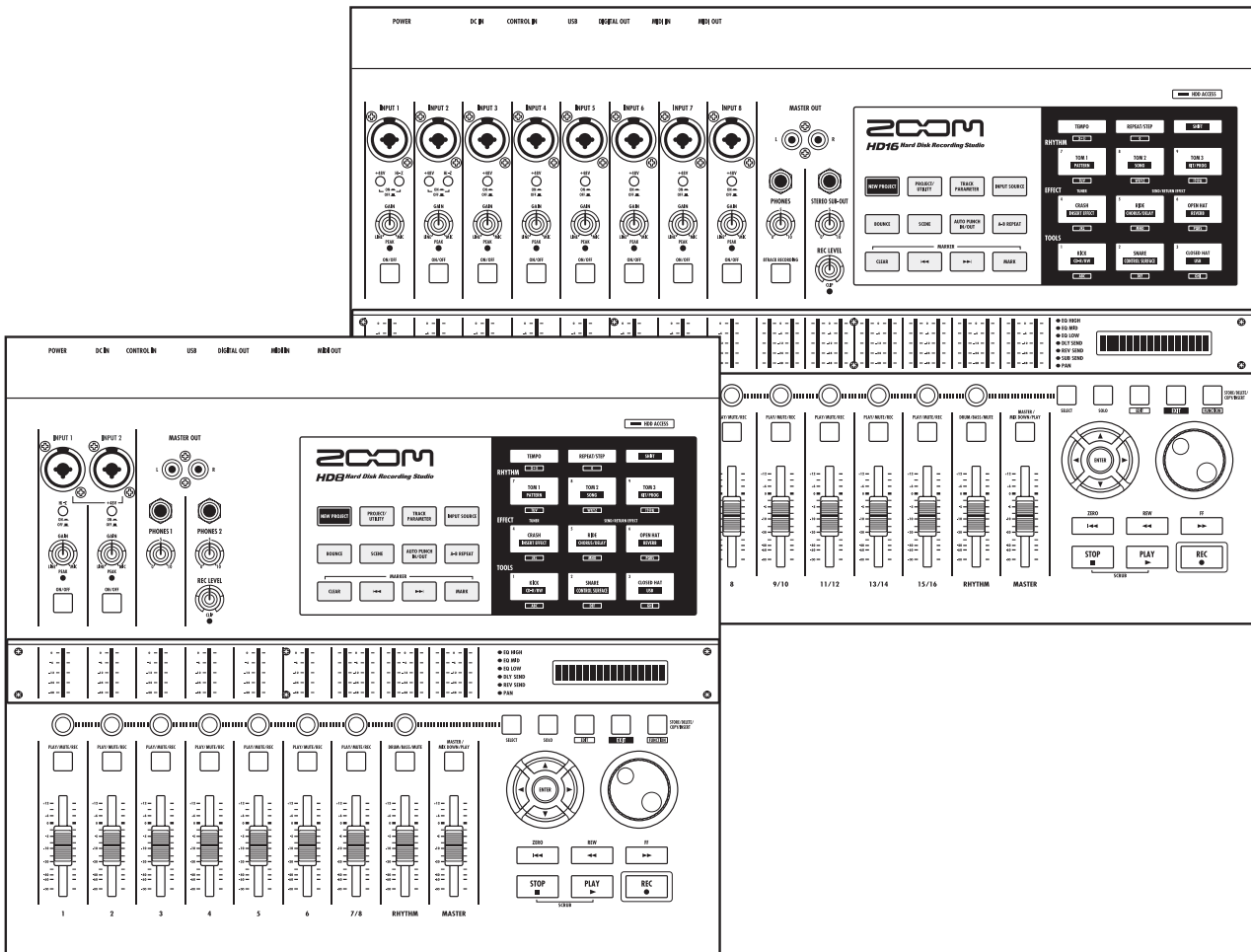


Hard Disk Recording Studio HD8 / HD16

English



Operation Manual

ZOOM

© ZOOM Corporation

Reproduction of this manual, in whole or in part, by any means, is prohibited.

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 HD8/HD16.

• Power requirements



The HD8/HD16 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 HD8/HD16 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 HD8/HD16. 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 HD8/HD16 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 HD8/HD16 since this can cause electric shock.



The HD8/HD16 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 HD8/HD16 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 HD8/HD16 and all other equipment before connecting or disconnecting any cables. Also make sure to disconnect all cables and the AC adapter before moving the HD8/HD16.

• Volume



Do not use the HD8/HD16 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 HD8/HD16 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 HD8/HD16, as the possibility of interference cannot be ruled out entirely.

With any type of digital control device, the HD8/HD16 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 HD8/HD16. 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 HD8/HD16 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.

MIDI is a registered trademark of Association of Musical Electronics Industry (AMEI).

All other trademarks and registered trademarks are the property of their respective owners.

All trademarks and registered trademarks mentioned in this manual are for identification purposes only and are not intended to infringe on the copyrighted properties of their respective owners.

Contents

USAGE AND SAFETY PRECAUTIONS	2	Reference [Recorder]	36
Introduction	7	V-takes	36
Overview	7	About V-takes	36
Features of the HD8/HD16	7	Switching V-takes	36
		Changing the V-take name	36
Getting to Know the HD8/HD16	9	Moving to a desired point in the song (locate function)	39
Recorder	10	Playing back the same passage repeatedly (A-B repeat function)	39
Rhythm section	10	Finding a desired location (scrub/preview function)	40
Mixer	11	Using scrub/preview	40
Effects	11	Changing the scrub direction and duration	40
Names of Parts	12	Re-recording only a specified region (punch-in/out function)	41
HD8 Top Panel	12	Using manual punch-in/out	41
HD16 Top Panel	13	Using auto punch-in/out	41
HD8/HD16 Rear Panel	14	Recording several tracks on a master track (mixdown function)	42
HD8/HD16 Right Side Panel	15	About the master track	42
Connections	16	Master track mixdown steps	43
Installing the CD-R/RW Drive	18	Playing the master track	43
Power On/Off	20	Converting the master track to a stereo WAV file	43
Turning power on	20	Combining multiple tracks on one or two tracks (bounce function)	44
Turning power off (shutdown)	20	Making bounce settings	44
Listening to a Demo Song	21	Executing bounce recording	45
Selecting the demo song	21	Recording the drum/bass track sound on an audio track (rhythm recording)	45
Playing the demo song	21	Selecting drum/bass track as recording source	45
Let's Record	22	Recording	46
Quick Tour	23	Recording on 8 tracks simultaneously (8-track recording mode) <<HD16 only>>	46
Step 1: Preparations	23	About 8-track recording	46
1.1 Creating a new project	23	Assigning an input signal to a track	47
1.2 Selecting the rhythm pattern to use	24	Marker function	47
Step 2: Recording the first track	25	Setting a mark	47
2.1 Adjusting input sensitivity	25	Locating a mark	48
2.2 Applying the insert effect	26	Deleting a mark	48
2.3 Selecting a track and recording	28	Making settings for pre-count operation	49
Step 3: Overdubbing	29	Reference [Track Editing]	50
3.1 Making settings for input sensitivity and insert effect	29	Editing a range of data	50
3.2 Selecting a track and recording	29	Basic steps for range editing	50
Step 4: Mixing	30	Copying a specified range of data	51
4.1 Turning off the input and rhythm section	30	Moving a specified range of data	52
4.2 Adjusting volume, panning, and EQ	30	Erasing a specified range of data	52
4.3 Applying the send/return effect	32	Trimming a specified range of data	53
4.4 Applying the insert effect to a track	33	Fade-in/fade-out of specified data range	53
Step 5: Mixdown	34	Reversing a specified range of audio data	54
5.1 Using the mastering insert effect	34	Changing the duration of an entire track	55
5.2 Mixdown on the master track	35	Compensating the pitch of a specified range	55
		Generating harmony from a specified range of audio data	57
		Generating a 1-part harmony from a specified range of audio data	59
		Editing using V-takes	61
		Basic steps for V-take editing	61
		Erasing a V-take	61

Copying a V-take	62	Assigning a name to a rhythm pattern	100
Moving a V-take	62	Editing rhythm patterns.	100
<< HD16 only>> Moving V-takes of tracks 1 – 8 to tracks 9 – 16	62	Copying a rhythm pattern	100
Exchanging V-takes	63	Deleting a rhythm pattern	101
Importing audio data to a V-take	63	Creating a rhythm song.	101
Track capture and swap.	65	Selecting a rhythm song	101
Capturing a track	65	Entering pattern information using step input	102
Swapping a track	66	Using FAST for pattern information input	104
Reference [Phrase Looping]	67	Entering chord information	105
Which kind of phrases can be used?	67	Entering other information	107
Loading a phrase	68	Playing a rhythm song.	108
Basic phrase loading steps	68	Editing a rhythm song	108
Importing a phrase from the current project	68	Copying a specified range of measures	108
Importing a phrase from a different project	69	Transposing the entire rhythm song	109
Importing a WAV/AIFF file	70	Copying a rhythm song	109
Adjusting phrase parameters	70	Deleting the rhythm song	110
Copying a phrase	71	Assigning a name to a rhythm song	110
Deleting a phrase	72	Importing a rhythm pattern/rhythm song from another project.	111
Writing a phrase loop to a track	73	Using Kit Files	112
Using FAST input for the phrase loop	73	Creating a kit file	112
Writing a phrase loop to a track	74	Assigning samples to pads	112
Reference [Mixer]	76	Making pad parameter settings	113
About the mixer of the HD8/HD16	76	Copying a kit file	114
Assigning input signals to recording tracks	77	Deleting a kit file	115
Adjusting the signal for each track (track parameters)	79	Importing a kit file from another project	115
Adjusting a track parameter	79	Assigning a name to a kit file	116
Using the parameter knobs	81	Using samples.	117
Linking two tracks (stereo link)	82	Making various sample settings	117
<<HD16>> Assigning an input/track signal to the SUB-OUT jack	82	Copying a sample	119
Using the solo function	83	Deleting a sample	120
Saving/recalling mixer settings (scene function) ..	84	Importing a sample from an external source	121
Saving a scene	84	Editing various settings of the rhythm section ..	124
Recalling a scene	84	Basic procedure	124
Switching scenes automatically	84	Changing the length of the pre-count	124
Deleting certain parameters from a scene	85	Changing the metronome volume	125
Reference [Rhythm]	87	Adjusting the sensitivity of the pads	125
About the rhythm section.	87	Checking the remaining amount of memory	125
Drum kits and bass programs	87	Swapping the left/right pan position	125
Rhythm patterns	87	Reference [Effects]	126
Rhythm song	88	About the effects	126
Rhythm pattern mode and rhythm song mode	88	Insert effect	126
Playing rhythm patterns	88	Send/return effect	126
Selecting a rhythm pattern	88	Using the insert effect.	127
Changing the tempo	89	About insert effect patches	127
Changing the drum kit / bass program	89	Changing the insert location of the insert effect	128
Using the pads to play drum/bass sounds	90	Selecting the patch for the insert effect	129
Creating an original rhythm pattern.	92	Editing the insert effect patches	130
Preparations	92	Storing/swapping insert effect patches	132
Drum sequence real-time input	93	Editing the name of an insert effect patch	132
Bass sequence real-time input	94	Applying the insert effect only to the monitor signal. ...	133
Drum sequence step input	96	Using the send/return effect.	134
Bass sequence step input	97	About the send/return effect patches	134
Entering rhythm pattern chord information	98	Selecting a send/return effect patch	134
Changing the drum/bass sequence volume level	99	Editing a send/return effect patch	134
		Storing/swapping send/return effect patches	135
		Editing the name of a send/return effect patch	136
		Importing patches from another project	136
		Reference [Creating a CD]	138
		About creating an audio CD	138
		About CD-R/RW discs	138

Creating an audio CD	139	Using the chromatic tuner	167
Creating an audio CD by project	139	Using other tuner types	168
Creating an audio CD by album	140	Changing the function of the foot switch	169
Using the marker function to separate tracks	142	Preventing digital copying of a master disc	
Including a playlist in an album	143	or master tape	169
Playing an audio CD	143	Switching the level meter display type	170
Finalizing a CD-R/RW Disc	144	Adjusting the display contrast	170
Erasing a CD-RW disc	144	Checking the system version	171
Loading an audio CD into a project	145	Hard disk maintenance	171
Backup and restore	146	Basic maintenance procedure	171
Saving a single project to CD-R/RW disc	146	Test/restore integrity of data on internal hard disk	
Saving all projects to CD-R/RW disc	147	(Scan Disk)	172
Loading a project from CD-R/RW disc	148	Returning system file data to factory default	
		(Factory Initialize)	172
		Returning the entire hard disk to the factory default	
		(All Initialize)	173
Reference [Projects]	150	Hard disk maintenance using the supplied	
About projects	150	CD-ROM	173
Project operations	150		
Loading a project	151	Specifications	174
Creating a new project	151		
Checking the project size/available hard disk		Troubleshooting	176
capacity	152	Problems during playback	176
Duplicating a project	152	Problems during recording	176
Erasing a project	152	Problems with effects	176
Changing the project name	153	Problems with the rhythm section	177
Protecting a project	153	Problems with MIDI	177
		Problems with CD-R/RW drive	178
		Other problems	178
Reference [MIDI]	154		
About MIDI	154	Appendix	179
What you can do using MIDI	154	Effect parameters	179
Making MIDI-related settings	155	Insert effect	179
Basic procedure	155	Send/return effect	190
Setting the drum kit/bass program MIDI channel	155	Effect Patch List	191
Turning Timing Clock messages on or off	156	Insert effect	191
Turning Song Position Pointer messages on or off	156	Send/return Effect	197
Turning Start/Stop/Continue messages on or off	156	Rhythm Pattern	198
Turning MIDI Time Code (MTC) messages on or off	157	Drum Kits/Bass Programs	200
Selecting the port to send/receive MIDI messages	157	Instruments	201
Using the SMF player	158	MIDI note number chart	205
Reading an SMF into a project	158	Phrases	206
Selecting the SMF output destination	158	HD8/HD16 Hard Disk Contents	208
SMF playback	159	MIDI implementation chart	209
		INDEX	210
Reference [USB]	161		
What you can do with the USB port	161		
Supported operating systems	161		
File transfer to and from a computer	161		
Operating DAW Software From the HD8/HD16 ..	163		
Selecting the connector to use for control			
surface mode	163		
Switching to control surface mode	163		
Using Mass Storage Mode and Control Surface			
Mode Simultaneously	164		
Reference [Other Functions]	165		
Playing several projects continuously			
(sequence play)	165		
Creating a playlist	165		
Playlist playback	166		
Using the tuner function	167		

Introduction

Overview

Thank you for selecting the **ZOOM HD8/HD16** Hard Disk Recorder (simply called the “**HD8/HD16**” in this manual). This manual covers both the HD8 and the HD16 model.

In order to take full advantage of the HD8/HD16’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.

Features of the HD8/HD16

The HD8/HD16 is a fascinating product with the following features.

■ Brings together everything you need for complete music production

The HD8/HD16 provides all the functionality you need for professional music production: hard disk recorder, drum/bass machine, digital mixer, effects, CD-R/RW drive and more. From creating the rhythm tracks to multitrack recording, mixdown, and burning an audio CD, the HD8/HD16 lets you do it all.

■ Recorder section with plenty of tracks

The HD8 provides 8 audio tracks (mono x 6, stereo x 1), and the HD16 has 16 audio tracks (mono x 8, stereo x 4). 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, pitch compensation, and harmonizing are also available.

■ Support for a wide range of input sources

Input connectors compatible with high-impedance sources and 48V phantom power allow the unit to handle any kind of source, from electric guitar/electric bass and other high-impedance instruments to dynamic and condenser microphones, as well as synthesizers and other line-level equipment.

■ 8-track recording mode/sub output support << **HD16** only >>

The HD16 has an 8-track recording mode that can handle up to 8 signals simultaneously. This is great for multi-miking a drum setup or recording an entire band in one go. In addition to the regular stereo output, the HD16 also provides a STEREO SUB-OUT which can be used to supply a separate mix, for example for monitoring during recording, or to send a signal to a separate effect device.

■ Bounce function allows mixdown of all tracks

The bounce function makes it easy to consolidate multiple tracks into one or two tracks with just a few keystrokes. Play all 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 function provides guide rhythm or accompaniment

The built-in rhythm function offers more than 400 types of accompaniment patterns from the internal drum + bass 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 HD8/HD16 features an innovative concept called FAST developed by ZOOM which lets you quickly build songs by using simple formula. Instead of the built-in drum sound generator, a part of an audio track or an audio file from a CD-ROM can also be used. Add special effects to a song or play patterns and songs with your very own sound.

■ **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 track/V-take as audio data.

■ **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 HD8/HD16 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 for mastering during track playback for mixdown and bounce.

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

The 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. The drive is also convenient to back up data that you have recorded.

■ **USB port as standard equipment**

The HD8/HD16 can be directly connected to a computer via the USB port. This lets you not only send and receive MIDI information, it also allows having the HD8/HD16 recognized as external storage by the computer, for easy transfer of audio files. Copy files from the computer to the HD8/HD16 and take them to a studio for adding vocals or guitar solos, or copy files from the HD8/HD16 to the computer further processing with DAW software. Suddenly, the scope of personal recording has become much wider.

■ **Use as control surface for DAW software**

The HD8/HD16 incorporates a control surface function for operating DAW software installed on a computer. When connected via MIDI or USB, the controls of the HD8/HD16 can act as transport keys, adjust the volume, etc.

Getting to Know the HD8/HD16

The HD8/HD16 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.

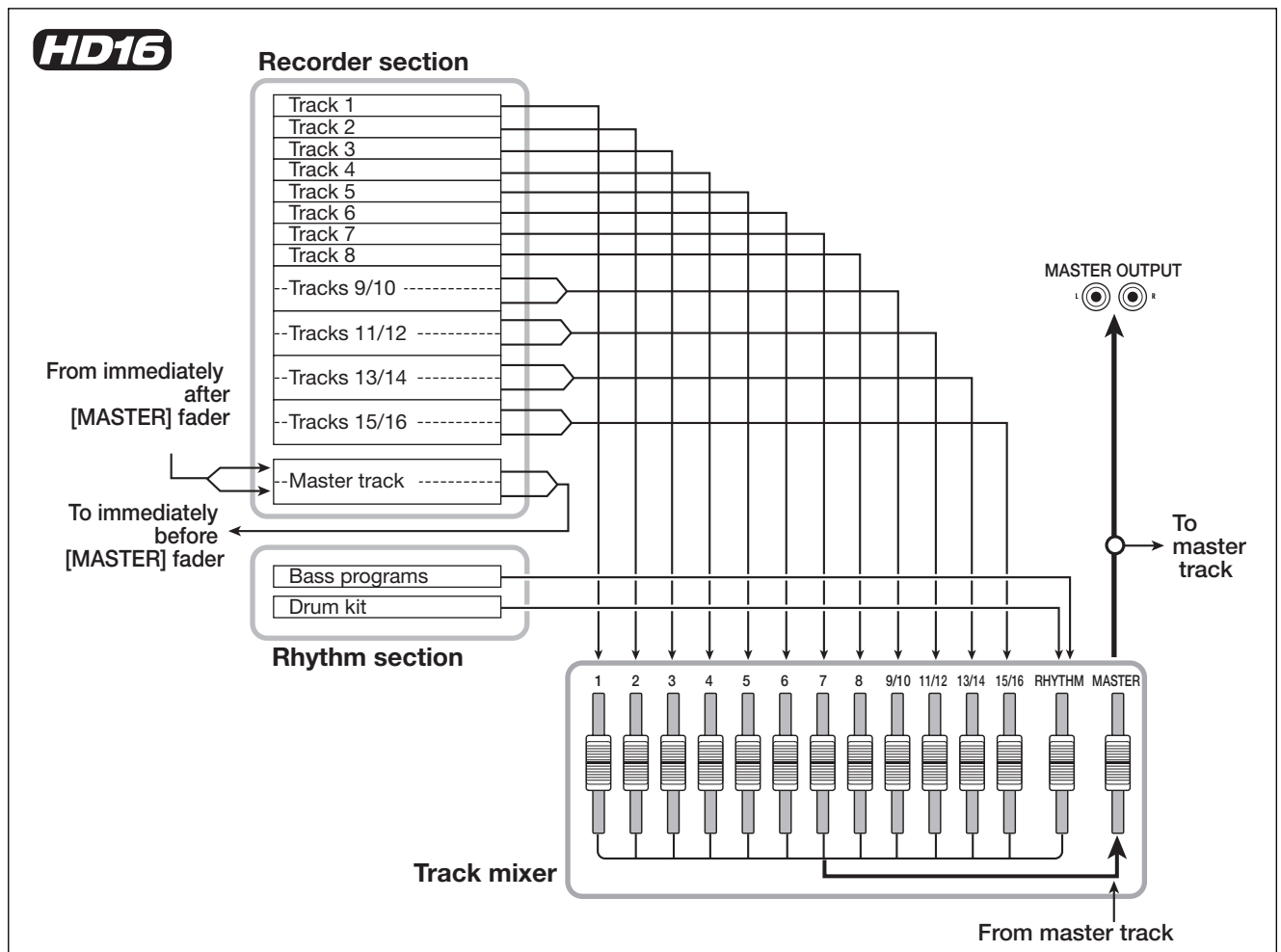
- **Effects**

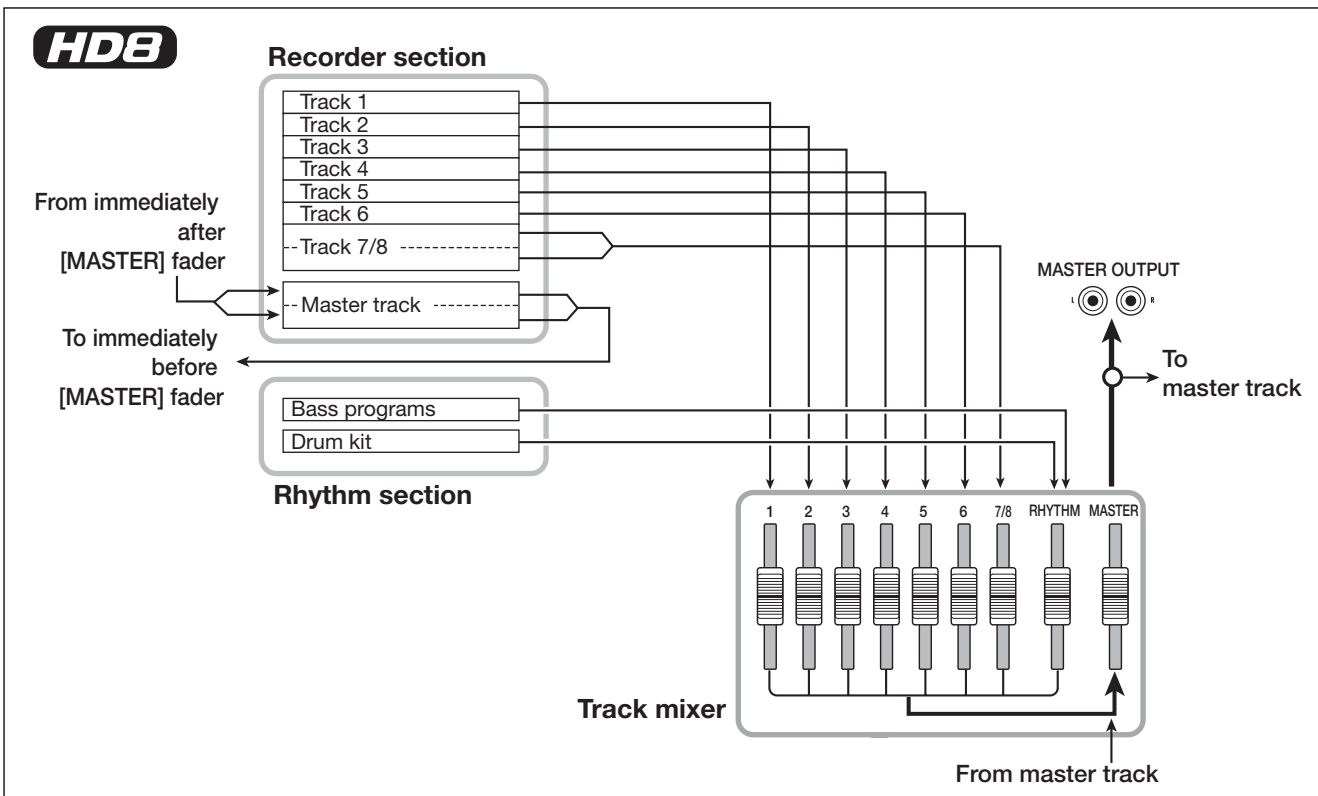
Process input signals, recorder playback signals, or drum/bass sound source signals in various ways, to achieve various sound characteristics.

- **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

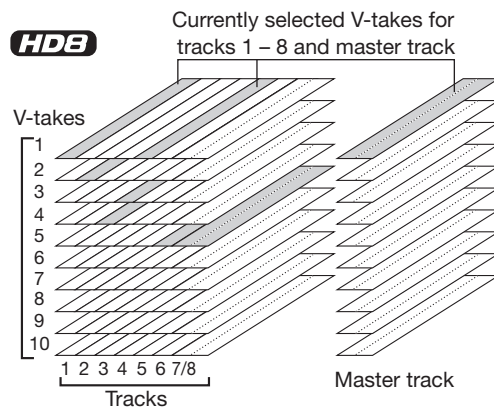
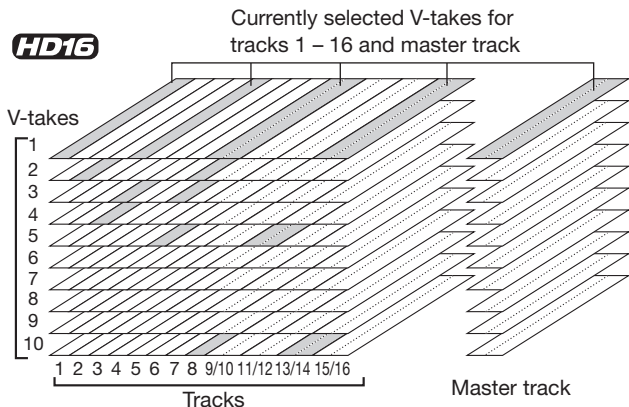
The recorder section of the HD8 has eight audio tracks: six mono tracks and one stereo track. Up to two tracks can be recorded simultaneously and up to eight tracks can be played back simultaneously.

The recorder section of the HD16 has sixteen audio tracks: eight mono tracks and four stereo tracks. Up to eight tracks can be recorded simultaneously and up to sixteen tracks can be played back simultaneously.

(A “track” is a separate section for recording audio data.)

Each of the tracks has ten switchable virtual tracks (called “V-takes”).

For each track, one V-take can be selected for recording/playback.



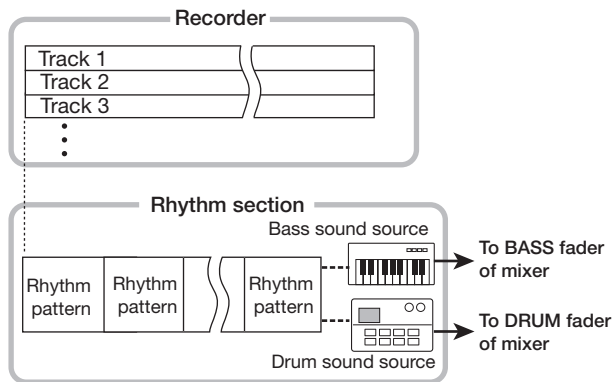
The recorder section also provides a set of stereo tracks which are separate from the normal audio tracks. This is called the master track. The master track is dedicated for mixdown and for holding the material used to create an audio CD.

Rhythm section

The HD8/HD16 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.

Instead of the built-in drum sound source, part of an audio track or an audio file from a CD-ROM can also be played with the pads or integrated in a rhythm pattern or rhythm song. This lets you create your very own sounds or special effects to a rhythm pattern/rhythm song.

HINT

You can process the drum/bass sound and imported sound with the insert effect and record it on an audio track of the recorder.

Mixer

The signals from audio tracks, and the drum and bass sounds (drum/bass track) are sent to the built-in mixer channels for individual adjustment of volume and tone and to create a stereo mix. For each track (audio track, drum track, bass track), parameters such as volume, panning, and 3-band EQ can be controlled independently. The resulting stereo mix can be recorded on the master track or sent to an external recorder via the MASTER OUT and DIGITAL OUT connectors.

Effects

The HD8/HD16 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 track 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.

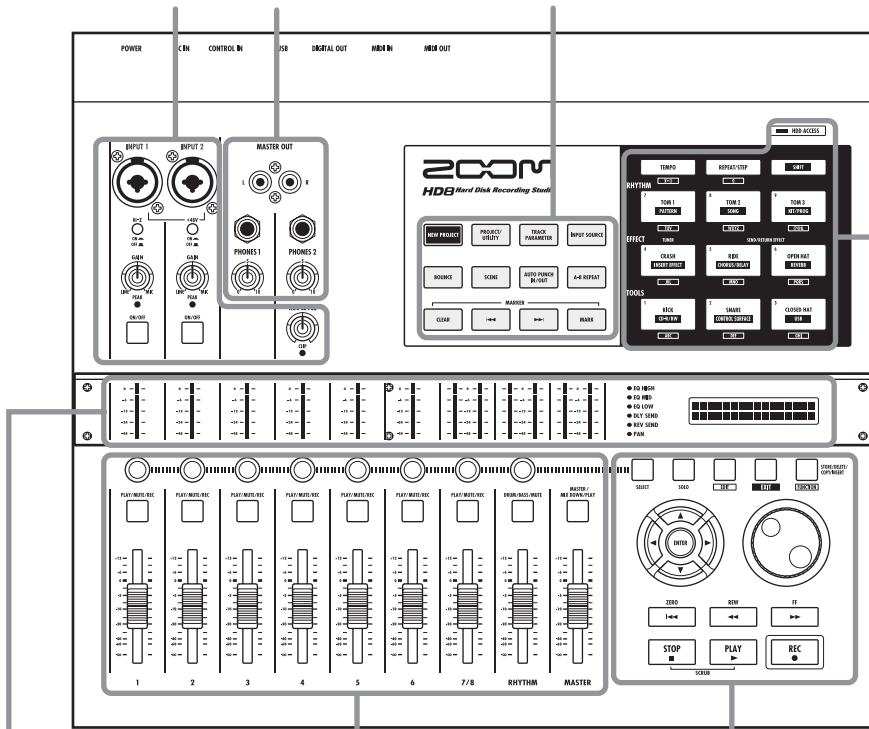
The send level of each mixer channel adjusts the depth of the send/return effect. Raising the send level will produce a deeper reverb or chorus/delay effect for that channel.

Names of Parts

HD8 Top Panel

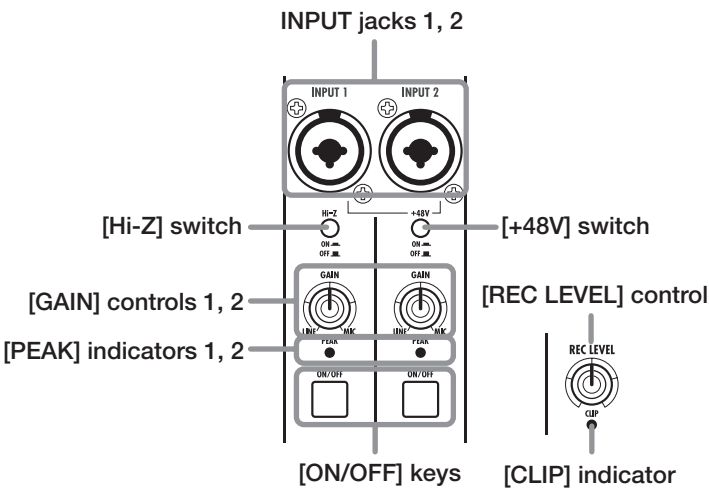
HDB

(1) Input section (2) Output section (5) Control section (6) Pad section

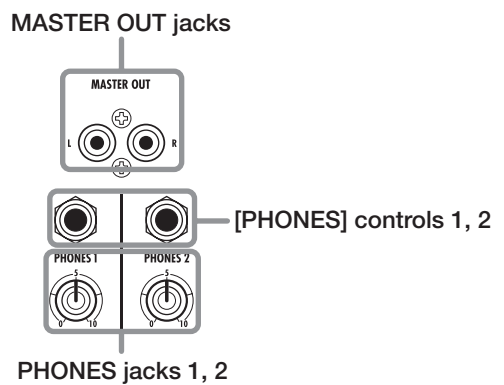


(3) Meter/display section (4) Fader section (7) Function/transport section

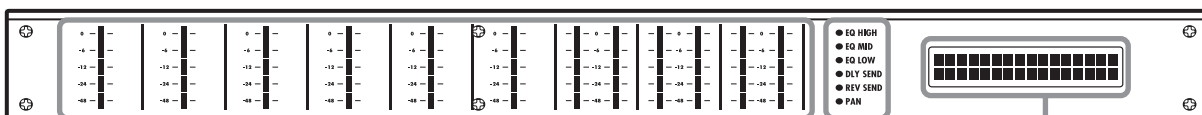
HD8 (1) Input section



HD8 (2) Output section



HD8 (3) Meter/display section

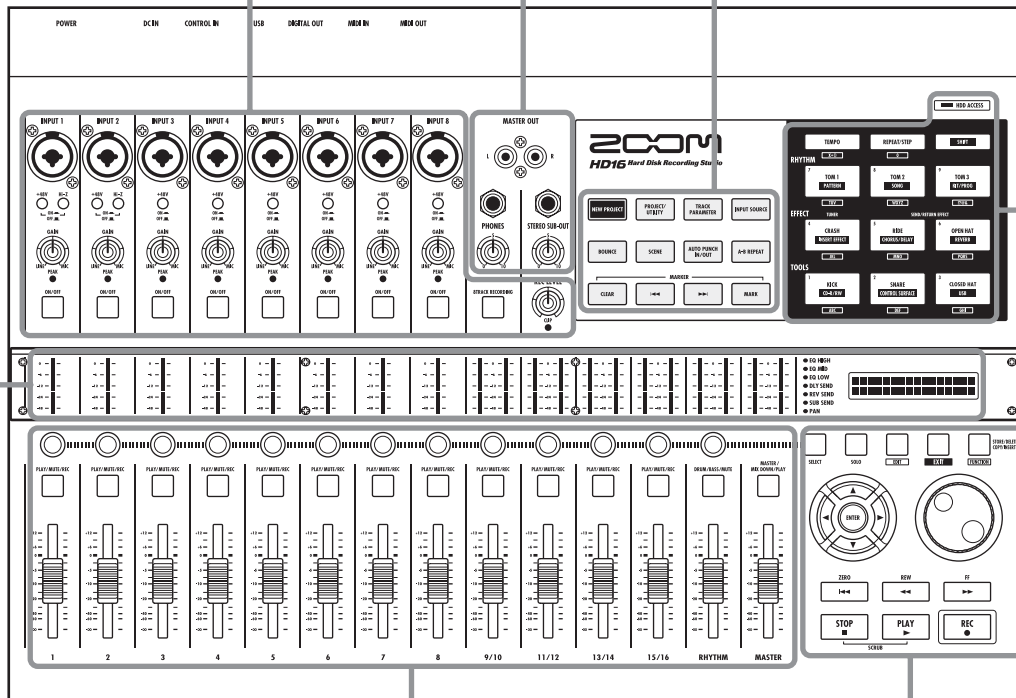


Level meters (1 – 6, 7/8, [RHYTHM], [MASTER]) Parameter select indicators Display

HD16 Top Panel



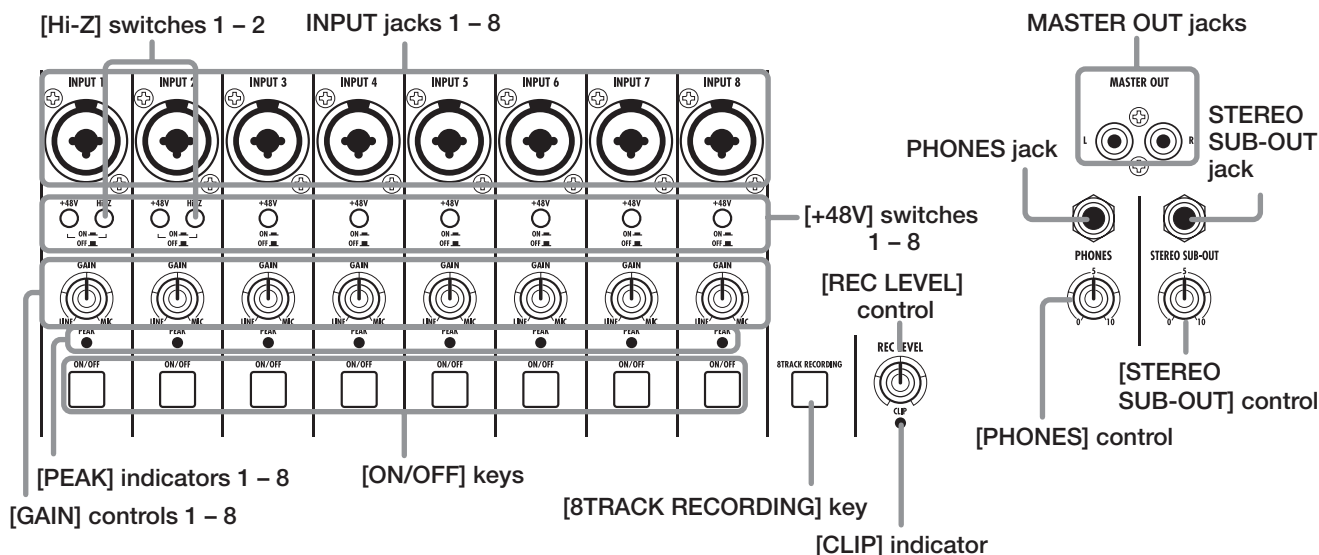
(1) Input section (2) Output section (5) Control section (6) Pad section



(3) Meter/display section (4) Fader section (7) Function/transport section

HD16 (1) Input section

HD16 (2) Output section

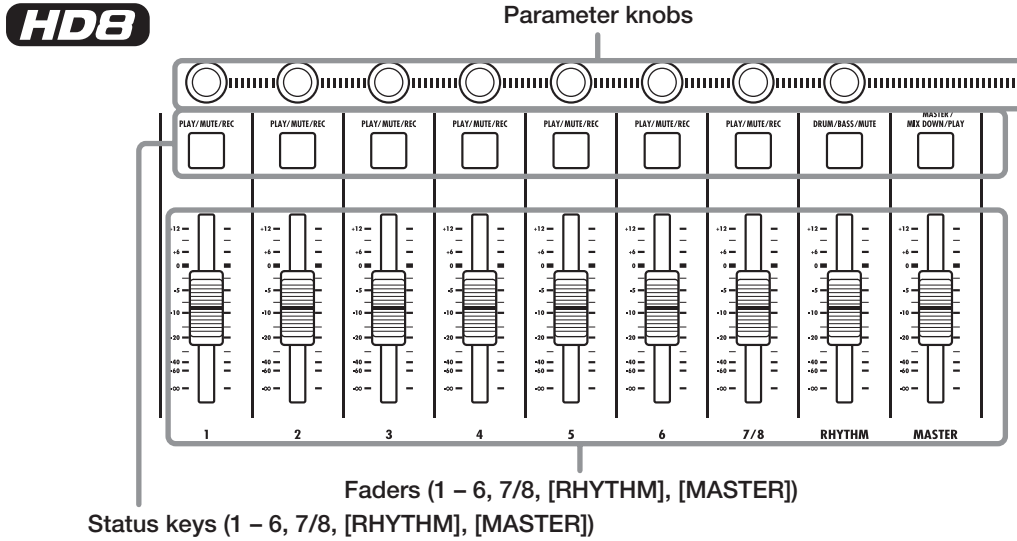


HD16 (3) Meter/display section

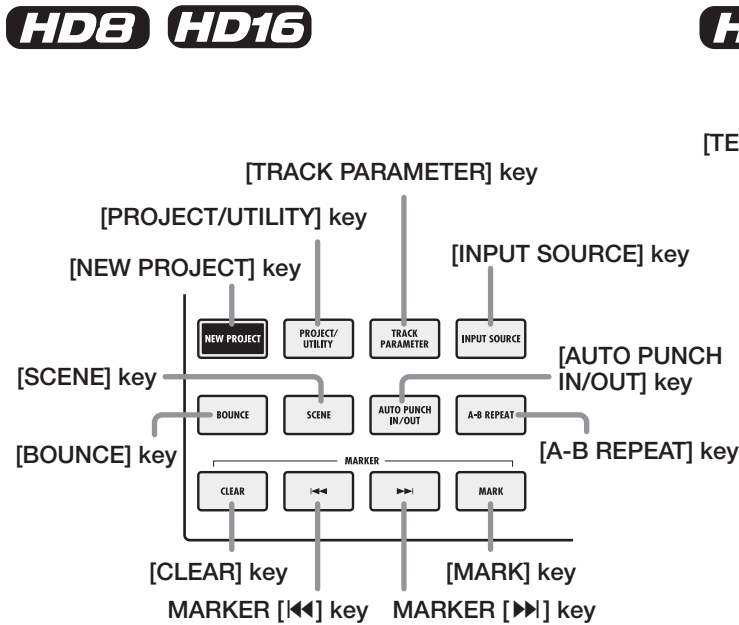


Level meters (1 – 8, 9/10 – 15/16, [RHYTHM], [MASTER]) Parameter select indicators Display

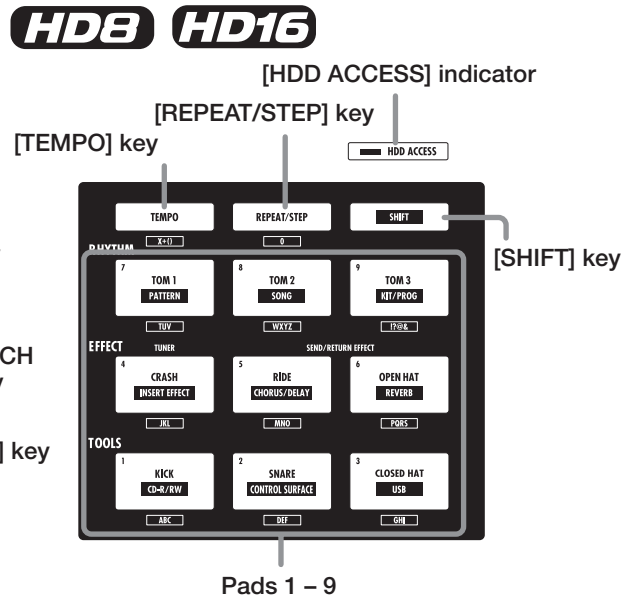
HD8 (4) Fader section



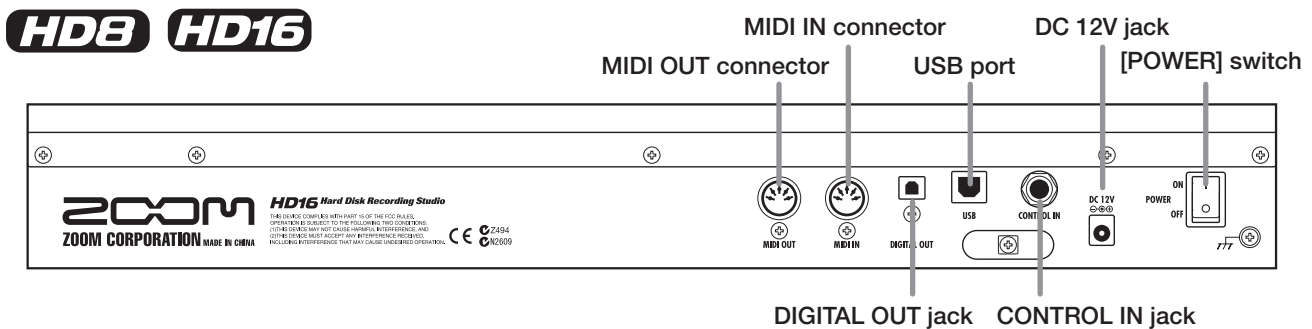
HD8/HD16 (5) Control section



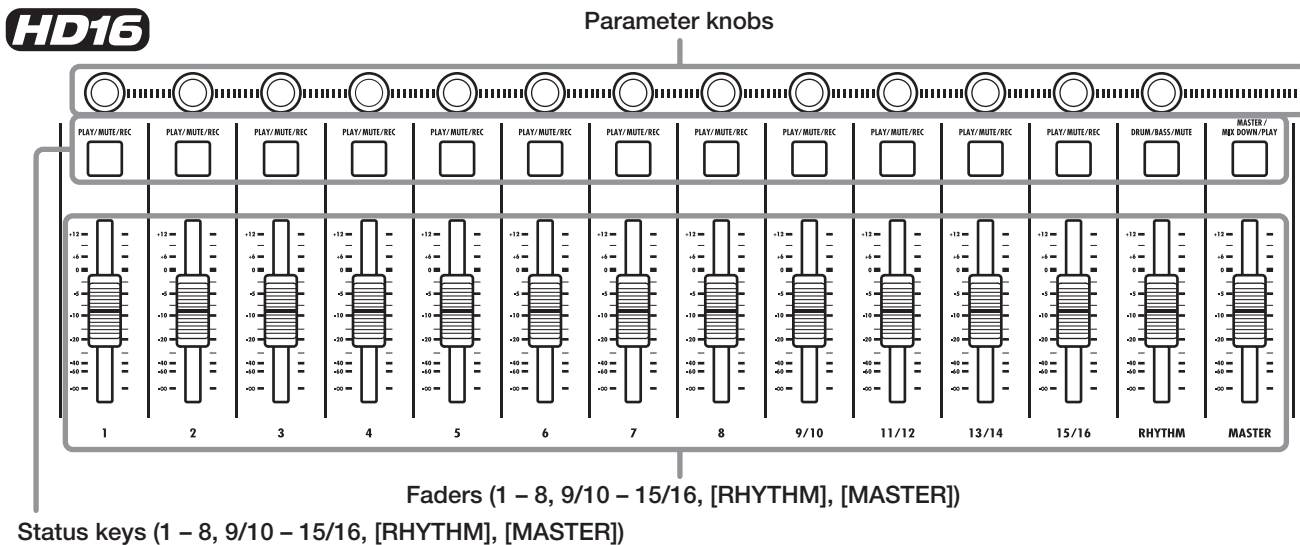
HD8/HD16 (6) Pad section



HD8/HD16 Rear Panel

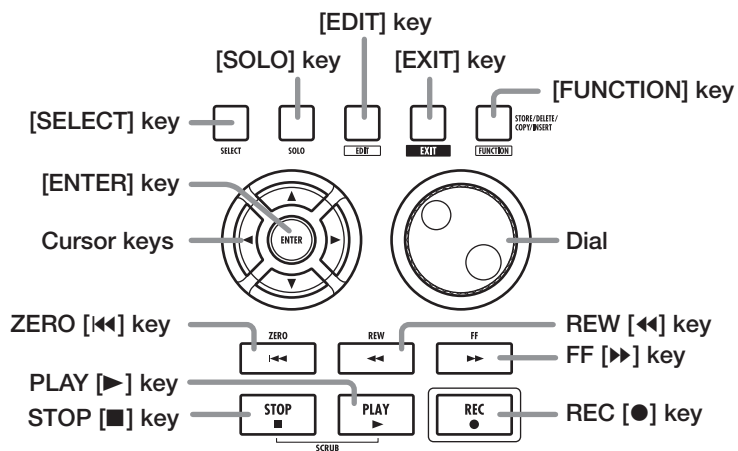


HD16 (4) Fader section



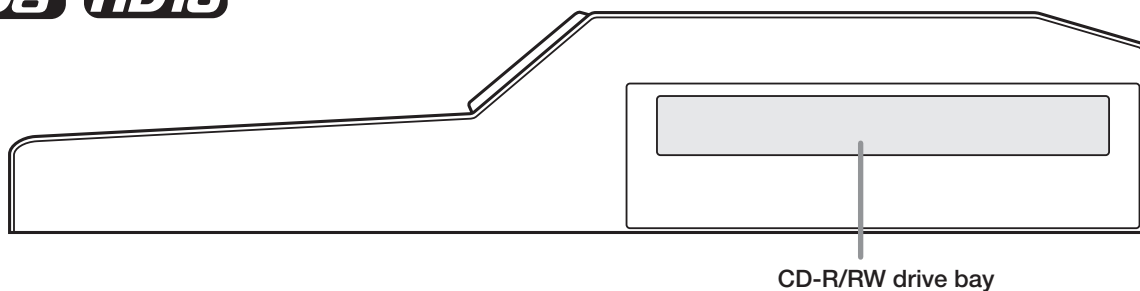
HD8/HD16 (7) Function/transport section

HD8 HD16



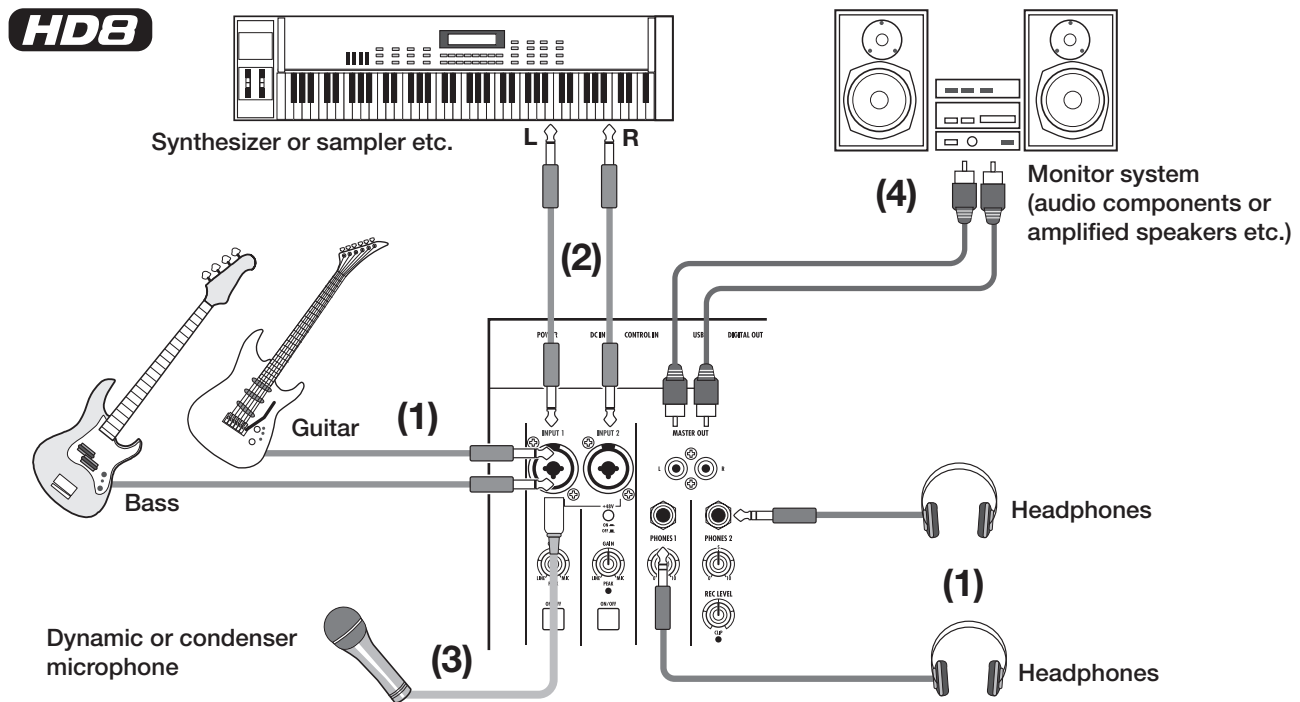
HD8/HD16 Right Side Panel

HD8 HD16



Connections

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



The INPUT jacks accept cables with XLR plugs as well as cables with mono phone plugs (balanced/unbalanced).

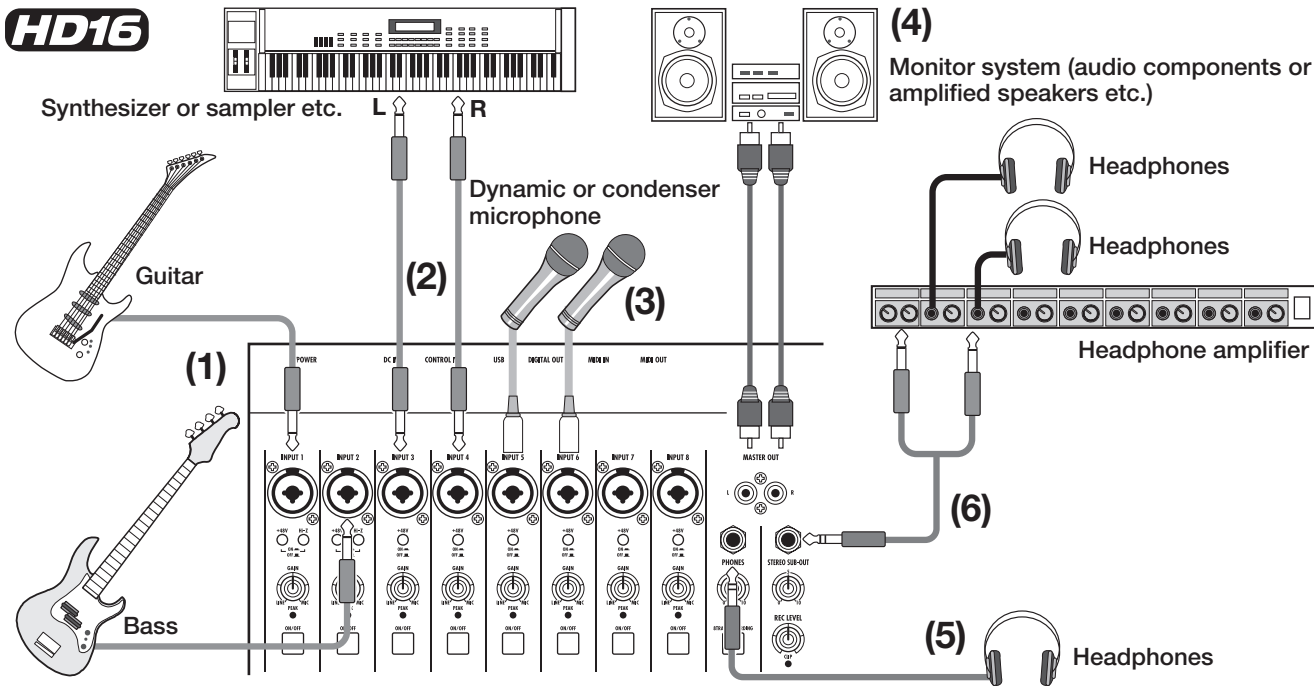
- (1)** To directly connect an electric guitar or bass with a passive pickup, use a high-impedance compatible INPUT jack and set the respective [Hi-Z] switch to On (engaged). On the HD8, the INPUT jack 1 is high-impedance compatible. On the HD16, INPUT jacks 1 and 2 are high-impedance compatible.

- (2)** When connecting stereo output devices such as a synthesizer or CD player, connect the L side output of the external device to an odd-numbered INPUT and the R side output to an even-numbered INPUT on the HD8/HD16.

- (3)** To supply phantom power to a condenser mic, use the INPUT jack (s) and set the respective [+48V] switch to On (engaged).

- (4)** To prevent damage to the speakers of your monitor system, turn off the power of the system (or turn the volume all the way down) before making connections.

- (5)** The PHONES jacks carry the same signal as the MASTER OUT connectors. The output level can be adjusted with the knob below the jack.



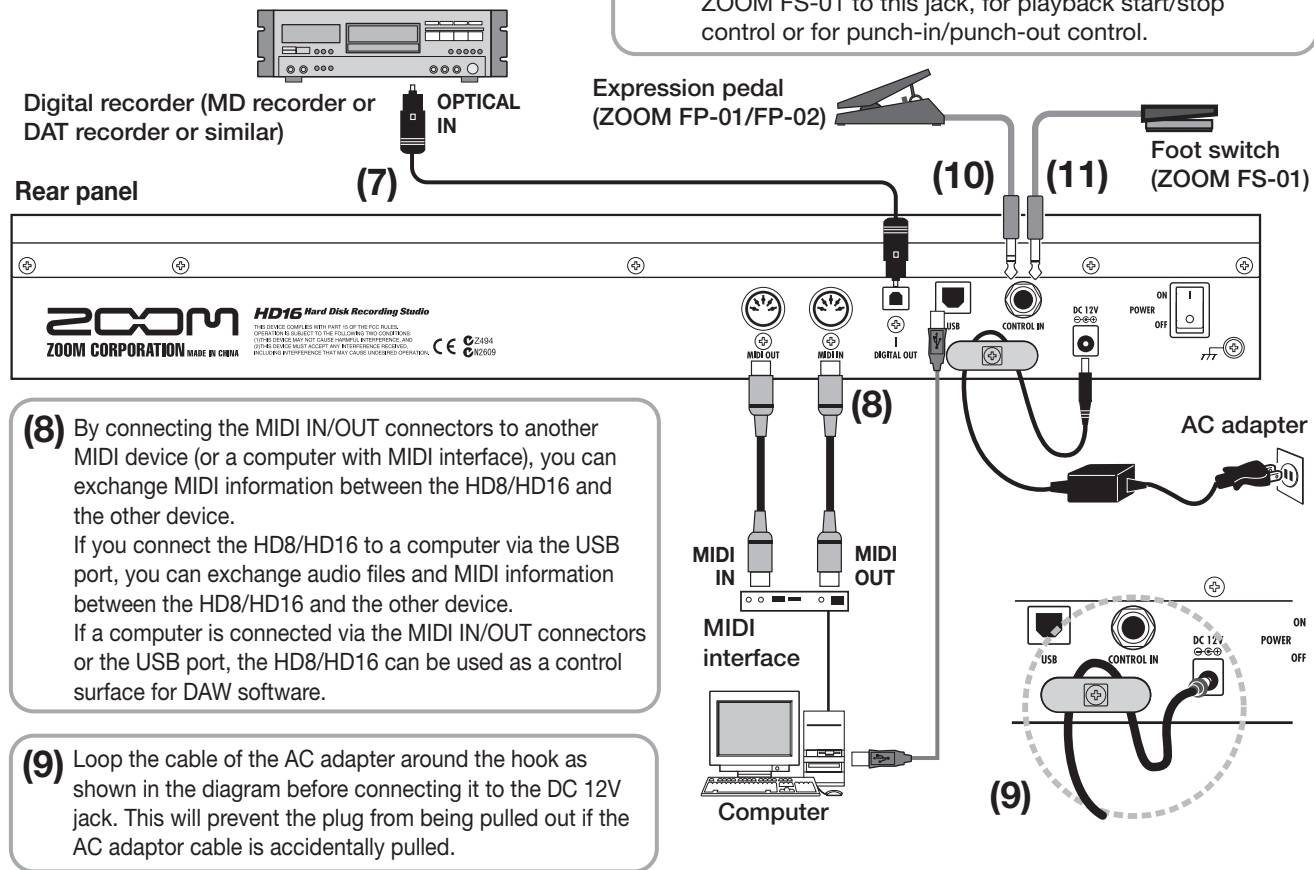
(6) << **HD16** only >> The STEREO SUB-OUT jack normally carries the same signal as the MASTER OUT connectors. (You can therefore also use it as a second headphone jack.) By changing an internal setting, the jack can be made to carry a mix that is separate from MASTER OUT, with level/pan adjustments for each track/input, allowing use as a monitor send or effect send. The output level can be adjusted with the knob below the jack.

HD8 HD16

(7) The DIGITAL OUT connector carries the same signal as the MASTER OUT connectors, but in digital format (16-bit/44.1 kHz).

(10) You can connect the separately available foot pedal ZOOM FP-01/FP-02 to this jack, for adjusting the effect parameter value.

(11) You can connect the separately available foot switch ZOOM FS-01 to this jack, for playback start/stop control or for punch-in/punch-out control.



(8) By connecting the MIDI IN/OUT connectors to another MIDI device (or a computer with MIDI interface), you can exchange MIDI information between the HD8/HD16 and the other device.
If you connect the HD8/HD16 to a computer via the USB port, you can exchange audio files and MIDI information between the HD8/HD16 and the other device.
If a computer is connected via the MIDI IN/OUT connectors or the USB port, the HD8/HD16 can be used as a control surface for DAW software.

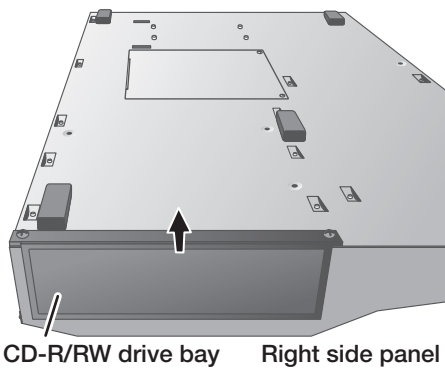
(9) Loop the cable of the AC adapter around the hook as shown in the diagram before connecting it to the DC 12V jack. This will prevent the plug from being pulled out if the AC adaptor cable is accidentally pulled.

Installing the CD-R/RW Drive

To install the separately available CD-R/RW drive into a HD8/HD16 model without preinstalled CD-R/RW drive, proceed as follows.

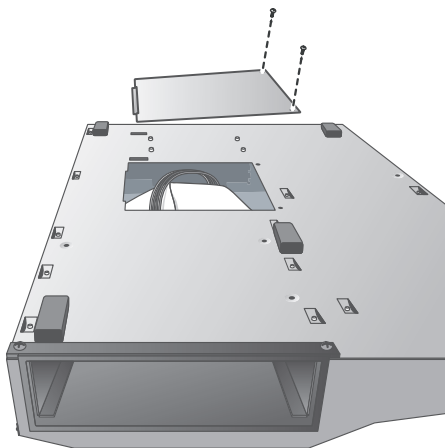
Caution

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



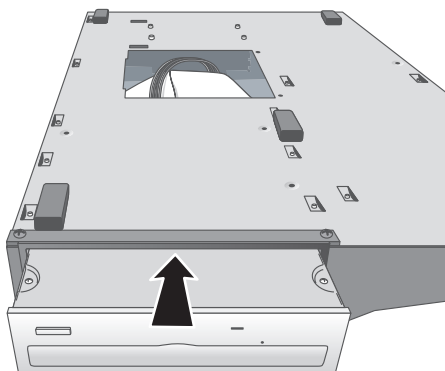
- 1. Turn the HD8/HD16 over and remove the blank panel from the drive mounting section on the right side panel.**

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

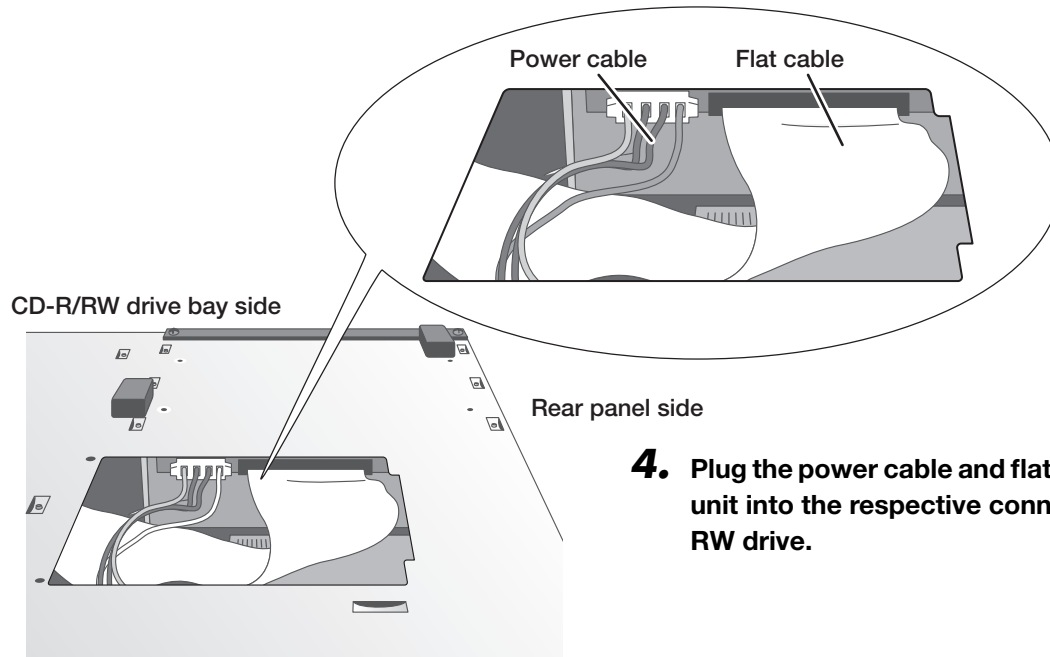


- 2. Remove the fastening screws of the bottom plate, and remove the bottom plate.**

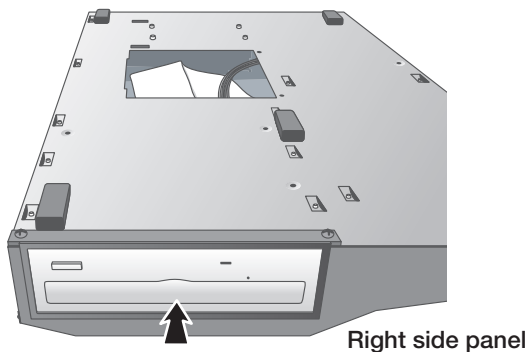
Take care not to lose the screws, as these will be needed again for reassembly.



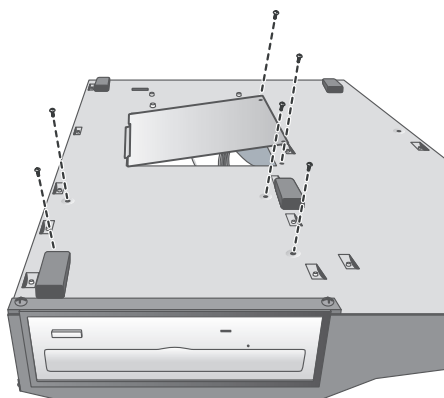
- 3. Turn the CD-R/RW drive over and insert it into the drive mount bay.**



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 HD8/HD16 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-02(made by ZOOM Corporation) or our recommendation drive (For details our recommendation drive, see our website : <http://www.zoom.co.jp>)
- 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 HD8/HD16 on and off.

Turning power on

1. Make sure that the HD8/HD16 and peripheral equipment is turned off.
2. Make sure that AC adapter, instrument, and monitor system (or headphones) are correctly connected to the HD8/HD16. (For information on connections, refer to page 16, 17.)

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 HD8/HD16.

3. Set the [POWER] switch on the rear panel to ON.



Power to the HD8/HD16 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”.

Project number (→ p. 23) Project name (→ p. 23)

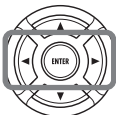


Protect symbol (→ p. 153) Current position (time indication or measure/beat/tick indication)

Mark symbol/Mark number (→ p. 47)



Cursor up/down keys
Switch between time indication and measure/beat/tick indication.

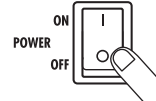


Cursor left/right keys
Move the cursor.

4. Turn on the connected monitor system.

Turning power off (shutdown)

1. Turn power to the monitor system off.
2. Set the [POWER] switch on the rear panel of the HD8/HD16 to OFF.



The indication “GoodBye See You!” appears on the display, and the unit is turned off.

GoodBye See You!

When a synthesizer or other electronic instrument is connected, turn power to that device off after the HD8/HD16.

Caution

- You must use this method to turn off the power of the HD8/HD16. 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 HD8/HD16 contains a demo song. To listen to it, proceed as follows.

Selecting the demo song

On the HD8/HD16, 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.

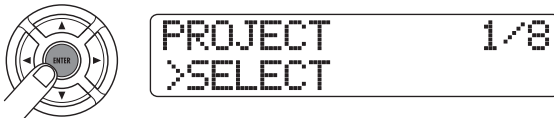
To load a demo song project from the hard disk, proceed as follows.

1. At the main screen, press the [PROJECT/UTILITY] key.

The display changes as follows.

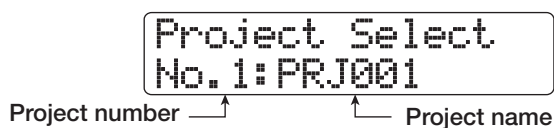


2. Press the [ENTER] key.



3. Verify that the indication “SELECT” is shown on the second line of the display, and press the [ENTER] key.

If “SELECT” is currently not shown, use the cursor left/right keys to bring it up, and then press the [ENTER] key.



In this condition, you can select a project stored on the hard disk.

4. Turn the dial to select the demo song.

Project number 0 is the demo song.



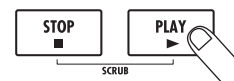
5. Press the [ENTER] key.

The HDD ACCESS indicator flashes 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 [PHONES] 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 [PHONES] 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 [RHYTHM] fader after selecting the drum track or bass track with the [RHYTHM] status key. When the [RHYTHM] status key is lit in green, the drum track is selected. When the [RHYTHM] status key is lit in red, the bass track is selected. The overall volume can be adjusted with 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, muting is canceled. For the drum/bass track, muting is canceled when the status key is lit in green or red.

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. 153).

Let's Record

This section demonstrates the basic recording procedure of the HD8/HD16. As an example, it explains how to record a guitar connected to INPUT jack 1 on track 1.

1. Press the [NEW PROJECT] key in the control section and then press the [ENTER] key.

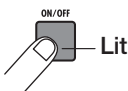


This creates a new project and activates the recording standby condition.

2. Connect the guitar to INPUT jack 1 and set the [Hi-Z] switch 1 to ON (engaged).

For a passive-type electric guitar or other instrument with high output impedance, the [Hi-Z] switch 1 should be set to ON.

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



In this condition, input 1 is active (ON).

4. While playing your guitar, adjust the [GAIN] control 1 to adjust the input sensitivity.

Make the adjustment so that the [PEAK] indicator 1 flickers slightly when you play your instrument at its loudest volume.



5. 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.



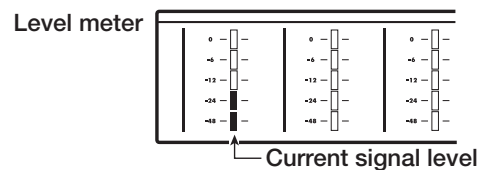
6. Press status key 1 repeatedly until the key is lit in red.



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

7. Operate the fader for track 1 to adjust the input signal monitor level.

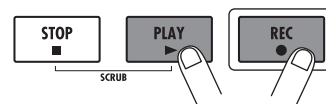
In the recording standby condition (status key lit in red), the respective level meter shows the input signal level. For tracks in playback mode (status key lit in green), the respective level meter shows the track playback level.



HINT

When you press the PLAY [▶] key of the HD8/HD16 in a new project, a rhythm pattern will start to play in sync with the audio track. To turn off the rhythm accompaniment, press the [RHYTHM] status key repeatedly until it goes out.

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



HINT

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

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

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

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



11. To cancel the recording standby condition, press the status key 1 so that the key is lit in green.

Quick Tour

Now let's use your HD8/HD16 to do some serious recording. Connect an instrument or microphone and follow the instructions below to get a feel for what the unit can do.

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 HD8/HD16, song data are managed in units called "projects". To start recording with the HD8/HD16, you must first create a project.

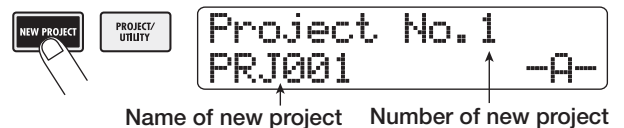
1. Connect the instrument to record and the monitoring system to the HD8/HD16 (→ p. 16, 17).

2. Turn power on in the order HD8/HD16 → monitoring system.

When the HD8/HD16 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.



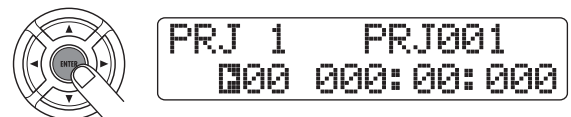
You can assign a name to the project. For details on entering characters, see page 37.

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. 151).

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.



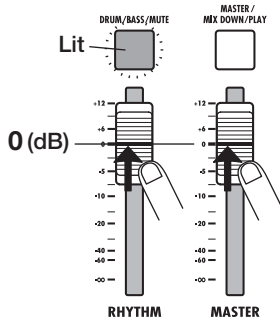
HINT

- 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 HD8/HD16 (→ p.20), the last project is automatically saved.

1.2 Selecting the rhythm pattern to use

The HD8/HD16 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). The rhythm function can also be used as a metronome, or you can leave out the rhythm from the final mix.

- 1. Verify that the [RHYTHM] status key is lit. Then set the [RHYTHM] fader and the [MASTER] fader to 0 (dB).**



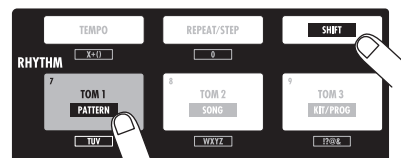
The output level of the drum kit/bass program (drum/bass track) can be adjusted with the [RHYTHM] fader in the same way as regular tracks. To select the track to adjust with the [RHYTHM] fader, press the [RHYTHM] status key. While the key is lit in green, the drum track is adjusted. While the key is lit in red, the bass track is adjusted.

HINT

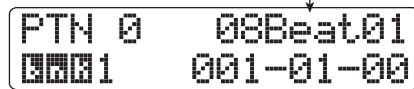
When the [RHYTHM] status key is out, the drum/bass track is muted. In this case, press the [RHYTHM] status key so that it is lit in green or orange.

- 2. Hold down the [SHIFT] key in the pad section and press pad 7 (PATTERN).**

Pad 7 (PATTERN) lights up and the currently selected rhythm pattern is shown on the display.



Rhythm pattern name



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

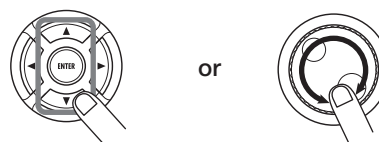


The selected rhythm pattern is played repeatedly, in sync with the recorder operation. The [TEMPO] key flashes according to the current tempo setting.

HINT

- 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.
- When the [RHYTHM] status key is lit in green, the drum kit sound can be played with the pads. When the key is lit in red, the bass program sound can be played with the pads.

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

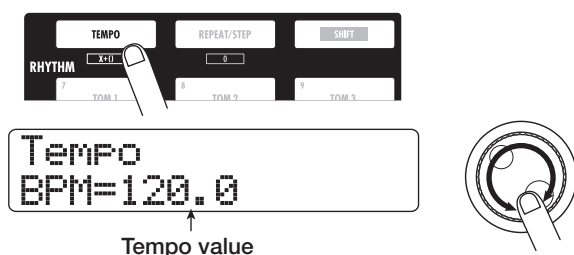


Up to 511 rhythm patterns can be used in a project. 475 of these are preprogrammed. (For the other patterns, “Empty” is shown.)

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.

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



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 [RHYTHM] status key and the [RHYTHM] fader to adjust the volume of the drum/bass track.

While the [RHYTHM] status key is lit in green, the drum track can be adjusted. While the key is lit in red, the bass track can be adjusted.

If bass sound is not desired, turn the bass track level 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.

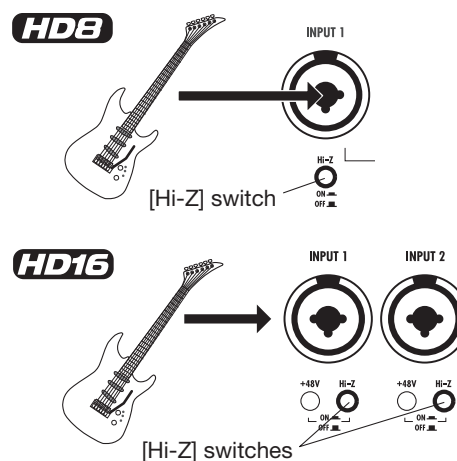
Step 2: Recording the first track

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 INPUT jack 1 (→ p. 16, 17).

For an instrument with high output impedance (passive-type electric guitar or bass), use a high-impedance compatible INPUT jack and set the respective [Hi-Z] switch to On (engaged). On the HD8, the INPUT jack 1 is high-impedance compatible. On the HD16, INPUT jacks 1 and 2 are high-impedance compatible.

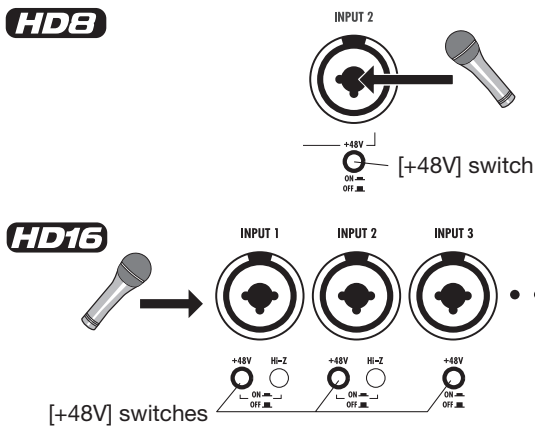


To connect a low-impedance electric guitar or bass with built-in preamp or a synthesizer or other component with line-level output, or to connect a mic or direct box, you can use any INPUT jack.

NOTE

When a low-impedance instrument is connected to a high-impedance compatible INPUT jack, the respective [Hi-Z] switch must be set to Off (disengaged).

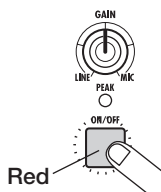
To supply phantom power to a condenser mic or direct box, set the respective [+48V] switch to On (engaged).



HINT

- When the [+48V] switch of the HD8 is set to On, phantom power is supplied to both INPUT 1 and 2.
- << HD16 only >> When on of the [+48V] switches of the HD16 is set to On, phantom power is supplied to the respective INPUT only.

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



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

NOTE

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 [GAIN] control 1 to adjust sensitivity.



The [GAIN] control serves to adjust the input sensitivity of the respective INPUT. Adjust the control so that the [PEAK] indicator in the input section lights up occasionally when you play the instrument at the loudest level.

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). Set the level so that the [CLIP] indicator does not light during play peaks.



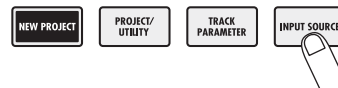
To check the level, press the status key for the record target track so that the key is lit in red. The level meter for that track now shows the recording level.

2.2 Applying the insert effect

The signal supplied to the HD8/HD16 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 INPUT 1 jack.

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



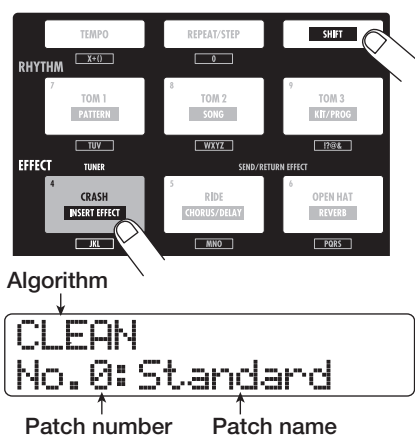
The [INPUT SOURCE] key serves to select the insert position for the insert effect. When you press this key, the current position is shown on the second line of the display.

In the default condition of a project, the insert effect insert position is "Input". If another position is selected, turn the dial to select "Input".

2. Press the [EXIT] key to return to the main screen.

3. Hold down the [SHIFT] key in the pad section and press pad 4 (INSERT EFFECT).

While you hold down the [SHIFT] key, pad 4 (INSERT EFFECT) is lit. The first line of the display shows the currently selected algorithm, and the second line shows the patch (effect program) number and name.



A combination of effect modules that can be used simultaneously is called an “algorithm”. The insert effect of the HD8/HD16 has 8 << HD16 9 >> different algorithms for different applications. Patches can be saved individually.

NOTE

If pad 4 (INSERT EFFECT) does not light although the [SHIFT] key is pressed, the insert effect is set to the bypass (off) condition (“Off” is shown on the first line of the display). Press the pad again to light it.

4. Use the cursor up/down keys to select an algorithm for the insert effect.

The following algorithms are available.

- **CLEAN**
- **DISTORTION**
- **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.
- **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.
- << HD16 only >> **8x COMP EQ**
An algorithm with 8 separate input/output channels. Different high-pass filter, compressor, and EQ settings are possible for each channel.

When you select an algorithm, the patch shown on the

second line of the display also changes.

NOTE

<< HD16 only >> The 8x COMP EQ algorithm can only be inserted in the input when the 8-track recording function (→ p. 46) is active.

5. Turn the dial to select the patch.

A total of 310 << HD16 330 >> 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
DISTORTION	0 – 49
ACO/BASS SIM	0 – 19
BASS	0 – 29
MIC	0 – 49
DUAL MIC	0 – 49
LINE	0 – 49
MASTERING	0 – 29
HD16 8x COMP EQ	0 – 19

HINT

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

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

The output level to the insert effect changes according to the selected patch. To prevent clipping, readjusting the [REC LEVEL] control may be necessary.

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

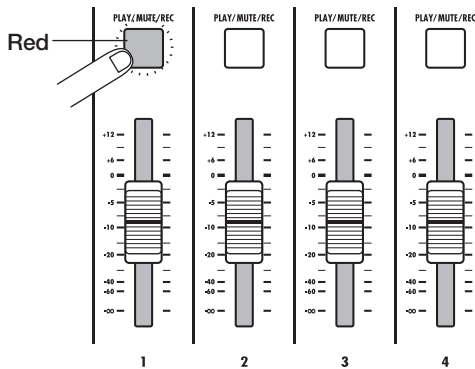
HINT

To record without using the insert effect, hold down the [SHIFT] key in the pad section and press pad 4 (INSERT EFFECT). The pad goes out, and the insert effect is bypassed.

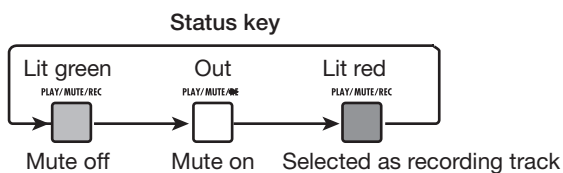
2.3 Selecting a track and recording

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.

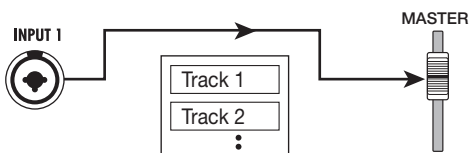


The status keys are used to select the recording/playback track and to switch muting for each track on and off. Each time you press a status key, the key will cycle through the following states.

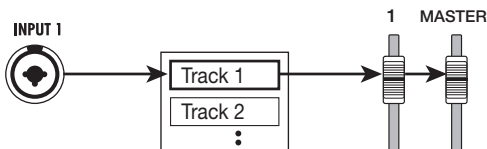


When status key 1 is red, track 1 is in the recording standby condition, and the input signal is assigned to track 1. The signal routing will change as follows.

When a recording track has not been selected



When a recording track (track 1) has been selected



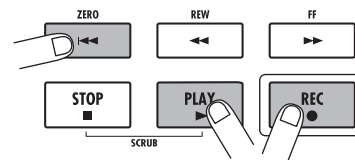
For stereo tracks, the parameters for left and right are set to the same values, except for the recording target V-take and phase selection. This is useful for recording from stereo sources such as synthesizers or CD players.

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.
- Also 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.
- << HD16 only >> You can also record 8 tracks simultaneously (→ p. 46).

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.



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

HINT

- The number and the sound of the pre-count clicks can be changed (→ p. 49).
- If the input signal is distorted, refer to step 2-1 to adjust the input sensitivity and recording level.

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

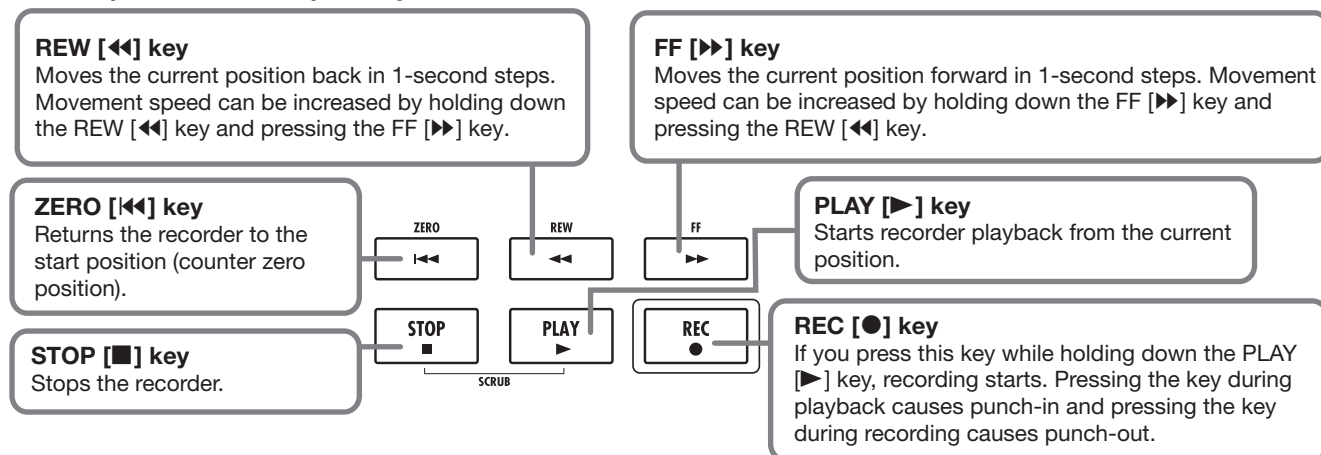
The REC [●] key and PLAY [▶] key will go out, and recording will stop. The “wait” bar indication is shown on the display while the unit is processing the recorded data.

NOTE

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

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

Basic operation of transport keys



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 or in measures/beats/ticks and move directly to that point (→ p. 39).
- By setting marks within the recording, you can quickly jump to these points (→ p. 47).

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

To redo the recording, repeat steps 3 – 5.

8. 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. 50).
- By switching to another V-take for the track, you can record again on the track without erasing the current recording (→ p. 61).

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. To use the insert effect for recording, select the algorithm and patch 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 is lit in green and the [RHYTHM] status key is lit in green or red.

HINT

If the [RHYTHM] status key is lit in green, the [RHYTHM] fader can be used to adjust the drum track. If the key is lit in red, the fader adjusts the bass track.

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 [RYTHM] fader to adjust the monitor level balance between tracks.

HINT

- For tracks in the recording standby condition (status key lit in red), the level meter can be used to check the input signal level.
- For tracks in playback mode (status key lit in green), the level meter shows the playback signal level.

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 play while listening to the guide rhythm and track 1.

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

5. To check 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. 41).

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

Even when all 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. 44).

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 [RYTHM] status key so that the key goes 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 using the faders or controlling the track parameters of the built-in mixer.

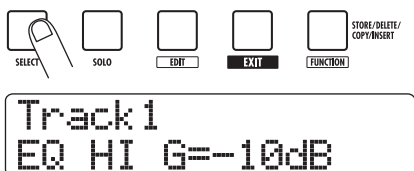
To change the track parameter settings, you can either call up the respective track and parameter on the display and use the dial to change the setting, or you can select main parameters with the keys and use the parameter knobs on the panel to quickly change the setting. This section explains how to use the parameter knobs for main track parameters.

1. To adjust the volume balance between tracks, operate the faders to set the volume for the respective track.

Operating the fader of a pair of stereo tracks adjusts the level in both channels.

2. To select the track parameter to adjust, press the [SELECT] key in the function/transport section while the main screen is shown.

The [SELECT] key allows you to select main track parameters. The parameter can then be adjusted with one of the parameter knobs. The first time you press the [SELECT] key, the most recently adjusted track parameter appears on the display.



3. Repeatedly press the [SELECT] key, until the parameter to adjust is shown.

The display shows the selected parameter.

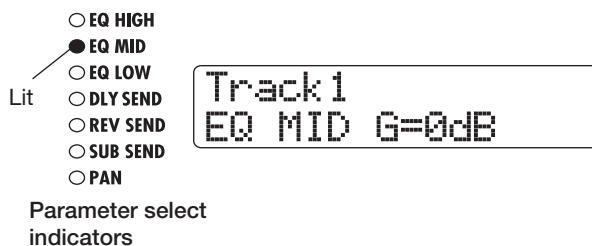


The [SELECT] key gives access to the following track parameters.

Parameter	Setting range	Description
EQ HI GAIN (*)	-12 - +12dB	Adjusts high frequency range boost/cut.
EQ MID GAIN (*)	-12 - +12dB	Adjusts mid frequency range boost/cut.
EQ LOW GAIN (*)	-12 - +12dB	Adjusts low frequency range boost/cut.
CHORUS DELAY SEND LEVEL (*)	0 - 100	Adjusts level of signal sent from track/input to chorus/delay effect.
REVERB SEND LEVEL (*)	0 - 100	Adjusts level of signal sent from track/input to reverb effect.
SUB-OUT SEND LEVEL (*) << HD16 only >>	0 - 100	Adjusts level of signal sent from track/input to STEREO SUB-OUT jack.
PAN	L100 - R100	Adjusts panning for the track/input. For stereo tracks, this adjusts the left/right balance.

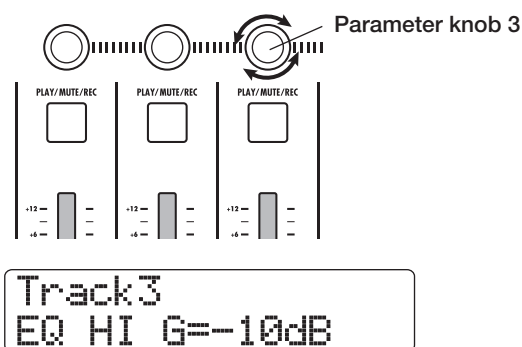
Parameters marked with (*) can be switched on and off.

The currently selected track parameter is shown by the lit parameter select indicator to the left of the display.



4. Turn the parameter knob for the track whose parameter value you want to adjust.

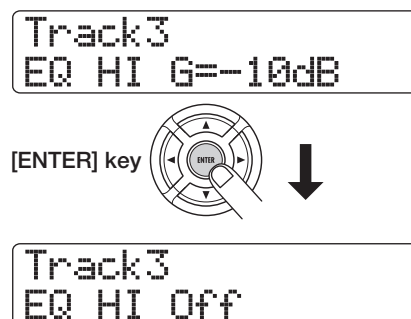
The display switches to the track that is being adjusted, and the value of the track parameter selected in step 2 changes.



HINT

- To adjust a track parameter for the drum/bass track, press the [RHYTHM] status key to select the drum track (key lit in green) or rhythm track (key lit in red), and then operate the knob.
- For stereo tracks, the parameter change applies to both tracks.

For parameters marked with a (*) in the table at left, you can press the [ENTER] key to switch the parameter on or off for the most recently adjusted track. For example, if you press the [ENTER] key while adjusting EQ HIGH GAIN for track 3, the display changes as follows, and high-frequency EQ for that track is set to off.



HINT

It is also possible to first select a track with the left/right cursor keys or the status keys and then switch the parameter on or off.

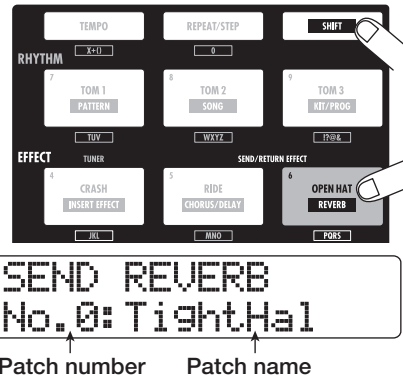
5. Repeat steps 3 - 4 to adjust other parameters

in the same way.

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

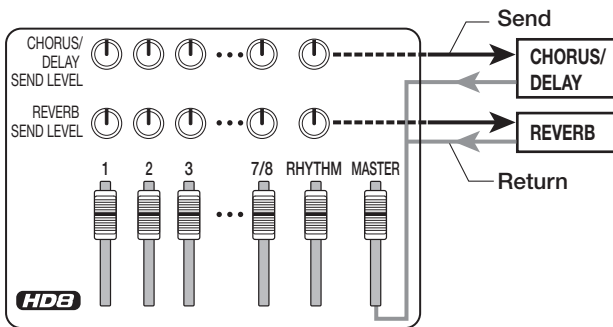
HINT

Besides the method described above, you can also select the track/parameter and then turn the dial to adjust the value. This method lets you edit all track parameters (→ p. 79).



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 HD8/HD16 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

- From the main screen, hold down the [SHIFT] key and press pad 5 (CHORUS/DELAY) or pad 6 (REVERB).

While you hold down the [SHIFT] key, pad 5 (CHORUS/DELAY) and pad 6 (REVERB) are lit. Press pad 5 (CHORUS/DELAY) to select a chorus/delay patch, or pad 6 (REVERB) to select a reverb patch.

If you select pad 6 (REVERB), the display will change as follows, and the second line of the display shows the number and name of the currently selected patch.

NOTE

If pad 5 (CHORUS/DELAY) or pad 6 (REVERB) does not light when you press the [SHIFT] key, the chorus/delay or reverb effect is set to off (the indication “Off” is shown on the second line of the display). Press the same pad once more so that it lights up.

- Turn the dial to select a patch. The send/return effect can use 30 patches each (numbered 0 – 29) for the chorus/delay and reverb effect. These patches can be edited to modify the effect further (→ p. 134).
- Select the patch for the other send/return effect in the same way.
- To return to the main screen, press the [EXIT] key.

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

- Repeatedly press the [SELECT] key to bring up the indication “DLY SEND” (to set the chorus/delay send level) or “REV SEND” (to set the reverb send level) on the display.

The selected track parameter is shown by the parameter select indicator.

- EQ HIGH
- EQ MID
- EQ LOW
- DLY SEND
- REV SEND
- SUB SEND
- PAN



6. While playing the song, turn the parameter knob to adjust the send level value for each track.
7. Adjust the intensity of the other send/return effect in the same way.
8. To return to the main screen, press the [EXIT] key.

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 location of the insert effect

1. While the main screen is displayed, press the [INPUT SOURCE] key in the control section.

```
Input Source
Input
```

2. 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. If the drum track is selected, the [RHYTHM] status key is lit in green. If the bass track is selected, the key is lit in red.

```
Input Source
Track 3
```

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.

3. Press the [EXIT] key to return to the main screen.
4. While the main screen is displayed, hold down the [SHIFT] key in the pad section and press pad 4 (INSERT EFFECT).

While you hold down the [SHIFT] key, pad 4 (INSERT EFFECT) is lit. The display indication changes as follows, and the second line shows the currently selected patch.

```
CLEAN
No. 0: Standard
```

NOTE

If pad 4 (INSERT EFFECT) does not light although the [SHIFT] key is pressed, the insert effect is set to the bypass (off) condition ("Off" is shown on the first line of the display). Press the pad again to light it.

5. Use the cursor up/down keys to select the algorithm for the insert effect.

<< HD16 only >> With the HD16, the number and combination of tracks for insertion changes as follows. If necessary, repeat steps 1 – 3 to select the insert target tracks again.

- **When 8x COMP EQ algorithm is selected**
You can select eight continuous tracks (Track 1 – 8 or Track 9 – 16) as insert location. Also if you have selected track 9 – 16, you can set different high-pass filter/compressor/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 (Track 1 – Track 8) or two mono tracks/one stereo track (Track 1/2 – Track 15/16) as insert location.

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

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

<< HD16 only >> When the 8x COMP EQ algorithm is selected, settings and effect on/off switching can be done individually for each channel (→ p. 128).

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

HINT

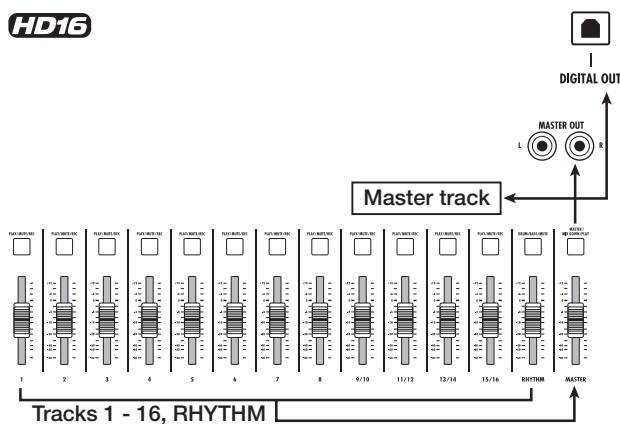
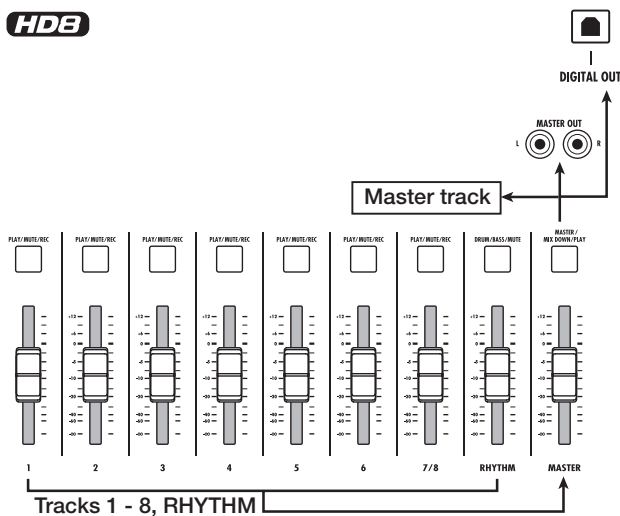
If the insert effect is applied to the track output, it is not possible to also apply it to the input or before the [MASTER] fader. However, by using the bounce function (→ p. 44) to record the track/V-take on another empty V-take, you can turn the post-processed effect sound into audio data and then 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 OUT connectors and record the song on an external recorder, or use the internal master track of the HD8/HD16 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 location of the insert effect

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

Input Source
Master

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

3. Press the [EXIT] key to return to the main screen.

Selecting a patch for the insert effect

4. While the main screen is displayed, hold down the [SHIFT] key in the pad section and press pad 4 (INSERT EFFECT).

The algorithm and patch selected for the insert effect are shown on the display.

CLEAN
No. 0: Standard

5. Use the cursor up/down keys to select “MASTERING” as the algorithm.



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

You can edit the patch to modify the effect further (→ p. 130).

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.

7. 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 [MASTER] level meter. 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.

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

The master track can now be recorded.

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

Recording on the master track starts. The playback level of each track and the master track recording level are shown on the level meters.

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 HD8/HD16 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. 165).
- The contents of the master track can be edited later (→ p. 50).

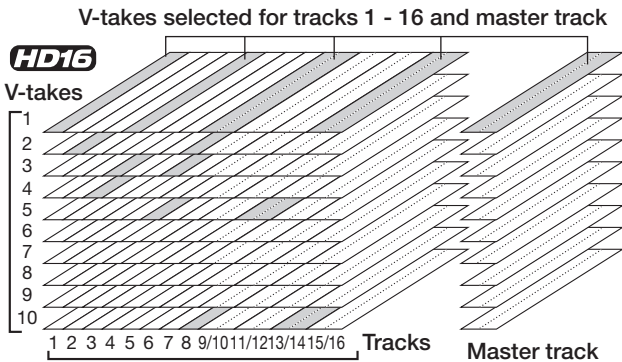
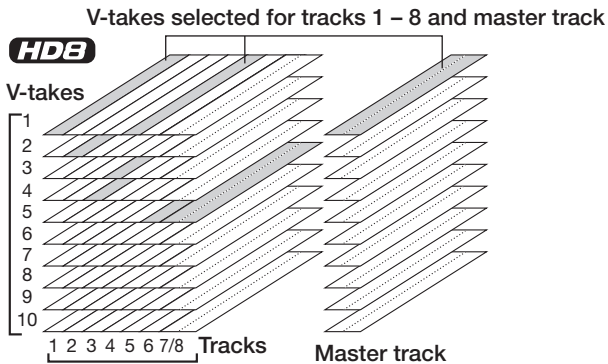
Reference [Recorder]

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

V-takes

About V-takes

Each audio track and the master track 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. The illustration shows the track configuration of the HD8 and HD16.



Switching V-takes

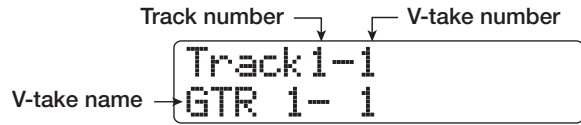
Here's how to select the V-take used by the audio tracks or the master track.

1. From the main screen, press the [TRACK PARAMETER] key in the control section.

You can now select various track parameters.

2. Use the cursor up/down keys to bring up the indication “Trackxx-yy” on the first line of the display (where x is the track number and yy is the V-take number).

The V-take name is shown on the second line of the display.



HINT

- If you select a V-take on which nothing is recorded, the indication “No Data” appears.
- If you select the master track, “Master” is shown as the track number.

3. Use the cursor left/right keys or the status keys to select the track for which to switch the V-take.

```

Track2-1
GTR 2- 1
    
```

HINT

- You can also use the respective status key to select a track.
- When you select a stereo track pair with the status key, each push of the status key toggles between the odd and even numbered track.

4. Turn the dial to select the V-take.
5. Repeat steps 3 – 4 as necessary, to select a V-take for each track.
6. To finish, press the [EXIT] key.

Changing the V-take name

A V-take that has been recorded will be automatically assigned an 8-character 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 << HD16 only >>**
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 function
- **LPxx_yy**
Phrase written to V-take using the phrase loop function (→ p. 67)

HINT

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

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

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

1. From the main screen, press the [TRACK PARAMETER] key in the control section.
2. Use the cursor up/down keys to bring up the indication “Trackxx-yy” on the first line of the display (where xx is the track number and yy is the V-take number).

The V-take name is shown on the second line of the display.

NOTE

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

3. Use the cursor left/right keys or the status keys to select the track for which to change the V-take name.

NOTE

The name of a V-take on which nothing is recorded (“No Data”) cannot be edited.

4. Press the [EDIT] key.

The cursor (flashing box) appears on the first character of the V-take name. This indicates that you can change the V-take name.



5. Use the cursor left/right keys to move the cursor to the character to change, and use the dial or the pads and keys in the pad section to select the character.

During character input, you can use the cursor left/right keys to move the input position. Characters can be input either by turning the dial or pressing the pads and keys of the pad section, as described below.

● Deleting a character

Move the cursor to the character to delete, and press the [EDIT] key. The character is deleted and subsequent characters move one position to the left.

● Entering a character with the dial

The dial changes the character under the cursor. Turn the dial until the desired character is shown. The following characters can be selected.

Numerals: 0 – 9

Letters: A – Z, a – z

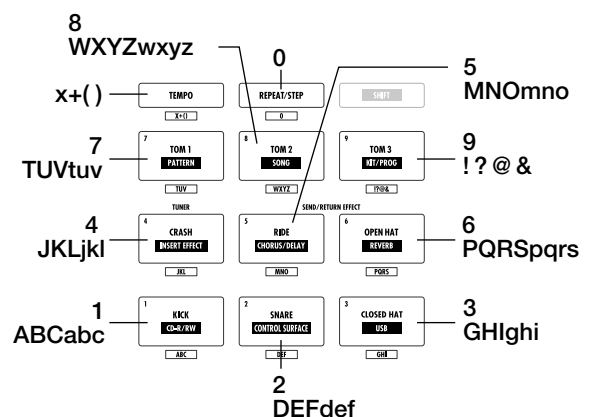
Symbols: (space) ! “ # \$ % & ` () * + , - . / : ; < > = ? @ [] ^ _ ` { } |

HINT

The method for character input is the same also when assigning a name to elements other than V-takes. However, for samples saved on the hard disk, kit file names, and backup folder names, the only characters that can be used are 0 – 9, A – Z, and _ (underscore character).

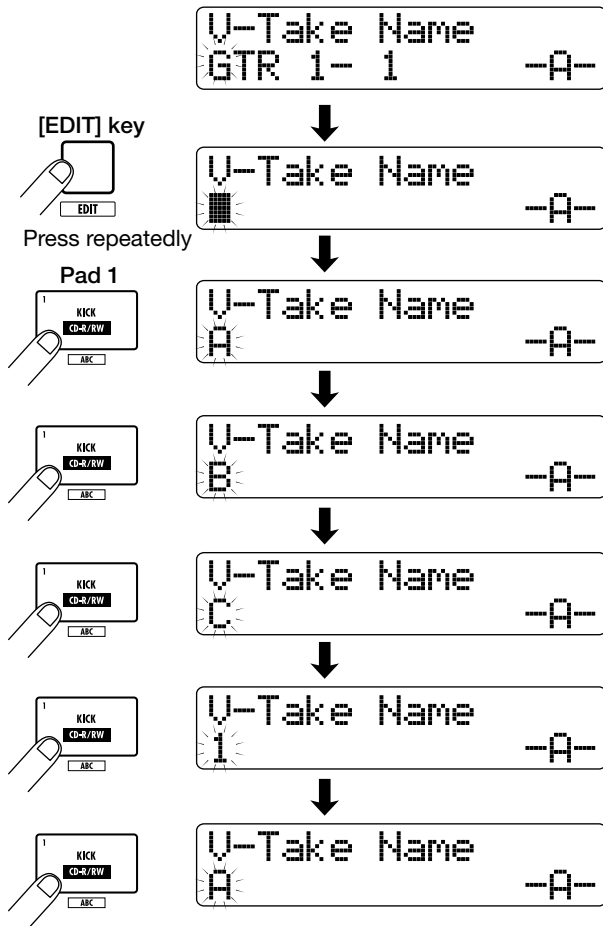
● Entering a character with the pad section pads and keys

Move the cursor to the input position and repeatedly press the respective pad or key to enter a numeral, letter, or symbol. The pad/key assignments are shown below.

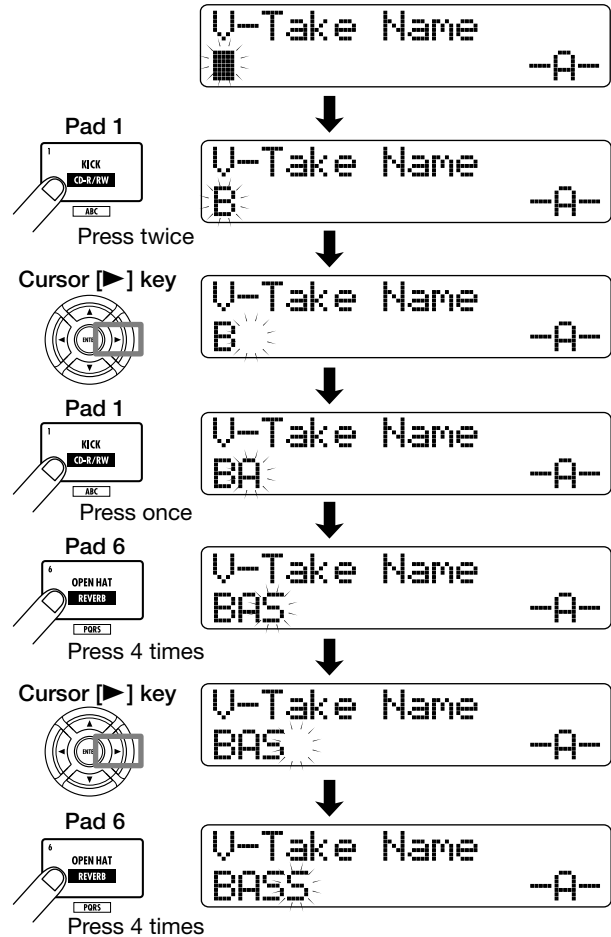


When you press a pad or key, the character is inserted and subsequent characters move one position to the right. To clear the old name first, press the [EDIT] key repeatedly until all characters are erased, and then start the input procedure.

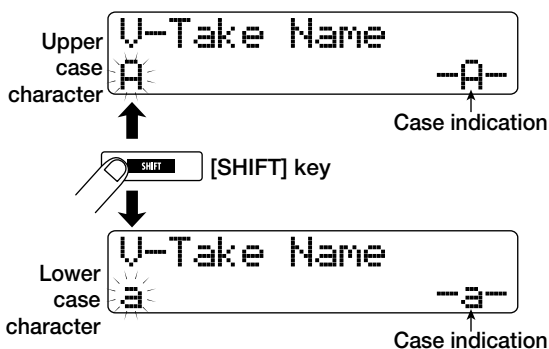
For example, when all characters are cleared and you press pad 1 repeatedly, the character under the cursor changes in the order A → B → C → 1 → A → B ...



By pressing another pad or key after entering a character, the cursor will move to the next position, without the need for pressing the cursor key. If the next character to input is assigned to the same pad, you must first press the cursor right key once to move the cursor, and then enter the character. An example for entering "BASS" from scratch is shown below.



To switch between upper and lower case, press the [SHIFT] key. The currently selected case is indicated by the "A" or "a" shown on the second line of the display. You can change the case of a letter after you have already input it by pressing the [SHIFT] key immediately afterwards.



NOTE

The space character and some symbols (" # \$ % `*, - . / : ; < > = [] ^ _ ` { } |) cannot be entered with the pads and keys of the pad section.

6. Repeat step 5 to complete the desired name.

7. To finish, press the [EXIT] key.

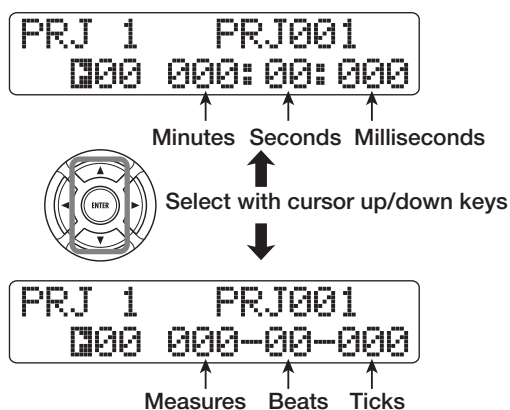
The main screen appears again.

HINT

If the contents of a V-take are 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.



1. Verify that the transport is stopped and the main screen is shown.

The locate function can only be used when the transport is stopped.

2. Use the cursor left/right keys to move the flashing part to the unit to change.

The unit that can be changed is indicated by the flashing value.



You can use the cursor up/down keys to switch between time indication and measure/beat/tick indication.

3. Turn the dial to change the value.

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

HINT

If you have set marks using the marker function (→ p. 47), you can use the locate function to move among the marks.

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

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

1. Move to the point where repeat playback should begin, 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 repeat playback should end, 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

If you specify a point B that is located earlier than point A, the section from points B → A will be played repeatedly.

3. 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.

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

When point B is reached, the recorder jumps back to point A, and playback continues.

5. 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.

6. 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)

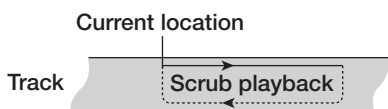
The HD8/HD16 provides a “scrub” function that lets you search for a desired location while repeatedly playing a short section before or after the current point. This is convenient to accurately find the point at which a specific sound starts or stops.

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

Using scrub/preview

1. 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 section (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.



2. 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.

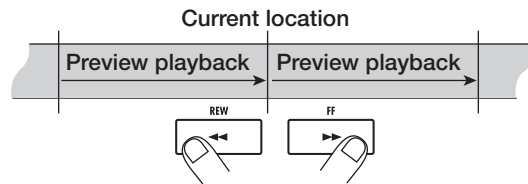
3. To move the scrub playback position, use the cursor left/right keys to cause the millisecond indication or the tick indication on the counter to flash. Then turn the dial to find the desired location.

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

4. To use the preview function for hearing the section before the current location, press the REW [◀] key. To hear the section after the current location, press the FF [▶] key.

If you press the REW [◀] key, a section of 0.7 seconds prior

to the current location will play (ending at the current location). If you press the FF [▶] key, a section 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.



5. 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 section before or after the current location), and the length of the scrub playback section.

1. 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.

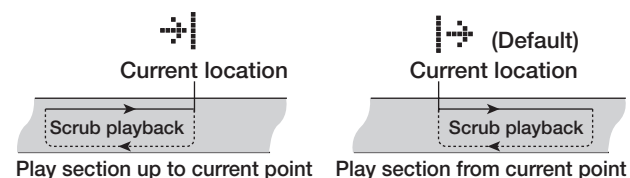
Direction of scrub playback Length of scrub playback



2. 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.

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.



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 HD8/HD16 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

<< **HD16** only >> When the 8-track recording function (→ p. 46) 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 CONTROL IN jack on the rear panel.
- In the default condition of the HD8/HD16, 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. 169).

1. Repeatedly press the status key of the track on which 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 [GAIN] control and [REC LEVEL] control to adjust the recording level.
4. Locate a point slightly 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 unit 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 HD8/HD16 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 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 [GAIN] control and [REC LEVEL] control to adjust the recording level.
3. Locate the point for 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 for 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. 40) to find the locations and assign a mark (→ p. 47) beforehand at the desired locations.

5. Use the Locate function to go to a spot

before the In point.

- Repeatedly press the status key for the track on which 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.

- 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.

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 and 4.

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

- 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).

- When you are finished recording, press the STOP [■] key.

- 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.

- 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 discarded.

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

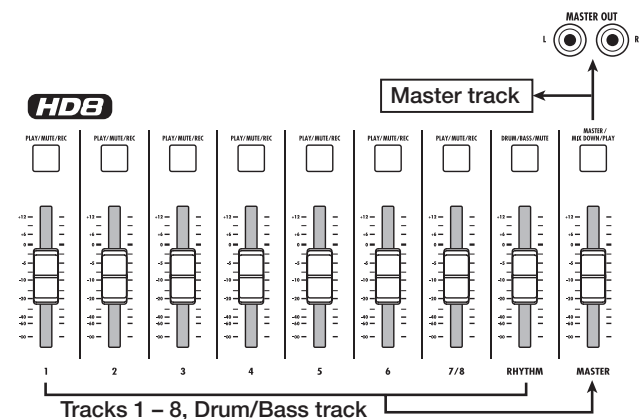
The master track is a set of stereo tracks that is separate from the normal tracks. The most common use of the master track is as a track on which the end result of a mixdown process is recorded. The contents of the master track can then be used to create an audio CD.

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 HD8/HD16 offers one master track for each project. Similar to the regular tracks, 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.

It is possible to convert the contents of the master track into a stereo WAV file. If you copy this file via the USB interface to a computer, you can use it to create a CD with the software and CD-R/RW drive of the computer.

The illustration below shows the signal flow for recording on the master track of the HD8.



HINT

- It is possible to play the master tracks of several projects recorded on the hard disk in succession (→ p. 165).
- The data recorded on all tracks including the master track are saved as mono WAV files (2 mono WAV files for stereo tracks). To save data as a stereo WAV file, special steps are necessary (→ p. 43).

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 36 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. In this case, only the section with recorded data will be 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.

Converting the master track to a stereo WAV file

You can write any V-take of the master track to the hard disk as a WAV file. This file can then be copied to a computer for further editing or burning to CD.

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

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

2. Use the cursor left/right keys to bring up the indication "STEREO WAV" on the second line of the display, and press the [ENTER] key.

The name of the master track V-take is shown on the second line of the display.

```
Take Select
VTake1:Master 1
```

3. Turn the dial to select the V-take to convert into a stereo WAV file, and press the [ENTER] key.

The display indication changes as follows.

```
Create StereoWAV
*MASTER1.WAV
```

NOTE

When a file with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file will be overwritten if you proceed with this operation. If required, you can change the name from this screen. (For information on entering characters, see page 37.)

4. Assign a file name as necessary, and press the [ENTER] key.

The indication "Create?" appears on the second line of the

display.

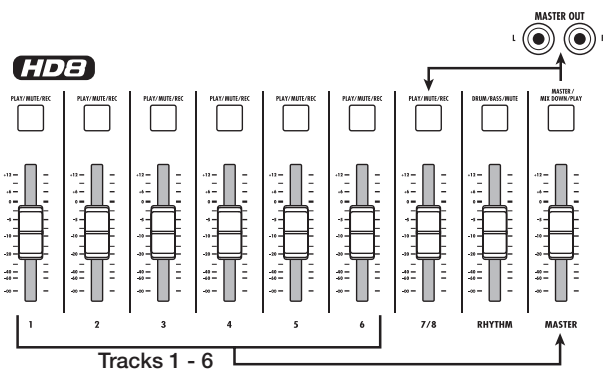
5. To create the file, press the [ENTER] key once more.

The stereo WAV file is created in the IMPORT folder of the currently selected project. By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

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

“Bounce” is a function that mixes the sound from the audio tracks and drum/bass track, and records them on one or two tracks. (This is sometimes called “ping-pong recording”.)

The illustration below shows the signal flow when performing bounce recording on the HD8.



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, a signal mixed to mono will be recorded.
- If necessary, you can play back all tracks, 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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

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

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

The current setting is shown.

```
Rec Track
Mute
```

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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

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

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

The current setting is shown.



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 – 8 << HD15 1 – 16 >> and the drum/bass track onto V-take 10 of tracks 7/8 << HD15 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 7/8 << HD15 15/16 >> repeatedly, so that the keys are lit in red.**

Tracks 7/8 << HD15 15/16 >> are now ready for recording.

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

The key lights up and the bounce function is turned on. While the key is lit, the tracks/V-takes selected in steps 2 – 3 are selected as recording targets.

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

The individual settings for level balance, panning, and effects all have an influence on the mixed signal that is sent to the bounce target tracks. During recording, adjust levels while watching the MASTER level meter, to make sure that no signal clipping occurs.

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

Recording on tracks 7/8 << HD15 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. Then set the recorder to playback. 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 drum/bass track signal is recorded, select “Master” as recording source. For information on how to do this, see the next section “Selecting drum/bass track as recording 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 track sound on an audio track (rhythm recording)

The HD8/HD16 allows you to record the drum track or bass track sound of the rhythm section onto any audio 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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

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

- Use the cursor left/right keys to bring up the indication “REC SOURCE” on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.



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

- **Master**
Signal immediately before [MASTER] fader (default setting)
 - **Drum Track**
Drum track output
 - **Bass Track**
Bass track output
- Turn the dial to select “Drum Track” or “Bass Track” as recording source.
 - 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.

- Press the [BOUNCE] key.

The key lights up.

- Repeatedly press the status key for the track on which 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 sounds in stereo, select a stereo track (or two mono tracks) as recording destination. If only one mono track is selected, the left and right signals will be mixed down to mono for recording.

- While holding down the [SHIFT] key in the pad section, press a pad marked “SONG” or “PATTERN” to select a rhythm song or rhythm pattern for recording.

To record your own pad playing, select an empty rhythm pattern/rhythm song verify that the sounds that you want to play are assigned to the pads.

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

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

NOTE

Before performing the following steps, make sure that the rhythm pattern/rhythm song tempo is as desired. If you change the rhythm pattern/rhythm song tempo after recording the audio track, the rhythm will no longer match the recorded track.

- 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.

- Press the [BOUNCE] key.

The key goes out, and the bounce function is canceled. To return the bounce function to the normal condition, select “Master” as recording source, as described in “Selecting drum/bass track as recording source”.

Recording on 8 tracks simultaneously (8-track recording mode)
 << HD16 only >>

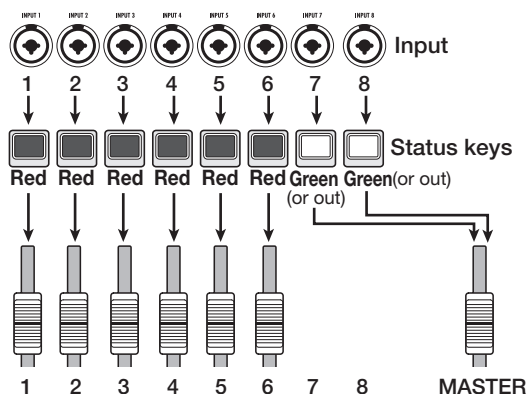
This section explains how to use the 8-track recording mode which allows up to eight tracks to be recorded simultaneously. <<This function is available only in the HD16.>>

About 8-track recording

In 8-track recording mode, the signals from the INPUT jacks 1 – 8 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 not recorded and 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 and the master track is not possible. The auto punch-in/out and bounce functions are also not available.
- 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. 62).

Assigning an input signal to a track

After adjusting the level of the signals from the INPUT jacks 1 – 8, 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.**
- 2. Press the [8TRACK RECORDING] key in the input section.**
The key lights up and the unit 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 respective [GAIN] controls to obtain a suitable input sensitivity level.**
- 5. To use an insert effect, press the [INPUT SOURCE] key in the control 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 8 x 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.

- 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. In the recording standby condition (status key lit in red), the level of the input signal can be checked with the respective level meter.

- 7. Repeatedly press the status keys for the tracks 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 an input 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 a song (→ p. 142).

Setting a mark

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

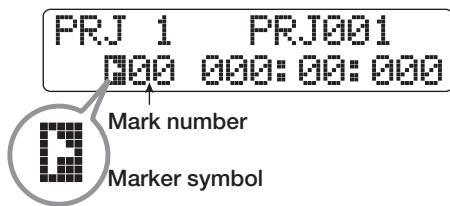
- 1. Locate the point where you want to set a mark.**

HINT



- A mark can be assigned either during playback or when stopped.
- You can use the scrub function (→ p. 40) to locate the point with high precision.

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

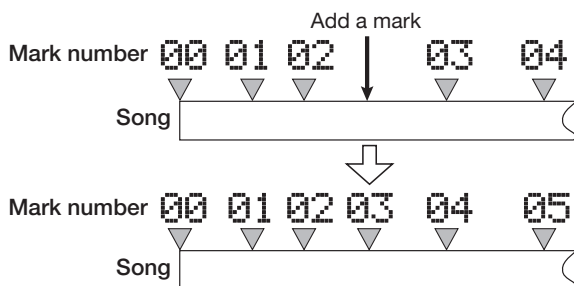
A mark will be assigned to the current location. The second line of the display always shows the number of the mark at the current point or the closest preceding mark.



The marker symbol to the left of the mark number changes as follows, according to the current position.

-  The mark number and the current position match.
-  No mark is assigned at the current position.

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.

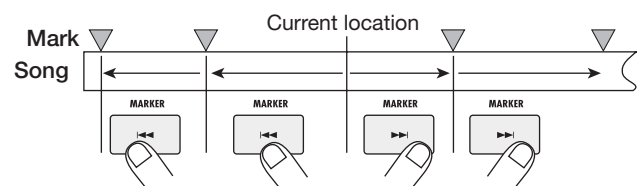
Locating a mark

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 marker symbol is shown in reverse. 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 [PROJECT/UTILITY] key.

The indication "REC UTILITY" appears on the first line and the indication "PROJECT" on the second line of the display.

2. Use the cursor left/right keys to bring up the indication "PRE COUNT" on the second line of the display, then press the [ENTER] key.

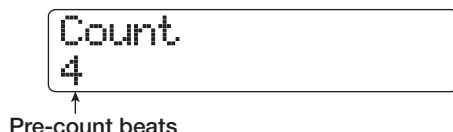
The display indication changes as follows.



```
PRE COUNT      1/2
>COUNT
```

3. To change the number of pre-count beats, use the cursor left/right keys to bring up the indication "COUNT" on the second line of the display, and press the [ENTER] key.

The current pre-count setting is shown.



```
Count
4
```

↑
Pre-count beats

The following settings are available.

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.

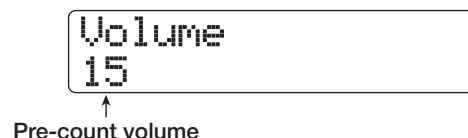


4. Turn the dial to make a selection.

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

5. To change the volume of the pre-count, use the cursor left/right keys to bring up the indication "VOLUME" on the second line of the display, and press the [ENTER] key.

The current pre-count volume is shown.



```
Volume
15
```

↑
Pre-count volume

6. Turn the dial to set the volume (0 – 15).

7. 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 the audio tracks or the master track. 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 [PROJECT/UTILITY] key.

The display indication changes as follows.

```
REC UTILITY 1/10  
>PROJECT
```

2. Use the cursor left/right keys to bring up the indication "TRACK EDIT" on the second line of the display, and press the [ENTER] key.

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

```
TRACK EDIT 1/10  
>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.

- **TIME STRETCH**
Change the duration of the entire audio data on a track without changing the pitch.
- **PITCH FIX**
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 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 Source  
Track 1-1
```

5. Use the cursor up/down keys or the status keys to select the track, and use the dial to select the V-take number.

```
Copy Source  
Track 5-1
```

On this screen, V-takes that are not currently selected can also be selected for editing. When track 8 of the HD8 or track 16 of the HD16 is selected, pressing the cursor right key selects tracks in odd-numbered/even-numbered pairs (1/2, 5/6 etc.) or the master track ("Master" indication appears instead of track number). (This applies to commands other than PITCH FIX, HARMONY+, and DUO HARMONY.)

```
Copy Source  
Track 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 HARMONY, 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 in step 4. See the following sections for the respective commands.

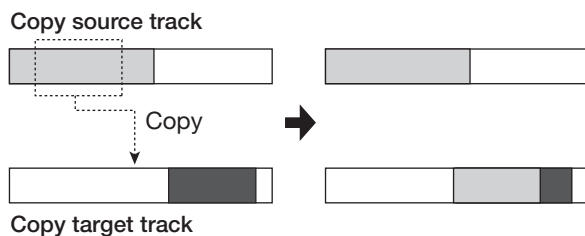
7. When the editing command has been executed, repeatedly press the [EXIT] key to return to the main screen.

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” and select the COPY command. Select the copy source track/V-take, and press the [ENTER] key.

The display for specifying the copy start point appears. The range start point can be specified minutes/seconds/milliseconds, or in measures/beats/ticks. You can also specify the point using markers (→ p. 47). Use the cursor up/down keys to switch units.

Minutes/seconds/milliseconds

Start 000:00:000

Measures/beats/ticks

Start 001-01-00

Marker position

Start 000

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.

When a value is specified, the other units currently not shown on the display also reflect the new location.

NOTE

If you specify a point where no audio data exist, the display shows a “*” symbol.

3. Press the [ENTER] key.

The second line of the display now lets you specify the copy range end point.

Start 000:00:000
End 003:15:000

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 first line of the display now shows “Copy Destination” and the second line “Trackxx-yy” (where xx is the track number and yy the V-take number). This display lets you specify the copy destination.

HINT

You can select the same track as copy source and copy destination. In this case, the copy source range and copy destination range may overlap, but copying is still possible.

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 shows the copy destination start point.

Copy Destination
To 003:15:000

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

The indication “Copy?” appears on the second line of the display.

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

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

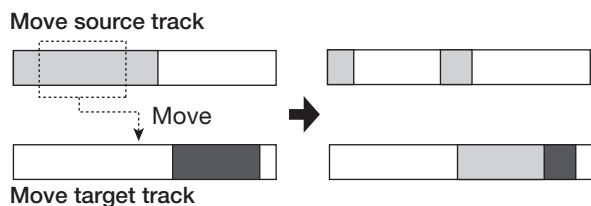
By pressing the [EXIT] key instead of the [ENTER] key, you can cancel the operation and back up one step at a time.

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.



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

The display for specifying the move start point appears. (For information on switching the display units, see page 51.)

Start 000:00:000

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

3. Press the [ENTER] key.

The second line of the display now lets you specify the move range end point.

Start 000:00:000
End 000:42:230

4. 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.

5. Press the [ENTER] key.

The first line of the display now shows “Move Destination” and the second line “Trackxx-yy” (where xx is the track number and yy the V-take number). This display lets you specify the move destination.

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

The display shows the move destination start point.

Move Destination
To 000:42:230

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

The indication “Move?” appears on the second line of the display.

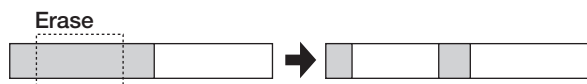
8. To execute the move operation, press the [ENTER] key.

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 mute (non-recorded) condition.



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

The display for specifying the move start point appears. (For information on switching the display units, see page 51.)

Start 000:00:000

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 second line of the display now lets you specify the erase range end point.

```
Start 000:00:000
End   001:20:020
```

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?” appears on the second line of the display.

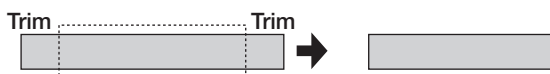
6. To execute the erase operation, press the [ENTER] key.

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

The display for specifying the trimming start point appears. (For information on switching the display units, see page 51.)

```
Start 000:00:000
```

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

All data before the point specified here will be erased.

3. Press the [ENTER] key.

The second line of the display now lets you specify the trimming end point.

```
Start 000:20:000
End   000:42:230
```

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

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

5. Press the [ENTER] key.

The indication “Trim?” appears on the second line of the display.

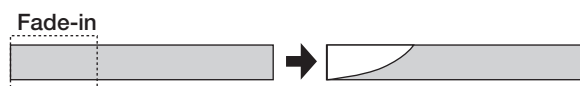
6. To execute the trimming operation, press the [ENTER] key.

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.



NOTE

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

1. Refer to steps 1 – 6 of “Basic steps for range editing” and select the FADE I/O command. Select the track/V-take for fade-in or fade-out, and press the [ENTER] key.

The display for specifying the fade-in/fade-out start point appears. (For information on switching the display units, see page 51.)

```
Start 000:00:000
```

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

3. Press the [ENTER] key.

The second line of the display now lets you specify the fade-in/fade-out end point.

```
Start 000:00:000
End   000:10:000
```

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

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

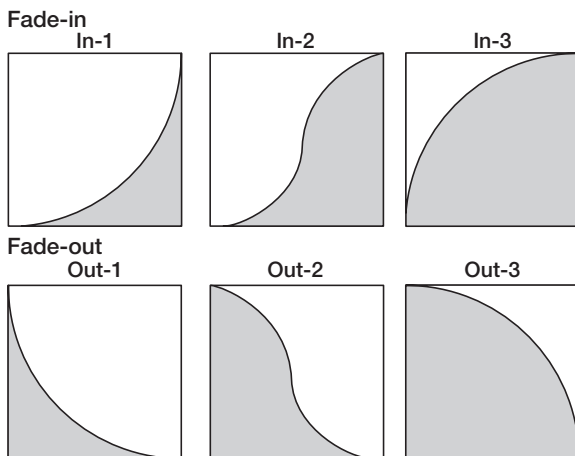
5. Press the [ENTER] key.

A display for selecting the fade-in or fade-out curve appears.

```
Fade Curve
In-1
```

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 numbers are for three different kinds of curves, which look as follows.

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

The indication "Fade?" appears on the second line of the display.

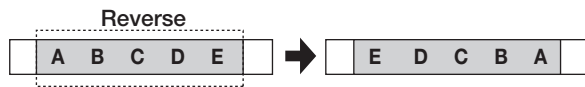
8. To execute the fade-in or fade-out operation, press the [ENTER] key.

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" and select the REVERSE command. Select the track/V-take for reversing, and press the [ENTER] key.**

The display for specifying the reverse start point appears. (For information on switching the display units, see page 51.)

```
Start 000:00:000
```

2. Use the cursor left/right keys to move the flashing section of the counter, and turn the dial to specify the reverse start point.**3. Press the [ENTER] key.**

The second line of the display now lets you specify the reverse end point.

```
Start 001:15:000
End   001:18:000
```

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

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

5. Press the [ENTER] key.

The indication "Reverse?" appears on the second line of the display.

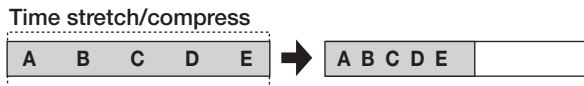
6. To execute the reverse operation, press the [ENTER] key.

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 an entire track

You can change the duration of the entire 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” and select the **TIME STRETCH** command. Select the track/V-take for time stretch/compress, and press the [ENTER] key.

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

```
Time Stretch Dst
Track 1-1
```

2. Use the cursor left/right keys or the status keys to select the target track, and use the dial to select the V-take number.

The display indication changes as follows.

```
Stretch ratio      Tempo
  ↓                ↓
100.00%  ↓=120.0
          000:00:000
```

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 “Stretch?” appears on the second line of 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

When wishing to apply time stretch/compress only to a part of the song such as a drum pattern or guitar riff, use the copy function or 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 bass sequence from the bass track as reference for pitch compensation.

HINT

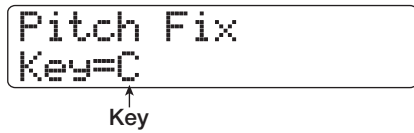
The edited audio data after pitch compensation will overwrite the existing data.

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” and select the PITCH FIX command. Select the track/V-take for time stretch/compress, and press the [ENTER] key.

The indication “Pitch Fix” appears on the first line of the display, and “Key” on the second line. In this condition, you can select the key for the scale to be used for pitch compensation.



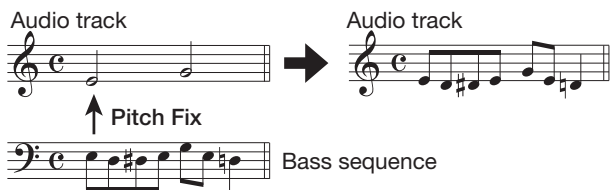
HINT

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 “Bass Seq”.

When you select “BassSeq”, the pitch of the audio track will be detected and transposed to the same note in the nearest octave 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 “Bass Seq”, step 3 is not necessary.
- When you select “Bass Seq” 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.

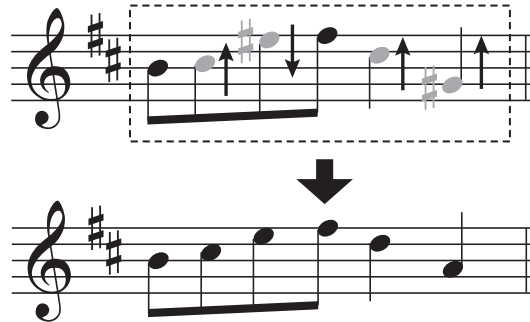
3. Use the cursor left/right keys to bring up the indication “Scale” on the second line of the display, then turn the dial to select the scale type.

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

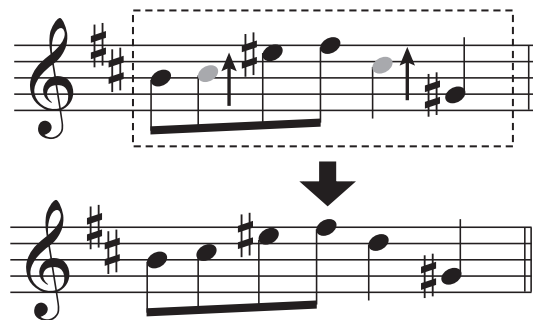


The following illustrations show pitch compensation for the same melody, using D Major and Chromatic.

Pitch compensation (D Major)



Pitch compensation (Chromatic)



4. Use the cursor left/right keys to bring up the indication “Speed” on the second line of 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.

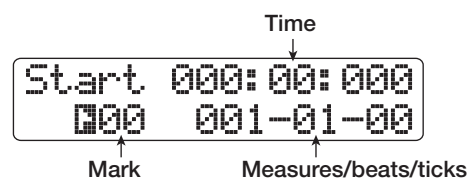


HINT

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

5. Press the cursor down key.

The display indication changes as follows. At this screen, you can specify the start point in minutes/seconds/milliseconds, measures/beats/ticks, or by using marks. (To return to the previous screen, press the cursor up key.)



6. Use the cursor left/right keys to cause the counter indication to flash. Then use 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.

7. 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 “Bass Seq” in step 2, you can check the bass track signal level at the “RHYTHM” position on the level meter.

By using the cursor left/right keys during recording, you can call up and edit the Key, Scale, and Speed parameters. If you press the [SHIFT] 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 (→ p. 41) can also be used at this point.

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

The indication “Fix?” appears on the second line of the display.

9. 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.

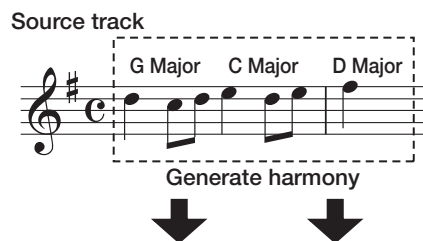
Generating harmony from a specified range of audio data

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.



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

- When the rhythm pattern/rhythm song is “Empty”, the harmony create function is not available.
- For the harmony create 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” and select the HARMONY+ command. Then select the track/V-take for harmony generation, and press the [ENTER] key.

The indication “Harmony+ Dst” appears on the first line of the display. In this condition, you can select the target destination for writing the harmony.

```
Harmony+ Dst
Track1-1
```

NOTE

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 left/right keys or the status keys to select the target track, and use the dial to select the V-take number.

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+
SourceLevel=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 Level" 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 Level 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 second line of the display, and then turn the dial to adjust panning for the source.

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

```
Harmony+
SourcePan=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 Chorus Level 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 "Feeling" on the second line of 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=15
```

9. Press the cursor down key.

The display indication changes as follows.

At this screen, you can specify the start point in time units, measures/beats/ticks, or by using marks.

(To return to the previous screen, press the cursor up key.)

```

Time
Start 000:00:000
000 001-01-000
Mark Measures/beats/ticks
```

10. 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.

By pressing the PLAY [▶] key in this condition, you can check what the result will sound like when the function is executed.

HINT

The manual and automatic punch-in/punch-out functions (→ p. 41) can also be used at this point.

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

Recording starts. The display indication changes as follows.

```
Harmony+
Chord=C Maj
```

When the second line of the display reads "Chord", the chord of the current rhythm pattern/rhythm song is shown.

During recording, you can use the cursor left/right keys to call up and edit the Source level and panning, Chorus 1 – 3 level and panning, and the Feeling parameter. The settings will be reflected in the recorded result.

HINT

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

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

The indication “Harmonize?” appears on the second line of the display.

13. 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

Key/Scale = C Major
Shift direction: up

Duo Harmony

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” and select the DUO HARMONY command. Select the track/V-take for time stretch/compress, and press the [ENTER] key.

The indication “Duo Harmony Dst” appears on the first line of the display. In this condition, you can select the target destination for writing the created harmony.

Duo Harmony Dst
Track 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 left/right keys or the status keys to select the target track, and use the dial to select the V-take number.

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 Harmony
Key=C

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 “Scale” on the second line of the display. Then turn the dial to select the scale type and the pitch shift direction. The following settings are available.

Duo Harmony
Scale=Major Up

- **Major Up**
Create harmony a major third up
- **Minor Up**
Create harmony a minor third up
- **Major Down**
Create harmony a major third down
- **Minor Down**
Create harmony a minor third down

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 Harmony
Feeling=15
```

- 7.** Use the cursor left/right keys to bring up the indication “Source Level” 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 Harmony
SourceLevel=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) to R100 (fully right).

```
Duo Harmony
SourcePan=0
```

NOTE

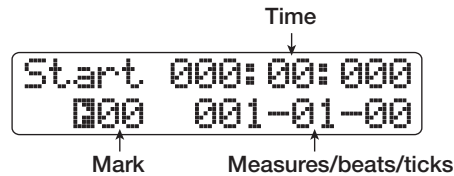
When the destination is a mono track, the pan setting will have no effect.

- 9.** Adjust the level and panning for the harmony part in the same way, by bringing up the indication “Chorus Level” or “Chorus Panning” on the second line of the display.

- 10.** Press the cursor down key.

At this screen, you can specify the start point in time units, measures/beats/ticks, or by using marks.

(To return to the previous screen, press the cursor up key.)



- 11.** 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.

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 (→ p. 41) can also be used at this point.

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

During recording, you can use the cursor left/right keys to call up and edit the Source level and panning, Chorus 1 – 3 level and panning, and the Feeling parameter. The settings will be reflected in the recorded result.

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

The indication “Harmonize?” appears on the second line of the display.

- 14.** 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 for example 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 [TRACK PARAMETER] key in the control section.

Various track parameters can now be selected.

2. Use the cursor up/down keys to bring up the indication “Trackxx-yy” (where xx is the track number and yy the V-take number) on the first line of the display.

Now you can select the V-take.

```
Track 1-1
GTR 1- 1
```

3. Use the cursor left/right keys or the status keys to select the target track, and use the dial to select the V-take number.

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 track number indication shows “Master”.

HINT

Pressing the status key for a stereo track repeatedly selects the odd-numbered track and even-numbered track in sequence.

4. Press the [FUNCTION] key in the function/transport section.

A menu for editing audio data in V-take units appears.

```
ERASE V-TAKE
Track 1-1
```

5. Repeatedly press the [FUNCTION] key to call up the desired command. The following editing commands are available.

- **ERASE V-TAKE**

Erase the audio data on a specified track/V-take.

- **COPY V-TAKE**

Copy the audio data of a specified track/V-take to another track/V-take.

- **MOVE V-TAKE**

Move the audio data of a specified track/V-take to another track/V-take.

HINT

<< **HD16** only >> When you have called up “MOVE V-TAKE” and use the cursor left/right keys to select “Track1 – Track 8” as source, you can move the contents of tracks 1 – 8 to tracks 9 – 16 in one operation. The first line of the display shows “8TRACKS MOVE” in this case.

- **EXCHANGE V-TAKE**

Exchange the audio data of a specified track/V-take with the data of another track/V-take.

- **IMPORT V-TAKE**

Import any track/V-take from another project, from a CD-ROM/R/RW disc inserted in the CD-R/RW drive, or import an audio file (WAV/AIFF) from the internal hard disk.

HINT

If necessary, you can also change your selection of track and V-take from this screen.

6. Press the [ENTER] key.

The subsequent steps will differ, depending on which command was selected in step 5. See the following 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.

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 – 6 of “Basic steps for V-take editing” to select the track/V-take to erase and bring up the indication “ERASE V-TAKE” on the display. Then press the [ENTER] key.

The indication “Erase?” appears on the display.

2. To execute the erase operation, press the

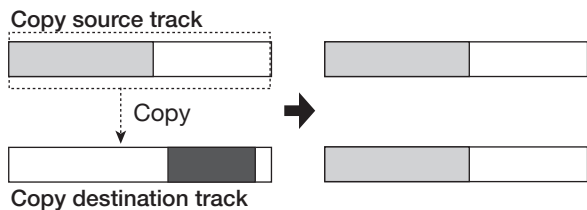
[ENTER] key once more.

When the erase operation is completed, the unit returns to the V-take selection screen.

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 – 6 of “Basic steps for V-take editing” to select the track/V-take to copy and bring up the indication “COPY V-TAKE” on the display. Then press the [ENTER] key.

A screen for selecting the copy destination track/V-take appears on the display.

Copy to
Track3-1

2. Use the cursor left/right keys, status keys, and the dial to select the track/V-take to use as copy destination, and press the [ENTER] key.

The indication “Copy?” appears on the display. If audio data exist at the copy destination, the indication “Overwrite?” is shown. When the copy operation is performed, these data will be overwritten.

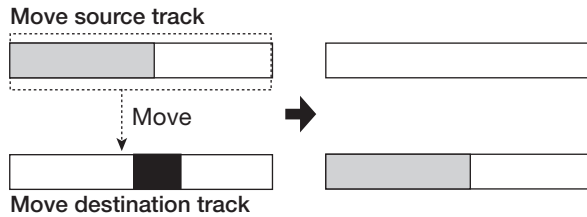
3. To execute the copy operation, press the [ENTER] key once more.

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.

**HINT**

<< HD16 only >> You can also move all currently selected V-takes for tracks 1 - 8 to tracks 9 - 16 in a single operation.

1. Refer to steps 1 – 6 of “Basic steps for V-take editing” to select the track/V-take to move and bring up the indication “MOVE V-TAKE” on the display. Then press the [ENTER] key.

A screen for selecting the move destination track/V-take appears on the display.

Move to
Track3-1

2. Use the cursor left/right keys, status keys, and the dial to select the track/V-take to use as move destination, and press the [ENTER] key.

The indication “Move?” appears on the display. If audio data exist at the move destination, the indication “Overwrite?” is shown. When the move operation is performed, these data will be overwritten.

3. 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.

<< HD16 only >> Moving V-takes of tracks 1 – 8 to tracks 9 – 16

You can move the contents of the selected V-takes for tracks 1 – 8 to tracks 9 – 16 in a single operation. This action will overwrite any existing data on the destination V-takes. The data on the move source V-takes will be erased. This function is convenient to move V-takes recorded with the 8-track recording function to tracks 9 – 16, to create room for recording more instruments.

1. Refer to steps 1 – 6 of “Basic steps for V-take editing” and bring up the indication “MOVE V-TAKE” on the display.

```
MOVE V-TAKE
Track1-1
```

- Use the cursor left/right keys to select “Track1-Track8” as source, and press the [ENTER] key.

When you select “Track1-Track8” as move source, the indication “MOVE V-TAKE on the first line of the display changes to “8TRACKS MOVE”. When you press the [ENTER] key in this condition, the destination tracks are shown.

```
Move to
Track9-Track16
```

NOTE

When “8TRACKS MOVE” is shown on the first line of the display and you have pressed the [ENTER] key, the destination is fixed to “Track9-Track16”. The move source will be the currently selected V-takes of tracks 1 – 8, and the move destination will be the currently selected V-takes of tracks 9 – 16.

- Press the [ENTER] key.

The indication “Move?” appears on the display. If audio data exist at the move destination, the indication “Overwrite?” is shown. When the move operation is performed, these data will be overwritten.

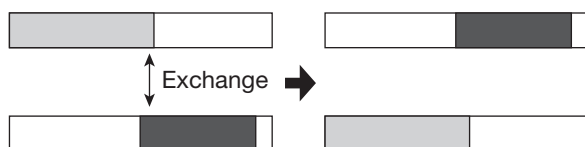
- To execute the move operation, press the [ENTER] key once more.

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 – 6 of “Basic steps for V-take editing” to select the track/V-take to exchange and bring up the indication “EXCHANGE V-TAKE” on the display. Then press the [ENTER] key.

A screen for selecting the exchange destination track/V-take appears on the display.

```
Exchange to
Track3-1
```

- Use the cursor left/right keys, status keys, and the dial to select the track/V-take to use as exchange destination, and press the [ENTER] key.

The indication “Exchange?” appears on the display.

- To execute 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 audio data to a V-take

You can import audio data into any track/V-take of the currently selected project. Any audio data on the destination V-take are overwritten by the imported data.

Besides V-takes from other projects, data that can be imported include WAV/AIFF files located on a CD-ROM or CD-R/RW disc or on the internal hard disk. Before importing a WAV/AIFF file from a CD-ROM/R/RW disc or the internal hard disk, the following preparations are necessary.

- **When importing a WAV/AIFF file from a CD-ROM/R/RW disc**

Insert the CD-ROM or CD-R/RW disc with the WAV/AIFF file into the CD-R/RW drive of the HD8/HD16.

- **When importing a WAV/AIFF file from the internal hard disk**

Copy the WAV/AIFF file from a computer into a folder named “IMPORT” immediately under the folder “PROJxxx” (where xxx is the project number) located in the root directory (top level folder) of the internal hard disk. (For details, see page 161.)

The file must have the extension “.WAV” (for WAV files) or “.AIF” (for AIFF files).

- Refer to steps 1 – 6 of “Basic steps for V-take editing” to select the track/V-take to use as import destination and bring up the indication “IMPORT V-TAKE” on the display. Then press the [ENTER] key.

A screen for selecting the import source appears on the display.



2. Use the cursor left/right keys to select one of the following choices.

- **PROJECT**
Import any V-take from another project.
- **IMPORT FOLDER**
Import a WAV/AIFF file located on the internal hard disk.
- **CD-ROM**
Import a WAV/AIFF file located on a CD-ROM or CD-R/RW disc.

3. Press the [ENTER] key.

Depending on which selection was made in step 2, select the WAV/AIFF file.

■ **If PROJECT was selected in step 2**

The name of the source project is shown on the display.



Project number Name of source project

(1) Turn the dial to select the source project and press the [ENTER] key.
A display showing a track and V-take in the source project appears.



Source track number and V-take number V-take name

(2) Use the cursor left/right keys, status keys, and the dial to select the track/V-take to use as import source.
If you select a track/V-take on which nothing is recorded, the indication “No Data” appears in the V-take name field.

■ **If CD-ROM or IMPORT FOLDER was selected in step 2**

Search for the WAV/AIFF file in the selected location. When a file is found, its name is shown on the display.



File name

Turn the dial to select a WAV/AIFF file.
If a folder on a CD-ROM/R/RW disc is selected, the indication “Folder” is shown in the right section of the display.



Folder name

In this case, turn the dial to select the desired folder, and press the [ENTER] key. Files contained in that folder will be shown. To return to the next higher level, press the [EXIT] key.

4. When the file is selected, press the [ENTER] key.

The following steps will differ, depending on whether the source audio file is stereo or mono, and whether the sampling frequency is 44.1 kHz.

● **When the source file is a stereo file**

A screen for selecting the import type appears.



Turn the dial to select the import type from one of the following options, and press the [ENTER] key.

- **St→Mono:** The stereo file is mixed to mono for importing.
- **Lch:** Only the left-channel information is imported.
- **Rch:** Only the right-channel information is imported.

● **Sampling frequency is 44.1 kHz**

The indication “Import?” appears on the display. If audio data exist at the import destination, the indication “Overwrite?” is shown. When the import operation is performed, these data will be overwritten.

● Sampling frequency other than 44.1 kHz

A selection screen for choosing whether to perform conversion to 44.1 kHz (resampling) appears.

```
BASS.WAV
Resample On
```

Turn the dial to select whether to perform resampling or not, and press the [ENTER] key. The indication “Import?” appears on the display. If audio data exist at the import destination, the indication “Overwrite?” is shown. When the import operation is performed, these data will be overwritten.

5. To carry out 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.

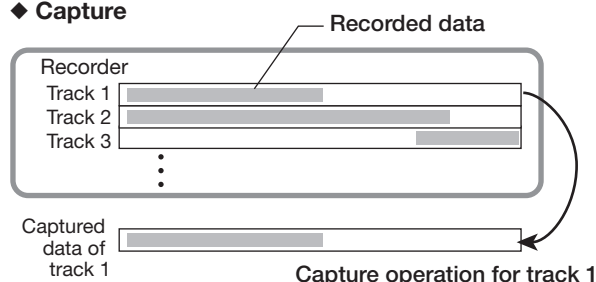
NOTE

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.

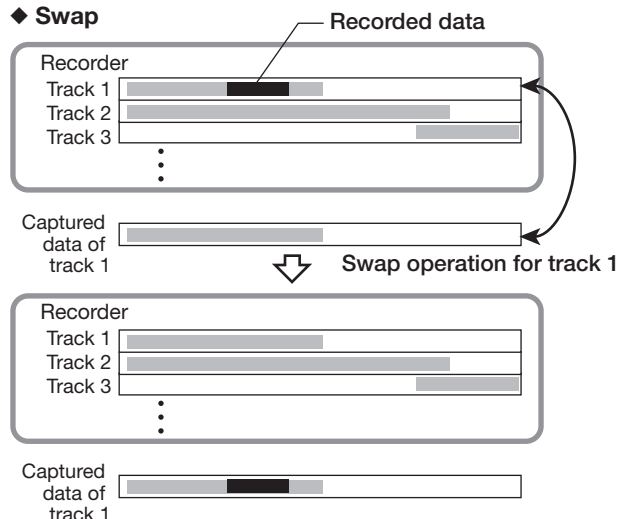
Track capture and swap

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.

◆ Capture



◆ Swap



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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

2. Use the cursor left/right keys to bring up the indication “CAPTURE/SWAP” on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.



3. Use the status keys or the dial to select a track for 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.
- If a track that is already captured is selected, the indication “Swap” appears on the first line of the display.

4. Press the [ENTER] key.

The indication “Capture?” appears on the display.

5. To carry out the capture operation, press the [ENTER] key once more.

When capture is completed, the indication “Swap Trackxx” (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 a track

You can swap the current data of a track with the captured data.

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

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

2. Use the cursor left/right keys to bring up the indication “CAPTURE/SWAP” on the second line of 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 first line of the display.

HINT

If you select a track that was not captured, the indication “Capture” appears.

4. Press the [ENTER] key.

The indication “Swap?” 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 HD8/HD16 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 HD8/HD16 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 disc

You can load a stereo or mono audio file (8 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. You can also copy audio files via the USB port from a computer to the hard disk of the HD8/HD16 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.

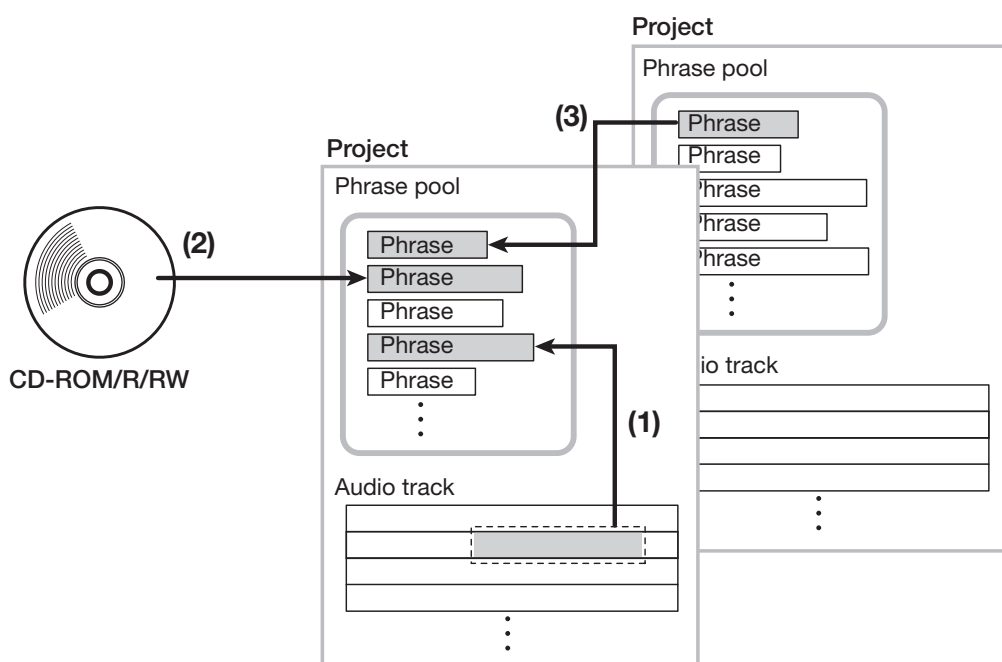
(3) Phrase from another project

You can load any phrase from a project stored on the internal hard disk of the HD8/HD16.

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 HD8/HD16 (→ p. 145) 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 [PROJECT/UTILITY] key in the display section.

The display indication changes as follows.

```
REC UTILITY 1/10
>PROJECT
```

2. Use the cursor left/right keys to bring up the indication "PHRASE" on the second line of the display, and press the [ENTER] key.

A screen for selecting the phrase appears on the display.

```
Phrase
No. 0: REST
```

↑ ↑
Phrase number Phrase name

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 [PROJECT/UTILITY] key once more.

The phrase utility menu for loading phrases and creating phrase loops appears on the display.

```
PHRASE UTIL 1/2
>IMPORT
```

5. Verify that the indication "IMPORT" is shown on the second line of the display, and press the [ENTER] key.

The menu for selecting the import source appears on the display.

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.

● PHRASE

Import a phrase from the phrase pool of another project saved on the hard disk.

● WAV_AIFF FOLDER

Import an audio file (WAV/AIFF) from WAV_AIFF folder on the internal hard disk.

● CD-ROM

Import an audio file (WAV/AIFF) from a CD-ROM/R/RW disc inserted in the CD-R/RW drive.

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 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 "Import Source" appears on the first line and the indication "Trackxx-yy" (where xx is the track number and yy the V-take number) appears on the second line of the display. In this condition, you can select the import source track and V-take.

2. Use the cursor left/right keys and the status

keys to select the track number, and turn the dial to select the V-take number.



When track 8 is selected with the HD8 or track 16 with the HD16, 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.

A display showing the start point for the data range to be imported appears. (For information on how to switch the display units, see page 51.)



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

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. 40).
- The playback range of the phrase loop can be fine-tuned also after importing. Therefore it suffices if you make a rough selection here.
- If you specify a point where there are no audio data, the second line of the display shows “*”.

5. Press the [ENTER] key.

The display indication changes as follows.



6. Specify the end point of the range in the same way as described in step 4.

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

7. When you have fully specified the import source, press the [ENTER] key.

The indication “Import?” appears on the display.

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 phrase from a different project

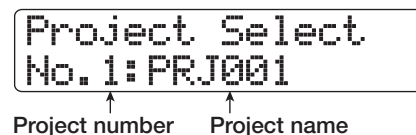
You can import any phrase contained in the phrase pool of another project stored on the hard disk.

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 file phrase name and number before you start the procedure.

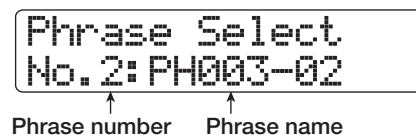
1. Refer to steps 1 – 6 of “Basic phrase loading steps” to select “PHRASE” as import source. Then press the [ENTER] key.

The indication “Project Select” appears on the first line of the display, and the project name is shown on the second line.



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?” 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.

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

- Any subfolders in the WAV_AIFF folder are not recognized by the HD8/HD16.
- 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 “CD-ROM” (to import from CD-ROM/R/RW disc) or “WAV_AIFF FOLDER” as import source. Then press the [ENTER] key.

The indication “Import” appears on the first line of the display, and the file name is shown on the second line.



```

Import
LOOP.WAV
  
```

When a folder on a CD-ROM/R/RW disc is selected, the indication “Folder” is shown at the left side of the display.

2. Turn the dial to select the audio file to import.

3. 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?” appears on the second line of the display. When you press the [ENTER] key again, 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.



```

LOOP.WAV
Resample On
  
```

Turn the dial to select resampling on/off. When you press the [ENTER] key, the indication “Import?” appears on the second line of the display. 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 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.

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 [PROJECT/UTILITY] key in the display section.

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

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

The phrase screen appears on the display.



```

Phrase
No. 0: REST
  
```

- Turn the dial to select the phrase that you want to edit.

```
Phrase
No. 2: PH003-02
```

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.

- Press the [EDIT] key.

A parameter of the selected phrase appears.

```
No. 2: PH003-02
Measure x2
```

- Use the cursor up/down keys to call up the parameter you want to edit.

- **Measure x**

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.

- **Time Signature**

This specifies the beat of the phrase. In combination with the Measure 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.

- **Level**

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 Measure x and Time Signature parameters.

- Use the dial and the cursor left/right keys to adjust the setting value.

- **Adjusting Measure x/Time Signature/Level**

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 underline 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.

- 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.

- 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.

- From the main screen, press the [PROJECT/UTILITY] key in the display section.

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

- Use the cursor left/right keys to bring up the indication “PHRASE” on the second line of the display, and press the [ENTER] key.

The phrase screen appears on the display.

```
Phrase
No. 0: REST
```

- Turn the dial to select the copy source.

```
Phrase
No. 1: PH001-01
```

- Press the [FUNCTION] key in the function/transport section twice, to bring up the indication "COPY PHRASE" on the first line of the display. Then press the [ENTER] key.

The screen for specifying the copy destination phrase number appears.

```
Copy to
No. 3: PH000-03
```

- Turn the dial to select the phrase number for the copy destination, and press the [ENTER] key.

The display indication changes as follows.

```
Phrs1+Phrs3
Copy?
```

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.

- 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.

- From the main screen, press the [PROJECT/UTILITY] key in the display section.

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

- Use the cursor left/right keys to bring up the indication "PHRASE" on the second line of the display, and press the [ENTER] key.

The phrase screen appears on the display.

- Turn the dial to select the phrase to erase.

```
Phrase
No. 1: PH001-01
```

- Press the [FUNCTION] key in the function/transport section once, to bring up the indication "DELETE PHRASE" on the first line of the display. Then press the [ENTER] key.

The display indication changes as follows.

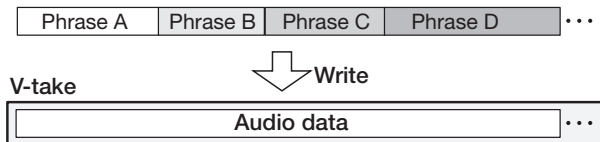
```
No. 1: PH001-01
Delete?
```

- To carry out the delete process, press the [ENTER] key.

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 the 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.



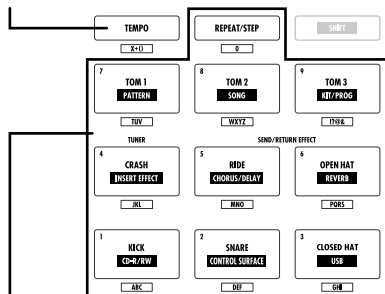
Using FAST input for the phrase loop

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 pad section are used for FAST input, as described below.

[TEMPO] key

Serves for entering the multiplication symbol "x", the addition symbol "+", the opening bracket "(" and the closing bracket ")"



[REPEAT/STEP] key/Pads 1 – 9

Serve to enter the phrase number and repetition count.

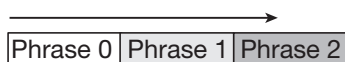
The basic rules for creating a phrase loop are as follows.

● Select the phrase

Use the [REPEAT/STEP] key and pads 1 – 9 to select a phrase number from 0 – 99.

● Line up phrases

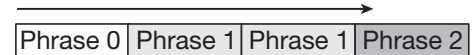
Use the "+" (addition) symbol to line up phrases. For example, entering $0 + 1 + 2$ will result in the following phrase sequence being written.



● Repeat phrases

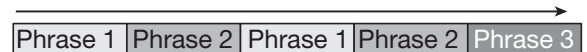
Use the "x" (multiplication) symbol to specify phrase

repetitions. "x" takes precedence over "+". For example, entering $0 + 1 \times 2 + 2$ will result in the following phrase sequence being written.

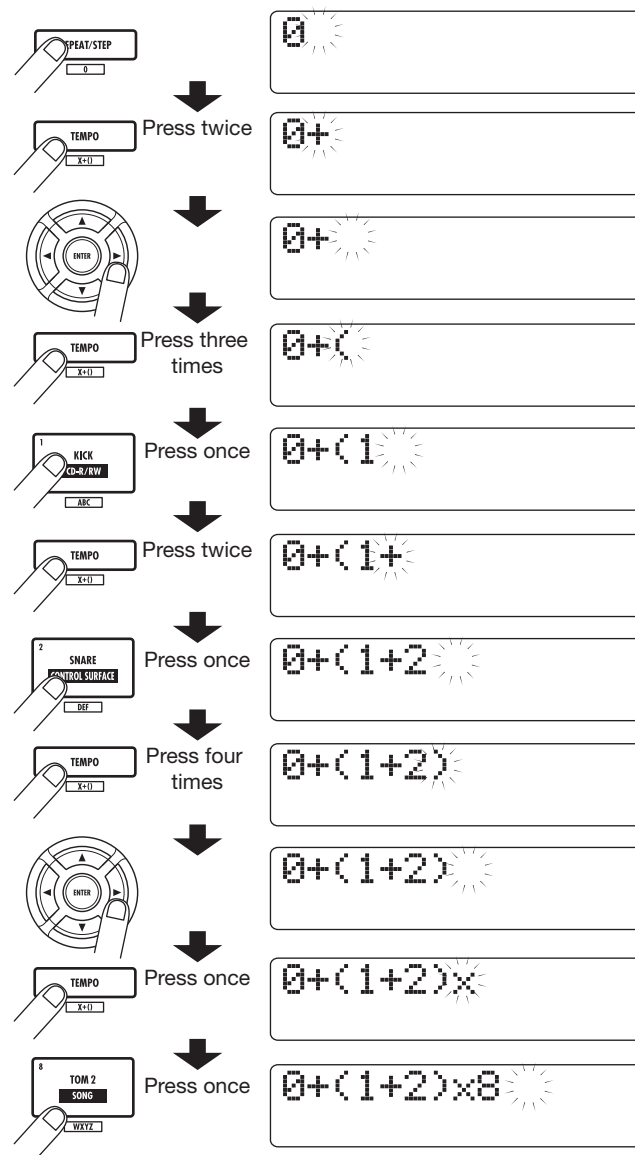


● Link multiple phrases

Use the "(" (opening bracket) and ")" (closing bracket) symbols to link a group of phrases for repetition, and then use the "x" (multiplication) symbol to specify the repetition count. For example, entering $(1 + 2) \times 2 + 3$ will result in the following phrase sequence being written.



An example for entering the formula $0 + (1 + 2) \times 8$ 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 [EDIT] 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 [PROJECT/UTILITY] key in the display section.**

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

- 2. Use the cursor left/right keys to bring up the indication “PHRASE” on the second line of the display, and press the [ENTER] key.**

The phrase screen appears on the display.

```
Phrase
No. 1: Empty
```

- 3. Press the [PROJECT/UTILITY] key once more.**

The phrase utility menu appears on the display.

- 4. Use the cursor left/right keys to bring up the indication “CREATE” on the second line of**

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
Track 1-1
```

- 5. Use the cursor left/right keys, the status keys, and the dial to select the track/V-take to which to write the phrase.**

```
Create
Track 8-1
```

When track 8 of the HD8 or track 16 of the HD16 is selected, turning the dial further to the right selects tracks in odd-numbered/even-numbered pairs (1/2, 5/6 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.

```
Create
Loop 01
```

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 pad section to enter the formula for creating the loop.

For information on entry procedures, refer to page 73.



0+(1+2)x8

9. When formula input is completed, press the [ENTER] key.

The display indication changes as follows. This screen lets you select whether to match phrase playback to the rhythm section measure/tempo.

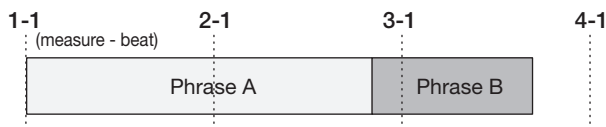


Adjust
Off

10. Turn the dial to select one of the following methods.

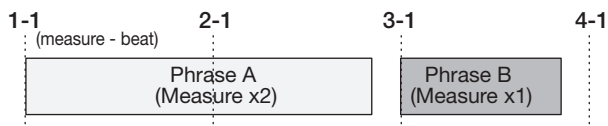
● Adjust Off

When you select this setting, the selected phrase is played continuously, independent of the rhythm song bar lines and tempo. (Default setting)



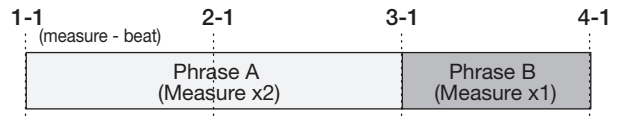
● Adjust Bar

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 Measure x parameter) is longer than one measure of the rhythm song, the phrase is switched when the number of measures specified by the Measure 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 & Length

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 & Length, verify that the Measure 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 & Length 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?” 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]

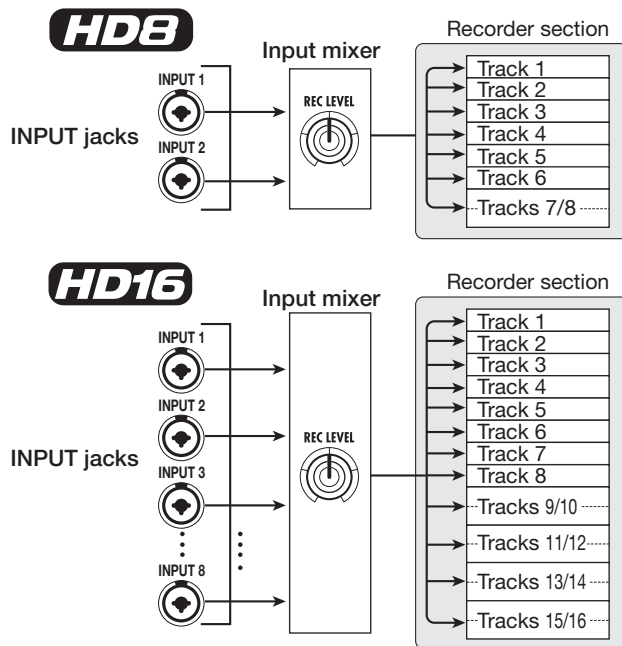
This section explains the functions and operation of the two mixer types built into the HD8/HD16.

About the mixer of the HD8/HD16

The mixer of the HD8/HD16 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 assigns these signals to the recorder tracks, either individually or mixed.



The input mixer serves to adjust the following parameters.

- Input signal sensitivity
- Input signal recording level
- Input signal phase
- <<HD16 only>> 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

<<HD16 only>> In the 8-track recording mode, you can set the panning value and send level for each input.

Track mixer

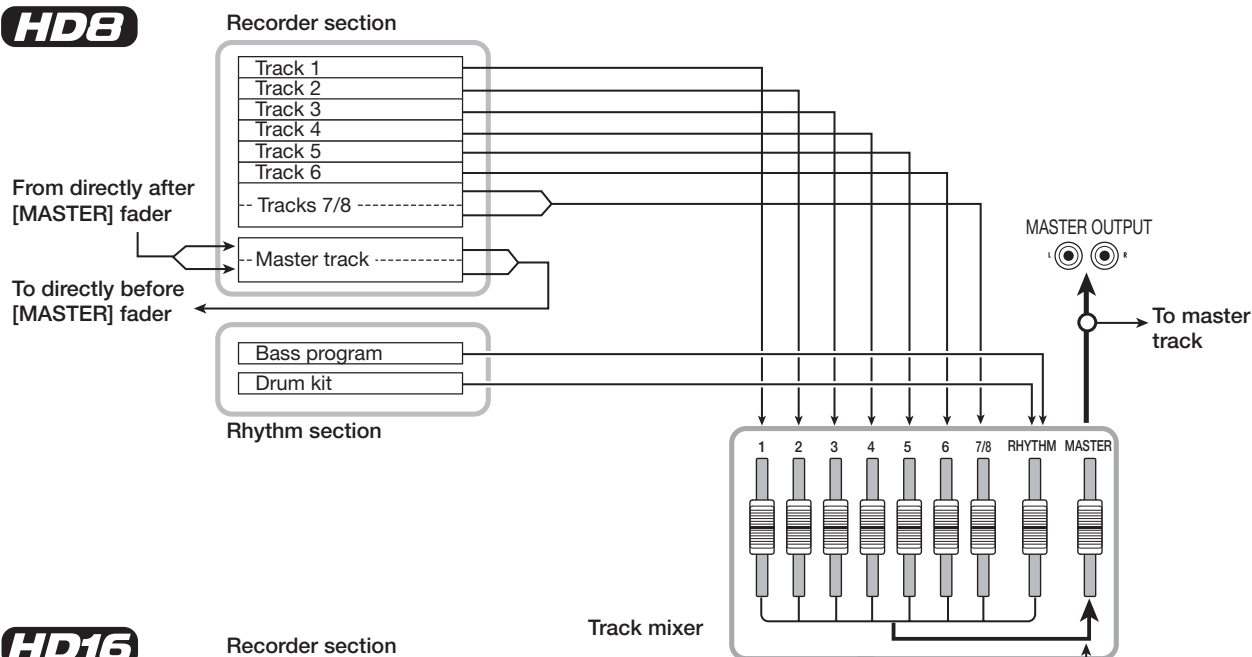
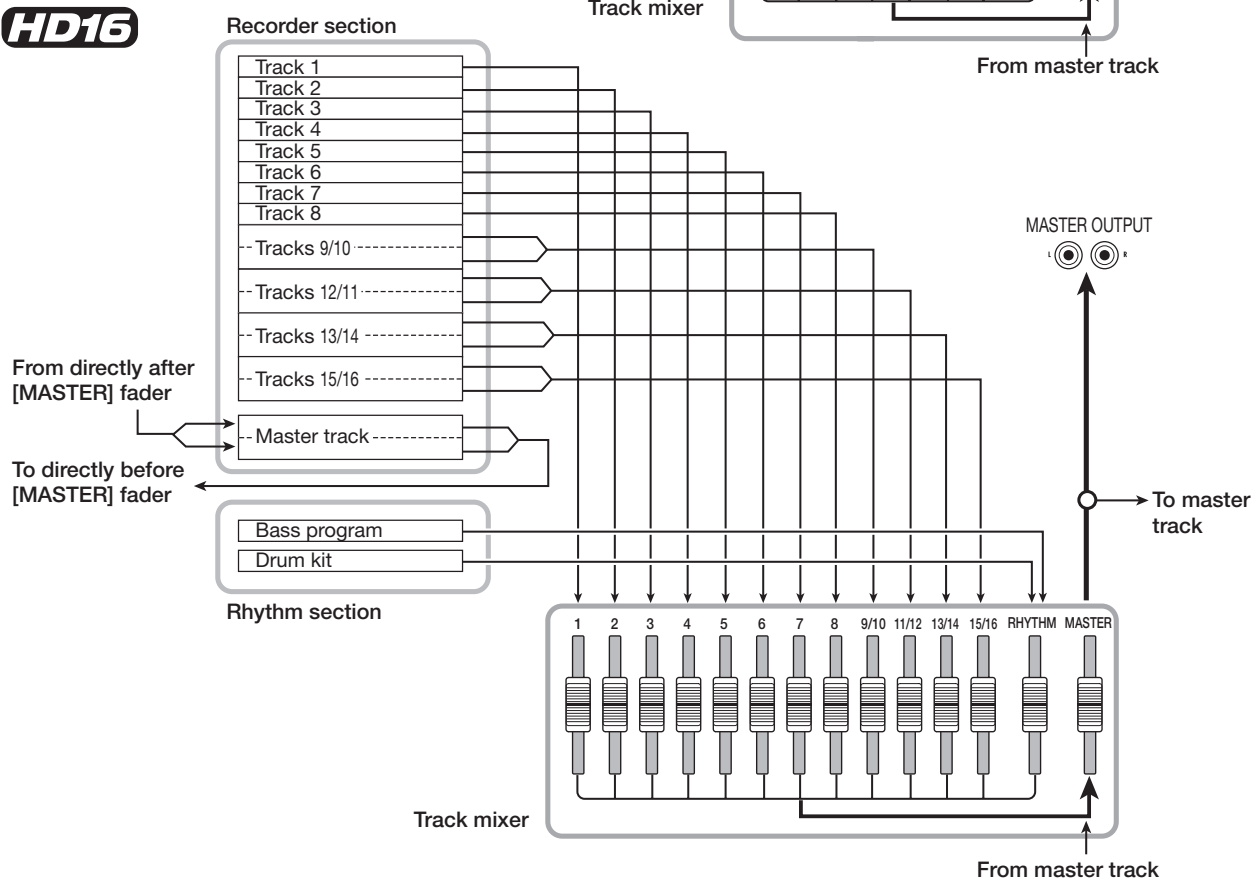
Serves to process the playback signals of the recorder audio tracks and the sound of the drum/bass track, and to mix these signals to stereo. The mixer allows you to adjust the volume with faders and set panning and EQ for each track.

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
- Mid frequency range EQ boost/cut amount
- Low frequency range EQ boost/cut amount
- Send/return effect intensity
- Stereo link (→ p. 82) settings (mono audio tracks)
- <<HD16 only>> Signal level sent to STEREO SUB-OUT jack

HINT

On stereo tracks and the drum track, parameter settings except phase and V-take number (audio tracks only) are linked for the L/R channels.

HD8**HD16**

Assigning input signals to recording tracks

This section explains how to adjust the sensitivity for signals in input from the INPUT jacks, and how to send them to audio tracks in the recorder section.

- 1. Make sure that the instrument or mic that you want to record is connected to the respective INPUT jack.**

- 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.

<<[HD16] only>> It is also possible to press two separate [ON/OFF] keys together.

HINT

<<[HD16] only>> 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 [GAIN] 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. 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 if the insert effect is used). 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 setting of the [REC LEVEL] control parameter can be checked by pressing a [TRACK PARAMETER] key and then pressing the cursor down key, so that the indication "REC LVL" is shown. This will call up the precise level setting on the display.

5. If you will be recording the sound through the insert effect, proceed as follows.

(1) Press the [INPUT SOURCE] key in the control section and turn the dial to set the insert position to "Input". When the setting is complete, press the [EXIT] key to return to the main screen.

(2) Hold down the [SHIFT] key and press pad 4 (INSERT EFFECT).

HINT

If you want to bypass the insert effect, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) once more. In the project default condition, the insert effect is bypassed.

(3) Use the cursor up/down keys to select an algorithm, and turn the dial to select the patch (effect program) to use.

CLEAN
No. 0: Standard

NOTE

The level of the signal sent to the recording track is affected not only by the [REC LEVEL] control setting but also by 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.

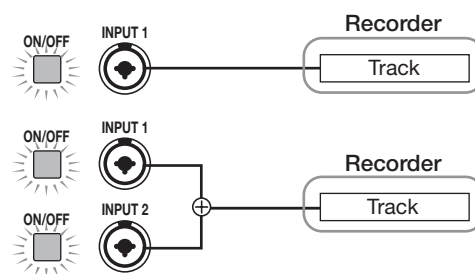
6. Repeatedly press the status key for the recording destination track until the key is lit in red.

The input signal from the input mixer will be sent to the recording track. Normally, you can select record mode for up to two mono tracks or one stereo track.

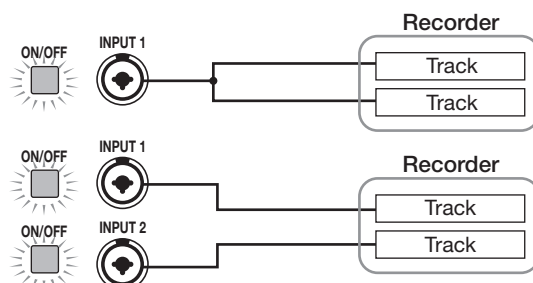
When selecting two mono tracks, only odd/even combinations are allowed. To select the tracks, repeatedly press the status key for one track until the key is lit in red, and then hold the key while pressing the status key for the other track until it is also lit in red.

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



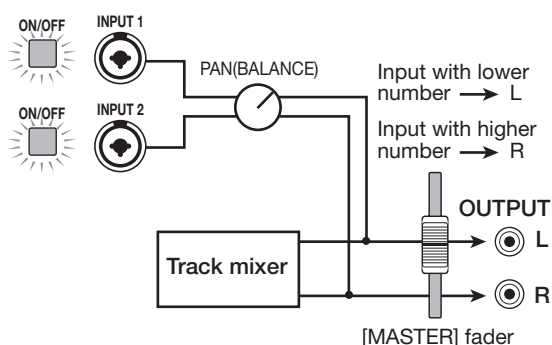
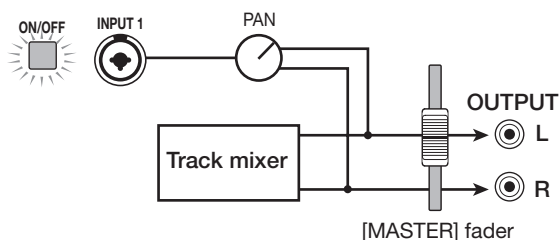
● Stereo track or two mono tracks selected as recording track



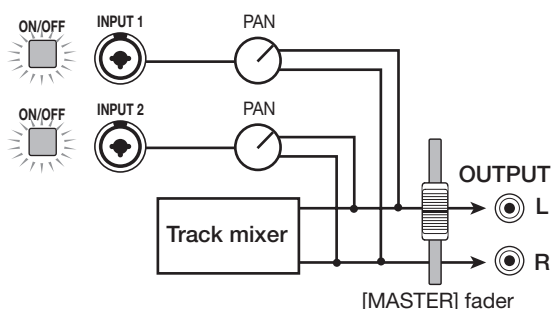
HINT

When two inputs are assigned to a stereo track or two mono tracks, the signal from the input with the lower number will go to the odd-numbered track and the signal from the input with the higher number to the even-numbered track.

● No track selected as recording track



HD16 only (8-track recording enabled)



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. 128).
- << **HD16** only >> In 8-track recording mode (→ p. 46), 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. 44).

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 can be done for each track individually.

This section describes how to adjust track parameters.

NOTE

For stereo tracks and the drum track, parameter settings except phase and V-take number (audio tracks only) are linked for the L/R channels.

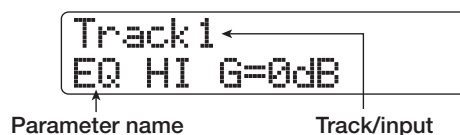
HINT

The parameter knobs above the faders let you quickly adjust main parameters for a track (→ p. 81).

Adjusting a track parameter

1. From the main screen, press the [TRACK PARAMETER] key in the control section.

The first line of the display shows the track/input and the second line shows the name of the parameter that is being adjusted.



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

You can also use the status keys to select a track.



HINT

- When switching the V-take of a stereo track, each push of the key toggles between the odd-numbered and even-numbered track.
- When selecting the drum/bass track with the [RHYTHM] status key, each push of the key toggles the target track. This also changes the track that can be controlled with the pad and fader.
- << **HD16** only >> 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 for tracks/inputs, see the table below.

Mono tracks: 1 – 6 (HD8), 1 – 8 (HD16)

Stereo tracks: 7/8 (HD8), 9/10 – 15/16 (HD16)

■ Track parameter list

Parameter	Display	Setting range	Description	Mono track	Stereo track	Master track	Drum/bass track	Input
EQ HI GAIN (*) (S)	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 (Hz) – 18 (kHz)	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 (Hz) – 18 (kHz)	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 (*) (S)	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 (Hz) – 1.6 (kHz)	Adjusts turnover frequency for low-frequency boost/cut. This parameter is only shown when LOW EQ is on.	○	○		○	
CHORUS/DELAY SEND LEVEL (*) (S)	DLY SEND	0 – 100	Adjusts the chorus/delay effect send level for the track/input.	○	○		○	○
REVERB SEND LEVEL (*) (S)	REV SEND	0 – 100	Adjusts the reverb effect send level for the track/input.	○	○		○	○
SUB-OUT SEND ON/OFF (*)	SUB SND	On/Off	Selects whether the signal at the MASTER OUT connectors (master track signal) is also supplied to the STEREO SUB-OUT jack.			○		
SUB-OUT SEND LEVEL (*) (S) HD16	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 (*) HD16	SUB SND PAN	L100 – R100	Adjusts panning for the signal sent from the track/input to the STEREO SUB-OUT jack	△	△		△	△
PAN (S)	PAN	L100 – R100	Adjusts the panning value of the track/input signal. For stereo tracks, the parameter adjusts the left/right level balance.	○	○		○	○
V-TAKE	Track x-y	x=1 – 8 x=1 – 16 HD16 y=1 – 10	Selects the V-take to use for the track (→ p. 36). 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.	○	○		○	○

(*): Denotes a parameter that can be switched on and off with the [ENTER] key.
(S): Denotes a parameter that can be selected with the [SELECT] key.

○: 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.

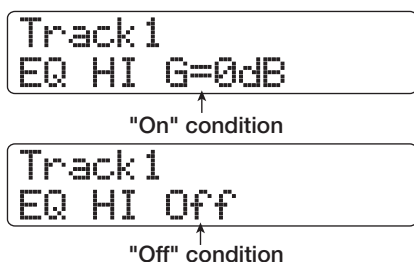
NOTE

- When a recording track is selected, the input signal is sent to that track directly, without going through the track mixer. Therefore the input track parameter setting has no effect. However, the REC LVL parameter is always active, regardless of the recording standby setting of a track.
- << **HD16** only >> The STEREO SUB-OUT jack parameters are available only on the HD16.

4. To adjust the value of a numeric parameter, turn the dial.

5. To change the setting of an On/Off parameter (marked with an asterisk in the table), select the parameter and then press the [ENTER] key.

Each push of the [ENTER] key toggles the parameter between On and Off. For example, when you switch HI EQ from On to Off, the display indication changes as follows.



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.

Using the parameter knobs

The row of parameter knobs above the faders and status keys can be used to quickly adjust main track parameters.

NOTE

Only parameters for tracks 1 – 8 << **HD16** 1 – 16 >> and the drum/bass track can be adjusted with the parameter knobs. Master track and input parameters cannot be adjusted in this way.

1. From the main screen, press the [SELECT] key in the function/transport section.

You can now select a parameter for adjustment with the parameter knob. The display shows the most recently adjusted

track parameter.

2. Repeatedly press the [SELECT] key, until the parameter to adjust is shown.

The display shows the selected parameter.

The [SELECT] key gives access to the following track parameters.

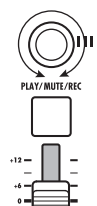
- EQ HI GAIN
- EQ MID GAIN
- EQ LOW GAIN
- CHORUS DELAY SEND LEVEL
- REVERB SEND LEVEL
- SUB-OUT SEND LEVEL << **HD16** only >>
- PAN

The currently selected track parameter is also shown by the parameter select indicator.

- EQ HIGH
- EQ MID
- EQ LOW
- DLY SEND
- REV SEND
- SUB SEND
- PAN

3. Turn the parameter knob for the track whose setting you want to adjust.

The display switches to the track that is being adjusted, and the value of the track parameter selected in step 2 changes.


HINT

You can also use the status keys to select a track. For the drum/bass track, press the [RHYTHM] status key.

4. Repeat steps 2 – 3 for other parameters.

HINT

To change the setting of an On/Off parameter, select the

parameter with the [SELECT] key and then press the [ENTER] key.

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

Linking two tracks (stereo link)

In the HD8/HD16, the parameters of adjacent odd-numbered/even-numbered mono tracks 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. From the main screen, press the [TRACK PARAMETER] key in the control section.

The track parameter can be selected.

2. Use the cursor left/right keys or the status keys to select one of the tracks that you want to stereo-link.

3. Repeatedly press the cursor down key, until the following indication appears.



Track 3
ST LINK OFF

4. Turn the dial to switch the setting to 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.

HINT

You can also use the [ENTER] key to toggle between On and 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 setting and V-take selection can be made individually for each track.

<<HD16>> 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 OUT connectors. 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 OUT connectors. 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. From the main screen, press the [TRACK PARAMETER] key in the control section.

The track parameter can be selected.

3. Use the cursor left/right keys or the [MASTER] status key to select the master track.

4. Use the cursor up/down keys to bring up the indication “SUB SEND” on the second line of the display.

In the default condition of a project, the SUB-OUT SEND ON/OFF parameter of the master track is set to ON. This means that the STEREO SUB-OUT jack carries the same signal as the MASTER OUT connectors. In this condition, the signal from other tracks or inputs cannot be sent directly to the STEREO SUB-OUT jack.

```
Master
SUB SND On
```

NOTE

If the SUB-OUT SEND ON/OFF parameter of the master track is set to ON, calling a SUB-OUT SEND parameter for another track/input will only bring up the indication “xxx SUB SEND Master” (where xxx is the track/input name), and no setting can be made.

5. Turn the dial to change the setting to Off.

The level of the signal at the STEREO SUB-OUT jack can now be adjusted for each track/input individually.

HINT

You can also use the [ENTER] key to toggle between On and Off.

6. Use the cursor left/right keys and status keys to select a track/input, and use the cursor up/down keys bring up the indication “SUB SND LVL” on the second line of the display.

```
Track 1
SUB SND LVL=0
```

7. Turn the dial to adjust the level of the signal that is sent from that track/input to the STEREO SUB-OUT jack.

In the default condition of a project, the SUB-OUT SEND LEVEL for all tracks/inputs is set to zero. Setting the value to 100 results in unity gain (0 dB) for the signal at the STEREO SUB-OUT jack.

```
Track 1
SUB SND LVL=100
```

8. Press the cursor down key to bring up the indication “SUB SND PAN” on the second line of the display, and turn the dial to adjust the panning value for the signal sent to the STEREO SUB-OUT jack.

The panning value setting range is L100 (fully left) – R100 (fully right). By pressing the cursor up key, you can return to the condition of step 5.

```
Track 1
SUB SND PAN=R32
```

9. Repeat steps 4 – 6 to adjust the output level and panning for all track/input signals sent to the STEREO SUB-OUT jack.

Also while the SUB-OUT SEND LEVEL or SUB-OUT SEND PAN parameter is shown, you can use the [ENTER] key to set the signal for that track/input to Off and prevent it from being sent to the STEREO SUB-OUT jack. This lets you temporarily remove a track/input signal from the sub mix. Pressing the [ENTER] key once more restores the previous condition.

10. 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.

By using the [RHYTHM] status key, it is possible to isolate the drum or bass track. While the [RHYTHM] status key is lit in green, only the drum track is heard. While the [RHYTHM] status key is lit in red, only the bass track is heard.

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 the memory, and recalled either manually or automatically whenever desired. This is convenient when you want to compare various mixes, or when you want 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

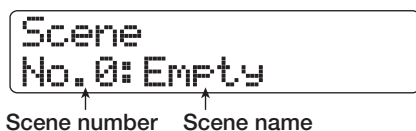
Up to 100 different scenes per project can be stored. Scene data stored in memory are saved on the internal hard disk as part of the currently selected project.

Saving a scene

This section explains how to save the current settings as a scene.

1. Press the [SCENE] key in the control section.

The display shows the currently selected scene number and name.



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 [FUNCTION] key.

The scene name is shown, with the cursor (flashing square) on the first character. In this condition, you can specify a name for the scene.

HINT

The default name is “SCENExx” (where xx is the scene number).

4. Use the cursor left/right keys to move the cursor to the character you want to change, and turn the dial or use the pads/keys of the

pad section to select a character.

For details on entering characters, see page 37.

5. To carry out the store process, press the [ENTER] key.

The scene settings are saved. If you wish to cancel the process, press the [EXIT] key instead of the [ENTER] key to return to the previous screen.

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

Recalling a scene

This section explains how to recall a scene that was saved to memory.

1. Press the [SCENE] key in the control section.

The display shows the currently selected scene number and name.

2. 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. Follow steps 4 and 5 in the section “Saving a scene” to enter the name.

3. 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 HD8/HD16 allows you to assign a scene to a mark (→ p. 47) 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.

1. 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.

2. Repeat step 1 to enter marks at all other points where you want to change the mix.

3. Save the mix to be used at the start of the

song as well as all other mix settings as scenes.

4. 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. Assign the starting scene to this mark.

5. Press the **[MARK]** key.

When you press the **[MARK]** key at a location where a mark has been assigned, a screen will appear in which you can assign a scene to the corresponding mark.



NOTE

If you press the **[MARK]** key at a location where no mark has been assigned (marker symbol shown in reverse), a new mark will be assigned to that location. Take care not to assign a mark by mistake. If required, use the **MARKER [◀◀] / [▶▶]** keys to match the current position with the marker point.

6. 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 "--".

7. 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.
8. 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.

9. 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
	CHORUS/DELAY SEND
	REVERB 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 **[PROJECT/UTILITY]** key in the display section.

The display changes as follows. 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**.
3. To exclude other groups except for the fader from scene control, press the key or pad for the respective group.

Except for the fader, scene control for the other groups can be enabled or disabled by pressing one of the keys or pads listed below, in the condition of step 1.

- **TRACK PARAMETER** group
Status key for the track to enable/disable, except **[MASTER]** status key
- **INSERT EFFECT** group
Pad 4 (INSERT EFFECT)

- **CHORUS/DELAY group**
Pad 5 (CHORUS/DELAY)
- **REVERB group**
Pad 6 (REVERB)
- **MASTER FADER group**
[MASTER] status key

When a group is enabled, the respective key/pad is lit, and when the group is disabled, the key/pad goes out.

HINT

- The on/off setting for the TRACK PARAMETER group can be made for each track individually.
- The on/off setting for the drum track and bass track can be made together with the [RHYTHM] status key.
- You can use the cursor up/down keys to enable or disable all groups together except for the MASTER FADER group.

4. 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 HD8/HD16.

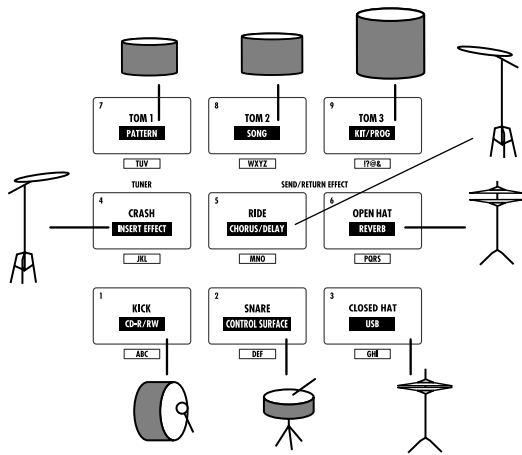
About the rhythm section

The rhythm section of the HD8/HD16 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.

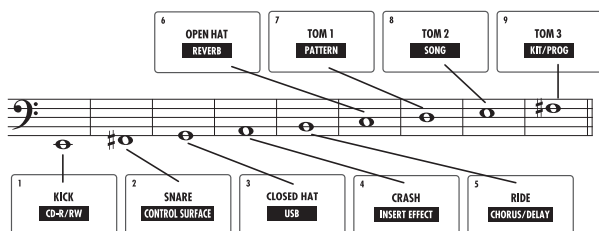
Drum kits and bass programs

The sound created by the rhythm section is produced by a “drum kit” and a “bass program”.

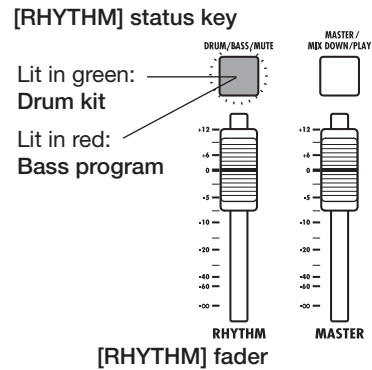
The drum kit is a combination of 27 drum/percussion sounds (samples) such as kick, snare, hihat, and conga. You can select one of these drum kits and play it manually with the pads on the top panel, or you can use it as a sound source for rhythm accompaniment. You may also create your own drum kit, which gives you the option of using on samples on a CD-ROM disc or parts of an audio track as building blocks.



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 or via an external MIDI keyboard. The HD8/HD16 has 11 bass programs. You can choose one of these and play it manually or use it as a sound source for pattern play.



The rhythm section of the HD8/HD16 lets you select a drum kit or a bass program and play it with the pads. You switch the sound with the [RHYTHM] status key. When the key is lit in green, the drum kit is selected. When it is lit in red, the bass program is selected.

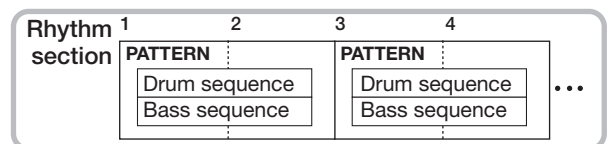


The output signal from the drum kit (drum track) and the output signal from the bass program (bass track) are sent to the internal mixer, where you can independently adjust the volume, panning (balance), EQ, and other parameters.

Rhythm patterns

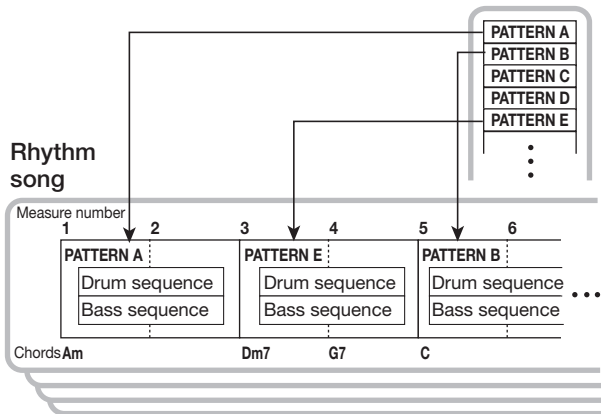
A project can contain accompaniment patterns with drum/bass performance data for up to 99 measures each. This is called a rhythm pattern. The HD8/HD16 has 511 such patterns. Inside each rhythm pattern, the area that holds the drum performance data is called the “drum sequence”, and the area that holds the bass performance data is called the “bass sequence”.

In the default condition, a project contains preprogrammed rhythm patterns in numbers 000 – 472 and 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

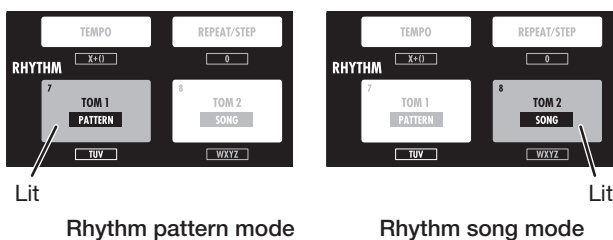
Multiple rhythm patterns arranged in a desired order of playback are collectively called a “rhythm song”. Besides the rhythm pattern data, a rhythm song comprises information about various aspects such as chord, tempo, and time signature to create the accompaniment for an entire song. Up to 10 rhythm 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 holding down the [SHIFT] key and pressing pad 7 (PATTERN). The rhythm song mode is selected by holding down the [SHIFT] key and pressing pad 8 (SONG). The pad for selected mode lights up.



Playing rhythm patterns

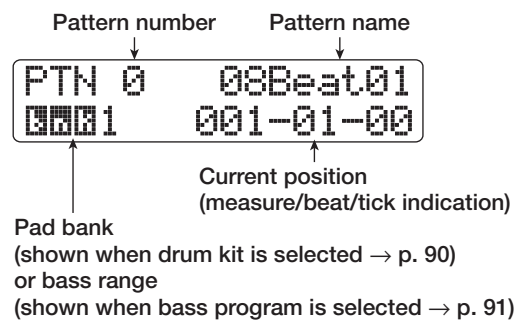
This section explains basic functions, such as how to play rhythm patterns, how to change the tempo, and how to change the drum kit or bass program.

Selecting a rhythm pattern

This section explains how to select and play one of the 511 rhythm patterns.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN).

The rhythm pattern selection screen appears.



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 0 – 472 and 509 – 510.

3. Press the PLAY [▶] key.

The selected rhythm pattern will begin playing repeatedly. If there are recorded audio tracks, these will also start to play. To listen to the rhythm pattern only, turn the faders for the audio tracks down.

4. To adjust the volume of the drum/bass track, operate the [RHYTHM] fader.

The [RHYTHM] fader controls either the drum track or the bass track. The selection is made by pressing the [RHYTHM] status key. When the [RHYTHM] status key is lit in green, the fader controls the drum track.

When the [RHYTHM] status key is lit in red, the fader controls the bass track. Select the desired setting, and then operate the fader.

5. To mute the drum track and bass track, repeatedly press the [RHYTHM] status key.

When the [RHYTHM] status key is out, both the drum track and the bass track are muted. To cancel the muting, press the key again so that it is lit.

6. To stop rhythm pattern playback, press the STOP [■] key.
7. To return to the main screen, press the [EXIT] key.

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 [TEMPO] key.

The display indication changes as follows.

```
Tempo
BPM=120.0
```

2. Turn the dial to adjust the tempo.

The tempo can be adjusted over a range of 40.0 – 250.0 (BPM).

HINT

The tempo can be changed in the play or stop condition.

3. To change the tempo manually, hit the [TEMPO] key repeatedly in the desired tempo.

The average of the key press intervals is determined and set as the new tempo.

4. 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

In the HD8/HD16, drum kit information including the drum sounds used by the pads and parameters for each pad is saved in so-called drum kit files. To change the current drum kit, you load a different kit file.

HINT

In the factory default condition, the HD8/HD16 gives the user a choice of 20 kit files.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Verify that the second line of the display shows “KIT FILE”, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE 1/6
>LOAD
```

4. Verify that the second line of the display shows “LOAD”, and press the [ENTER] key.

A screen for selecting a new kit file appears.

```
Kit File Load
ANALOG.ZSP
```

5. Turn the dial to select the kit file, and press the [ENTER] key.

When you press the [ENTER] key, the kit file is loaded, and the rhythm pattern or rhythm song selection screen appears again.

Changing the bass program

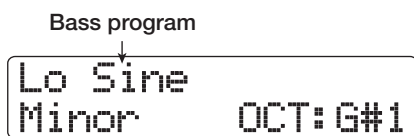
The HD8/HD16 offers a selection of 11 bass programs. To select a bass program, proceed as follows.

1. Press the [RHYTHM] status key repeatedly, until the key is lit in red.

While the [RHYTHM] status key is lit in red, the pads can be used to play a bass program.

2. From the main screen, hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the bass program is shown on the first line of the display.



HINT

The second line of the display shows the type of scale playable by the pads as well as the key and range. These parameters can be changed (→ p. 91).

3. Use the cursor up/down keys to select the bass program.

The bass program becomes active immediately.

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

Using the pads to play drum/bass sounds

This section describes how to use the pads on the top panel to play a drum kit or bass program.

Playing a drum kit with the pads

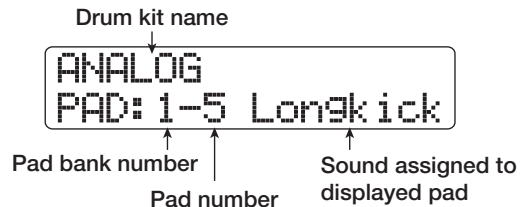
When playing a drum kit, you can use nine pads and switch between three pad banks (combination of drum sounds), giving you a total of 27 sounds.

1. Select the drum kit to play (→ p. 89)
2. Press the [RHYTHM] status key repeatedly until the key is lit in green.

While the [RHYTHM] status key is lit in green, the pads can be used to play a drum kit.

3. From the main screen, hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the pad bank selection screen is shown. A pad bank is a collection of drum sounds playable with the pads. Each drum kit has three pad banks numbered 1 – 3. In the default condition of a project, pad bank 1 is selected.



4. Turn the dial to select the pad bank to use.

The selection becomes active immediately, and the sounds assigned to the nine pads change.

HINT

You can also check the number of the currently selected pad bank on the rhythm pattern selection screen.

5. Hit the pads to play the drum kit.

The volume of the drum kit sound can be adjusted with the [RHYTHM] fader.

6. To play a specific pad repeatedly (roll play), press the [REPEAT/STEP] key in the rhythm section to bring up the following indication on the display.

Roll Play
Sync=1/4

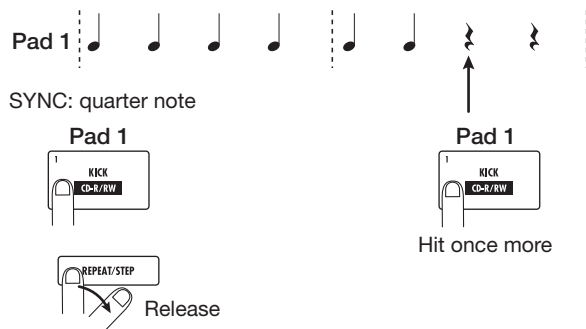
When you turn the dial at this screen, the interval for roll play can be set as follows.

- 2/4 – 16/4 quarter note x 2 – 16
- 3/8..... dotted quarter note
- 1/3..... half triplet 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
- Hi..... 1 tick (1/48 of quarter note)

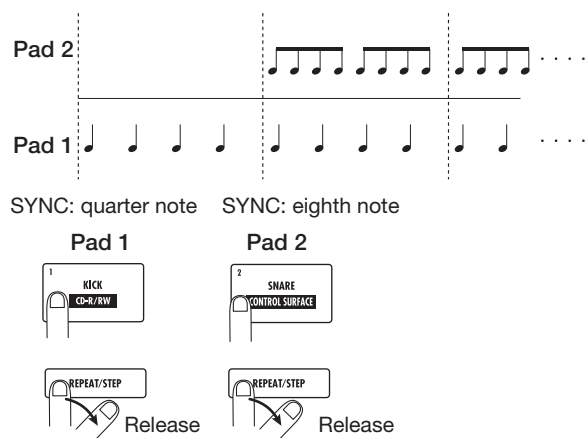
When you hit a pad while pressing the [REPEAT/STEP] key, the pad plays repeatedly at the specified interval (roll play). For example, you can repeat a kick drum at quarter note intervals, or play a hihat in sixteenth note units.

To stop roll play, release the pad.

If you release the [REPEAT/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.

- To return to the main screen, press the [EXIT] key once more.

Playing a bass program with the pads

When playing a bass program with the pads, you can specify the scale of Major or Minor. By switching the key and range used by the scale, you can cover more than four octaves.

NOTE

The bass program does not allow multiple tones to be played simultaneously. When you hit a pad, the sound of the immediately preceding pad will cease and only the sound of the new pad is heard.

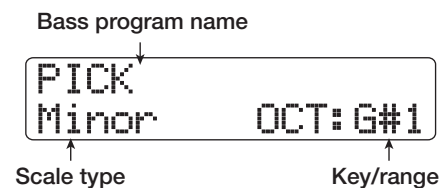
- Select the bass program to play (→ p. 90).

- Press the [RHYTHM] status key repeatedly until the key is lit in red.

While the [RHYTHM] status key is lit in red, the pads can be used to play a bass program.

- From the main screen, hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the scale and key/range selection screen for the bass program is shown.



- Use the cursor left/right keys to change the scale type.

You can select either Major or Minor for the scale. When "E" is selected as the key, the pads function as shown below, depending on the scale type.

Major

D#	E	F#
A	B	C#
E	F#	G#

Minor

D	E	F#
A	B	C
E	F#	G

5. To change the key/range of the scale, turn the dial.

The key selected here is the note assigned to pad 1. When you change the key, the notes assigned to all other pads will also shift accordingly.

The range for specifying the key is C1 to B4 which corresponds to more than four octaves.

6. Hit the pads to play the bass program.

The volume of the bass program sound can be adjusted with the [RHYTHM] fader.

7. To switch the scale and key/range during play, repeat steps 3 – 4.

You can change the scale and key/range during rhythm pattern and rhythm song playing.

When you press the [EXIT] key, the rhythm pattern or rhythm song selection screen appears again.

8. 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, hold down the [SHIFT] key and press pad 7 (PATTERN) so that the pad lights up.

The rhythm pattern selection screen appears.

```
PTN 0      08Beat01
0001      001-01-00
```

2. Turn the dial to select an empty rhythm pattern.

The indication “Empty” appears on the display when an empty pattern is selected.

```
PTN 500 Empty
0001      001-01-00
```

HINT

If there is no empty rhythm pattern, erase an unneeded pattern (→ p. 101).

3. Press the [EDIT] key.

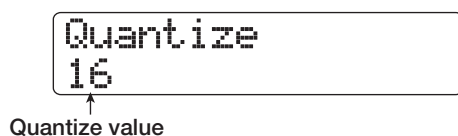
The rhythm pattern edit menu appears.

```
PATTERN EDIT 1/8
>QUANTIZE
```

4. To set the quantize value, bring up the

indication “QUANTIZE” on the second line of the display, and press the [ENTER] key.

The current quantize setting is shown.



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.

5. Turn the dial to select one of the following quantize values. Then press the [EXIT] key.

- 4..... Quarter note
- 8..... Eighth note
- 12..... Eighth triplet note
- 16..... Sixteenth note (default)
- 24..... Sixteenth triplet note
- 32..... Thirty-second note
- Hi 1 tick (1/48 of quarter note)

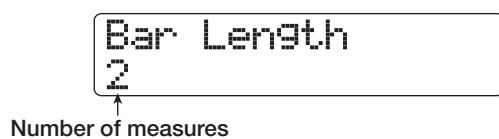
When you press the [EXIT] key, the rhythm pattern edit menu appears again.

HINT

The quantization setting applies to the entire rhythm section.

6. To set the bar length (number of measures) of the rhythm pattern, use the cursor left/right keys to bring up the indication “BAR LENGTH” on the second line of the display, and press the [ENTER] key.

The current bar length is shown.



HINT

When a finished rhythm pattern is selected, the bar length indication is enclosed in brackets. This shows that the number of measures is already set and cannot be changed.

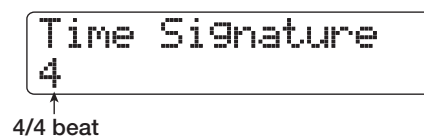
7. Turn the dial to select the number of measures.

The setting range is 1 – 99 measures. When the setting is complete, press the [EXIT] key twice to return to the rhythm pattern selection screen.

8. To change the time signature of the rhythm pattern, use the cursor left/right keys to bring up the indication “TIME SIGNATURE” on the

second line of the display, and press the [ENTER] key.

The current time signature setting is shown.



HINT

When a finished rhythm pattern is selected, the time signature indication is enclosed in brackets. This shows that the time signature is already set and cannot be changed.

9. Turn the dial to select the time signature.

The setting range is 1 – 8 (1/4 – 8/4). When the setting is complete, press the [EXIT] key twice 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 HD8/HD16.

1. At the rhythm pattern screen, select an empty rhythm pattern number.

If necessary, set the bar length, time signature, and quantize value (→ p. 92).

2. Press the [RHYTHM] status key repeatedly, until the key is lit in green.

3. Hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the pad bank selection screen is shown.

4. If necessary, turn the dial and select the pad bank to play.

For details on pad banks, see page 90.

When the setting is completed, press the [EXIT] key to return to the rhythm pattern selection screen.

5. Hold down the REC [●] key and press the PLAY [▶] key.

A four-beat pre-count (one measure) is heard, and rhythm pattern recording starts. During recording, a click sound (metronome) indicating the current tempo/beat setting is heard. The current position in the rhythm pattern is shown on the display in measures/beats/ticks.

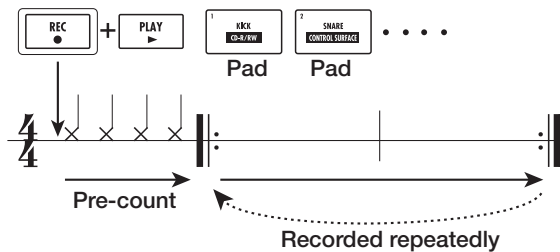
HINT

The beat and the volume of the pre-count clicks can be changed (→ p. 124).

6. Hit the pads while listening to the metronome.

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.



● To change the pad bank during real-time input

Hold down the [SHIFT] key and press pad 9 (KIT/PROG) to bring up the pad bank selection screen. Turn the dial to select the pad bank. Press the [EXIT] key to return.

● To switch to a bass sequence during real-time input

Press the [RHYTHM] status key repeatedly, until the key is lit in red.

● To pause real-time input

Press the REC [●] key during recording so that the key flashes. You can now switch pad banks or tap the pads to check which sound is assigned to each pad. To resume recording, press the REC [●] key once more so that the key is again permanently lit.

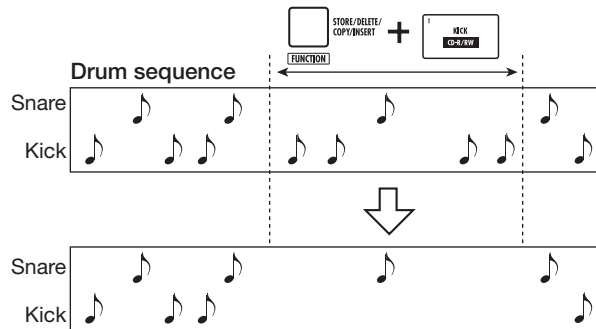
HINT

- You can use step input to add to a rhythm pattern that was created using real-time input.
- 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.)
- Instead of tapping the pads, you can also input a pattern in real time by using an external MIDI controller connected to the HD8/HD16's MIDI IN connector. For a list of pads and corresponding MIDI note numbers, refer to the appendix at the end of this manual.

7. To edit the recorded contents during real-time input, proceed as follows.

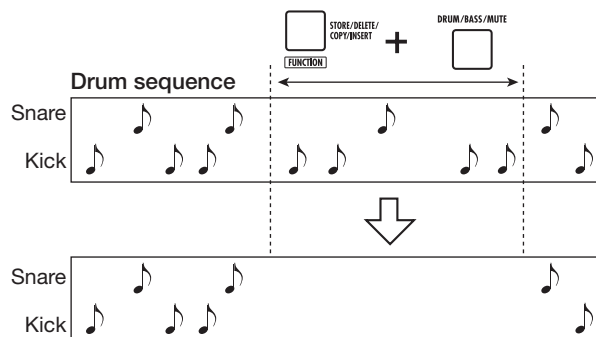
● To erase the performance of a specific pad

While holding down the [FUNCTION] key, press the pad whose sound you want to erase. While you are holding down both the [FUNCTION] key and the pad, the performance of the corresponding pad is erased from the rhythm pattern.



● To erase the performance of all pads

While holding down the [FUNCTION] key, press the [RHYTHM] status key. While you are holding down both keys, the performance of all pads is erased from the drum sequence.



8. 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. 100).

Bass sequence real-time input

For real-time input of a bass sequence, you play the pads of the HD8/HD16.

1. At the rhythm pattern selection screen, select an empty rhythm pattern number (or a rhythm pattern for which only a drum sequence has been input).

2. Press the [RHYTHM] status key repeatedly until the key is lit in red.

While the [RHYTHM] status key is lit in red, the pads can be used to play a bass program.

3. Hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the scale and key/range selection screen for the bass program is shown.

4. If necessary, change the scale and key/range settings.

To change the scale type, use the cursor left/right keys. To change the key/range, turn the dial. When the setting is completed, press the [EXIT] key to return to the rhythm pattern selection screen.

5. Hold down the REC [●] key and press the PLAY [▶] key.

A four-beat pre-count (one measure) is heard, and rhythm pattern recording starts. During recording, a click sound (metronome) indicating the current tempo/beat setting is heard. The current position in the rhythm pattern is shown on the display in measures/beats/ticks.

HINT

The beat and the volume of the pre-count clicks can be changed (→ p. 124).

6. Hit the pads while listening to the metronome.

Your performance on the pads will be recorded as a bass sequence according to the quantization setting. The duration for 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.

● To change the scale and key/range during real-time input

Hold down the [SHIFT] key and press pad 9 (KIT/PROG) to bring up the scale and key/range selection screen. Press the cursor left/right keys for the scale or turn the dial for the key/range.

● To switch to a drum sequence during real-time input

Press the [RHYTHM] status key repeatedly, until the key is lit in green.

● To pause real-time input

Press the REC [●] key during recording so that the key flashes. You can now switch the range and scale or tap the pads to check which note is assigned to each pad. To resume recording, press the REC [●] key once more so that the key is again permanently lit.

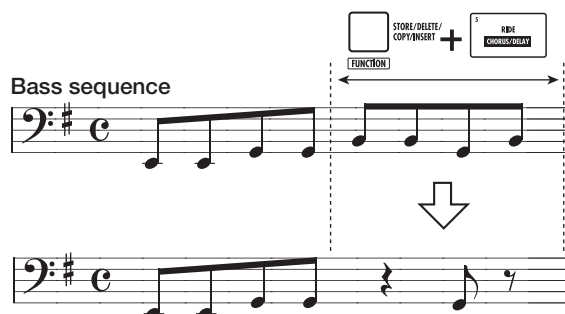
HINT

- Instead of tapping the pads, you can also input a bass pattern by using an external MIDI controller connected to the HD8/HD16'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.)

7. To edit the recorded contents during real-time input, proceed as follows.

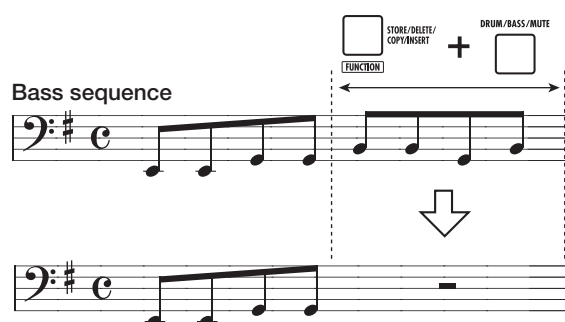
● To erase the performance of a specific pad

While holding down the [FUNCTION] key, press the pad whose note you want to erase. While you are holding down both the [FUNCTION] key and the pad, the notes of the corresponding pad is erased from the rhythm pattern.



● To erase the performance of all pads

While holding down the [FUNCTION] key, press the [RHYTHM] status key. While you are holding down both keys, the performance of all pads is erased from the drum sequence.



8. 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.

Drum sequence step input

For step input, you enter each note separately, while the rhythm pattern 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 [REPEAT/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 [REPEAT/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 necessary, set the bar length, time signature, and quantize value (→ p. 92).

2. Press the [RHYTHM] status key repeatedly, until the key is lit in green.

3. Hold down the [SHIFT] key in the pad section and press pad 9 (KIT/PROG) so that the pad lights up.

When the pad is lit, the pad bank selection screen is shown.

4. If necessary, turn the dial and select the pad bank to play.

For details on pad banks, see page 90.

When the setting is completed, press the [EXIT] key to return to the rhythm pattern selection screen.

5. Press the REC [●] key.

The key lights up and the display indication changes as follows. In this condition, step input of a drum sequence is possible.



During drum sequence step input, the first line of the display

shows the quantize value, and the second line shows the current position in measures/beats/ticks.

6. 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.

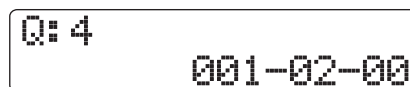
- 4 Quarter note
- 8 Eighth note
- 12 Eighth triplet note
- 16 Sixteenth note (default)
- 24 Sixteenth triplet note
- 32 Thirty-second note
- Hi 1 tick (1/48 of quarter note)

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.

7. To enter a note, hit the pad corresponding to the note, and then press the [REPEAT/STEP] key.

The note is recorded, and the unit advances by one step, corresponding to the quantize value set in step 6.



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.

8. To enter a rest, press only the [REPEAT/STEP] key.

If you press the [REPEAT/STEP] key by itself, the position advances by one step (duration of quantize value) but no play information is recorded.



Drum sequence step input

Quantize setting = quarter note

Quantize setting = sixteenth note

9. Repeat steps 6 – 8 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 [REPEAT/STEP] key to move step by step through a recorded rhythm pattern, the pad recorded at the respective position lights up.

You can edit the recorded content as follows.

● To delete an entered note

Repeatedly press the [REPEAT/STEP] key to move to the position that you want to erase. Then hold down the [FUNCTION] key and press the respective pad.

The note recorded at that point is erased, and the pad goes out.

HINT

- To change the pad bank during step input, hold down the [SHIFT] key and press pad 9 (KIT/PROG) to bring up the pad bank selection screen. Turn the dial to select the pad bank. Press the [EXIT] key to return.
- To switch to a bass sequence during step input, press the [RHYTHM] key repeatedly, until the key is lit in red.

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 [REPEAT/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).

1. At the rhythm pattern screen, select an empty rhythm pattern number.
2. Press the [RHYTHM] status key repeatedly until the key is lit in red.
3. Hold down the [SHIFT] key and press pad 9 (KIT/PROG) so that the pad lights up.

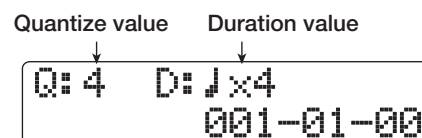
When the pad is lit, the scale and key/range selection screen for the bass program is shown.

4. If necessary, turn the dial to change the scale and key/range.

Use the cursor left/right keys for the scale type and the dial for the key/range. Press the [EXIT] key to return.

5. Press the REC [●] key.

Display indication changes as follows. In this condition, step input is possible.



The first line of the display shows the quantize value and the duration value, and the second line shows the current position in measures/beats/ticks.

Bass sequence step input

Quantize setting = quarter note Duration setting = quarter note	Quantize setting = 8th note Duration setting = 8th note	Quantize setting = quarter note Duration setting = quarter note	Quantize setting = 8th note Duration setting = 16th note
--	--	--	---

6. Use the cursor up/down keys to select the quantize value.

The value selected here becomes the duration of 1 step.

7. Turn the dial to select the duration value, as listed below.

The duration is specified as “ $\frac{1}{n}$ x 1”, i.e. as multiples of a quarter note. Depending on this value, 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

8. To enter a note, hit the pad corresponding to the note, and then press the [REPEAT/STEP] key.

The note is recorded, and the unit advances by the step duration set in step 6.

```
Q: 4  D: Jx1
      001-02-00
```

HINT

The intensity with which you hit the pad is also recorded on the bass sequence.

9. To enter a rest, press only the [REPEAT/STEP] key.

If you press the [REPEAT/STEP] key by itself, the position advances by one step (duration of quantize value) but no play information is recorded.

```
Q: 4  D: Jx1
      001-03-00
```

10. Repeat steps 6 – 9 while changing the quantize value and duration as necessary, to enter the bass pattern.

When you reach the end of the pattern, the unit automatically returns to the first measure, letting you continue the input. You can edit the recorded content as follows.

● To erase an entered note

Repeatedly press the [REPEAT/STEP] key to move to the position that you want to erase. Then hold down the [FUNCTION] key and press the respective pad.

The note recorded at that point is erased, and the pad goes out.

HINT

- To change the scale and key/range during step input, hold down the [SHIFT] key and press pad 9 (KIT/PROG) to bring up the screen for setting these value. Use the cursor left/right keys for the scale type and the dial for the key/range. Press the [EXIT] key to return.
- To switch to a drum sequence during step input, press the [RHYTHM] key repeatedly, until the key is lit in green.

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.

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

If required you can set specific chord information (root + chord type) for a recorded rhythm pattern. When you then use the bass phrase in a rhythm song, it 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, hold down the [SHIFT] key and press pad 7 (PATTERN).

The rhythm pattern selection screen appears.

2. Turn the dial to select the pattern for which to specify chord information, and press the [EDIT] key.

The rhythm pattern edit menu appears.

```
PATTERN EDIT 1/8
>QUANTIZE
```

- Use the cursor left/right keys to bring up the indication “ORIGINAL ROOT” on the second line of the display, and press the [ENTER] key.

This screen allows you to specify the root for the selected rhythm pattern.

```
Original Root
E
↑
Chord root
```

- 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.

- When the setting is complete, press the [EXIT] key.

The rhythm pattern edit menu appears again.

- Use the cursor left/right keys to bring up the indication “ORIGINAL CHORD” on the second line of the display, and press the [ENTER] key.

This screen allows you to specify the chord type for the selected rhythm pattern.

```
Original Chord
Major
```

- 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 a G major chord in mind, set the root to “G” and the chord type to “Major”.

- When the setting is complete, press the [EXIT] key.

The setting is entered and the rhythm pattern edit menu appears again.

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

Changing the drum/bass sequence volume level

Normally, the playback volume of the rhythm pattern can be adjusted with the [RHYTHM] fader for the drum and bass. If necessary, the volume levels can also be individually programmed for each rhythm pattern.

- From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) so that the pad lights up.

The rhythm pattern selection screen appears.

- Turn the dial to select the rhythm pattern for which to set the volume, and press the [EDIT] key.

The rhythm pattern edit menu appears.

```
PATTERN EDIT 1/8
>QUANTIZE
```

- Use the cursor left/right keys to bring up the indication “DRUM LEVEL” on the second line of the display, and press the [ENTER] key.

This screen allows you to specify the drum sequence volume. The display shows the current volume setting (1 – 15).

```
Drum Level
15
```

- 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.

- Use the cursor left/right keys to bring up the indication “BASS LEVEL” on the second line of the display, and press the [ENTER] key.

This screen allows you to specify the bass sequence volume. The display shows the current volume setting (1 – 15).

```
Bass Level
15
```

- 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.

- 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.

- From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN).

The rhythm pattern selection screen appears.

- Turn the dial to select the rhythm pattern for which to change the name, and press the [EDIT] key.

The rhythm pattern edit menu appears.

```
PATTERN EDIT 1/8
>QUANTIZE
```

- Use the cursor left/right keys to bring up the indication "NAME" on the second line of the display, and press the [ENTER] key.

In this condition, you can edit the rhythm pattern name.

```
Pattern Name
08Beat01 -A-
```

- 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 character input, refer to page 37.

- Repeat step 4 until the name is as desired.
- 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 if you want to create variations of a rhythm pattern.

- From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) so that the pad lights up.

The rhythm pattern selection screen appears.

- Turn the dial to select the rhythm pattern to use as copy source.

- Press the [FUNCTION] key twice.

The rhythm pattern number/rhythm pattern name from which to copy is shown.

```
COPY PATTERN
No. 0: 08Beat01
```

↑
Copy source rhythm pattern number/name

- Press the [ENTER] key.

The rhythm pattern that will be used as copy destination is shown.

```
Copy to
No. 480: Empty
```

↑
Copy destination rhythm pattern number/name

NOTE

When you select an existing rhythm pattern as destination, it will be overwritten with the content of the copy source.

- Turn the dial to select the number of the rhythm pattern to use as copy destination, and press the [ENTER] key.

The indication "Copy?" appears on the display.

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

When the copy operation is completed, the display returns to the rhythm pattern selection screen, with the copy destination 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.

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

Deleting a rhythm pattern

This section explains how to delete all data from a specified rhythm pattern, returning it to the blank state.

NOTE

Once deleted, a rhythm pattern cannot be restored. Use this function with care.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN).

The rhythm pattern selection screen appears.

2. Turn the dial to select the rhythm pattern to delete.

3. Press the [FUNCTION] key.

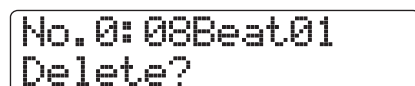
The display indication changes as follows. Make sure that the rhythm pattern number/name shown is that of the pattern you want to delete.



Rhythm pattern number/name to erase

4. Press the [ENTER] key.

The display indication changes as follows.



5. To execute the delete process, press the [ENTER] key once more.

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.

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

Creating a rhythm song

The HD8/HD16 allows you to save up to 10 rhythm songs per project. Each 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. This means that you can first create a rough version of a song using FAST and then perform detailed editing using step input.

Selecting a rhythm song

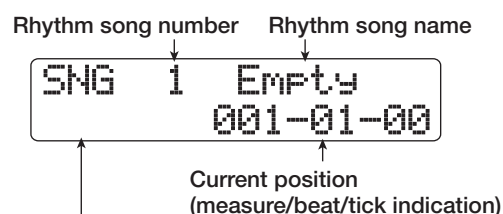
Select the rhythm song for editing or playing as follows.

HINT

In the default condition of a project, all rhythm songs are empty.

1. From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

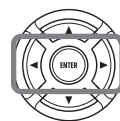
The rhythm song selection screen appears.



Rhythm song number Rhythm song name

Current position (measure/beat/tick indication)

Pattern information (→ p. 102)
or chord information (→ p. 105)
during playback



Cursor left/right keys
Switch between pattern information
and chord information.

2. Turn the dial to select a rhythm song number from 0 – 9.

- 3.** To return to the main screen, press the [EXIT] key.

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.

HINT

In rhythm song mode, the currently selected drum kit/bass program is always enabled. If necessary, select the drum kit/bass program before entering the mode (→ p. 89).

- 1.** From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

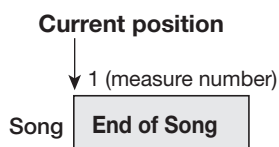
The rhythm song selection screen appears.

- 2.** Press the REC [●] key.

The key lights up and the display indication changes as follows. In this condition, you can perform rhythm song step input.

```
Event→
EOS      001-01-00
```

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 down key to bring up the indication “←Pattern” on the first line of the display.

```
←Pattern
EOS
```

During step input, the cursor up/down keys serve to show and edit various kinds of events that are programmed at the current point. For example, when “Pattern” is displayed, rhythm pattern information can be entered. The following items can be selected.

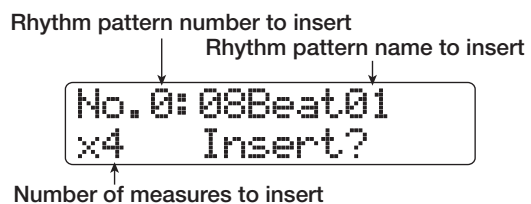
Parameter	Description
Event→	Event information at current point
Pattern	Rhythm pattern number
Time Signature	Time signature
Root	Chord root
Chord	Chord type
Tempo	Tempo
Drum Volume	Drum sequence volume
Bass Volume	Bass sequence volume

HINT

When an item other than “Event→” is selected and no information is input for the current position, the arrow “←” is shown before the item name (for example: “←Pattern”). This indicates that information input at a preceding point continues to be valid.

- 4.** Press the [FUNCTION] key.

The indication “Insert?” is shown on the second 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.

HINT

To check the currently selected rhythm pattern, press the PLAY [▶] key.

- 6.** Use the cursor up/down keys to specify the number of measures to insert.

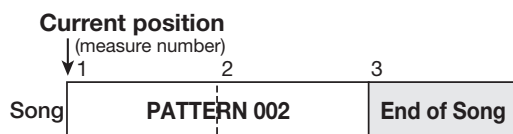
If you specify more measures than the original length of the rhythm pattern, the rhythm pattern will be repeated. If you specify fewer measures, the song will switch to the next rhythm pattern before the current pattern has finished playing.

- 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.

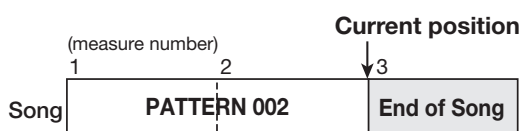
Pattern
No. 2: 08Beat03



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.

←Pattern
EOS



HINT

- The REW [◀] and FF [▶] keys in the transport section can be used to move the current position in beat units.
- When “Event→” is shown on the display, turning the dial moves the current position in sixteenth note units. By bringing up the “Event→” 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. 107).

9. Repeat steps 4 – 8 to enter all required pattern information.

10. When all required pattern information has been entered, press the STOP [■] key.

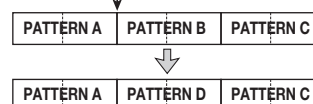
The REC [●] key goes out and the rhythm song selection screen appears again. If you press the PLAY [▶] key, the created rhythm song will be played.

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.

Select pattern D

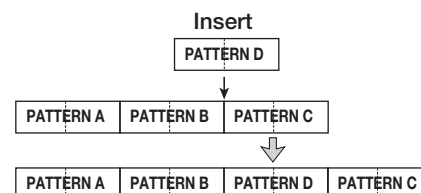


By turning the dial at a point where no rhythm pattern information is input (“←Pattern” is shown), you can add new rhythm pattern information for this point.

In any case, the newly selected rhythm pattern information will be valid until the point where the next rhythm pattern information is input.

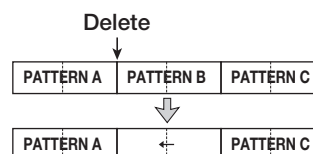
● Inserting a rhythm pattern in a song

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.



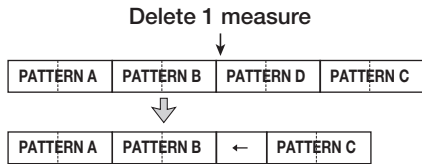
● Erasing entered rhythm pattern information

Use the cursor left/right keys to move to the position of the rhythm pattern information that you want to erase, and press the [FUNCTION] key twice. This brings up the indication “Event Erase?”. Then press the [ENTER] key. When rhythm pattern information was erased, 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 [FUNCTION] key three times. This brings up the indication “Measure Delete?”. Then 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 “←Pattern” for the second measure.

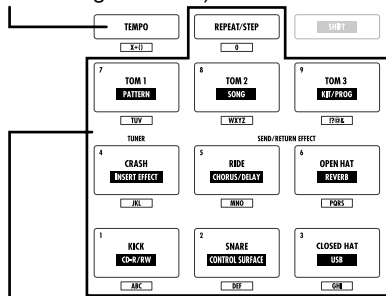


Using FAST for pattern information input

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.

[TEMPO] key

Serves for entering the multiplication symbol "x", the addition symbol "+", the opening bracket "(", and the closing bracket ")"



[REPEAT/STEP] key/Pads 0 - 9
Serve to enter the phrase number and repetition count.

The basic rules for creating a rhythm pattern sequence are as follows.

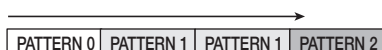
● Line up patterns

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

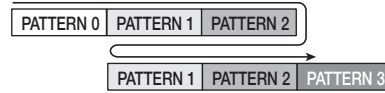
Use the "x" symbol to specify pattern repetitions. "x" takes precedence over "+". For example, entering **0 + 1 x 2 + 2** will result in the following rhythm pattern play sequence.



● 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) x 2 + 3** will result in the following rhythm pattern play

sequence.



An example for creating the rhythm pattern sequence **(0 + 1) x 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.
- 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 rewrite 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.

- If you wish 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. From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm section switches to rhythm song mode, and the rhythm song selection screen appears.

2. Press the [EDIT] key.

The rhythm song edit menu appears.



SONG EDIT 1/3
>TRANSPOSE

3. Use the cursor left/right keys to bring up the indication “FAST” on the second line of 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 104.



(0+1)x4+2

If you make a mistake during input, correct it as follows.

● **Deleting a number/formula**

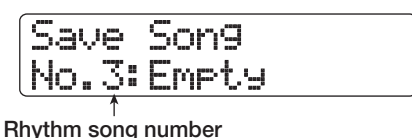
Use the cursor left/right keys to cause the numeral or symbol that you want to delete to flash, and press the [EDIT] key.

● **Inserting a number/formula**

Use the cursor left/right keys to move the flashing section, and enter the new numeral or symbol.

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 into which you want to write the song.



Save Song
No. 3: Empty

Rhythm song number

NOTE

If you select an existing rhythm song as write target, the contents of that rhythm song will be completely erased.

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.)

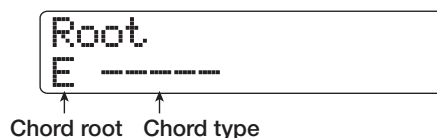
1. Bring up the rhythm song selection screen, and turn the dial to select the rhythm song for which you want to add chord information.

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 ----

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.



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”.



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

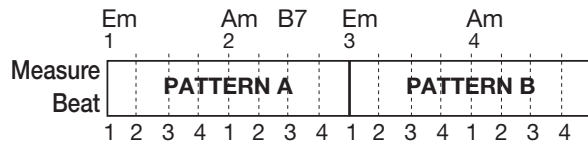
Use the REW [◀◀]/FF [▶▶] keys to move to the beginning of the preceding or following beat.

● Moving in steps of a sixteenth note

Repeatedly press the cursor up key to bring up the indication “Event→” 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 “Event→” 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 erase chord information

Move to the location at which the chord data is input, and use the cursor up/down keys to bring up the indication chord information that you want to erase. Then press the [FUNCTION] key twice. The indication “Event Erase” appears. When you press the [ENTER] key, the chord data (root and chord) will be erased, 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.

Entering other information

A rhythm song contains information about rhythm patterns, chord, tempo, beat etc. in a matrix configuration, as shown below. This is called event information. When the rhythm song is in the input condition, 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 (see below).

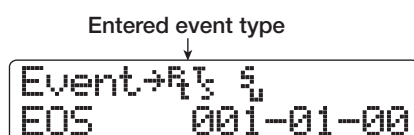
1. Bring up the rhythm song selection screen, and turn the dial to select the rhythm song for which you want to add other information.

2. Press the REC [●] key.

The REC [●] key lights up and rhythm song step input becomes possible.

3. Use the cursor up key to bring up the indication “Event→” on the first line of the display.

This screen lets you check which event information is entered at the current point. The symbol after “Event→” (such as “Pt” or “TS”) denotes the type of event.



Available events and their symbols are listed in the table below.

Event type	Symbol	Description	Setting range
Pattern		Rhythm pattern number	0 - 510
Time Signature		Time signature (beat)	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
Drum Volume		Drum sequence volume	0 - 15
Bass Volume		Bass sequence volume	0 - 15

NOTE

- Time signature information can be entered only at the beginning of a measure.
- 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.

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 106.

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.

The screenshot shows a monochrome display with two lines of text. The first line reads "Drum Volume" and the second line reads "15".

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 still applies.

The screenshot shows a monochrome display with one line of text: "←Tempo".

6. Turn the dial to input the event value.

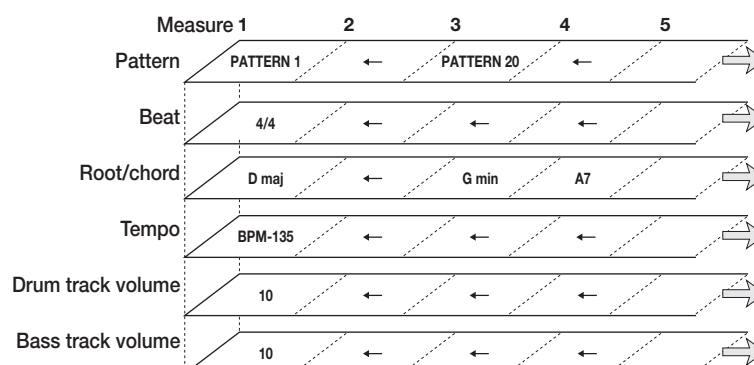
HINT

By pressing the PLAY [▶] button during rhythm song step input, you can listen to the rhythm pattern with the updated settings. (To stop play, press the STOP [■] key.)

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 [FUNCTION] key twice. The indication “Event Erase” appears. Press the [ENTER] 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.

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, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

```
SNG 1  SONG001
      001-01-00
```

2. Turn the dial to select the rhythm song to play, and press the PLAY [▶] key.

The rhythm song will begin playing. If something also has been recorded on the audio tracks, those tracks will also play back. The display shows information about the rhythm pattern number, chord type, and other information at the current location.

```

Rhythm song name
  ↓
SNG 1  SONG001
c7sus4 001-01-00
  ↑
Current chord
```

3. To stop the rhythm song, press the STOP [■] key.

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

HINT

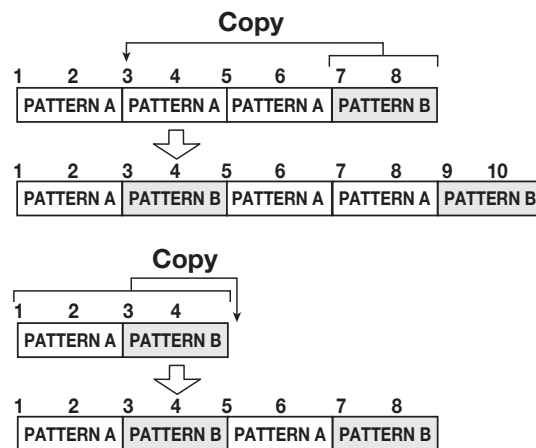
It is also possible to play a drum kit or bass program by hitting the pads during rhythm song playback.

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, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

2. Turn the dial to select the rhythm song edit.

3. Press the REC [●] key.

4. Repeatedly press the [FUNCTION] key to bring up the indication “Copy Start” on the display.

```
Copy
Start  001-01-00
      ↑
Copy source start point
```

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.

```
Start  001-01-00
End    001-01-00
```

↑
Copy source end point

- Turn the dial to select the copy source end measure, and press the [ENTER] key.

The screen for selecting the copy destination appears.

```
Copy Destination
To      001-01-00
```

↑
Copy destination start point

- Turn the dial to select the copy destination start measure.

- 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.

- Press the STOP [■] key.

The unit returns to the rhythm song selection screen. To return to the main screen, press the [EXIT] key.

Transposing the entire rhythm song

You can transpose the bass sequence of the rhythm song in semitone units.

- From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

- Turn the dial to select the rhythm song to transpose.

- Press the [EDIT] key.

The rhythm song edit menu appears.

```
SONG EDIT  1/3
>TRANSPOSE
```

- Verify that the indication “TRANSPOSE” is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
Transpose
+2
```

- 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 “Transpose?” appears on the display.

- 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.

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.

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

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.

- From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

- Turn the dial to select the rhythm song to copy.

- Press the [FUNCTION] key twice.

The display indication changes as follows. This screen lets you check rhythm song number/rhythm song name that will be

used as copy source.

```
COPY SONG
No. 2: SONG002
```

Copy source rhythm song number/rhythm song name

4. Press the [ENTER] key.

In this condition, you can select the rhythm song to be used as copy target.

```
Copy to
No. 4: Empty
```

Copy destination rhythm song number/rhythm song name

5. Turn the dial to select the copy destination rhythm song, and press the [ENTER] key.

The indication “Copy?” 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.

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

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, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

2. Turn the dial to select the rhythm song to delete.

3. Press the [FUNCTION] key.

The display indication changes as follows. This screen lets you check rhythm song number/rhythm song name that will be deleted.

```
DELETE SONG
No. 2: SONG002
```

Delete target rhythm song number/rhythm song name

4. Press the [ENTER] key.

The display indication changes as follows.

```
No. 2: SONG002
Delete?
```

5. Press the [ENTER] key once more 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.

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

Assigning a name to a rhythm song

You can edit the name of any rhythm song as follows.

1. From the main screen, hold down the [SHIFT] key and press pad 8 (SONG) so that the pad lights up.

The rhythm song selection screen appears.

2. 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.

```
SONG EDIT 1/3
>TRANSPOSE
```

3. Use the cursor left/right keys to bring up the indication “NAME” on the second line of the display, and press the [ENTER] key.

In this condition, the selected rhythm song name can be changed.

```
Song Name
Song002 -A-
```

4. Use the cursor left/right keys to bring the cursor to the character to change, and use

the dial and the pads/keys of the pad section to select a character.

For details on entering characters, see page 37.

5. Repeat step 4 until the name is as desired.
6. To return to the main screen, press the [EXIT] key several times.

Importing a rhythm pattern/rhythm song 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, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Use the cursor left/right keys to bring up the indication "IMPORT" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
IMPORT 1/2
>ALL
```

4. Use the cursor left/right keys to select "ALL" (import all rhythm patterns/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.

An example for a display that appears when you select "ALL"

is shown below.

```
Import All
No. 1: PRJ001
```

↑ ↑
Project number Project name

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?" is shown on the second line of the display. Proceed to step 6.

- 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. Turn the dial to select the import target, and press the [ENTER] key. The indication "Import?" appears on the second line of the display. Proceed to step 6.

6. 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.

Using Kit Files

The HD8/HD16 stores information about samples assigned to the pads of a drum kit, and about settings such as pad volume and panning in so-called kit files.

When a kit file is loaded in the rhythm section, all samples and pad settings stored in the file will become active and can be used as a drum kit. (For information on how to load kit files, see page 89.) You can also edit the settings in a kit file to create your own original drum kit.

This section describes how to work with kit files.

Creating a kit file

To create your own drum kit from scratch, it is convenient to start with a blank kit file.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY  1/9
>KIT FILE
```

3. Verify that the indication "KIT FILE" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE      1/6
>LOAD
```

4. Use the cursor left/right keys to bring up the indication "NEW" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
Create Kit File
SMPL0000.ZSP
```

NOTE

- When a file with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file cannot be created. You must first change the name from this screen. (For details on entering characters, see page 37. Note that available characters are limited.)

- You can change the name of the kit file later (→ p. 116).

5. To create the new file, press the [ENTER] key.

Assigning samples to pads

You can freely assign samples to any pad in the drum kit.

1. Press the [RHYTHM] status key repeatedly, until the key is lit in green.
2. From the main screen, hold down the [SHIFT] key and press pad 9 (KIT/PROG) so that the pad lights up.

The display indication changes as follows.

```
ANALOG
PAD: 1-1 Empty
```

↑ Pad bank number ↑ Pad number ↑ Sample assigned to pad

If no sample has been assigned to the pad, the indication "Empty" is shown in the sample name field.

HINT

Immediately after a newly created kit file is loaded, all pads are empty.

3. Press the [EDIT] key.

You can now change the sample assigned to the pad.

```
PAD: 1-1
Sample: LONGKICK
```

4. Use the cursor up/down keys to select the pad bank, and then press the pad to which you want to assign the sample.

This pad is now selected for the following steps.

5. To assign the sample, press the [FUNCTION] key once to bring up the indication "LOAD SAMPLE" on the display, and press the [ENTER] key.

The display indication changes as follows. This screen lets you specify the folder where the sample is stored.

```
Sample Select
Folder: @USER
```

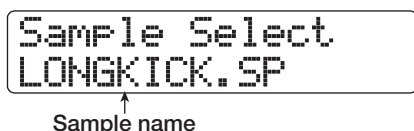
↑
Folder name

HINT

- For information on the folder structure of the HD8/HD16, see page 208.
- To assign a sample imported from an external source, select the folder “0USER” under the “SAMPLER” folder in the root directory of the hard disk.

6. Turn the dial to select the folder that contains the desired sample, and press the [ENTER] key.

Samples contained in the selected folder are shown.



7. Turn the dial to select the sample to assign.

By pressing the PLAY [▶] key at this point, you can listen to the selected sample.

8. Press the [ENTER] key.

The display indication changes as follows.

**HINT**

With the cursor up/down keys, you can toggle the indication on the first line of the display between sample name and sample size.

9. Press the [ENTER] key once more.

The sample is assigned to the pad.

● **To clear the sample assigned to a pad**

Select the pad. At the display of step 3, press the [FUNCTION] key twice to bring up the indication “CLEAR SAMPLE” on the first line of the display. Then press the [ENTER] key twice.

HINT

When a sample is cleared from a pad, all pad parameters revert to the default.

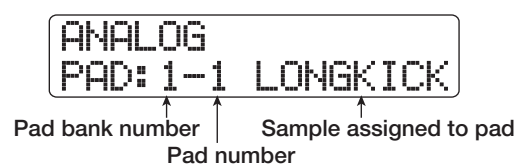
10. To return to the main screen, press the [EXIT] key several times.

Making pad parameter settings

Volume, panning, and other parameters can be set for each pad in the drum kit.

- 1. Press the [RHYTHM] status key repeatedly, until the key is lit in green.**
- 2. From the main screen, hold down the [SHIFT] key and press pad 9 (KIT/PROG) so that the pad lights up.**

The display indication changes as follows.



3. Press the [EDIT] key.

A menu for various pad settings appears.

4. Use the cursor left/right keys to select one of the following items.

● **Level**

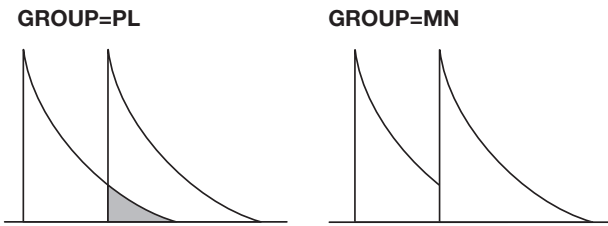
This lets you set the pad output level in the range from 0 – 15.

● **Pan**

This lets you set the left/right positioning of the pad sound when using stereo playback. The setting range is L63 (fully left) to R63 (fully right). This parameter setting is independent of the track parameter for panning. When you adjust the track parameter for panning, the overall stereo balance will be shifted while keeping the relative positioning of the pad intact.

● **Voice 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 two pads 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.

● Reverb Send

Sets the reverb send level for each pad. The setting range is 0 – 127. This parameter setting is independent of the track parameter for reverb send level.

● Remain

Shows the remaining drum kit memory as a capacity or in terms of playing time. Use the cursor up/down keys to toggle between kB (kilobytes) and mS (milliseconds).

● Priority

Specifies the priority order for the pads that applies when several pads are pressed at the same time (or when triggered by a rhythm pattern or rhythm song). Higher numbers indicate higher priority.

Higher numbers are recommended for pads with long-reverberation sounds such as cymbals or pads that use loop material.

5. Use the cursor up/down keys to select the pad banks, and press the pad for which to make settings.

The setting for the pad appears on the display. For example, if Level is selected as parameter and you press pad 3, the display indication changes as follows.

```
PAD: 1-3
Level=12
```

6. Turn the dial to select a setting value.

While the menu for setting pad parameters is shown, you can also use the faders to adjust the Level parameter for the pads. The assignment of faders to pads is as shown below.

Fader		Pad
HD16	HD8	
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7/8	7
8	--	8
9/10	--	9

NOTE

With the HD8, adjusting the Level parameter for pads 8 and 9 with a fader is not possible.

7. Repeat steps 4 – 6 as necessary to edit other pads.

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

Copying a kit file

You can copy the kit files in the current project.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Verify that the indication "KIT FILE" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE 1/6
>LOAD
```

4. Use the cursor left/right keys to bring up the indication "COPY" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
Kit File Copy
ANALOG.ZSP
```

5. Turn the dial to select the kit file to use as copy source, and press the [ENTER] key.

The display indication changes as follows.

```
Create Kit File
*ANALOG.ZSP
```

HINT

- When a file with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file cannot be created. You must first change the name from this screen. (For details on entering characters, see page 37. Note that available characters are limited.)
- You can change the name of the kit file later (→ p. 116).

6. To execute the copy process, press the [ENTER] key once more.

Deleting a kit file

You can delete no longer needed kit files from the current project.

HINT

Once you delete the kit file, it cannot be recovered. Use this operation with care.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Verify that the indication "KIT FILE" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE 1/6
>LOAD
```

4. Use the cursor left/right keys to bring up the indication "DELETE" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
Kit File Delete
ANALOG.ZSP
```

5. Turn the dial to select the kit file to delete, and press the [ENTER] key.

The display indication changes as follows.

```
ANALOG.ZSP
Delete?
```

6. To execute the delete process, press the [ENTER] key once more.

Importing a kit file from another project

You can import a kit file that was created as part of another project into the current project. To do this, proceed as follows.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Verify that the indication "KIT FILE" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE 1/6
>LOAD
```

- Use the cursor left/right keys to bring up the indication "IMPORT" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows. In this condition, you can select the project from which to import the kit file.

```
Kit File Import
No. 1: PRJ001
```

Source project number Source project name

- Turn the dial to select the source project, and press the [ENTER] key.

Kit files included in the selected project are listed.

```
Kit File Import
ANALOG.ZSP
```

Kit file name

- Turn the dial to select the kit file, and press the [ENTER] key.

```
Create Kit File
*ANALOG.ZSP
```

HINT

- When a file with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file cannot be created. You must first change the name from this screen. (For details on entering characters, see page 37. Note that available characters are limited.)
- You can change the name of the kit file later (→ p. 116).

- To execute the import process, press the [ENTER] key once more.

Assigning a name to a kit file

You can assign a name to a kit file as follows.

- From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

- Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY 1/9
>KIT FILE
```

- Verify that the indication "KIT FILE" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
KIT FILE 1/6
>LOAD
```

- Use the cursor left/right keys to bring up the indication "NAME" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
Kit File Name
ANALOG.ZSP
```

- Turn the dial to select the kit file whose name you want to change, and press the [ENTER] key.

The display indication changes as follows. In this condition, you can change the name of the selected kit file.

```
Kit File Name
*ANALOG.ZSP
```

HINT

When a file with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file cannot be created.

- Use the cursor left/right keys to bring the cursor to the character to change, and use the dial and the pads/keys of the pad section to select a character.

For details on entering characters, see page 37. (Note that

available characters are limited.)

7. Repeat step 6 until the name is as desired.
8. When the name entry is completed, press the [EXIT] key.

Using samples

This section describes how to change various settings for samples used by drum kits, and how to import parts of audio tracks or audio files on CD-ROM discs as samples.

Making various sample settings

The drum sounds (samples) used in the drum kits of the HD8/HD16 are stored as files in a number of folders on the hard disk. You can specify properties such as the playback range and name of a sample, and add a fade-in/fade-out effect.

When making sample file parameter settings, some steps are similar for each action. These are as follows.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

3. Use the cursor left/right keys to bring up the indication "SAMPLE FILE" on the second line of the display, then press [ENTER] key.

The display indication changes as follows. From this screen, you can select the folder where the sample file is stored.

```
File Select
Folder: 0USER
```

↑
Folder name

4. Turn the dial to select the folder which contains the desired sample file, and press the [ENTER] key.

Sample files included in the selected folder are listed.

```
File Select
LONGKICK.SP
```

↑
Sample name

HINT

- For information on the folder structure of the HD8/HD16, see page 208.
- To assign a sample imported from an external source (→ p. 121), select the folder "0USER" under the "SAMPLER" folder in the root directory of the hard disk.

5. Turn the dial to select the sample whose parameters you want to change.

By pressing the PLAY [▶] key at this point, you can listen to the selected sample.

6. Press the [EDIT] key.

A parameter of the selected sample is shown.

```
SAMPLE EDIT 1/5
>START/END POINT
```

7. Use the cursor left/right keys to select the parameter to adjust.

● START/END POINT

Specify the playback start and end point for the sample.

● FADE I/O (Fade-in/out)

Specify a sample range and perform fade-in or fade-out.

● REVERSE

Specify a sample range and reverse it.

● NAME

Specify a name for the sample.

● SIZE

Display the size of the currently selected sample in kB (kilobytes) or mS (milliseconds).

8. Press the [ENTER] key.

The selected parameter can now be changed. The subsequent steps will differ, depending on the parameter. See the following sections for the respective commands.

9. Repeat steps 7 and 8 to make all necessary parameter adjustments.

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

Changing the playback start and end point

You can specify the playback start and end point for the sample.

1. Perform steps 1 – 8 of “Making various sample settings” and select the “START/END POINT” parameter. Then press the [ENTER] key.

The sample start point is shown on the second line of the display.

```
Start/End Point
Start 000:00:000
```

2. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the start point. Then press the [ENTER] key.

The sample end point is shown on the second line of the display.

```
Start 000:00:000
End   000:00:000
```

3. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the end point. Then press the [ENTER] key.

The sample start and end points are set.

Using fade-in/fade-out for the sample

You can rewrite a specified range of data to perform fade-in/fade-out.

1. Perform steps 1 – 8 of “Making various sample settings” and select the “FADE I/O” parameter. Then press the [ENTER] key.

The fade I/O start point is shown on the second line of the display.

```
Fade I/O
Start 000:00:000
```

2. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the fade I/O start point. Then press the [ENTER] key.

The fade I/O end point is shown on the second line of the display.

```
Start 000:00:000
End   000:00:000
```

3. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the fade I/O end point. Then press the [ENTER] key.

A screen for selecting the fade-in/fade-out curve appears.

```
Fade Curve
In-1
```

4. Turn the dial to select the curve and press the [ENTER] key. When the indication “Fade?” appears, press the [ENTER] key once more.

The fade-in/fade-out settings are made. To return to the parameter selection screen, press the [EXIT] key.

HINT

For information on available fade-in/fade-out curves, see page 54.

Reversing a sample

You can reverse a specified range of the sample data.

1. Perform steps 1 – 8 of “Making various sample settings” and select the “REVERSE” parameter. Then press the [ENTER] key.

The reverse start point is shown on the second line of the display.

```
Reverse
Start 000:00:000
```

2. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the reverse start point. Then press the [ENTER] key.

The reverse end point is shown on the second line of the display.

```
Start 000:00:000
End   000:00:000
```

3. Use the cursor left/right keys to move the flashing section, and turn the dial to change the numerals for the reverse end point. Then press the [ENTER] key. When the indication “Reverse?” appears on the display, press the [ENTER] key once more.

The reverse action is carried out.

To return to the parameter selection screen, press the [EXIT] key.

Changing the sample name

You can assign a name to a sample as follows.

1. Perform steps 1 – 8 of “Making various sample settings” and select the “NAME” parameter. Then press the [ENTER] key.

The current sample name is shown on the second line of the display.

```
Sample Name
LONGKICK.SP
```

HINT

If a sample with the same name exists in the same folder on the hard disk, a “*” symbol appears on the display.

2. Use the cursor left/right keys to bring the cursor to the character to change, and use the dial and the pads/keys of the pad section to select a character.

For details on entering characters, see page 37. (Note that available characters are limited.)

3. Repeat step 2 until the name is as desired.
4. When the name entry is completed, press the [ENTER] key.

Checking the sample size

The sample size can be displayed in kB (kilobytes) or mS (milliseconds of playing time). This display is for information only, and no changes can be made.

1. Perform steps 1 – 8 of “Making various sample settings” and select the “SIZE” parameter. Then press the [ENTER] key.

The sample size is shown on the second line of the display.

```
Sample Size
166KB
```

Use the cursor up/down keys to toggle between kB and mS indication.

2. Press the [EXIT] key to return to the previous screen.

Copying a sample

You can copy a specific sample, which is convenient to use the same material but with a different playing range.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

3. Use the cursor left/right keys to bring up the indication “SAMPLE FILE” on the second line of the display, then press the [ENTER] key.

The display indication changes as follows. From this screen, you can select the folder where the sample file is stored.

```
File Select
Folder: 0USER
```

↑
Folder name

HINT

- For information on the folder structure of the HD8/HD16, see page 208.
- To use a sample imported from an external source, select the folder “0USER” under the “SAMPLER” folder in the root directory of the hard disk.

4. Turn the dial to select the folder which contains the desired sample file, and press the [ENTER] key.

Sample files included in the selected folder are listed.

```
File Select
LONGKICK.SP
```

↑
Sample name

5. Turn the dial to select the sample to copy and press the [FUNCTION] key twice.

The display indication changes as follows, letting you check the copy source.

```
COPY SAMPLE
LONGKICK.SP
```

6. Press the [ENTER] key.

The display indication changes as follows.

```
Create Sample
*LONGKICK.SP
```

HINT

- When a sample with the same name is present in the same folder on the hard disk, a "*" symbol appears on the display. This is a warning that the file cannot be created. You must first change the name from this screen. (For details on entering characters, see page 37. Note that available characters are limited.)
- You can change the name of the sample later (→ p. 119).

7. To execute the copy process, press the [ENTER] key once more.

When the copy operation is completed, the screen selection screen returns.

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 as follows.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

3. Use the cursor left/right keys to bring up the indication "SAMPLE FILE" on the second line of the display, then press the [ENTER] key.

The display indication changes as follows. From this screen, you can select the folder where the sample file is stored.

```
File Select
Folder: 0USER
```

↑
Folder name

HINT

- For information on the folder structure of the HD8/HD16, see page 208.
- To use a sample imported from an external source, select the folder "0USER" under the "SAMPLER" folder in the root directory of the hard disk.

4. Turn the dial to select the folder which contains the sample file to delete, and press the [ENTER] key.

Sample files included in the selected folder are listed.

```
File Select
LONGKICK.SP
```

↑
Sample name

5. Turn the dial to select the sample to delete and press the [FUNCTION] key.

The display indication changes as follows, letting you check the sample to delete.

```
DELETE SAMPLE
LONGKICK.SP
```

6. Press the [ENTER] key.

The display indication changes as follows.

```
LONGKICK.SP
Delete?
```

7. To execute the delete process, press the [ENTER] key once more.

When the delete operation is completed, the screen selection screen returns.

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 sample from an external source

In the factory default condition, an array of samples is present in the HD8/HD16 for use by the drum kits. To expand your choices, it is also possible to import parts of an audio track or an audio file contained on a CD-ROM disc or similar. Once these have been saved in a special area on the internal hard disk of the HD8/HD16 (called the “sample pool”), they can be used as samples in the same way as pre-existing samples (see illustration below).

The following types of audio material can be imported into the sample pool.

● Any audio track from a project

You can select any track/V-take from the currently loaded project and specify a range for use as a sample.

● 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 inserted in the CD-ROM/R/RW drive can be used as a sample. Audio files copied from a computer via the USB port to the WAV_AIFF folder on the internal hard disk of the HD8/HD16 can also be used.

NOTE

- All imported 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.

When importing samples, some steps are similar for each action. These are as follows.

1. From the main screen, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY  1/9
>KIT FILE
```

3. Use the cursor left/right keys to bring up the indication “SAMPLE FILE” on the second line of the display, then press the [ENTER] key.

The sample selection screen appears.

```
File Select
Folder: 0USER
```

4. Press the [PROJECT/UTILITY] key once more.

The sample import menu appears.

In this condition, you can select the sample import source.

```
IMPORT from
TAKE
```

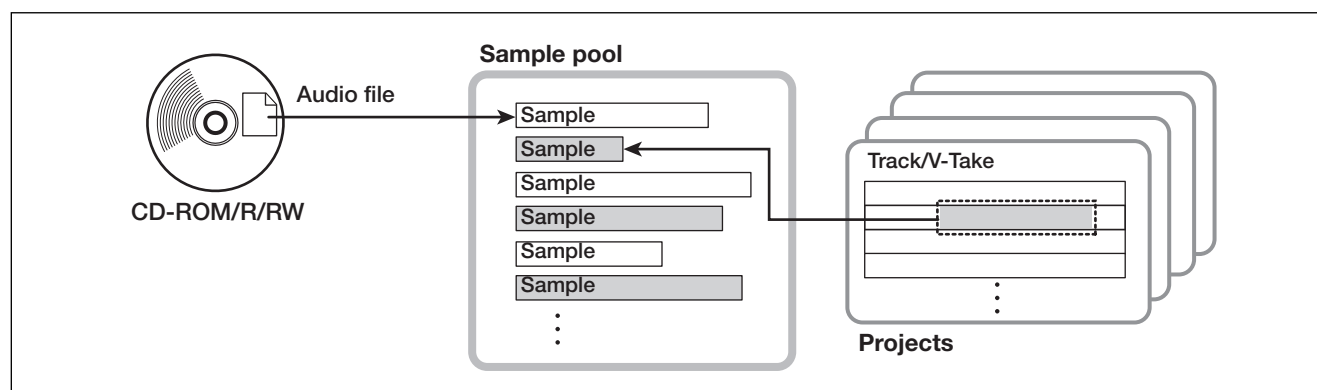
5. Use the cursor left/right keys to choose one of the following options, and press the [ENTER] key.

● TAKE

Import a specified range of audio data from any track/V-take in the currently loaded project.

● WAV/AIFF FOLDER

Import an audio file (WAV/AIFF) from the internal hard disk. When importing files from a computer, copy the audio files 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).



● CD-ROM

Import an audio file (WAV/AIFF) from a CD-ROM/R/RW disc inserted in the CD-R/RW drive.

To import a sample from a CD-ROM/R/RW disc, insert it into the CD-R/RW drive.

The subsequent steps will differ, depending on the type of source. See the following sections for the respective commands.

When the import process is completed, the sample selection screen appears again. This lets you easily import further samples.

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

Importing a V-take

1. Perform steps 1 – 5 of “Importing a sample from an external source” and select the “TAKE” parameter. Then press the [ENTER] key.

The indication “Trackxx-yy” (where xx is the track number and yy the V-take number) appears on the second line of the display. This indicates the source track/V-take.

2. Use the cursor left/right keys or the status keys to select the track number, and turn the dial to select the V-take number.

```
Import Source
Track1-1
```

When track 8 of the HD8 or track 16 of the HD16 is selected, turning the dial further to the right selects tracks in odd-numbered/even-numbered pairs or the master track. (By pressing two adjacent odd-numbered/even-numbered status keys together, you can select two mono tracks.) When a stereo track, two mono tracks, or the master track is selected, a stereo sample can be imported.

HINT

Pressing the status key for a stereo track repeatedly selects the odd-numbered track, even-numbered track, and stereo track in sequence.

3. Press the [ENTER] key.

A display showing the import start point appears.

```
Start 000:00:000
```

HINT

You can use the cursor up/down keys to toggle the counter indication between measures/beats/ticks and minutes/seconds/milliseconds.

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

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. 40).
- The playback range of the sample can be fine-tuned also after importing. Therefore it suffices if you make a rough selection here.
- If you specify a point where there are no audio data, the second line of the display shows “*”.

5. Press the [ENTER] key.

The import end point is shown on the second line of the display.

```
Start 000:00:000
End   000:00:000
```

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

When you press the PLAY [▶] key at this point, the specified range is played.

7. To complete the import source selection, press the [ENTER] key.

The display indication changes as follows.

```
Create Sample
*LONGKICK.SP
```

↑
Sample name

HINT

- When a sample with the same name is present in the same folder on the hard disk, a “*” symbol appears on the display. This is a warning that the file cannot be created. You must first change the name from this screen. (For details on entering characters, see page 37. Note that available characters are limited.)
- You can change the name of the sample later (→ p. 119).

8. To execute the import process, press the [ENTER] key once more.

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 imported sample is saved in a folder called "0USER" in the SAMPLER folder immediately under the root directory (top level folder) of the internal hard disk.

Importing an audio file from a CD-ROM or the WAV_AIFF folder

- 1. Perform steps 1 – 5 of "Importing a sample from an external source" and select the "CD-ROM" or "WAV_AIFF FOLDER" parameter. Then press the [ENTER] key.**

The HD8/HD16 searches for WAV/AIFF files in the specified location. When a file is found, its name appears on the display.

```
Import
LOOP.WAV
```

When a folder on a CD-ROM/R/RW disc is selected, the indication "Folder" is shown at the left side of the display.

```
Import
Folder: WAUFILES
```

↑
Folder name

In this case, turn the dial to select the folder and press the [ENTER] key to show files in that folder. To return to one level higher, press the [EXIT] key.

- 2. Turn the dial to select the audio file to import.**
- 3. When the file is selected, press the [ENTER] key.**

The following steps will differ, depending on the sampling frequency of the selected audio file.

● Sampling frequency is 44.1 kHz

The indication "Create Sample" appears on the first line of the display. Press the [ENTER] key once more to import the file.

● Sampling frequency other than 44.1 kHz

A selection screen for choosing whether to perform conversion to 44.1 kHz (resampling) appears.

```
LOOP.WAV
Resample On
```

Turn the dial to select whether to perform resampling or not, and press the [ENTER] key. The indication "Create Sample" appears on the first line of the display. Press the [ENTER] key once more to import the file.

HINT

- While the indication "Create Sample" is shown on the first line of the display, it is possible to change the sample name. For details on entering characters, see page 37. You can also change the name of the sample later (→ p. 119).
- The imported sample is saved in a folder called "0USER" in the SAMPLER folder immediately under the root directory (top level folder) of the internal hard disk.

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.

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, hold down the [SHIFT] key and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad lights up.

The rhythm pattern or rhythm song selection screen appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu screen appears.

```
RHY UTILITY  1/9
>KIT FILE
```

3. Use the cursor left/right keys to select one of the following items to edit, and press the [ENTER] key.

- **KIT FILE**

Import or create a kit file (→ p. 112).

- **SAMPLE FILE**

Import or edit samples assigned to pads (→ p. 117).

- **COUNT**

Change the length of the pre-count that is heard during real-time input of a rhythm pattern.

- **CLICK VOLUME**

Change the volume level of the metronome that is heard during real-time input of a rhythm pattern.

- **PAD SENS (Pad sensitivity)**

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. 155).

- **IMPORT**

Import rhythm patterns and rhythm songs from another project saved on the hard disk (→ p. 111).

- **MEMORY**

Check the remaining amount of rhythm pattern and rhythm song memory.

- **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 kit file operations, sample settings, MIDI settings, and importing, 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 “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 “CLICK VOLUME”, and press the [ENTER] key. Then turn the dial to set the volume (0 – 15).



Click Volume
15

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 “PAD SENS”, and press the [ENTER] key. Then turn the dial to choose one of these settings.



Pad Sense
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

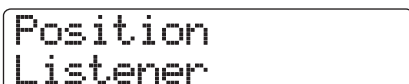
The remaining amount of recording memory for rhythm patterns and rhythm songs will be displayed as a percentage (%). Perform steps 1 – 3 of “Basic procedure” to bring up the indication “MEMORY”, and press the [ENTER] key. This screen is for display only. There is no setting that can be changed.



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 “POSITION”, and press the [ENTER] key. Then select one of the following settings.



Position
Listener

● 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 [Effects]

This section explains the functions and operation of the effect section built into the HD8/HD16.

About the effects

The HD8/HD16 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 of input mixer
- (2) Any channel 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

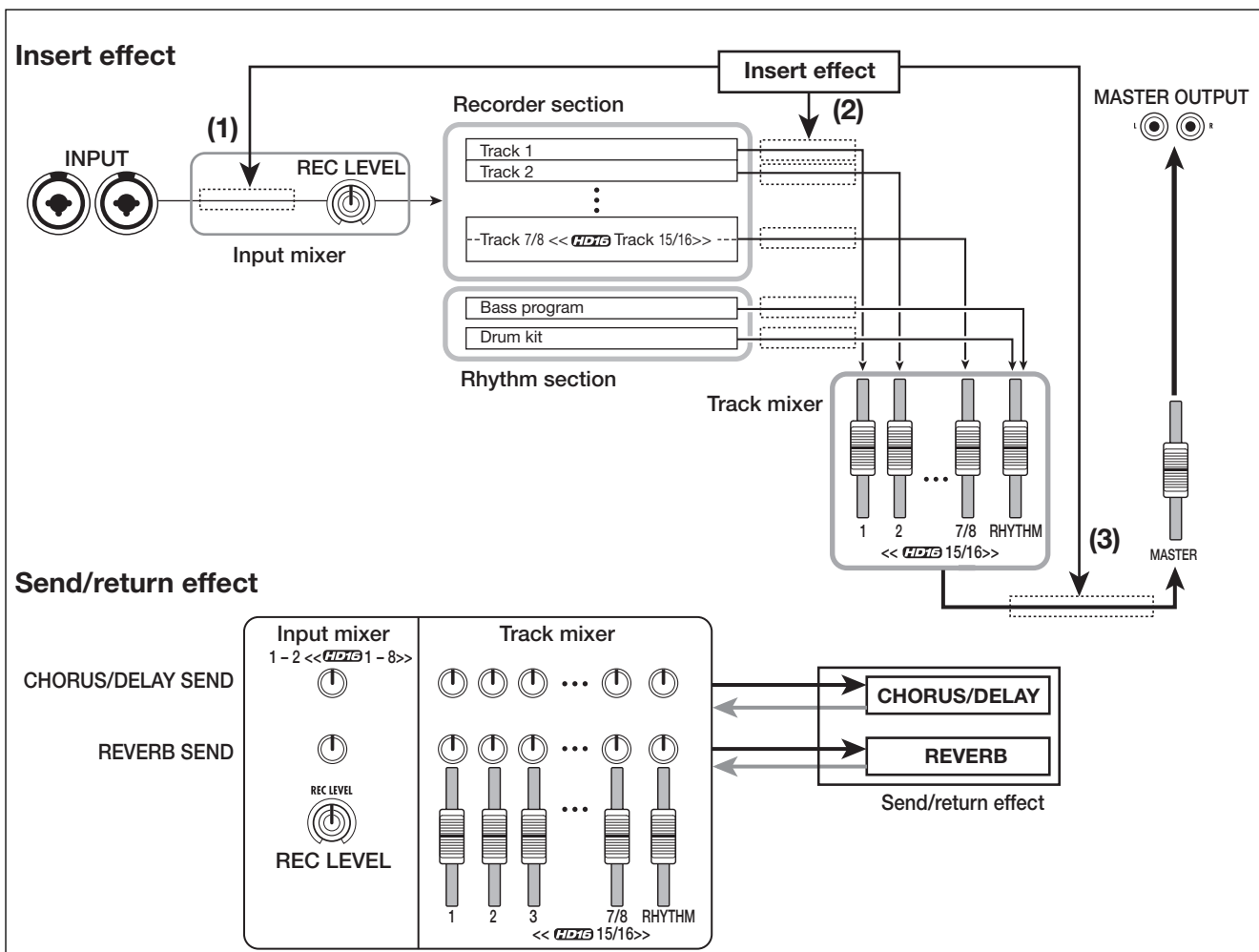
into a channel of the track mixer, the effect processes the playback signal from an audio track or the drum/bass track.

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 HD8/HD16 has two types of send/return effects, chorus/delay (CHORUS/DELAY) and reverb (REVERB), which 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 original signal of the track.



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 HD8/HD16 offers the following algorithms.

● CLEAN

● DISTORTION

● 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.

● LINE

An algorithm suitable for recording line-level output instruments such as synthesizer or electric piano.

● <<HD16 only>> 8x COMP EQ

This is an algorithm with eight separate inputs/output channels, available only in the HD16. Separate high-pass filter (HPF), compressor, and EQ settings are possible for each channel.

● MASTERING

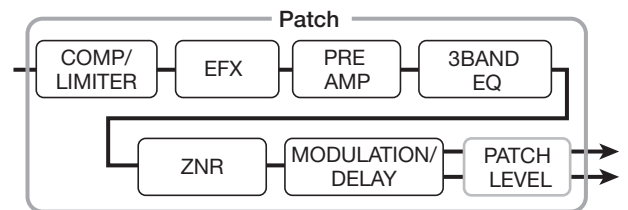
An algorithm suitable for processing the final stereo mix signal.

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. 130).
- <<HD16 only>> With the 8x COMP EQ algorithm, the VOLUME PEDAL 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”.



A project contains 310 <<HD16 330>> patches, which are organized according to 8 <<HD16 9>> algorithms. You can

Algorithm	Effect module arrangement	Input/output type
CLEAN DISTORTION ACO/BASS SIM BASS	COMP/LIMITER → EFX → PREAMP → 3BAND EQ → VOLUME PEDAL → ZNR → MODULATION/DELAY	Mono → Stereo
MIC	COMP/LIMITER → EFX → MIC PRE DE-ESSER → 3BAND EQ → VOLUME PEDAL → ZNR → MODULATION/DELAY	
DUAL MIC	COMP/LIMITER → MIC PRE → 3BAND EQ → VOLUME PEDAL → ZNR → DELAY	Mono x 2 → Mono x 2
	COMP/LIMITER → MIC PRE → 3BAND EQ → VOLUME PEDAL → ZNR → DELAY	
LINE	COMP/LIMITER → ISOLATOR → 3BAND EQ → VOLUME PEDAL → ZNR → MODULATION/DELAY	Stereo → Stereo
<<HD16 only>> 8xCOMP EQ	HIGH PASS FILTER → COMP/LIMITER → 3BAND EQ → VOLUME PEDAL ⋮ HIGH PASS FILTER → COMP/LIMITER → 3BAND EQ → VOLUME PEDAL * VOL PDL applies to all inputs	Mono x 8 → Mono x 8
MASTERING	MULTI BAND COMP/Lo-Fi → NORMALIZER → 3BAND EQ → VOLUME PEDAL → ZNR → DIMENSION/RESONANCE	Stereo → Stereo

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)
DISTORTION	50 (40)
ACO/BASS SIM	20 (10)
BASS	30 (20)
MIC	50 (30)
DUAL MIC	50 (30)
LINE	50 (30)
8x COMP EQ << HD16 only >>	20 (10)
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
Input	Input mixer
Drum	Drum track output
Bass	Bass track output
Track1, Track2...	Any output of a mono track
Track1/2, Track3/4...	Any output of a stereo track or mono track x 2
Master	Immediately before [MASTER] fader

<< HD16 only >>

In addition to the above possibility, the HD16 offers the following choices.

Display	Insert position
Input1 - Input8	Any input of input mixer
Input1-8	All inputs of input mixer
Track1-8	All outputs of tracks 1 - 8
Track9-16	All outputs of tracks 9 - 16

NOTE

<< HD16 only >>

- Individual selection of Input 1 - Input 8 is possible only when the 8-track recording function is enabled and an algorithm other than 8x COMP EQ is selected.
- Track 1 - 8 and Track 9 - 16 are only available when the 8x COMP EQ algorithm is selected.
- Simultaneous selection of Input 1 - 8 is possible only 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 Input 1 - 8, Track 1 - 8,

or Track 9 - 16 (depending on the immediately preceding setting).

Insertion to input

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 control section.

The current insert position is shown on the display.

Input Source
Input

2. Verify that "Input" is selected.

If another position is selected, turn the dial to select "Input". You can also make the selection by pressing an [ON/OFF] key in the input section.

When the input is selected as insert position, all [ON/OFF] keys are lit in orange. In this condition, the effect will apply to one or two inputs as selected in step 1.

NOTE

<< HD16 only >> If the 8-track recording function is inactive, you cannot select "Input" as insert position, even when the 8x COMP EQ algorithm was selected.

3. Press the [EXIT] key to return to the main screen.

<< HD16 only >> Insertion to 8 input channels

With the HD16, when the 8-track recording function is enabled and the 8x COMP EQ algorithm is selected, the insert effect can be applied to 8 channels simultaneously.

1. Press the [8TRACK RECORDING] key in the input section so that the [ON/OFF] keys for inputs 1 - 8 are lit in red.
2. Select 8x COMP EQ as algorithm for the insert effect (→ p. 127).
3. Press the [INPUT SOURCE] key in the control section.

The current insert position is shown on the display.

4. Turn the dial to select "Input 1-8".

All [ON/OFF] keys are lit in orange. In this condition, the effect will apply to inputs 1 - 8.

HINT

The effects in the 8x COMP EQ algorithm can be switched off

individually.

5. When the insert position selection is completed, press the [EXIT] key.

When an algorithm other than 8x COMP EQ is selected, up to two inputs from Input 1 – 8 can be selected as insert position. (The [ON/OFF] key of a currently selected input is lit in orange.) You can use the [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 “Inputx/y” (where x/y is the respective input number).

Insertion to track output/immediately before [MASTER] fader

To apply the insert effect to a mono track x 1, mono track x 2, a stereo track, or immediately before [MASTER] fader, proceed as follows.

NOTE

<< **HD16** only >>

When 8x COMP EQ is selected, you can select either Track 1 – 8 (insert to all outputs of tracks 1 – 8) or Track 9 – 16 (insert to all outputs of tracks 9 – 16).

HINT

To apply the effect to two mono tracks, you can only select a pair of tracks in odd/even-numbered order.

1. On the main screen, press the [INPUT SOURCE] key in the control section.

The current insert position is shown on the display.

2. Turn the dial to select the insert position.

To select the output of mono track x 1 as insert position, select “Track 1” – “Track 6” << **HD16** “Track 1” – “Track 8” >>. To select the output of mono track x 2 as insert position, select “Track 1/2” – “Track 7/8” << **HD16** “Track 1/2” – “Track 15/16” >>. To select the position immediately before the [MASTER] fader, select “Master”.

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.

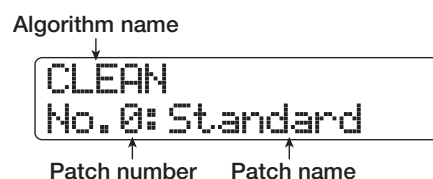
3. When the insert position selection is completed, press the [EXIT] key to return to the main screen.

Selecting the patch for the insert effect

This section explains how to select the patch for the insert effect.

1. On the main screen, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) so that the pad lights up.

The following screen appears on the display. At this screen, you can select the algorithm and patch for the insert effect.



2. Use the cursor up/down keys to select the algorithm to use.

The second line of the display shows the patch that is currently selected in that algorithm.

NOTE

<< **HD16** only >> When you switch to 8x COMP EQ from another algorithm, the insert position becomes Input 1 – 8, Track 1 – 8, or Track 9 – 16 (depending on the immediately preceding setting). Make sure once more that the desired insert position is selected.

3. 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.

4. If you want to temporarily turn the insert effect off, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) so that the pad goes out.

The insert effect setting changes to “Off”. The first line of the display shows “Off” and the second line shows “[ENTER]→TUNER”.

To turn the insert effect on again, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) once more.

HINT

If you press the [ENTER] key in the bypass condition, the tuner function will be called up (→ p. 167).

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

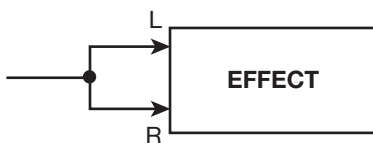
The flow of the signal that passes through the insert effect will change as shown below, depending on the insert location and the destination of the signal after passing the effect.

● **Signal flow with insert effect at input**

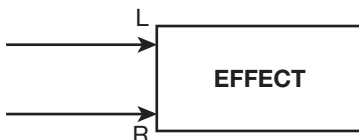
- Using mono input insert effect on mono input/mono track



- 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

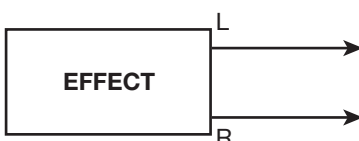


- Using mono input insert effect on stereo input/stereo track

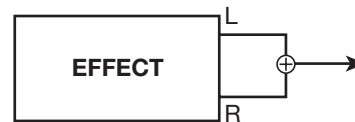


● **Signal flow with insert effect at output**

- Sending insert effect output to stereo track or [MASTER] fader



- Sending insert effect output to mono track



HINT

<< **HD16** only >> With the 8x COMP EQ algorithm, the 8 channel signals are processed separately by the high-pass filter/compressor and EQ effects. The 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 13 effect types such as CHORUS, ENSEMBLE, FLANGER, etc. (When you change the effect type, the effect parameter arrangement also changes.)

Effect module	MODULATION/DELAY		
Effect type	CHORUS	ENSEMBLE	FLANGER
Effect parameters	Depth	Depth	Depth
	Rate	Rate	Rate
	Tone	Tone	Resonance
	Mix	Mix	Manual
			...

This section explains how to edit the effect type and effect parameters for the currently selected patch.

NOTE

The content of the algorithm itself, that is effect module combination and placement, cannot be edited.

1. On the main screen, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) so that the pad lights up.

The insert effect algorithm and patch select screen appears.



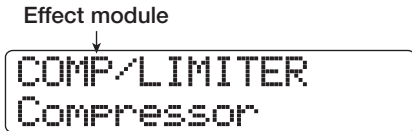
2. Use the cursor up/down keys to select the algorithm with the patch to edit, and then turn the dial to select the patch.

HINT

If the indication “Empty” appears instead of the patch name, all modules for the patch are set to Off. By editing such a patch, you can create your own settings from scratch.

3. Press the [EDIT] key.

The first line of the display shows the currently selected effect module. This means that the patch can now be edited.



4. Use the cursor left/right keys to select the effect module to edit.



The indication shown on the first line for the various effect modules changes as shown in the table below.

The table applies to the case when the effect module is On. When the effect module is Off, the indication “Off” appears on the second line of the display.

HINT

- To edit the ZNR/VOLUME PEDAL 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.

Algorithm	Module indication					
CLEAN DISTORTION ACO/BASS SIM BASS	COMP/LIMITER	→ EFX	→ PREAMP	→ 3BAND EQ	→ MOD/DELAY	→ TOTAL
	COMP/LIMITER	EFX	PREAMP	3BAND EQ	MODULATION/DELAY	ZNR, VOLUME PEDAL, PATCH LEVEL
MIC	COMP/LIMITER	→ EFX	→ MIC PRE	→ 3BAND EQ	→ MOD/DELAY	→ TOTAL
	COMP/LIMITER	EFX	MICPRE + DE-ESSER	3BAND EQ	MODULATION/DELAY	ZNR, VOLUME PEDAL, PATCH LEVEL
DUAL MIC	COMP/LIMITER L	→	MIC PRE L	→ 3BAND EQ L	→ DELAY L	→ TOTAL
	COMP/LIMITER		MICPRE	3BAND EQ	DELAY	ZNR, VOLUME PEDAL, PATCH LEVEL
LINE	COMP/LIMITER	→ ISOLATOR	→	→ 3BAND EQ	→ MOD/DELAY	→ TOTAL
	COMP/LIMITER	ISOLATOR		3BAND EQ	MODULATION/DELAY	ZNR, VOLUME PEDAL, PATCH LEVEL
8 x COMP EQ	HPF1	→ HPF2	→ ...	→ ...	→ HPF8	→ TOTAL
						VOLUME PEDAL, PATCH LEVEL
MASTERING	COMP/Lo-Fi	→ NORMALIZER	→	→ 3BAND EQ	→ DIMENSION/RESO	→ TOTAL
	MULTIBAND COMP/Lo-Fi	NORMALIZER		3BAND EQ	DIMENSION/RESONANCE	ZNR, VOLUME PEDAL, PATCH LEVEL

- << HD16 only >> In the 8x COMP EQ algorithm, there is one high-pass filter/compressor/EQ per channel. You can control the respective effect on/off settings separately. The number of the channel that is currently being set appears on the first line of the display.

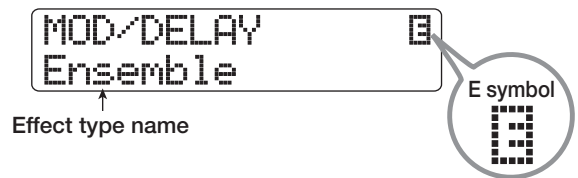
NOTE

<< HD16 only >> The 8xCOMP EQ algorithm does not include the ZNR module.

5. 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.

If the contents of a patch have been changed, the [E] “Edited” symbol will appear on the first line of the display.



6. Use the cursor up/down keys to select the effect parameter that you want to edit.

The displayed parameter depends on the effect module and effect type.

The following illustration shows an example of what appears on the display when you have selected the “Depth” parameter of the “Ensemble” effect.

Effect parameter Setting value

HINT

To reselect the effect type, repeatedly press the cursor up key to bring up the effect type name, and then turn the dial.

7. 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.

8. 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 [ENTER] key once more returns the module to the active condition.

HINT

<< **HD16** only >> When editing a patch of the 8xCOMP EQ algorithm, it is not possible to turn the effects for all channels on and off together. However, when the setting for the respective effect is shown, you can turn it off for the current channel by pressing the [ENTER] key.

NOTE

The modules included in TOTAL cannot be turned off.

9. Repeat steps 4 – 8 as necessary to edit other modules.

10. To adjust the patch level (the final volume of the patch), use the cursor left/right keys to bring up the indication “TOTAL” on the first line and the indication “Patch Level” on the second line of the display, and then turn the dial.

The patch level can be adjusted in the range from 1 to 30.

11. 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. If you want 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 patch select screen or edit screen, press the [FUNCTION] key once (to store the patch) or twice (to swap the patch).

Patch number

2. Verify that the indication “STORE PATCH” or “SWAP PATCH” is shown on the first line of the display, and press the [ENTER] key.
3. Turn the dial to bring up the patch to store or swap on the second line of the display, and press the [ENTER] key.

The indication “Store?” or “Swap?” appears on the second line of the display.

4. To carry out the store/swap operation, press the [ENTER] key.

When the store/swap operation is completed, the insert effect patch select 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

- Patches that you have stored are saved on the hard disk as a part of the project.
- Patch data included in another project can be loaded into the current project (→ p. 136).

Editing the name of an insert effect patch

This section explains how to edit the name of the currently selected patch.

1. At the insert effect patch select screen, select the patch whose name you want to change.

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” on the first line and the indication “Patch Level” on the second line of the display.

```
TOTAL
Patch Level=25
```

4. Repeatedly press the cursor down key to bring up the indication “Patch Name” on the first line of the display.

The name of the selected patch can now be edited. A cursor (flashing square) indicates the character that can be changed.

```
Patch Name
█tandard      -A-
```

5. Use the cursor left/right keys to move the cursor to the character you want to change, and turn the dial or use the pads/keys of the pad section to select a character.

For details on entering characters, see page 37.

6. To confirm the new name, do the store operation. (For details on store operation, see page 132.)

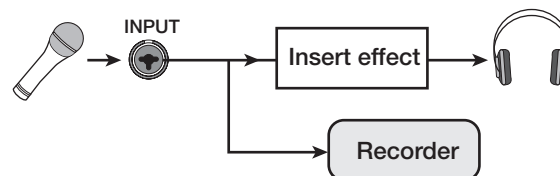
The patch is stored (overwritten) with the new name, and the insert effect patch select screen appears again.

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 will 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 [PROJECT/UTILITY] key.**

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

```
REC UTILITY 1/10
>PROJECT
```

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

The current setting value is shown.

```
Rec Signal
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 monitor signal appearing at the MASTER OUT 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.

HINT

The setting is stored for each project. If required, change the setting back to “Wet” before you begin recording other parts.

Using the send/return effect

This section explains how to select and edit patches for the send/return effect (reverb, chorus/delay).

About the send/return effect patches

The “reverb” and “chorus/delay” parts of the send/return effect are separate and can be used independently.

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 for which you want to select a patch (reverb or chorus/delay), 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. On the main screen, hold down the [SHIFT] key and press pad 5 (CHORUS/DELAY) or pad 6 (REVERB) so that the pad lights up.

The patch select screen for the send/return effect appears. For example, if you have pressed pad 6 (REVERB), the following indication appears.

```
SEND REVERB
No. 0: TightHal
```

↑ ↑
Patch number Patch name

2. Turn the dial to select the patch.

As you turn the dial, new patches will be called up immediately.

3. Repeatedly press the [SELECT] key to select DLY SEND (chorus/delay send level) or REV

SEND (reverb send level) as track parameter to adjust.

4. Turn the respective parameter knob to adjust the parameter.

You can press the PLAY [▶] key to play back the song, and listen to the result of the selected patch.

HINT

- The send level is one of the track parameters. For information on how to adjust track parameters, see page 79.
- You can also use the cursor up/down keys and the status keys to select a track parameter/track, and then turn the dial to adjust the send level (→ p. 79).
- To switch between the drum/bass track, use the [RHYTHM] status key.

5. Use the same procedure to adjust the track-specific send level for the other send/return effect.

6. If you want to temporarily turn the send/return effect off, hold down the [SHIFT] key and press pad 5 (CHORUS/DELAY) or pad 6 (REVERB) so that the pad goes out.

The send/return effect setting for that pad changes to “Off”. The second line of the display shows “Off”.

To return the setting to “On”, press the same pad once more so that it lights up again.

7. 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. On the main screen, hold down the [SHIFT] key and press pad 5 (CHORUS/DELAY) or pad 6 (REVERB) so that the pad lights up.

The patch select screen for the send/return effect appears.

```
SEND CHO/DLY
No. 0: Vocal
```

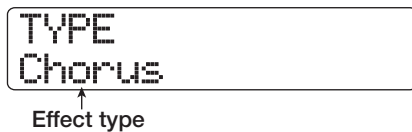
2. Turn the dial to select the patch.

HINT

If the indication “Empty” appears instead of the patch name, all modules for the patch are set to Off. By editing such a patch, you can create your own settings from scratch.

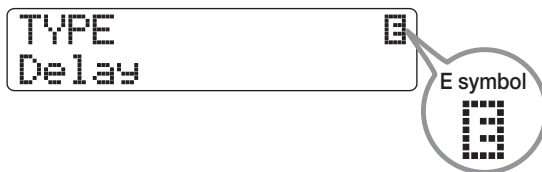
3. Press the [EDIT] key.

The second line of the display shows the currently selected effect type.

**4. Turn the dial to select the effect type.**

When the effect type is changed, the effect parameters will also change accordingly.

If the contents of a patch have been changed, the [E] “Edited” symbol will appear on the first line of the display.

**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 screen of step 3, and then turn the dial.

6. Turn the dial to change the setting.

For details on the effect types that can be selected for the send/return effect, 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. If you want 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 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 patch select screen or edit screen, press the [FUNCTION] key once (to store the patch) or twice (to swap the patch).**2. Verify that the indication “STORE PATCH” or “SWAP PATCH” is shown on the first line of the display, and press the [ENTER] key.****3. Turn the dial to bring up the patch to store or swap on the second line of the display, and press the [ENTER] key.**

The indication “Store?” or “Swap?” appears on the second line of the display.

4. To carry out the store/swap operation, press the [ENTER] key.

When the store/swap operation is completed, the send/return effect patch select 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

- Patches that you have stored are saved on the hard disk as a part of the project.
- Patch data included in another project can be loaded into the current project (→ p. 136).

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. At the send/return effect patch select screen, select the patch whose name you want to change.

```
SEND REVERB
No. 0: TightHal
```

2. Press the [EDIT] key.

The selected patch can now be edited.

3. Repeatedly press the cursor down key to bring up the indication "Patch Name" on the first line of the display.

The name of the selected patch can now be edited. A cursor (flashing square) indicates the character that can be changed.

```
Patch Name
TightHal -A-
```

4. Use the cursor left/right keys to move the cursor to the character you want to change, and turn the dial or use the pads/keys of the pad section to select a character.

For details on entering characters, see page 37.

5. To confirm the new name, do the store operation. (For details on store operation, see page 135.)

The patch is stored (overwritten) with 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.

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. Select the patch to use as import target.

● Importing a specific insert effect patch

From the main screen, hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) to bring up the insert effect patch select screen. Then use the cursor up/down keys and the dial to select the algorithm and patch to use as import target. The import source can be selected from the patches of the same algorithm.

● Importing a specific send/return effect patch

From the main screen, hold down the [SHIFT] key and press pad 5 (CHORUS/DELAY) or pad 6 (REVERB) to bring up the send/return effect patch select screen. Then use the dial to select the patch to use as import target.

2. At the insert effect select screen or send/return effect select screen, press the [PROJECT/UTILITY] key.

The display changes as follows.

```
EFFECT UTILITY
>IMPORT
```

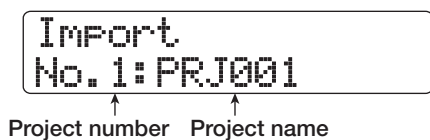
3. Press the [ENTER] key.

A screen for selecting "ALL" (import all patches) or "PATCH" (import single patch) such as shown below appears.

```
IMPORT 1/2
>ALL
```

4. Use the cursor left/right keys to select "ALL" or "PATCH", and press the [ENTER] key.

In this condition, you can select the source project.



5. 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 3.

● **When “ALL” was selected**

Verify that the indication “Import?” is shown on the display and proceed to step 6.

● **When “PATCH” was selected**

The import source patch appears on the display. When you turn the dial to select the patch and press the [ENTER] key, the import target patch selected in step 1 is shown. If necessary, turn the dial to select the number of the patch to use as import target, and press the [ENTER] key. The indication “Import?” appears on the display.

6. 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 were imported, the insert effect or send/return effect select screen appears again. When a single patch was imported, the display of step 4 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 HD8/HD16 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 HD8/HD16 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 HD8/HD16 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 HD8/HD16. 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. 53).
- 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 HD8/HD16 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 HD8/HD16 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 144.

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. 53).

3. From the main screen, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

```
CD-R/RW      1/2
>AUDIO CD
```

4. Verify that "AUDIO CD" is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
AUDIO CD      1/5
>BURN CD
```

5. Verify that "BURN CD" is shown on the second line of the display, and press the [ENTER] key.

The indication "Time" appears on the second line of the display 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      03:27
```

↑
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 Select
VTake1:Master 1
```

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.

NOTE

Unrecorded V-takes of the master track cannot be selected.

7. Press the [ENTER] key.

The display indication changes as follows.

```
CD Track1
Burn?
```

The indication "CD Trackxx" is shown on the first line of the display (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.

When writing is complete, the display shows "Complete!".

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 HD8/HD16, refer to page 143.)

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. 165).

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, hold down the [SHIFT] key and press pad 1 (CD-R/RW).**

The menu for various CD-R/RW functions appears.

- 4. Verify that “AUDIO CD” is shown on the second line of the display, and press the [ENTER] key.**

The display indication changes as follows.

```
AUDIO CD      1/5
>BURN CD
```

- 5. Use the cursor left/right keys to bring up the indication “ALBUM” on the second line of the display, and press the [ENTER] key.**

In this condition, you can select the write method.

```
Album
Burn Type: DAO
```

- 6. Turn the dial to select “DAO” (disc-at-once) or “TAO” (track-at-once), and press the [ENTER] key.**

The display indication changes as follows.

```
Album
List: New
```

Here you can select whether to create a new list for the album or use a list that has previously been created.

The available selections are defined as follows.

- **New**

Create a new album list, with no registered projects.

- **Old**

Use an album list that was compiled earlier when creating an audio CD by album.

- 7. Turn the dial to select “New” and press the [ENTER] key.**

The display for registering projects for the album appears.

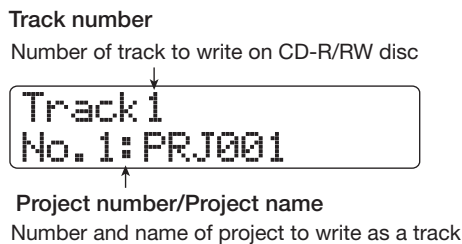
```
Track1
End of Album
```

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.

- 8. 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.



Pressing the PLAY [▶] key in this condition will play the master track of the currently displayed project.

HINT

When you press the cursor down key, the duration of the V-take selected for the master track of the current project is shown in minutes/seconds/milliseconds. Pressing the cursor up key returns to the original indication.

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.

9. 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.



10. Turn the dial to select the project to be used as track 2 of the album.

11. 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.

● 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 [FUNCTION]

key once to bring up the indication “INSERT TRACK” on the first line of the display. The second line shows the name of the project to be inserted. In this condition, use the dial to select another project, and press the [ENTER] key. The indication “Insert?” appears on the second line of the display. To carry out the process, press the [ENTER] key.

● To delete a project from an album

Use the cursor left/right keys to select the track number you want to delete. Then press the [FUNCTION] key twice. The indication “DELETE TRACK” appears on the first line of the display, and the name of the project to be deleted from the album is shown on the second line.

When you press the [ENTER] key in this condition, the indication “Delete?” appears on the second line of the display. To delete the project from the album, press the [ENTER] key.

● To delete all projects from an album

On the album screen, press the [FUNCTION] key three times. The indication “DELETE TRACK” appears on the first line of the display, and “All” is shown on the second line.

When you press the [ENTER] key in this condition, the indication “Delete?” appears on the second line of the display. To delete all projects from the album, 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 album screen.

12. When you have stored all desired projects in the album, press the [ENTER] key twice.

The display indication changes as follows.

**HINT**

If you press the [ENTER] key once, the indication “xxTracks” (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.

13. 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 the write process is completed, the disc is ejected automatically, and the message “Next?” appears on the display. 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.

14. 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 – 7 of “Creating an audio CD by album”, select the disc-at-once (DAO) write method, and bring up the album screen.



Track 1
End of Album

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 on the second line of 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.

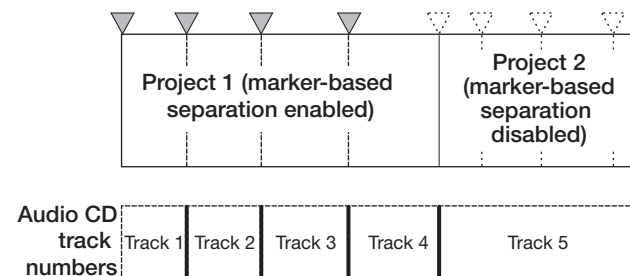
If the mark function is enabled for the project registered as track 1 of the audio CD, the following indication appears.



Track 1
No. 1: PRJ001

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, if 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 Tracks” appears, and marker-based separation cannot be enabled.

Including a playlist in an album

The HD8/HD16 lets you register the master tracks of multiple projects in a list (playlist) for continuous playback in a sequence (→ p. 165). 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 – 7 of “Creating an audio CD by album”, and bring up the album screen on the display.

```
Track 1
End of Album
```

2. Press the [PROJECT/UTILITY] key in the control section.

The display indication changes as follows. In this condition, you can select the playlist (1 – 10) to include in the album.

```
Import Playlist
List1
```

↑
Playlist number

3. Turn the dial to select the playlist, and press the [ENTER] key.

The indication “Import?” appears on the second line of the display.

```
List1
Import?
```

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 into the integrated CD-R/RW drive.
2. From the main screen, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

3. Verify that “AUDIO CD” is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
AUDIO CD      1/5
>BURN CD
```

4. Use the cursor left/right keys to bring up the indication “PLAYER” on the second line of the display, 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 current position (minutes/seconds) for the inserted audio CD. If a non-finalized CD-R/RW disc is inserted, a “*” symbol is shown on the first line of the display.

Finalize status

When a “*” symbol is shown here, a non-finalized CD-R/RW disc is inserted.

```
Player *
Track 1      00:00
```

↑
Track number

The number of the currently selected track on the audio CD is shown.

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. 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.

7. 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.

8. 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 integrated CD-R/RW drive.

2. From the main screen, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

3. Verify that “AUDIO CD” is shown on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
AUDIO CD      1/5
>BURN CD
```

4. Use the cursor left/right keys to bring up the indication “FINALIZE” on the second line of the display, and press the [ENTER] key.

The first line of the display indicates the total number of tracks on the CD-R/RW disc. The second line indicates the total playing time of all tracks on the disc (including pauses) in minutes and seconds.

```
Number of tracks
↓
12Tracks
Total          58:12
↑
Playing time
```

5. Press the [ENTER] key.

The indication “Finalize” appears on the second line of 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 “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 integrated CD-R/RW drive.

2. From the main screen, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

3. Verify that “AUDIO CD” is shown on the second line of the display, and press the [ENTER] key.

HINT

A CD-RW disc can also be erased from the backup menu (→ p. 146). Bring up the indication “BACK UP” on the first line of the display and the indication “CD-RW ERASE” on the second line. Then press the [ENTER] key. The following steps for erasing are the same.

4. Use the cursor left/right keys to bring up the indication “CD-RW ERASE” on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
CD-RW Erase
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 second line of the display now shows the indication “Erase?”.

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 “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 HD8/HD16 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. 53).

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 integrated CD-R/RW drive.

2. Perform steps 2 – 5 of “Playing an audio CD” (→ p. 143) 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.

```
Import to
Track 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, stereo tracks, or the master track (MASTER) can be selected.

5. Press the [ENTER] key.

The recording destination is selected, and the indication “Import?” appears on the display. When the track already contains data, the indication “Overwrite?” 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 HD8/HD16 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 integrated 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, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

3. Use the cursor left/right keys to bring up the indication "BACK UP" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
BACK UP      1/4
>SAVE
```

4. Verify that "SAVE" is shown on the second line of 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.

```
Save
No. 1: PRJ001
```

Project number Project name

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).

```
Project Size
175MB
```

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 "PRJxxx" (where xxx is the project number). This name can be edited.

```
Folder Name
PRJ001
```

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.

For details on entering characters, see page 37. (Note that available characters are limited.)

8. Press the [ENTER] key.

The indication "Save?" appears on the second line of the display.

9. To execute the backup, press the [ENTER] key. To cancel, press the [EXIT] key instead.

When the backup is finished, the display shows "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.

```
Insert
Disc2
```

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

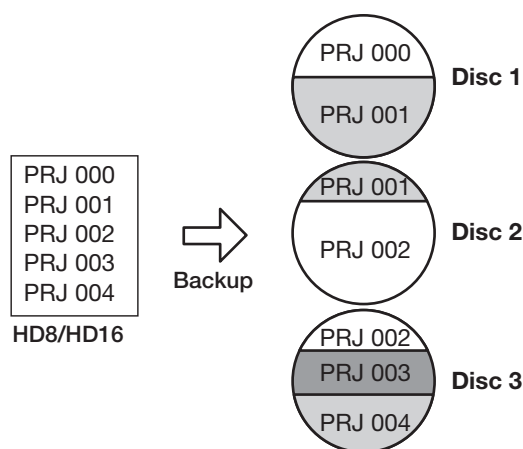
When the disc has been ejected, it is possible to abort the backup operation. To do this, press the [EXIT] key while the "Insert" indication is shown. The indication will change to "Cancel?". Press the [ENTER] key to terminate the process.

- 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 projects were saved in one operation, restoring will be on a single-project basis.

- 1.** Insert a CD-R/RW disc into the integrated 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, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

- 3.** Use the cursor left/right keys to bring up the indication "BACK UP" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```

BACK UP      1/4
>SAVE
  
```

- 4.** Use the cursor left/right keys to bring up the indication "ALL SAVE" on the second line of the display, and press the [ENTER] key.

The display shows the space required for the backup of all projects in MB (megabytes).

```

Total
1137MB
  
```

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

The display indication changes as follows.

```

All Project
Save?
  
```

- 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
Disc1
Burning      No.4
                ↑
            Project currently being saved
  
```

When the backup is finished, the display indication changes to "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.

```

Insert
Disc2      No.5
  
```

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 "Insert" indication is shown. The indication will change to "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 HD8/HD16, 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, hold down the [SHIFT] key and press pad 1 (CD-R/RW).

The menu for various CD-R/RW functions appears.

2. Use the cursor left/right keys to bring up the indication "BACK UP" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```

BACK UP      1/4
>SAVE
  
```

3. Use the cursor left/right keys to bring up the indication "LOAD" on the second line of the display, and press the [ENTER] key.

The tray of the CD-R/RW drive opens and the display indication changes as follows.

```

Insert
Disc
  
```

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 the project was backed up as a single project

Insert disc number 1.

● If the 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
PRJ001→No. 7
  
```

Project name Project number to be assigned

HINT

When being restored to the HD8/HD16, 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?" appears on the second line of the display.

- 8. To execute the load operation, press the [ENTER] key. To cancel, press the [EXIT] key instead.**

When the operation is finished, the display indication changes to “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.



```
Insert
Next Disc
```

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 backup operation. To do this, press the [EXIT] key while the “Insert” indication is shown. The indication will change to “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 HD8/HD16, 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 all audio tracks and the master track
- Numbers of selected V-takes for each track
- Mixer 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
- Selected kit file
- Selected bass program
- Audio data in phrase pool
- Playlist contents
- Other required files

NOTE

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.

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

The display indication changes as follows.

```
REC UTILITY 1/10  
>PROJECT
```

2. Verify that “PROJECT” is being shown on the second line of the display, and press the [ENTER] key.

If the indication is not shown, use the cursor left/right keys to bring up the indication “PROJECT” and then press the [ENTER] key.

The project menu appears, allowing you to select the desired project operation.

```
PROJECT 1/8  
>SELECT
```

3. Use the cursor left/right keys to select one of the following operations.

● SELECT

Load a previously saved project from the internal hard disk.

● NEW

Create a new project.

● SIZE

View the size of the currently loaded project.

● COPY

Duplicate a specified project on the hard disk.

● ERASE

Erase a specified project from the hard disk.

● NAME

Edit the name of the currently loaded project.

● PROTECT

Switch the protection status of the currently loaded project on or off.

● SEQUENCE PLAY

Continuously play the master tracks from several projects saved on the hard disk.

4. 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.

HINT

For information on the sequence play feature, see the section “Other Functions” on page 165.

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

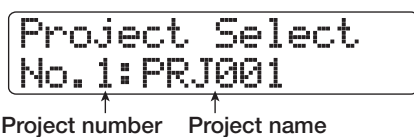
Depending on which selection was made in step 2, the main screen may return automatically.

Loading a project

You can select a project that was saved on the hard disk, and load it.

1. Refer to steps 1 – 3 of “Basic procedure” to bring up the indication “SELECT” on the second line of 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

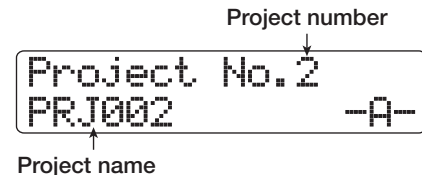
When power to the HD8/HD16 is turned on, the project that was last worked on will be loaded automatically.

Creating a new project

This operation creates a new project.

1. Refer to steps 1 – 3 of “Basic procedure” to bring up the indication “NEW” on the second line of the display. Then press the [ENTER] key.

The name and number of the project to create are 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 project name is shown with the first character flashing. This indicates that you can change the project name.

HINT

If the recorder is stopped and the main screen is shown, you can call up the above screen simply by pressing the [NEW PROJECT] key.

2. If necessary, edit the project name.

For details on entering characters, see page 37. The project name can also be edited later (→ p. 153).

3. Press the [ENTER] key to create the project.

After the new project has been created, it is loaded automatically, and 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.

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 – 3 of “Basic procedure” to bring up the indication “SIZE” on the second line of the display. Then press the [ENTER] key.

```
Remain
27920MB
```

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 (h/m/s units)**

The approximate recordable time calculated for a single track is shown in hours (h), minutes (m), and seconds (s).

- **Project Size (MB units)**

This shows the size of the currently loaded project in MB (megabyte) units.

- **Project Size (h/m/s units)**

This shows the size of the currently loaded project calculated for a single track, in hours (h), minutes (m), and seconds (s).

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 – 3 of “Basic procedure” to bring up the indication “COPY” on the second line of the display. Then press the [ENTER] key.

The name and number of the project to copy are shown on the display.

```
Project Copy
No. 3: PRJ003
```

2. Turn the dial to select the copy source project, and press the [ENTER] key.

The display changes as follows. At this screen, you can specify the number for the copy destination project.

```
Project Copy
Copy to      No. 4
```

3. Turn the dial to select the copy destination project number, and press the [ENTER] key.

The indication “Copy?” appears on the second line of the display.

4. Press the [ENTER] key to copy the project.

When copying is completed, the unit automatically 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.

Erasing a project

This operation erases the specified project from the hard disk.

1. Refer to steps 1 – 3 of “Basic procedure” to bring up the indication “ERASE” on the second line of the display. Then press the [ENTER] key.

The name and number of the project to erase are shown on the display.

```
Project Erase
No. 4: PRJ004
```

2. Turn the dial to select the project, and press the [ENTER] key.

The indication “Erase?” appears on the second line of 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

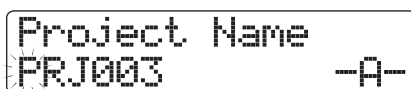
- Once a project has been erased, it cannot be recovered. Use this operation with care.
- A project for which protect is On cannot be erased. Set protect to Off and then repeat the procedure.
- If you erase the project that is currently loaded, the lowest-numbered project will automatically be loaded 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 – 3 of “Basic procedure” to bring up the indication “NAME” on the second line of the display. Then press the [ENTER] key.

The current project name is shown on the display.



2. To edit the name, use the cursor left/right keys to move the cursor (flashing part) to the character you want to change, and turn the dial or use the pads/keys of the pad section to select a character.

For details on the entry procedure and available characters, see page 37. 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 not be possible.

- 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/editing a drum kit

1. Refer to steps 1 – 3 of “Basic procedure” to bring up the indication “PROTECT” on the second line of the display. Then press the [ENTER] key.

The screen for setting the protect status to On/Off is shown on the display.



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

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.
- A change in the protect On/Off setting becomes active immediately. To return to the main screen after making the setting, press the [EXIT] key several times.

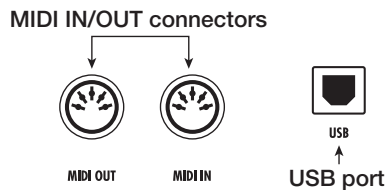
Reference [MIDI]

This section explains the MIDI-related settings and functions of the HD8/HD16.

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 HD8/HD16 supports the use of external MIDI devices and the transfer of MIDI messages via the MIDI IN/OUT connectors and via the USB port.



● 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 HD8/HD16. 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.

● USB port

Like the MIDI IN/OUT connectors, this port can be used to send and receive MIDI messages. This lets you play the rhythm section (drum kits/bass programs) from a sequencer on a computer, or send synchronization information from the HD8/HD16 to the sequencer.

HINT

Sending and receiving MIDI messages via USB is possible only under Windows (XP and later), and MacOSX (10.2 and later).

The function is available without having to install driver software.

What you can do using MIDI

On the HD8/HD16, 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 (or the USB port) of the HD8/HD16, 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 HD8/HD16 to input play information.

You can send Note On/Off messages from the HD8/HD16 via the MIDI OUT connector (or the USB port) 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 (or the USB port) of the HD8/HD16 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 control change information

Via the MIDI IN connector (or the USB port), the HD8/HD16 can receive Control Change messages from an external MIDI device to control the level of the drum/bass track. Via the MIDI OUT connector (or the USB port), the HD8/HD16 can send out Control Change messages according to drum/bass level information contained in a rhythm song.

● SMF playback

The HD8/HD16 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.

Basic procedure

The procedure is the same for most settings. The basic steps are as follows.

1. From the main screen, hold down the [SHIFT] key in the pad section and press pad 7 (PATTERN) or pad 8 (SONG), so that the pad is lit.

A screen for selecting the rhythm pattern or rhythm song appears.

2. Press the [PROJECT/UTILITY] key.

The rhythm utility menu for making various rhythm section settings appears.

```
RHY UTILITY 1/9
>KIT FILE
```

3. Use the cursor left/right keys to bring up the indication "MIDI" on the second line of the display. Then press the [ENTER] key.

The display indication changes as follows.

```
MIDI 1/6
>DRUM CHANNEL
```

In this condition, you can select MIDI-related setting items.

4. Use the cursor left/right keys to select one of the following items.

- **DRUM CHANNEL**

Set the MIDI channel for the drum kit.

- **BASS CHANNEL**

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.

- **MTC**

Turn MIDI Time Code transmission on/off.

HINT

For information on the SMF playback procedure, see page 158.

NOTE

- 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 "DRUM CHANNEL" or "BASS CHANNEL" on the second line of the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

- **1 – 16ch**

Select one of MIDI channels 1 – 16.

Default: Drum Channel = 10ch

Bass Channel = 9ch

```
Drum Channel
10ch
```

- **Off**

Channel messages (Note On/Off, 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 HD8/HD16.

Also, when you play back a rhythm pattern or rhythm song on the HD8/HD16, the drum/bass track playing information will

be transmitted as Note On/Off messages.

HINT

If you set the drum kit and bass program to the same MIDI channel, playing information for both will be handled together and appear at the MIDI OUT connector (or USB port).

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 “CLOCK” on the second line of the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

● On (Transmission on)

Timing Clock information will be transmitted when the HD8/HD16 is running (default setting).

Clock
On

● 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 HD8/HD16 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 track is muted ([RHYTHM] status key is out).

HINT

- When using MIDI Timing Clock messages transmitted from the HD8/HD16 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 HD8/HD16, 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 “SPP” on the second line of the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

● On (Transmission on)

MIDI Song Position Pointer messages will be transmitted when a locate operation is performed on the HD8/HD16 (default setting).

SPP
On

● 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 “COMMAND” on the display and press the [ENTER] key. Then turn the dial to select one of the following settings.

● On (Transmission on)

The appropriate Start/Stop/Continue message will be transmitted when the HD8/HD16 stops or begins running (default setting).

Command
On

● Off (Transmission off)

Start/Stop/Continue messages will not be transmitted.

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 “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 HD8/HD16 is running, MTC messages with the respective frame per second setting are sent out.

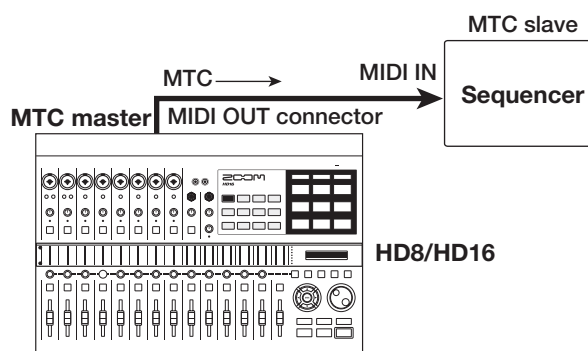
- Off (Transmission off)

MTC messages will not be transmitted.



MTC message output is based on recorder time information. When using MTC to synchronize MIDI devices, the HD8/HD16 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 HD8/HD16 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.

Selecting the port to send/receive MIDI messages

You can select whether MIDI messages are output and received via the MIDI IN/OUT connectors or the USB port. The steps for this operation are different from the basic steps for other MIDI operations.

1. From the main screen, press the [PROJECT/UTILITY] key, and then use the cursor left/right keys to bring up the indication “SYSTEM” on the second line of the display.



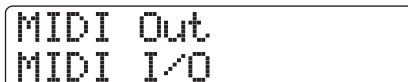
2. Press the [ENTER] key.

The display indication changes as follows.



3. Use the cursor left/right keys to bring up the indication “MIDI OUT” on the second line of the display, and press the [ENTER] key.

The display indication changes as follows. You can now select the MIDI input/output connector.



4. Turn the dial to select one of the following settings.

- MIDI I/O

MIDI messages are output and received via the MIDI IN/OUT connectors (Default setting).

- USB

MIDI messages are output and received via the USB port.

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

Using the SMF player

Using the SMF player function, the HD8/HD16 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.

NOTE

The SMF must have the file extension “.MID”, otherwise it will not be recognized.

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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

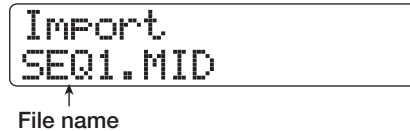
3. Use the cursor left/right keys to bring up the indication “SMF” on the second line of the display, and press the [ENTER] key.

The menu screen for SMF selection and playback appears.



4. Verify that “IMPORT” is shown on the second line of the display, and press the [ENTER] key.

The names of SMFs on the CD-ROM/R/RW disc are shown.



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, and whether the file extension is “.MID”.

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 USB port, 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 whether to play certain channels with the internal sound sources of the HD8/HD16. The SMF output destination is specified using the following two parameters.

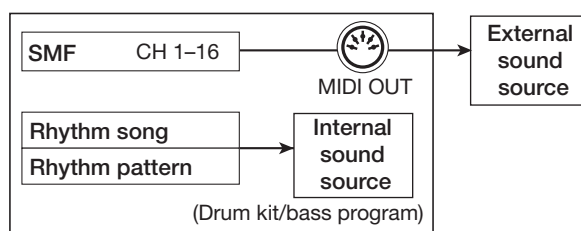
● SMF CHANNEL TO DRUM

Selects which MIDI channel (1 – 16) of the SMF playing information is directed to the internal drum kit of the HD8/HD16. 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 CHANNEL TO BASS

Selects which MIDI channel (1 – 16) of the SMF playing information is directed to the internal bass program of the HD8/HD16. 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.

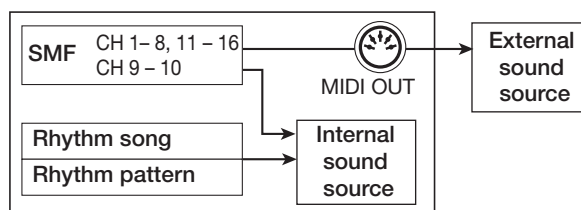
The diagram on the next page shows a setting example for using the HD8/HD16 as an SMF player and using external sound sources. In this example, the SMF playing information is sent only to the MIDI OUT connector.



NOTE

When an SMF is played in the above condition, the rhythm song or rhythm pattern of the HD8/HD16 will be played at the same time. If you do not want to play the drum/bass sound, set the [RHYTHM] status key to OFF or select an empty rhythm song/rhythm pattern.

The next diagram shows a setting example for using the HD8/HD16 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 HD8/HD16 will be sent to the internal drum kit/bass program at the same time. If you want 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 (including Pitch Bend messages for the bass track), these will alter the corresponding parameters of the internal sound sources (volume, pitch).

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

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

2. Use the cursor left/right keys to bring up the indication “SMF” on the second line of 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 “CHANNEL TO DRUM” or “CHANNEL TO BASS” on the display, and

press the [ENTER] key.

If “CHANNEL TO DRUM” was selected, the display indication changes as follows.

Channel To Drum
10ch

4. Turn the dial to select Off or 1 – 16, and then press the [EXIT] key.

HINT

The factory default setting for a project is “10” (MIDI channel 10) for the Channel To Drum parameter and “9” (MIDI channel 9) for the Channel To Bass 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. If you want to use the SMF tempo throughout, you should first select an empty rhythm song.
- If the beat 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 [PROJECT/UTILITY] key.

The indication “REC UTILITY” appears on the first line and the indication “PROJECT” on the second line of the display.

2. Use the cursor left/right keys to bring up the indication “SMF” on the second line of 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 “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 "FILE SELECT" on the display.



SMF 2/5
>FILE SELECT

6. Press the [ENTER] key.

In this condition, you can select an SMF imported into the project for playback.



File Select
SEQ1.MID

↑
File name

HINT

If required, you can delete the selected SMF from the project. To do this, select the SMF to delete and then use the [FUNCTION] key in the function/transport section to bring up the indication "Delete?". Pressing the [ENTER] key will delete the file.

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 [USB]

This section explains the settings and operation steps for using the USB port of the HD8/HD16.

What you can do with the USB port

When the HD8/HD16 is connected to a computer (Windows/Macintosh) via the USB port, the following functions become available.

● Exchanging files with the computer (mass storage mode)

The internal hard disk of the HD8/HD16 is recognized by the computer as an external storage device, allowing easy transfer of audio data and SMF (Standard MIDI Files). Creating backup copies of projects on the computer is also possible.

● Operating DAW software from the HD8/HD16 (control surface mode)

The faders and keys on the HD8/HD16 can be used to operate transport functions or mixing functions of DAW software installed on the computer.

● Send/receive MIDI messages

MIDI messages can also be sent via USB cable.

HINT

- In control surface mode, you can select to use either the USB port or the MIDI IN/OUT connectors. If you select the MIDI IN/OUT connectors for control surface mode, simultaneous use of the mass storage mode is also possible.
- For information on how to send and receive MIDI messages via the USB port, see page 157.

NOTE

While the HD8/HD16 is in mass storage mode or control surface mode, the recorder functions cannot be used.

Supported operating systems

● Windows

Windows XP and later

● Macintosh

Mac OS X 10.2 and later

File transfer to and from a computer

This section describes how to switch the HD8/HD16 to mass storage mode and how to transfer files to and from a computer.

1. Connect the computer and the HD8/HD16 with a USB cable.

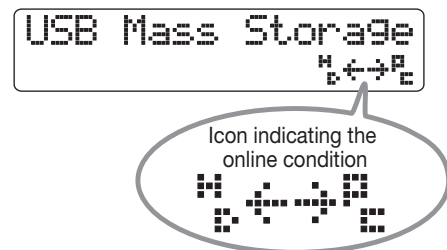
The USB connection can be established while power to the HD8/HD16 and the computer is already on.

2. From the main screen, hold down the [SHIFT] key and press pad 3 (USB) so that the pad is lit.

A message to confirm switching to mass storage mode appears.

3. Press the [ENTER] key.

The HD8/HD16 switches to mass storage mode, and the display indication changes as follows.



When you switch the HD8/HD16 to mass storage mode, the computer will automatically recognize the hard disk built into the HD8/HD16 as an external storage device. When this has happened, the second line of the display of the HD8/HD16 shows a symbol indicating the online condition.

To check whether the online condition is established from the computer, proceed as follows.

● When using Windows

From the “Start” menu, select “My Computer” and verify that the HD8/HD16 hard disk is shown as a local disk.

● When using a Macintosh

Verify that the HD8/HD16 hard disk has been mounted as a local disk on the desktop.

4. Double-click on the HD8/HD16 hard disk shown on the computer.

The content of the HD8/HD16 hard disk is shown. In mass storage mode, the following operations are possible.

● Creating a project backup on the computer

On the HD8/HD16, project data are stored in folders named "PROJxxx" (where xxx is the project number) created under the root directory (top-level folder) of the hard disk. Each project therefore has its own folder. To back up a project, copy the respective folder to the hard disk of the computer, using drag and drop.

● Restoring a project from the computer

To restore a project that was backed up (copied) to the hard disk of the computer, copy the respective folder on the hard disk of the computer to the hard disk of the HD8/HD16. If a folder with the same name exists on the HD8/HD16 hard disk, that folder will be overwritten.

● Exporting audio data from the HD8/HD16 to the computer

To use audio data recorded on the HD8/HD16 on the computer, open the respective project folder "PROJxxx" (where xxx is the project number) under the root directory to display the contents of the next lower level. Audio data are stored as WAV files in a folder named "TAKE" on that level. Open that folder and copy the respective WAV file(s) to the computer.

HINT

- All tracks including the master track are recorded as monaural WAV files. (Stereo tracks are also recorded as two monaural files.)
- The V-takes of the master track can be converted into a stereo WAV file (→ p. 43).

● Importing WAV/AIFF files from the computer as V-takes to the HD8/HD16

In mass storage mode, it is not possible to directly import WAV/AIFF files from the computer as V-takes to the HD8/HD16. However, this can be achieved through the following procedure. Open the project folder "PROJxxx" (where xxx is the project number) under the root directory to display the contents of the next lower level. Copy the WAV/AIFF files to a folder named "IMPORT" on that level. When the copy process is finished, terminate the connection and use the IMPORT command (→ p. 63) to import the files as V-takes.

NOTE

- Only WAV/AIFF audio files in the following formats can be imported as V-takes: sampling frequency 8 – 96 kHz, quantization 8, 16, or 24 bit.
- The file names of audio files must be 8 characters or less, using

only capital letters or numerals or the underscore symbol (_). The files must have the extension ".WAV" (for WAV files) or ".AIF" (for AIFF files).

HINT

It is also possible to copy phrase loops, drum kit samples, and SMF (standard MIDI files) in their respective folders. For information on the folder structure of the HD8/HD16, see page 208.

5. To terminate the connection, cancel the online condition at the computer.

● When using Windows

Click the remove hardware icon in the task tray and select the device name for the HD8/HD16 hard disk. When the connection has been terminated, a message stating that the hardware can be safely removed appears.

● When using a Macintosh

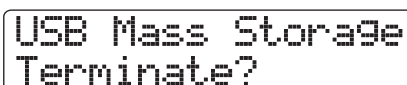
Drag-and-drop the icon for the HD8/HD16 hard disk volume mounted on the desktop into the trash.

NOTE

To terminate the connection, be sure to perform the above steps at the computer first. If you simply disconnect the USB cable or cancel the mass storage mode at the HD8/HD16, files may be corrupted.

6. To cancel the mass storage mode, hold down the [SHIFT] key and press pad 3 (USB).

The display indication changes as follows.



USB Mass Storage
Terminate?

7. Press the [ENTER] key.

The main screen returns again, and normal recorder operation resumes.

Operating DAW Software From the HD8/HD16

This section explains the basic settings for control surface mode which allows using the controls of the HD8/HD16 to remotely operate a DAW software application installed on the computer.

Selecting the connector to use for control surface mode

You can select to use either the USB port or the MIDI IN/OUT connectors for control surface mode. Connect the HD8/HD16 to the computer either with a USB cable or via the MIDI IN and OUT connectors. Then make the selection as follows.

1. From the main screen, press the [PROJECT/UTILITY] key and then use the cursor left/right keys to bring up the indication "SYSTEM" on the second line of the display.

```
REC UTILITY 4/10
>SYSTEM
```

2. Press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM 1/7
>FOOT SWITCH
```

3. Use the cursor left/right keys to bring up the indication "CONTROL SURFACE" on the second line of the display, and press the [ENTER] key.

The currently selected connector is shown.

```
Control Surface
USB
```

4. Turn the dial to change the selection if necessary.

The following settings are available.

- **USB**
The remote control signals are sent and received via the USB port.
- **MIDI I/O**
The remote control signals are sent and received via the MIDI IN/OUT connectors.

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

Switching to control surface mode

To switch the HD8/HD16 to control surface mode, proceed as follows.

1. Select the connector for sending/receiving the control surface mode signals, as described in the preceding section.
2. Connect the HD8/HD16 to the computer, using the connector selected in step 1.

HINT

When using the MIDI IN/OUT connectors, connect the MIDI IN/OUT connectors of the HD8/HD16 to the MIDI OUT/IN connectors on the MIDI interface of the computer.

3. From the main screen, hold down the [SHIFT] key and press pad 2 (CONTROL SURFACE).

A message to confirm switching to control surface mode appears.

4. Press the [ENTER] key.

The HD8/HD16 switches to control surface mode, and the display indication changes as follows.

```
Stat: Mute Bank: 1
PAN
```

For details on how to use the control surface mode, refer to the separate "Control Surface Operation Manual" supplied with the HD8/HD16.

5. To cancel control surface mode, hold down the [SHIFT] key and press pad 2 (CONTROL SURFACE).

The display indication changes as follows.

```
Control Surface
Terminate?
```

6. Press the [ENTER] key.

The main screen returns again, and normal recorder operation resumes.

Using Mass Storage Mode and Control Surface Mode Simultaneously

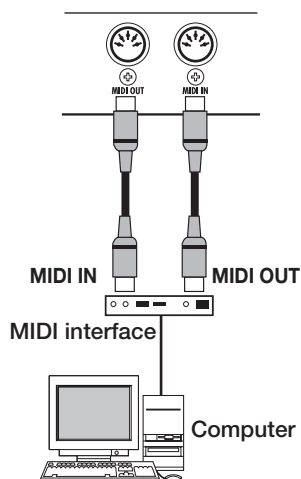
If the MIDI IN/OUT connectors are selected for carrying the control surface mode signals, you can use mass storage mode and control surface mode simultaneously. This is convenient to access the HD8/HD16 hard disk while operating DAW software.

- 1. Connect the HD8/HD16 and the computer with a USB cable.**
- 2. Select the MIDI IN/OUT connectors for use with control surface mode, as described in the section “Selecting the connector to use for control surface mode” (→ p.163).**

NOTE

If the USB port is selected for use with control surface mode, the two modes cannot be used simultaneously. In this case, activating one mode will forcibly terminate the other mode.

- 3. Connect the MIDI IN/OUT connectors of the HD8/HD16 to the MIDI OUT/IN connectors on the MIDI interface of the computer.**



- 4. Switch the HD8/HD16 to mass storage mode or control surface mode.**

To use both modes simultaneously, you must first switch the HD8/HD16 to one of the modes.

- 5. Depending on the current mode, proceed as follows.**

- **If mass storage mode is selected**

Hold down the [SHIFT] key and press pad 2 (CONTROL

SURFACE). At the screen that appears, press the [ENTER] key so that the pad is lit.

- **If control surface mode is selected**

Hold down the [SHIFT] key and press pad 3 (USB). At the screen that appears, press the [ENTER] key so that the pad is lit.

When both modes are used simultaneously, the display will give priority to the control surface mode. However, the icon indicating that the hard disk is in the online state will be shown on the second line of the display.



Icon indicating the online condition

- 5. To cancel one of the modes, proceed as follows.**

- **To cancel mass storage mode**

First cancel the online condition at the computer. Then hold down the [SHIFT] key and press pad 3 (USB). At the screen that appears, press the [ENTER] key so that the pad goes out.

The icon indicating the online condition disappears and the HD8/HD16 operates in control surface mode only.

- **To cancel control surface mode**

Hold down the [SHIFT] key and press pad 2 (CONTROL SURFACE). At the screen that appears, press the [ENTER] key so that the pad goes out.

The HD8/HD16 operates in mass storage mode only.

- 6. To return to normal recorder operation, cancel the current mode so that the main screen returns again.**

Reference [Other Functions]

This section explains various other functions of the HD8/HD16.

Playing several projects continuously (sequence play)

The HD8/HD16 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 recorder, or to use the HD8/HD16 for accompaniment during a live performance.

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/UTILITY] key.
The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.
3. Verify that "PROJECT" is shown on the second line of the display, and press the [ENTER] key.

The project menu for various project related functions appears.

```
PROJECT          1/8
>SELECT
```

4. Use the cursor left/right keys to bring up the indication "SEQUENCE PLAY" on the display, and press the [ENTER] key.

The display indication changes as follows, showing the number and name of the currently selected playlist. In this condition, you can select a playlist. If there are no existing playlists, the display shows "Empty".

```
Playlist number  Playlist name
↓                ↓
List1: Empty
Total 000:00:000
```

5. 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.

```
Track1
End of List
```

6. Turn the dial to select the project to register at the beginning of the project.

The display indication changes as follows.

Playback number
Position in the sequence
where the project will be played

```
Sequence number  Total number of
of displayed playlist  registered projects
↓                ↓
Track1           1/1
No. 1: PRJ001
```

Project number and project name
Number and name of the project registered in the playlist

HINT

You can use the cursor up/down keys to check the duration of the V-take selected for the master track of the registered project, in minutes, seconds, and milliseconds.

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.

7. Press the cursor right key.

The display indication changes as follows. ("End of List" indication has changed to the second position.) In this condition, you can select the second project to play.

```
Track2
End of List
```

8. 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 [FUNCTION] key once to bring up the indication "INSERT TRACK" on the first line of the display. The second line shows the name of the project to be inserted. In this condition, use the dial to select another project, and press the [ENTER] key. The indication "Insert?" appears on the second line of the display. To carry out the process, press the [ENTER] key.

● To delete a project from a playlist

Use the cursor left/right keys to select the position number you want to delete. Then press the [FUNCTION] key twice. The indication "DELETE TRACK" appears on the first line of the display, and the name of the project to be deleted is shown on the second line.

When you press the [ENTER] key in this condition, the indication "Delete?" appears on the second line of the display. To delete the project, press the [ENTER] key.

● To delete all projects from a playlist

On the playlist registration screen, press the [FUNCTION] key three times. The indication "DELETE TRACK" appears on the first line of the display, and "All" is shown on the second line.

When you press the [ENTER] key in this condition, the indication "Delete?" appears on the second line of 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.

9. 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/UTILITY] key.

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

2. Verify that "PROJECT" is shown on the second line of the display, and press the [ENTER] key.

The project menu for various project related functions appears.

```
PROJECT          1/8
>SELECT
```

3. Use the cursor left/right keys to bring up the indication "SEQUENCE PLAY" on the display, and press the [ENTER] key.

The display shows the screen for selecting a playlist. The second line of the display shows the total playback time of all projects in the playlist.

```
List1: 3Songs
Total 020:15:320
```

↑
Total playing time of projects

4. Turn the dial to select the desired playlist.**5. Press the PLAY [▶] key.**

Projects are played in the order as registered in the playlist. The display indication changes as follows.

```
Current playback number  Project name
      ↓                   ↓
No. 1: PRJ001
      000:00:000
```

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.

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

Using the tuner function

The HD8/HD16 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 an INPUT jack.

2. At 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. Hold down the [SHIFT] key and press pad 4

(INSERT EFFECT) several times, until the pad is out.

The insert effect is bypassed, and the display indication changes as follows.

```
Off
[ENTER]→TUNER
```

4. Press the [ENTER] key.

The built-in tuner is activated. In the default condition of a project, the chromatic tuner will be selected.

```
Currently selected tuner type  Reference pitch
      ↓                       ↓
CHROMATIC  440Hz
-----
```

HINT

- You can use the cursor left/right keys to change the tuner type. For details, see the next section.
- While the tuner function is used, all effects are disabled.

5. 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.

```
CHROMATIC  440Hz
>>A
```

```

Pitch is flat  > A
                > A
                >>A
                >A
Correct pitch  <A >
                A <
                A <<
                A <
Pitch is sharp  A <
```

6. Adjust the pitch until the “<>” indication encloses the desired note.



7. 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.

HINT

- The reference pitch setting is saved individually for each project.
- When you change the reference pitch of the tuner, the pitch of the rhythm section bass program will also change accordingly.

8. When you have finished using the tuner function, press the [EXIT] key to return to the main screen.

Using other tuner types

The HD8/HD16 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 a high-impedance compatible INPUT jack and press the [ON/OFF] key for the input to which the instrument is connected, so that the key is lit in red.

On the HD8, the INPUT jack 1 is high-impedance compatible. On the HD16, the INPUT jacks 1 and 2 are high-impedance compatible.

Verify that the [Hi-Z] switch is set to On.

2. Hold down the [SHIFT] key and press pad 4 (INSERT EFFECT) several times, until the pad is out.

The insert effect is bypassed, and the display indication changes as follows.

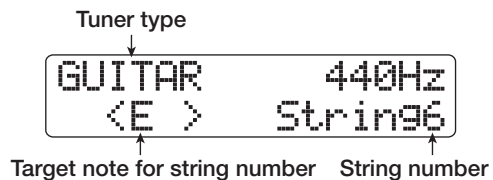


3. Press the [ENTER] key to activate the tuner function, and use the cursor left/right keys to select the tuner type.

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.

For example, when you select the tuner type “GUITAR”, the display shows the following information.



4. Play the indicated string as an open string, and perform tuning.

HINT

You can change the reference pitch (default setting center A = 440 Hz). The procedure is the same as when using the chromatic tuner.

5. Use the cursor up/down keys to select other string numbers.

Tune the other strings in the same way.

6. To quit the tuning function, press the [EXIT] key. The main screen returns again.

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						

Changing the function of the foot switch

With the default settings of a project, a foot switch connected to the CONTROL IN jack can be used to control play/stop of the recorder. To use the foot switch to control manual punch-in/out recording (→ p. 41), use the following procedure to change the internal setting.

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

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

2. Use the cursor left/right keys to bring up the indication "SYSTEM" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM          1/7
>FOOT SWITCH
```

3. Make sure the indication "FOOT SWITCH" is shown on the second line of the display, and press the [ENTER] key.

The function currently assigned to the foot switch will be displayed.

```
Foot Switch
Play/Stop
```

4. Turn the dial to select "Play/Stop" or "Punch I/O".

The available settings are as follows.

● Play/Stop

Each push of the foot switch toggles between play and stop of the recorder section.

● Punch I/O

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 OUT jack, 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 [PROJECT/UTILITY] key.

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

2. Use the cursor left/right keys to bring up the indication "SYSTEM" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM          1/7
>FOOT SWITCH
```

3. Use the cursor left/right keys to bring up the indication "DIGITAL PROJECT" on the second line of the display, and press the [ENTER] key.

The current digital copy setting is shown.

```
Digital Protect
Off
```

The available settings are as follows.

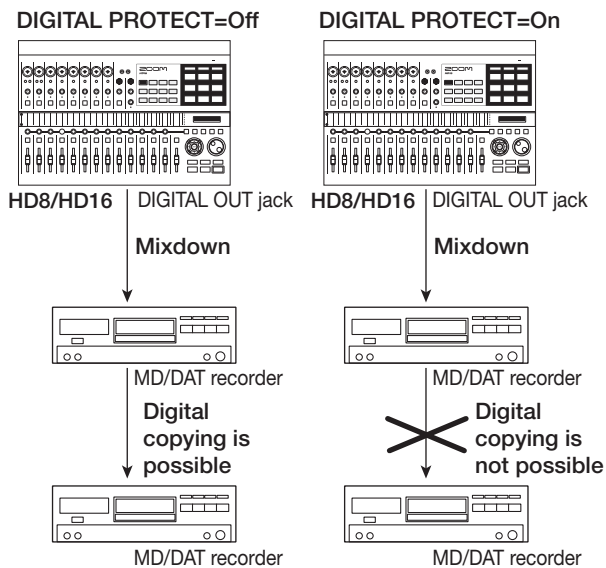
● Off (default setting)

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 OUT 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 on the top panel can indicate the level of the signal after passing through the faders (post-fader) or the signal before passing through the faders (pre-fader). You can change the setting as follows.

HINT

<< HD15 only >> 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 [PROJECT/UTILITY] key.

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

- 2.** Use the cursor left/right keys to bring up the indication "SYSTEM" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM      1/7
>FOOT SWITCH
```

- 3.** Use the cursor left/right keys to bring up the indication "LEVEL METER" on the second line of the display, and press the [ENTER] key.

The current level meter setting is shown.

```
Level Meter
Post
```

The available settings are as follows.

● **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.

- 4.** Turn the dial to change the setting.

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

Adjusting the display contrast

You can adjust the display contrast as follows.

- 1.** From the main screen, press the [PROJECT/UTILITY] key.

The indication "REC UTILITY" appears on the first line of the display, and "PROJECT" is shown on the second line.

- 2.** Use the cursor left/right keys to bring up the indication "SYSTEM" on the second line of the display, and press the [ENTER] key.

The display indication changes as follows.

```
SYSTEM      1/7
>FOOT SWITCH
```

- 3.** Use the cursor left/right keys to bring up the indication "CONTRAST" on the second line of the display, and press the [ENTER] key.

The current contrast setting is shown.

```
Contrast
3
```

4. Turn the dial to change the setting to a value from 1 – 3.
5. When the setting is complete, press the [EXIT] key several times to return to the main screen.

Checking the system version

To check the system software version of the HD8/HD16, proceed as follows.

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

The indication “REC UTILITY” appears on the first line of the display, and “PROJECT” is shown on the second line.

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

The display indication changes as follows.

```

SYSTEM          1/7
>FOOT SWITCH
  
```

3. Use the cursor left/right keys to bring up the indication “SYSTEM VERSION” on the second line of the display, and press the [ENTER] key.

The current system version is shown.

```

ZOOM HD16
Ver: 1.00
  
```

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

Hard disk maintenance

This section describes how to test and restore the integrity of data on the internal hard disk of the HD8/HD16, 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 HD8/HD16 off. While holding down the [CLEAR] key in the control section, turn power on again.

The HD8/HD16 starts up in “HDD utility mode” which serves for performing special functions.

```

HDD UTILITY  1/3
>INIT ALL
  
```

2. Use the cursor left/right keys to select the desired command.

The following commands are available.

- **INIT ALL (All Initialize)**

Format the hard disk and restore system files and various data necessary for operation. All existing projects will be erased.

- **INIT FACTORY (Factory Initialize)**

Restore system files and various data necessary for operation. Data created by the user will not be erased.

- **SCAN DISK**

Test and repair the integrity of data stored on the internal hard disk.

3. Press the [ENTER] key to execute the command.

Subsequent display indications and operation steps differ for the individual commands. See the respective section below.

4. When the command has been executed, turn the unit off and then turn it on again.

The HD8/HD16 will operate in normal mode.

Test/restore integrity of data on internal hard disk (Scan Disk)

This action serves to test and restore data on the internal hard disk. Perform this procedure when operation of the HD8/HD16 has become unstable.

NOTE

Scan Disk 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 “Scan Disk” on the display. Then press the [ENTER] key.

The Scan Disk menu for selecting the testing method appears.

```
SCAN DISK    1/2
>AUTO REPAIR
```

2. Use the cursor left/right keys to select the Scan Disk function, and press the [ENTER] key.

● AUTO REPAIR

This function tests all files on the hard disk and automatically repairs damaged files.

● CHEK FILE

This function only tests all files, but does not automatically repair them.

3. To execute the selected function, press the [ENTER] key once more.

Scan Disk 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 Scan Disk has started, it cannot be interrupted by the user. Never turn power to the unit off while Scan Disk is running. Otherwise the hard disk may be destroyed.

4. When Scan Disk 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 HD8/HD16. Projects created by the user are not affected by this operation. Try this procedure if operation of the HD8/HD16 is still unstable after running Scan Disk.

1. Refer to steps 1 – 3 of “Basic maintenance procedure” to bring up the indication “INIT FACTORY” on the display. Then press the [ENTER] key.

The indication “Init Factory Sure?” appears on the display to confirm the operation.

```
Init Factory
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 of the HD8/HD16. 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. 146).

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 HD8/HD16, 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. 146).

■ Factory initialize (VERSION UP)

This action restores system files and all data necessary for HD8/HD16 operation onto the hard disk.

To use the CD-ROM for one of these functions, proceed as follows.

1. Insert the supplied CD-ROM into the integrated CD-R/RW drive of the HD8/HD16 and press the rear-panel [POWER] switch to turn the HD8/HD16 on.
2. Use the cursor left/right keys to select “RECOVER?” or “VERSION 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 HD8/HD16.

To cancel the operation, press the [POWER] switch before pressing the [ENTER] key to turn the unit off.

Specifications

	Model	HD8	HD16
Recorder	Physical track	8 (mono x6, stereo x1)	16 (mono x8, stereo x4)
	Virtual take	80 (10V-takes per track)	160 (10V-takes per track)
	Rhythm track	Stereo (Drum) x1, mono (bass) x1	
	Simultaneous recording track	2	8
	Simultaneous playback track	11 (8audio + stereo drum + bass)	19 (16audio + stereo drum + bass)
	Recording data format	44.1kHz, 16bit mono WAV	
	Maximum recording time	Approx.3hours/GB (in mono track)	
	Project	1000	
	Marker	100 points per project	
	Locator	Minite/second/millisecond, measure/beat/chic	
	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 loop	
Mixer	Fader	9 (mono x6, stereo x1, master x1, rhythm x1)	14 (mono x8, stereo x4, master x1, rhythm x1)
	Level meter	Post-fader, pre-fader 5segment	
	Track parameter	Equlizer (3-band), effect send (Chorus/delay, reverb), panning (balance), sub-out send	Equlizer (3-band), effect send (Chorus/delay, reverb), panning (balance)
	Stereo linking	Tracks 1/2, 3/4, 5/6 selectable	Tracks 1/2, 3/4, 5/6, 7/8 selectable
	Scene	100 scenes per project	
Effect	Algorithm	8 (CLEAN,DISTORTION, ACO/BASS SIM, BASS, MIC, DUAL MIC, LINE, MASTERING)	9 (CLEAN,DISTORTION, ACO/BASS SIM, BASS, MIC, DUAL MIC, LINE, 8xCOMP EQ,MASTERING)
	Patch	310 for insert, 60 for send/return	330 for insert, 60 for send/return
	Module	7 for insert, 2 for send/return	
	Tuner	Chiromatic, guitar, bass, open A/D/E/G, D modal	
Rhythm	Voice	9 (Drum 8 + Bass 1)	
	Sound source principle	16bit, linear PCM	
	Drum kit	20	
	Drum sound	27 per kit(9 pad x 3 bank)	
	Sampling capacity	Total 66 seconds per kit in mono (5.5MB) (Maximum sample is 22 seconds per pad)	
	Bass program	11	
	Pad	9 (velocity sensitive)	
	Resolution	48PPQN	
	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. 20000 notes per song	
	Tempo	40.0 - 250.0 BPM	
	Hard disk drive	3.5-inch, E-IDE type 80 GB	
CD-R drive	5 inch bay type (CD-R/RW model)		
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	93dB (IHF-A)		
Dynamic range	97dB (IHF-A)		
THD+N	0.02% (400-Hz, 10kilohm load)		
Display	16-digit 2-line backlight LCD		

Input	XLR/standard phone combo jack x2 (Balanced operation) Input impedance 1 kilohm, pin 2hot (Unbalanced operation) Input impedance 50 kilohm Hi-Z selectable x1 Input impedance 1 megohm (Hi-Z switch ON) With phantom power supply x2	XLR/standard phone combo jack x8 (Balanced operation) Input impedance 1 kilohm, pin 2hot (Unbalanced operation) Input impedance 50 kilohm Hi-Z selectable x2 Input impedance 1 megohm (Hi-Z switch ON) With phantom power supply x8
Phantom power supply	48V	
Input level	-50 dBm to +4 dBm continuously variable	
Master output	RCA phono jack (L/R) Output impedance 1 kilohm Rated output level -10 dBm	
Headphones output	Standard stereo phone jack x2 50 mW into 32-ohm load	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	
USB	USB2.0 High Speed Mass Storage Class operation, USB MIDI operation	
Control input	For FP02/FP01 or FS01	
Dimension	382(W) x 328(D) x 84(H)mm	482(W) x 328(D) x 84(H)mm
Weight	5.1 kg (CD-R/RW drive installed) 4.5 kg (CD-R/RW drive uninstalled)	6.0 kg (CD-R/RW drive installed) 5.3 kg (CD-R/RW drive uninstalled)
Power supply	DC12V, 3A (supplied AC adaptor AD-0011)	
Power consumption	30 W (12V, 2.5A) typical	
Supplied accessory	Operation manual, AC adaptor/cable, CD-ROM, screws for CD-R/RW drive	
Optional accessory	Foot switch FS01 Expression pedal FP02 CD-R/RW drive CD-02 or our recommendation drive (For details our recommendation drive, see our website : http://www.zoom.co.jp)	

Troubleshooting

If there are problems during operation of the HD8/HD16, 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 (except the [MASTER] status key) and that the faders are raised. If a key is out, press it repeatedly to make it light up in green.
- Make sure that the [MASTER] status key is out and 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. 47).

■ 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 at the current display screen. Press the [EXIT] key several times to return 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 [GAIN] control for the respective input 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. 152).
- Recording is not possible if the project is write-protected. Either turn protect off (→ p. 153), or use a different project.
- While the 8-track recording function (→ p. 46) of the HD16 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 recorded sound is distorted

- Check whether the input sensitivity setting ([GAIN] control) 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. 128).

■ Insert effect does not work

- Make sure that pad 4 (INSERT EFFECT) is lit. If it is out, hold down the [SHIFT] key and press the pad.
- Make sure that the insert effect is sent to the desired location (→ p. 128).

■ Send/return effect does not work

- Make sure that pad 5 (CHORUS/DELAY) or pad 6

(REVERB) is lit. If it is out, hold down the [SHIFT] key and press the pad.

- Make sure that the send level for each track is raised (→ p. 79).

Problems with the rhythm section

■ Cannot hear rhythm pattern playback

- Make sure that the [RHYTHM] status key is lit (in green or red).
- Try operating the [RHYTHM] fader. To adjust the drum track volume, cause the [RHYTHM] status key to be lit in green and then lower and raise the [RHYTHM] fader. For the bass track, do the same with the [RHYTHM] status key lit in red.
- Make sure that you have not selected a blank rhythm pattern (pattern name “Empty”).
- If an original drum kit is selected, make sure that samples are properly assigned to the pads for that drum kit.

■ Cannot hear rhythm song playback

- 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.

■ Cannot get loud sounds when you hit the pads

If the pad sensitivity has been set to “Soft”, loud sounds will not be produced even when you hit the pad strongly. Change the pad sensitivity setting (→ p. 125).

■ Cannot record or edit a rhythm pattern/rhythm song

If the display indicates “Sequence 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 (8 sounds for the drum kit and 1 sound for the bass program) 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 drum kit

With a new drum kit, no samples will be assigned to the pads. Assign samples to pads, or select an existing kit file.

■ Cannot add samples to kit file

If the display indicates “Sample Full”, the kit file memory has been used to maximum capacity. Delete unneeded samples to free up memory.

Problems with MIDI

■ The HD8/HD16'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 HD8/HD16'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 HD8/HD16.
- 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 HD8/HD16 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 HD8/HD16. The HD8/HD16 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 HD8/HD16 (→ p. 156).
- When synchronizing on the MTC (MIDI Time Code), make sure that MTC output is enabled at the HD8/HD16 (→ p. 157).
- 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 stand by mode.

■ **Cannot load SMF from CD-ROM or CD-R/RW disc**

- Verify that the file is a Format 0 SMF.
- Make sure that the SMF file name has the proper extension (.MID).
- 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. 159).

Problems with CD-R/RW drive

■ **Cannot play audio CD created with HD8/HD16 on ordinary CD player**

- Check whether the disc was finalized.
- On some older CD players, CD-R 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 write-protect setting is on. Turn protect off (→ p. 153).

■ **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 “Project 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.

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.

Not Blank

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, DISTORTION, ACO/BASS SIM algorithm

COMP/LIMITER module

Type	Parameter			
Compressor	Sense	Attack	Tone	Level
	MXR Dynacomp type compressor.			
Rack Comp	Threshold	Ratio	Attack	Level
	Compressor with more detailed adjustment.			
Limiter	Threshold	Ratio	Release	Level
	Limiter for suppressing signal peaks above a certain level.			

Parameter description

Parameter name	Setting range	Description
Sense	0 – 10	Adjusts compressor sensitivity.
Attack	Compressor: Fast, Slow	Selects compressor response speed.
	Rack Comp: 1 – 10	Adjusts compressor response speed.
Tone	0 – 10	Adjusts tonal quality.
Level	2 – 100	Adjusts signal level after passing module.
Threshold	0 – 50	Adjusts threshold for compressor/limiter action.
Ratio	1 – 10	Adjusts compressor/limiter compression ratio.
Release	1 – 10	Adjusts delay until compressor/limiter release from point where signal level falls below threshold level.

EFX module


Type	Parameter						
Auto Wah	Position	Sense	Resonance	Level			
	Auto wah dependent on dynamics of input signal.						
Tremolo	Depth	Rate	Wave	Level			
	Periodically varies the volume level.						
Phaser	Position	Rate	Color	Level			
	Produces a swooshing sound.						
Ring Modulator	Position	Frequency	Balance	Level			
	Produces a metallic ringing sound. Adjusting the Frequency parameter results in a drastic change of sound character.						
Slow Attack	Position	Time	Curve	Level			
	Slows down the attack rate of the sound.						
Fix-Wah	Position	Frequency	Dry Mix	Level	RTM Mode	RTM Wave	RTM Sync
	Changes the wah frequency according to rhythm tempo.						












Parameter description

Parameter name	Setting range	Description
Position	Before, After	Sets connection position of EFX module to “Before” (before PREAMP) or “After” (after PREAMP).
Sense	-10 – -1, 1 – 10	Adjusts auto wah sensitivity.
Resonance	0 – 10	Adjusts resonance intensity.
Level	2 – 100	Adjusts signal level after passing module.
Depth	0 – 100	Adjusts modulation depth.
Rate	0 – 50 ♪ (Table 1)	Adjusts modulation rate. Using rhythm tempo as reference, setting in note units is also possible.
Wave	Up 0 – 9, Down 0 – 9, Tri0 – 9	Sets modulation waveform to “Up” (rising sawtooth), “Down” (falling sawtooth), or “Tri” (triangular). Higher values result in stronger clipping, emphasizing the effect.
Color	4Stage, 8State, Invert4, Invert8	Selects sound type.
Frequency	Ring Modulator: 1 – 50	Adjusts frequency used for modulation.
	Fix-Wah: 1 – 50	Adjusts wah center frequency. Can also be controlled by pedal.

Balance	0 – 100	Adjusts balance between original sound and effect sound.
Time	1 – 50	Adjusts rise time for sound.
Curve	0 – 10	Adjusts volume rise curve.
Dry Mix	0 – 10	Adjusts original sound mix ratio.
RTM Mode	Table 2	Adjusts change range and direction.
RTM Wave	Table 3	Selects control waveform.
RTM Sync	Table 4	Adjusts control frequency.

Table 1

Parameters marked with  allow selection of setting value in note units, using the song/pattern tempo as reference. The note duration according to the setting value is shown below.

	Thirty-second note		Dotted sixteenth note		Dotted eighth note	 x 2	Quarter note x 2
	Sixteenth note		Eighth note		Quarter note	:	:
 3	Quarter triplet note	 3	Half triplet note		Dotted quarter note	 x 20	Quarter note x 20

NOTE

- The actually available note range depends on the parameter.
- Depending on the combination of tempo setting and selected note symbol, the maximum of the parameter setting range may be exceeded. In such a case, the value is automatically halved (or set to 1/4 if the range is still exceeded).





Table 2

Setting value	Description
Off	Frequency does not change.
Pedal	Frequency changes according to expression pedal movement.
Up	Frequency changes from minimum to maximum according to control waveform.
Down	Frequency changes from maximum to minimum according to control waveform.
Hi	Frequency changes from patch setting to maximum according to control waveform.
Lo	Frequency changes from minimum to patch setting according to control waveform.

Table 3

Setting value	Description	Setting value	Description
Up Saw	Rising sawtooth wave	Tri	Triangular wave
Up Fin	Rising fin wave	TrixTri	Squared triangular wave
DownSaw	Falling sawtooth wave	Sine	Sine wave
DownFin	Falling fin wave	Square	Square wave

Table 4

Setting value	Description	Setting value	Description
	Eighth note	1 bar	1 measure
	Quarter note	2 bars	2 measure
	Half note	3 bars	3 measure
	Dotted half note	4 bars	4 measure

PREAMP module

Type	Parameter			
FD Clean	Clean sound of Fender Twin Reverb ('65 model) favored by guitarists of many music styles.			
VX Clean	Clean sound of combo amp VOX AC-30 operating in class A.			
JC Clean	Clean sound of Roland JC series with built-in chorus which gives a broad, clear tone.			
HW Clean	Clean sound of legendary all-tube Hiwatt Custom 100 from Britain.			
UK Blues	Crunch sound of 30-watt combo amp Marshall 1962 Bluesbreaker.			
US Blues	Crunch sound of Fender Tweed Deluxe '53.			
TweedBass	Crunch sound of Fender Bassman, a bass amp with a strong presence.			
BG Crunch	Crunch sound of Mesa Boogie MkIII combo amp.			
MS #1959	Crunch sound of legendary Marshall 1959.			
MS Drive	High gain sound of Marshall stack amp JCM2000.			
Rect Vnt	High gain sound of Mesa Boogie Dual Rectifier red channel (vintage mode).			
HK Drive	High gain sound of Hughes & Kettner flagship model Triamp MKII.			
DZ Drive	High gain sound of the hand-made German guitar amp Diezel Herbert with three separately controllable channels.			
ENGL Drive	Drive sound of ENGL Ritchie Blackmore Signature 100.			
PV Drive	High gain sound of Peavey 5150 developed in cooperation with a world-famous hard rock guitarist.			
TS+FD CMB	Combination of Fender combo amp and Ibanez TS-9 sound.			
SD+MS STK	Combination of Marshall stack amp and Boss SD-1 sound.			
FZ+MS STK	Combination of Fuzz Face and Marshall stack amp sound.			
	Gain	Tone	Cabinet	Level
	FD Clean - FZ+MS STK have the same parameters.			

Acoustic Sim	Top	Body	Level	
	This effect makes an electric guitar sound like an acoustic guitar.			
Aco_Ere Pre	Color	Tone	Level	
	This is a dedicated preamp for electroacoustic guitar.			
Bass Sim	Tone	Level		
	This effect makes an electric guitar sound like a bass guitar.			

Parameter description

Parameter name	Setting range	Description
Gain	0 – 100	Adjusts preamp gain (distortion intensity).
Tone	0 – 30	Adjusts tonal quality.
Cabinet	0 – 2	Adjusts speaker cabinet sound intensity.
Level	1 – 100	Adjusts signal level after passing module.
Top	0 – 10	Adjusts characteristic acoustic guitar string resonance.
Body	0 – 10	Adjusts characteristic acoustic guitar body resonance.
Color	1 – 4	Adjusts characteristics of dedicated electroacoustic guitar preamp.

3Band EQ module

Type	Parameter			
3Band EQ	Bass	Middle	Treble	Level
	This is a 3-band equalizer.			

Parameter description

Parameter name	Setting range	Description
Bass	-12dB – 12dB	Adjusts low frequency boost/cut.
Middle	-12dB – 12dB	Adjusts mid frequency boost/cut.
Treble	-12dB – 12dB	Adjusts high frequency boost/cut.
Level	2 – 100	Adjusts signal level after passing module.

MOD/DELAY module

Type	Parameter			
Chorus	Depth	Rate	Tone	Mix
	Mixes a variable pitch-shifted component to the original signal, resulting in full-bodied resonating sound.			
Ensemble	Depth	Rate	Tone	Mix
	Chorus ensemble with three-dimensional movement.			
Flanger	Depth	Rate	Resonance	Manual
	Produces a resonating and strongly undulating sound.			
Pitch	Shift	Tone	Fine	Balance
	Shifts the pitch up or down.			
Vibe	Depth	Rate	Tone	Balance
	Effect with automatic vibrato.			
Step	Depth	Rate	Resonance	Shape
	Special effect that changes the sound in a staircase pattern.			
Cry	Range	Resonance	Sense	Balance
	Varies the sound like a talking modulator.			
Exciter	Frequency	Depth	Low Boost	
	Enhances the sound outline, making it more prominent.			
Air	Size	Reflex	Tone	Mix
	Recreates the airy ambience of a room, with a feeling of depth.			
Wide	Time	Wet Level	Dry Level	
	Produces a stereo sound as if recorded with 2 mics.			
Delay	Time	Feedback	Hi Damp	Mix
	Delay effect with max. setting 2000 ms.			
Analog Delay	Time	Feedback	Hi Damp	Mix
	Delay effect with max. setting 2000 ms. Simulates the warm sound of an analog delay.			
Reverse Delay	Time	Feedback	Hi Damp	Balance
	Reverse delay effect with max. setting 1000 ms.			
ARRM Pitch	Type	Tone	RTM Wave	RTM Sync
	Changes the pitch of the original sound according to rhythm tempo.			

Parameter description

Parameter name	Setting range	Description
Depth	Exciter: 0 – 30	Adjusts effect depth.
	Others: 0 – 100	Adjusts modulation depth.
Rate	Chorus, Ensemble: 1 – 50	Adjusts modulation rate.
	Flanger, Vibe, Step: 0 – 50 ♪ (P 180 Table 1)	Adjusts modulation rate. Using rhythm tempo as reference, setting in note units is also possible.
Tone	0 – 10	Adjusts tonal quality.
Mix	0 – 100	Adjusts mix ratio of effect sound to original sound.
Resonance	Flanger: -10 – 10	Adjusts resonance intensity. Negative values result in reversed phase of effect sound.
	Step, Cry: 0 – 10	Adjusts effect intensity.
Manual	0 – 100	Adjusts frequency range of effect.
Shift	-12 – 12, 24	Adjusts pitch shift amount in semitone units.
Fine	-25 – 25	Adjusts pitch shift amount in cent (1/100 semitone) units.
Balance	0 – 100	Adjusts balance between original sound and effect sound.
Shape	0 – 10	Adjusts effect sound envelope.
Range	1 – 10	Adjusts frequency range of effect.
Sense	-10 – -1, 1 – 10	Adjusts effect sensitivity.
Frequency	1 – 5	Adjusts frequency of effect.
Low Boost	0 – 10	Adjusts low frequency boost.
Size	1 – 100	Adjusts size of simulated space.
Reflex	0 – 10	Adjusts amount of wall reflections.
Time	Wide: 1 – 64	Adjusts delay time.
	Delay, Analog Delay: 1 – 2000ms ♪	
	Reverse Delay: 10 – 1000ms ♪	
Wet Level	0 – 30	Adjusts effect sound level.
Dry Level	0 – 30	Adjusts original sound level.
Feedback	0 – 100	Adjusts feedback amount.
Hi Damp	0 – 10	Adjusts intensity of delay sound high range damping.
Type	Table 5	Selects pitch change type.
RTM Wave	Table 3, page 180	Selects control waveform.
RTM Sync	Table 4, page 180	Selects control waveform cycle.

Table 5

Setting value	Description	Setting value	Description
1	1 semitone lower → original sound	9	1 octave lower + original sound → 1 octave higher + original sound
2	Original sound → 1 semitone lower	10	1 octave higher + original sound → 1 octave lower + original sound
3	Doubling → detune + original sound	11	Complete fifth down + original sound → complete fourth up + original sound
4	Detune + original sound → doubling	12	Complete fourth up + original sound → complete fifth down + original sound
5	Original sound → 1 octave higher	13	0 Hz + original sound → 1 octave up
6	1 octave higher → original sound	14	1 octave up → 0 Hz + original sound
7	Original sound → 2 octaves lower	15	0 Hz + original sound → 1 octave up + original sound
8	2 octaves lower → original sound	16	1 octave up + original sound → 0 Hz + original sound

ZNR module

Type	Parameter
ZNR	Threshold
	ZOOM original noise reduction for reducing noise in playing pauses without affecting the overall tone.

Parameter description

Parameter name	Setting range	Description
Threshold	Off, 1 – 30	Adjusts ZNR sensitivity. For maximum noise reduction, set value as high as possible without causing the sound to decay unnaturally.

Volume Pedal module

Type	Parameter
Volume Pedal	Min Volume
	Allows volume adjustment with the expression pedal.

Parameter description

Parameter name	Setting range	Description
Min Volume	0 – 10	Adjusts the minimum volume when using the expression pedal for volume control.

BASS algorithm

COMP/LIMITER module

Type	Parameter
Rack Comp Limiter	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

EFX module

Type	Parameter				
Auto Wah	Position	Sense	Resonance	Dry Mix	Level
	This effect varies the wah action according to the intensity of the input signal.				
Tremolo	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.				
Phaser					
Ring Modulator					
Slow Attack					
Fix-Wah					

Parameter description

Parameter name	Setting range	Description
Position	Before, After	Sets connection position of EFX module to "Before" (before PREAMP) or "After" (after PREAMP).
Sense	-10 -- -1, 1 – 10	Adjusts auto wah sensitivity.
Resonance	0 – 10	Adjusts resonance intensity.
Dry Mix	0 – 10	Adjusts original sound mix ratio.
Level	2 – 100	Adjusts signal level after passing module.

PREAMP module

Type	Parameter				
SVT	Simulation of Ampeg SVT sound.				
Bassman	Simulation of Fender Bassman sound.				
Hartke	Simulation of Hartke HA3500 sound.				
Super Bass	Simulation of Marshall Super Bass sound.				
SANSAMP	Simulation of Sansamp Bass Driver DI sound.				
Tube Preamp	ZOOM original tube preamplifier sound.				
	Gain	Tone	Cabinet	Balance	Level
	SVT - Tube Preamp have the same parameters.				

Parameter description

Parameter name	Setting range	Description
Gain	0 – 100	Adjusts preamp gain (distortion depth).
Tone	0 – 30	Adjusts tonal quality.
Cabinet	0 – 2	Adjusts intensity of speaker cabinet sound.
Balance	0 – 100	Adjusts mixing balance of signal before and after module.
Level	1 – 100	Adjusts signal level after passing module.

3Band EQ module

Type	Parameter
3Band EQ	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

MOD/DELAY module

Type	Parameter
Chorus	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Ensemble	
Flanger	
Pitch	
Vibe	
Step	
Cry	
Exciter	
Air	
Wide	
Delay	
Analog Delay	
Reverse Delay	
ARRM Pitch	

ZNR module

Type	Parameter
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Volume Pedal module

Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

MIC algorithm**COMP/LIMITER module**

Type	Parameter
Rack Comp	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Limiter	

EFX module

Type	Parameter
Tremolo	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Phaser	
Ring Modulator	
Slow Attack	
Fix-Wah	

MIC PRE module

Type	Parameter				
Mic Pre	Type	Tone	Level	De-Esser	Low Cut
	This is a preamplifier for using an external microphone.				

Parameter description

Parameter name	Setting range	Description
Type	Vocal, AcousticGt, Flat	Selects preamp characteristics.
Tone	0 – 10	Adjusts tonal quality.
Level	1 – 100	Adjusts signal level after passing module.
De-Esser	Off, 1 – 10	Controls the de-esser setting.
Low Cut	Off, 80 – 240Hz	Controls a filter for reducing low frequency noise often picked up during mic recording.

3BAND EQ module

Type	Parameter
3Band EQ	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

MOD/DELAY module

Type	Parameter
Chorus	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Ensemble	
Flanger	
Pitch	
Vibe	
Step	
Cry	
Exciter	
Air	
Wide	
Delay	
Analog Delay	
Reverse Delay	
ARRM Pitch	

ZNR module

Type	Parameter
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Volume Pedal module

Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

DUAL MIC algorithm**COMP/LIMITER module**

Type	Parameter			
Compressor L	Threshold	Ratio	Attack	Level
	Compressor for attenuating high-level signals and boosting low-level signals.			
Limiter L	Threshold	Ratio	Release	Level
	Limiter for attenuating high-level signals that exceed a certain threshold.			

Parameter description

Parameter name	Setting range	Description
Threshold	-24 – 0	Adjusts threshold level of compressor/limiter.
Ratio	Compressor: 1 – 26	Adjusts compression ratio of compressor/limiter.
	Limiter: 1 – 54, ∞	
Attack	0 – 10	Adjusts attack rate of compressor.
Level	0 – 12	Adjusts module output level.
Release	0 – 10	Adjusts speed of limiter release after signal falls below threshold level.

MIC PREAMP L module

Type	Parameter
Mic Pre L	For an explanation of types and parameters, see MIC algorithm.


3BAND EQ L module

Type	Parameter
3BandEQ L	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

DELAY module

Type	Parameter		
Delay L	Time	Feedback	Mix
	Delay effect with max. setting 2000 ms.		
Echo L	Time	Feedback	Mix
	Warm delay effect with max. setting 2000 ms.		
Doubling L	Time	Tone	Mix
	Doubling effect which creates body by adding a short delay.		

Parameter description

Parameter name	Setting range	Description
Time	Delay L, Echo L: 1 – 2000ms 	Adjusts delay time.
	DoublingL: 1 – 100ms	
Feedback	0 – 100	Adjusts feedback amount.
Tone	0 – 10	Adjusts tonal quality.
Mix	0 – 100	Adjusts mix ratio of effect sound to original sound.

COMP/LIMITER R module

Type	Parameter
Compressor R Limiters R	For an explanation of types and parameters, see COMP LIMITER L module.

MIC PREAMP R module

Type	Parameter
Mic Pre R	For an explanation of types and parameters, see MIC algorithm.

3BAND EQ R module

Type	Parameter
3Band EQ R	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

DELAY R module

Type	Parameter
Delay R Echo R Doubling R	For an explanation of types and parameters, see DELAY L module.

ZNR module

Type	Parameter
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Volume Pedal module

Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

LINE algorithm

COMP/LIMITER module

Type	Parameter
Compressor Limiters	For an explanation of types and parameters, see DUAL 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 allows individual adjustment of mixing ratio for each band.					

Parameter description

Parameter name	Setting range	Description
Xover Lo	50Hz – 16kHz	Adjusts low-to-mid crossover frequency.
Xover Hi	50Hz – 16kHz	Adjusts mid-to-high crossover frequency.
Mix High	Off, -24 – 6	Adjusts high range mixing level.
Mix Mid	Off, -24 – 6	Adjusts mid range mixing level.
Mix Low	Off, -24 – 6	Adjusts low range mixing level.

3BAND EQ R module

Type	Parameter
3BAND EQ	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

MOD/DELAY module

Type	Parameter			
Chorus	Depth	Rate	Mix	
	Mixes a variable pitch-shifted component to original sound, resulting in full-bodied resonating tone.			
Flanger	Depth	Rate	Resonance	
	Produces a resonating and strongly undulating sound.			
Phaser	Rate	Color	LFO Shift	
	Produces a swooshing sound.			
Tremolo	Depth	Rate	Clip	
	Periodically varies the volume level.			
Auto Pan	Width	Rate	Clip	
	Shifts the panning position of the sound between left and right.			
Pitch	Shift	Tone	Fine	Balance
	This effect shifts the pitch up or down.			
Ring Modulator	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.			
Delay	Time	Feedback	Mix	
	Delay effect with max. setting 2000 ms.			
Echo	Time	Feedback	Mix	
	Warm delay effect with max. setting 2000 ms.			
Doubling	Time	Tone	Mix	
	Doubling effect which creates body by adding a short delay.			

Parameter description

Parameter name	Setting range	Description
Depth	0 – 100	Adjusts modulation depth.
Resonance	-10 – 10	Adjusts resonance intensity. Negative values result in reversed phase of effect sound.
Color	4Stage, 8Stage, Invert4, Invert8	Selects sound type.
LFO Shift	0 – 180	Adjusts left/right phase shift.
Width	0 – 10	Adjusts auto pan width.
Rate	1 – 50 ♪ (P180 Table1)	Adjusts modulation rate. Using rhythm tempo as reference, setting in note units is also possible.
Clip	0 – 10	Adds emphasis by clipping modulation waveform.
Time	Delay, Echo: 1 – 2000ms ♪	Adjusts delay time.
	Doubling: 1 – 100ms	

Feedback	0 – 100	Adjusts feedback amount.
Mix	0 – 100	Adjusts mix ratio of effect sound to original sound.
Tone	0 – 10	Adjusts tonal quality.

ZNR module

Type	Parameter
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Volume Pedal module

Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

8x Comp EQ algorithm (HD16 only)

Modules 1 - 8

Unit	Type	Parameter
HPF 1-8	HPF	Frequency High-pass filter blocking the low range and passing high frequencies.
COMP/LIMITER 1-8	Rack Comp	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
	Limiters	
3BAND EQ 1-8	3Band EQ	

Parameter description

Parameter name	Setting range	Description
Frequency	80 – 240Hz	Adjusts cutoff frequency.

Volume Pedal module

Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

MASTERING algorithm

COMP/Lo-Fi module

Type	Parameter							
3Band Comp	Xover Lo	Xover Hi	Sense Hi	Sense Mid	Sense Low	Mix High	Mix Mid	Mix Low
	Compressor that divides the signal into three frequency bands and allows individual adjustment of compressor sensitivity and mixing ratio for each band.							
Lo-Fi	Character	Color	Distortion	Tone	EFX Level	Dry Level		
	Lo-fi effect purposely degrades sound quality.							

Parameter description

Parameter name	Setting range	Description
Xover Lo	50Hz – 16kHz	Adjusts low-to-mid crossover frequency.
Xover Hi	50Hz – 16kHz	Adjusts mid-to-high crossover frequency.
Sense Hi	0 – 24	Adjusts high range compressor sensitivity.
Sense Mid	0 – 24	Adjusts mid range compressor sensitivity.
Sense Low	0 – 24	Adjusts low range compressor sensitivity.
Mix High	Off, -24 – 6	Adjusts high range mixing ratio.
Mix Mid	Off, -24 – 6	Adjusts mid range mixing ratio.
Mix Low	Off, -24 – 6	Adjusts low range mixing ratio.
Character	0 – 10	Adjusts filter characteristics.
Color	1 – 10	Adjusts sound color.
Distortion	0 – 10	Adjusts distortion.
Tone	0 – 10	Adjusts tonal quality.

EFX Level	0 – 100	Adjusts effect sound level.
Dry Level	0 – 100	Adjusts original sound level.

NORMALIZER module

Type	Parameter	
Normalizer	Gain	
	Adjusts COMP/Lo-Fi module input level.	

Parameter description

Parameter name	Setting range	Description
Gain	-12 – 12	Adjusts level.

3BAND EQ module

Type	Parameter
3Band EQ	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

DIMENSION/RESO module

Type	Parameter						
Dimension	Rise1	Rise2					
	Effect producing spatial expansion.						
Resonance	Depth	Freq Offset	Rate	Filter Type	Resonance	EFX Level	Dry Level
	Resonance filter with LFO.						

Parameter description

Parameter name	Setting range	Description
Rise1	0 – 30	Adjusts stereo component intensity.
Rise2	0 – 30	Adjusts mono component intensity.
Depth	0 – 100	Adjusts effect depth.
Freq Offset	1 – 30	Adjusts LFO offset.
Rate	1 – 50 ♪ (P180 Table1)	Adjusts modulation rate. Using rhythm tempo as reference, setting in note units is also possible.
Filter Type	HPF, LPF, BPF	Selects filter type.
Resonance	1 – 30	Adjusts resonance intensity.
EFX Level	0 – 100	Adjusts effect sound level.
Dry Level	0 – 100	Adjusts original sound level.

ZNR module

Type	Parameter
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Volume Pedal module


Type	Parameter
Volume Pedal	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Send/return effect

CHORUS/DELAY module

Type	Parameter					
Chorus	LFO Type	Depth	Rate	Pre Delay	EFX Level	
	Mixes a variable pitch-shifted component to original sound, resulting in full-bodied resonating tone.					
Delay	Time	Feedback	Hi Damp	Pan	EFX Level	Rev Send
	Delay effect with max. setting 2000 ms.					

Parameter description

Parameter name	Setting range	Description
LFO Type	Mono, Stereo	Sets LFO phase to mono or stereo.
Depth	0 – 100	Adjusts effect depth.
Rate	1 – 50	Adjusts modulation rate.
Pre Delay	1 – 30	Adjusts pre-delay time.
EFX Level	0 – 100	Adjusts effect sound level.
Rev Send	0 – 30	Adjusts delay sound reverb send level.
Time	1 – 2000ms 	Adjusts delay time.
Feedback	0 – 100	Adjusts feedback amount.
Hi Damp	0 – 10	Adjusts intensity of delay sound high range damping.
Pan	Left10 – Left1, Center, Right1 – Right10	Adjusts delay sound panning.

REVERB module

	Parameter					
Hall	Simulates the acoustics of a concert hall.					
Room	Simulates the acoustics of a room.					
	Pre Delay	Decay	EQ High	EQ Low	E.R.Mix	EFX Level
	Hall and Room have the same parameters.					
Spring	Simulates a spring reverb.					
Plate	Simulates a plate reverb.					
	Pre Delay	Decay	EQ High	EQ Low	EFX Level	
	Spring and Plate have the same parameters.					

Parameter description

Parameter name	Setting range	Description
Pre Delay	1 – 100	Adjusts pre-delay time.
Decay	1 – 30	Adjusts reverb time.
EQ High	-12 – 6	Adjusts high range effect sound.
EQ Low	-12 – 6	Adjusts low range effect sound.
E.R.Mix	0 – 30	Adjusts mixing ratio of initial reflections.
EFX Level	0 – 100	Adjusts effect sound level.

Effect Patch List

Insert effect

CLEAN algorithm

No.	Patch name	Description
0	Standard	Standard clean sound optimized for line-level equipment.
1	Ensemble	Transparent sound with ensemble effect.
2	CompPlus	Universal compressor with a wide range of uses.
3	R&Roll	Sound tailored for vintage genres such as rock'n roll.
4	CutPhase	Phase effect for that great cutting style.
5	Hi-WT	Hiwatt amp tone gets natural distortion from the picking dynamics.
6	DlyLead	Clean lead patch, characterized by long delays with solid presence.
7	Blues	Choose this for an orthodox blues feel.
8	MultiFLG	Flanger suitable for many uses including arpeggio, cutting, and lead guitar.
9	DaDaFunk	Auto wah brings out the picking nuances.
10	Tremolo	Twin reverb with added tremolo for color.
11	BeatRock	Get into the Mersey beat for rock bands.
12	Rockably	Rockabilly sound with effective use of short delay.
13	WarmCho	Combination of warm tone with deep chorus.
14	Unison	Unison sound with added bass (-12 shift), good for low range phrasing.
15	Crunch	Light crunch for rock and pop backing.
16	CleanArp	Wide ensemble sound that works well with arpeggios and obligato.
17	CompLead	Streamlined lead sound with effective compressor action.
18	FastRate	Fast phaser turns full chords into a unique lead sound.
19	ClubJazz	Simulates the ambience in a jazz club or a similar live venue.
20	SlowVibe	Slow attack sound for imaginative chord work.
21	Ethnic	ARRM effect effectively emphasizes open-string phrasing.
22	Insect	SFX sound of a small insect buzzing.
23-29	Empty	

DISTORTION algorithm

No.	Patch name	Description
0	5-1-5-0	5150 simulation, great for hard riffs.
1	MS#1959	British rock sound with airy distortion that comes alive at high volumes.
2	AnyOD	Overdrive suitable for both lead and backing.
3	RectiDRV	Sound modeled on the Boogie Rectifier.
4	MultiLD	Versatile lead tone for many applications.
5	Detune	Solid sound with detune effect.
6	UK Blues	Bluesbreaker with added delay gives fat and smooth sound.
7	Fusion	Fusion type sound with a surging deep chorus.
8	AutoWah	Versatile auto wah for lead or backing.
9	JB Style	Octaver sound made famous by Jeff Beck.
10	Hvy Riff	Choose this for heavy riffs.
11	BlueLine	Bluesy sound with a dry character.
12	Melody	Sustain sound for melodious solos.
13	TalkTime	Talk sound featuring a cry effect. Persistence makes it easy to play.
14	ArpenCho	Chorus effect great for arpeggios.
15	HK Drive	The full-bodied sound of AMP3 high-gain distortion, with added delay.
16	MS Drive	JCM2000 lead channel simulation. Air effect adds the cabinet touch.

17	Crunch	Crunch sound optimized for cutting.
18	NuanceOD	Overdrive sound brings out those fine amp details.
19	Tremolo	Tremolo sound for arpeggio.
20	ShortDLY	Rock lead sound with short delay.
21	Half Wah	Midrange-oriented sound with half open wah.
22	Jet Riff	Flanger jet sound.
23	SmoothLD	Smooth and glossy distortion sound.
24	HR Core	Punchy hard rock sound.
25	ENGL 650	Simulation of the ENGL E650 favored by Ritchie Blackmore.
26	5thPitch	Synthesizer-like pitch sound with fifth-down for ad-libbing.
27	375 DLY	Dotted eighth delay with bpm = 120 gives a gimmicky sound for solo play.
28	PsycheVB	Psychedelic vibe sound of the sixties as personified by Jimi Hendrix.
29	D'live	Crunch sound with intense live feeling.
30	NicePick	Crunch sound controlled by your picking.
31	X'over	Slick semi-acoustic sound with overdrive.
32	Combo	Crunch sound in the boogie combo style.
33	MildTone	Mild tone emphasizes the low range.
34	Bright	Bright and airy sound.
35	OLD DLY	Lead tone flavored with analog delay.
36	Tweed	Tweed amp sound with a clear edge.
37	BoxBody	Old-style semi-acoustic fusion sound.
38	Big Wave	SFX sound using ARRM creates a wave that rolls back to you.
39	Bottom	Twang those lower strings with this sound.
40-49	Empty	

ACO/BASS SIM algorithm

No.	Patch name	Description
0	Ensemble	Gorgeous sound with deep ensemble effect.
1	Delay LD	Lively acoustic guitar sound for lead playing.
2	Chorus	Chorus sound runs the gamut from side guitar to lead guitar.
3	FineTune	Delicate detune creates sonic depth.
4	Air Aco	Air sound creates a miking effect.
5	Standard	Standard bass sound with many uses.
6	CompBass	Bass sound comes to live with compressor and exciter.
7	WarmBass	Bass sound with warm and round feeling.
8	Flanging	Flanging sound covers a lot of ground, from 16-beat phrases to melody playing.
9	Auto Wah	Funky bass making good use of auto wah.
10-19	Empty	

BASS algorithm

No.	Patch name	Description
0	SVT	Walk the high road of rock. Great for finger picking or flatpicking.
1	BASSMAN	Vintage rock sound for any occasion.
2	HARTKE	Hartke simulation with all the glitz and glitter.
3	SUPER-B	Choose this for guitar unison play and solo play.
4	SANS-A	Edgy sound with a strong core is a good match for flatpick.
5	TUBE PRE	All-rounder tube sound always comes in handy.
6	Attack	Compression sound effective for slap and flatpick playing.
7	Wah-Solo	Solo sound with distortion and a touch of wah. Pitch shift is the secret ingredient.
8	Talk&Cry	Typical SFX effect that uses cry like a talking modulator.

9	Melody	Chorus sound for melody, solo, chord playing, or harmonics.
10	SlapJazz	Basic slap sound in the jazz bass style.
11	Destroy	Smashing sound mixing distortion, pitch shift, and ring modulator.
12	Tremolo	A great match for moody bass line and chord playing.
13	SoftSlow	Melody or solo play tone is ideal for a fretless bass.
14	Limiter	Limiter evens out the sound when using a pick.
15	X'over	Flanger sound for picking, typical of the crossover genre.
16	CleanWah	Auto wah sound that has a million uses.
17	Exciter	Universal sound with a fresh and transparent character.
18	ClubBass	Play those walking phrases with this sound that simulates the ambience of a small club.
19	DriveWah	Auto wah sound with variable drive that follows the picking dynamics.
20-29	Empty	

MIC algorithm

No.	Patch name	Description
0	Rec Comp	Conventional preamp + compression sound for recording.
1	RoomAmbi	Simulates the acoustics of a radio station broadcast studio.
2	VocalDly	Delay effect that works best with wet vocals.
3	Rock	Massive compression sound for rock vocals.
4	Long DLY	Long delay sound for vocals (2 beats at tempo 120).
5	InTheBOX	This effect seems to put the entire sound into a small box.
6	Limiter	Limiter effect highly useful for recording.
7	AG MIC	Preamp tone is great for recording acoustic guitar.
8	AG Dub	Doubling sound that gives a stroke more of a pick feeling.
9	12st Cho	Chorus sound for 12-string guitar.
10	AG-Jumbo	Increases the apparent body size of an acoustic guitar.
11	AG-Small	Reduces the apparent body size of an acoustic guitar.
12	StereoAG	Stereo sound for acoustic guitar.
13	Live AMB	Bright reverb sound for acoustic guitar increases the live feeling.
14	Tunnel	Simulation of tunnel reverb.
15	Filter	Filter effect lets you change the sound character during a song.
16	BrethCmp	Fairly strong compressor sound emphasizes breathiness.
17	Vib MOD	Crafty vocal sound combining phaser and vibrato.
18	Duet Cho	Detune sound creates an instant duet.
19	Ensemble	Fresh ensemble sound great for chorus.
20	VocalDub	Conventional doubling sound.
21	Sweep	Voice sound with slow phase sweep.
22	VoiceFlg	Flanging chorus sound with strong modulation.
23	Wide PH	Phase sound spread to right and left.
24	VibVoice	Clearcut vibrato sound.
25	FutureVo	A message from the aliens.
26	M to F	Transforms male vocals into a female sound.
27	F to M	Transforms female vocals into a male sound.
28	WaReWaRe	SFX sound speaks to you from the cosmos.
29	Hangul	SFX sound that turns Japanese into Korean.
30-49	Empty	

DUAL MIC algorithm

No.	Name	Comment	Recommended L/R input
0	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	DuoAttack	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
0	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	WideDrm	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 (HD16 Only)

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
0	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	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	HOUss1VA	1
160	HOUss1FA	1
161	HOUss1VB	1
162	HOUss1FB	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
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

Kit name
ROCK
ACOUSTIC
FUNK
STUDIO
BASIC
LIVE
REGGAE
POP
ARENA
JAZZ
WORLD
TECHNO
URBAN
BUMP_IT
LNCH_BOX
CRUNCHIN
DEEPKNCK
BOUNCER
PHT_BEAT
PUSH_ME
BEATBOX

Bass Programs

No.	Program name
1	PICK
2	FINGER
3	ACOUSTIC
4	FRETLESS
5	MUTED
6	SLAP
7	MOOG
8	TECHNO
9	JUNO
10	HUMMER
11	SUBTONE

Instruments

Category	Name
1KICK	808KICK
	909KICK
	909LONG
	ACO_BD1
	ACO_BD2
	ANALOG1
	ANALOG2
	ATFCKIK
	ATTK_BD
	B_DAKICK
	BD_DRY1
	BD_DRY2
	BDBB1
	BDBB2
	BDBB3
	BEND_BD
	BGBGRKIK
	BMERKIK
	BOXKICK
	BROKNKIK
	CAJONKIK
	CLASSC1
	CLASSC2
	CRNCHKIK
	DEEP_BD
	DGRDEKIK
	DIGALG1
	DIGALG2
	DNGRKICK
	DOOMKICK
	DPKNCKIK
	DROPKICK
	DROPKIKR
	EASTKCK
	HARD_BD
	HUGE
	ILLKICK
	KALIKICK
	LIVE_BD
	LONGKICK
	OPSRDO
	PAPAKICK
PUNCH	
PUSHKICK	
RESO_BD	
REVDROP	
ROUNDKIK	
SMASHKIK	
STAGE	
STANDRD	
STD_BD1	
STD_BD2	
STD_BD3	
STDO_BD	
STEAMKIK	

1KICK	THMPRKIK
	THUMP
	THUNKKIK
	TIGHT
	VO_BD1
	VO_BD2
	VO_BD3
	WHOMPKIK

Category	Name
2SNARE	808_RIM
	808BRTE
	808SNAR
	909SNAR
	ANALOGM
	ANALOGS
	ANLGRIM
	ATTK_SD
	BASIC
	BLASTSNR
	BOXSNARE
	BR_MUTE
	BR_SLAP
	BR_SWEP
	BR_SWPE
	BRBITSNR
	BRSSMT
	BRSSSLP
	BRSSWEP
	BRSSWIP
	BRSTAP
	CHEATSNR
	CLAPSNR
	CRNCHSNR
	CRSHSNR
	CRSPYSNR
	DAYSNARE
	DEEP_SD
	DIGALGM
	DIGALGS
	DRY_SD
	DRY_SDH
	EASTSNR
	EDGESNR
	FATFUNK
	FNKYSNR
	FUNK
	FUNKSNR
	FUNKUP
	GMRIM
	HARSHSNR
	HIGHSD1
HITSNARE	
JNGLSNR	
LECTRIP	

2SNARE	LIVE_SD
	MACHINE
	MARCHSNR
	NEPRIM
	POWER
	REGAE
	REGASNR
	REGATON
	RESO_SD
	ROLL1
	ROLL2
	ROOM
	SD_DRY1
	SD_DRY2
	SLAPROL
	SMPLRIM
	SNAP1
	SNAP2
	SNARELET
	SNAROLL
	SNRATAK
	SNRBB1
	SNRBB2
	SNRBB3
	SNREYSNR
	SNRULATR
	STD_SD
	STELSNR
	STRCHSNR
	STREETSN
	TIGHT
	TOCKDNG
TOCKRIM	
TRSHSNR	
TUBESNR	
TUFFSNR	
VEBYSR	
VO_SD1	
VO_SD2	
VO_SD3	
VO_SD4	
VO_SD5	

Category	Name
3TOMS	808_1
	808_2
	808_3
	ACO_TM1
	ACO_TM2
	ACO_TM3
	AMBI1
	AMBI2
	AMBI3
	BENDTM1
	BENDTM2
	BENDTM3
	BRSHTMH
	BRSHTML
	BRSHTMM
	DRY_TM1
	DRY_TM2
	DRY_TM3
	ELECTO1
	ELECTO2
	ELECTO3
	GATE1
	GATE2
	GATE3
	HARDTM1
	HARDTM2
	HARDTM3
	HI_808
	HI_909
	HI_TECH
	HI_TOM
	HIDRVTM
	HIELECTM
	HIPWRM
	LIVETM1
	LIVETM2
	LIVETM3
	LO_808
	LO_909
	LO_TECH
	LO_TOM
	LODRVTM
	LOELECTM
	LOPWRTM
	MDDRVTM
	MDELECTM
	MDPWRTM
	POPHI1
	POPHI2
	POPLO
	POPMID
	STDOTM1
	STDOTM2
	STDOTM3
	SYNTH

Category	Name
4CYMBAL	808CRSH
	808CRSH2
	CHINA
	CRASH
	CRSH_17
	CRSH_20
	CRSH_B
	CRSH3
	CUP1
	CUP2
	HICRASH
	LIVECYM
	MUTECHR
	REVCYM1
	REVCYM2
	RIDE_B
	RIDE1
	RIDE2
	RIDE3
	RIDE4
	SPLASH1
	SPLASH2
	VO_CYM

Category	Name
5HIHAT	808CLS
	808OPN
	909CLS
	909OPN
	CLCLEAR
	CLS14
	CLS14_2
	CLSANLG
	CLSBEND
	CLSDGAN
	CLSHMN
	CLSLIVE
	CLSSTDO
	CP_HAT1
	CP_HAT2
	CP_HAT3
	CP_HAT5
	CP_HAT9
	HATTICK1
	HATTICK2
	HHCLSBB
	HHOPENBB
	OP_HAT1
	OP_HAT2
	OP_HAT3
	OP_HAT4
	OP_HAT5
	OP_HAT9
	OPANLG1
	OPANLG2
	OPBEND
	OPCLEAR
	OPDGAN
	OPHMN
	OPLIVE
	PEDACO
	RELCLSD
	RELOPEN
	TICK1
	TICK2

Category	Name
6PERCUS	AGOHI
	AGOLO
	BELLTR
	BLOCK
	BONGO1
	BONGO2
	BONGO3
	BONGO4
	CABASA
	CABASA1
	CABASA2
	CASTA1
	CASTA2
	CHIMES
	CLAVE
	CLAVES
	CNGAHI
	CNGALO
	CNGAMID
	COWBEL1
	COWBEL2
	CSTNET
	DJEMBE1
	DJEMBE2
	DJEMBE3
	DJEMBE4
	DJEMBE5
	DJEMBE6
	DJMSLAP
	DUMBEC1
	DUMBEC2
	DUMBEC3
	DUMBEC4
	DUMBEC5
	DUMBEC6
	DUMBEK1
	DUMBEK2
	DUMBEK3
	DYSTICK
	EXCWBL1
	EXCWBL2
	EXRIM1
	EXRIM2
	EXRIM3
	EXSN909
	EXTMBRB
	FLEXI
	FLEXI2
GUIRODN	
GUIROL	
GUIROS	
GUIROUP	
H_RIM01	
HIAGOGO	
HIBONGO	
HICNG1	

6PERCUS	HICNG2
	HIGH_Q
	HITIMBA
	JGBELL
	JINGLE
	LOAGOGO
	LOBONGO
	LOCNG
	LOTIMBA
	MARACAS
	METAL
	MTCUICA
	MTHICNG
	MTRBELL
	MTRCLIK
	MTRCLK
	MTSRDO
	MTTRAGL
	OPCUICA
	OPSRDO
	OPTRAGL
	SHAKER
	SHAKER1
	SHAKER2
	SHAKER3
	SHAKER4
	SHAKER5
	SHAKER6
	SHAKER7
	SHAKER8
	SHAKER9
	SLAP
	SQRCLK
	STICKS
	SYNCNGA
	SYNCOW1
	SYNCOW2
	TABLA1
	TABLA10
	TABLA11
	TABLA2
	TABLA3
	TABLA4
	TABLA5
	TABLA6
	TABLA7
	TABLA8
	TABLA9
TAMBO1	
TAMBO2	
TAMBO3	
TAMBO4	
TAMBRIN	
TIMBAL1	
TIMBAL2	
TRNGLE1	
TRNGLE2	

6PERCUS	VIBRA1
	VIBRA2
	VIBSLAP
	WDBLKH
	WDBLKL
	WHISL1
WHISL2	

Category	Name
7CLAP	808CLAP
	909CLAP
	909SNAP
	CLAPPER
	CLAPTRAP
	EXCLAP1
	EXCLAP2
	EXCLAPB

Category	Name
8EXTRA	ANVIL
	BASSSLD
	BELL
	BELLCOW
	BIGHT
	BITWHIP
	BLOQ1
	BLOQ2
	BLOQ3
	BLOQ4
	BREATBB
	BROKEN1
	BROKEN2
	BROKEN3
	BROKEN4
	C_MON
	CHIIRP
	CHIT1
	CHIT2
	CHIT3
	CHIT4
	CHIT5
	CHORD1
	CHORD2
	CHORD3
	CHORD4
	CHORD5
	CLANG2
	CLOCK
	CRASHBB
	CRUNCH
	CRUSH1
	CRUSH2
	CRUSH3
	CRUSH4
	CRUSH5
	CUDAIKO
	CYMBOLIC
	D_CLOSE
	D_OPEN
	DIGIBLCK
	DIGIFLEX
	DIRT1
	DIRT2
	DIRT3
	DIRT4
	DRIZZLE
	DUNKLE
	ELCKITTY
	ENGINE
FACEDOWN	
FLANGE	
FLITSWP	
GAMELAN	
HEY	
HICRASH	
HLLYWOOD	

8EXTRA	INOUTBB
	INSECT
	JARHEAD
	KISHIMI
	KISSER
	KLUNCH
	KUEY
	LGSCRTCH
	MAJOR7
	MINOR7
	MOKUGYO
	MUTE
	MUTEGTR1
	MUTEGTR2
	MUTEGTR3
	MUTEGTR4
	MUTEGTR5
	MUTEGTR6
	NERVY
	OEDO
	OMSHIT
	OODAIKO
	OVERFLOW
	PARTIAL
	PECKER
	PHWIKET
	PLASTIC
	PLUCKTNE
	POP
	PSYCHODB
	RACHET
	RAMROD
	RESONANT
	RTTLBELL
	SCRAPE
	SCRATCH
	SCRATCH2
	SCRATCH3
	SCRATCH4
	SCRCH1
	SCRCH2
	SCRUB
	SHNCRSH
	SLIDING
	SMEAR
	SONAR
	SPACE
	SQENCE
	STSCRTCH
	SWIPE
TEARUP	
TEMPLE	
THWACK	
TICKER	
TONEGATE	
TRMBLING	
TRONIC1	
TRONIC2	

8EXTRA	TRONIC3
	TRONIC4
	TRONIC5
	UFO
	UP
	URGENCE
	URGENT
	WARBLE
	WHOOSH
	WINDOWN

Category	Name
9LOOP	BFY_GATE
	DLY_HEAD
	DRTYBEAT
	GTR_HERO
	HIPHITZ
	HIPHOP
	SCRPSCP
	TMB_GRPV
TRP_SPC	

MIDI note number chart

Pad	Note number		
	Bank1	Bank2	Bank3
1/KICK	36	35	61
2/SNARE	38	40	60
3/CLOSED HAT	42	44	70
4/CRASH	49	57	54
5/RIDE	51	53	64
6/OPEN HAT	46	55	62
7/TOM1	50	39	63
8/TOM2	47	37	67
9/TOM3	43	56	68

Note#	Instrument	Bank1	Bank2	Bank3
35	Kick Drum2		PAD1	
36	Kick Drum1	PAD1		
37	Side Stick		PAD8	
38	Snare Drum1	PAD2		
39	Hand Clap		PAD7	
40	Snare Drum2		PAD2	
41	Low Tom2			
42	Closed Hi-Hat	PAD3		
43	Low Tom1	PAD9		
44	Pedal Hi-Hat		PAD3	
45	Mid Tom2			
46	Open Hi-Hat	PAD6		
47	Mid Tom1	PAD8		
48	High Tom2			
49	Crash Cymbal1	PAD4		
50	Hi Tom1	PAD7		
51	Ride Cymbal1	PAD5		
52	Chinese Cymbal			
53	Ride Bell		PAD5	
54	Tambourine			PAD4
55	Splash Cymbal		PAD6	
56	Cowbell		PAD9	
57	Crash Cymbal2		PAD4	
58	Vibraslap			
59	Ride Cymbal2			
60	High Bongo			PAD2
61	Low Bongo			PAD1
62	Mute High Conga			PAD6
63	Open High Conga			PAD7
64	Low Conga			PAD5
65	High Timbale			
66	Low Timbale			
67	High Agogo			PAD8
68	Low Agogo			PAD9
69	Cabasa			
70	Maracas			PAD3

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
				29	Ry-04-2D	Percussion loop 4
			3	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
				43	Sg-01-2C	Big beat FX loop
	Control Variations		1	44	Sg-02-1A	Hiphop track 1-1
				45	Sg-02-1B	Hiphop track 1-2
			2	46	Sg-02-2A	Hiphop track 2-1
	Drum Bass Loops		1	48	Sg-03-1A	Drum loop
				49	Sg-03-1B	Bass loop
	Reggae Variations		1	50	Sg-04-1A	Dub drum loop
				51	Sg-04-1B	Dub bass loop
				52	Sg-04-1C	Dub guitar loop
			2	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		

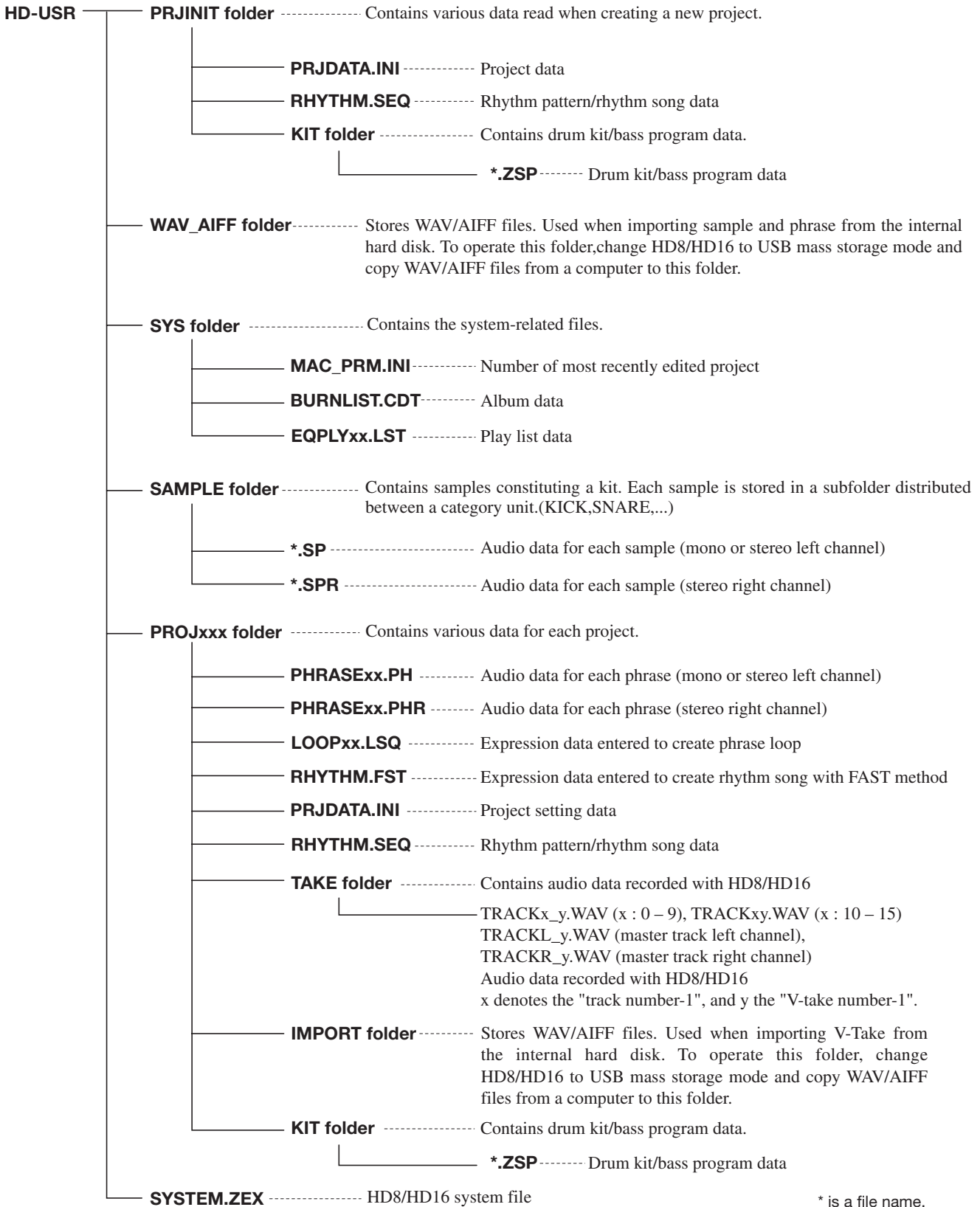
With the factory default settings, project 001 contains these phrases.

HD8/HD16 Hard Disk Contents

The hard disk in the HD8/HD16 is composed of two partitions called "HD-USR" and "HD-FAC".

The "HD-FAC" partition contains files to perform hard disk maintenance. Never attempt to manipulate the files in this partition.

Do not rename the "HD-USR" files and folders unnecessarily since the HD8/HD16 will not recognize the renamed files or folders.



MIDI implementation chart

[HardDisk Recorder (Recorder Mode)]

Model HD8/HD16

MIDI Implementation Chart

Date : 17.Jan. 2007

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	12-74 *****	12-74	
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		7 120 121	7 11 120 121	Volume Expression All Sounds Off Reset All Ctrl's
Prog Change	True #	o *****	x	
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

Function ...	Transmitted	Recognized	Remarks
Basic Default	10	10	Memorized
Channel Changed	1-16	1-16	
Mode Default	x	x	
Mode Messages	x	x	
Mode Altered	*****		
Note Number	35-70	x	
Note True voice	*****		
Velocity Note ON	x	x	
Velocity Note OFF	x	x	
After Touch Key's	x	x	
After Touch Ch's	x	x	
Pitch Bend	x	x	
Control	6	6	Data Entry-MSB
	38	38	Data Entry-LSB
Change	98	98	NRPN-LSB
	99	99	NRPN-MSB
Prog Change	x	x	
Prog True #	*****		
System Exclusive	x	x	
System Qtr Frame	x	x	
System Song Pos	x	x	
System Song Sel	x	x	
Common Tune	x	x	
System Clock	x	x	
Real Time Commands	x	x	
Aux Local ON/OFF	x	x	
Aux All Notes OFF	x	x	
Mes- Active Sense	x	x	
sages Reset	x	x	
Notes			

Mode 1 : OMNI ON, POLY
 Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
 Mode 4 : OMNI OFF, MONO

o : Yes
 x : No

INDEX

■ Symbols/Numerals

8-track recording (HD16 only)	46
(.	104
)	104
+	104
x	104

■ A

A, point	39
A-B repeat	39
AIFF file	63, 70
Algorithm	127
All initialize	173
Auto punch-in/out	41

■ B

B, point	39
Backup CD	146
Loading a project	148
Saving a single project	146
Saving all projects	147
Bass program	87
Bass sequence	87
Bass volume	102
Bounce function	44

■ C

Capture	65
CD creation	138
By album	140
By project	139
Using marks for track division	142
CD-R	138
CD-R/RW disc	138
Finalizing	144
CD-R/RW drive installation	18
CD-RW	138
CD-RW disc	138
Erasing	144
Changing the drum kit/bass program	89
Character input	37
Chord	102
Chord information	102
Rhythm pattern	98
Rhythm song	105
Chromatic	56
Chromatic tuner	167
Connections (HD8)	16
Connections (HD16)	17
Contrast	170
Control section	14
Control surface mode	163
Selecting the interface	163
Copy	51
Kit file	114
Measure	108
Phrase	71
Project	152
Rhythm pattern	100
Rhythm song	109
Sample	119
Specified data range	51
V-take	62

■ D

DADGAD	168
DAO (Disc-at-once)	140

Delete

Character	37
Kit file	115
Phrase	72
Rhythm pattern	101
Rhythm song	110
Sample	120
Demo song	21
Digital copy prevention	169
Disc-at-once	140
Drum kit	87
Assigning samples to pads	112
Importing samples from an external source	121
Setting pad parameters	113
Drum sequence	87
Drum volume	102
Duo harmony	59

■ E

Effect module	127
Effect parameters	127
Insert effect	179
Send/return effect	190
Effect type	127
Effects	126
Insert effect	11
Mastering effect	34
Send/return effect	11
End of song	102
EOS	102
Erase	52
CD-RW disc	144
Chord information	106
Marker	48
Measure	103
Note	97, 98
Pad play information	94, 95
Project	152
Rhythm pattern information	103
Specified data range	52
V-take	61
Event	102

■ F

Factory initialize	172, 173
Fade-in/out	53
Fader section (HD8)	14
Fader section (HD16)	15
FAST input	15
Phrase loop	73
Rhythm song	104
Finalize	144
Foot switch function	169
Function/transport section	15

■ H

Hard disk maintenance	171
Basic operation	171
Format hard disk	173
System file restore	172
Test/repair internal hard disk	172
Harmony generate	57
HARMONY+	57

■ I

Import	145
Audio CD	145
Audio data	63

Kit file	115
Patch	136
Phrase	68
Playlist	143
Rhythm song/rhythm pattern	111
Sample	121
SMF	158
WAV/AIFF file	70
Importing an audio CD into a project	145
In point	41
Input mixer	76
Input section (HD8)	12
Input section (HD16)	13
Input sensitivity	25
Insert effect	11, 26, 126
Applying effects to 8 inputs (HD16 only)	128
Changing a patch name	132
Editing a patch	130
Inserting effects before track output/ [MASTER] fader	129
Inserting effects into input path	128
Patches	127
Selecting a patch	129
Storing/swapping patches	132

■ K

Key	55
Kit file	112
Assigning a name	116
Copying a kit file	114
Deleting a kit file	115

■ L

Level meter display mode	170
Locate function	39

■ M

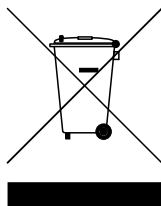
Major	56
Manual punch-in/out	41
Marker function	47
Deleting a mark	48
Dividing a track	142
Moving a mark	48
Setting a mark	47
Mass storage mode	161, 164
Master track	10, 42
Converting to stereo WAV file	43
Mastering effect	34
Meter/display section (HD8)	12
Meter/display section (HD16)	13
Metronome	125
Changing the volume	125
MIDI	154
Basic operation	155
MTC	157
Song position pointer	156
Start/Stop/Continue	156
Timing clock	156
MIDI channel	155
MIDI implementation chart	209
MIDI IN jack	154
MIDI note number chart	205
MIDI OUT jack	154
Minor	56
Mixdown	34
Mixdown function	42

- Mixer** 11, 76
Assigning an input signal to a track 77
Input mixer 76
Linking two tracks 82
Scene function 84
Solo function 83
Track mixer 76
- Move**
Moving a V-take 62
Moving data 52
Moving V-takes of tracks 1 – 8 to tracks
9 – 16 (HD16 only) 62
- **O**
Out point 41
Output section (HD8) 12
Output section (HD16) 13
Overdubbing 29
- **P**
Pad section 14
Pads
Assigning samples 112
Changing sensitivity 125
Making settings 113
MIDI note number table 205
Parameter knobs 81
Patch
Insert effect 127
Send/return effect 134
Pattern 102
Phrase list 206
Phrase loop 67
FAST input 73
Phrase
Adjusting parameters 70
Copying a phrase 71
Deleting a phrase 72
Importing a phrase 68
Importing a WAV/AIFF file 70
Writing a phrase loop to a track 73
Pitch fix 55
Playlist 165
Power-down 20
Power-up 20
PQ subcode 142
Pre-count 49, 124
Project 150
Basic operation 150
Changing the project name 153
Continuous playback 165
Copying a project 152
Creating a new project 23, 151
Deleting a project 152
Loading a project 151
Loading a project from CD-R/RW disc 148
Saving a single project on CD-R/RW disc
..... 146
Saving all projects on CD-R/RW disc 147
Write-protecting 153
Punch-in/out function 41
Auto punch-in/out 41
Manual punch-in/out 41
- **Q**
Quantize 92
Quick erase 145
- **R**
Range edit
Basic operation 50
Copy data 51
Delete data 52
Fade-in/fade-out data 53
Generating 1-part harmony 59
Generating 3-part harmony 57
Move data 52
Pitch compensation 55
Reverse data 54
Time compression 55
Trimming 53
Real-time input
Bass sequence 94
Drum sequence 93
Rear panel 14
Recorder 10, 36
Setting the pre-count 49
Recording
Mixdown 34
Mixing 30
Overdubbing 29
Preparations 23
Recording the first track 25
Reverse 54
Rhythm 10, 87
Rhythm pattern 10, 87, 88
Assigning a name 100
Bass sequence 87
Bass sequence real-time input 94
Bass sequence step input 97
Changing the drum kit/bass program 89
Changing the tempo 89
Changing the volume of drum/bass
sequence 99
Copying a rhythm pattern 100
Creating a rhythm pattern 92
Deleting a rhythm pattern 101
Drum sequence 87
Drum sequence real-time input 93
Drum sequence step input 96
Entering chord information 98
Selecting a rhythm pattern 88
Rhythm pattern list 198
Rhythm pattern mode 88
Rhythm recording function 45
Rhythm section
Changing the metronome volume 125
Changing the pad sensitivity 125
Checking the remaining memory 125
Pre-count 124
Swapping left/right pan position 125
Rhythm song 11, 88, 101
Assigning a name 110
Copy 109
Copying a specified range of measures
..... 108
Delete 110
Entering chord information 105
FAST input 104
Play 108
Step input 102
Transposing a rhythm song 109
Rhythm song mode 88
Right side panel 15
Root 102
- **S**
Sample 117
Assign 112
Copy 119
Delete 120
Sample pool 121
Scale 55
Scan disc 172
Scene function 84
- SCMS** 169
Scrub/review 40
Send/return effect 11, 32, 126, 134
Editing a patch 134
Patch 134
Storing/swapping patches 135
Sequence play 165
Shutdown 20
SMF 158
Output destination 158
Playback 159
Solo function 83
Specifications 174
Step input
Bass sequence 97
Drum sequence 96
Rhythm song 102
Stereo link 82
Swap 66
System version 171
- **T**
TAO (Track-at-once) 140
Tempo 89, 102
Time signature 102
Time stretch 55
Top panel (HD8) 12
Top panel (HD16) 13
Track 10
Capture 65
Swap 66
Track editing
Specifying a range 50
Track mixer 76
Track parameters 31, 79
Track parameter list 80
Track-at-once 140
Transpose 109
Trimming 53
Trying out the recorder 22
Tuner function 167
Tuner type 168
- **U**
USB
File exchange with computer 161
Operating DAW software 163
- **V**
V-take 10, 36
Assigning a name 36
Switching the V-take 36
V-take based editing 61
Basic operation 61
Copying a V-take 62
Erasing a V-take 61
Importing audio data 63
Moving a V-take 62
Moving V-takes of tracks 1 – 8 to tracks
9 – 16 (HD16 only) 62
Swapping V-takes 63
- **W**
WAV file 43, 63, 70
Write
Phrase loop 73
Rhythm song 104
Write-protect 153

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.**



Disposal of Old Electrical & Electronic Equipment (Applicable in European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

ZOOM

ZOOM CORPORATION

ITOHPIA Iwamotocho 2chome Bldg. 2F, 2-11-2, Iwamoto-cho,
Chiyoda-ku, Tokyo 101-0032, Japan

Web Site: <http://www.zoom.co.jp>