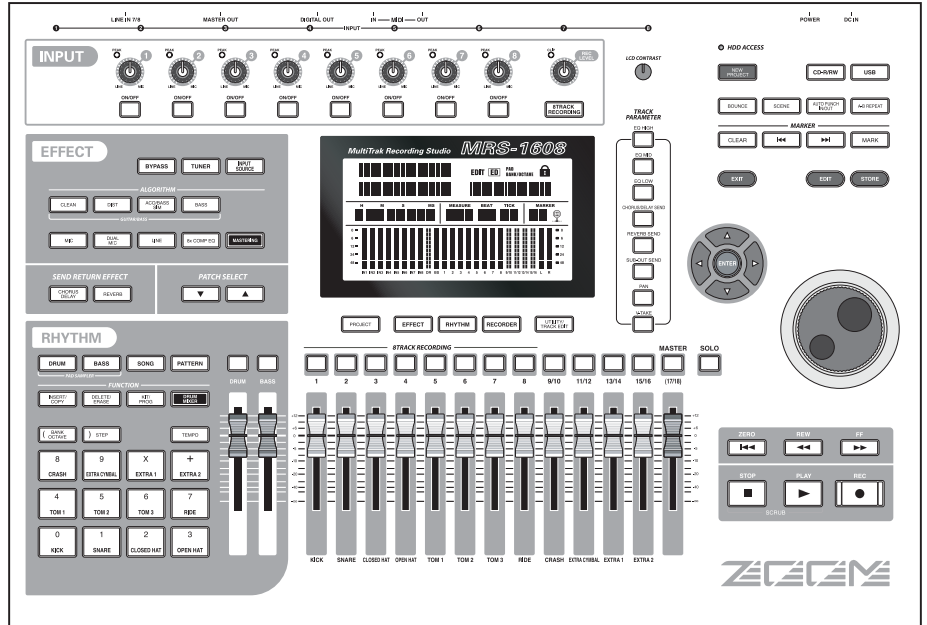




MultiTrak Recording Studio **MRS-1608**



Operation Manual

USAGE AND SAFETY PRECAUTIONS

SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions for you to read so that accidents can be prevented. The meanings of these symbols are as follows:



This symbol indicates explanations about extremely dangerous matters. If users ignore this symbol and handle the device the wrong way, serious injury or death could result.



This symbol indicates explanations about dangerous matters. If users ignore this symbol and handle the device the wrong way, bodily injury and damage to the equipment could result.

Please observe the following safety tips and precautions to ensure hazard-free use of the MRS-1608.

• Power requirements



The MRS-1608 is powered by the supplied AC adapter. To prevent malfunction and safety hazards, do not use any other kind of AC adapter.

When using the MRS-1608 in an area with a different line voltage, please consult your local ZOOM distributor about acquiring a proper AC adapter.

• About grounding



Depending on installation conditions, a slight electrical charge may be felt when touching a metal part of the MRS-1608. If you wish to avoid this, ground the unit by connecting the ground screw on the rear panel to a good external ground.

To prevent the risk of accidents, never use one of the following for grounding:

- Water pipe (risk of electric shock)
- Gas pipe (risk of explosion)

- Telephone wiring ground or lightning arrestor (risk of lightning stroke)

• Environment



Avoid using your MRS-1608 in environments where it will be exposed to:

- Extreme temperature
- High humidity, moisture, or splashing water
- Excessive dust or sand
- Excessive vibration or shock

• Handling



Never place objects filled with liquids, such as vases, on the MRS-1608 since this can cause electric shock.



The MRS-1608 is a precision instrument. Do not exert undue pressure on the keys and other controls. Also take care not to drop the unit, and do not subject it to shock or excessive pressure.

• Alterations



Never open the case of the MRS-1608 or attempt to modify the product in any way since this can result in damage to the unit.

• Connecting cables and input and output jacks



You should always turn off the power to the MRS-1608 and all other equipment before connecting or disconnecting any cables. Also make sure to disconnect all cables and the AC adapter before moving the MRS-1608.

• Volume



Do not use the MRS-1608 at a loud volume for a long time since this can cause hearing impairment.

• CD-R/RW Drive



Never look directly in the laser beam projected from the optical pickup of the CD-R/RW drive since your sight can be damaged.

Usage Precautions

• Electrical interference

For safety considerations, the MRS-1608 has been designed to provide maximum protection against the emission of electromagnetic radiation from inside the device, and protection from external interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves should not be placed near the MRS-1608, as the possibility of interference cannot be ruled out entirely.

With any type of digital control device, the MRS-1608 included, electromagnetic interference can cause malfunctioning and can corrupt or destroy data. Care should be taken to minimize the risk of damage.

• Cleaning

Use a soft, dry cloth to clean the MRS-1608. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

• Backup

The data of MRS-1608 can be lost because of malfunction or incorrect operation. Backup your data.

• Copyrights

Except for personal use, unauthorized recording from copyrighted sources (CDs, records, tapes, video clips, broadcast material and so on) is prohibited. ZOOM Corporation does not bear any liability for injunctions regarding the copyright law infringement.

Please keep this manual in a convenient place for future reference.

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Introduction

Thank you for selecting the *ZOOM MRS-1608 MultiTrak Recording Studio* (simply called the “*MRS-1608*” in this manual). The MRS-1608 is a fascinating product with the following features.

■ Brings together everything you need for complete music production

The MRS-1608 provides all the functionality you need for professional music production: hard disk recorder, drum/bass machine, sampler, digital mixer, effects, CD-R/RW drive and more. From creating the rhythm tracks to multitrack recording, mixdown, and burning an audio CD, the MRS-1608 lets you do it all.

■ Recorder with 16 tracks x 10 virtual takes

The recorder section provides 16 audio tracks (mono x 8, stereo x 4), plus a stereo master track for mixdown. Because each track has ten virtual tracks (V-takes), you can record multiple takes for important parts such as vocals or guitar solos and select the best take later. A full range of editing functions is provided, allowing you to copy or move audio data. Special functions including time stretch/compression and pitch compensation are also available.

■ Versatile input/output configuration allows simultaneous recording in 8 channels

The MRS-1608 features 3 inputs on the front and rear panels feeding a total of 8 channels. The unit can accommodate a wide range of sources, including high-impedance instruments such as guitar and bass, dynamic or condenser mics, as well as synthesizers and other line-level devices.

Normally, any two input signals will be selected for recording, but an 8-track recording mode for simultaneous recording of up to 8 signals is also available. This is great for multi-miking of drum sets or for capturing the performance of an entire band.

On the output side, there are analog and digital (optical) stereo outputs as well as a STEREO SUB-OUT connector that can carry a separate mix. Possible applications include monitoring during recording and use as a send output for an external effect.

■ Bounce function allows ping-pong recording of 16 tracks simultaneously

The bounce function makes it easy to consolidate multiple tracks into one or two tracks with just a few keystrokes. Play all 16 tracks, add the drum + bass sound, and bounce the result onto two empty V-takes.

If you select the master track as bounce target, internal mixdown is possible without using up any of the regular audio tracks.

■ **Rhythm section can be used to provide guide rhythm or accompaniment**

The rhythm section provides more than 400 types of accompaniment patterns from the internal drum sound generator. What's more, you can create your own original patterns using real-time or step input. Patterns can be used as a guide rhythm during recording, or programmed together with chords to create an entire rhythm song. In addition to conventional step input, the MRS-1608 features an innovative concept called FAST developed by ZOOM which lets you quickly build songs with various repetition patterns.

■ **Phrase loop function for pasting audio material**

Using recorded audio data or audio files picked up from a CD-ROM disc, you can create "phrase loops" for example of drum licks and guitar riffs. The playback order and repetition count of loop material can be programmed with the FAST method and written to any V-take as audio data.

■ **Pad sampler lets you play audio material with the pads**

Parts of an audio track or an audio file imported from CD-ROM can be assigned to the pads and played like a percussion set. This is useful to add sound effects to a song or play a rhythm pattern with unique character.

■ **Mixer section supporting automated operation**

The internal digital mixer can handle the playback signal from the audio tracks plus the drum and bass sound. The level, panning, and EQ settings of each channel can be saved as separate "scenes". A saved scene can be switched automatically at a desired point in a song.

■ **Versatile effects**

In terms of internal effects, the MRS-1608 provides an "insert effect" that can be inserted into a specified signal route, and a "send/return effect" that is used via the mixer send/return loop. The effects can be used in a variety of ways, either modifying the tone in real time while recording a track or during track playback.

■ **CD-R/RW drive lets you create audio CDs or backups**

The MRS-1608 CD model with integrated CD-R/RW drive lets you write audio data saved on the master track onto a CD-R/RW disc, to produce an audio CD. This is convenient to back up data that you have recorded.

The version of the MRS-1608 without internal CD-R/RW drive lets you install the optional drive CD-02 later, giving you the same functionality as the integrated model.

In order to take full advantage of the MRS-1608's versatile functions and to ensure trouble-free enjoyment, please read this manual carefully.

Keep this manual in a safe place together with the warranty card.

Introducing the MRS-1608

The MRS-1608 is internally divided into the following five sections.

● Recorder

Records and plays back audio signals.

● Rhythm section

Uses the internal drum/bass sound source to play rhythms.

● Mixer

Mixes the signals from the recorder and the drum/bass sound source into a stereo signal, for output via the output jacks and for mixdown on dedicated master tracks.

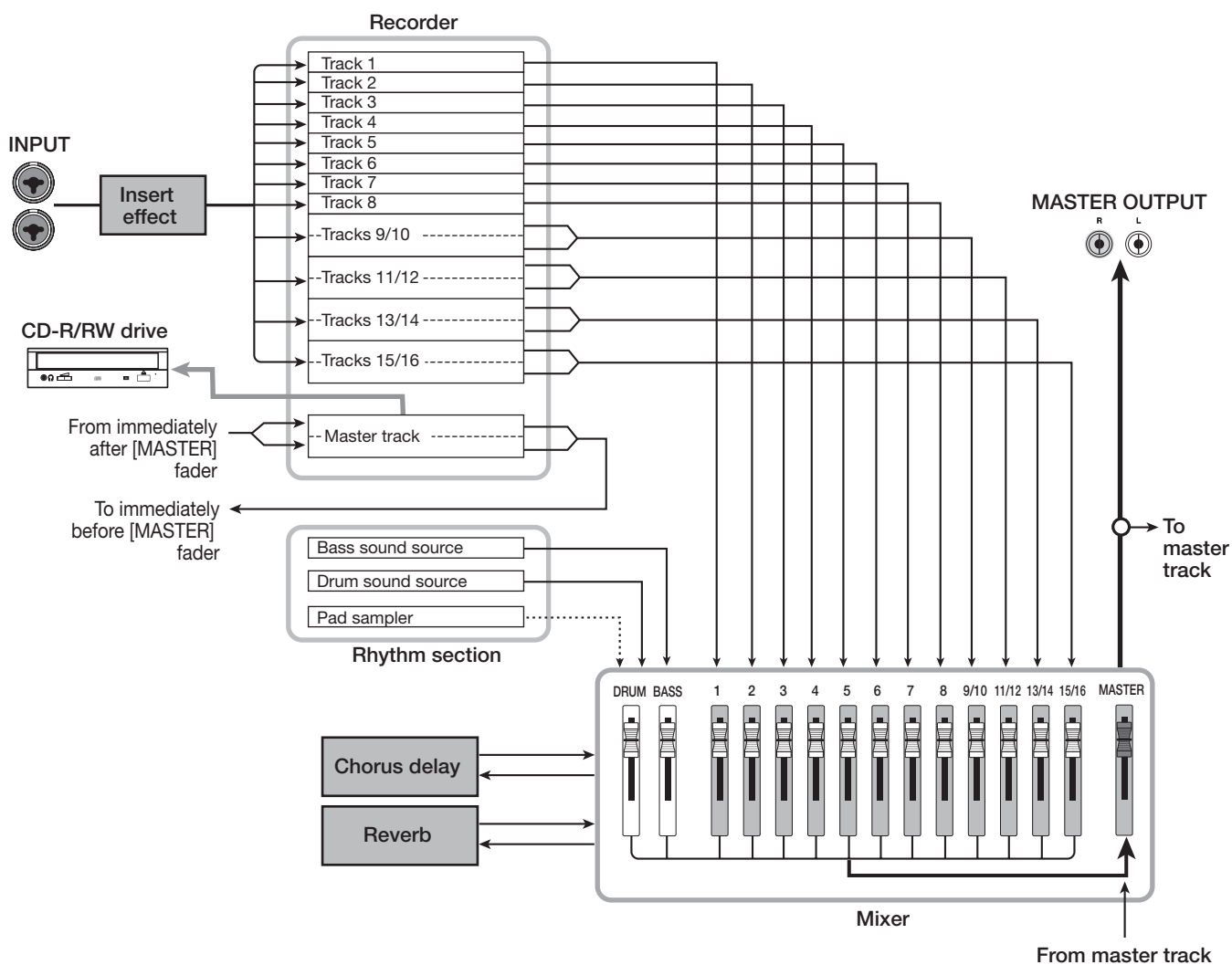
● Effects

Process input signals, recorder playback signals, or drum/bass sound source signals in various ways, to achieve various sound characteristics.

● CD-R/RW drive

Allows creating an audio CD or backing up recorded contents. Also serves for importing audio material from a CD or CD-ROM inserted in the drive.

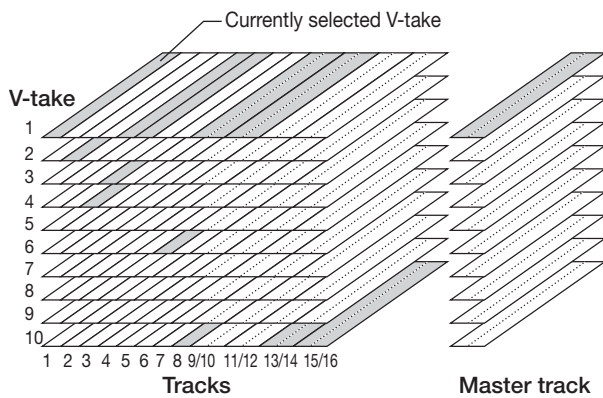
The following diagram shows the relationship and signal flow between each section.



Recorder

The recorder section of the MRS-1608 has 16 audio tracks: eight mono tracks (tracks 1 – 8) and four stereo tracks (tracks 9/10 – 15/16). (A “track” is a separate section for recording audio data.) Up to 8 tracks can be recorded simultaneously and up to 16 tracks can be played back simultaneously.

Each of the tracks has ten switchable virtual tracks (called “V-takes”). For each track, one V-take can be selected for recording/playback.



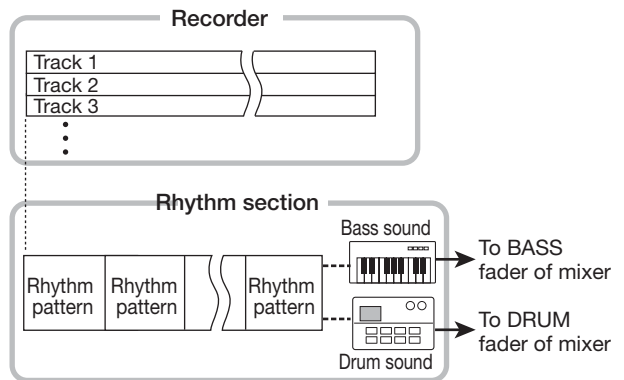
The recorder section also provides a set of stereo tracks which are separate from the normal record/play tracks 1 – 16. This is called the master track. The master track is dedicated for mixdown and for holding the material used to create an audio CD.

Rhythm section

The MRS-1608 contains a rhythm section that operates in sync with the recorder. It offers 511 accompaniment patterns (called “rhythm patterns”) that use the internal drum/bass sound generator. (Over 400 patterns are preprogrammed at the factory.) You can use these patterns as they are, modify them in part, or create entirely new patterns from scratch.

HINT

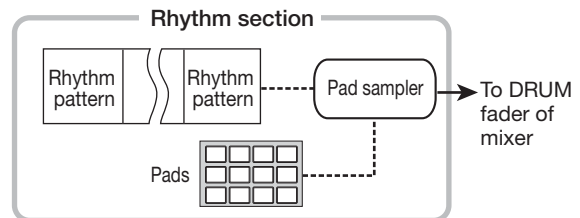
The drum/bass sound sources can be played with the pads on the top panel or with a MIDI keyboard or similar.



You can arrange rhythm patterns in the desired order of playback, and program chords and tempo to create the rhythm accompaniment for an entire song. (This is called a “rhythm song”) Up to 10 rhythm songs can be created, among which one is selected for editing/playback.

The rhythm section can also be played using the “pad sampler” instead of the drum/bass sound sources. The pad sampler uses parts of an audio track or an audio file imported from CD-ROM and lets you play these with the pads or in a rhythm pattern/rhythm song.

This makes it possible to incorporate special sounds in a rhythm pattern/rhythm song and to create your own original sounds.



HINT

You can process the drum/bass sound and pad sampler output sound with the insert effect and record it on a recorder track.

Mixer

The signals from audio tracks 1 – 16, and the drum and bass sounds (drum track/bass track) are sent to separate mixer channels for individual adjustment of volume and tone and to create a stereo mix.

For each track, parameters such as volume, panning, and 3-band EQ can be controlled independently.

Effects

The MRS-1608 provides two types of effects: insert effect and send/return effect. These effects which can be used simultaneously have the characteristics described below.

◆ Insert effect

This effect can be inserted at one of the following three points in the signal path.

- (1) Immediately after the INPUT jack
- (2) A desired channel of the mixer
- (3) Immediately before the [MASTER] fader

In the default condition, position (1) (immediately after INPUT jack) is selected.

When the setting is changed to (2), only a selected track or drum/bass sound is processed by the effect.

When the setting is changed to (3), the final stereo mix can be processed. This setting is suitable for processing the signal of the entire song during mixdown.

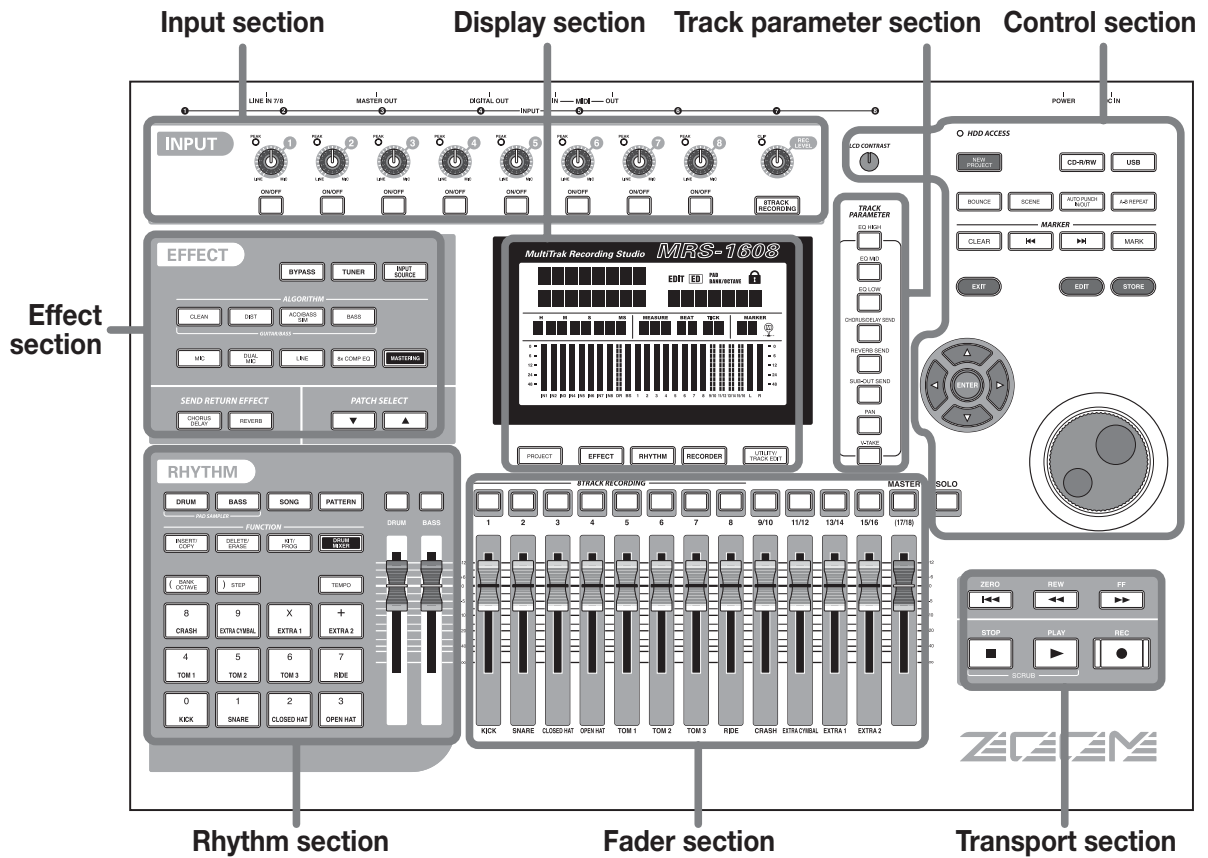
◆ Send/return effect

This effect is internally connected to the send/return loop of the mixer section. There are two types of send/return effect, reverb and chorus/delay, which can be used simultaneously.

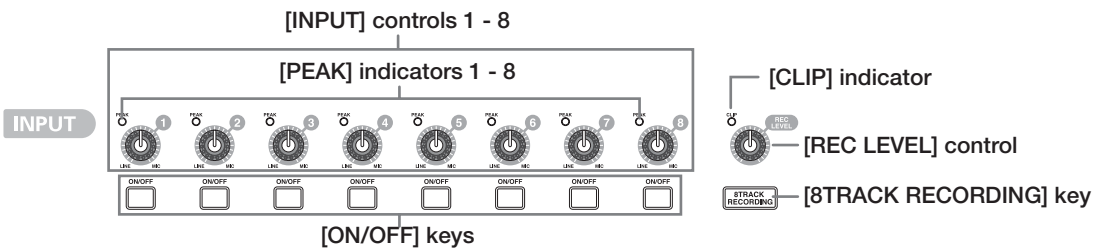
The send level of each mixer channel adjusts the depth of the send/return effect. Raising the send level will produce a deeper reverb or chorus/delay effect for that channel.

Parts of the MRS-1608

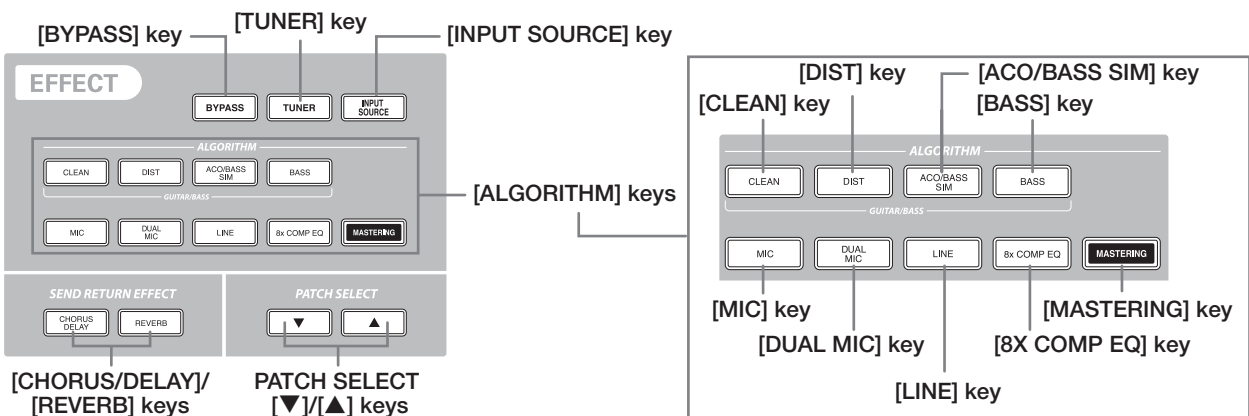
Top panel



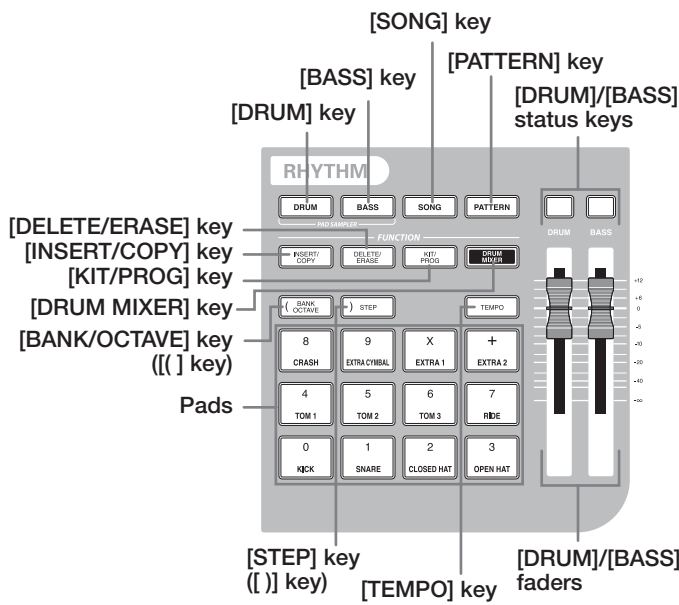
Input section



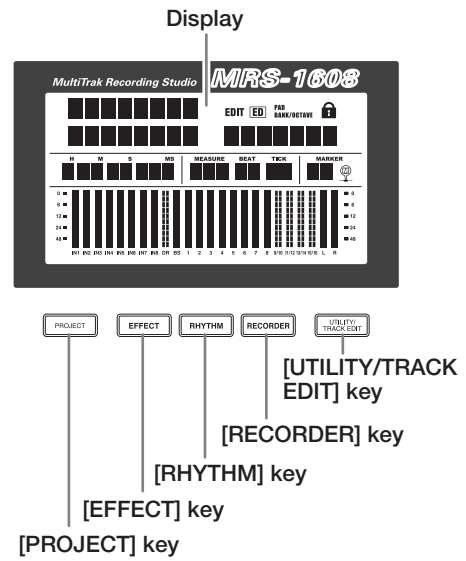
Effect section



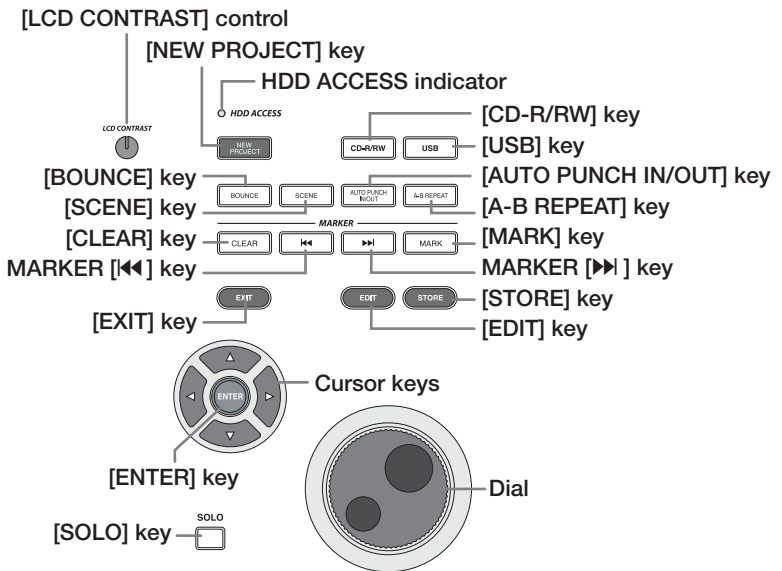
Rhythm section



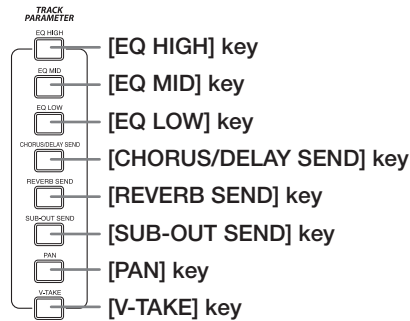
Display section



Control section

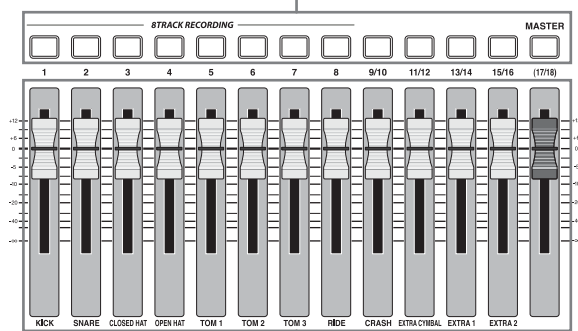


Track parameter section



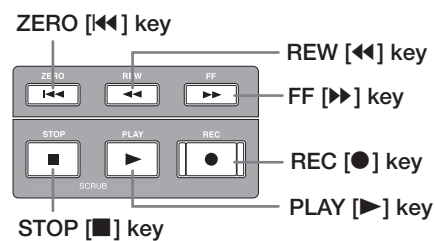
Fader section

Status keys (1 - 8, 9/10 - 15/16, [MASTER])

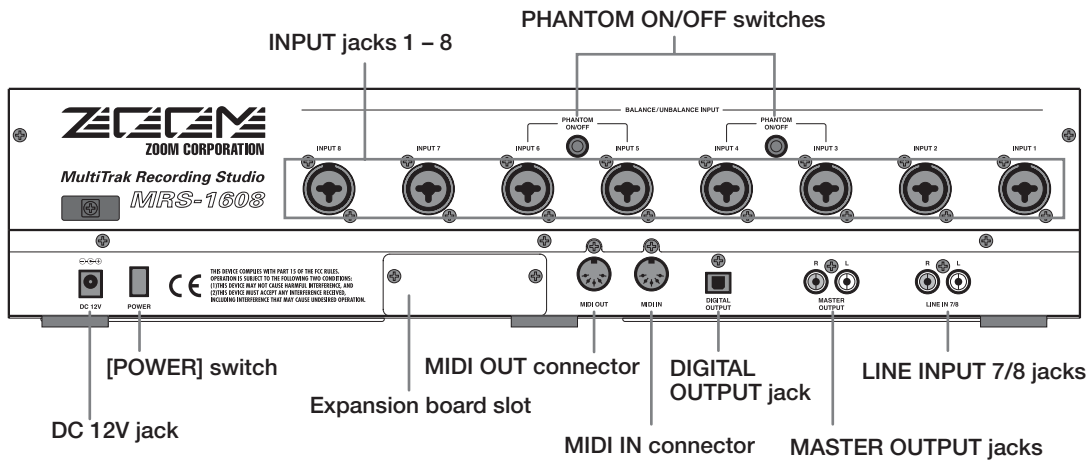


Faders (1 - 8, 9/10 - 15/16, [MASTER])

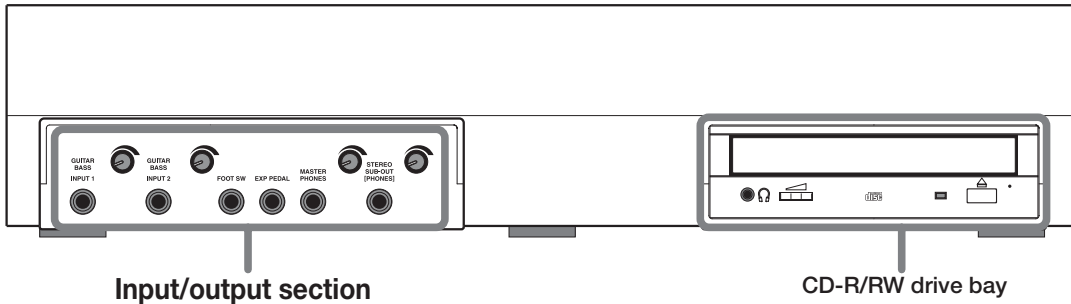
Transport section



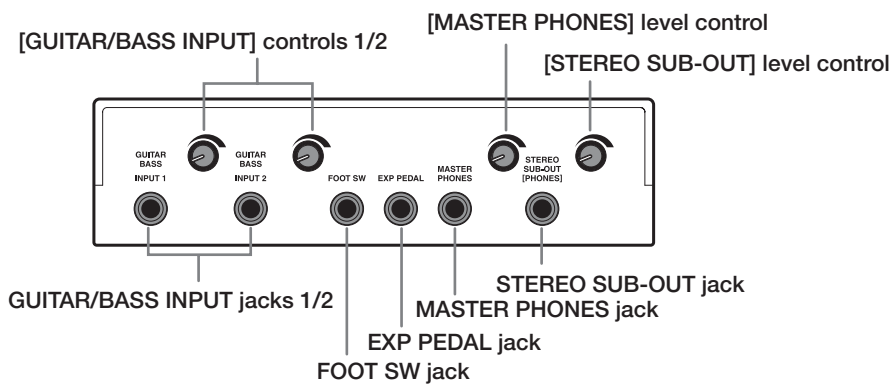
Rear panel



Front panel



Input/output section



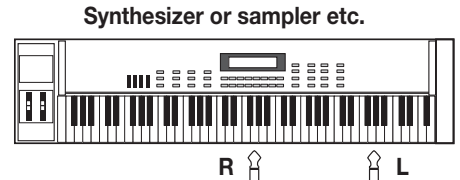
Connections

Connect your instrument, microphone, audio devices, and MIDI devices as shown in the following diagram.

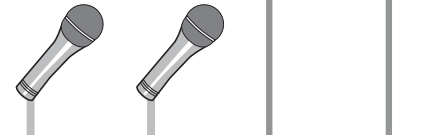
When connecting stereo output devices such as a synthesizer or CD player, connect the L output of the external device to the odd-numbered INPUT jack and the R output to the even-numbered INPUT jack.

To supply +48V phantom power to a condenser mic, connect the mic to the INPUT 3/4 or 5/6 jacks and set the corresponding [PHANTOM ON/OFF] switch to ON.

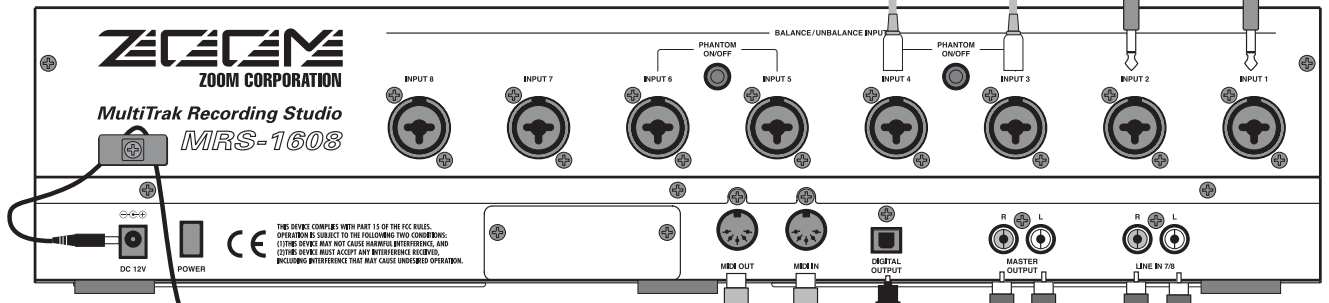
The INPUT 1 – 8 jacks accept either XLR plugs or mono phone plugs (balanced/unbalanced).



Dynamic or condenser microphones

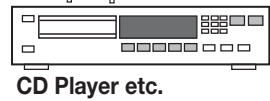
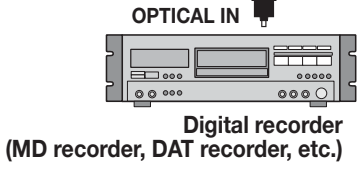
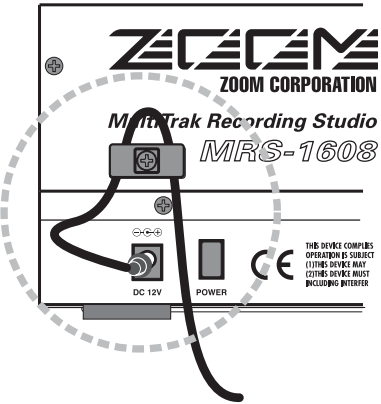


Rear panel



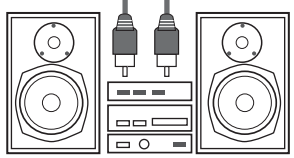
AC adapter

Loop the cable of the AC adaptor around the hook as shown below before connecting it to the [DC 12V] jack. This will prevent the plug from being pulled out if the AC adaptor cable is accidentally pulled.

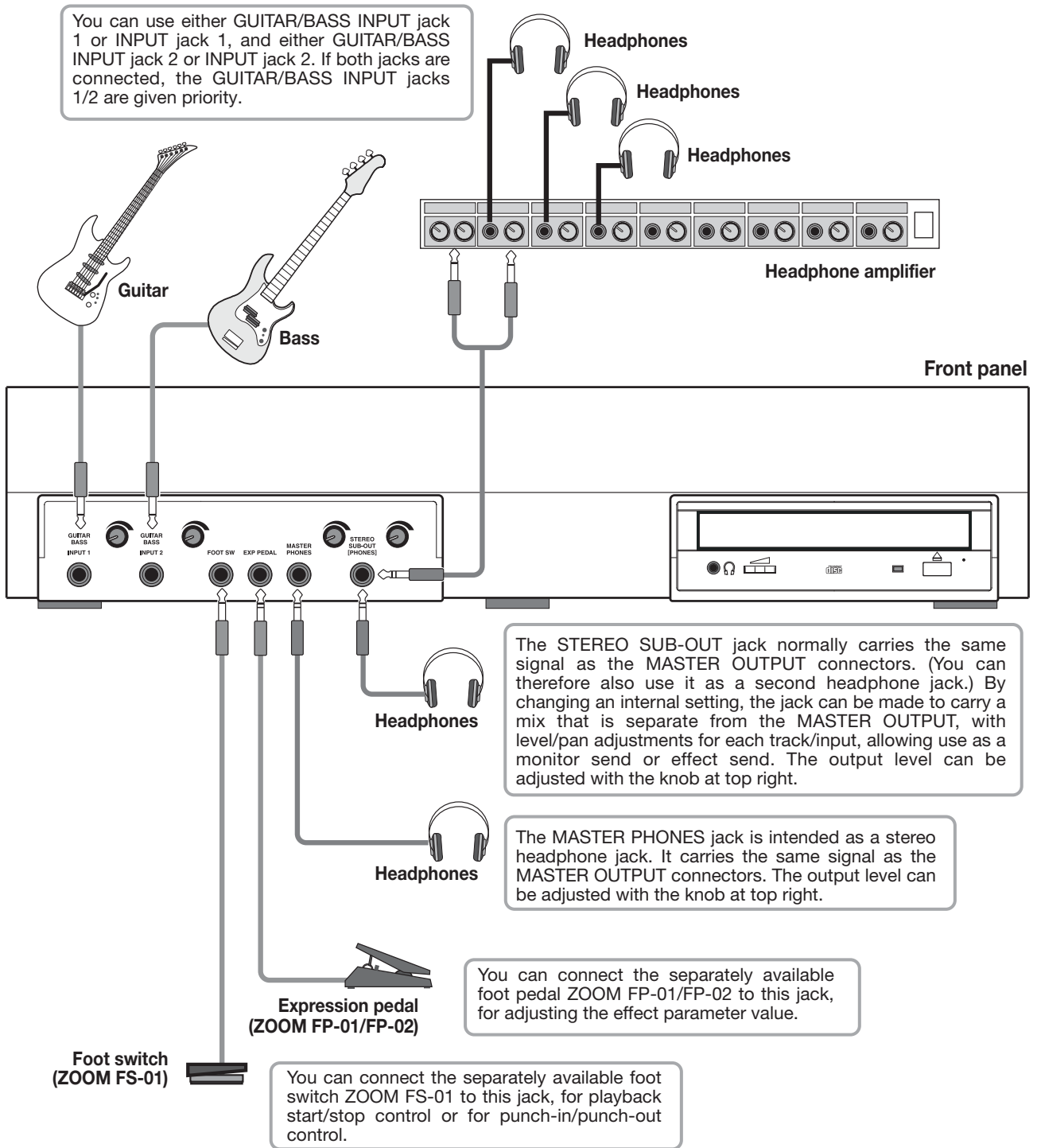


The signal from the LINE INPUT jacks 7/8 is mixed to that of the INPUT 7/8 jacks. For example, you could connect a CD player or similar here, or use the input for the effect return of an external effect. Adjust the output level of the source so that it causes no distortion when used as an input signal.

To prevent damage to the speakers of your monitor system, turn off the power of the system connected to the MASTER OUTPUT jacks (or turn the volume all the way down) before you make connections.



Monitor system (audio components or amplified speakers etc.)

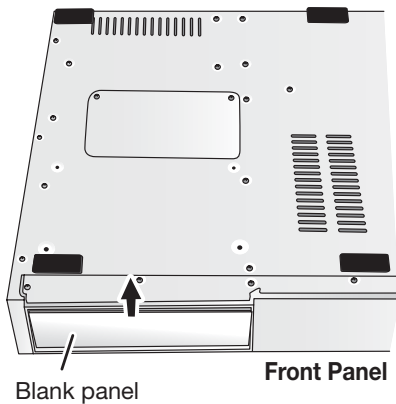


Installing the CD-R/RW Drive

To install the separately available CD-R/RW drive into the MRS-1608 model without preinstalled CD-R/RW drive, proceed as follows.

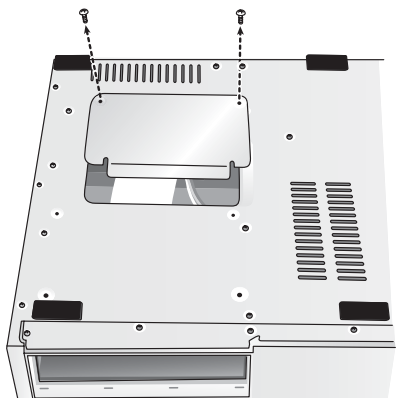
Caution

Before installing the drive, make sure that all cables and the AC adapter are disconnected.



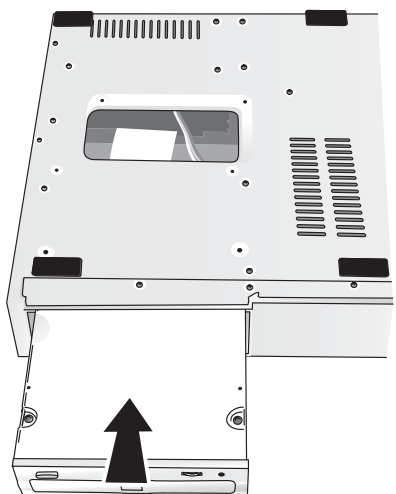
- 1.** Turn the MRS-1608 over and remove the blank panel from the drive mounting section of the front panel.

To remove the blank panel, pull out the groove in the center.



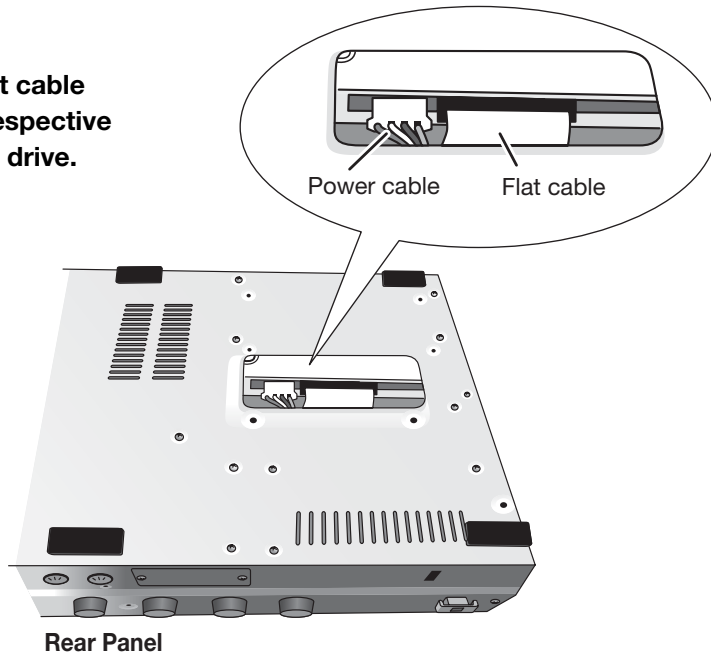
- 2.** Remove the fastening screws of the bottom plate, and remove the bottom plate.

Slide the bottom plate towards the rear to remove. Take care not to lose the screws, as these will be needed again for reassembly.

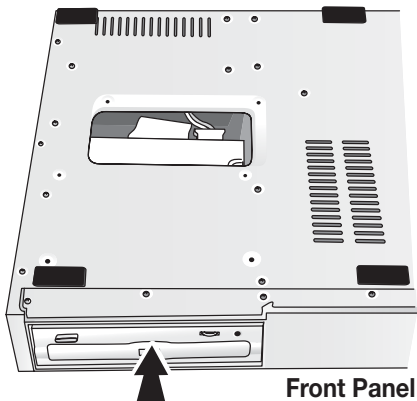


- 3.** Turn the CD-R/RW drive over and insert it into the drive mount bay.

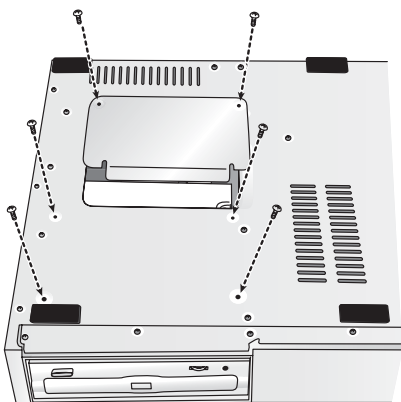
4. Plug the power cable and flat cable from the main unit into the respective connectors on the CD-R/RW drive.



5. Push the CD-R/RW drive all the way into the bay, so that the screw holes on the bottom of the MRS-1608 and the screw holes of the CD-R/RW drive are aligned.



6. Fasten the CD-R/RW drive with the four supplied panhead screws. Then reattach the bottom plate with the screws removed in step 2.



NOTE

- Use only the dedicated CD-R/RW drive CD-01 or CD-02 made by ZOOM Corporation.
- ZOOM Corporation will not accept any responsibility for damage or third-party claims arising from using any other drive.

Power On/Off

This section explains the procedure for turning the MRS-1608 on and off.

Turning power on

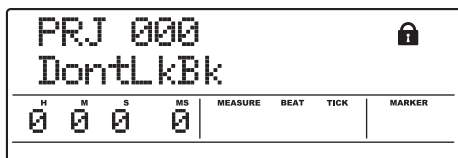
1. Make sure that the MRS-1608 and peripheral equipment is turned off.
2. Make sure that AC adapter, instrument, and monitor system (or headphones) are correctly connected to the MRS-1608. (For information on connections, refer to page 15.)

At this time, the volume setting of the connected instrument and monitor system should be minimum.

When a synthesizer or other electronic instrument is connected, turn power to that device on before the MRS-1608.

3. Press the [POWER] switch on the rear panel.

Power to the MRS-1608 comes on, the unit performs a self-test, and system settings are read. Wait until the following indication appears on the display. This is called the “main screen”.



4. Turn on the connected monitor system.

Turning power off (shutdown)

1. Turn power to the monitor system off.
2. Press the [POWER] switch on the rear panel of the MRS-1608.

The indication “GOODBYE SEE YOU!” appears on the display, and the unit is turned off.

When a synthesizer or other electronic instrument is connected, turn power to that device off after the MRS-1608.

Caution

- You must use this method to turn off the power of the MRS-1608. Never turn off the power by disconnecting the AC adaptor plug from the [DC 12V] jack or by unplugging the AC adaptor from the AC power outlet.
- In particular, you must never turn the power off by unplugging the AC adaptor while the HDD ACCESS indicator is lit. Doing so may damage the internal hard disk, causing all data to be lost permanently.

Listening to a Demo Song

When shipped from the factory, the internal hard disk of the MRS-1608 contains two demo songs. To listen to them, proceed as follows.

Selecting the demo song

On the MRS-1608, song data are managed in units called “projects”. A project encompasses recorded audio data, rhythm and effect settings, and other information. When you load a project, the complete state in which that song was saved will be reproduced.

To load a demo song project from the hard disk, proceed as follows.

1. From the main screen, press the **[PROJECT]** key in the display section.

The indication “PROJECT SELECT” appears on the display.

2. Press the **[ENTER]** key.

Projects stored on the hard disk are shown in the lower part of the display.



3. Turn the dial to select the demo song.

Project numbers 000 – 002 are the demo songs.

HINT

Project number 1 contains a demo song that uses the phrase loop function (→ p. 67). If desired, you can load elements from that demo song while working on another project.

4. Press the **[ENTER]** key.

The HDD ACCESS indicator lights up and the selected project is loaded. When the respective project display appears on the main screen, the demo song has been loaded.

Playing the demo song

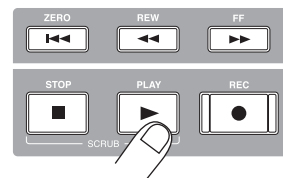
After loading, play the demo song as follows.

1. Turn down the volume of the monitor system.

When headphones are connected, turn down the [MASTER PHONES] level control.

2. Press the **PLAY [▶]** key in the transport section.

Playback of the demo song starts.



3. Adjust the monitor system volume setting (or the [MASTER PHONES] level control) to a comfortable volume.

4. To adjust the volume of the individual tracks, use the respective faders.

The volume of the rhythm section can be adjusted with the [DRUM]/[BASS] faders. To adjust the volume of the entire song, use the [MASTER] fader.

5. To switch individual tracks on or off, press the respective status key.

When the status key is out, the track is muted. When the key is lit in green, the muting is canceled.

6. To stop the demo song, press the **STOP [■]** key.

NOTE

The demo song is write-protected. Even if you change the mix by adjusting fader or pan settings, the changes will not be stored. To retain any changes you have made, cancel the write-protect setting first (→ p. 169).

Let's Record

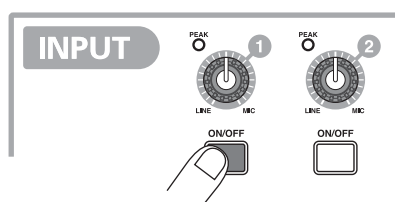
This section demonstrates the basic recording procedure of the MRS-1608. As an example, it explains how to record a guitar connected to the GUITAR/BASS INPUT jack 1 on track 1.

- 1. Press the [NEW PROJECT] key and then press the [ENTER] key.**

A new project is created, and the recording standby condition is activated.

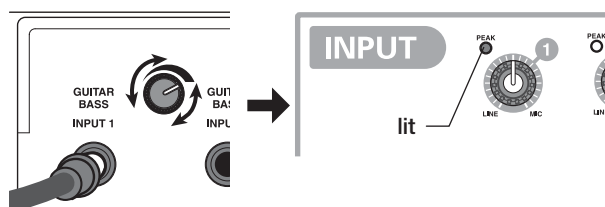
- 2. Press the [ON/OFF] key for input 1 so that the key lights up.**

The jack to which the guitar is connected is now active.



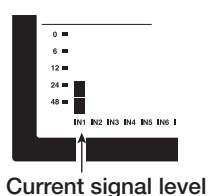
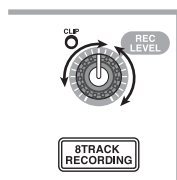
- 3. While playing your guitar, adjust the [GUITAR/BASS INPUT] control 1 to adjust the input sensitivity.**

Make the adjustment so that the [PEAK] indicator flickers slightly when you play your instrument at its loudest volume.



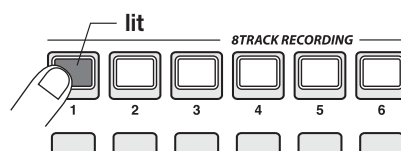
- 4. While playing your guitar, adjust the recording level by turning the [REC LEVEL] control.**

If the [CLIP] indicator lights up at high playing levels, you should turn down the recording level. The lower part of the display shows the current signal level.



- 5. Repeatedly press status key 1 until the key is lit in red.**

A track for which the status key is lit in red is in recording standby mode.



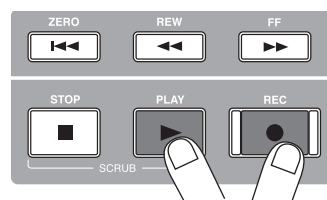
- 6. Operate the fader for track 1 to adjust the input signal monitor level.**

HINT

When you press the PLAY [▶] key in a new project, a rhythm pattern will start to play in sync with the audio track. If the rhythm accompaniment is not desired, lower the [DRUM]/[BASS] faders or repeatedly press the respective status key until it goes out.

- 7. To start recording, press the PLAY [▶] key while holding down the REC [●] key.**

A four-beat pre-count is heard, and recording starts. Play your instrument to record.



- 8. When recording is complete, press the STOP [■] key.**

The REC [●] key and PLAY [▶] key go out, and recording stops.

- 9. To check the recorded contents, press the ZERO [◀◀] key and then press the PLAY [▶] key.**

- 10. To cancel the recording condition, press the status key 1 so that the key is lit in green.**

Quick Tour

Now let's use your MRS-1608 to do some serious recording. This Quick Tour describes the five steps that cover the entire process of recording tracks and completing a song.

■ Step 1: Preparations

Shows how to create a new project, select a guide rhythm, and perform other steps necessary for recording.

■ Step 2: Recording the first track

Shows how to record the first track while using the insert effect.

■ Step 3: Overdubbing

Shows how to record further tracks while listening to a track already recorded (overdubbing).

■ Step 4: Mixing

Shows how to adjust the level, panning, and EQ of each track, apply the send/return effect, and mix the recorded tracks down to a pair of stereo tracks.

■ Step 5: Mixdown

Finally the completed stereo mix is recorded on the master track to create the finished song.

Step 1: Preparations

1.1 Creating a new project

On the MRS-1608, song data are managed in units called "projects". To start recording with the MRS-1608, you must first create a project.

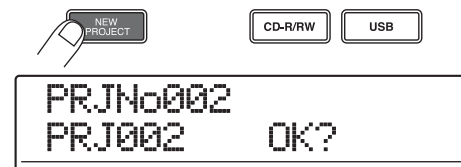
1. Connect the instrument to record and the monitoring system to the MRS-1608 (→ p. 15).

2. Turn power on in the order MRS-1608 → monitoring system.

When the MRS-1608 starts up, the last handled project is automatically loaded.

3. Press the [NEW PROJECT] key in the control section.

When you press the [NEW PROJECT] key at the main screen, the display indication changes as follows, and a new project can be created.



You can create a new project. You can also assign a name to the project.

HINT

- When creating a new project, the lowest free project number is automatically selected.
- It is also possible to create a new project from the project menu (→ p. 166).

4. Press the [ENTER] key.

A new project is created, and the main screen appears. While this screen is displayed, you can perform various recorder actions such as recording and playback.



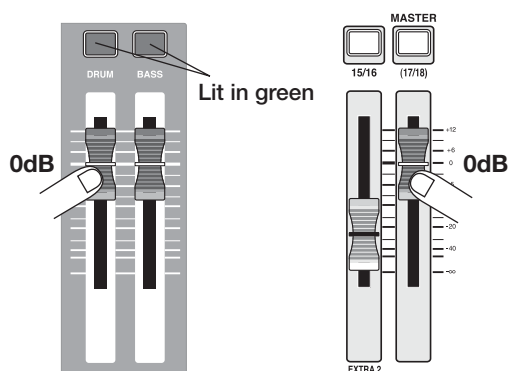
HINT

- When selecting a different project or creating a new project, the project you were working on up to that point is automatically saved.
- When performing the shutdown procedure for the MRS-1608 (→ p.19), the last project is automatically saved.

1.2 Selecting the rhythm pattern to use

The MRS-1608 has a built-in rhythm function that operates in sync with the recorder. This lets you use drum sounds (drum kits) and bass sounds (bass programs) to create repeated rhythm patterns of several measures. By combining various patterns, you can create the rhythm accompaniment for an entire song (rhythm song).

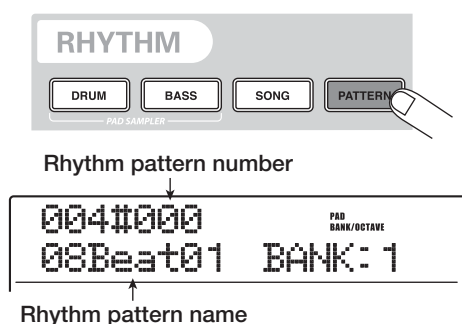
1. Verify that the [DRUM]/[BASS] status keys are lit in green. Then set the [DRUM]/[BASS] faders and the [MASTER] fader to 0 (dB).



The output signal of the drum kit/bass program (drum track/bass track) is sent to the respective fader of the mixer section. Like the regular tracks, these tracks also have status keys and faders for switching between playback and mute and for adjusting the signal level.

2. Press the [PATTERN] key in the rhythm section.

The [PATTERN] key lights up and the currently selected rhythm pattern is shown on the display.

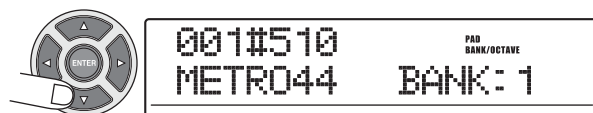


While this screen is shown, the [RHYTHM] key in the display section is flashing. This indicates that currently the

rhythm section is being set up.

While the [RHYTHM] key is flashing or out, the recorder and the rhythm section are always synchronized (→ p. 87).

3. Turn the dial or use the cursor up/down keys to select a pattern to use as guide rhythm.

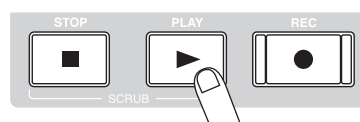


Up to 511 rhythm patterns can be used in a project. 475 of these are preprogrammed. (For the other patterns, "EMPTY" is shown.)

When you turn the dial to select another rhythm pattern while a pattern is playing, the new pattern will start after the current pattern has finished. When you select a new pattern with the cursor up/down keys, the new pattern begins playing immediately.

In this example, we will select a simple rhythm pattern as guide rhythm for use during recording. If you select for example the rhythm pattern number 510, a quarter-note metronome sound is heard.

4. Press the PLAY [▶] key in the transport section.



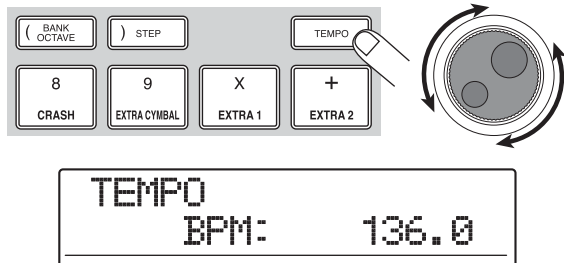
The selected rhythm pattern is played repeatedly, in sync with the recorder operation. The [TEMPO] key flashes according to the current tempo setting.

HINT

- If you press and light the [RHYTHM] key while the recorder is stopped, you can play the rhythm pattern by itself.
- During play, the pads corresponding to the currently produced sound of the drum kit/pitch of the bass program are flashing. You can also tap the pads to play the drum sounds/bass notes.

- 5. To change the tempo, press the [TEMPO] key in the rhythm section and then turn the dial to change the tempo value shown on the display.**

The tempo value can be set in 0.1 BPM steps.



When the setting is complete, press the [EXIT] key to return to the previous screen.

HINT

You can also set the tempo by tapping the [TEMPO] key repeatedly (→ p.89).

- 6. Use the [DRUM]/[BASS] faders to adjust the volume of the drum/bass track.**

If bass sound is not desired, turn the [BASS] fader all the way down.

- 7. To stop playback, press the STOP [■] key.**



- 8. To return to the main screen, press the [EXIT] key several times.**



Step 2: Recording the first track

In this step, you record the first track while listening to the guide rhythm of the rhythm section. As an example we describe how to record an electric guitar on track 1 with the insert effect.

2.1 Adjusting input sensitivity

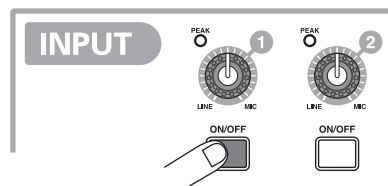
- 1. Connect an instrument to the GUITAR/BASS INPUT jack 1 (→ p. 15).**

To connect a guitar or bass, use the front panel GUITAR/BASS INPUT jacks 1/2. To connect a synthesizer or other component with line-level stereo output, use the rear panel INPUT 1 – 8 jacks.

HINT

You can use either GUITAR/BASS INPUT jack 1 or INPUT jack 1, and either GUITAR/BASS INPUT jack 2 or INPUT jack 2. If both jacks are connected, the GUITAR/BASS INPUT jacks 1/2 are given priority.

- 2. From the main screen, press the input 1 [ON/OFF] key so that the key lights up in red.**



The [ON/OFF] keys 1 – 8 in the input section control the status of inputs 1 – 8. When a key is lit, the corresponding input is turned on.

HINT

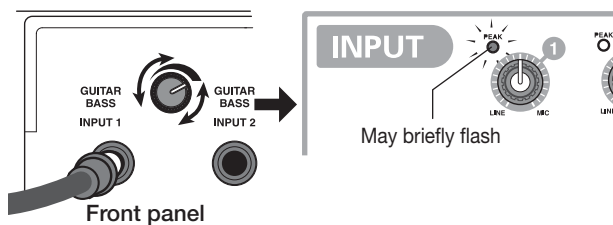
To record the output of a synthesizer or other stereo component in stereo, connect the L and R output to a pair of odd/even-numbered INPUT jacks, and press the corresponding [ON/OFF] keys so that both keys are lit.

- 3. While playing the instrument, use the [GUITAR/BASS INPUT] control 1 to adjust sensitivity.**

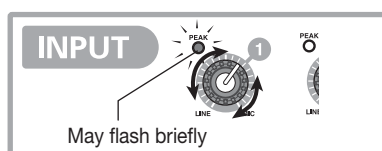
When the instrument is connected to GUITAR/BASS INPUT 1/2, use the [GUITAR/BASS INPUT] control 1/2. When the instrument is connected to INPUT 1 – 8, use the [INPUT] control 1 – 8 to adjust the input sensitivity. Adjust the control so that the [PEAK] indicator in the input

section lights up occasionally when you play the instrument at the loudest level.

● When using the GUITAR/BASS INPUT jack

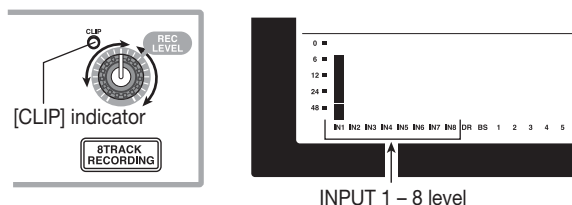


● When using the INPUT jack



4. While playing the instrument, use the [REC LEVEL] control to adjust the recording level.

The [REC LEVEL] control modifies the signal level going to the recorder (after passing the insert effect). Watch the IN1 level meter in the lower left of the display and set the level as high as possible, but avoid settings that cause the 0 dB indicator segment to light during play peaks.



If the recording level setting is too high, the [CLIP] indicator of the [REC LEVEL] control lights up.

2.2 Applying the insert effect

The signal supplied to the MRS-1608 can be modified with the insert effect. This effect can be applied to the input, to any track, or immediately before the [MASTER] fader. The insert effect actually is a multi-effect unit that contains a number of single effects (effect modules) such as compressor, distortion, and delay, connected in series. The following steps show how to select an algorithm and

apply the insert effect to the guitar signal connected to the GUITAR/BASS INPUT jack.

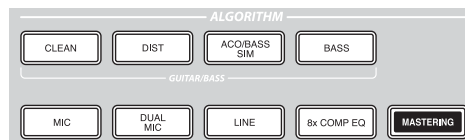
1. Press the [INPUT SOURCE] key in the effect section.



The insert position of the insert effect is indicated on the second line of the display. The default is “IN” (INPUT). If another setting is currently selected, turn the dial to select “IN”.

2. Use the [ALGORITHM] keys in the effect section to select the desired algorithm.

A combination of effect modules that can be used simultaneously is called an “algorithm”. The MRS-1608 has 9 algorithms which are controlled by the [ALGORITHM] keys in the effect section.



The following selections are available.

- CLEAN
- DIST
- ACO/BASS SIM
- BASS

These algorithms are suitable for recording guitar/bass.

- MIC
An algorithm suitable for vocals and other microphone recordings.
- DUAL MIC
An algorithm with two entirely separate mono input and mono output channels.
- 8x COMP EQ
An algorithm with 8 separate input/output channels. Different high-pass filter, compressor, and EQ settings are possible for each channel.
- LINE
An algorithm suitable mainly for recording line-level output

instruments such as synthesizer or electric piano.

● **MASTERING**

An algorithm suitable for processing the final stereo mixdown signal.

When you select an algorithm, the respective key lights up and a patch (effect program) using the selected algorithm is shown on the display.



NOTE

The 8x COMP EQ algorithm can only be inserted in the input if the 8-track recording function (→p. 45) is active.

3. Turn the dial to select the patch.

A total of 320 patches are available for the insert effect. You can edit these patches if desired to alter the sound or the effect depth.

The patches available for each algorithm are listed below.

Algorithm	Patch number range
CLEAN	0 – 29
DIST	0 – 49
ACO/BASS SIM	0 – 19
BASS	0 – 19
MIC	0 – 49
DUAL MIC	0 – 49
8x COMP EQ	0 – 19
LINE	0 – 49
MASTERING	0 – 29

HINT

When “EMPTY” is shown as the patch name, the patch is empty. Selecting such a patch will have no effect.

4. While playing your instrument at the maximum level, readjust the recording level and make sure that the [REC LEVEL] indicator does not light.

The recording level may change according to the selected patch. To prevent clipping, readjusting the [REC LEVEL] control may be necessary.

5. To return to the main screen, press the [EXIT] key several times.

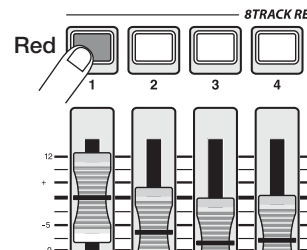
HINT

To record without using the insert effect, press the [BYPASS] key in the effect section. The key lights up and the insert effect is bypassed.

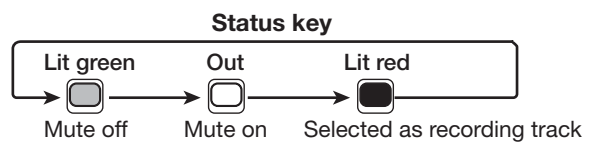
2.3 Selecting a track and recording

Now we will record the guitar sound (with the insert effect applied) on track 1.

1. From the main screen, repeatedly press the status key 1 until the key is lit in red.

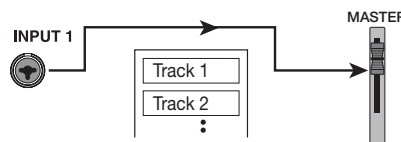


The status keys are used to select the recording track and to switch muting for each track on and off. Each time you press a status key, the key will cycle through the following states.

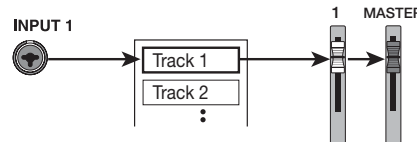


When status key 1 is red, track 1 is in the recording standby condition, and the input signal is assigned to track 1. The signal routing will change as follows.

When a recording track has not been selected



When a recording track (track 1) has been selected



When you press status keys 9/10 – 15/16, a pair of stereo tracks is selected as recording target. Except for the recording target V-take selection and phase setting, the

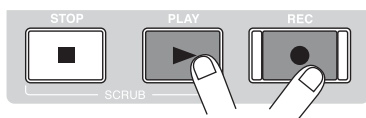
parameters for left/right stereo tracks are set to the same values. This is useful for recording from stereo sources such as synthesizers or CD players.

HINT

- Normally, you can select up to two tracks simultaneously. To select two mono tracks, press the first status key of an odd/even-numbered pair so that it is lit in red, and then hold down that key and press the other key so that it also is lit in red.
- Even if the input signal is mono, selecting a pair of stereo tracks as target will ensure that the left/right spread added by certain insert effect settings is preserved in recording.
- You can also record 8 tracks simultaneously (→ p. 45).

2. Set fader 1 and the [MASTER] fader to 0 dB. Then adjust the volume of the monitoring system while playing your instrument.

3. To begin recording, press the ZERO [◀◀] key to return to the beginning of the song. Then hold down the REC [●] key and press the PLAY [▶] key.



The REC [●] key and PLAY [▶] key light up, and a pre-count of 4 beats is heard. Then recording will begin. Record your instrument playing while listening to the guide rhythm from the rhythm section.

HINT

- The number and the style of the pre-count clicks can be changed (→ p. 48).
- If the input signal is distorted, refer to step 2.1 to adjust the input sensitivity and recording level.

4. When you have finished recording, press the STOP [■] key.

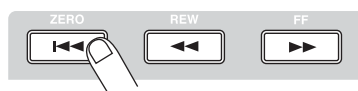
The REC [●] key and PLAY [▶] key will go out, and

recording will stop. The indication “wait...” is briefly shown on the display, and then the main screen reappears.

NOTE

The duration of the “wait...” period may differ. Never turn power to the unit off while “wait...” is being shown on the display. Otherwise recorded data may be lost and damage to the unit may occur.

5. To listen to the recorded content, press the ZERO [◀◀] key to return to the beginning of the song, and then press the PLAY [▶] key.



The track will be played back together with the selected guide rhythm from the rhythm section.

HINT

- You can specify a position in hours/minutes/seconds/milliseconds and move directly to that point (→ p. 37).
- By setting marks at the desired points, you can quickly jump to these points (→ p. 46).

6. To stop playback, press the STOP [■] key.

To redo the recording, repeat steps 3 – 5.

7. When you are satisfied with the recorded content, press status key 1 until it is lit in green.

The recording standby condition of track 1 is canceled.

HINT

- Recorded content can be copied, deleted, or edited (→ p. 49).
- By switching to another V-take for the track, you can record again on the track without erasing the current recording (→ p. 35).

Basic operation of transport keys

REW [◀◀] key: Moves the current position back in 1-second steps. Movement speed can be increased by holding down the REW [◀◀] key and pressing the FF [▶▶] key.

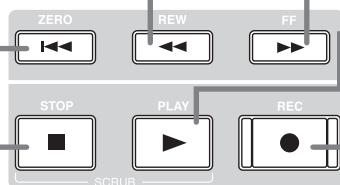
FF [▶▶] key: Moves the current position forward in 1-second steps. Movement speed can be increased by holding down the FF [▶▶] key and pressing the REW [◀◀] key.

ZERO [◀◀] key: Returns the recorder to the start position (counter zero position).

PLAY [▶] key: Starts recorder playback from the current position.

STOP [■] key: Stops the recorder.

REC [●] key: If you press the PLAY [▶] key while holding down this key, recording starts. Pressing the key during playback causes punch-in and pressing the key during recording causes punch-out.



Step 3: Overdubbing

In this step, you will learn how to record another instrument on track 2, while listening to the content you recorded in step 2. Adding parts in this way is called “overdubbing”.

3.1 Making settings for input sensitivity and insert effect

As in step 2, adjust input sensitivity and recording level, and make settings for the insert effect.

- 1.** Connect the next instrument you want to record, and press the [ON/OFF] key so that it is lit in red.
- 2.** Adjust input sensitivity and recording level in the same way as in step 2.1.
- 3.** Select the algorithm and patch for the insert effect in the same way as in step 2.2.
- 4.** When the setting is complete, press the [EXIT] key to return to the main screen.

3.2 Selecting a track and recording

Now you're ready to record the second instrument on track 2, while playing the content of track 1 and the guide rhythm.

- 1.** Repeatedly press status key 2 until the key is lit in red.

Track 2 is now in the recording standby condition. Verify that the status key 1 and the [DRUM]/[BASS] status keys are lit in green.

- 2.** Set the [MASTER] fader to 0 dB and use fader 2 to adjust the monitoring level.

If necessary, set the recorder to playback and operate faders 1/2 and the [DRUM]/[BASS] faders to adjust the monitor level balance between tracks.

- 3.** To begin recording, press the ZERO [◀◀] key to return to the beginning of the song. Then hold down the REC [●] key and press the PLAY [▶] key.

After the pre-count, recording on track 2 will begin. Record your instrument playing while listening to the guide rhythm and track 1.

- 4.** When you have finished recording track 2, press the STOP [■] key.

The indication “wait...” is briefly shown on the display, and then the main screen reappears.

- 5.** To listen to the recorded content, press the ZERO [◀◀] key to return to the beginning of the song, and press the PLAY [▶] key.

The guide rhythm of the rhythm section and tracks 1/2 will be played back. Adjust faders 1/2 as necessary to adjust the level balance.

- 6.** To stop playback, press the STOP [■] key.

HINT

To redo the recording, repeat steps 3 – 5. You can also start rerecording from partly into the track and use the punch-in/punch-out function to redo a limited passage only (→ p. 39).

- 7.** When you are satisfied with the recorded content, press status key 2 until it is lit in green.

You can now record more tracks in the same way.

HINT

The maximum number of tracks that can be recorded is 16. But even when all 16 tracks have been filled, you can still use the bounce function (also called ping-pong recording) to move the contents from multiple tracks onto 1 or 2 tracks. Then you can select another V-take for the bounce source tracks and record more (→ p. 35).

Step 4: Mixing

When you have finished recording all tracks, you can use the built-in mixer to adjust parameters such as volume level, EQ (equalizer), and panning (stereo left/right positioning) to create a pair of stereo tracks.

4.1 Turning off the input and rhythm section

In order to keep unwanted signals from being included in the mix, you should turn off the input and the guide rhythm from the rhythm section.

1. To mute the rhythm section, press the [DRUM]/[BASS] status keys so that the keys go out.
2. To mute the input, press the [ON/OFF] key for the input where the instrument is connected, so that the key goes out.

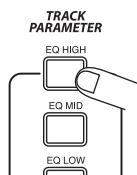
HINT

If desired, you can add the drum kit/bass program sound and/or sound from input signals to the mix.

4.2 Adjusting volume, panning, and EQ

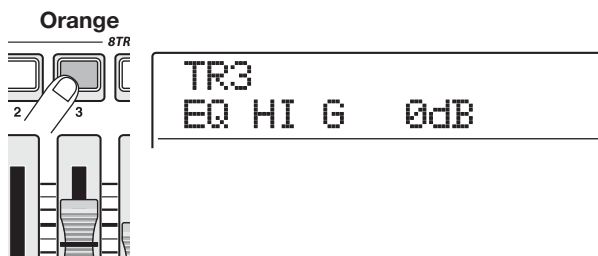
Adjust the volume, panning, and equalization for each track by controlling the track parameters of the built-in mixer.

1. To adjust the volume balance between tracks, operate faders 1 – 8, and faders 9/10 – 15/16.
By operating faders of a pair of stereo tracks, you can adjust the left/right balance.
2. To adjust the EQ and panning for each track, press the respective key in the track parameter section.

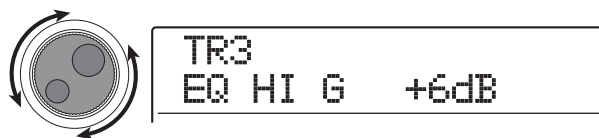


3. Use the cursor left/right keys or the status keys to select the track for which you want to make a setting.

While the track parameter display is shown, the status keys and cursor left/right keys can be used to select a track. The status key for the currently selected track is lit in orange.



4. Turn the dial to select the setting value.



5. Use the cursor up/down keys or the keys in the track parameter section to select a track parameter, and adjust other parameters in the same way.

When a parameter is displayed, pressing the corresponding key in the track parameter section toggles the parameter between on and off.

The parameters that can be selected for tracks 1 – 8 and tracks 9/10 – 15/16 are listed in the table on the next page.

HINT

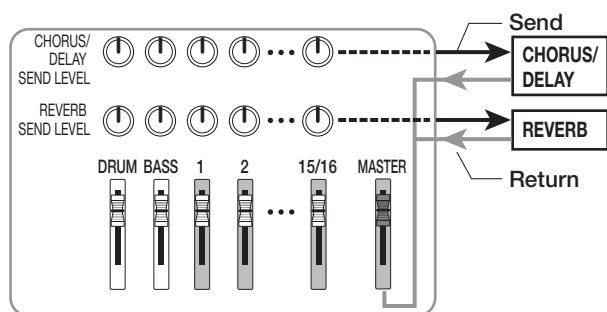
- In the default condition of a project, the SUB-OUT SEND LVL and SUB-OUT SEND PAN parameters are turned off. For information on how to control these parameters, see page 82.
- Some track parameters (level, EQ, panning/balance, send/return effect intensity etc.) can also be used for the drum/bass track and input signals.

Track parameter list

Parameter	Corresponding key	Display	Setting range	Description
EQ HI GAIN	[EQ HIGH] key	EQ HI G	-12 – +12dB	Adjusts high frequency range boost/cut.
EQ HI FREQUENCY		EQ HI F	500 – 18000(Hz)	Adjusts center frequency for high frequency range boost/cut.
EQ MID GAIN	[EQ MID] key	EQ MID G	-12 – +12dB	Adjusts mid frequency range boost/cut.
EQ MID FREQUENCY		EQ MID F	40 – 18000(Hz)	Adjusts center frequency for mid frequency range boost/cut.
EQ MID Q-FACTOR		EQ MID Q	0.1 – 1.0	Adjusts the Q value (bandwidth) for mid-frequency EQ.
EQ LOW GAIN	[EQ LOW] key	EQ LO G	-12 – +12dB	Adjusts low frequency range boost/cut.
EQ LOW FREQUENCY		EQ LO F	40 – 1600(Hz)	Adjusts center frequency for low frequency range boost/cut.
CHORUS/DELAY SEND LEVEL	[CHORUS/DELAY SEND] key	CHO SEND	0 – 100	Adjusts signal volume sent to chorus/delay effect.
REVERB SEND LEVEL	[REVERB SEND] key	REV SEND	0 – 100	Adjusts signal level sent to reverb effect.
SUB-OUT SEND ON/OFF	[SUB-OUT SEND] key	SUB SEND	ON/OFF	Selects whether the STEREO SUB-OUT jack carries the same signal as the MASTER OUTPUT jacks. This parameter can be selected only for the master track.
SUB-OUT SEND LEVEL		SUB SEND LVL	0 – 127	Adjusts the level of the signal sent from tracks 1 – 16, drum/bass track, and input to the STEREO SUB-OUT jack. This parameter is not shown when the SUB-OUT SEND ON/OFF parameter for the master track is ON.
SUB-OUT SEND PAN		SUB SEND Pan	L100 – 0 – R100	Adjusts the panning value of the signal sent from tracks 1 – 16, drum/bass track, and input to the STEREO SUB-OUT jack. This parameter is not shown when the SUB-OUT SEND ON/OFF parameter for the master track is ON.
PAN	[PAN] key	PAN	L100 – 0 – R100	Adjusts panning for the track. For stereo tracks, this adjusts the left/right balance.
V-TAKE	[V-TAKE] key	TR x-y	x=1 – 16 y=1 – 10	Selects V-take to use for the track. x is the track number and y is the V-take number.
FADER	None	FADER	0 – 127	Adjusts the current volume.
STEREO LINK		ST LINK	ON/OFF	Links the parameters for two mono tracks (→p. 82).
INVERT		INVERT	ON/OFF	Selects whether the output signal phase is inverted. OFF means normal phase and ON means inverted phase.

4.3 Applying the send/return effect

The track signals sent to the internal mixer can be processed by an effect that is connected internally to the send/return loop of the mixer. (This is called a send/return effect.) The MRS-1608 incorporates two kinds of send/return effects (chorus/delay and reverb).



The intensity of the send/return effect can be adjusted for each track by using the send level parameter (which controls the signal level that is sent to the effect). Increasing this parameter will result in stronger effect action. This section describes how to select the send/return effect type and adjust the send level for each track.

◆ Selecting the send/return effect patch

1. From the main screen, press the [CHORUS/DELAY] key or [REVERB] key in the effect section.

Press the [CHORUS/DELAY] key to select a chorus/delay patch, or the [REVERB] key to select a reverb patch. The display will indicate the patch that is currently selected for the effect you selected. For example, a screen such as shown below appears when the [REVERB] key is pressed.



2. Turn the dial to select a patch.

Each send/return effect has 30 preprogrammed patches (numbered 0 – 29). If desired, you can edit these patches to modify the effect further (→ p. 147).

3. Select the patch for the other send/return effect in the same way.
4. To return to the main screen, press the [EXIT] key several times.

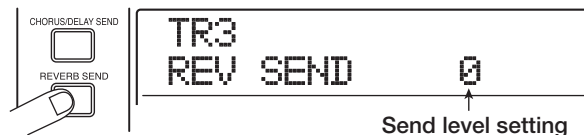
HINT

In the project default condition, the send level for the send/return effect is set to zero for each track. Therefore you need to raise the setting to verify the sound produced by the effect.

◆ Adjusting the send/return effect intensity for each track

5. From the main screen, press the [CHORUS/DELAY SEND] key or [REVERB SEND] key in the effect section, to set the respective level.

The display will indicate the send level that is currently set for the effect. For example, a screen such as shown below appears when the [REVERB SEND] key is pressed.



6. Use the cursor left/right keys or the status keys to select the track for which you want to adjust the send level.
7. While playing the song, turn the dial to adjust the send level value.
8. Adjust the send level for other tracks in the same way.
9. Adjust the intensity of the other send/return effect in the same way.
10. To return to the main screen, press the [EXIT] key several times.

4.4 Applying the insert effect to a track

You can apply the insert effect to the output of any track, so that it post-processes the output signal of the track.

◆ Changing the algorithm/insert position of the insert effect

1. Use the [ALGORITHM] key in the effect section to select the algorithm you want to use.

When applying the insert effect to a track, the selected algorithm determines the number of tracks for which the effect can be used.

● When 8x COMP EQ is selected

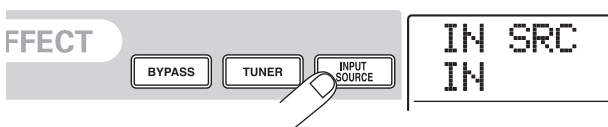
The effect can be used on the output of eight continuous tracks (1 – 8 or 9 – 16).

● When an algorithm other than 8x COMP EQ is selected

The effect can be used on a maximum of two mono tracks or one stereo track.

2. Press the [INPUT SOURCE] key in the effect section.

The currently selected insert position appears on the display.

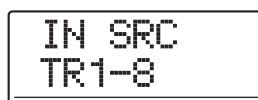


3. Turn the dial to bring up the track to which you want to apply the insert effect on the second line of the display.

The status key of the selected track lights up in orange.

● When 8x COMP EQ algorithm is selected

You can select eight continuous tracks (TR 1 – 8 or TR 9 – 16) as insert location. Also if you have selected track TR 9 – 16, you can set different high-pass filter, compressor, and EQ values for odd/even-numbered tracks.



● When an algorithm other than 8x COMP EQ is selected

You can select one of eight mono tracks (TR 1 – TR 8) or two mono tracks/one stereo track (TR 1/2 – TR 15/16) as insert location.



HINT

The insert position can also be selected with the status keys. To select a mono track x 2, hold down one status key while pressing the other one.

◆ Selecting the patch for the insert effect

4. Press the [ALGORITHM] key selected in step 1 once more.

The currently selected patch is shown on the display.

5. While playing the song, turn the dial to select the patch to use.

The insert effect can now be used to post-process the specified track. When the effect is applied, the track output level may change. Use the respective fader to readjust the level as necessary.

HINT

When the 8x COMP EQ algorithm is selected, settings and effect on/off switching can be done individually for each track (→ p.142).

6. When you have checked the effect, stop the song and press the [EXIT] key to return to the main screen.

HINT

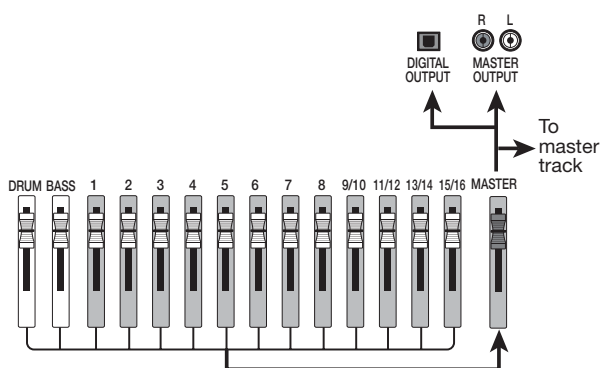
If the insert effect is applied to the track output, it is not possible to also apply it to the input or before the [MASTER] fader. However, by using the bounce function (→ p. 42) to record the track/V-take on another empty V-take, you can turn the post-processed effect sound into audio data and then apply the insert effect at another position.

Step 5: Mixdown

When the mix is ready, you can transfer it onto two tracks to create the finished song. This is referred to as “mixdown”.

There are two ways of doing this: use the MASTER OUTPUT or DIGITAL OUTPUT connectors and record the song on an external recorder, or use the internal master track of the MRS-1608 to record.

The master track is a dedicated pair of stereo tracks that is separate from the normal audio tracks. When you select the master track as recording track, the signal after the [MASTER] fader is recorded. The content recorded on the master track can later be used as source material for creating an audio CD.



This section explains the mixdown procedure when you select the second method, i.e. recording on the master track.

5.1 Using the mastering insert effect

By applying the insert effect immediately before the [MASTER] fader, you can process the stereo mix signal for mixdown. If you select the MASTERING algorithm at this time, you can use the mastering effect for processing the stereo mix.

NOTE

While the insert effect is inserted immediately before the [MASTER] fader, you cannot use the effect for processing during recording or for post-processing of a track.

To apply the insert effect to the stereo mix, proceed as follows.

◆ Changing the insert position of the insert effect

1. From the main screen, press the [INPUT SOURCE] key in the effect section.

The current insert effect position is shown on the display.

2. Turn the dial to bring up the indication “MASTER” on the second line of the display.

```
IN SRC
MASTER
```

Now the insert effect is inserted immediately before the [MASTER] fader.

3. Press the [EXIT] key.

The unit returns to the main screen.

◆ Selecting a patch for the insert effect

4. Press the [MASTERING] key in the effect section.

The insert effect algorithm is switched to MASTERING. The display shows the currently selected patch.



5. While playing the song, turn the dial to select the patch.

If desired, you can edit the patch to modify the effect further (→ p. 142).

NOTE

If the signal sounds distorted when the mastering effect is applied, make sure that there is no distortion in the playback sound of individual tracks, and lower all fader settings as necessary.

6. When you have verified that the sound is as desired, press the [EXIT] key.

The unit returns to the main screen.

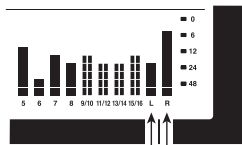
5.2 Mixdown on the master track

After mastering effect settings have been completed, record the final mix on the master track.

1. Press the ZERO [◀◀] key to return to the beginning of the song.

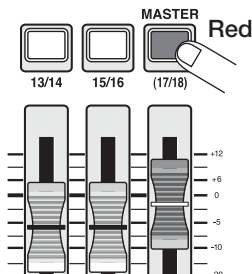
2. Press the PLAY [▶] key to play the song, and check the level after the [MASTER] fader.

The signal level after the [MASTER] fader can be checked by observing the level meter in the lower right of the display. If the 0 dB segment lights up during play, turn down the [MASTER] fader to perform fine adjustment. After checking the level, press the STOP [■] key.



Left channel signal level Right channel signal level

3. Repeatedly press the [MASTER] status key so that the key lights up in red.



The master track can now be recorded.

4. Move to the recorder start position. Then hold down the REC [●] key and press the PLAY [▶] key.

Recording on the master track starts.

5. When recording is completed, press the STOP [■] key.

6. To play the master track, repeatedly press the [MASTER] status key until it is lit in green.

While the [MASTER] status key is lit in green, the master track can be played. All other status keys go out and the signals from other tracks are muted. The insert and send/return effects are also disabled.

7. Return to the beginning of the song, and press the PLAY [▶] key.

The master track is played back. To stop playback, press the STOP [■] key.

8. To return the MRS-1608 to normal operation, repeatedly press the [MASTER] status key until it is out.

Muting of other tracks is canceled, and the status keys revert to the original condition.

HINT

- Like the other tracks, the master track also has 10 V-takes.
- You can play the master tracks of multiple projects in succession (→ p. 177).
- The contents of the master track can be edited later (→ p. 49).

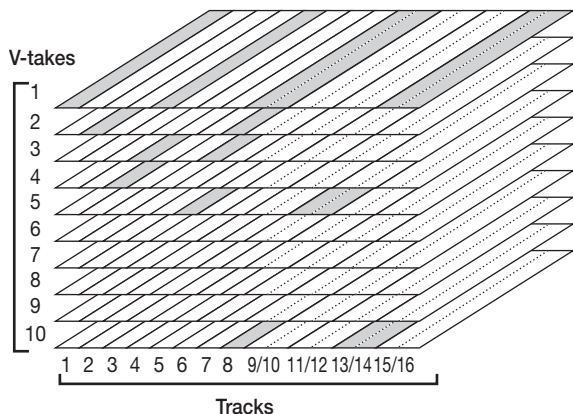
Reference [Recorder]

This chapter explains the functions and operation steps of the recorder section.

V-takes

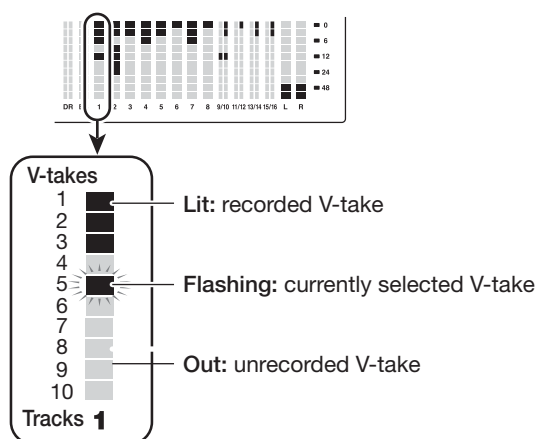
About V-takes

Each track 1 – 16 of the recorder contains ten virtual tracks, called “V-takes”. For each track, you can select one such take, which will be used for recording and playback. For example, you can switch V-takes as you record multiple vocal or guitar solos on the same track, and later compare them and select the best V-take.



- If you select the master track, “M” is shown as the track number.

While the above display indication is shown, the V-take condition for each track is indicated by the segments of the level meter. A lit segment denotes a recorded V-take and an unlit segment denotes an unrecorded V-take. The flashing segment indicates the currently selected V-take for each track.



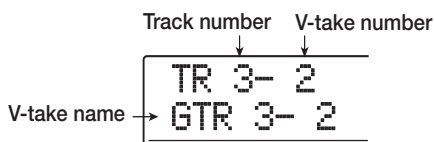
2. Use the cursor left/right keys to select a track.

Switching V-takes

Here’s how to switch the V-take used by each track 1 – 16.

1. From the main screen, press the [V-TAKE] key in the track parameter section.

The key lights up, and the track number, V-take number, and V-take name appear on the display.



HINT

- If you select a V-take on which nothing is recorded, the indication “NO DATA” appears.

```
TR 2- 1
GTR 2- 1
```

HINT

You can also select the track with the status keys. For stereo tracks (9/10 – 15/16), each push of the status key toggles between the odd and even numbered track. Pressing the [MASTER] status key selects the master track.

3. Turn the dial to select the V-take.

For stereo tracks, you can select a different V-take for the odd and even numbered track.

4. Repeat steps 2 – 3 as necessary, to select a V-take for each track.

5. To return to the main screen, press the [EXIT] key.

The [V-TAKE] key goes out.

Assigning V-take names

A V-take that has been recorded will be automatically assigned a default name, according to the following pattern. (xx denotes the track number, and yy the V-take number.)

GTRxx-yy

V-take recorded through CLEAN, DIST, or ACO/BASS SIM algorithm of insert effect

BASxx-yy

V-take recorded through BASS algorithm of insert effect

MICxx-yy

V-take recorded through MIC algorithm of insert effect

DULxx-yy

V-take recorded through DUAL MIC algorithm of insert effect

LINxx-yy

V-take recorded through LINE algorithm of insert effect

8INxx-yy

V-take recorded through 8x COMP EQ algorithm of insert effect

MASxx-yy

V-take recorded through MASTERING algorithm of insert effect

BYPxx-yy

V-take recorded without passing through insert effect

BOUxx-yy

V-take recorded using the bounce function or rhythm recording

LP_xx_yy

Phrase written to V-take using the phrase loop function (→ p. 67)

HRMxx-yy

V-take recorded using the harmony generate function or duo harmony function.

HINT

When the phrase loop function is used to write a phrase to the master track, the name “LP_MS_yy” is assigned.

To change a V-take name, proceed as follows.

1. From the main screen, press the [V-TAKE] key in the track parameter section.

The key lights up, and the track number, V-take number, and V-take name appear on the display.

```
TR 3- 2
GTR 3- 2
```

NOTE

Only the name of the V-take currently selected for a track can be changed.

2. Use the cursor left/right keys to select the track whose V-take name you want to edit.

```
TR 2- 2
GTR 2- 1
```

NOTE

If you select a V-take on which nothing is recorded, the indication “NO DATA” appears and the name cannot be edited.

3. Press the [EDIT] key.

The first character of the V-take name flashes. This indicates that you can change the V-take name.

4. Use the cursor left/right keys to move the flashing section to the character you want to change.

5. Turn the dial to select a character.

The following characters can be selected.

Numerals: 0 – 9

Letters: A – Z, a – z

Symbols: (space) ! “ # \$ % & ‘ () * + , - . / : ; < > = ? @ [] ^ _ ` { } | ¥ ← →

6. Repeat steps 4 – 5 until the name is as desired.

7. When you have finished editing the name, press the [EXIT] key.

The new name is accepted and the unit returns to the condition of step 2. If necessary, you can edit the names of other V-takes.

8. To return to the main screen, press the [EXIT] key.

The [V-TAKE] key goes out.

HINT

If the contents of a V-take are fully erased, the name reverts to "NO DATA".

Moving to a desired point in the song (locate function)

You can specify a location within the song in time units (minutes/seconds/milliseconds) or in measure units (measure/beat/tick) units, and move to that location.

Hours	Seconds	Measures	Ticks
H	M	S	MS
0	10	12	660
MEASURE	BEAT	TICK	MARKER
307	2	0	00
Minutes	Milliseconds	Beats	

HINT

If you use the marker function (→ p. 46) to set marks for recorder positions, you can use the locate function to move among marks.

1. Verify that the recorder is stopped.
2. Use the cursor left/right keys from the main screen to move the flashing part to the unit you want to change.

For example, to change the minutes, cause the segment marked "M" to flash.

H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	10	12	660	307	2	0	00

3. Turn the dial to change the value shown for the flashing part.

When you change the displayed value, the recorder immediately moves to the new location. Pressing the PLAY [▶] key starts playback from that point.

HINT

The measure/beat/tick indication changes according to the current rhythm section tempo and beat.

Playing back the same passage repeatedly (A-B repeat function)

A-B repeat is a function that repeatedly plays back a desired region of the song. This is useful to listen to the same region repeatedly, for example during practice.

1. Move to the point at which you want to begin repeat playback, and press the [A-B REPEAT] key in the control section.

The key flashes, and the repeat start location (point A) is specified.

HINT

The A/B point can be specified either during playback or when the recorder is stopped.

2. Move to the point at which you want to end repeat playback, and press the [A-B REPEAT] key once more.

The [A-B REPEAT] key will change from flashing to constantly lit, and the repeat end location (point B) is set.

NOTE

- To redo the A/B point setting, press the [A-B REPEAT] key so that it goes out, and then repeat the procedure from step 1.
- If you specify a point B that is located earlier than point A, the region from points B → A will be played repeatedly.

3. To begin repeat playback, press the PLAY [▶] key.

Repeat playback will begin when you press the PLAY [▶] key while the [A-B REPEAT] key is lit. When the point B is reached, the recorder jumps to point A, and playback continues.

4. To stop repeat playback, press the STOP [■] key.

Even after pressing the STOP [■] key to stop playback, you can perform repeat playback again as many times as desired, as long as the [A-B REPEAT] key is still lit.

5. To turn off repeat playback, press the [A-B REPEAT] key.

The key goes out, and repeat playback will be turned off. The A/B point locations also will be cleared.

Finding a desired location (scrub/preview function)

The MRS-1608 provides a “scrub” function that lets you search for a desired location while repeatedly playing a short region before or after the current point. This is convenient to accurately find the point at which a specific sound starts or stops.

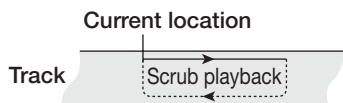
When the scrub function is on, you can use the “preview function” that plays 0.7 seconds before and after the current point. By using the scrub and preview functions together, you can find the desired location quickly and accurately.

Using scrub/preview

- To perform scrub playback, hold down the STOP [■] key from the main screen and press the PLAY [▶] key.**

The keys light up, and a short region (40 milliseconds by default) following the current location will play back repeatedly.

Immediately after activating the scrub function, audio track 1 will be selected as target for scrub playback.



When the scrub function is on, the display indication changes as follows.

```

SCRUB
FRM 40ms
  
```

- Use the status keys to select the track(s) for scrub playback.**

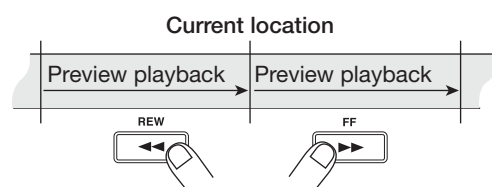
Up to four tracks can be selected simultaneously for scrub playback. (Stereo track pairs are counted as two tracks.) Scrub playback is toggled on and off for a track by repeatedly pressing the respective status key. If you attempt to select more than four tracks, scrub playback will be carried out for the last four tracks only.

- To move the scrub playback position, use the cursor left/right keys to cause the millisecond indication or the tick indication on the counter to flash. Then turn the dial to find the desired location.**

During scrub playback, the current location can be moved forward or backward in milliseconds or ticks.

- To use the preview function to hear the region before the current location, press the REW [◀◀] key. To hear the region after the current location, press the FF [▶▶] key.**

If you press the REW [◀◀] key, a region of 0.7 seconds prior to the current location will play (ending at the current location). If you press the FF [▶▶] key, a region of 0.7 seconds following the current location will play (beginning at the current location). This is called “preview playback”. When preview playback ends, scrub playback will resume.



- To cancel the scrub function, press the STOP [■] key.**

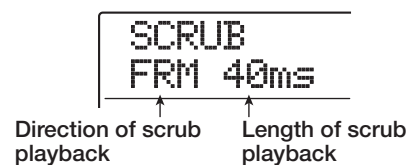
The PLAY [▶] and STOP [■] keys go out.

Changing the scrub direction and duration

When the scrub function is on, you can change the direction of scrub playback (whether it will play the region before or after the current location), and the length of the scrub playback section.

- From the main screen, hold down the STOP [■] key and press the PLAY [▶] key.**

This turns the scrub function on, and the direction and duration of scrub playback are shown on the display.



- To change the length of scrub playback, use the cursor left/right keys to cause the scrub playback length setting to flash, and turn the dial.**

You can select 40, 80, 120, 160, or 200 (ms) as the length of scrub playback.

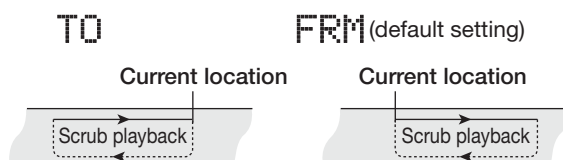
HINT

You can also use the cursor up/down keys to change the scrub playback length.

3. To change the direction of scrub playback, use the cursor left/right keys to cause the scrub playback direction indication to flash, and turn the dial.

If you select “TO”, scrub playback will begin from an earlier point and end at the current location. If you select “FRM”, scrub playback will begin from the current location.

To exit the scrub function, press the STOP [■] key.



Re-recording only a specified region (punch-in/out function)

Punch-in/out is a function that lets you re-record just a specified region of a previously recorded track. The action of switching a currently-playing track to record mode is called “punch-in”, and the action of switching back from recording to playback is called “punch-out”.

The MRS-1608 provides two ways to do this. You can use the panel keys or a foot switch (ZOOM FS-01, sold separately) to punch-in/out manually (“manual punch-in/out”), or you can cause punch-in/out to occur automatically at previously specified points (“auto punch-in/out”).

NOTE

When the 8-track recording function (→ p. 45) is active, punch-in/out cannot be used.

Using manual punch-in/out

To perform manual punch-in/out, proceed as follows.

HINT

- To use a foot switch for punch-in/out, connect the separately available ZOOM FS-01 to the FOOT SW jack on the front panel.

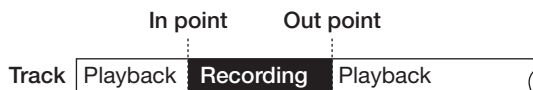
- In the default condition of the MRS-1608, the foot switch is set to control recorder playback/stop. To use the foot switch to punch-in/out, you must first change the foot switch setting (→ p. 181).

1. Repeatedly press the status key of the track on which you want to perform punch-in/out, until the key is lit in red.
2. Raise the fader of this track to a suitable position.
3. Use the [ON/OFF] key to select the input, and then play your instrument connected to the INPUT jack and use the [INPUT] control and [REC LEVEL] control to adjust the recording level.
4. Locate a point several measures before the intended punch-in point, and press the PLAY [▶] key to begin recorder playback.
5. When you come to the punch-in point, press the REC [●] key (or press the foot switch).
The REC [●] key lights up, and track recording begins from that location.
6. When you come to the intended punch-out point, press the REC [●] key (or the foot switch) once more.
The REC [●] key goes out, and the MRS-1608 switches from recording to playback.
7. To stop the recorder, press the STOP [■] key.
8. To check the newly recorded content, locate to a point before the punch-in point, and press the PLAY [▶] key.

Using auto punch-in/out

Auto punch-in/out is a function that lets you specify beforehand the region to be re-recorded. Punch-in will occur automatically when you reach the starting location (In point), and punch-out will occur automatically when you reach the ending location (Out point). This is convenient when you cannot operate the MRS-1608 because you are playing the instrument yourself, or when very fast playback/record switching is required.

In order to perform auto punch-in/out, you must first specify the In point (the point where the recorder switches from playback to record) and Out point (the point where the recorder switches from record to playback), and then perform the recording operation.



- 1. Raise the fader of the track on which you want to perform punch-in/out to a suitable position.**
- 2. Use the [ON/OFF] key to select the input, and then play your instrument connected to the INPUT jack and use the [INPUT] control and [REC LEVEL] control to adjust the recording level.**
- 3. Locate the point at which you want to punch-in, and press the [AUTO PUNCH IN/OUT] key.**

The key flashes. This sets the “In point” at which recording will begin.

- 4. Locate the point at which you want to punch-out, and press the [AUTO PUNCH IN/OUT] key once more.**

The key changes from flashing to solidly lit. This sets the “Out point” at which recording will end.

HINT

To specify the in/out points precisely, it is convenient to use the scrub function (→ p. 38) to find the locations and assign a mark (→ p. 46) beforehand at the desired locations.

- 5. Use the Locate function to go to a spot before the In point.**

- 6. Repeatedly press the status key for the track on which you want to perform punch-in/out, until the key flashes red.**

NOTE

If the current location is between the In point and Out point, the status key (and the REC [●] key if during recording) will be lit red. In this case, use the locate function once again to go to a point that is earlier than the In point.

- 7. To rehearse the auto punch-in/out process, press the PLAY [▶] key.**

The recorder will begin playing. When you reach the In point, the track on which you are punching-in/out will be muted. When you reach the Out point, muting will be defeated. (You will always be able to monitor the input signal during this time.) Performing this action will not delete or record anything on the track.

When you have finished rehearsing, move again to a location earlier than the In point.

HINT

To change the positions of the In point or Out point, press the [AUTO PUNCH IN/OUT] key so that the key goes out, and then repeat steps 3 – 7.

- 8. To actually perform auto punch-in/out, hold down the REC [●] key and press the PLAY [▶] key.**

The recorder will begin playing. When you reach the In point, recording will begin automatically (punch-in). When you reach the Out point, recording will end automatically, and playback will resume (punch-out).

- 9. When you have finished recording, press the STOP [■] key.**

- 10. To listen to the recorded result, repeatedly press the status key for the track on which you recorded, until the key is lit green. Then move to a location earlier than the In point, and press the PLAY [▶] key.**

To re-do the punch-in/punch-out recording, repeat steps 5 – 9.

- 11. When you are satisfied with the recording, press the [AUTO PUNCH IN/OUT] key so that the key goes out.**

The auto punch-in/out function is turned off, and the In point and Out point settings are cleared.

Recording several tracks on a master track (mixdown function)

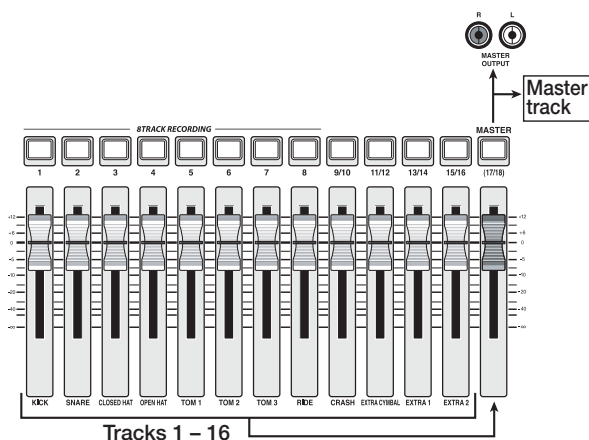
This section explains how to play recorded audio tracks as well as drum/bass track sounds and record them as a stereo mix on a master track (mixdown).

About the master track

The master track is a set of stereo tracks that are separate from the normal tracks 1 – 16. The most common use of the master track is as a track on which the end result of a mixdown process is recorded. The contents of the master track can then be used to create an audio CD.

When you switch the master track to the recording condition, the signal after passing the [MASTER] fader (the same signal as available from the MASTER OUTPUT jacks) is sent to the master track.

The MRS-1608 offers one master track for each project. Similar to the regular tracks 1 – 16, the master track also has ten virtual tracks (V-takes). This allows you to record different mixes on several V-takes and select the optimum take later.



HINT

It is possible to play the master tracks of several projects recorded on the hard disk in succession (→ p. 177).

Master track mixdown steps

Here's how to mix recorder tracks and the rhythm section sound onto two stereo channels and record these on the master track.

1. If required, refer to page 35 and select the desired V-take for the master track.
2. From the main screen, press the [MASTER] status key repeatedly until the key is lit in red.

The master track is now ready for recording.

3. Start recorder playback and adjust the mixing balance of the various tracks.

The individual track level settings as well as the insert effect and send/return effect settings all have an influence on the signal that is sent to the master track. Adjust levels while watching the L/R level meter, and make sure that no signal clipping occurs.

4. To carry out the mixdown operation, press the ZERO [◀◀] key to return to the beginning of the song, and then press the PLAY [▶] key while holding down the REC [●] key.

Recording on the master track starts.

5. When recording is complete, press the STOP [■] key.

HINT

You can start the mixdown operation from a point within the song. Only the data in the recorded range are overwritten.

Playing the master track

To play the recorded master track, proceed as follows.

1. From the main screen, press the [MASTER] status key repeatedly until the key is lit in green.

The master track is now ready for playback. In this mode, all other tracks are muted, and all effects are switched off.

HINT

While the [MASTER] status key is lit in green, the transport section keys except for the REC [●] key operate normally.

2. Press the ZERO [◀◀] key to return to the beginning of the song, and then press the PLAY [▶] key.

Playback of the master track starts. You can use the [MASTER] fader to adjust the playback volume.

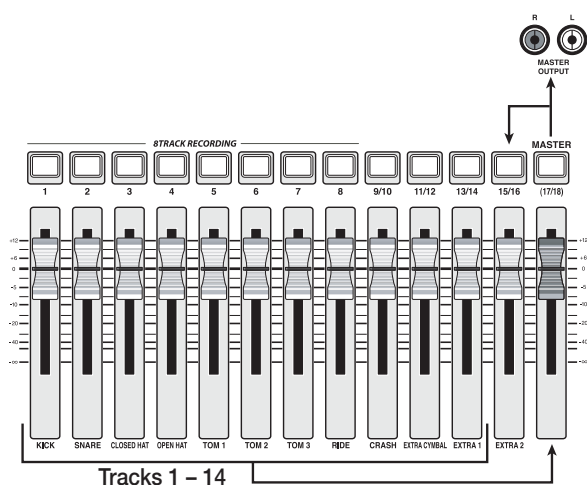
3. To stop recorder playback, press the STOP [■] key.
4. To cancel the master track playback mode, press the [MASTER] status key so that the key goes out.

Muting for all tracks is canceled, and the unit returns to normal operation. Status keys that were automatically turned off are returned to the previous condition.

Combining multiple tracks on one or two tracks (bounce function)

How bounce works

“Bounce” is a function that mixes the sound from the audio tracks and drum/bass tracks, and records them on one or two tracks. (This is sometimes called “ping-pong recording”.) For example, you might bounce the contents of tracks 1 – 14 onto tracks 15/16 and then switch the V-takes of tracks 1 – 14 to record new versions of your performance.



HINT

- You can mix the signals from the INPUT jacks into the bounce recording.

- If you select only one mono track as the bounce destination, the signal mixed to mono will be recorded.
- If necessary, you can play back all tracks 1 – 16, and bounce the signal onto an empty V-take of a selected track.

Making bounce settings

Before using the bounce function, you may have to make certain settings.

◆ Specifying playback/mute for the recording track(s)

By default, the bounce destination recording track(s) will be muted. To play back a track while you bounce-record onto another V-take of that track, use the following procedure to change the internal setting so that the recording track(s) will also play back.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY BOUNCE” on the display, and press the [ENTER] key.

3. Use the cursor left/right keys to bring up the indication “BOUNCE REC TRACK” on the display, and press the [ENTER] key.

The current setting is shown.



The indications have the following meaning.

- **MUTE:** The recording track(s) will be muted (default setting).
- **PLAY:** The recording track(s) will play back.

4. To play the bounce target track, turn the dial to change the setting to “PLAY”.

5. To return to the main screen, press the [EXIT] key several times.

◆ Selecting the recording destination V-take

By default, the result of the bounce operation will be recorded on the V-take that is currently selected for the recording track(s). To play back a track while bouncing onto another V-take of that track, you can use the following procedure to change the recording destination V-take.

1. From the main screen, press the [UTILITY/TRACK EDIT] key.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY BOUNCE” on the display, and press the [ENTER] key.

3. Use the cursor left/right keys to bring up the indication “BOUNCE REC TAKE” on the display, and press the [ENTER] key.

The current setting is shown.



```

REC TAKE
CURRENT
  
```

The indications have the following meaning.

- **CURRENT:**

The bounce result will be recorded on the V-take currently selected for the recording track (default setting).

- **1 – 10:**

The bounce result will be recorded on the V-take of the recording track with the specified number.

4. Turn the dial to specify the recording destination V-take.

5. To return to the main screen, press the [EXIT] key several times.

Executing bounce recording

This example explains how to bounce the contents of tracks 1 – 16 and the drum/bass tracks onto V-take 10 of tracks 15/16.

1. Refer to “Making bounce settings” and set the bounce target track to “PLAY”.

2. Refer to “Making bounce settings” and select V-take 10 for the bounce target track.

3. From the main screen, press the status keys of tracks 15/16 repeatedly, so that the keys are lit in red.

Tracks 15/16 are now ready for recording.

4. Press the [BOUNCE] key in the control section.

The key lights up and the bounce function for the target tracks is turned on. Other tracks and effects function normally.

5. Set the recorder to playback and adjust the mixing balance of the various tracks.

The individual track level settings as well as the insert effect and send/return effect settings all have an influence on the mixed signal that is sent to the bounce target tracks.

Adjust levels while watching the L/R level meter, and make sure that no signal clipping occurs.

6. Move the recorder to the beginning and start recording.

Recording on tracks 15/16 starts.

7. When recording is complete, press the STOP [■] key.

HINT

- To check the result of the bounce operation, select the V-take for the bounce target tracks and mute the other tracks. Note that the track parameters will continue to be valid. To monitor the unprocessed sound, return the track volume and EQ settings for the bounce target tracks to the default condition. When bouncing in stereo to two mono tracks, set the Pan parameter for the odd-numbered track to L 100 and for the even-numbered track to R 100.
- If only the signal from the drum track or bass track is recorded, refer to “Selecting drum/bass track as recording

source” on page 44 and select “MASTER” as source.

8. To turn off the bounce function, press the [BOUNCE] key.

The [BOUNCE] key goes out, and the bounce function is canceled.

Recording the drum/bass sound (rhythm recording)

The MRS-1608 allows you to record the drum track or bass track sound of the rhythm section onto any track. This function is called “rhythm recording”. By recording a rhythm song or rhythm pattern on an audio track, you can then combine this with another song or pattern as played by the rhythm section.

To use the rhythm recording function, proceed as follows.

Selecting drum/bass track as recording source

While using the bounce function, select the drum/bass track as recording source signal.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY BOUNCE” on the display, and press the [ENTER] key.

3. Use the cursor left/right keys to bring up the indication “BOUNCE REC SRC” on the display, and press the [ENTER] key.

The display indication changes as follows.

```

REC SRC
MASTER
  
```

In this condition, you can select the recording source signal. The following choices are available.

- **MASTER**

Signal immediately before [MASTER] fader (default setting)

- **DRUM TR**

Drum track

- **BASS TR**

Bass track

4. Turn the dial to select “DRUM TR” or “BASS TR” as recording source.

5. Press the [EXIT] key several times to return to the main screen.

Recording

While playing the audio tracks, you can now record the rhythm section play on any audio track.

1. Press the [BOUNCE] key.

The key lights up.

2. Repeatedly press the status key for the track on which you want to record, until the key is lit in red.

In this condition, the signal of the track selected in step 4 of “Selecting drum/bass track as recording source” will be recorded.

HINT

To record drum tracks in stereo, select two tracks as recording destination. If only one track is selected, the recording will be in mono.

3. Verify that the [RHYTHM] key is out, and that the rhythm song or rhythm pattern that you want to record is selected, or that the sounds that you want to play are assigned to the pads.

4. Set the recorder to playback and adjust the drum/bass track output level.

Adjust levels while watching the level meter, and make sure that no signal clipping occurs.

5. Move to the start point of the recorder, and start recording.

The rhythm pattern/rhythm song play is recorded on the audio track. If you hit the pads during recording, this sound will also be captured. When play is complete, stop the recorder. To cancel the bounce function and return to the normal condition, switch the recording source back to “MASTER”, as described in “Selecting drum/bass track

as recording source”.

HINT

It is also possible to use a MIDI keyboard or similar device instead of the pads to play drum/bass sounds.

6. Press the [BOUNCE] key.

The key goes out.

Recording on 8 tracks simultaneously (8-track recording mode)

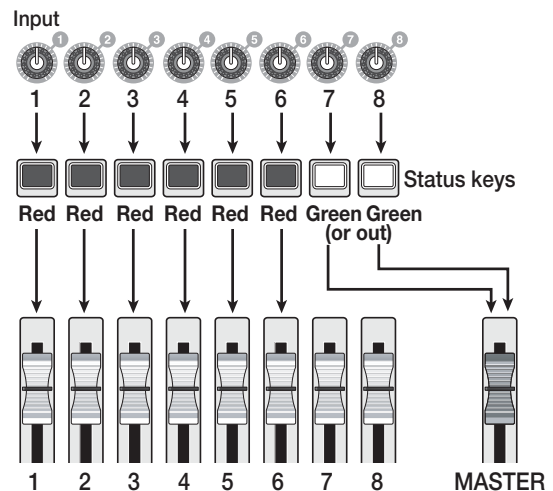
This section explains how to use the 8-track recording mode which allows up to eight tracks to be recorded simultaneously.

About 8-track recording

In 8-track recording mode, the signals from the INPUT jacks 1 – 8 (or from GUITAR/BASS INPUT jacks 1/2 instead of INPUT jacks 1/2) can be recorded directly onto tracks 1 – 8. This is convenient to record the performance of an entire band in a single session, using separate tracks for the various parts, or for picking up a drum performance with multiple mics.

In 8-track recording mode, inputs 1 – 8 and tracks 1 – 8 correspond to each other. When the status key of a track is lit in red, the signal of that input can be recorded on the track. When the status key is out or lit in green, the signal from the respective input is sent directly to a point immediately before the [MASTER] fader.

The insert and send/return effects are available also in 8-track recording mode.



NOTE

- In 8-track recording mode, recording on tracks 9/10 – 15/16 is not possible. To perform overdubbing on a mono track after you have recorded tracks 1 – 8, you must move the recorded takes to tracks 9 – 16 first (→ p. 63).
- In 8-track recording mode, the auto punch-in/out and bounce functions are not available.

Assigning an input signal to a track

After adjusting the level of the signals from the INPUT jacks 1 – 8 or the GUITAR/BASS INPUT jacks 1/2, the signals are sent to tracks 1 – 8 in the recorder section.

1. Verify that the instruments or microphones to be recorded are connected to the INPUT jacks 1 – 8 or GUITAR/BASS INPUT jacks 1/2.

NOTE

You can use either GUITAR/BASS INPUT jack 1 or INPUT jack 1, and either GUITAR/BASS INPUT jack 2 or INPUT jack 2. If both jacks are connected, the GUITAR/BASS INPUT jacks 1/2 are given priority.

2. Press the [8TRACK RECORDING] key in the input section.

The key lights up and the MRS-1608 switches to 8-track recording mode.

3. Press the [ON/OFF] keys for the INPUT jacks 1 – 8.

When pressed, a key lights up, and the corresponding input is active.

4. While the instruments are played, adjust the [INPUT] controls to obtain a suitable input sensitivity level.

When using the GUITAR/BASS INPUT jacks 1/2, perform the adjustment with the [GUITAR/BASS INPUT] control 1/2 on the front panel.

5. To use an insert effect, press the [INPUT SOURCE] key in the effect section, and press the [ON/OFF] key for the input to which you want to apply the effect.

The respective [ON/OFF] key lights up orange, and the insert effect is applied. When 8x COMP EQ is selected as algorithm for the insert effect, all channels can be processed by the effect. Otherwise, two selected channels can be effect-processed.

HINT

In the default condition of a project, a patch suitable for guitar/bass playing is selected as insert effect. If necessary, select a different patch (→ p. 139).

6. While the instruments are played, use the [REC LEVEL] control to adjust the recording level.

Set the recording level as high as possible, but avoid settings that cause the [CLIP] indicator to light. The current signal level can be checked with the level meters IN1 – IN8.

7. Repeatedly press the status keys for the tracks (1 – 8) to be recorded so that the keys are lit in red.

Up to eight status keys can be activated simultaneously. When a track is switched to the recording standby condition, the signal from the input mixer will be sent to the corresponding recording track.

If the [ON/OFF] key for a track is ON but the corresponding status key is lit green (or is off), the respective input will not be recorded.

8. Move to the start point of the recorder, and start recording.

When recording is finished, stop the recorder.

9. To cancel the 8-track recording condition, press the [8TRACK RECORDING] key.

The key goes out.

Marker function

This function lets you set marks at any recorder position, and return to the mark using a simple operation. Up to 100 marks can be set.

HINT

- It is also possible to switch mixer settings or effect setting groups (scenes) at a marked position (→ p. 84).
- When creating an audio CD, marks can be used to provide index information. This will allow the CD player to access specific points within tracks (→ p. 155).

Setting a mark

Here's how to assign a mark at the desired location in a song.

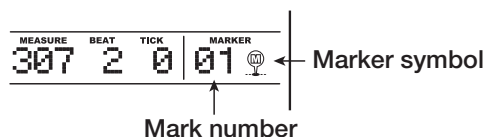
1. Locate the point to which you want to assign a mark.

HINT

- A mark can be assigned either during playback or when stopped.
- You can use the scrub function (→ p. 38) to locate the position with high precision.

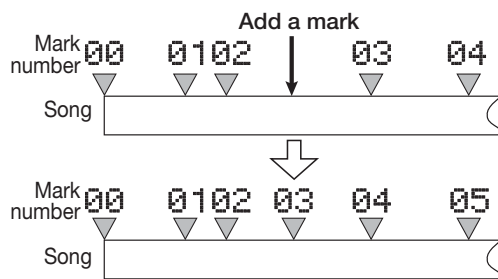
2. Press the [MARK] key in the control section.

A mark will be assigned to the current location. The mark number will appear in the MARKER field of the counter.



The MARKER field shows the number of the mark at the current position or the closest preceding mark. When the current position matches the mark, a marker symbol appears to the right of the mark number.

The mark number is assigned automatically in ascending order from the beginning of the song. If you add a new mark between two existing marks, the subsequent marks will be renumbered.



HINT

Mark number 00 is already set at the beginning of the song (the counter zero location). This cannot be changed.

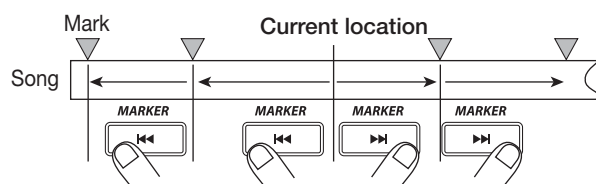
Locating a mark

Here's how to move to the location of a mark. This can be done in two ways: you can use key operations, or specify the mark number directly.

◆ Using keys to locate

1. From the main screen, press either the **MARKER** [◀◀] or [▶▶] key in the control section.

Each time you press the key, the unit jumps to the next mark before or after the current location.



◆ Specifying the mark number to locate

1. From the main screen, use the cursor left/right keys to cause the mark number on the counter to flash.
2. Turn the dial to select the desired mark number.

As soon as the number is changed, the recorder jumps to that number.

Deleting a mark

Here's how to delete a mark that you assigned.

1. **Locate the mark that you want to delete.**

A mark can only be deleted when it exactly matches the current location. Make sure that the mark symbol is shown. If not, use the **MARKER** [◀◀] / [▶▶] keys to jump to the exact marker point.

2. **Press the [CLEAR] key in the control section.**

The selected mark will be deleted, and subsequent marks will be renumbered.

NOTE

- A deleted mark cannot be recovered.
- It is not possible to delete mark number "00" located at the beginning of the song.

Making settings for pre-count operation

In the default condition of a project, a pre-count of four beats is heard before the start of recording. The number of beats and the pre-count volume can be changed as follows.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY PreCount” on the display, and press the [ENTER] key.

The display indication changes as follows.

```

┌───────────┐
│ PreCount  │
│ COUNT     │
└───────────┘
  
```

3. To change the number of pre-count beats, press the [ENTER] key. Then turn the dial to make the selection.

- **OFF**

The pre-count is turned off.

- **1 – 8**

A pre-count of 1 – 8 beats is heard.

- **SPECIAL**

A special pre-count as follows is heard.



```

┌───────────┐
│ COUNT     │
│ 4         │
└───────────┘
  
```

Number of pre-count beats

When the setting is complete, press the [EXIT] key to return to the screen of step 2.

4. To change the volume of the pre-count, use the cursor left/right keys to bring up the indication “PreCount VOLUME” on the display, and press the [ENTER] key.

The display indication changes as follows. Turn the dial to set the volume (0 – 15).

```

┌───────────┐
│ VOLUME    │
│ 10        │
└───────────┘
  
```

Value of pre-count volume

5. When the setting is complete, press the [EXIT] key to return to the main screen.

If you initiate the recording procedure in this condition, the selected number of pre-count beats will be heard at the selected volume.

Reference [Track Editing]

This section explains how to edit audio data contained on tracks 1 – 16 of the recorder section. There are two major types of editing functions: specifying a range within a track for editing, and editing an entire V-take.

Editing a range of data

The procedure for specifying a range within a track and then performing an editing action is explained below.

Basic steps for range editing

When performing editing for a specified range of data, some steps are similar for each action. These are as follows.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

```
UTILITY
TR EDIT
```

2. Press the [ENTER] key.

The track edit menu containing various editing commands appears on the display.

```
TR EDIT
COPY
```

3. Use the cursor left/right keys to select the desired command from the following options.

- **COPY**

Copy a specified range of audio data.

- **MOVE**

Move a specified range of audio data.

- **ERASE**

Erase a specified range of audio data.

- **TRIM**

Retain only a specified range of audio data and erase the rest.

- **FADE I/O (Fade-in/out)**

Perform fade-in/fade-out over a specified audio data

interval.

- **REVERSE**

Reverse a specified range of audio data.

- **TimStrch (Time Stretch/Compress)**

Change the duration of the entire audio data on a track without changing the pitch.

- **PitchFix**

Apply pitch compensation to a specified range of audio data.

- **HARMONY+ (Harmony Generate)**

Add 3-part harmony to a specified range of audio data.

- **DUO HARM (Duo Harmony)**

Add 1-part harmony to a specified range of audio data.

4. Press the [ENTER] key.

The screen for selecting the track and V-take for editing appears.

The display shown below is an example for selecting the COPY command in step 3.

```
Copy Src
TR 1- 1
```

5. Use the cursor up/down keys or the status keys and the dial to select the track (1 - 16, MASTER) and V-take number.

```
Copy Src
TR 5- 1
```

On this screen, V-takes that are not currently selected can also be selected for editing.

For commands other than PitchFix, HARMONY+, and DUO HARM, when track 16 is selected, turning the dial further to the right lets you select odd/even track pairs (track 1/2, track 15/16 etc.) or the master track (shown as "M").

```
Copy Src
TR 1/2
```

NOTE

- You can also press the status keys for two adjacent odd/even-numbered mono tracks together to select these tracks.
- Repeatedly pressing the status keys for stereo tracks selects the odd-numbered track, even-numbered track, and stereo track in sequence.
- When a single track has been selected as editing source for a command other than HARMONY+ and DUO HARM, the editing target will also be a single track.
- When two tracks or the master track have been selected as editing source, the editing target will also be two tracks or the master track. The currently selected V-take for each track will be the target.

6. Press the [ENTER] key.

The subsequent steps will differ, depending on which command was selected. See the sections for the respective commands.

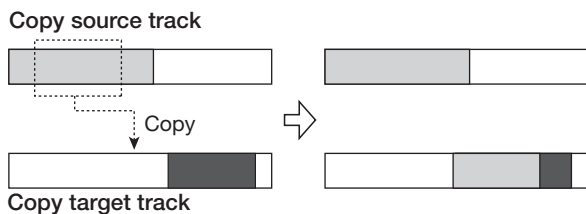
7. When the editing command has been executed, repeatedly press the [EXIT] key to return to the main screen.

NOTE

After executing an edit command for rewriting the audio data on a track, the original data cannot be restored. To retain the condition before editing, use the capture and swap functions (→ p. 65) for that track.

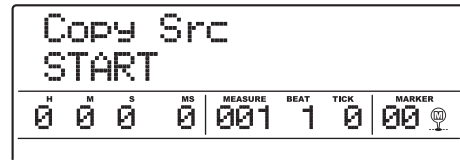
Copying a specified range of data

You can copy the audio data of a specified range to a specified position on a specified track/V-take. This action will overwrite the existing data at the destination location. The copy source data will be unchanged.



1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the copy source track/V-take, and press the [ENTER] key.

The display indication changes as follows. In this condition, you can specify the copy start point.



The edit range start point is shown on the counter in hours, minutes, seconds, milliseconds, and in measures, beats, and ticks.

2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the copy start point.

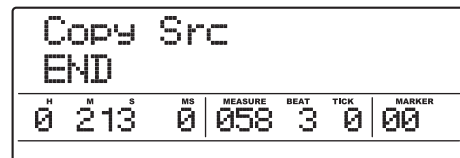
The point can be specified in hours/minutes/seconds/milliseconds, or in measures/beats/ticks. When a value is specified, the other units also reflect the new location. By causing a mark number to flash, you can also specify edit points using the markers.

NOTE

If you specify a point where no audio data exist, the second line of the display shows * symbol.

3. Press the [ENTER] key.

The display changes to “Copy Src END”. This screen lets you specify the copy range end point.



4. Use the same procedure as in step 2 to specify the copy range end point.

If you press the PLAY [▶] key at this point, the specified range will be played.

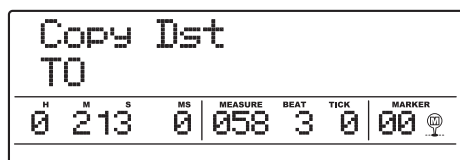
5. Press the [ENTER] key.

The display now shows “Copy Dst TR xx-yy” (where xx is the track number and yy the V-take number).



6. Specify the copy destination track/V-take in the same way as when selecting the copy source, and press the [ENTER] key.

The display indication changes as follows.



- Specify the copy destination start point in the same way as for the copy source, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display.

- To execute the copy operation, press the [ENTER] key.

When the copy operation is completed, the unit returns to the track edit menu.

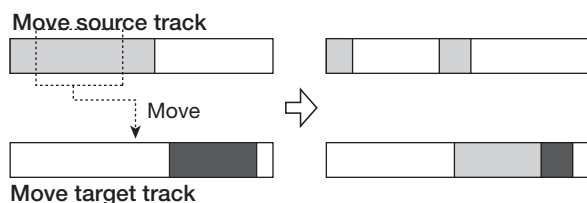
By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

To paste the same range repeatedly, use the phrase loop function (→ p. 67).

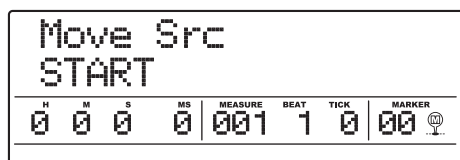
Moving a specified range of data

You can move the audio data of a specified range to a specified position on a specified track/V-take. This action will overwrite the existing data at the destination location. The move source data will be erased.



- Refer to steps 1 – 6 of “Basic steps for range editing” to select the move source track/V-take, and press the [ENTER] key.

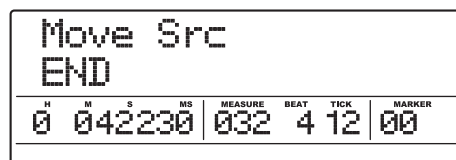
The display indication changes to “Move Src START”.



- Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the move start point.

- Press the [ENTER] key.

The display indication changes to “Move Src END”.



- Use the same procedure as in step 2 to specify the move range end point.

If you press the PLAY [▶] key at this point, the specified range will be played.

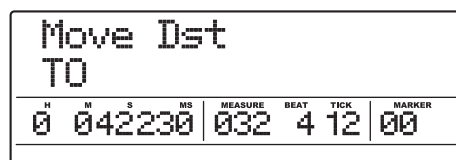
- Press the [ENTER] key.

The display changes to let you specify the move destination track/V-take.



- Specify the move destination track/V-take in the same way as when selecting the move source track/V-take, and press the [ENTER] key.

The display changes to the screen for specifying the move destination start point.



- Specify the move destination start point in the same way as for the move source, and press the [ENTER] key.

The indication “MOVE SURE?” appears on the display.

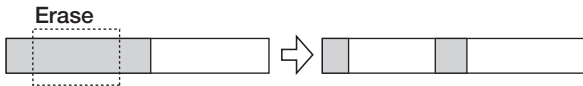
- To execute the move operation, press the [ENTER] key once more.

When the move operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Erasing a specified range of data

You can erase the audio data of a specified range and return the range to the non-recorded condition.



1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/V-take for erasing, and press the [ENTER] key.

The indication “Ers Src START” appears on the display.

Ers Src START							
H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	0	0	001	1	0	00

2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the erase start point.

3. Press the [ENTER] key.

The display indication changes to “Ers Src END”.

Ers Src END							
H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	120	20		042	4	24	00

4. Use the same procedure as in step 2 to specify the erase range end point.

If you press the PLAY [▶] key at this point, the specified range will be played.

5. Press the [ENTER] key.

The indication “ERASE SURE?” appears on the display.

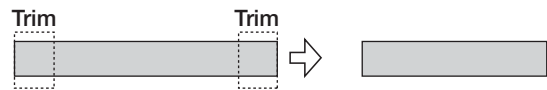
6. To execute the erase operation, press the [ENTER] key.

When the erase operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Trimming a specified range of data

You can erase the audio data of a specified range and adjust the data start/end point (trimming). For example, when preparing to burn the master track onto a CD-R/RW disc, you might want to remove unwanted portions at the start and the end of the V-take that will be used.



NOTE

When data before a specified section are erased (trimmed), the remaining audio data will move up by that amount. Therefore the timing may become mismatched with regard to other tracks.

1. Refer to “Basic steps for range editing” to select the track/V-take from which you want to trim data, and press the [ENTER] key.

The indication “Trim Src START” appears on the display.

Trim Src START							
H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	0	0	001	1	0	00

2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the trimming range start point.

All data before the point specified here will be erased.

3. Press the [ENTER] key.

The display indication changes to “Trm Src END”.

Trim Src END							
H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	042	230		032	4	12	00

4. Specify the trimming end point using the same procedure as in step 2.

All data after the point specified here will be erased.

If you press the PLAY [▶] key, the specified range will

be played.

5. Press the [ENTER] key.

The indication “TRIM SURE?” appears on the display.

6. To execute the trimming operation, press the [ENTER] key.

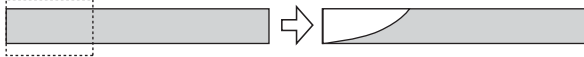
When the trimming operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Fade-in/fade-out of specified data range

You can fade in or fade out the audio data over a specified range.

Fade-in

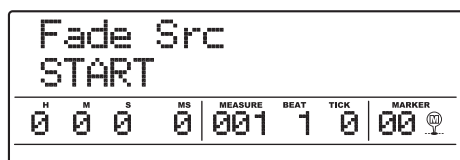


NOTE

The fade-in/out command does not simply alter the track volume. Rather, it rewrites the waveform data and is therefore not reversible once executed.

1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/Vtake for fade-in or fade-out, and press the [ENTER] key.

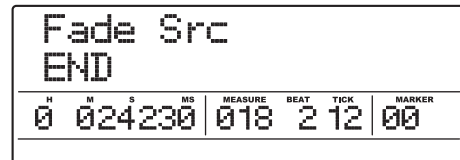
The indication “Fade Src START” appears on the display.



2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the fade-in or fade-out start point.

3. Press the [ENTER] key.

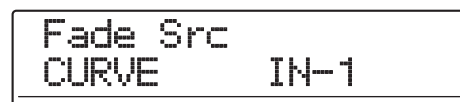
The display indication changes to “Fade Src END”.



4. Use the same procedure as in step 2 to specify the fade-in or fade-out end point.

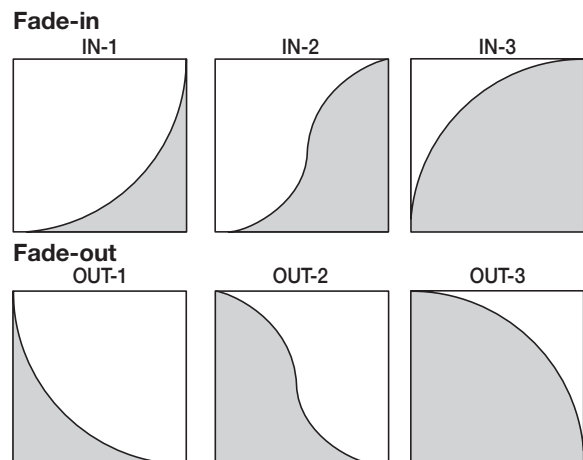
5. Press the [ENTER] key.

The indication “Fade Src CURVE” appears on the display.



6. Turn the dial to select the fade-in or fade-out curve.

Curves IN-1 to IN-3 are for fade-in, and curves OUT-1 to OUT-3 are for fade-out. The three different kinds of curves look as follows.



7. Press the [ENTER] key.

The indication “FADE I/O SURE?” appears on the display.

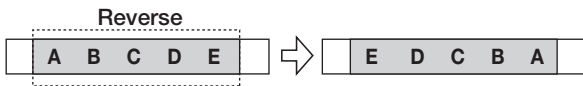
8. To execute the fade-in/fade-out operation, press the [ENTER] key once more.

When the fade-in/fade-out operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

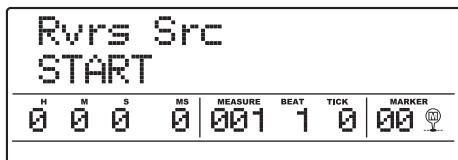
Reversing a specified range of audio data

You can reverse the order of a specified range of audio data.



1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/V-take for reversing, and press the [ENTER] key.

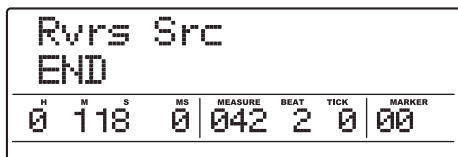
The indication “Rvrs Src START” appears on the display.



2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the reversing start point.

3. Press the [ENTER] key.

The display indication changes to “Rvrs Src END”.



4. Use the same procedure as in step 2 to specify the reversing end point.

If you press the PLAY [▶] key, the specified range will be played.

5. Press the [ENTER] key.

The indication “REVERSE SURE?” appears on the display.

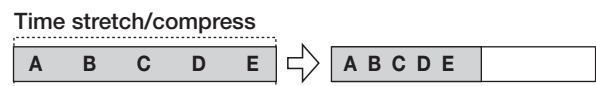
6. To execute the reversing operation, press the [ENTER] key.

When the reverse operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Changing the duration of a specified range of data

You can change the duration of the specified range of audio data on a track without changing the pitch (time stretch/compress). The stretched or compressed data can be written over the old data on the same track or pasted on another track while leaving the source data unchanged.



NOTE

- The editing start point for time stretch/compress is always from the beginning of the V-take.
- The point where you stop playback when checking out the time stretch/compress effect becomes the editing end point.

1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/V-take for time stretch/compress, and press the [ENTER] key.

The indication “TmStrDst” appears on the display. In this condition, you can select a track/V-take on which to place the audio data after time stretch/compress.



2. Use the cursor up/down keys and the dial to select the destination track/V-take, and press the [ENTER] key.

The display indication changes as follows.



This screen lets you specify the ratio for time stretch/compress in two units, as listed below.

- **Stretch ratio (%)**

Expresses the length of the track after time stretch/compress.

- **Tempo (BPM)**

Sets the tempo (beats per minute) after time stretch/compress, using the tempo set in the rhythm song as reference. In the default condition, the current tempo of the rhythm section is shown.

3. Use the cursor left/right keys to select the unit for making the time stretch/compress setting.

The selected unit flashes.

4. Turn the dial to make the time stretch/compress setting.

When you change one item, the other item also changes accordingly.

The setting range of 50% – 150% for the stretch/compress ratio cannot be exceeded.

5. Press the PLAY [▶] key.

The stretched/compressed track is played from the beginning of the V-take.

If you continue playback to the end of the V-take, all audio data of that track/V-take are stretched or compressed.

HINT

It is also possible to change the stretch/compress ratio during playback.

6. At the point where you want the time stretch/compress function to end, press the STOP [■] key.

The indication “TimStrch SURE?” appears on the display.

7. To execute the time stretch/compress operation, press the [ENTER] key.

When the time stretch/compress operation is completed, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

To apply time stretch/compress only to a part of the song such as a drum pattern or guitar riff, use the copy function and trimming function to create a V-take of the desired length first.

Compensating the pitch of a specified range

This editing command lets you specify a KEY and SCALE and align all audio data in a specified range to the nearest note in that scale (PitchFix). Instead of the scale, it is also possible to use a phrase from a bass sequence as reference for pitch compensation.

HINT

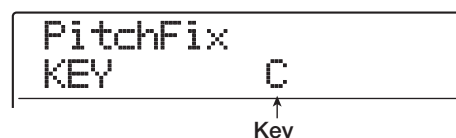
The edited audio data after pitch compensation will overwrite the existing data.

NOTE

For pitch shift to operate correctly, the audio data should represent single notes recorded without applying delay, reverb, chorus, or other effects.

1. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/V-take for pitch compensation, and press the [ENTER] key.

The indication “PitchFix KEY” appears on the display. In this condition, you can select the key for the scale to be used for pitch compensation.



HINT

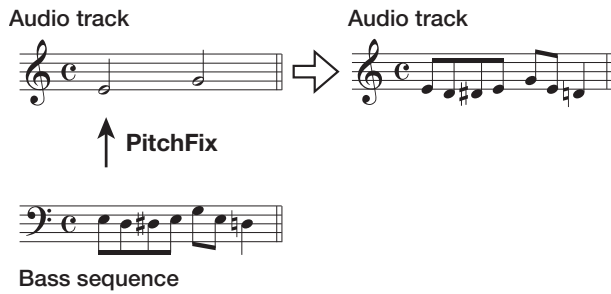
You can only select a single mono track or one track of a stereo pair as source track for PitchFix.

2. Turn the dial to select the key.

The selection range for the key is C – B (in semitone steps) and “BassSeq”.

When you select “BassSeq”, the pitch of the audio track will be detected and transposed to the nearest note specified by the bass sequence or by actually hitting a pad. The upper limit for pitch detection is two octaves above center A.

For example, if you use an audio track recorded with long tones and apply PitchFix using a bass sequence with a short rhythm, you will get an interesting effect with strong modulation.

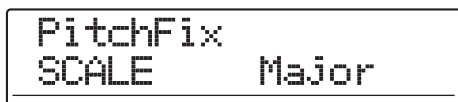


HINT

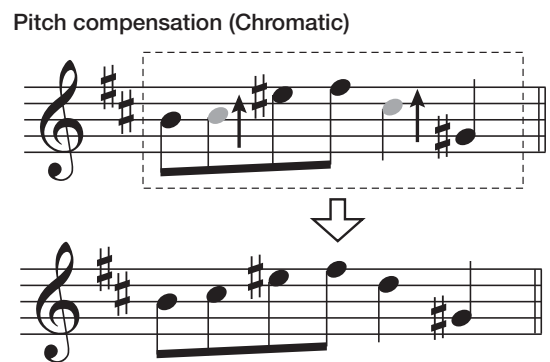
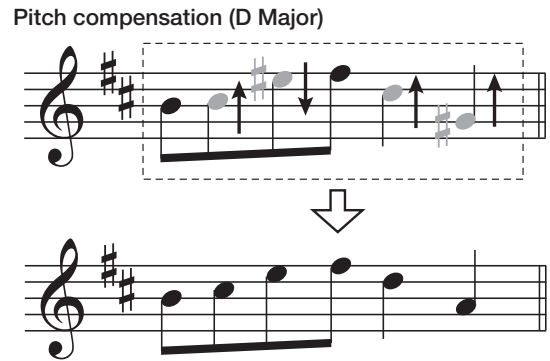
- When you select “BassSeq”, step 3 is not necessary.
- When you select “BassSeq” for pitch compensation, the note in the octave closest to the source material is selected. If the source and the bass track pitch are far apart, the results may be unpredictable.

3. Use the cursor left/right keys to bring up the indication “PitchFix SCALE” on the display, then turn the dial to select the scale type.

The scale type selections are “Major”, “Minor”, and “Chrmtic” (Chromatic). When you select Chromatic, pitch compensation is performed to the nearest semitone.

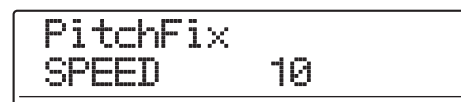


The following illustrations show pitch compensation for the same melody, using D Major and Chromatic.



4. Use the cursor left/right keys to bring up the indication “PitchFix SPEED” on the display, then turn the dial to select the speed with which the pitch is adjusted. The setting range is 0 – 30.

Smaller values result in faster compensation speed. For a natural effect, select a fairly high value.



HINT

By selecting a very high pitch compensation speed, you can produce a robotic voice from a vocal source.

5. Press the cursor down key to cause the counter indication to flash. Then use the cursor left/right keys and the dial to specify the start point for pitch compensation.

You can also use the MARKER [◀◀]/[▶▶] keys, ZERO [◀◀] key, and REW [◀◀]/FF [▶▶] keys to locate the point. By pressing the PLAY [▶] key at this point, you can check out the editing result.

6. To start pitch compensation, hold down the REC [●] key and press the PLAY [▶] key.

Recording starts with the pitch compensation applied. If you have selected “BassSeq” in step 2, you can check the bass track level on the level meter in the display.

By using the cursor left/right keys during recording, you can call up and edit the parameter values set in steps 2 – 5. If you press the [BYPASS] key, the pitch compensation effect is bypassed. (This will also be reflected in the recording.)

HINT

The manual and automatic punch-in/punch-out functions can also be used at this point.

7. When recording has progressed to the point where you want pitch compensation to stop, press the STOP [■] key.

The indication “PitchFix SURE?” appears on the display.

8. To carry out pitch compensation, press the [ENTER] key.

The audio data of the specified range are overwritten, and the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

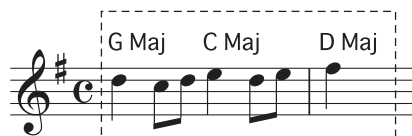
Generating a 3-part harmony from a specified range of audio data

You can use chord information programmed in the rhythm pattern/rhythm song to shift the pitch of the audio data and create a 3-part harmony (chord root/third/fifth). Whether the rhythm pattern or rhythm song is used as source of chord information depends on the mode selected for the rhythm section (rhythm pattern mode or rhythm section mode).


The pitch-shifted audio data can be either added to the source material or written to another track/V-take.



For example, when G Major → C Major → D Major are programmed in a rhythm song, the following harmony is created.

Source track



Generate harmony



<p>Source track</p> 	<p>Write target track</p> 
--	---

HINT

- Depending on the pitch of the source material and the rhythm pattern/rhythm song setting, the results of this command may be unpredictable.
- When generating harmony using the rhythm song, chords must be programmed for the rhythm song beforehand.
- When “-- (no conversion)” is programmed as chord type in the rhythm song, no harmony can be created at this point.
- When generating harmony using chord information of the rhythm pattern, the harmony is created for the same chord throughout.

NOTE

For the harmony generate function to work properly, the audio data should represent single notes recorded without applying delay, reverb, chorus, or other effects.

1. Select the rhythm pattern or rhythm song to be used for harmony generation.

When the selection is finished, press the [EXIT] key to return to the main screen.

NOTE

Make sure that the selected rhythm pattern/rhythm song comprises suitable chord information.

2. Refer to steps 1 – 6 of “Basic steps for range editing” to select the track/V-take for harmony generation, and press the [ENTER] key.

The indication “Hmny Dst” appears on the display. In this condition, you can select the target destination for writing the harmony.

```
Hmny Dst
TR 1- 1
```

HINT

You can only select a single mono track or one track of a stereo pair as source track for Harmony Generate.

3. Use the cursor up/down keys and the dial/status keys to select the track/V-take to be used as destination.

If you specify the same track/V-take as the source, the harmony data will be added to the original data and the V-take will be overwritten. You can also specify a stereo track or two mono tracks as destination.

HINT

During parameter setting and harmony generation, the status key of the source track is lit in green and the status key of the destination track in red. If the source track/V-take is also selected as destination, the status key is lit in orange.

4. Press the [ENTER] key.

The display indication changes as follows.

```
HARMONY+
SOURCE   LVL 100
```

From this screen, you can set the volume and panning for the source and the harmony parts. The parameter for the edit source is “SOURCE”. The parameter for the chord root is called “CHORUS 1”, the parameter for the third

“CHORUS 2”, and the parameter for the fifth “CHORUS 3”.

5. Verify that “SOURCE LVL” is shown on the second line of the display, and turn the dial to set the volume for the edit source.

The setting range is 0 - 127. A setting of 100 results in an unchanged level.

HINT

When the SOURCE LVL parameter is set to zero, the edit source will be muted, and only the generated harmony parts are written to the track.

6. To set the pan value for the edit source, use the cursor left/right keys to bring up the indication “SOURCE Pan” on the display, and then turn the dial to adjust panning for the source.

The setting range is L100 (fully left) – 0 (center) – R100 (fully right).

```
HARMONY+
SOURCE   Pan  0
```

NOTE

When the destination is a mono track, the pan setting will have no effect.

7. Use the cursor left/right keys and the dial to adjust the level and panning for the harmony parts (CHORUS 1 - 3) in the same way.

By setting the LVL parameter to zero, you can mute the respective part.

8. To adjust the speed with which the created harmony parts will reach the target pitch, use the cursor left/right keys to bring up the indication “HARMONY+ FEELING” on the display and turn the dial.

The setting range for the FEELING parameter is 0 - 30. The larger the value, the smoother the transition to the harmony.

```
HARMONY+
FEELING  7
```

- 9.** Press the cursor down key to cause the counter indication to flash. Then use the cursor left/right keys and the dial to specify the start point for harmony generation.

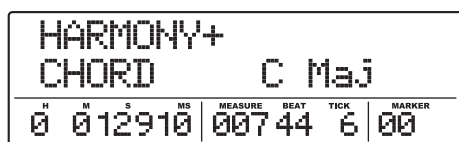
You can also use the MARKER [◀◀]/[▶▶] keys, ZERO [◀◀] key, and REW [◀◀]/FF [▶▶] keys to locate the point.

HINT

The manual and automatic punch-in/punch-out functions can also be used at this point.

- 10.** To start harmony generation, hold down the REC [●] key and press the PLAY [▶] key.

Recording starts. The display indication changes as follows.



When the second line of the display reads “CHORD”, the chord of the current rhythm pattern/rhythm song is shown. By using the cursor left/right keys, you can display and edit the parameters of steps 5 – 8.

HINT

When playing the harmony, the drum/bass track will also be played. Use the faders as required to adjust the level.

- 11.** When recording has progressed to the point where you want harmony generation to stop, press the STOP [■] key.

The indication “HARMONY+ SURE?” appears on the display.

- 12.** To carry out harmony generation, press the [ENTER] key.

The audio data of the specified range are written. When the process is complete, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

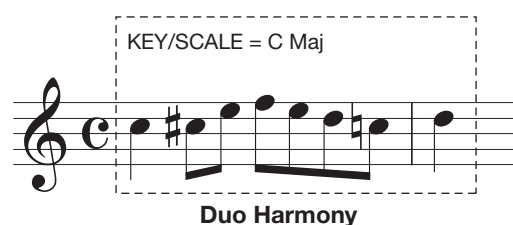
Generating a 1-part harmony from a specified range of audio data

You can specify a KEY and SCALE and shift the pitch of the audio data by a third up or down to create a 1-part harmony. This is called the Duo Harmony function.

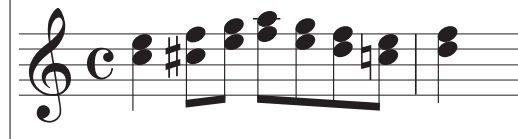
The pitch-shifted audio data can be either added to the source material or written to another track/V-take.

For example, when KEY = C and SCALE = Major is specified, and shift upwards is selected for the Duo Harmony function, the following harmony will be created.

Source track



Write target track



NOTE

For the Duo Harmony function to work properly, the audio data should represent single notes recorded without applying delay, reverb, chorus, or other effects.

1. Refer to steps 1 - 6 of “Basic steps for range editing” to select the track/V-take for harmony generation, and press the [ENTER] key.

The indication “DHmnyDst” appears on the display. In this condition, you can select the target destination for writing the created harmony.

DHmnyDst
TR 1- 1

NOTE

You can only select a single mono track or one track of a stereo pair as source track for Duo Harmony.

- 2. Use the cursor up/down keys and the dial/status keys to select the track/V-take to be used as destination.**

If you specify the same track/V-take as the source, the harmony data will be added to the original data and the V-take will be overwritten. You can also specify a stereo track or two mono tracks as destination.

- 3. Press the [ENTER] key.**

The display indication changes as follows. From this screen, you can set the key to be used as reference for the harmony.

```

DUO HARM
KEY      C
          ↑
          Key
  
```

- 4. Turn the dial to select the key.**

The setting range is C - B (in semitone steps).

- 5. Use the cursor left/right keys to bring up the indication “DUO HARM SCALE” on the display. Then turn the dial to select the scale type and the pitch shift direction. The following settings are available.**

- **Maj Up:** Create harmony a major third up
- **Min Up:** Create harmony a minor third up
- **Maj Dn:** Create harmony a major third down
- **Min Dn:** Create harmony a minor third down

```

DUO HARM
SCALE   Maj Up
  
```

- 6. Use the cursor left/right keys to bring up the indication “FEELING” on the display. Then turn the dial to select the speed with which the created harmony will reach the target pitch.**

The setting range is 0 – 30. The larger the value, the smoother the transition to the harmony.

```

DUO HARM
FEELING 7
  
```

- 7. Use the cursor left/right keys to bring up the indication “SOURCE LVL” on the display, and turn the dial to set the volume for the edit source.**

The setting range is 0 – 127. A setting of 100 results in an unchanged level.

```

DUO HARM
SOURCE  LVL 100
  
```

HINT

When the SOURCE LVL parameter is set to zero, the edit source will be muted, and only the generated harmony is written to the track.

- 8. To set the pan value for the edit source, use the cursor left/right keys to bring up the indication “SOURCE Pan” on the display, and then turn the dial to adjust panning for the source.**

The setting range is L100 (fully left) - 0 (center) - R100 (fully right).

```

DUO HARM
SOURCE  Pan  0
  
```

NOTE

When the destination is a mono track, the pan setting will have no effect.

- 9. Adjust the level and panning for the harmony part in the same way, by bringing up the indication “CHORUS LVL” or “CHORUS Pan” on the display.**
- 10. Press the cursor down key to cause the counter indication to flash. Then use the cursor left/right keys and the dial to specify the start point for Duo Harmony generation.**

You can also use the MARKER [◀◀]/[▶▶] keys, ZERO [◀◀] key, and REW [◀◀]/FF [▶▶] keys to locate the point.

The Duo Harmony part will be added to the range where recording steps were carried out. By pressing the PLAY [▶] key at this point, you can check the editing result.

HINT

The manual and automatic punch-in/punch-out functions can also be used at this point.

11. To start Duo Harmony generation, hold down the REC [●] key and press the PLAY [▶] key.

12. When recording has progressed to the point where you want harmony generation to stop, press the STOP [■] key.

The indication “DUO HARM SURE?” appears on the display.

13. To confirm the operation, press the [ENTER] key.

The editing result is written to the track. When the process is complete, the unit returns to the track edit menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Editing using V-takes

Recorded audio data can also be edited in V-take units. This is convenient to exchange the data on two V-takes or delete a V-take that is no longer needed. The procedure is explained in this section.

Basic steps for V-take editing

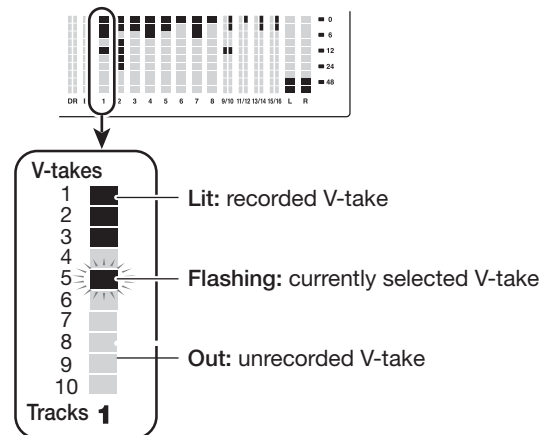
When editing audio data in V-take units, some steps are similar for each action. These are as follows.

1. From the main screen, press the [V-TAKE] key in the track parameter section.

The key lights up, and a screen for selecting the V-take appears on the display.

```
TR 1- 1
GTR 1- 1
```

While this screen is shown, the level meter section of the display indicates the V-take selection and the presence or absence of audio data by the segment flashing/lit/out status.



2. Use the cursor left/right keys and the dial to select a track and V-take.

The status key for the currently selected track is lit in orange. Alternatively, you can press a status key to select a track.

It is also possible to select the master track. In this case, the track number indication shows “M”.

HINT

Pressing the status key for a stereo track repeatedly selects the odd-numbered track and even-numbered track in sequence.

3. Press the [UTILITY/TRACK EDIT] key in the display section.

A menu for editing audio data in V-take units appears on the display.

4. Repeatedly press the [UTILITY/TRACK EDIT] key to call up the desired command. The following editing commands are available.

- **ERASE**

Erase the audio data on a specified track/V-take.

- **COPY**

Copy the audio data of a specified track/V-take to another track/V-take.

- **MOVE**

Move the audio data of a specified track/V-take to another track/V-take.

- **EXCHG (Exchange)**

Exchange the audio data of a specified track/V-take with the data of another track/V-take.

- **IMPORT**

Import any track/V-take from another project saved on the hard disk.

HINT

If necessary, you can also change your selection of track and V-take from this screen.

5. Press the [ENTER] key.

The subsequent steps will differ, depending on which command was selected in step 4. See the sections for the respective commands.

6. When the editing command has been executed, repeatedly press the [EXIT] key to return to the main screen.

NOTE

After executing an edit command for rewriting the audio data on a track, the original data cannot be restored. To retain the

condition before editing, use the capture and swap functions (→ p. 65) for that track.

Erasing a V-take

You can erase the audio data on a specified V-take. The V-take is returned to the non-recorded condition.



1. Refer to steps 1 – 5 of “Basic steps for V-take editing” to select the track/V-take to erase and to bring up the indication “ERASE” on the display. Then press the [ENTER] key.

The indication “ERASE SURE?” appears on the display.

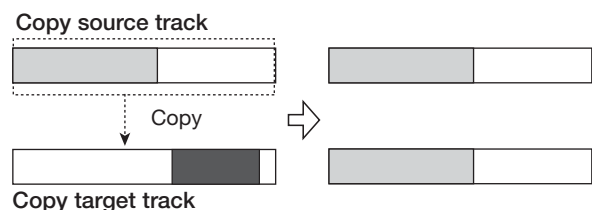
2. To execute the erase operation, press the [ENTER] key once more.

When the erase operation is completed, the unit returns to the V-take selection menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Copying a V-take

You can copy the audio data of a specified V-take to any other V-take. This action will overwrite any existing data on the destination V-take. The data on the copy source V-take will be unchanged.



1. Refer to steps 1 – 5 of “Basic steps for V-take editing” to select the track/V-take to copy and to bring up the indication “COPY” on the display. Then press the [ENTER] key.

A screen for selecting the copy destination track/V-take appears on the display.

```
COPY TO
TR 4- 1
```

- Use the cursor left/right keys and the dial to select the destination track/V-take, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display. If audio data exist at the copy destination, the indication “OverWrt?” is shown. When the copy operation is performed, these data will be overwritten.

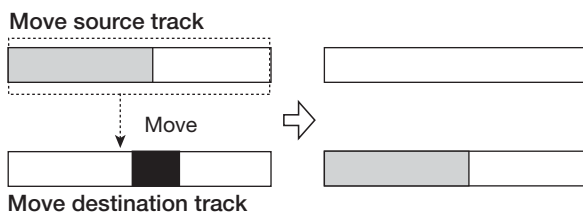
- To execute the copy operation, press the [ENTER] key once more.

When the copy operation is completed, the unit returns to the V-take selection menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Moving a V-take

You can move the audio data of a specified V-take to any other V-take. This action will overwrite any existing data on the destination V-take. The data on the move source V-take will be erased.



- Refer to steps 1 – 5 of “Basic steps for V-take editing” to select the track/V-take to move and to bring up the indication “MOVE” on the display. Then press the [ENTER] key.

A screen for selecting the move destination track/V-take appears on the display.

```
MOVE TO
TR 1- 1
```

- Use the cursor left/right keys and the dial to

- select the destination track/V-take, and press the [ENTER] key.

The indication “MOVE SURE?” appears on the display. If audio data exist at the move destination, the indication “OverWrt?” is shown. When the move operation is performed, these data will be overwritten.

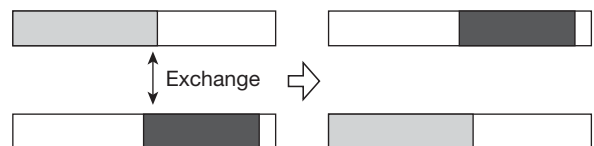
- To execute the move operation, press the [ENTER] key once more.

When the move operation is completed, the unit returns to the V-take selection menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Exchanging V-takes

You can exchange the audio data of two specified V-takes.



- Refer to steps 1 – 5 of “Basic steps for V-take editing” to select the exchange source track/V-take. Bring up the indication “EXCHG” on the display and press the [ENTER] key.

The exchange destination track/V-take is shown on the display.

```
EXCHG TO
TR 1- 1
```

- Use the cursor left/right keys and the dial to select the exchange destination V-take, and press the [ENTER] key.

The indication “EXCHG SURE?” appears on the display.

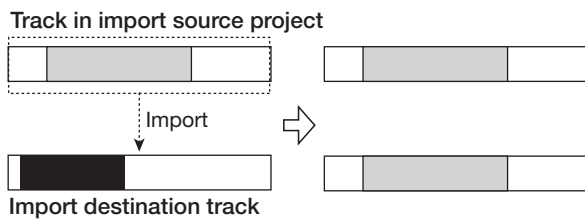
- To carry out the exchange operation, press the [ENTER] key once more.

When the exchange operation is completed, the unit returns to the V-take selection menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

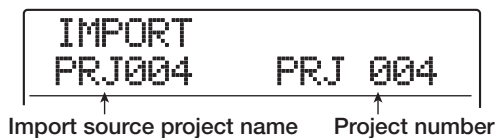
Importing a V-take from another project

You can import any V-take from another project into a specified track/V-take of the current project. Any audio data on the destination V-take are overwritten by the imported V-take.



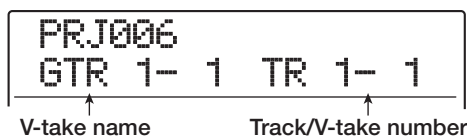
1. Refer to steps 1 – 5 of “Basic steps for V-take editing” to select the import destination track/V-take and to bring up the indication “IMPORT” on the display. Then press the [ENTER] key.

The name of the import source project is shown on the display.



2. Turn the dial to select the import source project, and press the [ENTER] key.

A track/V-take in that project is shown. While this screen is shown, the level meter section of the display indicates the status of the V-take in the source project by the segment flashing/lit/out status.



3. Use the cursor left/right keys and the dial to select the track/V-take to import.

When an unrecorded track/V-take is selected, the indication “NO DATA” is shown instead of the V-take name.

4. Press the [ENTER] key.

The indication “IMPORT SURE?” appears on the display. If audio data exist at the import destination, the indication “OverWrt?” is shown. When the import operation is performed, these data will be overwritten.

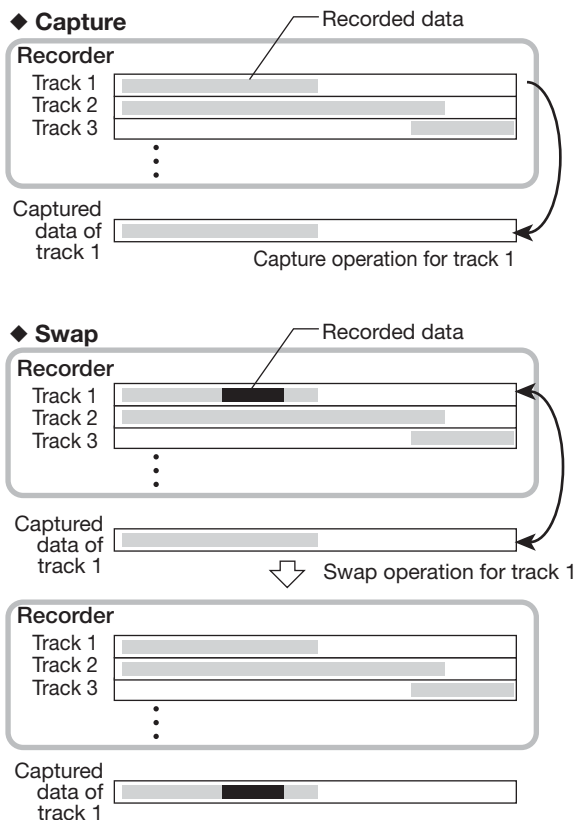
5. To execute the import operation, press the [ENTER] key once more.

When the import operation is completed, the unit returns to the V-take selection menu.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Track capture and swap

You can capture the audio data of any track and temporarily store them on the hard disk. Later you can swap the captured data with the current data of the track. This lets you save the state of a track before an editing operation. If the result of the operation is not as desired, you can then easily restore the track to its previous state.



NOTE

- Capture is performed on a track by track basis.
- Captured track data will be erased from the hard disk when another project is loaded or when the power is turned off.

Capturing a track

You can capture the audio data of any specified track.

- 1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.**

The indication “UTILITY TR EDIT” appears on the display.

- 2. Use the cursor left/right keys to bring up the indication “UTILITY CAP/SWAP” on the display, and press the [ENTER] key.**

The display indication changes as follows.

```
CAPTURE
TR1
```

- 3. Use the status keys or the dial to select the track to capture.**

The status key for the currently selected track is lit in orange. It is also possible to select the master track. In this case, the indication shows “MASTER” and the [MASTER] status key is lit.

HINT

A track for which an unrecorded V-take is selected cannot be captured.

- 4. Press the [ENTER] key.**

The indication “CAPTURE SURE?” appears on the display.

- 5. To carry out the capture operation, press the [ENTER] key once more.**

When capture is completed, the indication “SWAP TRxx” (where xx is the track number) appears on the display. This indicates that the track has been captured and can be swapped if necessary.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

- 6. To return to the main screen, press the [EXIT] key several times.**

HINT

By repeating steps 3 – 5, you can capture multiple tracks.

Swapping track data and captured data

You can swap the current data of a track with the captured data.

- 1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.**

The indication “UTILITY TR EDIT” appears on the display.

- 2. Use the cursor left/right keys to bring up the indication “UTILITY CAP/SWAP” on the display, and press the [ENTER] key.**

- 3. Use the status keys or the dial to select a track that was captured.**

When you select a captured track, the indication “SWAP” appears on the display.



```
SWAP
TR1
```

HINT

If you select a track that was not captured, the indication “CAPTURE” appears.

- 4. Press the [ENTER] key.**

The indication “SWAP SURE?” appears on the display.

- 5. To carry out the swap operation, press the [ENTER] key once more.**

When the operation is completed, the audio data of the selected track will have been replaced by the previously captured audio data.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

By performing the swap operation once more, you can return the track contents to the previous condition.

- 6. To return to the main screen, press the [EXIT] key several times.**

Reference [Phrase Looping]

The MRS-1608 lets you handle part of a recorded track or an audio file on CD-ROM as a phrase that can be loaded and played freely, in a preprogrammed sequence or for a specified number of times. The result can be written to any track/V-take. This function is called “phrase looping”. For example, you could use a commercially available sampling CD to pick up drum loops in any desired order, and use these to create a rhythm track.

This section describes the steps for phrase looping.

Which kind of phrases can be used?

The MRS-1608 can manage up to 100 phrases in one project. The phrases are stored on the hard disk in an area called the “phrase pool”. The following kinds of data can be used as a phrase.

(1) Any track/V-take in the currently loaded project

You can select any track/V-take in the currently loaded project and specify a range to be used as a phrase.

(2) Audio file on CD-ROM/R/RW

You can load a stereo or mono audio file (8-bit or 16-bit AIFF or WAV file with sampling frequency 8 – 48 kHz) from a CD-ROM/R/RW disc inserted in the CD-R/RW drive and use it as a phrase. If the optional UIB-02 card is installed in the MRS-1608, you can also copy audio files from the hard disk of a computer to the hard disk of the MRS-1608 and then use such files as a phrase.

NOTE

- After loading, all audio files are played with a sampling frequency of 44.1 kHz. If necessary, files with other sampling frequencies can be converted (resampled) to 44.1 kHz.
- Discs that do not comply to ISO 9660 Level 2 specifications will not be recognized.
- CD-R or CD-RW discs that have not been finalized will not be recognized.

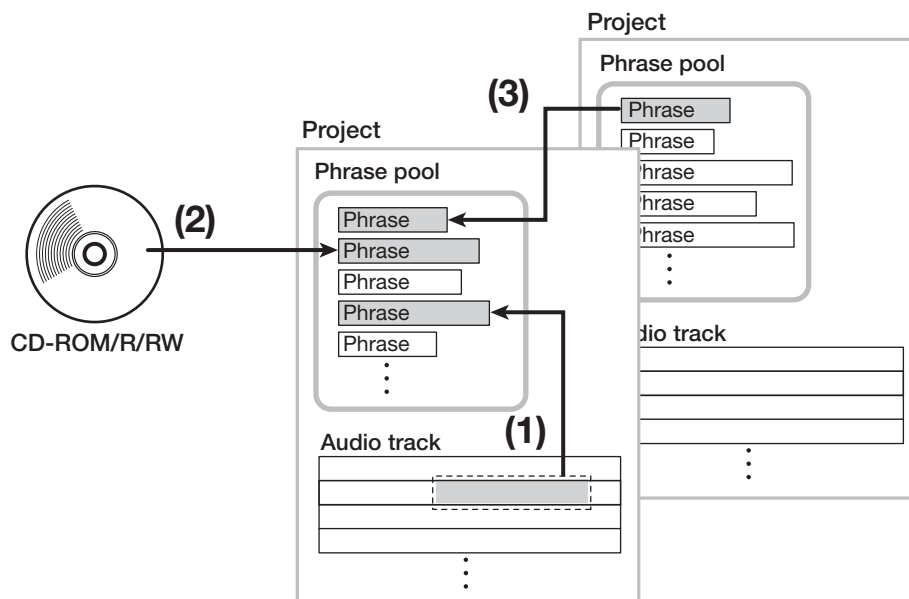
(3) Phrase from another project

You can load any phrase from a project stored on the internal hard disk of the MRS-1608.

HINT

It is not possible to directly load an audio track from an audio CD as a phrase. You must first read it into a track 1 – 16 of the MRS-1608 (→ p. 160) and then load the audio track into the phrase pool.

Once you have loaded phrases into the phrase pool, you can specify various parameters such as playback range and volume level, and then you can specify a playback sequence and number of times each phrase is played. The result can then be written to any track/V-take as a phrase loop.



Loading a phrase

This section describes how to load a phrase into the phrase pool.

Basic phrase loading steps

When loading phrases, some steps are similar for each type.

1. From the main screen, press the [UTILITY/TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

```

UTILITY
TR EDIT
  
```

2. Use the cursor left/right keys to bring up the indication “UTILITY PHRASE” on the display, and press the [ENTER] key.

A screen for selecting the phrase appears on the display.

```

PHRASE
REST          No. 0
  ↑           ↑
Phrase name  Phrase number
  
```

HINT

The phrase number 0 is preprogrammed as a rest of 1 measure (4/4 beat). This phrase cannot be overwritten.

3. Turn the dial to select a number into which the phrase should be loaded.

If you select an empty phrase number, the display shows “EMPTY”.

NOTE

If you select a number into which a phrase is already loaded, the previous phrase will be erased and replaced by the new phrase.

4. Press the [UTILITY/TRACK EDIT] key once more.

The phrase utility menu for loading phrases and creating phrase loops appears on the display.

5. Use the cursor left/right keys to bring up the indication “PHRASE IMPORT” on the display, and press the [ENTER] key.

The menu for selecting the import source appears on the display.

```

IMPORT
TAKE
  
```

6. Use the cursor left/right keys to select one of the following, and press the [ENTER] key.

● TAKE

Import a specified range of audio data from any track/V-take in the currently loaded project.

● WAV/AIFF

Import an audio file (WAV/AIFF) from a CD-ROM/RW disc inserted in the CD-R/RW drive or from the internal hard disk.

● PHRASE

Import a phrase from the phrase pool of another project saved on the hard disk.

The subsequent steps will differ, depending on the type of source selected for the phrase.

See the sections for the respective commands.

After the import operation was carried out, the phrase menu appears again on the display. If desired, you can import another phrase. Up to 100 phrases can be included in a project (with a duration of 1 second – 30 minutes per phrase).

To return to the main screen, press the [EXIT] key several times.

HINT

The name “PHxxx-yy” is automatically assigned to the loaded phrase (where xxx is the current project number and yy the phrase number).

Importing a phrase from the current project

You can specify a range from any track/V-take of the current project and use it as a phrase.

1. Refer to steps 1 – 6 of “Basic phrase loading steps” to select “TAKE” as import source. Then press the [ENTER] key.

The indication “ImprtSrc TRxx-yy” (where xx is the track number and yy the V-take number) appears on the display. In this condition, you can select the import source.

2. Use the dial or the status keys to select the track, and use the cursor up/down keys to select the V-take number.



ImprtSrc
TR 16- 1

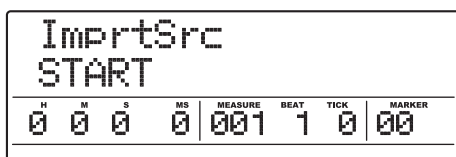
When track 16 is selected, turning the dial further to the right selects tracks in odd-numbered/even-numbered pairs or the master track. (Pressing two status keys for odd/even-numbered tracks together selects the tracks as two mono tracks.) When a stereo track, two mono tracks, or the master track is selected, the phrase can be imported in stereo.

HINT

By repeatedly pressing the status key of a stereo track, you can select the odd-numbered track, even-numbered track, and stereo track.

3. Press the [ENTER] key.

The display indication changes to “ImprtSrc START”. In this condition, you can specify the start point for the data range to be imported.



ImprtSrc
START

H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	0	0	001	1	0	00

4. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the start point.

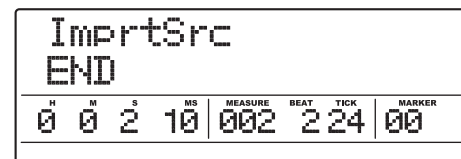
By moving the flashing section to the MEASURE/BEAT/TICK or MARKER field on the display, you can specify the point as a measure, beat, tick, or as a mark number.

HINT

- By holding down the STOP [■] key and pressing the PLAY [▶] key, you can perform scrub playback of the V-take of the specified track (→ p. 38).
- The playback range of the phrase loop can be fine-tuned also after importing. Therefore it is best to choose a somewhat wider range here.
- If you specify a point where there are no audio data, the second line of the display shows * symbol.

5. Press the [ENTER] key.

The display indication changes as follows.



ImprtSrc
END

H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	2	10	002	2	24	00

6. Specify the end point of the range in the same way as described in step 4.

If you press the PLAY [▶] key, the specified range will be played.

7. When you have fully specified the import source, press the [ENTER] key.

The indication “IMPORT SURE?” appears on the display.



IMPORT
SURE?

8. To carry out the import process, press the [ENTER] key again.

The phrase is imported. When the import process is completed, the phrase menu appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Importing a WAV/AIFF file

You can import an audio file (WAV/AIFF) from a CD-ROM or CD-R/RW disc inserted in the CD-R/RW drive or from the internal hard disk.

Before doing this, the following preparations are necessary.

● When importing from the CD-R/RW drive

Insert a CD-ROM or CD-R/RW disc containing audio files into the CD-R/RW drive.

● When importing from the internal hard disk

Copy audio files from a computer into a folder named “WAV_AIFF” immediately under the root directory (top level folder) of the internal hard disk.

The files must have the extension “.WAV” (for WAV files) or “.AIF” (for AIFF files).

NOTE

- To copy audio files to the internal hard disk, the optional UIB-02 card is necessary. For information on using the option card, see page 183.
- Any subfolders in the WAV_AIFF folder are not recognized by the MRS-1608.
- The following procedure will not allow you to first listen to the audio files. Confirm file content and file name before you start the procedure.

1. Refer to steps 1 – 6 of “Basic phrase loading steps” to select “WAV/AIFF” as import source. Then press the [ENTER] key.

The indication “IMPORT CD-ROM” appears on the display. You can now select the source device.

```
IMPORT
CD-ROM
```

2. Use the cursor left/right keys to select the source device: “CD-ROM” (CD-R/RW drive) or “IntHDD” (internal hard disk), and press the [ENTER] key.

The unit searches for WAV/AIFF files on the specified device. When files are found, their names are listed on the display.

```
IMPORT
LOOP.WAV
```

↑
File name

HINT

If you select CD-ROM as source without a disc in the drive, the indication “IMPORT Ins Disc” appears on the display and the tray of the CD-R/RW drive opens. To continue, insert a disc containing audio files and press the [ENTER] key.

3. Turn the dial to select the audio file to import.

When accessing a disc in the CD-R/RW drive which has audio files in a certain folder, turn the dial to display the folder name. When a folder is selected, the indication “Folder” is shown in the right side of the display.

```
IMPORT
WAVFILES Folder
```

↑
Folder name

When you press the [ENTER] key in this condition, the files inside the selected folder are displayed. Turn the dial to select the desired file. By pressing the [EXIT] key, you can return to the next higher level.

4. When the file has been selected, press the [ENTER] key.

Depending on the sampling frequency of the imported audio file, the following applies.

● Sampling frequency 44.1 kHz

The indication “IMPORT SURE?” appears on the display. When you press the [ENTER] key, the audio file is imported. When the process is complete, the phrase menu appears again.

● Sampling frequency other than 44.1 kHz

When you press the [ENTER] key, a selection screen for conversion to 44.1 kHz (resampling) appears.

```
WAV/AIFF
Resample ON
```

Turn the dial to select resampling on/off. When you press the [ENTER] key, the indication “WAV/AIFF SURE?” appears. Press the [ENTER] key once more to start the

import process. When the process is complete, the phrase menu appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

The name “PHxxx-yy” is automatically assigned to the loaded phrase (where xxx is the current project number and yy the phrase number).

NOTE

Imported audio files are always played with a sampling frequency of 44.1 kHz. If resampling was disabled during the import process, a file with a different sampling frequency will play back with a different pitch and tempo.

Importing a phrase from a different project

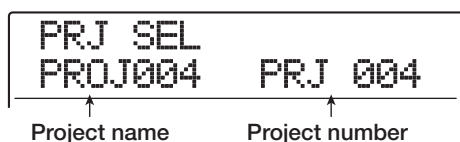
You can import any phrase contained in the phrase pool of another project stored on the hard disk.

NOTE

- When you import a phrase from the phrase pool of another project, you cannot specify a range. If necessary, edit the phrase playback point after importing the phrase.
- The following procedure will not allow you to first listen to the phrase. Confirm name and number of the phrase before you start the procedure.

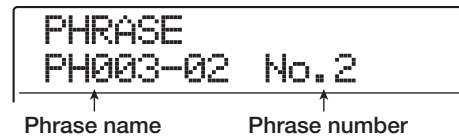
1. Refer to steps 1 – 6 of “Basic phrase loading steps” to select “PHRASE” as import source. Then press the [ENTER] key.

The indication “PRJ SEL xxx” (where xxx is the project name) appears on the display. You can now select the source project.



2. Turn the dial to select the source project, and press the [ENTER] key.

The display now shows the screen for selecting phrases in that project.



HINT

If the selected project does not contain any phrases, the indication “NO DATA” appears on the display for several seconds, and then the previous screen returns.

3. Turn the dial to select the phrase, and press the [ENTER] key.

The indication “IMPORT SURE?” appears on the display.

4. To carry out the import process, press the [ENTER] key once more.

The phrase is imported. When the import process is completed, the phrase menu appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Adjusting phrase parameters

Once you have imported a phrase into the phrase pool, you will need to specify parameters such as playback range and number of measures.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY PHRASE” on the display, and press the [ENTER] key.

The phrase screen appears on the display.



3. Turn the dial to select the phrase that you want to edit.

When you press the PLAY [▶] key, the selected phrase is played. If you select a number where no phrase is

imported, the indication “EMPTY” appears instead of the phrase name.

4. Press the [EDIT] key.

A parameter of the selected phrase appears.

```

PHRASE
MEAS x02 No. 1

```

5. Use the cursor up/down keys to call up the parameter you want to edit.

● MEAS xxx (XX = 01 – 99)

This parameter specifies to how many measures the playback range of the phrase corresponds. The parameter lets you compress or expand the playing duration of the phrase to match the tempo setting of the rhythm section. The setting range is 1 – 99 measures.

● TIMSIG

This specifies the time signature of the phrase. In combination with the MEAS x parameter, it determines the length of the phrase. The setting range is 1 (1/4) – 8 (8/4).

● START

Specifies the playback start point of the phrase in milliseconds. In the default condition, this is the beginning of the imported data.

● END

Specifies the playback end point of the phrase in milliseconds. In the default condition, this is the end of the imported data.

● NAME

Specifies a name for the phrase.

● LVL

Specifies the phrase playback level in the range of ± 24 dB.

HINT

If you do not intend to match the phrase to a rhythm song, there is no need to set the MEAS x and TIMSIG parameters.

6. Use the dial and the cursor left/right keys to adjust the setting value.

• Adjusting MEAS x/TIMSIG/LVL

Turn the dial to set the numerical value.

• Adjusting START / END

Use the cursor left/right keys to cause the counter value to flash, and turn the dial to set the value.

• Adjusting NAME

Use the cursor left/right keys to move the flashing section to the character to edit, and turn the dial to select the character.

HINT

You can use the PLAY [▶] key to check the phrase during editing.

7. Repeat steps 5 – 6 to complete the phrase.

If desired, press the [EXIT] key several times to return to the phrase screen, and edit another phrase.

8. To return to the main screen, press the [EXIT] key several times.

Copying a phrase

You can copy a phrase to any other phrase number. Any phrase at the copy destination will be overwritten (erased). This is convenient to use one phrase as a starting point and save it with different parameter settings.

1. From the main screen, press the [UTILITY/TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY PHRASE” on the display, and press the [ENTER] key.

The phrase screen appears.

PHRASE	
REST	No. 0

3. Turn the dial to select the copy source.
4. Press the [INSERT/COPY] key in the rhythm section.

The screen for specifying the copy destination phrase number appears.

COPY TO	
PH000-03	No. 3

5. Turn the dial to select the phrase number for the copy destination, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display.

NOTE

If a phrase already exists at the copy destination number, it will be erased and replaced by the copy source phrase. Take care not to accidentally delete a phrase.

6. To carry out the copy process, press the [ENTER] key once more.

The phrase is copied, and the phrase screen appears again. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Deleting a phrase

You can return a phrase to the blank (empty) condition as follows.

NOTE

Once deleted, a phrase cannot be restored. Use this function with care.

1. From the main screen, press the [UTILITY/TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY PHRASE” on the display, and press the [ENTER] key.

The phrase screen appears.

3. Turn the dial to select the phrase to delete.
4. Press the [DELETE/ERASE] key in the rhythm section.

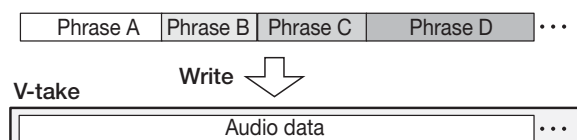
The indication “DELETE SURE?” appears on the display.

5. To carry out the delete process, press the [ENTER] key once more.

The phrase is deleted, and the phrase screen appears again. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Writing a phrase loop to a track

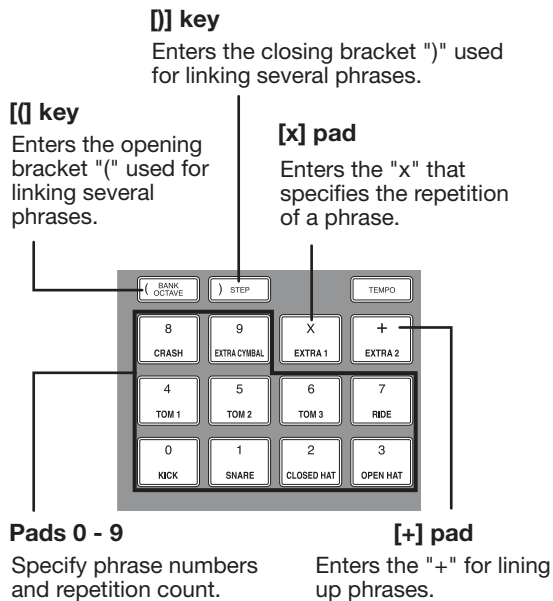
Phrases contained in a phrase pool can be played in a specified order, repeated automatically, and written as a phrase loop to a specified track/V-take. After writing the phrase loop, the target track/V-take will contain actual audio data which can then be played and edited in the same way as regular audio data.



Using FAST input for the phrase loop

When creating a phrase loop, the FAST (Formula Assisted Song Translator) method developed by ZOOM can be used to specify phrase sequence and number of plays.

The keys and pads of the rhythm section are used for FAST input, as described below.



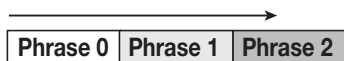
The basic rules for creating a phrase loop are as follows.

● Select the phrase

Use pads 0 – 9 to select a phrase number from 0 – 99.

● Line up phrases

Use the "+" symbol to line up phrases. For example, entering **0 + 1 + 2** will result in the following phrase sequence being written.



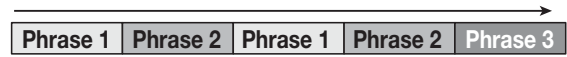
● Repeat phrases

Use the "x" symbol to specify phrase repetitions. "x" takes precedence over "+". For example, entering **0 + 1 x 2 + 2** will result in the following phrase sequence being written.

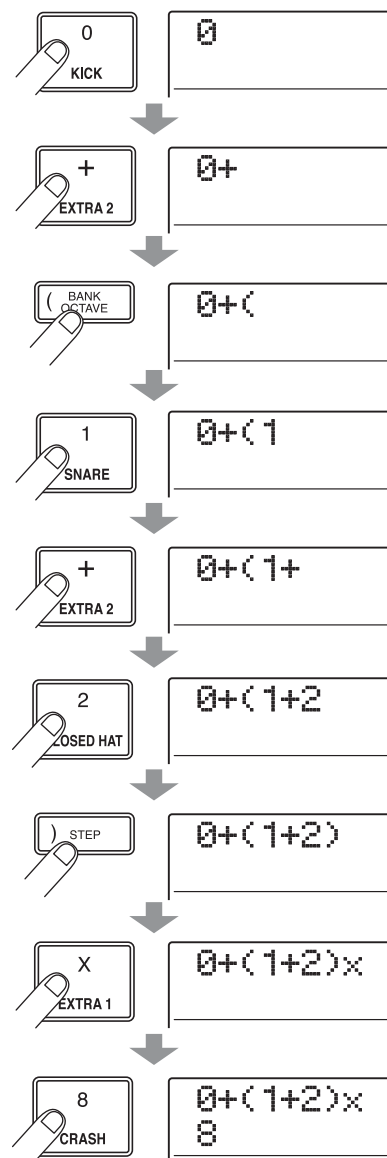


● Link multiple phrases

Use the "(" and ")" symbols to link a group of phrases for repetition, and then use the "x" symbol to specify the repetition count. For example, entering **(1 + 2) x 2 + 3** will result in the following phrase sequence being written.



An example for entering the formula **0 + (1 + 2) x 8** is shown below.



HINT

If the formula does not fit on two lines, the indication scrolls by one character each. If you use the cursor keys to move the input position, the line scrolls accordingly.

If you make a mistake during input, correct it as follows.

● **Inserting a number or symbol**

Use the cursor left/right keys to move the flashing position to where you want to insert a new number/symbol. Then enter the new number/symbol.

● **Deleting a number or symbol**

Use the cursor left/right keys to move the flashing position to the number or symbol that you want to delete. Then press the [DELETE/ERASE] key.

When formula input is completed, specify the track/V-take to which the phrase loop is to be written as audio data.

HINT

- The entered formula will be stored as part of the project also after writing the phrase loop. This allows you to later call up the formula, edit it, and write the data again.
- After writing the phrase loop, it is not possible to write only a part of the data or add a phrase to the loop. To make changes, enter the new formula from the beginning to the end and then perform the writing operation.

Writing a phrase loop to a track

This section explains how to create a phrase loop and write it as audio data to a specified track/V-take.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY PHRASE” on the display, and press the [ENTER] key.

The phrase screen appears.

```

PHRASE
REST      No. 0
  
```

3. Press the [UTILITY/TRACK EDIT] key once more.

The phrase utility menu appears on the display.

```

PHRASE
IMPORT
  
```

4. Use the cursor left/right keys to bring up the indication “PHRASE CREATE” on the display, and press the [ENTER] key.

The display indication changes as follows. This screen lets you select a track/V-take for writing the phrase loop.

```

CREATE
TR 1- 1
  
```

5. Use the cursor up/down keys or the status keys and the dial to select the track/V-take to which to write the phrase.

```

CREATE
TR16- 1
  
```

When track 16 is selected, turning the dial further to the right selects tracks in odd-numbered/even-numbered pairs (1/2, 7/8 etc.) or the master track. (Pressing two status keys for odd/even-numbered tracks together selects the tracks as two mono tracks.) When a stereo track, two mono tracks, or the master track is selected, the V-take currently selected for the two specified tracks or the master track becomes the writing target.

NOTE

- By repeatedly pressing the status key of a stereo track, you can select the odd-numbered track, even-numbered track, and stereo track.
- If the phrase is mono and the selected write target track is stereo, the same data will be written to both tracks.
- If the phrase is stereo and the write target track is mono, the left and right channels of the phrase will be mixed when the data are written to the track.
- When a V-take which already contains audio data is selected, the existing data will be completely erased and overwritten by the new audio data.

6. When you have selected a track/V-take, press the [ENTER] key.

A screen for selecting the phrase loop number for formula input appears.



HINT

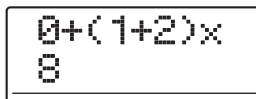
Ten phrase loops (LOOP01 – LOOP10) can be created.

7. Turn the dial to select the desired phrase loop number, and press the [ENTER] key.

FAST input is now possible.

8. Use the keys and pads of the rhythm section to enter the formula for creating the loop.

For information on entry procedures, refer to page 74.



9. When formula input is completed, press the [ENTER] key.

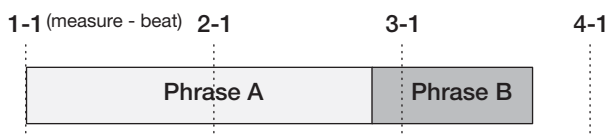
The following screen appears on the display. This screen lets you select whether to match phrase playback to the rhythm section measure/tempo.



10. Turn the dial to select one of the following methods.

● ADJUST OFF

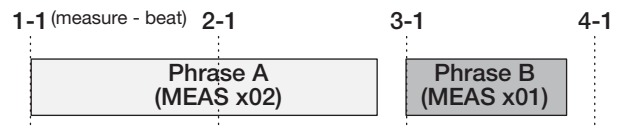
When you select this setting, the selected phrase is played continuously, independent of the rhythm song bar lines and tempo. (Default setting)



● ADJUST BAR

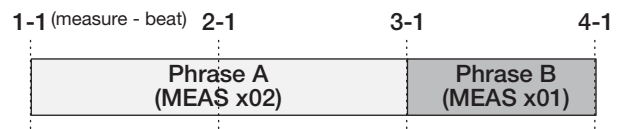
When you select this setting, phrase playback start is

aligned to the measure start of the rhythm song. If one measure of the phrase (phrase playback range divided by number of measures specified by MEAS x parameter) is longer than one measure of the rhythm song, the phrase is switched when the number of measures specified by the MEAS x parameter has played, without waiting for the end of the phrase. If one measure of the phrase is shorter than one measure of the rhythm song, there will be a blank until the measure where playback switches to the next phrase.



● ADJUST BAR & LEN

When you select this setting, the phrase length is adjusted so that the measures of the rhythm song and the phrase are matched. (Pitch will not change.)



NOTE

- When selecting ADJUST BAR or ADJUST BAR & LEN, verify that the MEAS x parameter for each phrase is set to a suitable number of measures. If the setting is inappropriate, the rhythm song and phrase will not synchronize properly.
- If ADJUST BAR & LEN is selected and the expansion/contraction ratio exceeds a certain range (50 – 150%), the indication “Out of Range” appears, and the results may not be as expected.

11. Press the [ENTER] key.

The indication “CREATE SURE?” appears on the display.

12. To carry out the phrase loop writing process, press the [ENTER] key once more.

The phrase loop is written. When the process is completed, the display reverts to the phrase screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

13. To return to the main screen, press the [EXIT] key several times.

Reference [Mixer]

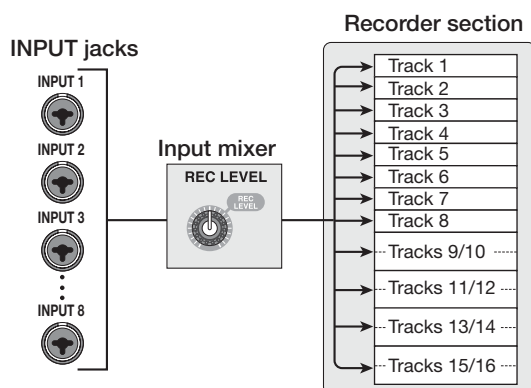
This section explains the functions and operation of the two mixer types built into the MRS-1608.

About the mixer

The mixer of the MRS-1608 is divided into two sections: an “input mixer” that processes the input signals from the INPUT jacks, and a “track mixer” that processes the signals from the audio tracks and the drum/bass track of the recorder section. Details of each mixer are described below.

◆ Input mixer

Adjusts the sensitivity for signals from the INPUT jacks and GUITAR/BASS INPUT jacks and assigns these signals to the recorder tracks.



The input mixer serves to adjust the following parameters.

- Input signal sensitivity
- Input signal recording level
- Input signal phase
- Level of signal sent to STEREO SUB-OUT jack

If an input signal is not assigned to a track (recording track not selected), the input signal will be sent straight to the [MASTER] fader. In this condition, the following parameters can be adjusted.

- Input signal panning
- Send/return effect intensity

HINT

In the 8-track recording mode, you can set the panning value and send level for each input.

◆ Track mixer

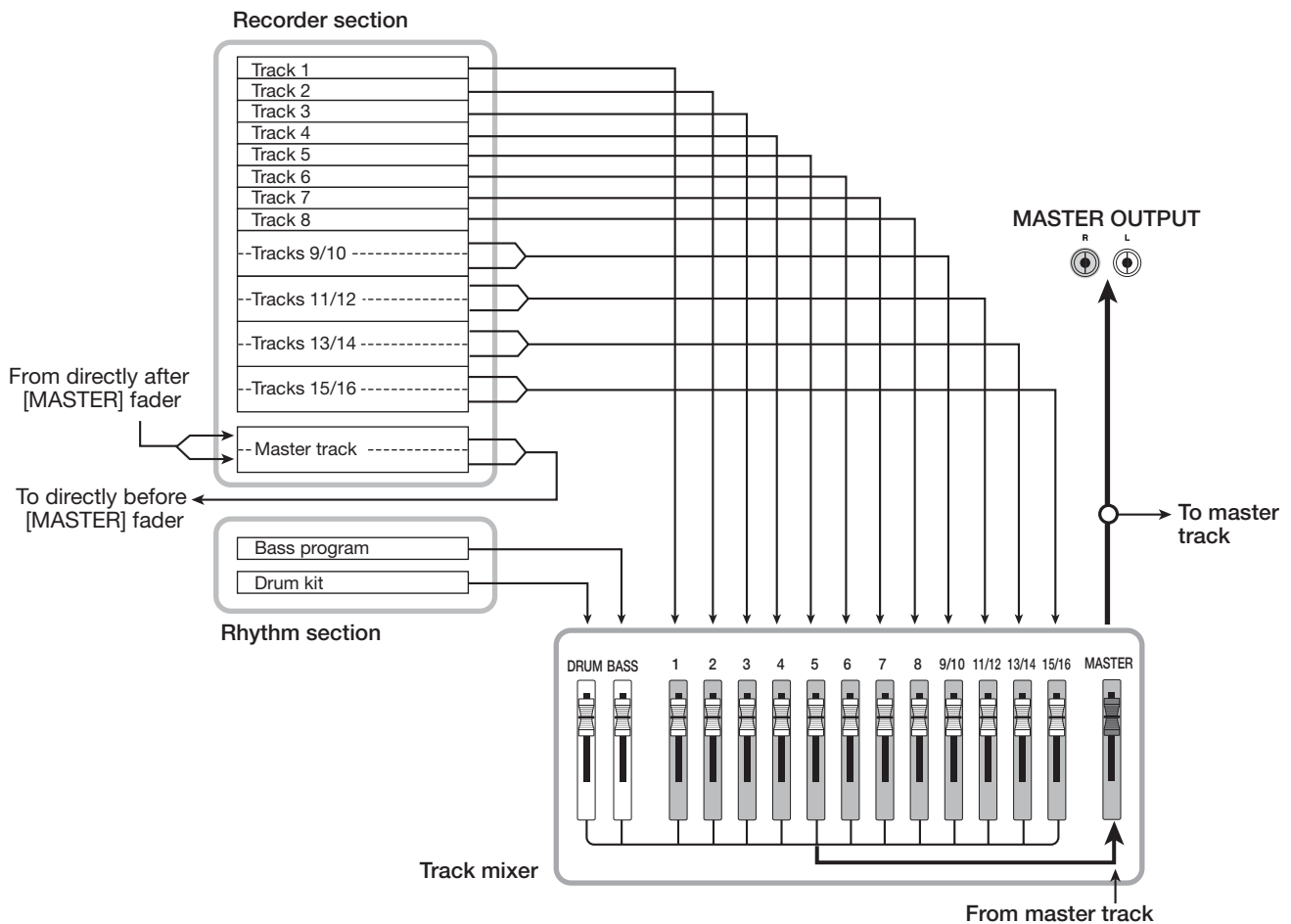
Serves to process the playback signals of the recorder tracks 1 – 16 and the sound of the drum/bass track, and to mix these signals to stereo. The mixer allows you to adjust the volume with faders and set panning and EQ for each track.

The track mixer lets you adjust the following parameters for each track.

- Track volume
- Track panning
- Track phase
- V-take used for the track (audio tracks only)
- High frequency range EQ boost/cut amount, turnover frequency
- Mid frequency range EQ boost/cut amount, turnover frequency, and bandwidth
- Low frequency range EQ boost/cut amount, turnover frequency
- Send/return effect intensity
- Signal level sent to STEREO SUB-OUT jack
- Stereo link (→ p. 82) settings (audio tracks 1 – 8 only)

HINT

Audio tracks 9/10 – 15/16 and the drum track are stereo channels. For these, parameter settings except phase and V-take number (audio tracks only) are linked for the L/R channels.



Assigning input signals to recording tracks

This section explains how to adjust the sensitivity for signals input from the INPUT jacks 1 – 8 and GUITAR/BASS INPUT jacks 1/2, and how to send them to tracks in the recorder section.

- 1. Make sure that the instrument or mic that you want to record is connected to the respective INPUT or GUITAR/BASS INPUT jack.**

NOTE

You can use either GUITAR/BASS INPUT jack 1 or INPUT jack 1, and either GUITAR/BASS INPUT jack 2 or INPUT jack 2. If both jacks are connected, the GUITAR/BASS INPUT jacks 1/2 are given priority.

- 2. From the main screen, press the [ON/OFF] key of the input to which the instrument or microphone is connected, so that the key is lit in red.**

Input selection is performed with the [ON/OFF] keys in the input section. If you press an [ON/OFF] key while another

key is already lit, the previous key goes out and the new key lights up. While the key is lit, the input is active.

Normally, up to two keys can be activated simultaneously. To activate two inputs, hold down one [ON/OFF] key and then press the other key. It is also possible to press two non-adjacent [ON/OFF] keys together.

HINT

When the [8TRACK RECORDING] key is activated, the 8-track recording mode becomes active, and up to eight inputs can be used simultaneously. Each input can then be switched on or off individually.

- 3. While playing your instrument, turn the [INPUT] control or the [GUITAR/BASS INPUT] control for the input selected in step 2, to adjust the input sensitivity.**

Make adjustments so that the [PEAK] indicator flickers slightly when you play your instrument at its loudest volume.

- 4. If you will be recording the sound through the insert effect, press the [INPUT SOURCE] key in the effect section and turn the dial to set the insert position for the effect to IN.**

When the setting is complete, press the [EXIT] key to return to the main screen.

HINT

- With the default settings of a project, the insert effect is inserted into the input mixer, and a patch suitable for guitar/bass recording is selected.
- To record without sending the sound through the insert effect, press the [BYPASS] key in the effect section to bypass the insert effect.

- 5. Press one of the [ALGORITHM] keys in the effect section to select the desired algorithm, and then use the PATCH SELECT [▲]/[▼] keys or the dial to select the patch to be used.**

```
INSERT
MRS-DRV  No. 0
```

- 6. While playing your instrument, adjust the recording level by turning the [REC LEVEL] control.**

The [REC LEVEL] control adjusts the signal level before it is sent to the recording track (i.e., after it has passed through the insert effect). The [CLIP] indicator will light if the level is too high. Set the recording level as high as possible, but avoid settings that cause the [CLIP] indicator to light.

HINT

- The level of the signal sent to the recording track will change according to the settings of the insert effect parameters. If you switch insert effect patches or edit the parameters, you should once again check whether the recording level is appropriate.
- The precise value of the [REC LEVEL] control parameter can be checked by pressing any key in the track parameter section and then pressing the cursor down key, so that the value of "REC LVL" is shown.

- 7. Repeatedly press the status key for the recording destination track until the key is lit in red.**

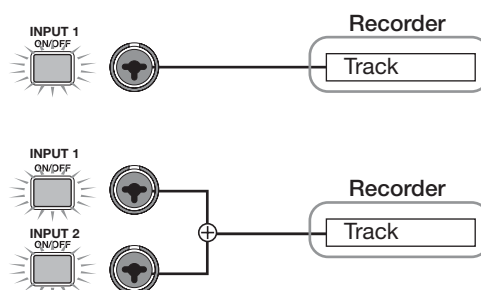
The input signal from the input mixer will be sent to the recording track. You can select record mode for up to two mono tracks (1 – 8) or one stereo track (9/10 – 15/16).

When selecting two mono tracks, only odd/even pairs can be selected (1/2, 3/4, 5/6, 7/8). To select two tracks,

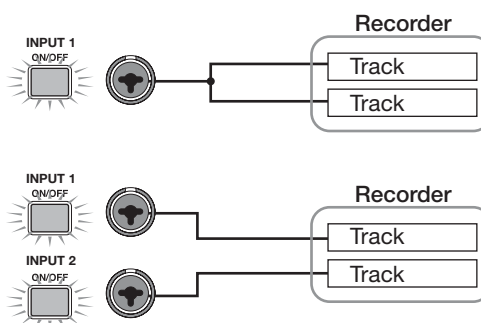
repeatedly press the status key for one track until the key is lit in red, and then hold the key while pressing the status key for the other track.

The signal flow from the input mixer to the track will change as follows, depending on the number of inputs and recording tracks.

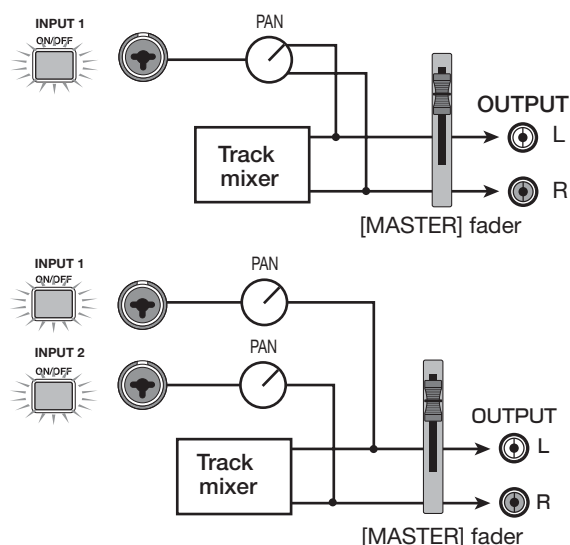
- **Mono track selected as recording track**



- **Stereo track or two mono tracks selected as recording track**



- **No track selected as recording track**



NOTE

- The diagrams above show the signal flow when the insert effect has not been inserted into the input mixer. When the insert effect is inserted, the signal flow will change, depending on the number of input and output channels of the effect (→ p. 141).
- In 8-track recording mode (→ p. 45), the signals from inputs 1 – 8 are sent to tracks 1 – 8.

HINT

- When no recording track is selected, the input signals are sent directly to the [MASTER] fader. The pan controls of the input mixer can be used to adjust the panning value of the signal sent to the [MASTER] fader. (When a recording track is selected, the pan setting of the input mixer has no effect on the signal.)
- By using the bounce function, you can apply the send/return effect to the input signal for recording (→ p. 42).

Adjusting the signal for each track (track parameters)

The input mixer and track mixer let you adjust various aspects for each track (called track parameters), such as panning and send/return effect intensity. This section describes how to adjust track parameters.

1. Press any key in the track parameter section.

Pressing any of the keys in the track parameter section brings up the respective track parameter on the display. The keys that are active for the target track/input light up. Keys for inactive parameters and for parameters not included in that track/input are out.

2. Use the cursor left/right keys or the status keys and [ON/OFF] keys to select the track/input.

HINT

- To select a single track from a pair of stereo tracks (such as track 9 or track 10), press the status key repeatedly.
- In 8-track recording mode, eight inputs can be used simultaneously. In this case, you can select the input with the respective [ON/OFF] key and adjust track parameters for each input (except for the record level). The display will show the number of the input (INPUT 1, INPUT 7, etc.)

3. Use the cursor up/down keys to select the track parameter you want to adjust. For a list of available parameters, see the table on the next page.

For track parameters which have dedicated keys, you can select the parameter directly by pressing the key.

4. Turn the dial to adjust the value.

5. For parameters where on/off can be selected (marked with an asterisk in the table on the next page), repeatedly press the respective key in the track parameter section until the key is out.

Each push of the key toggles between lit (on) and out (off).

For example, when switching high-range EQ from on to off, the display indication changes as follows. Pressing the respective key once more restores the previous condition.

- On condition

```
TR1
EQ HI G  0dB
```

- Off condition

```
TR1
EQ HI  OFF
```

6. Repeat steps 3 – 5 until all desired parameters are adjusted.

If required, you can use the cursor left/right keys, status keys and [ON/OFF] keys in this condition to change to another track/input and adjust other parameters.

7. To return to the main screen, press the [EXIT] key.

◆ Track parameter list

Parameter	Display	Setting range	Description	Track 1 – 8	Track 9 – 16	Master track	Drum/ bass track	Input 1 – 8
EQ HI GAIN (*)	EQ HI G	-12 – +12dB	Adjusts high-frequency boost or cut in the range from -12 to +12 dB. This parameter is only shown when HI EQ is on.	○	○		○	
EQ HI FREQUENCY (*)	EQ HI F	500 – 18000(Hz)	Adjusts turnover frequency for high-frequency boost/cut. This parameter is only shown when HI EQ is on.	○	○		○	
EQ MID GAIN (*)	EQ MID G	-12 – +12dB	Adjusts mid-frequency boost or cut in the range from -12 to +12 dB. This parameter is only shown when MID EQ is on.	○	○		○	
EQ MID FREQUENCY (*)	EQ MID F	40 – 18000(Hz)	Adjusts turnover frequency for mid-frequency boost/cut. This parameter is only shown when MID EQ is on.	○	○		○	
EQ MID Q-FACTOR (*)	EQ MID Q	0.1 – 1.0	Adjusts the Q value (bandwidth) for mid-frequency EQ. This parameter is only shown when MID EQ is on.	○	○		○	
EQ LOW GAIN (*)	EQ LO G	-12 – +12dB	Adjusts low-frequency boost or cut in the range from -12 to +12 dB. This parameter is only shown when LOW EQ is on.	○	○		○	
EQ LOW FREQUENCY (*)	EQ LO F	40 – 1600(Hz)	Adjusts turnover frequency for low-frequency boost/cut. This parameter is only shown when LOW EQ is on.	○	○		○	
CHORUS/ DELAY SEND LEVEL (*)	CHO SEND	0 – 100	Adjusts the chorus/delay effect send level for the track/input.	○	○		○	○
REVERB SEND LEVEL (*)	REV SEND	0 – 100	Adjusts the reverb effect send level for the track/input.	○	○		○	○
SUB-OUT SEND ON/OFF (*)	SUB SEND	ON/OFF	Selects whether the signal at the MASTER OUTPUT jacks (master track signal) is also supplied to the STEREO SUB-OUT jack.			○		
SUB-OUT SEND LEVEL (*)	SUB SEND LVL	0 – 127	Adjusts the level of the signal sent from the track/input to the STEREO SUB-OUT jack (→ p. 82).	△	△		△	△
SUB-OUT SEND PAN (*)	SUB SEND Pan	L100 – 0 – R100	Adjusts panning for the signal sent from the track/input to the STEREO SUB-OUT jack	△	△		△	△
PAN (*)	PAN	L100 – 0 – R100	Adjusts the panning value of the track/input signal. For stereo tracks, the parameter adjusts the left/right level balance.	○	○		○	○
V-TAKE	TR x-y	x=1 – 16 y=1 – 10	Selects the V-take to use for the track (→ p. 35). x stands for the track number and y for the V-take number.	○	○	○		
FADER	FADER	0 – 127	Adjusts the current volume level.	○	○	○	○	
REC LVL	REC LVL	0 – 127	Adjusts the recording level.					○
STEREO LINK	ST LINK	ON/OFF	Controls the stereo link function for linking two mono tracks (→ p. 82).	○				
INVERT	INVERT	ON/OFF	Allows inverting the track/input phase. When set to off, the phase is normal. When set to on, the phase is inverted.	○	○		○	○

(*) symbol: denotes a parameter that can be switched on and off directly with a key in the track parameter section.

○: Valid parameter for this track/input

△: The triangle denotes a parameter that is only displayed when the SUB-OUT SEND LVL ON/OFF parameter for the master track is off.

Linking two tracks (stereo link)

In the MRS-1608, the parameters of adjacent odd-numbered/even-numbered mono tracks (1/2, 3/4, 5/6, 7/8) can be linked, resulting in a pair of stereo tracks. (This function is referred to as “stereo link”.) The setting procedure is as follows.

- 1. Press any key in the track parameter section.**
- 2. Press the status key of one of the mono tracks that you want to stereo-link.**
- 3. Repeatedly press the cursor down key, until the following indication appears.**

This is the STEREO LINK parameter screen.

```
TR7
ST LINK  OFF
```

- 4. Turn the dial to switch the setting ON.**

Stereo linking will be enabled immediately, so that the selected track and the adjacent odd-numbered/even-numbered track are linked. To defeat stereo linking, return the setting to OFF.

- 5. To return to the main screen, press the [EXIT] key.**

HINT

- To adjust the volume of stereo-linked tracks, use the odd-numbered fader. (The even-numbered fader will have no effect.)
- The PAN parameter of two stereo-linked tracks will function as a balance parameter that adjusts the volume balance between the tracks.
- Also when stereo-link is on, the phase parameter and V-take selection parameter can be set individually for each track.

Assigning an input/track signal to the SUB-OUT jack

In the default condition of a project, the STEREO SUB-OUT jack carries the same signal as the MASTER OUTPUT jacks. Therefore it can be used as an extra headphone jack. If required, the signal level and panning of the signal sent to the STEREO SUB-OUT jack can be controlled individually for each input or track, creating a mix that is different from that of the MASTER OUTPUT jacks. This is convenient to create a monitoring mix or to send only the signal from a specific track/input to an external effect.

HINT

- For the audio tracks and drum/bass track, the signal immediately before the fader is sent to the STEREO SUB-OUT jack.
- For inputs 1 – 8, the signal after the [REC LEVEL] control is sent to the STEREO SUB-OUT jack.

- 1. Connect a monitor system or external effect to the STEREO SUB-OUT jack.**

Use the [STEREO SUB-OUT] control to adjust the signal at the STEREO SUB-OUT jack to a suitable level.

HINT

For connection to a system with stereo inputs, use a Y cable (stereo plug x 1 + mono plug x 2). If you connect the two mono plugs of the Y cable to separate effects, the STEREO SUB-OUT jack functions as two AUX OUT jacks. In this case, you can set the panning value of the signal sent from the track/input to the STEREO SUB-OUT jack fully to L or R to select the send target.

- 2. Press the [MASTER] status key and then the [SUB-OUT SEND] key in the track parameter section.**

The indication “MASTER SUB SEND” appears on the display.

In the default condition of a project, the master track SUB-OUT SEND ON/OFF parameter is ON, so that the STEREO SUB-OUT jack carries the same signal as the MASTER OUTPUT jacks.

In this condition, the signal from other tracks or inputs cannot be sent directly to the STEREO SUB-OUT jack.

```
MASTER
SUB SEND ON
```

While the SUB-OUT SEND ON/OFF parameter of the master track is ON, the indication “xxx SUB SEND MASTER” (where xxx is the track/input name) will be shown when another track or input is called up. For this track/input, the SUB-OUT SEND parameter cannot be modified.

3. Turn the dial to set the parameter to OFF.

In this condition, the signal level to be sent from each track/input to the STEREO SUB-OUT jack can be adjusted individually.

HINT

- You can also switch between ON and OFF by pressing the [SUB-OUT SEND] key.
- By selecting ON, you can return to the original condition at any time.

4. Use the cursor left/right keys and status keys to select the track/input, and turn the dial to adjust the level of the signal sent to the STEREO SUB-OUT jack.

When the project is in the default condition, the SUB-OUT SEND LVL parameter is set to zero for all tracks/inputs. A setting of 100 will result in a unity gain (0 dB) signal being sent to the STEREO SUB-OUT jack.

```
TR1
SUB SEND LVL 100
```

5. Press the cursor down key until the following indication appears. Then turn the dial to set the panning value of the signal sent to the STEREO SUB-OUT jack.

The panning value setting range is L100 (fully left) – 0 (center) – R100 (fully right). By pressing the cursor up key, you can return to the condition of step 4.

```
TR2
SUB SEND Pan R32
```

6. Repeat steps 4 – 5 to adjust the output level for all track/input signals sent to the STEREO SUB-OUT jack.

You can set the SUB-OUT SEND parameter for a track/input to OFF by pressing the [SUB-OUT SEND] key repeatedly so that the key goes out. This is useful to temporarily take that track/input out of the mix. Pressing the key again turns it ON and restores the original condition.

7. To return to the main screen, press the [EXIT] key.

Using the solo function

If desired, you can mute all other tracks except one during playback of the recorder section. This is called the “solo function”. It is convenient to fine-tune the parameters for a certain track.

- 1. From the main screen, perform playback of the recorder section and press the [SOLO] key.**

The key lights up.

NOTE

Also when the [SOLO] key is lit, the input signals are always mixed. If necessary, turn inputs off by pressing the respective [ON/OFF] key.

- 2. Press the status key (except [MASTER] status key) for the track that you want to monitor alone.**

The status key lights up in green, and only the corresponding track is heard. You can use the fader of the track to adjust the volume.

HINT

- For stereo tracks, both tracks are monitored.
- While the [SOLO] key is lit, two mono tracks that are stereo-linked will be played individually.

- 3. To cancel the solo function, press the [SOLO] key once more.**

The key goes out.

Saving/recalling mixer settings (scene function)

The current mixer and effect settings can be saved as a so-called “scene” in a special area of memory, and recalled either manually or automatically whenever desired. This is convenient to compare various mixes, or to automate mix operations.

A scene contains the following data.

- Track parameters (except for stereo link on/off and currently selected V-take number)
- The state of all status keys (play/mute)
- Insert effect patch number/input source
- Send/return effect (chorus/delay, reverb) patch number
- Fader settings

Up to 100 different scenes per project can be stored. Scene data stored in memory are saved on the internal hard disk as part of the currently selected project.

Saving a scene

This section explains how to save the current settings as a scene.

- 1. Press the [SCENE] key in the control section.**

- 2. Turn the dial to select the scene number (0 – 99) in which the data will be saved.**

If you select a number where scene data are already saved, the existing data will be erased and overwritten by the new data.

- 3. Press the [STORE] key.**

The first character of the scene name flashes. In this condition, you can specify a name for the scene.

HINT

The default name is “SCENExxx” (where xxx is the scene number).

- Use the cursor left/right keys to move the flashing section, and turn the dial to select a character.

Repeat this until the name is as desired. For information on available characters, refer to page 36.

- To carry out the store process, press the [STORE] key or the [ENTER] key.

The current mixer and effect settings will be saved as a scene. When the process is completed, the unit returns to the screen of step 2. To cancel the process, you can press the [EXIT] key instead of these keys to return to the previous screen.

- Press the [EXIT] key to return to the main screen.

Recalling a scene

This section explains how to recall a scene that was saved to memory.

- Press the [SCENE] key in the control section.

The display indicates the scene number that will be recalled.

- Turn the dial to select the desired scene to recall.

HINT

By pressing the [EDIT] key after selecting a scene, you can edit the name of the scene. Refer to steps 4 – 5 of “Saving a scene” to edit the name.

- To recall the selected scene, press the [ENTER] key.

The scene is recalled, the indication “CALL” appears on the display, and the unit returns to the condition of step 1. If you press the [EXIT] key instead of the [ENTER] key, the action is canceled and the main screen returns.

Switching scenes automatically

The MRS-1608 allows you to assign a scene to a mark (→ p. 46) that was placed at a desired location in the song. This can be used to switch scenes automatically. For example, you could change the mixing balance or effect settings as the song progresses.

- Move to the point in the song where you want to change the mix, and press the [MARK] key in the control section.

A mark is entered at this point. Repeat this step to enter marks at all other points where you want to change the mix.


- Save the mix setting to be used at the start of the song as well as all other mix settings to be used in the middle of the song as scenes.

- While the recorder is stopped, press the ZERO [◀◀] key in the transport section to move to the recorder start position.

The beginning of the song (counter zero location) already contains the mark number 00. You can assign the starting scene to this mark.

- Press the [MARK] key.

When you press the [MARK] key at a location where a mark symbol is shown, a screen will appear in which you can assign a scene to the corresponding mark.

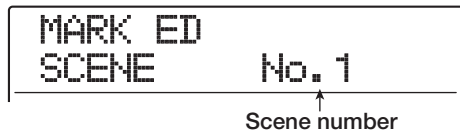
MARK ED									
SCENE									
H	M	S	MS	MEASURE	BEAT	TICK	MARKER		
0	0	5	50	80	3	24	00		

NOTE

If you press the [MARK] key at a location where no mark symbol is shown, a new mark will be assigned to that location.

- Turn the dial to select the number of the scene you want to assign to this mark, and press the [ENTER] key.

The scene will be assigned to the mark.

**HINT**

To cancel a scene assignment, turn the dial until the display indicates "--".

- 6.** Use the MARKER [◀]/[▶] keys to locate the next mark at which you want the mix to change, and assign a scene in the same way.
- 7.** When all desired scenes have been assigned, move to the start position of the recorder, and start playback.

Each time the song reaches a mark to which a scene has been assigned, the settings of that scene will be recalled.

- 8.** Press the [EXIT] key to return to the main screen.

Deleting certain parameters from a scene

If desired, you can disable a group of parameters saved in a scene. Such parameters will not change even if the scene is changed. The following groups of parameters can be specified and made active or inactive.

Group	Item
TRACK PARAMETER	EQ HI
	EQ MID
	EQ LO
	CHO SEND
	REV SEND
	PAN
	Play/mute
INSERT EFFECT	Patch number
	Input source
CHORUS/DELAY	Patch number
REVERB	Patch number
ALL FADER	Fader position
MASTER FADER	[MASTER] fader position

For example, after you have programmed a sequence of automatic scene changes, you may want to disable only the TRACK PARAMETER group and set the EQ and

panning parameters manually for each track.

- 1.** Press the [SCENE] key in the control section, and then press the [UTILITY/TRACK EDIT] key in the display section.

The following screen appears on the display. In this condition, you can select whether the scene controls the fader action.



- 2.** Turn the dial to set fader permission to ON or OFF.

Except for the fader, scene control for the other groups can be enabled or disabled by pressing one of the keys listed below, in the condition of step 1.

- **TRACK PARAMETER group**
Any status key except [MASTER] status key
- **INSERT EFFECT group**
Any [ALGORITHM] key
- **CHORUS/DELAY group**
[CHORUS/DELAY] key
- **REVERB group**
[REVERB] key
- **MASTER FADER group**
[MASTER] status key

When a group is enabled, the respective key is lit, and when the group is disabled, the key is flashing.

HINT

- The on/off setting for the TRACK PARAMETER group can be made for each track individually.
- You can use the cursor up/down keys to enable or disable all groups together except MASTER FADER group.

- 3.** When the setting is complete, repeatedly press the [EXIT] key.

The main screen returns.

The settings made here are stored as part of the project.

Reference [Rhythm]

This section explains the functions and operation of the built-in rhythm section of the MRS-1608.

About the rhythm section

The rhythm section of the MRS-1608 uses internal drum sounds and bass sounds to generate rhythm accompaniment. It can be used instead of a metronome by playing simple rhythm patterns, or you can program a sequence of rhythm patterns and chord progression into the rhythm accompaniment for an entire song.

The rhythm section is made up of the following components.

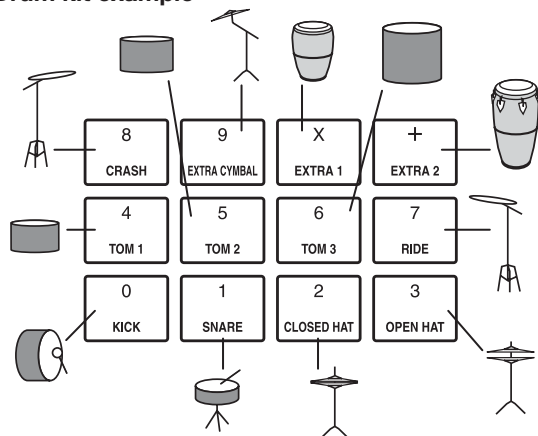
Drum kits and bass programs

The sound created by the rhythm section is produced by a “drum kit” and a “bass program”.

The drum kit is a combination of 36 drum/percussion sounds such as kick, snare, hihat, and conga. A combination of drum/percussion sounds and drum kits for use within a project is called a “drum sound set”. A drum sound set contains over 80 drum/percussion sounds and 15 – 17 drum kits. From such a drum sound set, you may also select desired sounds and create your own drum kits.

You can select one of these drum kits and play it manually with the pads on the top panel, or you can use it as a sound source for rhythm accompaniment.

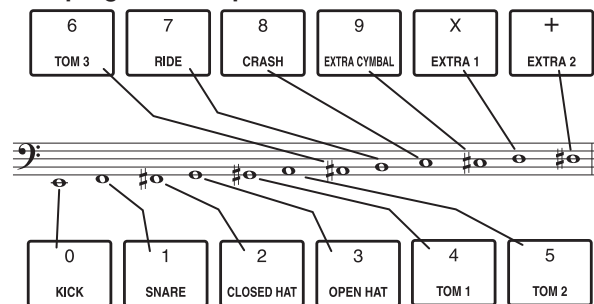
Drum kit example



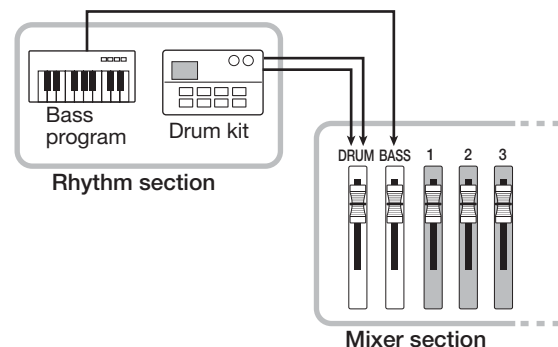
A bass program is a single bass sound, such as an electric bass or acoustic bass, which can be played as a scale with the pads on the top panel. The MRS-1608 has 13 bass

programs. You can choose one of these and play a scale, with the pads, or use it as a sound source for rhythm accompaniment.

Bass program example



The output signal from the drum kit (stereo) and the output signal from the bass program (mono) are sent to the corresponding fader of the internal mixer, where you can independently adjust the volume, panning (balance), EQ, and other parameters and apply send/return effects.



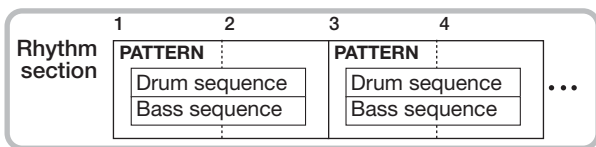
NOTE

While using the pad sampler (→ p. 121), the drum kit/bass program sound is not available.

Rhythm patterns

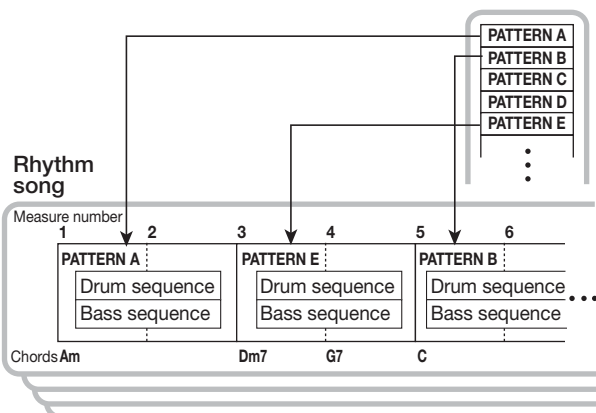
A project can contain accompaniment patterns with drum/bass performance data for up to 99 measures each. This is called a rhythm pattern. The MRS-1608 has 511 such patterns. Inside each rhythm pattern, the area that holds the drum performance data is called the “drum sequence”, and the area that holds the bass performance data is called the “bass sequence”.

In the default condition, a project contains preprogrammed rhythm patterns in numbers 000 – 472, 509 – 510. You can edit a portion of a rhythm pattern, or use an empty slot to create an entirely original rhythm pattern. The rhythm patterns you modify or create are saved on the hard disk as part of the project.



Rhythm song

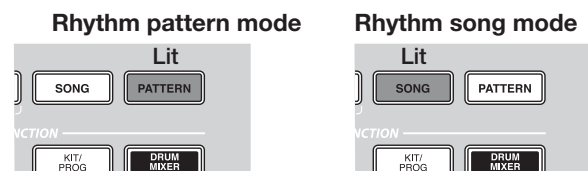
Multiple rhythm patterns arranged in a desired order of playback are collectively called a “rhythm song”. Besides the rhythm pattern data, a rhythm song comprises information about various aspects such as chord, tempo, and beat to create the accompaniment for an entire song. Up to 10 rhythm songs can be programmed in one project.



Rhythm pattern mode and rhythm song mode

The rhythm section can operate in one of two modes: “rhythm pattern mode”, in which you can create and play rhythm patterns, and “rhythm song mode”, in which you can create and play a rhythm song. One of these two modes will always be selected.

The rhythm pattern mode is selected by pressing the [PATTERN] key and the rhythm song mode by pressing the [SONG] key. The selected key lights up.



Synchronizing the recorder section and rhythm section

In the default condition of the MRS-1608, the rhythm section will operate in sync with the recorder section. When you operate the transport section to start the recorder section running, the rhythm pattern or rhythm song will also begin playing. If desired, the rhythm section can be disconnected from the recorder section and used independently.

To see whether the recorder is synchronized with the rhythm section, check the lit/out status of the [RHYTHM] key in the display section. When operation is synchronized, this key will be out. When the key is pressed so that it lights up, the recorder is separated and the rhythm section operates on its own.

To restore the original condition, press the [RECORDER] key or the [EXIT] key.

Playing rhythm patterns

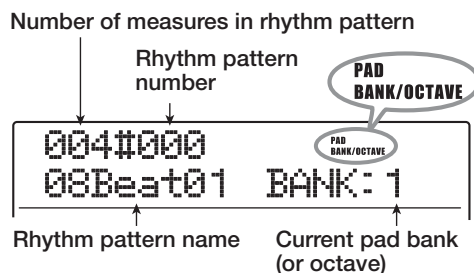
This section explains how to play rhythm patterns, how to change the tempo, and how to change the drum kit or bass program.

Selecting a rhythm pattern

This section explains how to select and play one of the 511 rhythm patterns.

1. From the main screen, press the [PATTERN] key in the rhythm section, so that the key lights up.

The rhythm pattern selection screen appears. In this condition, the following information is displayed.



HINT

- When you press the [PATTERN] key from the main screen, the [RHYTHM] key in the display section flashes. This indicates that the rhythm section is synchronized with the recorder.
- The right side of the display shows the pad bank (combination of drum sounds playable with the pads) or octave (bass program register).

2. Turn the dial to select the rhythm pattern that you want to play.

In the default condition of a project, patterns are programmed in rhythm pattern numbers 000 – 472, 509 – 510.

3. Press the PLAY [▶] key.

The selected rhythm pattern will begin playing repeatedly. If you press the PLAY [▶] key while the [RHYTHM] key is flashing, the recorder also starts to run when you start playback of the rhythm pattern.

4. To mute the performance of the drum track or bass track, repeatedly press the respective status key, so that it goes out.

The corresponding track will be muted. To defeat muting, repeatedly press the same status key again until it is lit in green.

5. To stop rhythm pattern playback, press the STOP [■] key.

The PLAY [▶] key goes out.

6. To play the rhythm pattern by itself, press the [RHYTHM] key in stop mode, so that the key is lit.

The recorder section and rhythm section are disconnected.

7. To return to the main screen, press the [EXIT] key several times.

HINT

During rhythm pattern playback, it is also possible to play rhythm section sounds by hitting the pads.

Changing the tempo

You can change the tempo of the rhythm pattern.

HINT

The tempo set here applies to all rhythm patterns. A rhythm song for which no tempo information is programmed also will use this tempo.

1. Press the [PATTERN] key so that the key lights up.

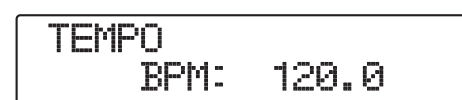
The rhythm pattern selection screen appears.

HINT

You can change the tempo in playback or stop mode.

2. Press the [TEMPO] key.

The display indication changes as follows.



3. Turn the dial to adjust the tempo.

The tempo can be adjusted over a range of 40.0 – 250.0 (BPM).

4. To change the tempo manually, hit the [TEMPO] key repeatedly at the desired tempo.

The average of the key press intervals is determined and set as the new tempo.

5. To return to the main screen, press the [EXIT] key several times.**NOTE**

If you record on the audio tracks while listening to the rhythm pattern, and then later change the tempo, the audio track content and the rhythm pattern will no longer be synchronized. Be sure to decide on the tempo first.

Changing the drum kit / bass program

You can change the drum kit/bass program used by the rhythm section.

◆ Changing the drum kit**1. Press the [DRUM] key.**

You can now use the pads to play a drum kit.

2. To change the drum sound set, press the [RHYTHM] key and then the [UTILITY/ TRACK EDIT] key.

The rhythm utility menu appears.

```

UTILITY
SoundSel
  
```

3. Verify that the indication “UTILITY SoundSel” is shown on the display, and then press the [ENTER] key.

The display changes as follows.

```

SoundSel
STANDARD
  
```

↑
Sound set name

NOTE

This screen will not appear when the pad sampler is being used.

4. Turn the dial to select a drum sound set from the following choices, then press the [ENTER] key.

Available drum sound sets are:

- **STANDARD**

Dry drum and percussion sounds suitable for a variety of styles.

- **ANALOG**

Drum/percussion sounds for hip-hop, techno, house and other styles that use analog rhythm machines.

- **CLASSIC**

Drum/percussion sounds in the style of ZOOM stand-alone rhythm machines.

When you press the [ENTER] key, the respective drum sound set is loaded, and a screen for selecting a rhythm pattern or rhythm song appears.

5. To select a drum kit, press the [KIT/PROG] key in the rhythm section.

The currently selected drum kit is shown on the display.

```

          Drum kit number
          ↓
KIT: 0
Standard  PAD BANK/OCTAVE
          ↑          ↑
          Drum kit name  Pad bank
  
```

HINT

If you operate the cursor up/down keys while selecting a drum kit, the combination of sounds playable by the pads (pad bank) will be switched.

6. Turn the dial to select the desired drum kit.

The drum kit becomes active immediately. For a list of drum kits that can be selected, refer to the appendix at the end of this manual.

7. To return to the main screen, press the [EXIT] key several times.

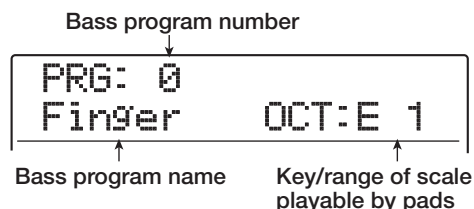
◆ Changing the bass program

1. Press the [BASS] key.

You can now use the pads to play a bass program.

2. Press the [KIT/PROG] key in the rhythm section.

The currently selected bass program is shown on the display.



HINT

If you operate the cursor up/down keys while selecting a bass program, the octave playable by the pads will be switched.

3. Turn the dial to select the desired bass program.

The bass program becomes active immediately. For a list of bass programs that can be selected, refer to the appendix at the end of this manual.

4. To return to the main screen, press the [EXIT] key several times.

Selecting the sound or scale to play with the pads

Using the pads on the top panel, you can manually play a drum kit or bass program. This section explains how to select the drum sound combination or the bass program octave/scale to assign to the pads.

HINT

The drum kit/bass program can always be played with the pads, regardless of the lit/flashing/out status of the [RHYTHM] key.

◆ Playing a drum kit with the pads

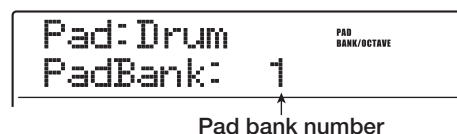
When playing a drum kit, you can switch between three pad banks (combination of drum sounds), giving you a total of 36 sounds.

1. From the main screen, press the [DRUM] key.

The key lights up, and a drum kit to play can be selected. In the default condition of a project, pad bank 1 is selected.

2. Use the [BANK/OCTAVE] key in the rhythm section to switch the pad bank.

If you press the [BANK/OCTAVE] key while a drum kit is selected, the pad bank selection screen appears.



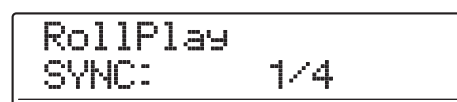
3. Turn the dial to select the desired pad bank (1 – 3).

The sounds assigned to the pads are switched immediately.

4. Hit the pads to play.

Switch the [DRUM] status key between on and off as necessary, and use the [DRUM] fader to adjust the volume.

5. To play a specific pad repeatedly (roll play), press the [STEP] key in the rhythm section to bring up the following indication on the display.



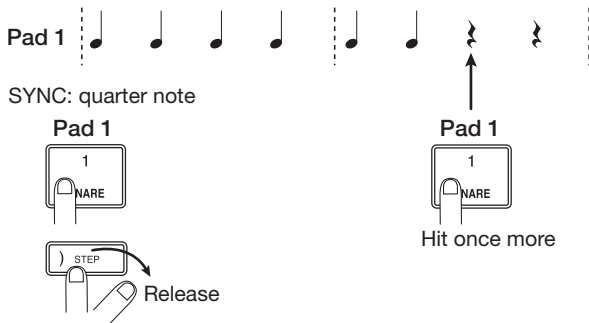
When you turn the dial at this screen, the interval for roll play can be set as follows.

- 2/4 – 8/4. quarter note x 2 – 8
- 1/3 half triplet note
- 3/8 dotted quarter note
- 1/4 quarter note (default)
- 3/16 dotted eighth note
- 1/6 quarter triplet note
- 1/8 eighth note
- 1/12 eighth triplet note
- 1/16 sixteenth note
- 1/24 sixteenth triplet note
- 1/32 thirty-second note
- Hl 1 tick (1/48 of quarter note)

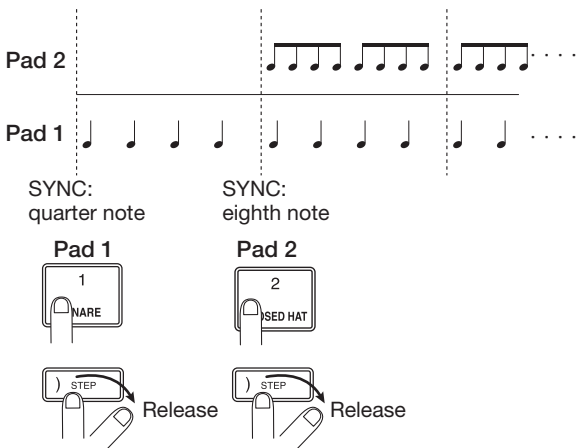
When you hit a pad while pressing the [STEP] key, the pad plays repeatedly at the specified interval (roll play). For example, you can repeat a kick drum at quarter note intervals, or play a hihat in sixteenth note units.

To stop roll play, release the pad.

If you release the [STEP] key first, roll play continues also when you release the pad. To stop roll play in this case, press the pad once more.



You can also set a different interval for different pads. For example, when you select a quarter note interval for pad 1 and an eighth note interval for pad 2, the following play results.



To return to the previous screen, press the [EXIT] key.

HINT

The roll play function is also convenient during rhythm pattern real-time input.

6. To return to the main screen, press the [EXIT] key.

◆ Playing a bass program with the pads

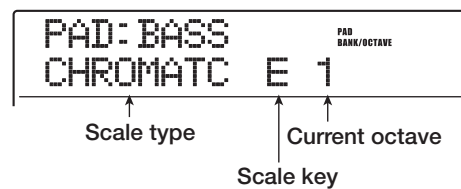
When playing a bass program, you can specify a scale and octave, which will change the pitch of the sounds assigned to the pads.

1. From the main screen, press the [BASS] key.

The key lights up, and a bass program to play can be selected.

2. Use the [BANK/OCTAVE] key in the rhythm section to switch the scale and octave to play with the pads.

If you press the [BANK/OCTAVE] key while a bass program is selected, the currently active scale type, key, and octave are shown on the display. By changing these values, you can change the pitch of the sounds assigned to the pads.



3. To change the key of the scale, use the cursor up/down keys.

The setting range is C – B in semitone steps. The key specified here is the note that will be played by pad 1.

4. To change the type of the scale, use the cursor left/right keys.

The scale type selections are CHROMATC (chromatic), MAJOR, and MINOR.

For example, when the key of “E” is selected, the pitch of the pads changes as follows depending on the scale type selection.

CHROMATIC

C	C#	D	D#
G#	A	A#	B
E	F	F#	G

MAJOR

F#	G#	A	B
B	C#	D#	E
E	F#	G#	A

MINOR

F#	G	A	B
B	C	D	E
E	F#	G	A

5. Turn the dial to change the octave to be played by the pads.

The octave of the pads can be selected in four steps (1 – 4). For example, a change from 1 to 2 will shift the pitch being assigned to the pads up by 1 octave.

Any change in a setting takes effect immediately.

6. Hit the pads to play.

Switch the [BASS] status key between on and off as necessary, and use the [BASS] fader to adjust the volume.

7. To return to the main screen, press the [EXIT] key.

Creating an original rhythm pattern

This section explains how you can create your own original rhythm patterns. There are two ways of doing this: real-time input where you record your play on the top panel pads, and step input where play is stopped and you enter the sounds one by one.

Preparations

Before starting to record, you must make various settings for the rhythm pattern, such as number of measures and time signature, and quantize value (shortest unit for recording). By default, an empty rhythm pattern has a 4/4 time signature and a duration of 2 measures.

NOTE

After you have started the rhythm pattern input procedure, you can no longer change the time signature and number of measures. Be sure to make these settings beforehand.

1. From the main screen, press the [PATTERN] key.

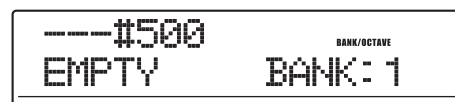
The rhythm pattern selection screen appears on the display.

2. Press the [RHYTHM] key.

The key lights up, and creating and editing a rhythm pattern becomes possible.

3. Turn the dial to select an empty rhythm pattern.

The indication “EMPTY” appears on the display when an empty pattern is selected.



HINT

If there is no empty rhythm pattern, erase an unneeded pattern (→ p. 103).

4. Press the [EDIT] key.

The rhythm pattern edit menu appears.

A rectangular display with a black border showing the text "EDIT QUANTIZE" in a monospaced font.

- 5.** To set the quantize value, make sure the indication “EDIT QUANTIZE” is shown on the display, and press the [ENTER] key.

The display indication changes as follows. The quantize value is the smallest note unit for recording a pattern. When performing real-time input, your play is recorded using the note steps selected here.

The default setting is “16” (a sixteenth note).

A rectangular display with a black border showing the text "QUANTIZE" on the top line and "16" on the bottom line.

- 6.** Turn the dial to select one of the following quantize values. Then press the [EXIT] key.

4Quarter note
 8Eighth note
 12Eighth triplet note
 16Sixteenth note (default)
 24Sixteenth triplet note
 32Thirty-second note
 Hi1 tick (1/48 of quarter note)

When you press the [EXIT] key, the rhythm pattern edit menu appears again.

HINT

The quantization setting applies to all rhythm patterns.

- 7.** To set the rhythm pattern time signature, use the cursor left/right keys to bring up the indication “EDIT TimSig” on the display, and press the [ENTER] key.

The current time signature setting appears on the display.

A rectangular display with a black border showing the text "TimSig" on the top line and "4" on the bottom line. Below the display, an upward-pointing arrow is positioned under the "4", and the text "4/4 beat" is written below the arrow.

- 8.** Turn the dial to select the beat, and then press the [EXIT] key to return to the rhythm pattern edit menu.

The setting range is 1 – 8 (1/4 – 8/4).

- 9.** To set the length (number of measures) of the rhythm pattern, use the cursor left/right keys to select the indication “EDIT BarLen”, and press the [ENTER] key.

The current length of the pattern is shown as number of measures.

A rectangular display with a black border showing the text "BarLen" on the top line and "2" on the bottom line. Below the display, an upward-pointing arrow is positioned under the "2", and the text "Number of measures" is written below the arrow.

- 10.** Turn the dial to select the desired setting.

The setting range is 1 – 99 measures.

- 11.** When the setting is complete, press the [EXIT] key to return to the rhythm pattern selection screen.

Drum sequence real-time input

For real-time input of a drum sequence, you play the rhythm pattern on the pads of the MRS-1608.

- 1.** At the rhythm pattern screen, select an empty rhythm pattern number.

If the [RHYTHM] key is flashing, press it so that it is constantly lit.

- 2.** Press the [DRUM] key so that the key lights up.

In this condition, you can play the drum kit with the pads. Your play will be recorded as a drum sequence.

- 3.** As necessary, press the [BANK/OCTAVE] key to switch pad banks.

- 4.** Hold down the REC [●] key and press the PLAY [▶] key.

A four-beat pre-count is heard, and rhythm pattern recording starts.

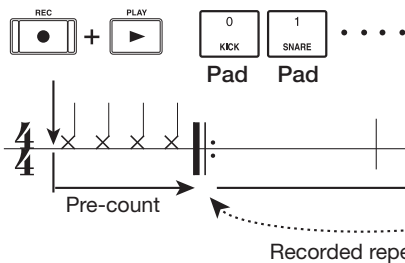
HINT

The beat and the volume of the pre-count clicks can be changed (→ p. 118).

5. While listening to the metronome, tap the pads.

Your performance on the pads will be recorded as a drum sequence according to the quantization setting. The intensity with which you hit the pads will also be recorded.

When you reach the end of the pattern, the unit automatically returns to the first measure, and real-time input continues.



If you press the REC [●] key during recording, the REC [●] key will flash, and recording will be temporarily suspended. In this state you can tap the pads to check which sound is assigned to each pad. Recording resumes when you press the REC [●] key once more.

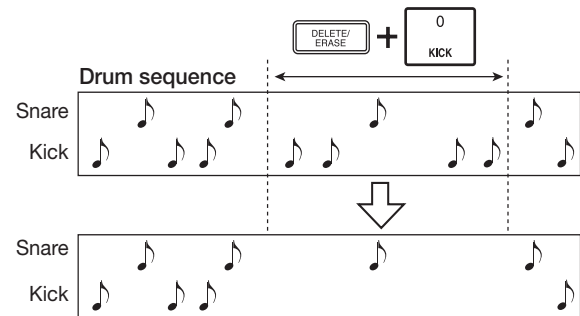
HINT

- During real-time input, you can press the [DRUM] or [BASS] key to switch the target sequence for recording.
- Instead of tapping the pads, you can also input a pattern in real time by using a MIDI controller connected to the MRS-1608's MIDI IN connector. For a list of pads and corresponding note numbers, refer to the appendix at the end of this manual.
- After concluding real-time input, you can change the quantize setting and then record on top of the existing sequence. (Changing the quantize value will not affect the existing playing information.)

6. To edit the recorded contents during real-time input, proceed as follows.

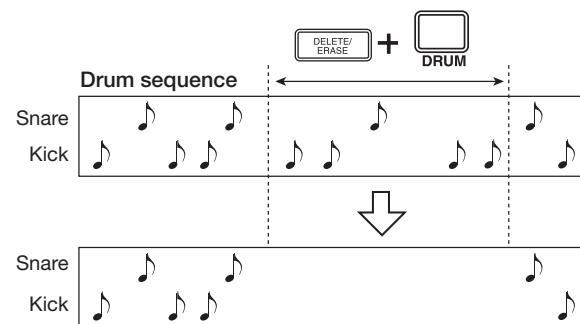
● To erase the performance of a specific pad

While holding down the [DELETE/ERASE] key, press the pad whose sound you want to erase. While you are holding down both keys, the performance of the corresponding pad is erased from the rhythm pattern.



● To erase the performance of all pads

While holding down the [DELETE/ERASE] key, press the [DRUM] status key. While you are holding down both keys, the performance of all pads is erased from the drum sequence.



7. When you have finished real-time recording, press the STOP [■] key.

Rhythm pattern recording will stop. Press the PLAY [▶] key to hear the pattern that you recorded.

NOTE

- When you select an empty pattern and record it, the pattern name "Pat xxx" (where xxx is the pattern number) is automatically assigned. You can edit this pattern name as necessary (→ p. 101).
- You can use step input to add playing information to a rhythm pattern recorded with real-time input.

Bass sequence real-time input

For real-time input of a bass sequence, you play the pads of the MRS-1608.

1. At the rhythm pattern screen, select an empty rhythm pattern number.

If the [RHYTHM] key is flashing, press it so that it constantly lit.

2. Press the [BASS] key so that the key lights up.

In this condition, you can play the bass program with the pads. Your play will be recorded as a bass sequence.

3. As necessary, press the [BANK/OCTAVE] key to switch the scale and octave of the bass program.

4. Hold down the REC [●] key and press the PLAY [▶] key.

A four-beat pre-count is heard, and rhythm pattern recording starts.

HINT

The beat and the volume of the pre-count clicks can be changed (→ p. 118).

5. While listening to the metronome, tap the pads.

Your performance on the pads will be recorded as a bass sequence according to the quantization setting. The intensity with which you hit the pads will also be recorded. When you reach the end of the pattern, the unit automatically returns to the first measure, and real-time input continues.

If you press the REC [●] key during recording, and recording will be temporarily suspended. In this state you can tap the pads to check which note is assigned to each pad, and you can also switch the octave. Recording resumes when you press the REC [●] key once more.

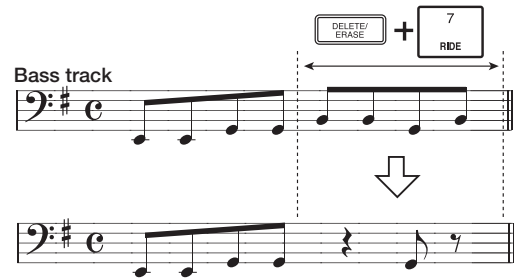
HINT

- During real-time input, you can press the [DRUM] or [BASS] key to switch the target sequence for recording.
- Instead of tapping the pads, you can also input a pattern in real time by using a MIDI controller connected to the MRS-1608's MIDI IN connector.
- After concluding real-time input, you can change the quantize setting and then record on top of the existing sequence. (Changing the quantize value will not affect the existing playing information.)

6. To edit the recorded contents during real-time input, proceed as follows.

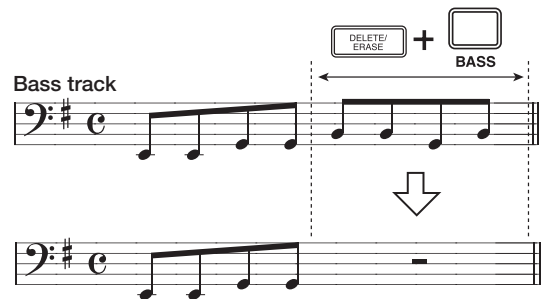
● To erase the performance of a specific pad

While holding down the [DELETE/ERASE] key, press the pad whose pitch you want to erase. While you are holding down both keys, the performance of the corresponding pad is erased from the rhythm pattern.



● To erase the performance of all pads

While holding down the [DELETE/ERASE] key, press the [BASS] status key. While you are holding down both keys, the performance of all pads is erased from the bass sequence.



7. When you have finished real-time recording, press the STOP [■] key.

Rhythm pattern recording will stop. Press the PLAY [▶] key to hear the pattern that you recorded.

NOTE

- You can use step input to add playing information to a rhythm pattern recorded with real-time input.

Drum sequence step input

For step input, you enter each note separately, while the MRS-1608 is in the stop condition. This makes it easy to enter even complex drum patterns or bass lines that might be difficult to achieve with real-time input.

For drum sequence step input, you specify the step length (interval to next note or rest) using the quantize value. Then you enter notes and rests.

When you hit a pad and then press the [STEP] key, playing (note) information is entered at that point, and the step advances by an interval corresponding to the current quantize value. The intensity with which you hit the pad is also recorded.

If you only press the [STEP] key, no playing information is entered, but the step advances by an interval corresponding to the current quantize value. This becomes a rest (see illustration below).

1. At the rhythm pattern screen, select an empty rhythm pattern number.

If the [RHYTHM] key is flashing, press it so that it is constantly lit.

2. Press the [DRUM] key.

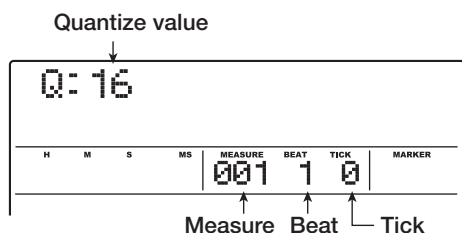
In this condition, drum kit sounds are assigned to the pads on the top panel.

3. As necessary, press the [BANK/OCTAVE] key to select the pad bank which contains the sound you want to input.

When the setting is complete, press the [EXIT] key to return to the previous screen.

4. Press the REC [●] key.

The key lights up and the display indication changes as follows. In this condition, step input is possible.



The first line of the display shows the quantize value, and the counter shows the current position is shown in measures/beats/ticks.

5. Use the cursor up/down keys to select the quantize value.

This setting becomes the length of the note you want to enter. The setting can be changed at any time during step input.

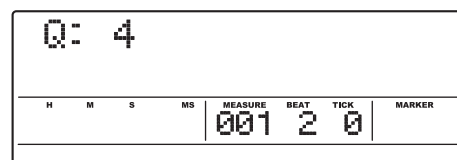
- 4.Quarter note
- 8.Eighth note
- 12. . . .Eighth triplet note
- 16. . . .Sixteenth note (default)
- 24. . . .Sixteenth triplet note
- 32. . . .Thirty-second note
- Hi1 tick (1/48 of quarter note)

HINT

The quantize value setting is linked to the quantize setting for real-time input. If you change one setting, the other will also change.

6. To enter a note, hit the pad corresponding to the note, and then press the [STEP] key.

The note is recorded, and the unit advances by one step, corresponding to the quantize value set in step 5. Before hitting the pad, you can also use the [BANK/OCTAVE] key to switch the pad bank for a different sound.

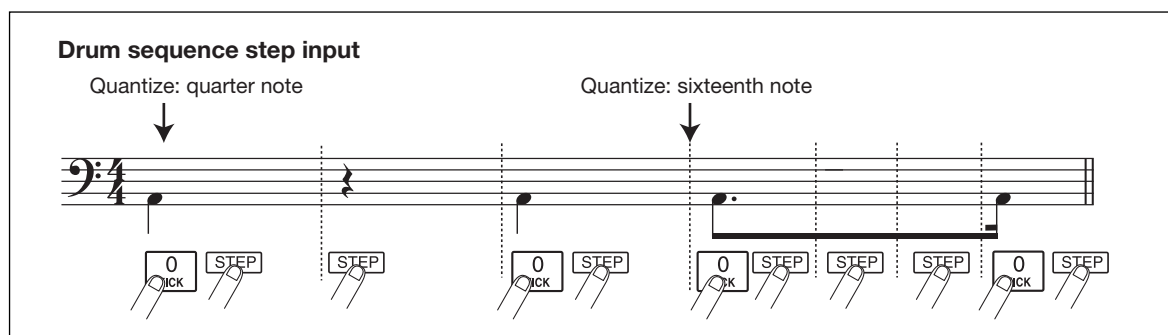


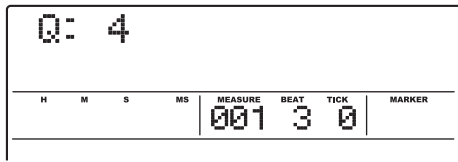
HINT

- The intensity with which you hit the pad is also recorded in the drum sequence.
- If you hit several pads during input, multiple sounds will be recorded at the same position.

7. To enter a rest, press only the [STEP] key.

If you press the [STEP] key by itself, the position advances by one step (duration of quantize value) but no play information is recorded.





8. Repeat steps 6 – 7 while changing the step length as necessary, to enter the desired rhythm pattern.

When you reach the end of the pattern, the unit automatically returns to the first measure, letting you enter more instrument sounds.

When you use the [STEP] key to move step by step through a recorded rhythm pattern, the pad recorded at the respective position lights up.

9. To erase an entered note, repeatedly press the [STEP] key to move to the position that you want to erase. Then hold down the [DELETE/ERASE] key and press the respective pad.

The note recorded at that point is erased, and the pad goes out.

NOTE

When searching for a note to erase, set the quantize value to the same value as the smallest value used during recording, or to a smaller value. Otherwise the start of a note may be missed.

10. When you have finished step input, press the STOP [■] key.

The REC [●] key goes out and the rhythm pattern selection screen appears again.

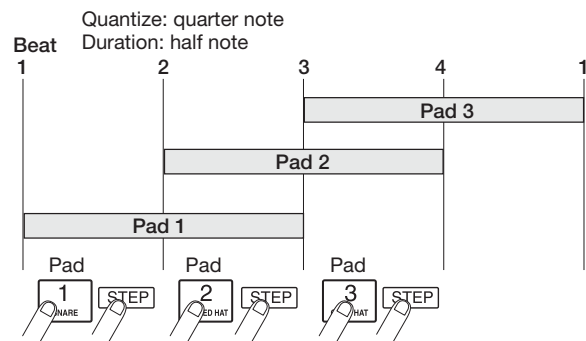
By pressing the PLAY [▶] key you can check the rhythm pattern that you recorded.

11. To return to the main screen, press the [EXIT] key several times.

Bass sequence step input

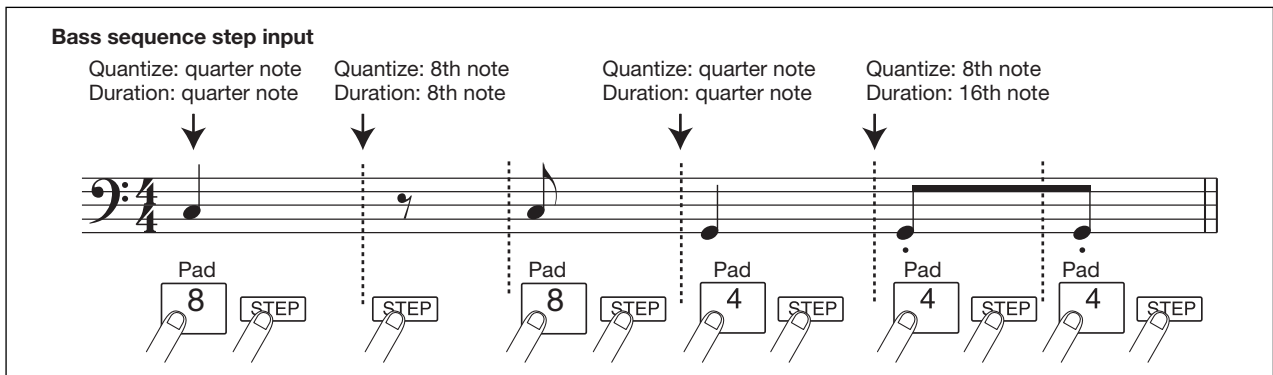
Compared to the drum sequence step input, the step input procedure for a bass sequence is somewhat more complex, because there are the additional elements of “pitch” and “duration”. As in drum track step input, you specify the step length (interval to next note or rest) using the quantize value, and you use the pads and the [STEP] key to enter notes and rests. But when you input a note, you must also specify the duration parameter. This parameter allows you to vary the actual duration for each note, while keeping the step length the same (see diagram below).

It is also possible to set the duration to a longer value than the step length. In this case, the note will overlap the next note, which can be used to achieve an arpeggio-like effect.



1. At the rhythm pattern screen, select an empty rhythm pattern number.

2. Press the [BASS] key and select a bass sequence.

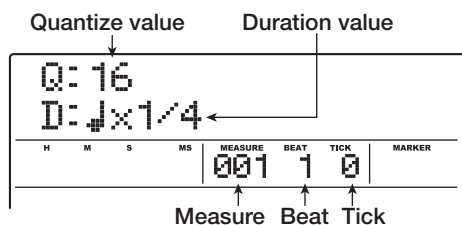


3. As necessary, press the [BANK/OCTAVE] key to select the octave for step input.

When the setting is complete, press the [EXIT] key to return to the previous screen.

4. Press the REC [●] key.

The display indication changes as follows. In this condition, step input is possible.



The first line of the display shows the quantize value, and the second line the duration value.

5. Use the cursor up/down keys to select the quantize value.

The value selected here becomes the duration of 1 step.

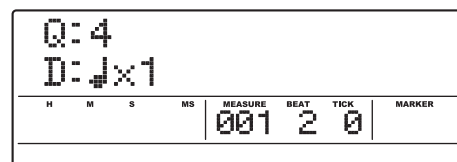
6. Turn the dial to select the duration value, as listed below.

The duration is specified as “♩ x yy”, i.e. as multiples of a quarter note. Depending on the value of “yy”, the actual duration becomes as follows.

- 1 – 8 quarter note x 1 – 8
- 3/2 dotted quarter note
- 3/4 dotted 8th note
- 1/2 8th note
- 1/3 8th note triplet
- 1/4 16th note
- 1/6 16th note triplet
- 1/8 32nd note
- 1/12 32nd note triplet
- 1/16 64th note
- 1/24 64th note triplet

7. To enter a note, hit the pad corresponding to the note, and then press the [STEP] key.

The note is recorded, and the unit advances by the step duration set in step 5. You can also use the [BANK/OCTAVE] key to select a different octave before hitting a pad.

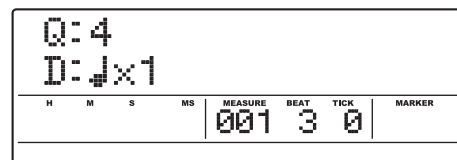


HINT

- The intensity with which you hit the pad is also recorded on the bass sequence.
- By hitting several pads during input, you can create a chord. The maximum number of simultaneous sounds in the rhythm section is 24 (drum + bass).

8. To enter a rest, press only the [STEP] key.

If you press the [STEP] key by itself, the position advances by one step (duration of quantize value) but no play information is recorded.



9. Repeat steps 7 – 8 while changing the quantize value and duration as necessary, to enter the desired bass pattern.

When you reach the end of the pattern, the unit automatically returns to the first measure, letting you continue the input.

10. To erase an entered note, repeatedly press the [STEP] key to move to the position that you want to erase. Then hold down the [DELETE/ERASE] key and press the respective pad.

The note recorded at that point is erased, and the pad goes out.

NOTE

When searching for a note to erase, set quantize to the same value as the smallest value used during recording, or to a smaller value. Otherwise the start of a note may be missed.

11. When you have finished step input, press the STOP [■] key.

The REC [●] key goes out and the rhythm pattern selection screen appears again. By pressing the PLAY [▶] key you can check the rhythm pattern that you recorded.

- 12.** To return to the main screen, press the [EXIT] key several times.

Entering rhythm pattern chord information

When you have recorded a rhythm pattern, and you later set the chord information (root + chord type), the bass phrase in a rhythm song will be transformed based on the original chord information of that rhythm pattern.

HINT

For patterns not used in a rhythm song or for which no bass sequence is input, this procedure is not necessary.

- 1.** From the main screen, press the [PATTERN] key in the rhythm section.

The rhythm pattern selection screen appears, and the [RHYTHM] key flashes.

- 2.** Turn the dial to select the pattern for which to specify chord information (root/type), and press the [RHYTHM] key so that the key is constantly lit.

In this condition you can create and edit rhythm patterns.

- 3.** Press the [EDIT] key.

The rhythm pattern edit menu appears on the display.

```

EDIT
QUANTIZE
  
```

- 4.** Use the cursor left/right keys to bring up the indication “EDIT OrgRoot” on the display, and press the [ENTER] key.

This screen allows you to specify the root for the selected rhythm pattern.

```

OrgRoot
E
↑
Chord root
  
```

- 5.** Turn the dial to select the root for the chord.

The available range is C – B (default setting: E). When setting chord information for a rhythm song, the root specified here will become the default.

- 6.** When the setting is complete, press the [EXIT] key.

The setting is entered and the rhythm pattern edit menu appears again.

- 7.** Use the cursor left/right keys to bring up the indication “EDIT OrgChord” on the display, and press the [ENTER] key.

This screen allows you to specify the chord type for that rhythm pattern.

```

OrgChord
MAJOR
  
```

- 8.** Turn the dial to select the chord.

For the chord type, you can select MAJOR or MINOR. For example, if you have entered a bass phrase with an E minor chord in mind, set the root to “E” and the chord type to “MINOR”.

- 9.** When the setting is complete, press the [EXIT] key.

The setting is entered and the rhythm pattern edit menu appears again.

- 10.** To return to the main screen, press the [EXIT] key several times.

Changing the drum/bass sequence volume level

The playback volume of the drum sequence and bass sequence can be adjusted with the [DRUM] and [BASS] faders. If necessary, the volume levels can also be individually programmed for each rhythm pattern.

1. From the main screen, press the [PATTERN] key so that the key lights up.

The rhythm pattern selection screen appears, and the [RHYTHM] key flashes.

2. Turn the dial to select the rhythm pattern for which to specify level information, and press the [RHYTHM] key.

The [RHYTHM] key is now constantly lit, and the unit is in the condition for creating and editing rhythm patterns.

3. Press the [EDIT] key.

The rhythm pattern edit menu appears on the display.



EDIT
QUANTIZE

4. Use the cursor left/right keys to bring up the indication "EDIT Dr LEVEL" on the display, and press the [ENTER] key.

This screen allows you to specify the drum sequence volume.



Dr LEVEL
15

The display shows the current volume setting (0 – 15).

5. Turn the dial to select the desired setting, and then press the [EXIT] key.

The setting is entered, and the rhythm pattern edit menu appears again.

6. Use the cursor left/right keys to bring up the indication "EDIT Bs LEVEL" on the display, and press the [ENTER] key.

This screen allows you to specify the bass sequence volume.



Bs LEVEL
15

The display shows the current volume setting (0 – 15).

7. Turn the dial to select the desired setting, and then press the [EXIT] key.

The setting is entered, and the rhythm pattern edit menu appears again.

8. To return to the main screen, press the [EXIT] key several times.

Assigning a name to a rhythm pattern

When an empty rhythm pattern is selected for input, the pattern name "Pat xxx" (where xxx is the pattern number) is automatically assigned. You can edit this pattern name as necessary.

1. From the main screen, press the [PATTERN] key so that the key lights up.

The rhythm pattern selection screen appears, and the [RHYTHM] key flashes.

2. Turn the dial to select the pattern and press the [RHYTHM] key.

The [RHYTHM] key is now constantly lit, and a rhythm pattern can be created or edited.

3. Press the [EDIT] key.

The rhythm pattern edit menu appears on the display.



EDIT
QUANTIZE

4. Use the cursor left/right keys to bring up the indication "EDIT NAME" on the display, and press the [ENTER] key.

In this condition, you can edit the rhythm pattern name.

```
NAME
Pat 500
```

5. Use the cursor left/right keys to move the flashing position to the character you want to change, and turn the dial to select a character.

For information on available characters, refer to page 36.

6. Repeat step 5 until the name is as desired.
7. To return to the main screen, press the [EXIT] key several times.

Editing rhythm patterns

This section explains how to copy existing rhythm patterns or erase them to return them to the blank condition.

Copying a rhythm pattern

You can copy a rhythm pattern to another pattern number. This is useful to create variations of a rhythm pattern.

1. From the main screen, press the [PATTERN] key so that the key lights up.

The rhythm pattern selection screen appears, and the [RHYTHM] key flashes.

2. Turn the dial to select the rhythm pattern you want to copy, and press the [RHYTHM] key.

The [RHYTHM] key is now constantly lit, and a rhythm pattern can be created or edited.

3. Press the [INSERT/COPY] key in the rhythm section.

The display indication changes as follows. In this condition, you can select the copy destination rhythm pattern number.

```
COPY
0→ 1
```

Copy destination rhythm pattern number

HINT

- An empty pattern is shown with an “E” to the right of the number.
- When you select an existing rhythm pattern as destination, it will be overwritten with the content of the copy source.

4. Turn the dial to select the number of the rhythm pattern to use as copy destination, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display.

5. To execute the copy process, press the [ENTER] key once more.

When the copy operation is completed, the display returns to the rhythm pattern selection screen, with the

copy destination rhythm pattern as the selected pattern. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

6. To return to the main screen, press the [EXIT] key several times.

Deleting a rhythm pattern

This section explains how to delete all data from a specified rhythm pattern, returning it to the blank state.

1. From the main screen, press the [PATTERN] key so that the key lights up.

The rhythm pattern selection screen appears, and the [RHYTHM] key flashes.

2. Turn the dial to select the rhythm pattern you want to delete, and press the [RHYTHM] key.

The [RHYTHM] key is now constantly lit, and a rhythm pattern can be created or edited.

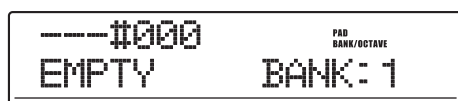
3. Press the [DELETE/ERASE] key in the rhythm section.

The indication "DELETE SURE?" appears on the display.

4. To execute the delete process, press the [ENTER] key.

When the delete operation is completed, the display returns to the rhythm pattern selection screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.



5. To return to the main screen, press the [EXIT] key several times.

Creating a rhythm song

The MRS-1608 allows you to save up to 10 rhythm songs per project. Out of these, one is selected for editing or playing.

One rhythm song can have up to 999 rhythm pattern measures. By specifying the rhythm pattern playing sequence and adding chord and tempo information, you can create a rhythm song.

The following two methods are available for entering rhythm pattern information.

● Step input

With this method, you create rhythm patterns one by one by specifying a pattern and the number of measures. Input can be performed at any point in the song. It is also possible to switch to another pattern while the previous pattern is still playing. This mode is suitable for specifying patterns in detail.

● FAST (Formula Assisted Song Translator)

This method uses simple formulas to specify rhythm pattern playback from start to end. The result is written to the song in a single operation. Because input midway through a song is not possible with this method, it is most suitable for cases where the configuration of the entire song has been decided beforehand.

HINT

There is no difference in the completed rhythm song due to input method that was used, i.e. a song will be the same, regardless of whether it was created using step input or the FAST method. If necessary, you can first create a rough version of a song using FAST and then perform detailed editing using step input.

Selecting a rhythm song

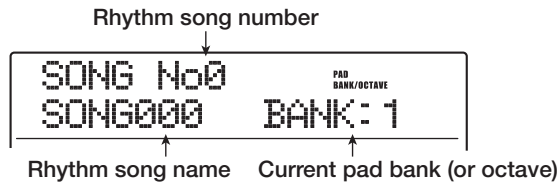
Select the rhythm song for editing or playing as follows.

HINT

In the default condition of a project, all rhythm songs are empty.

1. From the main screen, press the [SONG] key in the rhythm section.

The key lights up, and the rhythm song selection screen appears. The display shows the following information.



When the rhythm song is empty, the indication “EMPTY” is shown in the rhythm song name field.

HINT

- When you press the [SONG] key at the main screen, the [RHYTHM] key in the display section flashes. This indicates that the rhythm section and the recorder are synchronized.
- By pressing the [RHYTHM] key so that it is constantly lit, you can separate the operation of the rhythm section and the recorder.
- Rhythm song creation and editing is possible only when the [RHYTHM] key is constantly lit.

2. Turn the dial to select a rhythm song number from 0 – 9.

3. To return to the main screen, press the [EXIT] key several times.

Entering pattern information using step input

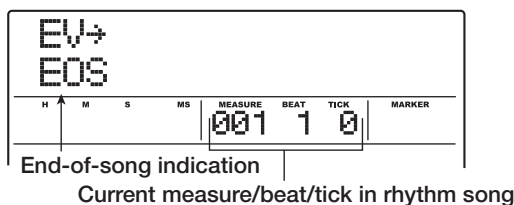
This section explains how to input rhythm pattern data into an empty rhythm song by specifying the rhythm pattern number and number of measures.

1. From the main screen, press the [SONG] key and then the [RHYTHM] key.

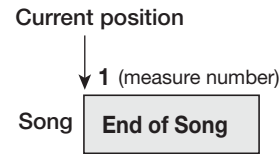
Both keys light up, and the rhythm song selection screen appears.

2. Press the REC [●] key in the transport section.

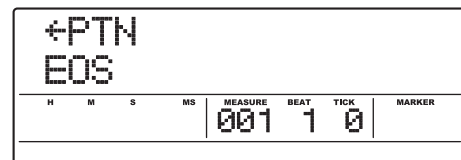
The key lights up and the display indication changes as follows. In this condition, you can perform rhythm song step input.



The indication “EOS” (End of Song) shows the position where the rhythm song ends. For an empty song, “EOS” will be located at the beginning. Therefore nothing happens if you play the song.



3. Use the cursor up/down keys to bring up the indication “ ← PTN” on the first line of the display.



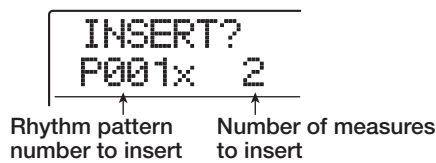
During step input, the cursor up/down keys serve to bring up various kinds of information about events that are programmed at the current point. The following items can be selected.

Parameter	Description
EV →	Event information at current point
PTN	Rhythm pattern number
TimSig	Time Signature
ROOT	Chord root
CHORD	Chord type
TEMPO	Tempo
DrVOL	Drum sequence volume
BsVOL	Bass sequence volume
DrKIT	Drum kit number
BsPRG	Bass program number

HINT

When an item other than “EV →” is selected and no information is input for the current position, the arrow “ ← ” is shown before the item name (for example: “ ← PTN”). This indicates that information input at a preceding point continues to be valid.

4. Press the [INSERT/COPY] key to bring up the indication “INSERT?” on the first line of the display.



In this condition, you can insert rhythm pattern information.

5. Turn the dial to select the rhythm pattern that you want to insert.

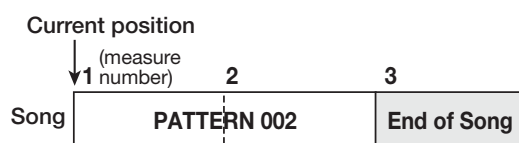
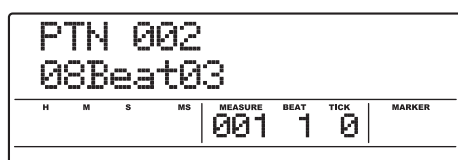
6. Use the cursor up/down keys to specify the number of measures to insert.

If you specify more measures than the original length of the rhythm pattern, the rhythm pattern will be repeated. If you specify fewer measures, the song will switch to the next rhythm pattern before the current pattern has finished playing.

7. To finalize the setting, press the [ENTER] key.

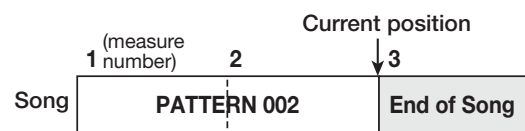
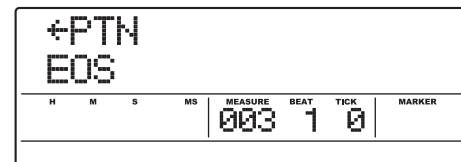
The rhythm pattern information will be input at the current location, and the display reverts to the original screen. The “EOS” indication is moved back by the number of measures that were inserted.

By pressing the PLAY [▶] key while this display is shown, you can check the rhythm pattern entered at the current point.



8. Repeatedly press the cursor right key to move to the measure number for which “EOS” is shown.

During step input, you can use the cursor left/right keys to move the input position in measure units. When you reach the end of the song, the indication “EOS” is shown on the second line of the display.



HINT

- The REW [◀◀] and FF [▶▶] keys in the transport section can be used to move the current position in beat units.
- When “EV→” is shown on the display, turning the dial moves the current position in sixteenth note units. By bringing up the “EV→” indication to move to a point within a measure and then using the cursor up/down keys to display event information, you can enter event information in sixteenth note units (→ p. 108).

9. Repeat steps 4 – 8 to enter all required pattern information.

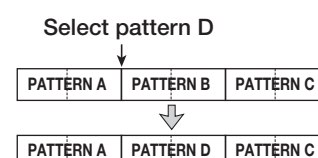
10. When all required pattern information has been entered, press the STOP [■] key.

The REC [●] key goes out and the rhythm song selection screen appears again. If you press the PLAY [▶] key, the created rhythm song will be played.

To edit the entered rhythm pattern information, proceed as follows.

● Selecting a different rhythm pattern

Use the cursor left/right keys to move to the point where the respective rhythm pattern information is input, and then turn the dial to select the new rhythm pattern.

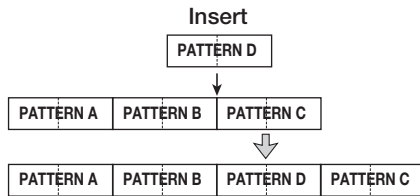


By turning the dial at a point where no rhythm pattern information is input (“← PTN” is shown), you can add new rhythm pattern information for this point.

In any case, the newly selected rhythm pattern information will be valid until the point where the next rhythm pattern information is input.

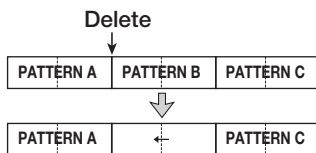
● **Inserting a rhythm pattern in a song**

Move to the point you want to insert the rhythm pattern, and perform steps 4 – 7. A new rhythm pattern is inserted at the current location, and all subsequent patterns are shifted back by the duration of the inserted pattern.



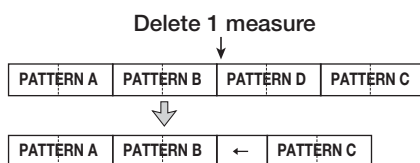
● **Deleting entered rhythm pattern information**

Use the cursor left/right keys to move to the position of the rhythm pattern information that you want to delete, and press the [DELETE/ERASE] key. When rhythm pattern information was deleted, the previous pattern will remain valid until the point where the next rhythm pattern information is input.



● **Deleting a specific measure**

Use the cursor left/right keys to move to the start position of the measure that you want to delete. Press the cursor up key to bring up the indication “EV→” on the display, and press the [DELETE/ERASE] key. (The confirmation “DELETE?” appears.) Press the [ENTER] key. The measure at the current position is deleted, and subsequent rhythm pattern information moves forward. When a measure at the beginning of a rhythm pattern (for example first measure of a 2-measure pattern) is deleted, that measure only is deleted, and the indication changes to “← PTN” for the second measure.



Using FAST for pattern information input

The FAST (Formula Assisted Song Translator) method developed by ZOOM uses simple formulas to specify rhythm pattern playback from start to end. The following keys and pads can be used for numeric input.

[() key
Enters the opening bracket "(" used for linking several patterns.

[)] key
Enters the closing bracket ")" used for linking several patterns.

[x] pad
Enters the "x" that specifies the repetition of a pattern.

Pads 0 - 9
Specify pattern numbers and repetition count.

[+] pad
Enters the "+" for lining up patterns.

The basic rules for creating a rhythm pattern sequence are as follows.

● **Line up patterns**

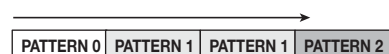
Use the "+" symbol to line up rhythm patterns. For example, entering **0 + 1 + 2** will result in the following rhythm pattern play sequence.



● **Repeat patterns**

Use the "x" symbol to specify pattern repetitions. "x" takes precedence over "+".

For example, entering **0 + 1 x 2 + 2** will result in the following rhythm pattern play sequence.

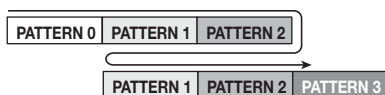


● **Repeat multiple patterns**

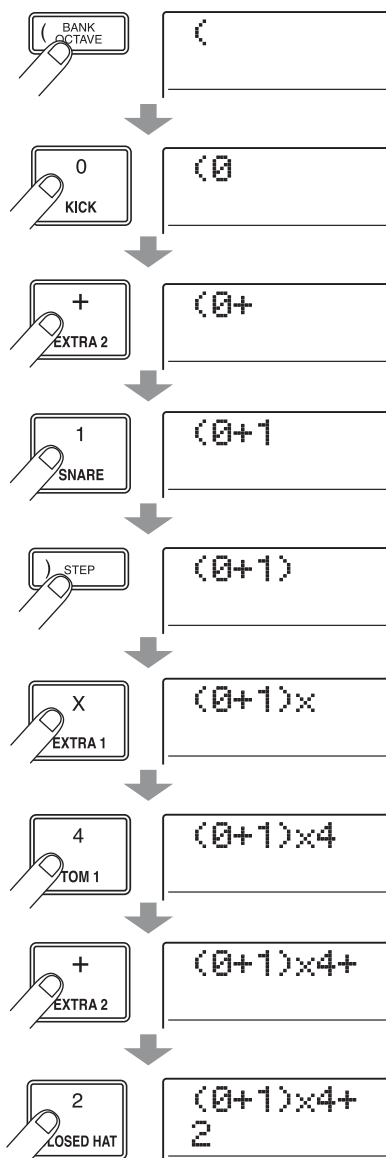
Use the "(" and ")" symbols to link a group of patterns for repetition. Formulas enclosed in brackets take

precedence over other formulas.

For example, entering $0 + (1 + 2) \times 2 + 3$ will result in the following rhythm pattern play sequence.



An example for creating the rhythm pattern sequence $(0 + 1) \times 4 + 2$ is shown below.



HINT

- If the formula does not fit on two lines, the indication scrolls by one character each. If you use the cursor left/right keys to move the input position, the line scrolls left and right accordingly.
- For FAST input, leading zeros are omitted. For example, pattern 001 is shown as “1”, and pattern 050 as “50”.
- The formula entered with FAST input is saved as part of a project. By calling up the formula later, you can edit it or use it to write the song.

NOTE

- The FAST method can only write a song in one go, from beginning to end. Entering rhythm patterns partly into the song is not possible.
- To edit a rhythm song that was written with this method, edit the formula and then write the entire song again, or use step input.

1. Press the [SONG] key and then the [RHYTHM] key to switch the rhythm section to rhythm song mode.

2. Press the [EDIT] key.

The rhythm song mode edit menu appears.

3. Use the cursor left/right keys to bring up the indication “EDIT FAST” on the display, and press the [ENTER] key.

FAST input is now possible.

4. Use the keys and pads of the rhythm section to enter the formula for creating the rhythm song.

Formula input principles are explained on page 106.

If you make a mistake during input, correct it as follows.

● Inserting a number/formula

Use the cursor left/right keys to move the flashing section, and enter the new numeral or symbol.

● Deleting a number/formula

Use the cursor left/right keys to cause the numeral or symbol that you want to delete to flash, and press the [DELETE/ERASE] key.

5. When formula input is completed, press the [ENTER] key.

The display indication changes as follows. In this condition, you can select the rhythm song number in which you want to write the song.

```
SaveSong
0
```

6. Turn the dial to select the target rhythm song, and press the [ENTER] key.

The write operation is carried out, and the rhythm song edit menu appears again.

To check the result, press the [EXIT] key to return to the rhythm song selection screen, select the rhythm song that you have written, and press the PLAY [▶] key.

7. To return to the main screen, press the [EXIT] key several times.

Entering chord information

This section explains how to add chord information (root and chord type) data to the rhythm song that you have created by inputting rhythm pattern data. When playing a rhythm song for which chord information was input, the bass sequence will change according to the chord progression.

HINT

- If the original root of the rhythm pattern and the root specified for the rhythm song are different, the bass sequence phrase will be transposed according to the root input for the rhythm song.
- If the original chord type of the rhythm pattern and the chord type specified for the rhythm song are different, the bass sequence phrase will be converted according to the chord type input for the rhythm song. (Depending on the phrase, there may be no change.)

1. Verify that the [SONG] key and [RHYTHM] key are lit.

If a key is not lit, press it so that it lights up. Use the ZERO [◀◀] key to align the current position with the beginning of the rhythm song.

2. Press the REC [●] key.

The [REC] key lights up and rhythm song step input becomes possible.

3. Use the cursor up/down keys to bring up the indication "ROOT" on the first line of the display.

At a point where rhythm pattern information is already input, the chord information "E--" (root: E, chord type: no conversion) is automatically assigned.

```
ROOT
E --
|-----|-----|-----|-----|
|  R  |  M  |  S  |  MS | MEASURE BEAT TICK MARKER
|-----|-----|-----|-----|
|  001 |  1  |  0  |     |
-----
Chord root      Chord type
```

4. Turn the dial to specify the note name (C - B) that will be the root of the chord.

The following screen shows an example of changing the chord root to A.

```
ROOT
A --
```

5. To specify the chord type, press the cursor down key once to bring up the indication "CHORD" on the first line of the display.

6. Turn the dial to select the chord type.

You can choose from the following chord types.

Display	Description	Display	Description
---	No conversion	7sus4	7th Suspended 4th
Maj	Major Triad	sus4	Suspended 4th
m	Minor Triad	m7b5	Minor 7th flat 5
7	Dominant 7th	m6	Minor 6th
m7	Minor 7th	6	Major 6th
M7	Major 7th	m9	Minor 9th
aug	Augment	M9	Major 9th
dim	Diminish	Mm7	Minor Major 7th

The following screen shows an example of when the chord type has been changed to "M7".

```
CHORD
A M7
```

By pressing the PLAY [▶] key in this condition, you can check the rhythm pattern with the new chord information.

7. Move to the location at which you want to input the next chord data, and input chord data

in the same way as described in steps 3 – 6.

You can move the input location within a rhythm song in the following ways.

● Moving in steps of a measure

Use the cursor left/right keys to move to the beginning of the preceding or following measure.

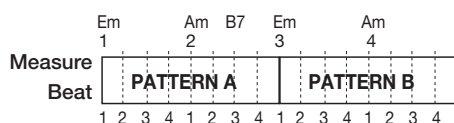
● Moving in steps of a beat

Use the REW [◀◀]/FF [▶▶] keys to move to the beginning of the preceding or following beat.

● Moving in steps of a sixteenth note

Repeatedly press the cursor up key to bring up the indication “EV→” on the display, and turn the dial to move forward or backward in 12-tick (16th note) units.

If necessary, you can also input chord information at a point within a measure, as shown below (smallest unit: sixteenth note). For example, to enter chord information in sixteenth note units, bring up the indication “EV→” on the first line of the display, turn the dial to move current point, and then bring up the chord information input screen again.



HINT

At a point where no chord information is input, “←” is shown to the left of the “ROOT” or “CHORD” indication. This means that the immediately preceding information continues to be valid.

8. Input the remaining chord data in the same way.

If you have made a mistake or want to make a change, proceed as follows.

● To change chord information

Move to the location at which the chord data is input, use the cursor up/down keys to switch the display to “ROOT” or “CHORD”, and turn the dial to change the chord information.

● To delete chord information

Move to the location at which the chord data is input, use the cursor up/down keys to switch the display to “ROOT” or “CHORD”, and press the [DELETE/ERASE] key. The chord data (root and chord) will be deleted, and the display will change to “← ROOT” or “← CHORD”.

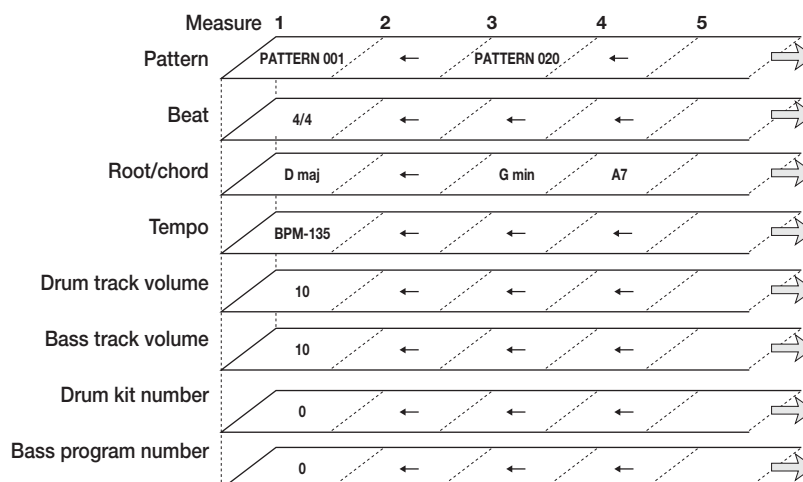
9. When you have finished, press the STOP [■] key.

The unit returns to the rhythm song selection screen. By pressing the PLAY [▶] key in this condition, you can check the rhythm song with the new chord information. To return to the main screen, press the [EXIT] key several times.

Entering other information

A rhythm song contains information about rhythm patterns, chord, tempo, beat etc. in a matrix configuration, as shown at the bottom of this page. This is called event information. When the rhythm song is in the input condition (REC [●] key lit), you can move the current position with the cursor keys etc. and use the cursor up/down keys to call up and enter or edit event information.

1. Verify that the [SONG] key and [RHYTHM] key are lit.



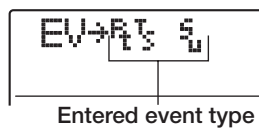
If a key is not lit, press it so that it lights up. Use the ZERO [◀◀] key to align the current position with the beginning of the rhythm song.

2. Press the REC [●] key.

The [REC] key lights up and rhythm pattern input for the rhythm song becomes possible.

3. Press the cursor up key repeatedly to bring up the indication “EV→” on the first line of the display.

This screen lets you check which event information is entered at the current point. The symbol after “EV→” (such as “Pt” or “TS”) denotes the type of event.



Available events and their symbols are listed in the table below.

Type of event	Symbol	Content	Range
Ptn	⋮	Rhythm pattern number	000 – 510
TimSig	⋮	Time signature	1 – 8(1/4 – 8/4)
ROOT	⋮	Chord root	C – B
CHORD		Chord type	--, Maj, m, 7, m7, M7, aug, dim, 7sus4, sus4, m7b5, m6, 6, m9, M9, mM7
Tempo	⋮	Tempo	40.0 – 250.0
DrVOL	⋮	Drum sequence volume	0 – 15
BsVOL		Bass sequence volume	0 – 15
DrKIT		Drum kit	See appendix
BsPRG		Bass program	See appendix

NOTE

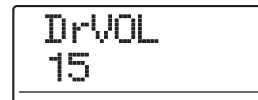
- If no tempo information is input for the rhythm song, the tempo currently set for the rhythm section will be used. To ensure that a rhythm song will always play with the same tempo, be sure to enter tempo information at the beginning of the song.
- Time signature information can be entered only at the beginning of a measure.

4. Move to the location at which you want to input a new event.

For details on how to move the current location, refer to page 108.

5. Use the cursor up/down keys to select the type of event that you want to input.

If the event you select here has been input at the current location, its value will be displayed.



If there is no corresponding event, the display will indicate “← xxx” (where xxx is the event name). This indicates that the previously input event information is still valid.



6. Turn the dial to input the event value.

7. Input the remaining events in the same way.

To input more information for the same type of event, you can move the current position in measures or beats while the event input screen is displayed.

If you make a mistake or want to change the information, the events can be edited in the following ways.

● To change an event setting

Display the event you want to change, and turn the dial to alter the setting.

● To delete event information

Display the event you want to delete, and press the [DELETE/ERASE] key.

8. When you have finished, press the STOP [■] key.

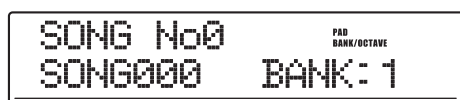
The REC [●] key goes out, and the rhythm song selection screen appears again. To return to the main screen, press the [EXIT] key several times.

Playing a rhythm song

This section explains how to play one of the 10 rhythm songs that were created by inputting rhythm pattern and chord information.

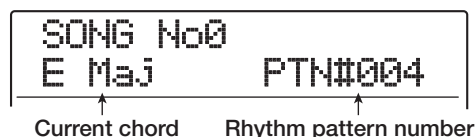
1. From the main screen, press the [SONG] key.

The key lights up and the rhythm song selection screen appears.



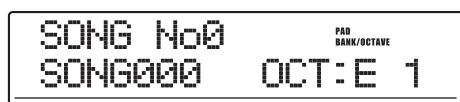
2. Turn the dial to select the song, and then press the PLAY [▶] key.

The rhythm song will begin playing. If something has been recorded on the audio tracks, those tracks will play back simultaneously. The display shows information about the rhythm pattern number, chord type, and other information at the current location.



3. To stop the rhythm song, press the STOP [■] key.
4. To play the rhythm section independently, press the [RHYTHM] key while stopped, so that the key lights up.

The rhythm section will be disconnected from the recorder section. The pad bank or scale/octave setting will be shown at the right side of the display. (Which one is shown depends on the currently selected sound.)



5. To return to the main screen, press the [EXIT] key several times.

HINT

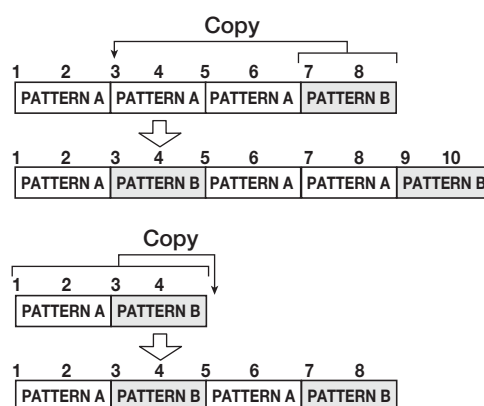
It is also possible to play a drum kit or bass program by hitting the pads during rhythm song playback.

Editing a rhythm song

This section explains how to edit a rhythm song that you have created.

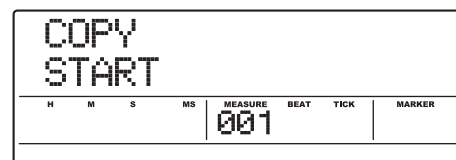
Copying a specified range of measures

Part of a rhythm song can be copied in measures and inserted into another location. This is convenient when you want to repeat a portion of a rhythm song.



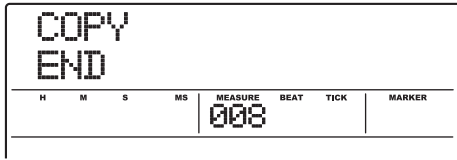
1. From the main screen, press the [SONG] key so that the key is lit.
2. Press the [RHYTHM] key.
3. Press the REC [●] key.
4. Press the [INSERT/COPY] key two times.

The following screen appears.



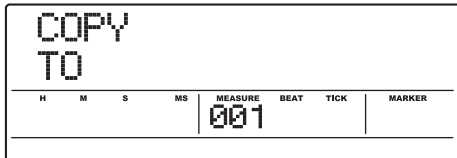
5. Turn the dial to select the copy source start measure, and press the [ENTER] key.

The display indication changes as follows, letting you specify the copy source end point.



- 6. Turn the dial to select the copy source end measure, and press the [ENTER] key.**

The screen for selecting the copy destination appears.



- 7. Turn the dial to select the copy destination start measure.**

- 8. To execute the copy process, press the [ENTER] key.**

When the copy is executed, the “EOS” marker is shifted back by the number of copied measures.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

- 9. Press the STOP [■] key.**

The unit returns to the rhythm song selection screen.

Transposing the entire rhythm song

You can transpose the bass sequence of the rhythm song in semitone units.

NOTE

When the transpose function is used, the chord information (root) entered for the rhythm song will be rewritten. To return to the previous state, perform transpose once more in the opposite direction.

- 1. From the main screen, press the [SONG] key so that the key is lit.**

- 2. Press the [RHYTHM] key.**

The key lights up, and a rhythm song can be created or edited.

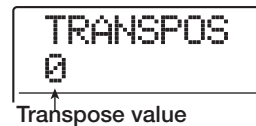
- 3. Press the [EDIT] key.**

The rhythm song edit menu appears.



- 4. Use the cursor left/right keys to bring up the indication “TRANSPOS” on the display, and press the [ENTER] key.**

The display indication changes as follows.



- 5. Turn the dial to select the transpose setting (-6 - 0 - +6), and press the [ENTER] key.**

The default setting is 0 (no transpose operation). When you select for example a setting of +6, the rhythm song will be transposed by six semitones up.

When you press the [ENTER] key, the indication “TRANSPOS SURE?” appears on the display.

- 6. Press the [ENTER] key once more to execute the transpose operation.**

The transpose operation is carried out, and the rhythm song edit menu appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Copying a rhythm song

You can copy the contents of any rhythm song in a project to any other rhythm song number. This is useful to create variations of a song.

NOTE

When you execute the copy, the contents of the destination rhythm song will be completely erased and overwritten by the copy source rhythm song. Take care not to accidentally erase a song that you wish to keep.

1. From the main screen, press the [SONG] key so that the key is lit.

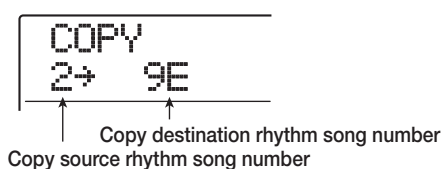
2. Press the [RHYTHM] key.

The key lights up, and a rhythm song can be created or edited.

3. Turn the dial to select the copy source rhythm song.

4. Press the [INSERT/COPY] key.

The display indication changes as follows. In this condition, you can select the rhythm song to be used as copy target.



HINT

An empty rhythm song is shown with an “E” to the right of the number.

5. Turn the dial to select the copy destination rhythm song, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display.

6. To execute the copy process, press the [ENTER] key once more.

When the copy operation is completed, the unit returns to the rhythm song selection screen, with the destination rhythm song being selected.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Deleting the rhythm song

This section explains how to delete the entire rhythm song, resetting it to a blank state.

HINT

Once you delete the rhythm song, it cannot be recovered. Use this operation with care.

1. From the main screen, press the [SONG] key so that the key is lit.

2. Press the [RHYTHM] key.

The key lights up, and a rhythm song can be created or edited.

3. Turn the dial to select the rhythm song to delete.

4. Press the [DELETE/ERASE] key.

The indication “DELETE SURE?” appears on the display.

5. Press the [ENTER] key to delete the rhythm song.

When the delete operation is completed, the unit returns to the rhythm song selection screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Assigning a name to a rhythm song

You can edit the name of any rhythm song as follows.

1. From the main screen, press the [SONG] key so that the key is lit.

2. Press the [RHYTHM] key.

The key lights up, and a rhythm song can be created or edited.

3. Turn the dial to select the rhythm song whose name you want to edit, and press the [EDIT] key.

The rhythm song edit menu appears.



4. Use the cursor left/right keys to bring up the indication “EDIT NAME” on the display, and press the [ENTER] key.

The rhythm song name is shown. The flashing section indicates the character that can be changed.



- Use the cursor left/right keys to move the flashing section, and turn the dial to select a character.

For information on available characters, refer to page 36.

- Repeat step 5 until the name is as desired.

- When the name has been input, press the [EXIT] key.

The rhythm song name is changed, and the display returns to the rhythm song edit menu. To return to the main screen, press the [EXIT] key several times.

Creating your own drum kit

You can create your own original drum kit by assigning sounds with specific settings for volume, pitch, panning, etc. to the pads and giving the kit a unique name. It is also possible to copy an existing drum kit and edit only a part of it. The drum kit can then be saved on the hard disk as part of the project.

Changing the sound and settings for each pad

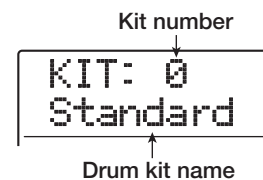
You can specify the sound, volume, pitch, panning and other parameters for each pad to create your very own drum kit.

- From the main screen, press the [RHYTHM] key so that the key lights up.

Creating a drum kit is possible both in rhythm pattern mode and rhythm song mode.

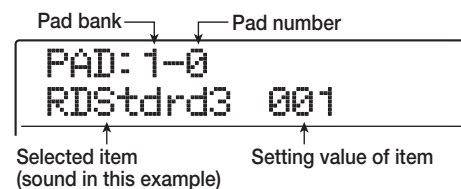
- Press the [DRUM] key in the rhythm section, and then the [KIT/PROG] key.

The name of the drum kit selected for editing appears on the display.



- Turn the dial to select the drum kit that you want to edit, and press the [EDIT] key.

The menu for editing individual pad settings appears.



- If necessary, press the [BANK/OCTAVE] key and use the dial to switch the pad bank.

To return to the original display, press the [EXIT] key.

5. Use the cursor left/right keys to select an item to set. The following items are available.

• Instrument sound

Lets you select a single drum/percussion sound from the currently selected drum sound set to assign to a pad. For a list of numbers and corresponding sound names, refer to the appendix at the end of this manual.

• PITCH

Adjusts the pitch of the drum/percussion sound for the pad. The setting range is -7.9 – 0 (reference pitch) – 7.9, in steps of 0.1 (1/10 of a semitone).

• LEVEL

Adjusts the output level for the pad. The setting range is 0 – 15.

HINT

When you press the [DRUM MIXER] key at the drum kit selection screen, you can use faders 1 – 8 and 9/10 – 15/16 to set the LEVEL parameter (→ p. 117).

• PAN (Panning)

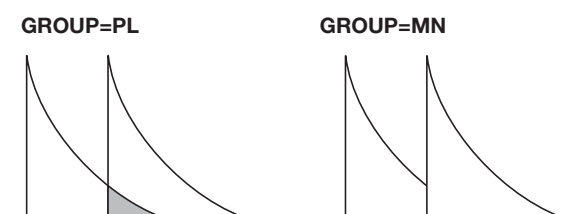
Adjusts the left/right stereo position (panning) for the pad. The setting range is L63 (far left) – 0 (center) – R63 (far right).

HINT

The panning value set here is valid regardless of the track parameter pan setting. When you set the track parameter pan to left/right, the left/right volume balance changes while the positioning of each pad is retained.

• GROUP (Pad group)

Selects the type of sound produced when pads are hit in succession (PL/MN) and the group to which the pad belongs (0 – 7). The setting range is PL0 – PL7 and MN0 – MN7. When PL is selected, hitting same pad in succession will produce overlapping sound, i.e. the previous sound continues while the next one starts. When MN is selected, the previous sound stops when the next one starts.



The numbers 0 – 7 specify the group to which the pad belongs (0 = no group, 1 – 7: respective group). Pads in the same group cannot produce sound at the same time. For example, if you assign an open hi-hat sound and closed hi-hat sound to two pads in the same group, the open hi-hat sound will cease when you play the closed hi-hat sound, resulting in realistic action.

• REV SEND (Reverb send)

Sets the reverb send level for each pad. The setting range is 0 – 127. This setting is independent from the reverb send level setting made as part of the track parameters.

• NAME (Drum kit name)

Lets you change the name of the drum kit (→ p. 116).

6. Press the pad for which you want to make a setting.

The setting for the pad appears on the display. For example, if PAN is selected as parameter and you press pad 3, the display indication changes as follows.

```

PAD: 1-3
PAN          L16
  
```

7. Turn the dial to select a setting value.

8. Repeat steps 5 – 7 as necessary to edit other pads.

9. When the setting is complete, press the [EXIT] key.

The unit returns to the drum kit selection screen. The created drum kit is saved as part of the project.

HINT

You can also copy all the settings for a pad to another pad. To do this, press the [INSERT/COPY] key while a parameter for the copy source pad is displayed. Then select the pad bank and pad to which you want to copy the settings, and press the [ENTER] key.

Assigning a name to a drum kit

You can assign a name to a drum kit.

1. From the main screen, press the [RHYTHM] key so that the key lights up.

2. Press the [DRUM] key in the rhythm section, and then the [KIT/PROG] key.

The drum kit selection screen appears on the display.

3. Turn the dial to select the drum kit (0 – 126) whose setting you want to change, and press the [EDIT] key.

The menu for making settings for each pad appears.

4. Use the cursor left/right keys to bring up the name of the drum kit on the display.



5. Use the cursor left/right keys to move the flashing section, and turn the dial to select a character.

For information on available characters, refer to page 36.

6. Repeat step 5 until the name is as desired.

7. When the name has been input, press the [EXIT] key.

The drum kit name is changed, and the display returns to the drum kit selection menu. To return to the main screen, press the [EXIT] key several times.

Copying a drum kit

You can copy the currently selected drum kit to another kit number. This is useful to create variations of a drum kit.

NOTE

If the number selected as copy destination already contains a drum kit, it will be overwritten. Use this operation with care.

1. From the main screen, press the [RHYTHM] key so that the key lights up.

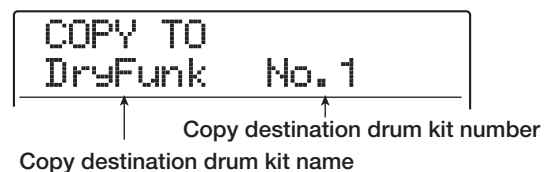
2. Press the [DRUM] key in the rhythm section, and then the [KIT/PROG] key.

The drum kit selection screen appears on the display.

3. Turn the dial to select the drum kit that you want to copy.

4. Press the [INSERT/COPY] key.

The display indication changes as follows. In this condition, you can select the drum kit number to be used as copy destination.



5. Turn the dial to select the drum kit number to be used as copy destination.

6. To execute the copy, press the [ENTER] key.

The drum kit setting is copied, and the display returns to the drum kit selection menu. To return to the main screen, press the [EXIT] key several times.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Adjusting the volume of each pad with the faders

While playing a rhythm song or rhythm pattern, you can adjust the volume for each pad in the currently selected drum kit by using the faders. This is useful to adjust the volume of each instrument before mixdown.

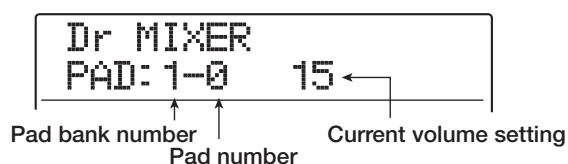
1. From the main screen, press the [RHYTHM] key so that the key lights up.

2. Press the [DRUM] key in the rhythm section, and then the [KIT/PROG] key.

The drum kit selection screen appears on the display.

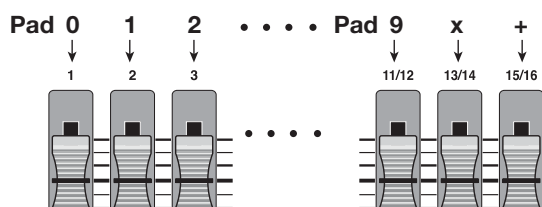
3. Press the [DRUM MIXER] key.

The key lights up and the display shows the currently selected pad bank, pad number, and volume setting.



4. While playing the rhythm song/rhythm pattern, operate the faders to adjust the respective volume for each pad.

While the [DRUM MIXER] key is lit, the 12 faders of the fader section are assigned to pads 0 – 9, x, +.



When you move a fader, the corresponding pad is selected for adjustment, and the volume changes. If necessary, switch the pad bank with the [BANK/OCTAVE] key.

5. To return to the main screen, press the [EXIT] key several times.

The new volume setting for the drum kit is saved.

HINT

The volume for each pad in the sampler program (→ p. 121) can be set in the same way.

Importing rhythm patterns and rhythm songs from another project

This section explains how to selectively or globally import rhythm pattern data and rhythm song data from another project that was saved on the hard disk.

NOTE

The import process will overwrite existing rhythm patterns/rhythm songs in the currently selected project. Take care not to accidentally overwrite rhythm pattern or rhythm song data that you want to keep.

1. From the main screen, press the [RHYTHM] key so that the key lights up.

2. Press the [UTILITY/TRACK EDIT] key.

The rhythm utility menu for making various rhythm section settings appears.



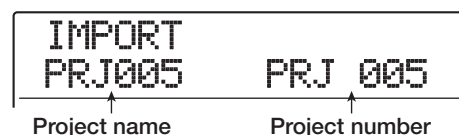
3. Use the cursor left/right keys to bring up the indication "UTILITY IMPORT" on the display, and press the [ENTER] key.

The display indication changes as follows.



4. Use the cursor left/right keys to select ALL (import all rhythm patterns and rhythm songs) or PATTERN (import a specific rhythm pattern), and press the [ENTER] key.

In this condition, you can select the source project from which to import.



5. Turn the dial to select the source project, and press the [ENTER] key.

The subsequent steps differ, depending on which selection was made in step 4.

- **When ALL was selected**

Verify that the indication “IMPORT SURE?” is shown on the display. Proceed to step 7.

- **When PATTERN was selected**

The source rhythm pattern is shown on the display. Turn the dial to select the desired rhythm pattern, and press the [ENTER] key. You can now select the target pattern. Proceed to step 6.

6. Turn the dial to select the import target, and press the [ENTER] key.

The indication “SURE?” appears on the display.

7. To carry out the import process, press the [ENTER] key.

When all patterns/songs have been imported, the rhythm pattern or rhythm song selection screen appears again. If a single pattern was imported, the display of step 5 returns again.

To return to the main screen, press the [EXIT] key several times.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Editing various settings of the rhythm section

This section explains how to edit various settings that affect the entire rhythm section, such as adjusting the pad sensitivity or adjusting the volume of the metronome.

Basic procedure

The basic procedure for editing the rhythm section settings is the same for most items, as described below.

HINT

This procedure can be carried out either in rhythm pattern mode or rhythm song mode.

1. From the main screen, press the [RHYTHM] key so that the key lights up.

Depending on the current operation mode of the rhythm section, the rhythm pattern selection screen or rhythm song selection screen appears.

2. Press the [UTILITY/TRACK EDIT] key.

The rhythm utility menu for making various rhythm section settings appears.



HINT

When the pad sampler function is being used, the indication “UTILITY SPL PRG” appears instead of the above screen.

3. Use the cursor left/right keys to select one of the following items to edit, and press the [ENTER] key.

- **SoundSel**

Select the drum sound set to be used by the rhythm section (→ p. 90).

- **COUNT**

Change the length of the pre-count that is heard during real-time input of a rhythm pattern.

- **ClickVol**

Change the volume level of the metronome that is heard

during real-time input of a rhythm pattern.

- **PAD SENS**

Change the pad sensitivity which determines the volume level in relation to the force with which the pad is struck.

- **MIDI**

Make MIDI-related settings (→ p. 170).

- **IMPORT**

Import rhythm patterns and rhythm songs from another project saved on the hard disk (→ p. 117).

- **MEMORY**

Check the remaining amount of rhythm pattern and rhythm song memory.

- **SAMPLE**

Import and edit source material to be used for the pad sampler function (→ p. 121).

- **POSITION**

Selects whether the drum sound pan setting applies as seen from the drummer or from the listener.

4. Turn the dial to edit the setting.

The screen display and operation will be different for each item. For details, refer to the sections that follow.

HINT

For information on drum sound set selection, MIDI setting, importing, and the pad sampler function, refer to the respective sections.

5. When the setting procedure is complete, press the [EXIT] key several times to return to the main screen.

Changing the length of the pre-count

You can change the length of the pre-count that is heard when you record a rhythm pattern in real time. Perform steps 1 – 3 of “Basic procedure” to bring up the indication “UTILITY COUNT”, and press the [ENTER] key. Then turn the dial to choose one of these settings.

```
COUNT
  4
```

- **OFF**

The pre-count is turned off.

- **1 – 8**

A pre-count of 1 – 8 beats is heard (default: 4).

- **SPECIAL**

The following special pre-count is heard.



Changing the metronome volume

You can change the volume of the metronome that is heard when you record a rhythm pattern in real time. Perform steps 1 – 3 of “Basic procedure” to bring up the indication “UTILITY ClickVol”, and press the [ENTER] key. Then turn the dial to set the volume (0 – 15).

```
ClickVol
  10
```

Adjusting the sensitivity of the pads

You can specify the volume that is produced according to the force with which you hit the pads (pad sensitivity). Perform steps 1 – 3 of “Basic procedure” to bring up the indication “UTILITY PAD SENS”, and press the [ENTER] key. Then turn the dial to choose one of these settings.



PAD SENS
NORMAL

● SOFT

The volume will be soft, regardless of how strongly you tap the pad.

● MEDIUM

The volume will be medium, regardless of how strongly you tap the pad.

● LOUD

The volume will be loud, regardless of how strongly you tap the pad.

● LITE

Maximum sensitivity. Even light taps will produce a loud volume.

● NORMAL

Normal sensitivity (default setting).

● HARD

Low sensitivity. Strong tapping is needed to produce a loud volume.

● EX HARD

Lowest sensitivity. Very strong tapping is needed to produce a loud volume.

Checking the remaining amount of memory

The remaining amount of recording memory for rhythm patterns and rhythm songs will be displayed as a percentage (%). Perform steps 1 – 3 of “Basic procedure” to bring up the indication “UTILITY MEMORY”, and press the [ENTER] key. This screen is for display only. There is no setting that can be edited.



MEMORY
45%

Swapping the left/right pan position

The pan setting for the drum sound can be set to apply as seen from the drummer or from the listener. Perform steps 1 - 3 of "Basic procedure" to bring up the indication "UTILITY POSITION", and press the [ENTER] key. Then select one of the following settings.

● PLAYER

Left/right pan setting applies as seen from the player (drummer).

● LISTENER

Left/right pan setting applies as seen from the listener (audience).

Reference [Pad Sampler]

This section explains the pad sampler function which lets you import short sound passages from audio tracks or a CD-ROM and assign these to the pads for playing.

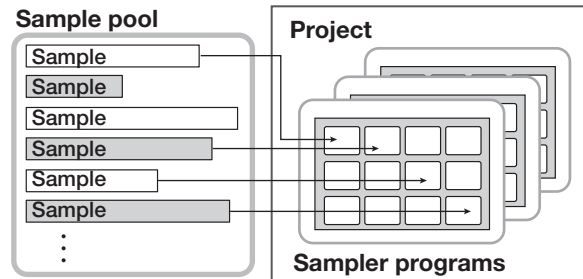
How the pad sampler works

The pad sampler is a function which lets you assign material from audio tracks or a CD-ROM to the pads of the MRS-1608 for playing. This can be used to add effect sounds to a song or play a rhythm pattern/rhythm song with your original sounds.

The material (samples) used for the pad sampler can be taken from an audio track or from an audio file on a CD-ROM. The samples are stored on the hard disk of the MRS-1608 in a special area called the “sample pool”. A maximum of 1000 samples can be stored. The playback range can be set individually for each sample (see illustration below).

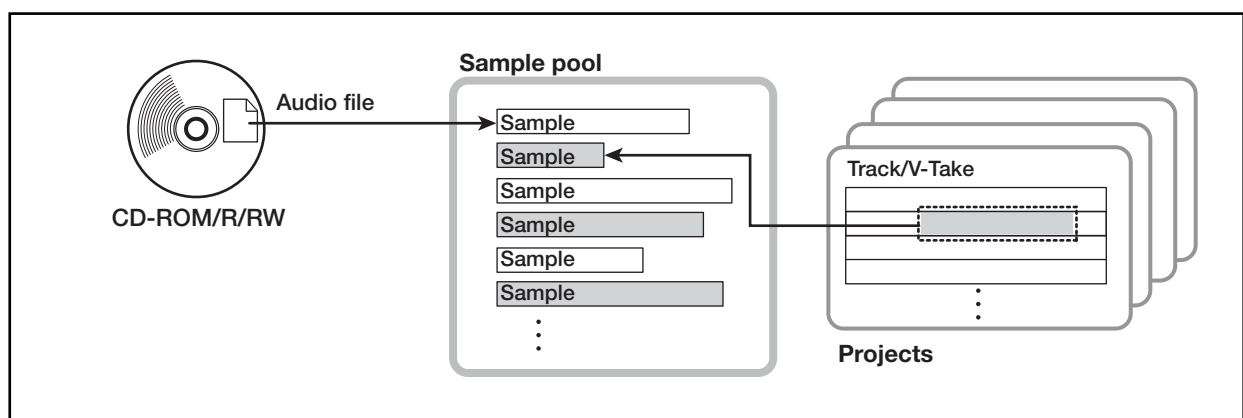
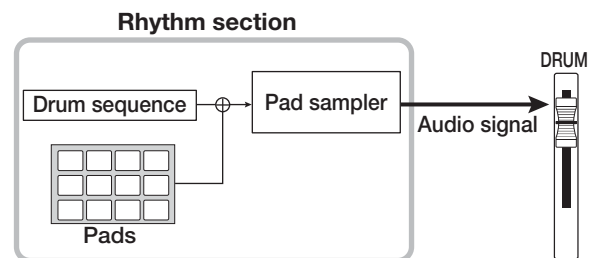
To use the pad sampler, samples are loaded from the sample pool into memory and assigned to the pads of the MRS-1608. Up to 36 samples with a combined playing time of 22 second (converted to mono) can be used at one time. A combination of such assigned samples is called a sampler program. The sampler program contains information about assigning samples to pads, as well as information about level, pan, pitch and other parameters. In the MRS-1608, you can create up to 10 sampler programs per project.

The created sampler programs are stored as part of a project.



The pad sampler can also be played by a drum sequence instead of the pads. (However, while the pad sampler is being used, the drum kit and bass program are unavailable.)

The output signal of the pad sampler is sent to the [DRUM] fader of the mixer. Like a regular drum track, it can be controlled by the status key and fader, and track parameters can be used to modify the signal.



Material that can be imported into the sample pool

The following types of audio material can be imported into the sample pool.

(1) Any audio track from the currently loaded project

You can select any track/V-take from the currently loaded project and specify a range for use as a sample.

(2) Audio file stored on CD-ROM/R/RW disc

A stereo or mono audio file (sampling frequency 8 – 48 kHz, 8-bit or 16-bit WAV/AIFF file) stored on a CD-ROM/R/RW disc can be used as a sample.

NOTE

- All audio files will be played at a sampling frequency of 44.1 kHz. When using an audio file that was recorded with a different sampling frequency, convert it to 44.1 kHz during importing, as required.
- Discs not compliant with the ISO 9660 Level 2 standard cannot be used.
- CD-R/RW discs with unfinalized sessions cannot be used.

Importing a sample

This section explains how to import samples into the sample pool.

Basic steps for sample importing

When acquiring samples for use with the pad sampler, some steps are similar for each source.

1. From the main screen, press the [RHYTHM] key in the display section.

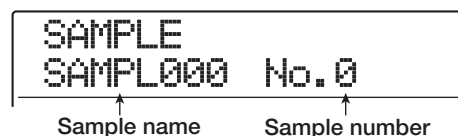
The key lights up, and the rhythm section can be used independently.

2. Press the [UTILITY/TRACK EDIT] key in the display section.

The rhythm utility menu for making various rhythm section settings appears.

3. Use the cursor left/right keys to bring up the indication "UTILITY SAMPLE" on the display, and press the [ENTER] key.

A screen for selecting the sample appears on the display.



4. Turn the dial to select the sample number to be used as import destination.

When the sample number is empty, the indication "EMPTY" is shown in the sample name field.

NOTE

If you select the number of an existing sample, its contents will be overwritten by the new sample.

5. Press the [UTILITY/TRACK EDIT] key once more.

The sample utility menu for sample importing and editing appears.

```
SAMPLE
IMPORT
```

6. Verify that “SAMPLE IMPORT” is shown on the display and press the [ENTER] key.

You can now select the type of import source.

```
IMPORT
TAKE
```

7. Use the cursor left/right keys to select one of the following, and press the [ENTER] key.

● **TAKE**

Import a specified range of audio data from any track/V-take in the currently loaded project.

● **WAV/AIFF**

Import an audio file (WAV/AIFF) from a CD-ROM/RW disc inserted in the CD-R/RW drive or from the internal hard disk.

The subsequent steps differ, depending on which selection was made. For details, see the respective section.

When the import process is completed, the sample selection screen appears again. If necessary, import more samples. The maximum number of samples that can be imported is 1000.

To return to the main screen, press the [EXIT] key several times.

HINT

The imported samples are automatically assigned a name, using the pattern “SAMPLxxx” (where xxx is the sample number).

Importing part of a track/V-take

You can specify a range on any track/V-take in the currently loaded project and import this as a sample.

1. Refer to steps 1 – 7 of “Basic steps for sample importing” to bring the indication “TAKE” onto the display. Then press the [ENTER] key.

The display now shows “ImprtSrc TR xx-yy” (where xx is the track number and yy the V-take number). In this condition, you can select the track/V-take to use as import source.

2. Use the dial or the status keys to select the track, and use the cursor up/down keys to select the V-take.

```
ImprtSrc
TR 16- 1
```

When track 16 is selected, turning the dial further to the right lets you select odd/even track pairs or the master track. If you press the adjacent status keys of an odd-numbered and even-numbered track in succession, “mono track x 2” is selected.

HINT

Repeatedly pressing the status keys for stereo tracks selects the odd-numbered track, even-numbered track, and stereo track in sequence.

3. Press the [ENTER] key.

The display now shows “ImprtSrc START”. This lets you specify the import start position.

```
ImprtSrc
START
H M S MS MEASURE BEAT TICK MARKER
0 0 0 0 001 1 0 00
```

4. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the import start point.

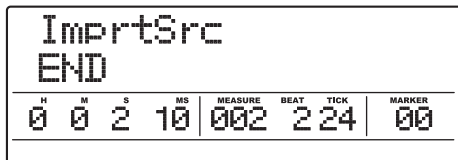
By moving the flashing section to the MEASURE/BEAT/TICK or MARKER field on the display, you can specify the point as a measure, beat, tick, or as a mark number.

HINT

- By holding down the STOP [■] key and pressing the PLAY [▶] key, you can perform scrub playback of the specified range (→ p. 38).
- The sample playback range can be fine-tuned also after importing.
- If you specify a point where there are no audio data, the second line of the display shows * symbol.

5. Press the [ENTER] key.

The display indication changes as follows.

**6. Specify the end point in the same way as in step 4.**

If you press the PLAY [▶] key at this point, the range between the specified start and end points is played.

7. When the import source has been specified, press the [ENTER] key.

The indication “IMPORT SURE?” appears on the display.

8. To carry out the import process, press the [ENTER] key once more.

When the import process is completed, the unit returns to the sample selection screen. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Importing a WAV/AIFF file

You can import an audio file (WAV/AIFF) from a CD-ROM or CD-R/RW disc inserted in the CD-R/RW drive or from the internal hard disk.

Before doing this, the following preparations are necessary.

● When importing from the CD-R/RW drive

Insert a CD-ROM or CD-R/RW disc containing audio files into the CD-R/RW drive.

● When importing from the internal hard disk

Copy the audio files from a computer into a folder named “WAV_AIFF” immediately under the root directory (top level folder) of the internal hard disk.

The files must have the extension “.WAV” (for WAV files) or “.AIF” (for AIFF files).

NOTE

- To copy audio files to the internal hard disk, the optional UIB-02 card is necessary. For information on using the option card, see page 183.
- Any subfolders in the WAV_AIFF folder are not recognized by the MRS-1608.
- The following procedure will not allow you to first listen to the audio files. Confirm file content and file name before you start the procedure.

1. Refer to steps 1 – 7 of “Basic steps for sample importing” to bring the indication “WAV/AIFF” onto the display. Then press the [ENTER] key.

The display now shows “IMPORT CD-ROM”, and you can select the source device.

**2. Use the cursor left/right keys to select the source device: “CD-ROM” (CD-R/RW drive) or “IntHDD” (internal hard disk), and press the [ENTER] key.**

The unit searches for WAV/AIFF files on the specified device. When files are found, their names are listed on the display.

**HINT**

If you select CD-ROM as source without a disc in the drive, the indication “IMPORT Ins Disc” appears on the display and the tray of the CD-R/RW drive opens. To continue, insert a disc containing audio files and press the [ENTER] key.

3. Turn the dial to select the audio file to import.

When accessing a disc in the CD-R/RW drive which has audio files in a certain folder, turn the dial to display the folder name. When a folder is selected, the indication “Folder” is shown in the right side of the display.



When you press the [ENTER] key in this condition, the files inside the selected folder are displayed. Turn the dial to select the desired file. By pressing the [EXIT] key, you can return to the next higher level.

4. When the file has been selected, press the [ENTER] key.

Depending on the sampling frequency of the imported audio file, the following applies.

● Sampling frequency 44.1 kHz

The indication “IMPORT SURE?” appears on the display. When you press the [ENTER] key, the audio file is imported. When the process is complete, the sample selection screen appears again.

● Sampling frequency other than 44.1 kHz

When you press the [ENTER] key, a selection screen for conversion to 44.1 kHz (resampling) appears.

```

WAV/AIFF
Resample ON
  
```

Turn the dial to set resampling to ON or OFF. When you press the [ENTER] key, the indication “WAV/AIFF SURE?” appears. Press the [ENTER] key once more to start the import process. When the process is complete, the sample selection screen appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

The name “SAMPLxxx” is automatically assigned to the imported sample (where xxx is the sample number).

NOTE

Imported audio files are always played with a sampling frequency of 44.1 kHz. If resampling was turned off during the import process, a file with a different sampling frequency will play back with a different pitch and tempo.

Setting various sample parameters

Samples imported into the sample pool have parameters such as playback range and sample name that can be set.

1. From the main screen, press the [RHYTHM] key in the display section.

The key lights up, and the rhythm section can be used independently.

2. Press the [UTILITY/TRACK EDIT] key in the display section.

The rhythm utility menu for making various rhythm section settings appears.

3. Use the cursor left/right keys to bring up the indication “UTILITY SAMPLE” on the display, and press the [ENTER] key.

A screen for selecting the sample appears on the display.

```

SAMPLE
SAMPL000 No. 0
  
```

↑ ↑
Sample name Sample number

4. Turn the dial to select the sample whose parameters you want to adjust.

When you press the PLAY [▶] key, the currently displayed sample is played. When the sample number is empty, the indication “EMPTY” is shown in the sample name field.

5. Press the [EDIT] key.

A parameter of the selected sample is displayed.

```

SAMPL000
START No. 0
  
```

H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	0	0				

6. Use the cursor up/down keys to call up the parameter that you want to adjust.

● START

Specifies the playback start point of the sample in milliseconds. In the default condition, this is the beginning of the sample.

● END

Specifies the playback end point of the sample in milliseconds. In the default condition, this is the end of the sample (max. 22 seconds).

● NAME

Specifies the name of the sample.

● SIZE

Indicates the size of the currently displayed sample.

7. Use the dial and the cursor keys to adjust the setting.

• Setting START/END

Use the cursor left/right keys to move the flashing section on the display, and turn the dial to adjust the value.

• Setting NAME

Use the cursor left/right keys to move the flashing section to the character you want to change, and turn the dial to select the new character.

HINT

- If you press the PLAY [▶] key while setting a parameter, the sample is played.
- The SIZE parameter is for information only and cannot be changed. If you press the cursor left/right keys, you can select the unit between KB (kilobytes) and ms (milliseconds).

8. Repeat steps 6 – 7 to adjust all desired parameters.

You can also press the [EXIT] key to return to the sample selection screen, and then select another sample for parameter adjustment.

9. To return to the main screen, press the [EXIT] key several times.

Editing a sample

This section describes how you can copy and delete samples in the sample pool, and how you can perform waveform data editing on a specified range of a sample.

Copying a sample

You can copy a sample into any other sample number. If a sample exists at the copy destination number, it will be overwritten. This is useful to create identical samples with different start and end points.

1. From the main screen, press the [RHYTHM] key in the display section.

The key lights up, and the rhythm section can be used independently.

2. Press the [UTILITY/TRACK EDIT] key in the display section.

The rhythm utility menu appears.

3. Use the cursor left/right keys to bring up the indication “UTILITY SAMPLE” on the display, and press the [ENTER] key.

A screen for selecting the sample appears on the display.

A screenshot of a digital display showing the text 'SAMPLE' on the top line and 'SAMPL000 No. 0' on the bottom line. Below the text, there are two upward-pointing arrows. The arrow under 'SAMPL000' is labeled 'Sample name' and the arrow under 'No. 0' is labeled 'Sample number'.

4. Turn the dial to select the sample you want to copy.

5. Press the [INSERT/COPY] key in the rhythm section.

The copy destination sample number display appears.

A screenshot of a digital display showing the text 'COPY TO' on the top line and 'EMPTY No. 3' on the bottom line.

6. Turn the dial to select the copy destination sample number, and press the [ENTER] key.

The indication “COPY SURE?” appears on the display.

HINT

The copy process will overwrite the existing sample at the destination number. Take care not to accidentally overwrite a sample that you want to keep.

7. To execute the copy process, press the [ENTER] key.

When the copy operation is completed, the unit returns to the sample selection screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Deleting a sample

You can delete a sample from the sample pool as follows.

NOTE

Once deleted, a sample cannot be restored. Use this function with care.

1. From the main screen, press the [RHYTHM] key in the display section.

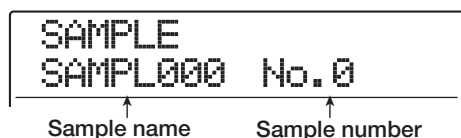
The key lights up, and the rhythm section can be used independently.

2. Press the [UTILITY/TRACK EDIT] key in the display section.

The rhythm utility menu appears.

3. Use the cursor left/right keys to bring up the indication "UTILITY SAMPLE" on the display, and press the [ENTER] key.

A screen for selecting the sample appears on the display.

**4. Turn the dial to select the sample you want to delete.****5. Press the [DELETE/ERASE] key in the rhythm section.**

The indication "DELETE SURE?" appears on the display.

6. To execute the delete process, press the [ENTER] key.

When the delete operation is completed, the unit returns to the sample selection screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Editing a specified range of a sample

You can specify a range of a sample and then perform waveform editing functions such as reversing, fade-in/out.

1. From the main screen, press the [RHYTHM] key in the display section.

The key lights up, and the rhythm section can be used independently.

2. Press the [UTILITY/TRACK EDIT] key in the display section.

The rhythm utility menu appears.

3. Use the cursor left/right keys to bring up the indication "UTILITY SAMPLE" on the display, and press the [ENTER] key.

A screen for selecting the sample appears on the display.

4. Turn the dial to select the sample you want to edit, and then press the [UTILITY/TRACK EDIT] key once more.

The sample utility menu appears.

5. Use the cursor left/right keys to bring up the indication "SAMPLE SPL EDIT" on the display, and press the [ENTER] key.

In this condition, you can select an editing command.



The following commands are available.

● REVERSE

Reverse a specified range of audio data.

● FADE I/O (Fade-in/out)

Perform fade-in/fade-out over a specified audio data interval.

6. Use the cursor left/right keys to select the command, and press the [ENTER] key.

The subsequent steps are the same as described for the respective editing commands in the track editing section of this manual.

For REVERSE, see page 54. For FADE I/O, see page 53.

The only difference is that the range can only be specified in minutes/seconds/milliseconds.

Creating sampler programs

Creating a new sampler program

To use samples that you have imported, you must first create a blank sampler program in an unused program number, as described below.

1. From the main screen, press the [RHYTHM] key in the display section.

The key lights up, and the rhythm section can be used independently. Depending on the current operation status of the rhythm section, the rhythm pattern or rhythm song selection screen appears.

2. Press the [DRUM] key and [BASS] key in the rhythm section simultaneously.

Both keys light up, and the pad sampler can be used.

3. Press the [UTILITY/TRACK EDIT] key.

The rhythm utility menu appears.

```
UTILITY
SPL PRG
```

4. Verify that the indication "UTILITY SPL PRG" is shown, and press the [ENTER] key.

The sampler program menu for various sampler program functions appears.

```
SPL PRG
SELECT
```

HINT

The sampler program menu only appears when the pad sampler can be used.

5. Use the cursor left/right keys to bring up the indication "SPL PRG NEW" on the display, and press the [ENTER] key.

The indication "PRG NEW SURE?" appears.

6. To create a new program, press the [ENTER] key.

When the sampler program has been created, the unit returns to the rhythm pattern or rhythm song selection

screen. To return to the main screen, press the [EXIT] key several times.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Assigning samples to pads

To assign samples to pads for the sampler program, proceed as follows. You can also set the volume and panning for each pad.

1. From the main screen, press the [RHYTHM] key in the display section, and then press the [DRUM] key and [BASS] key in the rhythm section simultaneously.

Both keys light up, and the pad sampler can be used.

2. Press the [UTILITY/TRACK EDIT] key.

The rhythm utility menu appears.

```
UTILITY
SPL PRG
```

3. Verify that the indication "UTILITY SPL PRG" is shown, and press the [ENTER] key.

The sampler program menu appears.

```
SPL PRG
SELECT
```

4. Verify that the indication "SPL PRG SELECT" is shown, and press the [ENTER] key.

The display changes as follows. You can now select a sampler program to load into the pad sampler.

```
PRG SEL
SPL PRG0 PRG:0
```

5. Turn the dial to select the sampler program, and press the [ENTER] key.

The selected sampler program is loaded into the pad sampler. When loading is complete, the unit returns to the rhythm pattern or rhythm song selection screen.

NOTE

An unused program number cannot be selected. To create a sampler program from scratch, you must first create a new program (→ p. 128).

6. Press the [KIT/PROG] key in the rhythm section.

When you press the [KIT/PROG] key at the rhythm pattern or rhythm song selection screen, a menu for making settings for each pad appears.

```
Pad bank → Pad number
PAD: 1-0
EMPTY
Sample name ↑
```

If no sample has been assigned to the displayed pad, the sample name field shows "EMPTY".

HINT

In a newly created sampler program, all pads assignments will be empty.

7. Use the cursor up/down keys to select a pad bank, and press the pad to which you want to assign a sample.

The pad is selected. For example, if you press pad 2, of pad bank 1, the following indication will appear.

```
PAD: 1-2
EMPTY
```

8. To make a setting for this pad, press the [INSERT/COPY] key in the rhythm section.

The indication "SPL LOAD" appears on the display, and you can select a sample to assign to the pad.

```
SPL LOAD
SAMPL000 No.0
Sample name Sample number ↑
```

9. Turn the dial to select the sample that you want to assign to the pad, and press the [ENTER] key twice.

To hear the sample, you can press the PLAY [▶] key at this point.

The assignment process is carried out, and the unit returns to the screen of step 6.

HINT

After you have pressed the [ENTER] key once, the indication "LOAD OK?" is shown. The size of the sample is shown on the second line of the display. You can use the cursor up/down keys to switch the indication between the size and the play time of the sample.

10. To adjust various parameters for the pad, use the cursor left/right keys to select a parameter from the following options, and turn the dial to adjust it.

• PITCH

Fine-tunes the pitch of the sample for the pad. The setting range is $-7.9 - 0$ (reference pitch) $+7.9$, in steps of 0.1 (1/10 of a semitone).

• LEVEL

Adjusts the output level for the pad. The setting range is 1 – 15.

• PAN (Panning)

Adjusts the left/right stereo position (panning) for the pad. The setting range is L63 (far left) – 0 (center) – R63 (far right).

HINT

The panning value set here is independent of the track parameter pan setting. When track panning is shifted to left or right, the relative arrangement for each pad will be retained while the entire sound is moved left or right.

• GROUP

Selects the type of sound produced when pads are hit in succession (PL/MN) and the group to which the pad belongs (0 – 7). The setting range is PL0 – PL7 and MN0 – MN7. For an explanation of this setting, see page 114.

• REV SEND (Reverb send)

Sets the reverb send level for each pad. The setting range is 0 - 127. This setting is independent from the reverb send level setting made as part of the track parameters.

• NAME (Program name)

Lets you change the name of the sampler program.

• MEMORY REMAIN

Indicates the remaining amount of memory for the pad sampler, in terms of capacity or play time. Use the cursor up/down keys to switch between kB (kilobytes) and ms (milliseconds).

HINT

- The MEMORY REMAIN parameter is for information only and cannot be changed.
- You can also use the cursor left/right keys to bring up the sample name and select another sample. Then press the [INSERT/COPY] key again.
- Normally, a sample will play to the end when its pad is hit. To end the sample earlier, proceed as follows. Set the LEVEL parameter for another pad to zero and set its MNO – MN9 parameter to the same group as the pad whose sound you want to stop. Then hit the second pad at the point where you want to stop the sample.

11. Repeat steps 7 – 10 to assign samples to other pads.

One sampler program can have a maximum total playing time of 22 seconds (about 2 megabytes). If the indication "SPL FULL" appears while you are assigning samples, the maximum memory capacity is reached. In such a case, delete unneeded sample assignments as described below.

12. To cancel the sample assignment of a pad, select the pad and press the [DELETE/ERASE] key. Then press the [ENTER] key.

When you press the [DELETE/ERASE] key, the indication "SURE?" appears on the second line of the display. Pressing the [ENTER] key proceeds with the operation.

HINT

When a sample is deleted, the pad reverts to the default settings for each parameter.

13. To return to the main screen, press the [EXIT] key several times.

The created sampler program is automatically stored on the hard disk.

HINT

You can copy a sampler program to another program number, or delete the sampler program. For details, see the next section.

Editing a sampler program

You can change the name of a sampler program or copy it to another program. The sampler program editing procedure is described below.

Assigning a name to a sampler program

You can assign a name to a sampler program as follows.

1. From the main screen, press the [RHYTHM] key, so that the key lights up.

2. Press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

Both keys light up. In this condition, the pad sampler can be used.

3. Press the [UTILITY/TRACK EDIT] key and then press the [ENTER] key twice.

You can now select a sampler program to load into the pad sampler.

4. Turn the dial to select the sampler program to which you want to assign a name, and press the [ENTER] key.

The sampler program is loaded, and the unit returns to the rhythm pattern or rhythm song selection screen.

5. Press the [KIT/PROG] key.

The menu for making sampler program settings appears.

```

PAD: 1-0
SAMPL000
  
```

6. Use the cursor left/right keys to bring up the program name on the display.

```

NAME
SPL PRG1
  
```

7. Use the cursor left/right keys to move the flashing section to the character you want to change, and turn the dial to select the new character.

For information on available characters, refer to page 36.

8. Repeat step 7 until the name is as desired.

9. When input is complete, press the [EXIT] key.

The new name is saved, and the sampler program selection screen appears again.

To return to the main screen, press the [EXIT] key several times.

Copying a sampler program

You can copy a sampler program in the current project to an unused program number, as follows.

HINT

If all program numbers are used up, the indication "PRG FULL" appears, and the copy process cannot be carried out. Delete unneeded sampler programs before proceeding.

1. From the main screen, press the [RHYTHM] key, so that the key lights up.

2. Press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

Both keys light up. In this condition, the pad sampler can be used.

3. Press the [UTILITY/TRACK EDIT] key.

The display changes as follows.

```

UTILITY
SPL PRG
  
```

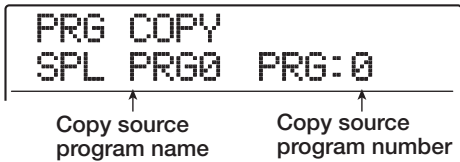
4. Verify that the indication "UTILITY SPL PRG" is shown, and press the [ENTER] key.

The sampler program menu appears.



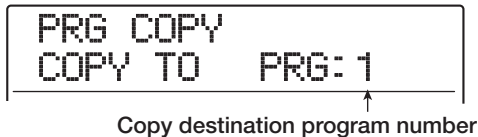
- Use the cursor left/right keys to bring up the indication “SPL PRG COPY” on the display, and press the [ENTER] key.

The sampler program that will be used as copy source appears on the display.



- Turn the dial to select the desired sampler program, and press the [ENTER] key.

The sampler program that will be used as copy destination appears on the display.



- Turn the dial to select the sampler program to be used as copy destination and press the [ENTER] key.

The indication “PRG COPY SURE?” appears on the display.

- To execute the copy process, press the [ENTER] key.

When the copy operation is completed, the unit returns to the rhythm pattern or rhythm song selection screen. To return to the main screen, press the [EXIT] key several times.

Deleting a sampler program

You can delete an unneeded sampler program as follows.

NOTE

A deleted sampler program cannot be restored. Use this operation with care.

- From the main screen, press the [RHYTHM] key, so that the key lights up.
- Press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

Both keys light up. In this condition, the pad sampler can be used.

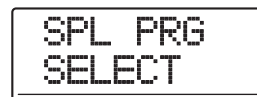
- Press the [UTILITY/TRACK EDIT] key.

The display changes as follows.



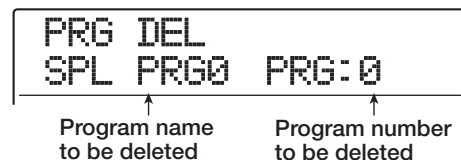
- Verify that the indication “UTILITY SPL PRG” is shown, and press the [ENTER] key.

The sampler program menu appears.



- Use the cursor left/right keys to bring up the indication “SPL PRG DELETE” on the display, and press the [ENTER] key.

The sampler program that will be deleted appears on the display.



6. Turn the dial to select the sampler program to delete, and press the [ENTER] key.

The indication “SPL DEL SURE?” appears on the display.

7. To execute the delete process, press the [ENTER] key.

When the delete operation is completed, the unit returns to the rhythm pattern or rhythm song selection screen. To return to the main screen, press the [EXIT] key several times.

NOTE

If you delete all programs, the program number 0 will be automatically created.

Using the pads to play the pad sampler

You can select a sampler program, then play it with the pads.

1. From the main screen, press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

Both keys light up. In this condition, the pad sampler can be used.

NOTE

- While the pad sampler is active, the drum kit and bass program cannot be used.
- By pressing only the [DRUM] key or [BASS] key, you can return to the normal condition in which a drum kit and bass program can be played.

2. Press the [RHYTHM] key so that the key lights up, and then press the [UTILITY/ TRACK EDIT] key.

The indication “UTILITY SPL PRG” appears on the display

3. Press the [ENTER] key twice.

After you have pressed the [ENTER] key once, the sampler program menu appears. When you press the [ENTER] key once more while “SPL PRG SELECT” is shown, the display changes as follows.

```
PRG SEL
SPL PRG1 PRG: 1
```

4. Turn the dial to select the program to play, and press the [ENTER] key.

The selected sampler program is loaded into the pad sampler. When loading is complete, the unit returns to the rhythm pattern or rhythm song selection screen.

5. To switch the pad bank, press the [BANK/ OCTAVE] key.

The pad bank selection screen appears.

```
PAD: SMPL          PAD BANK/OCTAVE
PadBank: 1
```

6. Turn the dial to select the desired pad bank (1 – 3).

The sound assigned to the pads is switched immediately. When the setting is complete, press the [EXIT] key to return to the original screen.

7. Hit the pads to play the assigned samples.

You can switch the function on and off by pressing the [DRUM] status key, and you can use the [DRUM] fader to adjust the pad sampler level.

HINT

Instead of tapping the pads, you can also use a MIDI controller connected to the MRS-1608's MIDI IN connector. The MIDI channel setting and the assignment of MIDI note numbers to pads is the same as for the drum kit.

8. To play the sample of a pad continuously, hold down the [STEP] key and then press the pad.

If you hit a pad while holding the [STEP] key, the roll play function is activated which plays a sound in repetition with only a single hit of the pad. To stop roll play, release the pad. If you release the [STEP] key first, roll play continues also when you release the pad. To stop roll play in this case, hit the pad once more.

For details on the roll play function, see page 91.

To return to the previous screen, press the [EXIT] key.

HINT

The roll play function can also be used during real-time input of a rhythm pattern.

9. To return to the main screen, press the [EXIT] key.

Playing the pad sampler sounds in a rhythm pattern

This section explains how you can use the pad sampler sounds during real-time input and for playback of a rhythm pattern.

HINT

- You can also use a pattern created in this way in a rhythm song.
- The intensity with which you hit the pads will also be recorded.

NOTE

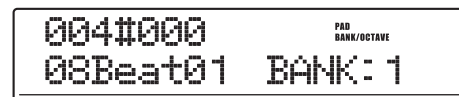
The pad sampler and drum kit/bass program cannot be used concurrently. To use a rhythm pattern or rhythm song with drum/bass together with the pad sampler, record the rhythm pattern play on an audio track first (→ p. 44).

1. From the main screen, press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

The rhythm section sound is switched to the pad sampler.

2. Press the [PATTERN] key in the rhythm section, and press the [RHYTHM] key in the display section.

Both keys light up, and rhythm pattern input and editing becomes possible. The display shows the currently selected rhythm pattern.



3. Turn the dial to select an empty rhythm pattern.

4. Press the ZERO [◀◀] key to return to the beginning of the rhythm pattern.

If necessary, adjust the number of measures, time signature, and the quantize setting of the rhythm pattern (→ p. 93).

5. If necessary, use the [BANK/OCTAVE] key and the dial to select the pad bank.

After selecting the pad bank, press the [EXIT] key to return to the previous screen.

6. Press the PLAY [▶] key while holding down the REC [●] key.

A pre-count of four beats is heard, and then rhythm pattern recording starts.

7. While listening to the metronome, tap the pads.

Your performance of the pad sampler will be recorded as a drum sequence.

By pressing the REC [●] key during recording, you can pause the recording to rehearse and switch pad banks. Press the REC [●] key again to continue.

HINT

Instead of tapping the pads, you can also use a MIDI controller connected to the MRS-1608's MIDI IN connector.

8. To edit the recorded contents during real-time input, proceed as follows.

● To erase the performance of a specific pad

While holding down the [DELETE/ERASE] key, press the pad whose assigned sample sound you want to erase. While you are holding down both keys, the information for the corresponding pad is erased from the rhythm pattern.

● To erase the performance of all pads

While holding down the [DELETE/ERASE] key, press the [DRUM] status key. While you are holding down both keys, the performance of all pads is erased.

9. When you have finished real-time recording, press the STOP [■] key.

The rhythm pattern stops.

10. To play the resulting rhythm pattern, press the ZERO [◀◀] key to return to the beginning of the rhythm pattern, and then press the PLAY [▶] key.

When the contents of the pattern are as desired, press the STOP [■] key to stop the rhythm pattern, and then press the [EXIT] key several times to return to the main screen.

HINT

Creating a rhythm pattern using drum sequence step input is also possible.

Recording pad sampler play on an audio track

You can record your pad sampler play on an audio track. This is useful to add effect sounds in real time while listening to other audio tracks.

NOTE

- When a programmed rhythm pattern/rhythm song is selected while recording is carried out, the contents will be played back and the pad sampler sounds will be activated by the rhythm pattern or rhythm song. To record only your pad play, select an empty rhythm pattern/rhythm song.
- The pad sampler and drum kit/bass program cannot be used concurrently. To use a rhythm pattern or rhythm song with drum/bass together with the pad sampler, record the rhythm pattern play on an audio track first (→ p. 44).

1. From the main screen, press the [UTILITY/TRACK EDIT] key.

The indication "UTILITY TR EDIT" appears on the display.

2. Use the cursor left/right keys to bring up the indication "UTILITY BOUNCE" on the display, and press the [ENTER] key.

The display indication changes as follows.

```
BOUNCE
REC TAKE
```

3. Use the cursor left/right keys to bring up the indication "BOUNCE REC SRC" on the display, and press the [ENTER] key.

In this condition, you can select the bounce recording source.

```
REC SRC
MASTER
```

4. Turn the dial to change the setting to "DRUM TR", and press the [EXIT] key several times to return to the main screen.

When you carry out bounce recording in this condition, you can record the pad sampler signal (drum track) onto any audio track.

5. Press the [DRUM] and [BASS] keys in the rhythm section simultaneously to activate the pad sampler.

6. Select the sampler program you want to play.

For details, see “Using the pads to play the pad sampler” (→ p. 133).

7. Press the [EXIT] key several times to return to the main screen.

8. Repeatedly press the status key of the audio track on which to record, until the key is lit in red.

9. Press the [BOUNCE] key in the control section so that the key is lit in red.

10. Press the PLAY [▶] key while holding down the REC [●] key to start bounce recording.

Four pre-count clicks are heard, and then bounce recording starts.

11. Hit the pads to play.

The pad sampler signal is recorded directly on the audio track.

You can switch the pad bank as necessary, and use the roll play function to periodically repeat sample sounds (→ p. 133).

12. To stop recording, press the STOP [■] key.

13. To check the recorded result, press the ZERO [◀◀] key to return to the recorder start position, and then press the PLAY [▶] key.

14. When the recording is as you want it, press the [BOUNCE] key so that the key goes out. Then perform steps 1 – 4 to return the recording source setting to “MASTER”.

Importing a sampler program from another project

If desired, you can import a sampler program that was created for another project into the current project. To do this, proceed as follows.

HINT

The imported program will overwrite the sampler program currently selected for the pad sampler. To keep a current program, create a new, empty program first and then import the sampler program from the other project.

1. From the main screen, press the [RHYTHM] key in the display section, so that the key lights up.

2. Press the [DRUM] and [BASS] keys in the rhythm section simultaneously.

Both keys light up. In this condition, the pad sampler can be used.

3. Press the [UTILITY/TRACK EDIT] key.

The display changes as follows.

```
UTILITY
SPL PRG
```

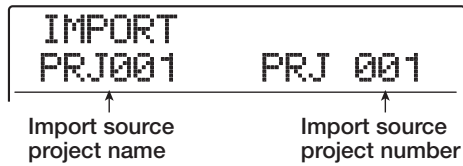
4. Verify that the indication “UTILITY SPL PRG” is shown, and press the [ENTER] key.

The sampler program menu appears.

```
SPL PRG
SELECT
```

5. Use the cursor left/right keys to bring up the indication “SPL PRG IMPORT” on the display, and press the [ENTER] key.

The display changes as follows. In this condition, you can select the project from which to import the sampler program.

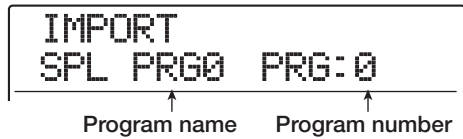


IMPORT
PRJ001 PRJ 001

↑ ↑
Import source Import source
project name project number

6. Turn the dial to select the project, and press the [ENTER] key.

A sampler program from the selected project is shown.



IMPORT
SPL PRG0 PRG:0

↑ ↑
Program name Program number

7. Turn the dial to select the sampler program to import, and press the [ENTER] key.

The indication “IMPORT SURE?” appears on the display.

8. To carry out the import process, press the [ENTER] key.

When importing is complete, the unit returns to the rhythm pattern or rhythm song selection screen. To return to the main screen, press the [EXIT] key several times.

Reference [Effects]

This section explains the functions and operation of the effect section built into the MRS-1608.

About the effects

The MRS-1608 has two types of effects, an “insert effect” and a “send/return effect”. The two types can be used simultaneously. The characteristics of these effects are described below.

Insert effect

The insert effect is used by inserting it into a specific point in the signal route. You can select one of the following locations at which to apply the effect.

- (1) Input mixer
- (2) Any track of the track mixer
- (3) Immediately before the [MASTER] fader

For example, if you insert the effect into the input mixer, the input signal is processed by the effect and the result is recorded on a track of the recorder. Alternatively, if you

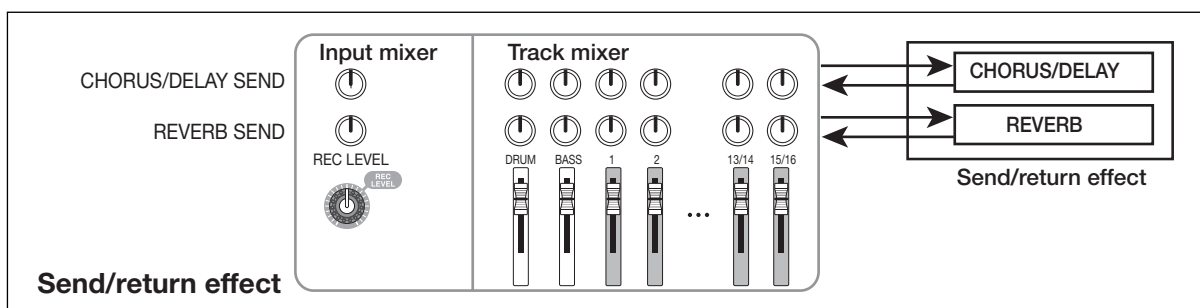
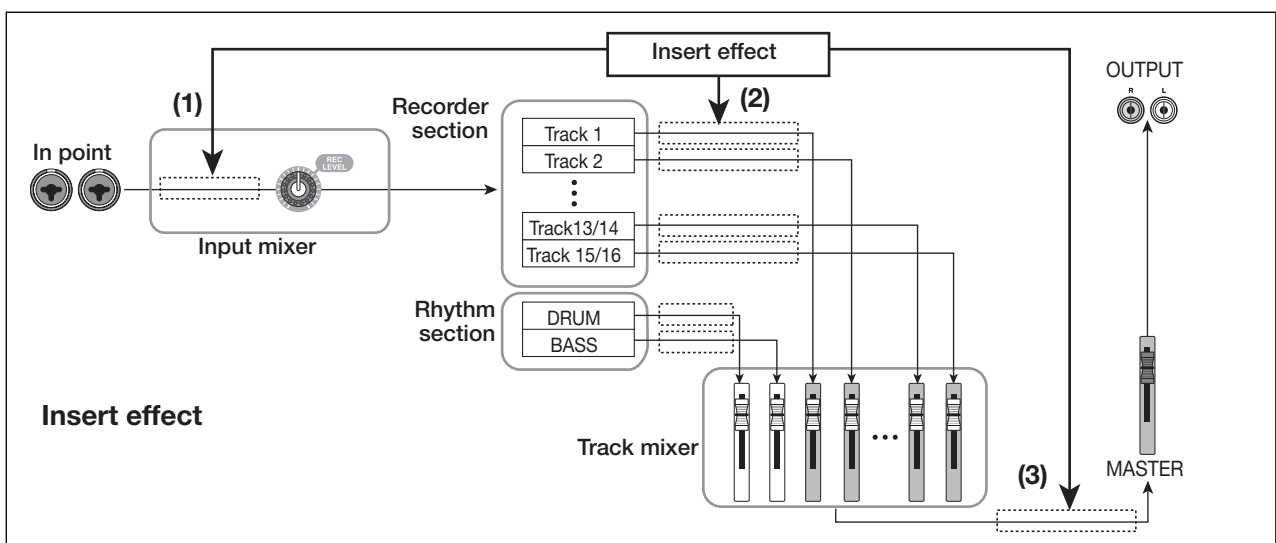
insert the effect into a channel of the track mixer, the effect processes the playback signal from an audio track or the drum/bass track.

By selecting a position immediately before the [MASTER] fader, you can use the effect to process the final mix before recording on the master track.

Send/return effect

The send/return effect is internally connected to the send/return loop of the mixer section. The MRS-1608 has two types of send/return effects, reverb and chorus/delay, and these two can be used simultaneously.

The send levels of the input mixer or track mixer adjust the effect depth of the send/return effect. Raising the send level will send the corresponding signal to the input of the effect, and the signal processed by the effect will be returned immediately before the [MASTER] fader, and mixed with the other signals.



Using the insert effect

This section explains how to select the position for the insert effect, how to select a patch, and how to edit the patch.

About insert effect patches

The insert effect is a multi-effect unit that contains a number of single effects such as compressor, distortion, and delay, connected in series. Each of these separate effects is called an “effect module”.

A combination of effect modules that can be used simultaneously is called an “algorithm”.

The MRS-1608 offers the following algorithms.

● CLEAN

● DIST

● ACO/BASS SIM

● BASS

An algorithm suitable for recording guitar/bass.

● MIC

An algorithm suitable for microphone recording of vocals etc.

● DUAL MIC

An algorithm with two entirely separate channels for mono

input x 2 and mono output x 2.

● 8x COMP EQ

This is an algorithm with eight separate inputs/outputs. Separate high-pass filter (HPF), compressor, and EQ settings are possible for each channel.

● LINE

An algorithm suitable for recording line-level output instruments such as synthesizer or electric piano.

● MASTERING

An algorithm suitable for processing the final stereo mix signal.

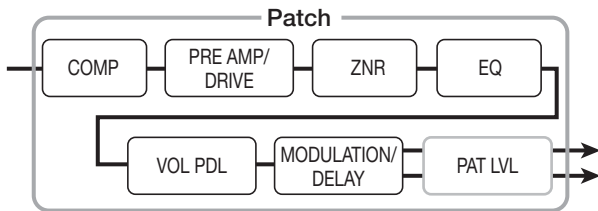
The arrangement of effect modules and the signal flow for each algorithm is shown in the diagram below.

HINT

- Depending on the selected algorithm, the input/output configuration of the effect will differ. For some insert position settings, two input signals or the stereo output of an effect may be mixed to mono (→ p. 141).
- With the 8x COMP EQ algorithm, the VOL PDL module is shared by all eight channels.

Each effect module comprises two aspects, namely the effect type and the effect parameters. Effect type and parameter settings for an effect module are collectively referred to as a “patch”.

Algorithm	Effect module arrangement	Input/output type
CLEAN DIST ACO/BASS SIM BASS	→ [COMP] → [PRE AMP/DRIVE] → [ZNR] → [EQ] → [VOL PDL] → [MODULATION/DELAY] →	Mono → Stereo
MIC	→ [COMP/LIM] → [MIC PRE+DE-ESSER] → [ZNR] → [EQ] → [VOL PDL] → [MODULATION/DELAY] →	
DUAL MIC	→ [COMP/LIM] → [MIC PRE] → [ZNR] → [EQ] → [VOL PDL] → [DELAY] → → [COMP/LIM] → [MIC PRE] → [ZNR] → [EQ] → [VOL PDL] → [DELAY] →	Mono x 2 → Mono x 2
8x COMP EQ	→ [HPF] → [COMP/LIM] → [EQ] → [VOL PDL] → → [HPF] → [COMP/LIM] → [EQ] → [VOL PDL] → ⋮ → [HPF] → [COMP/LIM] → [EQ] → [VOL PDL] → x 8	Mono x 8 → Mono x 8 * VOL PDL applies to all inputs
LINE	→ [COMP/LIM] → [ISOLATOR] → [ZNR] → [EQ] → [VOL PDL] → [MODULATION] →	Stereo → Stereo
MASTERING	→ [3BAND COMP LO-FI] → [NORMALIZE] → [ZNR] → [EQ] → [VOL PDL] → [DIMENSION RESONANCE] →	



A project contains 320 patches, which are organized according to the nine algorithms. You can instantly switch insert effect settings simply by selecting the appropriate algorithm, and then selecting a patch.

The table below shows the number of patches for each algorithm.

Algorithm	Patches (preprogrammed patches)
CLEAN	30 (22)
DIST	50 (42)
ACO/BASS SIM	20 (10)
BASS	20 (10)
MIC	50 (31)
DUAL MIC	50 (30)
8X COMP EQ	20 (10)
LINE	50 (30)
MASTERING	30 (21)

Changing the insert location of the insert effect

In the default condition of a project, the insert effect is applied to the input mixer. However, you may change the insert location as necessary. The following possibilities are available.

Display	Insert position
IN	Input mixer
IN1 - IN8	One of the input mixer inputs
IN1-8	All of the input mixer inputs
DRUM	Drum track output
BASS	Bass track output
TR1 - TR8	Any output of track 1 - 8
TR1/2 - TR15/16	Any output of stereo track or mono track x 2
TR1-8	All outputs of track 1 - 8
TR9-16	All outputs of track 9 - 16
MASTER	Immediately before [MASTER] fader

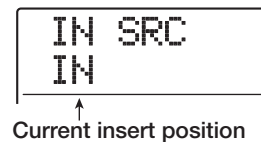
NOTE

- One of the input mixer outputs IN1 - IN8 can only be selected if the 8-track recording function is enabled.
- TR1-8 and TR9-16 are only available when the 8x COMP EQ algorithm is selected.
- IN1-8 can only be selected when the 8-track recording function is enabled and the 8x COMP EQ algorithm is selected.
- If you switch to the 8x COMP EQ algorithm after selecting the insert position, the position will change to IN, TR1-8, or TR9-16 (depending on the immediately preceding setting).

◆ Insertion to input mixer (recording on one or two tracks)

1. On the main screen, verify that the [ON/OFF] key for the desired input is lit in red. Then press the [INPUT SOURCE] key in the effect section.

The current insert position is shown on the display.



2. Verify that "IN" is selected.

If another position is selected, turn the dial to select "IN". (You can also do this by pressing an [ON/OFF] key.)

When the input mixer is selected as insert position, all [ON/OFF] keys are lit in orange. In this condition, the effect will apply to the one or two inputs as selected in step 1.

NOTE

If the 8-track recording function is inactive, you cannot select the input mixer as insert position, even when the 8x COMP EQ algorithm was selected.

3. Press the [EXIT] key to return to the main screen.

◆ Insertion to input mixer (recording on 8 tracks simultaneously)

In 8-track recording mode, the insert effect can be applied to the input of any channel 1 - 2 or 8 channels.

1. Verify that the 8-track recording function is enabled and that the [ON/OFF] keys for inputs 1 - 8 are lit in red (→ p. 45).

2. Press the [INPUT SOURCE] key.

The current insert position is shown on the display.

3. Turn the dial to select the input to use as insert position.

If the 8-track recording function is enabled, operation will be different, depending on the selected algorithm.

● When 8x COMP EQ algorithm is selected

Select IN1-8. In this condition, all input [ON/OFF] keys are lit in orange, and the effect is applied to inputs 1 - 8.

HINT

Effects in individual channels of the 8x COMP EQ algorithm can be turned on or off individually.

● When another algorithm is selected

Select the input from IN1 - IN8 (input 1 - input 8) to which you want to apply the effect. (The input [ON/OFF] key of the selected input lights up in orange.) You can also use the input [ON/OFF] keys to select the input. By pressing two [ON/OFF] keys together, you can select a combination of any two inputs. (Non-adjacent inputs can also be selected.)

The lower numbered input is assigned to the L channel and the higher numbered input to the R channel.

HINT

If you have selected two inputs for the effect, the inputs will be shown together on the display, in the format "INx/y" (where x/y is the respective input number).

4. When the insert position selection is completed, press the [EXIT] key.

The main screen returns.

◆ Insertion to track output/immediately before [MASTER] fader

1. At the main screen, press the [INPUT SOURCE] key in the effect section.

The current insert position is shown on the display.

2. Turn the dial to select the insert position.

The status key of the selected track or the [MASTER] status key lights up in orange. These keys can also be used to select the insert position. If you press the adjacent status keys of an odd-numbered and even-numbered input in succession, "mono track x 2" is selected.

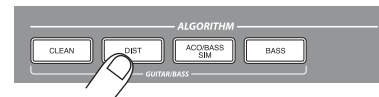
3. When the insert position selection is completed, press the [EXIT] key to return to the main screen.

Selecting the patch for the insert effect

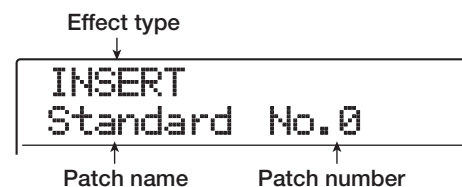
This section explains how to select the patch for the insert effect.

1. Press one of the [ALGORITHM] keys in the effect section. Select the key that corresponds to the desired algorithm.

The respective key lights up, and the display shows the insert effect patch select screen.



To select a patch for the insert effect, you must first specify the algorithm (effect module combination). When you press any [ALGORITHM] key, the first line of the display shows "INSERT", and the second line shows a patch included in the selected algorithm.



NOTE

If you switch from another algorithm to the 8x COMP EQ algorithm, the position will change to IN1 - 8, TR1 - 8, or TR9 - 16 (depending on the immediately preceding setting). Make sure once more that the desired insert position is selected.

HINT

- Even if the 8-track recording function is disabled, the 8x COMP EQ algorithm can process the output of tracks 1 - 8 or 9 - 16 of the track mixer. This is useful to individually process the output of 8 tracks during mixdown.
- While making settings for the insert effect or send/return effect, the [EFFECT] key in the display section is lit. When you press the key at the main screen, the patch select screen for the most recently used effect comes up.

2. Use the PATCH SELECT [▼]/[▲] keys or turn the dial to select the patch.

The new patch is called up immediately.

HINT

The indication “EMPTY” appears instead of the patch name if the patch is empty. Selecting such a patch will not have an effect.

3. To temporarily turn the insert effect off, press the [BYPASS] key in the effect section.

The [BYPASS] key lights up, and the insert effect is bypassed. Pressing the [BYPASS] key once more enables the effect again.

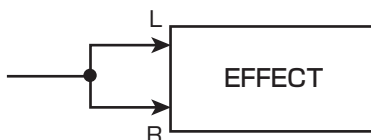
4. To return to the main screen, press the [EXIT] key.

The flow of the signal that passes through the insert effect will change as shown below, depending on the insert location and the destination of the signal after passing the effect.

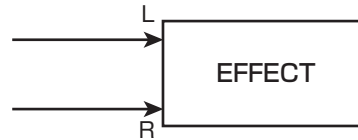
● Using mono input insert effect on mono input/mono track



● Using stereo input (or mono input x 2) insert effect on mono input/mono track



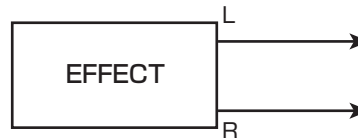
● Using stereo input (or mono input x 2) insert effect on stereo input/stereo track



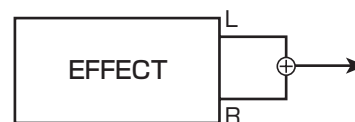
● Using mono input insert effect on stereo input/stereo track



● Sending insert effect output to stereo track or [MASTER] fader



● Sending insert effect output to mono track



HINT

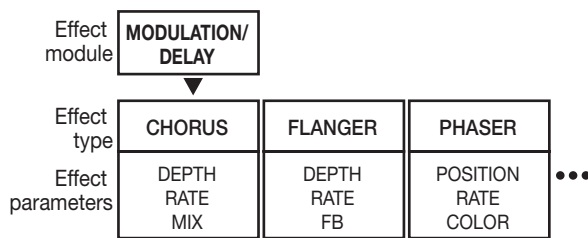
With the 8x COMP EQ algorithm, the 8 channel signals are processed separately by the HPF/compressor and EQ effects. Input and output for each channel therefore is always mono.

Editing the insert effect patches

The effect modules of the insert effect have various effect parameters that can be adjusted to make detailed changes to the character of the effect. By editing the effect parameters, you can obtain the desired sonic result.

For some effect modules, you can also change the effect type. For example the MODULATION/DELAY effect module of the MIC algorithm provides 18 effect types such as chorus, flanger, phaser, etc. (When you change the effect

type, the effect parameter arrangement also changes.)



3. Use the cursor left/right keys to select the effect module to edit.

This section explains how to edit the effect type and effect parameters for the currently selected patch.

1. Use the [ALGORITHM] keys to select the algorithm, and then use the PATCH SELECT [▼]/[▲] keys or the dial to select the patch to edit.

It is not possible to later change the algorithm of a patch. For this reason, you must first begin by selecting a patch that uses the desired algorithm, even to create a patch from the beginning.

HINT

The indication “EMPTY” appears instead of the patch name if the patch is empty. By editing such a patch, you can create a patch from the beginning.

2. Press the [EDIT] key.

The first line of the display will indicate the effect module type, followed by “EDIT”. This means that the patch can now be edited.



The indication shown on the first line for the various effect modules is as follows.

HINT

- To edit the ZNR/VOL PDL module, bring up the indication “TOTAL” on the first line of the display.
- In the DUAL MIC algorithm, the modules assigned to the L and R channels can be edited separately. The indication “L” on the first line of the display means that the module for the left channel is selected. The indication “R” means that the module for the right channel is selected.
- The 8x COMP EQ algorithm has one high-pass filter, compressor, and EQ per channel, with individual on/off control. The number of the channel currently selected for operation is shown on the first line of the display.

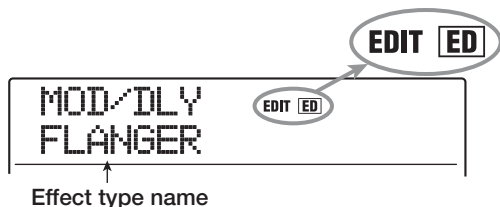
Algorithm	Module indication								
CLEAN DIST ACO/BASS sim BASS	COMPRESS COMP	→	PRE/DRV PRE AMP/DRIVE	→	3BandEQ EQ	→	MOD/DLY MODULATION/DELAY	→	TOTAL ZNR, VOL PDL, PAT LVL
MIC	COMP/LIM COMP/LIM	→	MIC PRE MICPRE+DE-ESSER	→	3BandEQ EQ	→	MOD/DLY MODULATION/DELAY	→	TOTAL ZNR, VOL PDL, PAT LVL
DUAL MIC	COMP L COMP/LIM	→	MicPre L MICPRE	→	EQ L EQ	→	DELAY L DELAY	→	TOTAL ZNR, VOL PDL, PAT LVL
8x COMP EQ	HPF1	→	HPF2	→	...	→	HPF8	→	TOTAL VOL PDL, PAT LVL
LINE	COMP/LIM COMP/LIM	→	ISOLATOR ISOLATOR	→	3BandEQ EQ	→	MOD/DLY MODULATION/DELAY	→	TOTAL ZNR, VOL PDL, PAT LVL
MASTERING	CMP/LoFi 3BAND COMP/LO-FI	→	NORMLZR NORMALIZER	→	3BandEQ EQ	→	DIM/RESO DIMENSION/ RESONANCE	→	TOTAL ZNR, VOL PDL, PAT LVL

NOTE

- The indications shown in the table on the previous page are for the condition where the effect module is on. When the effect module is off, the indication “-OFF-” is shown on the second line.
- The 8x COMP EQ algorithm does not include a ZNR module.

4. To change the effect type of the currently selected effect module, turn the dial.

For effect modules which comprise multiple effect types, the name of the currently selected effect type is shown on the second line of the display. When you turn the dial in this condition, the effect type changes.

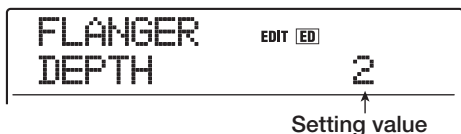


HINT

If the contents of a patch have been changed, the “EDIT” indicator in the upper part of the display will change to “EDITED”. When the setting is returned to the original condition, the indicator reverts to “EDIT”.

5. Use the cursor up/down keys to select the effect parameter that you want to edit.

The following diagram shows an example of what appears on the display when you have selected the DEPTH parameter of the “FLANGER” effect.



HINT

To reselect the effect type, repeatedly press the cursor up key to bring up the effect type name, and then turn the dial.

6. Turn the dial to change the setting value.

For details on the effect types that can be selected for each effect module and on the effect parameters of each type, refer to the information in the appendix of this manual.

7. To toggle the effect module on or off, bring up the indication for the module on the display, and then press the [ENTER] key.

When the effect module is turned off, the indication “-OFF-” is shown on the second line of the display. Pressing the same key once more returns the module to the active condition.



HINT

In the 8xCOMP EQ algorithm, the effects in the respective channels cannot be switched on or off together in a single step. However, when the setting for the respective effect is shown, simply pressing the [ENTER] key will toggle the effect between on and off.

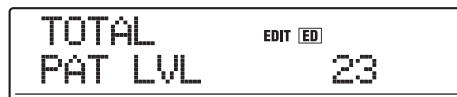
NOTE

The modules included in TOTAL cannot be turned off.

8. Repeat steps 3 – 7 as necessary to edit other modules.

9. To adjust the patch level (the final volume of the patch), press the [TOTAL] key, use the cursor left/right keys to bring up the indication “TOTAL PAT LVL”, and turn the dial.

The patch level can be adjusted in the range from 1 to 30.



10. When you have finished editing, press the [EXIT] key.

The insert effect patch select screen appears again.

NOTE

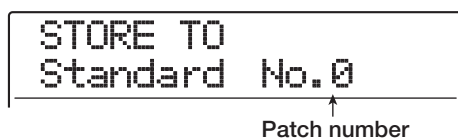
Keep in mind that if you select another patch without first storing the edited patch, the changes will be lost. To keep the results of your editing session, refer to the following section.

Storing/swapping insert effect patches

A patch that you have edited can be stored in any location of the same algorithm. You can also store an existing patch in another location to create a copy of that patch. Interchanging the position of patches (swapping) is also possible.

1. At the insert effect patch select screen, press the [STORE] key.

The currently selected patch goes into the store standby condition. In this condition, you can perform the store or swap operation.



2. Use the cursor left/right keys to bring up the indication "STORE TO" or "SWAP TO".
3. Turn the dial to select the number of the patch to store/swap.
4. To carry out the store/swap operation, press the [STORE] key.

When the store/swap operation is completed, the insert effect patch select screen appears again.

By pressing the [EXIT] key instead of the [STORE] key, you can cancel the operation and back up one step at a time.

HINT

- Patches that you have stored are saved on the hard disk as part of the project.
- Patch data included in an already existing project can be loaded into the current project (→ p. 149).

Editing the name of an insert effect patch

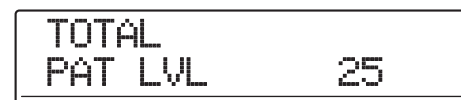
This section explains how to edit the name of the currently selected patch.

1. Use the [ALGORITHM] keys to select the algorithm which contains the patch whose name you want to change. Then use the PATCH SELECT [▼]/[▲] keys or the dial to select the patch.

2. Press the [EDIT] key.

The currently selected patch can be edited.

3. Use the cursor left/right keys to bring up the indication "TOTAL PAT LVL" on the display.



4. Repeatedly press the cursor down key to bring up the indication "PAT NAME" on the display.

The name of the selected patch can now be edited.

The flashing section indicates the character that can be changed.



5. Use the cursor left/right keys to move the flashing section, and turn the dial to select a character.

For information on available characters, refer to page 36.

6. Repeat step 5 as necessary to complete the new name.

7. To confirm the new name, press the [STORE] key in the control section twice.

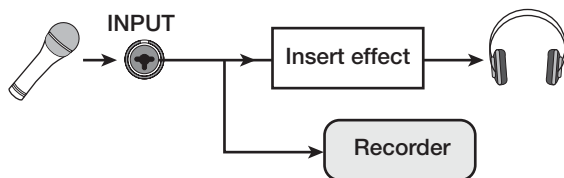
The patch is stored under the new name, and the insert effect patch select screen appears again.

NOTE

Keep in mind that the name will revert to the previous name if you switch to another patch without storing the edited patch name.

Applying the insert effect only to the monitor signal

Normally, when the insert effect is applied to the input mixer, the signal processed by the effect will be recorded on the track. If necessary, however, you can apply the insert effect only to the monitor signal, and record the unprocessed input signal on the track. For example when recording the unprocessed sound of a vocal performance, the vocalist may be more comfortable singing if an insert effect suitable for mic recording is applied to the monitor signal.



- 1. Set the insert effect position to the input mixer.**
- 2. At the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.**

The indication “UTILITY TR EDIT” appears on the display.

```

UTILITY
TR EDIT
  
```

- 3. Use the cursor left/right keys to bring up the indication “UTILITY REC SRC” on the display, and press the [ENTER] key.**

The display indication changes as follows.

```

REC SRC
WET
  
```

You can now select one of the following two signal types to be recorded on the track.

● WET

The input signal that has passed through the insert effect will be recorded on the track (default setting).

● DRY

Only the unprocessed input signal will be recorded on the track. Even in this case, however, the insert effect will be applied to the signal appearing at the MASTER OUTPUT jacks.

- 4. Turn the dial to change the setting to “DRY”.**
- 5. When you have finished adjusting settings, press the [EXIT] key several times.**

The unit returns to the main screen.

NOTE

The “UTILITY REC SRC” setting is stored for each project. Before you begin recording other parts, be sure to change the setting back to “WET”.

Using the send/return effect

This section explains how to select and edit patches for the send/return effect (chorus/delay, reverb).

About the send/return effect patches

The “reverb” and “chorus/delay” send/return effects are separate and independent.

Reverb and chorus/delay each have an effect type that determines the general sound of effect, and various parameters that let you adjust the sonic character. Settings for the effect type and parameters, together with a name, are collectively called send/return effect “patches”.

A newly created project contains 30 reverb patches and 30 chorus/delay patches. You can instantly switch reverb or chorus/delay settings simply by choosing the effect and then selecting a patch.

The number of patches available for each effect is as follows.

Effect	Patch number (preprogrammed patches)
REVERB	30 (22)
CHORUS/DELAY	30 (18)

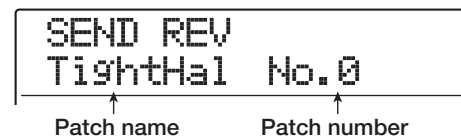
Selecting a send/return effect patch

This section explains how to select a reverb or chorus/delay patch.

1. Press the [REVERB] key or [CHORUS/DELAY] key in the effect section.

When you press a key, a patch select screen for the respective effect appears.

For example, when you have selected a reverb effect patch, the following indication appears.



2. Use the PATCH SELECT [▼]/[▲] keys or the dial to select the patch.

As you turn the dial, new patches will be recalled immediately. If the track mixer REVERB SEND LEVEL or CHORUS/DELAY SEND LEVEL parameter settings are raised, you can press the PLAY [▶] key to play back the song, and listen to the result of the newly selected patch.

HINT

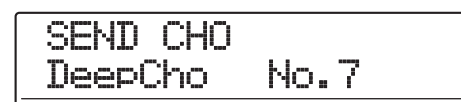
- For details on track mixer operations, refer to p. 80.
- The lit/out status of the [REVERB] or [CHORUS/DELAY] key shows the on/off status of that module. Each push of the key toggles the status.

3. To return to the main screen, press the [EXIT] key.

Editing a send/return effect patch

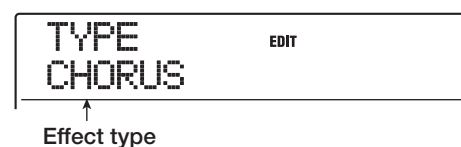
This section explains how to edit a send/return effect patch.

1. Press the [REVERB] key or [CHORUS/DELAY] key in the effect section.
2. Use the PATCH SELECT [▼]/[▲] keys or the dial to select the patch to edit.



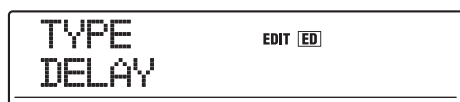
3. Press the [EDIT] key.

The display will indicate “EDIT”, and a screen will appear in which you can edit the patch. When the [EDIT] key is pressed, the effect type selected for that send/return effect is shown.



4. To change the effect type, turn the dial.

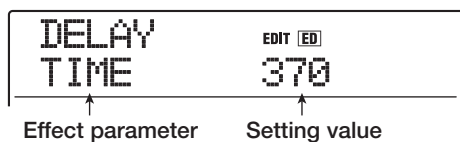
When the effect type is changed, the effect parameters will also change accordingly.

**HINT**

If the contents of a patch have been changed, the “EDIT” indicator in the upper part of the display will change to “EDITED”. When the setting is returned to the original condition, the indicator reverts to “EDIT”.

5. Use the cursor up/down keys to select the effect parameter that you want to edit.

The first line of the display shows the effect type, and the second line shows the name and current value of the effect parameter.

**HINT**

To change the effect type, repeatedly press the cursor up key to display the effect type name, and then turn the dial.

6. Turn the dial to change the setting.

For details on the effect types that can be selected for reverb or chorus/delay, and on the range of each effect parameter, refer to the appendix at the end of this manual.

7. Repeat steps 5 – 6 as necessary to edit other effect parameters.**8. When you have finished editing, press the [EXIT] key.**

The send/return effect patch select screen appears again.

NOTE

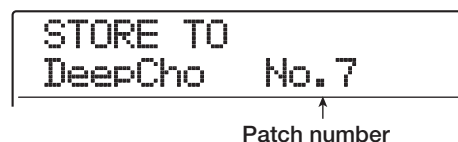
Keep in mind that if you select another patch without first storing the edited patch, the changes will be lost. To keep the results of your editing session, refer to the following section.

Storing/swapping send/return effect patches

A patch that you have edited can be stored in any location of the same send/return effect. You can also store an existing patch in another location to create a copy of that patch. Interchanging the position of patches (swapping) is also possible.

1. At the send/return effect patch select screen, press the [STORE] key.

The currently selected patch goes into the store standby condition. In this condition, you can perform the store or swap operation.

**2. Use the cursor left/right keys to bring up the indication “STORE TO” or “SWAP TO”.****3. Turn the dial to select the number of the patch to store/swap.****4. To carry out the store/swap operation, press the [STORE] key.**

When the store/swap operation is completed, the send/return effect patch select screen appears again.

HINT

- Patches that you have stored are saved on the hard disk as part of the project.
- Patch data included in an already existing project can be loaded into the current project (→ p. 149).

Editing the name of a send/return effect patch

This section explains how to edit the name of the patch that is currently selected for a send/return effect.

1. Press the [REVERB] key or [CHORUS/DELAY] key in the effect section, then use the PATCH SELECT [▼]/[▲] keys or the dial to select the patch to edit.
2. Press the [EDIT] key, and repeatedly press the cursor down key to bring up the indication "PAT NAME".

The name of the selected patch can now be edited. The flashing character can be changed.

```
PAT NAME
DeepCho
```

3. Use the cursor left/right keys to move the flashing section to the character to edit, and turn the dial to select the new character.

For information on available characters, refer to page 36.

4. Repeat step 3 as necessary to complete the new name.
5. To confirm the new name, press the [STORE] key in the control section twice.

The patch is stored under the new name, and the send/return effect patch select screen appears again.

Importing patches from another project

If required, you can import all patches or specified patches of the insert effect or send/return effect from another project that is already saved on the hard disk.

NOTE

Keep in mind that importing patches in this way will overwrite patches in the current project. Take care not to accidentally erase patches that you wish to keep.

1. Press the [UTILITY/TRACK EDIT] key to bring up the indication "UTILITY IMPORT" on the display, and then press the [ENTER] key.

The display indication changes as follows.

```
IMPORT
ALL
```

2. Use the cursor left/right keys to select ALL (import all patches) or PATCH (import a single patch), and press the [ENTER] key.

In this condition, you can select the project from which to import.

```
IMPORT
PRJ005 PRJ 005
```

3. Turn the dial to select the import source project, and press the [ENTER] key.

The subsequent steps differ, depending on which selection was made in step 2.

● When ALL was selected

Verify that the indication "IMPORT SURE?" is shown on the display, and proceed to step 5.

● When PATCH was selected

The import source patch appears on the display. Use the dial and the [ALGORITHM]/[REVERB]/[CHORUS/DELAY] keys to select the patch and press the [ENTER] key. You can now select the import destination patch. Proceed to step 4.

4. Turn the dial to select the import destination, and press the [ENTER] key.

The indication “SURE?” appears on the display.

5. To carry out the import process, press the [ENTER] key.

All patches or the specified patch of the selected project will be imported. When all patches have been imported, the insert effect or send/return effect selection screen appears again.

If a single patch was imported, the screen of step 3 appears again.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Reference [Creating a CD]

This section describes how to use the CD-R/RW drive in the MRS-1608 to create an audio CD or store a project from the hard disk onto a CD-R/RW disc.

NOTE

- This section does not apply to MRS-1608 models without integrated CD-R/RW drive.
- Mixed-mode CDs or copy-controlled CDs cannot be played or read.

About creating an audio CD

The MRS-1608 lets you write the contents of the master track of any project to a CD-R/RW disc in CD-DA (audio data) format. The result is an audio CD that can be played in a CD player.

There are two ways of writing audio data on a CD-R/RW disc, as described below.

● Writing by project

This method writes the master track of a single project to the disc. When using this method, it is possible to add audio data later, until the CD-R/RW disc has been finalized.

● Writing by album

This method involves first creating a list for the audio CD (called an “album”) which contains information about master tracks from various projects that are to be included. The CD-R/RW is then written in one operation, and finalizing is automatically performed, so that no more audio data can be added later.

HINT

“Finalizing” a CD-R/RW disc refers to the procedure of making it playable on an ordinary CD player besides the MRS-1608. After it has been finalized, no more data can be added to a CD-R/CD-RW disc.

NOTE

- The waveform data of the currently selected V-take of the master track are recorded as is on the audio CD. To cut off blank portions before or after the audio material, you can use the trimming function (→ p. 52).
- If the V-take is less than 4 seconds long, the master track cannot be written.

About CD-R/RW discs

When creating an audio CD, you can select either CD-R or CD-RW discs as media. The features of the two disc types are described below.

● CD-R

This media type allows only one-time recording or adding of data. Once data have been written, they cannot be changed or erased. CD-R discs are typically available in 650 MB and 700 MB capacities.

To newly write audio data of the MRS-1608 to disc, a blank CD-R is required. As long as the disc has not been finalized, it is possible to add further audio data up to the maximum capacity of the disc. After being finalized, the disc can be played on an ordinary CD player.

● CD-RW

This media type allows recording, adding, and bulk-erasing of data. CD-RW discs are also typically available in 650 MB and 700 MB capacities.

To newly write audio data of the MRS-1608 to disc, a blank or completely erased CD-RW is required. As long as the disc has not been finalized, it is possible to add audio data up to the maximum capacity of the disc. Even when finalized, some CD players may not be able to play CD-RW discs.

Disc	Write	Add data	Erase
CD-R	Once only	Yes	No
CD-RW	Many times (after erasing)	Yes	Yes

NOTE

When using commercially available pre-formatted CD-RW discs, perform an erase operation first, as described on page 159.

Creating an audio CD

This section describes how to create an audio CD using a completed project as source material.

Creating an audio CD by project

You can write the contents of the master track of the current project to a CD-R/RW disc. When creating an audio CD by project, you can select any desired V-take of the master track as source.

1. Insert a CD-R/RW disc into the integrated CD-R/RW drive.

To newly write audio data, use a blank CD-R/RW disc or a CD-RW disc that has been completely erased. Even when audio data are present, adding data is possible as long as the disc has not been finalized.

2. Select the project to be used as write source.

NOTE

Before starting the procedure, use the trimming function on the V-take to make sure that it does not include unwanted blank portions at the beginning and end (→ p. 52).

3. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu for various disc related functions appears.

```
CD-R/RW
AUDIO CD
```

4. Verify that "CD-R/RW AUDIO CD" is shown on the display and press the [ENTER] key.

The display indication changes as follows.

```
AUDIO CD
BURN CD
```

5. Verify that the indication "AUDIO CD BURN CD" is shown on the display, and press the [ENTER] key.

The indication "BURN CD TIME" is shown, along with the duration of the master track (V-take) that is currently selected for writing.

By pressing the PLAY [▶] key at this point, you can listen to the contents of the V-take.

```
BURN CD
TIME
-----
H M S MS MEASURE BEAT TICK MARKER
0 3 27 320
↑
Master track duration
```

HINT

When you press the cursor down key, the second line of the display shows "REMAIN", and the remaining write time on the inserted CD-R/RW disc appears on the counter. Press the cursor up key to return to the previous indication.

6. To change the V-take to be used as source material, press the [EDIT] key.

When the key is pressed, the display indication changes as follows.

```
TAKE SEL
MASTER 1 TR M- 1
```

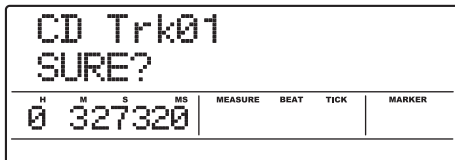
NOTE

Unrecorded V-takes of the master track cannot be selected.

By turning the dial in this condition, you can select the V-take. To return to the condition of step 5, press the [EXIT] key. If necessary, listen to the V-take to verify that the correct V-take is selected.

7. Press the [ENTER] key twice.

When you press the key once, the indication "CD Trkxx WRITE?" appears, and when you press the key the second time, the indication changes to "CD Trkxx SURE?" (where xx is the track number). When adding to a CD-R/RW disc, this indication lets you check which track of the project will be written.



8. To carry out the write process, press the [ENTER] key once more.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

During the write process, the indication “wait...” is shown on the display. The counter indicates the progress status of the write process. When writing is complete, the display shows “CD Trkxx COMPLETE” (where xx is the track number).

9. To return to the main screen, press the [EXIT] key several times.

By repeating steps 2 – 8, you can add audio data to the disc.

HINT

- When adding tracks, a blank of 2 seconds will automatically be inserted between tracks on the disc.
- As long as the finalizing operation has not been performed, the CD-R/RW disc cannot be played on an ordinary CD player. (For information on how to play an unfinalized CD-R/RW disc on the MRS-1608, refer to page 157.)

Creating an audio CD by album

This method involves creating a list for the audio CD (called an “album”) which combines multiple projects saved on the hard disk. The CD-R/RW disc is then written in a single operation. With this method, the disc will be automatically finalized.

When recording by album, the V-take last selected for the master track of each project will be selected as source material.

There are two methods for recording by album:

● Track-at-once (TAO)

The master track of each project selected for the album is written in a separate operation. When a CD-R written with track-at-once is played on a CD player, a pause of 2 seconds will occur between tracks.

● Disc-at-once (DAO)

The master tracks of all projects selected for the album are written in a single operation. When a CD-R written with disc-at-once is played on a CD player, there will be no pause between tracks. If necessary, you can use marks set in the project as PQ subcode information (specifying track start/stop position and other items) to split up a single project into multiple tracks.

HINT

You can include playlist information created with the sequence play function in the album (→ p. 156).

NOTE

Before starting the procedure, use the trimming function on the V-takes to be used as source material.

1. Insert a CD-R/RW disc into the integrated CD-R/RW drive.

Use a blank CD-R/RW disc or a CD-RW disc that has been completely erased.

2. Verify that the V-takes you want to use for the audio CD are selected for the master tracks of the projects.

3. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

4. Verify that “CD-R/RW AUDIO CD” is shown on the display and press the [ENTER] key.

The display indication changes as follows.



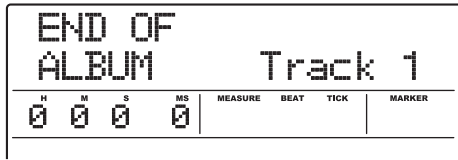
5. Use the cursor left/right keys to bring up the indication “AUDIO CD ALBUM” on the display, and press the [ENTER] key.

In this condition, you can select the write method.



- Turn the dial to select “DAO” (disc-at-once) or “TAO” (track-at-once), and press the [ENTER] key.

The screen for registering projects for the album appears.



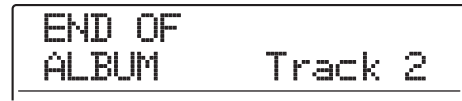
The indication “END OF ALBUM” denotes the end of the album list of projects. When the album display is first called up, no project has been registered, therefore the indication “END OF ALBUM” appears.

- Turn the dial to select the project to be used as track 1 of the album.

The indication “END OF ALBUM” moves up to the next track (track 2 in this example), and the screen changes as follows.

- When the project for track 1 has been selected, use the cursor right key to move to track 2.

The display indication changes as follows.



- Turn the dial to select the project to be used as track 2 of the album.

- In the same way, select projects for track 3 and subsequent tracks.

The maximum allowable number of tracks is 99, provided that there is enough free capacity on the disc.

HINT

When you press the cursor down key, the second line of the display shows “REMAIN”, and the remaining write time on the inserted CD-R/RW disc appears on the counter. Press the cursor up key to return to the previous indication.

● **To change projects in an album**

Use the cursor left/right keys to select the track number for which you want to change the project, and use the dial to select another project.

● **To insert projects in an album**

Use the cursor left/right keys to select the track number where you want to insert a project. Press the [INSERT/COPY] key in the rhythm section. The indication “INSERT?” appears on the display. In this condition, use the dial to select another project, and press the [ENTER] key. (Subsequent tracks are renumbered.)

● **To delete a project from an album**

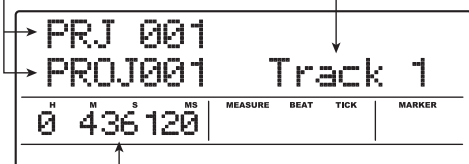
Use the cursor left/right keys to select the track number you want to delete. Press the [DELETE/ERASE] key in the rhythm section. The indication “DELETE SURE?” appears on the display. To delete the project from the album, press the [ENTER] key. (Subsequent tracks are renumbered.)

● **To delete all projects from an album**

On the album screen, press the [DELETE/ERASE] key in the rhythm section and then the cursor down key. The indication “ALL DEL SURE?” appears on the display. To delete all projects from the album, press the [ENTER] key.

Project number/Project name
Number and name of project to write as a track

Track number
Number of track to write on CD-R/RW disc



V-take duration
Length of V-take selected for master track of project, in hours (H), minutes (M), seconds (S), and milliseconds (MS)

Pressing the PLAY [▶] key in this condition will play the master track of the currently displayed project.

NOTE

- A project for whose master track an unrecorded V-take is selected cannot be chosen as source material. Make sure that a V-take that you want to use is selected.
- If the master track data for projects included in an album have been deleted, the album returns to the blank state.

● To switch the V-take for the master track

Press the [EXIT] key repeatedly to return to the main screen. Load the project for which you want to switch the V-take, and select the V-take for the master track. Then return to the album screen.

11. When you have stored all desired projects in the album, press the [ENTER] key twice.

The display indication changes as follows.



ALBUM
SURE?

HINT

If you press the [ENTER] key once more, the indication “xx Tracks BURN?” (where xx is the number of tracks) appears on the display. You can check the total number of tracks that will be written to the disc from this screen.

12. To carry out the write process, press the [ENTER] key once more.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

When writing begins, the indication “wait...” appears on the display. The counter indicates the progress status of the write process.

When the write process is completed, the disc is ejected automatically, and the message “ALBUM NEXT?” appears on the screen. To write another disc with the same content, insert a blank CD-R/RW disc or a CD-RW disc which has been completely erased, and press the [ENTER] key. To terminate the process, press the [EXIT] key.

13. To return to the main screen, press the [EXIT] key several times.

Using the marker function to separate tracks

When you create an audio CD using the disc-at-once method, marker information included in the project can be used to generate PQ subcode information (specifying track start/stop position and other items) to split up a single project into multiple tracks. Marker-based track separation can be enabled or disabled for each project. For example, when a project contains a number of songs that were recorded live, you can set a mark at the beginning of each song, so that these will be recorded as different tracks on the CD. This will enable easy searching and jumping between tracks.

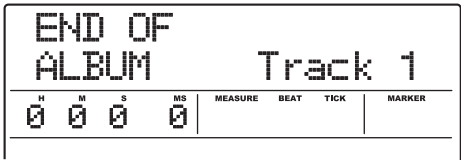
NOTE

To use the marker-based track separation function, at least two marks (including the project start mark 00) must be set.

1. Load the project that you want to split into multiple tracks, and set marks at the points where the tracks should be separated.

Marker-based track separation can only be enabled or disabled for the entire project. Delete any unnecessary marks beforehand.

2. Perform steps 1 – 6 of “Creating an audio CD by album”, select the disc-at-once (DAO) write method, and bring up the album screen.



END OF				Track 1			
H	M	S	MS	MEASURE	BEAT	TICK	MARKER
0	0	0	0				

3. Use the cursor left/right keys and the dial to register projects for the album.

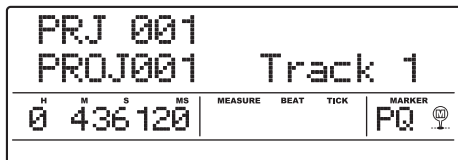
4. Use the cursor left/right keys to select a project that is to be divided into multiple tracks.

5. Press the [MARK] key in the control section.

Marks contained in this project will be used as PQ subcodes. The indication “PQ” and a marker icon appear in the MARKER field on the display. By pressing the

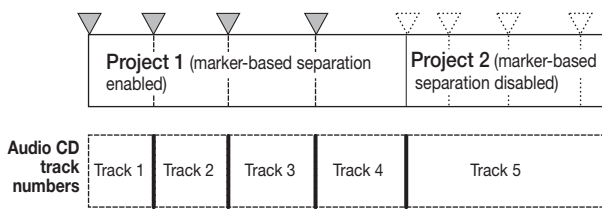
[MARK] key again, you can return to the previous condition. The marker enable/disable selection can be made at any time while the album screen is shown.

If the mark function is enabled for the project registered as track 1 of the audio CD, the following indication appears.



When you divide a project, the number of tracks on the album will increase, and tracks corresponding to subsequent projects will be renumbered.

For example four marks are set for the project, the tracks on the audio CD will be allocated as follows.



The subsequent steps for creating the audio CD are as described in the previous section.

NOTE

- If the tracks have not been separated as expected, press the [EXIT] key repeatedly to return to the main screen, and check whether marker information has been created properly for the project.
- If marks are too close together, the indication “ERROR Track is Short” appears on the display, and marker-based separation cannot be enabled for that project.
- The maximum number of tracks per album is 99. If you attempt to enable marker-based separation for a project and this causes the number of tracks to exceed 99, the indication “ERROR Too Many Track” appears, and marker-based separation cannot be enabled.

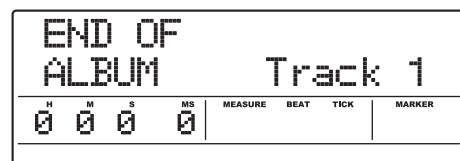
Including a playlist in an album

The MRS-1608 lets you register the master tracks of multiple projects in a list (playlist) for continuous playback in a sequence (→ p. 177). It is possible to include playlist information when creating an audio CD by album.

HINT

You can create up to ten playlists, but only one can be included in an album.

- 1. Perform steps 1 – 6 of “Creating an audio CD by album”, and bring up the album screen on the display.**



- 2. Press the [UTILITY/TRACK EDIT] key in the display section.**

The display indication changes as follows. In this condition, you can select the playlist (1 – 10) to include in the album.



- 3. Turn the dial to select the playlist, and press the [ENTER] key.**

The indication “IMPORT SURE?” appears on the display.



- 4. To import the playlist information, press the [ENTER] key.**

The procedure is carried out, and the album screen returns.

HINT

After importing playlist information, you can edit the album as normal.

Playing an audio CD

To play an audio CD inserted in the CD-R/CD-RW drive, proceed as follows. This method can also be used to audition a CD-R/CD-RW disc which has not been finalized yet.

NOTE

- A CD-R/CD-RW disc which has not been finalized can only be played with this method.
- Mixed-mode CDs or copy-controlled CDs cannot be played.

1. Insert an audio CD in the CD-R/RW drive.

2. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

3. Verify that the indication “CD-R/RW AUDIO CD” is shown on the display, and press the [ENTER] key.

The display indication changes as follows.

```
AUDIO CD
BURN CD
```

4. Use the cursor left/right keys to bring up the indication “AUDIO CD PLAYER”, and press the [ENTER] key.

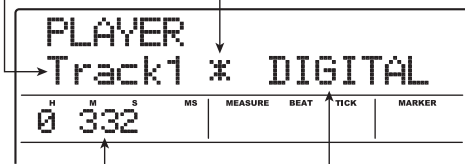
The CD player screen for audio CD playback appears. The second line of the display shows the track number and playback method for the inserted audio CD. If a non-finalized disc is inserted, a * symbol is shown.

Track number

The number of the currently selected track on the audio CD is shown.

Finalize status

When a * symbol is shown here, a non-finalized CD-R/RW disc is inserted.



Current position in track

The location in the current track is shown here in hours (H), minutes (M), and seconds (S).

Playback method

Indicates the currently selected audio CD playback method: DIGITAL or ANALOG

5. Use the REW [◀] and FF [▶] keys in the transport section to select the track to be played.

The FF [▶] key selects the next track and the REW [◀] key selects the previous track.

6. Use the cursor up/down keys to select the playback method for the audio CD.

The following two methods are available.

● DIGITAL (Digital playback)

The digital audio signal of the CD is read by the MRS-1608 in the digital domain and becomes available as an audio signal at the rear panel MASTER OUTPUT jacks, DIGITAL OUTPUT connectors, and front panel MASTER PHONES jack. (Default setting)

The audio CD playback volume can be adjusted with the [MASTER] fader.

● ANALOG (Analog playback)

The audio signal of the CD is reproduced via the headphone outputs of the CD-R/RW drive. Adjust the volume with the volume control of the drive.

7. To start playback of the audio CD, press the PLAY [▶] key.

Playback of the selected track starts. When the track is finished, playback continues with the next track. During audio CD playback, all faders except for the [MASTER] fader as well as the EQ, reverb, chorus/delay, and pan settings are disabled.

8. For track selection and for controlling playback stop/pause, use the transport section keys.

● PLAY [▶] key

Playback of the selected track starts. Pressing the key during playback sets the system to pause mode.

● STOP [■] key

Playback stops, and the system returns to the beginning of the current track.

● FF [▶▶] key

Playback stops, and the system jumps to the beginning of the next track.

● REW [◀◀] key

Playback stops, and the system jumps to the beginning of the previous track.

9. To return to the main screen, press the [EXIT] key several times.

Finalizing a CD-R/RW Disc

“Finalizing” a CD-R/RW disc to which audio data were written refers to the procedure of turning it into a finished audio CD. When a CD-R disc has been finalized, it will be playable on an ordinary CD player. (A CD-RW may not be playable on an ordinary CD player even after it has been finalized.)

After a disc has been finalized, no more tracks can be added to it.

1. Insert the disc to finalize into the CD-R/RW drive.

2. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

3. Verify that the indication “CD-R/RW AUDIO CD” is shown on the display, and press the [ENTER] key.

The display indication changes as follows.

```

AUDIO CD
BURN CD
  
```

4. Use the cursor left/right keys to bring up the indication “AUDIO CD FINALIZE”, and press the [ENTER] key.

The display indicates the total number of tracks on the CD-R/RW disc. The counter indicates the total playing time of all tracks on the disc (including pauses) in hours (H), minutes (M), and seconds (S).

Number of tracks									
FINALIZE					12				
TRACKS									
H	M	S	MS	MEASURE	BEAT	TICK	MARKER		
0	3	6	5	9	2	4	0		
Playing time									

5. Press the [ENTER] key.

The indication “FINALIZE SURE?” appears on the display.

- 6.** To carry out the finalizing process, press the [ENTER] key once more.

The finalizing process starts. When the process is finished, the display shows “FINALIZE COMPLETE”.

- 7.** To return to the main screen, press the [EXIT] key several times.

HINT

A CD-RW disc can be returned to the blank condition also after finalizing, by erasing all data.

Erasing a CD-RW disc

The entire information on a CD-RW disc (audio data or backup data) can be erased, thereby returning the disc to the blank state.

- 1.** Insert the disc to erase into the CD-R/RW drive.
- 2.** From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

- 3.** Verify that the indication “CD-R/RW AUDIO CD” is shown on the display, and press the [ENTER] key.

HINT

Erasing a CD-RW disc is also possible from the backup menu (→ p.161). After you bring up the indication “BACKUP CDRW ERS” on the display and press the [ENTER] key, the disc can be erased in the same way as described below.

- 4.** Use the cursor left/right keys to bring up the indication “AUDIO CD CDRW ERS” on the display, and press the [ENTER] key.

The display indication changes as follows.

```

CDRW ERS
NORMAL

```

- 5.** Use the cursor up/down keys to select one of the following CD-RW disc erase methods.

● **NORMAL (Default setting)**

Information from all areas of the disc is erased. This takes longer than the QUICK erase operation, but all contents of the disc are reliably erased. This method is recommended. (Required time is max. 74 minutes for a 650 MB disc and 80 minutes for a 700 MB disc.)

● **QUICK**

Only the track information on the CD-RW disc is erased. This requires less time than the NORMAL erase operation.

6. Press the [ENTER] key.

The display now shows the indication “CDRW ERS SURE?”.

7. To carry out the erase process, press the [ENTER] key once more.

The erasing operation starts. When the operation is finished, the display shows “CDRW ERS COMPLETE”. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

8. To return to the main screen, press the [EXIT] key several times.

Loading an audio CD into a project

The MRS-1608 can read audio data from an audio CD inserted in the CD-R/RW drive and record these data on any track/V-take of the internal recorder. The data can then be played and edited in the same way as other tracks. This is convenient to use drum or guitar phrases from a sampling CD.

Data can be read only as entire audio CD tracks. Specifying a range is not possible. To use only a part of a track, perform trimming of unwanted portions after loading (→ p.52).

NOTE

- The audio data are written to the currently selected V-take of the target track. If required, select the appropriate V-take beforehand.
- Material subject to copyright (CD, analog record, tape, video, broadcast, etc.) is subject to legal restrictions regarding copying.
- Mixed-mode CDs or copy-controlled CDs cannot be loaded.

1. Insert the disc from which to load audio data into the CD-R/RW drive.**2. Perform steps 2 – 5 of “Playing an audio CD” (→ p. 157) to bring up the CD player screen and select the desired track of the CD.****3. Press the REC [●] key.**

The display indication changes as follows. In this condition, you can select the target for the audio data.

```

  READ DST
  TR 1/2

```

4. Use the status keys or the dial to select the track for recording the data.

Only odd-numbered/even-numbered pairs of mono tracks (1/2, 3/4, 5/6, 7/8), stereo tracks (9/10 – 15/16), or the master track (MASTER) can be selected.

5. Press the [ENTER] key.

The recording destination is selected, and the indication “READ CD SURE?” appears on the display. When the track already contains data, the indication “OverWrt?” is shown. This indicates that existing data will be overwritten when the operation is carried out.

6. To carry out the read process, press the [ENTER] key.

Loading data from the audio CD starts. When loading is complete, the unit returns to the CD player screen.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

7. To return to the main screen, press the [EXIT] key several times.

Backup and restore

This section explains how you can use the CD-R/RW drive in the MRS-1608 to back up a project to a CD-R/RW disc and how to restore a project from a disc backup. You can either create backups for individual projects or save all projects in a common operation.

Saving a single project to CD-R/RW disc

You can select any project and save it on a CD-R/RW disc for backup.

HINT

If the size of the project is larger than the capacity of the CD-R/RW disc, you can create a backup spanning multiple volumes.

1. Insert a CD-R/RW disc into the CD-R/RW drive.

To back up a project, use a blank CD-R/RW disc or a CD-RW disc that has been completely erased.

2. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

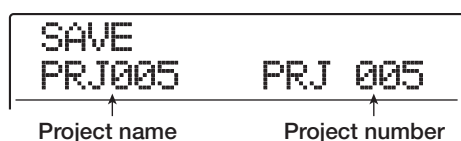
3. Use the cursor left/right keys to bring up the indication “CD-R/RW BACKUP” on the display, and press the [ENTER] key.

The display indication changes as follows.



4. Verify that the indication “BACKUP SAVE” is shown on the display, and press the [ENTER] key.

The display indication changes as follows. In this condition, you can select the project to be backed up.



5. Turn the dial to select the project, and press the [ENTER] key.

This selects the project that will be backed up. The display now shows the space required for the backup in MB (megabytes).



6. Press the [ENTER] key.

The name of the folder to be used for backup appears.

A folder is a hierarchical unit that will be created on the backup media when the backup is executed. All data for one project are stored in the same folder.

When the backup is executed, a new folder is created on the CD-R/RW disc with the name “PROJxxx” (where xxx is the project number). This name can be edited.



7. To change the store destination folder name, use the cursor left/right keys to move the flashing section, and then turn the dial to change the character.

The following characters can be used.

Numerals: 0 – 9

Letters: A – Z

Symbols: _ (underscore)

8. Press the [ENTER] key.

The indication “SAVE SURE?” appears on the display.

9. To execute the backup, press the [ENTER] key. To cancel, press the [EXIT] key instead.

When backup starts, the indication “DISCxxx BURNING (where xxx is the disc number) appears on the display. When the backup is finished, the display shows “SAVE COMPLETE”.

If the project size is larger than the capacity of one CD-R/RW disc, the disc will be ejected after it has been filled up, and the display indication changes as follows.

```
CHANGE
DISC002
```

When this message is shown, insert the next CD-R/RW disc and press the [ENTER] key. The backup operation resumes. If more than two discs are required, the above steps will be repeated.

NOTE

When a backup spans several discs, the discs must be used in the same order for restore. Be sure to note the disc number on the case and label of the disc.

HINT

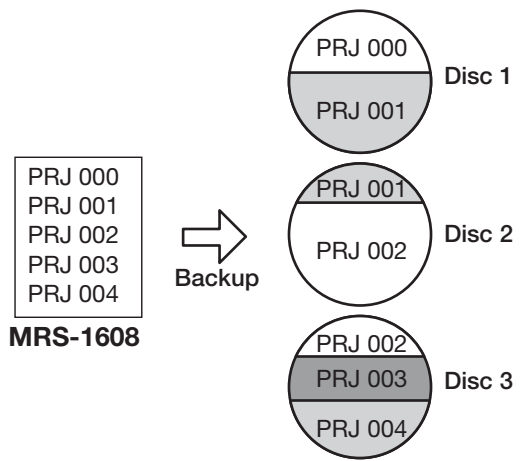
When the disc has been ejected, it is possible to abort the backup operation. To do this, press the [EXIT] key while the indication “CHANGE DISCxxx” (where xxx is the disc number) is shown. The indication will change to “SAVE CANCEL?”. Press the [ENTER] key to terminate the process.

10. To return to the main screen, press the [EXIT] key several times.

Saving all projects to CD-R/RW disc

You can save all projects on the hard disk to CD-R/RW media for backup.

If the total size of all projects is larger than the capacity of one CD-R/RW disc, the backup will automatically extend over multiple volumes, with lower-numbered projects being placed on lower-numbered discs.



NOTE

Also if all projects were saved in one operation, restoring will be on a single-project basis.

1. Insert a CD-R/RW disc into the CD-R/RW drive.

To back up projects, use a blank CD-R/RW disc or a CD-RW disc that has been completely erased.

2. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

3. Use the cursor left/right keys to bring up the indication “CD-R/RW BACKUP” on the display, and press the [ENTER] key.

The display shows the indication “BACKUP SAVE”.

4. Use the cursor left/right keys to bring up the indication “BACKUP ALL SAVE” on the display, and press the [ENTER] key.

The display shows the space required for the backup of all projects in MB (megabytes).

```
SIZE
1137MB
```

5. Press the [ENTER] key.

The display indication changes as follows.

```

ALL SAVE
SURE?

```

6. To execute the backup, press the [ENTER] key. To cancel, press the [EXIT] key instead.

When you press the [ENTER] key, backup starts from the project with the lowest number. The display shows the disc number, the project number, and the indication “BURNING”.

Disc number

```

DISC001
BURNING PRJ 004

```

Project currently being saved

When the backup is finished, the display indication changes to “ALL SAVE COMPLETE”.

If the backup size is larger than the capacity of one CD-R/RW disc, the disc will be ejected after it has been filled up, and the display indication changes as follows.

```

CHANGE
DISC002 PRJ 005

```

Number of project that has been only partly backed up

The right side of the display shows the number of the project that has been only partly backed up. Insert the next CD-R/RW disc and press the [ENTER] key. The backup operation resumes. If more than two discs are required, the above steps will be repeated.

NOTE

When a full backup spans several discs, restoring a single project requires you to first insert the disc on which it is saved. Be sure to note the disc number and the projects saved on the disc on the case and label of the disc.

HINT

When the disc has been ejected, it is possible to abort the backup operation. To do this, press the [EXIT] key while the indication “CHANGE DISCxxx” (where xxx is the disc number) is shown. The indication will change to “ALL SAVE CANCEL?”. Press the [ENTER] key to terminate the process.

7. To return to the main screen, press the [EXIT] key several times.

Loading a project from CD-R/RW disc

To restore a project saved on CD-R/RW disc to the hard disk of the MRS-1608, proceed as follows.

NOTE

Also when you have backed up all projects in a single operation, restore is performed only for single projects.

1. From the main screen, press the [CD-R/RW] key in the control section.

The CD-R/RW menu appears.

2. Use the cursor left/right keys to bring up the indication “CD-R/RW BACKUP” on the display, and press the [ENTER] key.

The display shows the indication “BACKUP SAVE”.

3. Use the cursor left/right keys to bring up the indication “BACKUP LOAD” on the display, and press the [ENTER] key.

The tray of the CD-R/RW drive opens and the display indication changes as follows.

```

LOAD
InsDisc1

```

4. Insert the CD-R or CD-RW where the project is saved into the CD-R/RW drive.

Insert the correct disc for the stored content.

● **If project was backed up as single project**

Insert disc number 1.

● **If project was backed up as part of a full backup of all projects**

Insert the disc where the project is stored. (If there are multiple discs, insert the first disc that contains data of the desired project.)

NOTE

If the backup of the project spans multiple discs, be sure to insert the first disc that contains data of the desired project first. If you insert another disc, the project data will not be read correctly.

5. Press the [ENTER] key.

The name of the project on the disc, and the number which is to be assigned to the project are shown on the display.

```

LOAD
PRJ012    PRJ 007
  
```

↑ ↑
Project name Project number to be assigned

HINT

When being restored to the MRS-1608, an empty project number is automatically assigned to the project. Even if a project with the same name already exists on the hard disk, it will not be overwritten.

6. To check the name of the folder from which the project will be read, press the cursor down key.

The second line of the display shows the folder name. Press the cursor up key to restore the original display.

7. Turn the dial to select the project to load, and press the [ENTER] key.

The indication "LOAD SURE?" appears on the display.

8. To execute the load operation, press the [ENTER] key. To cancel, press the [EXIT] key instead.

When you press the [ENTER] key, the indication "Wait..." appears on the display. When the operation is finished, the display indication changes to "LOAD COMPLETE", and the CD-R/RW disc is ejected.

If the backup spans multiple discs, the CD-R/RW disc will be automatically ejected after the data have been loaded, and the display indication changes as follows.

```

CHANGE
DISC002
  
```

When this message is shown, insert the next CD-R/RW disc, and press the [ENTER] key. The load operation resumes. Repeat this operation until the last disc of the project has been read.

NOTE

If the backup of the project spans multiple discs, be sure to insert the discs in the correct order. Otherwise the project data will not be read correctly.

HINT

When the disc has been ejected, it is possible to abort the load operation. To do this, press the [EXIT] key while the indication "CHANGE DISCxxx" (where xxx is the disc number) is shown. The indication will change to "LOAD CANCEL?". Press the [ENTER] key to terminate the process.

9. To return to the main screen, press the [EXIT] key several times.

Reference [Projects]

This section describes how to perform operations for entire projects.

About projects

On the MRS-1608, the data needed to reproduce a song you create are managed in units called “projects”. By loading a project from the hard disk, you can always go back to exactly the same condition that existed when the project was saved. A project contains the following information.

- Audio data recorded on V-takes 1 – 10 of tracks 1 – 16 and the master track
- Numbers of selected V-takes for each track
- Mixer section settings
- Settings saved in scene numbers 0 – 99
- Scene parameter enabled/disabled settings
- Numbers and settings of patches currently selected for insert effect/send return effects
- Rhythm patterns
- Rhythm songs
- Numbers of drum kit/bass program currently selected for drum/bass track
- Sampler programs for pad sampler
- Samples used by sampler programs
- Audio data in phrase pool
- Playlist contents
- Other required files

NOTE

On the MRS-1608, recording/playback operations can be performed only for the currently loaded project. It is not possible to perform functions for multiple projects simultaneously.

Project operations

This section explains operations such as loading or saving a project. The procedure is the same for most project operations. The basic procedure is as follows.

Basic procedure

1. From the main screen, press the [PROJECT] key.

The project menu appears on the display, allowing you to select the desired project operation.



```
PROJECT  
SELECT
```

HINT

When you press the [PROJECT] key, the current project is automatically saved on the hard disk.

2. Use the cursor left/right keys to select one of the following operations.

● PROJECT SELECT

Load a previously saved project from the internal hard disk.

● PROJECT NEW

Create a new project.

● PROJECT SIZE

View the size of the currently loaded project.

● PROJECT COPY

Duplicate a specified project on the hard disk.

● PROJECT ERASE

Erase a specified project from the hard disk.

● PROJECT NAME

Edit the name of the currently loaded project.

● PROJECT PROTECT

Switch the protection status of the currently loaded project on or off.

● PROJECT SEQ PLAY

Continuously play the master tracks from several projects saved on the hard disk (→ p. 177).

3. Press the [ENTER] key to execute the operation (or change the setting) that you selected.

For details on the procedure, refer to the sections that follow.

4. To return to the main screen, press the [EXIT] key several times.

Depending on which selection was made in step 2, the main screen may return automatically.

Loading a project

You can select a project that was saved on the hard disk, and load it.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT SELECT” on the display. Then press the [ENTER] key.

The name and number of the project to be loaded are shown on the display.



2. Turn the dial to select the desired project.

3. Press the [ENTER] key to load the project.

When loading is completed, the unit returns to the main screen. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

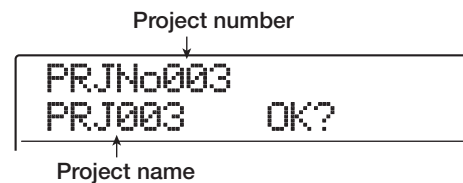
When power to the MRS-1608 is turned on, the project that was last worked on will be loaded automatically.

Creating a new project

This operation creates a new project.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT NEW” on the display. Then press the [ENTER] key.

The project to create is shown on the display.



The number of the newly created project is assigned automatically, choosing the lowest free project number, and a default name of “PRJxxx” (where xxx is the project number) will be assigned.

The first character of the project name flashes. This indicates that you can change the project name.

2. If necessary, edit the project name.

To change the project name, use the cursor left/right keys to move the flashing section to the character you want to change, and turn the dial to select the new character. The project name can also be edited later (→ p. 168).

3. Press the [ENTER] key to create the project.

After the new project has been created, it is loaded automatically, the unit returns to the main screen. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

HINT

If the recorder is stopped and the main screen is shown, you can call up the screen of step 1 simply by pressing the [NEW PROJECT] key.

Checking the project size/ available hard disk capacity

This operation displays the size of the currently loaded project, the available capacity of the internal hard disk, and the remaining recording time.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT SIZE” on the display. Then press the [ENTER] key.
2. Use the cursor up/down keys to select the desired screen from one the following options.

- REMAIN (MB units)

This shows the remaining space on the internal hard disk in MB (megabyte) units.

```
REMAIN
027920MB
```

- REMAIN (h/m units)

The approximate recordable time (converted into one track) is shown in hours (h), minutes (m), and seconds.

```
REMAIN
92h12m11
```

- PRJ SIZ (MB units)

This shows the size of the currently loaded project in MB (megabyte) units.

```
PRJ SIZE
000175MB
```

- PRJ SIZ (h/m units)

This shows the size of the currently loaded project (converted into one track) in hours (h), minutes (m), and seconds.

```
PRJ SIZE
00h34m47
```

To return to the main screen, press the [EXIT] key several times.

NOTE

- These screens are for display only, and contain no items that can be edited.
- The remaining recordable time is an approximation. Use it for general reference only.

Duplicating a project

This operation copies a specified project that is saved on the hard disk.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT COPY” on the display. Then press the [ENTER] key.

The name and number of the project to copy is shown on the display.

```
PRJ COPY
PRJ003   PRJ 003
  ↑       ↑
Project name Project number
```

2. Turn the dial to select the copy source project, and press the [ENTER] key.

The screen for selecting the copy destination project appears on the display.

```
PRJ COPY
COPY TO   PRJ 004
                ↑
Copy destination project number
```

3. Turn the dial to select the copy destination project number, and press the [ENTER] key.

The indication “PRJ COPY SURE?” appears on the display.

4. Press the [ENTER] key to copy the project.

When copying is completed, the unit automatically returns to the main screen of the copy destination project. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

Erasing a project

This operation erases the specified project from the hard disk.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT ERASE” on the display. Then press the [ENTER] key.

```

PRJ ERS
PRJ004   PRJ 004
  ↑           ↑
Project name Project number
  
```

2. Turn the dial to select the project, and press the [ENTER] key.

The indication “PRJ ERS SURE?” appears on the display.

3. Press the [ENTER] key to erase the project.

When erasing is completed, press the [EXIT] key to return to the main screen.

NOTE

- Once a project has been erased, it cannot be recovered. Use this operation with care.
- A project for which protect is ON cannot be erased. Set protect to OFF and then repeat the procedure.
- If you erase a project that is currently loaded, the lowest-numbered project will automatically be loaded after the erase operation has been completed.

Changing the project name

This operation lets you edit the name of the currently loaded project.

1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT NAME” on the display. Then press the [ENTER] key.

The current project name is shown on the display.

```

PRJ NAME
PRJ003
  
```

2. Use the cursor left/right keys to move the flashing section to the character you want to change, and turn the dial to select the new character.

For information on available characters, refer to page 36.

To return to the main screen after editing the name, press the [EXIT] key several times.

Protecting a project

This operation lets you write-protect the currently loaded project, which disables project storing and editing. When protect is ON, the following operations will be impossible.

- Erasing a project
- Editing or recording on the recorder
- Changing the V-take
- Editing a patch (including module on/off)
- Recording or editing a rhythm pattern or rhythm song
- Saving/deleting scenes, making marker settings, etc.
- Creating a phrase loop
- Creating sample data for the pad sampler function

- 1. Refer to steps 1 – 2 of “Basic procedure” to bring up the indication “PROJECT PROTECT” on the display. Then press the [ENTER] key.**

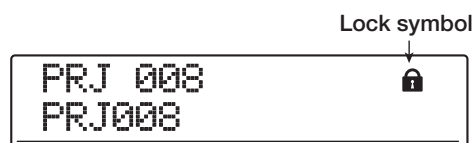
The screen for setting the protect status to ON/OFF is shown on the display.



```
PRJ PRT
OFF
```

- 2. Turn the dial to select ON (protect enabled) or OFF (protect disabled).**

When a project is loaded for which protect is ON, a lock symbol is shown in the top right of the display.



Lock symbol

```
PRJ 008
PRJ008
```

A change in the protect status becomes active immediately. To return to the main screen after making the setting, press the [EXIT] key several times.

NOTE

A project that is not protected will be automatically saved when power is turned off or when another project is loaded. If you have finished a song, we recommend to turn protect ON. This will prevent inadvertently saving changes caused by operation steps that you have taken after finishing the song.

Reference [MIDI]

This section explains the MIDI-related settings and functions of the MRS-1608.

About MIDI

MIDI (Musical Instrument Digital Interface) is a standard that allows messages such as performance data (collectively called “MIDI messages”) to be exchanged between devices such as electronic musical instruments and computers.

The MRS-1608 supports MIDI and is equipped with the following two MIDI connectors.



- **MIDI IN connector**

Serves for receiving MIDI messages sent from an external MIDI device. This connector is used mainly to receive Note messages from an external MIDI device in order to play the drum kit, bass program, or pad sampler.

- **MIDI OUT connector**

Serves for transmitting MIDI messages from the MRS-1608. Note messages that represent the content played by a rhythm pattern or rhythm song are transmitted from this connector, as well as synchronization information for use by an external MIDI device.

What you can do using MIDI

On the MRS-1608, you can use MIDI for the following functions.

- **Receive and send play information**

You can use an external MIDI keyboard or a computer to send play information (Note On/Off messages) to the MIDI IN connector of the MRS-1608, to play various sounds of the rhythm section. When creating a rhythm pattern, you can use an external MIDI keyboard instead of the pads on the MRS-1608 to input play information.

You can send Note On/Off messages from the MRS-1608 when hitting the pads or when playing a rhythm song/rhythm pattern. These can be used to play an external MIDI sound source.

- **Send sync information**

The MIDI OUT connector of the MRS-1608 can supply MIDI Timing Clock (MIDI Clock) and MIDI Time Code (MTC) information to a MIDI sequencer or other external MIDI device. Playback and other transport operations as well as locate operations can be synchronized.

- **Send/receive program change information**

The MRS-1608 can receive Program Change messages from an external MIDI device to switch the sound of the rhythm section. The MRS-1608 can also send out Program Change messages when the sound is switched, allowing an external device to perform synchronized switching.

- **Send/receive control change information**

Via the MIDI IN connector, the MRS-1608 can receive Control Change messages from an external MIDI device to control the level of the drum/bass track. Via the MIDI OUT connector, the MRS-1608 can send out Control Change messages according to drum/bass level information contained in a rhythm song.

- **SMF playback**

The MRS-1608 can read SMFs (Standard MIDI Files) from a CD-ROM/R/RW disc and load the contents into a project. Once loaded, an SMF can use internal or external sound sources and perform playback in sync with the recorder section or rhythm section (SMF player function).

Making MIDI-related settings

This section explains how to make MIDI-related settings. The procedure is the same for most settings. The basic steps are as follows.

Basic procedure

1. Press the [RHYTHM] key in the display section, and then press the [UTILITY/TRACK EDIT] key.

The rhythm utility menu for making various rhythm section settings appears.

2. Use the cursor left/right keys to bring up the indication "UTILITY MIDI" on the display.

```
UTILITY
MIDI
```

3. Press the [ENTER] key.

The display indication changes as follows. In this condition, you can select MIDI-related setting items.

```
MIDI
DRUM CH
```

4. Use the cursor left/right keys to select one of the following items.

- DRUM CH

Set the MIDI channel for the drum kit.

- BASS CH

Set the MIDI channel for the bass program.

- CLOCK

Turn Timing Clock transmission on/off.

- SPP

Turn Song Position Pointer transmission on/off.

- COMMAND

Turn Start/Stop/Continue message transmission on/off.

- PRG CHG

Turn Program Change transmission on/off.

- MTC

Turn MIDI Time Code transmission on/off.

HINT

- For information on the SMF playback procedure, see page 174.
- While MTC transmission is enabled, Timing Clock, Song Position Pointer, and Start/Stop/Continue messages are disabled.
- Control Change transmission is always enabled, except when the drum kit/bass program send/receive channel is off.

5. Press the [ENTER] key to display the setting of the selected item, and turn the dial to change the setting.

For details on each item, refer to the following explanation.

6. When you have finished making settings, press the [EXIT] key several times to return to the main screen.

Setting the drum kit/bass program MIDI channel

You can specify the MIDI channels for the drum kit and bass program.

Refer to steps 1 – 4 of "Basic procedure" to bring up the indication "MIDI DRUM CH" or "MIDI BASS CH" on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

```
DRUM CH
10CH
```

- 1 – 16CH

Select one of MIDI channels 1 – 16 (default: DRUM CH=10CH, BASS CH=9CH)

- OFF

Channel messages (Note On/Off, Program Change, Control Change and other messages) will not be sent or received.

If you specify a MIDI channel (1 – 16) for the drum kit or bass program, you can transmit Note On/Off messages from an external MIDI device on that MIDI channel to play the sounds of the MRS-1608.

Also, when you play back a rhythm pattern or rhythm song on the MRS-1608, the drum/bass track playing information will be transmitted as Note On/Off messages.

Turning Timing Clock messages on or off

This setting specifies whether the MIDI synchronization message Timing Clock will be transmitted.

Refer to steps 1 – 4 of “Basic procedure” to bring up the indication “MIDI CLOCK” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

A rectangular display box containing the text "CLOCK" on the top line and "ON" on the bottom line.

● ON (Transmission on)

Timing Clock information will be transmitted when the MRS-1608 is running (default setting).

● OFF (Transmission off)

Timing Clock information will not be transmitted.

Timing Clock will be output according to the tempo of the rhythm pattern/rhythm song that is playing. In order for the external MIDI device to play back in synchronization at an appropriate tempo, you will need to specify the tempo of the rhythm pattern/rhythm song. Also, to synchronize the measure indication at the MRS-1608 and the MIDI device, the time signature of the rhythm pattern/rhythm song must be set.

NOTE

Timing Clock information will be transmitted even if the drum/bass tracks are muted ([DRUM]/[BASS] status keys are out).

HINT

- When using MIDI Timing Clock messages transmitted from the MRS-1608 to synchronize the operation of an external MIDI device, you should also turn on transmission for Song Position Pointer and Start/Stop/Continue messages as well as Timing Clock.
- When transmitting Timing Clock from the MRS-1608, it is recommended to turn the drum kit/bass program MIDI channels OFF. Synchronization may become unstable if MIDI Timing Clock and other MIDI messages are being transmitted simultaneously.

Turning Song Position Pointer messages on or off

You can specify whether Song Position Pointer messages will be transmitted. Song Position Pointer is a MIDI message that indicates the current position as a beat count from the start. Normally it is used in conjunction with Timing Clock.

Refer to steps 1 – 4 of “Basic procedure” to bring up the indication “MIDI SPP” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

A rectangular display box containing the text "SPP" on the top line and "ON" on the bottom line.

● ON (Transmission on)

MIDI Song Position Pointer messages will be transmitted when a locate operation is performed on the MRS-1608 (default setting).

● OFF (Transmission off)

Song Position Pointer messages will not be transmitted.

Turning Start/Stop/Continue messages on or off

You can specify whether Start/Stop/Continue messages will be transmitted. Start/Stop/Continue are MIDI messages that control the transport of a device, causing it to run or stop. Normally these messages are used in conjunction with Timing Clock.

Refer to steps 1 – 4 of “Basic procedure” to bring up the indication “MIDI COMMAND” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

A rectangular display box containing the text "COMMAND" on the top line and "ON" on the bottom line.

● ON (Transmission on)

The appropriate Start/Stop/Continue message will be transmitted when the MRS-1608 stops or begins running (default setting).

● OFF (Transmission off)

Start/Stop/Continue messages will not be transmitted.

Turning Program Change messages on or off

You can specify whether Program Change messages will be transmitted. Program Change are MIDI messages that changes a sound number of MIDI device such as synthesizer. Refer to steps 1 – 4 of “Basic procedure” to bring up the indication “MIDI PRG CHG” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.



● ON (Transmission on)

When the sound of the rhythm section is switched at the MRS-1608, a Program Change message for the respective MIDI channel is sent out (default setting).

● OFF (Transmission off)

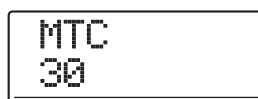
Program Change messages will not be transmitted.

HINT

There is no item for turning Program Change receive on or off. This function is always enabled, except when the drum kit/bass program channel is off.

Turning MIDI Time Code (MTC) messages on or off

You can specify whether MIDI Time Code (MTC) messages used for synchronization will be transmitted. Refer to steps 1 – 4 of “Basic procedure” to bring up the indication “MIDI MTC” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.



● 24 (24 frames/second)

● 25 (25 frames/second)

● 29.97 (29.97 frames/second, non-drop)

● 30 (30 frames/second, non-drop)

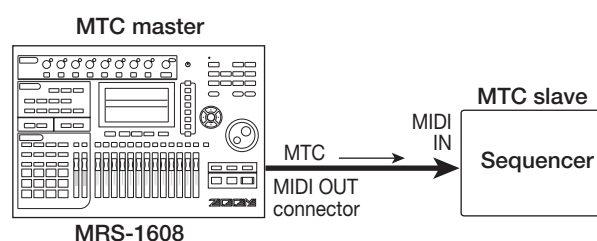
When the MRS-1608 is running, MTC messages with the respective frame per second setting are sent out.

● OFF (Transmission off)

MTC messages will not be transmitted.

MTC message output is based on recorder time information. When using MTC to synchronize MIDI devices, the MRS-1608 always functions as MTC master. Set up the other device to operate as MTC slave which receives MTC messages and functions accordingly.

An example for synchronizing the MRS-1608 with a sequencer is shown below.



HINT

- MTC allows more precise synchronization than MIDI Timing Clock messages.
- When MTC transmission is enabled, Timing Clock, Song Position Pointer, and Start/Stop/Continue messages will all be disabled.

Using the SMF player

Using the SMF player function, the MRS-1608 can read Format 0 SMF (Standard MIDI Files) from a CD-ROM/R/RW disc and load the contents into a project. Once loaded, an SMF can perform playback in sync with the recorder section or rhythm section, using the sounds of the rhythm section or MIDI sound sources connected to the MIDI OUT connector.

This section explains how to use the SMF playback function.

HINT

“Format 0” is a type of SMF that contains all MIDI channel playing information in a single track.

NOTE

The following files cannot be read.

- Format 1 or Format 2 SMF
- Files located on a CD-ROM/R/RW disc not complying to the ISO 9660 Level 2 standard
- Files on a CD-R/RW disc which has not been finalized

Reading an SMF into a project

By performing the following steps, you can read an SMF from a CD-ROM/R/RW disc and load it in a project. The maximum number of SMFs per project is 100.

- 1. Insert the CD-ROM or CD-R/RW disc containing the SMF into the CD-R/RW drive.**
- 2. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.**

The indication “UTILITY TR EDIT” appears on the display.

- 3. Use the cursor left/right keys to bring up the indication “UTILITY SMF” on the display, and press the [ENTER] key.**

The menu screen for SMF selection and playback appears.

```

SMF
IMPORT
  
```

- 4. Verify that “SMF IMPORT” is shown on the display, and press the [ENTER] key.**

The names of SMFs on the CD-ROM/R/RW disc are shown.

```

IMPORT
SEQ1
  
```

↑
File name

- 5. Turn the dial to select the SMF to import.**

NOTE

If the desired file is not shown, check whether the file is in Format 0.

- 6. To execute the import process, press the [ENTER] key.**

When import is completed, the disc is ejected from the CD-R/RW drive. To import other SMFs, repeat steps 1 – 6.

- 7. To return to the main screen, press the [EXIT] key several times.**

HINT

By using the option board UIB-02, it is possible to directly import SMFs from a computer into a project. To do this, the SMF must be copied to the PROJxxx folder (where xxx is the project number).

Selecting the SMF output destination

When playing an SMF, you can select whether to send the entire playing information to an external sound source or to play certain channels with the internal sound sources of the MRS-1608. The SMF output destination is specified using the following two parameters.

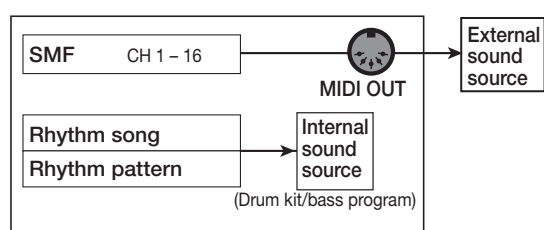
● SMF ChToDrum

Selects which MIDI channel (1 – 16) of the SMF playing information is directed to the internal drum kit of the MRS-1608. Information for the channel selected here will not be present at the MIDI OUT connector. When this parameter is set to OFF, no playing information is sent to the drum kit.

● SMF ChToBass

Selects which MIDI channel (1 – 16) of the SMF playing information is directed to the internal bass program of the MRS-1608. Information for the channel selected here will not be present at the MIDI OUT connector. When this parameter is set to OFF, no playing information is sent to the bass program.

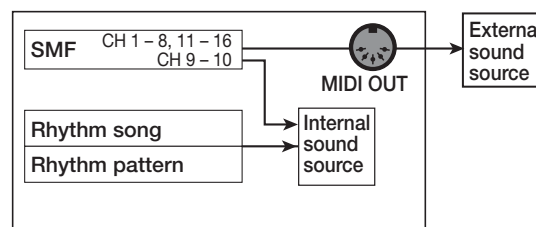
The diagram below shows a setting example for using the MRS-1608 as an SMF player and using external sound sources. In this example, the SMF playing information is sent only to the MIDI OUT connector.



NOTE

When an SMF is played in the above condition, the rhythm song or rhythm pattern of the MRS-1608 will be played at the same time. If you do not want to play the drum/bass sound, set the [DRUM]/[BASS] status keys to OFF or select an empty rhythm song/rhythm pattern.

The next diagram shows a setting example for using the MRS-1608 as an SMF player with a combination of internal and external sound sources. In this example, MIDI channel 9 of the SMF playing information is sent to the bass program, MIDI channel 10 to the drum kit, and the other MIDI channels to the MIDI OUT connector.



NOTE

- When an SMF is played in the above condition, the SMF playing information and the rhythm song or rhythm pattern information of the MRS-1608 will be sent to the internal drum kit/bass program at the same time. To use the drum kit/bass program only for the SMF, you must first select an empty rhythm song/rhythm pattern.
- If the SMF contains Program Change or Control Change messages, these will alter the corresponding parameters of the internal sound sources (tone, volume, pitch). (Pitch Bend messages affect only the bass program.)

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY SMF” on the display, and press the [ENTER] key.

The SMF menu appears on the display.

3. Use the cursor left/right keys to bring up the indication “ChToDrum” or “ChToBass” on the display, and press the [ENTER] key.

If “ChToDrum” was selected, the display indication changes as follows.

```
ChToDrum
10CH
```

4. Turn the dial to select OFF or 1 – 16, and then press the [EXIT] key.

HINT

The factory default setting is “10” (MIDI channel 10) for the ChToDrum parameter and “9” (MIDI channel 9) for the ChToBass parameter.

5. Make the setting for the other parameter in the same way.

6. To return to the main screen, press the [EXIT] key.

SMF playback

You can select any SMF imported into a project and play it as follows.

NOTE

- When playing an SMF, the rhythm section tempo will be disregarded, and playback starts with the timing programmed in the SMF. However, if a tempo change event is programmed somewhere in the rhythm song, this tempo change will become active. To use the SMF tempo throughout, you should first select an empty rhythm song.
- If the time signature information of the SMF and the rhythm section is different, the audio track position and SMF position may be different when locating in measures/beats/ticks.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The utility menu appears.

2. Use the cursor left/right keys to bring up the indication "UTILITY SMF" on the display, and press the [ENTER] key.

The indication "UTILITY TR EDIT" appears on the display.

3. Use the cursor left/right keys to bring up the indication "SMF OUTPUT" on the display, and press the [ENTER] key.

In this condition, you can decide whether to enable SMF playback.

```
OUTPUT
ON
```

4. Verify that the setting is ON, and press the [EXIT] key.

In the default condition of a project, the setting is ON. If it was set to OFF, turn the dial to select ON.

5. Use the cursor left/right keys to bring up the indication "SMF FILE SEL" on the display.

```
SMF
FILE SEL
```

6. Press the [ENTER] key.

In this condition, you can select an SMF imported into the project for playback.

```
FILE SEL
SEQ1
```

HINT

If required, you can delete the selected SMF from the project. To do this, select the SMF to delete and then press the [DELETE/ ERASE] key in the rhythm section. The indication "SURE?" appears. Press the [ENTER] key to delete.

7. Turn the dial to select the SMF for playback, and press the [ENTER] key.

The file is selected, and the display returns to the SMF menu.

8. To return to the main screen, press the [EXIT] key several times.

9. To play the SMF, press the PLAY [▶] key.

The SMF is played in conjunction with the recorder section/ rhythm section.

Reference [Other Functions]

This section explains various other functions of the MRS-1608.

Playing several projects continuously (sequence play)

The MRS-1608 lets you line up the master tracks from multiple projects saved on the hard disk and play them continuously in a specified order (sequence play). This is handy to record several projects on an external device such as a MD recorder.

To use sequence play, you create a playlist which specifies the order of projects. (Up to 10 different playlists can be created.) You can also import playlist information into an album used for creating an audio CD.

Creating a playlist

Register projects in a playlist as follows.

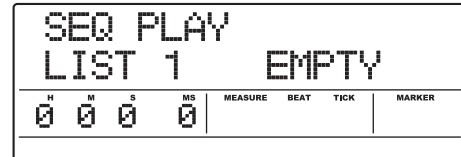
1. Verify that the V-take you want to play is selected for each project's master track.
2. From the main screen, press the [PROJECT] key in the display section.

The project menu for various project related functions appears.



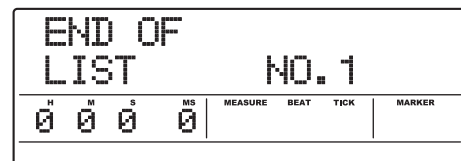
3. Use the cursor left/right keys to bring up the indication "PROJECT SEQ PLAY" on the display, and press the [ENTER] key.

The display shows the screen for selecting a playlist. If there are no existing playlists, the display shows "EMPTY".



4. Turn the dial to select the playlist for which you want to register projects, and press the [EDIT] key.

The screen for registering projects in the playlist appears. The indication "END OF LIST" denotes the end of the playlist. When the playlist is empty, the indication "END OF LIST" appears at the beginning of the list.

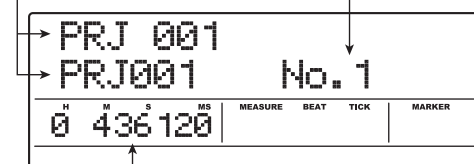


5. Turn the dial to select the project to register at the beginning of the project.

The display indication changes as follows.

Project number and project name
Number and name of the project registered in the playlist

Playback number
Position in the sequence where the project will be played



V-take duration

Length of the V-take selected for the master track of the project, in hours (H), minutes (M), seconds (S), and milliseconds (MS)

NOTE

- Projects in which an unrecorded V-take is selected for the master track cannot be registered in a playlist. If the name of a desired project does not appear on the display, check the V-take selected for the master track.
- If the V-take is less than 4 seconds long, the master track cannot be registered in the playlist.

6. Press the cursor right key.

The display indication changes as follows. (The END OF LIST indication has moved to the second position.) In this condition, you can select the second project to play.



7. Turn the dial to select the next project to play.

Use the same procedure to select projects for subsequent positions.

A maximum of 99 projects can be registered in a playlist.

● **To change projects in a playlist**

Use the cursor left/right keys to select the position number for which you want to change the project, and use the dial to select another project.

● **To insert a project in a playlist**

Use the cursor left/right keys to select the position number where you want to insert a project. Press the [INSERT/COPY] key in the rhythm section. The indication “INSERT?” appears on the display. In this condition, use the dial to select another project, and press the [ENTER] key. (Subsequent projects are renumbered.)

● **To delete a project from a playlist**

Use the cursor left/right keys to select the position number you want to delete. Press the [DELETE/ERASE] key in the rhythm section. The indication “DELETE SURE?” appears on the display. To delete the project from the playlist, press the [ENTER] key. (Subsequent projects are renumbered.)

● **To delete all projects from a playlist**

On the playlist registration screen, press the [DELETE/ERASE] key in the rhythm section and then the cursor down key. The indication “ALL DEL SURE?” appears on the display. To delete all projects from the playlist, press the [ENTER] key.

● **To switch the V-take for the master track**

Press the [EXIT] key repeatedly to return to the main screen. Load the project for which you want to switch the V-take, and select the V-take for the master track. Then return to the playlist registration screen.

8. When you have registered all desired projects in the playlist, press the [EXIT] key several times to return to the main screen.

HINT

The playlist contents are stored automatically.

NOTE

If the master track data for projects included in a playlist have been deleted from the hard disk, the playlist returns to the blank state.

Playlist playback

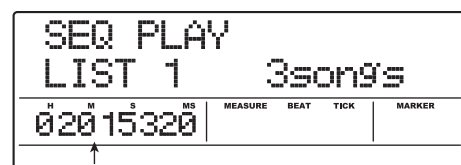
Select the playlist for continuous project playback as follows.

1. From the main screen, press the [PROJECT] key in the display section.

The project menu appears.

2. Use the cursor left/right keys to bring up the indication “PROJECT SEQ PLAY” on the display, and press the [ENTER] key.

The display shows the screen for selecting a playlist. The counter in the bottom of the display shows the total playback time of all projects in the playlist.

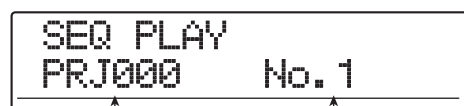


Total playing time of projects

3. Turn the dial to select the desired playlist.

4. Press the PLAY [▶] key.

Projects are played in the order as registered in the playlist. The display indication changes as follows.



Project name Current playback number

Use the [MASTER] fader to adjust the playback volume. When a project has played through, the next project is

automatically loaded and played.

During project playback, the following keys can be used to select a track, pause play, or locate a certain point.

- **PLAY [▶] key**

Starts playback from the beginning of the current project.

- **STOP [■] key**

Interrupts project playback and returns to the start of the current project.

- **ZERO [◀◀] key**

Returns to the project registered for playback position 1.

- **FF [▶▶] key**

Playback stops, and the system jumps to the beginning of the next project.

- **REW [◀◀] key**

Playback stops, and the system jumps to the beginning of the previous project.

When playback of the last project is completed, the recorder stops.

- 5. To return to the main screen, press the [EXIT] key several times.**

Using the tuner function

The MRS-1608 incorporates a versatile tuner that can also accommodate 7-string guitar and other unconventional tunings. This section explains how to use the tuner function.

Using the chromatic tuner

The chromatic tuner which can automatically detect pitch in semitone steps operates as follows.

- 1. Connect the instrument that you want to tune to one of the INPUT jacks 1 – 8 or the GUITAR/BASS INPUT jacks 1/2.**
- 2. From the main screen, press the [ON/OFF] key for the input to which the instrument is connected, so that the key is lit in red.**

HINT

If two or more inputs are activated, the respective input signals will be mixed and sent to the tuner. You should set all inputs not required for tuning to OFF.

- 3. Press the [TUNER] key in the effect section.**

The insert effect and send/return effect are bypassed, and the built-in tuner is activated. If this is the first time that the function is used, the chromatic tuner will be selected.

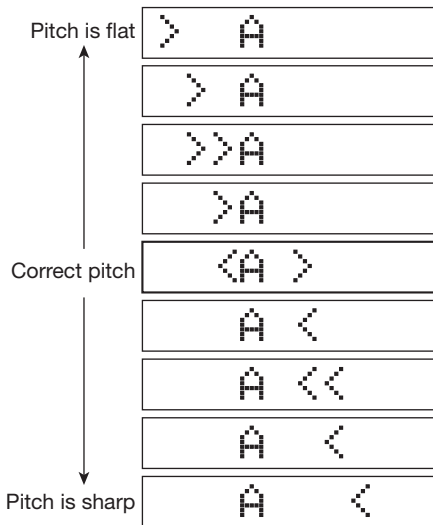
Currently selected tuner type

A rectangular display box containing the text 'CHROMATC' on the top line and '---' on the bottom line. An arrow points down to the text from the label 'Currently selected tuner type' above it.

- 4. Play the note that you want to tune.**

The pitch is automatically detected, and the display shows the nearest note name (C, C#, D, D#, E...). The display also indicates by how much the current pitch is different from the correct pitch.

A rectangular display box containing the text 'CHROMATC' on the top line and '>>A' on the bottom line.



5. Adjust the pitch until the “<>” indication encloses the desired note.

6. To change the reference pitch of the tuner, turn the dial during tuner operation.

The reference pitch of the tuner is set to center A = 440 Hz by default. The reference pitch can be adjusted over the range of 435 – 445 Hz, in 1-Hz steps. When the value was changed, the original display will return after a while.



HINT

- The reference pitch selected here will remain in effect until you return the setting to the original value.

- When you change the reference pitch of the tuner, the pitch of the rhythm section bass program will also change accordingly.
- The reference pitch setting is saved individually for each project.

7. When you have finished using the tuner function, press the [EXIT] key.

The tuner is turned off, and the insert effect and send/return effect will revert to the original condition.

Using other tuner types

The MRS-1608 allows various other tuner types besides chromatic tuning, including standard tuning for guitar and bass, and various special tuning functions.

For these types it is necessary to first select a string number and then tune the strings one by one.

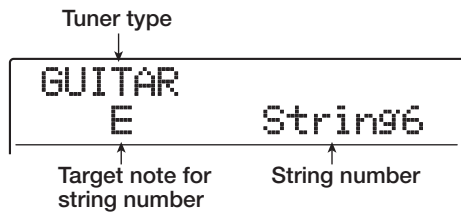
1. Connect the guitar or bass that you want to tune to one of the GUITAR/BASS INPUT jacks 1/2. Press the [ON/OFF] key for the input to which the instrument is connected, so that the key is lit in red.

2. Press the [TUNER] key in the effect section, and use the cursor left/right keys to select the tuner type.

While the tuner function is active, the cursor left/right keys serve to switch the tuner type. Tuner types and notes for each string are listed in the table below.

Tuner type		GUITAR	BASS	OPEN A	OPEN D	OPEN E	OPEN G	DADGAD
String number/note name	String1	E	G	E	D	E	D	D
	String2	B	D	C#	A	B	B	A
	String3	G	A	A	F#	G#	G	G
	String4	D	E	E	D	E	D	D
	String5	A	B	A	A	B	G	A
	String6	E		E	D	E	D	D
	String7	B						

For example, when you select the tuner type “GUITAR”, the display shows the following information.



3. Play the indicated string as an open string, and perform tuning.

4. Use the cursor up/down keys to select other string numbers.

Tune the other strings in the same way.

5. To quit the tuning function, press the [EXIT] key.

The tuner is turned off, and the insert effect and send/return effect will revert to the original condition.

HINT

If required, you can change the reference pitch (A = 440 Hz). The procedure is the same as for the chromatic tuner.

Changing the function of the foot switch

With the default settings of a project, a foot switch connected to the FOOT SW jack can be used to control play/stop of the recorder. To use the foot switch to control manual punch-in/out recording (→ p.39), use the following procedure to change the internal setting.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY SYSTEM” on the display, and press the [ENTER] key.

The display indication changes as follows.

A rectangular display area showing the text 'SYSTEM' on the top line and 'FOOT SW' on the bottom line.

3. Make sure the indication “SYSTEM FOOT SW” is shown on the display, and press the [ENTER] key.

The function currently assigned to the foot switch will be displayed.

A rectangular display area showing the text 'FOOT SW' on the top line and 'PLY_STP' on the bottom line.

4. Turn the dial to select “PLY_STP” or “PUNCH IO”.

The settings are as follows.

- PLY_STP

Each push of the foot switch toggles between play and stop of the recorder section.

- PUNCH IO

The foot switch can be used to perform manual punch-in/out. Pressing the foot switch has the same effect as pressing the REC [●] key.

5. To return to the main screen, press the [EXIT] key several times.

Preventing digital copying of a master disc or master tape

When mixing down to a DAT recorder, MD recorder or similar via the DIGITAL OUTPUT jacks, you can prevent digital copies (third-generation copies) from being made from your completed master disc or tape onto another digital recorder. The procedure is as follows.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY SYSTEM” on the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM
FOOT SW
```

3. Use the cursor left/right keys to bring up the indication “UTILITY D PRTCT” on the display, and press the [ENTER] key.

The current setting for digital copying will be displayed.

```
D PRTCT
OFF
```

The settings have the following meaning.

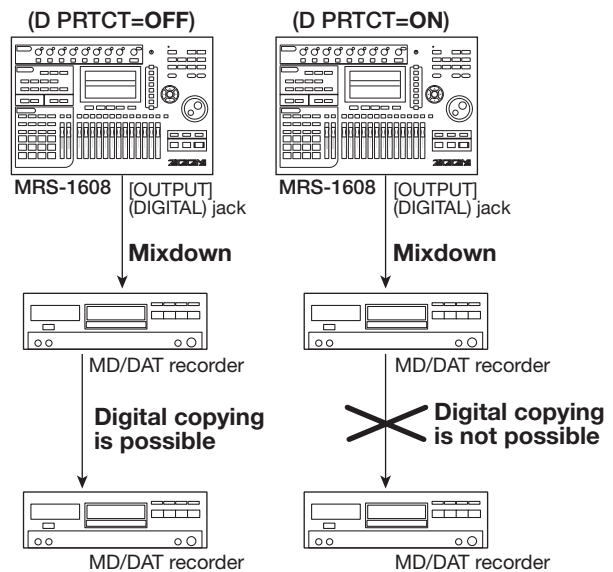
● **OFF (default setting)**

Digital copying from your master tape to another digital recorder is permitted.

● **ON**

SCMS (Serial Copy Management System) data will be added to the digital signal that is output from the [DIGITAL OUTPUT] jack. It will not be possible to make digital copies (third-generation copies) from a master tape or master disc that contains this data.

4. Turn the dial to select the “ON” setting.



5. To return to the main screen, press the [EXIT] key several times.

Switching the level meter display type

The level meter below the display can indicate the level of the signal after passing through the level controls/faders (post-fader) or the signal before passing through the level controls/faders (pre-fader). You can change the setting as follows.

HINT

When sending the signal of a given track/input to the STEREO SUB-OUT jack, the signal before the fader is sent. By switching the level meter to the pre-fader setting, you can monitor the signal level sent to the STEREO SUB-OUT jack.

1. From the main screen, press the [UTILITY/ TRACK EDIT] key in the display section.

The indication “UTILITY TR EDIT” appears on the display.

2. Use the cursor left/right keys to bring up the indication “UTILITY SYSTEM” on the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM
FOOT SW
```

- Use the cursor left/right keys to bring up the indication “UTILITY LVL MET” on the display, and press the [ENTER] key.

The current level meter setting will be displayed.

```
LVL MET
POST
```

The settings have the following meaning.

- **POST (default setting)**

The meter shows the level of the signal after passing through the faders and [REC LEVEL] control.

- **PRE**

The meter shows the level of the signal before passing through the faders and [REC LEVEL] control.

- Turn the dial to change the setting.
- To return to the main screen, press the [EXIT] key several times.

Using an option card to connect to a computer

If the optional USB board UIB-02 is installed in the MRS-1608, the internal hard disk of the MRS-1608 can be recognized by a computer (Windows/Macintosh) as an external hard disk. This allows audio data transferring, project backup etc. To make this possible, connect the computer and MRS-1608 with a USB cable and switch the MRS-1608 to USB mode, as described below.

HINT

The UIB-02 supports Windows (98/98SE/Me/2000/XP) and MacOS (9.1/9.2/MacOS X). Depending on the computer and the operating system, driver installation may be required. For details, see the on-line manual supplied with the UIB-02.

- Verify that the recorder is stopped. Then connect the option board to a USB port on the computer, using a USB cable.
- From the main screen, press the [USB] key in the control section.

The display changes as follows.

```
UIB MODE
SURE?
```

- Press the [ENTER] key.

The indication “UIB WORKING” appears on the display, and the MRS-1608 switches to UIB mode.

```
UIB
WORKING
```

When UIB mode is activated, the computer automatically recognizes the internal hard disk of the MRS-1608 and goes into the on-line state.

For details on operation, see the on-line manual supplied with the UIB-02.

- To terminate the connection, cancel the on-line state at the computer.

5. To cancel the UIB mode at the MRS-1608, press the [EXIT] key.

The indication “HDD scan...” is shown, and the MRS-1608 returns to normal mode.

HINT

It is also possible to set the MRS-1608 to the on-line state when turning the unit on. Hold down the [USB] key while turning power to the MRS-1608 on. When you press the [ENTER] key, the MRS-1608 and computer will be in the on-line state (“I/F WORKING” is shown). To start up in normal mode, cancel the on-line state and press the [EXIT] key.

Hard disk maintenance

This section describes how to test and restore the integrity of data on the internal hard disk, and how to perform other hard disk maintenance functions.

Basic maintenance procedure

The procedure for hard disk maintenance is the same for most operations. The basic steps are described below.

1. Turn power to the MRS-1608 off. While holding down the [CLEAR] key, turn power on again.

The MRS-1608 starts up in “ROM utility mode” which serves for performing special functions.

```
ROM UTILITY
MRS-1608
```

2. Press the [MARK] key in the control section.

The indication “ExtFunc Select” appears on the display.

```
ExtFunc
←Select→
```

3. Use the cursor left/right keys to select the desired command.

```
AutoRepr
↔→ENT
```

The following commands are available.

● ScanDisk

Test and repair the integrity of data stored on the internal hard disk.

● Init Fac (Factory Initialize)

Restore system files and various data necessary for operation. Data created by the user will not be erased.

● Init ALL (All Initialize)

Format the hard disk and restore system files and various data necessary for operation. All existing projects will be erased.

4. Press the [ENTER] key to execute the command.

Subsequent display indications and operation steps differ for the individual commands. See the respective section below.

5. When the command has been executed, turn the unit off and then turn it on again.

The MRS-1608 will operate in normal mode.

Test/restore integrity of data on internal hard disk (ScanDisk)

This action serves to test and restore data on the internal hard disk. Perform this procedure when operation of the MRS-1608 has become unstable.

NOTE

ScanDisk may not be able in all cases to restore damaged files. To guard against data loss, it is recommended to regularly back up data from the hard disk onto CD-R/RW discs.

1. Refer to steps 1 – 3 of “Basic maintenance procedure” to bring up the indication “ScanDisk” on the display. Then press the [ENTER] key.

The ScanDisk menu for selecting the testing method appears.

2. Use the cursor left/right keys to select the ScanDisk function.

● AutoRepr (Auto Repair)

This function tests all files on the hard disk and automatically repairs damaged files.

● ChekFile (Check File)

This function only tests all files, but does not automatically repair them. If a problem is found, a message is displayed on the screen.

3. To execute the selected function, press the [ENTER] key.

ScanDisk starts. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and return to the condition of step 1.

NOTE

Once ScanDisk has started, it cannot be interrupted by the user. Never turn power to the unit off while ScanDisk is running. Otherwise the hard disk may be destroyed.

4. When ScanDisk is completed, press the [EXIT] key.

The unit returns to the condition of step 1.

Returning system file data to factory default (Factory Initialize)

This action restores only the system files and other data necessary for operation of the MRS-1608. Projects created by the user are not affected by this operation. Try this procedure if operation of the MRS-1608 is still unstable after running ScanDisk.

1. Refer to steps 1 – 3 of “Basic maintenance procedure” to bring up the indication “Init Fac” on the display. Then press the [ENTER] key.

The indication “Init Fac Sure?” appears on the display to confirm the operation.

```
Init Fac
Sure?
```

2. To restore the system data, press the [ENTER] key once more.

The factory initialize process starts. When it is complete, the unit returns to the condition of step 1.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and return to the condition of step 1.

Returning the entire hard disk to the factory default (All Initialize)

This action formats the hard disk and restores system files and various data necessary for operation. All existing projects including demo song data will be erased.

Caution

- Once erased, user-created projects cannot be restored. Use this function with extreme care.
- To preserve projects, back them up to CD-R/RW disc first (→ p. 161).

1. Refer to steps 1 – 3 of “Basic maintenance procedure” to bring up the indication “Init ALL” on the display. Then press the [ENTER] key.

The indication “Init ALL Sure?” appears on the display to confirm the operation.

```
Init ALL
Sure?
```

2. To carry out the initialization process, press the [ENTER] key once more.

The all initialize process starts. When it is complete, the unit returns to the condition of step 1.

By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and return to the condition of step 1.

Hard disk maintenance using the supplied CD-ROM

Using the CD-ROM supplied with the MRS-1608, the following functions can be performed.

◆ Restoring the factory default condition (RECOVER)

This action restores all data including the demo song to the condition in which the unit was originally shipped from the factory. All projects created by the user will be erased.

Caution

- Once erased, user-created projects cannot be restored. Use this function with extreme care.
- To preserve projects, back them up to CD-R/RW disc first (→ p. 161).

◆ Factory initialize (VER UP)

This action restores system files and all data necessary for MRS-1608 operation onto the hard disk.

- 1. Insert the supplied CD-ROM into the CD-R/RW drive and press the rear-panel [POWER] switch to turn the MRS-1608 on.**
- 2. Use the cursor left/right keys to select “RECOVER?” or “VER UP?”, and press the [ENTER] key.**

The indication “Sure?” appears on the display.

- 3. To carry out the respective operation, press the [ENTER] key once more.**

When maintenance is completed, the indication “Done” appears. Remove the CD-ROM from the CD-R/RW drive and restart the MRS-1608.

To cancel the operation, press the [POWER] switch before pressing the [ENTER] key to turn the unit off.

Specifications

● Recorder

Physical track	16
Virtual take	160 (10 V-takes per track)
Drum track	1 (stereo)
Bass track	1
Simultaneous recording track	8
Simultaneous playback track	19 (16 audio + stereo drum + bass)
Recording data format	16-bit linear (non-compressed)
Maximum recording time	Approx. 3 hours/GB (in mono track)
Project	1000
Marker	100 points per project
Locator	Hour/minute/second/ millisecond, measure/beat/tick
Track editing	Copy, move, erase, exchange, trim, fade-in/out, reverse, time stretch, pitch fix, harmony generate, duo harmony
Punch in/out	Manual, auto
Other function	Bounce, scrub/preview, A-B repeat, capture/swap, phrase looping

● Mixer

Fader	15
Level meter indication	Post-fader/pre-fader, fader value monitored
Track parameter	Equaliser, effect send, panning (balance), sub-output send
Equaliser	3-band
Effect send	Chorus/delay, reverb
Stereo linking	Tracks 1/2, 3/4, 5/6, 7/8 selectable
Scene	100 scenes per project

● Effect

Algorithm	9 (CLEAN, DIST, ACO/BASS SIM, BASS, MIC, DUAL MIC, LINE, 8x COMP EQ, MASTERING)
Patch	320 for insert, 60 for send/return
Module	6 for insert, 2 for send/return
Tuner	Chromatic, guitar, bass, open A/D/E/G, D modal

● Rhythm

Voice	24 (drum + bass)
Sound source principle	16-bit, linear PCM
Drum kit	50
Drum sound	36 per kit (12 pad x 3 bank)
Bass program	13
Pad	12 (velocity sensitive)
Resolution	48 PPQN
Beat	1/4 – 8/4
Rhythm pattern	511 patterns per project
Rhythm song	10 songs per project
Measure	999 measures per song, 99 measures per pattern
Note/event	Approx. 20 000 notes per song
Tempo	40.0 – 250.0 BPM

Hard disk drive	3.5-inch, E-IDE type
A/D conversion	24-bit, 64-times oversampling
D/A conversion	24-bit, 128-times oversampling
Sampling frequency	44.1 kHz
Signal processing	24-bit
Frequency response	20Hz – 20kHz ± 1 dB (10-kilohm load)
S/N ratio	93 dB (IHF-A)
Dynamic range	97 dB (IHF-A)
THD+N	0.02% (400-Hz, 10-kilohm load)
Display	122 x 65 mm custom LCD (with backlight)

Guitar/bass input	2 x standard mono phone jack Input impedance 500 kilohm
Balanced/unbalanced input	8x XLR/standard phone combo jack (Balanced operation) Input impedance 1 kilohm, pin 2 hot (Unbalanced operation) Input impedance 50 kilohm
Line input	RCA phono jacks (L/R) Input impedance 10 kilohm Rated input level -10 dBm

Phantom power supply	48 V (on/off switch)
Input level	-50 dBm to +4 dBm continuously variable

Master output	RCA phono jacks (L/R) Output impedance 1 kilohm Rated output level -10 dBm
---------------	--

Headphones output	Standard stereo phone jack 50 mW into 32-ohm load
Sub output	Standard stereo phone jack 50 mW into 32-ohm load

Digital output	S/P DIF, optical (20-bit)
MIDI	IN, OUT
Control input	FS01 connector, FP02 connector
Expansion board slot	1

Dimension	490 (W) x 450 (D) x 125 (H) mm
Weight	7.8 kg (CD-R/RW drive installed) 7.3 kg (CD-R/RW drive uninstalled)

Power supply	DC12 V, 3 A (supplied AC adaptor AD-0011)
--------------	--

Power consumption	30 W (12 V, 2.5 A) typical
Supplied accessory	Operation manual, AC adaptor/ cable, CD-ROM, screws for CD-R/ RW drive

Optional accessory	Foot switch FS01 Expression pedal FP02 USB interface board UIB-02 CD-R/RW drive CD-02
--------------------	--

* 0 dBm = 0.775 Vrms

* Design and specifications are subject to change without notice.

Troubleshooting

If there are problems during operation of the MRS-1608, check the following points first.

Problems during playback

◆ No sound, or sound is very weak

- Check the connections to your monitor system, and the volume setting of the system.
- Make sure that the status keys in the mixer section are lit in green and that the faders are raised. If a key is out, press it to make it light up in green.
- Make sure that the master fader is raised.
- If a scene with the volume lowered has been assigned to a mark, the volume will automatically be lowered when that mark is reached. Delete the scene that is assigned to the mark (→ p. 85).
- The recorder will not operate when the [RECORDER] key is out. Press the [RECORDER] key so that the key is lit.

◆ Operating the fader does not affect the volume

On channels for which stereo link is turned on, the fader of the even-numbered channel will have no effect. Either turn stereo link off (→ p. 82), or operate the fader of the odd-numbered channel.

◆ The display indicates “Don’t Play” and playback is not possible

The recorder will not operate in the current screen. Press the [EXIT] key several times to switch to the main screen.

◆ No sound from input signal, or sound is very weak

- Make sure that the respective [ON/OFF] key of the input is lit.
- Make sure that the respective [INPUT] control or the [GUITAR/BASS INPUT] control is raised.
- Make sure that the [REC LEVEL] control is raised. If it is raised, temporarily turn it down and then up again.

◆ The indication “Stop Recorder” is shown on the display, and operation is not possible.

The current operation is not possible while the recorder is operating. Press the STOP [■] key to stop the recorder.

Problems during recording

◆ Cannot record on a track

- Make sure that you have selected a recording track.
- Check whether you have run out of free space on the hard disk (→ p. 167).
- Recording is not possible if the project is write-protected. Either turn protect off (→ p. 169), or use a different project.
- While the 8-track recording function (→ p. 45) is active, recording on tracks 9/10 – 15/16 and the master track is not possible. To record on these tracks, turn off 8-track recording.

◆ The signal from an instrument or mic connected to an INPUT jack is not available

When instruments/mics are connected to jacks with the same number on both the front panel and rear panel (INPUT 1 and GUITAR/BASS INPUT 1, or INPUT 2 and GUITAR/BASS INPUT 2), the front panel jack has priority.

◆ The recorded sound is distorted

- Check whether the input sensitivity setting ([INPUT] and [GUITAR/BASS INPUT] controls) and recording level setting ([REC LEVEL] control) are appropriate.
- Lower the fader so that the 0 (dB) dot of the level meter does not light.
- If the EQ gain of the track mixer is set extremely high, the sound may be audibly distorted even if the fader is lowered. Set the EQ to an appropriate value.
- When the insert effect is applied to the input, check whether the effect output level (patch level) setting is appropriate.

Problems with effects

◆ Insert effect cannot be inserted

When the 8x COMP EQ algorithm is selected, the selection of insert points is limited (→ p. 140).

◆ Insert effect does not apply

- Make sure that the [BYPASS/TUNER] key is out.
- Make sure that the insert effect is sent to the desired location (→ p.140).

◆ Send/return effect does not apply

- Make sure that the [CHORUS/DELAY] or [REVERB] key is lit. If it is out, press the key several times to make it light.
- Make sure that the send level for each track is raised (→ p. 80).

Problems with the rhythm section

◆ Cannot hear the rhythm pattern playback

- Make sure that the [DRUM]/[BASS] status keys are lit in green.
- Make sure that the [DRUM]/[BASS] faders are raised. If the faders are already raised, lower them and then raise them once more.
- Make sure that you have not selected a blank rhythm pattern (pattern name “EMPTY”).
- Make sure which is selected as playback sound, a drum kit/bass program, or the pad sampler. A sound that is not selected will not play.
- If the pad sampler is selected as playback sound, make sure that samples are assigned to the pads.

◆ Cannot hear the rhythm song play back

- In the case of a new project, all rhythm songs will be empty, so you will hear no sound. Either create a new rhythm song, or load a project for which a rhythm song has been created.
- When using Control Change signals sent from an external MIDI device, the drum or bass volume may be lowered. Set the MIDI channels for drum and bass to OFF or check the setting at the external MIDI device.

◆ No sound when you tap the pads

If the pad sensitivity has been set to “SOFT”, loud sounds will not be produced even when you tap the pad strongly. Change the pad sensitivity setting (→ p. 120).

◆ Cannot record or edit a rhythm pattern/ rhythm song

- When the [RHYTHM] key is out or blinking, it is not possible to record or edit a rhythm pattern or rhythm song. Press the [RHYTHM] key so that the key is lit.
- If the display indicates “SEQ FULL”, the rhythm section memory has been used to maximum capacity. Delete unneeded rhythm patterns to free up memory.

◆ Sounds recorded in the rhythm pattern do not play

Sounds that exceed the maximum polyphony (24 sounds for drum kit + bass program; 24 sounds for pad sampler) will not be played. Either delete some of the notes that have been recorded, or stay within the maximum polyphony when you record.

◆ Cannot play pad sampler

When an empty sampler program was selected, no samples will be assigned to the pads. Select one of the preset sampler programs.

◆ Cannot add samples to pad sampler

If the display indicates “SPL FULL”, the pad sampler memory has been used to maximum capacity. Delete unneeded samples to free up memory.

Problems with MIDI

◆ The MRS-1608's drum kit/bass program sounds cannot be played from external MIDI device

- Make sure that the MIDI cable is correctly connected from the MIDI OUT connector of the external device to the MRS-1608's MIDI IN connector.
- Make sure that the MIDI send channels of the external device match the MIDI receive channels for drum kit/bass program at the MRS-1608.
- During rhythm pattern step input, an external MIDI device cannot be used.

◆ Cannot synchronize with external MIDI device

- Make sure that the MIDI cable is correctly connected from the MIDI OUT connector of the MRS-1608 to the MIDI IN connector of the external device.
- Synchronization with an external MIDI device is only possible by using the MIDI clock or MTC output from the MRS-1608. The MRS-1608 cannot synchronize to a MIDI clock or MTC supplied by an external device.
- When synchronizing on the timing clock (MIDI clock), make sure that output is enabled for Timing Clock, Song Position Pointer, and Start/Stop/Continue

messages at the MRS-1608 (→ p. 172).

- When synchronizing on the MTC (MIDI Time Code), make sure that MTC output is enabled at the MRS-1608 (→ p. 173).
- Make sure that the external MIDI device is set to receive MIDI clock or MTC and synchronize to it.
- Make sure that the external MIDI device is in playback mode.

◆ **Cannot load SMF from CD-ROM or CD-R/RW disc**

- Make sure that the SMF is Format 0 and that the file name and extension are appropriate.
- An SMF located on an unfinalized CD-R/RW cannot be loaded.

◆ **Cannot play SMF**

Make sure that the SMF playback setting is “ON” (→ p. 176).

Problems with CD-R/RW drive

◆ **Cannot play audio CD created with MRS-1608 on ordinary CD player**

- Check whether the disc was finalized.
- On some older CD players, CD-R/RW discs will not play properly as audio CDs, even if the disc was finalized.
- Discs created using CD-RW media may not be playable on an ordinary CD player.

◆ **Cannot write audio data to CD-R/RW disc**

If the disc was already finalized, no more data can be added to it.

◆ **Cannot perform backup**

Check whether audio data have already been written to the CD-R/RW disc. Such a disc cannot be used for backup.

◆ **Cannot read a backup spanning several discs**

When a project backup spans several discs, insert disc number 1. When the entire hard disk was backed up, insert the first disc that contains data of the desired project.

Other problems

◆ **Cannot save a project**

The project cannot be saved if the protect setting is on. Turn protect off (→ p. 169).

◆ **Cannot read an audio file from CD-ROM or CD-R/RW**

- Check whether the audio file has the correct extension (.WAV or .AIF).
- An audio file from a CD-R/RW that has not been finalized cannot be read.

◆ **Cannot record on an external recorder connected to the DIGITAL OUTPUT jack**

- Check whether the digital input has been selected as recording source on the external recorder. Also make sure that the external recorder has locked to the sampling frequency of the input signal.
- Make sure that the external recorder supports the S/P DIF audio format.

◆ **Cannot create a new project or copy a project**

If the display indicates “PRJ FULL”, the project memory has been used to maximum capacity. Delete unneeded projects to free up memory.

◆ **One of the following messages is shown when attempting to execute a command**

CD FULL

There is not enough free space on the CD-R/RW disc.

INSERT DISCxxx

Insert the disc with the number xxx.

NO AUDIO

The disc in the CD-R/RW drive is not an audio disc.

NO DATA

The specified data do not exist.

NO DISC

No disc is inserted in the CD-R/RW drive.

NotBLANK

The CD-R/RW disc is not empty.

NOT CD-R

The disc inserted in the CD-R/RW drive is not a CD-R/RW disc.

HDD FULL

There is not enough free space on the internal hard disk.

Appendix

Effect Parameters

Insert Effect

◆CLEAN, DIST, ACO/BASS SIM, BASS algorithm

COMP module

Type	Parameter		
COMPRESS	SENS	ATTACK	LEVEL
	Keeps the dynamic range consistent.		

Parameter description

Parameter	Setting range	Description
SENS	0 – 10	Adjusts the compression input sensitivity.
ATTACK	0 – 10	Adjusts the compression attack speed.
LEVEL	1 – 8	Adjusts the module output level.

PRE AMP/DRIVE module

Type	Parameter					
J-CLN	Clean sound that models a transistor combo amp.					
US-CLN	Clean sound that models a built-in type vacuum tube amp.					
US-DRV	Drive sound that models a built-in type vacuum tube amp.					
TWEED	Model of a small built-in vacuum tube combo amp with dry distortion.					
CLASS A	Unique crunch sound that models a British-style combo amp.					
UK-CRU	Crunch sound that models a British-style vacuum tube stack amp.					
UK-DRV	Drive sound that models a British-style vacuum tube stack amp.					
CMB 335	Models a vacuum tube combo amp characterized by long sustain.					
MTL PNL	High-gain drive sound that models a vacuum tube stack amp.					
BLK BTM	Model of a vacuum tube stack amp, characterized by fat bass and delicate distortion.					
MD LEAD	Drive sound that models a high-gain amp suitable for lead guitar.					
FZ-STK	60's sound typical of a Fuzz unit played through an amp stack.					
TE BASS	Model of a bass amp with a distinctively clean low-mid range.					
FD BASS	Model of a bass amp with vintage-style drive.					
	GAIN	TONE	LEVEL			
	<i>Parameters for type J-CLN to FD BASS are the same.</i>					
SNS BASS	Trebly drive sound for bass.					
CR+CAB	Combination of crunch and cabinet simulator.					
TS+CAB	Combination of vintage overdrive and cabinet simulator.					
GV+CAB	Combination of vintage distortion and cabinet simulator.					
MZ+CAB	Combination of metal-style distortion and cabinet simulator.					
9002+CAB	Combination of the Zoom 9002 distortion and cabinet simulator.					
	GAIN	TONE	LEVEL	CABINET	SPEAKER	DEPTH
	<i>Parameters for type SNS BASS to 9002+CAB are the same.</i>					
ACO SIM	TOP	BODY	LEVEL	CABINET	SPEAKER	DEPTH
	Transforms the sound of an electric guitar into an acoustic-guitar-like tone.					
E-AcPRE	COLOR	TONE	LEVEL	CABINET	SPEAKER	DEPTH
	Pre-amp for electroacoustic guitar.					
BASS SIM	TONE	LEVEL				
	Transforms the sound of an electric guitar into a bass-guitar-like tone.					
CABINET	CABINET	SPEAKER	DEPTH			
	Simulation of the cabinet of a guitar/bass amp.					

Parameter description

Parameter	Setting range	Description
GAIN	1 – 30	Adjusts the amount of gain.
TONE	0 – 10	Adjusts the tone.
LEVEL	1 – 8	Adjusts the module output level.
CABINET		Selects the cabinet type
	COMBO	Combo-type cabinet.
	BRIGHT	Produces a brighter tone than Combo.
	FLAT	Cabinet with a flat response.
	STACK	Stack-type cabinet.
	BsCombo	Combo-type cabinet for bass.
SPEAKER	BsStack	Stack-type cabinet for bass.
		Selects the loudspeaker type.
	Gt 12x1	Combo-type guitar amp with one 12 inch speaker.
	Gt 12x2	Combo-type guitar amp with two 12 inch speakers.
	Gt 10x1	Combo-type guitar amp with one 10 inch speaker.
	GtStack	Stack-type guitar amp with four 10 inch speakers.
	Gt Wall	Multiple stack-type amps placed together.
Bs 15x1	Combo-type bass amp with one 15 inch speaker.	
BsStack	Stack-type bass amp with four 6.5 inch speakers.	
DEPTH	0 – 10	Adjusts the cabinet resonance of the speaker.
TOP	1 – 30	Adjusts the resonance of the strings.
BODY	0 – 10	Adjusts the resonance of the body.
COLOR	1 – 4	Adjusts the character of the electroacoustic guitar preamp.

3 BAND EQ module

Type	Parameter			
3BandEQ	HIGH	MID	LOW	LEVEL
	Three-band equalizer.			

Parameter description

Parameter	Setting range	Description
HIGH	-12 – 12	Boosts/cuts the high-frequency range.
MID	-12 – 12	Boosts/cuts the mid-frequency range.
LOW	-12 – 12	Boosts/cuts the low-frequency range.
LEVEL	1 – 8	Adjusts the module output level.

MODULATION/DELAY module

Type	Parameter			
CHORUS	DEPTH	RATE	MIX	
	Adds pulsation and spaciousness to the sound.			
V-CHORUS	DEPTH	RATE	MIX	
	Simulates the warm sound of a vintage effect.			
FLANGER	DEPTH	RATE	FB	
	Produces a unique, undulating sound.			
PHASER	POSITION	RATE	COLOR	
	Produces a swooshing sound.			
TREMOLO	DEPTH	RATE	CLIP	
	Periodically varies the level of the sound.			
AUTO WAH	FLT TYPE	POSITION	RESONANC	SENS
	Gives a varying wah sound that depends on the picking intensity.			
PITCH	SHIFT	TONE	BALANCE	
	Modifies the pitch of the direct sound.			
SLOW-ATK	POSITION	TIME	CURVE	
	Creates a “violin playing” sound with soft attack.			
VIBE	DEPTH	RATE	BALANCE	
	Automatic vibrato effect.			

STEP	DEPTH	RATE	RESONANC			
	Changes the sound with step-like filter characteristics.					
RING MOD	POSITION	RATE	BALANCE			
	Produces a metallic sound.					
CRY	POSITION	RESO	SENS			
	Talking-modulator-like effect.					
EXCITER	FREQ	DEPTH	LowBoost			
	Gives the sound more focus and spatial definition.					
AIR	SIZE	TONE	MIX			
	Simulates the air ambience of the room, giving the sound spatial depth.					
WIDE	TIME	WET LVL	DRY LVL			
	Simulates a stereo recording with two microphones.					
DELAY	TIME	FB	MIX			
	Delay effect with a delay time of up to 10 seconds.					
ECHO	TIME	FB	MIX			
	Delay effect with warm sound, up to 10 second delay time.					
FIX-WAH	FLT TYPE	POSITION	FREQ	R MODE	R WAVE	R SYNC
	Changes the wah frequency in sync with rhythm tempo.					
ARRM-PIT	TYPE	TONE	R WAVE	R SYNC		
	Changes the pitch in sync with rhythm tempo.					

Parameter description

Parameter	Setting range	Description
DEPTH	EXCITER: 0 – 30	Adjusts the depth of the effect.
	Others: 0 – 10	
RATE	TREMOLO: 1 – 30, T 4 – T 1/8	Adjusts the speed of the effect. The “T x” setting results in sync with the rhythm tempo.
	FLANGER, PHASER: 1 – 30, T 4x4 – T 1/8	
	Others: 1 – 30	
MIX	0 – 30	Adjusts the mix amount of the effect.
FB	FLANGER: -10 – 10	Adjusts the amount of feedback.
	DELAY, ECHO: 0 – 10	
POSITION	AFTER, BEFORE	Selects the module location from AFTER; after the 3 BAND EQ module and BEFORE; before the PRE AMP/DRIVE module.
COLOR		Specifies the type of phase tone.
	4Stage	4-stage phaser
	Invert4	4-stage phaser with inverted feedback
	8Stage	8-stage phaser
CLIP		Emphasizes the effect.
	0 – 10	
FLT TYPE	BPF, LPF	Specifies the filter type.
RESONANC	AUTO WAH, CRY: 1 – 10	Adjusts the effect character intensity.
	STEP: 0 – 10	
SENS	-10 – -1, 1 – 10	Adjusts the effect sensitivity.
SHIFT	-24.0 – 12.0	Adjust the pitch shift amount. The value “1.0” corresponds to semitone.
TONE	0 – 10	Adjusts the tone.
BALANCE	0 – 30	Adjusts the balance between the direct sound and effect sound.
TIME	SLOW-ATK: 1 – 30	Adjusts the attack speed.
	WIDE: 1 – 64	Adjusts the delay time in 1-ms steps. The “T x” setting results in sync with the rhythm tempo.
	DELAY, ECHO: 1 – 10000, T 4x4 – T 1/4	
CURVE	0 – 10	Adjusts the attack curve.
FREQ	EXCITER: 1 – 5	Adjusts the frequency.
	FIX-WAH: 1 – 50	Adjusts wah effect center frequency.
LowBoost	0 – 10	Emphasizes the low frequency range.
SIZE	1 – 10	Adjusts the spatial width.
WET LVL	0 – 30	Adjusts the mix amount of the effect sound.
DRY LVL	0 – 30	Adjusts the mix amount of the direct sound.

R MODE		Selects the changing width.
	OFF	Frequency stays constant.
	PEDAL	Use the expression pedal to change the frequency.
	UP	Minimum → maximum
	DOWN	Maximum → minimum
	HI	Setting value → maximum
R WAVE	LO	Minimum → setting value
		Selects the control waveform.
	Up Saw	Rising sawtooth wave
	Up Fin	Rising fin wave
	DownSaw	Falling sawtooth wave
	DownFin	Falling fin wave
	TRI	Triangle wave
	TRIXTRI	Second power triangle wave
R SYNC	SINE	Sine wave
	SQUARE	Square wave
		Adjusts the control waveform cycle.
	1/2	Eighth note
	1	Quarter note
TYPE	2	Half note
	3	Dotted half note
	1b - 4b	1 measure - 4 measures
		Selects the pitch change type.
	1	Semitone lower → original
	2	Original → semitone lower
	3	Doubling → detune + original
	4	Detune + original → doubling
	5	Original → 1 octave higher
	6	1 octave higher → original
	7	Original → 2 octaves lower
	8	2 octaves lower → original
	9	1 octave lower + original → 1 octave higher + original
	10	1 octave higher + original → 1 octave lower + original
	11	Perfect 5th lower + original → perfect 4th higher + original
	12	Perfect 4th higher + original → perfect 5th lower + original
13	0 Hz + original → 1 octave higher	
14	1 octave higher → 0 Hz + original	
15	0 Hz + original → 1 octave higher + original	
16	1 octave higher + original → 0 Hz + original	

ZNR module

Type	Parameter
ZNR	THRSHOLD
	Cuts noise during performance pauses.

Parameter description

Parameter	Setting range	Description
THRSHOLD	OFF, 1 - 30	Adjusts the sensitivity. Set this high as far as the attacks or decays sound natural.

VOL PDL module

Type	Parameter
VOL PDL	MIN VOL
	You can use the expression pedal to control the volume.

Parameter description

Parameter	Setting range	Description
MIN VOL	0 - 10	Specifies the minimum volume.

◆MIC algorithm

COMP/LIM module

Type	Parameter			
COMPRESS	THRSHOLD	RATIO	ATTACK	LEVEL
	Keeps the dynamic range consistent.			
LIMITER	THRSHOLD	RATIO	RELEASE	LEVEL
	Controls the signal peeks.			

Parameter description

Parameter	Setting range	Description
THRSHOLD	-24 – 0	Adjusts the sensitivity.
RATIO	COMP: 1 – 26	Adjusts the compression degree of the signal.
	LIMIT: 1 – 54, ∞	
ATTACK	0 – 10	Adjusts the compression attack speed.
LEVEL	0 – 12	Adjusts the module output level.
RELEASE	0 – 10	Adjusts the time between the threshold and compression finish.

MIC PRE module

Type	Parameter			
MIC PRE	COLOR	TONE	LEVEL	DE-ESSER
	Preamp for external microphone.			

Parameter description

Parameter	Setting range	Description
COLOR		Adjust the frequency response.
	FLAT	Flat response
	HPF	Low cut
	AcoGt	Acoustic guitar characteristics
	HPF Aco	Acoustic guitar characteristics with low cut
	Vocal	Vocal characteristics
TONE	0 – 10	Adjusts the tone.
	HPF Vo	Vocal characteristics with low cut
LEVEL	1 – 8	Adjusts the module output level.
DE-ESSER	0 – 10	Adjusts the cut amount of vocal sibilants.

3 BAND EQ module

See the *CLEAN*, *DIST*, *ACO/BASS SIM*, *BASS* algorithm.

MODULATION/DELAY module

Type	Parameter			
CHORUS	DEPTH	RATE	MIX	
	Adds pulsation and spaciousness to the sound.			
V-CHORUS	DEPTH	RATE	MIX	
	Simulates the warm sound of a vintage effect.			
FLANGER	DEPTH	RATE	FB	
	Produces a unique, undulating sound.			
PHASER	RATE	COLOR		
	Produces a swooshing sound.			
TREMOLO	DEPTH	RATE	CLIP	
	Periodically varies the level of the sound.			
PITCH	SHIFT	TONE	BALANCE	
	Modifies the pitch of the direct sound.			
SLOW-ATK	TIME	CURVE		
	Creates a “violin playing” sound with soft attack.			
VIBE	DEPTH	RATE	BALANCE	
	Automatic vibrato effect.			

STEP	DEPTH	RATE	RESONANC	
	Changes the sound with step-like filter characteristics.			
RING MOD	RATE	BALANCE		
	Produces a metallic sound.			
CRY	RESONANC	SENS		
	Talking-modulator-like effect.			
EXCITER	FREQ	DEPTH	LowBoost	
	Gives the sound more focus and spatial definition.			
AIR	SIZE	STONE	MIX	
	Simulates the air ambience of the room, giving the sound spatial depth.			
DELAY	TIME	FB	MIX	
	Delay effect with a delay time of up to 10 seconds.			
ECHO	TIME	FB	MIX	
	Delay effect with warm sound, up to 10 second delay time.			
DOUBLING	TIME	STONE	MIX	
	Doubling effect with a delay time of up to 100 milliseconds.			
FIX-WAH	FLT TYPE	FREQ	R MODE	R WAVE R SYNC
	Changes the wah frequency in sync with rhythm tempo.			
ARRM-PIT	TYPE	STONE	R WAVE	R SYNC
	Changes the pitch in sync with rhythm tempo.			

Regarding the parameter description, see the CLEAN, DIST, ACO/BASS SIM, BASS algorithm.

ZNR module

VOL PDL module

See the CLEAN, DIST, ACO/BASS SIM, BASS algorithm.

◆DUAL MIC algorithm

COMP/LIM module

MIC PRE module

See the MIC algorithm.

(Same with the MIC algorithm except that there is not the parameter “DE-ESSER” in MIC PRE module)

3 BAND EQ module

Type	Parameter			
EQ L/R	HIGH	MID	LOW	LEVEL
	Three-band equalizer.			

Parameter description

Parameter	Setting range	Description
HIGH	-12 – 12	Boosts/cuts the high-frequency range.
MID	-12 – 12	Boosts/cuts the mid-frequency range.
LOW	-12 – 12	Boosts/cuts the low-frequency range.
LEVEL	1 – 8	Adjusts the module output level.

DELAY module

Type	Parameter			
DELAY L/R	TIME	FB	MIX	
	Delay effect with a delay time of up to 5 seconds.			
ECHO L/R	TIME	FB	MIX	
	Delay effect with warm sound, up to 5 second delay time.			
DOUBLE L/R	TIME	STONE	MIX	
	Doubling effect with a delay time of up to 100 milliseconds.			

Parameter description

Parameter	Setting range	Description
TIME	DOUBLING: 1 – 100	Adjusts the delay time in 1-ms steps. The “T x” setting results in sync with the rhythm tempo.
	DELAY, ECHO: 1 – 5000, T 4x4 – T 1/4	
FB	0 – 10	Adjusts the amount of feedback.
MIX	0 – 30	Adjusts the mix amount of the effect.
STONE	0 – 10	Adjusts the tone.

ZNR module**VOL PDL module**

See the *CLEAN*, *DIST*, *ACO/BASS SIM*, *BASS* algorithm.

◆LINE algorithm**COMP/LIM module**

See the *MIC* algorithm.

ISOLATOR module

Type	Parameter				
ISOLATOR	XOVER LO	XOVER HI	MIX HIGH	MIX MID	MIX LOW
	Divides the signal into three frequency bands, and specifies the mix amount each.				

Parameter description

Parameter	Setting range	Description
XOVER LO	50 – 16000	Adjusts the frequency for bass/midrange division.
XOVER HI	50 – 16000	Adjusts the frequency for midrange/treble division.
MIX HIGH	OFF, -24 – 6	Adjusts the treble mix amount.
MIX MID	OFF, -24 – 6	Adjusts the midrange mix amount.
MIX LOW	OFF, -24 – 6	Adjusts the bass mix amount.

3 BAND EQ module

See the *CLEAN*, *DIST*, *ACO/BASS SIM*, *BASS* algorithm.

MODULATION/DELAY module

Type	Parameter		
CHORUS	DEPTH	RATE	MIX
	Adds pulsation and spaciousness to the sound.		
FLANGER	DEPTH	RATE	FB
	Produces a unique, undulating sound.		
PHASER	RATE	COLOR	
	Produces a swooshing sound.		
TREMOLO	DEPTH	RATE	CLIP
	Periodically varies the level of the sound.		
PITCH	SHIFT	TONE	BALANCE
	Modifies the pitch of the direct sound.		
RING MOD	RATE	BALANCE	
	Produces a metallic sound.		
DOUBLING	TIME	TONE	MIX
	Doubling effect with a delay time of up to 100 milliseconds.		
DELAY	TIME	FB	MIX
	Delay effect with a delay time of up to 5 seconds.		
ECHO	TIME	FB	MIX
	Delay effect with warm sound, up to 5 second delay time.		

Parameter description

Parameter	Setting range	Description
DEPTH	0 – 10	Adjusts the depth of the effect.
RATE	TREMOLO: 1 – 30, T 4 – T 1/8	Adjusts the speed of the effect. The “T x” setting results in sync with the rhythm tempo.
	FLANGER, PHASER: 1 – 30, T 4x4 – T 1/8	
	Others: 1 – 30	
MIX	0 – 30	Adjusts the mix amount of the effect.
FB	FLANGER: -10 – 10	Adjusts the amount of feedback.
	DELAY, ECHO: 0 – 10	
COLOR	1 – 4	Specifies the type of phase tone.
CLIP	0 – 10	Emphasizes the effect.
SHIFT	-24.0 – 12.0	Adjust the pitch shift amount. The “dt” setting results in a detune effect.
TONE	0 – 10	Adjusts the tone.
BALANCE	0 – 30	Adjusts the balance between the direct sound and effect sound.
TIME	DOUBLING: 1 – 100	Adjusts the delay time in 1-ms steps. The “T x” setting results in sync with the rhythm tempo.
	DELAY, ECHO: 1 – 5000, T 4x4 – T 1/4	

ZNR module**VOL PDL module**

See the *CLEAN*, *DIST*, *ACO/BASS SIM*, *BASS algorithm*.

◆8x COMP EQ algorithm

Module 1 – 8

Unit	Type	Parameter				
HPF1 - 8	HPF	FREQ				
		Filter passing the high frequency signal through.				
COMP1 - 8	COMPRESS	THRSHOLD	RATIO	ATTACK	LEVEL	
		Keeps the dynamic range consistent.				
	LIMITER	THRSHOLD	RATIO	RELEASE	LEVEL	
		Controls the signal peeks.				
EQ1 - 8	EQ	HIGH	MID	LOW	LEVEL	
		Three-band equalizer.				

Parameter description

Parameter	Setting range	Description
FREQ	0 – 10	Sets the cut-off frequency.
THRSHOLD	-24 – 0	Adjusts the sensitivity.
RATIO	COMP: 1 – 26	Adjusts the compression degree of the signal.
	LIMIT: 1 – 54, ∞	
ATTACK	0 – 10	Adjusts the compression attack speed.
LEVEL	COMPRESS, LIMITER: 0 – 12	Adjusts the unit output level.
	EQ: 1 – 8	
RELEASE	0 – 10	Adjusts the time between the threshold and compression finish.
HIGH	-12 – 12	Boosts/cuts the high-frequency range.
MID	-12 – 12	Boosts/cuts the mid-frequency range.
LOW	-12 – 12	Boosts/cuts the low-frequency range.

◆MASTERING algorithm

3 BAND COMP/Lo-Fi module

Type	Parameter							
MLT CMP	XOVER LO	XOVER HI	SENS HI	SENS MID	SENS LOW	MIX HIGH	MIX MID	MIX LOW
	Divides the signal into three frequency bands, and specifies the compression and the mix amount each.							
Lo-Fi	CHARACTR	COLOR	DISTORTN	TONE	EFX LVL	DRY LVL		
	Degrades the audio quality of the sound.							

Parameter description

Parameter	Setting range	Description
XOVER LO	50 – 16000	Adjusts the frequency for bass/midrange division.
XOVER HI	50 – 16000	Adjusts the frequency for midrange/treble division.
SENS HI	0 – 24	Adjusts the compressor input sensitivity for the treble range.
SENS MID	0 – 24	Adjusts the compressor input sensitivity for the midrange.
SENS LOW	0 – 24	Adjusts the compressor input sensitivity for the bass range.
MIX HIGH	OFF, -24 – 6	Adjusts the treble mix amount.
MIX MID	OFF, -24 – 6	Adjusts the midrange mix amount.
MIX LOW	OFF, -24 – 6	Adjusts the bass mix amount.
CHARA	0 – 10	Specifies the character of the filter.
COLOR	1 – 10	Adjusts the color.
DIST	0 – 10	Adjusts the degree of distortion.
TONE	0 – 10	Adjusts the tone.
EFX LVL	0 – 30	Adjusts the mix amount of the effect sound.
DRY LVL	0 – 30	Adjusts the mix amount of the direct sound.

NORMALIZER module

Type	Parameter
NORMLZR	GAIN
	Set the input level of the 3 BAND COMP/Lo-Fi module.

Parameter description

Parameter	Setting range	Description
GAIN	-12 – 12	Adjusts the level.

3 BAND EQ module

See the CLEAN, DIST, ACO/BASS SIM, BASS algorithm.

DIMENSION/RESONANCE module

Type	Parameter						
DIMENSN	RISE 1	RISE 2					
	Produces spatial width.						
RESONNC	DEPTH	FreqOFST	RATE	TYPE	RESONANC	EFX LVL	DRY LVL
	A resonance filter with LFO.						

Parameter description

Parameter	Setting range	Description
RISE 1	0 – 30	Adjusts the emphasizing degree of the stereo component.
RISE 2	0 – 30	Adjusts the spaciousness that includes the monaural component.
DEPTH	0 – 10	Adjusts the depth of the effect.
FreqOFST	1 – 30	Adjusts the LFO offset.
RATE	1 – 30, T 4x4 – T 1/8	Adjusts the speed of the effect. The “T x” setting results in sync with the rhythm tempo.
TYPE	HPF, LPF, BPF	Specifies the filter type.
RESONANC	1 – 30	Adjusts the effect character intensity.
EFX LVL	0 – 30	Adjusts the mix amount of the effect sound.
DRY LVL	0 – 30	Adjusts the mix amount of the direct sound.

ZNR module

VOL PDL module

See the CLEAN, DIST, ACO/BASS SIM, BASS algorithm.

Send/return Effect

CHORUS/DELAY module

Type	Parameter					
CHORUS	LFO TYPE	DEPTH	RATE	PRE DLY	EFX LVL	
	Adds pulsation and spaciousness to the sound.					
DELAY	TIME	FB	DAMP	PAN	EFX LVL	REV SEND
	Delay effect with a delay time of up to 10 seconds.					

Parameter description

Parameter	Setting range	Description
LFO TYPE	MONO, STEREO	Selects the LFO phase: Mn (monaural) or St (stereo).
DEPTH	0 – 10	Adjusts the depth of the effect.
RATE	1 – 30	Adjusts the speed of the effect.
PRE DLY	1 – 30	Adjusts the pre-delay time.
EFX LVL	0 – 30	Adjusts the mix amount of the effect sound.
TIME	1 - 10000, T 4x4 – T 1/4	Adjusts the delay time in 1-ms steps. The “T x” setting results in sync with the rhythm tempo.
FB	0 – 10	Adjusts the amount of feedback.
DAMP	0 – 10	Adjusts the cut amount of the delay sound's high range.
PAN	LEFT10 – L1, CENTER, RIGHT1 – RIGHT10	Adjusts the stereo position of the delay sound.
REV SEND	0 – 30	Adjusts the send level of the delay sound to reverb.

REVERB module

Type	Parameter					
HALL	PRE DLY	DECAY	EQ HIGH	EQ LOW	E/R MIX	LEVEL
	Simulates the acoustics of a concert hall.					
ROOM	PRE DLY	DECAY	EQ HIGH	EQ LOW	E/R MIX	LEVEL
	Simulates the acoustics of a room.					
SPRING	PRE DLY	DECAY	EQ HIGH	EQ LOW	EFX LVL	
	Simulates a spring type reverb machine.					
PLATE	PRE DLY	DECAY	EQ HIGH	EQ LOW	EFX LVL	
	Simulates a plate reverb.					

Parameter description

Parameter	Setting range	Description
PRE DLY	1 – 100	Adjusts the pre-delay time.
DECAY	1 – 30	Adjusts the reverb time.
EQ HIGH	-12 – 6	Adjusts the high range level of the effect sound.
EQ LOW	-12 – 6	Adjusts the low range level of the effect sound.
E/R MIX	0 – 30	Adjusts the volume of early reflections.
EFX LVL	0 – 30	Adjusts the mix amount of the effect sound.

Effect Patch

Insert Effect

◆CLEAN algorithm

No.	Name	Comment
0	Standard	Basic sound touched up for recording
1	J-Chorus	JC clean sound
2	Phaser	Emulates a vintage phase effect
3	DryComp	Line input clean sound with a hint of doubling
4	RiffCLN	Rock'n roll sound bringing out differences between guitars
5	WideCLN	Wide clean sound with crunch
6	PunchCLN	Airy sound with a punch
7	Arpeggio	Clean sound for arpeggios
8	CleanCH	Clean channel sound of an American-made vintage tube amp
9	50sRNB	Tremolo sound for rhythm & blues
10	StrmBeat	Basic sound for strummed backing
11	CompCln	Natural compression sound
12	12-Clean	Clean sound with an upper octave mixed in
13	Funky	Funky cutting sound
14	FDR-Cln	Clean sound of American-made vintage tube amp
15	Rockbily	Rockabilly sound with short delay
16	NYFusion	Clean sound for direct-line recording
17	Wet-Rhy	Cutting sound for ballads
18	JazzTone	Clean sound for jazz
19	DeepFLG	Clean flanging sound
20	ARRMWah	Clean wah sound using FIX-WAH
21	Kaitei	Mellow echoed sound for arpeggios or lead
22 - 25	EMPTY	

◆DIST algorithm

No.	Name	Comment
0	MRS-Drv	Full distortion with rich sustain
1	RCT-BG	High-gain amp sound of American-made "Rectifier" series
2	CrnchCmp	Crunch sound with a touch of compression
3	9002Lead	ZOOM 9002 sound
4	F-Tweed	Sound of a small, American-made vintage tube amp
5	BlackPnl	Heavy metal sound of "5100 series" American-made stack amp
6	MatchCru	Crunch sound of a modern class-A amp
7	Sticky	Tight crunch sound
8	HardPick	Hard crunch sound
9	RockDrv	Straight rock drive sound
10	Duplex	Spacious lead sound with dual overlay effect
11	MadBass	Distortion bass sound for high range chord playing and lead
12	Straight	Versatile, straight lead sound
13	JetSound	Versatile jet sound
14	Combo-BG	Overdrive sound with detailed long sustain
15	FDR-Twin	Clean sound of American-made vintage tube amp
16	Beatle	Class-A type Mersey Beat sound
17	WildFuzz	Vintage fuzz box
18	JB.Style	Octaver for guitar and bass unison riffs
19	Pitch-5	Even single notes sound like power chords

20	BRT-Drv	Great sound of British “900 series” stack amp
21	Soldan	High-gain amp sound for single coil half-tone settings
22	MatchDrv	Drive sound of a modern class-A amp
23	Snake	Heavy metal sound with a solid bottom
24	Crunch	Ensemble of “800” series crunch and delay
25	Ballad	Warm lead sound
26	Metal-X	Metal sound with subtle overtones
27	DP-Drv	1970’s hard rock sound
28	WetDrive	Simple wet overdrive sound
29	Mellow	Lead sound with a sweet tone
30	MultiDst	Strong all-round sound
31	Bright	Crisp sound
32	Melody	Tastefully seasoned sound for melodies
33	V-Blues	Vintage blues sound
34	BlueFngr	Bluesy sound for finger picking
35	HDR-Drv	Wet hard rock sound
36	Cry-Lead	Zoom’s original “cry effect” sound
37	ZakWah	Lead sound with auto-wah
38	LA-Std	L.A. studio-style big chorus sound
39	TheRing	Ring modulator simulation
40	JimVib	Remade famous vibrato
41	Creamy	Mild fuzz
42 - 49	EMPTY	

◆ACO/BASS SIM algorithm

No.	Name	Comment
0	AcoSIM 1	Simulates unadorned acoustic guitar sound
1	AcoSIM 2	Simulates acoustic guitar with beautiful chorus
2	AcoSIM 3	Shimmering detuned sound with no modulation
3	FullSize	Simulates acoustic guitar with full-sized body
4	Light12	Light 12-string guitar sound
5	BsSIM 1	Simulates a tight picked bass
6	BsSIM 2	Chorus bass simulation for melody lines
7	BsSIM 3	Auto-wah bass simulation
8	FIngBass	Flanging sound often used in 1980’s fusion
9	UniSolo	Guitar and bass unison sound
10 - 15	EMPTY	

◆BASS algorithm

No.	Name	Comment
0	BS-Pick	Tight sound for playing with a pick
1	BS-Od	Retro distortion sound
2	BS-Drv	Hard distortion sound
3	BS-Fingr	All-round sound for finger picking
4	BS-Slap	Crisp slap sound
5	BS-Comp	Sound with attack, controlled by picking dynamics
6	BS-Edge	Tight sound with an edge
7	BS-Solo	Chorus sound for melodies
8	BS-Octve	Sound with an upper octave mixed in
9	BS-Wah	Funky bass with auto-wah
10 - 19	EMPTY	

◆MIC algorithm

No.	Name	Comment
	Vo-Stnd	Standard vocal effect
1	Vo-Rock	Rock vocal effect
2	Vo-Balld	Ballade vocal effect with detuned chorus
3	Vo-Echo	Vocal echo
4	Vo-PreC1	Smooth, listenable sound for condenser mics
5	Vo-PreC2	Adds depth for condenser mics
6	Vo-PreD1	Improves definition for dynamic mics
7	Vo-PreD2	Makes sound fatter and wetter
8	Vo-Robot	Robot voice as in SF movies
9	AG-Live	Sound for mic recording with a live feel, not only for guitar
10	AG-Brght	Bright and crisp sound for mic recording
11	AG-Solo	Gorgeous solo sound
12	AG-Edge	Acoustic guitar recording sound with enhanced edge
13	AG-Strum	Acoustic guitar recording sound for strumming
14	ForWind	Sound with distinctive mid-range
15	ForBrass	Crisp-sounding short delay
16	ForPiano	Enhances depth and definition
17	AG-Mix 1	Enhanced sound for strumming
18	AG-Mix 2	Enhanced sound for arpeggio
19	SweeperX	Adds sharp sweep to one-shot percussion
20	FXgroove	Rhythm machine sound
21	Lo&Hi	Boosts highs and lows and attenuates midrange
22	Lo-Boost	Emphasizes low end by pitch shifter
23	FanFan	Sound like talking into a fan
24	Alien	Space creature sound for vocal
25	TapeComp	Simulates analog multi-track recording
26	Duet??	Adds a child voice to female vocal or a female voice to male vocal
27	Active	Emphasizes attack
28	Psyche	Vocal gimmick effect in psychedelic style
29	DeepDLY	Delay for vocals, useful when cutting shouts or sound
30	HeGas	Duck voice after inhaling helium gas
31 - 49	EMPTY	

◆DUAL MIC algorithm

No.	Name	Comment	Recommended L/R input
	Vo/Vo 1	For duets	Vocals
1	Vo/Vo 2	Chorus for main vocal	Vocals
2	Vo/Vo 3	For harmony	Vocals
3	AG/Vo 1	Creates a street-like character	Acoustic guitar/Vocal
4	AG/Vo 2	Different from AG/Vo 1 in vocal character	Acoustic guitar/Vocal
5	AG/Vo 3	Aggressively modifies vocal character	Acoustic guitar/Vocal
6	ShortDLY	Short delay sound with effective doubling	Microphones
7	FatDrum	For drum recording with single point stereo mic	Microphones
8	BothTone	Tuned for male on L channel and female on R channel	Vocals
9	Condnsr	Simulates condenser mic sound with dynamic mic input	Vocals
10	DuoAtack	Chorus for lead vocals with emphasized attack	Vocals
11	Warmth	Warm sound with prominent midrange	Vocals
12	AM Radio	Simulates AM monaural radio	Vocals
13	Pavilion	Narration sound at expo booths	Vocals
14	TV News	TV newscaster sound	Vocals
15	F-Vo/Pf1	For female vocal piano ballads	Vocal/Piano

16	JazzDuo1	Simulates jazz session LP with lo-fi sound	Vocal/Piano
17	Cntmprry	All-round clear sound	Vocal/Piano
18	JazzDuo2	JazzDuo 1 for male vocal	Vocal/Piano
19	Ensemble	For guitar with strong attack and mellow piano	Acoustic guitar/Piano
20	Enhanced	Enhances clear, strong outline for ballads	Acoustic guitar/Vocal
21	Warmy	Moderates overbright ambience	Acoustic guitar/Vocal
22	Strum+Vo	Smooth fat sound with midrange compensation	Acoustic guitar/Vocal
23	FatPlus	Spruces up a thin midrange	Acoustic guitar/Vocal
24	Arp+Vo	Overall solid sound	Acoustic guitar/Vocal
25	ClubDuo	Simulates live sound in small club	Acoustic guitars
26	BigShape	Enhances overall clarity	Acoustic guitars
27	FolkDuo	Fresh and clean sound	Acoustic guitars
28	GtrDuo	Suitable for guitar duos	Acoustic guitars
29	Bright	Bright and sharp outlook	Acoustic guitars
31 - 49	EMPTY		

◆LINE algorithm

No.	Name	Comment
	Syn-Lead	For synthesizer single note lead
1	OrganPha	Phaser for synthesizer/organ
2	OrgaRock	Boomy distortion for rock organ
3	EP-Chor	Beautiful chorus for electric piano
4	ClavFlg	Wah for clavinet
5	Concert	Concert hall effect for piano
6	Honkey	Honky-tonk piano simulation
7	PowerBD	Gives a bass drum more power
8	DrumFlng	Conventional flanger for drum
9	LiveDrum	Simulates outdoor live doubling
10	JetDrum	Phaser for 16-beat hi-hat
11	AsianKit	Changes a standard kit to an Asian kit
12	BassBost	Emphasizes low range
13	Mono->St	Gives spaciousness to a monaural source
14	AM Radio	AM radio simulation
15	WideDrms	Wide stereo effect for internal drums
16	DanceDrm	Reinforces bass for dance rhythms
17	Octaver	Adds one-octave lower sound
18	Percushn	Gives air, presence, and stereo spread to percussion
19	MoreTone	Distortion with emphasized midrange body
20	SnrSmack	Emphasizes snappy snare sound
21	Shudder!	Sliced sound for techno tracks
22	SwpPhase	Phaser with powerful resonance
23	DirtyBiz	Lo-fi distortion using ring modulator
24	Doubler	Doubling for vocal track
25	SFXlab	Forced SFX sound for synthesizer
26	SynLead2	Old-style jet sound for synthesizer lead
27	Tekepiko	For sequence phrases or single note muted guitar
28	Soliner	Simulates analog strings ensemble
29	HevyDrum	For hard rock drums
30 - 49	EMPTY	

◆8x COMP EQ algorithm

No.	Name	Comment	Recommended input 1 - 8	
0	For vocal band	For vocal band	1	Guitar amp
			2	Bass amp
			3	Vocal
			4	Chorus
			5 - 6	Drum
			7 - 8	Keyboard
1	Inst	For jazz or fusion band	1 - 2	Guitar amp
			3	Bass amp
			4	Piano
			5 - 6	Drum
2	AcoBand	For acoustic band	7 - 8	Keyboard
			1	Acoustic bass
			2	Piano
			3	Vocal
			4	Chorus
			5 - 6	Acoustic guitar
3	1ManBand	For private recording studio	7 - 8	Percussion
			1 - 2	Guitar
			3	Bass
			4	Keyboard
			5	Vocal
			6	Chorus
4	StdDrum	Standard sound for recording each sound of drum kit	7 - 8	Sequence
			1	Bass drum
5	VtgDrum	1970s drum sound with enhanced hi-hat	2	Snare drum
			3	Hi-hat
6	EhcdDrum	Punchy compression drum sound	4	High tom
			5	Mid tom
			6	Low tom
			7 - 8	Overhead mic
7	Percus	Suitable for recording individual percussion sound	1 - 2	Various percussion
			3 - 4	Cymbal/bell
			5 - 6	Headed percussion
			7 - 8	Overall percussion
8	CompLtr	Versatile, mellow sound	1 - 8	
9	A Capla	For a cappella group	1 - 2	Female vocal
			3 - 4	Male vocal
			5 - 6	Vocal duo
			7 - 8	Overall vocal
10 - 19	EMPTY			

◆MASTERING algorithm

No.	Name	Comment
	PlusAlfa	Enhances the overall power
1	All-Pops	Conventional mastering
2	StWide	wide-range mastering
3	DiscoMst	For club sound
4	Boost	For hi-fi finish
5	Power	Powerful low range
6	Live	Adds a live feel
7	WarmMst	Adds a warm feeling
8	TightUp	Adds a hard feeling
9	1930Mst	Mastering with 1930's sound
10	LoFi Mst	Lo-fi mastering
11	BGM	Mastering for background music
12	RockShow	Makes a rock style mix live
13	Exciter	Lo-fi mastering with slight distortion in mid and upper range
14	Clarify	Emphasizes high-end range
15	VocalMax	Brings vocals to the foreground
16	RaveRez	Special sweep effect using sharp filter
17	FullComp	Strong compression over full frequency range
18	ClearPWR	Power tuning with emphasized midrange
19	ClearDMS	Enhances clarity and spaciousness
20	Maximizr	Boosts overall sound pressure level
21 - 29	EMPTY	

Send/return Effect

◆CHORUS/DELAY

No.	Name	Comment
0	Vocal	Chorus adding color to vocals
1	GtChorus	Chorus for weak guitar sound
2	Doubling	Versatile doubling
3	Echo	Showy analog-style delay
4	Delay3/4	Dotted-8th-note delay in sync with rhythm tempo
5	Delay3/2	Dotted-quarter-note delay in sync with rhythm tempo
6	FastCho	Fast-rated chorus
7	DeepCho	Versatile deep chorus
8	ShortDLY	Versatile short delay
9	DeepDBL	Deep doubling
10	SoloLead	Keeps fast phrases tight
11	WarmyDly	Simulates warm analog delay
12	EnhanCho	Enhancer using phase shift doubling
13	Detune	For instruments with strong harmonics such as electronic piano or synthesizer
14	Natural	Chorus with low modulation for backing
15	Whole*4	4 x whole-note delay in sync with rhythm tempo
16	Delay2/3	Half-triplet-note delay in sync with rhythm tempo
17	Delay1/4	16th-note delay in sync with rhythm tempo
18 - 29	EMPTY	

◆REVERB

No.	Name	Comment
0	TightHal	Hall reverb with a hard tonal quality
1	BrgtRoom	Room reverb with a hard tonal quality
2	SoftHall	Hall reverb with a mild tonal quality
3	LargeHal	Simulates the reverberation of a large hall
4	SmallHal	Simulates the reverberation of a small hall
5	LiveHous	Simulates the reverberation of a club
6	TrStudio	Simulates the reverberation of a rehearsal studio
7	DarkRoom	Room reverb with a mild tonal quality
8	VcxRev	Tuned to enhance vocals
9	Tunnel	Simulates the reverberation of a tunnel
10	BigRoom	Simulates the reverberation of a gym
11	PowerSt.	Gate reverb
12	BritHall	Simulates the bright reverb of a concert hall
13	BudoKan	Simulates the reverberation at Budokan in Tokyo
14	Ballade	For slow ballads
15	SecBrass	Reverb for brass section
16	ShortPla	Short reverb
17	RealPlat	Spring reverb simulation
18	Dome	Reverb of a Domed-stadium
19	VinSprin	Simulates analog spring reverb
20	ClearSpr	Clear reverb with short reverb time
21	Dokan	Simulates the reverberation of a clay pipe
22 - 29	EMPTY	

Rhythm Pattern

In “Song” columns (No. 35 – 234), normal patterns and fill-in ones are gathered up on a style basis to ease rhythm song programming.

No.	Name	Measure
Variation		
0	08Beat01	4
1	08Beat02	4
2	08Beat03	4
3	08Beat04	4
4	08Beat05	4
5	08Beat06	4
6	08Beat07	4
7	08Beat08	4
8	08Beat09	4
9	08Beat10	4
10	08Beat11	4
11	08Beat12	4
12	16Beat01	4
13	16Beat02	2
14	16Beat03	4
15	16Beat04	4
16	16Beat05	4
17	16Beat06	4
18	16Beat07	2
19	16Beat08	2
20	16Beat09	4
21	16Beat10	4
22	16Beat11	4
23	16Beat12	4
24	16FUS01	2
25	16FUS02	2
26	16FUS03	4
27	16FUS04	2
28	04JAZZ01	4
29	04JAZZ02	4
30	04JAZZ03	4
31	04JAZZ04	4
32	DANCE	2
33	CNTRY	2
34	68BLUS	4
No.	Name	Measure
Song		
35	ROCKs1VA	2
36	ROCKs1Va	1
37	ROCKs1FA	1
38	ROCKs1VB	2
39	ROCKs1Vb	1
40	ROCKs1FB	1
41	ROCKs2VA	2
42	ROCKs2Va	1
43	ROCKs2FA	1
44	ROCKs2VB	2
45	ROCKs2Vb	1
46	ROCKs2FB	1
47	ROCKs3VA	1
48	ROCKs3FA	1
49	ROCKs3VB	1
50	ROCKs3FB	1
51	ROCKs4VA	2
52	ROCKs4Va	1

53	ROCKs4FA	1
54	ROCKs4VB	2
55	ROCKs4Vb	1
56	ROCKs4FB	1
57	HRKs1VA	1
58	HRKs1FA	1
59	HRKs1VB	1
60	HRKs1FB	1
61	HRKs2VA	2
62	HRKs2Va	1
63	HRKs2FA	1
64	HRKs2VB	2
65	HRKs2Vb	1
66	HRKs2FB	1
67	MTLs1VA	1
68	MTLs1FA	1
69	MTLs1VB	1
70	MTLs1FB	1
71	FUSs1VA	2
72	FUSs1Va	1
73	FUSs1FA	1
74	FUSs1VB	2
75	FUSs1Vb	1
76	FUSs1FB	1
77	FUSs2VA	2
78	FUSs2Va	1
79	FUSs2FA	1
80	FUSs2VB	2
81	FUSs2Vb	1
82	FUSs2FB	1
83	FUSs3VA	2
84	FUSs3Va	1
85	FUSs3FA	1
86	FUSs3VB	2
87	FUSs3Vb	1
88	FUSs3FB	1
89	INDTs1VA	2
90	INDTs1Va	1
91	INDTs1FA	1
92	INDTs1VB	2
93	INDTs1Vb	1
94	INDTs1FB	2
95	POPs1VA	2
96	POPs1Va	1
97	POPs1FA	1
98	POPs1VB	2
99	POPs1Vb	1
100	POPs1FB	1
101	RnBs1VA	2
102	RnBs1Va	1
103	RnBs1FA	1
104	RnBs1VB	2
105	RnBs1Vb	1
106	RnBs1FB	1
107	RnBs2VA	2
108	RnBs2Va	1
109	RnBs2FA	1

110	RnBs2VB	2
111	RnBs2Vb	1
112	RnBs2FB	1
113	MTNs1VA	2
114	MTNs1Va	1
115	MTNs1FA	1
116	MTNs1VB	2
117	MTNs1Vb	1
118	MTNs1FB	1
119	FUNKs1VA	2
120	FUNKs1Va	1
121	FUNKs1FA	1
122	FUNKs1VB	2
123	FUNKs1Vb	1
124	FUNKs1FB	1
125	FUNKs2VA	2
126	FUNKs2Va	1
127	FUNKs2FA	1
128	FUNKs2VB	2
129	FUNKs2Vb	1
130	FUNKs2FB	1
131	HIPs1VA	2
132	HIPs1Va	1
133	HIPs1FA	1
134	HIPs1VB	2
135	HIPs1Vb	1
136	HIPs1FB	1
137	HIPs1VC	2
138	HIPs1Vc	1
139	HIPs1VD	2
140	HIPs1Vd	1
141	HIPs2VA	2
142	HIPs2Va	1
143	HIPs2VB	2
144	HIPs2Vb	1
145	HIPs2FB	1
146	HIPs2VC	2
147	HIPs2Vc	1
148	HIPs2VD	2
149	DANCs1VA	1
150	DANCs1FA	1
151	DANCs1VB	1
152	DANCs1FB	1
153	DANCs2VA	2
154	DANCs2Va	1
155	DANCs2FA	1
156	DANCs2VB	2
157	DANCs2Vb	1
158	DANCs2FB	1
159	HOUUs1VA	1
160	HOUUs1FA	1
161	HOUUs1VB	1
162	HOUUs1FB	1
163	TECHs1VA	1
164	TECHs1FA	1
165	TECHs1VB	1
166	TECHs1FB	1

167	DnBs1VA	2
168	DnBs1Va	1
169	DnBs1FA	1
170	DnBs1VB	2
171	DnBs1Vb	1
172	DnBs1FB	1
173	TPs1VA	1
174	TPs1FA	1
175	TPs1VB	1
176	TPs1FB	1
177	AMBs1VA	2
178	AMBs1Va	1
179	AMBs1FA	1
180	AMBs1FB	1
181	BALDs1VA	2
182	BALDs1Va	1
183	BALDs1FA	1
184	BALDs1VB	2
185	BALDs1Vb	1
186	BALDs1FB	1
187	BLUSs1VA	2
188	BLUSs1Va	1
189	BLUSs1FA	1
190	BLUSs1VB	2
191	BLUSs1Vb	1
192	BLUSs1FB	1
193	CNTRs1VA	2
194	CNTRs1Va	1
195	CNTRs1FA	1
196	CNTRs1VB	2
197	CNTRs1Vb	1
198	CNTRs1FB	1
199	JAZZs1VA	2
200	JAZZs1Va	1
201	JAZZs1FA	1
202	JAZZs1VB	2
203	JAZZs1Vb	1
204	JAZZs1FB	1
205	AFROs1VA	2
206	AFROs1Va	1
207	AFROs1FA	1
208	AFROs1VB	2
209	AFROs1Vb	1
210	AFROs1FB	1
211	REGGs1VA	2
212	REGGs1Va	1
213	REGGs1FA	1
214	REGGs1VB	2
215	REGGs1Vb	1
216	REGGs1FB	1
217	LATNs1VA	2
218	LATNs1Va	1
219	LATNs1FA	1
220	LATNs1VB	2
221	LATNs1Vb	1
222	LATNs1FB	1
223	LATNs2VA	2

Appendix

224	LATNs2Va	1
225	LATNs2FA	1
226	LATNs2VB	2
227	LATNs2Vb	1
228	LATNs2FB	1
229	MidEs1VA	2
230	MidEs1Va	1
231	MidEs1FA	1
232	MidEs1VB	2
233	MidEs1Vb	1
234	MidEs1FB	1
No.	Name	Measure
Standard		
235	ROCK01	2
236	ROCK02	2
237	ROCK03	2
238	ROCK04	2
239	ROCK05	2
240	ROCK06	2
241	ROCK07	2
242	ROCK08	2
243	ROCK09	2
244	ROCK10	2
245	ROCK11	4
246	ROCK12	2
247	ROCK13	2
248	ROCK14	2
249	ROCK15	2
250	ROCK16	2
251	ROCK17	2
252	ROCK18	2
253	ROCK19	2
254	ROCK20	2
255	ROCK21	2
256	ROCK22	2
257	ROCK23	2
258	ROCK24	2
259	ROCK25	2
260	ROCK26	2
261	ROCK27	2
262	ROCK28	2
263	HRK01	2
264	HRK02	2
265	HRK03	2
266	HRK04	2
267	HRK05	2
268	HRK06	2
269	HRK07	2
270	MTL01	2
271	MTL02	2
272	MTL03	2
273	MTL04	2
274	THRS01	2
275	THRS02	2
276	PUNK01	2
277	PUNK02	2
278	FUS01	2
279	FUS02	2
280	FUS03	2
281	FUS04	2
282	FUS05	2
283	FUS06	2
284	FUS07	2
285	FUS08	2

286	POP01	2
287	POP02	2
288	POP03	2
289	POP04	2
290	POP05	2
291	POP06	2
292	POP07	2
293	POP08	2
294	POP09	2
295	POP10	2
296	POP11	2
297	POP12	2
298	RnB01	2
299	RnB02	2
300	RnB03	2
301	RnB04	2
302	RnB05	2
303	RnB06	2
304	RnB07	2
305	RnB08	2
306	RnB09	2
307	RnB10	2
308	FUNK01	2
309	FUNK02	2
310	FUNK03	2
311	FUNK04	2
312	FUNK05	2
313	FUNK06	2
314	FUNK07	2
315	FUNK08	2
316	FUNK09	2
317	FUNK10	2
318	FUNK11	2
319	FUNK12	2
320	HIP01	2
321	HIP02	2
322	HIP03	2
323	HIP04	2
324	HIP05	2
325	HIP06	2
326	HIP07	2
327	HIP08	2
328	HIP09	2
329	HIP10	2
330	HIP11	2
331	HIP12	2
332	HIP13	2
333	HIP14	2
334	HIP15	2
335	HIP16	2
336	HIP17	2
337	HIP18	2
338	HIP19	2
339	HIP20	2
340	HIP21	2
341	HIP22	2
342	HIP23	2
343	DANC01	2
344	DANC02	2
345	DANC03	2
346	DANC04	2
347	DANC05	2
348	DANC06	2
349	HOUS01	2

350	HOUS02	2
351	HOUS03	2
352	HOUS04	2
353	TECH01	2
354	TECH02	2
355	TECH03	2
356	TECH04	2
357	TECH05	2
358	TECH06	2
359	TECH07	2
360	TECH08	2
361	TECH09	2
362	TECH10	2
363	DnB01	2
364	DnB02	2
365	DnB03	2
366	DnB04	2
367	DnB05	2
368	DnB06	2
369	TRIP01	2
370	TRIP02	2
371	TRIP03	2
372	TRIP04	2
373	AMB01	2
374	AMB02	2
375	AMB03	2
376	AMB04	2
377	BALD01	2
378	BALD02	2
379	BALD03	2
380	BALD04	2
381	BALD05	2
382	BALD06	2
383	BALD07	2
384	BALD08	2
385	BALD09	2
386	BALD10	2
387	BALD11	4
388	BLUS01	2
389	BLUS02	2
390	BLUS03	2
391	BLUS04	2
392	BLUS05	2
393	BLUS06	2
394	CNTR01	2
395	CNTR02	2
396	CNTR03	2
397	CNTR04	2
398	JAZZ01	2
399	JAZZ02	2
400	JAZZ03	2
401	JAZZ04	2
402	JAZZ05	2
403	JAZZ06	2
404	JAZZ07	4
405	SHFL01	2
406	SHFL02	2
407	SHFL03	2
408	SHFL04	2
409	SHFL05	2
410	SKA01	2
411	SKA02	2
412	SKA03	2
413	SKA04	2

414	REGG01	2
415	REGG02	2
416	REGG03	2
417	REGG04	2
418	AFRO01	2
419	AFRO02	2
420	AFRO03	2
421	AFRO04	2
422	AFRO05	2
423	AFRO06	2
424	AFRO07	2
425	AFRO08	2
426	LATN01	2
427	LATN02	2
428	LATN03	2
429	LATN04	2
430	LATN05	2
431	LATN06	2
432	LATN07	2
433	LATN08	2
434	LATN09	2
435	LATN10	2
436	LATN11	2
437	LATN12	2
438	BOSSA01	4
439	BOSSA02	4
440	SAMBA01	4
441	SAMBA02	4
442	MidE01	2
443	MidE02	2
444	MidE03	2
445	MidE04	2
446	INTRO01	1
447	INTRO02	1
448	INTRO03	1
449	INTRO04	1
450	INTRO05	1
451	INTRO06	1
452	INTRO07	1
453	INTRO08	1
454	INTRO09	1
455	INTRO10	1
456	INTRO11	1
457	INTRO12	1
458	INTRO13	1
459	INTRO14	1
460	INTRO15	1
461	INTRO16	1
462	INTRO17	1
463	INTRO18	1
464	ENDING01	1
465	ENDING02	1
466	ENDING03	1
467	ENDING04	1
468	ENDING05	1
469	ENDING06	1
470	ENDING07	1
471	COUNT	2
472	AllMute	1
473 508	EMPTY	0
509	METRO34	1
510	METRO44	1

Drum Kits

STANDARD

No.	Name
0	Standard
1	DryFunk
2	Basic
3	Tight
4	Funk 1
5	Reggae 1
6	Analog 1
7	Analog 2
8	Snap
9	Pop
10	Brush
11	Reggae 2
12	Loose
13	Funk 2
14	Percuss
15	SFX
16	Minor7
17	Major7

ANALOG

No.	Name
0	Punch
1	Near
2	Room 1
3	Analog 1
4	Analog 2
5	Room 2
6	HipHop 1
7	HipHop 2
8	HipHop 3
9	Techno 1
10	Techno 2
11	Techno 3
12	Percuss
13	SFX
14	Minor7
15	Major7

CLASSIC

No.	Name
0	LiveRock
1	Standrd1
2	EpicRock
3	Modern 1
4	Live 1
5	Live 2
6	Studio
7	Standrd2
8	Epic 1
9	Epic 2
10	Modern 2
11	Modern 3
12	Brush
13	Benddown
14	Percuss
15	SFX

Bass Programs

No.	Name
0	Finger
1	Pick
2	Slap
3	AcostcBS
4	Synth BS
5	TechnoBS
6	BShrmonic
7	TechAnlg
8	AnaTouch
9	Lo Sine
10	HrmonicBS
11	Saw Wave
12	Square

Instruments

STANDARD

Category	No.	Name
Kick	000	BDTight
	001	BDAcsk1
	002	BDAcsk2
	003	BDClsic1
	004	BDClsic2
	005	BDStdrd1
	006	BDStdrd2
	007	BDStdrd3
	008	BDDgAna1
009	BDDgAna2	
Snare	100	SDHigh1
	101	SDHigh2
	102	SDBrush
	103	SDAnalgM
	104	SDAnalgS
	105	SDDgAnaS
	106	SDPower
	107	SDSnap1
	108	SDSnap2
	109	SDFunk1
	110	SDFunk2
	111	SDStndrd
112	SDRegae	
Tom	200	TMLive1
	201	TMLive2
	202	TMLive3
	203	TMDry1
	204	TMDry2
	205	TMDry3
	206	TM808_1
	207	TM808_2
	208	TM808_3
	209	TMAco1
	210	TMAco2
	211	TMAco3
	212	TMSynth
	213	TMPopHi
	214	TMPopHi2
	215	TMPopMid
216	TMPopLo2	
Hi-hat	300	CHH 14'
	301	CHH 14'2
	302	OHHLive
	303	CHHClear
	304	OHHClear
	305	CHHAnalg
	306	CHHDgAna
	307	OHHAna
308	FHHAco	

Cymbal	400	CYMCrsh1
	401	CYMCrsh2
	402	CYMSpls1
	403	CYMSpls2
	404	CYMRide1
	405	CYMRide2
Extra	406	CYMCup
	500	EXRim1
	501	EXRim2
	502	EXCwbel
	503	EXClap1
	504	EXClap2
	505	EXMute
	600	High Q
	601	Sticks
Global	602	MtrClick
	603	MtrBell
	604	Tambrin
	605	Vibslap
	606	HiBongo
	607	LoBongo
	608	MtHiCong
	609	HiConga1
	610	LoConga
	611	HiTimbal
	612	LoTimbal
	613	HiAgogo
	614	LoAgogo
	615	Cabasa
	616	Maracas
	617	Claves
	SFX	700
701		Odaiko
702		ChuDaiko
703		Oedo
704		Temple
705		Engine
706		Sonar
707		Minor7
708		Major7

ANALOG

Category	No.	Name
Kick	000	BDHard
	001	BDReso
	002	BDAnalg1
	003	BDAnalg2
	004	BDDgAna1
	005	BDDgAna2
	006	BDPunch
Snare	007	BDAttack
	100	SDDryHi
	101	SDAnalgM
	102	SDAnalgS
	103	SDDgAnaM
	104	SDDgAnaS
	105	SDAttack
	106	SDPower
	107	SDRoom
	200	TM808_1
Tom	201	TM808_2
	202	TM808_3
	203	TMGate1
	204	TMGate2
	205	TMGate3
	206	TMElect1
	207	TMElect2
	208	TMElect3
	209	TMSynth
	210	TMPopHi
	211	TMPopMid
	212	TMPopLo
Hi-hat	300	CHHLive
	301	OHHLive
	302	CHHClear
	303	OHHClear
	304	CHHAnalg
	305	OHHAnalg
	306	CHHDgAna
	307	OHHHDgAna
	308	FHHAco
	400	CYMCrsh1
Cymbal	401	CYMCrsh2
	402	CYMCrsh3
	403	CYMSpls1
	404	CYMSpls2
	405	CYMRide2
	406	CYMCup1

Extra	500	EXRim1
	501	EXRim2
	502	EXCwbel1
	503	EXCwbel2
	504	EXClap1
	505	EXClap2
	506	EXClv808
	507	EXSn909
508	EXMute	
Global	600	High Q
	601	Sticks
	602	MtrClick
	603	MtrBell
	604	Tambrin
	605	Vibslap
	606	HiBongo
	607	LoBongo
	608	MtHiCong
	609	HiConga1
	610	LoConga
	611	HiTimbal
	612	LoTimbal
	613	HiAgogo
	614	LoAgogo
	615	Cabasa
	616	Maracas
617	Claves	
SFX	700	Gamelan
	701	Odaiko
	702	ChuDaiko
	703	Oedo
	704	Temple
	705	Engine
	706	Sonar
	707	Minor7
708	Major7	

CLASSIC

Category	No.	Name
Kick Snare	000	BDLive
	001	BDStudio
	002	BDMute
	003	BDHuge
	004	BDStage
	005	BDDry
	006	BDReso
	007	BDDeep1
	008	BDDeep2
	009	BDBend
	010	BDAcstk
	100	SDLive1
	101	SDLive2
	102	SDDry
	103	SDDryHi
	104	SDSnappy
	105	SDReso
	106	SDBrush1
	107	SDBrush2
108	SDBrush3	
109	SDDeep	
Tom	200	TMLive1
	201	TMLive2
	202	TMLive3
	203	TMStdio1
	204	TMStdio2
	205	TMStdio3
	206	TMDry1
	207	TMDry2
	208	TMDry3
	209	TMAmbi1
	210	TMAmbi2
	211	TMAmbi3
	212	TMHard1
	213	TMHard2
	214	TMHard3
	215	TMAco1
	216	TMAco2
	217	TMAco3
	218	TMBend1
219	TMBend2	
220	TMBend3	
221	TMSynth	
Hi-hat	300	CHHLive
	301	OHHLive
	302	CHHStdio
	303	CHHClear
	304	OHHClear
	305	FHHAco1
	306	CHHBend
307	OHHBend	

Cymbal	400	CYMCrsh1
	401	CYMCrsh2
	402	CYMSpls2
	403	CYMCrshB
	404	CYMRide1
	405	CYMRide2
	406	CYMRideB
	407	CYMCup1
408	CYMCup2	
Extra	500	EXRim1
	501	EXRim2
	502	EXRim3
	503	EXCwbel1
	504	EXTmbriB
	505	EXClap1
	506	EXClapB
	507	EXMute
Global	600	High Q
	601	Sticks
	602	MtrClick
	603	MtrBell
	604	Tambrin
	605	Vibslap
	606	HiBongo
	607	LoBongo
	608	MtHiCong
	609	HiConga1
	610	LoConga
	611	HiTimbal
	612	LoTimbal
	613	HiAgogo
	614	LoAgogo
	615	Cabasa
	616	Maracas
617	Claves	
SFX	700	Gamelan
	701	Odaiko
	702	ChuDaiko
	703	Oedo
	704	Temple
	705	Engine
	706	Sonar
	707	Minor7
	708	Major7

MIDI note number chart

Pad	Note number		
	Bank 1	Bank 2	Bank 3
0/KICK	36	35	61
1/SNARE	38	40	60
2/CLOSED HAT	42	44	68
3/OPEN HAT	46	54	67
4/TOM 1	50	48	64
5/TOM 2	47	45	62
6/TOM 3	43	41	63
7/RIDE	51	52	59
8/CRASH	49	57	70
9/EXTRA CYMBAL	53	55	69
X/EXTRA 1	37	56	65
+/EXTRA 2	39	58	66

Note#	Instrument name	Bank 1	Bank 2	Bank 3
31	Sticks			
32				
33	Metronome Click			
34	Metronome Bell			
35	Kick Drum 2		PAD 0	
36	Kick Drum 1	PAD 0		
37	Side Stick	PAD X		
38	Snare Drum 1	PAD 1		
39	Hand Clap	PAD +		
40	Snare Drum 2		PAD 1	
41	Low Tom2		PAD 6	
42	Closed Hi-Hat	PAD 2		
43	Low Tom 1	PAD 6		
44	Pedal Hi-Hat		PAD 2	
45	Mid Tom 2		PAD 5	
46	Open Hi-Hat	PAD 3		
47	Mid Tom 1	PAD 5		
48	High Tom 2		PAD 4	
49	Crash Cymbal 1	PAD 8		
50	Hi Tom 1	PAD 4		

Note#	Instrument name	Bank 1	Bank 2	Bank 3
51	Ride Cymbal 1	PAD 7		
52	Claves		PAD 7	
53	Ride Bell	PAD 9		
54	Tambourine		PAD 3	
55	Splash Cymbal		PAD 9	
56	Cowbell		PAD X	
57	Crash Cymbal 2		PAD 8	
58	Vibraslap		PAD +	
59	Ride Cymbal 2			PAD 7
60	High Bongo			PAD 1
61	Low Bongo			PAD 0
62	Mute High Conga			PAD 5
63	Open High Conga			PAD 6
64	Low Conga			PAD 4
65	High Timbale			PAD X
66	Low Timbale			PAD +
67	High Agogo			PAD 3
68	Low Agogo			PAD 2
69	Cabasa			PAD 9
70	Maracas			PAD 8

Phrases

			No.	Name	Comments	
Rhythm	Drum Loops	1	1	Ry-01-1A	Drum loop 1	
			2	Ry-01-1B	Drum loop 2	
			3	Ry-01-1C	Drum fill 1	
			4	Ry-01-1D	Drum variation 1	
			5	Ry-01-1E	Drum fill 2	
			6	Ry-01-1F	Drum variation 2	
			7	Ry-01-1G	Drum end	
		2	8	Ry-01-2A	Drum intro	
			9	Ry-01-2B	Drum loop 1	
			10	Ry-01-2C	Drum loop 2	
			11	Ry-01-2D	Drum break	
			12	Ry-01-2E	Drum variation 1	
			13	Ry-01-2F	Drum fill	
			14	Ry-01-2G	Drum variation 2	
	Beats Variation		15	Ry-02-1A	Drum loop 1	
			16	Ry-02-1B	Drum loop 2	
	Breakbeats		17	Ry-03-1A	Drum loop 1	
			18	Ry-03-1B	Drum loop 2	
			19	Ry-03-1C	Drum loop 3	
			20	Ry-03-1D	Drum loop 4	
			21	Ry-03-1E	Drum loop 5	
	Latin Loops		1	22	Ry-04-1A	Percussion loop 1
				23	Ry-04-1B	Percussion loop 2
				24	Ry-04-1C	Percussion loop 3
				25	Ry-04-1D	Percussion loop 4
			2	26	Ry-04-2A	Percussion loop 1
				27	Ry-04-2B	Percussion loop 2
				28	Ry-04-2C	Percussion loop 3
			3	29	Ry-04-2D	Percussion loop 4
				30	Ry-04-3A	Percussion loop 1
				31	Ry-04-3B	Percussion loop 2
	Asian Loops		32	Ry-05-1A	Asian percussion loop 1-1	
			33	Ry-05-1B	Asian percussion loop 1-2	
			34	Ry-05-1C	Asian percussion loop 1-3	
			35	Ry-05-1D	Asian percussion loop 2	
			36	Ry-05-1E	Asian percussion loop 3	
Songs	Hardcore Loop	1	37	Sg-01-1A	Industrial drum loop	
			38	Sg-01-1B	Industrial break	
			39	Sg-01-1C	Industrial G & B break	
			40	Sg-01-1D	Industrial guitar	
		2	41	Sg-01-2A	Big beat drum loop	
			42	Sg-01-2B	Big beat bass loop	
	Control Variations	1	43	Sg-01-2C	Big beat FX loop	
			44	Sg-02-1A	Hiphop track 1-1	
		2	45	Sg-02-1B	Hiphop track 1-2	
	46		Sg-02-2A	Hiphop track 2-1		
	Drum Bass Loops	1	47	Sg-02-2B	Hiphop track 2-2	
			48	Sg-03-1A	Drum loop	
	Reggae Variations	1	49	Sg-03-1B	Bass loop	
			50	Sg-04-1A	Dub drum loop	
			51	Sg-04-1B	Dub bass loop	
2		52	Sg-04-1C	Dub guitar loop		
		53	Sg-04-2A	Dub drum loop		
		54	Sg-04-2B	Dub bass loop		
		55	Sg-04-2C	Dub guitar solo loop		

Bass	in A	56	EB-01-1A	Old funk loop 1	
		57	EB-01-1B	Old funk loop 2	
	in B	58	EB-02-1A	Old-school bass loop 1	
		59	EB-02-1B	Old-school bass loop 2	
	in C	60	EB-03-1A	Old House bass loop	
		61	EB-03-1B	Pops bass loop	
	in D	62	EB-04-1A	Funk bass loop 1	
		63	EB-04-1B	Funk bass loop 2	
	in E	64	EB-05-1A	Dark bass loop 1-1	
		65	EB-05-1B	Dark bass loop 1-2	
	in G	66	EB-06-1A	Funk bass loop 1-1	
		67	EB-06-1B	Funk bass loop 1-2	
	Guitar		68	Gt-01-1A	Acoustic guitar loop on A maj
			69	Gt-01-1B	Acoustic guitar loop on A min
		70	Gt-01-1C	Electric guitar loop on C min	
		71	Gt-01-1D	Rockabilly guitar loop on A min	
		72	Gt-01-1E	Funk guitar loop on A7#9	
		73	Gt-01-1F	Funk guitar loop on D min9	
		74	Gt-01-1G	Hard rock guitar loop on B min	
		75	Gt-01-1H	Rock guitar loop on A min	
Analog	Synth Bass	76	AG-01-1A	Analog bass loop 1	
		77	AG-01-1B	Synth bass loop 1	
		78	AG-01-1C	Synth bass loop 2	
		79	AG-01-1D	Synth bass loop 3	
		80	AG-01-1E	Analog bass loop 2	
		81	AG-01-1F	Analog bass loop 3	
		82	AG-01-1G	Synth bass loop 4	
		Synth Rhythm	83	AG-02-1A	Synth loop 1
	84		AG-02-1B	Synth loop 2	
	85		AG-02-1C	Synth loop 3	
	86		AG-02-1D	Synth loop 4	
	87		AG-02-1E	Synth loop 5	
	88		AG-02-1F	Synth loop 6	
	Synth Textures	89	AG-03-1A	String & synth loop	
		90	AG-03-1B	String loop 1	
91		AG-03-1C	String loop 2		
92		AG-03-1D	String loop 3		
FX Loops	93	FX-01-1A	Fx loop 1		
	94	FX-01-1B	Fx loop 2		
	95	FX-01-1C	Fx loop 3		
	96	FX-01-1D	Fx loop 4		

With the factory default settings, project 001 contains these phrases.

MRS-1608 Hard Disk Contents

The hard disk in the MRS-1608 is composed of two partitions called “MRS-USR” and “MRS-FAC”.

The “MRS-FAC” partition contains files to perform hard disk maintenance. Never attempt to manipulate the files in this partition.

Do not rename the “MRS-USR” files and folders unnecessarily since the MRS-1608 will not recognise the renamed files or folders.

The “MRS-USR” contains the following files and folders.

● PRJINIT folder

Contains various data read when creating a new project.

PRJDATA.INI
Project data

RHYTHM.SEQ
Rhythm pattern/rhythm song data

xxxxxxx.ZSD
Drum kits/bass program data

SAMPLER0.ZSP
Sample data

● SYS folder

Contains the system-related files.

MAC_PRM.INI
Number of most recently edited project

BURNLIST.CDT
Album data

SEQPLYxx.LST
Play list data

● PROJxxx folder

Contains various data for each project.

TRACKx_y.DAT or TRACKxxy.DAT
Audio data for each track/V-take
(x or xx; 0-15 corresponding to track number 1-16, y; 0-9 to V-take number 1-10)

PHRASExx.PH
Audio data for each phrase (mono or stereo left channel)
(xx; 00-99 corresponding to phrase number)

PHRASExx.PHR
Audio data for each phrase (stereo right channel)
(xx; 00-99 corresponding to phrase number)

LOOPxx.LSQ
Expression data entered to create phrase loop

RHYTHM.FST
Expression data entered to create rhythm song with FAST method

PRJDATA.INI
Project setting data

RHYTHM.SEQ
Rhythm pattern/rhythm song data

xxxxxxx.ZSD
Drum kits/bass program/sampler program data

SAMPLERx.ZSP
Sample data

● SAMPLER folder

Contains sample data.

SAMPLxxx.SP
Audio data for each sample (mono or stereo left channel)
(xxx; 000-999 corresponding to sample number)

SAMPLxxx.SPR
Audio data for each sample (stereo right channel)
(xxx; 000-999 corresponding to sample number)

● WAV_AIFF folder

Stores WAV/AIFF files. Used when importing phrases from the internal hard disk.

To operate this folder, install the optional USB board and copy WAV/AIFF files from a computer to this folder.

● SYSTEM.ZEX

MRS-1608 system file

Compatibility with MRS Series

The MRS-1608 can exchange project data with the MRS series (MRS-1044, MRS-1266, and MRS-802).

The following data can be read on all models of the series.

- Audio data for each track/V-take
- Rhythm pattern/rhythm song data

* Other data such as effect patch data and mixer settings cannot be read. When a project is loaded, the default settings of the destination model will apply.

MIDI implementation

1. Recognized Messages

Status	1st	2nd	Description
8nH	kk	vv	Note Off kk: note number vv: velocity will be ignored
9nH	kk	00H	Note Off kk: note number
9nH	kk	vv	Note On kk: note number (See NOTE 1) vv: velocity
BnH	07H	vv	Channel Volume vv: volume value
BnH	0BH	vv	Channel Expression vv: expression value
BnH	78H	xx	All Sounds Off
BnH	79H	xx	Reset All Controllers
BnH	7BH	xx	All Notes Off
CnH	pp		Program Change pp: program number
EnH	ll	hh	Pitch Bend Change hlll: pitch bend value

NOTE: n = MIDI Channel Number (0 - F)

- Note On messages can be recorded into a rhythm pattern.

2. Transmitted Messages

Status	1st	2nd	Description
8nH	kk	40H	Note Off kk: note number
9nH	kk	00H	Note Off kk: note number
9nH	kk	vv	Note On kk: note number vv: velocity
BnH	07H	vv	Channel Volume vv: volume value
BnH	7BH	00H	All Notes Off
CnH	pp		Program Change pp: program number
F1H	dd		MTC Quarter Frame dd: data
F2H	sl	sh	Song Position Pointer shsl: song position
F8H			Timing Clock
FAH			Start
FBH			Continue
FCH			Stop

NOTE: n = MIDI Channel Number (0 - F)

3. System Exclusive Messages

No SysEx messages are recognized/transmitted.

MIDI implementation chart

[HardDisk Recorder]
Model MRS-1608

MIDI Implementation Chart

Date : 10 Feb. 2004
Version: 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16,OFF 1-16,OFF	1-16,OFF 1-16,OFF	Memorized
Mode	Default Messages Altered	3 x *****	3 x	
Note Number	True voice	12-75 *****	12-75	
Velocity	Note ON Note OFF	o x	o x	
After Touch	Key's Ch's	x x	x x	
Pitch Bend		x	o	
Control Change		7	7 11 120 121	Volume Expression All Sounds Off Reset All Ctrls
Prog Change	True #	o *****	o 0-127	
System Exclusive		x	x	
System Common	Qtr Frame Song Pos Song Sel Tune	o o x x	x x x x	30 frame non-drop
System Real Time	Clock Commands	o o	x x	
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	x o x x	x o x x	
Notes		MTC quarter frame message is transmitted.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

o : Yes
x : No

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The FCC regulation warning (for U.S.A.)

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.**



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