133 high-quality preset patterns for immediate use, 300 variation patterns provide additional variety. You can also store up to 50 user patterns that you yourself create.

A sequencer that gives shape to your ideas

You can arrange a song in realtime simply by switching the playback patterns.
During recording, you can even switch the recording Part for non-stop recording.

RPS (Realtime Phrase Sequence)

Simply by pressing the keyboard pads, you can play back pre-registered phrases. These phrases can also be played back simultaneously with patterns.

Arpeggio function for easy creativity

Arpeggios can be played the easy way — simply by pressing the keyboard pads. Arpeggios can be played simultaneously with patterns, and can also be recorded.

Play Quantize function changes the "groove" in realtime

Three types of quantize are provided: grid, groove, and shuffle. Even during pattern playback, you can create a variety of groove feelings simply by turning a knob.

RTM (Realtime Modify) function for free changes in sound

By operating knobs such as Filter, LFO, and ENV, you can create realtime changes in the sound even while patterns are playing. Knob movements can also be recorded.

Easy operation for live performance

Functions and operability are especially designed for live performance; you can mute the playback of specific Parts or rhythm instruments, and even transpose patterns in realtime as they play back.

Low Boost function for powerful sound

The low boost circuit adds emphasis to the low frequencies, providing satisfyingly powerful sound even through headphones.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠WARNING and ⚠CAUTION Notices

⚠WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings.The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
⃠	The ⃠ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
●	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

⚠WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.
- Do not open (or modify in any way) the unit or its AC adaptor.
- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your dealer, or qualified Roland service personnel.
- Never use or store the unit in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Dusty; or are
  - Subject to high levels of vibration.
- This unit should be used only with a rack or stand that is recommended by Roland.
- When using the unit with a rack or stand recommended by Roland, the rack or stand must be carefully placed so it is level and sure to remain stable. If not using a rack or stand, you still need to make sure that any location you choose for placing the unit provides a level surface that will properly support the unit, and keep it from wobbling.

⚠WARNING

- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged.
- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.
- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.

⚠WARNING

- Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your dealer or qualified Roland service personnel when:
  - The AC adaptor or the power-supply cord has been damaged; or
  - Objects have fallen into, or liquid has been spilled onto the unit; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.

- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

- Protect the unit from strong impact. (Do not drop it!)

- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

- Before using the unit in a foreign country, consult with your dealer, or qualified Roland service personnel.

⚠CAUTION

- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.

- Always grasp only the plug or the body of the AC adaptor when plugging into, or unplugging from, an outlet or this unit.

- Whenever the unit is to remain unused for an extended period of time, disconnect the AC adaptor.

- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.

- Never climb on top of, nor place heavy objects on the unit.

- Never handle the AC adaptor body, or its plugs, with wet hands when plugging into, or unplugging from, an outlet or this unit.

- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.

- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet (Quick Start; p.3).

- Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.

Contents

Important notes

In addition to the items listed under "USING THE UNIT SAFELY" on page 2, please read and observe the following:

Power Supply: Use of Batteries

• Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).

• The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.

• Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

• This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

Maintenance

• For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.

• Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and Data

• Please be aware that all data contained in the unit's memory may be lost when the unit is sent for repairs. Important data should always be backed up in another MIDI device (e.g., a sequencer), or written down on paper (when possible). During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Roland assumes no liability concerning such loss of data.

Memory Backup

• This unit contains a battery which powers the unit's memory circuits while the main power is off. When this battery becomes weak, the message shown below will appear in the display. Once you see this message, have the battery replaced with a fresh one as soon as possible to avoid the loss of all data in memory. To have the battery replaced, consult with your dealer, or qualified Roland service personnel.

Additional Precautions

• Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of loosing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory in another MIDI device (e.g., a sequencer).

• Unfortunately, it may be impossible to restore the contents of data that was stored in the unit's memory once it has been lost. Roland Corporation assumes no liability concerning such loss of data.

• Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.

• Never strike or apply strong pressure to the display.

• A small amount of noise may be heard from the display during normal operation.

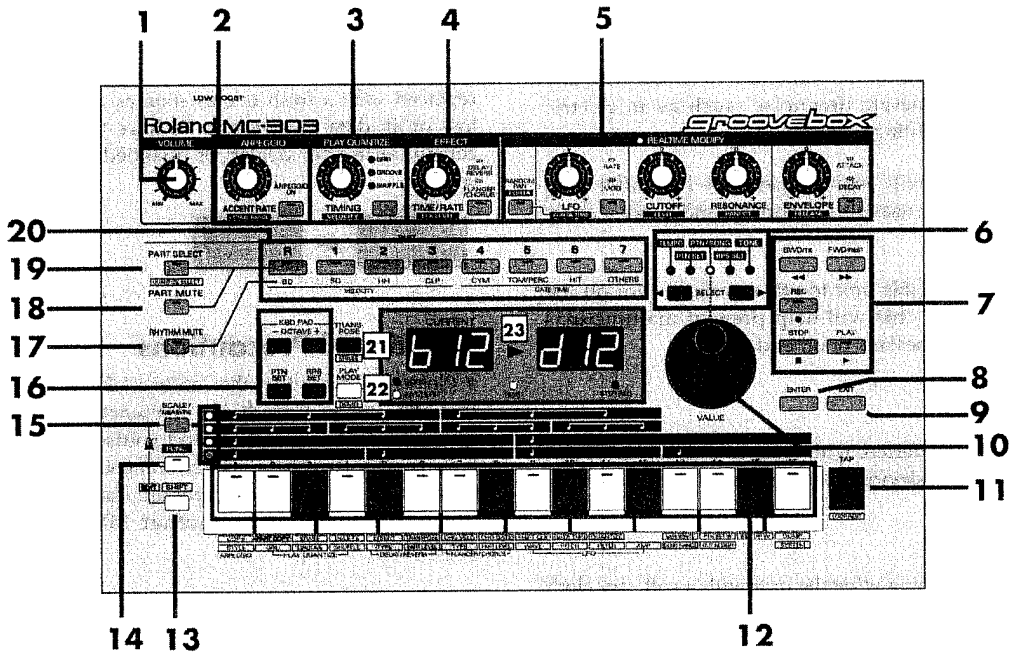
• When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.

• To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).

• When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

Front and rear panel

Front panel



1. VOLUME knob

Adjust the overall volume (Quick Start; p.3).

2. ARPEGGIO

● ACCENT RATE/OCTAVE RANGE knob
Adjust the arpeggio effect (p.39).

● ARPEGGIO button
Switch arpeggiation on/off (p.38).

3. PLAY QUANTIZE

● TIMING/VELOCITY knob
Adjust the depth of the Play Quantize effect (p.43, 44, 45).

● QUANTIZE button / QUANTIZE indicator
Turn the Play Quantize effect on/off, and select the type of quantization that will be used (p.43, 44, 45).

4. EFFECT

● TIME/RATE/EFX LEVEL knob
Adjust the way that effects are applied (p.30, 31, 33, 34).

● EFFECT button
Select the type of effect adjusted by the TIME/RATE/EFX LEVEL knob (p.30, 31, 33).

5. REALTIME MODIFY

● REALTIME MODIFY indicator
This will light when Realtime Modify is on (p.29).

● RND PAN/PORTAMENTO button
The panpot (location) of the specified part will shift randomly (p.22).
When the FUNC button indicator is blinking, this button switches Portamento on/off (p.23).

● LFO/PORTA TIME (LFO/portamento time) knob
Adjust the LFO effect for each part (p.23).
When the FUNC button indicator is blinking, this knob adjusts the Portamento Time of the specified Part (p.23).

● LFO button
Select the parameter that will be adjusted by the LFO knob (p.23, 24).

● CUTOFF/LEVEL knob
Adjust the cutoff frequency of the specified Part (p.24).
When the FUNC button indicator is blinking, this adjusts the level (volume) of the specified Part (p.22).

● RESONANCE/PANPOT knob
Adjust the resonance of the specified Part (p.24).
When the FUNC button indicator is blinking, this adjusts the panpot (location) of the specified Part (p.22).

● ENVELOPE/RELEASE knob
Adjust the attack time and decay time for the envelope of the specified Part (p.25).
When the FUNC button indicator is blinking, this adjusts the release time of the specified Part (p.26).

● ENVELOPE button
Select the parameter that will be adjusted by the ENVELOPE knob (p.25).

6. SELECT button / indicator
Select the parameter that will be adjusted by the VALUE dial (p.14, 15, 17, 21, 36, 68).

7. Sequencer section
● BWD/TIE (backward/tie) button
Rewind the pattern or song (p.15, 69).
During recording, pressing this will input a tie (p.52).

● FWD/REST (forward/rest) button
Fast-forward the pattern or song (p.15, 69).
During recording, pressing this will input a rest (p.52).

● REC (record) button
Press this to record a pattern or song (p.46, 48, 50, 68).

● STOP button
Stop playback of a pattern or song (p.14, 69).

● PLAY button
play back a pattern or song (p.14, 69).

8. ENTER button
Press this to execute an operation.

9. EXIT button
Press this to cancel an operation, or to exit from the current display.

10. VALUE dial
Use this dial to modify parameter values.

11. TAP / LOOP REST button
The tempo can be set by tapping on this button (p.15).
When used together with the SHIFT button, this switches the Loop Rest function on/off (p.49).

12. Keyboard pad
Use these to play sounds, or to select patterns or RPS (p.17, 20, 36).

13. SHIFT button
This button is used in conjunction with other buttons.
When used together with the keyboard pads, it accesses various parameter settings.
Some panel buttons and keyboard pads have characters printed in a black frame. These are the names of the functions accessed by holding down the SHIFT button.

14. FUNC (function) button
When the indicator is blinking the various knobs will change functions.
When used in conjunction with the SHIFT button and the keyboard pads, this button accesses various edit commands.
Some keyboard pads have characters printed below them in a white frame. These are the edit commands.

15. SCALE/MEASURE button / SCALE indicator
These select the note length of notes being recorded (p.51).
When this is pressed during playback or while stopped, the current playback position of the pattern is displayed (p.15).
When this is used together with the FUNC button, the Metronome is switched on/off (p.47).

16. KBD PAD (keyboard pad)
● OCTAVE -/+ buttons
These buttons switch the range of the keyboard pad in one-octave steps (p.20).

● PTN SET (pattern set) button
When the indicator is lit, the keyboard pads can be used to select patterns (p.17).

● RPS SET button
This turns the RPS function on/off (p.36).

17. RHYTHM MUTE button
When the indicator is lit, the PART buttons can be used to mute pattern playback for each rhythm instrument (p.16).

18. PART MUTE button
When the indicator is lit, the PART buttons can be used to mute pattern playback for each Part (p.16).

19. PART SELECT / QUANTIZE SELECT button
When the indicator is lit, the PART buttons can be used to select Parts (p.20).
When used with the SHIFT button to make the indicator blink, you can select the Part to which Play Quantize will be applied (p.42).

20. PART buttons
Press these buttons to select or mute a Part (p.16, 20).

21. TRANSPOSE / ERASE button
Press this to transpose (p.17).
During recording, this can be pressed together with the SHIFT button to turn Realtime Erase on/off (p.49).

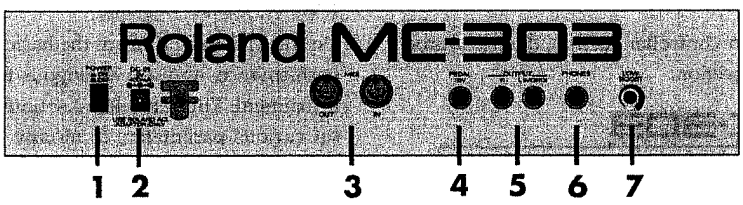
22. PLAY MODE button/indicator
This switches between Song mode and Pattern mode (p.14, 68).
When used together with the SHIFT button, it enters Demo mode.

23. Display
Various information regarding operation will be displayed here.

● STEP REC indicator
This will light during step recording (p.51).

● BEAT indicator
This will light on each beat, indicating the tempo and time signature (p.15).

Rear panel



1. POWER switch

This turns the power on/off.

DC IN jack

Connect the AC adaptor here.
Be sure to use only the included AC adaptor.

3. MIDI connectors

● OUT

This transmits MIDI messages from the MC-303 to other MIDI devices.

● IN

This receives MIDI messages from other MIDI devices.

4. PEDAL SWITCH jack

A pedal switch (optional) can be connected here.

5. OUTPUT jacks R/L (MONO)

These are the audio signal output jacks. Connect them to a keyboard amp, audio set, mixer, or the like.

6. PHONES jack

A set of headphones can be connected here.

7. LOW BOOST knob

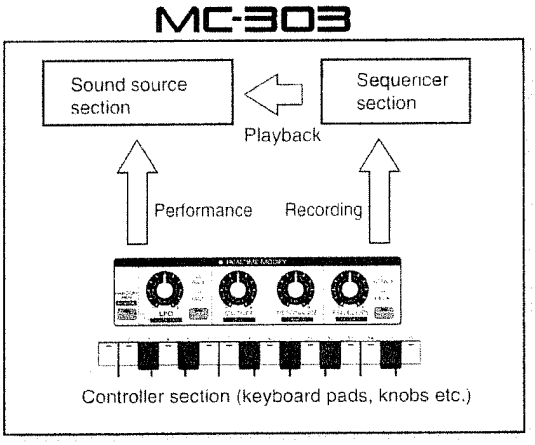
This adjusts the low boost effect (Quick Start; p.3).

Chapter 1. Introducing the MC-303

How the MC-303 is organized

Basic structure

The MC-303 consists of a controller section, sound source section, and a sequencer section.



Controller

Controllers refer to the keyboard pad, knobs on the panel, and pedal switches connected to the rear panel. By operating these controllers you can play sounds or modify them.

Sound source

The sound source is the section that produces the sound. Messages from the MC-303's controller and sequencer sections cause the sound to be produced. The sound source will also produce sound in response to MIDI messages received from external MIDI devices.

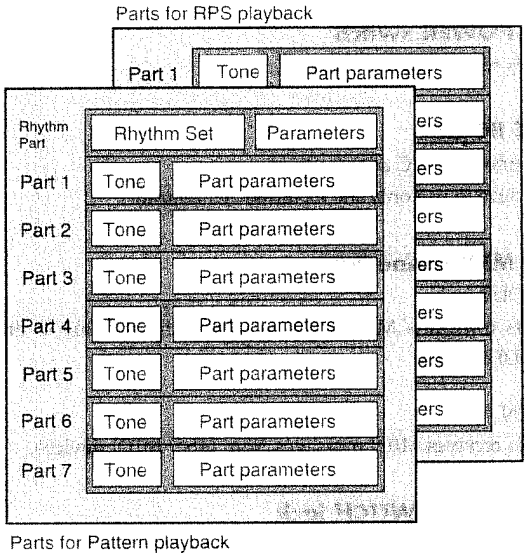
Sequencer

The sequencer records controller operations (knob movements) as MIDI messages, and plays back MIDI messages that have been recorded. MIDI messages recorded on the sequencer can also be transmitted from the MIDI OUT connector to control external MIDI devices such as the MS-1.

The sound source

Parts and Tones

On the MC-303, Parts are the basic units of sound used in a performance, and are analogous to a musician playing an instrument. You can select a sound (Tone) for each Part, and set various parameters to modify the sound or the performance. The MC-303 has 8 Parts for pattern playback, and 8 Parts for RPS playback. This means that up to 16 different Tones can be playing simultaneously.



There are two types of Parts; Parts 1–7 and the Rhythm Part.

Parts 1–7

These Parts are used mainly for playing melody or bass, etc., and provide a selection of 448 different Tones. You can also select individual rhythm instruments.

Rhythm Parts (R Part)

This Part is used for playing rhythm instruments (percussion instruments or sound effects, etc.), and lets you select from 12 different rhythm sets. In a rhythm set, a different rhythm instrument is assigned to each note, allowing you to play a variety of rhythm instruments simultaneously.

Simultaneous note capability

The sound source of the MC-303 can produce up to 28 notes (voices) simultaneously. If the incoming data is requesting more than this number, some notes will drop out. Also, since some Tones are actually playing two voices for each note, the number of simultaneous notes will be less when such Tones are being used.

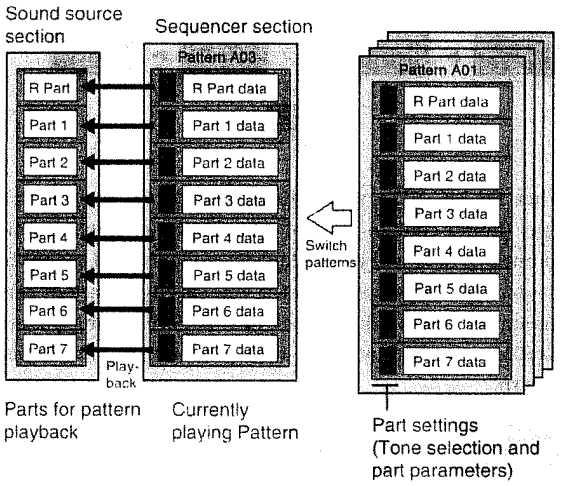
When more than 28 voices are requested simultaneously, the MC-303 will give priority to the most recently-played note, and the oldest notes will drop out one by one. If you use only single-voice Tones, you will be able to play 28 notes simultaneously. However, if you are using some dual-voice Tones, the number of simultaneous notes will be less than 28. When using Tones with a long decay or when using the RPS function, please be aware of this.
For the number of voices used by each Tone, refer to "Tone list" (p.85).

The Sequencer

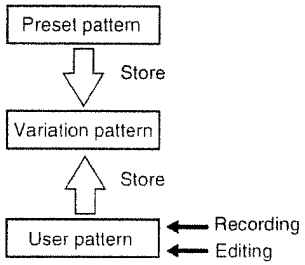
The sequencer records performance and controller operations as MIDI messages. The sequencer can then be played back to transmit the recorded MIDI messages to the sound source, causing it to produce sound. In other words, the sequencer plays the instrument in place of the musician.
A sequencer is like a tape recorder in that it records and plays back a performance, but provides important advantages such as the ability to change the tempo without affecting the pitch, the ability to play back an unlimited number of times with no change in sound quality, and the ability to do incredibly detailed editing, even down to the level of a single note.

Patterns

Patterns are units of musical data that the sequencer plays back. On the MC-303, you can even play back while switching patterns. A pattern contains separate musical data for each Part, and you can record, play back, or edit the musical data separately for each Part.



There are three types of patterns; preset, user, and variation. Each pattern contains data to specify the Tone and various other parameters for each Part.



Preset patterns

These are patterns which are preset in memory. It is not possible to edit or record their musical data. By copying a preset pattern to a user pattern and then modifying the settings, you can create new patterns.
Pattern banks A–C and E–I are preset patterns (E–I are for storing RPS).

User patterns

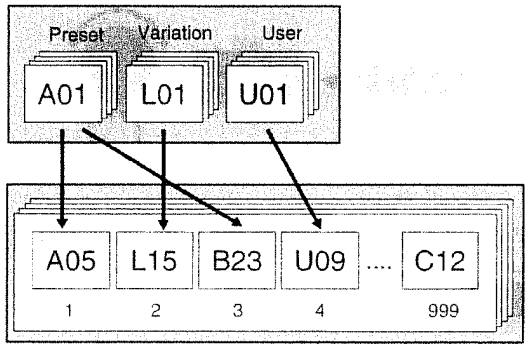
You can record and edit the musical data of these patterns. You can use preset patterns as a basis for creating your own new patterns, or create your own patterns from scratch. Up to 50 user patterns can be created, but if the patterns that you create contain large amounts of musical data, the maximum number of patterns may be fewer.
Pattern bank U is for user patterns.

Variation patterns

These are patterns which are based on preset or user patterns, but allow you to modify just the mute settings.
To play back a pattern, use Pattern mode.
Pattern banks L–Q are variation patterns.

Songs

On the MC-303, a sequence of patterns is called a Song. When you play back a song, the patterns will be played back in sequence. A song can contain up to 999 patterns.
To play back a song, use Song mode.

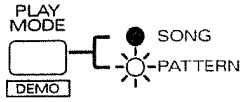


Chapter 2. Playing back patterns

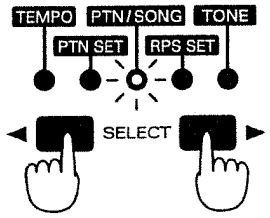
Playing back a pattern

The preset patterns are organized into 8 banks. For details refer to "Preset pattern list" (p.94).

1. Make sure that the PLAY MODE indicator PATTERN is lit (Pattern mode).
If it is dark, press [PLAY MODE] to make the indicator light.

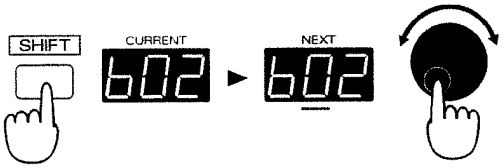


2. Use SELECT [◀][▶] to make the PTN/SONG indicator light.



3. Rotate the VALUE dial to select the pattern that you wish to play back.
The CURRENT display and NEXT display will indicate the bank and number of the selected pattern.

Range of settings: A01–C33, E01–I11, L01–Q50
By holding down [SHIFT] as you rotate the VALUE dial, you can rapidly change the tens digit of the number.



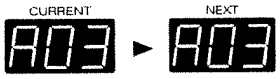
4. Press [PLAY] and the pattern will begin playing.

The CURRENT display will show the bank and number of the currently-playing pattern (the "current" pattern). The NEXT display will show the bank and number of the pattern which will be played next (the "next" pattern).

When you begin pattern playback, the CURRENT display and NEXT display will indicate the same pattern; this pattern will play back repeatedly.

5. If you rotate the VALUE dial while a pattern is playing back, the bank and number of the selected pattern will appear in the NEXT display.

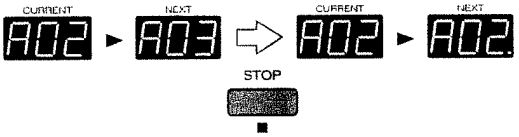
When the current pattern finishes playing, the pattern shown in the NEXT display will also appear in the CURRENT display, and playback will switch to the pattern specified as the next pattern.



* When playback approaches the point at which patterns will change, or the pattern will begin again, the NEXT display will blink. While it is blinking, it will not be possible to reserve the next pattern.

5. Press [STOP] to stop pattern playback.

* If, after reserving the next pattern, you press [STOP] to stop playback of the current pattern, the pattern that had been reserved will be canceled.



When the MC-303 is shipped from the factory, the user patterns do not contain musical data. Patterns which contain no musical data will be displayed as follows, and cannot be played back. This means that if you specify a pattern containing no musical data as the next pattern during pattern playback, playback will stop the moment it switches to that pattern.

When pattern playback is stopped, a dot will sometimes appear at the lower right of the pattern number in the NEXT display. This means that the pattern has been halted in the middle of a measure.

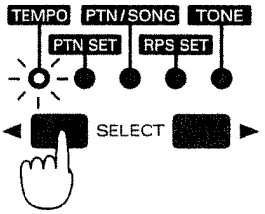
To rewind a pattern, press [BWD]. To return to the beginning of a pattern, hold down [SHIFT] and press [BWD].
To fast-forward a pattern, press [FWD]. To move to the end of a pattern, hold down [SHIFT] and press [FWD].
These functions can also be used while a pattern is playing.

Changing the tempo

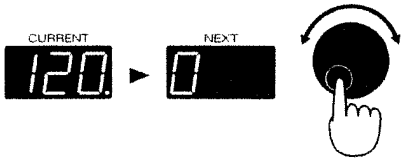
The most suitable tempo value (playback speed) is preset for each pattern. This is referred to as the "standard tempo." If you select a different pattern while pattern playback is stopped, the tempo will change to the standard tempo of the selected pattern. If you select a next pattern while a pattern is playing, the current tempo value of the pattern will be maintained.
The tempo can be changed using the VALUE dial or by using [TAP]. It can also be change during pattern playback.

Using the VALUE dial to change the tempo

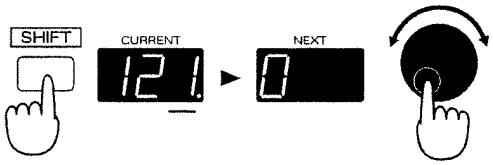
1. Use SELECT [◀][▶] to make the TEMPO indicator light.
The display will show the current tempo value.



2. Rotate the VALUE dial to change the tempo. The tempo can be adjusted in 0.1 BPM steps over a range of 20.0–240.0 BPM.



If you hold down [SHIFT] and rotate the VALUE dial, the tempo value can be modified in 1 BPM steps.

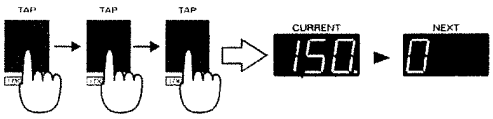


The tempo speed and time signature are indicated by the BEAT indicator. The indicator will blink red on the first beat, and green on the second and subsequent beats.

* BPM stands for Beats Per Minute, and indicates the number of quarter notes in one minute.

Tapping the TAP button to change the tempo

1. Press [TAP] at least three times, at quarter note intervals of the desired tempo.
The tempo will be automatically calculated, and the tempo will change to the timing interval of your taps.



* You can use [TAP] to change the tempo even when the tempo value does not appear in the display.

Viewing the number of measures in a pattern

You can use the SCALE/MEASURE button to view the total number of measures in the pattern and the current location within the pattern.

1. While the pattern is playing back or stopped, press [SCALE/MEASURE].
As long as you continue pressing the button, the CURRENT display will show the total number of measures in the pattern, and the NEXT display will show the current location (measure and beat). In the following example, the currently selected pattern has 16 measures, and the current location is measure 12 beat 3.

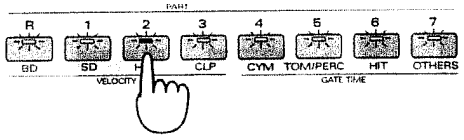
Muting a pattern

You can mute (silence) the playback of specific Parts within a pattern. For a rhythm part, you can mute specific rhythm instruments.

Muting individual Parts (Part Mute)

1. Press [PART MUTE] to make the button indicator light. The PART button indicator will light for Parts which contain musical data.

2. Press the [PART] button for the Part that you wish to mute, to make the indicator blink. In this example, let's press PART [2].
When you play back the pattern, the musical data of Part 2 will be muted so that it will not be heard.



During pattern playback, the musical data of the selected Part will be muted at the instant that you press the PART button.
You can also mute playback for two or more Parts.
To cancel muting, press the PART button once again to make the indicator light.

* If the indicator does not light when you press a PART button, that Part contains no musical data.
* The Part Mute and Rhythm Mute status can be stored in a variation pattern or user pattern. For details refer to "Creating a variation of pattern" (p.19) and "Storing Part settings in a pattern" (p.35).

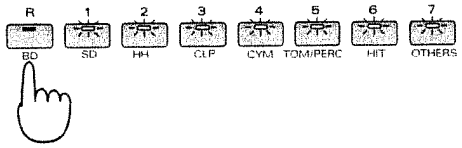
Muting individual rhythm instruments (Rhythm Mute)

You can mute the playback of specific rhythm instruments within the musical data of the rhythm part.

1. Press [RHYTHM MUTE] to make the button indicator light.

The indicator for each PART button will light.

2. Press the PART button for the rhythm instrument that you wish to mute, making the indicator go dark. In this example, let's press PART [R].
When the pattern is played back, the bass drum of the rhythm part will be muted, and will not be heard.

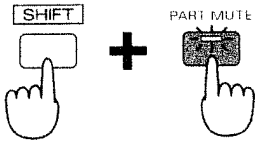


If you press a PART button during pattern playback, the rhythm instrument for the selected Part will be muted immediately.
To cancel muting, press the PART button once again to make the indicator light.

* If Part Mute has been used to mute the rhythm part itself, the Rhythm Mute settings will not take effect.
* For details on which rhythm instruments of the rhythm set are muted by each PART button, refer to "Rhythm set list" (p.90).

Muting all parts (All Mute)

During pattern playback, you can simultaneously mute the playback of all Parts either by pressing PART [R]–[7] at once, or by holding down [SHIFT] and pressing [PART MUTE].

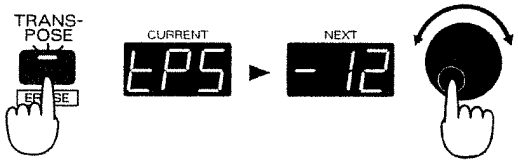


Transposing during playback (Realtime Transpose)

You can freely transpose to another key during pattern playback. Transposition can be done in a range of -24 – +24 semitones.

1. Press [TRANSPOSE] to make the button indicator light. The playback will be transposed as soon as you press the button.

2. To set the amount of transposition, hold down [TRANSPOSE] and rotate the VALUE dial.
While you are holding down the button, the display will indicate the current setting. At the factory settings this will be 4 (a major third up).



3. To return to the original key, press [TRANSPOSE] once again to make the button indicator go dark.

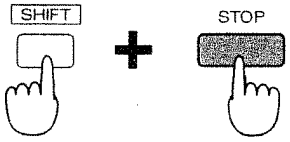
* When the power is turned on, the Realtime Transpose function will be reset to Off.

Correct playback from the middle of a pattern (MIDI Update)

If you play back a pattern after rewinding or fast-forwarding it, the playback may be incorrect, with problems such as diminished volume or incorrect pitch. This is because the MIDI messages in the section that you skipped over have not been sent to the sound source. In such situations, use the MIDI Update function. MIDI Update sends the sound source all the MIDI messages (except note messages) from the beginning of the pattern until the location that you moved to. This ensures that playback will be correct.

1. Make sure that the pattern is stopped.

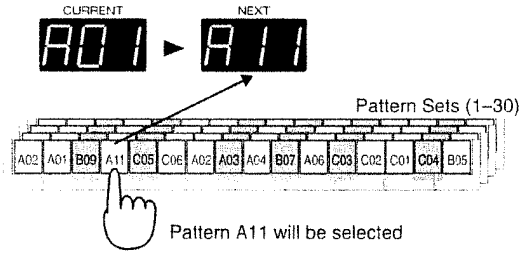
2. Hold down [SHIFT] and press [STOP].



While the update is in progress, the display will appear as follows.

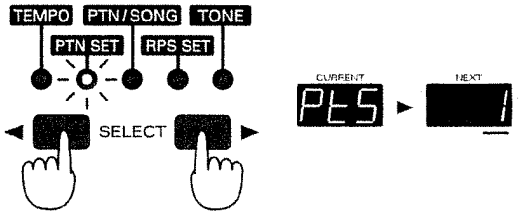
Selecting patterns from the keyboard pad (Pattern Set)

Normally you will use the VALUE dial to select patterns. However, if the pattern that you wish to play back next is in a distant bank/number, it cannot be selected quickly using the VALUE dial. In such cases, you can make settings so that patterns can be selected using the keyboard pads. A collection of patterns that have been registered for the 16 keyboard pads is called a Pattern Set.
The MC-303 provides 30 pattern sets, and these can be selected during pattern playback.

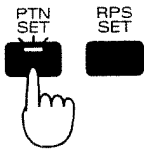


Using a Pattern Set to select a pattern

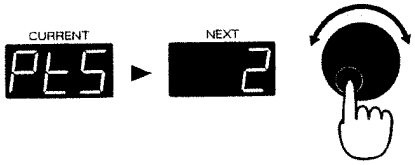
1. Use SELECT [◀][▶] to make the PTN SET indicator light.
The NEXT display will indicate the number of the currently selected pattern set.



2. Press [PTN SET] to make the indicator light.



3. Rotate the VALUE dial to select a pattern set (1–30).
When the [PTN SET] indicator is lit, you can also use OCTAVE [-][+] to select pattern set.



4. Press the keyboard pad, and the registered pattern will be selected.

* You can select patterns using the keyboard pad even during pattern playback.

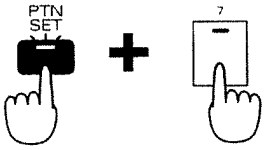
Registering patterns in a Pattern Set

You can freely re-register the patterns in a pattern set. It is convenient to register your favorite or frequently used patterns in a single pattern set. The following procedure is an example of registering pattern B07 in a pattern set.
First select a pattern set in which to newly register the pattern.

1. Select pattern B07 (p.14).

2. Make sure that the [PTN SET] indicator is lit.

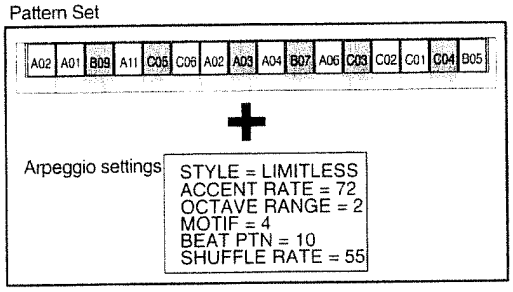
3. While holding down [PTN SET], press the keyboard pad for which you want to register that pattern.
The pattern will be registered for the keyboard pad that you press. In the following example, the display shows that pattern B07 has been registered for keyboard pad [7].



* Patterns can be registered even during pattern playback.

Storing arpeggio settings in a Pattern Set (Pattern Set Write)

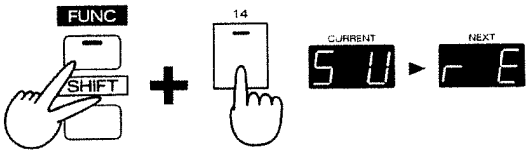
Each pattern set can contain arpeggio settings such as "Arpeggio Style," "Accent Rate," and "Octave Range." It is convenient to store frequently-used arpeggio settings in each pattern set.



First select a pattern set into which you will write the arpeggio settings.

1. Using the procedure of "Creating an arpeggio playback pattern" (p.38), set parameters such as "Arpeggio Style," "Accent Rate," and "Octave Range."

2. While holding down [SHIFT] and [FUNC], press keyboard pad [14] to select the Pattern Set Write display.
The display will ask you to confirm the operation.



3. Press [ENTER], and the arpeggio settings will be written.

When the operation is completed, you will return to normal operation.
To cancel the operation, press [EXIT].

* The Arpeggio on/off setting is not stored.

Creating a variation of a pattern (Variation Pattern)

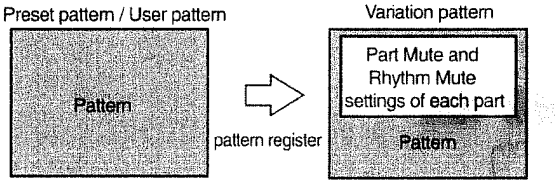
Starting with a preset pattern or user pattern, you can change just the Part Mute and Rhythm Mute settings of each Part to create a new "Variation Pattern." Variation Patterns consist of Part Mute and Rhythm Mute settings for each Part, and the bank/number of the original pattern.

Since Variation Patterns do not contain the musical data itself, they occupy much less memory than user patterns. This allows you to use the memory of the MC-303 more efficiently.

If, after registering a variation pattern based on a user pattern, you then modify the musical data of the original user pattern, the variation pattern will reflect the change. For example, if you delete all the musical data from the original user pattern, a variation pattern that is based on that user pattern can no longer be played back.

Variation patterns can be registered in pattern banks L–Q. Since each bank can contain 50 variation patterns, you can create a total of 300 variations.

Any number of variation patterns can be based on a single preset or user pattern.

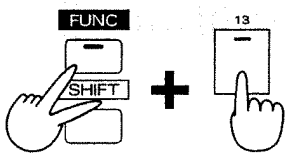


* It is not possible to register a variation pattern based on itself.

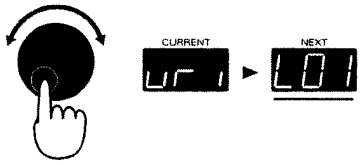
1. Select the pattern that you wish to register as a variation pattern (p.14).

2. Mute the Parts and Rhythm Instruments that you wish to be muted when that pattern is selected (p.16).

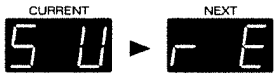
3. While holding down [SHIFT] and [FUNC], press keyboard pad [13] to access the Variation Write execute display.



4. Rotate the VALUE dial to specify the bank and number of the variation pattern to be newly registered.



5. Press [ENTER], and the display will ask for confirmation.



6. Press [ENTER] once again, and the variation pattern will be registered.

To cancel, press [EXIT].

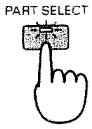
When registration is complete, the normal display will reappear.

Chapter 3. Modifying the sound

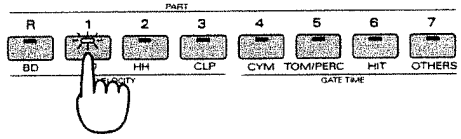
Playing sounds

1. Make sure that the [PTN SET] and [RPS SET] indicators are both dark.

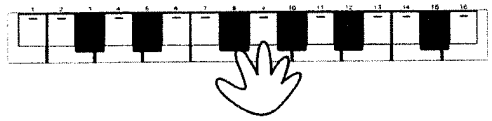
2. Press [PART SELECT] to make the button indicator light.



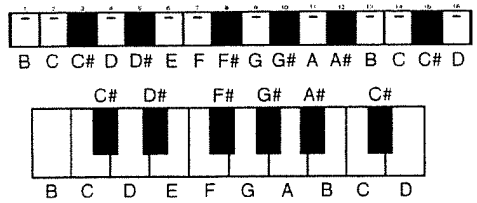
3. Press the PART button for the part that you wish to play.



4. Press the keyboard pad to play the sound.



If a MIDI keyboard is connected, you can play its keyboard to play the sound.
The keyboard pads correspond to a conventional keyboard as following.



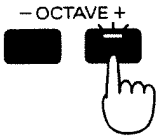
* The part selected by the PART SELECT button and PART buttons is referred to as the Current Part.

Shifting the keyboard in octave units (Octave Shift)

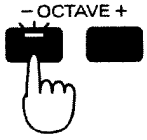
Octave Shift is a function that shifts the pitch of the keyboard pads in one-octave units. The range of pitch shifting is -4–+4 octaves. When playing Tones such as bass which are normally played in a low register, or when you wish to play rhythm instruments which are located in a different pitch range of the keyboard, you can use the Octave Shift function to shift the keyboard pads to the desired range.

* Octave Shift is a function which affects only the keyboard pad. It will not affect the pitch of a connected MIDI keyboard.

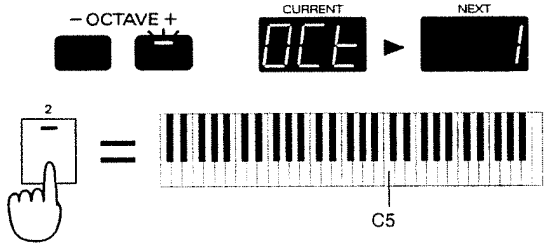
1. Use the OCTAVE [-][+] buttons to shift the pitch range. To shift upward, press OCTAVE [+]. The OCTAVE [+] indicator will light.



To shift downward, press OCTAVE [-]. The OCTAVE [-] indicator will light.



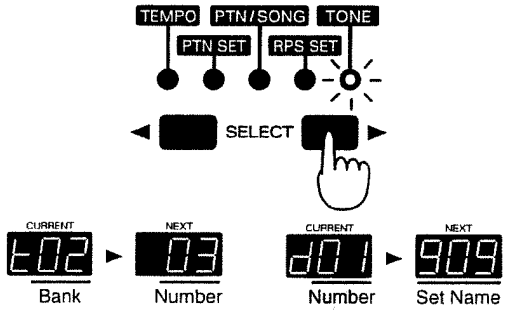
If neither of the OCTAVE buttons are lit, pressing keyboard pad 2 will play C4 (middle C).
While you are pressing an OCTAVE button, the display will indicate the value of the setting. For example, if you press the OCTAVE [+] button once to raise the keyboard one octave, the display will be as follows. With this setting, the C5 note will be sounded when you press keyboard pad 2.



Selecting sounds

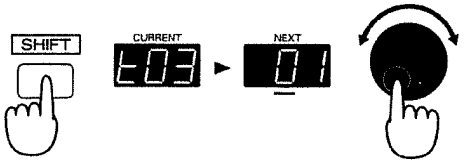
If you have used the PART buttons to select a part 1–7 you can select Tones, and if you have selected the rhythm part you can select Rhythm Sets. Tones are organized into 29 banks, by type of instrument. For details refer to "Tone list" (p.85). The rhythm instrument that will be sounded by each key of the rhythm part will depend on the selected Rhythm Set. For details refer to "Rhythm Set list" (p.90).

1. Use SELECT [◀][▶] to make the TONE indicator light.
The display will indicate the bank and number of the currently selected Tone. (If the rhythm part is selected, the Rhythm Set number will be displayed.)



2. Rotate the VALUE dial to select a Tone or Rhythm Set.

By holding down [SHIFT] as you rotate the VALUE dial, you can rapidly change the tens digit of the number.



Parameters that change the sound (Part parameters)

The MC-303 lets you modify the setting of various parameters for the selected Tone, to create the sound most suitable for your needs. Parameters are settings which determine the characteristics of a sound and how it is heard. The process of modifying the values of parameters to change the sound is referred to as "editing." The following parameters can be adjusted.

Parameters set by operating the knobs
- LEVEL: volume
- PANPOT: pan (location) adjustment
- PORTAMENTO: portamento on/off
- PORTA TIME: portamento time
- LFO RATE: LFO speed
- LFO MOD: LFO depth
- CUTOFF: cutoff frequency
- RESONANCE: resonance
- ENVELOPE ATTACK: attack time of envelope
- ENVELOPE DECAY: decay time of envelope
- ENVELOPE RELEASE: release time of envelope

Parameters set by using a menu
- LFO WAVE: LFO waveform selection
- LFO PITCH: degree to which LFO affects pitch
- LFO FILTER: degree to which LFO affects timbre
- LFO AMP: degree to which LFO affects volume
- BEND RANGE: bend range
- OUT ASSIGN: output destination of musical data

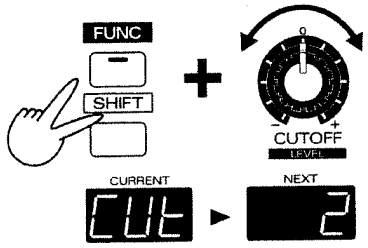
These parameters are referred to as "Part parameters." The MC-303 stores the selection of the Tone and the part parameter values for each part as Pattern Setup data. Edits you make to the part parameters are temporary, and your modified settings will be lost if you select a different Tone for that part or if you select a different pattern. If you wish to keep the edited settings, use the Pattern Setup Write procedure (p.35).
It is not possible to rewrite the pattern settings for preset patterns or variation patterns. If you wish to modify and save preset pattern settings, you must copy them to a user pattern (p.61), and then edit that user pattern. Then use the Pattern Setup Write operation.
Before you begin editing, use the PART SELECT button and the PART buttons to select the part that you wish to edit.

Parameters set by operating the knobs

< To confirm the numerical setting of a knob >

Normally, the value of the parameter setting is not displayed when you use a panel knob to modify it. If you wish to confirm the numerical value of a parameter as you edit, hold down [SHIFT] and [FUNC] as you rotate the knob.

For example, if you wish to confirm the numerical setting of the cutoff frequency, use the following operation.

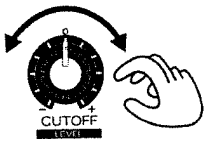


Changing the volume (Level)

The volume level of each part can be adjusted in the range 0–127.

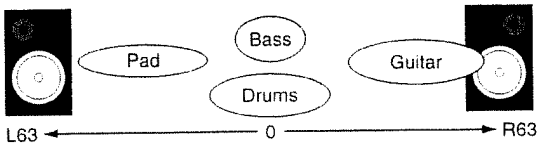
1. Press [FUNC] to make the button indicator blink.

2. Rotate the LEVEL knob to adjust the volume level. Rotating the knob to the right will increase the volume.



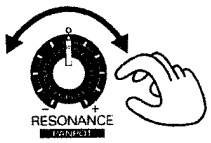
Changing the stereo location (Pan)

The panning of each part can be adjusted in the range RND/L63–0–R63. Pan determines the location of the sound when you listen in stereo. For example, you might place drums and bass in the center, guitar at right, and pad at left.



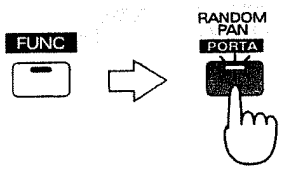
1. Press [FUNC] to make the button indicator blink.

2. Rotate the PANPOT knob to adjust the pan position.



Rotating the knob to the right will move the sound to the right, and rotating it to the left will move the sound to the left.

When the knob is in the center position, the sound will be located in the center. A setting of RND (random) produces a special effect in which the stereo location will be randomly different each time the sound is played. To select random panning, turn off the [FUNC] button and press [RND PAN].



* In a Rhythm Set, the stereo location of each rhythm instrument is fixed. Changing the pan setting of the rhythm part will move the overall stereo position of the entire Rhythm Set.
* For some Tones, a small amount of sound leakage may be heard from the opposite speaker even if the pan setting is fully left or right.
* If you are listening in mono, pan settings will have no effect.

Changing the pitch smoothly (Portamento)

Portamento is a function that creates smooth changes in pitch between one note to the next. When portamento is turned on, the Tone of that part will be set to Mono mode (i.e., able to produce only one note at a time). Portamento is especially effective when applied to synth bass or synth lead Tones.

PORTAMENTO ON/OFF

Here's how to turn portamento on/off for each part.

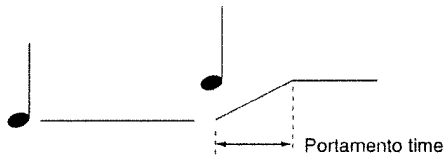
1. Press [FUNC] to make the button indicator blink.

2. Press [PORTAMENTO] to make the button indicator light, and portamento will be turned on.

* For the Rhythm Part, the sound will not be affected even if portamento is turned on.
* When the Portamento Time is set to "0," turning portamento on will simply set the Tone to mono mode, and no portamento effect will be heard.

PORTA TIME (Portamento time)

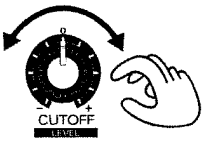
When portamento is on, this setting adjusts the time over which the pitch will smoothly change (0–127).



1. Press [FUNC] to make the button indicator blink.

2. Rotate the PORTA TIME knob to adjust the portamento time.

Rotating the knob to the right will lengthen the time. With a setting of "0," there will be no portamento effect even if portamento has been turned on.

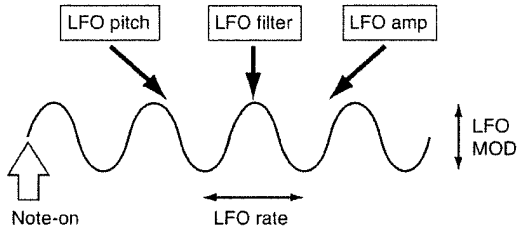


Creating cyclic changes in the sound (LFO)

LFO (Low Frequency Oscillator) is a function that creates cyclic changes in the Tone. It can affect the pitch, timbre (filter), and volume (amplitude).

< About LFO >

You can adjust LFO Rate (speed) and LFO MOD (depth). Applying LFO to the pitch produces a vibrato effect. Applying LFO to the filter produces a wah effect. Applying LFO to the amplitude produces a tremolo effect. The degree to which the LFO will affect each of these three elements is determined by the LFO PITCH, LFO FILTER, and LFO AMP settings (p.27). To make LFO settings, first adjust the degree to which the three elements (pitch, filter, amplitude) will be affected, and then adjust LFO Rate and LFO MOD.

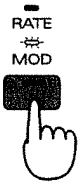


LFO RATE

The speed at which the LFO cycles can be adjusted over a range of -50 – +50.

1. Make sure that the [FUNC] indicator is dark.

2. Press [LFO] to make the button indicator go dark.
Now you can adjust the RATE setting.



3. Rotate the LFO knob to adjust the LFO rate.

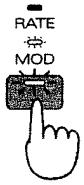
Rotating the knob to the right will make the oscillation faster, and rotating it to the left will make it slower.

LFO MOD (LFO modulation depth)

The depth of the LFO effect can be adjusted over a range of 0–127.

1. Make sure that the [FUNC] indicator is dark.

2. Press [LFO] to make the button indicator light.
Now you can adjust the MOD setting.

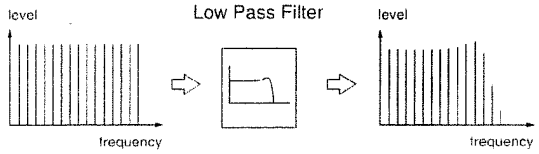


3. Rotate the LFO knob to adjust the LFO modulation depth.
As you rotate the knob to the right, the LFO effect will increase. At a setting of "0" the LFO will have no effect.

* If the LFO PITCH, LFO FILTER, and LFO AMP settings are all at "0," there will be no LFO effect even if this LFO MOD parameter is increased.

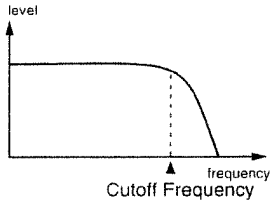
Changing the timbre (Filter)

You can modify the timbre by changing the filter setting. The filters of the MC-303 are of a type called Low Pass Filters, which pass only the frequencies below a specified frequency. This frequency is referred to as the cutoff frequency. By changing the cutoff frequency you can make the sound brighter or darker. The cutoff frequency will be controlled by the envelope to change over time. By adjusting the filter and envelope, you can create sounds that have movement and expression.



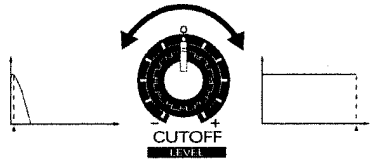
CUTOFF (Cutoff frequency)

Adjust the cutoff frequency value over a range of -50 – +50. If the cutoff frequency is raised, more of the overtones will be allowed through, making the sound brighter (harder). If it is lowered, less of the overtones will be allowed through, making the sound darker (softer).



1. Make sure that the [FUNC] indicator is dark.
If it is not dark, press the button to turn off the indicator.

2. Rotate the CUTOFF knob to adjust the cutoff frequency.
Rotating the knob to the right will raise the cutoff frequency, and rotating the knob to the left will lower it.



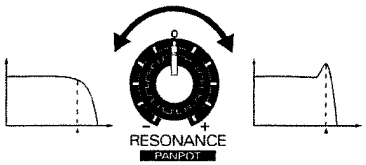
* For some Tones, raising the cutoff frequency will not produce an audible change.

RESONANCE

Adjust the overtones in the region of the cutoff frequency over a range of -50 – +50.

1. Make sure that the [FUNC] indicator is dark.
If it is not dark, press the button to turn off the indicator.

2. Rotate the RESONANCE knob to adjust the resonance value.
Rotating the knob to the right will increase the resonance, producing a more distinctive sound.



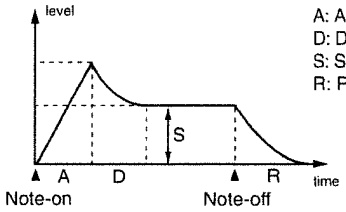
* For some Tones, raising the resonance will not produce an audible change.

Changing the time-variant aspects of the sound (Envelope)

The volume of a musical instrument changes over time, from the moment the sound begins to when it dies away. The figure below shows this change over time as a graph. The shape of this change is different for each instrument, and is an important factor in how we distinguish the sound of one instrument from another. This shape is called the "envelope."

The envelope of a musical instrument is also affected by the way that it is played. On the MC-303, you can change the sharpness with which the sound begins by adjusting the Attack Time of the envelope. By adjusting the envelope parameters, you can simulate the characteristics of a variety of different musical instruments.

The envelope shape that you set can also affect the cutoff frequency of the filter.



* For some Tones, adjusting the envelope times may not result in an audible difference.

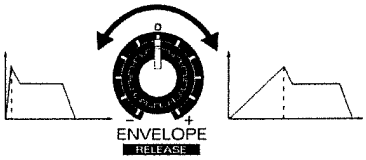
ENVELOPE ATTACK (Envelope attack time)

Adjust the sharpness of the attack over a range of -50 – +50.

1. Make sure that the [FUNC] indicator is dark.

2. Press [ENVELOPE] to turn off the button indicator. Now you can adjust the ATTACK setting.

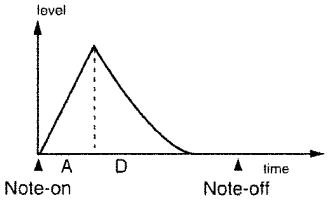
3. Rotate the ENVELOPE knob to adjust the Attack Time. Rotating the knob to the right will produce a more gentle attack, and rotating it to the left will produce a sharper attack.



ENVELOPE DECAY (Envelope decay time)

Adjust the time between the attack until the sustain level is reached (the Decay Time) over a range of -50 – +50.

* For some Tones (piano and guitar type), the Sustain Level is "0."



1. Make sure that [FUNC] indicator is dark.

2. Press [ENVELOPE] to make the button indicator light. Now you can adjust the DECAY setting.

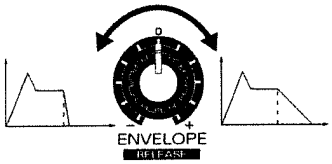
3. Rotate the ENVELOPE knob to adjust the Decay Time. Rotating the knob to the right will lengthen the time required to reach the Sustain Level, and rotating the knob to the left will shorten it.

ENVELOPE RELEASE (Envelope release time)

Adjust the time from when you take your finger off the key until the sound disappears (the Release Time) over a range of -50 – +50.

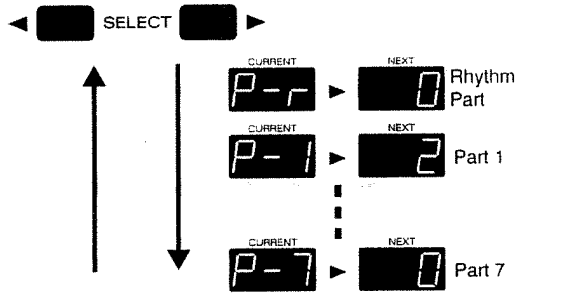
1. Press [FUNC] to make the button indicator blink.

2. Rotate the RELEASE knob to adjust the Release Time.
Rotating the knob toward the right will produce a longer release, and rotating it toward the left will produce a quicker release.



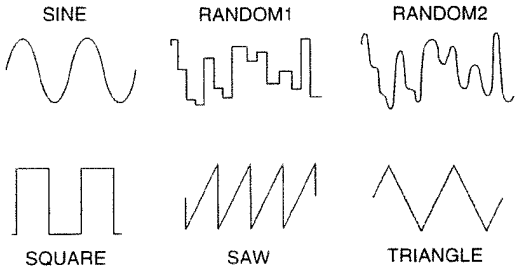
Parameters set by using a menu

When you are in the Part parameter setting display, you can also use SELECT [◀][▶] to select the Part for editing (in addition to using the PART buttons to select the Part).



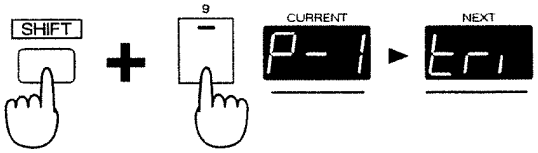
LFO WAVE (LFO waveform)

Select the LFO waveform.

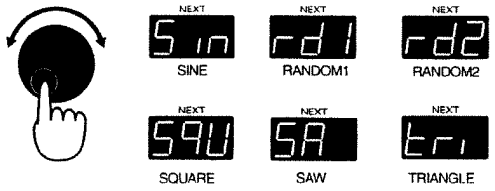


SINE: A sine wave. Use this to apply effects such as vibrato.
RANDOM 1, 2: These are waveforms in which the level changes randomly, and are useful for sound effects.
SQUARE: A square wave. It can be used for sound effects, etc.
SAW: A sawtooth wave. It can be used for sound effects, etc.
TRIANGLE: A triangle wave. Most suitable for vibrato effects, etc.

1. Hold down [SHIFT] and press keyboard pad [9] to access the LFO Waveform setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



2. Rotate the VALUE dial to select the waveform.

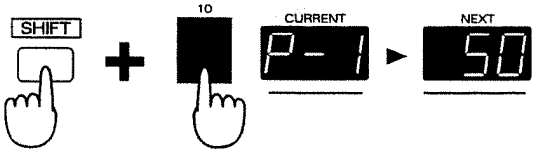


3. To leave the setting display, press [EXIT].

LFO PITCH (LFO pitch modulation depth)

This adjusts (0–127) the depth of the vibrato effect that will occur when you set LFO MOD (LFO modulation depth). Higher settings will produce a deeper vibrato effect when the LFO depth is raised. With a setting of "0" there will be no vibrato effect.

1. Hold down [SHIFT] and press keyboard pad [10] to access the LFO Pitch Modulation Depth setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



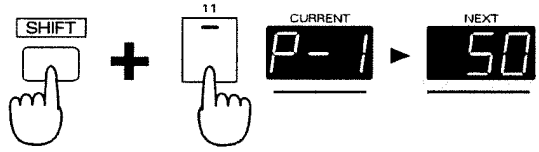
2. Rotate the VALUE dial to set the LFO Pitch Modulation Depth value.

3. To leave the setting display, press [EXIT].

LFO FILTER (LFO filter modulation depth)

This adjusts (0–127) the depth of the wah effect that will occur when you set LFO MOD (LFO modulation depth). Higher settings will produce a more intense wah effect when the LFO depth is raised. With a setting of "0" there will be no wah effect.

1. Hold down [SHIFT] and press keyboard pad [11] to access the LFO Filter Modulation Depth setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



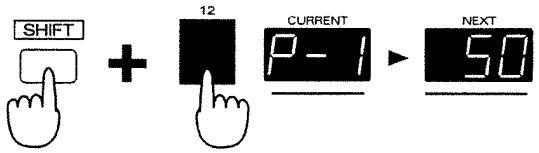
2. Rotate the VALUE dial to set the LFO Filter Modulation Depth value.

3. To leave the setting display, press [EXIT].

LFO AMP (LFO amplitude modulation depth)

This adjusts (0–127) the depth of the tremolo effect that will occur when you set LFO MOD (LFO modulation depth). Higher settings will produce a deeper tremolo effect when the LFO depth is raised. With a setting of "0" there will be no tremolo effect.

1. Hold down [SHIFT] and press keyboard pad [11] to access the LFO Amplitude Modulation Depth setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



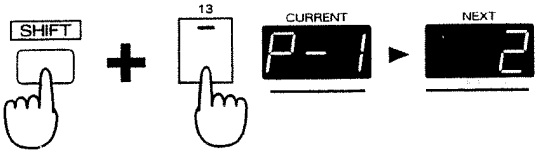
2. Rotate the VALUE dial to set the LFO Amplitude Modulation Depth value.

3. To leave the setting display, press [EXIT].

BEND RANGE

The bend range for each part can be adjusted from 0–24. If a MIDI keyboard is connected, its pitch bend lever or pitch wheel can be operated to transmit Pitch Bend messages, causing the pitch to change. The Bend Range setting sets the maximum pitch change that will occur in response to such messages. With a setting of 12, the maximum change will be 1 octave. With a setting of 24, the maximum change will be 2 octaves. With a setting of "0," incoming Pitch Bend messages will not change the pitch.

1. Hold down [SHIFT] and press keyboard pad [13] to access the Bend Range setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



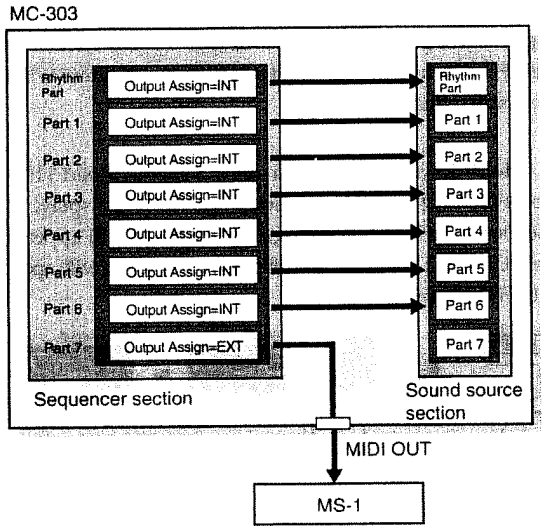
2. Rotate the VALUE dial to set the Bend Range value.

3. To leave the setting display, press [EXIT].

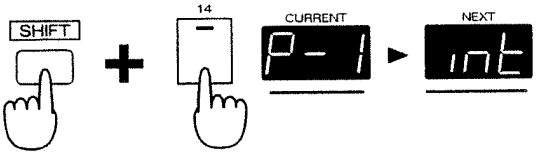
OUT ASSIGN (Output assign)

Setting range: INT/EXT

This setting determines the output destination for the musical data of each Part. Normally, all Parts are set to "INT" so that the musical data from the sequencer will be sent to the MC-303's own internal sound source. With a setting of "EXT," the musical data from that Part will not be sent to the internal sound source, but will be transmitted from the MIDI OUT connector. For example, if you wish to use the MC-303 with a sampler such as the MS-1, you could set the Output Assign setting of one of the Parts to "EXT." This would let you play the MS-1 directly from the MC-303's keyboard pads, or control the MS-1 by the musical data played back from the sequencer. For details on using the MS-1 together with the MC-303, refer to "Controlling the MS-1" (p.76).



1. Hold down [SHIFT] and press keyboard pad [14] to access the Output Assign setting display.
The Part for which the setting is being made will appear in the CURRENT display, and the current setting will appear in the NEXT display.



2. Rotate the VALUE dial to set the Output Assign setting.

3. To leave the setting display, press [EXIT].

Musical data of Parts which are set to "EXT" will be transmitted as MIDI messages to an external device via the MIDI OUT connector. At this time, each Part will be transmitted on a different MIDI channel.
The following table shows the MIDI channel on which the data of each Part is transmitted.

Part R: ch.10
Part 1: ch.1
Part 2: ch.2
Part 3: ch.3
Part 4: ch.4
Part 5: ch.5
Part 6: ch.6
Part 7: ch.7

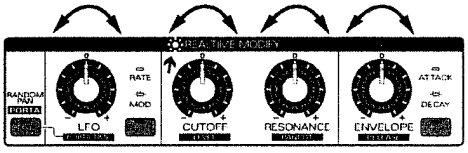
Using the knobs to change the sound in realtime (Realtime Modify)

Part parameters which can be modified using the knobs can be freely adjusted even during pattern playback. The capability of using the knobs to change the sound in realtime is referred to as "Realtime Modify." This is especially effective for live performances.

1. Select a pattern and play it back.

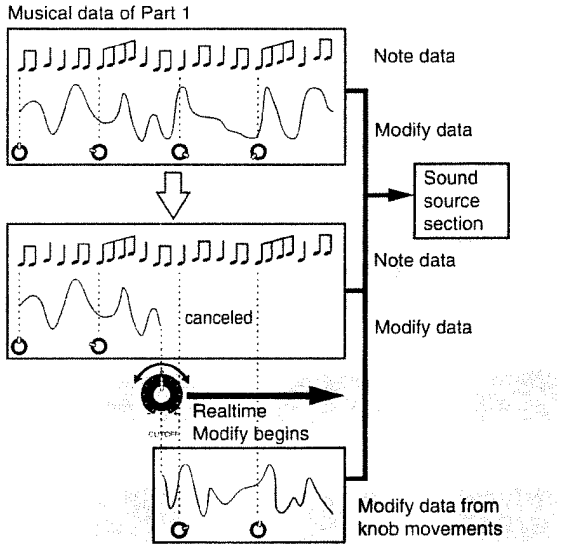
2. Use [PART SELECT] and the PART buttons to select the Part whose sound you wish to modify.

3. Use the knobs to modify the sound.
The REALTIME MODIFY indicator will light.



Even during playback, you can use [PART SELECT] and the PART buttons to select the Part for realtime modification.
When you switch to a different Part for realtime modification, or switch to a different Pattern, the REALTIME MODIFY indicator will go dark.
The data produced when you operate the knobs is referred to as "modify data," and can be recorded in a user pattern. For details refer to "Recording knob movements" (p.48).

If you use the realtime modify function while playing back a Part for which modify data has already been recorded, the knob movements will take priority, and the modify data within the musical data for that Part will be canceled and no longer transmitted to the sound source. (The note messages of the musical data will be transmitted regardless of knob movements.) If the modify data within the musical data has been canceled, the PART button indicator for that Part will blink.

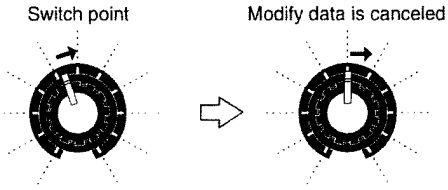


If the following operations are performed to make the REALTIME MODIFY indicator go dark, the modify data within the musical data will once again be transmitted to the sound source.

Press a blinking PART button once again to make the indicator light.

Return to the beginning of the pattern, or switch to a different pattern.

* Each knob has 11 switch points. When the knob is moved past a switch point, the modify data within the musical data will be canceled.



Effects

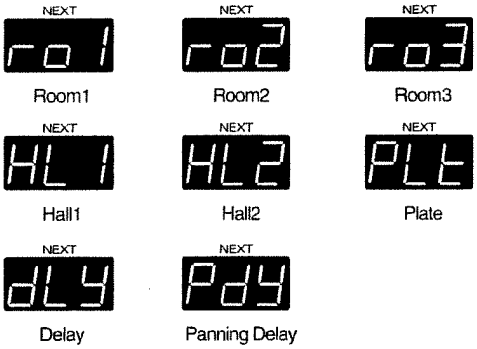
The MC-303 provides two effect systems; delay/reverb, and flanger/chorus. For each effect you can make settings such as type, rate, and time. You can also adjust the overall effect levels for all Parts, as well as the individual effect level for each Part.

Delay/Reverb

Delay is an effect that delays the sound to create echoes. Reverb is an effect that adds reverberance to the sound, producing the acoustic depth and spaciousness characteristic of a performance in a concert hall.

Selecting the type of delay/reverb (Delay/Reverb Type)

You can select one of the following 8 types of delay/reverb effect.



Room 1–3: These are reverbs that simulate the acoustics of a room, providing well-defined and spacious reverberation.

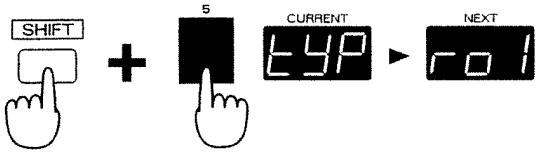
Hall 1, 2: These are reverbs that simulate the acoustics of a concert hall, providing a larger acoustic space than Room.

Plate: This simulates a plate reverb (a reverb device that uses the vibration of a metal plate).

Delay: This is a conventional delay, producing an echo effect.

Panning Delay: This is a special delay in which the delayed sound alternates between left and right. It is effective when you are listening in stereo.

1. Hold down [SHIFT] and press keyboard pad [5] to access the Delay/Reverb Type setting display.
The following display will appear.



2. Rotate the VALUE dial to select the type.

3. To exit the setting display, press [EXIT].

When you change the Delay/Reverb Type, parameters other than the Delay/Reverb Part Level will automatically be set to the most suitable values. When making delay/reverb settings, you should first select the Delay/Reverb Type. Then use the panel knobs to adjust Delay/Reverb Time and Delay/Reverb Level, etc., to adjust the effect to your taste.
If desired, you can make more detailed adjustments as well (p.32).

< To confirm the numerical setting of a knob >
Normally, the value of the parameter setting is not displayed when you use a panel knob to modify it. If you wish to confirm the numerical value of a parameter as you edit, hold down [SHIFT] and [FUNC] as you rotate the knob.

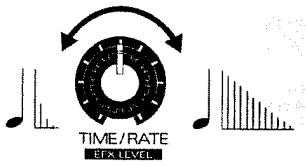
Adjusting the delay/reverb time (Delay/Reverb Time)

If a delay effect is selected, this sets the time between the original sound and the delayed sound (Delay Time: 0–127). If a reverb effect is selected, this sets the length of the reverb (Reverb Time: 0–127). Higher settings will produce a longer delay (reverb).

1. Press [EFFECT] to turn off the button indicator.
Now you can make DELAY/REVERB settings.

2. Make sure that the [FUNC] indicator is dark.

3. Rotate the TIME/RATE knob to adjust the delay/reverb time.
Rotating the knob to the right will lengthen the delay/reverb time.
Rotating the knob to the left will shorten the delay/reverb time.



Adjusting the overall delay/reverb sound (Delay/Reverb Level)

The overall volume of the effect sound can be adjusted over a range of 0–127. Higher settings will make the effect louder.

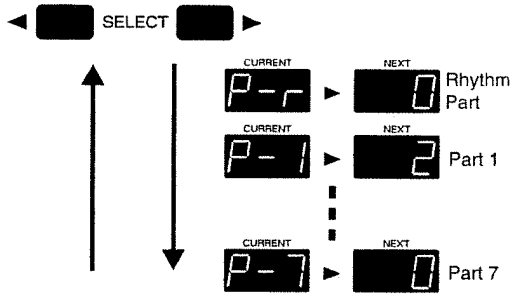
1. Press [EFFECT] to turn off the button indicator.
Now you can make DELAY/REVERB settings.

2. Press [FUNC] to make the button indicator blink.

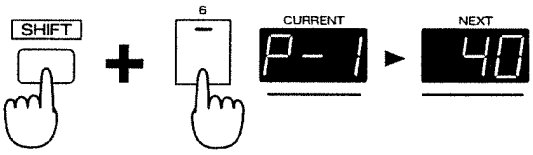
3. Rotate the EFX LEVEL knob to adjust the delay/reverb level.
Rotating the knob to the right will make the effect louder.
Rotating the knob to the left will make the effect softer.

Adjusting the delay/reverb sound for each Part (Delay/Reverb Part Level)

The effect level for each Part can be adjusted over a range of 0–127. Higher settings will make the effect louder. While you are in the selection display, you can select the Part to edit either by using the PART buttons, or by using SELECT [◀][▶].



1. Hold down [SHIFT] and press keyboard pad [6] to access the Delay/Reverb Part Level setting display.
The Part whose setting is being adjusted will appear in the CURRENT display, and the setting will appear in the NEXT display.



2. Rotate the VALUE dial to set the value.

3. To leave the setting display, press [EXIT].

* If the overall Delay/Reverb Level setting is at "0," there will be no effect even if you raise the Delay/Reverb Part Level settings.

Making detailed settings

Normally you will make delay/reverb settings by adjusting the four items "Delay/Reverb Type," "Delay/Reverb Time," "Delay/Reverb Level," and "Delay/Reverb Part Level." However, by adjusting the following parameters you can make effect settings with additional variety.

REVERB CHARACTER

Select one of 8 settings to determine the basic type of delay/reverb. 0–5 are reverb types, and 6, 7 are delay types.

REVERB Pre-LPF (Reverb pre- low pass filter)

This applies a low pass filter to the sound entering the reverb, attenuating the high frequencies. Specify the amount of attenuation over a range of 0–7. Higher settings will produce greater attenuation of the high frequencies, resulting in a more mellow reverberation.

REVERB DELAY FEEDBACK

This parameter is available when the Reverb Character is set to 6, 7 or the Reverb Type is set to Delay or Panning Delay. It sets the amount of delay repeats over a range of 0–127. Higher settings will produce more delay repeats.

REVERB Pre-DELAY TIME

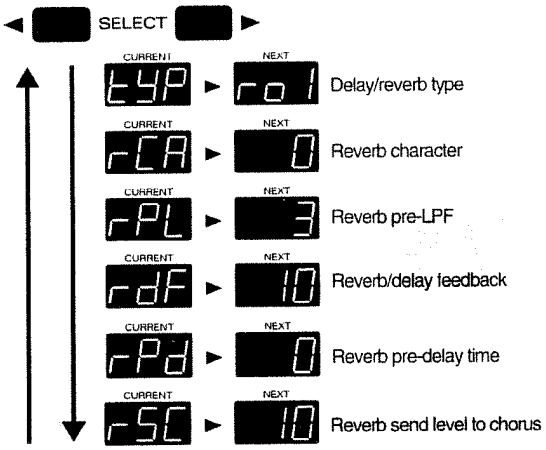
Specify the time from the original sound until the later reverberation is heard (the Pre Delay Time), over a range of 0–127 ms. Higher settings will lengthen the pre-delay time, producing the feeling of a larger acoustic space.

REVERB SEND LEVEL TO CHORUS

Adjust the amount of reverb sound that will be sent to the chorus, over a range of 0–127. Higher settings will increase the amount that is sent.

1. Hold down [SHIFT] and press keyboard pad [5] to access the Delay/Reverb Type setting display.

2. Use SELECT [◀][▶] to access the parameter display. Repeatedly press the buttons to access the setting display for the desired parameter.



3. Rotate the VALUE dial to set the parameter value.

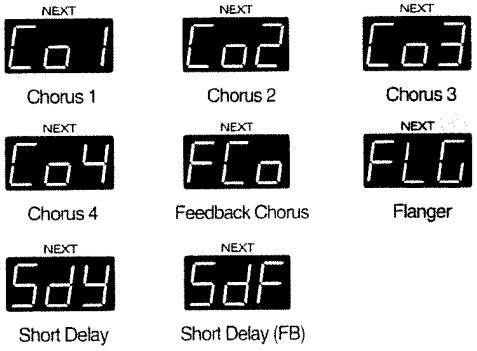
4. To leave the setting display, press [EXIT].

Flanger/Chorus

The flanger effect gives a metallic resonance to the sound to produce a unique character. The chorus effect gives depth and richness to the sound.

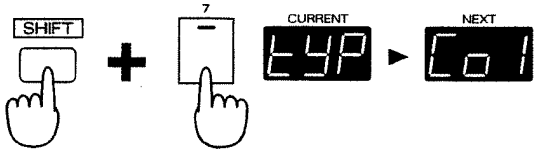
Selecting the flanger/chorus type (Flanger/Chorus Type)

Select the basic type of flanger/chorus effect from the following 8 selections.



Chorus 1–4: These are conventional chorus effects, adding spaciousness and depth to the sound.
Feedback Chorus: This is a chorus with a flanger-like effect, producing a softer sound.
Flanger: This produces an effect reminiscent of a jet airplane taking off and landing.
Short Delay: This is a delay with a short delay time.
Short Delay (FB): This is a delay with a short delay time and many repeats.

1. Hold down [SHIFT] and press keyboard pad [7] to access the Flanger/Chorus Type setting display.
The following display will appear.



2. Rotate the VALUE dial to select the type.

3. To leave the setting display, press [EXIT].

When you change the Flanger/Chorus Type, parameters other than Flanger/Chorus Part Level will be automatically set to the optimal settings. When making flanger/chorus settings, you should first select the Flanger/Chorus Type. Then use the panel knobs to set Flanger/Chorus Rate and Flanger/Chorus Level, etc., adjusting the sound to your taste.
If desired, you can make more detailed settings as well (p.34).

< To confirm the numerical setting of a knob >
Normally, the value of the parameter setting is not displayed when you use a panel knob to modify it. If you wish to confirm the numerical value of a parameter as you edit, hold down [SHIFT] and [FUNC] as you rotate the knob.

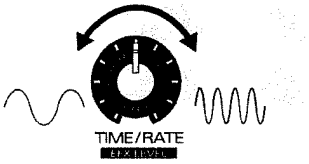
Adjusting the modulation speed (Flanger/Chorus Rate)

Set the modulation speed (frequency) of the effect over a range of 0–127. Higher settings will produce faster modulation.

1. Press [EFFECT] to make the button indicator light.
Now you can make FLANGER/CHORUS settings.

2. Make sure that the [FUNC] indicator is dark.

3. Rotate the TIME/RATE knob to adjust the Flanger/Chorus Rate.
Rotating the knob to the right makes the modulation faster.
Rotating the knob to the left makes the modulation slower.



Adjusting the overall flanger/chorus sound (Flanger/Chorus Level)

Set the overall amount of the effect over a range of 0–127. Higher settings will increase the effect.

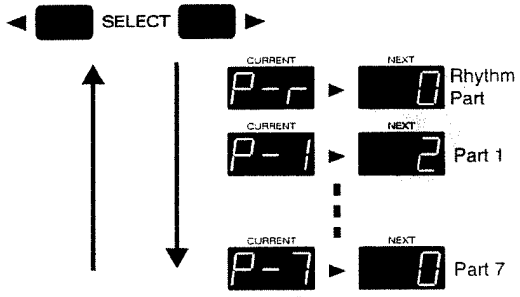
1. Press [EFFECT] to make the button indicator light.
Now you can make FLANGER/CHORUS settings.

2. Press [FUNC] to make the button indicator blink.

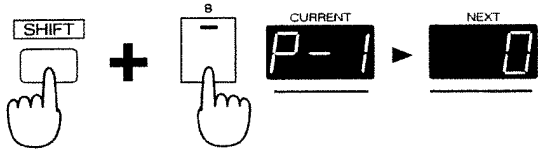
3. Rotate the EFX LEVEL knob to adjust the Flanger/Chorus Level.
Rotating the knob to the right increases the effect.
Rotating the knob to the left decreases the effect.

Adjusting the flanger/chorus sound for each Part (Flanger/Chorus Part Level)

Set the amount of effect for each Part over a range of 0–127. Higher settings will increase the effect. While you are in the setting display, you can select the Part being edited either by using the PART buttons, or by using SELECT [◀][▶].



1. Hold down [SHIFT] and press keyboard pad [8] to access the Flanger/Chorus Part Level setting display.
The Part being adjusted will appear in the CURRENT display, and the current setting will appear in the NEXT display.



2. Rotate the VALUE dial to set the value.

3. To leave the setting display, press [EXIT].

* If the overall Flanger/Chorus Level is set at "0," there will be no effect even if you raise the Flanger/Chorus Part Levels.

Making detailed settings

Normally you will make chorus/flanger settings by adjusting the four parameters "Flanger/Chorus Type," "Flanger/Chorus Rate," "Flanger/Chorus Level," and "Flanger/Chorus Part Level." However, by adjusting the following parameters, you can create an even greater variety of effect settings.

CHORUS Pre-LPF (Chorus pre- low pass filter)

A low pass filter is applied to the sound entering the chorus to attenuate the high frequency range. Specify the amount (0–7) of attenuation. Higher settings will produce more attenuation, resulting in a softer chorus sound.

CHORUS FEEDBACK (Chorus feedback level)

Adjust the level (0–127) of the chorus sound that is returned (fed back) to the input of the chorus. By using feedback, a more dense chorus effect can be achieved. Higher settings will raise the feedback level.

CHORUS DELAY TIME

Adjust the delay time (0–127) used by the chorus effect. Higher settings will produce an increasingly skewed pitch.

CHORUS DEPTH

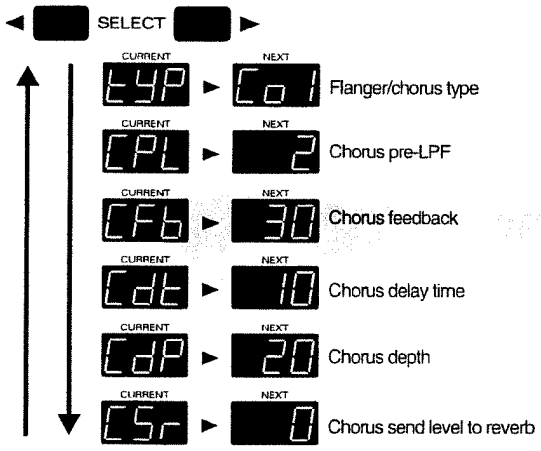
Adjust the modulation depth (0–127) of the chorus sound. Higher settings will produce deeper modulation.

CHORUS SEND LEVEL TO REVERB

Adjust the amount (0–127) of chorus sound that is sent to the reverb. Higher settings will send a greater amount of chorus sound to the reverb.

1. Hold down [SHIFT] and press keyboard pad [7] to access the Flanger/Chorus Type setting display.

2. Use SELECT [◀][▶] to move through the parameter displays. Repeatedly press a button to access the display for the desired parameter.



3. Rotate the VALUE dial to set the parameter value.

4. Press [EXIT] to leave the setting display.

Storing part settings in a pattern (Pattern Setup Write)

The following parameters set for each Part together with the standard tempo of the pattern are collectively referred to as Setup Parameters. Setup parameters are stored in each pattern as pattern setup data. When you select a pattern, the setup data of that pattern is sent to each Part.

Setup parameter settings that you edit can be stored in user patterns.

- Tone bank/number for Parts 1–7 (p.21)
- Rhythm set number assigned to the Rhythm Part (p.21)
- Part parameters (p.21)
- Delay/Reverb Part Levels (p.31)
- Flanger/Chorus Part Levels (p.34)
- Mute settings for each Part (p.16)
- Rhythm Mute settings (p.16)

1. Select a pattern.

If you wish to modify the setup data of a preset pattern, you must first copy that pattern to a user pattern (p.61), and then select that user pattern. It is not possible to modify the setup data of a variation pattern.

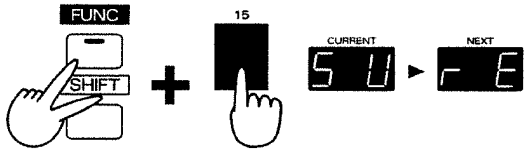
2. Select the Part that you wish to edit.

3. Edit the setup parameters.

4. If necessary, modify the standard tempo of the pattern (p.15).

5. While holding down [SHIFT] and [FUNC], press keyboard pad [15] to access the Pattern Setup Write execute display.

The display will ask for confirmation.



6. Press [ENTER], and the setup parameters for all Parts will be written at once.

To cancel, press [EXIT].

When the data has been written, the normal display will reappear.

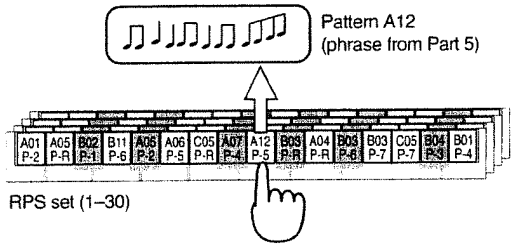
If you specify the Next pattern while a pattern is playing back, and if the current Part of the specified pattern does not contain playback data, the setup data of that Part will not be transmitted even when the specified Next pattern begins.

Chapter 4. Play back phrases from the keyboard (RPS)

RPS (Realtime Phrase Sequence) is a function that lets you play back the musical data for one Part within a pattern by pressing a specific keyboard pad. Various phrases can be played back by pressing different keys. Since you can use RPS play back even while playing back a pattern, this function is a very effective tool for live performance.
For example, if a drum fill-in phrase from a phrase is registered with the RPS function, you can play that fill-in simply by touching the keyboard pad, even if the phrase from which the fill-in is taken is not currently being played back.

Using RPS to play back a phrase

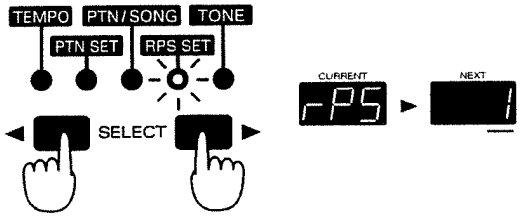
On the MC-303, a collection of phrases assigned to the sixteen keyboard pads is referred to as an "RPS Set." The MC-303 provides 30 RPS sets, and these can be switched even during pattern playback.



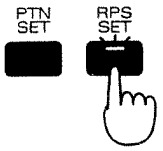
There are two types of phrases; those using Parts 1–7, and those using the Rhythm Part. Up to eight phrases can be played back simultaneously, even during pattern playback. Phrases which use the Rhythm Part will be played back using the Tone of the currently selected pattern's Rhythm Part.

* It is not possible to play back RPS phrases from a MIDI keyboard.

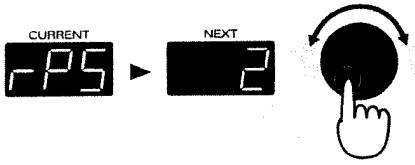
1. Use SELECT [◀][▶] to make the RPS SET indicator light.
The number of the currently selected RPS set will appear in the NEXT display.



2. Press [RPS SET] to make the button indicator light.



3. Rotate the VALUE dial to select an RPS set (1–30).
When the [RPS SET] indicator is lit, you can also use OCTAVE [-][+] to select RPS set.



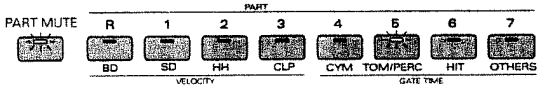
4. Press a keyboard pad to play back a phrase. The phrase will play back as long as you continue pressing the keyboard pad.

Registering phrases in an RPS set

You are free to re-register the phrases registered in an RPS set. It is convenient to collect your favorite or frequently-used phrases in a single RPS set. As an example, here's how to register the Part 5 phrase of pattern A02 in an RPS set.
Before you begin, select the RPS set in which the phrase will be registered.

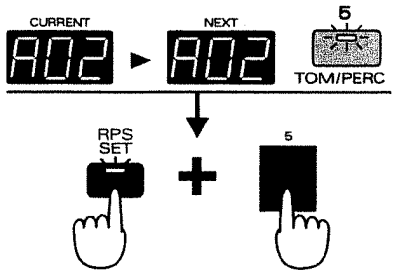
1. Select pattern A02 (p.14).

2. Use [PART MUTE] and the PART buttons to mute all Parts except Part 5.



3. Make sure that the [RPS SET] indicator is lit.

4. Hold down [RPS SET], and press the keyboard pad for which the phrase will be registered.
The phrase will be registered for the keyboard pad that you press.
The following display shows the example of registering the phrase of pattern A02 Part 5 in keyboard pad [5].



* You can register phrases even during pattern playback.
* Each keyboard pad registers not the musical data of the phrase, but simply data telling which Part of which phrase the musical data will be taken from. If a phrase from a user pattern is registered for a keyboard pad and you later modify the contents of the musical data of that user pattern, the phrase will reflect those modifications when it is played back by RPS. For example, if you erase the musical data of a Part that contains a registered phrase, there will be no sound when that phrase is played back by RPS.
* It is not possible to register two or more Part phrases for a single keyboard pad. In such cases, the following message will appear in the display.

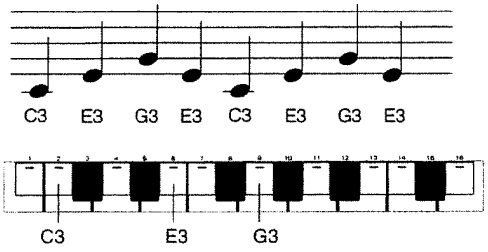
* Bank E–I contains patterns split up for RPS use. Phrases from these patterns can be conveniently registered as fill-ins, etc.
* Phrases from a Variation Pattern (bank L–Q) cannot be registered as an RPS.

< Notes when using RPS >

* When a phrase that was registered as an RPS is played back, part parameter settings such as Cutoff or Resonance are not applied. If a phrase from a part which uses these parameters to create the sound is registered as an RPS, the sound during RPS playback may be different than the original phrase, depending on the parameter settings. Also, if a Rhythm Part phrase is registered as an RPS, Rhythm Mute settings will be ignored when that phrase is played back.
* The MC-303 can simultaneously playback up to 8 phrases, but if you attempt to simultaneously playback phrases which contain large amounts of data, playback may lag or notes may be interrupted. If this occurs, reduce the number of phrases that are played back simultaneously.
* By setting the Output Assign (p.28) of a Part to "EXT," the musical data of that Part can be used to play an external MIDI sound source. However, the RPS function plays back phrases using the internal sound source. This means that if a phrase from a Part whose Output Assign is set to "EXT" is registered in an RPS Set, this data will not play an external sound source.

Chapter 5. Using the arpeggiator

The MC-303's arpeggiator lets you automatically produce arpeggios (broken chords) simply by holding down a chord. For example, if you play a C major chord as shown in the following keyboard diagram, an arpeggio of C3, E3, G3, E3, C3, E3, G3, E3 ... would be produced.



For settings of Arpeggio Style: 1/4, Octave Range: 0

Using the arpeggiator

1. Make sure that both the [PTN SET] and [RPS SET] indicators are dark.

2. Use [PART SELECT] and the PART buttons to select the Part on which you want to play an arpeggio.

3. Press [ARPEGGIO] to turn on the arpeggiator. When this is on, the button indicator will light.

4. Press the keyboard pad, and the sound of that Part will be played as an arpeggio.

If a MIDI keyboard is connected, the sound of the selected part will be played as an arpeggio when you play the keyboard.

The tempo of the arpeggio will be synchronized to the playback tempo of the pattern. To change the speed of the arpeggio, refer to "Changing the tempo" (p.15).

If a pedal switch (optional) is connected and the System setting "Pedal Assign" (p.72) is set to "HOLD," playing a chord while pressing the pedal will cause the arpeggio to continue even after you take your hand off the keys. To play another chord, release the pedal, and then play the next chord while pressing the pedal.

Creating an arpeggio playback pattern

There are a total of six items that you can set to control arpeggiation, but the "Arpeggio Style" is the most important. The playback pattern of the arpeggio is determined mainly by this selection.

When you select an arpeggio style, optimal settings will automatically be made for the four items "Accent Rate," "Motif," "Beat Pattern," and "Shuffle Rate." When making arpeggio settings, you should first select the Arpeggio Style. Then use the panel knobs to adjust Accent Rate and Octave Range, etc. to create the playback pattern.

If desired, you may make additional detailed settings (p.40). The modified arpeggio settings can be stored independently for each pattern set. For details refer to "Storing arpeggio settings in a pattern set" (p.18).

* The possible selections for "Motif" and "Beat Pattern" will depend on the selected arpeggio style.

< To confirm the numerical setting of a knob >

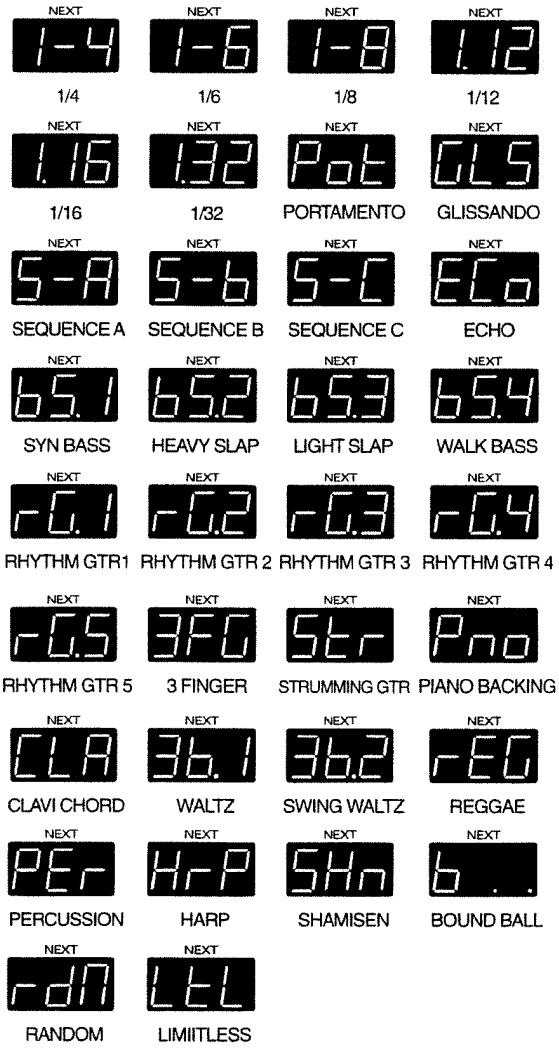
Normally, the value of the parameter setting is not displayed when you use a panel knob to modify it. If you wish to confirm the numerical value of a parameter as you edit, hold down [SHIFT] and [FUNC] as you rotate the knob.

Selecting the arpeggio style (Arpeggio Style)

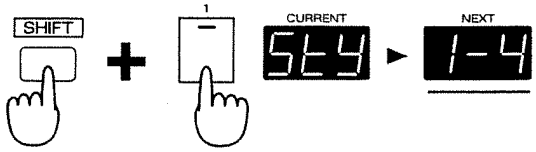
This determines the basic style of the arpeggio. You can select from the following 34 types.

1/4: Rhythm is divided in quarter-note intervals.
1/6: Rhythm is divided in quarter-note triplet intervals.
1/8: Rhythm is divided in eighth-note intervals.
1/12: Rhythm is divided in eighth-note triplet intervals.
1/16: Rhythm is divided in sixteenth-note intervals.
1/32: Rhythm is divided in thirty-second-note intervals.
PORTAMENTO: a style using a portamento effect
GLISSANDO: Glissando style.
SEQUENCE A–C: Sequence pattern-like styles.
ECHO: Echo style.
SYN BASS, HEAVY SLAP, LIGHT SLAP, WALK BASS: Styles suitable for playing bass parts.
RHYTHM GTR 1–5: Guitar cutting styles. Styles 2–5 are effective when 3–4 notes are held.
3FINGER: Guitar three-finger style.
STRUMMING GTR: A style simulating upward (downward) chord strokes on a guitar. Effective when 5–6 notes are held.
PIANO BACKING, CLAVICHORD: Keyboard accompaniment styles.

WALTZ, SWING WALTZ: Triple meter styles.
REGGAE: Reggae style. Effective when three notes are held.
PERCUSSION: Style effective for percussive instruments.
HARP: Style characteristic of harp performance.
SHAMISEN: Style characteristic of shamisen performance.
BOUND BALL: Style imitating a bouncing ball.
RANDOM: Notes will sound in random order.
LIMITLESS: The four parameters "Accent Rate," "Motif," "Beat Pattern," and "Shuffle Rate" will be permutated without limit.



1. Hold down [SHIFT] and press keyboard pad [1] to access the arpeggio setting display.
The following display will appear.



2. Rotate the VALUE dial to select the style.

3. To leave the setting display, press [EXIT].
While you continue pressing [ARPEGGIO], the currently selected style will be shown in the display. During this time you can use the VALUE dial to change the style. This is a convenient way to change the style during performance.

Adding expression to the arpeggio (Accent Rate)

By modifying the force of the accents and the note lengths, you can change the "groove" of the arpeggio. Adjust this setting over the range 0–100.

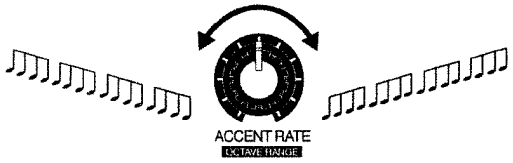
1. Rotate the ACCENT RANGE knob to adjust the Accent Rate.
Rotating the knob to the right will produce a more intense groove.

Changing the pitch range of the arpeggio (Octave Range)

This setting sets the pitch range of the arpeggio in octave units (-3–+3).

1. Press [FUNC] to make the indicator blink.

2. Rotate the OCTAVE RANGE knob to set the Octave Range.
Rotating the knob to the right will cause the arpeggio to be played upward from the area where you are holding the chord.
Rotating the knob to the left will cause the arpeggio to be played downward from the area where you are holding the chord.



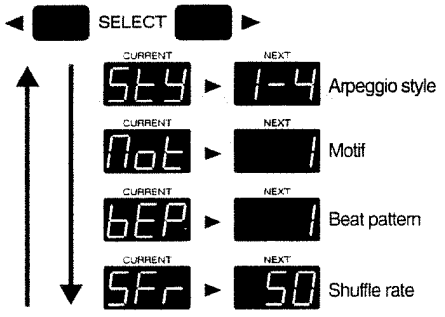
If you want the arpeggio to consist only of the notes you hold, set this to 0.

Making detailed settings

Normally you will make arpeggio settings using the three items "Arpeggio Style," "Accent Rate," and "Octave Range." However, by modifying the settings of the following parameters, you can create arpeggio patterns with even more variation.

1. Hold down [SHIFT] and press keyboard pad [1] to access the Arpeggio Style setting display.

2. Use SELECT [◀][▶] to switch the parameter display. Repeatedly press the buttons to select the setting display for the desired parameter.



3. Rotate the VALUE dial to set the parameter value.

4. Press [EXIT] to leave the setting display.

Sequence of the notes in the chord (Motif)

This setting determines the sequence in which the notes of the chord will sound.

* The values which can be set will depend on the currently selected arpeggio style. For details on the possible values for each style, refer to "Arpeggio style list" (p.98).

1 (SINGLE UP): Notes will sound one at a time in sequence from the lowest note pressed.
2 (SINGLE DOWN): Notes will sound one at a time in sequence from the highest note pressed.
3 (SINGLE UP&DN): Notes will sound one at a time in sequence from the lowest to the highest note pressed, and then from the highest to the lowest.
4 (SINGLE RANDOM): Notes will sound one at a time in random order.
5 (DUAL UP): Notes will sound two at a time in sequence from the lowest note pressed.
6 (DUAL DOWN): Notes will sound two at a time in sequence from the highest note pressed.
7 (DUAL UP&DN): Notes will sound two at a time in sequence from the lowest to the highest note pressed, and then from the highest to the lowest.
8 (DUAL RANDOM): Notes will sound two at a time in random order.
9 (NOTE ORDER): Notes will sound in the order that they were pressed. By pressing notes in the appropriate sequence, you can create melody lines. Up to 128 notes are remembered.
10 (GLISSANDO): Notes will sound at semitone intervals, rising and descending between the lowest and highest notes that were pressed. Press only the lowest and the highest notes.
11 (CHORD): All notes pressed will sound simultaneously.
12–16 (BASS+CHORD 1–5): The lowest note pressed will sound, and the rest of the notes will sound as a chord.
17–24 (BASS+UP 1–8): The lowest note pressed will sound, and the rest of the notes will be arpeggiated.
25–27 (BASS+RND 1–3): The lowest note pressed will sound, and the rest of the notes will be sounded randomly.
28–33 (TOP+UP 1–6): The highest note pressed will sound, and the rest of the notes will be arpeggiated.
34 (BASS+UP+TOP): The lowest and highest notes that you press and the other notes will sound separately.

Beat Pattern

This setting determines the beat pattern. This setting changes the location of the accents and the length of the notes to modify the beat (rhythm).

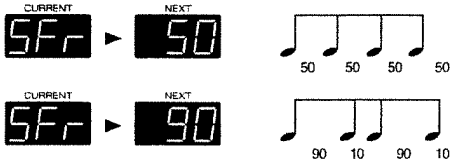
* The available values will depend on the currently selected arpeggio style. For details on the values that can be selected for each style, refer to "Arpeggio style list" (p.98).

1: 1/4
2: 1/6
3: 1/8
4: 1/12
5–7: 1/16 1–3
8–10: 1/32 1–3
11–21: PORTA 1–11
22–28: SEQ-A 1–7
29–32: SEQ-B 1–4
33, 34: SEQ-C 1, 2
35–37: ECHO 1–3
38–53: MUTE 1–16
54–61: STRUM 1–8
62, 63: REGGAE 1, 2
64, 65: REF 1, 2
66–69: PERC 1–4
70: WALKBS
71: HARP
72: BOUND
73: RANDOM

If PORTA 1–8 is selected as the beat pattern, the Part parameter Portamento Time (p.23) will control the attack of the portamento. Adjust the portamento time as appropriate for the playing tempo. (There is no need to turn Portamento on.)

Backbeat timing (Shuffle Rate)

This setting creates shuffle rhythms by modifying the timing of the notes. The range of settings is 50–90%. With a setting of 50%, notes will be spaced equally. As the value is increased, notes will become increasingly like dotted notes.



* With the beat pattern setting of 1 (1/4), there will be no shuffle effect even if the Shuffle Rate value is increased.

Chapter 6. Changing the groove of a pattern (Play Quantize)

Play Quantize is a function that applies certain rules to align or move the timing of the pattern being played. This does not affect the contents of the musical data; it changes only the note timing of the pattern being played.

The MC-303 provides three types of quantization, which you can use as appropriate for your situation. By applying Play Quantize to a desired Part while playing back a pattern, you can make fine timing adjustments in realtime as you listen.

* Quantize affects only note messages (the timing at which keys are pressed and released), and does not affect other messages. This means that if the pattern contains messages which affect the sound in realtime, such as Pitch Bend, quantizing will move the timing of the notes relative to the other data, causing playback to possibly become incorrect. When you use quantize, be sure to use patterns which do not contain messages that create realtime changes in the sound.

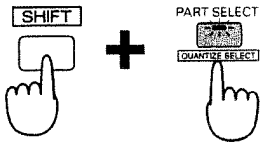
< To confirm the numerical setting of a knob >

Normally, the value of the parameter setting is not displayed when you use a panel knob to modify it. If you wish to confirm the numerical value of a parameter as you edit, hold down [SHIFT] and [FUNC] as you rotate the knob.

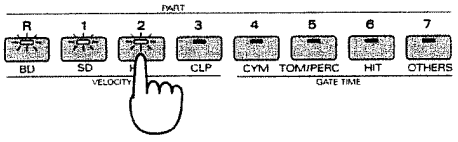
Selecting the Part for Play Quantize

Play Quantize can be applied to the playback of any specified Part. Before applying Play Quantize, select the Part to which it will apply.

1. Hold down [SHIFT] and press [QUANTIZE SELECT] to make the button indicator blink.



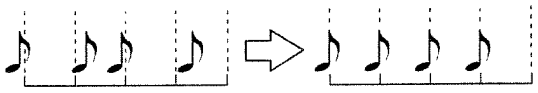
2. Press the PART button for the Part to which Play Quantize will be applied, making the button indicator light.



You may select two or more Parts if desired.

Correcting inaccuracies in rhythm (Grid Quantize)

Grid Quantize is a type of quantization that moves the timing of notes in the pattern to the nearest specified interval of timing. This is used to clean up inaccuracies in rhythm, so that the pattern will be played back with precise timing.

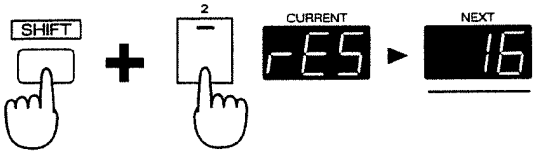


* Grid Quantizing will make the playback timing accurate, but this also means that "human" feeling may be lost, producing a mechanical performance. If you want to preserve the feeling of the original performance, set Resolution to a small value, or reduce the Strength setting.

Specifying the resolution

The timing interval to which notes are quantized is called the Resolution. Notes will be moved to the nearest grid interval of the note value you specify here. Set this to the shortest note value that occurs in the pattern.

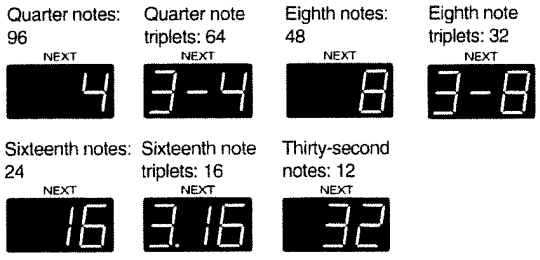
1. Hold down [SHIFT] and press keyboard pad [2] to access the Grid Quantize setting display. The display will show the Resolution setting.



2. Use the VALUE dial to set the Resolution.

You can select from quarter note, quarter note triplet, eighth note, eighth note triplet, sixteenth note, sixteenth note triplet, and thirty-second note.

A resolution of one quarter note is indicated as 96.

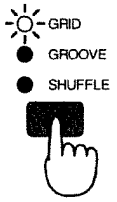


3. To leave the setting display, press [EXIT].

Applying grid quantize

1. Play back the pattern that you wish to quantize.

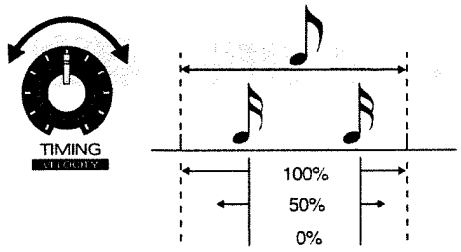
2. Press [QUANTIZE] to make the GRID indicator light.



* If you press and hold [QUANTIZE] while the GRID indicator is lit, the current resolution of Grid Quantize will appear in the display. At this time you can rotate the VALUE dial to modify the Grid Quantize resolution.

3. Grid quantize will be applied to the playback data according to the resolution setting.

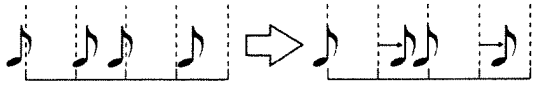
4. Rotate the TIMING knob to adjust the Strength (0–100%). The following diagram shows the effect when Resolution is set to an eighth note.



Strength refers to the degree to which note timing will be corrected toward the interval specified by the Resolution setting. Rotating the knob toward the right will cause the timing to be corrected more closely to the specified interval. With a setting of "0%" the timing will not be corrected at all.

Adding swing to the rhythm (Shuffle Quantize)

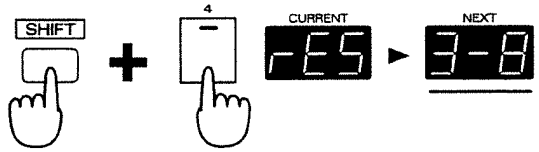
When Shuffle Quantize is applied, the backbeat timing of the pattern will be shifted, creating a "bouncing" feel of shuffle or swing.



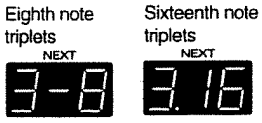
Specify the resolution

Set the Resolution to determine the interval of the grid which will be used to adjust the timing. Set this to the shortest note value that occurs in the pattern.

1. Hold down [SHIFT] and press keyboard pad [4] to access the Shuffle Quantize setting display.
The NEXT display will show the Resolution setting.



2. Rotate the VALUE dial to set the Resolution.
You can select either eighth note triplets or sixteenth note triplets.



3. To leave the setting display, press [EXIT].

Applying shuffle quantize

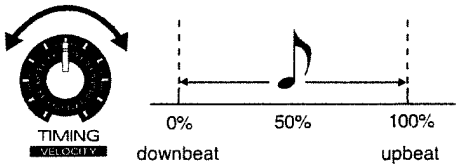
1. Play back the pattern to which you want to apply quantization.

2. Press [QUANTIZE] to make the SHUFFLE indicator light.

* If you press and hold [QUANTIZE] while the SHUFFLE indicator is lit, the current resolution of Shuffle Quantize will appear in the display. At this time you can rotate the VALUE dial to modify the Shuffle Quantize resolution.

3. Shuffle Quantize will be applied according to the Resolution setting.

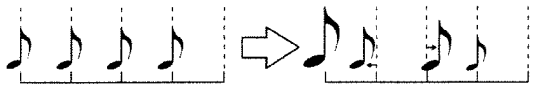
4. Rotate the TIMING knob to adjust the Shuffle Rate (0–100%).



Shuffle Rate is the degree to which the backbeat "bounces." The setting determines the distance from the downbeat at which the backbeat will occur. When the knob is in the center position, the setting will be 50%, and the upbeats will fall exactly half-way between the surrounding downbeats. As the knob is rotated toward the right, the upbeats will fall at a later timing. With a setting of 100%, the upbeats will fall at the same timing as the following downbeat.
As the knob is rotated toward the left, the upbeats will fall at an earlier timing. With a setting of 0%, the upbeats will fall at the same timing as the preceding downbeat.

Adding feel to the rhythm (Groove Quantize)

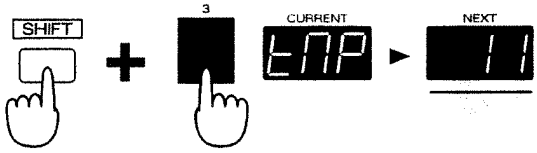
The MC-303 contains 71 templates containing data for various rhythmic timings and velocities (note dynamics).
Groove Quantize lets you select a desired template and use its rhythmic timings and velocities to apply quantization. Simply by changing the template, you can apply a variety of different feelings to a pattern.



* These templates are for use with 4/4 time signatures. They will not produce the desired results when used with other time signatures.

Selecting a template

1. Hold down [SHIFT] and press keyboard pad [3] to access the Groove Quantize setting display. The NEXT display will show the template setting.



2. Rotate the VALUE dial to specify the template number (1–71) that you wish to use.

For the effect of each template, refer to "Groove quantize template list" (p.99).

3. To exit the setting display, press [EXIT].

Applying groove quantize

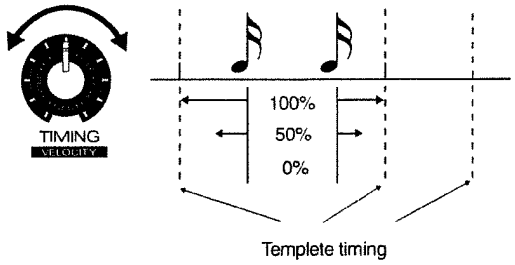
1. Play back the pattern that you want to quantize.

2. Press [QUANTIZE] to make the GROOVE indicator light.

* If you press and hold [QUANTIZE] while the GROOVE indicator is lit, the current template number for Groove Quantize will appear in the display. At this time you can rotate the VALUE dial to change the template.

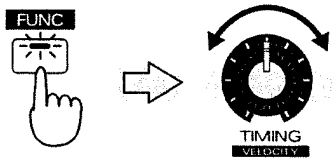
3. Groove quantize will be applied according to the settings of the selected template.

4. Rotate the TIMING knob to adjust the Strength (0–100%).



Strength refers to the degree to which playback timing will be moved toward the template timing. As the knob is rotated to the right, the timing will be moved more closely toward the template timing. With a setting of 0%, the timing will not be changed at all.

5. Press [FUNC] to make the indicator blink, and rotate the VELOCITY knob to adjust the Velocity Strength (0–100%).



Velocity Strength refers to the degree to which the note velocities of the pattern will be adjusted toward the template velocities. As the knob is rotated to the right, the velocities will be adjusted more closely toward the template velocities. With a setting of 0%, the velocities will not be changed at all.

Chapter 7. Recording a pattern

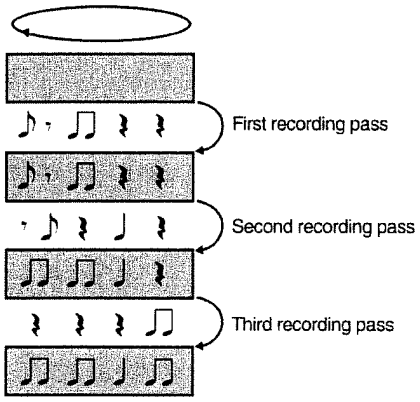
The MC-303 lets you create your own original pattern by recording your playing in a User Pattern.
Broadly speaking, there are two ways to record; realtime recording lets you record your playing and operation just as you perform, and step recording lets you input notes one by one.

Recording your playing as you perform (Realtime Recording)

Realtime recording is a method in which your playing on a keyboard or the keyboard pads and your controller operations are recorded just as they occur. The MC-303 uses two types of realtime recording, and different types of data are recorded using different methods.

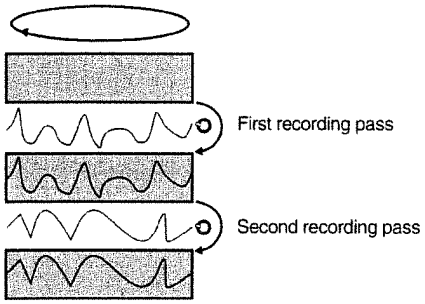
Loop Mix recording

Recording will take place repeatedly from the beginning to the end of the pattern. If data was already recorded in the pattern from a previous pass, it will remain, and the newly recorded data will be combined with it. Note messages are recorded using this method.



Loop Replace recording

Recording will take place repeatedly from the beginning to the end of the pattern. If data was already recorded in the pattern from a previous pass, it will be erased and replaced by the new recording. Controller operations, etc. are recorded using this method.



Recording procedure

Before you begin, select the user pattern into which the data will be recorded.

1. Press [REC].
The recording standby display will appear, and the [REC] indicator will blink.

2. Before you start recording, set the recording parameters.
There are four recording parameters; Beat, Pattern Length, Count In and Loop Rest. Use SELECT [◀][▶] to move between these four parameters. Rotate the VALUE dial to set each parameter.

Beat

Select the time signature of the pattern to be newly recorded: 2/4, 3/4, or 4/4.

Pattern Length

Specify the length of the pattern to be newly recorded: 1–32 measures.

Count-in

Select the way in which recording will begin.

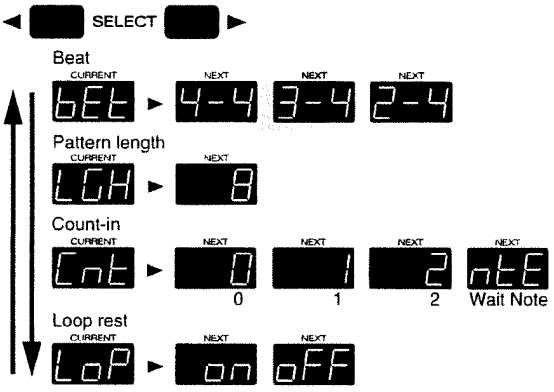
0: Recording will begin at the moment you press [PLAY].

1, 2: When you press [PLAY], playback will begin 1 measure (or 2 measures) earlier, and recording will begin when the start location is reached.

Wait Note: Recording will begin when you either play the keyboard or press the Hold pedal.

Loop Rest

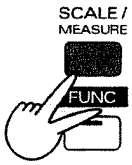
Turn this on when you wish to record smoothly over pattern boundaries. For details on use, refer to "Smoothly recording between Patterns" (p.49).



The default values of these parameters are a Beat of 4/4, a Pattern Length of 4 measures, a Count In of 2 and a Loop Rest of off. When you newly record a pattern without setting the recording parameters, these default values will be used. When you record onto a user pattern that has already been recorded, the settings from the previous recording will be used. It is not possible to modify the Beat of an already-recorded user pattern. It is possible to increase the Pattern Length afterwards, but not to decrease it. If you wish to change these settings, you must use the Pattern Edit function Delete Measure (p.63) to first delete measures from all Parts.

< About the metronome >

The metronome will normally be turned on/off in accordance with the System setting described in "Specifying how the metronome will sound (Metronome)" (p.73). If the metronome has been set to not sound during recording, you can temporarily turn it on by holding down [FUNC] and pressing [SCALE/MEASURE]. If the metronome has been set to sound during recording, you can temporarily turn it off by holding down [FUNC] and pressing [SCALE/MEASURE]. To return to the original setting, once again hold down [FUNC] and press [SCALE/MEASURE].



< About tempo >

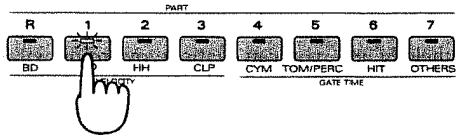
The tempo of a pattern is stored when you perform the Pattern Setup Write operation. Since the tempo for recording is not stored in the pattern, it is best to set a comfortable recording tempo before you start recording. Once you start recording, you can slow the tempo down if you decide that it is too fast. Press SELECT [◀] [▶] to make the TEMPO indicator light, and use the VALUE dial to adjust the tempo. Even if you change the tempo during recording, the change will not be recorded.

< Quantize during recording >

If you wish to apply quantization while you record, press [QUANTIZE] while in Recording Standby mode to select Quantize.

* During recording, quantization will be applied to the Part specified for recording. It is not possible to specify two or more Parts, as it is for Play Quantize.
* In rehearsal mode, you can turn quantization on/off and modify the settings. This means that you won't have to interrupt your recording to modify these settings.
* During recording, the notes will sound just as you play them, and the quantized result can be heard after you finish recording.

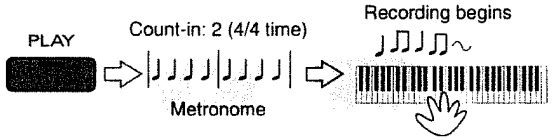
3. Press a PART button to select the Part you wish to record (the Recording Part).
The indicator of the PART button you pressed will light.



4. When you have completed preparations for recording, begin recording in one of the following ways.

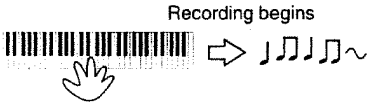
a: When the Count-in setting is 0, 1 or 2

Press [PLAY], and recording will begin after a count-in. If the metronome has been set to sound, it will sound.



b: When the Count-in setting is Wait Note

When you play your MIDI keyboard, press the keyboard pads, or press the hold pedal, recording will begin at that instant.



* If you wish to start recording by pressing a keyboard pad, make sure that the [PTN SET] and [RPS SET] indicators are dark.

When recording begins, the [REC] indicator will light. The CURRENT display will show the number of measures in the entire pattern, and the NEXT display will show the measure that is currently being recorded.

During recording, you may repeatedly record from the beginning to the end of the pattern. Once your playing (Note messages) on a MIDI keyboard or the keyboard pads is recorded, it will remain without being erased, even when you return to the beginning of the pattern. This allows you to continue "layering" your performance.

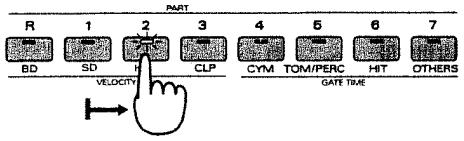
5. When you finish recording, press [STOP].

Changing the Recording Part during recording

During recording you are free to change the Recording Part. By changing the recording part in the order of drums, bass, chords, and melody, etc., you can continue recording without interruption.
When you change the recording part, you will switch from recording status to rehearsal status. Since your playing on a MIDI keyboard or the keyboard pads will not be recorded, you can first practice the next part while listening to the already-recorded parts, and then record the next part when you are ready.

1. During recording, press [REC].
The button indicator will blink, and you will enter rehearsal status. The CURRENT display will show as follows.

2. To change the Recording Part, press the PART button for the Part that you wish to record.



3. Press [REC] once again and you will exit rehearsal status and return to recording status.

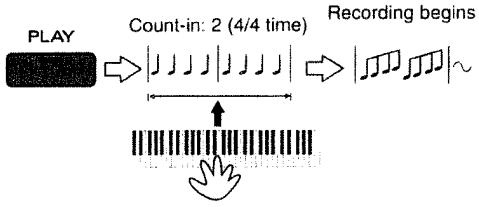
Recording arpeggios

1. Make preparations for recording (p.46).

2. Before recording, make settings for the desired arpeggio (p.38).
Press [ARPEGGIO] to turn on the arpeggiator.

3. When you have finished making preparations for recording, begin recording in one of the following two ways.

a: When the Count-in setting is 0, 1 or 2
Press [PLAY], and recording will begin after a count-in. Play a chord at the moment that recording starts.



b: When the Count-in setting is Wait Note
When you play a chord on your MIDI keyboard or the keyboard pads, arpeggiation and recording will begin at that instant.

* If you wish to start recording by pressing a keyboard pad, make sure that the [PTN SET] and [RPS SET] indicators are dark.

When recording begins, the [REC] indicator will light.

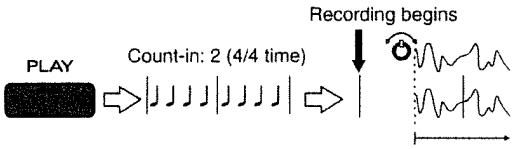
4. When you finish recording, press [STOP].

Recording knob movements (Modify data)

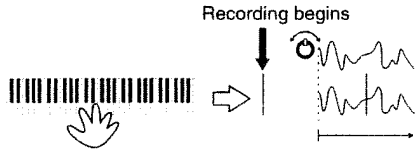
1. Make preparations for recording (p.46).

2. When you have finished making preparations for recording, begin recording in one of the following two ways.

a: When the Count-in setting is 0, 1 or 2
Press [PLAY], and recording will begin after a count-in. If you move a knob during recording, the knob movements will be recorded from the moment that you moved it.

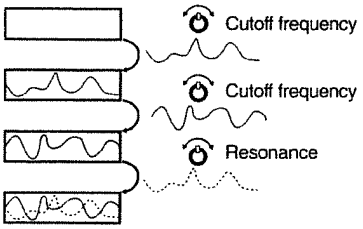


b: When the Count-in setting is Wait Note
When you play your MIDI keyboard or the keyboard pads, or press the Hold pedal, recording will begin at that instant. If you move a knob during recording, knob movements will be recorded from the moment that you moved it.



* If you wish to start recording by pressing a keyboard pad, make sure that the [PTN SET] and [RPS SET] indicators are dark.

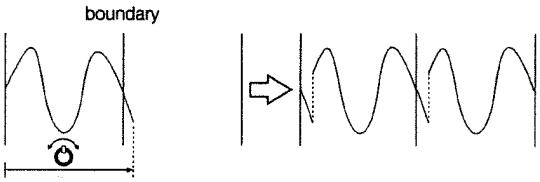
When recording begins, the [REC] indicator will light. During recording, you are free to record repeatedly from the beginning to the end of the pattern. Unlike note messages, modify data from the same knob is re-written (overwritten) for each recording pass. Modify data from different knobs is layered on successive recording passes.



3. When you finish recording, press [STOP].

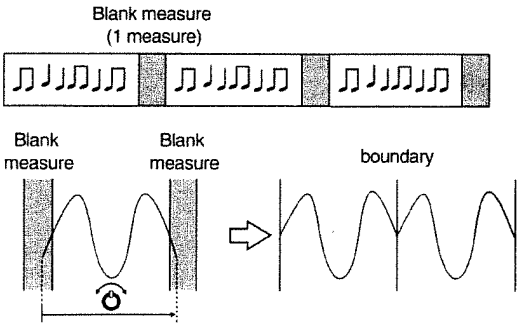
Smoothly recording between Patterns

When recording knob movements or arpeggios, it sometimes happens that unwanted data is recorded at Pattern boundaries when you attempt to record all the way from the beginning to the end of a Pattern. For example, if you record over the boundary of a Pattern, the following data might be recorded.



In such cases, you can turn on the Loop Rest function when you set the recording parameters.

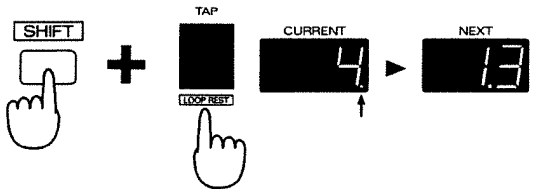
When Loop Rest is on, a one blank measure will be temporarily inserted at the pattern boundary. Since data will not be recorded in the blank measure, you can smoothly record over the pattern boundary. If the metronome has been set to sound, it will sound during the blank measure.



Loop Rest can be switched on/off using the procedure of p.46, but it can also be switched on/off using the following procedure. However it can be switched on/off only while setting the recording parameters. It cannot be switched on/off during recording.

1. Hold down [SHIFT] and press [LOOP REST] to turn Loop Rest on.

During recording, the CURRENT display will show a dot as follows.



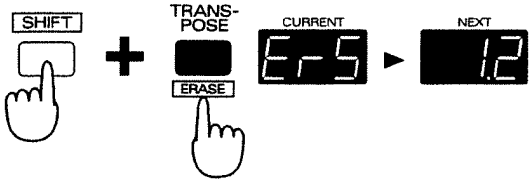
2. To turn Loop Rest off, once again hold down [SHIFT] and press [LOOP REST].

Erasing unwanted data during recording (Realtime Erase)

Realtime Erase is a function that lets you erase only the unwanted data by specifying a certain key or range. This is especially useful when you wish to erase a specific rhythm instrument while recording the Rhythm Part.

1. Hold down [SHIFT] and press [ERASE].

The CURRENT display will appear as follows, and you will enter Realtime Erase mode.

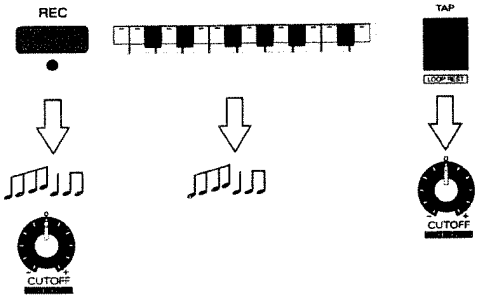


2. Erase the unwanted data.

To erase all data of the recording part, press [REC]. Data will be erased from the area that plays while you continue pressing [REC]. To erase just a specific note, press that note or keyboard pad. That note will be erased from the data while you continue pressing the note.

To erase a certain range of notes, press the highest and lowest notes in that range. The notes will be erased from the data while you continue pressing the notes.

To erase only knob movements (Modify data), press [TAP]. Modify data will be erased while you continue pressing [TAP].



3. When you finish erasing unwanted data, once again hold down [SHIFT] and press [ERASE], or press [EXIT] to return to normal recording.

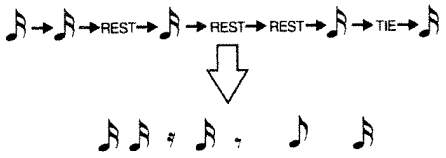
Recording notes one at a time from the keyboard (Step Recording)

Step recording is a method of recording in which notes are entered individually in sequence. This is a convenient way to input when the notes must be at precise timings, such as when recording rhythm instruments or bass. Note messages are the only type of data that can be recording using step recording.

Depending on the Part that you are recording, there are two methods of step recording.

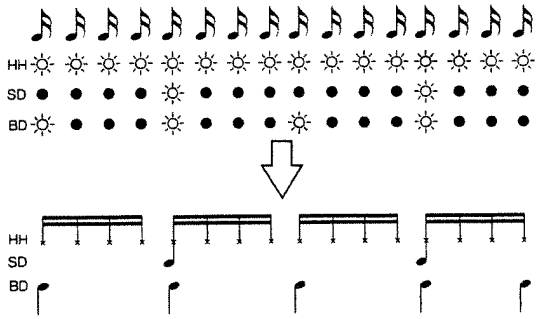
Step recording 1

This is the method used for Parts 1–7. Input notes in sequence as you advance the input location of the notes.



Step recording 2

This is the method used for the Rhythm Part, and is suitable for recording drums. Select a rhythm instrument that you want to input, and input notes for that rhythm instrument.



In addition to the above two methods of recording, there is also a Microscope that allows you to edit the notes that you have input. During recording, you can freely move between the Step Input display and the Microscope display.

Recording procedure

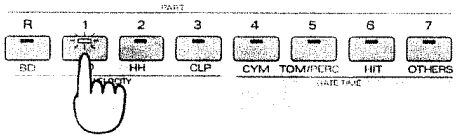
1. Press [REC].

You will enter the Recording Standby display, and the [REC] indicator will blink.

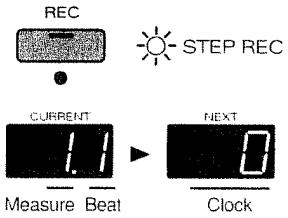
2. Before you begin recording, make settings for the recording parameters (p.46).

The Count-in and Loop Rest settings are not used for Step Recording.

3. Select the Part that you wish to record (the Recording Part) by pressing the PART button for that Part.
The indicator of the button you pressed will light.



4. Press [REC] once again.
You will enter the Microscope display, and the STEP REC indicator will light.
The display will show the input location. The CURRENT display will show the measure and beat, and the NEXT display will show the clock.



Clocks are a unit used to indicate the location of a note. One clock is 1/96th of a quarter note.
If you have selected Part 1–7 as the Recording Part, refer to Step Recording 1. If you have selected the Rhythm Part, refer to Step Recording 2 (p.53).

Recording notes one by one (Step Recording 1)

5. Press [PLAY] to begin recording.
The [PLAY] and [REC] indicators will light.
The display will indicate the input location, in the same way as the Microscope display.

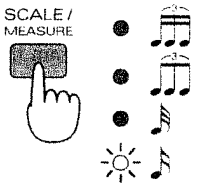
6. Before you input notes, select the Step Time, Gate Time Ratio, and Velocity.

Step Time

Select the length of the note that you wish to input (the length from Note-on to next Note-on). Step Time equivalent to one quarter note is a value of 96. You can select one of the following four.

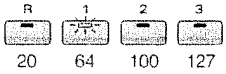
16th note triplet (step time = 16)
8th note triplet (step time = 32)
32nd note (step time = 12)
16th note (step time = 24)

Press [SCALE MEASURE] to select the step time. The note value symbol located at the right of [SCALE/MEASURE] for which the indicator is lit shows the current step time. The step time will change each time you press the button, so make the indicator light for the desired note value.



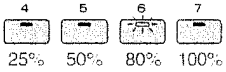
Velocity

This is the force with which a note is played. Higher values correspond to a more strongly-played note. Different velocity values are assigned to the PART buttons R–3. Press one of these buttons to select the velocity value that you wish to input. The indicator of the button you press will light.

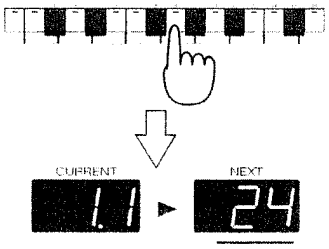


Gate time ratio

This is the time from Note-on to Note-off (gate time) expressed as a ratio of the step time. Normally you will set this to about 80%. To input a staccato note use 50%. To input a tenuto note use 100%. Different gate time ratios are assigned to the PART buttons 4–7.
Press one of these buttons to select the gate time ratio that you wish to input.
The indicator of the button you press will light.



7. Press a note on your MIDI keyboard or on the keyboard pad to input a note.

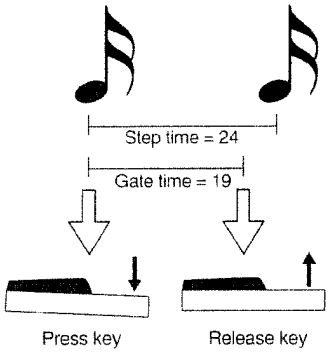


When you release the note, it will be input, and you will be able to input the next note.
Each time a note is input, the input location will advance by the length of the step time. The indicators above the keyboard pads will display the currently selected step time.

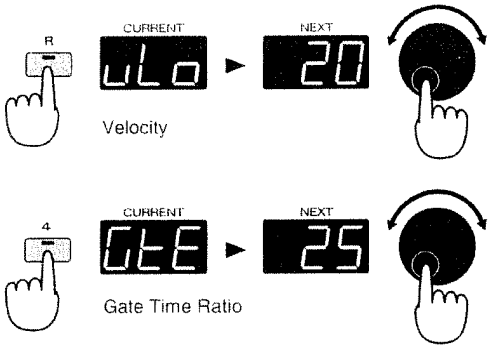
8. Repeat steps 6–7 to input notes.
Step Time, Gate Time Ratio, and Velocity will maintain the settings of the previously-input note. If these settings are what you want for the next note, there is no need to change them.
In Step Recording 1, notes will always overwrite (replace) notes entered on a previous pass. If you input into an area that has already been recorded, all notes at and following the recording start location will be erased.

9. When you finish inputting notes, press [STOP].

< Step Time and Gate Time >
In general, Step Time indicates the length between one note to the next, and Gate Time indicates the length that a note is actually sounding (the length between when you press and release the key). For example, if you input a sixteenth note (step time = 24) with a gate time ratio of 80%, the actual gate time will be 19.



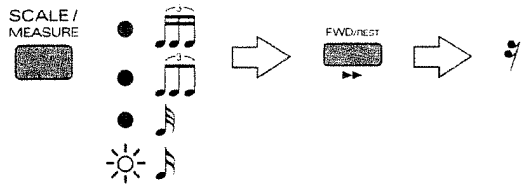
< Changing the Velocity / Gate Time Ratio of the PART buttons >
The velocity and gate time ratio settings assigned to each PART button are the factory settings, but you are free to change these. Hold down the PART button, and the assigned value will appear in the display. If you wish to modify this value, continue holding down the button and rotate the VALUE dial.



Inputting different types of notes

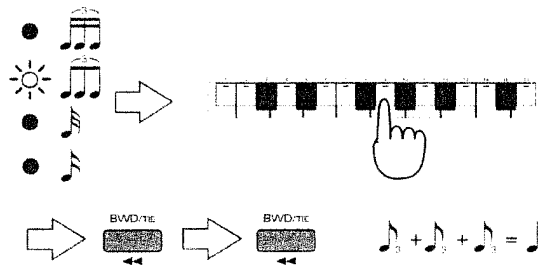
Inputting a chord
After pressing all the notes in the chord, release them all at the same time. Since the chord will not be input as long as even one note remains pressed, you can correct any mistakes in the chord.

Inputting a rest
Select a step time of the same length as the desired rest, and press [FWD].

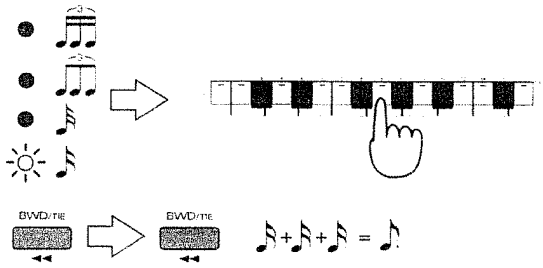


Inputting a tie
After inputting the first note that will be connected by the tie, press [BWD]. This method also lets you enter notes longer than a sixteenth note, or dotted notes.

Example 1: To input a quarter note, input an eighth note triplet, and press [BWD] twice without changing the step time. (Alternatively, input a sixteenth note and press [BWD] three times without changing the step time.)

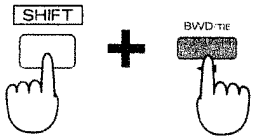


Example 2: To input a dotted eighth note, input a sixteenth note, and press [BWD] twice without changing the step time.



If you input a wrong note

Hold down [SHIFT] and press [BWD] to delete the previously-entered note. At this time the deleted note will sound for your confirmation.



Recording individual rhythm instruments (Step Recording 2)

When recording Parts 1–7, you use the keyboard pads or a MIDI keyboard to specify the notes to be entered. However, in the case of the Rhythm Part, the note that you press determines the type of rhythm instrument, and it is not necessary to specify the pitch of the notes. Instead, it is important to accurately input the timing at which each rhythm instrument is to sound. Thus in this method of recording, the keyboard pads function as buttons to indicate the location at which the note messages will be entered.

You can play back the result of recording while you continue to record, and immediately delete any wrong input.

* In Step Recording 2, it is not possible to input note messages from a MIDI keyboard.

5. Press [PLAY] to begin recording.

The [PLAY] and [REC] indicators will light, and the recorded data will play back.

The CURRENT display will show the measure of the current recording input area, and the NEXT display will show the playback location. In the following display, the current recording input area is the first measure, and beat 2 of the first measure is playing back.

6. Before you input notes, select the scale, the rhythm instrument to be input, and the velocity.

Scale

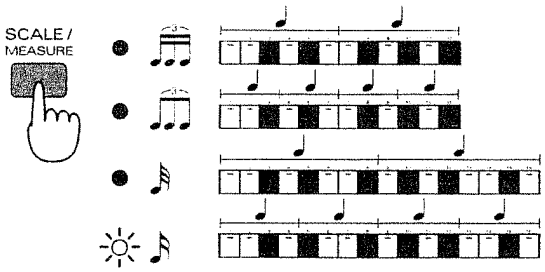
Select the unit of note to be input. The recording input area will be determined by the scale you select. You can select one of the following four.

16th note triplet: Keyboard pads 1–12 will be a recording input area of 2 beats, allowing you to input sixteenth note triplets.

8th note triplet: Keyboard pads 1–12 will be a recording input area of 1 measure, allowing you to input eighth note triplets.

32nd note: Keyboard pads 1–16 will be a recording input area of 2 beats, allowing you to input thirty-second notes.

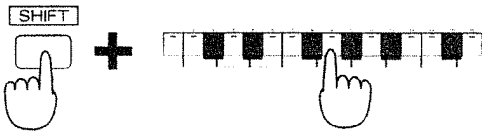
16th note: Keyboard pads 1–16 will be a recording input area of 1 measure, allowing you to input sixteenth notes.



Press [SCALE/MEASURE] to select the scale. The indicators for the note value symbols printed at the right of [SCALE/MEASURE] will indicate the current scale. The scale will change each time you press the button. Make the indicator light for the desired note value.

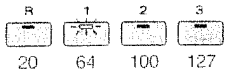
Selecting the rhythm instrument to input

Hold down [SHIFT] and press the keyboard pad for the rhythm instrument that you wish to input. As long as you hold down [SHIFT], the various rhythm instruments will be assigned to the keyboard pads just as during play. Press the keyboard pad to select the rhythm instrument that you wish to input. After sounding the rhythm instrument that you wish to input, release [SHIFT] and the last-sounded rhythm instrument will be selected.



Velocity

Specify the force with which the note will be played. Higher settings will produce a more strongly played note. Different velocity values are assigned to the PART buttons R–3. Press one of these buttons to select the velocity value that you wish to input. The indicator of the button you press will light.

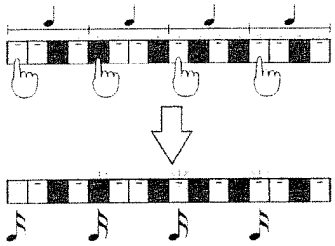


* The velocity values assigned to the buttons are factory settings, and you are free to modify these (p.52).

7. Press the keyboard pad for the location which you wish to input a note message.

You may start at any location. The indicators of the keyboard pads you press will light.

For example, with a pattern length of 1 measure, beat of 4/4 (p.46), and scale of 16th notes, you might input notes as follows.



To delete your input press the same keyboard pad once again to make the indicator go dark.

During recording, the pattern will repeatedly be played back, allowing you to check your input on the next playback. The notes you input will be layered (mixed) with the previously-recorded notes.

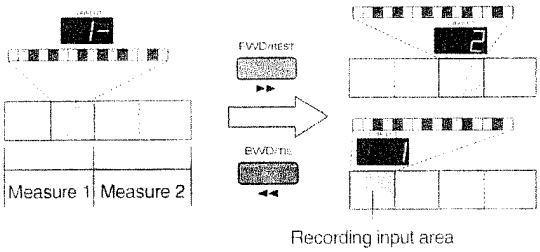
8. While listening to the repeated playback, repeat steps 6–7 to input notes.

The scale setting, rhythm instrument selection, and velocity value will be maintained from the previously-input note. If you wish to use these settings for the next note, there is no need to change them.

The recording input area can be moved using [FWD] and [BWD].

Pressing [FWD] will move the recording input area 1 measure (or 2 beats) forward. Pressing [BWD] will move the recording input area 1 measure (or 2 beats) backward.

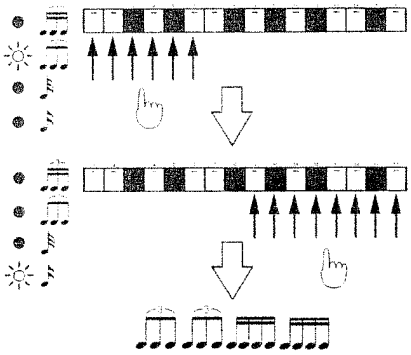
For example, with a pattern length of 2 measures, beat of 4/4 and scale of 32nd note, the recording input area will move as follows. When the recording input area is located in beats 3 or 4, a bar (-) will appear beside the measure number in the CURRENT display.



9. When you finish inputting notes, press [STOP].

Inputting various types of notes

By changing the scale during recording, you can input rhythms consisting of complex combinations of notes.



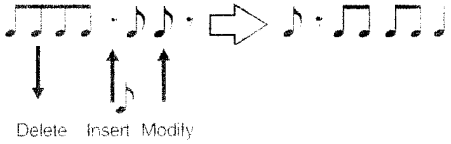
After realtime recording the Rhythm Part, you can use Step Recording 2 to check the previously-input notes on the panel. However, at this time, only the notes which fall on grid locations of the currently-selected scale will be displayed.

Also, if you change the scale during recording, notes which were previously visible may no longer be displayed.

For example, if you have input some 32nd notes and then change the scale to 16th notes, any notes which were input in keyboard pad locations 2, 4, 6, 8, 10, 12, 14, or 16 will no longer be displayed.

Individually editing notes that were input (Micro edit)

At any time during recording, you can press [REC] to enter the Microscope display. The microscope lets you move the location of a previously-input note or make detailed changes to it, or to delete or insert notes.



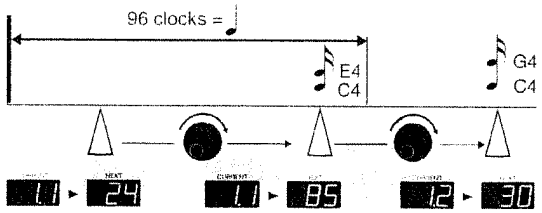
1. During recording, press [REC] to select the Microscope display.
The display will show the current input position (measure, beat, clock). This is referred to as the Position.

Displaying a previously-input note

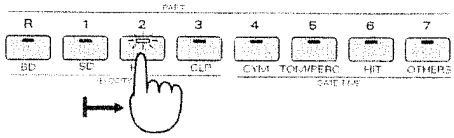
As you rotate the VALUE dial, the position will move to the previously-input notes. The display will indicate the location, and the keyboard pad indicators will light to show the notes that exist at that location.

* If the display shows a location where notes have been input but the keyboard pads indicators are not lit, it is possible that the notes which were input are not in the range of the keyboard pad. If so, try pressing OCTAVE [-][+].

Rotating the VALUE dial to the right will display the notes in the direction in which the pattern plays back.
Rotating the VALUE dial to the left will display the notes in the opposite direction to that in which the pattern plays back.
Instead of using the VALUE dial, you can also use [FWD] or [BWD] to step through the notes.
By holding down [SHIFT] as you rotate the VALUE dial, you can move the position in increments of one step.



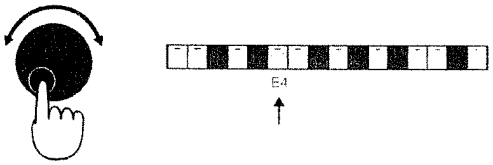
In this condition, you can press the PART button of another Part to select it as the recording part. If you select the Rhythm Part, you can also select rhythm instruments in this condition (p.**).



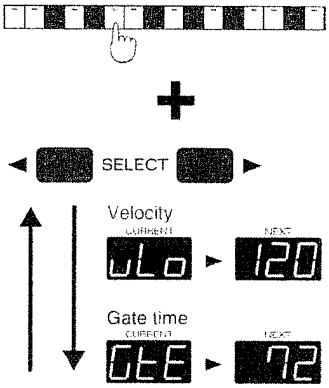
2. To return again to recording, press [REC]. In the case of Step Recording 1, recording will begin again from the position to which you newly moved.

Modifying parameter values of a previously-input note

1. Rotate the VALUE dial to move the position to the location of the note you wish to modify. The keyboard pad indicators will light to indicate the notes which are recorded at that position.



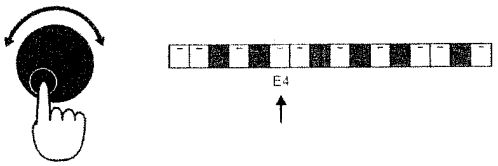
2. Press the keyboard pad (whose indicator is lit) of the note that you wish to modify, and the velocity and gate time of that note will appear in the display.
While continuing to hold down the keyboard pad whose indicator is lit, use SELECT [◀][▶] to switch the parameter that is shown in the display.



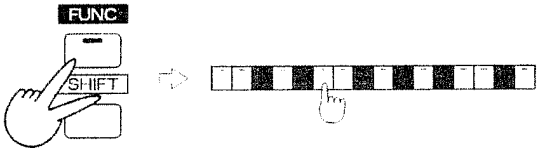
3. Select the parameter that you wish to adjust, and while holding down the keyboard pad of the note you wish to modify, rotate the VALUE dial to adjust the value.

Deleting a previously-input note

1. Rotate the VALUE dial to move the position to the location of the note you wish to delete. The keyboard pad indicators will light to indicate the notes which are recorded at that position.



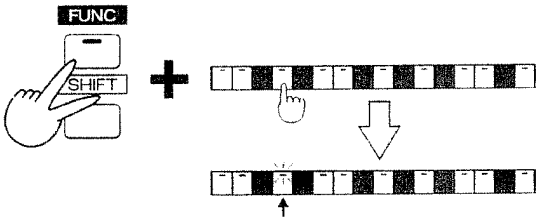
2. Hold down [SHIFT] and [FUNC], and press the keyboard pad (whose indicator is lit) of the note that you wish to delete.
The note will be deleted, and the keyboard pad indicator will go dark.



Inserting a note

1. Hold down [SHIFT] and rotate the VALUE dial to move the position to the location where you wish to insert a note.

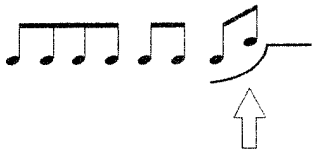
2. Hold down [SHIFT] and [FUNC], and press the keyboard pad that corresponds to the note you wish to enter. If you wish to insert a chord, press two or more keyboard pads.
The note will be inserted, and the indicators of the keyboard pads you pressed will light.



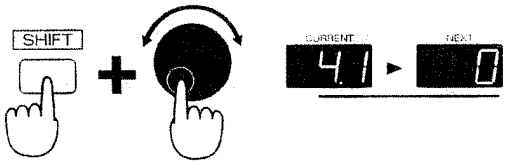
The inserted note will have a velocity value of 100 and a gate time value of 24. If you wish to modify these parameters, use the procedure explained in "Modifying parameter values of a previously-input note" (p.55).

Creating a slide effect

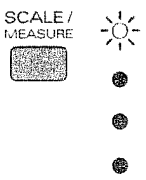
In the Microscope, you can insert Portamento On/Off messages at any desired location to create a slide effect. Slide effects are produced on stringed instruments such as guitar and bass by picking a note and then moving the fretting finger to smoothly change the pitch. This will smoothly connect two notes.



1. Hold down [SHIFT] and rotate the VALUE dial to move the position to the location where you wish to insert the Portamento On message.

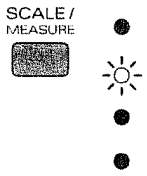


2. Press [PORTAMENTO] to insert a Portamento On message.
The [SCALE/MEASURE] indicator will light as follows, indicating that a Portamento On message has been inserted at this location.

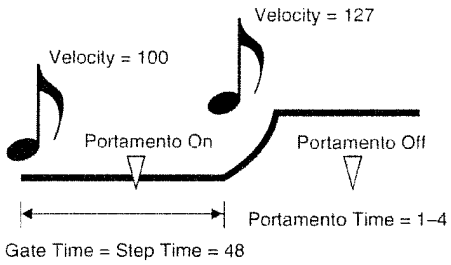


3. Hold down [SHIFT] and rotate the VALUE dial to move the position to the location where you wish to insert the Portamento Off message.

4. Hold down [SHIFT] and press [PORTAMENTO] to insert a Portamento Off message.
The [SCALE/MEASURE] indicator will light as follows, indicating that a Portamento Off message has been inserted at this location.



* To create a slide effect, insert the Portamento On message between the two notes that you wish to smoothly connect. Set the gate time of the first note to be the same as the step time until the next note (p.51). Also, whenever you are creating a slide effect, be sure to set the Portamento Time to greater than 1 (p.23). With a setting of 0 there will be no slide effect. Although it depends on the musical data, a setting of 1–4 is usually appropriate. In addition, the slide will be even more effective if the velocity of the note being connected is stronger than that of the other note.



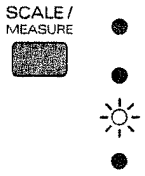
5. To delete Portamento On/Off messages, rotate the VALUE dial to move the position to the location where the Portamento On/Off message exists, and press [PORTAMENTO].
The [SCALE/MEASURE] indicator will go dark, indicating that the Portamento On/Off message has been deleted.

Inserting a Hold message

Using the microscope, you can insert Hold Pedal On/Off messages at any desired location.

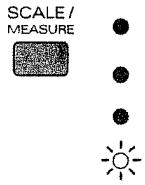
1. Hold down [SHIFT] and rotate the VALUE dial to move the position to the location where you wish to insert a Hold On message.

2. Press [TAP] to insert a Hold On message.
The [SCALE/MEASURE] indicator will light as follows, indicating that a Hold On message has been inserted at this location.



3. Hold down [SHIFT] and rotate the VALUE dial to move the position to the location where you wish to insert the Hold Off message.

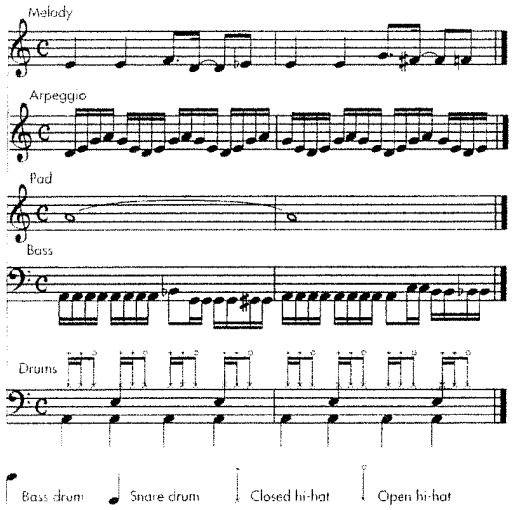
4. Hold down [SHIFT] and press [TAP] to insert a Hold Off message.
The [SCALE/MEASURE] indicator will light as follows, indicating that a Hold Off message has been inserted at this location.



5. To delete a Hold On/Off message, rotate the VALUE dial to move the position to the location of the Hold On/Off message, and press [TAP].
The [SCALE/MEASURE] indicator will go dark, indicating that the Hold On/Off message has been deleted.
If a Pattern Edit operation (Part Copy, Erase, Delete Measure, etc.) has been used to inadvertently delete just a Hold Off message, notes may "stick" and continue sounding. In such cases, insert a Hold Off message at the location where you want that Part to stop sounding.

Creating a pattern

This section explains the procedure for recording the pattern given in the following musical example. Working through this example to actually record a pattern is the best way to learn the procedure. Detailed explanations of each step are omitted so that it will easier for you to grasp the overall flow. For details, refer to the reference pages given.



When recording a pattern, it is usually best to follow the order of drums → bass → accompaniment → melody. If you record the instruments in this order, your timing will be more precise, since you will be able to record the accompaniment and melody while listening to the drums and bass. In this example, let's record each Part in the following order.

Drums (step recording 2)
Bass (step recording 1)
Arpeggio (realtime recording using the Arpeggio function)
Pad (realtime recording)
Melody (realtime recording)

Recording drums and bass using step recording

First, let's record the drum performance onto the Rhythm Part, using step recording 2.
Before you begin, select a User Pattern that does not contain any musical data.

1. Use [PART SELECT] and PART [R] to select the Rhythm Part, and then select the Rhythm Set that you wish to use to play the drums. For this example, select d02 (TR-808&Elec.Set).

2. Press [REC] to enter the Recording Standby display, and make settings for the various recording parameters (p.46). Set a beat of "4/4" and pattern length of "2."

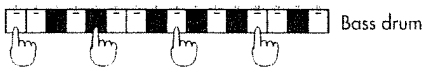
3. Press PART [R] to select the Rhythm Part as the recording part.

4. Press [REC] to select the Microscope display.

5. Press [PLAY] to begin recording. Set the Scale to "16th notes" and the velocity to "100" (p.53).

6. First, select the bass drum sound. In this example, select "808 BD 2" on the C2 note.
Hold down [SHIFT] and press OCTAVE [-] several times to set Octave Shift to "-2." Now if you hold down [SHIFT] and press keyboard pad [2], the "808 BD 2" sound will be heard. After you have confirmed the sound, release [SHIFT]. "808 BD 2" is now selected.

7. Press the keyboard pads of the locations shown in the diagram, to make their indicators light.
The first measure of the bass drum will be input, and the notes that you input will be played back in a loop.



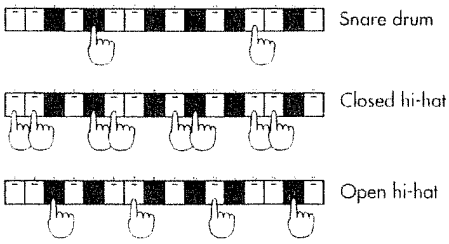
8. Press [FWD] once to advance the recording input area by one measure.

9. In the same way as for step 7, input the bass drum for measure 2. The input locations are the same as for measure 1.

10. In the same way as for steps 6–9, input the rest of the rhythm instruments in the order of snare drum → closed hi-hat → open hi-hat.
These rhythm instruments can be selected as follows.

Snare drum (808 SD 2): Set Octave Shift to "-2" and press keyboard pad [4] (the D2 note)
Closed hi-hat (808 CH): Set Octave Shift to "-2" and press keyboard pad [8] (the F#2 note)
Open hi-hat (808 OH): Set Octave Shift to "-2" and press keyboard pad [12] (the A#2 note)

Input these rhythm instruments in the following locations.



This completes input of the drums. Next we will use step recording method 1 to input the bass.

11. Press [REC] to access the Microscope display.

12. Press PART [2] to switch the recording part to Part 2, and then select the Tone that you will use to play the bass. For this example, select t02-04 (Acid TB 1).

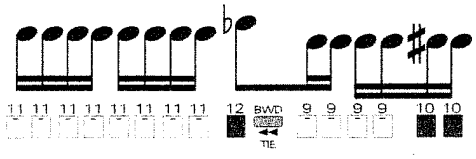
13. Rotate the VALUE dial to the left to return to the position of measure 1 beat 1 clock 0.

14. Press [REC] to access the Step Recording 1 display. Set Step Time to "24 (16th note), Velocity to "100," and Gate Time Ratio to "100%" (p.51).

15. Input the first note A1. Set Octave Shift to "-3" and press keyboard pad [11].
When you release the keyboard pad, the values will be finalized, and you will be ready to input the next note.

* The bass part in the musical example is written one octave higher than the notes that will actually be input.

16. Use the procedure of step 15 to input the rest of the notes. To input eighth notes, press [BWD] to connect 16th notes with a tie (p.52).



17. When recording is completed, press [STOP].

18. Play back the data that you have just recorded.
Hold down [SHIFT] and press [BWD] to return to the beginning of the first measure. Then press [PLAY] to have it play. If everything was recorded correctly, proceed to the next step.

Recording the other instruments using realtime recording

First we will use realtime recording to record the arpeggio.

1. Use [PART SELECT] and PART [3] to select Part 3, and then select the Tone that will be used to play the arpeggio. For this example, select t01-26 (Reso.Stack).
If you are using the keyboard pads to input the part, set Octave Shift to "0."

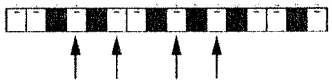
2. Press [ARPEGGIO] to turn arpeggiation on, and make arpeggiation settings. Set Style to "1/16," Accent Rate to "0," and Octave Range to "0."
When settings are complete, press a chord on the keyboard pads or on your external MIDI keyboard to produce an arpeggio along with the previously recorded parts.

3. Press [REC] to access the Recording Standby display.

4. Press PART [3] to select Part 3 as the recording part.

5. In the recording parameter settings, set Count In = Wait Note, and Loop Rest = On.
This will provide one blank measure between patterns.

6. When you are ready, press the following chord.
It will begin recording at the same time that the arpeggio begins from the beginning of the first measure.



7. When playback reaches the end of the pattern, you will once again return to the blank measure. Release your hand while the blank measure is playing back.
The arpeggio you recorded will play back together with the previously recorded parts.
When the recording is completed to your liking, turn arpeggiation off.

Next we will record the pad.

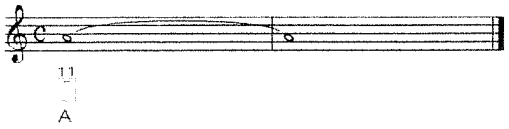
8. Press [REC] to switch to Rehearsal mode.

9. Press PART [5] to select Part 5 as the recording part, and then select the Tone that will be used to play the pad. For this example, select t05-24 (X-MOD Pad).
If you are using the keyboard pads to input this part, set Octave Shift to "-1."

* The pad part in the musical example is written one octave higher than the notes that will actually be input.

10. When you are ready, press [REC] to switch to normal recording mode.

11. While listening to the drums and bass, play either the keyboard pads or your external MIDI keyboard.
Once recorded, the note will be played back on the next repetition.



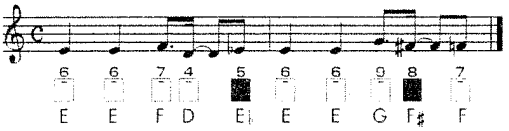
Finally, we will use realtime recording to record the melody.

12. Press [REC] to switch to Rehearsal mode.

13. Press PART [4] to switch the recording part to Part 4, and select the Tone that will be used to play the melody. For this example, select t01-12 (JP8 Pls.1).
If you will be using the keyboard pads to input the melody, set Octave Shift to "0."

14. When you are ready, press [REC] to select normal recording mode.

15. While listening to the sequencer playback, play the keyboard pads or your external MIDI keyboard.
When the melody has been input, it will be played back on the next repetition.



16. When recording is completed, press [STOP].

Last, we will store the setup data for each Part in the User Pattern.

17. Set the desired values for the Part parameters (Level, Pan, Effect Level etc.) and for the pattern playback tempo etc. (p.21).

18. Hold down [SHIFT] and [FUNC] and press keyboard pad [15] to access the Pattern Setup Write execute display.

19. Press [ENTER] to execute Pattern Setup Write.
This completes your recording of the sample pattern. Press [PLAY] to listen to the recorded pattern.

< Maximum number of user patterns >
Up to 50 user patterns can be created. However if the patterns you create contain large amounts of data, you will not be able to create as many as 50 patterns.
You can check the amount of remaining memory capacity by using the procedure given in "Viewing the remaining memory space (Available Memory)" (p.73). If you run low on memory, you can free up more memory by using the "Delete Measure" operation (p.63) to delete unneeded patterns, or by using the "Data Thin" operation (p.67) to thin out unnecessary data.

Chapter 8. Editing a Pattern (Pattern Edit)

The process of editing the musical data in a pattern is referred to as Pattern Editing. You can modify the musical data of a Pattern, or combine various Patterns to create an entirely new Pattern.

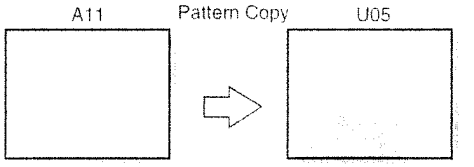
If you wish to edit a Preset Pattern, you must first copy that Preset Pattern to a User Pattern, and then edit it. It is not possible to edit a Variation Pattern.

While editing, you can return to the display for the previous parameter by pressing the SELECT [◀] button.

Copying a Pattern (Pattern Copy)

This operation copies a pattern to a different user pattern without changing it in any way. If data already exists in the copy destination user pattern, it will be overwritten. If the copy source pattern contains more measures than the copy destination user pattern, the number of measures in the copy destination user pattern may change.

This function is a convenient way to use an existing pattern to create a new pattern, or to create a new pattern using just the existing setup data.

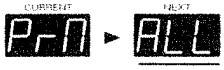


Before you begin, select the copy source pattern.

* It is not possible to select variation patterns as the copy source pattern.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [1] to select the Pattern Copy setting display.

The following display will appear.



2. Rotate the VALUE dial to select the parameters that will be copied.

ALL PHRASE SETUP

ALL: The musical data and setup data of all Parts will be copied.

PHRASE: Only the musical data of all Parts will be copied.

SETUP: Only the setup data of all Parts will be copied.

3. Press [ENTER]

4. Rotate the VALUE dial to specify to specify the copy destination user pattern.

The display will show the copy destination pattern number.

* Only user patterns can be specified as the copy destination pattern.

Range of settings: U01 – U50

5. Press [ENTER].

The execute display will appear.

6. Press [ENTER] once again to execute Pattern Copy.

When the operation is completed, the normal display will reappear.

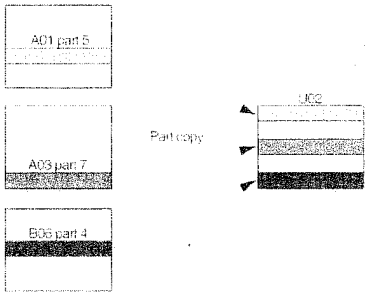
To cancel the operation, press [EXIT].

Copying a portion of a Pattern (Part Copy)

This operation copies the desired part of a pattern to a different user pattern. If data already exists in the copy destination pattern, it will be overwritten.

If the copy source pattern contains more measures than the copy destination pattern, the number of measures in the copy destination user pattern may change.

This function is a convenient way to create a new pattern by combining portions of other patterns.

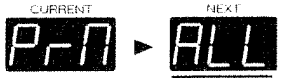


* It is not possible to use the Part Copy operation between patterns that have different time signatures.

Before you begin, select the copy source pattern.

* It is not possible to select variation patterns as the copy source pattern.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [2] to select the Part Copy setting display.
The following display will appear.



2. Press a PART button to specify the Part from which you want to copy.
The indicator will light for the button that you pressed.

* It is not possible to simultaneously select two or more Parts.

3. Rotate the VALUE dial to select the parameters that will be copied.

ALL: The musical data and setup data of the selected Part will be copied.

PHRASE: Only the musical data of the selected Part will be copied.

SETUP: Only the setup data of the selected Part will be copied.

* If you have selected SETUP, proceed to step 8.

4. Press [ENTER].
The CURRENT display will show the measure at which copying will begin, and the NEXT display will show the number of measures that will be copied. The CURRENT display will be blinking.

5. Rotate the VALUE dial to specify the first measure (1–32) that will be copied.

6. Press [ENTER].
The CURRENT display will change from blinking to lit, and the NEXT display will begin blinking.

7. Rotate the VALUE dial to specify the number of measures that will be copied (1–32, ALL).

* If you have selected ALL, all measures from the selected starting measure to the end will be copied.

8. Press [ENTER].
The display will show the copy destination pattern number.

9. Rotate the VALUE dial to specify the copy destination pattern.

* Only user patterns can be specified as the copy destination pattern.

Range of settings: U01 – U50

10. To specify the copy destination Part, press the appropriate PART button.
The indicator of the button you pressed will light.

* It is not possible to simultaneously select two or more Parts.

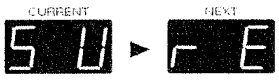
11. Press [ENTER].
The display will show the copy destination measure at which the copy will begin.

12. Rotate the VALUE dial to specify the measure of the copy destination at which the copy will begin (1–32, END).

* If the setting is END, the data will be copied onto the end of the copy destination Part.

* It is not possible to specify a number of measures that would cause the Pattern to have a length greater than 32 measures.

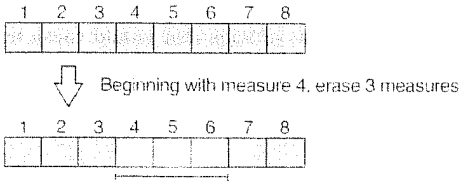
13. Press [ENTER].
The execute display will appear.



14. Press [ENTER] once again to execute the Part Copy operation.
When the operation is complete, the normal display will reappear.
To cancel the operation, press [EXIT].

Erasing unwanted data (Erase)

This operation erases an unwanted portion of a user pattern. If data exists after the erased portion, that data will remain where it is — it will not be moved forward to shorten the Part or Pattern. Use this operation to erase data that was input by mistake.



* This erase operation cannot be used to erase the setup data of the Parts.

Before you start, select the pattern from which you wish to erase data.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [3] to select the Erase setting display.
The following display will appear.

2. Press the PART button to make the indicator light for the Part from which you want to erase data.
You can select two or more parts at the same time.
The CURRENT display will show the first measure to be erased, and the NEXT display will show the number of measures that will be erased.
The CURRENT display will be blinking.

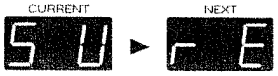
3. Rotate the VALUE dial to specify the first measure to be erased (1–32).

4. Press [ENTER].
The CURRENT display will change from blinking to lit, and the NEXT display will begin blinking.

5. Rotate the VALUE dial to specify the number of measures that will be erased (1–32, ALL).
For example, if you want to delete measures 4 through 6, make the following settings.

* If you have selected ALL, all mesures from the selected starting measure to the end will be erased.

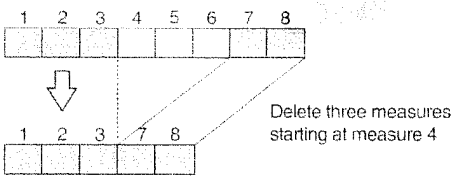
6. Press [ENTER].
The execute display will appear.



7. Press [ENTER] once again to execute the Erase operation. When the operation has been completed, the normal display will reappear.
To cancel the operation, press [EXIT].

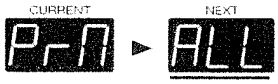
Deleting unwanted measures (Delete Measure)

This operation deletes unwanted measures from a user pattern, and moves subsequent measures forward to fill the gap. If data exists following the deleted measures, that data will be moved forward, and the musical data of that Part will be shortened. If you have specified all Parts for deletion, this operation will shorten the user pattern itself.
Also, by deleting all data from all Parts, you can delete the Pattern itself.



Before you begin, select the pattern from which data will be deleted.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [4] to select the Delete Measure setting display.
The following display will appear.



2. Press the PART button for the Part that you wish to delete, making the indicator light.
You can select two or more Parts simultaneously.

3. Rotate the VALUE dial to specify the parameters to be deleted.

ALL: Musical data and setup data of the selected Part will be deleted.
PHRASE: Only musical data of the selected Part will be deleted.
SETUP: Only setup data of the selected Part will be deleted.

* If you have selected SETUP, proceed to step 8.

4. Press [ENTER]
The CURRENT display will show the measure at which deletion will begin. The NEXT measure will show the number of measures to be deleted. The CURRENT display will be blinking.

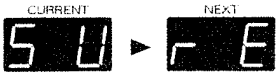
5. Rotate the VALUE dial to specify the first measure that will be deleted (1–32).

6. Press [ENTER].
The CURRENT display will change from blinking to lit, and the NEXT display will begin blinking.

7. Rotate the VALUE dial to specify the number of measures (1–32, ALL) that will be deleted.
For example, if you want to delete measures 4 through 6, make the following settings.

* If you have selected ALL, all measures from the selected starting measure to the end will be deleted.

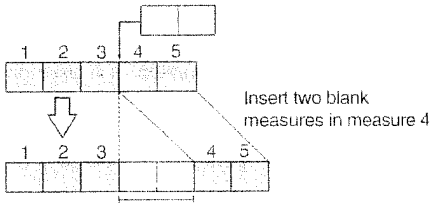
8. Press [ENTER].
The execute display will appear.



9. Press [ENTER] once again to execute the Delete Measure operation.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Inserting blank measures (Insert Measure)

This operation inserts blank measures into the specified location. If you wish to add some music in the middle of a pattern, use this operation to insert blank measures, and then record in them.
The inserted measures will have the same time signature as the pattern.



* It is not possible to make settings that would cause the pattern to be longer than 32 measures.

Before you begin, select the pattern into which the blank measures will be inserted.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [5] to access the Insert Measure setting display.
The following display will appear.

2. Press a PART button to specify the Part into which blank measures will be inserted, making its indicator light.
You may select two or more Parts simultaneously.
The CURRENT display will show the measure at which the insertion will begin, and the NEXT display will show the number of measures to be inserted.
The CURRENT display will be blinking.

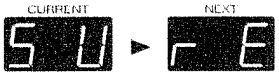
3. Rotate the VALUE dial to specify the measure at which insertion will begin (1–31, END).

* If you specify END, the blank measures will be inserted at the end of the musical data.

4. Press [[ENTER]].
The CURRENT display will change from blinking to lit, and the NEXT display will begin blinking.

5. Rotate the VALUE dial to specify the number of blank measures (0–31) that will be inserted.

6. Press [ENTER].
The execute display will appear.

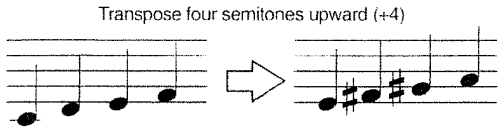


7. Press [ENTER] once again to execute the Insert Measure operation.
When the operation is complete, the normal display will reappear.
To cancel the operation, press [EXIT].

Changing key (Transpose)

This operation transposes the pitch of the Note data recorded in a user pattern. You can specify a transposition of up to +/-2 octaves.

* It is not possible to specify the range that will be transposed. All musical data of the selected Part will be transposed.



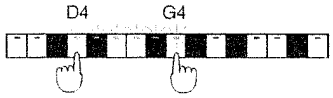
Before you begin, select the Pattern that you wish to transpose.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [6] to access the Transpose setting display.
The following display will appear.

2. Press the PART button for the Part that you wish to transpose, making the indicator light.
You can select two or more Part simultaneously.

3. Rotate the VALUE dial to specify the amount of transposition in semitone steps (-24–+24).
With a setting of 0, there will be no transposition.

If you wish to transpose only specific note numbers, you can use the keyboard pads to specify the range of notes that will be transposed.
Press the keyboard pads to specify the range of note numbers that will be transposed. If you press two keys, all notes messages between those two notes will be transposed. If you do not specify a range, all notes messages will be transposed.



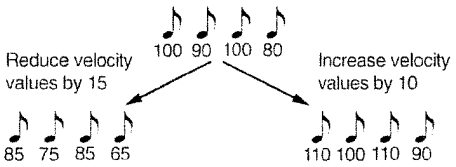
4. Press [ENTER].
The execute display will appear.

5. Press [ENTER] once again, and the Transpose operation will be executed.
When the operation has been completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Changing the strength of notes (Change Velocity)

This operation modifies the velocity (playing strength) of Note messages recorded in a user pattern. Higher values will produce more strongly played notes. Use this operation when you wish to strengthen or weaken the overall playing dynamics.
If this operation would result in velocity values greater than 127 (or less than 1), any such velocity values will be limited at 127 (or 1).

* It is not possible to specify the range for which velocity will be changed. The operation will apply to all musical data of the selected Part(s).



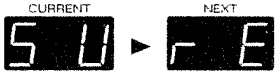
Before you begin, select the Pattern whose velocity values you wish to change.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [7] to access the Change Velocity setting display.
The following display will appear.

2. Press the PART button for the Part whose velocity you wish to change, making the button indicator light.
You can select two or more Parts simultaneously.

3. Rotate the VALUE dial to specify the amount (-99–+99) that will be added to (or subtracted from) the velocity value.
With a setting of "0," the velocity will not be modified.

4. Press [ENTER].
The execute display will appear.

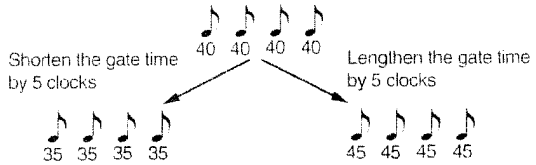


5. Press [ENTER] once again to execute the Change Velocity operation.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Modifying the length of the notes (Change Gate Time)

This operation modifies the Gate Time of the note messages recorded in a pattern. Use this to make the overall performance more staccato or more tenuto.
If this operation would result in gate times greater than 12,288 (or less than 1), such values will be limited at 12,288 (or 1).

* It is not possible to specify the range in which gate time will be modified. All note data in the selected Part(s) will be affected.



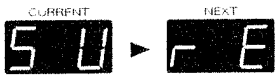
Before you begin, select the Pattern for which you want to modify the gate time.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [8] to access the Change Gate Time setting display.
The following display will appear.

2. Press the PART button for the Part whose gate time you wish to change, to make the button indicator light.
You can select two or more Parts simultaneously.

3. Rotate the VALUE dial to specify the amount (-99–+99) that will be added to (or subtracted from) the gate time.
With a setting of "0," the gate time will not be affected.

4. Press [ENTER].
The execute display will appear.

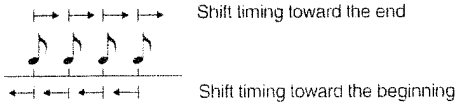


5. Press [ENTER] once again to execute the Change Gate Time operation.
When the operation is complete, the normal display will reappear.
To cancel the operation, press [EXIT].

Sliding the timing (Shift Clock)

This operation shifts the timing of musical data recorded in a user pattern, in steps of 1 clock. Use this to make fine adjustments in the timing of the overall performance.
Data that was shifted past the original beginning of the data will be deleted. If data is shifted past the end of the original data, the necessary number of new measures will be added. However, data that is moved past the end of the Pattern will be deleted.

* It is not possible to specify the area whose timing will be shifted. The timing will be shifted for the entire Part(s) that you select.



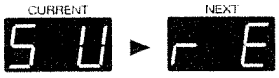
Before you begin, select the Pattern whose timing you wish to shift.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [9] to access the Shift Clock setting display.
The following display will appear.

2. Press the PART button of the Part whose timing you want to shift, making the button indicator light.
You can select two or more Parts at once.

3. Rotate the VALUE dial to specify the number of clocks (-99–+99) by which the data will be shifted.
Specify a negative (-) value to shift the data toward the beginning, or specify a positive (+) value to shift the data toward the end.
With a setting of "0," the data will not be moved.

4. Press [ENTER].
The execute display will appear.

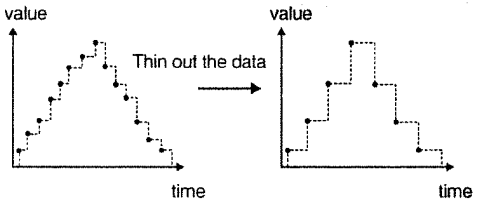


5. Press [ENTER] once again to execute the Shift Clock operation.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Thinning out unnecessary data (Data Thin)

Since Pitch Bend and Realtime Modify data consists of a continuous succession of values, it can quickly build up to a large amount of data. By using the Data Thin operation to thin out such data (to the extent that there is no audible difference), you can reduce the amount of data and conserve memory.

* It is not possible to specify the area in which data will be thinned. All musical data in the selected Part(s) will be affected.

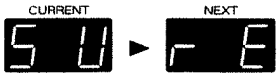


1. Hold down [SHIFT] and [FUNC], and press keyboard pad [10] to access the Data Thin setting display.
The following display will appear.

2. Press the PART button for the Part whose data you want to thin, making the button indicator light.
You can select two or more Parts simultaneously.

3. Rotate the VALUE dial to specify the degree to which data will be thinned (0–99).
Higher settings will cause the data to be thinned more heavily.
With a setting of "0" the data will not be thinned at all.

4. Press [ENTER].
The execute display will appear.



5. Press [ENTER] once again to execute the Data Thin operation.
When the operation is complete, the normal display will reappear.
To cancel the operation, press [EXIT].

Modify a Pattern according to Play Quantize settings (Edit Quantize)

This operation modifies the musical data of a pattern according to the note timings that were adjusted by Play Quantize.
Play Quantize affects only the playback timing of a pattern being played back, and does not modify the contents of the musical data itself. By using the Edit Quantize operation, you can modify the musical data itself, so that the data will play back with the same groove even when Play Quantize is not used.

* It is not possible to specify the area to be affected. This operation will affect all the musical data of the selected Part(s).

Before you begin, play back the pattern to be edited, apply Play Quantize, and make adjustments to achieve the desired groove.

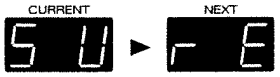
1. Leave Play Quantize turned on, and temporarily stop playback of the pattern.

2. Hold down [SHIFT] and [FUNC], and press keyboard pad [11] to access the Edit Quantize setting display.
The following display will appear.

3. Press the PART button for the Part(s) to which Edit Quantize will be applied, making the button indicator light.
You can select two or more parts simultaneously.

* The PART button indicator will light for the Part to which Play Quantize had been applied (the Part selected by the QUANTIZE SELECT button). If this selection is satisfactory, proceed to the next step.

4. Press [ENTER].
The execute display will appear.



5. Press [ENTER] once again to execute the Edit Quantize operation.
The musical data will be modified according to the Play Quantize settings.
When the operation is complete, the normal display will reappear, and Play Quantize will automatically be turned off.
To cancel the operation, press [EXIT].

Chapter 9. Creating a song

On the MC-303, a "song" consists of a number of Patterns that you have connected.
When you play back a song, the patterns will be switched automatically, so there is no need for you to select patterns manually.
The MC-303 can hold up to 10 songs, and each song can contain up to 999 patterns. Songs do not contain the musical data of the patterns; they only contain the pattern numbers. This means that if you create a song and then modify the data of the patterns used in that song, the playback of the song will be affected.
Record the song by inputting patterns one by one in sequence.

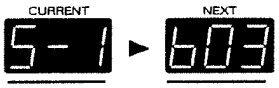
Selecting a song

First you must select the number of the song that you wish to record.

1. Make sure that the PLAY MODE indicator SONG is lit (Song mode).
If it is dark, press [PLAY MODE] to make SONG light.

2. Use SELECT [◀][▶] to make the PTN/SONG indicator light.

3. Rotate the VALUE dial to select the song to be recorded. The CURRENT display will show the selected song number, and the NEXT display will show the pattern number that will be played back first.



* If you have selected a new song (i.e., a song which has not yet been recorded), the following display will appear.

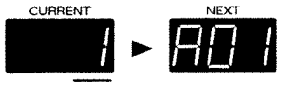
Recording a song

Before you begin, select the song that you wish to record.

1. Press [REC].
If the selected song already contains patterns, the following message will appear. If you wish to delete all the patterns from the song and start recording the song from scratch, press [ENTER]. If you do not want to erase the song, press [EXIT] to cancel the operation, and go back and select an unrecorded song.

You will enter Song Recording standby condition, and the STEP REC indicator will light.

2. Press [PLAY] to begin recording.



The CURRENT display will show the pattern input number. (When you begin recording this will be 1.)

3. Rotate the VALUE dial to select the pattern that will be recorded first.
The NEXT display will show the selected pattern number.

4. Press [ENTER].
The pattern input number will advance by one.

5. Rotate the VALUE dial to select the pattern that will be recorded next.
After making your selection, press [ENTER].

6. Repeat step 6 to complete your song.
After registering the last pattern, press [STOP] to end recording.
If you input a pattern by mistake, hold down [SHIFT] and press [BWD] to return to the previous input display.

Playing back a song

1. Select the song that you wish to play back (p.68).
The CURRENT display will show the number of the selected song.

2. Press [PLAY], and the song will begin playing back.
When song playback begins, the display will show the current pattern and the next pattern, in the same way as for pattern playback. Patterns will be automatically selected in the order in which they were recorded.

3. Press [STOP] to stop song playback.

- To rewind the song, press [BWD]. To return to the beginning of the song, hold down [SHIFT] and press [BWD].

- To fast-forward the song, press [FWD]. To interrupt song playback and move to the end of the song, hold down [SHIFT] and press [FWD].

- The [FWD] and [BWD] buttons move in steps of an entire pattern. If you use [FWD] or [BWD] to move while playback is stopped, the CURRENT display will show the playback order of that pattern.

- In addition to the above operations, you can also change the tempo and display the measures in the pattern using the same procedure as during pattern playback (p.15).

- It is not possible to switch patterns yourself. Nor is it possible to switch songs during playback.

- Songs contain only the sequence in which patterns are to be played back. This means that if you modify the contents of a pattern used by a song, the song playback will also be affected. If you delete all the musical data of a pattern, playback will come to a halt when that pattern is selected.

Storing modified settings to a song (Song Setup Write)

Songs contain the parameter settings listed below as setup data (tempo, and overall effect settings for all Parts). Each pattern also contains the tempo data, but when setup data is stored in a song, the tempo data of the individual patterns will be ignored. If you want a song to play back regardless of the pattern settings, you can write song setup data into the song. However, the Part Level settings (Delay/Reverb Part Level and Flanger/Chorus Part Level) specified for each Part will still be valid in this case. If the Part Level settings for the effects differ greatly between patterns, effect levels will become suddenly high or low as the song is played back. It is best to set effect Part Levels to similar settings for each pattern.
The following parameters can be stored in a song.

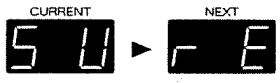
Tempo
This is the tempo at which the song will be played back. Even if you change the tempo during playback, it will not be recorded.

Delay/Reverb type effect
DELAY/REVERB TYPE
REVERB LEVEL
REVERB TIME

Flanger/Chorus type effect
FLANGER/CHORUS TYPE
CHORUS LEVEL
CHORUS RATE

1. Make the parameter settings that you wish to record in the song (p.15, 30).

2. Hold down [SHIFT] and [FUNC], and press keyboard pad [15] to access the Song Setup Write execute display.
The following display will appear.



3. Press [ENTER], and the song setup data will be written into the song.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Chapter 10. Editing a song (Song Edit)

Similarly to the way in which you can edit a pattern in Pattern mode, Song mode allows you to edit a song. Editing performed in Song mode is referred to as Song Edit.
Although editing in Pattern Edit is performed in units of a measure, editing in Song Edit is performed in units of a pattern. In Song mode you can press [FWD] or [BWD] to display the Pattern playback number in the CURRENT display, and the pattern corresponding to that number in the NEXT display. This lets you see the sequence in which each pattern will be played back. For example, if you pressed [FWD] or [BWD] several times to get the following display, you would know that pattern C04 is the tenth pattern to be played back in this song.

* Song Edit can be performed only if you are in Song mode. Before attempting to use the Song Edit functions, make sure that you are in Song mode (p.68).

During editing, you can return to the previous parameter setting display by pressing the SELECT [◀] button.

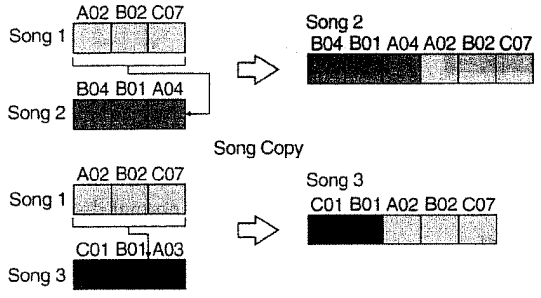
Copying a song (Song Copy)

This operation copies the sequence of patterns from a song to another song. This can be used to combine two songs to create one song, or to create a song by combining various pieces from other songs.

* If data exists in the copy destination song, the song data of the copy destination will be overwritten.

If the copy source song has more patterns than the copy destination song, the number of patterns in the copy destination song may increase.

* Song setup data will not be copied.



Before you begin, select the copy source song.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [1] to access the Song Copy setting display.
The following display will appear.

2. Rotate the VALUE dial to specify the copy source song.
The song number of the copy source will appear in the display.
Range of settings: S-1 – S-10

3. Press [ENTER].
The NEXT display will show the song playback number of the copy destination.

4. By either rotating the VALUE dial or by using [FWD] [BWD], specify the location (pattern playback number) at which the copy will begin.
Range of setting: 1 – 999, END

With a setting of "END," the data will be copied onto the end of the copy destination song.
For example, if you wish to copy from the third location, set NEXT = 3.

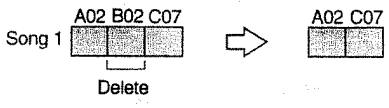
* It is not possible to make settings that would cause the number of patterns recorded in a song to exceed 999.

5. Press [ENTER].
The execute display will appear.

6. Press [ENTER] once again to execute the Song Copy operation.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Deleting unwanted patterns (Delete Pattern)

This operation deletes patterns from a song. When a pattern is deleted, patterns following it will be moved forward to fill the gap. Use this operation when you wish to remove unwanted patterns from a song.



Before you begin, select the song from which you want to delete patterns.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [4] to access the Delete Pattern setting display.
The CURRENT display will show the pattern playback number, and the NEXT display will show the bank and number of the pattern corresponding to that number.

2. By either rotating the VALUE dial or by using [FWD] [BWD], select the pattern (pattern playback number) which will be deleted.
Range of settings: 1 – 999, END
If you select "END," all patterns in the song and the song setup data will be deleted (Song Initialize).
For example, if you wish to delete B02 which is the second pattern played back, set CURRENT = 2.

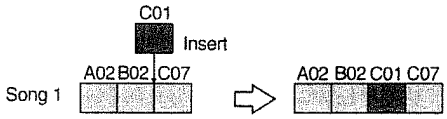
3. Press [ENTER].
The execute display will appear.

4. Press [ENTER] to execute the Delete Pattern operation.
When the operation is completed, the normal display will reappear.
To cancel the operation, press [EXIT].

Inserting a pattern (Insert Pattern)

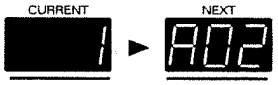
This operation inserts a pattern into the specified location of a song. Use this to add patterns to a previously-recorded song.

* Up to 999 patterns can be recorded in a song. If a song already contains 999 patterns, no further patterns can be inserted.



Before you begin, select the song into which you want to insert patterns.

1. Hold down [SHIFT] and [FUNC], and press keyboard pad [5] to access the Insert Pattern setting display.
The CURRENT display will show the pattern playback number, and the NEXT display will show the bank and number of the pattern corresponding to that number.



2. By either rotating the VALUE dial or by using [FWD] [BWD], specify the location of the insertion (pattern playback number: 1 – 998, END).
With a setting of "END," the pattern will be appended to the end of the song.
For example, if you wish to insert a pattern into the third location of the song, set CURRENT = 3.

3. Press [ENTER].

4. Rotate the VALUE dial to specify the bank and number of the pattern that will be inserted.
Range of settings: A01 – C33, E01 – I11, L01 – Q50, U01 – U50

5. Press [ENTER].
The execute display will appear.

6. Press [ENTER] once again to execute the Insert Pattern operation.
When the operation is complete, the normal display will reappear.
To cancel the operation, press [EXIT].

Chapter 11. System settings

Here you can make settings that affect the entire operating environment of the MC-303.
The various system parameter settings are preserved even when the power is turned off.

* It is not possible to enter the System Setting display while a pattern or song is playing back.

1. Hold down [SHIFT] and press keyboard pad [16] to access the System Setting display.

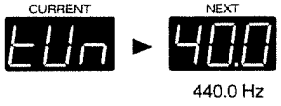
2. Use SELECT [◀][▶] to select the desired parameter display.

3. Rotate the VALUE dial to set the parameter value.

4. When you finish making settings, press [EXIT] to return to the normal display.

Tuning the MC-303 (Tuning)

This adjusts the tuning of the internal sound source.
The display will indicate the current frequency of the A4 note (middle A). The "4" in the hundreds place of the frequency will not be displayed.



Range of settings: 415.3–440.0–466.2 Hz

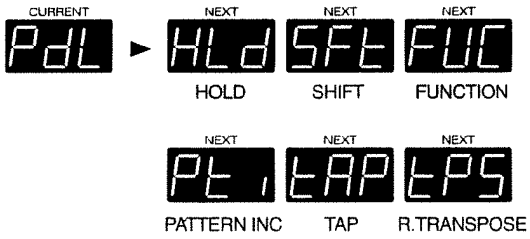
Playing back a song repeatedly (Song Loop)

This setting determines how songs will be played back.
You can cause the same song to be played back repeatedly, or all songs to be played back in sequence.

OFF: This is the normal condition. The currently selected song will be played back only once.
LOOP 1: The currently selected song will be played back repeatedly.
LOOP 2: All songs will be played back repeatedly in sequence.

Changing the function of the pedal (Pedal Assign)

This setting determines the function of the pedal switch connected to the PEDAL SWITCH jack.



HOLD: The pedal switch will hold the sound of the Part selected by the PART buttons. If the pedal is pressed during arpeggiation, the arpeggio will continue as long as the pedal is pressed even if you release your hand. If the pedal is pressed during RPS playback, RPS playback will continue as long as the pedal is pressed even if you release your hand.
SHIFT: The pedal switch will perform the same function as the SHIFT button.
FUNC: The pedal switch will perform the same function as the FUNC button.
PATTERN INC: The patterns registered in the currently selected pattern set will be registered one by one as the next pattern.
TAP: The pedal switch will perform the same function as the TAP button.
REALTIME TRANSPOSE: The pedal switch will perform the same function as the TRANSPOSE button.

Synchronization settings (Sync Mode)

This setting determines how the internal sequencer will function, and how MIDI Clock messages will be transmitted and received.

INT: The internal sequencer will operate using its own internal tempo clock, and will transmit MIDI Clock messages. If MIDI Clock messages are received from an external device, they will be ignored.
SLAVE: The internal sequencer will synchronize to a MIDI Clock. If MIDI Clock messages are not being received from an external device, pattern/song playback will not occur even if you press the PLAY button.
REMOTE: This is basically the same as INT. However, Start/Stop messages from an external MIDI device will start/stop the internal sequencer.

Transmitting signals for external synchronization (Sync Out)

This setting determines whether or not synchronization-related MIDI messages will be transmitted.
With a setting of ON, the following messages will be transmitted from the MIDI OUT connector: Timing Clock, Start, Continue, and Stop.

This parameter can be set either ON or OFF.

Specifying how the metronome will sound (Metronome)

This setting determines how the metronome will sound.

OFF: The metronome will never sound.
ALWAYS: The metronome will sound constantly.
REC ONLY: The metronome will sound only during recording.
PLAY & REC: The metronome will sound during playback and recording.

Adjusting the metronome volume (Metronome Volume)

Set the volume of the metronome over the range 0–127.

Higher settings will result in a louder metronome.

Adjusting the velocity produced when you press a keyboard pad (Pad Velocity)

When you press the keyboard pad to play notes, the notes will be played at a fixed loudness (velocity). This setting specifies the velocity that will be used (1–127).

Higher settings will result in stronger notes being produce when you play the pads.

Viewing the remaining memory space (Available Memory)

This displays the percentage of remaining memory.

Chapter 12. Using MIDI

What is MIDI?

The MC-303 is able to record/play back MIDI data, and can receive MIDI data to play its internal sound source.

What is MIDI?

MIDI (an acronym for Musical Instrument Digital Interface) is a standard way for electronic musical instruments and computers to exchange data, such as musical performance information. Devices which have MIDI connectors can be connected using MIDI cables to transmit and receive various types of data. Today, MIDI has become indispensable to electronic musical instruments. Without MIDI, it would not be possible to play the MC-303's sounds from an external keyboard, or to record and play back the performance from an external keyboard on the MC-303. The MC-303 can be used without extensive knowledge of MIDI, but a little understanding of MIDI gained from this chapter will help you take fuller advantage of the MC-303.

MIDI connectors

The MC-303 has the following two types of MIDI connectors.

MIDI OUT connector

This transmits MIDI messages to external MIDI devices.

MIDI IN connector

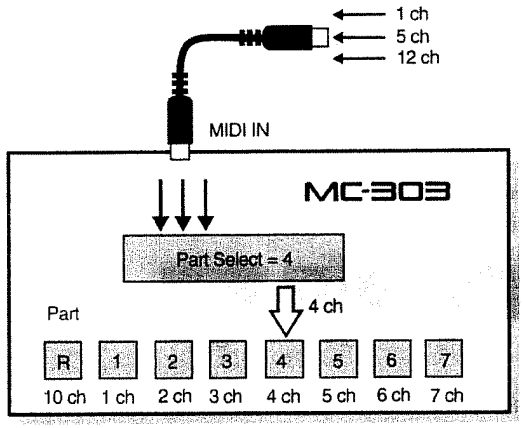
This receives MIDI messages that are sent from external devices. The MIDI device that receives these messages can perform actions such as play notes or select sounds.

MIDI channels

MIDI is able to transmit many independent sets of performance data over a single MIDI cable. This is made possible by "MIDI channels." There are sixteen MIDI channels, 1–16, and MIDI messages are received only if the channel of the transmitting device matches the channel of the receiving device.

Each of the 8 Parts of the MC-303 is assigned their own MIDI channel. When MIDI messages are received at the MIDI IN connector they are converted to the channel selected by the PART SELECT button, and sent to the sound source and sequencer.

This means that there is no need to change the MIDI transmit channel of the transmitting device to match the Part that you wish to play. You can play the MC-303 via MIDI without having to match the MC-303's own MIDI channel with the MIDI channel of the transmitting device.



Major types of MIDI message used to control the MC-303

MIDI includes many different types of message. Broadly speaking, MIDI messages can be grouped into those which are handled separately by channel (Channel Messages), and those which are handled regardless of channel (System Messages). The MC-303 uses the following MIDI messages.

Channel messages

These messages are used to convey musical performance information. Normally, most control is performed using these messages.

Note-on messages

These messages are transmitted when a note is played. Note-on messages included the following data.

Note-on: A note has been played.
Note number: Note position (which note was played)
Velocity: Strength with which the note was played

The note number is expressed as a number in the range of 0–127, with 60 being middle C (C4). When a Note-on message is received, the corresponding note will be played with the velocity value included in the message. However, notes which fall outside the recommended range of each Tone may not sound, or may sound at an incorrect pitch.

Note-off messages

These messages are transmitted when a note is released. When a Note-off message is received, that note will be turned off.

Pitch Bend messages

These messages are used to transmit smooth changes in pitch. When the pitch bend lever (wheel) found on many synthesizers is moved, these messages are transmitted.

Aftertouch messages

These messages are transmitted when you press down harder on the keyboard after playing a note. There are two types of aftertouch: channel aftertouch, which controls an entire channel; and polyphonic aftertouch, which controls individual notes. The MC-303 will not normally do anything in response to these messages.

Program Change messages

These messages are used to select sounds. These messages include a program number of 1–128 that specifies the sound to be selected. The MC-303 receives these messages (in conjunction with Bank Select messages; a type of control change message) to select Tones.

Control Change messages

Bank Select (controller numbers 0, 32)

The MC-303 can receive Bank Select messages (control changes 0 and 32) and Program Change messages to select up to 128 x 128 Tones. After a Bank Select message is received, a Program Change message can be received to switch the Tone. Tones will not switch simply upon receiving a Bank Select message. For the Bank Select and program numbers of each Tone, refer to "Tone list" (p.85).

Modulation (controller number 1)

This message is used to control the depth of the vibrato effect. When this message is received, pitch modulation (vibrato) will be applied to the sound.

Volume (controller number 7)

This message is used to control the volume of each Part to adjust the volume balance. When this message is received, the volume of the notes will change. The actual volume is determined by the combination of Volume and Expression (controller number 11).

Panpot (controller number 10)

This message adjusts the stereo location. When this message is received, the stereo position of the sound will be adjusted accordingly.

Expression (controller number 11)

This message adjusts the volume of each Part to create changes in dynamics. When this message is received, the volume of the notes will change. The actual volume is determined by the combination of Volume (controller number 7) and Expression.

Hold (controller number 64)

This message holds (sustains) the sound. It has a function similar to the damper pedal on a piano. When a Hold On message (data value 64–127) is received, the sound will be sustained until a Hold Off message (data value 0–63) is received.

Sostenuto (controller number 66)

This message causes only the currently-pressed notes to be sustained. When a Sostenuto On message (data value 64–127) is received, all notes currently being pressed will be held until a Sostenuto Off message (data value 0–63) is received.

Soft (controller number 67)

This message applies a soft pedal effect to make the sound softer. When this message is received, the sound will become softer and more mellow.

Effect 1 (Reverb) Depth (controller number 91)

When the MC-303 receives this message, the reverb depth will be adjusted.

Effect 3 (Chorus) Depth (controller number 93)

When the MC-303 receives this message, the chorus depth will be adjusted.

The MC-303 receives many other control change messages. For details refer to "MIDI Implementation" (p.101).

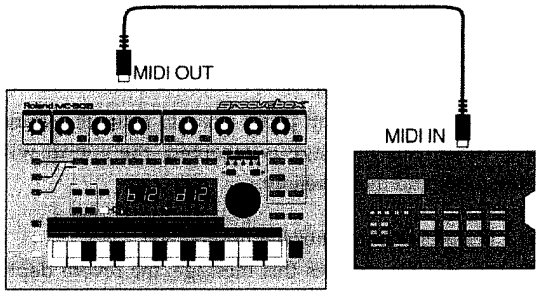
System messages

Exclusive messages

These messages handle data that is unique to the MC-303. They are used when storing data to an external device, or to remotely modify various parameters.

Controlling the MS-1

It is possible to fully enjoy playing the MC-303 by itself. However, by using the MC-303 together with other MIDI devices, additional possibilities are opened up.
When the MC-303 is used together with a Roland MS-1 (optional), additional possibilities are available; samples recorded on the MS-1 (human voices or sound effects) can be played from the keyboard pads of the MC-303, and you can create patterns which play MC-303 sounds together with MS-1 samples.



Procedure for controlling the MS-1

To control the MS-1 from the MC-303, you will need to set the Output Assign setting of one of the Parts to EXT. In this example, let's use Part 7 to control the MS-1.

1. Using a MIDI cable (optional), connect the MC-303's MIDI OUT to the MS-1's MIDI IN.

2. Refer to the procedure "Setting the MIDI channel" on p. 21 of the MS-1 owner's manual, and set the MIDI channel of the MS-1 to 7.

3. Set the Output Assign of Part 7 on the MC-303 to EXT (p.28).

4. Make sure that the [RPS SET] and [PTN SET] indicators are dark.

5. Press [PART SELECT], and then press PART [7] to select Part 7.

6. Press various keyboard pads, and the samples of the MS-1's keyboard pads will sound.
For the correspondence between the MC-303's keyboard pads and the MS-1's pads, refer to "Assigning keyboard notes to MS-1 pads" (p.21) in the MS-1's owner's manual.
Output Assign settings can be stored in a Pattern (Pattern Setup Write: p.35).

* With the MS-1 factory settings, the black keys other than A# have no samples assigned to them, so no sample sound will be heard when you play the MC-303 keyboard pads 3, 5, 8, 10, or 15. If you wish to use these keyboard pads to play MS-1 samples, refer to the procedure "Changing key/pad assignments" (p. 21) in the MS-1 owner's manual, and set the MS-1 pads which contain the samples to the note names of the MC-303 keyboard pads which will be used to play them.

Next, let's try recording musical data to play the MS-1 on the MC-303 to create a pattern which combines the MC-303's own sounds with the MS-1's samples.

1. Select a user pattern for which you want to use MS-1 samples.
We will use Part 7 to record the data for the MS-1 in this example as well. If Part 7 already contains other data, erase the musical data from Part 7 (p.63).

2. Set the Output Assign setting of Part 7 to EXT (p.28).

3. Store the setting to the pattern (p.35).

4. For Part 7, record the musical data that will play the MS-1. It will be convenient to use Realtime Recording and play the keyboard pads (p.46).

5. When you finish recording, press [PLAY] to play back the pattern.
The MS-1 samples will sound in addition to the MC-303's playback.

* You can use the same procedure to control digital samplers or MIDI sound sources other than the MS-1. For details on the MIDI operation of other devices, refer to their owner's manual.

Selecting Tones from an external MIDI device

By transmitting Bank Select messages (controller numbers 0 and 32) and Program Change messages from an external MIDI device to the MC-303, you can select the Tone (or Rhythm Set) for each Part.
For the procedure of transmitting Bank Select messages and Program Change messages from your external MIDI device, refer to the owner's manual for your device.

When in Pattern mode or Song mode

After using [PART SELECT] to select the Part whose Tone you wish to select, transmit a Bank Select message (controller number 0 and 32) and a Program Change message from the external device. At this time, the MIDI transmit channel of the external MIDI device can be set to any channel. The Tone of the Part selected by [PART SELECT] will be switched. For the correspondence between the incoming Bank Select messages and Program Select messages and the Tones of the MC-303, refer to "Tone list" (p.85) and "Rhythm set list" (p.90).

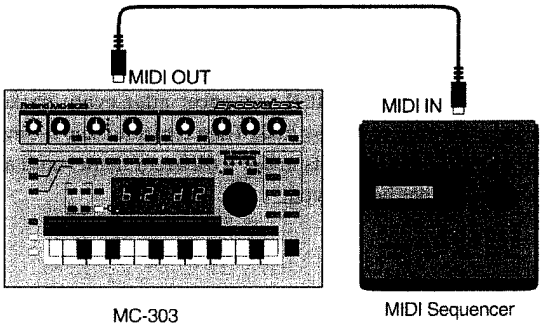
When in Sound Module mode (p.80)

In this case, the MIDI receive channel of the Part whose Tone (Rhythm Set) wish to switch must be matched with the MIDI transmit channel of the external MIDI device. When in Sound Module mode, the MIDI receive channel of each Part will be as given in "MIDI Implementation" (p.101).

* To switch Rhythm Sets, there is no need to transmit Bank Select messages.

Synchronizing an external sequencer to the MC-303

An external sequencer can be synchronized to the MIDI Clock messages transmitted from the MC-303, to play back in synchronization.



1. Use a MIDI cable (optional) to connect the MC-303's MIDI OUT to the external sequencer's MIDI IN.

2. Press [PLAY MODE] to select Pattern mode.

3. Turn the Sync Out setting "ON" (Sync Out: p.73).

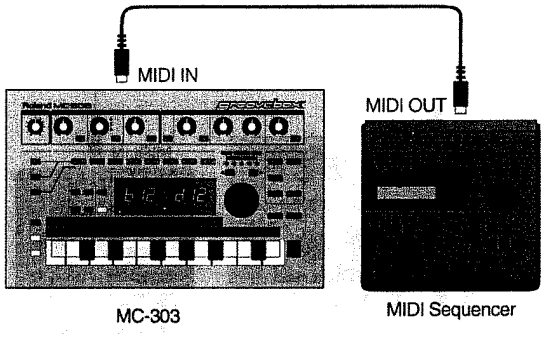
4. Set the external sequencer to synchronize to MIDI Clock messages from an external device. For details on this setting, refer to the owner's manual for your sequencer.

5. When you press [PLAY] on the MC-303, the MC-303 and the external sequencer will begin playback in synchronization.

6. When you press [STOP] on the MC-303, the MC-303 and the external sequencer will stop playback.

Synchronizing the MC-303 to an external sequencer

The MC-303 can be synchronized to the MIDI Clock messages transmitted from an external sequencer, to play back in synchronization.



1. Use a MIDI cable (optional) to connect the external sequencer's MIDI OUT to the MC-303's MIDI IN.

2. Press [PLAY MODE] to select Pattern mode.

3. Turn the Sync Out setting "SLAVE" (Sync Out: p.72).

4. Set the external sequencer to transmit MIDI Clock messages. For details on this setting, refer to the owner's manual for your sequencer.

5. When you begin playback on the external sequencer, the MC-303's internal sequencer will also begin playback in synchronization.

6. When you stop playback on the external sequencer, the MC-303 will also stop playback.

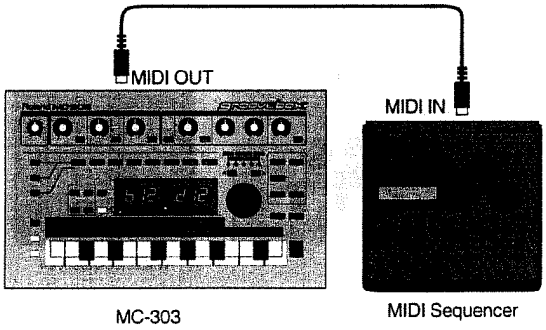
* If you want to control just pattern playback/stop from the external sequencer, and do not want the MC-303 to synchronize to the incoming MIDI Clock messages (i.e., when you want the MC-303 to determine the tempo), set the Sync Mode setting to "REMOTE."

Saving data (Bulk Dump)

The MC-303 is able to transmit its User Pattern data, Song data, RPS Set data, and Pattern Set data via MIDI to an external device. This procedure is referred to as "Bulk Dump." Bulk Dump allows you to transmit MC-303 data to an external sequencer that has a floppy disk drive, for storage on floppy disk. You can also transmit data between two MC-303 units.

Recording MC-303 data to an external sequencer

1. Use a MIDI cable (optional) to connect the MC-303's MIDI OUT to the external sequencer's MIDI IN.



2. With pattern and song playback halted, hold down [SHIFT] and [FUNC] and press keyboard pad [16] to access the Bulk Dump execute display.
The following display will appear.

3. Begin realtime recording on the external sequencer.

4. Press [ENTER] on the MC-303, and the data will be transmitted from MIDI OUT.
While data is being transmitted, the following display will appear.

* To stop data transmission during this process, press [STOP] or [EXIT]. During transmission, all other controllers will have no effect.

5. After a while, the following display will appear, and data transmission will pause. Immediately press [ENTER], and the display will once again indicate "Sending" and the next packet of data will be sent.

6. When steps 4-5 have been repeated some times, the following display will appear, indicating that all data has been transmitted. Then the normal display will automatically reappear.

7. Stop realtime recording on the external sequencer.
Assign an appropriate name to the data (song) that was recorded, and save it to the floppy disk of your MIDI sequencer.

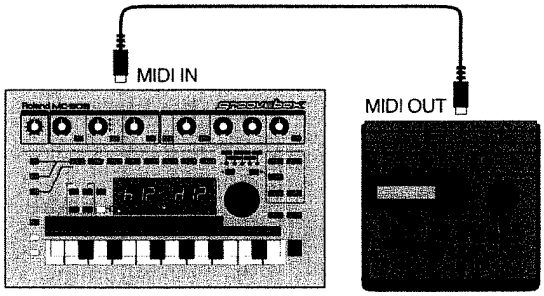
If the amount of data exceeds the capacity of the external sequencer

During Bulk Dump, the data in internal memory is divided into some packets of the same size, and transmitted with a pause between each packet. However since the data includes user pattern data, the total size is quite large, and some MIDI sequencers may not be able to accommodate all the data as a single song.
For example if, while receiving the second data packet in setp 6, your MIDI sequencer gives a warning message that its memory capacity has been exceeded, you will have to stop recording on the MIDI sequencer after every packet and save the data to floppy disk. Then return to step 5. Save each group of data packets under a different name, until all the bulk data has been saved.

Returning data from a MIDI sequencer to the MC-303

* Be aware when you perform this procedure, all user patterns and song data that was in the MC-303's memory will be erased.

1. Use a MIDI cable (optional) to connect the external sequencer's MIDI OUT to the MC-303's MIDI IN.



2. With pattern and song playback halted, hold down [SHIFT] and [FUNC] and press keyboard pad [16] to access the Bulk Dump execute display.

3. Press SELECT [▶], and the MC-303 will begin waiting to receive a bulk dump.
The following display will appear.

4. Operate your external sequencer to load the MC-303 data, and begin playback (start).
The data will be transmitted from the sequencer.

5. The following display will appear on the MC-303, and the data will be loaded into memory.

* While data is received, moving the controls will have no effect.

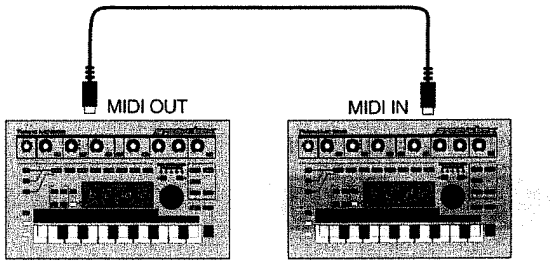
6. When the data has been completed transmitted from the sequencer, and the display will once again indicate "Receive."

* If the data from the MC-303 was saved in two or more data (songs) by the MIDI sequencer, be sure to transmit them in the same order in which they were received.

Transmitting data between two MC-303 units

* Be aware that when this procedure is performed, all user patterns and song data that was in the receiving MC-303 will be erased.

1. Use a MIDI cable (optional) to connect the MIDI OUT of the transmitting MC-303 to the MIDI IN of the receiving MC-303.



2. On the transmitting MC-303, select the Bulk Dump execute display (p.78).

3. Put the receiving MC-303 into the "waiting for bulk dump" condition (p.79).

4. Press [ENTER] on the transmitting MC-303, and data transmission will begin.

5. After a while, the transmitting MC-303 will indicate "NEXT" and transmission will be paused. Press the transmitting MC-303's [ENTER], and the display will once again indicate "Sending" and the next packet of data will be sent.

6. Repeat steps 4-5 some times, and the display will show "Completed" indicating that all data has been transmitted, the transmitting MC-303 will automatically return to the normal display.

This completes data transmission.

* The MC-303 sends a Bulk Dump while dividing the total amount of bulk data into some smaller sized packets. But note that if the external device you are using for receiving a Bulk Dump does not have sufficient memory available to process one packet, it will not be able to successfully receive it.

Using the MC-303 as a sound module

The MC-303 provides a Sound Module mode that allows the internal sound source to be controlled and played from an external MIDI device. In Sound Module mode, the MC-303 will function as a 16-part multi-timbral sound module. Controls other than the VOLUME knob will not function. Also, functions such as the sequencer, arpeggiator, and RPS will not be available.

1. Hold down [PLAY MODE] and press the [POWER] switch located on the rear panel to turn the power on.
The MC-303 will be set to Sound Module mode.
The following display will appear.

In Sound Module mode, you can control the MC-303's sound source by transmitting note messages and program change messages, etc. from an external MIDI device. For details on the MC-303's functioning when in Sound Module mode, refer to "MIDI Implementation" (p.101).

2. To return to normal operation, turn the MC-303's power off and then on again.

Appendices

groovebox MC-303

Troubleshooting

If there is no sound or if the MC-303 does not operate as you expect it to, first check the following points. If this does not resolve the problem, contact your dealer or a nearby Roland service center.

* Roland will take no responsibility for the recovery of lost data or for any damages incurred by such loss.

No sound

● The power of the MC-303 or connected equipment is not turned on.

● The volume of the MC-303 or connected equipment is lowered.

● The level of a Part is lowered.
Adjust the volume level (p.22).

● MIDI cables or audio cables are not connected correctly.

● The pitch of the selected Tone is outside the range in which it will sound correctly.
Use the Octave Shift setting to lower the range (p.20).

● The Part which does not sound has an Output Assign setting of "EXT."
Change the Output Assign setting to "INT" (p.28).

● Pad Velocity setting is too low.
Increase the Pad Velocity setting (p.73).

● A Tone to which no sound is assigned was selected from an external device (via Bank Select and Program Change messages).
Specify a Tone number (Bank Select and Program Change) to which a sound is assigned.

Notes drop out

You are attempting to play more than the maximum number of simultaneous notes (28).
The MC-303 will not produce more than 28 notes simultaneously.

Notes "stick" (continue sounding) during Pattern playback

A Hold Off message was deleted by an operation such as Pattern Edit.
In the Microscope display, insert a Hold Off message at the location where you want the sound to stop (p.57).

Sequencer does not operate

The Sync mode is set to "SLAVE."
Change the Sync mode to "INT" (p.72).

Effects are not applied even when the EFX level is raised

The delay/reverb or flanger/chorus level of the applicable Part is too low.
Increase the level (p.31, 34).

Rotating the LFO knob does not apply LFO

The LFO Pitch, LFO Filter, or LFO Amp settings of the applicable Part are too low.
Increase the value of the parameter for the desired effect (p. 27).

Pitch is wrong

● The tuning of the MC-303 is wrong.
Adjust the Tuning setting (p.72).

● Pitch Bend messages from the sequencer or external MIDI device have changed the pitch.
Perform the MIDI Update procedure (p.17).

Play Quantize does not work

● [QUANTIZE SELECT] has not been used to specify the Part for Play Quantize.
Specify the Part to which Play Quantize will be applied (p. 42).

● When using Grid Quantize or Groove Quantize, the Strength setting is at "0%."
Change the Strength setting (p.43, 45).

● When using Shuffle Quantize, the Shuffle Rate setting is at "50%."
Change the Shuffle Rate setting (p.44).

Error messages

If incorrect operation is attempted or if the requested processing could not be performed, an error message will appear. Refer to the explanation of the error message that appeared, and take the appropriate action.

Meaning: The internal backup battery (that preserves user memory) has run down.
Action: Contact your dealer or a Roland service center to have the battery replaced.

Meaning: There is a problem with MIDI cable connections.
Action: Make sure that MIDI cables have not been unplugged or damaged.

Meaning: More MIDI messages were received in a short time than could be processed by the MC-303.
Action: Reduce the amount of MIDI messages that are being transmitted to the MC-303.

Meaning: The checksum value of a received exclusive message was incorrect.
Action: Correct the checksum value.

Meaning: More recording data than the MC-303 could process correctly was received all at once.
Action: Reduce the amount of recording data that is being sent to the MC-303.

Meaning: User memory is full, and further recording or editing is not possible.
Action: Delete unneeded data.

Reason: Since two or more Parts are un-muted, the data cannot be registered as an RPS set.
Action: Select one Part from the Phrase which you wish to register, and mute all the other Parts.

Reason: Since a Preset Pattern or Variation Pattern is selected, the settings cannot be modified.
Action: Select a User Pattern. If you wish to create a modified version of the currently selected Preset Pattern, you must first copy the contents of that Preset Pattern to a User Pattern (p.61).

Reason: No quantization is selected.
Action: Press [QUANTIZE] to select the desired type of quantization.

Reason: Up to 999 Patterns can be registered in a song. It is not possible to register more Patterns than this.

Reason: Since no musical data is recorded in the Pattern, playback is not possible.

Restoring the factory settings (Factory Preset)

If you wish to initialize (reset) the settings and user memory of the MC-303 to their factory settings, use the Factory Preset operation.

* If your MC-303 contains important data, use the Bulk Dump operation (p.78) to save it to an external MIDI sequencer (or other device) before performing this operation.

Initializing all settings

Here's how to reset all settings of the MC-303 (user patterns, variation patterns, pattern sets, RPS sets, songs, system) to their factory values.

1. Hold down [SHIFT] and turn on the POWER switch.

2. The execute display will appear, so press [ENTER] to execute initialization.

Initializing some of the settings

Here's how to reset variation patterns, pattern sets, RPS sets, songs, and system settings to their factory values.

1. Hold down [FUNC] and turn on the POWER switch.

2. The execute display will appear, so press [ENTER] to execute initialization.

Tone List

★1 B3–D5 contain 16 types of percussion sounds.

★2 These tones split two types of rhythm instruments.

Bank 01: Synthesizer

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Lead TB	01	1 / 64	Lead TB 1	2
	02	1 / 65	Lead TB 2	1
	03	1 / 66	Wow TB	2
	04	1 / 67	Lead TB 3	2
Hard	05	2 / 64	MG Saw	1
	06	2 / 65	Voc.Saw	1
	07	2 / 66	Cheese Saw	1
	08	2 / 67	Saw Lead	2
	09	2 / 68	Calc.Saw	1
	10	2 / 69	OB2 Saw 1	2
	11	2 / 70	Juno6 Saw	2
	12	2 / 71	JP8 Pls.1	2
	13	2 / 72	MG Pls.1	1
	14	2 / 73	Flicker Pls.	2
Soft Flute	15	3 / 64	Tri Lead1	1
	16	3 / 65	Tri Lead2	2
	17	3 / 66	PR5 Squ.1	1
Sub Osc	18	4 / 64	JU2 SubOsc.	1
	19	4 / 65	Frog Wave	1
Sequence	20	5 / 64	Seq.Synth	2
	21	5 / 65	Polysynth	1
	22	5 / 66	JP8 Pls.2	1
	23	5 / 67	JP8 Squ.	1
	24	5 / 68	260 Pls.90	1
	25	5 / 69	Reso.Pls.	1
	26	5 / 70	Reso.Stack	1
Soft	27	6 / 64	Soft Lead	2
	28	6 / 65	8DV Saw 1	1
	29	6 / 66	PR5 Saw 1	1
	30	6 / 67	D50 Saw	1
Sweep	31	7 / 64	MG Sweep	2
	32	7 / 65	Sweep Lead	2
	33	7 / 66	Vocorderman	2
Chord	34	8 / 64	4th Lead 1	2
	35	8 / 65	4th Lead 2	2

Bank 02: Synth Bass

Type	Tone No.	PC#/CC0#	Tone Name	Voice
TB-303	01	9 / 64	Normal TB	1
	02	9 / 65	Dist.TB 1	1
	03	9 / 66	Dist.TB 2	2
	04	9 / 67	Acid TB 1	2
	05	9 / 68	Acid TB 2	2
	06	9 / 69	Acid TB 3	1
	07	9 / 70	Acid TB 4	2
Deep	08	10 / 64	101 Bass 1	1
	09	10 / 65	101 Bass 2	1
	10	10 / 66	101 Bass 3	1
	11	10 / 67	House Bass	1
	12	10 / 68	Sine Bass	1
	13	10 / 69	Dub Bass	2
Pizzicato	14	11 / 64	Pizz.Bass	2
Bright	15	12 / 64	MG Bass 1	2
	16	12 / 65	MG Bass 2	1
	17	12 / 66	MG Bass 3	2
	18	12 / 67	MG Bass 4	2
	19	12 / 68	FM Super Bs	1
	20	12 / 69	Cheese Bass	2
	21	12 / 70	Syn.SB Bass	2
Click	22	13 / 64	Blip Bass	2
	23	13 / 65	KGP Bass	1
	24	13 / 66	TBMG Bass 1	2
	25	13 / 67	MG Bass5	1
	26	13 / 68	JPMG Bass	2
	27	13 / 69	Click Bass	2
	28	13 / 70	KMP Bass	2
	29	13 / 71	Osc.Bass	2
Resonance	30	14 / 64	Reso.Bass	1
	31	14 / 65	Wow MG Bass	2
	32	14 / 66	Wow 101 Bass	2
	33	14 / 67	Sweep Wow Bass	2
	34	14 / 68	MG 5th Bass	2
	35	14 / 69	Doom Bass	1
	36	14 / 70	Rubber Bass 1	2
	37	14 / 71	Rubber Bass 2	2
EFX	38	15 / 64	Acid Bass	2
	39	15 / 65	Bubble Bass	2
Organ	40	16 / 64	Organ Bass	1

Bank 03: Bass Guitar

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Wood	01	17 / 64	Ac.Bass 1	2
	02	17 / 65	Ac.Bass 2	1
Finger	03	18 / 64	Fingered Bs 1	2
	04	18 / 65	Fingered Bs 2	1
Pick	05	19 / 64	Picked Bass 1	2
	06	19 / 65	Dust Pick Bass	2
	07	19 / 66	Picked Bass 2	1
Fretless	08	20 / 64	Fretless Bass	1
Slap	09	21 / 64	Slap Bass 1	1

Bank 04: Synth Stack

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Stack1	01	22 / 64	Syn.Stack 1	1
	02	22 / 65	Oct.Stack	2
	03	22 / 66	Syn.Stack 2	2
	04	22 / 67	Saw Stack	2
Stack2	05	23 / 64	Syn.SB 1	1
	06	23 / 65	Syn.SB 2	2
	07	23 / 66	Brass Perc.	1
	08	23 / 67	Dirty SB	2

Bank 05: Synth Pad

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Abstract	01	24 / 64	Atmosphere	1
	02	24 / 65	Feed Back Wave	1
	03	24 / 66	X-MOD	1
	04	24 / 67	Pacifica	2
	05	24 / 68	7th Atom	2
	06	24 / 69	Outer Space	2
	07	24 / 70	Rev.Atom	2
Strange	08	25 / 64	2.2 Pad	2
	09	25 / 65	Jungle Pad	2
	10	25 / 66	Psycho Pad	2
	11	25 / 67	Pipe Pad	1
	12	25 / 68	Ambient Pad	2
	13	25 / 69	Flanger Pad	2
Bell	14	26 / 64	Bell Pad	2
	15	26 / 65	7th Bell Pad	1
	16	26 / 66	Fantasia	2
	17	26 / 67	Crystal	2
	18	26 / 68	Exo.Bell Pad	2
	19	26 / 69	Echo Bell	2
Warm	20	27 / 64	Warm Pad	2
	21	27 / 65	Soundtrack	2
	22	27 / 66	Oct.Pad	2
	23	27 / 67	OB Str. Pad	2
	24	27 / 68	X-MOD Pad	2
	25	27 / 69	Sweep Pad 1	2
	26	27 / 70	Sweep Pad 2	2
	27	27 / 71	OB Soft Pad	1
	28	27 / 72	Goblin	2
	29	27 / 73	Echo Drops	1
EFX	30	28 / 64	Random Pad	2
	31	28 / 65	LFO Sweep	1
	32	28 / 66	Horror Pad	2
	33	28 / 67	Pulse Key Pad	2

Bank 06: Strings

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	29 / 64	Real Strings 1	2
	02	29 / 65	Real Strings 2	1
Synth	03	30 / 64	Auh Strings	2
	04	30 / 65	Hi Strings	2
	05	30 / 66	Syn.Strings 1	1
	06	30 / 67	Syn.Strings 2	2
	07	30 / 68	Syn.Strings 3	1
EFX	08	31 / 64	Noise Strings	2
	09	31 / 65	RND Strings	2
	10	31 / 66	LFO Strings	2
Slow	11	32 / 64	Slow Strings	1
	12	32 / 65	Slow SynStr.	1
Pizzicato	13	33 / 64	Pizzicato Str.	1

Bank 07: Voice

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Natural	01	34 / 64	Choir Auhs	1
EFX	02	35 / 64	Space Voice	2
	03	35 / 65	Sweepvox	2
	04	35 / 66	Synthvox 1	1
	05	35 / 67	Auh	1
	06	35 / 68	Synthvox 2	1
	07	35 / 69	Leadvox	2
	08	35 / 70	Auh Auh	2
	09	35 / 71	Sky Vox	2
	10	35 / 72	Auhbient	2
	11	35 / 73	Vibravox	2
	12	35 / 74	Noisevox	2

Bank 08: Synth FX

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Basic	01	36 / 64	UFO FX	2
	02	36 / 65	Saw in Saw	1
	03	36 / 66	Feed Bell	2
	04	36 / 67	Abduction	2
	05	36 / 68	Loop Sweep	1
	06	36 / 69	UP FX	2
	07	36 / 70	Robocorder	2
	08	36 / 71	Noise Grow	2
Hyper FX	09	37 / 64	LFO Techno	2
	10	37 / 65	Calculating	2
	11	37 / 66	Emergency!	2
	12	37 / 67	FX Beats	2
	13	37 / 68	Analog FX	1
	14	37 / 69	Transformer	2
	15	37 / 70	Dusty Scratch	2
	16	37 / 71	Space Worms	1
	17	37 / 72	Winky FX	1

Bank 09: Noise

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Absolute	01	38 / 64	PR5 Noise1	1
	02	38 / 65	PR5 Noise2	1
	03	38 / 66	Pink Noise	1
	04	38 / 67	White Noise	1
Noise FX1	05	39 / 64	Bomb Wind	2
	06	39 / 65	Syn.Wind	2
	07	39 / 66	Vinyl Noise	1
	08	39 / 67	Noise Snare	2
Noise FX2	09	40 / 64	Explosion	2
	10	40 / 65	Pink Bomb	2

Bank 10: Piano

Type	Tone No.	PC#/CC0#	Tone Name	Voice
A.Piano	01	41 / 64	Ac.Piano	2
	02	41 / 65	Bright Piano	2
E.Piano	03	42 / 64	E.Piano 1	1
	04	42 / 65	E.Piano 2	1
	05	42 / 66	E.Piano 3	2
	06	42 / 67	E.Piano 4	2
EFX	07	43 / 64	Org.E.Piano	2
	08	43 / 65	Noise Piano	2
Clavinet	09	44 / 64	Clav.	1
	10	44 / 65	Ana.Clav.	1
	11	44 / 66	Digi.Clav.	2

Bank 11: Organ

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Standard	01	45 / 64	Organ 1	1
	02	45 / 65	Lp-Hp Organ	2
Jazz	03	46 / 64	Organ 2	1
	04	46 / 65	Percsv Organ	2
Power	05	47 / 64	Slow Organ	2
Chord	06	48 / 64	Smokey Org.Chrd	2
	07	48 / 65	Organ Chord	1
60s	08	49 / 64	'60s Organ	2
Distortion	09	50 / 64	Dist.Organ	1
Church	10	50 / 64	Church Org.1	1
EFX	11	52 / 64	Organ Loop	1
	12	52 / 65	LF-Organ	2

Bank 12: Chromatic Percussion

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	53 / 64	Glockenspiel	1
	02	53 / 65	Vibraphone	1
	03	53 / 66	Beat Glocken	2
	04	53 / 67	Marimba	1
Percussive	05	54 / 64	Timpani	1
	06	54 / 65	Steel Drums	1
Synth	07	55 / 64	Sqr.Perc.	2
	08	55 / 65	Juno Bell	2
	09	55 / 66	MG Perc	1
	10	55 / 67	Perc.Glass	2

Bank 13: Bell

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	56 / 64	Tubular-bell	1
	02	56 / 65	Vib. Bell	2
Synth	03	57 / 64	7th Bells	2
	04	57 / 65	Ring Bell	1
	05	57 / 66	Digi.Bell 1	1
	06	57 / 67	Ring Mod.	1
	07	57 / 68	Digi.Bell 2	1
	08	57 / 69	Dirty Bell 1	2
	09	57 / 70	Dirty Bell 2	2
	10	57 / 71	Digi.Bell 3	1

Bank 14: Guitar

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Acoustic	01	58 / 64	Steel Str.Gt.	1
	02	58 / 65	12str.Guitar	2
Electric	03	59 / 64	Jazz Guitar	1
	04	59 / 65	Clean Guitar	1
	05	59 / 66	Distortion Gt.	1
	06	59 / 67	Gt.Harmonics	1
Hybrid	07	60 / 64	Acid Guitar 1	2
	08	60 / 65	Acid Guitar 2	2
	09	60 / 66	Jazz Steel Guitar	2
	10	60 / 67	Sitar Guitar	2
	11	60 / 68	Wah Guitar	1

Bank 15: Brass Section

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	62 / 64	Brass 1	1
	02	62 / 65	Bright Brass 1	2
	03	62 / 66	Bright Brass 2	2
Synth 1	04	63 / 64	Brass&Strings	2
	05	63 / 65	SB Brass Sect.	2
	06	63 / 66	ST Brass Sect.	2
Synth 2	07	64 / 64	OB Brass	2
	08	64 / 65	Hybrid Brs.	2
Synth 3	09	65 / 64	4th Brass	2

Bank 16: Brass/Pipe

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Synth	01	66 / 64	Synth Brass 1	2
	02	66 / 65	Synth Brass 2	2
	03	66 / 66	Bright Syn.Brs 1	2
	04	66 / 67	Bright Syn.Brs 2	2
	05	66 / 68	Warm Brass 1	2
	06	66 / 69	Stack Brass 1	2
	07	66 / 70	Warm Brass 2	2
	08	66 / 71	Strings Brass	1
	09	66 / 72	Warm Brass 3	2
	10	66 / 73	Stack Brass 2	2
Trumpet	11	67 / 64	Trumpet	1
	12	67 / 65	Muted Trumpet	1
	13	67 / 66	Sax&Trumpet	2
Sax	14	68 / 64	Alto Sax	1
	15	68 / 65	Baritone Sax	1
	16	68 / 66	Bright Sax	2
Flute	17	69 / 64	Flute	1
Pan Flute	18	70 / 64	Pan Flute	1
	19	70 / 65	Afro Flute	2
	20	70 / 66	Pipe Lead 1	2
	21	70 / 67	Pipe Lead 2	2
Shaku	22	71 / 64	Shakuhachi	2

Bank 17: Ethnic

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Sitar	01	72 / 64	Sitar 1	1
	02	72 / 65	Sitar 2	2
Kalimba	03	73 / 64	Kalimba	1
Bagpipe	04	74 / 64	Bagpipe	1

Bank 18: Hit

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Synth Blip	01	76 / 64	MG Blip 1	1
	02	76 / 65	Rev.Blip	1
	03	76 / 66	MG Blip 2	1
	04	76 / 67	Syn.Perc	1
	05	76 / 68	Powa	1
	06	76 / 69	Douby	1
	07	76 / 70	P-Mod Perc	2
Chord Hit	08	77 / 64	Bam Hit	1
	09	77 / 65	Bit Hit	1
	10	77 / 66	Orch. Hit	1
	11	77 / 67	BF Hit	1
	12	77 / 68	Organ Hit	1
	13	77 / 69	Bim Hit	1
	14	77 / 70	Dist.Hit	1
	15	77 / 71	Brass Fall	1
	16	77 / 72	Strings Hit	2
	17	77 / 73	Space Frog	1
Human	18	78 / 64	Hoo!	1
	19	78 / 65	Ha!	1
	20	78 / 66	Afro Feet	2
	21	78 / 67	Breath 3	1
Scratch 1	22	79 / 64	Scratch Rwnd	1
	23	79 / 65	Scratch Push	1
	24	79 / 66	Scratch Pull	1
Scratch 2	25	80 / 64	Tape Rewind	1
	26	80 / 65	Vinyl Stop	1

Bank 19: SFX

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Spacy	01	81 / 64	Starship	2
	02	81 / 65	Burst Noise	2
	03	81 / 66	Laser-gun	1
Nature	04	82 / 64	Seashore	1
	05	82 / 65	Rain	1
	06	82 / 66	Thunder	1
	07	82 / 67	Wind	1
	08	82 / 68	Stream	2
	09	82 / 69	Bubble	2
Animal	10	83 / 64	Bird	2
	11	83 / 65	Low Bird	2
Tool	12	84 / 64	Telephone	1
	13	84 / 65	Gun Shot	1
	14	84 / 66	Machine-gun	1
Traffic	15	85 / 64	Car-Pass	1
	16	85 / 65	Car-Crash	2
	17	85 / 66	Siren	1
	18	85 / 67	Jetplane	2
	19	85 / 68	Helicopter	1
Human	20	86 / 64	Laughing	1
	21	86 / 65	Screaming	1
	22	86 / 66	Punch	1
	23	86 / 67	Heart Beat	1
	24	86 / 68	Applause	2

Bank 20: Drum Percussion

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Tom Tom	01	87 / 64	909 Tom	1
	02	87 / 65	Synth Tom	1
	03	87 / 66	808 Tom	1
	04	87 / 67	Elec. Tom	1
	05	87 / 68	Ac.Tom	2
	06	87 / 69	78 Tom	2
Bongo	07	88 / 64	Hi Bongo Mute	1
	08	88 / 65	Hi Bongo Open	1
	09	88 / 66	Lo Bongo Mute	1
	10	88 / 67	Lo Bongo Open	1
Conga	11	89 / 64	Hi Conga Slap	1
	12	89 / 65	Hi Conga Mute	1
	13	89 / 66	Hi Conga Open	1
	14	89 / 67	Hi Conga Mute	1
	15	89 / 68	Lo Conga Open	1
	16	89 / 70	808 Conga	1
Surdo	17	90 / 64	Mute Surdo	1
	18	90 / 65	Open Surdo	1
Pandeiro	19	91 / 64	Open Pandeiro	1
	20	91 / 65	Mute Pandeiro	1
Cuica	21	92 / 64	Mute Cuica	1
	22	91 / 65	Open Cuica	1
Timbale	23	93 / 64	Timbale	1
Tablabaya	24	94 / 64	Tablabaya	1
	25	94 / 65	Udo	1
Latin Kit	26	95 / 64	Latin Menu *1	1

Bank 21: Metal Percussion

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Tambourine	01	96 / 64	Jungle Tamb.	1
	02	96 / 65	Tambourine	1
	03	96 / 66	Hit Tamb.	1
	04	96 / 67	Shake Tamb.	1
	05	96 / 68	78 Tamb.	
Cowbell	06	97 / 64	Cowbell	1
	07	97 / 65	808 Cowbell	1
	08	97 / 66	78 Cowbell	1
Triangle	09	98 / 64	Mute Triangle	1
	10	98 / 65	Open Triangle	1
Agogo	11	99 / 64	Agogo	1
	12	99 / 65	78 Metal Beat	1
Bell	13	100 / 64	Jingle Bell	1
	14	100 / 65	Bell Tree	1
	15	100 / 66	Wind-chime	2

Bank 22: Other Percussion

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Maracas	01	101 / 64	Maracas	1
	02	101 / 65	808 Maracas	1
Cabasa	03	102 / 64	Cabasa Up	1
	04	102 / 65	Cabasa Down	1
Shaker	05	103 / 64	626 Shaker	1
Whistle	06	104 / 64	Short Whistle	1
	07	104 / 65	Long Whistle	1
Guiro	08	105 / 64	Short Guiro	1
	09	105 / 65	Long Guiro	1
	10	105 / 66	78 Guiro	1
Click	11	106 / 64	Click Noise	1
Rim Shot	12	107 / 64	909 Rim Shot	1
	13	107 / 65	808 Rim Shot	1
	14	107 / 66	Rim Shot	2
Hit Percussion	15	108 / 64	Hyoshigi	1
	16	108 / 65	Claves	1
	17	108 / 66	808 Claves	1
	18	108 / 67	Wood Block	1
Vibra-slap	19	109 / 64	Vibra-slap	1

Bank 23: Hi-Hat

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	110 / 64	Real CH 1	1
	02	110 / 65	Real PH 1	1
	03	110 / 66	Real OH 1	1
	04	110 / 67	Room CH	1
	05	110 / 68	Room OH	1
	06	110 / 69	Real CH 2	2
	07	110 / 70	Real PH 2	1
	08	110 / 71	Real OH 2	1
Electronic	09	111 / 64	808 CH	1
	10	111 / 65	808 OH	1
	11	111 / 66	78 CH	1
	12	111 / 67	78 OH	1
	13	111 / 68	707 CH	1
	14	111 / 69	707 OH	1
	15	111 / 70	606 CH	1
	16	111 / 71	909 CH 1	1
	17	111 / 72	909 CH 2	1
	18	111 / 73	909 OH	1
	19	111 / 74	909 Dist.OH	1

Bank 24: Cymbal

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Crash	01	112 / 64	909 Crash	1
	02	112 / 65	808 Cymbal	1
Ride	03	113 / 64	909 Ride Cym.	1
	04	113 / 65	Ride Cymbal	1
Bell	05	114 / 64	Ride Bell	1
Ethnic	06	115 / 64	Asian Gong	1
Reverse	07	116 / 64	Reverse Cymbal	1

Bank 25: Clap

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Single	01	117 / 64	808 Clap	1
	02	117 / 65	Finger Snap	1
	03	117 / 66	Hip Clap	2
Kit	04	118 / 64	Shake & Light Clap *2	1
	05	118 / 65	Rap & Real Clap *2	1
	06	118 / 66	909 & Hard Clap *2	1
	07	118 / 67	HC2 & 707 Clap *2	1

Bank 26: Snare Drum(single)

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	119 / 64	Funky Ghost	1
	02	119 / 65	Clap SD	2
	03	119 / 66	Fat SD	1
	04	119 / 67	Tight SD	1
Electronic	05	120 / 64	909 SD	2
	06	120 / 65	808 SD	1
	07	120 / 66	Elec. SD	1
	08	120 / 67	80809 SD	2
	09	120 / 68	Slap	1
	10	120 / 69	Blip SD	2

Bank 27: Snare Drum(Kit)

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Real	01	121 / 64	Rim SD Kit *2	1
	02	121 / 65	Jngl.SD Kit 1 *2	1
	03	121 / 66	Jngl.SD Kit 2 *2	1
	04	121 / 67	Mute SD Kit *2	1
	05	121 / 68	Funky SD Kit *2	1
	06	121 / 69	Rap SD Kit *2	1
	07	121 / 70	Dry SD Kit *2	1
Brush	08	122 / 64	Brush Tap *2	1
	09	122 / 65	Brush Slap *2	1
	10	122 / 66	Brush Swirl *2	1
Electronic	11	123 / 64	909 SD Kit *2	2
	12	123 / 65	808 SD Kit 1 *2	1
	13	123 / 66	Hyper SD Kit *2	1
	14	123 / 67	FX SD Kit *2	1
	15	123 / 68	808 SD Kit 2 *2	1
	16	123 / 69	606 SD Kit *2	2

Bank 28: Bass Drum(Single)

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Electronic	01	125 / 64	Blip BD	2
	02	125 / 65	Cave BD	1
	03	125 / 66	808 BD 1	2
	04	125 / 67	808 BD 2	2
	05	125 / 68	Elec.BD	2
	06	125 / 69	Afro Feet BD	2

Bank 29: Bass Drum(Kit)

Type	Tone No.	PC#/CC0#	Tone Name	Voice
Electronic	01	127 / 64	Dist.BD Kit *2	2
	02	127 / 65	Jngl.BD Kit *2	1
	03	127 / 66	909 BD Kit 1 *2	1
	04	127 / 67	909 BD Kit 2 *2	1
	05	127 / 68	909 BD Kit 3 *2	1
	06	127 / 69	Dry BD Kit *2	1
	07	127 / 70	606 BD Kit *2	1

Rhythm set list

The Mute column shows the PART button which is pressed to mute the specified rhythm instrument.

Note No.	Mute	TR909 Set 01 (PC#1)	TR808&Elec.Set 02 (PC#9)	CR78&TR606 Set 03 (PC#17)	Jazz Set 04 (PC#25)	Brush Set 05 (PC#26)	Jungle Set 06 (PC#33)
11	SD	909 SD 1	909 SD 1	909 SD 1	909 SD 1	909 SD 1	909 SD 1
C0 12	SD	808 SD 4	808 SD 4	808 SD 4	808 SD 4	808 SD 4	Bamboo Stk.
13	SD	Rim SD 1	808 SD 3	808 SD 3	Dry SD 1	Clp SD 1	Jungle SD 3
14	SD	Hyper SD 1	808 SD 5	808 SD 5	Jungle SD 1	Rim SD 1	Funky SD 1
15	SD	Hyper SD 2	Hyper SD 1	Hyper SD 1	Fat SD	Funky SD 1	Clp SD 1
16	CLP	Finger Snap	Finger Snap	Finger Snap	Finger Snap	Finger Snap	606 SD 2
17	BD	909 BD 1	909 BD 1	909 BD 1	909 BD 1	909 BD 1	909 BD 1
18	BD	Cave BD	Cave BD	Cave BD	Cave BD	Cave BD	Cave BD
19	BD	808 BD 1	Jungle 808 BD	Jungle 808 BD	808 BD 1	808 BD 1	Heart Beat
20	BD	909 BD 3	909 BD 4	909 BD 4	909 BD 3	909 BD 3	Dry BD 1
21	BD	Blip BD	Blip BD	Blip BD	Dry BD 3	Dry BD 3	Blip BD
22	BD	606 BD 3	Dry BD 2	Dry BD 2	606 BD 1	606 BD 2	Jungle BD 2
23	BD	909 BD 9	909 BD 8	606 BD 3	808 BD 2	606 BD 1	909 BD 7
C1 24	BD	909 BD 1	Elec.BD	606 BD 1	Dry BD 2	Dry BD 2	909 BD 9
25	TOM/PERC	Rim Shot	Rim Shot	Tiny Rim 3	909 Rim Shot	909 Rim Shot	Tiny Rim 4
26	SD	909 SD 3	Elec.SD 1	606 SD 3	Funky Ghost	Fat SD	Tamb.SD 1
27	CLP	Hip Clap 1	Rap Clap 1	HC2 Clap	Hip Clap 1	Real Clap	Rap Clap 2
28	SD	909 SD 1	Elec.SD 2	606 SD 1	Funky SD 2	Tight SD	Jungle SD 4
29	TOM/PERC	78 Lo Tom	Lo Synth Tom	808 Lo Tom	909 Lo Tom 3	909 Lo Tom 3	Lo BambooTom
30	HH	808 CH	Real CH 1	606 CH	Room CH	Real CH 1	808 CH
31	TOM/PERC	78 Mid Tom	Mid Synth Tom	808 Mid Tom	909 Mid Tom 3	909 Mid Tom 3	Mid BambooTom
32	HH	606 CH	707 OH	707 CH	Real PH 2	Real PH 1	707 CH
33	TOM/PERC	78 Hi Tom	Hi Synth Tom	808 Hi Tom	909 Hi Tom 3	909 Hi Tom 3	Hi BambooTom
34	HH	909 Dist.OH	Real OH 2	808 OH	Room OH	Real OH 2	707 OH
35	BD	909 BD 9	808 BD 1	606 BD 3	808 BD 2	808 BD 2	Jungle 808 BD
C2 36	BD	909 BD 1	808 BD 2	606 BD 1	Dry BD 2	Dry BD 2	Jungle BD 1
37	TOM/PERC	909 Rim Shot	808 Rim Shot	808 Rim Shot	Rim Shot	Rim Shot	Tiny Rim 2
38	SD	909 SD 2	808 SD 2	808 SD 1	Dry SD 1	Brush Tap	Jungle SD 2
39	CLP	909 Clap	808 Clap	808 Clap	Real Clap	Brush Slap	Hard Clap
40	SD	909 SD 1	808 SD 1	78 SD	Funky SD 1	Brush Swirl	Jungle SD 1
41	TOM/PERC	909 Lo Tom 1	808 Lo Tom 1	78 Lo Tom 1	Ac.Lo Tom 1	Ac.Lo Tom 1	909 Lo Tom 1
42	HH	909 CH	808 CH	78 CH	Real CH 1	Real CH 2	Real CH 1
43	TOM/PERC	909 Lo Tom 2	808 Lo Tom 2	78 Lo Tom 2	Ac.Lo Tom 2	Ac.Lo Tom 2	909 Lo Tom 2
44	HH	909 CH 2	808 CH	808 CH	Real PH 1	Real RH 2	Jungle Tamb
45	TOM/PERC	909 Mid Tom 1	808 Mid Tom 1	78 Mid Tom 1	Ac.Mid Tom 1	Ac.Mid Tom 1	909 Mid Tom 1
46	HH	909 OH	808 OH	78 OH	Real OH 1	Real OH 2	Room OH
47	TOM/PERC	909 Mid Tom 2	808 Mid Tom 2	78 Mid Tom 2	Ac.Mid Tom 2	Ac.Mid Tom 2	909 Mid Tom 2
C3 48	TOM/PERC	909 Hi Tom 1	808 Hi Tom 1	78 Hi Tom 1	Ac.Hi Tom 1	Ac.Hi Tom 1	909 Hi Tom 1
49	CYM	909 Crash 1	808 Cymbal 1	808 Cymbal 1	909 Crash 1	909 Crash 1	909 Crash 1
50	TOM/PERC	909 Hi Tom 2	808 Hi Tom 2	78 Hi Tom 2	Ac.Hi Tom 2	Ac.Hi Tom 2	909 Hi Tom 2
51	CYM	909 Ride	808 Cymbal 2	808 Cymbal 2	909 Ride	909 Ride	909 Ride
52	CYM	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal
53	CYM	Ride Bell	Ride Bell	Ride Bell	Ride Bell	Ride Bell	Asian Gong
54	CYM	Tambourine	78 Tamb.	78 Tamb.	Hit Tamb.	Tambourine	Hit Tamb.
55	CYM	909 Crash 2	909 Crash 2	909 Crash 2	Shake Tamb.	909 Crash	909 Crash
56	TOM/PERC	Cowbell	808 Cowbell	78 Cowbell	Cowbell	Cowbell	Cowbell
57	CYM	808 Cymbal 1	909 Crash 1	909 Crash 1	909 Crash 2	909 Crash 2	909 Crash 2
58	TOM/PERC	Vibraslap	Vibraslap	808 Cowbell	Vibraslap	Vibraslap	Vibraslap
59	CYM	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal
C4 60	TOM/PERC	Hi Bongo Open	Elec.Hi Bongo	Elec.Hi Bongo	Hi Bongo Open	Hi Bongo Open	Hi Bongo Open
61	TOM/PERC	Lo Bongo Open	Elec.Lo Bongo	Elec.Lo Bongo	Lo Bongo Open	Lo Bongo Open	Lo Bongo Open
62	TOM/PERC	Hi Conga Slap	808 Hi Conga	808 Hi Conga	Hi Conga Slap	Hi Conga Slap	Hi Conga Slap
63	TOM/PERC	Hi Conga Open	808 Mid Conga	808 Mid Conga	Hi Conga Open	Hi Conga Open	Hi Conga Open
64	TOM/PERC	Lo Conga Open	808 Lo Conga	808 Lo Conga	Lo Conga Open	Lo Conga Open	Lo Conga Open
65	TOM/PERC	Hi Timbales	Hi Timbales	Hi Timbales	Hi Timbale	Hi Timbale	Hi Timbale
66	TOM/PERC	Lo Timbales	Lo Timbales	Lo Timbales	Lo Timbale	Lo Timbale	Lo Timbale
67	TOM/PERC	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo
68	TOM/PERC	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo
69	TOM/PERC	Cabasa Up	Cabasa Up	Cabasa Up	Cabasa Down	Cabasa Up	Cabasa Down
70	TOM/PERC	Maracas	808 Maracas	808 Maracas	Cabasa Up	Maracas	Cabasa Up
71	TOM/PERC	Short Whistle	Short Whistle	Short Whistle	Short Whistle	Short Whistle	Short Whistle

Note No.	Mute	TR909 Set 01 (PC#1)	TR808&Elec.Set 02 (PC#9)	CR78&TR606 Set 03 (PC#17)	Jazz Set 04 (PC#25)	Brush Set 05 (PC#26)	Jungle Set 06 (PC#33)
C5 72	TOM/PERC	Long Whistle	Long Whistle	Long Whistle	Long Whistle	Long Whistle	Long Whistle
73	TOM/PERC	Short Guiro	78 Metal Beat	78 Metal Beat	Short Guiro	Short Guiro	Hi Hyoshigi
74	TOM/PERC	Long Guiro	78 Guiro	78 Guiro	Long Guiro	Long Guiro	Lo Hyoshigi
75	TOM/PERC	Claves	808 Claves	808 Claves	Claves	Claves	Claves
76	TOM/PERC	Hi Woodblock	Hi Woodblock	Hi Woodblock	Mute Pandeiro	Hi Woodblock	Mute Pandeiro
77	TOM/PERC	Lo Woodblock	Lo Woodblock	Lo Woodblock	Open Pandeiro	Lo Woodblock	Open Pandeiro
78	TOM/PERC	Mute Cuica	Mute Cuica	Mute Cuica	Mute Cuica	Mute Cuica	Tablabaya
79	TOM/PERC	Open Cuica	Open Cuica	Open Cuica	Open Cuica	Open Cuica	Udo
80	TOM/PERC	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle
81	TOM/PERC	Open Triangle	Open Triangle	Open Triangle	Open Triangle	Open Triangle	Open Triangle
82	TOM/PERC	626 Shaker	626 Shaker	626 Shaker	626 Shaker	626 Shaker	626 Shaker
83	HIT	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit
C6 84	HIT	Bam Hit	Bam Hit	Bam Hit	Bam Hit	Bam Hit	Bam Hit
85	HIT	Bim Hit	Bim Hit	Bim Hit	Bim Hit	Bim Hit	Bim Hit
86	HIT	Dist.Hit	Dist.Hit	Dist.Hit	Dist.Hit	Dist.Hit	Dist.Hit
87	HIT	Organ Hit	Organ Hit	Organ Hit	Organ Hit	Organ Hit	Organ Hit
88	HIT	Douby	Douby	Douby	Douby	Douby	Douby
89	HIT	Strings Hit	Strings Hit	Strings Hit	Strings Hit	Strings Hit	Strings Hit
90	HIT	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.
91	HIT	MG Blip 1	MG Blip 1	MG Blip 1	MG Blip	MG Blip	MG Blip
92	HIT	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip
93	HIT	Ha!	Ha!	Ha!	Ha!	Ha!	Ha!
94	HIT	Hoo!	Hoo!	Hoo!	Hoo!	Hoo!	Hoo!
95	OTHERS	Brass Fall	Brass Fall	Brass Fall	Brass Fall	Brass Fall	Brass Fall
C7 96	OTHERS	Scratch Push	Scratch Push	Scratch Push	Scratch Push	Scratch Push	Scratch Push
97	OTHERS	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull
98	OTHERS	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd
99	OTHERS	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind
100	OTHERS	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop
101	OTHERS	Laughing	Laughing	Laughing	Laughing	Laughing	Laughing
102	OTHERS	Screaming	Screaming	Screaming	Screaming	Screaming	Screaming
103	OTHERS	Car-Pass	Car-Pass	Car-Pass	Car-Pass	Car-Pass	Car-Pass
104	OTHERS	Car-Crash	Car-Crash	Car-Crash	Car-Crash	Car-Crash	Car-Crash
105	OTHERS	Helicopter	Helicopter	Helicopter	Helicopter	Helicopter	Helicopter
106	OTHERS	Jetplane	Jetplane	Jetplane	Jetplane	Jetplane	Jetplane
107	OTHERS	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun
C8 108	OTHERS	Burst Noise	Burst Noise	Burst Noise	Burst Noise	Burst Noise	Burst Noise
109	OTHERS	Starship	Starship	Starship	Starship	Starship	Starship
110	OTHERS	Analog FX	Analog FX	Analog FX	Analog FX	Analog FX	Analog FX
111	OTHERS	Bird	Bird	Bird	Bird	Bird	Bird
112	OTHERS	Bubble	Bubble	Bubble	Bubble	Bubble	Bubble
113	OTHERS	Wind	Wind	Wind	Wind	Wind	Wind
114	OTHERS	Stream	Stream	Stream	Stream	Stream	Stream
115	OTHERS	Sea Shore	Sea Shore	Sea Shore	Sea Shore	Sea Shore	Sea Shore
116	OTHERS	Thunder	Thunder	Thunder	Thunder	Thunder	Thunder
117	OTHERS	Applause	Applause	Applause	Applause	Applause	Applause
118	OTHERS	Explosion	Explosion	Explosion	Explosion	Explosion	Explosion
119							

Note No.	Mute	House Set 07 (PC#41)	Techno Set1 08 (PC#49)	Techno Set2 09 (PC#57)	Techno Set3 10 (PC#65)	Abstract Set 11 (PC#73)	HipHop Set 12 (PC#81)
11	SD	909 SD 1	909 SD 1	909 SD 1	909 SD 1	909 SD 1	909 SD 1
C0 12	SD	808 SD 4	808 SD 4	808 SD 4	808 SD 4	808 SD 4	808 SD 4
13	SD	Jungle SD 1	Funky SD 1	Rim SD 2	Funky SD 1	Hard SD 2	Dry SD 2
14	SD	Hyper SD 2	Hyper SD 1	Hard SD 1	Elec.SD	FX SD 2	Jungle SD 1
15	SD	Tiny SD	Tamb.SD 3	Bamboo SD	Hyper SD 3	Jungle SD 1	Clp SD 2
16	CLP	Finger Snap	Finger Snap	Finger Snap	Finger Snap	Finger Snap	Shake Clap
17	BD	909 BD 1	909 BD 1	909 BD 1	909 BD 1	909 BD 2	909 BD 1
18	BD	Cave BD	Cave BD	Cave BD	Cave BD	Cave BD 2	Cave BD
19	BD	808 BD 1	Jungle 808 BD	Jungle 808 BD	Jungle 808 BD	808 BD 1	808 BD 1
20	BD	Dry BD 1	909 BD 10	Dist.BD 3	909 BD 10	Dry BD 1	909 BD 2
21	BD	Blip BD	Blip BD	Blip BD	Blip BD	Blip BD 2	909 BD 7
22	BD	606 BD 3	606 BD 1	Jungle BD 2	606 BD 3	606 BD 1	606 BD 1
23	BD	909 BD 9	909 BD 9	909 BD 9	Dist.BD 3	909 BD 9	808 BD 2
C1 24	BD	909 BD 7	909 BD 8	909 BD 7	909 BD 5	909 BD 8	Dry BD 2
25	TOM/PERC	Rim Shot	Rim Shot	Rim Shot	Rim Shot	Rim Shot	909 Rim Shot
26	SD	Funky SD 1	909 SD 3	Hyper SD 3	Noise SD	Funky SD 1	Clp SD 1
27	CLP	Real Clap	HC2 Clap	707 Clap	909 Clap	Shake Clap	Hard Clap
28	SD	Rap SD	909 SD 1	Tamb SD 2	80809 SD	Dry SD 1	Funky SD 1
29	TOM/PERC	808 Lo Tom 1	Tablabaya	Lo Bim Hit	Lo Synth Tom	Ac.Lo Tom	909 Lo Tom
30	HH	808 CH	808 CH	808 CH	707 CH	Real CH 1	Room CH 1
31	TOM/PERC	808 Mid Tom 3	Lo Udo	Mid Bim Hit	Mid Synth Tom	Ac.Mid Tom 1	909 Mid Tom
32	HH	Real PH 1	Room CH 1	707 CH	Room CH	Room CH 1	Real CH 1
33	TOM/PERC	808 Hi Tom 3	Hi Udo	Hi Bim Hit	Hi Synth Tom	Ac.Hi Tom	909 Hi Tom
34	HH	808 OH	909 OH	Room OH	909 OH	Room OH	Room OH
35	BD	909 BD 6	Afro Feet Kick	Dist.BD 2	909 BD 7	606 BD 1	Dry BD 2
C2 36	BD	909 BD 3	909 BD 6	Dist.BD 1	909 BD 8	Cave BD	Dry BD 1
37	TOM/PERC	909 Rim Shot	808 Rim Shot	909 Rim Shot	Dust Rim Shot	808 Rim Shot	Rim Shot
38	SD	909 SD 3	909 SD 2	909 SD 3	Slap	78 SD	Rap SD
39	CLP	909 Clap	707Á@Clap	Hyper SD 2	808 Clap	Hyper SN 2	Hip Clap 1
40	SD	Clp SD 1	80809 SD	FX SD 1	Blip SD	MG Blip	Hard SD 1
41	TOM/PERC	909 Lo Tom 1	909 Lo Tom 1	Elec.Lo Tom 1	78 Lo Tom 1	78 Lo Tom 1	Ac.Lo Tom 1
42	HH	909 CH	707 CH	909 CH	808 CH	78 CH	Real CH 1
43	TOM/PERC	909 Lo Tom 2	909 Lo Tom 2	Elec.Lo Tom 2	78 Lo Tom 2	78 Lo Tom 2	Ac.Lo Tom 2
44	HH	909 CH 2	Real PH 1	Room CH	Real PH 1	808 CH	Real PH 1
45	TOM/PERC	909 Mid Tom 1	909 Mid Tom 1	Elec.Mid Tom 1	78 Mid Tom 1	78 Mid Tom 1	Ac.Mid Tom 1
46	HH	909 OH	707 OH	909 Dist.OH	808 OH	78 OH	Real OH 1
47	TOM/PERC	909 Mid Tom 2	909 Mid Tom 2	Elec.Mid Tom 2	78 Mid Tom 2	78 Mid Tom 2	Ac.Mid Tom 2
C3 48	TOM/PERC	909 Hi Tom 1	909 Hi Tom 1	Elec.Hi Tom 1	78 Hi Tom 1	78 Hi Tom 1	Ac.Hi Tom 1
49	CYM	909 Crash 1	909 Crash 1	909 Crash 1	909 Crash 1	808 Cymbal 1	909 Crash 1
50	TOM/PERC	909 Hi Tom 2	909 Hi Tom 2	Elec.Hi Tom 2	78 Hi Tom 2	78 Hi Tom 2	Ac.Hi Tom 1
51	CYM	909 Ride	909 Ride	909 Ride	909 Ride	909 Ride	909 Ride
52	CYM	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal	Rev.Cymbal
53	CYM	Ride Bell	Asian Gong	Asian Gong	Asian Gong	Asian Gong	Ride Bell
54	CYM	Tambourine	Tambourine	Tambourine	Tambourine	Tambourine	Hit Tamb.
55	CYM	909 Crash 2	909 Crash 2	909 Crash 2	909 Crash 2	909 Crash 2	Shake Tamb
56	TOM/PERC	808 Cowbell	808 Cowbell	808 Cowbell	808 Cowbell	808 Cowbell	808 Cowbell
57	CYM	808 Cymbal 1	808 Cymbal 1	909 Crash 3	808 Cymbal 1	909 Crash 1	909 Crash 3
58	TOM/PERC	Vibraslap	Vibraslap	Vibraslap	Dust Box	Vibraslap	Vibraslap
59	CYM	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal	Ride Cymbal
C4 60	TOM/PERC	Hi Bongo Open	Elec.Hi Bongo	Hi Bongo Open	Elec.Hi Bongo	Elec.Hi Bongo	Hi Bongo Open
61	TOM/PERC	Lo Bongo Open	Elec.Lo Bongo	Lo Bongo Open	Elec.Lo Bongo	Elec.Lo Bongo	Lo Bongo Open
62	TOM/PERC	Hi Conga Slap	808 Hi Conga	Hi Conga Slap	808 Hi Conga	808 Hi Conga	Hi Conga Slap
63	TOM/PERC	Hi Conga Open	808 Mid Conga	Hi Conga Open	808 Mid Conga	808 Mid Conga	Hi Conga Open
64	TOM/PERC	Lo Conga Open	808 Lo Conga	Lo Conga Open	808 Lo Conga	808 Lo Conga	Lo Conga Open
65	TOM/PERC	Hi Timbales	Hi Timbales	Hi Timbales	Hi Timbales	Hi Timbales	Hi Timbales
66	TOM/PERC	Lo Timbales	Lo Timbales	Lo Timbales	Lo Timbales	Lo Timbales	Lo Timbales
67	TOM/PERC	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo	Hi Agogo
68	TOM/PERC	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo	Lo Agogo
69	TOM/PERC	Cabasa Up	Cabasa Up	Cabasa Up	Cabasa Up	Cabasa Up	Cabasa Down
70	TOM/PERC	Cabasa Up	Maracas	Maracas	Maracas	Maracas	Cabasa Up
71	TOM/PERC	Short Whistle	Short Whistle	Short Whistle	Short Whistle	Short Whistle	Short Whistle

Note No.	Mute	House Set 07 (PC#41)	Techno Set1 08 (PC#49)	Techno Set2 09 (PC#57)	Techno Set3 10 (PC#65)	Abstract Set 11 (PC#73)	HipHop Set 12 (PC#81)
C5 72	TOM/PERC	Long Whistle	Long Whistle	Long Whistle	Long Whistle	Long Whistle	Long Whistle
73	TOM/PERC	Mute Surdo	78 Metal Beat	Short Guiro	78 Metal Beat	78 Metal Beat	Short Guiro
74	TOM/PERC	Open Surdo	78 Guiro	Long Guiro	78 Guiro	78 Guiro	Long Guiro
75	TOM/PERC	Claves	808 Claves	808 Claves	808 Claves	808 Claves	Claves
76	TOM/PERC	Mute Pandeiro	Hi Hyoshig	Hi Hyoshigi	Hi Hyoshigi	Hi Hyoshigi	Mute Pandeiro
77	TOM/PERC	Open Pandeiro	Lo Hyoshigi	Lo Hyoshigi	Lo Hyoshigi	Lo Hyoshigi	Open Pandeiro
78	TOM/PERC	Mute Cuica	Mute Cuica	Mute Cuica	Mute Cuica	Mute Cuica	Mute Cuica
79	TOM/PERC	Open Cuica	Open Cuica	Open Cuica	Open Cuica	Open Cuica	Open Cuica
80	TOM/PERC	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle	Mute Triangle
81	TOM/PERC	Open Triangle	Open Triangle	Open Triangle	Open Triangle	Open Triangle	Open Triangle
82	TOM/PERC	626 Shaker	626 Shaker	626 Shaker	626 Shaker	626 Shaker	626 Shaker
83	HIT	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit	Oche.Hit
C6 84	HIT	Bam Hit	Bam Hit	Bam Hit	Bam Hit	Bam Hit	Bam Hit
85	HIT	Bim Hit	Bim Hit	Bim Hit	Bim Hit	Bim Hit	Bim Hit
86	HIT	Dist Hit	Dist Hit	Dist Hit	Dist Hit	Dist Hit	Dist Hit
87	HIT	Organ Hit	Organ Hit	Organ Hit	Organ Hit	Organ Hit	Organ Hit
88	HIT	Douby	Douby	Douby	Douby	Douby	Douby
89	HIT	Strings Hit	Strings Hit	Strings Hit	Strings Hit	Strings Hit	Strings Hit
90	HIT	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.	Syn.Perc.
91	HIT	MG Blip	MG Blip	MG Blip	MG Blip	MG Blip	MG Blip
92	HIT	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip	Rev.Blip
93	HIT	Ha!	Ha!	Ha!	Ha!	Ha!	Ha!
94	HIT	Hoo!	Hoo!	Hoo!	Hoo!	Hoo!	Hoo!
95	OTHERS	Brass Fall	Brass Fall	Brass Fall	Brass Fall	Brass Fall	Brass Fall
C7 96	OTHERS	Scratch Push	Scratch Push	Scratch Push	Scratch Push	Scratch Push	Scratch Push
97	OTHERS	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull	Scratch Pull
98	OTHERS	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd	Scratch Rwnd
99	OTHERS	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind	Tape Rewind
100	OTHERS	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop	Vinyl Stop
101	OTHERS	Laughing	Laughing	Laughing	Laughing	Laughing	Laughing
102	OTHERS	Screaming	Screaming	Screaming	Screaming	Screaming	Screaming
103	OTHERS	Car-Pass	Car-Pass	Car-Pass	Car-Pass	Car-Pass	Car-Pass
104	OTHERS	Car-Crash	Car-Crash	Car-Crash	Car-Crash	Car-Crash	Car-Crash
105	OTHERS	Helicopter	Helicopter	Helicopter	Helicopter	Helicopter	Helicopter
106	OTHERS	Jetplane	Jetplane	Jetplane	Jetplane	Jetplane	Jetplane
107	OTHERS	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun	Laser-Gun
C8 108	OTHERS	Burst Noise	Burst Noise	Burst Noise	Burst Noise	Burst Noise	Burst Noise
109	OTHERS	Starship	Starship	Starship	Starship	Starship	Starship
110	OTHERS	Analog FX	Analog FX	Analog FX	Analog FX	Analog FX	Analog FX
111	OTHERS	Bird	Bird	Bird	Bird	Bird	Bird
112	OTHERS	Bubble	Bubble	Bubble	Bubble	Bubble	Bubble
113	OTHERS	Wind	Wind	Wind	Wind	Wind	Wind
114	OTHERS	Stream	Stream	Stream	Stream	Stream	Stream
115	OTHERS	Sea Shore	Sea Shore	Sea Shore	Sea Shore	Sea Shore	Sea Shore
116	OTHERS	Thunder	Thunder	Thunder	Thunder	Thunder	Thunder
117	OTHERS	Applause	Applause	Applause	Applause	Applause	Applause
118	OTHERS	Explosion	Explosion	Explosion	Explosion	Explosion	Explosion
119							

Preset pattern list

No.	Tempo(BPM)	Measures	Name	Auther
A-01	147.0	8	Goa Trance Pattern 1	MASA
A-02	142.0	4	Goa Trance Pattern 2	MASA
A-03	142.0	4	Goa Trance Pattern 3	MASA
A-04	142.0	4	Goa Trance Pattern 4	MASA
A-05	142.0	4	Goa Trance Pattern 5	MASA
A-06	142.0	8	Goa Trance Pattern 6	MASA
A-07	142.0	4	Goa Trance Pattern 7	MASA
A-08	136.0	4	Goa Trance Pattern 8	MASA
A-09	160.0	4	Goa Trance Pattern 9	MASA
A-10	145.0	8	Goa Trance Pattern 10	MASA
A-11	146.0	4	Goa Trance Pattern 11	MASA
A-12	143.0	4	Goa Trance Pattern 12	MASA
A-13	141.0	4	Goa Trance Pattern 13	MASA
A-14	142.0	8	Goa Trance Pattern 14	MASA
A-15	149.0	4	Goa Trance Pattern 15	MASA
A-16	147.0	4	Goa Trance Pattern 16	MASA
A-17	154.0	8	Goa Trance Pattern 17	MASA
A-18	140.0	8	Goa Trance Pattern 18	MASA
A-19	139.0	8	Goa Trance Pattern 19	MASA
A-20	131.0	4	Goa Trance Pattern 20	MASA
A-21	140.0	8	Goa Trance Pattern 21	MASA
A-22	135.0	8	Goa Trance Pattern 22	MASA
A-23	142.0	8	Goa Trance Break Pattern 1	MASA
A-24	142.0	4	Goa Trance Break Pattern 2	MASA
A-25	142.0	8	Goa Trance Break Pattern 3	MASA
A-26	142.0	8	Goa Trance Break Pattern 4	MASA
A-27	140.0	8	Goa Trance Break Pattern 5	MASA
A-28	136.0	4	Goa Trance Break Pattern 6	MASA
A-29	145.0	4	Trance Pattern 1	Ryeland Alison
A-30	145.0	4	Trance Pattern 2	Ryeland Alison
A-31	160.0	8	Trance Pattern 3	Ryeland Alison
A-32	140.0	8	Trance Pattern 4	Ryeland Alison
A-33	140.0	8	Trance Pattern 5	Ryeland Alison
A-34	145.0	8	Trance Pattern 6	Ryeland Alison
A-35	140.0	8	Trance Pattern 7	Ryeland Alison
A-36	140.0	4	Trance Pattern 8	Ryeland Alison
A-37	140.0	8	Trance Pattern 9	Ryeland Alison
A-38	135.0	4	Trance Pattern 10	Ryeland Alison
A-39	150.0	8	Trance Pattern 11	Ryeland Alison
A-40	128.0	4	Trance Pattern 12	Sagawa
A-41	150.0	8	Trance Pattern 13	GigBag
A-42	144.0	8	Trance Pattern 14	GigBag
A-43	147.0	8	Trance Pattern 15	GigBag
A-44	168.0	8	Trance Pattern 16	GigBag
A-45	185.0	8	Trance Pattern 17	GigBag
A-46	160.0	4	Trance Break Pattern 1	Ryeland Alison
A-47	140.0	4	Trance Break Pattern 2	Ryeland Alison
A-48	145.0	4	Trance Break Pattern 3	Ryeland Alison
A-49	135.0	4	Trance Break Pattern 4	Ryeland Alison
A-50	140.0	4	Trance Break Pattern 5	Ryeland Alison

No.	Tempo(BPM)	Measures	Name	Auther
B-01	119.0	8	Techno Pattern 1	GigBag
B-02	141.0	8	Techno Pattern 2	GigBag
B-03	131.0	8	Techno Pattern 3	GigBag/Terra
B-04	130.0	8	Techno Pattern 4	GigBag
B-05	153.0	8	Techno Pattern 5	GigBag
B-06	131.0	8	Techno Pattern 6	GigBag/Terra
B-07	122.0	8	Techno Pattern 7	GigBag
B-08	115.0	8	Techno Pattern 8	GigBag
B-09	120.0	8	House Pattern 1	GigBag
B-10	133.0	8	House Pattern 2	GigBag/Terra
B-11	130.0	4	House Pattern 3	GigBag
B-12	121.0	4	House Pattern 4	MASA
B-13	121.0	4	House Pattern 5	MASA
B-14	123.0	4	House Pattern 6	MASA
B-15	142.0	4	House Pattern 7	MASA
B-16	128.0	4	House Pattern 8	MASA
B-17	128.0	4	House Pattern 9	MASA
B-18	121.0	4	House Pattern 10	MASA
B-19	123.0	4	House Pattern 11	MASA
B-20	120.0	4	House Pattern 12	MASA
B-21	122.0	4	House Pattern 13	MASA
B-22	122.0	4	House Pattern 14	MASA
B-23	119.0	4	House Pattern 15	MASA
B-24	122.0	4	House Pattern 16	MASA
B-25	122.0	4	House Pattern 17	MASA
B-26	121.0	4	House Pattern 18	MASA
B-27	121.0	8	House Pattern 19	MASA
B-28	121.0	8	House Pattern 20	MASA
B-29	128.0	8	House Break Pattern 1	MASA
B-30	128.0	8	House Break Pattern 2	MASA
B-31	80.0	8	Hip Hop Pattern 1	GigBag
B-32	91.0	4	Hip Hop Pattern 2	GigBag
B-33	99.0	8	Hip Hop Pattern 3	GigBag
B-34	94.0	4	Hip Hop Pattern 4	GigBag/Shige
B-35	120.0	4	Hip Hop Pattern 5	Sagawa
B-36	120.0	4	Hip Hop Pattern 6	Sagawa
B-37	130.0	8	Jazz Funk Pattern 1	GigBag/Terra
B-38	108.0	8	Jazz Funk Pattern 2	GigBag
B-39	109.0	8	Jazz Funk Pattern 3	GigBag
B-40	108.0	8	Jazz Funk Pattern 4	GigBag
B-41	101.0	8	Jazz Funk Pattern 5	GigBag
B-42	116.0	8	Jazz Funk Pattern 6	GigBag/Terra
B-43	175.0	4	Jungle Pattern 1	Ryeland Alison
B-44	165.0	4	Jungle Pattern 2	Ryeland Alison
B-45	180.0	8	Jungle Pattern 3	Ryeland Alison
B-46	180.0	4	Jungle Pattern 4	Ryeland Alison
B-47	180.0	4	Jungle Pattern 5	Ryeland Alison
B-48	180.0	4	Jungle Pattern 6	Ryeland Alison
B-49	180.0	4	Jungle Pattern 7	Ryeland Alison
B-50	175.0	4	Jungle Pattern 8	Ryeland Alison

No.	Tempo(BPM)	Measures	Name	Auther
C-01	185.0	4	Jungle Pattern 9	Ryeland Alison
C-02	190.0	8	Jungle Pattern 10	Ryeland Alison
C-03	164.0	8	Jungle Pattern 11	MASA
C-04	168.0	8	Jungle Pattern 12	MASA
C-05	158.0	8	Jungle Pattern 13	MASA
C-06	168.0	8	Jungle Pattern 14	GigBag
C-07	176.0	8	Jungle Pattern 15	MASA
C-08	158.0	8	Jungle Pattern 16	MASA
C-09	158.0	8	Jungle Pattern 17	MASA
C-10	158.0	16	Jungle Pattern 18	MASA
C-11	181.0	8	Jungle Pattern 19	Sagawa
C-12	165.0	4	Jungle Break Pattern 1	Ryeland Alison
C-13	158.0	4	Jungle Break Pattern 2	MASA
C-14	175.0	4	Jungle Break Pattern 3	Ryeland Alison
C-15	175.0	4	Jungle Break Pattern 4	Ryeland Alison
C-16	175.0	4	Jungle Break Pattern 5	Ryeland Alison
C-17	165.0	4	Jungle Break Pattern 6	Ryeland Alison
C-18	158.0	4	Jungle Break Pattern 7	MASA
C-19	95.0	4	Trip Hop Pattern 1	Ryeland Alison
C-20	80.0	4	Trip Hop Pattern 2	Ryeland Alison
C-21	67.0	8	Trip Hop Pattern 3	Ryeland Alison
C-22	90.0	4	Trip Hop Pattern 4	Ryeland Alison
C-23	85.0	4	Trip Hop Pattern 5	Ryeland Alison
C-24	80.0	8	Trip Hop Pattern 6	Ryeland Alison
C-25	100.0	8	Trip Hop Pattern 7	Ryeland Alison
C-26	65.0	4	Trip Hop Pattern 8	Ryeland Alison
C-27	100.0	4	Trip Hop Pattern 9	Ryeland Alison
C-28	80.0	8	Trip Hop Pattern 10	Ryeland Alison
C-29	70.0	4	Trip Hop Break Pattern 1	Ryeland Alison
C-30	90.0	2	Trip Hop Break Pattern 2	Ryeland Alison
C-31	72.0	4	Trip Hop Break Pattern 3	Ryeland Alison
C-32	92.0	4	Salsa Pattern	GigBag
C-33	124.0	8	Samba Pattern	GigBag/Terra

No.	Category	Type	Measures
E-01	Goa Trance	Drums Pattern	2
E-02	Goa Trance	Sound Effects	2
E-03	Goa Trance	Shaker	2
E-04	Goa Trance	Taiko	2
E-05	Goa Trance	Sound Effects	2
E-06	Goa Trance	Drums Pattern	2
E-07	Goa Trance	Drums Pattern	2
E-08	Goa Trance	Drums Pattern	2
E-09	Goa Trance	Ostinato	2
E-10	Goa Trance	Drums Pattern	2
E-11	Goa Trance	Bass Line	2
E-12	Goa Trance	Sound Effects	2
E-13	Goa Trance	Drums Pattern	2
E-14	Goa Trance	Drums Fill in	1
E-15	Goa Trance	Drums Fill in	2
E-16	Goa Trance	Drums Pattern	2
E-17	Goa Trance	Cymbal Pattern	4
E-18	Goa Trance	Voice	1
E-19	Goa Trance	Drums Fill in	2
E-20	Goa Trance	Drums Pattern	2
E-21	Goa Trance	Phrase	2
E-22	Goa Trance	Bass Line	2
E-23	Hip Hop	Bass Line	4
E-24	Hip Hop	EP Chords	4
E-25	Hip Hop	Sound Effects	4
E-26	Hip Hop	Drums Pattern	4
E-27	Hip Hop	Drums Fill in	4
E-28	House	Drums Fill in	1
E-29	House	Drums Pattern	2
E-30	House	Bass Line	2
E-31	House	Drums Fill in	1
E-32	House	Drums Pattern	2
E-33	House	Tambourin Pattern	2
E-34	House	Clavi Pattern	2
E-35	House	Bass Line	2
E-36	House	Drums Fill in	1
E-37	House	Drums Pattern	2
E-38	House	Clarinet Riff	2
E-39	House	Horn Kick	2
E-40	House	Horn Kick	2
E-41	House	Bass Line	4
E-42	House	Drums Pattern	2
E-43	House	Riff	1
E-44	House	Clavi Phrase	2
E-45	House	Bass Line	2
E-46	House	Drums Fill in	1
E-47	House	Drums Pattern	2
E-48	House	Hit	2
E-49	House	Hit	2
E-50	House	Piano Riff	2

No.	Category	Type	Measures
F-01	House	Piano Riff	2
F-02	House	Drums Pattern	2
F-03	House	Hit	2
F-04	House	Horn Kick	1
F-05	House	Horn Kick	1
F-06	House	Bass Line	2
F-07	House	Drums Pattern	2
F-08	House	Snare Roll	8
F-09	House	Horn Kick	1
F-10	House	Bass Line	2
F-11	House	Riff	1
F-12	House	Riff	1
F-13	House	Bass Line	2
F-14	House	Bass Line	2
F-15	House	Bass Line	2
F-16	House	Drums Pattern	2
F-17	House	Bass Line	2
F-18	House	Line	2
F-19	House	EP Chords	4
F-20	House	Perc Pattern	2
F-21	House	Drums Fill in	1
F-22	House	Drums Pattern	2
F-23	House	Bass Line	2
F-24	House	EP Line	4
F-25	House	Drums Pattern	2
F-26	House	Drums Fill in	2
F-27	House	Clavi Line	2
F-28	House	El Drums Fill in	1
F-29	House	Drums Pattern	2
F-30	House	Drums Pattern	4
F-31	House	Guitar Strum	4
F-32	House	Bass Line	2
F-33	House	EP Chords	2
F-34	House	Bass Line	2
F-35	House	Piano Chords	2
F-36	House	Synth Line	2
F-37	House	Tambourin Pattern	1
F-38	House	Drums Pattern	4
F-39	House	EP Chords	2
F-40	House	EP Chords	2
F-41	House	Bass Line	2
F-42	House	Horn Kick	1
F-43	House	Drums Pattern	2
F-44	House	Drums Fill in	1
F-45	Jungle	Synth Riff	2
F-46	Jungle	Drums Fill in	1
F-47	Jungle	Synth Riff	4
F-48	Jungle	Snare Roll	1
F-49	Jungle	Synth Riff	2
F-50	Jungle	Drums Fill in	2

No.	Category	Type	Measures
G-01	Jungle	Drums Pattern	4
G-02	Jungle	Drums Fill in	4
G-03	Jungle	Drums Fill in	4
G-04	Jungle	Drums Pattern	4
G-05	Jungle	Drums Pattern	4
G-06	Jungle	Pizz Riff	2
G-07	Jungle	Drums Pattern	4
G-08	Jungle	Drums Pattern	4
G-09	Jungle	Snare Roll	1
G-10	Jungle	Drums Fill in	1
G-11	Jungle	Sound Effects	1
G-12	Jungle	Hit	1
G-13	Jungle	Drums Pattern	2
G-14	Jungle	Oboe Riff	2
G-15	Jungle	Thunder Hit	1
G-16	Jungle	Drums Fill in	2
G-17	Jungle	Bass Line	2
G-18	Jungle	SE	2
G-19	Jungle	SE	2
G-20	Jungle	Drums Pattern	1
G-21	Jungle	Drums Pattern	1
G-22	Jungle	Snare Roll	1
G-23	Jungle	Drums Pattern	4
G-24	Jungle	Snare	4
G-25	Jungle	Drums Pattern	2
G-26	jungle	Drums Fill in	2
G-27	Jungle	Tabla	2
G-28	Jungle	SE	1
G-29	Jungle	Tom Echo	2
G-30	Jungle	Bass Line	1
G-31	Jungle	Bass Line	2
G-32	Jungle	Melody Line	2
G-33	Jungle	Organ Chord	2
G-34	Jungle	Horn Kicks	2
G-35	Jungle	Drums Pattern	2
G-36	Jungle	Drums Fill in	2
G-37	Jungle	Drums Pattern	8
G-38	Jungle	Synth Line	4
G-39	Jungle	Cymbal	2
G-40	Jungle	Drums Pattern	2
G-41	Jungle	Drums Fill in	2
G-42	Salsa	Bass Line	4
G-43	Salsa	Montuno	2
G-44	Salsa	Horn Kick	1
G-45	Salsa	Horn Kick	1
G-46	Salsa	Flute Riff	1
G-47	Salsa	Maracas	2
G-48	Salsa	Perc Pattern	2
G-49	Trip Hop	Drums Fill in	1
G-50	Trip Hop	SE	2

No.	Category	Type	Measures
H-01	Trip Hop	Screem	1
H-02	Trip Hop	Wah Wah Guit	2
H-03	Trip Hop	Drums Pattern	2
H-04	Trip Hop	Perc Fill in	2
H-05	Trip Hop	BD Pattern	4
H-06	Trip Hop	EP Phrase	1
H-07	Trip Hop	Sound Effects	1
H-08	Trip Hop	Drums Pattern	2
H-09	Trip Hop	Perc Fill in	1
H-10	Trip Hop	Wah Wah Guit	2
H-11	Trip Hop	Drums Fill in	2
H-12	Trip Hop	Bass Line	2
H-13	Trip Hop	Drums Pattern	2
H-14	Trip Hop	Drums Fill in	1
H-15	Trip Hop	Disc Noise	8
H-16	Trip Hop	Drums Pattern	4
H-17	Trip Hop	Scratch	1
H-18	Trip Hop	Drums Pattern	2
H-19	Trip Hop	Perc Pattern	2
H-20	Trip Hop	Drums Fill in	2
H-21	Trip Hop	Drums Pattern	2
H-22	Trip Hop	Drums Fill in	1
H-23	Trip Hop	Drums Fill in	1
H-24	Trip Hop	Drums Pattern	2
H-25	Trip Hop	Drums Pattern	2
H-26	Trip Hop	Drums Fill in	2
H-27	Trip Hop	Drums Pattern	2
H-28	Trip Hop	Drums Fill in	1
H-29	Trip Hop	Ostinato	2
H-30	Trip Hop	Bass Line	2
H-31	Trip Hop	Drums Pattern	2
H-32	Trip Hop	Drums Fill in	1
H-33	Trip Hop	Sound Effects	2
H-34	Trip Hop	Bass Line	2
H-35	Trip Hop	Drums Pattern	2
H-36	Trip Hop	Bass Line	2
H-37	Trip Hop	Perc Pattern	2
H-38	Trip Hop	Synth chord	2
H-39	Trip Hop	Drums Pattern	4
H-40	Trip Hop	Synth Riff	2
H-41	Trip Hop	Drums Pattern	2
H-42	Trip Hop	Perc Fill in	2
H-43	Trip Hop	Bass Line	2
H-44	Trip Hop	Drums Pattern	2
H-45	Trip Hop	Drums Pattern	2
H-46	Trip Hop	Bass Line /Pitch	2
H-47	Trip Hop	Sound Effects /Porta	2
H-48	Trip Hop	Riff	2
H-49	Trip Hop	Drums Pattern	2
H-50	Trip Hop	Tom Roll	1

No.	Category	Type	Measures
i-01	Trip Hop	Bass Line	2
i-02	Trip Hop	Drums Pattern	2
i-03	Trip Hop	Drums Pattern	2
i-04	Trip Hop	Sound Effects	2
i-05	Trip Hop	Sound Effects	1
i-06	Trip Hop	Sound Effects	2
i-07	Trip Hop	Drums Fill in	2
i-08	Trip Hop	Drums Pattern	2
i-09	Trip Hop	Sound Effects	2
i-10	Trip Hop	Punch	2
i-11	Trip Hop	Sound Effects	2

Arpeggio style list

Style	Motif	Beat Pattern	Accent Rate	Shuffle Rate
1/4	all	1/4	0–100%	50–90%
1/6	all	1/6	0–100%	50–90%
1/8	all	1/8	0–100%	50–90%
1/12	all	1/12	0–100%	50–90%
1/16	all	1/16 1–3	0–100%	50–90%
1/32	all (*1)	1/32 1–3	0–100%	50–90%
PORTAMENTO	all	PORTA 1–11	0–100%	50–90%
GLISSANDO	GLISSANDO	1/16 1–3, 1/32 1–3	0–100%	50–90%
SEQUENCE A	all	SEQ-A 1–7	0–100%	50–90%
SEQUENCE B	all	SEQ-B 1–4	0–100%	50–90%
SEQUENCE C	all (*1)	SEQ-C 1–2	0–100%	50–90%
ECHO	*2	ECHO 1–3	0–100%	50–90%
SYNTH BASS	BASS+UP 2	SEQ-A 1, SEQ-C 1	0–100%	50–90%
HEAVY SLAP	BASS+UP 5, TOP+UP 5	MUTE 2, 3	0–100%	50–90%
LIGHT SLAP	BASS+UP 5, TOP+UP 5	MUTE 2, 3	0–100%	50–90%
WALK BASS	SINGLE, DUAL, NOTE ORDER	WALKBS, REF1	0–100%	50–90%
RHYTHM GTR 1	all (*1)	MUTE 1,4	0–100%	50–90%
RHYTHM GTR 2	CHORD	MUTE 7, 13, 14	0–100%	50–90%
RHYTHM GTR 3	CHORD	MUTE 8, 12, 15	0–100%	50–90%
RHYTHM GTR 4	CHORD	MUTE 9, 10, 11, 16	0–100%	50–90%
RHYTHM GTR 5	SINGLE UP, SINGLE DOWN	STRUM 1–6	0–100%	50–90%
3 FINGER	BASS+UP+TOP	SEQ-A7	0–100%	50–90%
STRUMMING GTR	SINGLE UP, SINGLE DOWN	STRUM 7, 8	0–100%	50–90%
PIANO BACKING	CHORD	MUTE 12, REF2	0–100%	50–90%
CLAVI CHORD	*3	MUTE 05, 06	0–100%	50–90%
WALTZ	*4	1/6, 1/12	0–100%	50–90%
SWING WALTZ	*4	1/16 1–3	0–100%	50–90%
REGGAE	CHORD	REGGAE 1, 2	0–100%	50–90%
PERCUSSION	CHORD	PERC1–4	0–100%	50–90%
HARP	*5	HARP	0–100%	50–90%
SHAMISEN	TOP+UP 4–6	SEQ-A 2	0–100%	50–90%
BOUND BALL	*6	BOUND	0–100%	50–90%
RANDOM	*7	1/4 –1/32 3, RANDOM	0–100%	50–90%
LIMITLESS	all	all	0–100%	50–90%

all: All values can be specified

*1: Except for CHORD and BASS+CHORD 1–5

*2: SINGLE UP, SINGLE DOWN, SINGLE UP&DOWN, SINGLE RANDOM, DUAL UP, DUAL DOWN, DUAL UP&DOWN, DUAL RANDOM, NOTE ORDER

*3: BASS+CHORD 4, BASS+CHORD 5

*4: BASS+CHORD 2, BASS+UP 2, BASS+RANDOM 2, TOP+UP 2

*5: SINGLE UP, SINGLE DOWN, SINGLE UP&DOWN, GLISSANDO

*6: SINGLE, DUAL, NOTE ORDER, GLISSANDO

*7: SINGLE RANDOM, DUAL RANDOM, BASS+RANDOM 1–3

Groove quantize template list

When using Groove Quantize, please be aware of the following points to achieve the maximum effect.

- Groove Quantize is effective when used on the rhythm instruments and bass which create the groove of the song. When using it on other instruments, decrease the effect.
- These templates are for 4/4 time. Using them for other time signatures may not produce the desired effect.
- The musical genres listed for each template are only guidelines. Try them with other types of music as well.
- If there are inaccuracies in timing, the desired effect may not be obtained. In this case, apply Grid Quantize to correct the inaccuracies before applying Groove Quantize.
- These templates were created with a tempo of 120–140 in mind. When using them with a faster tempo, set Strength to 100%. When using them with a slower tempo, set Strength to less than 100%.
- When using a template that produces a "swing" feel, adjust the degree of the effect as appropriate for the tempo of the play-back data. For example, you would use a deeper setting for a jazz song with a slow tempo, and a lighter setting for a song with a fast tempo. For a fast dance-type song, a deeper setting will produce a "bouncy" feel.

Template			Effect
1	:	16beat Normal Dance Light Accent	dance with light accenting
2	:	16beat Normal Dance Hard Accent	dance with hard accenting
3	:	16beat Normal Dance Light Swing	dance with light swing
4	:	16beat Normal Dance Hard Swing	dance with hard swing
5	:	16beat Heavy Dance Light Accent	dance with light accenting, behind the beat
6	:	16beat Heavy Dance Hard Accent	dance with hard accenting, behind the beat
7	:	16beat Heavy Dance Light Swing	dance with light swing, behind the beat
8	:	16beat Heavy Dance Hard Swing	dance with hard swing, behind the beat
9	:	16beat Pushed Dance Light Accent	dance with light accenting, pushing the beat
10	:	16beat Pushed Dance Hard Accent	dance with hard accenting, pushing the beat
11	:	16beat Pushed Dance Light Swing	dance with light swing, pushing the beat
12	:	16beat Pushed Dance Hard Swing	dance with hard swing, pushing the beat
13	:	16beat Normal Fusion Light Accent	fusion with light accenting
14	:	16beat Normal Fusion Hard Accent	fusion with hard accenting
15	:	16beat Normal Fusion Light Swing	fusion with light swing
16	:	16beat Normal Fusion Hard Swing	fusion with hard swing
17	:	16beat Heavy Fusion Light Accent	fusion with light accenting, behind the beat
18	:	16beat Heavy Fusion Hard Accent	fusion with hard accenting, behind the beat
19	:	16beat Heavy Fusion Light Swing	fusion with light swing, behind the beat
20	:	16beat Heavy Fusion Hard Swing	fusion with hard swing, behind the beat
21	:	16beat Pushed Fusion Light Accent	fusion with light accenting, pushing the beat
22	:	16beat Pushed Fusion Hard Accent	fusion with hard accenting, pushing the beat
23	:	16beat Pushed Fusion Light Swing	fusion with light swing, pushing the beat
24	:	16beat Pushed Fusion Hard Swing	fusion with hard swing, pushing the beat
25	:	16beat Normal Reggae Light Accent	reggae with light accenting
26	:	16beat Normal Reggae Hard Accent	reggae with hard accenting
27	:	16beat Normal Reggae Light Swing	reggae with light swing
28	:	16beat Normal Reggae Hard Swing	reggae with hard swing
29	:	16beat Heavy Reggae Light Accent	reggae with light accenting, behind the beat
30	:	16beat Heavy Reggae Hard Accent	reggae with hard accenting, behind the beat
31	:	16beat Heavy Reggae Light Swing	reggae with light swing, behind the beat
32	:	16beat Heavy Reggae Hard Swing	reggae with hard swing, behind the beat
33	:	16beat Pushed Reggae Light Accent	reggae with light accenting, pushing the beat
34	:	16beat Pushed Reggae Hard Accent	reggae with hard accenting, pushing the beat
35	:	16beat Pushed Reggae Light Swing	reggae with light swing, pushing the beat
36	:	16beat Pushed Reggae Hard Swing	reggae with hard swing, pushing the beat

37	16beat Normal Pops Light Accent	pops with light accenting
38	16beat Normal Pops Hard Accent	pops with hard accenting
39	16beat Normal Pops Light Swing	pops with light swing
40	16beat Normal Pops Hard Swing	pops with hard swing
41	16beat Heavy Pops Light Accent	pops with light accenting, behind the beat
42	16beat Heavy Pops Hard Accent	pops with hard accenting, behind the beat
43	16beat Heavy Pops Light Swing	pops with light swing, behind the beat
44	16beat Heavy Pops Hard Swing	pops with hard swing, behind the beat
45	16beat Pushed Pops Light Accent	pops with light accenting, pushing the beat
46	16beat Pushed Pops Hard Accent	pops with hard accenting, pushing the beat
47	16beat Pushed Pops Light Swing	pops with light swing, pushing the beat
48	16beat Pushed Pops Hard Swing	pops with hard swing, pushing the beat
49	16beat Normal Rhumba Light Accent	rhumba with light accenting
50	16beat Normal Rhumba Hard Accent	rhumba with hard accenting
51	16beat Normal Rhumba Light Swing	rhumba with light swing
52	16beat Normal Rhumba Hard Swing	rhumba with hard swing
53	16beat Heavy Rhumba Light Accent	rhumba with light accenting, behind the beat
54	16beat Heavy Rhumba Hard Accent	rhumba with hard accenting, behind the beat
55	16beat Heavy Rhumba Light Swing	rhumba with light swing, behind the beat
56	16beat Heavy Rhumba Hard Swing	rhumba with hard swing, behind the beat
57	16beat Pushed Rhumba Light Accent	rhumba with light accenting, pushing the beat
58	16beat Pushed Rhumba Hard Accent	rhumba with hard accenting, pushing the beat
59	16beat Pushed Rhumba Light Swing	rhumba with light swing, pushing the beat
60	16beat Pushed Rhumba Hard Swing	rhumba with hard swing, pushing the beat
61	Samba 1(Pandero etc)	samba (for Pandero etc.)
62	Samba 2(Surdo/Timba)	samba (for Surdo/Timba)
63	Axe 1(Caixa)	axe (for Caixa)
64	Axe 2(Surdo)	axe (for Surdo)
65	Salsa 1(Cascala)	salsa (for Cascala)
66	Salsa 2(Conga)	salsa (for Conga)
67	Triplets	triplets
68	Quituplets	quintuplets
69	Sextuplets	sextuplets
70	7 against 2 QuaterNo	seven against two beats
71	Lagging Triplets	lagging triplets

MIDI implementation

Model: MC-303 (Groove Box)
Date: Mar. 25. 1996
Version: 1.00

Section 1. Receive data

■ Channel Voice Messages

● Note off

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

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

- For Rhythm Parts, these messages are received when Rx.NOTE OFF = ON for each Instrument.
- The velocity values of Note Off messages are ignored.
- These messages are recorded during realtime recording.

● Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

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

- Not received when Rx.NOTE MESSAGE = OFF. (Initial value is ON)
- For Rhythm Parts, not received when Rx.NOTE ON = OFF for each Instrument.
- These messages are recorded during realtime recording.

● Polyphonic Key Pressure

Status	2nd byte	3rd byte
AnH	kkH	vvH

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

- Not received when Rx.POLY PRESSURE (PAf) = OFF. (Initial value is ON)
- The resulting effect is determined by System Exclusive messages. With the initial settings, there will be no effect.

● Control Change

- When Rx.CONTROL CHANGE = OFF, all control change messages except for Channel Mode messages will be ignored.
- The value specified by a Control Change message will not be reset even by a Program Change, etc.

○ Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm, ll = Bank number : 00H, 00H-7FH, 7FH (bank.1-bank.16384)

- Not received when Rx.BANK SELECT = OFF. (Power-on default value is ON.)
- Bank number LSB will be handled as 00H regardless of the received value. However, when sending Bank Select messages, you have to send both the MSB (mmH) and LSB (llH, the value should be 00H) together.
- Bank Select processing will be suspended until a Program Change message is received.

○ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

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

- Not received when Rx.MODULATION = OFF.
- The resulting effect is determined by System Exclusive messages. With the initial settings, this is Pitch Modulation Depth.
- These messages are recorded during realtime recording.

○ Portamento Time (Controller number 5)

Status	2nd byte	3rd byte
BnH	05H	vvH

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

- This adjusts the rate of pitch change when Portamento is ON or when using the Portamento Control. A value of 0 results in the fastest change.
- These messages are recorded during realtime recording

○ Data Entry (Controller number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm, ll = the value of the parameter specified by RPN/NRPN
- These messages are recorded during realtime recording.

○ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

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

- Volume messages are used to adjust the volume balance of each Part.
- Not received when Rx.VOLUME = OFF.
- These messages are recorded during realtime recording.

○ Pan (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
vv = pan : 00H-40H-7FH (Left-Center-Right)

- For Rhythm Parts, this is a relative adjustment of each Instrument's pan setting.
- Not received when Rx.PANPOT = OFF.
- These messages are recorded during realtime recording.

○ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

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

- It can be used independently from Volume messages. Expression messages are used for musical expression within a performance; e.g., expression pedal movements, crescendo and decrescendo.
- Not received when Rx.EXPRESSION = OFF. (Initial value is ON)

○ Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

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

- Not received when Rx.HOLD1 = OFF. (Initial value is ON)
- These messages are recorded during realtime recording.

❍ Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

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

* Not received when Rx.PORTAMENTO = OFF. (Initial value is ON)

❍ Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

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

* Not received when Rx.SOSTENUTO = OFF. (Initial value is ON)

❍ Soft (Controller number 67)

Status	2nd byte	3rd byte
BnH	43H	vvH

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

* Not received when Rx.SOFT = OFF. (Initial value is ON)

❍ Portamento control (Controller number 84)

Status	2nd byte	3rd byte
BnH	54H	kkH

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

* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.
* These messages are recorded during realtime recording.

Example 1.

On MIDI	Description	Result
90 3C 40	Note on C4	C4 on
B0 54 3C	Portamento Control from C4	no change (C4 voice still sounding)
90 40 40	Note on E4	glide from C4 to E4
80 3C 40	Note off C4	no change
80 40 40	Note off E4	E4 off

Example 2.

On MIDI	Description	Result
B0 54 3C	Portamento Control from C4	no change
90 40 40	Note on E4	E4 is played with glide from C4 to E4
80 40 40	Note off E4	E4 off

❍ Effect 1 (Reverb Send Level) (Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

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

* This message adjusts the Reverb Send Level of each Part.

❍ Effect 3 (Chorus Send Level) (Controller number 93)

Status	2nd byte	3rd byte
BnH	5DH	vvH

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

* This message adjusts the Chorus Send Level of each Part.

❍ NRPN MSB/LSB (Controller number 98, 99)

Status	2nd byte	3rd byte
BnH	63H	mmH
BnH	62H	llH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm = upper byte of the parameter number specified by NRPN
ll = lower byte of the parameter number specified by NRPN

* NRPN can be received when Rx.NRPN = ON. "Rx.NRPN" is set to OFF by power-on in Normal Mode.
* The value set by NRPN will not be reset even if Reset All Controllers is received.
* These messages are recorded during realtime recording.

"NRPN"
The NRPN (Non Registered Parameter Number) message allows an extended range of control changes to be used.
To use these messages, you must first use NRPN MSB and NRPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an NRPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter. Refer to Section 4. Supplementary material "Examples of actual MIDI messages" <Example 4> (page 113).
On the MC-303, Data entry LSB (llH) of NRPN is ignored, so it is no problem to send Data entry MSB (mmH) only (without Data entry LSB).

On the MC-303, NRPN can be used to modify the following parameters.

NRPN MSB LSB	Data entry MSB	Description
01H 08H	mmH	Vibrato rate (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 09H	mmH	Vibrato depth (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 0AH	mmH	Vibrato delay (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 20H	mmH	TVF cutoff frequency (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 21H	mmH	TVF resonance (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 63H	mmH	TVF&TVA Env. Attack time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 64H	mmH	TVF&TVA Env. Decay time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 66H	mmH	TVF&TVA Env. Release time (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
18H rrH	mmH	Pitch coarse of drum instrument (relative change on specified drum instrument) rr: key number of drum instrument mm: 00H-40H-7FH (-64 - 0 - +63 semitone)
1AH rrH	mmH	TVA level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H-7FH (zero-maximum)
1CH rrH	mmH	Panpot of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H, 01H-40H-7FH (Random, Left-Center-Right)
1DH rrH	mmH	Reverb send level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H-7FH (zero-maximum)
1EH rrH	mmH	Chorus send level of drum instrument (absolute change on specified drum instrument) rr: key number of drum instrument mm: 00H-7FH (zero-maximum)

* Parameters marked "relative change" will change relative to the preset value.
* Parameters marked "absolute change" will be set to the absolute value of the parameter, regardless of the preset value.

○ RPN MSB/LSB (Controller number 100, 101)

Status	2nd byte	3rd byte
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm = upper byte of parameter number specified by RPN
ll = lower byte of parameter number specified by RPN

* Not received when Rx.RPN = OFF.
* The value specified by RPN will not be reset even by messages such as Program Change or Reset All Controller.

RPN
The RPN (Registered Parameter Number) messages are expanded control changes, and each function of an RPN is described by the MIDI Standard.
To use these messages, you must first use RPN MSB and RPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an RPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter.Refer to Section 4. "Examples of actual MIDI messages" <Example 4> (page 113).

On the MC-303, RPN can be used to modify the following parameters.

RPN MSB LSB	Data entry MSB LSB	Explanation
00H 00H	mmH —	Pitch Bend Sensitivity mm: 00H-18H (0-24 semitones), Initial Value = 02H (2 semitones) ll: ignored (processed as 00H) specify up to 2 octaves in semitone steps
00H 01H	mmH llH	Master Fine Tuning mm, ll: 00 00H - 40 00H - 7F 7FH (-100 - 0 - +99.99 cents), Initial Value = 40 00H (±0 cent) Refer to 5. Supplementary material, "About tuning" (P-114).
00H 02H	mmH —	Master Coarse Tuning mm: 28H-40H-58H (-24 - 0 - +24 semitones). Initial Value = 40H (±0 semitone) ll: ignored (processed as 00H)
7FH 7FH	— —	RPN null Set condition where RPN and NRPN are unspecified. The data entry messages after set RPN null will be ignored. (No Data entry messages are required after RPN null). Settings already made will not change. mm, ll: ignored

● Program Change

Status	2nd byte
CnH	ppH

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

* Not received when Rx.PROGRAM CHANGE = OFF. (Initial value is ON)
* After a Program Change message is received, the sound will change beginning with the next Note-on. Voices already sounding when the Program Change message was received will not be affected.
* For Rhythm Parts, Program Change messages will not be received on bank numbers 129-16384 (the value of Control Number 0 is other than 0 (00H)).

● Channel Pressure

Status	2nd byte
DnH	vvH

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

* Not received when Rx.CH PRESSURE (CAf) = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings there will be no effect.

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm, ll = Pitch Bend value : 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

* Not received when Rx.PITCH BEND = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings the effect is Pitch Bend.
* These messages are recorded during realtime recording.

■ Channel Mode Messages

● All Sounds Off (Controller number 120)

Status	2nd byte	3rd byte
BnH	78H	00H

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

* When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.

● Reset All Controllers (Controller number 121)

Status	2nd byte	3rd byte
BnH	79H	00H

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

* When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	±0 (center)
Polyphonic Key Pressure	0 (off)
Channel Pressure	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold 1	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
RPN	unset; previously set data will not change
NRPN	unset; previously set data will not change

● All Notes Off (Controller number 123)

Status	2nd byte	3rd byte
BnH	7BH	00H

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

* When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

● OMNI OFF (Controller number 124)

Status	2nd byte	3rd byte
BnH	7CH	00H

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

* The same processing will be carried out as when All Notes Off is received.

● OMNI ON (Controller number 125)

Status	2nd byte	3rd byte
BnH	7DH	00H

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

* The same processing will be carried out as when All Notes Off is received.

● MONO (Controller number 126)

Status	2nd byte	3rd byte
BnH	7EH	mmH

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

* In Normal Mode, the same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 2 (M = 1) regardless of the value of "mono number." In Sound Module Mode, the same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 4 (M = 1) regardless of the value of "mono number."

● POLY (Controller number 127)

Status	2nd byte	3rd byte
BnH	7FH	00H

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

* In Normal Mode, the same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 1. In Sound Module Mode, the same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 3.

■ System Realtime Message

● Timing Clock

Status
F8H

* This message is received when Sync Mode is SLAVE in Normal Mode.

● Start

Status
FAH

* This message is received when Sync Mode is SLAVE or REMOTE in Normal Mode.

● Continue

Status
FBH

* This message is received when Sync Mode is SLAVE or REMOTE in Normal Mode.

● Stop

Status
FCH

* This message is received when Sync Mode is SLAVE or REMOTE in Normal Mode.

● Active Sensing

Status
FEH

* When Active Sensing is received, the unit will begin monitoring the intervals of all further messages. While monitoring, if the interval between messages exceeds 420 ms, the same processing will be carried out as when All Sounds Off, All Notes Off and Reset All Controllers are received, and message interval monitoring will be halted.

■ System Exclusive Message

Status	Data byte	Status
F0H	iiH, ddH, ...eeH	F7H

F0H : System Exclusive Message status
ii = ID number : an ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is. Roland's manufacturer ID is 41H.
ID numbers 7EH and 7FH are extensions of the MIDI standard: Universal Non-realtime Messages (7EH) and Universal Realtime Messages (7FH).
dd,...,ee = data : 00H-7FH (0-127)
F7H : EOX (End Of Exclusive)

The System Exclusive Messages received by the MC-303 are; Universal Realtime System Exclusive messages, Universal Non-realtime System Exclusive Messages, Data Requests (RQ1), and Data Set (DT1).

● Universal Non-realtime System Exclusive Messages

○ Inquiry Request Message

Status	Data byte	Status
F0H	7EH, dev, 06H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
dev	Device ID (dev: 10H (17))
06H	Sub ID#1 (General Information)
01H	Sub ID#2 (Inquiry Request)
F7H	EOX (End Of Exclusive)

* The "dev" is own device number or 7FH (Broadcast)
* When Inquiry Request is received, Inquiry Reply message will be transmitted.(page 106)

● Universal Realtime System Exclusive Messages

○ Master volume

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 01H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control messages)
01H	Sub ID#2 (Master Volume)
llH	Master volume lower byte
mmH	Master volume upper byte
F7H	EOX (End Of Exclusive)

* The lower byte (llH) of Master Volume will be handled as 00H.

● Data transmission

MC-303 can transmit and receive the various parameters using System Exclusive messages.
The exclusive message of MC-303 has a model ID of 00H 03H and a device ID of 10H (17).

○ Request data 1 RQ1

This message requests the other device to send data. The Address and Size determine the type and amount of data to be sent.
When a Data Request message is received, if the device is ready to transmit data and if the address and size are appropriate, the requested data will be transmitted as a "Data Set 1 (DT1)" message. If not, nothing will be transmitted.

Status	Data byte	Status
F0H	41H, 10H, 00H, 03H, 11H, aaH, bbH, ccH, ddH, ssH, ttH, uuH, vvH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev:10H (17))
00H 03H	Model ID (MC-303)
11H	Command ID (RQ1)
aaH	Address MSB: upper byte of the starting address of the requested data
bbH	Address: 2nd byte of the starting address of the requested data
ccH	Address : 3rd byte of the starting address of the requested data
ddH	Address LSB: lower byte of the starting address of the requested data
ssH	Size MSB
ttH	Size
uuH	Size
vvH	Size LSB
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at once time will depend on the type of data, and data must be requested using a specific starting address and size. Refer to the Address and Size listed in Section 3 (page 106).
* Regarding the checksum please refer to Section 4 (page 114).

○ Data set 1 DT1

This is the message that actually performs data transmission, and is used when you wish to transmit the data.

Status	Data byte	Status
F0H	41H, 10H, 00H, 03H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 10H)
00H 03H	Model ID (MC-303)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the transmitted data
bbH	Address: 2nd byte of the starting address of the requested data
ccH	Address 3rd byte of the starting address of the requested data
ddH	Address LSB: lower byte of the starting address of the transmitted data
eeH	Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data can be received only from the specified starting address and size. Refer to the Address and Size given in Section 3 (page 106).
* Data larger than 128 bytes must be divided into packets of 128 bytes or less. If "Data Set 1" is transmitted successively, there must be an interval of at least 40 ms between packets.
* Regarding the checksum please refer to section 4 (page 114).

Section 2. Transmit data

■ Channel Voice Messages

● Note off

Status	2nd byte	3rd byte
9nH	kkH	00H

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

* These messages are transmitted when Out Assign is Ext in Normal Mode.

● Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

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

* These messages are transmitted when Out Assign is Ext in Normal Mode.

■ System Realtime Message

● Timing Clock

Status
F8H

* This message is transimtted when Sync Mode is SLAVE and Sync Out is ON in Normal Mode.

● Start

Status
FAH

* This message is transimtted when Sync Mode is SLAVE and Sync Out is ON in Normal Mode.

● Continue

Status
FBH

* This message is transimtted when Sync Mode is SLAVE and Sync Out is ON in Normal Mode.

● Stop

Status
FCH

* This message is transimtted when Sync Mode is SLAVE and Sync Out is ON in Normal Mode.

● Active sensing

Status
FEH

* This will be transmitted constantly at intervals of approximately 250 ms.

■ System exclusive messages

"Inquiry Reply" and "Data Set 1 (DT1)" are the only System Exclusive messages transmitted by MC-303.

When an appropriate "Inquiry Request Message" and "Data Request 1 (RQ1)" message are received, the requested internal data will be transmitted.

● Universal Non-realtime System Exclusive Messages

❍ Inquiry Reply

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 03H, 01H, 00H, 00H, 00H, 03H, 00H, 00H,	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
10H	Device ID
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Inquiry Reply)
41H	ID number (Roland)
03H 01H	Device family code
00H 00H	Device family number code
00H 03H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

* Reply the message by the unique device ID (dev) when the device has received the "Inquiry Request Message" in the Broadcast (page 104).

❍ Data set 1 DT1

Status	Data byte	Status
F0H	41H, 10H, 00H, 03H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 10H)
00H 03H	Model ID (MC-303)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the transmitted data
bbH	Address: 2nd byte of the starting address of the requested data
ccH	Address 3rd byte of the starting address of the requested data
ddH	Address LSB: lower byte of the starting address of the transmitted data
eeH	Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the Address and Size given in Section 3 (next column).
* Data larger than 128 bytes will be divided into packets of 128 bytes or less, and each packet will be sent at an interval of about 40 ms.
* Regarding the checksum please refer to section 4 (page 114).

Section 3. Parameter Address Map (Model ID = 00H 03H)

This map indicates address, size, Data (range), Parameter, Description, and Default Value of parameters which can be transferred using "Request data 1 (RQ1)" and "Data set 1 (DT1)" (paga 105).

All the numbers of address, size, Data, and Default Value are indicated in 7-bit Hexadecimal-form.

■ Address Block map

An outlined address map of the Exclusive Communication is as follows:

Sound Module Section

address(H)	Block	
00 40 00 00	System Parameter	Individual
00 40 01 3F		
00 40 1x 00	Part Parameter (x = 0-F)	Individual
00 40 2x 5A		
00 41 m0 00	Drum Setup Parameter (m = 0-1)	Individual
00 41 m8 7F		
00 48 00 00	System Parameter	Bulk
00 48 01 10	Part Parameter	Bulk
00 48 1D 0F		
00 49 m0 00	Drum Setup Parameter (m = 0-1)	Bulk
00 49 mE 17		

Sequencer Section

10 xx xx 00	Variation Setup Data (xx xx = 00 00-02 2B)	Bulk
11 xx 00 00	EFS Set Data (xx = 00-1D)	Bulk
12 xx 00 00	Pattern Set Data (xx = 00-1D)	Bulk
13 xx 00 00	Song Setup Data (xx = 00-09)	Bulk
14 xx 00 00	Pattern Setup Data (xx = 00-31)	Bulk
15 xx 00 00	Song Data (xx = 00-09)	Bulk
xx 00 00 00	Pattern Data (xx = 40-71)	Bulk

There are two ways in which data of MC-303 is transmitted: Individual Parameter Transmission in which individual parameters are transmitted one by one, and Bulk Dump Transmission in which a large amount of data is transmitted at once

■ Individual Parameters

Individual Parameter Transmission transmits data (or requests data) for one parameter as one exclusive message (one packet of "F0 ..... F7").
In Individual Parameter Transmission, you must use the Address and Size listed in the following "Parameter Address Map." Addresses marked at "#" cannot be used as starting addresses.

● System Parameters

Parameters related to the system of the device are called System Parameters.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
00 40 00 00	00 00 04	0018-07E8	MASTER TUNE	-100.0 - +100.0 [cent]	00 04 00 00	0 [cent]
00 40 00 01#			Use nibblized data			
00 40 00 02#						
00 40 00 03#						

* Refer to section 4. Supplementary material, "About tuning" (page 114).

00 40 00 04	00 00 00 01	00-7F	MASTER VOLUME	0-127	7F	127
			(= F0 7F 7F 04 01 00 vv F7)			
00 40 00 05	00 00 00 01	28-58	MASTER KEY-SHIFT	-24 - +24 [semitones]	40	0 [semitones]
00 40 00 06	00 00 00 01	01-7F	MASTER PAN	-63 (LEFT) - +63 (RIGHT)	40	0 (CENTER)
00 40 00 7F	00 00 00 01	00,7F	MODE SET	00=Sound Module Mode		
			(Receive only)	127=Exit Sound Module Mode		

				Sound Module Mode	(Normal Mode)				
00 40 01 10	00 00 00 10	00-1C	VOICE RESERVE	Part 10	(RPS Part)	02	(00)	2	(0)
00 40 01 11#				Part 1	(RPS Part)	06	(00)	6	(0)
00 40 01 12#				Part 2	(RPS Part)	02	(00)	2	(0)
00 40 01 13#				Part 3	(RPS Part)	02	(00)	2	(0)
00 40 01 14#				Part 4	(RPS Part)	02	(00)	2	(0)
00 40 01 15#				Part 5	(RPS Part)	02	(00)	2	(0)
00 40 01 16#				Part 6	(RPS Part)	02	(00)	2	(0)
00 40 01 17#				Part 7	(RPS Part)	02	(00)	2	(0)
00 40 01 18#				Part 8	(Pattern Part R)	02	(03)	2	(3)
00 40 01 19#				Part 9	(Pattern Part 1)	02	(03)	2	(3)
00 40 01 1A#				Part 11	(Pattern Part 2)	00	(03)	0	(3)
00 40 01 :#				:	:		:	:	
00 40 01 1F#				Part 16	(Pattern Part 7)	00	(03)	0	(3)

* The sum total of voices in the voice reserve function must be equal to or less than the number of the maximum polyphony. The maximum polyphony of the MC-303 is 28.

00 40 01 30	00 00 00 01	00-07	REVERB MACRO	00: Room 1 01: Room 2 02: Room 3 03: Hall 1 04: Hall 2 05: Plate 06: Delay 07: Panning Delay	04	Hall 2
00 40 01 31	00 00 00 01	00-07	REVERB CHARACTER	0-7	04	4
00 40 01 32	00 00 00 01	00-07	REVERB PRE-LPF	0-7	00	0
00 40 01 33	00 00 00 01	00-7F	REVERB LEVEL	0-127	40	64
00 40 01 34	00 00 00 01	00-7F	REVERB TIME	0-127	40	64
00 40 01 35	00 00 00 01	00-7F	REVERB DELAY FEEDBACK	0-127	00	0
00 40 01 36	00 00 00 01	00-7F	REVERB SEND LEVEL TO CHORUS	0-127	00	0

* REVERB MACRO is a macro parameter that allows global setting of reverb parameters. When you select the reverb type with REVERB MACRO, each reverb parameter will be set to the most suitable value.
* REVERB CHARACTER is a parameter that changes the reverb algorithm. The value of REVERB CHARACTER corresponds to the REVERB MACRO of the same number.

00 40 01 38	00 00 00 01	00-07	CHORUS MACRO	00: Chorus 1 01: Chorus 2 02: Chorus 3 03: Chorus 4 04: Feedback Chorus 05: Flanger 06: Short Delay 07: Short Delay (FB)	02	Chorus 3
00 40 01 39	00 00 00 01	00-07	CHORUS PRE-LPF	0-7	00	0
00 40 01 3A	00 00 00 01	00-7F	CHORUS LEVEL	0-127	40	64
00 40 01 3B	00 00 00 01	00-7F	CHORUS FEEDBACK	0-127	08	8
00 40 01 3C	00 00 00 01	00-7F	CHORUS DELAY	0-127	50	80
00 40 01 3D	00 00 00 01	00-7F	CHORUS RATE	0-127	03	3
00 40 01 3E	00 00 00 01	00-7F	CHORUS DEPTH	0-127	13	19
00 40 01 3F	00 00 00 01	00-7F	CHORUS SEND LEVEL TO REVERB	0-127	00	0

* CHORUS MACRO is a macro parameter that allows global setting of chorus parameters. When you use CHORUS MACRO to select the chorus type, each chorus parameter will be set to the most suitable value.

● Part Parameters

MC-303 has 16 parts. Parameters that can be set individually for each Part are called Part parameters.
If you use exclusive messages to set Part parameters, specify the address by Block number rather than Part Number (normally the same number as the MIDI channel). The Block number can be specified as one of 16 blocks, from 0 (H) to F (H).

The relation between Part number and Block number is as follows.

	Sound Module Mode	Normal Mode	
x...BLOCK NUMBER (0-F).	Part 1 (MIDI ch = 1) x = 1	x=0 (H)	RPS Part
	Part 2 (MIDI ch = 2) x = 2	x=1 (H)	RPS Part
	: :	:	:
	Part 8 (MIDI ch = 8) x = 8 (H)	x=7 (H)	RPS Part
	Part 9 (MIDI ch = 9) x = 9	x=9 (H)	Pattern Part 1
	Part10 (MIDI ch = 10) x = 0	x=8 (H)	Pattern Part R
	Part11 (MIDI ch = 11) x = A	x=A (H)	Pattern Part 2
	Part12 (MIDI ch = 12) x = B	x=B (H)	Pattern Part 3
	: : :	:	:
	Part16 (MIDI ch = 16) x = F	x=F (H)	Pattern Part 7

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
00 40 1x 00	00 00 00 02	00-7F	TONE NUMBER	CC#00 VALUE 0-127	40	64
00 40 1x 01#		00-7F		P.C. VALUE 1-128	00	1
00 40 1x 02	00 00 00 01	00-10	Rx. CHANNEL	1-16, OFF		
00 40 1x 03	00 00 00 01	00-01	Rx. PITCH BEND	OFF/ON	01	ON
00 40 1x 04	00 00 00 01	00-01	Rx. CH PRESSURE (CAf)	OFF/ON	01	ON
00 40 1x 05	00 00 00 01	00-01	Rx. PROGRAM CHANGE	OFF/ON	01	ON
00 40 1x 06	00 00 00 01	00-01	Rx. CONTROL CHANGE	OFF/ON	01	ON
00 40 1x 07	00 00 00 01	00-01	Rx. POLY PRESSURE (PAf)	OFF/ON	01	ON
00 40 1x 08	00 00 00 01	00-01	Rx. NOTE MESSAGE	OFF/ON	01	ON
00 40 1x 09	00 00 00 01	00-01	Rx. RPN	OFF/ON	01	ON
00 40 1x 0A	00 00 00 01	00-01	Rx. NRPN	OFF/ON	01	ON

* Rx. NRPN is set to OFF by power-on in Normal Mode.

00 40 1x 0B	00 00 00 01	00-01	Rx. MODULATION	OFF/ON	01	ON
00 40 1x 0C	00 00 00 01	00-01	Rx. VOLUME	OFF/ON	01	ON
00 40 1x 0D	00 00 00 01	00-01	Rx. PANPOT	OFF/ON	01	ON
00 40 1x 0E	00 00 00 01	00-01	Rx. EXPRESSION	OFF/ON	01	ON
00 40 1x 0F	00 00 00 01	00-01	Rx. HOLD1	OFF/ON	01	ON
00 40 1x 10	00 00 00 01	00-01	Rx. PORTAMENTO	OFF/ON	01	ON
00 40 1x 11	00 00 00 01	00-01	Rx. SOSTENUTO	OFF/ON	01	ON
00 40 1x 12	00 00 00 01	00-01	Rx. SOFT	OFF/ON	01	ON
00 40 1x 13	00 00 00 01	00-01	MONO/POLY MODE (= CC# 126 01 / CC# 127 00)	Mono/Poly	01	Poly
00 40 1x 14	00 00 00 01	00-02	ASSIGN MODE	0 = SINGLE 1 = LIMITED-MULTI 2 = FULL-MULTI	00 at x = r 01 at x ≠ r	SINGLE at x = r LIMITED-MULTI at x ≠ r

* ASSIGN MODE is the parameter that determines how voice assignment will be handled when sounds overlap on identical note numbers in the same channel (i.e., repeatedly struck notes). This is initialized to a mode suitable for each Part, so for general purposes there is no need to change this. (r=0 Sound Module Mode, r=8 Normal Mode)

40 1x 15	00 00 01	00-02	USE FOR RHYTHM PART	0 = OFF 1 = MAP1 2 = MAP2	00 at x ≠ r 01 at x = r	OFF at x ≠ r MAP1 at x ≠ r

* This parameter sets the Drum Map of the Part used as the Rhythm Part. MC-303 can simultaneously (in different Parts) use up to two Drum Maps (MAP1, MAP2). (r=0 Sound Module Mode, r=8 Normal Mode)

00 40 1x 16	00 00 00 01	28-58	PITCH KEY SHIFT	-24 - +24 [semitones]	40	0 [semitones]
00 40 1x 17	00 00 00 02	08-F8	PITCH OFFSET FINE	-12.0 - +12.0 [Hz]	08 00	0 [Hz]
00 40 1x 18#			Use nibblized data.			

* PITCH OFFSET FINE allows you to alter, by a specified frequency amount, the pitch at which notes will sound. This parameter differs from the conventional Fine Tuning (RPN #1) parameter in that the amount of frequency alteration (in Hertz) will be identical no matter which note is played. When a multiple number of Parts, each of which has been given a different setting for PITCH OFFSET FINE, are sounded by means of an identical note number, you can obtain a Celeste effect.

00 40 1x 19	00 00 00 01	00-7F	PART LEVEL (= CC# 7)	0-127	64	100
00 40 1x 1A	00 00 00 01	00-7F	VELOCITY SENSE DEPTH	0-127	40	64
00 40 1x 1B	00 00 00 01	00-7F	VELOCITY SENSE OFFSET	0-127	40	64
00 40 1x 1C	00 00 00 01	00-7F	PART PANPOT (= CC# 10, except RANDOM)	-64 (RANDOM), -63 (LEFT) - +63 (RIGHT)	40	0 (CENTER)
00 40 1x 1D	00 00 00 01	00-7F	KEY RANGE LOW	(C-1)-(G9)	00	C-1
00 40 1x 1E	00 00 00 01	00-7F	KEY RANGE HIGH	(C-1)-(G9)	7F	G 9
00 40 1x 1F	00 00 00 01	00-5F	CC1 CONTROLLER NUMBER	0-95	10	16
00 40 1x 20	00 00 00 01	00-5F	CC2 CONTROLLER NUMBER	0-95	11	17
00 40 1x 21	00 00 00 01	00-7F	CHORUS SEND LEVEL (= CC# 93)	0-127	00	0
00 40 1x 22	00 00 00 01	00-7F	REVERB SEND LEVEL (= CC# 91)	0-127	28	40

00 40 1x 23	00 00 00 01	00-01	Rx. BANK SELECT	OFF/ON	01	ON
00 40 1x 30	00 00 00 01	0E-72	TONE MODIFY 1 Vibrato rate (= NRPN# 8)	-50 - +50	40	0
00 40 1x 31	00 00 00 01	0E-72	TONE MODIFY 2 Vibrato depth (= NRPN# 9)	-50 - +50	40	0
00 40 1x 32	00 00 00 01	0E-72	TONE MODIFY 3 TVF cutoff frequency (= NRPN# 32)	-50 - +50	40	0
00 40 1x 33	00 00 00 01	0E-72	TONE MODIFY 4 TVF resonance (= NRPN# 33)	-50 - +50	40	0
00 40 1x 34	00 00 00 01	0E-72	TONE MODIFY 5 TVF&TVA Env.attack (= NRPN# 99)	-50 - +50	40	0
00 40 1x 35	00 00 00 01	0E-72	TONE MODIFY 6 TVF&TVA Env.decay (= NRPN# 100)	-50 - +50	40	0
00 40 1x 36	00 00 00 01	0E-72	TONE MODIFY 7 TVF&TVA Env.release (= NRPN# 102)	-50 - +50	40	0
00 40 1x 37	00 00 00 01	0E-72	TONE MODIFY 8 Vibrato delay (= NRPN# 10)	-50 - +50	40	0
00 40 1x 39	00 00 00 01	00 - 05	LFO WAVE FORM	00 - SINE 01 - RANDOM1 02 - RANDOM2 03 - SQUARE 04 - SAW 05 - TRIANGLE	00	SINE
00 40 1x 40	00 00 00 0C	00-7F	SCALE TUNING C	-64 - +63 [cent]	40	0 [cent]
00 40 1x 41#		00-7F	SCALE TUNING C#	-64 - +63 [cent]	40	0 [cent]
00 40 1x 42#		00-7F	SCALE TUNING D	-64 - +63 [cent]	40	0 [cent]
00 40 1x 43#		00-7F	SCALE TUNING D#	-64 - +63 [cent]	40	0 [cent]
00 40 1x 44#		00-7F	SCALE TUNING E	-64 - +63 [cent]	40	0 [cent]
00 40 1x 45#		00-7F	SCALE TUNING F	-64 - +63 [cent]	40	0 [cent]
00 40 1x 46#		00-7F	SCALE TUNING F#	-64 - +63 [cent]	40	0 [cent]
00 40 1x 47#		00-7F	SCALE TUNING G	-64 - +63 [cent]	40	0 [cent]
00 40 1x 48#		00-7F	SCALE TUNING G#	-64 - +63 [cent]	40	0 [cent]
00 40 1x 49#		00-7F	SCALE TUNING A	-64 - +63 [cent]	40	0 [cent]
00 40 1x 4A#		00-7F	SCALE TUNING A#	-64 - +63 [cent]	40	0 [cent]
00 40 1x 4B#		00-7F	SCALE TUNING B	-64 - +63 [cent]	40	0 [cent]

* SCALE TUNING is a function that allows fine adjustment to the pitch of each note in the octave. The pitch of each identically-named note in all octaves will change simultaneously. A setting of 40 cent (40H) is equal temperament. Refer to section 4. Supplementary material, "The Scale Tune Feature"(p-114).

00 40 2x 00	00 00 00 01	28-58	MOD PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
00 40 2x 01	00 00 00 01	00-7F	MOD TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 02	00 00 00 01	00-7F	MOD AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 03	00 00 00 01	00-7F	MOD LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 04	00 00 00 01	00-7F	MOD LFO1 PITCH DEPTH	0-600 [cent]	0A	47 [cent]
00 40 2x 05	00 00 00 01	00-7F	MOD LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 06	00 00 00 01	00-7F	MOD LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 07	00 00 00 01	00-7F	MOD LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 08	00 00 00 01	00-7F	MOD LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 09	00 00 00 01	00-7F	MOD LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 0A	00 00 00 01	00-7F	MOD LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 10	00 00 00 01	40-58	BEND PITCH CONTROL	0-24 [semitone]	42	2 [semitones]
00 40 2x 11	00 00 00 01	00-7F	BEND TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 12	00 00 00 01	00-7F	BEND AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 13	00 00 00 01	00-7F	BEND LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 14	00 00 00 01	00-7F	BEND LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 15	00 00 00 01	00-7F	BEND LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 16	00 00 00 01	00-7F	BEND LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 17	00 00 00 01	00-7F	BEND LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 18	00 00 00 01	00-7F	BEND LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 19	00 00 00 01	00-7F	BEND LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 1A	00 00 00 01	00-7F	BEND LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 20	00 00 00 01	28-58	CAf PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
00 40 2x 21	00 00 00 01	00-7F	CAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 22	00 00 00 01	00-7F	CAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 23	00 00 00 01	00-7F	CAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 24	00 00 00 01	00-7F	CAf LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 25	00 00 00 01	00-7F	CAf LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 26	00 00 00 01	00-7F	CAf LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 27	00 00 00 01	00-7F	CAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 28	00 00 00 01	00-7F	CAf LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 29	00 00 00 01	00-7F	CAf LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 2A	00 00 00 01	00-7F	CAf LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]

00 40 2x 30	00 00 00 01	28-58	PAf PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
00 40 2x 31	00 00 00 01	00-7F	PAf TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 32	00 00 00 01	00-7F	PAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 33	00 00 00 01	00-7F	PAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 34	00 00 00 01	00-7F	PAf LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 35	00 00 00 01	00-7F	PAf LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 36	00 00 00 01	00-7F	PAf LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 37	00 00 00 01	00-7F	PAf LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 38	00 00 00 01	00-7F	PAf LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 39	00 00 00 01	00-7F	PAf LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 3A	00 00 00 01	00-7F	PAf LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 40	00 00 00 01	28-58	CC1 PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
00 40 2x 41	00 00 00 01	00-7F	CC1 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 42	00 00 00 01	00-7F	CC1 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 43	00 00 00 01	00-7F	CC1 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 44	00 00 00 01	00-7F	CC1 LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 45	00 00 00 01	00-7F	CC1 LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 46	00 00 00 01	00-7F	CC1 LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 47	00 00 00 01	00-7F	CC1 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 48	00 00 00 01	00-7F	CC1 LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 49	00 00 00 01	00-7F	CC1 LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 4A	00 00 00 01	00-7F	CC1 LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 50	00 00 00 01	28-58	CC2 PITCH CONTROL	-24 - +24 [semitone]	40	0 [semitones]
00 40 2x 51	00 00 00 01	00-7F	CC2 TVF CUTOFF CONTROL	-9600 - +9600 [cent]	40	0 [cent]
00 40 2x 52	00 00 00 01	00-7F	CC2 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40	0 [%]
00 40 2x 53	00 00 00 01	00-7F	CC2 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 54	00 00 00 01	00-7F	CC2 LFO1 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 55	00 00 00 01	00-7F	CC2 LFO1 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 56	00 00 00 01	00-7F	CC2 LFO1 TVA DEPTH	0-100.0 [%]	00	0 [%]
00 40 2x 57	00 00 00 01	00-7F	CC2 LFO2 RATE CONTROL	-10.0 - +10.0 [Hz]	40	0 [Hz]
00 40 2x 58	00 00 00 01	00-7F	CC2 LFO2 PITCH DEPTH	0-600 [cent]	00	0 [cent]
00 40 2x 59	00 00 00 01	00-7F	CC2 LFO2 TVF DEPTH	0-2400 [cent]	00	0 [cent]
00 40 2x 5A	00 00 00 01	00-7F	CC2 LFO2 TVA DEPTH	0-100.0 [%]	00	0 [%]

● Drum Setup Parameters

* m: Map number (0 = MAP1, 1 = MAP2)
* rr: Rhythm part note number (00H-7FH)

Address (H)	Size (H)	Data (H)	Parameter	Description	
00 41 m1 rr	00 00 00 01	00-7F	PLAY NOTE NUMBER	Pitch coarse	
00 41 m2 rr	00 00 00 01	00-7F	LEVEL	TVA level	
				(= NRPN# 26)	
00 41 m3 rr	00 00 00 01	00-7F	ASSIGN GROUP NUMBER	Non, 1-127	
00 41 m4 rr	00 00 00 01	00-7F	PANPOT	-64 (RANDOM), -63 (LEFT) - +63 (RIGHT)	
				(= NRPN# 28, except RANDOM)	
00 41 m5 rr	00 00 00 01	00-7F	REVERB SEND LEVEL	0.0-1.0	
				(= NRPN# 29)	Multiplicand of the part reverb depth
00 41 m6 rr	00 00 00 01	00-7F	CHORUS SEND LEVEL	0.0-1.0	
				(= NRPN# 30)	Multiplicand of the part chorus depth
00 41 m7 rr	00 00 00 01	00-01	Rx. NOTE OFF	OFF/ON	
00 41 m8 rr	00 00 00 01	00-01	Rx. NOTE ON	OFF/ON	

* When the Rhythm Set is changed, DRUM SETUP PARAMETER values will all be initialized.

■ Bulk Dump

Bulk Dump allows you to transmit a large amount of data at once, and is convenient for storing settings for the entire unit on a computer or sequencer.
To make MC-303 a Bulk Dump transmission, send it a "Bulk Dump Request" message. For Bulk Dump Request, you must use the Address and Size listed in the following "Parameter Map."
Addresses marked at "#" cannot be used as starting addresses.
Bulk Dump data which include large amount of data (more than 128 bytes) will sent out in separate packets at an interval of about 40 ms. In this case, the subsequent packets may contain the address marked "#."
To send several packets of large DT1 messages at a time, insert intervals of at least 40 ms, in between those packets.

● System and Part Parameters

Address (H)	Size (H)	Description	Number of packets
00 48 00 00 | # 00 48 1D 0F#	00 00 1D 10	ALL	34 packets
00 48 00 00 | # 00 48 00 0F#	00 00 00 10	SYSTEM PARAMETERS 1	1 packet
00 48 00 10 | # 00 48 01 0F#	00 00 01 00	SYSTEM PARAMETERS 2	1 packet
00 48 01 10 | # 00 48 02 6F#	00 00 01 60	PART PARAMETERS - BLOCK 0	2 packets
00 48 02 70 | # 00 48 04 4F#	00 00 01 60	PART PARAMETERS - BLOCK 1	2 packets
00 48 04 50 | # 00 48 06 2F#	00 00 01 60	PART PARAMETERS - BLOCK 2	2 packets
00 48 06 30 | # 00 48 08 0F#	00 00 01 60	PART PARAMETERS - BLOCK 3	2 packets
00 48 08 10 | # 00 48 09 6F#	00 00 01 60	PART PARAMETERS - BLOCK 4	2 packets
00 48 09 70 | # 00 48 0B 4F#	00 00 01 60	PART PARAMETERS - BLOCK 5	2 packets
00 48 0B 50 | # 00 48 0D 2F#	00 00 01 60	PART PARAMETERS - BLOCK 6	2 packets
00 48 0D 30 | # 00 48 0F 0F#	00 00 01 60	PART PARAMETERS - BLOCK 7	2 packets
00 48 0F 10 | # 00 48 10 6F#	00 00 01 60	PART PARAMETERS - BLOCK 8	2 packets
00 48 10 70 | # 00 48 12 4F#	00 00 01 60	PART PARAMETERS - BLOCK 9	2 packets
00 48 12 50 | # 00 48 14 2F#	00 00 01 60	PART PARAMETERS - BLOCK A	2 packets
00 48 14 30 | # 00 48 16 0F#	00 00 01 60	PART PARAMETERS - BLOCK B	2 packets
00 48 16 10 | # 00 48 17 6F#	00 00 01 60	PART PARAMETERS - BLOCK C	2 packets
00 48 17 70 | # 00 48 19 4F#	00 00 01 60	PART PARAMETERS - BLOCK D	2 packets
00 48 19 50 | # 00 48 1B 2F#	00 00 01 60	PART PARAMETERS - BLOCK E	2 packets
00 48 1B 30 | # 00 48 1D 0F#	00 00 01 60	PART PARAMETERS - BLOCK F	2 packets

● DRUM SETUP PARAMETERS

m: map number (0 = MAP1, 1 = MAP2)

Address (H)	Size (H)	Description	Number of packets
00 49 m0 00 : 00 49 m1 7F	00 00 02 00	PLAY NOTE NUMBER	2 packets
00 49 m2 00 : 00 49 m3 7F	00 00 02 00	LEVEL	2 packets
00 49 m4 00 : 00 49 m5 7F	00 00 02 00	ASSIGN GROUP NUMBER	2 packets
00 49 m6 00 : 00 49 m7 7F	00 00 02 00	PANPOT	2 packets
00 49 m8 00 : 00 49 m9 7F	00 00 02 00	REVERB SEND LEVEL	2 packets
00 49 mA 00 : 00 49 mB 7F	00 00 02 00	CHORUS SEND LEVEL	2 packets
00 49 mC 00 : 00 49 mD 7F	00 00 02 00	Rx. NOTE ON/OFF	2 packets
00 49 mE 00 : 00 49 mE 17	00 00 00 18	DRUM MAP NAME	1 packet

● Pattern/Song data

MC-303 can be transmitted User Pattern, Variation Pattern, Song, Pattern Set and RPS Set data.
Preset Pattern data can not be transmitted.

Address (H)	Size (H)	Description
10 00 00 00	00 02 2B 1C	Dump request of all Variation Setup
11 00 00 00	00 1D 0F 05	Dump request of all RPS Set
12 00 00 00	00 13 0F 06	Dump request of all Pattern Set
13 00 00 00	00 09 00 38	Dump request of all Song Setup
14 00 00 00	00 31 47 14	Dump request of all Pattern Setup
15 00 00 00	00 09 3E 07	Dump request of all Song
40 00 00 00	31 7F 7F 7F	Dump request of all User Pattern

Section 4. Supplementary material

● Decimal and Hexadecimal table

In MIDI documentation, data values and addresses/sizes of exclusive messages etc. are expressed as hexadecimal values for each 7 bits.
The following table shows how these correspond to decimal numbers.

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

* Decimal values such as MIDI channel, bank select, and program change are listed as one (1) greater than the values given in the above table.
* A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128 + bb.
* In the case of values which have a ± sign, 00H = -64, 40H = ±0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ±0, and 7F 7FH = +8191. For example if aa bbH were expressed as decimal, this would be aa bbH - 40 00H = aa x 128 + bb - 64 x 128.
* Data marked "nibbled" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16 + b.

<Example 1> What is the decimal expression of 5AH ?

From the preceding table, 5AH = 90

<Example 2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?

From the preceding table, since 12H = 18 and 34H = 52
18 x 128 + 52 = 2356

<Example 3> What is the decimal expression of the nibbled value 0A 03 09 0D ?

From the preceding table, since 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
((10 x 16 + 3) x 16 + 9) x 16 + 13 = 41885

<Example 4> What is the nibbled expression of the decimal value 1258?

```
16)  1258
16)    78 ...  10
16)     4 ...  14
16)     0 ...   4
```

Since from the preceding table, 0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH, the answer is 00 04 0E 0AH.

● Examples of actual MIDI messages

<Example 1> 92 3E 5F

9n is the Note-on status, and n is the MIDI channel number. Since 2H = 2, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 3, note number 62 (note name is D4), and velocity 95.

<Example 2> CE 49

CnH is the Program Change status, and n is the MIDI channel number. Since EH = 14 and 49H = 73, this is a Program Change message with MIDI CH = 15, program number 74 .

<Example 3> EA 00 28

EnH is the Pitch Bend Change status, and n is the MIDI channel number. The 2nd byte (00H = 0) is the LSB and the 3rd byte (28H = 40) is the MSB, but Pitch Bend Value is a signed number in which 40 00H (= 64 x 128 + 0 = 8192) is 0, so this Pitch Bend Value is
28 00H - 40 00H = 40 x 128 + 0 - (64 x 128 + 0) = 5120 - 8192 = -3072

If the Pitch Bend Sensitivity is set to 2 semitones, -8192 (00 00H) will cause the pitch to change -200 cents, so in this case -200 x (-3072) / (-8192) = -75 cents of Pitch Bend is being applied to MIDI channel 11.

<Example 4> B3 64 00 65 00 06 0C 26 00 64 7F 65 7F

BnH is the Control Change status, and n is the MIDI channel number. For Control Changes, the 2nd byte is the control number, and the 3rd byte is the value. In a case in which two or more messages consecutive messages have the same status, MIDI has a provision called "running status" which allows the status byte of the second and following messages to be omitted. Thus, the above messages have the following meaning.

B3	64 00	MIDI ch.4, lower byte of RPN parameter number	: 00H
(B3)	65 00	(MIDI ch.4) upper byte of RPN parameter number	: 00H
(B3)	06 0C	(MIDI ch.4) upper byte of parameter value	: 0CH
(B3)	26 00	(MIDI ch.4) lower byte of parameter value	: 00H
(B3)	64 7F	(MIDI ch.4) lower byte of RPN parameter number	: 7FH
(B3)	65 7F	(MIDI ch.4) upper byte of RPN parameter number	: 7FH

In other words, the above messages specify a value of 0C 00H for RPN parameter number 00 00H on MIDI channel 4, and then set the RPN parameter number to 7F 7FH.

RPN parameter number 00 00H is Pitch Bend Sensitivity, and the MSB of the value indicates semitone units, so a value of 0CH = 12 sets the maximum pitch bend range to ±12 semitones (1 octave). (On MC-303, the LSB of Pitch Bend Sensitivity is ignored, but the LSB should be transmitted anyway (with a value of 0) so that operation will be correct on any device.)

Once the parameter number has been specified for RPN or NRPN, all Data Entry messages transmitted on that same channel will be valid, so after the desired value has been transmitted, it is a good idea to set the parameter number to 7F 7FH to prevent accidents. This is the reason for the (B3) 64 7F (B3) 65 7F at the end.

It is not desirable for performance data (such as Standard MIDI File data) to contain many events with running status as given in <Example 4>. This is because if playback is halted during the song and then rewound or fast-forwarded, the sequencer may not be able to transmit the correct status, and the sound source will then misinterpret the data. Take care to give each event its own status.

It is also necessary that the RPN or NRPN parameter number setting and the value setting be done in the proper order. On some sequencers, events occurring in the same (or consecutive) clock may be transmitted in an order different than the order in which they were received. For this reason it is a good idea to slightly skew the time of each event (about 1 tick for TPQN = 96, and about 5 ticks for TPQN = 480).

* TPQN: Ticks Per Quarter Note

● Example of an Exclusive message and calculating a Checksum

Roland Exclusive messages (RQ1, DT1) are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted exclusive message.

✧ How to calculate the checksum (hexadecimal numbers are indicated by 'H')

The checksum is a value derived by adding the address, size and checksum itself and inverting the lower 7 bits.
Here's an example of how the checksum is calculated. We will assume that in the exclusive message we are transmitting, the address is aa bb ccH and the data or size is dd ee ffH.

aa + bb + cc + dd + ee + ff + gg + hh = sum
sum / 128 = quotient ... remainder
128 - remainder = checksum

<Example 1> Setting REVERB MACRO to ROOM 3

According to the "Parameter Address Map," the REVERB MACRO Address is 00 40 01 30H, and ROOM 3 is a value of 02H. Thus,

F0	41	10	00 03	12	00 40 01 30	02	??	F7
(1)	(2)	(3)	(4)	(5)	address	data	checksum	(6)

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17),
(4) Model ID (MC-303), (5) Command ID (DT1), (6) End of Exclusive

Next we calculate the checksum.

00H + 40H + 01H + 30H + 02H = 0+ 64 + 1 + 48 + 2 = 115 (sum)
115 (sum) / 128 = 0 (quotient) ... 115 (remainder)
checksum = 128 - 115 (remainder) = 13 = 0DH

This means that F0 41 10 00 03 12 00 40 01 30 02 0D F7 is the message we transmit.

<Example 2> Requesting transmission of the LEVEL for DRUM MAP 1 NOTE NUMBER 75 (D#5; Claves)

NOTE NUMBER 75 (D#5) is 4BH in hexadecimal.
According to the "Parameter Address Map," LEVEL of NOTE NUMBER 75 (D#5; Claves) in DRUM MAP 1 has an Address of 00 41 02 4BH and a Size of 00 00 00 01H. Thus,

F0	41	10	00 03	11	00 41 02 4B	00 00 00 01	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17),
(4) Model ID (MC-303), (5) Command ID (RQ1), (6) End of Exclusive

Next we calculate the checksum.

00H + 41H + 02H + 4BH + 00H + 00H + 00H + 01H = 0 + 65 + 2 + 75 + 0 + 0 + 0 + 1 = 143 (sum)
143 (sum) / 128 = 1 (quotient) ... 15 (remainder)
checksum = 128 - 15 (remainder) = 113 = 71H

This means that F0 41 10 00 03 11 00 41 02 4B 00 00 00 01 71 F7 is the message we transmit.

● About tuning

In MIDI, individual Parts are tuned by sending RPN #1 (Master Fine Tuning) to the appropriate MIDI channel.
In MIDI, an entire device is tuned by either sending RPN #1 to all MIDI channels being used, or by sending a System Exclusive MASTER TUNE (address 00 40 00 00H).
RPN #1 allows tuning to be specified in steps of approximately 0.012 cents (to be precise, 100/8192 cent), and System Exclusive MASTER TUNE allows tuning in steps of 0.1 cent.
One cent is 1/100th of a semitone.
The values of RPN #1 (Master Fine Tuning) and System Exclusive MASTER TUNE are added together to determine the actual pitch sounded by each Part.

Frequently used tuning values are given in the following table for your reference. Values are in hexadecimal (decimal in parentheses).

Hz in A4	cent	RPN #1	Sys.Ex. 00 40 00 00
445.0	+19.56	4C 43 (+1603)	00 00 04 0C 04 (+196)
444.0	+15.67	4A 03 (+1283)	00 00 04 09 0D (+157)
443.0	+11.76	47 44 (+ 964)	00 00 04 07 00 (+118)
442.0	+ 7.85	45 03 (+ 643)	00 00 04 04 0F (+ 79)
441.0	+ 3.93	42 42 (+ 322)	00 00 04 02 07 (+ 39)
440.0	0.00	40 00 (0)	00 00 04 00 00 (0)
439.0	- 3.94	3D 3D (- 323)	00 00 03 0D 09 (- 39)
438.0	- 7.89	3A 7A (- 646)	00 00 03 0B 01 (- 79)

<Example> Set the tuning of MIDI channel 3 to A4 = 442.0 Hz

Send RPN#1 to MIDI channel 3. From the above table, the value is 45 03H.

B2	64 00	MIDI ch.3, lower byte of RPN parameter number	: 00H
(B2)	65 01	(MIDI ch.3) upper byte of RPN parameter number	: 01H
(B2)	06 45	(MIDI ch.3) upper byte of parameter value	: 45H
(B2)	26 03	(MIDI ch.3) lower byte of parameter value	: 03H
(B2)	64 7F	(MIDI ch.3) lower byte of RPN parameter number	: 7FH
(B2)	65 7F	(MIDI ch.3) upper byte of RPN parameter number	: 7FH

● The Scale Tune Feature (address: 00 40 1x 40)

The scale Tune feature allows you to finely adjust the individual pitch of the notes from C through B. Though the settings are made while working with one octave, the fine adjustments will affect all octaves. By making the appropriate Scale Tune settings, you can obtain a complete variety of tuning methods other than equal temperament. As examples, three possible types of scale setting are explained below.

❍ Equal Temperament

This method of tuning divides the octave into 12 equal parts. It is currently the most widely used form of tuning,
especially in occidental music. On (the MC-303), the default settings for the Scale Tune feature produce equal temperament.

❍ Just Temperament (Keytone C)

The three main chords resound much more beautifully than with equal temperament, but this benefit can only be obtained in one key. If transposed, the chords tend to become ambiguous. The example given involves settings for a key in which C is the keynote.

❍ Arabian Scale

By altering the setting for Scale Tune, you can obtain a variety of other tunings suited for ethnic music. For example, the settings introduced below will set the unit to use the Arabian Scale.

Example Settings

Note name	Equal Temperament	Just Temperament (Keytone C)	Arabian Scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
D#	0	+16	-12
E	0	-14	-51
F	0	-2	-8
F#	0	-10	+43
G	0	+2	-4
G#	0	+14	+47
A	0	-16	0
A#	0	+14	-10
B	0	-12	-49

The values in the table are given in cents. Refer to the explanation of Scale Tuning on page 109 to convert these values to hexadecimal, and transmit them as exclusive data.
For example, to set the tune (C-B) of the Part1 Arabian Scale, send the data as follows:
F0 41 10 00 03 12 00 40 11 40 3A 6D 3E 34 0D 38 6B 3C 6F 40 36 0F 50 F7

Groove Box (Normal Mode)
Model MC-303

MIDI Implementation Chart

Date : Mar. 25, 1996
Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 — 7, 10	1 — 16	
	Changed	X	X	
Mode	Default	Mode 3	Mode 1	*1
	Messages		Mode 1, 2 (M=1)	*2
	Altered	**********		
Note Number :	True Voice	0 — 127 **********	0 — 127 0 — 127	
Velocity	Note ON	O *3	O	
	Note OFF	X	X	
After Touch	Key's	X	O *3	
	Ch's	X	O *3	
Pitch Bend		X	O *3	
Control Change	0, 32	X	O *3	Bank select
	1	X	O *3	Modulation
	5	X	O *3	Portamento time
	6, 38	X	O *3	Data entry
	7	X	O *3	Volume
	10	X	O *3	Panpot
	11	X	O *3	Expression
	64	X	O *3	Hold 1
	65	X	O *3	Portamento
	66	X	O *3	Sostenuto
	67	X	O *3	Soft
	84	X	O *3	Portamento control
	91	X	O (Reverb) *3	Effect 1 depth
	93	X	O (Chorus) *3	Effect 3 depth
	98, 99	X	O *3	NRPN LSB, MSB
	100, 101	X	O *3	RPN LSB, MSB
Program Change	: True #	X **********	O *3 0 — 127	Program No. 1—128
System Exclucive		O	O	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	O	O	
	: Commands	O	O	
Aux Message	: All sound off	X	O (120, 126, 127)	
	: Reset all controllers	X	O	
	: Local ON/OFF	X	X	
	: All Notes OFF	X	O (123 — 127)	
	: Active Sense	O	O	
	: System Reset	X	X	
Notes		* 1 Recognized as Channel Voice Messages of current part. * 2 Recognized as M=1 even if M≠1. * 3 O X is selectable.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Groove Box (Sound Module Mode)

Model MC-303

MIDI Implementation Chart

Date : Mar. 25, 1996

Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic	Default	X	1 — 16	
Channel	Changed	X	1 — 16	
Mode	Default	X	Mode 3	
	Messages	X	Mode 3, 4 (M=1)	*1
	Altered	**********		
Note Number :	True Voice	X	0 — 127	
		**********	0 — 127	
Velocity	Note ON	X	O	
	Note OFF	X	X	
After Touch	Key's	X	O *2	
	Ch's	X	O *2	
Pitch Bend		X	O *2	
Control Change	0, 32	X	O *2	Bank select
	1	X	O *2	Modulation
	5	X	O *2	Portamento time
	6, 38	X	O *2	Data entry
	7	X	O *2	Volume
	10	X	O *2	Panpot
	11	X	O *2	Expression
	64	X	O *2	Hold 1
	65	X	O *2	Portamento
	66	X	O *2	Sostenuto
	67	X	O *2	Soft
	84	X	O *2	Portamento control
	91	X	O (Reverb) *2	Effect 1 depth
	93	X	O (Chorus) *2	Effect 3 depth
	98, 99	X	O *2	NRPN LSB, MSB
	100, 101	X	O *2	RPN LSB, MSB
Program Change	: True #	X	O *2	
		**********	0 — 127	Program No. 1—128
System Exclucive		O	O	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	X	
	: Commands	X	X	
Aux Message	: All sound off	X	O (120, 126, 127)	
	: Reset all controllers	X	O	
	: Local ON/OFF	X	X	
	: All Notes OFF	X	O (123 — 127)	
	: Active Sense	O	O	
	: System Reset	X	X	
Notes		* 1 Recognized as M=1 even if M≠1. * 2 O X is selectable.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Topical index

[A] + [B] means you should hold down [A] and press [B].
A specific keyboard pad to be pressed is indicated as [1]–[16].
The SELECT [◀] [▶], [PLAY MODE] and [QUANTIZE] buttons have two or more indicators associated with each button. If a button is to be pressed to make a specific indicator light, the name of the indicator will be given.
The following symbols printed beside a button name indicate the status of the button indicator. Press the listed button to switch the indicator to the specified status.

- ☽ : lit
- * : blinking
- ● : dark

● Listening to the demo

[SHIFT] + [DEMO] → [PLAY]

● Pattern

Select Pattern mode	[PLAY MODE] (PATTERN)
Select a Pattern	SELECT [◀] [▶] (PTN/SONG) → VALUE dial ([SHIFT] + VALUE dial)
Playback	[PLAY]
Stop	[STOP]
Fast-forward	[FWD]
Move to end of Pattern	[SHIFT] + [FWD]
Rewind	[BWD]
Move to beginning of Pattern	[SHIFT] + [BWD]
Change tempo	SELECT [◀] (TEMPO) → VALUE dial ([SHIFT] + VALUE dial) alternatively, press [TAP] three or more times
Display the number of measures in a Pattern	hold down [SCALE/MEASURE]
Mute a Part	[PART MUTE] ☽ → [PART]
Mute a rhythm instrument	[RHYTHM MUTE] ☽ → the [PART] for the rhythm instrument to be muted
Transpose during playback	[REALTIME TRANSPOSE]
Specify the amount of transposition	[REALTIME TRANSPOSE] → VALUE dial
Play back correctly from the middle of a Pattern	[SHIFT] + [STOP]

● Pattern Sets

Select a Pattern Set	SELECT [◀] [▶] (PTN SET) → VALUE dial ([SHIFT] + VALUE dial) alternatively, [PTN SET] → OCTAVE [-][+]
Select a Pattern from a Pattern Set	[PTN SET] → keyboard pad
Register a Pattern in a Pattern Set	[PTN SET] → keyboard pad
Register a Variation Pattern	[SHIFT] + [FUNC] + [13] → VALUE dial -> [ENTER]

● Pattern Editing

Copy an entire Pattern	[SHIFT] + [FUNC] + [1]
Copy part of a Pattern	[SHIFT] + [FUNC] + [2]
Erase unwanted data	[SHIFT] + [FUNC] + [3]
Delete unwanted measures	[SHIFT] + [FUNC] + [4]
Insert blank measures	[SHIFT] + [FUNC] + [5]
Transpose	[SHIFT] + [FUNC] + [6]
Change note velocity	[SHIFT] + [FUNC] + [7]
Change note length	[SHIFT] + [FUNC] + [8]
Fine adjustments in timing	[SHIFT] + [FUNC] + [9]
Thin out unnecessary data	[SHIFT] + [FUNC] + [10]
Modify a Pattern according to the Play Quantize settings	[SHIFT] + [FUNC] + [11]

● Song

Select Song mode	[PLAY MODE] (SONG)
Select a song	SELECT [◀] [▶] (PTN/SONG) → VALUE dial
Playback	[PLAY]
Stop	[STOP]
Fast-forward	[FWD]
Move to end of song	[SHIFT] + [FWD]
Rewind	[BWD]
Move to beginning of song	[SHIFT] + [BWD]
Store modified settings in song	[SHIFT] + [FUNC] + [15] → [ENTER]

● Song Editing

Copy a song	[SHIFT] + [FUNC] + [1]
Delete unwanted Patterns	[SHIFT] + [FUNC] + [4]
Insert a Pattern	[SHIFT] + [FUNC] + [5]

● RPS

Select an RPS set	SELECT [◀] [▶] (RPS SET) → VALUE dial ([SHIFT] + VALUE dial)
Use RPS to play back a phrase	[RPS SET] → keyboard pad
Register a phrase in an RPS set	mute all Parts except the one you wish to register → [RPS SET] + keyboard pad

● Arpeggio

Play an arpeggio	[RPS SET] ● [PTN SET] ● → [ARPEGGIO] ○ → play keyboard pads (or MIDI keyboard)
Select a style	[SHIFT] + [1] → VALUE dial alternatively, [ARPEGGIO] + VALUE dial
Add accent	[FUNC] ○ → ACCENT RATE knob
Change the pitch range	[FUNC] * → OCTAVE RANGE knob
Change the order in which the notes of the chord sound	[SHIFT] + [1] → SELECT [▶] → VALUE dial
Change the beat pattern	[SHIFT] + [1] → SELECT [▶] → SELECT [▶] → VALUE dial
Change the backbeat timing	[SHIFT] + [1] → SELECT [▶] → SELECT [▶] → SELECT [▶] → VALUE dial
Store arpeggio settings in a pattern set	[SHIFT] + [FUNC] + [14] → [ENTER]

● Play Quantize

Specify the Part to which Play Quantize will be applied — [SHIFT] + [QUANTIZE SELECT] * → [PART]

○ Grid Quantize

Select the resolution — [SHIFT] + [2] → VALUE dial
alternatively, [QUANTIZE] + VALUE dial

Apply Grid Quantize — [QUANTIZE] (GRID) → TIMING knob

○ Shuffle Quantize

Select the resolution — [SHIFT] + [4] → VALUE dial
alternatively, [QUANTIZE] + VALUE dial

Apply Shuffle Quantize — [QUANTIZE] (SHUFFLE) → TIMING knob

○ Groove Quantize

Select a template — [SHIFT] + [3] → VALUE dial
alternatively, [QUANTIZE] + VALUE dial

Apply Groove Quantize — [QUANTIZE] (GROOVE) → [FUNC] ● → TIMING knob
([FUNC] * → VELOCITY knob)

● Tone

Select a Part — [PART SELECT] ○ → [PART]
Play sounds — [RPS SET] ● [PTN SET] ● → play keyboard pad (MIDI keyboard)
Select sounds — SELECT [◀] [▶] (TONE) → VALUE dial ([SHIFT] + VALUE dial)
Transpose the pitch — [RPS SET] ● (PTN SET) ● → OCTAVE [-][+]
Modify the sound
- LEVEL — [FUNC] * → LEVEL knob
- PANPOT — [FUNC] * → PANPOT knob
- RND PAN — [FUNC] ● → [RND PAN]
- PORTAMENTO — [FUNC] * → [PORTAMENTO]
- PORTA TIME — [FUNC] * → PORTA TIME knob
- LFO RATE — [LFO] ● → [FUNC] ● → LFO knob
- LFO MOD — [LFO] ○ → [FUNC] ● → LFO knob
- CUTOFF — [FUNC] ● → CUTOFF knob
- RESONANCE — [FUNC] ● → RESONANCE knob
- ENV. ATTACK — [ENVELOPE] ● → [FUNC] ● → ENVELOPE knob
- ENV. DECAY — [ENVELOPE] ○ → [FUNC] ● → ENVELOPE knob
- ENV. RELEASE — [FUNC] * → ENVELOPE knob
- LFO WAVE — [SHIFT] + [9] → VALUE dial
- LFO PITCH — [SHIFT] + [10] → VALUE dial
- LFO FILTER — [SHIFT] + [11] → VALUE dial
- LFO AMP — [SHIFT] + [12] → VALUE dial
- BEND RANGE — [SHIFT] + [13] → VALUE dial
- OUT ASSIGN — [SHIFT] + [14] → VALUE dial

Storing Part settings in a Pattern — [SHIFT] + [FUNC] + [15] → [ENTER]

● Effects

○ Delay/Reverb

Select the type	[SHIFT] + [5] → VALUE dial
Adjust the delay time	[EFFECT] ● → [FUNC] ● → TIME/RATE knob
Adjust the overall effect sound	[EFFECT] ● → [FUNC] * → EFX LEVEL knob
Adjust the effect sound for each Part	[SHIFT] + [6] → VALUE dial

○ Flanger/Chorus

Select the type	[SHIFT] + [7] → VALUE dial
Adjust the speed of modulation	[EFFECT] ○ → [FUNC] ● → TIME/RATE knob
Adjust the overall effect sound	[EFFECT] ○ → [FUNC] * → EFX LEVEL knob
Adjust the effect sound for each Part	[SHIFT] + [8] → VALUE dial

● System settings

Tuning	[SHIFT] + [16] → VALUE dial
Repeatedly play back a song	[SHIFT] + [16] → SELECT [▶] → VALUE dial
Change the function of the pedal	[SHIFT] + [16] → press SELECT [▶] twice → VALUE dial
Set synchronization settings	[SHIFT] + [16] → press SELECT [▶] three times → VALUE dial
Transmit signals for external synchronization	[SHIFT] + [16] → press SELECT [▶] four times → VALUE dial
Specify how the metronome will sound	[SHIFT] + [16] → press SELECT [▶] five times → VALUE dial
Adjust the volume of the metronome	[SHIFT] + [16] → press SELECT [▶] six times → VALUE dial
Change the velocity produced when the keyboard pads are played	[SHIFT] + [16] → press SELECT [▶] seven times → VALUE dial
View the remaining amount of memory	[SHIFT] + [16] → press SELECT [▶] eight times → VALUE dial

● Other

Metronome on/off	[FUNC] + [SCALE/MEASURE]
Make adjustments while viewing the display	[SHIFT] + [FUNC] + knob
Save data	[SHIFT] + [FUNC] + [16] → [ENTER]
Load data	[SHIFT] + [FUNC] + [16] → SELECT [▶] → [ENTER]
Use the MC-303 as a MIDI sound module	[PLAY MODE] + power switch
Reset to the factory settings (all settings)	[SHIFT] + power switch
Reset to the factory settings (except for user data)	[FUNC] + power switch

Specifications

MC-303 GROOVEBOX

● Parts
: 16 parts(Main: 8 + RPS: 8)

● Tones
: 448 tones

● Rhythm Sets
: 12 sets

● Maximum Polyphony
: 28 voices

● Effects
: Reverb/Delay, Chorus/Flanger

● Sequencer
Tracks : 8
Songs : 10
Pattern
Preset Patterns : 133
RPS Patterns : 211
Variation Patterns : 300
User Patterns : 50 (Maximum)
Note Storage : approx. 14,000 notes
RPS Set : 30
Pattern Set : 30
Tempo : 20.0 to 240.0
Resolution : 96 ticks per quarter note
Recording Method : Realtime, Step1, Step2

● Control Knob
Realtime Modify : Cutoff, Resonance, LFO(Modulation, Rate)
Envelope Attack, Decay, Release
Panpot, Level, Portamento Time

Effect : Time/Rate, EFX Level

Play Quantize : Timing, Velocity
(Grid, Groove, Shuffle)

Arpeggio (34 style) : Accent Rate, Octave Rate

Others : Low Boost, Master Volume

● Keyboard Pad
16 keys

● Display
7 Segments, 6 Characters(LED)

● Connectors
Output Jack(L(MONO)/R)
Headphone Jack
MIDI Connectors(IN,OUT)
Foot Control Jack
AC Adaptor Jack

● Power Supply
AC Adaptor (DC 9V)

● Current Draw
500mA

● Dimensions
378(W) x 244(D) x 91(H)mm
14-14/16 x 9-10/16 x 3-9/16

● Weight
3.0Kg / 6 lbs 10 oz (Excluding AC Adaptor)

● Accessories
AC adaptor : ACI-120C, ACI-220J, ACB-240E, ACB-240A

● Options
Pedal Switch DP-2, FS-5U

Index

"Q" represents the Quick Start.

Information

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

ARGENTINA
Instrumentos Musicales S.A.
Florida 638
(1005) Buenos Aires
ARGENTINA
TEL: (01) 394-4029

BRAZIL
Roland Brasil Ltda.
R. Coronel Octaviano da Silveira
203 05522-010
Sao Paulo BRAZIL
TEL: (011) 843 9377

CANADA
Roland Canada Music Ltd.
(Head Office)
5480 Parkwood Way Richmond
B. C., V6V 2M4 CANADA
TEL: (0604) 270 6626

Roland Canada Music Ltd.
(Toronto Office)
Unit 2, 109 Woodbine Downs
Blvd, Etobicoke, ON
M9W 6Y1 CANADA
TEL: (0416) 213 9707

MEXICO
Casa Veerkamp, s.a. de c.v.
Av. Toluca No. 323 Col. Olivar de
los Padres 01780 Mexico D.F.
MEXICO
TEL: (525) 668 04 80

La Casa Wagner de
Guadalajara s.a. de c.v.
Av. Corona No. 202 S.J.
Guadalajara, Jalisco Mexico
C.P.44100 MEXICO
TEL: (03) 613 1414

PANAMA
Productos Superiores, S.A.
Apartado 655 - Panama 1
REP. DE PANAMA
TEL: 26 3322

U. S. A.
Roland Corporation U.S.
7200 Dominion Circle
Los Angeles, CA. 90040-3696,
U. S. A.
TEL: (0213) 685 5141

VENEZUELA
Musicland Digital C.A.
Av. Francisco de Miranda,
Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
VENEZUELA
TEL: (02) 285 9218

AUSTRALIA
Roland Corporation
Australia Pty. Ltd.
38 Campbell Avenue
Dee Why West. NSW 2099
AUSTRALIA
TEL: (02) 982 8266

NEW ZEALAND
Roland Corporation (NZ) Ltd.
97 Mt. Eden Road, Mt. Eden,
Auckland 3, NEW ZEALAND
TEL: (09) 3098 715

HONG KONG
Tom Lee Music Co., Ltd.
Service Division
22-32 Pun Shan Street, Tsuen
Wan, New Territories,
HONG KONG
TEL: 2415 0911

INDONESIA
PT CITRARAMA
BELANTIKA
Kompleks Perkantoran Duta
Merlin Blok E No 6—7
Jl. Gajah Mada No.3—5, Jakarta
10130,
INDONESIA
TEL: (021) 3850073

KOREA
Cosmos Corporation
Service Station
261 2nd Floor Nak-Won Arcade
Jong-Ro ku, Seoul, KOREA
TEL: (02) 742 8844

MALAYSIA
Bentley Music SDN BHD
No.142, Jalan Bukit Bintang 55100
Kuala Lumpur, MALAYSIA
TEL: (03) 2443333

PHILIPPINES
G.A. Yupangco & Co. Inc.
339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
TEL: (02) 899 9801

SINGAPORE
Swee Lee Company
BLOCK 231, Bain Street #03-23
Bras Basah Complex,
SINGAPORE 0718
TEL: 3367886

CRISTOFORI MUSIC PTE
LTD
335, Joo Chiat Road SINGAPORE
1542
TEL: 3450435

TAIWAN
Siruba Enterprise (Taiwan)
Co., LTD.
Room. 5, 9fl. No. 112 Chung Shan
N.Road Sec.2 Taipei, TAIWAN,
R.O.C.
TEL: (02) 561 3339

THAILAND
Theera Music Co. , Ltd.
330 Verng Nakorn Kasem, Soi 2,
Bangkok 10100, THAILAND
TEL: (02) 2248821

BAHRAIN
Moon Stores
Bad Al Bahrain Road,
P.O.Box 20077
State of BAHRAIN
TEL: 211 005

IRAN
TARADIS
Mir Emad Ave. No. 15, 10th street
P. O. Box 15875/4171 Teheran,
IRAN
TEL: (021) 875 6524

ISRAEL
Halilit P. Greenspoon &
Sons Ltd.
8 Retzif Ha'aliya Hashnya St.
Tel-Aviv-Yafo ISRAEL
TEL: (03) 6823666

JORDAN
AMMAN Trading Agency
Prince Mohammed St. P. O. Box
825 Amman 11118 JORDAN
TEL: (06) 641200

KUWAIT
Easa Husain Al-Yousifi
P.O. Box 126 Safat 13002
KUWAIT
TEL: 5719499

LEBANON
A. Chahine & Fils
P.O. Box 16-5857 Gergi Zeidan St.
Chahine Building, Achrafieh
Beirut, LEBANON
TEL: (01) 335799

OMAN
OHI Electronics & Trading
Co. LLC
P. O. Box 889 Muscat
Sultanate of OMAN
TEL: 706 010

QATAR
Badie Studio & Stores
P.O.Box 62,
DOHA QATAR
TEL: 423554

SAUDI ARABIA
SAF Music Center
AL-Khobar 31952, P. O. Box 1366
SAUDIARABIA
TEL: (03) 898 3311

Abdul Latif S. Al-Ghamdi
Trading Establishment
Middle East Commercial Center
Al-Khobar Dharan Highway
W/hamood st.
P. O. Box 3631 Al-Khober
31952 SAUDIARABIA
TEL: (03) 898 2332

SYRIA
Technical Light & Sound
Center
Khaled Ebn Al Walid St.
P.O.Box 13520
Damascus - SYRIA
TEL: (011) 2235 384

TURKEY
Barkat Sanayi ve Ticaret
Siraselvier Cad. Guney Ishani No
86/6 Taksim, Istanbul TURKEY
TEL: (0212) 2499324

U.A.E
Zak Electronics & Musical
Instruments Co.
Zabeel Road, Al Sherooq Bldg.,
No. 14, Grand Floor DUBAI
U.A.E.
P.O. Box 8050DUBAI, U.A.E
TEL: (04) 360715

EGYPT
Al Fanny Trading Office
9, Ebn Hagar Al Askalany Street,
Ard El Golf, Heliopolis, Cairo,
11341 EGYPT
TEL: (02) 4171828
(02) 4185331

MAURITIOUS
Philanne Music Center
4th, Floor Noll, Happy World
House Sir William Newton Street
Port Luis MAURITIOUS
TEL: 242 2986

REUNION
FO - YAM Marcel
25 Rue Jules MermanZL
Chaudron - BP79 97491
Ste Clotilde REUNION
TEL: 28 29 16

SOUTH AFRICA
That Other Music Shop
(PTY) Ltd.
11 Melle Street (Cnr Melle and
Juta Street)
Braamfontein 2001
Republic of SOUTH AFRICA
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre Claremont
7700
Republic of SOUTH AFRICA
TEL: (021) 64 4030

AUSTRIA
E. Dematte &Co.
Neu-Rum Siemens-Strasse 4
A-6040 Innsbruck P.O.Box 83
AUSTRIA
TEL: (0512) 26 44 260

BELGIUM/HOLLAND/ LUXEMBOURG
Roland Benelux N. V.
Houtstraat 1 B-2260 Oevel-
Westerlo BELGIUM
TEL: (014) 575811

BELORUSSIA
TUSHE
UL. Mogilovskaja 4/4/145
220001 MINSK
TEL: (0172) 252-059

CYPRUS
Radex Sound Equipment Ltd.
17 Diagorou St., P.O.Box 2046,
Nicosia CYPRUS
TEL: (02) 453 426
(02) 466 423

DENMARK
Roland Scandinavia A/S
Langebrogade 6 Post Box 1937
DK-1023 Copenhagen K.
DENMARK
TEL: 32 95 3111

FRANCE
Guillard Musiques Roland
ZAC de Rosarge Les Echets 01700
MIRIBEL FRANCE
TEL: 7226 5060

Guillard Musiques Roland
(Paris Office)
1923 rue Léon Geoffroy 94400
VITRY-SUR-SEINE FRANCE
TEL: (1) 4680 86 62

FINLAND
Roland Scandinavia As,
Filial Finland
Lauttasaarentie 54 B
Fin-00201 Helsinki, FINLAND
P. O. Box No. 109
TEL: (0) 682 4020

GERMANY
Roland Elektronische
Musikinstrumente
Handelsgesellschaft mbH.
Oststrasse 96, 22844 Norderstedt,
GERMANY
TEL: (040) 52 60090

GREECE
V. Dimitriadis & Co. Ltd.
20, Alexandras St. & Bouboulinas
54 St. 106 82 Athens, GREECE
TEL: (01) 8232415

HUNGARY
Intermusica Ltd.
Warehouse Area 'DEPO' Pf.83
H-2046 Torokbalint, HUNGARY
TEL: (23) 338 041

IRELAND
The Dublin Service Centre
Audio Maintenance Limited
11 Brunswick Place Dublin 2
Republic of IRELAND
TEL: (01) 677322

ITALY
Roland Italy S. p. A.
Viale delle Industrie, 8
20020 Arese Milano, ITALY
TEL: (02) 93581311

NORWAY
Roland Scandinavia Avd.
Kontor Norge
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo
NORWAY
TEL: 273 0074

POLAND
P. P. H. Brzostowicz Marian
UL. Blokowa 32, 03624 Warszawa
POLAND
TEL: (022) 679 44 19

PORTUGAL
Caius - Tecnologias Audio e
Musica , Lda.
Rua do Catarina 131
4000 Porto, PORTUGAL
TEL: (02) 38 4456

RUSSIA
PETROSHOP Ltd.
11 Sayanskaya Street Moscow
1153L, RUSSIA
TEL: 095 901 0892

SPAIN
Roland Electronics
de España, S. A.
Calle Bolivia 239 08020 Barcelona,
SPAIN
TEL: (93) 308 1000

SWEDEN
Roland Scandinavia A/S
Danvik Center 28 A, 2 tr.
S-131 30 Nacka SWEDEN
TEL: (08) 702 0020

SWITZERLAND
Roland (Switzerland) AG
Musitronic AG
Gerberstrasse 5, CH-4410 Liestal.
SWITZERLAND
TEL: (061) 921 1615

UKRAINE
TIC-TAC
Mira Str. 19/108
P.O.Box 180
295400 Munkachevo, UKRAINE
TEL: (03131) 414-40

UNITED KINGDOM
Roland (U.K.) Ltd., Swansea
Office
Atlantic Close, Swansea
Enterprise Park SWANSEA
West Glamorgan SA7 9FJ,
UNITED KINGDOM
TEL: (01792) 702701

As of March, 11, 1996

For the U.K.

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

BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

For Nordic Countries

Apparatus containing Lithium batteries

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

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

ADVARSEL!
Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

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

For Europe

CE

This product complies with the requirements of European Directive 89/336/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

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

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

Roland®

71451223

UPC 71451223

Roland Corporation

01013567 '96-04-C3-11D

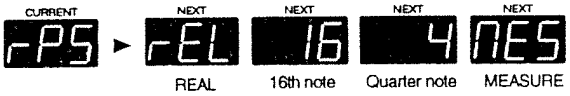
New Features Have Been added

We are pleased to announce that new features has been added with the MC-303.

Add to "Chapter 11. System settings" (Owner's Manual, p.72).

Setting the RPS playback timing (RPS Trigger Quantize)

When using RPS during pattern playback, patterns and phrases may not play back in precise alignment, depending on the timing at which you press the keyboard pad. If desired, the MC-303 allows you to specify the timing at which phrases will play back. This allows phrases to be played back in precise timing with the patterns.



REAL: When you press the keyboard pad, the phrase will play back immediately.

16th note: The pattern will be divided into 16th note steps, and when you press the keyboard pad, the phrase will play back beginning at the next step.

Quarter note: The pattern will be divided into quarter note steps, and when you press the keyboard pad, the RPS phrase will play back beginning at the next step. This lets you play back the phrase starting precisely on the beat after you press the keyboard pad.

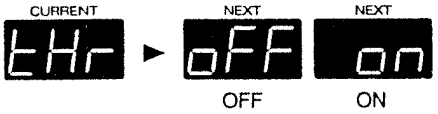
MEASURE: The pattern will be divided into one-measure steps, and when you press the keyboard pad, the RPS phrase will play back beginning at the next measure. This lets you play back the phrase starting precisely at the beginning of the measure after you press the keyboard pad.

With settings of 16th note, quarter note, or MEASURE, you can press the keyboard pad slightly before you want the phrase to actually play back. This will make the phrase playback in perfect synchronization with the pattern.

* With the factory settings, this is set to 16th note.
* If the pattern is stopped, the phrase will play back immediately, regardless of the playback method that is selected here.

Re-transmitting MIDI messages received at MIDI IN directly from MIDI OUT

When this is ON, MIDI messages received at the MIDI IN connector will be re-transmitted without modification from the MIDI OUT connector.



* Even if this is ON, System Exclusive messages received at the MIDI IN connector will not be re-transmitted from the MIDI OUT connector.
* If Arpeggio is on, messages received at MIDI IN will not be re-transmitted from MIDI OUT.
* The setting here will also apply when the MC-303 is used in Sound Module mode.

Then please add the following to "Specifications" (Owner's Manual, p.121).

● Accessories

Quick Start
Owner's Manual

Roland®

40236290

UPC 40236290