BOSS®

DIGITAL RECORDING STUDIO
BR-1600 CD

Basic Operation
(from setup to creating a CD)

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (Owner's manual p. 2–3; p. 4–5). These sections provide important information concerning the proper operation of the unit.

Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, "Basic Operation" and "Owner's manual" should be read in their entirety.

The manual should be saved and kept on hand as a convenient reference.

How to use this manual

The BR-1600CD Owner's manual consists of two volumes "**Basic Operation**" and "**Owner's Manual**."

"Basic Operation" explains the sequence of turning on this unit, recording, playback, mixing down and making an original Audio CD.

To use the BR-1600CD, please read this book first.

"Owner's Manual" covers the functions which are not mentioned in "Basic Operation." Please read it for finer settings and more sophisticated use of the BR-1600CD.

Common operations and display items	
Connecting other devices	
Turning on/off the BR-1600CD	
Adjusting the display's contrast	
Listening to the demo songs and selecting songs (Song Select)	
Basic operation of the recorder	
Preparing a song for recording (Song New)	
Selecting an input source for recording (Input Select)	
Adjusting the input source volume (Input Sensitivity)	
Recording with effects (Insert Effects)	
Selecting drums to act as a guide for recording	
Adjusting the recording level	
Setting an audio input's left-right position (Input Pan)	
Applying reverb for a warmer sound during recording (Reverb)	
Recording	
Rectifying recording mistakes (Undo/Redo)	
Recording a new track while listening to an earlier recording (Overdubbing)	
Mixing audio from various tracks onto a stereo track (Mix Down)	
Saving your song (Song Save)	
Adjusting volume and compression for CD writing (Mastering Tool Kit)	
Writing your finished song to a CD (Audio CD Write)	
Listening to your audio CD (Audio CD Play)	

■ Printing Conventions in This Manual

• Text or numerals enclosed in square brackets [ ] indicate buttons.

  [PLAY]　　　PLAY button

  [CURSOR]　　CURSOR button

• Reference such as (p. **) indicate pages in this manual to which you can refer.
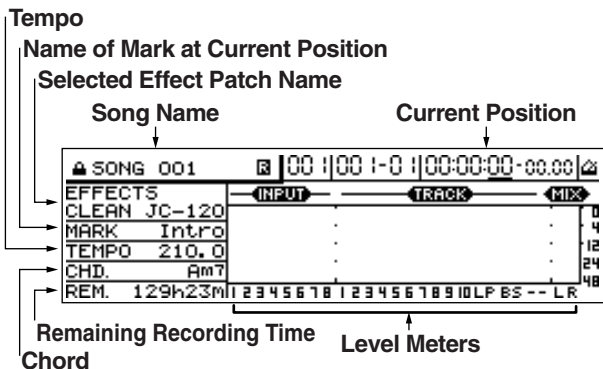
Contents

Common operations and display items

Top screen

Tempo
Name of Mark at Current Position
Selected Effect Patch Name
Song Name   Current Position

Remaining Recording Time   Level Meters
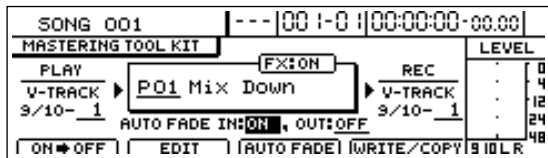Chord

Mastering Mode Top Screen

Displayed shortly after the power is turned on, this is the main BR-1600CD screen. Among other important information, the top screen presents the name of the currently selected song, the current position within the song, the level meters, and remaining recording time on the hard disk.

Regardless of the screen that you are currently in, you will always be able to return to this screen by pressing [EXIT/NO] several times (although you may sometimes have to wait until the BR-1600CD completes the current process).
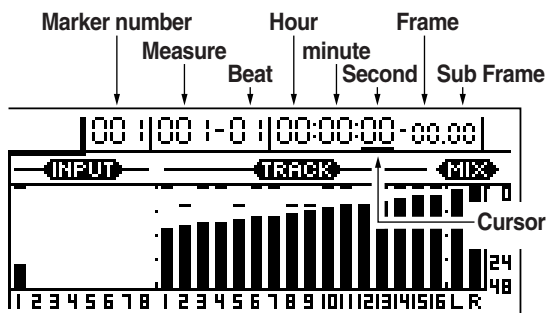
In Mastering mode only, the top screen changes to the screen like that shown to the left.

Unless otherwise specified, all procedures described in this manual will require you to return first of all to the top screen.

Current position

Marker number   Hour   Frame
Measure   minute
Beat   Second   Sub Frame

Cursor

The current position within the song is indicated in terms of time at the top right of the display. In addition, this position is also indicated in terms of bars and beats to the left of this time value.

The displayed time is based on MIDI Time Code (MTC), and as such, it is presented in terms of hours, minutes, seconds, frames, and sub-frames. Note that different devices use different MTC specifications.

If you want to synchronize the BR-1600CD with another MIDI device using MTC, you will first of all need to set both to the same MTC specification. At the time of purchase, the number of frames per second will initially be set to 30 (non-drop) on the BR-1600CD.

FUNCTION buttons ([F1] through [F4])/PAGE SCROLL buttons

Function buttons

(Left)   Page Scroll buttons   (Right)

[F1] through [F4] are called the FUNCTION buttons. At the bottom of the display, you will find the names of the functions that are assigned within the current screen to each of these buttons.
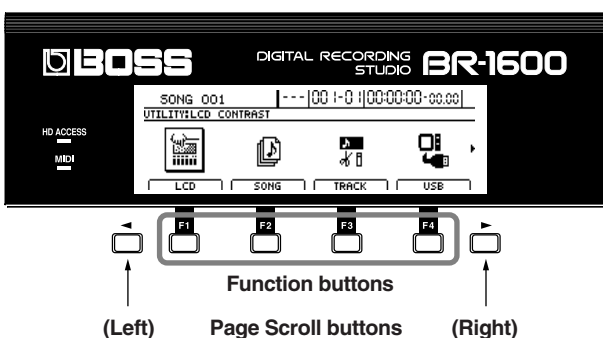
If an explanation from this manual were to refer to "[F1] (WRITE)", you would know that pressing [F1] would select the "WRITE" function as displayed immediately above the button.

When " ◀ " and/or " ▶ " is displayed on the left and right of the screen, respectively, it will indicate that the BR-1600CD could not fit all of the relevant content on-screen and that some content is hidden in the direction of the arrow. The PAGE SCROLL buttons [◀] and [▶] are used to display this hidden content. Press [◀] to scroll the screen to the left, and press [▶] to scroll the screen to the right.

Although you can also scroll the screen by holding down [◁] or [▷] from CURSOR, this can be done much quicker using the PAGE SCROLL buttons.

Scroll Bar

```
   SONG 001      |---|001-01|00:00:00-00.00|
UTILITY:SYSTEM
Foot Switch      :PLAY/STOP
Phantom          :OFF
Sub Mixer        :OFF
Digital In Assign :OFF
Level Display    :POST FADER
```

Scroll Bar

When you see a scroll bar at the right of the screen, it means that the BR-1600CD could not fit all of the relevant content in one screen, and there is additional content hidden at the top or the bottom.

The scroll bar itself represents the entire display content, and the black portion represents the range of that content that is currently being displayed.

To view the hidden content, press CURSOR [▽] or [△] to move the display area up or down respectively.

When the display area is moved up, the black area in the scroll bar will also move up, and when the display area is moved down, the black area moves down.

Cursor

(Up)

(Left) CURSOR **(Right)**

(Down)

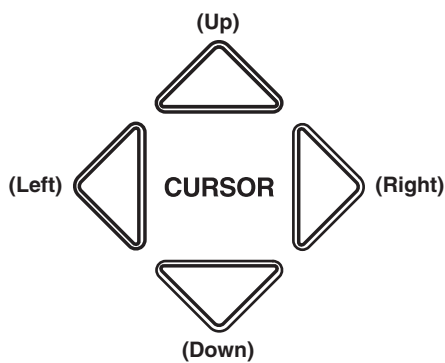The BR-1600CD's cursor is represented either as an inverted character, a frame, or an underline in a section of the screen that allows settings to be made. When represented as a knob icon, the knob is shown in black.

If the current screen contains a number of such sections, you can use [CURSOR] to move between the corresponding setting items. In addition, when you press and hold down [CURSOR], the on-screen cursor will move continuously in the corresponding direction. If you need to speed up the motion of the cursor, press and hold the CURSOR arrow for the required direction of movement, and then press the CURSOR arrow for the opposite direction. This action will cause the cursor to move more quickly around the screen.

Example: To move the cursor quickly to the right

Press and hold CURSOR [▷], and then press [◁].

Example: To move the cursor quickly downward
Press and hold CURSOR [▽], and then press [△].

TIME/VALUE dial
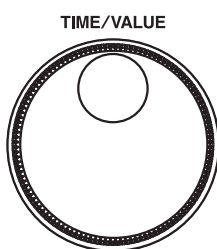
TIME/VALUE

The TIME/VALUE dial is used to change the cursor position, values, or characters. In the case of values, these are increased when the dial is turned clockwise, and reduced when the dial is turned counterclockwise.

VALUE 1/PAN, VALUE 2, VALUE 3, and VALUE 4 knobs

EFFECTS CONTROL / VALUE EDIT
VALUE 1/PAN   VALUE 2   VALUE 3   VALUE 4
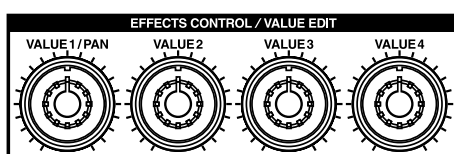
These knobs can be used to change the values of parameters

indicated by knob icons (⬤) on-screen.

Turn clockwise to increase a value and counterclockwise to decrease it.

In addition, you can also use these knobs to make large changes in pattern and loop phrase numbers when a pattern selection screen for rhythm patterns, bass patterns, or loop phrases is displayed.

Connecting other devices

MIDI Sequencer etc.

MIDI OUT

MIDI IN

Computer

USB

LINE OUT

CD Player, Rhythm Machine, etc.

MIDI Sequencer, MIDI Sound Module, etc.

DIGITAL IN

GT-6, CD Player etc.

Microphone

Keyboard etc.

DC IN   POWER   OUT   MIDI   IN   USB   DIGITAL (COAXIAL)   FOOT SW   EXP PEDAL   LINE OUT   AUDIO SUB MIX   INPUT

USE ROLAND PSB-3U ADAPTOR ONLY   MODEL/SER. NO.   W/PHANTOM   HOT COLD

MADE IN JAPAN   BOSS Corporation   N225

DIGITAL OUT

AC Adaptor (PSB-3U)

DS-30A, Digital Amp, etc.

LINE IN

Audio Set etc.

Electric Guitar or Electric Bass

Set the polarity switch as shown below.
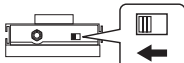
Foot Switch (FS-5U etc.)

Expression Pedal (Roland EV-5 etc.)

Roland EV-5

FS-5U   BOSS

Stereo Headphones

PLAY   REC   V-TRACK   1   2   3   4   5   6   7   8   9/10   11/12   13/14   15/16   TRACK MUTE   L/R   TAP

PHONES2 VOLUME   PHONES1 VOLUME   GUITAR/BASS

NOTE

To prevent malfunction and/or damage to speakers or other devices, always turn down the volume and turn off all devices before making any connections.

● The pin assignment for the XLR type connectors is as shown below. Before making any connections, make sure that this pin assignment is compatible with that of all your other devices.

COLD

3   1   2

GND   **HOT**

1 Connect the guitar, bass guitar, microphone, etc. to the BR-1600CD's input jacks.

Guitar, bass, etc.:
Connect to the GUITAR/BASS jack on the front panel.

Microphone for solo vocals:
Connect to the INPUT 2/MIC 2 input jack on the rear panel.

CD player, keyboard, etc.:
Although CD players, keyboards, and the like can be connected to any of the input jacks INPUT 1/MIC 1 through INPUT 8/MIC 8 on the rear panel, it is recommended that you use INPUT 3/MIC 3 through INPUT 8/MIC 8, since a guitar, bass guitar, or solo-vocal microphone may need to be connected later on. For this example, let's connect the L channel to INPUT 7/MIC 7 and the R channel to INPUT 8/MIC 8.

Multiple microphones for recording chorus vocals or drums or the like:
Connect to any of the input sources INPUT 1/MIC 1 through INPUT 8/MIC 8 on the rear panel.

2 Connect the LINE OUT L and LINE OUT R jacks on the rear panel to your amplifier.
If you will be using headphones, connect these to the PHONES 1 jack.

The BR-1600CD's LINE OUT L/R jacks must always be correctly matched with the amplifier's left and right inputs.

3 If necessary, connect an expression pedal or foot switch to the BR-1600CD. Any MIDI or USB connections should also be made.

△ NOTE Precautions When Making Connections

- When a guitar or bass is connected to the GUITAR/BASS jack, the INPUT 1/MIC 1 input jack will be deactivated and will not accept any sound input.
- Noise may be generated when the pickup on your guitar or bass is close to the BR-1600CD. Move the BR-1600CD and guitar further apart to eliminate this noise.
- The location of microphones relative to speakers could result in feedback being produced. This can be remedied by:
    1. Changing the orientation of the microphone(s).
    2. Relocating the microphone(s) at a greater distance from the speakers.
    3. Lowering volume levels.

MEMO

- For more detailed information regarding the operation and setting of expression pedals, refer to "Using an expression pedal" (Owner's Manual; p. 84).
- For more detailed information regarding the operation and setting of foot switches, refer to "Using a foot switch" (p. 12).
- For more detailed information regarding the operation and setting of MIDI devices, refer to "Section 5 Using MIDI" (Owner's Manual; p. 221).
- For more detailed information regarding USB operation and setting methods, refer to "Section 6 Using USB" (Owner's Manual; p. 239).
- When a condenser microphone is connected to an XLR input jack, phantom power at +48 V can be supplied from the BR-1600CD. For details on how this is done, see "Using condenser microphones (Phantom Power)" (Owner's Manual; p. 264).

Turning on the BR-1600CD

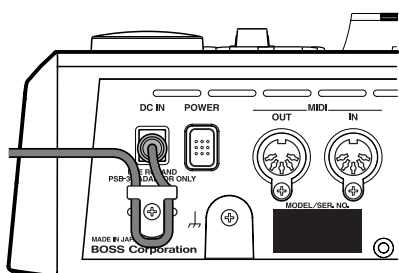Use the POWER switch to turn the BR-1600CD on and off.

Once the connections have been completed (p. 6), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

POWER Switch
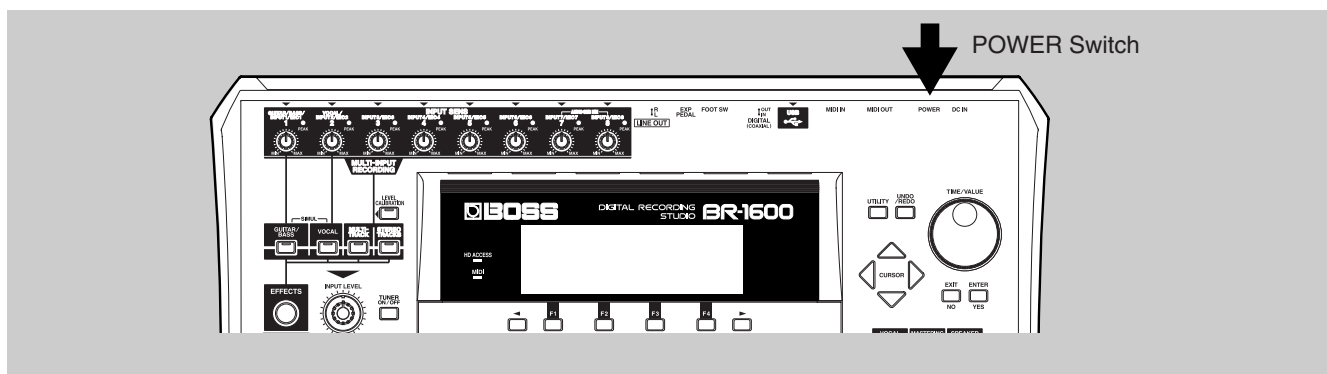
1 Before turning on the power, the volume of all connected devices should be turned all the way down.

2 Connect the AC adaptor's plug to the BR-1600CD's DC IN jack and loop its cord around the cord hook.

This will ensure that, even when the cord is accidentally pulled, the power will not turn off as a result of the plug being pulled out of the DC IN jack, and the jack itself will not be subjected to excessive force.

3 Plug the AC adaptor into a power outlet.

4 If any CD players, keyboards, etc. are connected to the BR-1600CD's input jacks, turn on these devices first.

5 Press the BR-1600CD's POWER switch.

The power will turn on and the opening screen will be displayed. After a few moments, the message "Now Checking..." will appear, and this will be followed by the message "Now Loading...". When the top screen appears, it indicates that the BR-1600CD is ready for use.
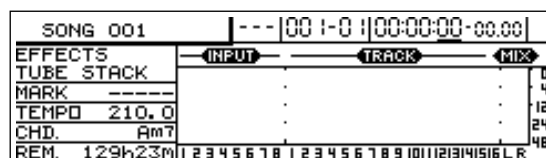
6 If an amplifier or any other similar device is connected to the BR-1600CD's output, this should be turned on last of all.

⚠ NOTE IMPORTANT

- A small amount of noise may be output from the BR-1600CD when it is turned on. Although this noise is neither loud nor the result of a malfunction, it can cause speakers and other similar devices to be damaged if the amplifier volume is turned up at this time. It is important, therefore, to ensure that the amplifier is turned on last of all.
- In order to protect the BR-1600CD's circuits, no operation will be possible for a short period of time after the power is turned on.

Turning off the BR-1600CD

1 **If an amplifier or any other similar device is connected to the BR-1600CD's output, this should be turned off first of all.**
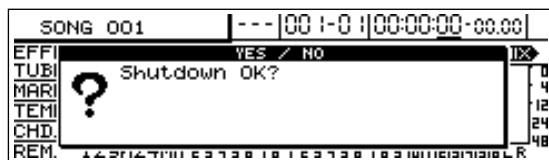
2 **Press and hold down the BR-1600CD's POWER switch for approximately 2 seconds.**

The message "Shutdown OK?" will appear.

3 **Press [ENTER/YES].**

The message "Save Current?" will appear.

Song Protect is activated for the demo songs already included in the BR-1600CD at the time of purchase, and for this reason, the power will turn off without the message "Save Current?" being displayed.

4 **Press [ENTER/YES] once again.**

The message "Storing Current..." will appear and saving of the currently selected song will begin. When saving has been completed, the message "Now shutdown..." is displayed, and the BR-1600CD will automatically turn off a few moments later.

If you do not want to save your song at this time, press [EXIT/NO]. The BR-1600CD will turn off without the song being saved. In such a case, however, all audio that was recorded and data that was edited since you last saved the song will be lost; accordingly, be careful not to press [EXIT/NO] by mistake.

⚠ (IMPORTANT) Precautions when turning off the BR-1600CD

- Always use the POWER switch to turn off the BR-1600CD's power. Recorded audio data, mixer settings, etc. are not stored as the corresponding operations are completed; rather, they are stored when the song is saved or when the power is turned off automatically. Therefore, when the BR-1600CD is turned off by pulling out the AC adaptor's plug or by any other method not involving the POWER switch, all recorded audio data, mixer settings, and the like will be lost. This practice can also lead to song data being lost or to the hard disk being permanently damaged, and it should be avoided.

- Before removing the AC adaptor from the power outlet, be sure to confirm that the BR-1600CD has turned off fully (i.e., the display is not lit). The AC adaptor should not be disconnected while data is being saved as this will result in the loss of recorded audio data and other song contents (i.e., mixer settings, effect patch data, etc.).

- The hard disk motor will continue to run for a short period of time after the power has been turned off. Accordingly, the BR-1600CD should not be moved immediately after it has been turned off. Note that failure to observe this precaution can result in damage to the hard disk mechanism.


MEMO

What is meant by saving songs?

In the BR-1600CD, recorded or edited audio data is only temporarily stored on the hard disk until the song that contains it is saved. For this reason, if the power is turned off before the song has been saved, all of your recorded and edited data will be lost. The Save function prevents this from occurring by storing the recorded and edited data on the BR-1600CD's hard disk.

Note that songs can be saved at any time, not only when the power is being turned off. For more detailed information, refer to "Saving your song (Song Save)" (p. 56).

Adjusting the display's contrast

In certain locations, the BR-1600CD's display may be difficult to read. In such cases, use the following procedure to adjust the display's contrast.
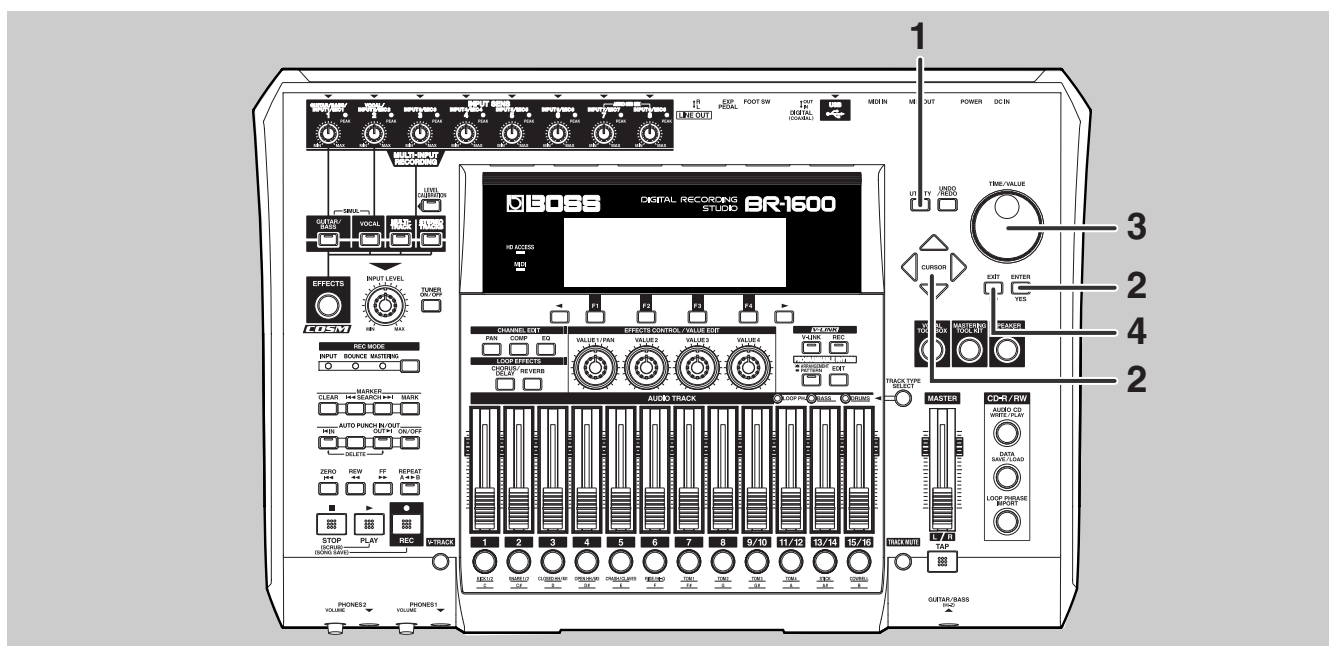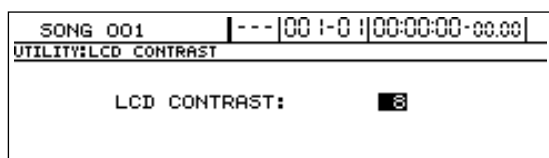

1 Press [UTILITY].

The Utility screen will appear.

2 Move the cursor to the LCD CONTRAST icon and press [ENTER/YES].

Alternatively, press [F1] (LCD) if the LCD CONTRAST icon is currently displayed.

The LCD Contrast screen will appear.

3 Turn the TIME/VALUE dial to adjust the contrast.

Setting range: 1 through 16

Higher values produce a darker display and vice-versa.

4 When you have finished adjusting the contrast, press [EXIT/NO] several times to return to the top screen.
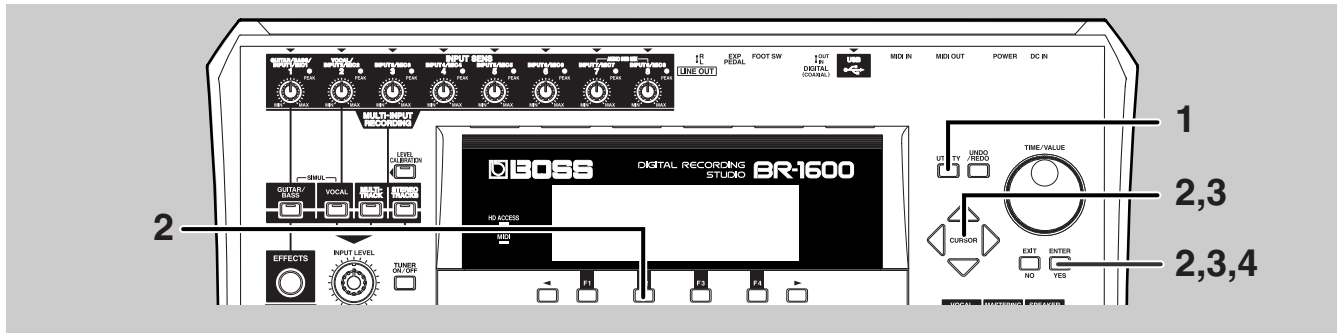
MEMO

If you press and hold [UTILITY] while turning the TIME/VALUE dial, you will be able to change the contrast in real time. Choose the method that best suits the BR-1600CD's setup.

Listening to the demo songs and selecting songs (Song Select)

When the BR-1600CD is turned on, the top song is automatically selected and all data necessary for playback is loaded. When the loading of this data has been completed, the name of the song will be displayed.
If you wish to work on a different song, you can select that song using the following procedure. Demo songs are stored on the BR-1600CD. Let's now select one of these songs to listen to. (Refer to the Demo Song List leaflet.)
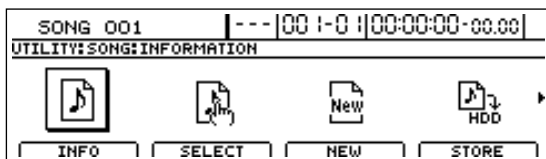

1 Press [UTILITY].

The Utility Menu screen will appear.

```
 SONG 001        ---|001-01|00:00:00-00.00|
UTILITY:LCD CONTRAST

  [LCD]    [SONG]    [TRACK]    [USB]
```

2 Move the cursor to the SONG icon and press [ENTER/YES].

Alternatively, you can press [F2] (SONG) if the SONG icon is currently displayed.
The Song Menu screen will appear.

```
 SONG 001        ---|001-01|00:00:00-00.00|
UTILITY:SONG:INFORMATION

  [INFO]   [SELECT]   [NEW]    [STORE]
```

3 Move the cursor to the SELECT icon and press [ENTER/YES].

Alternatively, press [F2] (SELECT) if the SELECT icon is currently displayed.
The Song Menu Selection screen will appear.

```
 SONG 001        ---|001-01|00:00:00-00.00|
UTILITY:SONG:SELECT
  *   1|SONG 001
      2|SONG 002
      3|SONG 003
      4|SONG 004
  [---]    [---]     [---]     [GO]
```

4 Move the cursor to the song you want to listen to and press [F4] (GO).

The message "Now Loading..." will appear and loading of song data from the hard disk will begin. After a few moments, the message "Complete!" is displayed to indicate that the data has been read.

NOTE

- In certain cases, the message "Save Current?" will appear during the procedure described above. This indicates that the currently selected song contains recorded audio data and/or edited data that has not been saved. If you want to save the song, press [ENTER/YES]; if this will not be necessary, press [EXIT/NO]. Note that if you press [EXIT/NO], the recorded audio data and/or edited data will be lost; accordingly, be careful not to press this button by mistake. In other cases, the message "Re-Load Current?" may appear. This indicates that although the currently selected song contains recorded audio data and/or edited data that has not been saved, all such changes are to be discarded and the song is to be restored to its previously saved condition. If you want to discard the changes and restore the song, press [ENTER/YES]; if you want to cancel loading, press [EXIT/NO]. Note that if you press [ENTER/YES], the recorded audio data and/or edited data will be lost; accordingly, be careful not to press this button by mistake.
- The demo songs contained in the BR-1600CD are intended for personal enjoyment only. Usage of these songs for any other purpose without the permission of the copyright holder is prohibited by law. The data contained in the demo songs may not be copied or used in secondary works without prior consent of the copyright holder.

Playing and stopping
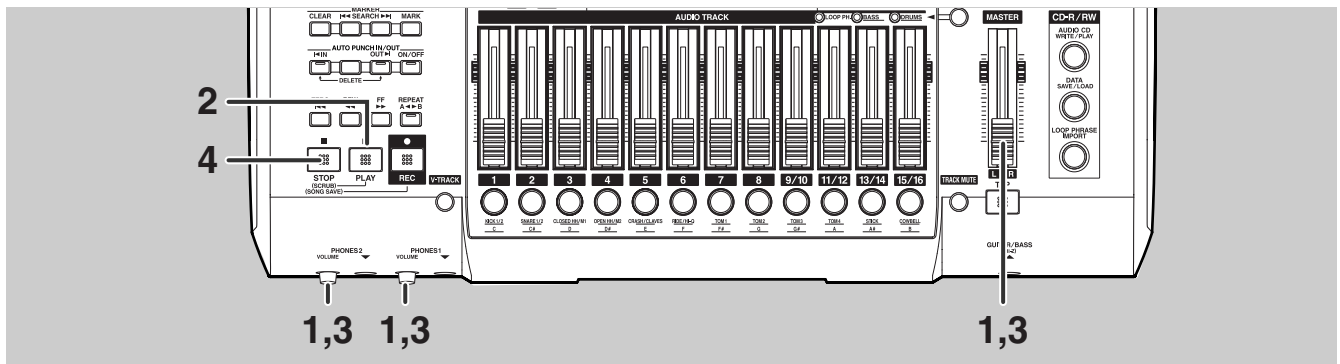
1 In order to avoid being startled by sudden loud noises, turn the PHONES 1 & 2 VOLUME knobs and the MASTER fader all the way down before proceeding.

2 Press [PLAY].

The BR-1600CD will start playback. The playback position is shown in real time at the top of the display. In addition, the playback volume for each track is indicated by the level meters.

3 Slowly raise the PHONES VOLUME knob(s) and the MASTER fader until the playback can be heard at a suitable level.

4 Press [STOP].

The BR-1600CD will stop playback.

Using a foot switch

With a foot switch (such as the optional BOSS US-5U or Roland DP-2) connected to the FOOT SW jack on the BR-1600CD's rear panel, you can use your foot to start and stop performance. Use the following procedure to set the function of the foot switch.

1 Press [UTILITY].

The Utility Menu screen will appear.

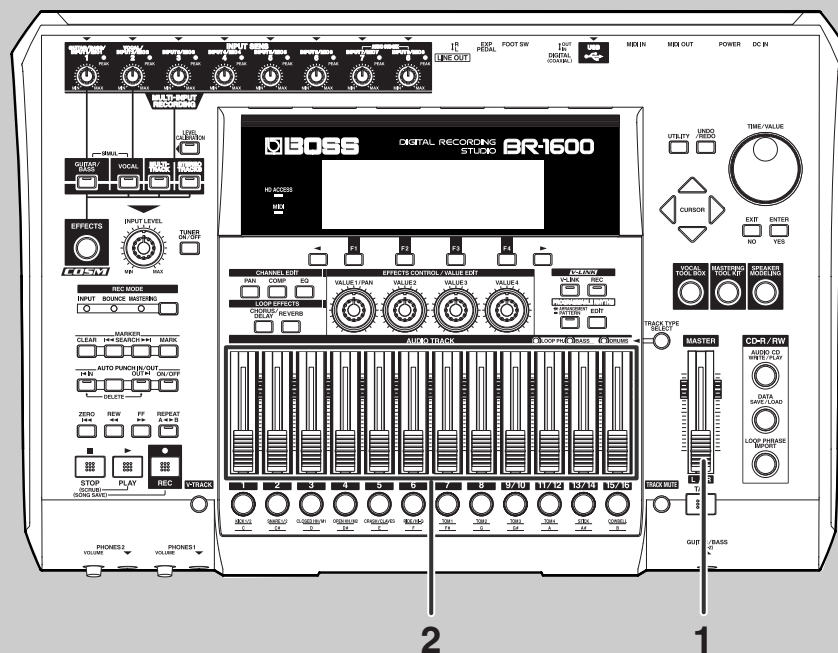**2** Move the cursor to the SYSTEM icon and press [ENTER/YES].
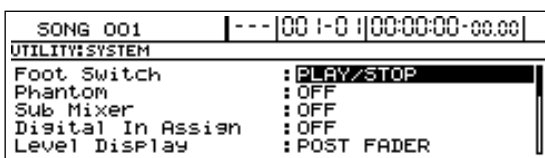
3 Move the cursor to FOOT Switch and select "PLAY/STOP" using the TIME/VALUE dial.

4 Press [EXIT/NO] several times to return to the top screen.

5 Operate the foot switch.

The song will alternate between play and stop each time you press the foot switch.

Adjusting the volume

1 Move the MASTER fader up and down while the song is being played.

The overall volume changes in response to the position of this fader. The display on the MIX level meter changes in response to the volume.

2 Move the Track faders for each track up and down.

The volume of each track changes in response to the position of the corresponding fader. In addition, the display on each track's level meter changes in response to its volume.

NOTE

In certain cases, distortion will occur when a fader is raised too high. In particular, this occurs when the corresponding level meter rises beyond the 0 dB point. In such a case, lower the fader until the distortion is no longer present.
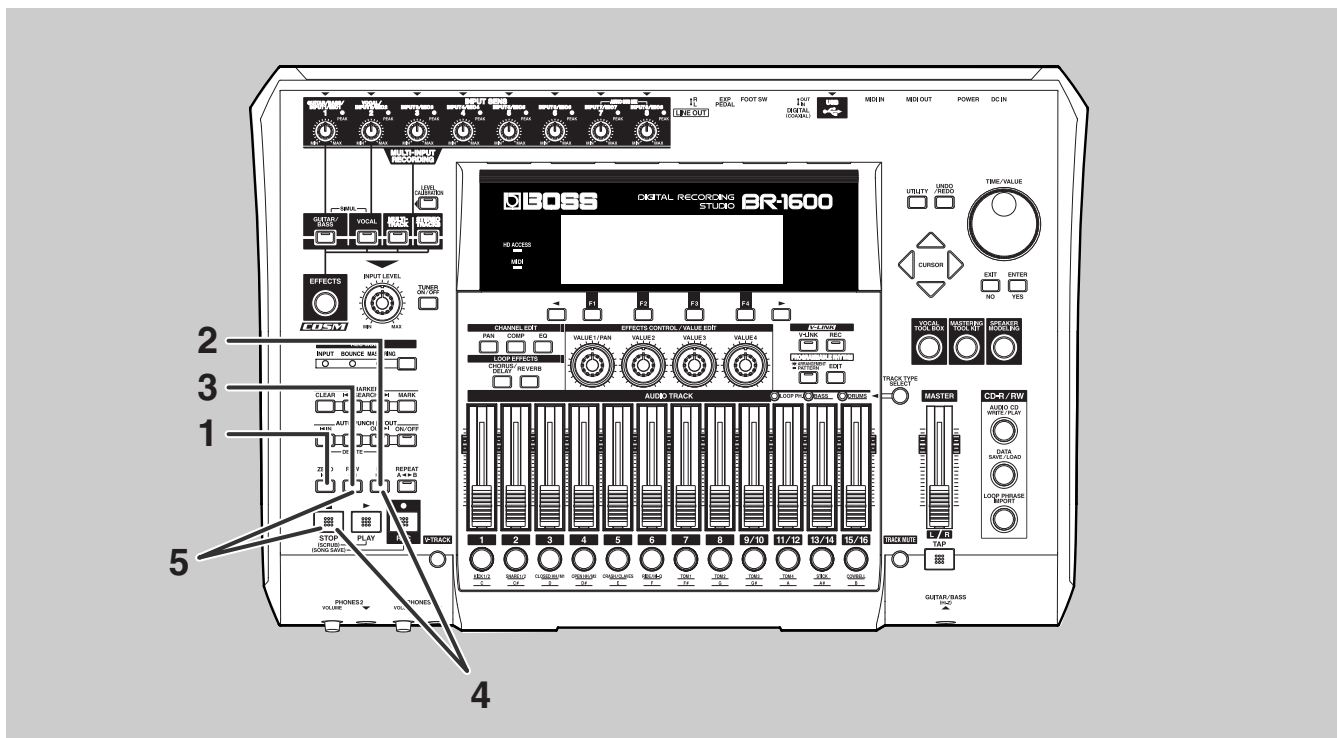
Changing the current position

The current position within a song can be moved regardless of whether or not the song is being played. Any one of a number of different methods can be used to change the current position.

NOTE

- When the current position is changed, it takes a bit of time before you can carry out the next operation. This time is necessary for reading of data from the hard disk that will be needed for playback at the new song position.
- It is not possible to change the current position while recording.

Using the transport buttons

The song position can be changed using the transport buttons located on the bottom left of the front panel.

1 Press [ZERO].

Moves you to the time location 00:00:00-00.00.

2 Press [FF].

The current position will move forward by one second.

3 Press [REW].

The current position will move back by one second.

4 Hold down [STOP] and press [FF].

After the BR-1600CD has checked the V-Tracks currently selected for each track, the current position will jump to the point in the song at which the last recording was made.

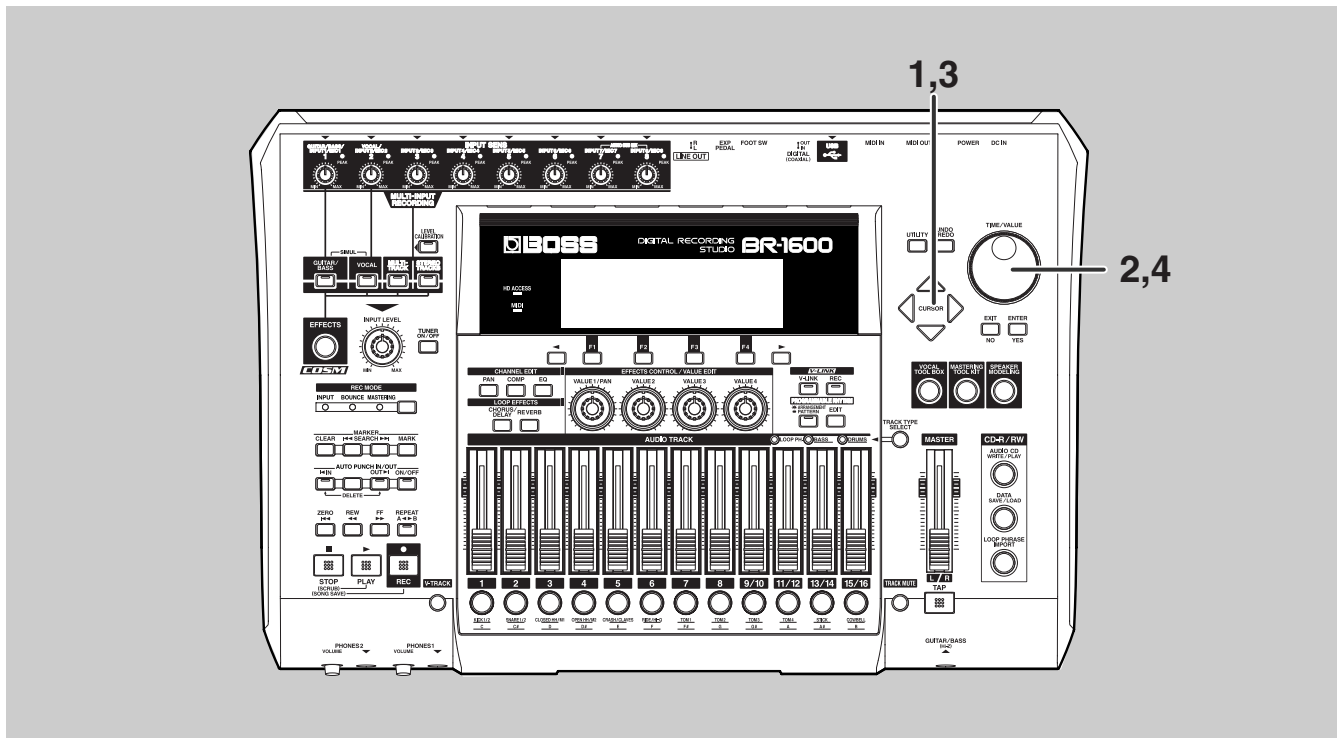## 5 Hold down [STOP] and press [REW].

After the BR-1600CD has checked the V-Tracks currently selected for each track, the current position will jump to the point in the song at which the first recording was made.

Using TIME/VALUE dial

A cursor is displayed below the time for the current position on the top screen. Use the TIME/VALUE dial to change the time values and to move the current position.

1 Move the cursor to the seconds, minutes or hours value.

2 Turn the TIME/VALUE dial.

The current position will change in units of seconds, minutes or hours.

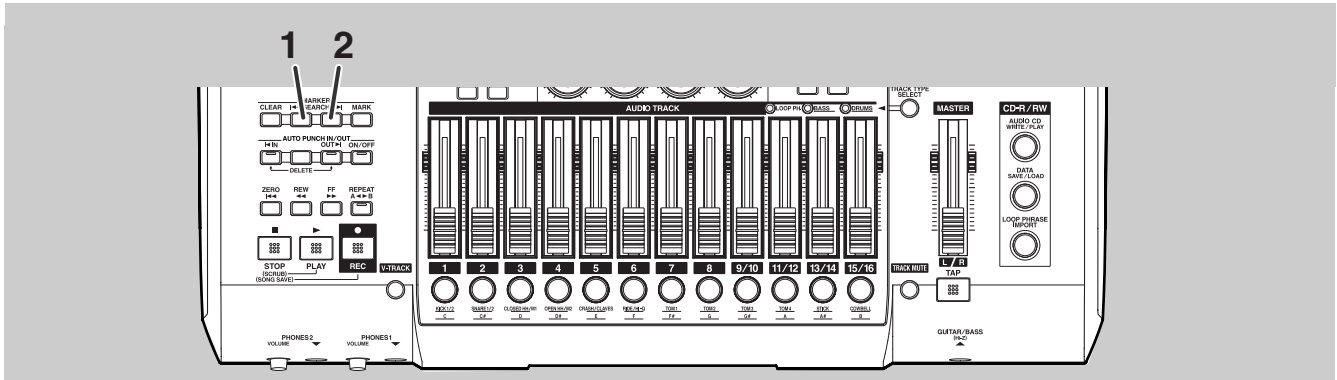## 3 Move the cursor to the measures or beats value.

4 Turn the TIME/VALUE dial.

The current position will change in units of measures or beats. "- - -" will be displayed after measure 999.

Using markers

A number of song markers are set up in the demo songs in advance. These markers can be used to jump to the corresponding positions within the song.

1 Press MARKER [SEARCH ▶▶].

The current position will jump to the location of one of the markers that has been set. Each time

[SEARCH ▶▶] is pressed, the current position will jump forward to the next nearest marker. Note that the marker number corresponding to the current position is displayed at this time.

2 Press MARKER [SEARCH ◀◀].

The current position will jump back. Each time [SEARCH ◀◀] is pressed, the current position will jump back to the previous nearest marker.

3 Move the cursor to the value in the Marker box, and then use the TIME/ VALUE dial to specify a marker number.

The current position will jump to the location of the corresponding marker.

MEMO

- Up to 100 markers can be set up at will within a song. For more detailed information, refer to "Placing markers in your song (Marker)" (Owner's Manual; p. 48).
- The number of the marker at the current position is shown in the display's Marker box. If no marker has been set up at this position, "- - -" is displayed.

Playing back repeatedly (Repeat Function)

Use the Repeat function to play a certain section of the song in a repeated fashion.

This function can also be combined with punch-in and punch-out to carry out loop recording (Owner's Manual; p. 45).
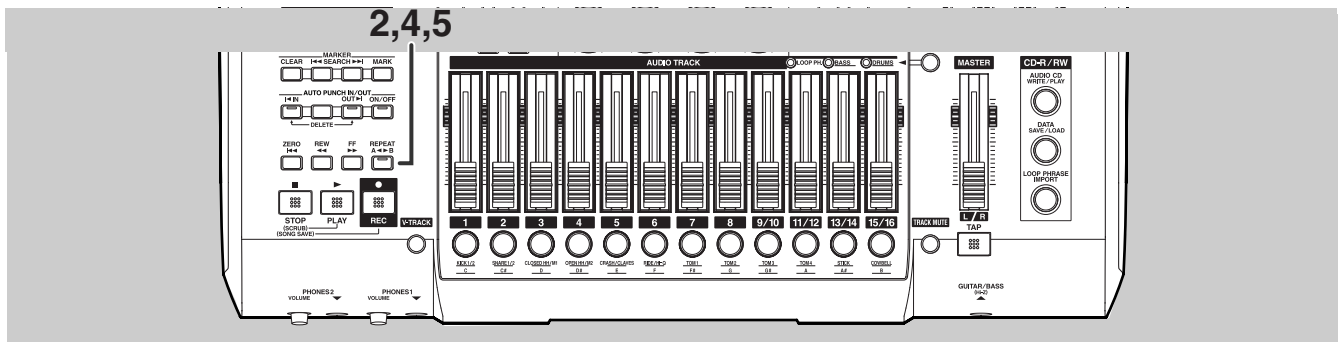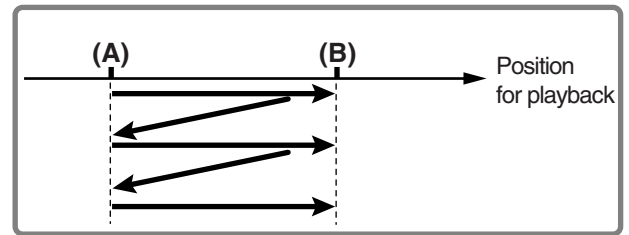
1 Move to the song position from which looped playback is to be started.

2 Press [REPEAT].

[REPEAT] will start to flash and the current position will be specified as the start position (A) for repeat playback.

3 Move to the song position at which playback is to be looped back.

4 Press [REPEAT].

[REPEAT] will start to light up and the current position will be specified as the end position (B) for repeat playback.

5 To redo these settings, press [REPEAT] once again, and turn it off.

In this condition, the start position (A) and end position (B) for repeat playback have been cleared. Repeat Steps 1 through 4 to set new positions.

6 Move the current position to a point before (B) and start playback.

When the song position reaches (B), it will automatically jump to (A), and the section between (A) and (B) plays back repeatedly.

NOTE

- A gap of at least 0.5 seconds is required between the start position (A) and the end position (B) for repeat playback. As a result, (B) cannot be set up at a position within 0.5 seconds of (A).
- Playback is not repeated when the playback is started at a song position after (B).
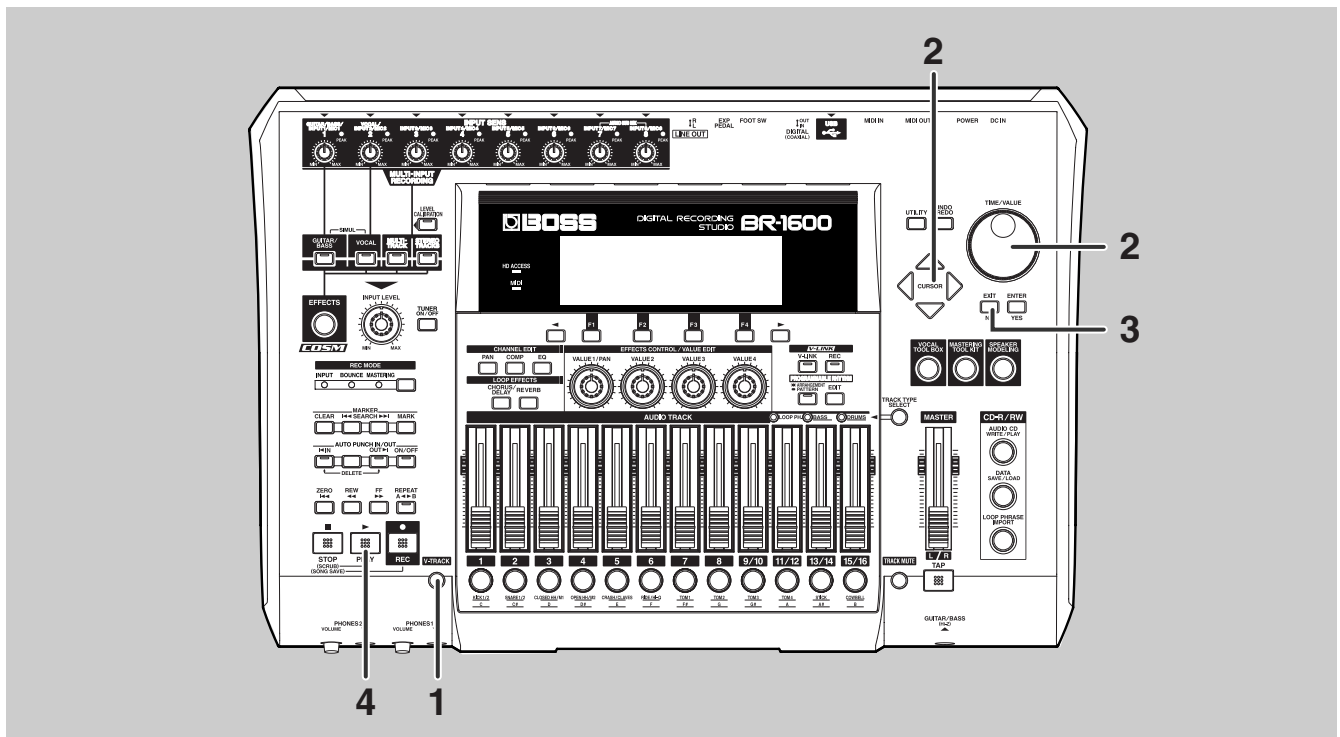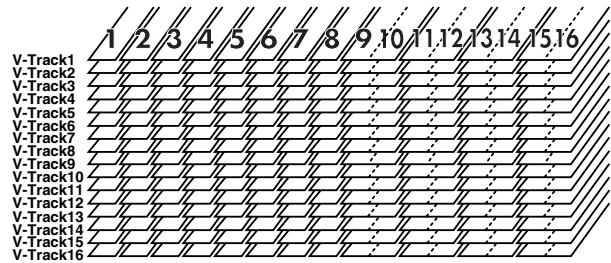
Changing V-Tracks

Recorded variations that use V-Tracks are included in the demo songs. We will now change V-Tracks to listen to these variations.

MEMO

What are V-Tracks?

Each BR-1600CD track comprises sixteen different virtual tracks, one of which is selected for recording and/or playback. In other words, performances can be recorded onto a total of 256 tracks (i.e., 16 x 16), and any sixteen of these tracks can be played back at any one time. The term "V-Track" is used to refer to the virtual tracks that make up each BR-1600CD track.

1 Press [V-TRACK].

The V-Track screen will appear.

The V-Track currently selected for each track and the presence or absence of data in each V-Track are indicated on the V-Track screen.

(■): Currently selected V-Track (containing recorded audio data)

(▬): Currently selected V-Track (not containing recorded audio data)

(▭): V-Track containing recorded audio data

(▪): V-Track not containing recorded audio data

(▸): The V-Track from Track 9/10 last used for mastering (Final Mastering Track)

Changing V-Tracks

2 Move the cursor to the track whose V-Track is to be changed, and then use the TIME/VALUE dial to select a new V-Track.

The symbol indicating the currently selected V-Track will move to this new V-Track.

```
 SONG 001      ┃---┃001-01┃00:00:00-00.00┃
 TRACK       3    1  2  3  4  5  6  7  8  910 1112 1314 1516
 VTRACK      5    ▪ ▪ ▫ ▪ ▪ ▪ ▪ ▪ ▸▪ ▪ ▫ ▪
 NAME             ▫       ▪ ▪ ▪     ▪     ▪ ▫ ▪
 MASTER VTRACK
    9/10- 1
```

3 Press [EXIT/NO] to return to the top screen.

4 Press [PLAY] to start playback.

You will now hear the song with the variation that has been recorded on the newly selected V-Track. However, if this V-Track contains no data, the corresponding track will be silent.

5 If you wish to store the modified settings, save the current song (p. 56).

NOTE

• It is not possible to change V-Tracks while recording.

• Tracks 9/10 through 15/16 are all set to stereo and each comprises two individual tracks; accordingly, V-Tracks can only be selected in sets of two for these tracks. In other words, it is not possible to select a different V-Track for the left track and the right track in a stereo pair.

Turning tracks off temporarily (Track Mute)

When recording a band or the like, it is often necessary to turn off just the vocalist's track to listen to the combined sound of the instruments. In a situation like this, the BR-1600CD allows you to temporarily turn off the audio from specific tracks (Track Mute).
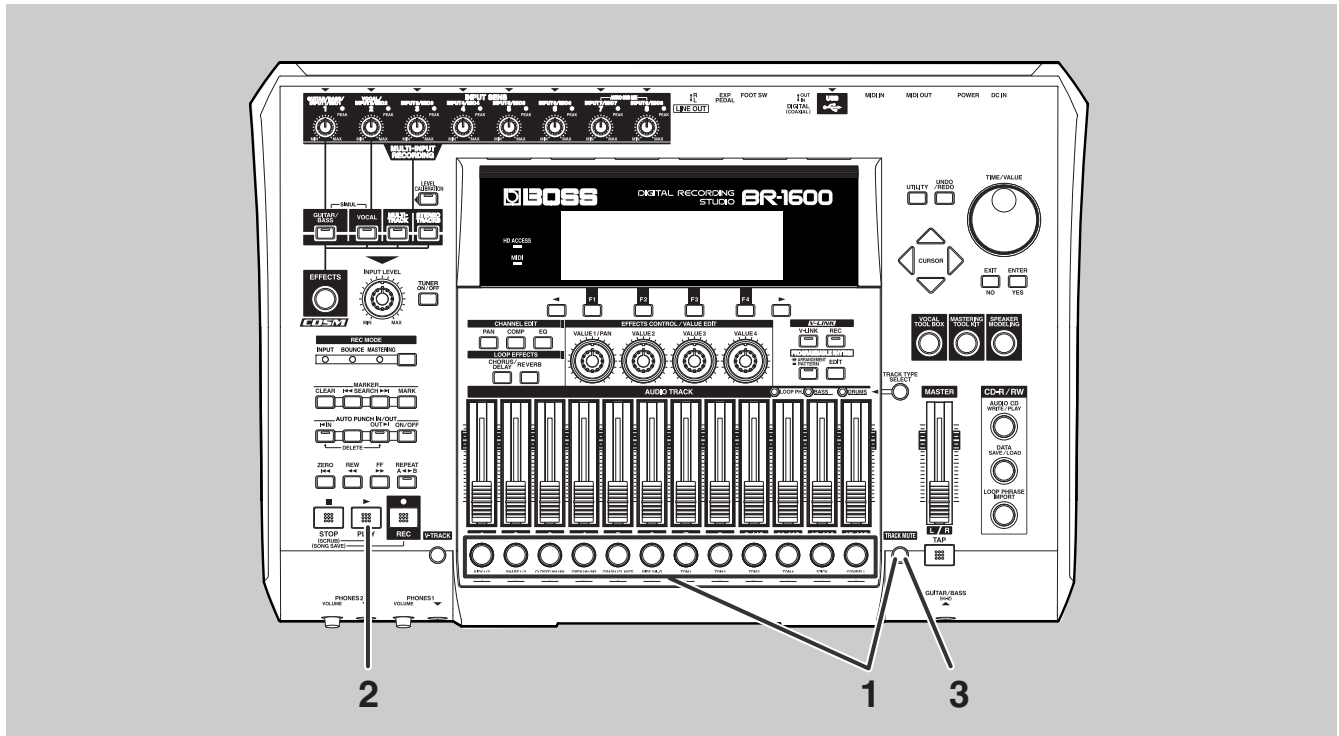
1 Hold down [TRACK MUTE] and press the track button for the track(s) you want to mute.

The track button(s) will start to flash to indicate that the corresponding track(s) are now muted.

2 Press [PLAY] to start playback.

No audio will be output from the muted track(s). Even if its fader is raised, the audio from a track will not be heard when it is muted.

3 To cancel a muted condition, again hold down [TRACK MUTE] and press the track button for the track(s) for which muting is to be canceled.

The track button(s) will stop flashing to indicate that the corresponding track(s) are no longer muted.

## 4 If you wish to store the muted condition, save the current song (p. 56).

MEMO

- When a track is muted, its condition will be the same as if its fader had been moved all the way down. Muting does not cause recorded audio data to be deleted.
- Track Mute is not enabled for tracks other than those whose Track Type is set to AUDIO (p. 28). The Track Mute is also cancelled with the track type is changed.

MEMO

Preparing a song for recording (Song New)

If you are going to record your own performance from scratch, you will first of all have to create a new song free of any recorded audio data. This operation is referred to as "Song New," and it is carried out as follows.
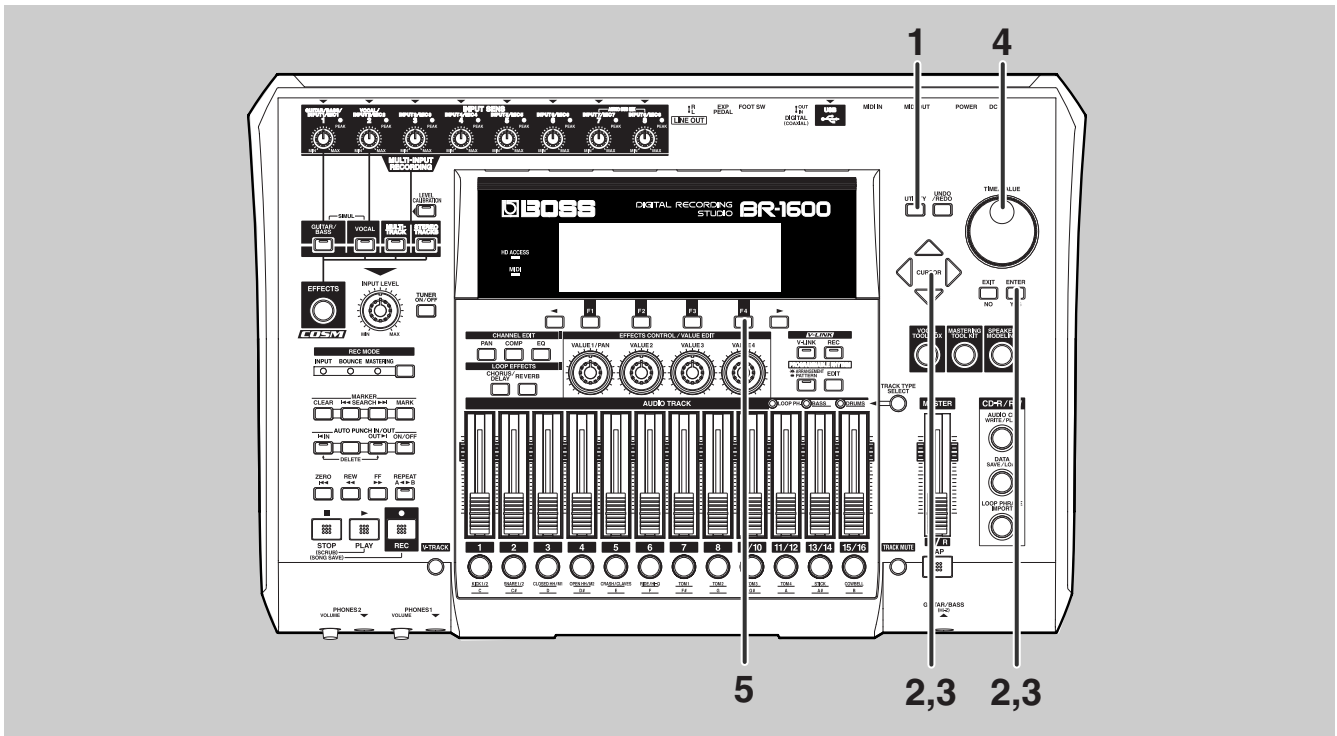
1 Press [UTILITY].

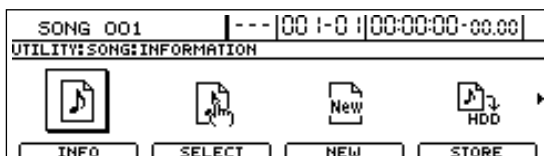The Utility Menu screen will appear.

2 Move the cursor to the SONG icon and press [ENTER/YES].

Alternatively, you can press [F2] (SONG) if the SONG icon is currently displayed. The Song Menu screen will appear.

3 Move the cursor to the NEW icon and press [ENTER/YES].

Alternatively, you can press [F3] (NEW) if the NEW icon is currently displayed. The screen for creating a new song will appear.
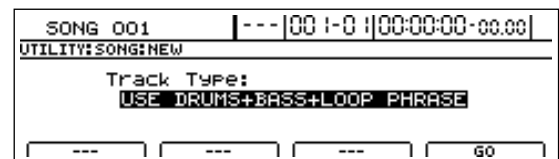
4 Use the TIME/VALUE dial to select the song's initial track type.

For example, let's select USE DRUMS for this song.

Initial Track Types

16 AUDIO TRACKS	All tracks from 1 through 15/16 are set up as audio tracks.
USE DRUMS	Track 15/16 is used as a drum track, and the remaining tracks 1 through 13/14 are used as audio tracks.
USE BASS	Track 13/14 is used as a bass track, and the remaining tracks 1 through 11/12 and 15/16 are used as audio tracks.
USE LOOP PHRASE	Track 11/12 is used as a loop phrase track, and the remaining tracks 1 through 9/10, 13/14, and 15/16 are used as audio tracks.
USE DRUMS + BASS	Track 15/16 is used as a drum track, Track 13/14 is used as a bass track, and the remaining tracks 1 through 11/12 are used as audio tracks.
USE DRUMS + LOOP PHRASE	Track 15/16 is used as a drum track, Track 11/12 is used as a loop phrase track, and the remaining tracks 1 through 9/10 and 13/14 are used as audio tracks.
USE BASS + LOOP PHRASE	Track 13/14 is used as a bass track, Track 11/12 is used as a loop phrase track, and the remaining tracks 1 through 9/10 and 15/16 are used as audio tracks.
USE DRUMS + BASS + LOOP PHRASE	Track 15/16 is used as a drum track, Track 13/14 is used as a bass track, Track 11/12 is used as a loop phrase track, and the remaining tracks 1 through 9/10 are used as audio tracks.

MEMO

Track types can be freely changed even after Song New has been completed.

5 Press [F4] (GO).

The message "New Song..." will appear on the display and a new song will be created. When finished, the message "Complete!" will appear and the display will automatically return to the top screen.

NOTE

In certain cases, the message "Save Current?" will appear during the procedure described above. This indicates that the currently selected song contains recorded audio data and/or edited data that has not been saved. If you want to save this new data, press [ENTER/YES]; if you don't want to, press [EXIT/NO]. Note that if you press [EXIT/NO], the recorded audio data and/or edited data will be lost; accordingly, be careful not to press this button by mistake.

Selecting an input source for recording (Input Select)

Before you start recording an instrument, you will have to select the input source to which that instrument has been connected. Furthermore, when you select an input source, the appropriate insert effects for that input source will be automatically selected and applied to the input.

INPUT SELECT button →
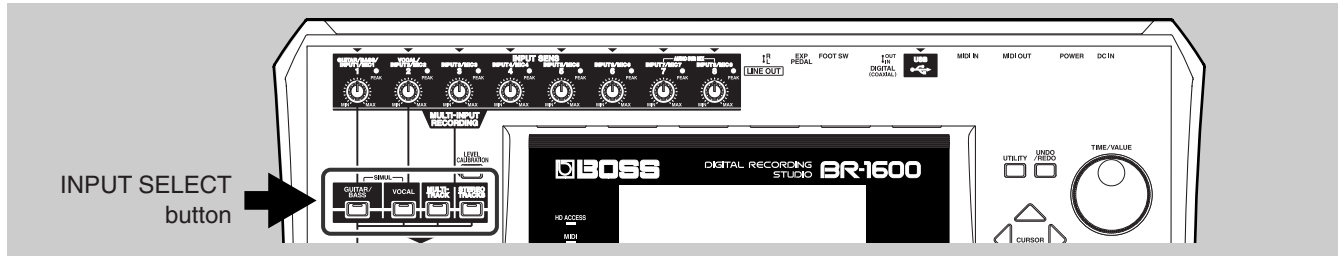
Recording guitar or bass guitar

Press INPUT SELECT [GUITAR/BASS].

[GUITAR/BASS] will light up, indicating that either the INPUT 1/MIC 1 jack on the rear panel or the GUITAR/BASS jack on the front panel can be used as the input source. (Any time a plug is inserted into the GUITAR/BASS jack, this input source will be given priority and the INPUT 1/MIC 1 jack will be deactivated.)

In addition, an effect will be automatically selected from the insert effects' guitar bank, and this will be applied to the audio input.

Recording a solo vocal microphone

Press INPUT SELECT [VOCAL].

[VOCAL] will light up, indicating that the INPUT 2/MIC 2 jack on the rear panel has been selected as the input source.

In addition, an effect will be automatically selected from the insert effects' microphone bank, and this will be applied to the audio input.

Recording a number of microphones or instruments onto separate tracks

Press [MULTI-TRACK] from INPUT SELECT.

[MULTI-TRACK] will light up, indicating that jacks INPUT 1/MIC 1 through INPUT 8/MIC 8 on the rear panel have all been selected as input sources. (The INPUT 1/MIC 1 jack and the GUITAR/BASS jack share the same internal circuitry. When an instrument is connected to the GUITAR/BASS jack, this input source will be given priority and the INPUT 1/MIC 1 jack will be deactivated.) In addition, an effect will be automatically selected from the insert effects' multi-channel bank, and this will be applied to each audio input.

Recording guitar + Vocal

Press INPUT SELECT [GUITAR/BASS] and [VOCAL] simultaneously. (SIMUL)

The INPUT SELECT [GUITAR BASS] and [VOCAL] buttons will light up, indicating that INPUT 1/MIC 1 jack on the rear panel or GUITAR/BASS jack on the front panel has been selected as input sources. (The INPUT 1/MIC 1 jack and the GUITAR/BASS jack share the same internal circuitry.)

In this condition, an effect will be automatically selected from the insert effects' simul bank, and this will be applied to each input source.

MEMO

When connecting an electric guitar to the BR-1600CD, be sure to use the GUITAR/BASS jack.

Note also that when an acoustic guitar is being recorded using a microphone, the microphone should be connected to the INPUT 1/MIC 1 jack. The INPUT 2/MIC 2 jack should be used for connecting the microphone used for vocals.

When recording stereo inputs to a stereo track

Press INPUT SELECT [STEREO TRACKS].

The INPUT SELECT [STEREO TRACKS] button will light up, indicating that jacks INPUT 1/MIC 1 through INPUT 8/MIC 8 on the rear panel have all been selected as input sources. (The INPUT 1/MIC 1 jack and the GUITAR/BASS jack share the same internal circuitry.)

In this condition, the eight input sources will be mixed in stereo, and you will be able to record this mix to a stereo track. In addition, an effect will be automatically selected from the insert effects' stereo bank, and this will be applied to the stereo mix of the input sources.

NOTE

- When a guitar or bass is connected to the GUITAR/BASS jack, the INPUT 1/MIC 1 input jack will be deactivated and will not accept any sound input.

MEMO

To learn more about the Input Select buttons, see "Operation of the INPUT SELECT buttons" (Owner's Manual; p. 280).

Adjusting the input source volume (Input Sensitivity)

The output from guitars, bass guitars, microphones, keyboards, and other instruments all enter the BR-1600CD as continuous electrical waves. This type of output is referred to as an analog signal. Inside the BR-1600CD, circuits known as A/D converters are used to convert these analog signals into digital signals. If the volume of an analog signal is too high, unpleasant distortion will occur in the corresponding digital signal; however, if the volume of this signal is too low, the noise that is generated during conversion to digital will become very noticeable. Once distortion or noise becomes obvious in a digital signal, it is extremely difficult to restore the quality of the sound using any amount of post-processing. In order to record with good sound quality, therefore, it is extremely important that you adjust the volume of the analog signal in such a way that the source can be made as loud as possible without distorting. Adjustment of a source's volume while it is still an analog signal is carried out using the INPUT SENS (Input Sensitivity) knob.
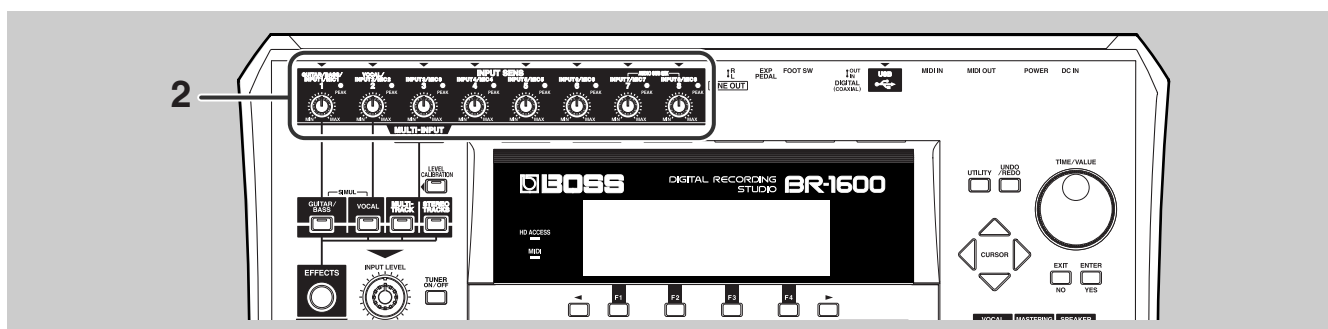
1 **Play the instrument to be recorded.**

2 **Check whether the PEAK indicator for that instrument's input source lights up when the instrument is played hard.**

If it lights up frequently:

The volume is too loud. Turn the INPUT SENS knob for the corresponding input source counterclockwise to reduce the volume to a level where the PEAK indicator lights up only occasionally when the instrument is played hard.

If it lights up occasionally when the instrument is played hard:

The volume is at a suitable level and does not need to be adjusted.

If it never lights up:

The volume is too low. Turn the INPUT SENS knob for the corresponding input source clockwise to raise the volume to a level where the PEAK indicator lights up only occasionally when the instrument is played hard.

NOTE

- If a suitable volume cannot be obtained even when the INPUT SENS knob is used, it is quite possible that the output volume of the instrument itself is improper level. In such a case, make sure that the instrument's volume is at a suitable level, and then repeat the adjustment procedure described above.
- If you are using a condenser microphone that requires phantom power, no sound will be output from the microphone until the phantom power is turned on. Refer to the user's manual that came with your microphone, and then turn on the phantom power if the manual indicates that it is necessary. For more detailed information regarding usage of phantom power, refer to "Using condenser microphones (Phantom Power)" (Owner's Manual; p. 264).

MEMO

Each PEAK indicator lights up when the corresponding analog signal reaches -6 dB, and distortion occurs in the A/D converter when this signal rises beyond 0 dB.

# Recording with effects (Insert Effects)

When an input source is chosen, a suitable insert effect for that input source will be selected automatically by the BR-1600CD. For example, when GUITAR/BASS has been chosen, an effect will be selected from the guitar bank; when VOCAL has been chosen, an effect will be selected from the MIC bank; and so on.

Each bank contains a number of different effects (Effect Patches) with various different settings that affect the sound. Let's now select some of these patches.
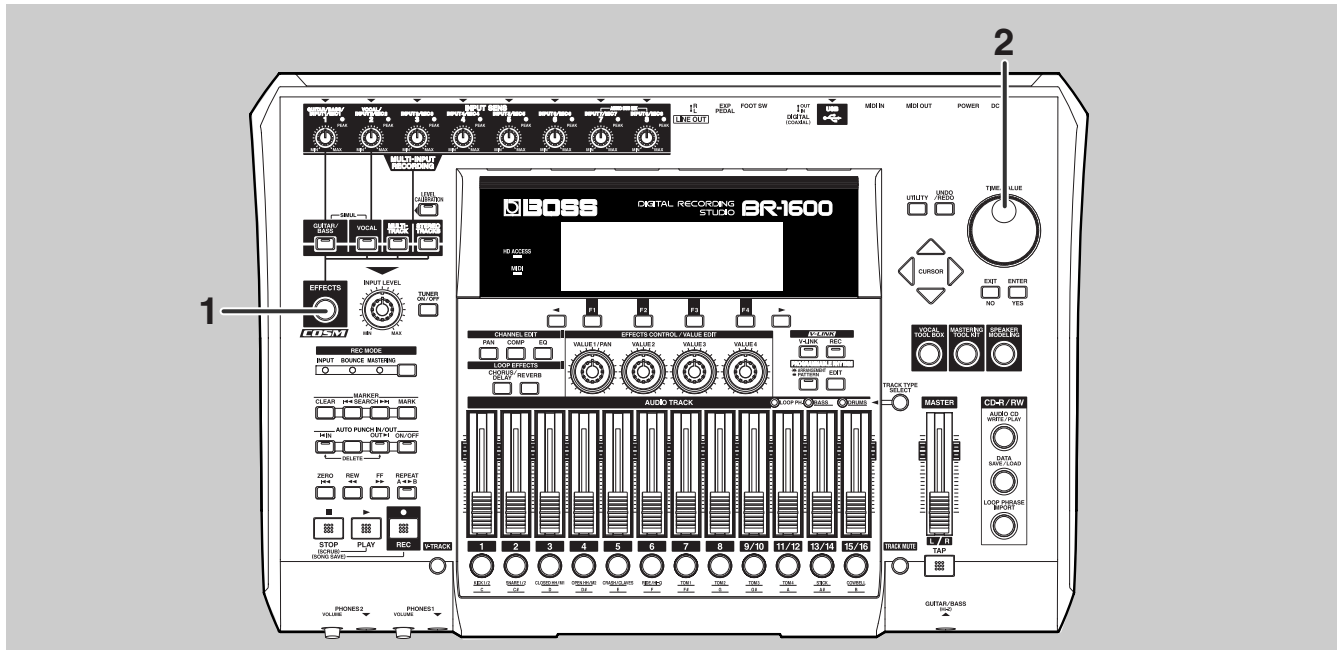
1 Press [EFFECTS].

The insert effects' patch screen will appear.
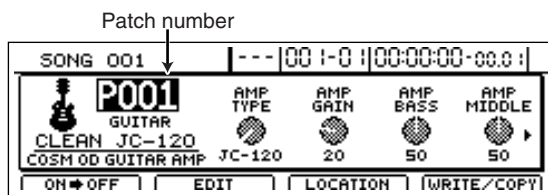
Patch number

2 Using the TIME/VALUE dial, change the patch number and select the desired effect.

The sound of the insert effect will change each time a different patch is selected.
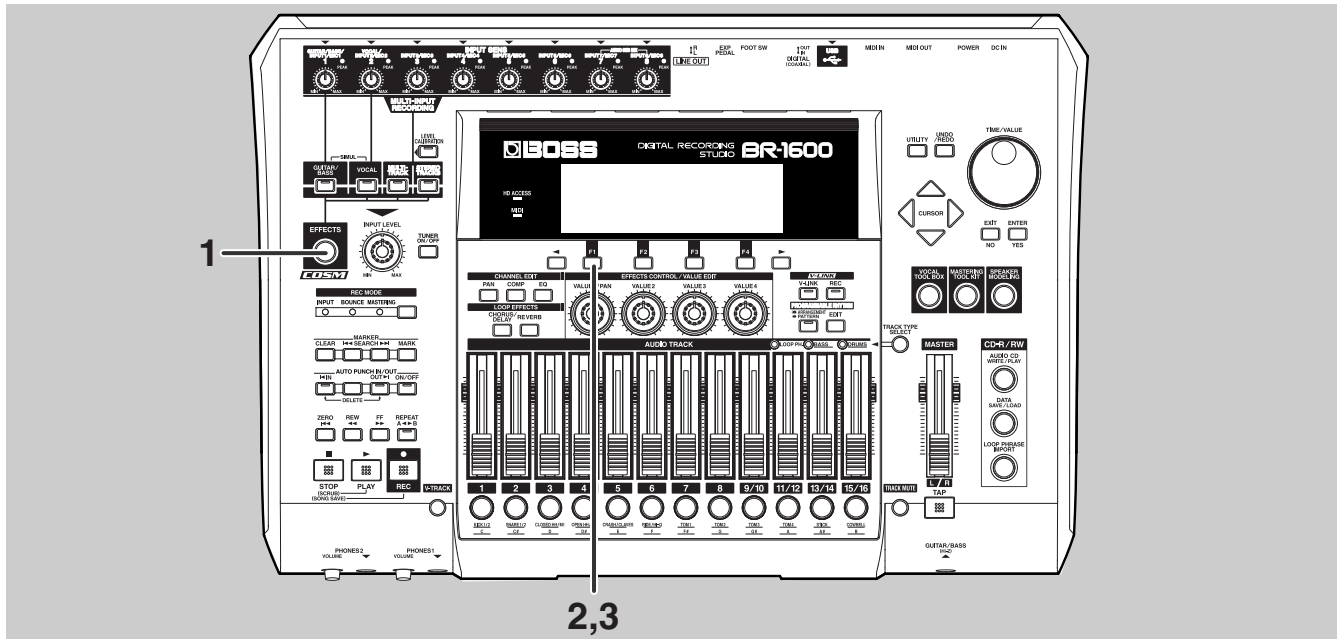
NOTE

Whenever a patch is selected, the effect sound will be muted for a short period of time (i.e., 20 to 50 ms) in order to prevent switching noise being output.

MEMO

At the time of purchase, the BR-1600CD's preset patches (P001 to P050) and user patches (U001 to U050) will contain the same effects.
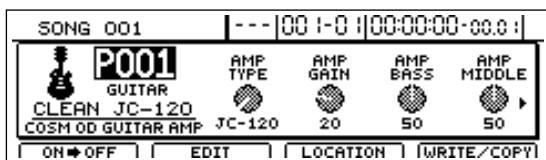
Turning off effects

You may want to turn off an Insert Effect in order to record the input source as is. If this is the case, use the following procedure to turn off the effect (Effect Off).

1

2,3

1 Press [EFFECTS].

The insert effects' patch screen will appear.

2 Press [F1] (ON/OFF).

The insert effect has been turned off.

[EFFECTS] will go out, indicating that the insert effect has been turned off.

3 If you would like to re-apply the insert effect, press [F1] (ON/OFF) once again.

The insert effect has been turned on.
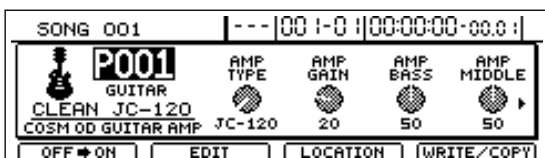
[EFFECTS] will light up, indicating that the insert effect has been turned on.

[F1] is used to toggle the insert effect between on and off.

NOTE

Even if an insert effect has been turned off, it will be automatically turned back on whenever a different INPUT SELECT button is pressed or a different patch is selected.

Selecting drums to act as a guide for recording

It is often difficult to keep playing a part at a fixed tempo until you have become very familiar with it. If you play along with the BR-1600CD's internal drums, however, this type of variation in tempo can be dramatically reduced.

Thanks to the highly realistic sound of the BR-1600CD's PCM drum samples, you'll be able to enjoy the great feeling of playing along with actual drums. What's more, if you record along with a drum track, you'll be able to perform editing in units of beats and bars later on.
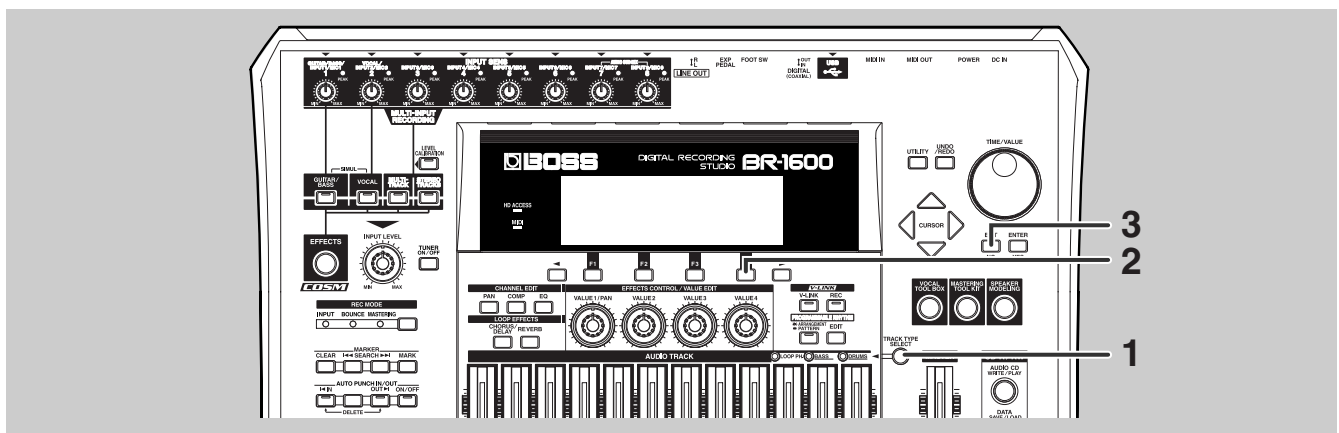
MEMO

You can use bass and loop phrase as well as drum as a guide. Please refer to "Section 3 Using Rhythm" (Owner's Manual; p. 145).

Setting up a drum track (Track Type Select)

In order to set up the BR-1600CD to play drum sounds, use the following procedure to designate Track 15/16 as the drum track.

NOTE

If USE DRUMS was selected during SONG NEW (p. 22), Track 15/16 will be already set up as the drum track and the following procedure will not be required.

1   With the top screen displayed, press [TRACK TYPE SELECT].
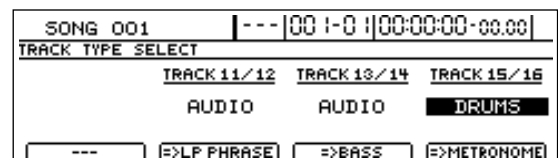
The Track Type Select screen will appear.

MEMO
For more detailed information regarding track types, refer to "Setting the track type" (Owner's Manual; p. 149).
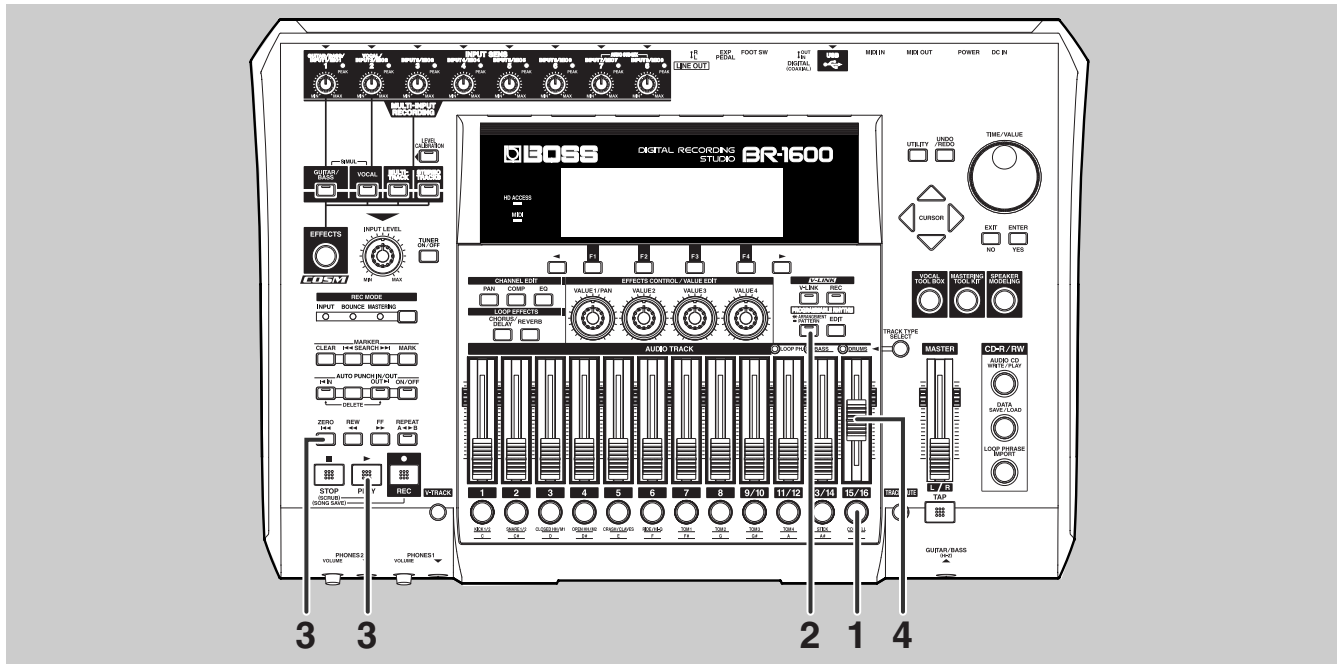
2   Press [F4] (DRUMS).

This operation sets up Track 15/16 as the drum track.

3   Press [EXIT/NO] to return to the top screen.

Playing drum sounds

1 Press the track button for Track 15/16 several times until it starts to flash.

You can press this button repeatedly to cycle through the available statuses, which are: Flashing → Lit → Unlit.

Unlit: No drum sounds will be played.

Flashing: Drum sounds will be played only when the BR-1600CD is recording or performing playback.

Lit: Drum sounds will be played even when the BR-1600CD is stopped.

2 Press PROGRAMMABLE RHYTHM [ARRANGEMENT/PATTERN] so the button is not lighted.

Each time this button is pressed, it toggles between lit and unlit.

Off (Pattern Mode):

In this mode, a rhythm pattern of one or several bars in length is played repeatedly. This type of playback can be used instead of a metronome, and it can also provide a useful guide track when you are working on ideas for new songs.

On (Arrange Mode):

In this mode, drum patterns can be arranged and played back in accord with a song structure comprising intro, verse, fill, bridge, break, and ending elements. Once you have an idea of your new song, this function allows the complete drum structure to be easily created.
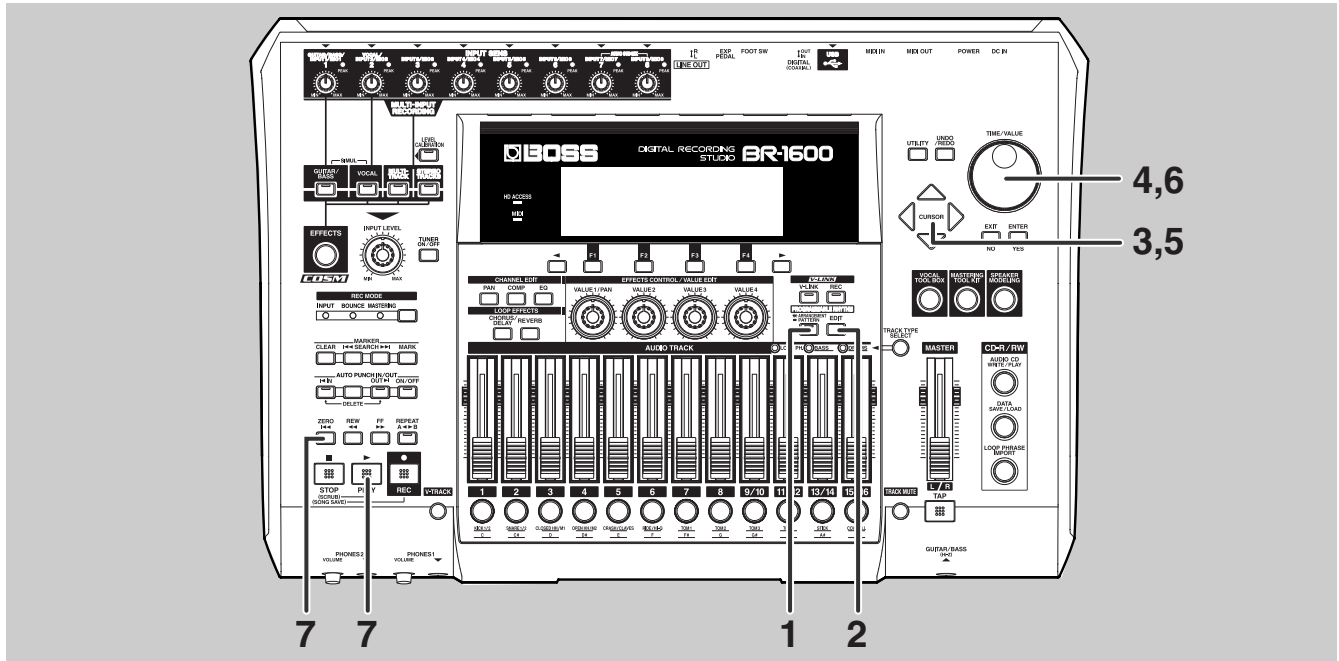
3 Play the song from the beginning.

The BR-1600CD will start playback of the drum track.

4 Use the Track 15/16 fader to adjust to the appropriate volume.

Selecting drum patterns

the BR-1600CD features preset drum patterns. Let's choose one of these patterns to play with.
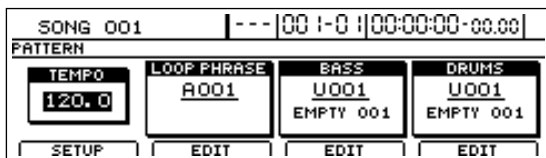

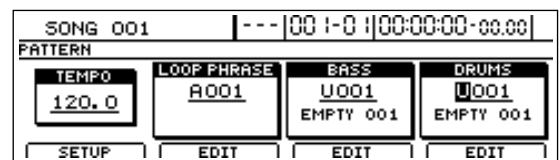## 1 Confirm that the PROGRAMMABLE RHYTHM [ARRANGEMENT/ PATTERN] indicator turns off.

When this button is lit, it may need to be pressed to turn it off.

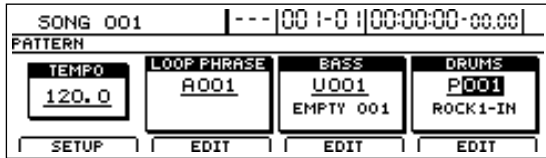## 2 Press PROGRAMMABLE RHYTHM [EDIT].

The Pattern Select screen will appear.

3 Move the cursor to Drum Pattern Group.

4 Turn the TIME/VALUE dial to "P" for the Drum Pattern Group.

5 Move the cursor to the drum pattern number.

```
SONG 001        |---|001-01|00:00:00-00.00|
PATTERN
   TEMPO     LOOP PHRASE     BASS        DRUMS
              A001           U001        P001
   120.0                   EMPTY 001    ROCK1-IN

  SETUP    |    EDIT    |    EDIT    |    EDIT
```

6 Select a drum pattern number using the TIME/VALUE dial.

7 Play the song from the beginning.

The BR-1600CD will start playback of the selected drum pattern.

NOTE

At the time of purchase, the BR-1600CD contains drum patterns only in Preset patterns (P001–). User patterns (U001 –) and Song (S001–) are provided for you to freely create your own drum patterns, and these patterns are initially empty. If you select "U" or "S" at this time the BR-1600CD will not be able to play back a rhythm track.


MEMO

- In addition to the TIME/VALUE dial, the VALUE knobs can also be used at this time. Turn the VALUE knob immediately below the drum pattern number (i.e., VALUE 4) to change this number.
- Even while the drum pattern is being played, you can repeat Step 6 above to select a new pattern. In such a case, playback of the newly selected drum pattern will start as soon as the previously selected drum pattern has ended.

Changing the drum pattern tempo

Two simple methods are available for changing the tempo of the drum track.

● Set the new tempo using the TIME/VALUE dial

● Tap the new tempo using [TAP]

Set the new tempo using the TIME/VALUE dial
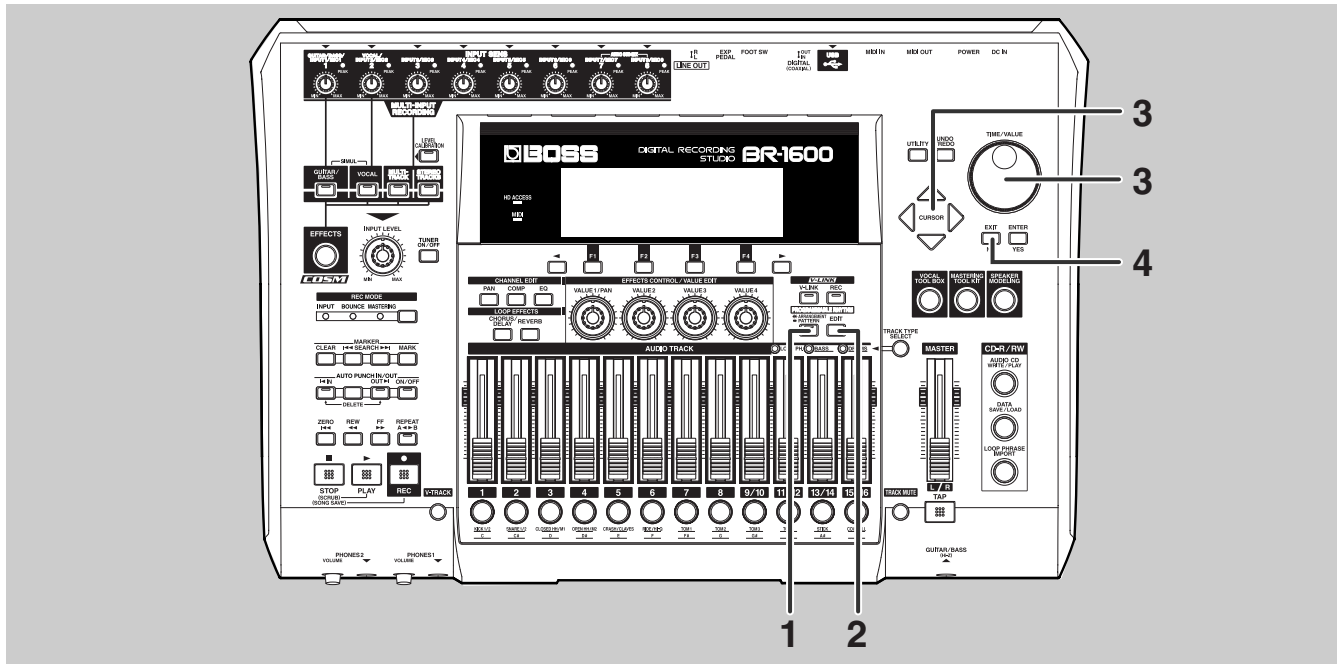
1 Make sure that PROGRAMMABLE RHYTHM [ARRANGEMENT/PATTERN] is extinguished.

If this button's indicator is lit, press PROGRAMMABLE RHYTHM [ARRANGEMENT/PATTERN] to turn it off.

2 Press PROGRAMMABLE RHYTHM [EDIT].

The Pattern Selection screen will appear.

3 Move the cursor to "TEMPO" and select a suitable tempo using the TIME/VALUE dial.

You will be able to hear how your new setting changes the playback tempo.

The tempo can be set anywhere within a range of 25.0 to 250.0 BPM. (Beats Per Minute—A value that indicates the tempo in terms of the number of quarter notes occurring in one minute.)

4 After you have set the tempo, press [EXIT/NO] several times to return to the top screen.

5 If you wish to store the pattern's tempo, save the current song (p. 56).

Setting the tempo using [TAP]

In addition to setting the tempo using [CURSOR] and the TIME/VALUE dial, you can also set it by tapping your finger on [TAP] at the desired tempo. (Tap Tempo)

This feature proves extremely useful when you want to match the playback tempo to that of an audio CD but don't know the actual BPM value.

1
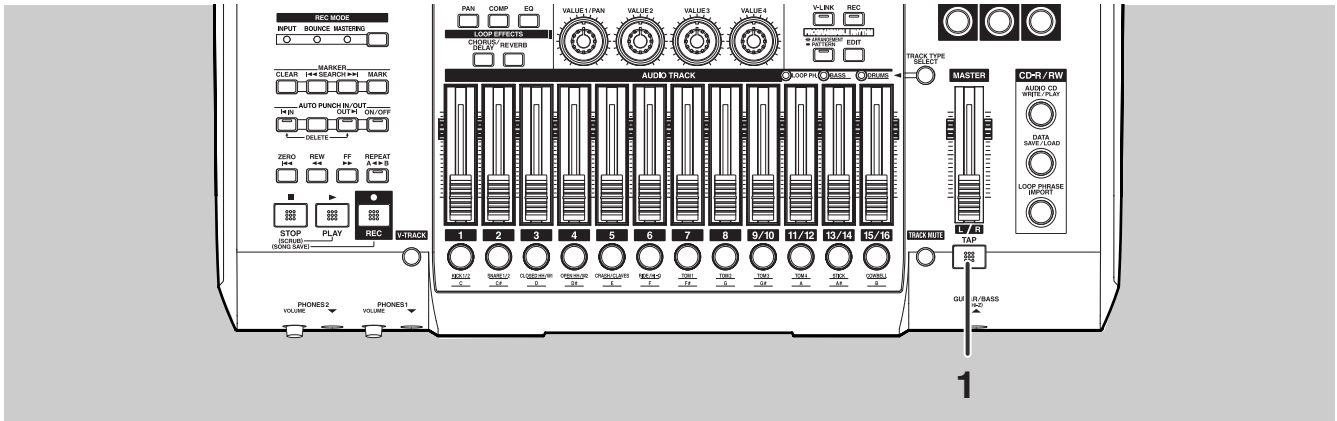
1 Tap your finger on [TAP] four times with approximately the same interval

The tempo will be set based on the average tapping interval.

MEMO

In addition to the two methods indicated above, it is also possible to specify tempos much more precisely for each individual measure. For more detailed information, refer to "Setting tempos and beats for individual measures (Tempo Map/Beat Map)" (Owner's Manual; p. 197).

And a further method also enables you to control the BR-1600CD's tempo by synchronizing it with the tempo of an external MIDI sequencer. For more detailed information, refer to "Synchronizing external MIDI sequencers and rhythm machines" (Owner's Manual; p. 225).

Changing the drum sounds

Drum patterns can be given a completely new feel by changing the sounds of the drums that they use.
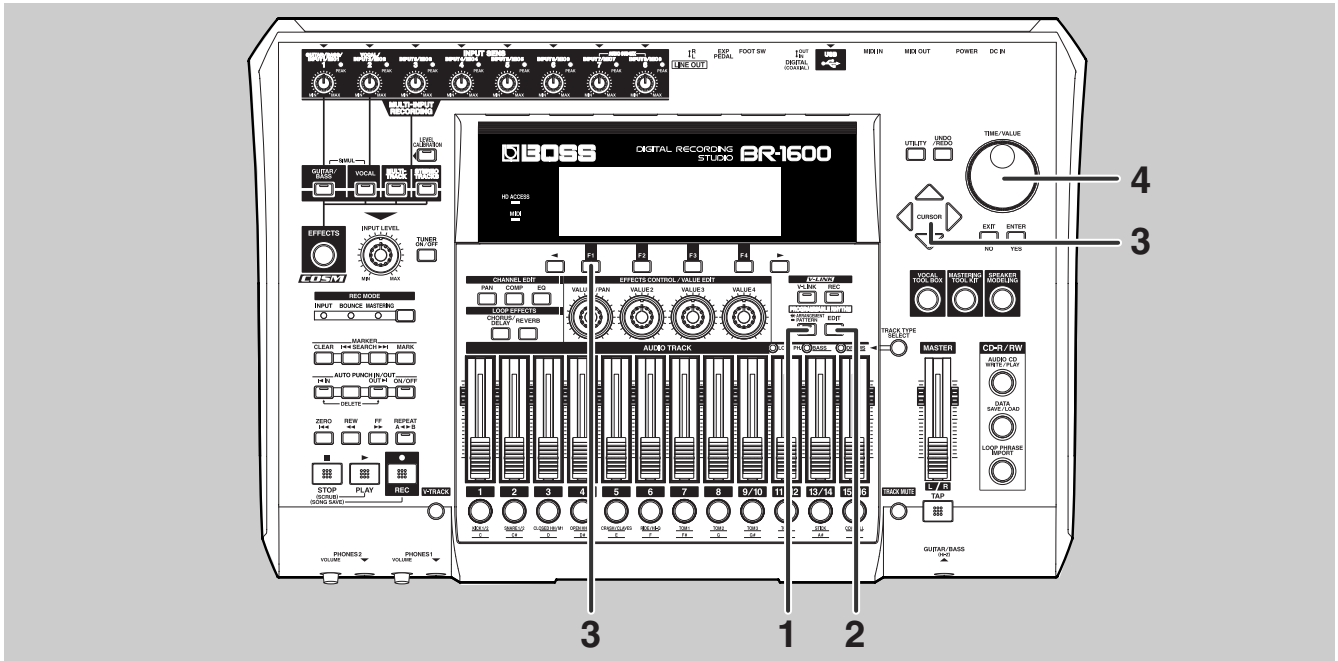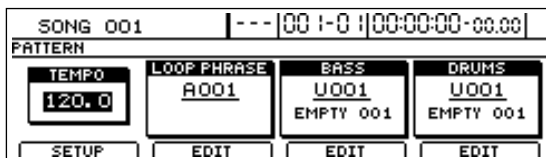

1 Confirm that the PROGRAMMABLE RHYTHM [ARRANGEMENT/PATTERN] indicator turns off.

When this button is lit, it may need to be pressed to turn it off.

2 Press PROGRAMMABLE RHYTHM [EDIT].

The Pattern Select screen will appear.

3 Press [F1] (SETUP).

The Pattern Setup screen will appear.

4 Move the cursor to Drum Kit and select a new drum kit using the TIME/VALUE dial.

The drum pattern will be played using sounds from the newly selected drum kit.

NOTE

A short period of time (i.e., 1 or 2 seconds) is required for the switching of drum kits. Although you will not be able to hear the drum pattern during this period, this is normal and is not the result of a malfunction.

MEMO

Although this section described a playback method where a basic rhythm (Drum Pattern) of one or several bars in length was repeated indefinitely, you can also arrange and play back drum patterns that have been matched to a song structure comprising Intro, Verse, Fill, Bridge, Break, and End Crash elements in any order. This type of combination is referred to as a "rhythm arrangement." For more detailed information regarding rhythm arrangement operations, refer to "Using rhythm arrangements" (Owner's Manual; p. 186).

Adjusting the recording level
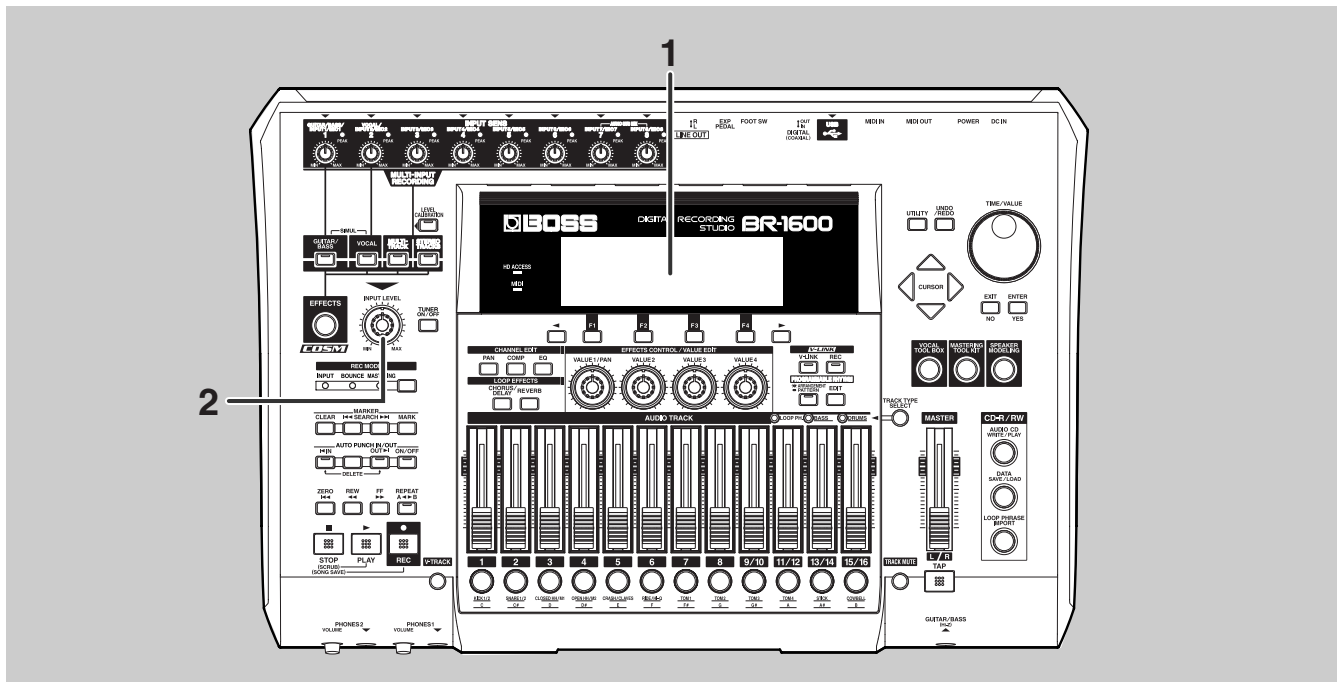
1 Play the instrument to be recorded.

The level meters on the display change in response to the instrument's volume.

```
 SONG 001        ┃---|00 1-01|00
 EFFECTS         ┃━INPUT━      ┃TR:
 TUBE STACK      ┃
 MARK   -----    ┃
 TEMPO   120.    ┃
 CHD.    CMa     ┃
 REM.  129h23m   ┃1 2 3 4 5 6 7 8  2 3 4 5 6 7 8
```

2 Use the INPUT LEVEL knob to ensure that the peak display for any level meter does not rise above 0 dB when the instrument is played hard.
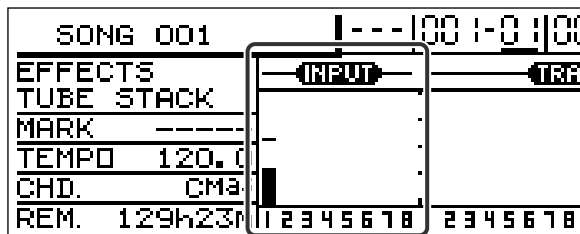
MEMO

Rather than changing the volume of effect inputs, the INPUT LEVEL knob adjusts the volume after effects have been applied. As a result, factors such as distortion and the effect of compressors are not influenced by this knob.
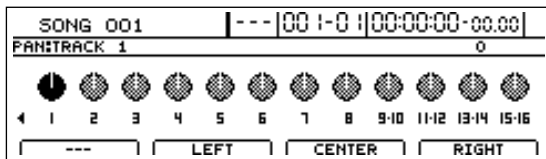
Setting an audio input's left-right position (Input Pan)

When recording from a number of different microphones at the same time or in other similar situations, you can widen the overall sound by setting the left-right position (i.e., the pan) of each microphone before recording is started.
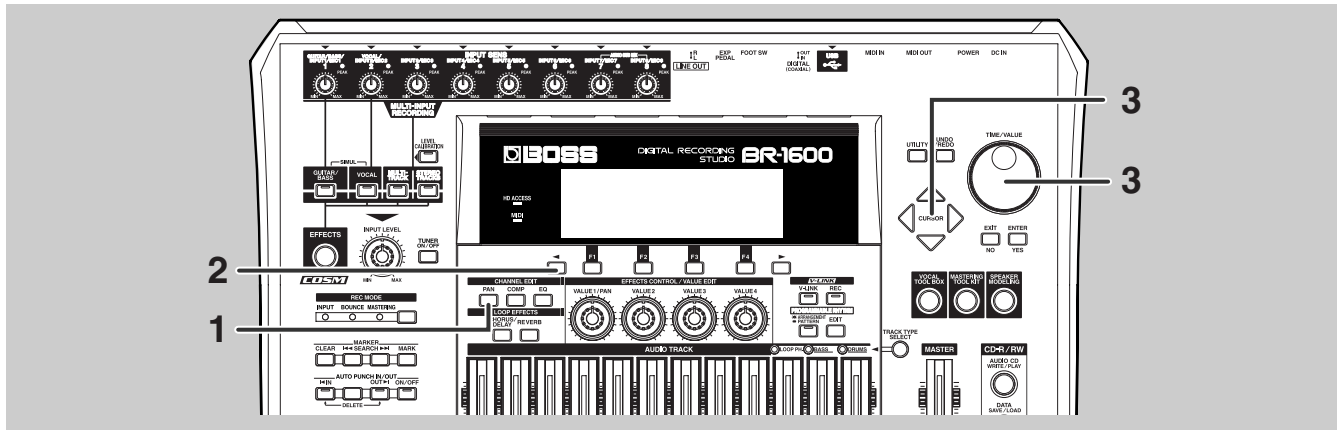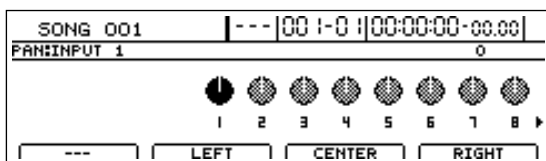

1 Press CHANNEL EDIT [PAN].

The pan setting screen will appear.

2 Press [◄].

The screen for setting input pan will appear.

The number of displayed knobs depends on the INPUT SELECT setting.

The knob where the cursor is located is shown in black.

GUITAR/BASS:

A single knob is displayed for INPUT 1.

VOCAL:

A single knob is displayed for INPUT 2.

SIMUL:

Two knobs are displayed—one for INPUT 1, the other for INPUT 2.

The pan for each of these is set to the central position immediately after Song New is carried out.

MULTI-TRACK:

Eight knobs are displayed—one each for INPUT 1 through INPUT 8.

Immediately after Song New is carried out, the pan for each of these is set to the central position.

STEREO TRACKS:

Eight knobs are displayed—one each for INPUT 1 through INPUT 8.

Immediately after Song New is carried out, the pan for odd numbered inputs is set to full left, and the pan for even numbered inputs is set to full right.

3 Move the cursor to the input source to which pan setting is to be changed, and then use the TIME/VALUE dial to make a new pan setting.

The setting can also be carried out using the VALUE1/PAN knob.

L100: Audio is moved to the extreme left.

0: Audio is moved to the center.

R100: Audio is moved to the extreme right.

MEMO

After recording, the pan values set here for each audio input are automatically copied to the corresponding recorded tracks.


Applying reverb for a warmer sound during recording (Reverb)

Vocalists often find it easier to sing when a small amount of reverb is applied to their voice during recording. This does not apply to vocalists alone—in fact, you will find that the presence of reverb on other instruments can also lead to improved performances and better recordings, and this is particularly true in the case of instruments that play melodies. We will now apply reverb to our input sources to see how it sounds.
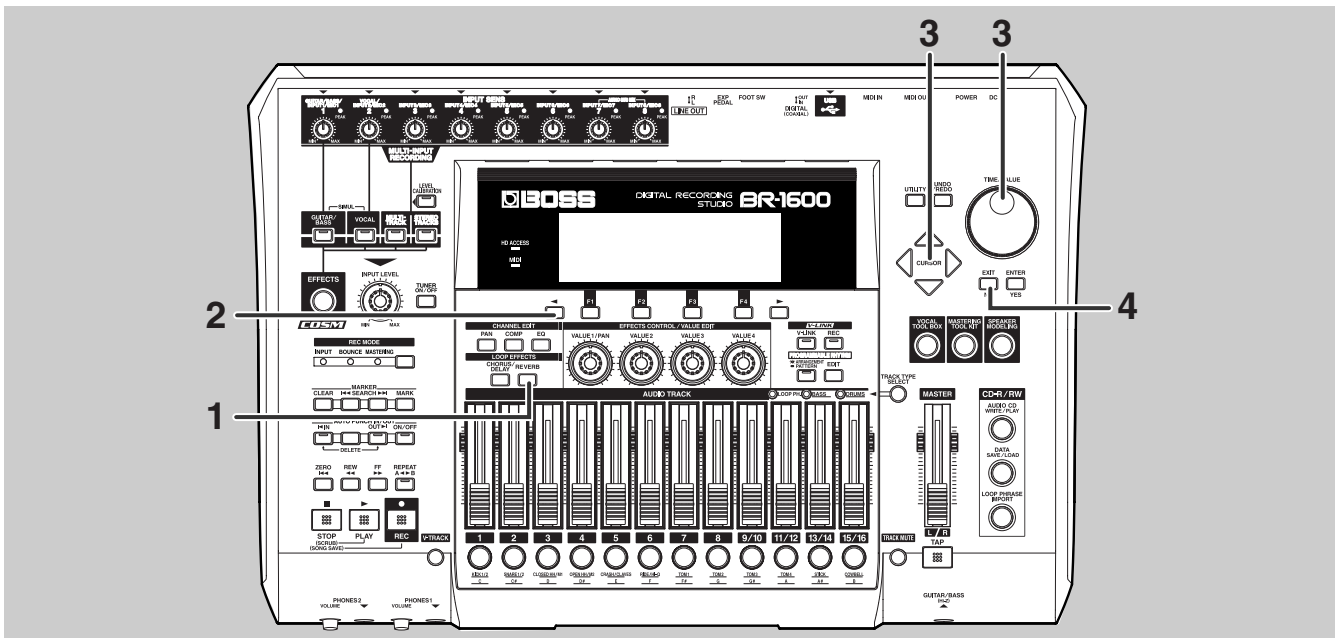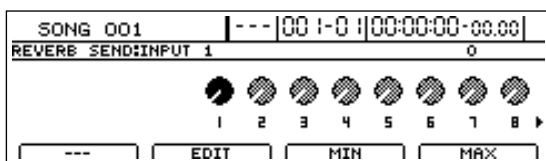
1 Press LOOP EFFECTS [REVERB].

The BR-1600CD will display a screen (Reverb Send) for adjusting the amount of the audio being sent from each track to the reverb.
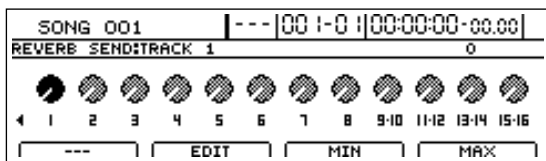
2 Press [◄].

The Reverb Send screen for the input sources will appear.

The number of displayed knobs depends on the INPUT SELECT setting.

GUITAR/BASS:

A single knob is displayed for INPUT 1.

VOCAL:

A single knob is displayed for INPUT 2.

SIMUL:

Two knobs are displayed—one for INPUT 1, the other for INPUT 2.

MULTI-TRACK:

Eight knobs are displayed—one each for INPUT 1 through INPUT 8.

STEREO TRACKS:

A single knob is displayed for INPUT.

3 Move the cursor to the input source you wish to apply reverb to, and while listening to the instrument to be recorded, use the TIME/VALUE dial to set a pleasant reverb send level.

When the reverb send level is 0, no reverb will be applied; when it is 100, the maximum amount of reverb will be applied.

4 **Press [EXIT/NO] to return to the top screen.**

MEMO

- Although the sound you hear will include reverb, this effect is not actually applied to the sound to be recorded. (Only the true sound of the performance will be recorded.)
- After recording, the values for reverb send levels set here for each audio input are automatically copied to the reverb send levels of the corresponding recorded tracks. As a result, when you play back a track that was recorded with reverb applied in this way, you will still be able to hear the same reverb. This may lead you to conclude that you accidentally recorded the reverb together with the input source, but this is not the case. In actuality, the true sound was recorded to the track, and reverb was reapplied to the recorded sound during playback. the BR-1600CD copies these settings to ensure that the same sound heard during recording will be heard during playback; however, if you no longer need to hear this reverb, set the corresponding reverb send level to zero. This will remove reverb from the playback sound.

Recording

In the previous sections, you have made all the necessary preparations for recording instruments as they are played along with a drum pattern. We will now record one of these instruments.
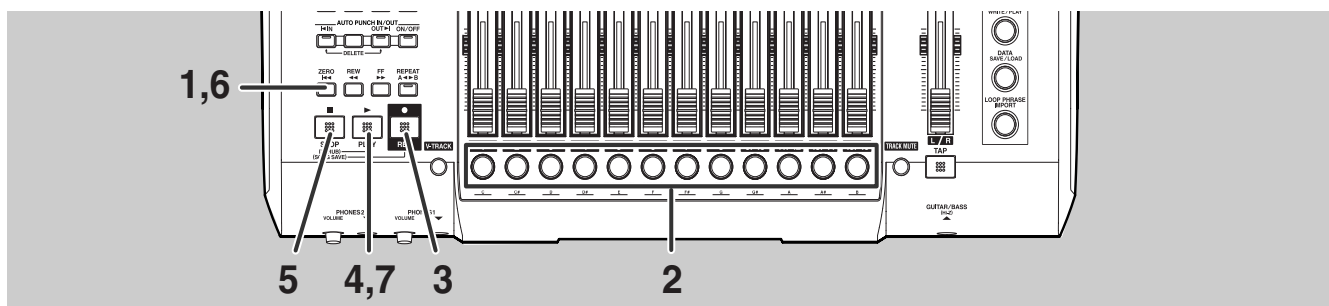
1 Press [ZERO].

The current position will jump to the beginning of the song.

2 Press the track button for the track to be recorded (Recording Track).

The track button will turn red and start flashing to indicate selection as a recording track.

The track buttons function in a different way for each Input Select status. For more detailed information regarding the relationship between the Input Select status and the track buttons, refer to "Input select status and track button functions" below.

3 Press [REC].

[REC] will turn red and start to flash, indicating that the BR-1600CD is now ready for recording.

4 Press [PLAY].

Both [PLAY] and [REC] will light up and recording will start. The color of the track button for the recording track will change to red.

Since the BR-1600CD plays the drum pattern during recording, the instrument can be played along with the drums. Note, however, that the drums will not be recorded onto the recording track. Only the instrument itself is recorded.

5 Press [STOP] when you want to stop recording.

Both [PLAY] and [REC] will turn off and recording will stop. Playback of the drum pattern will also stop at this time. The track button for the recording track will now start to flash green and orange.

6 Press [ZERO].

7 Press [PLAY].

[PLAY] will light up and the recorded performance will be played back. Use the fader for the recorded track to change its volume during playback.

8 If you wish to store the recorded audio, save the current song (p. 56).

NOTE

- If you turn off the BR-1600CD without saving the current song, the recorded audio will be lost.
- If the track type (p. 28) for any of the tracks 11/12 through 15/16 has been set to DRUMS, BASS, or LOOP PHRASE, it will not be possible to select that track for recording. However, if you want to record to one of these tracks, its track type should be set to AUDIO.
- After recording has been stopped, a period of 1 or 2 seconds may elapse before you can carry out the next operation. This time is necessary for processing of the recorded data and for reading of data from the hard disk that will be needed for playback.
- The BR-1600CD allows a single, continuous recording of up to approximately 13 hours in length to be carried out. If a single recording reaches this limit, the message "Memory Full" will be displayed and recording will be stopped automatically. If you want to continue recording in such a case, hold down [REC] and press [PLAY] at the position were recording was stopped.

MEMO

Input Select status and track button functions

* The following section describes the selection of audio tracks using track buttons. When any of the TRACK TYPE indicators are lit up, Tracks 11/12 through 15/16 will each be selected for drum patterns, bass patterns, and loop phrases, respectively. It is important to remember that the operation of these tracks will differ from that of standard audio tracks.

When the Input Select status is GUITAR/BASS:

Only one of the track buttons will flash, and the sound source will be recorded to the corresponding track.

If a pair of adjacent track buttons (such 1 and 2, or 3 and 4) are pressed simultaneously at this time, both of these buttons will begin to flash, indicating that the corresponding tracks have been selected as the destination for a stereo recording. If you then press one of these track buttons, things go back to the way they commonly are, with only one track button flashing. This means that the corresponding track has been selected to record in mono. Note that whenever a pair of tracks from Track 9/10 through Track 15/16 is selected, the corresponding tracks will always be selected for stereo recording.

Certain effects applied to mono input sources produce a stereo output, and the BR-1600CD allows stereo tracks to be selected so that this audio can be recorded. If the output of such an effect were recorded to a mono track, the stereo nature of the sound would be lost.

When the Input Select status is VOCAL:

Only one of the track buttons will flash.

If a pair of adjacent track buttons (such 1 and 2, or 3 and 4) are pressed simultaneously at this time, both of these buttons will begin to flash, indicating that the corresponding tracks have been selected as the destination for a stereo recording. If you then press one of these track buttons, things go back to the way they commonly are, with only one track button flashing. This means that the corresponding track has been selected to record in mono. Note that whenever a pair of tracks from Track 9/10 through Track 15/16 is selected, the corresponding tracks will always be selected for stereo recording.

Certain effects applied to mono input sources produce a stereo output, and the BR-1600CD allows stereo tracks to be selected so that this audio can be recorded. If the output of such an effect were recorded to a mono track, the stereo nature of the sound would be lost.

When the Input Select status is SIMUL:

A pair of tracks are selected for recording, and the track buttons for these tracks start flashing.

In this condition, the audio from the INPUT 1/MIC 1 jack or the GUITAR/BASS jack, and the audio from the INPUT 2/MIC 2 jack will be recorded separately on the two selected tracks. If one of the flashing track buttons were to be pressed at this time, the other button would stop flashing and turn off, indicating that a mix of the two input sources will be recorded to the mono track corresponding to the flashing track button. Note that whenever a pair of tracks from Track 9/10 through Track 15/16 is selected, the corresponding tracks will always be selected for the separate recording of each of the input sources.

When the Input Select status is MULTI-TRACK:

Track buttons 1 through 8 or 9/10 through 15/16 will all start to flash. In this condition, the audio from INPUT 1/MIC 1 through INPUT 8/MIC 8 will each be recorded separately to one of the tracks whose track button is flashing.

If any of the track buttons 9/10 through 15/16 are pressed while track buttons 1 through 8 are flashing, these buttons will turn off and track buttons 9/10 through 15/16 will all start to flash. Similarly, If any of the track buttons 1 through 8 are pressed while track buttons 9/10 through 15/16 are flashing, these buttons will turn off and track buttons 1 through 8 will all start to flash.

If you do not want to record to a specific track, press the corresponding track button while it is flashing. It will stop flashing and turn off, indicating that no audio will be recorded to the corresponding track. If you decide to record to that track after all, press the corresponding track button once again. It will start to flash, indicating that the track has been re-selected for recording.

### When the Input Select status is STEREO TRACKS:

A stereo track is selected for recording, and the track button for this track starts flashing.

In this condition, the input sources from INPUT 1/MIC 1 through INPUT 8/MIC 8 are mixed in stereo, and this mix is recorded to the selected track.

If one of the flashing track buttons were to be pressed at this time, the other button would stop flashing and turn off, indicating that a mix of the two input sources will be recorded to the mono track corresponding to the flashing track button. Note that whenever a pair of tracks from Track 9/10 through Track 15/16 is selected, the corresponding tracks will always be selected for the separate recording of each of the input sources.

Rectifying recording mistakes (Undo/Redo)

In cases where mistakes were made while playing the instrument or where volume levels could not be controlled as desired during recording, you will be able to cancel this recording and return the BR-1600CD to its condition before the start of this operation. (Undo)

In addition, if you then want to restore this recording, you can cancel the Undo and return the BR-1600CD to its condition at the end of recording. (Redo)

Undo
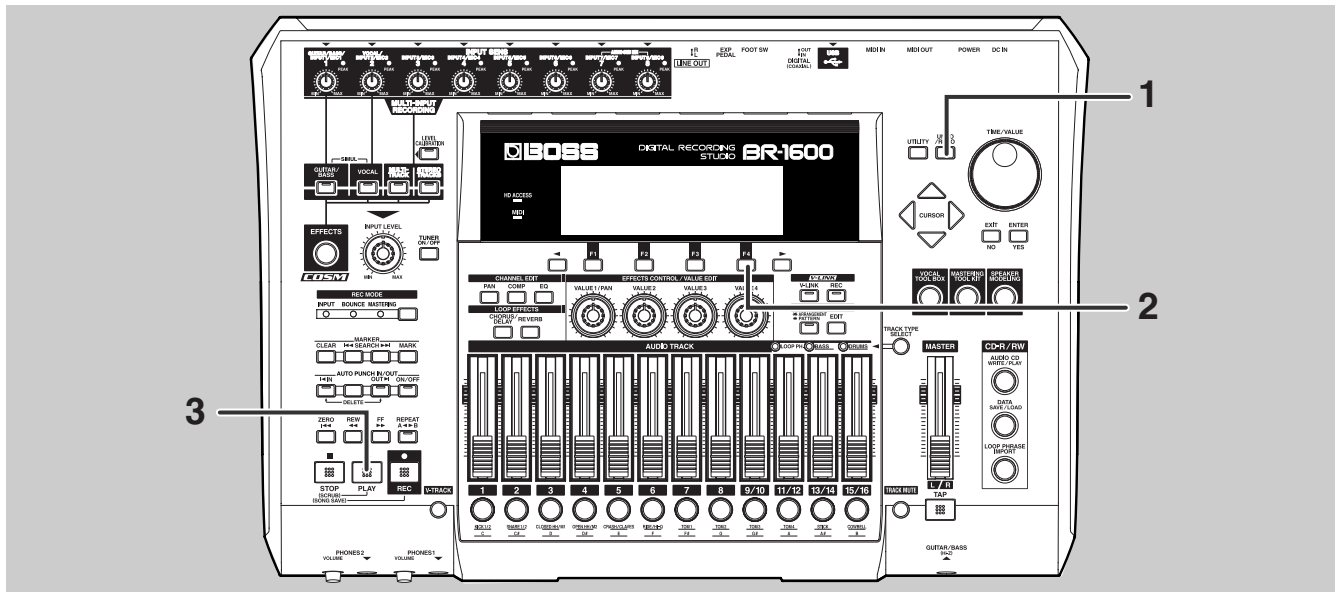
1 Press [UNDO/REDO].

The message "Undo?" will appear.

2 Press [F4] (UNDO).

The message "Complete!" will be displayed to indicate that the Undo has been completed.

3 Press [PLAY] to start playback, and confirm that the recording has been canceled.

4 If you now want to cancel another recording before the one just canceled, repeat Steps 1 to 3.

Each time an Undo is performed, the BR-1600CD will cancel the next newest recording.

NOTE

- Once Song Optimization (Owner's Manual; p. 70) has been carried out, Undo will no longer be possible.
- The BR-1600CD is capable of performing up to approximately 10,000 Undo operations.
- Undo can only be used with recorded audio data and edits performed on this data.
  No other types of change can be canceled using this function.

Redo

Use Redo to restore a recording that was canceled using Undo. The procedure for Redo is as follows.
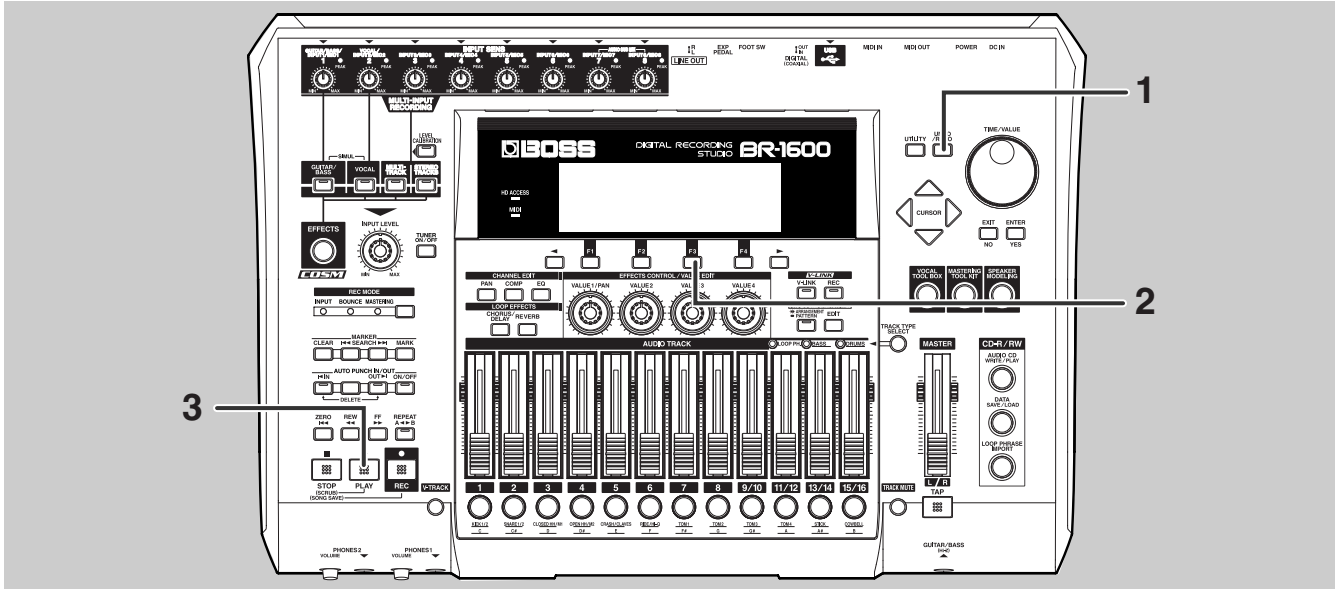
1 Press [UNDO/REDO].

The message "Redo?" will appear.

2 Press [F3] (REDO).

The message "Complete!" will be displayed to indicate that the Redo has been completed.

3 Press [PLAY] to start playback, and confirm that the recording canceled using Undo has now been restored.

If you have used Undo more than once, Steps 1 to 3 can now be repeated to perform successive Redo operations.

Each successive Redo will restore another canceled recording.

NOTE

- Please note that you will no longer be able to use Redo, once recording or editing has been performed after an Undo.
- Once Song Optimization (Owner's Manual; p. 70) has been carried out, Redo will no longer be possible.

Recording a new track while listening to an earlier recording (Overdubbing)

The BR-1600CD is a multi-track recorder, and in contrast to standard tape recorders, MD recorders, etc., multi-track recorders allow you to record new tracks while you listen to tracks that have been previously recorded. This capability is referred to as "overdubbing." By recording the vocals, guitar, bass guitar, and other instruments onto individual tracks, you ensure that the relative levels of instruments and their left-right positioning can be optimized later on. In addition, it is also possible to replace entire performances for individual instruments.
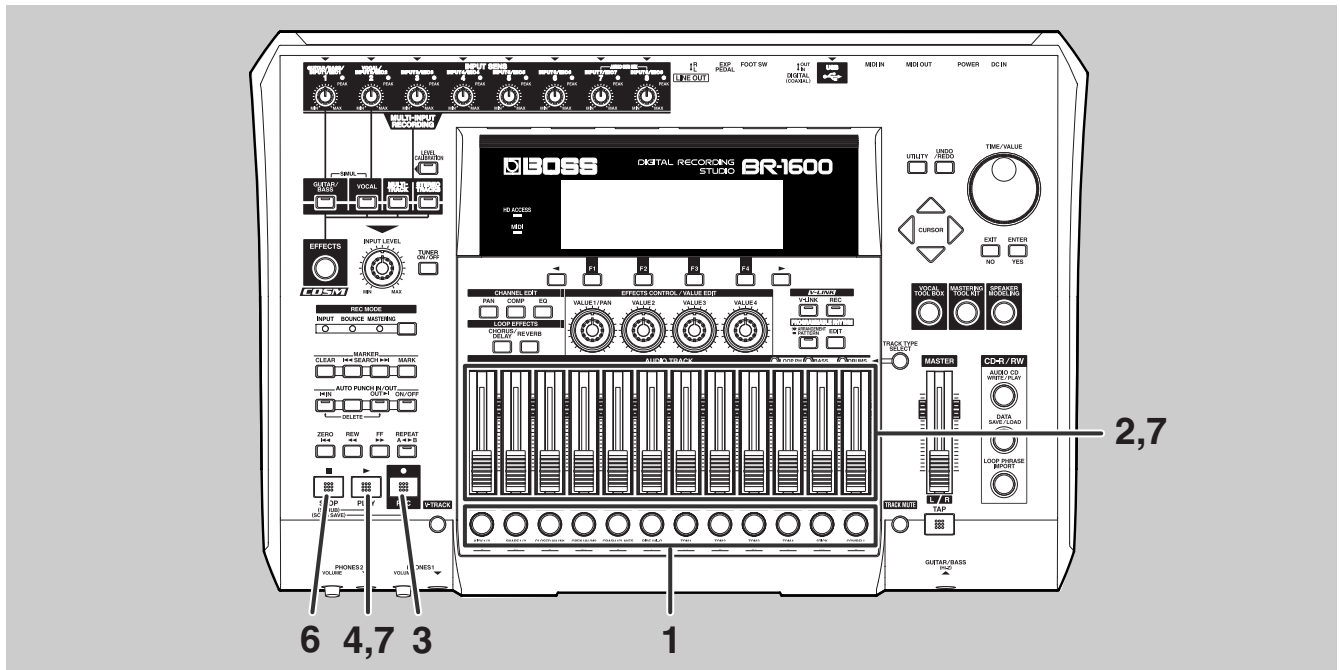
1 Press the track button for a track that has not yet been recorded.

The corresponding track will be selected for recording, and the track button will turn red and start flashing. The track buttons for tracks that have been recorded will all be green.

2 Move the faders for the previously recorded tracks to the positions that give suitable playback volumes.

3 Press [REC].

[REC] will turn red and start to flash, indicating that the BR-1600CD is now ready for recording.

4 Press [PLAY].

[PLAY] will turn green, [REC] will change to a steady red, and recording will start. Although you will be able to hear the previously recorded tracks at this time, none of this audio data will be recorded to the recording track.

5 Play the instrument to be recorded this time along with the previously recorded tracks.

Only this instrument will be recorded.

6 Press [STOP] at the point where you want to stop recording.

Both [PLAY] and [REC] will turn off, and the track button for the recording track will now start to flash green and orange.

7 **Move the recorded track's fader to a position that gives a suitable playback volume, and then press [PLAY].**

[PLAY] will light up and the track just recorded will play back together with those tracks recorded earlier.

8 **Repeat Steps 1 to 7 as many times as necessary to make the required number of recordings.**

9 **If you wish to store the recorded audio, save the current song (p. 56).**

NOTE

If you turn off the BR-1600CD without saving the current song, the recorded audio will be lost.

MEMO

Useful tip for overdubbing

When you are making a new recording while listening to previously recorded tracks, these tracks can drown out the sound of the instrument currently being played, making it difficult to hear. In this type of situation, you can lower the faders of the playback tracks, use pan to move either these tracks or the instrument being played to the left or right, etc. to make it easier to hear this instrument.

☞ "Setting the left-right position of each track (Pan)" (p. 46)

☞ "Setting an audio input's left-right position (Input Pan)" (p. 37)

# Mixing audio from various tracks onto a stereo track (Mix Down)

If you have constructed a song through repeated overdubbing, it is often the case that the recorded instruments will sound disjointed in terms of volume and position, giving the impression that they're not actually part of the same performance. Nevertheless, if you combine each of these tracks into a stereo mix while readjusting the balance of volume and pan settings, you will be able to convey the image of a single, complete song.

And if you intend to create an audio CD later on, your songs must be in the form of stereo tracks; consequently, you will need to perform a mix down for each one.

A mix down is carried out as follows.

(1) Set the left-right position of each track (Pan).

(2) Suppress variations in volume (Compressor).

(3) Adjust the sound of each track (Equalizer).

(4) Widen the overall sound (Loop Effects).

(5) Mix the playback tracks onto a single stereo track (Bounce).

Setting the left-right position of each track (Pan)
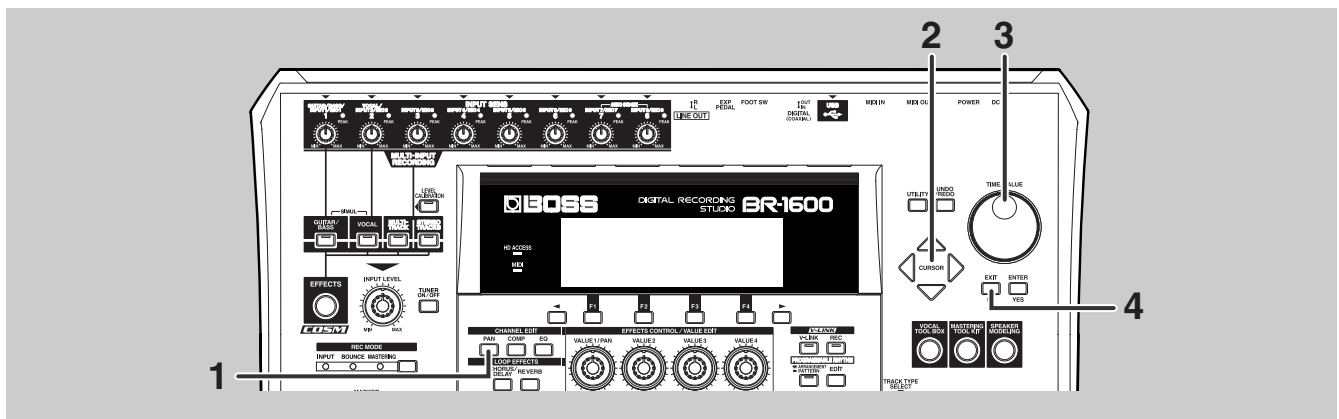
1 Press CHANNEL EDIT [PAN].

The pan setting screen will appear.
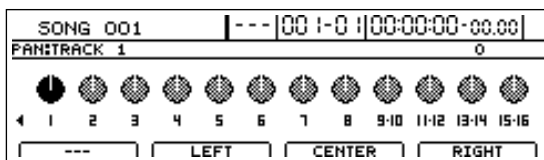
2 Move the cursor to the track to which pan setting is to be changed.

You can also select a track by pressing its track button. The track button for the selected track will light up.

3 Change the pan setting using the TIME/VALUE dial.

**L100:** Audio is moved to the extreme left.

0: Audio is moved to the center.

R100: Audio is moved to the extreme right.

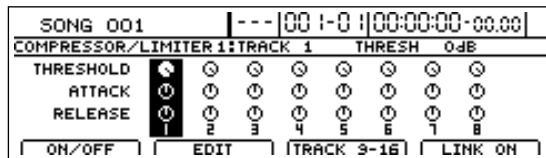## 4 Press [EXIT/NO] to return to the top screen.

Suppressing variations in volume (Compressor)

Each of the tracks 1 through 8 contains a built-in compressor, and these compressors can be used to smoothen out differences in the volumes and peak levels of the corresponding tracks.
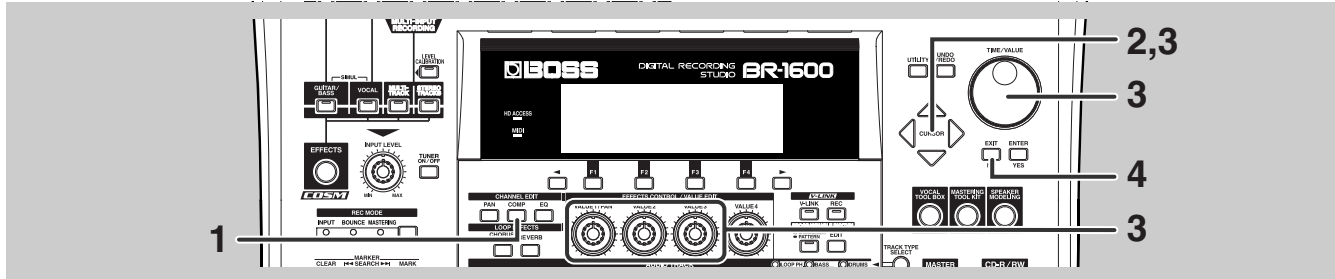
1 Press [COMP].

The compressor setting screen will appear.

2 Move the cursor to the track to which compressor setting is to be changed.

The track button for the selected track will light up.

Press [F3] (TRACK 9-16) to switch to the setting screen for Track 9/10 through 15/16. To return to the setting screen for Track 1 through Track 8, press [F3] once again.

3 Move the cursor to the parameter to which setting is to be changed, and then use the TIME/VALUE dial to make a new setting.
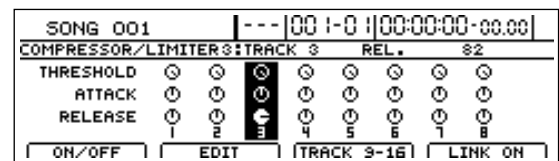
THRESHOLD:

This parameter sets the volume level at which the compressor starts to affect the sound. As the setting is made smaller (or more negative), the compressor will become active at lower volumes.

ATTACK:

This parameter adjusts the time it takes for the compressor to start affecting the sound after the volume exceeds the threshold. Smaller values reduce the time until the compressor starts working.

RELEASE:

This parameter adjusts the time it takes for the compressor to stop affecting the sound after the volume drops below the threshold. Smaller values reduce the time until the compressor stops working.

The threshold, attack, and release parameters can also be adjusted directly using the VALUE 1–3 knobs, respectively.

4 Press [EXIT/NO] to return to the top screen.

MEMO

- In addition to the cursor, the track buttons can also be used to directly choose the track to which settings are to be changed. Furthermore, if the track buttons for tracks 1 and 2, tracks 3 and 4, tracks 5 and 6, or tracks 7 and 8 are pressed in unison at this time, you will be able to modify the settings for the two selected tracks at the same time. This function is extremely useful when you want to match the compressor settings of stereo tracks. By changing compressor settings in this condition, all parameters can be set to the same values. And as the compressors from the two selected tracks will operate as a stereo compressor in this situation, differences in the balance of left and right volumes can be easily eliminated.

- In addition to the parameters displayed on-screen, the compressors also feature other detailed parameters. For more detailed information, refer to "Adjusting a compressor" (Owner's Manual; p. 109).

- The compressor can be used on up to 8 channels, and while with the factory settings it is applied to Tracks 1–8, you can apply it to Tracks 9/10–15/16 instead of Tracks 1–8. ("Selecting tracks to be compressed" (Owner's Manual; p. 110)).
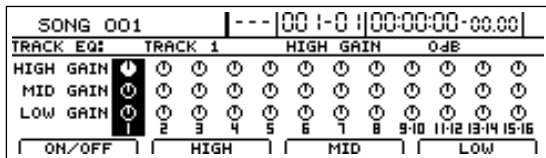
Adjusting the sound of each track (Equalizer)

Each of the tracks contains a built-in three-band equalizer (EQ), and these can be used to adjust the low, mid, and high bands of audio recorded on the corresponding track.
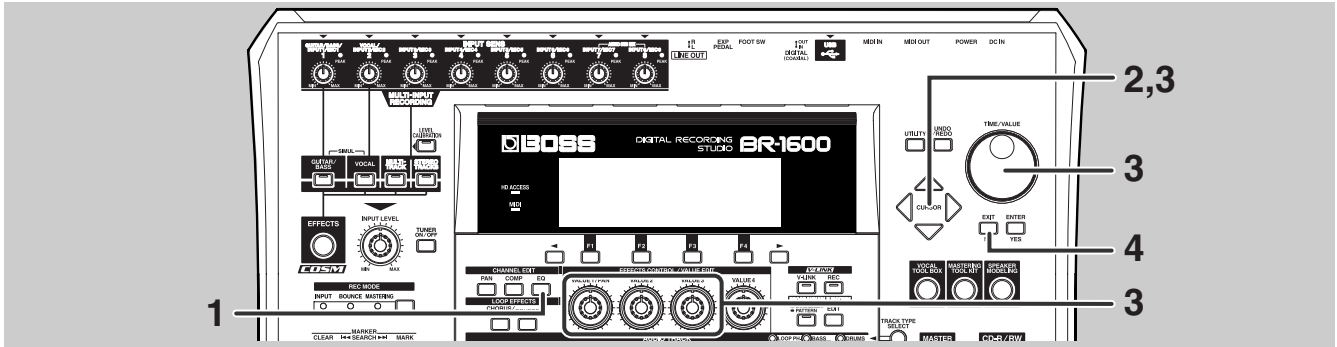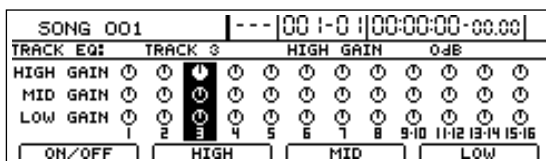

1 Press [EQ].

The equalizer setting screen will appear.

2 Move the cursor to the track to which equalizer setting is to be changed.

The track button for the selected track will light up.

3 Move the cursor to the parameter to which setting is to be changed, and then use the TIME/VALUE dial to make a new setting.

HIGH:

This parameter adjusts the sound of the high band. It is used to change the brightness or thinness of a sound. The high-band EQ can be used effectively on hi-hats, cymbals, etc., and it also used to adjust sibilance (the harsh "S" sound often present in vocals).

MID:

This parameter adjusts the sound of the mid band. It is mainly used to change an instrument's degree of power or presence, and can be extremely useful when used on vocals, guitars, saxophones, and other instruments that play melodies. Human hearing is most sensitive in this mid-range and the main part of an instrument's sound is usually found here; accordingly, the mid-band EQ can be used effectively on nearly all instruments.

LOW:

This parameter adjusts the sound of the low band. It can be used to change the degree of punch in bass guitars, kick drums, and other instruments at the rhythmic core of a song. Note that low-band EQ has little effect on brighter instruments such as strings or cymbals.

The high, mid, low and parameters can also be adjusted directly using the VALUE1, VALUE2, and VALUE3 knobs, respectively.

4 Press [EXIT/NO] to return to the top screen.

NOTE

If the setting is raised to an excessive level, the volume of the corresponding range will be too high, and there is a danger that this could damage your hearing. In addition, sound will become distorted and external audio devices such as headphones may be damaged. Accordingly, you should take extra care when making this setting, and if necessary, do so with the volume turned down.

MEMO

- In addition to the cursor, the track buttons can also be used to directly choose the track to which settings are to be changed. Furthermore, if the track buttons for tracks 1 and 2, tracks 3 and 4, tracks 5 and 6, or tracks 7 and 8 are pressed in unison at this time, you will be able to modify the settings for the two selected tracks at the same time. This function is extremely useful when you want to match the EQ settings of stereo tracks. By changing EQ settings in this condition, all parameters can be set to the same values. Note that since tracks 9/10 through 15/16 are fixed as stereo tracks, the parameters for the left and right sides of each of these tracks will always change in the same way. It is not possible to modify the settings of the left and right sides individually.

- In addition to the parameters presented on the display, the equalizers also feature other detailed parameters of sound settings. For more detailed information, refer to "Adjusting a three-band equalizer" (Owner's Manual; p. 110).

Enhancing the sound (Loop Effects)

The BR-1600CD's mixer features CHORUS/DELAY/DOUBLING and REVERB as loop effects. When used correctly, these effects can add a feeling of spaciousness and depth to the sound.


MEMO

What are Loop Effects?

Effects that are connected between a mixer's effect-send and effect-return are referred to as Loop Effects. With this type of effect, you can adjust the degree to which the sound is affected by changing the send level for the corresponding mixer channel (or in our case, for the corresponding BR-1600CD track). Since each track has its own send level, the degree to which each track is affected can be easily changed—for example, a lot of reverb can be applied to vocals, a little reverb can be applied to drums, and so on. In contrast to insert effects (p. 26), which affect a particular sound, Loop Effects can be said to affect the overall sound.

For more detailed information regarding settings, refer to "Using loop effects" (Owner's Manual; p. 112).

Applying reverb
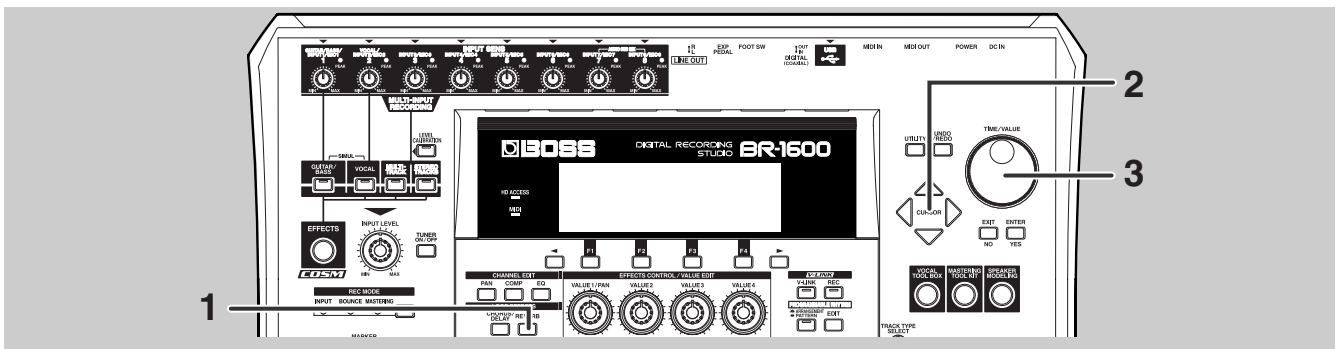
1 Press LOOP EFFECTS [REVERB].

The BR-1600CD will display a screen (Reverb Send) for adjusting the amount of the audio being sent from each track to the reverb.
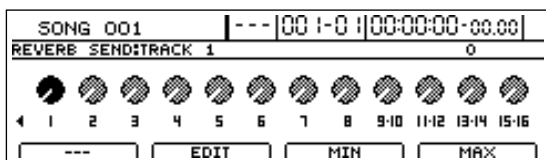

If this screen does not appear, use either [◀] or [▶] to call it up.

2 Move the cursor to the track to which reverb is to be applied.

You can also move directly to a track by pressing the corresponding track button.
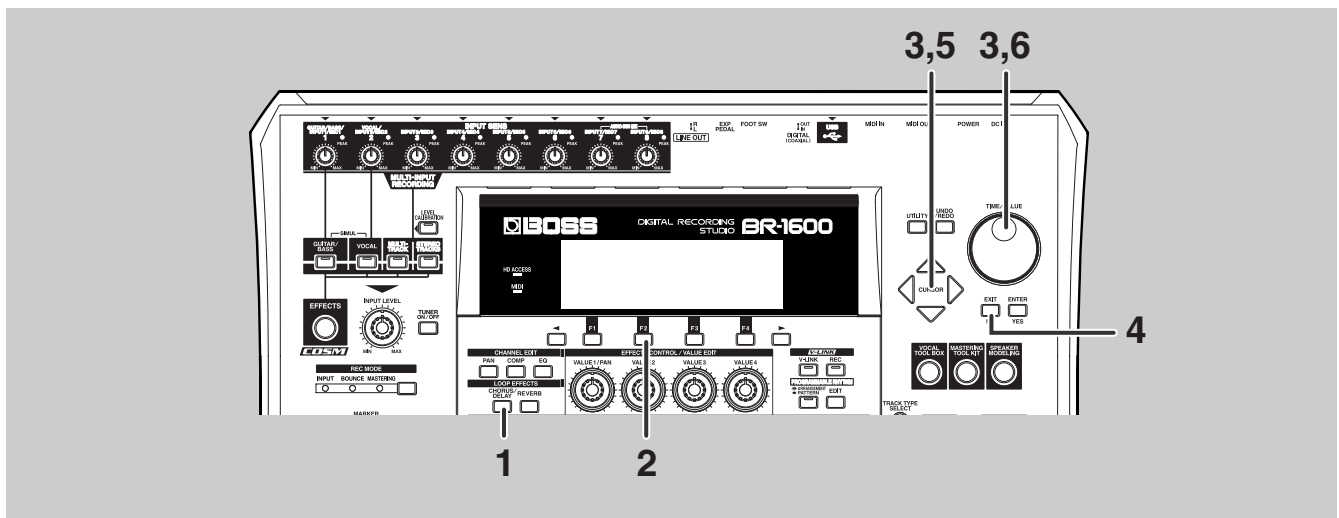
3 While listening to the playback from the selected track, use the TIME/VALUE dial to adjust the reverb send level until you like what you hear.

When the reverb send level is 0, no reverb will be applied; when it is 100, the maximum amount of reverb will be applied.
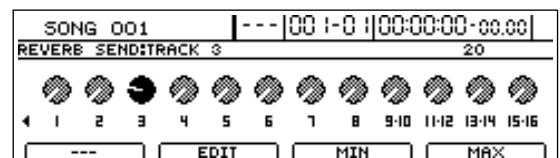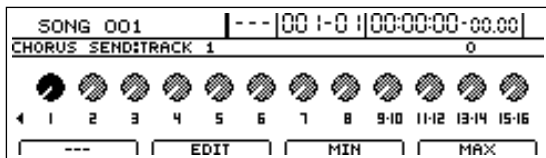

4 If necessary, repeat Steps 2 and 3.

Applying chorus, delay or doubling

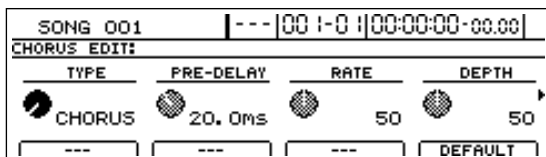
1 Press LOOP EFFECTS [CHORUS/ DELAY].

The BR-1600CD will display a screen (Chorus/Delay Send) for adjusting the amount of the audio being sent from each track to the delay or chorus.

If this screen does not appear, use either [◀] or [▶] to call it up.

2 Press [F2] (EDIT).

The Chorus/Delay Edit screen will appear.

3 Move the cursor to TYPE and select the desired Loop Effect using the TIME/ VALUE dial.

CHORUS:

A chorus effect creates sound a little off, and by adding this to the original sound, it allows the sound to be thickened. You can have the effect seemed to be surrounded by the sound.

DELAY:

A delay effect works like an echo by repeating the original sound after a specific delay time. You can apply this effect on instruments that play melodies to create a richer, thicker sound with no loss of presence.
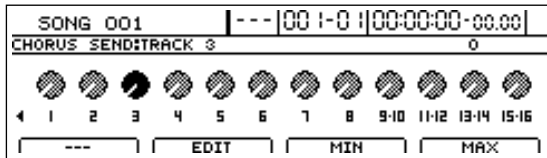
DOUBLING:

A doubling effect is essentially the same as a delay with an extremely short delay time. You can use this effect to make an instrument recorded in mono sound like it was actually recorded in stereo.

4 Press [EXIT/NO] to return to the Chorus/Delay Send screen.

5 Move the cursor to the track to which chorus, delay, or doubling is to be applied.

You can also move directly to a track by pressing the corresponding track button.

```
 SONG 001      |---|001-01|00:00:00-00.00|
CHORUS SEND:TRACK 3               0
```

```
◄  1   2   3   4   5   6   7   8  9·10 11·12 13·14 15·16
   [    ---    ] [   EDIT   ] [    MIN    ] [    MAX    ]
```

6 While listening to the playback from the selected track, use the TIME/VALUE dial to adjust the send level until you like what you hear.

When the send level is 0, no effect will be applied; when it is 100, the maximum amount of effect will be applied.

7 If necessary, repeat Steps 5 and 6.

NOTE

You can only select one chorus, delay, or doubling effect. Different types of chorus, delay, and doubling effects cannot be used together.

Once all the necessary settings have been made, you will be able to start recording (bouncing).

MEMO

# Mixing the playback tracks to a single stereo track (Bounce)

If you have made all of the necessary track settings as described in the previous sections, all that now remains is to combine your tracks and record this mix in stereo.

In addition, you can also record from one track to a different track using just the BR-1600CD in a procedure known as "bouncing."

MEMO

If you are using Drum, Bass or Loop Effects, these can be combined with the playback from the recorded tracks in the mix down process. To do this, first of all press the track button for the Drum, Bass or Loop Effect track (Track 11/12 through 15/16) several times until it lights up or starts to flash. Then, use the track's fader to adjust its volume to a suitable level and bounce the Drum, Bass or Loop Effect track to a different track.

As you will probably want to master (p. 58) your song later on, let's bounce to Track 9/10.
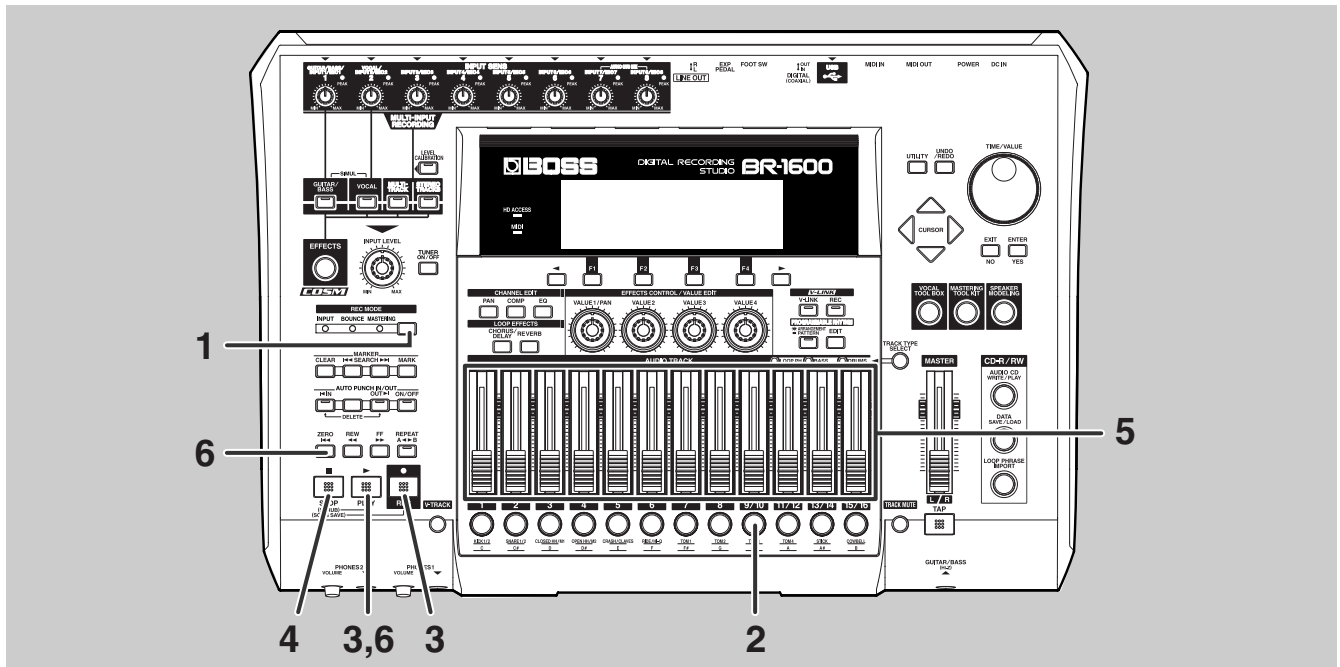
1 Press [REC MODE] several times until the BOUNCE indicator lights up.

All inputs sources will be automatically muted at this time.

2 Press track button for Track [9/10].

This button will turn red and start to flash, indicating that Track [9/10] has been selected as the destination for bouncing. Note that the track buttons for tracks that have been recorded will all be green.

3 Press [REC], then press [PLAY].

Both [PLAY] and [REC] will light up and recording (bouncing) will start.

4 When you reach the end of the song, press [STOP].

Both [PLAY] and [REC] will turn off, indicating that bouncing has been completed.

5 To check the track recorded by bouncing, lower all faders except the one for Track 9/10, and move the fader for Track 9/10 to a position that gives a suitable playback volume.

6 Press [ZERO], then press [PLAY].

The audio data bounced to Track 9/10 will now be played back.

7 If you wish to store the track recorded by bouncing, save the current song (p. 56).

This process of adjusting the tone and balance for each track, and of then recording these to a single stereo track is referred to as a Mix Down.

NOTE

- If you turn off the BR-1600CD without saving the current song, the track recorded by bouncing will be lost. It is important, therefore, that you save your songs regularly. Furthermore, if you intend to create an audio CD later on, you must save the bounced mix-down track at this time.

- If audio data already exists on the track selected for bouncing, this data will be overwritten during the bouncing process. If you want to prevent the data from being overwritten in this way, you should ensure during recording and overdubbing that an empty track is reserved for bouncing. Note that even if you accidentally overwrite audio data as a result of bouncing, you can use Undo to restore the data and cancel the bounce. "Undo" (p. 42)

- After bouncing has been completed, a period of 1 or 2 seconds may elapse before you can carry out the next operation.

MEMO

- If you want to bounce an instrument being played live together with playback from previously recorded tracks, press the appropriate INPUT SELECT button. This button will light up and muting of the input sources will be canceled. You will now be able to record the instrument in combination with the playback tracks during the bounce process.

- Although the previous sections described a mix down in terms of bouncing within the BR-1600CD itself, you can also mix down to an external recording device as mentioned above. To do this, simply connect the BR-1600CD's LINE OUT to the recording device, start recording on that device, and then start playback on the BR-1600CD. Note that there is no need to set REC MODE to BOUNCE at this time and it is quite acceptable to leave it at INPUT.

Saving your song (Song Save)

In the BR-1600CD, recorded or edited audio data is only temporarily stored on the hard disk until the corresponding song is saved. If the power is turned off without saving the song, all newly recorded audio data, edited data, modified mixer settings, etc. will be lost. The Save function prevents this from occurring by storing the recorded and edited data on the BR-1600CD's hard disk.
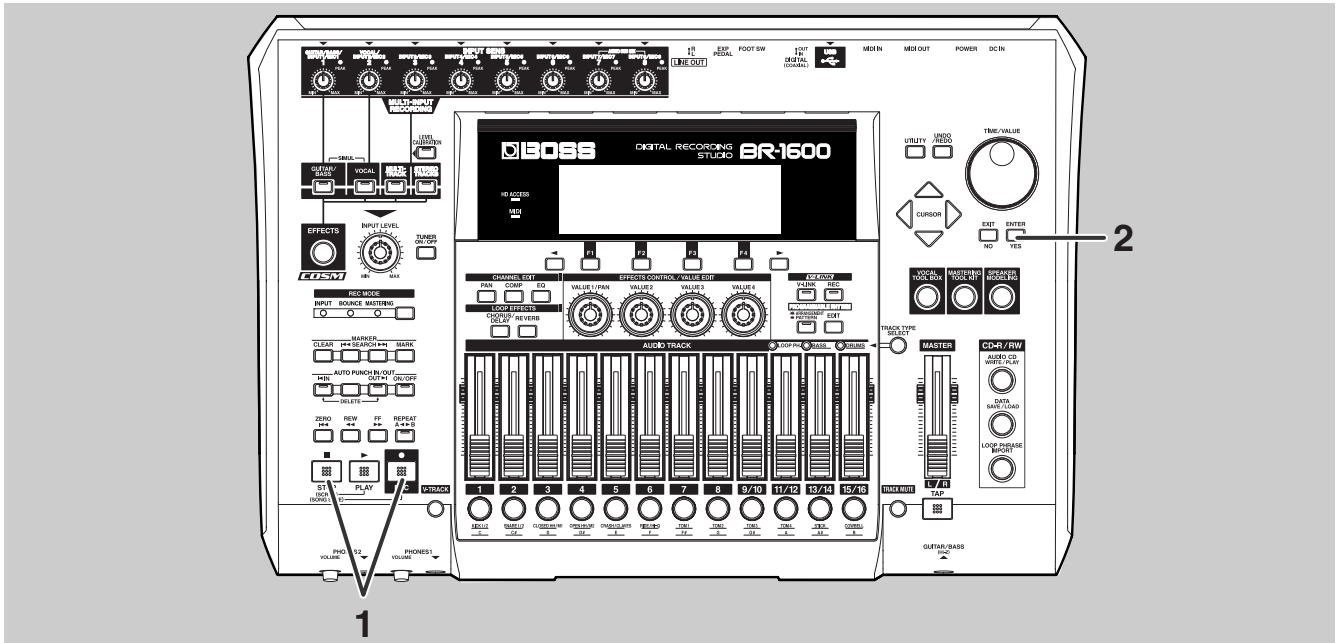
1 With the top screen displayed, hold down [STOP] and press [REC].

The message "Save Current?" will appear.
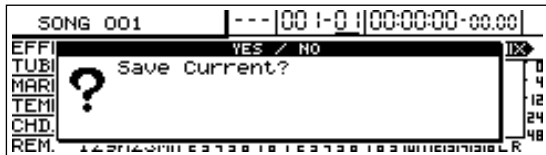
2 Press [ENTER/YES]. (If you do not want to save, press [EXIT/NO].)

The message "Storing Current..." will appear on the screen and saving of the song will begin. When saving has been completed, the message "Complete!" will appear.

NOTE

Song Protect has activated for the demo songs already included in the BR-1600CD at the time of purchase; accordingly, the message "Protected Song!" will be displayed at this time and it will not be possible to save the song.

Saving your song from the Utility screen

In addition to the above method, songs can also be saved from the Utility screen. Note that both methods save songs in exactly the same way.
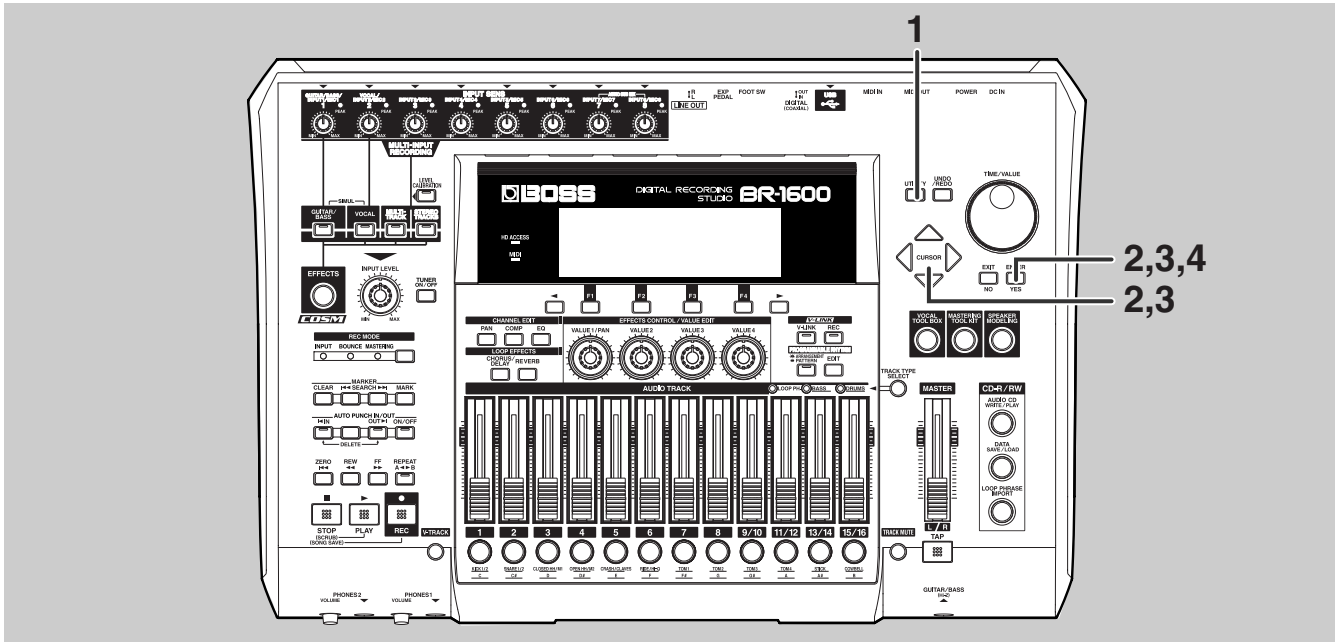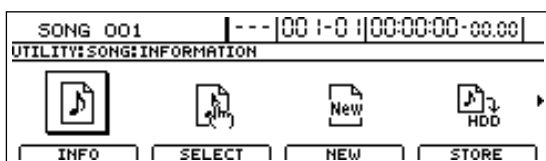

1 Press [UTILITY].

The Utility Menu screen will appear.

2 Move the cursor to the SONG icon and press [ENTER/YES].

Alternatively, you can press [F2] (SONG) if the SONG icon is currently displayed.

The Song Menu screen will appear.

3 Move the cursor to the STORE icon and press [ENTER/YES].

Alternatively, you can press [F4] (STORE) if the STORE icon is currently displayed. The message "Save Current?" will appear.

4 Press [ENTER/YES]. (If you do not want to save, press [EXIT/NO].)

The message "Storing Current..." will appear on the display and saving of the song will begin.

When saving has been completed, the message "Complete!" will appear.

Adjusting volume and compression for CD writing (Mastering Tool Kit)

When creating a CD, it is crucial that the overall volume of the song be reduced in order to allow its loudest parts to be recorded without any degradation of sound quality. However, this reduction in volume can often result in CDs that lack power and punch. In addition, since our ears are not as sensitive to sound in the low band of frequencies, it may be difficult to hear these sounds even if the level meter indicates maximum volume, and this factor also hinders the production of powerful-sounding CDs.

The Mastering Tool Kit contained within the BR-1600CD provides a means of eliminating this type of problem so that you can easily create great-sounding CDs. When you use this Mastering Tool Kit, you will be able to smooth out volume fluctuations in your songs and balance the sound in the low band of frequencies.

MEMO

Audio CDs can be created without using the Mastering Tool Kit, and you can choose whether or not to use it.

Before using the Mastering Tool Kit

At the time of purchase, the BR-1600CD's Mastering Tool Kit already contains 19 preset patches (P 001 through P019) that cannot be overwritten, 19 user patches (U001 through U019) that can be used in any song, and 19 song patches (S001 through S019) that are stored together with a specific song. User patches and song patches can be overwritten.

☞ "Mastering Tool Kit Patch List" (separate document)

The Mastering Tool Kit can only be used with Track 9/10. If you have made recordings on tracks 1 through 8 and 11/12 through 15/16, you should first of all mix these tracks down to Track 9/10 as described in "Mixing audio from various tracks onto a stereo track (Mix Down)" (p. 46).

Selecting the Mastering Tool Kit

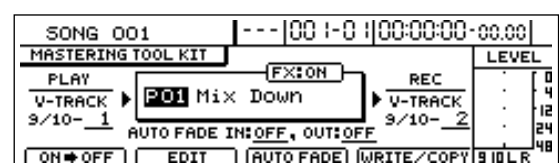To use the Mastering Tool Kit, you will need to set REC MODE to MASTERING.
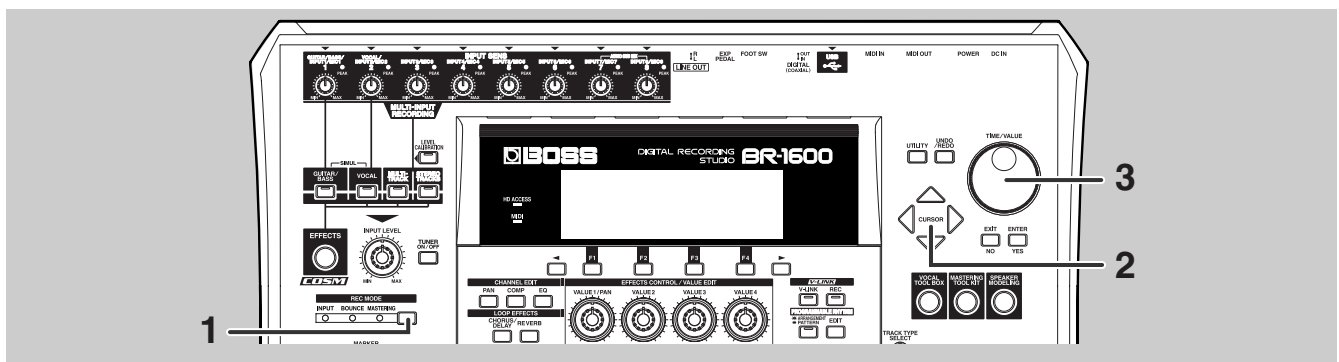
1 Press [REC MODE] several times until the MASTERING indicator lights up.

The Mastering screen will appear.

[MASTERING TOOL KIT] will also light up at this time, indicating that the Mastering Tool Kit has been applied to Track 9/10.

**2** Move the cursor to the Mastering Tool Kit Patch number.

3 Select a Mastering Tool Kit patch using the TIME/VALUE dial.

Start playback on the BR-1600CD, and select the patch that gives the best sound for your song.

MEMO

For more information regarding the modification of Mastering Tool Kit settings, refer to "Modifying Mastering Tool Kit settings (Edit)" (Owner's Manual; p. 130).

Adjusting the mastering volume
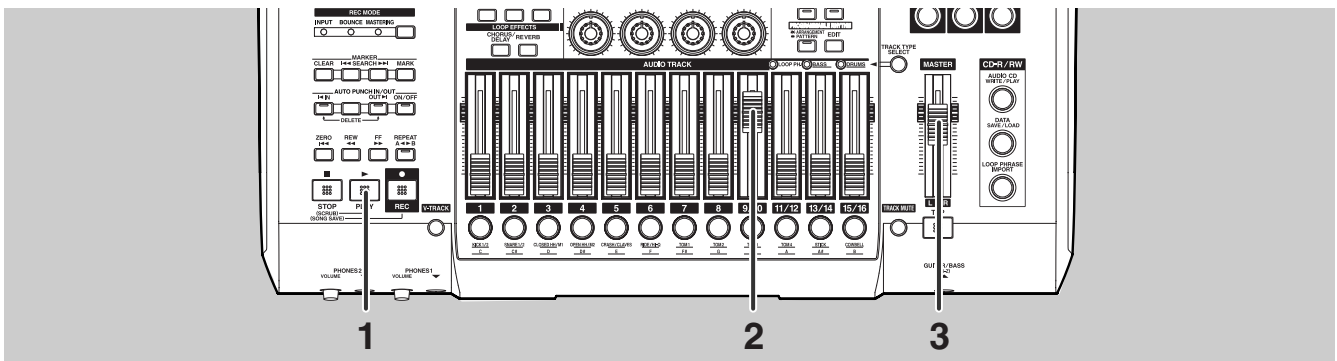
1 Press [PLAY], listen to Track 9/10, and set its volume to a suitable level.

2 Use the fader for Track 9/10 to set its volume slightly lower than the setting that causes full-scale deflection of its level meter.

Note that the volume you select here will have an effect on the way in which the Mastering Tool Kit shapes the sound and also in which the kit effect is applied.

Full-scale deflection of the level meter will result in sound being distorted during the mastering process. On the other hand, if there is very little deflection in the level meter, the effect of the Mastering Tool Kit will be reduced.

As you set a suitable volume for mastering, listen to the sound of the playback to confirm that it is not distorting.

3 Use the Master fader to set the overall volume slightly lower than the setting that causes full-scale deflection of the MIX L/R level meter.

The mastering volume is determined by the volume that you set here—in fact, this is the actual volume at which you will write your song to the audio CD.
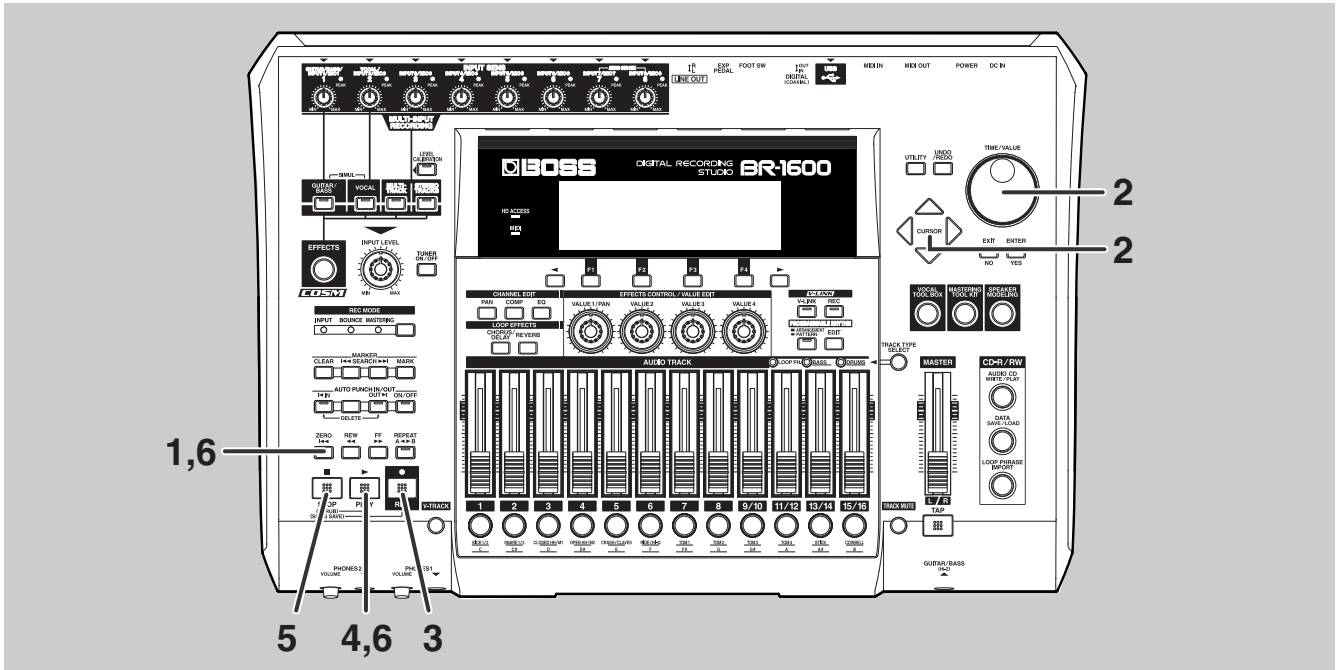
Mastering

1 Move the current position back to the beginning of the song.

2 Use [CURSOR] and the TIME/VALUE dial to choose the V-Tracks to be used as the source and destination of mastering.

The source V-Track   The destination V-Track

3 Press [REC].

[REC] will turn red and start to flash, indicating that the BR-1600CD is now ready for recording.

4 Press [PLAY].

Both [PLAY] and [REC] will light up and mastering will begin.

5 When you reach the end of the song, press [STOP].

Both [PLAY] and [REC] will turn off and mastering will stop.

When mastering has been completed, the current V-Track used as source will automatically switch to the V-Track that you chose as the destination for mastering. In addition, the BR-1600CD will also turn off the Mastering Tool Kit (the [MASTERING TOOL KIT] indicator goes out) to prevent the mastered track from passing through the kit a second time.

6 Start playback from the beginning of the song and listen to the mastered track.

If you are not happy with the results of mastering, press [UNDO/REDO] to cancel the recording that you have just made. ("Undo" (p. 42))

7 If you wish to store the mastered track, save the current song (p. 56).

Adjusting volume and compression for CD writing (Mastering Tool Kit)

NOTE

If you turn off the BR-1600CD without saving the current song, the mastered track will be lost.

MEMO

- The V-Track for Track 9/10 that was most recently used for mastering is set as the final mastering track. When you subsequently use Disc At Once (p. 62) to create an audio CD, the BR-1600CD will give priority to the selection of final mastering track for songs that you want to write to the CD. For more detailed information regarding final mastering track, refer to "Changing the V-Track to be written to an audio CD (the Final Mastering Track)" (Owner's Manual; p. 47).

- Commercially available songs often feature an effect that gradually reduces the volume at the end of a song (Fade Out). In addition, some songs also feature a different effect that gradually increases the volume at the beginning (Fade In). Although you can use the MASTER fader during the mastering process to replicate these effects, the BR-1600CD is capable of performing automatic fade in and fade out. This capability ensures that volume changes are both gradual and smooth, and it is referred to as "Auto Fade In/Out." For more details regarding the usage of Auto Fade In/Out, refer to "Performing automatic fade-in and fade-out (Auto Fade In/Out)" (Owner's Manual; p. 132).

Writing your finished song to a CD (Audio CD Write)

The procedures described above have allowed us to finish one complete song, so let's now write this song to an audio CD. In order to do this, you'll need an unrecorded CD-R or CD-RW disc.

MEMO

Methods for creating audio CDs

The BR-1600CD allows you to create audio CDs in three different ways.

Track At Once:

With Track At Once, only the currently loaded song is written to the audio CD. If you want to include other songs on your CD, they will each have to be loaded and written in sequence. When you use this method, individual songs can be added to a disc one at a time until it is full. However, the repetitive writing of individual tracks in this way can be considerably time consuming, especially when you are compiling an album or any other type of audio CD with more than two or three songs.

Disc At Once By Song

The Disc At Once By Song method allows you to write a number of different songs selected from the BR-1600CD's hard disk to an audio CD in a single process. In this way, album creation and other similar operations can be carried out much more conveniently. However, it will not be possible to subsequently add other songs to a disc that has been created using this method. As a result, a considerable amount of disc memory could be wasted if only a few songs are written.

Disc At Once By Marker

With this method, you can place markers at the desired positions in a long audio track to divide the track into different sections and can write each of these sections to an audio CD as a different song. A typical example of this type of long track would be a continuous live performance recorded over an hour or more. Say this performance included five songs, you could place markers at the beginning of each song to ensure that, once created, the audio CD would appear on a CD player as containing five different songs.

Writing songs individually (Track At Once)
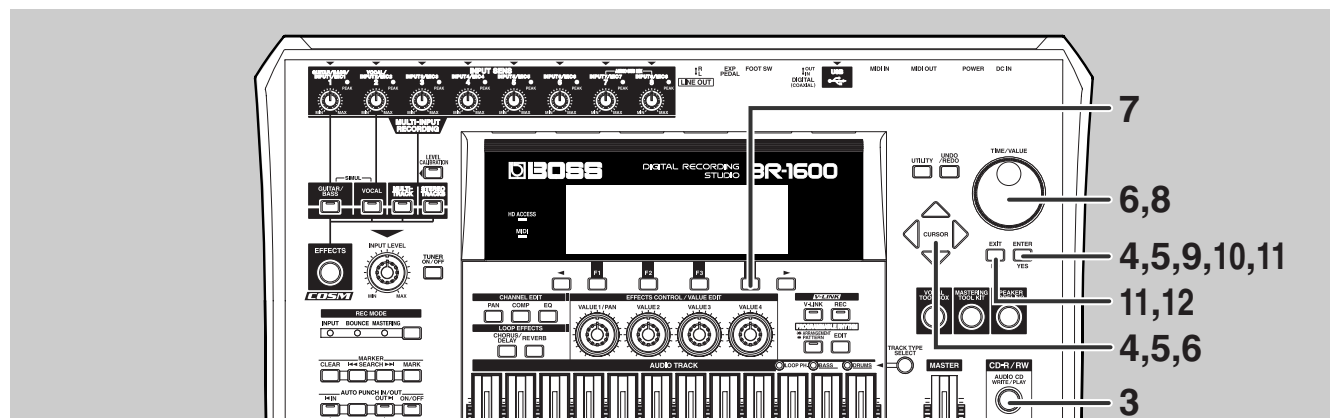
1 Load the song that you want to write.

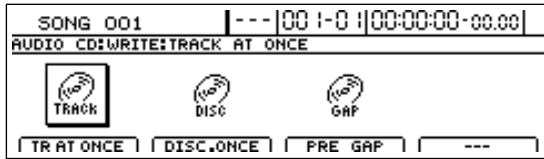**2** Insert an unrecorded CD-R or CD-RW disc into the CD-R/RW drive.

3 Press [AUDIO CD WRITE/PLAY].
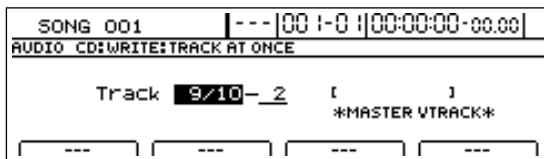
The Audio CD screen will appear.

4 Move the cursor to WRITE and press [ENTER/YES].

Alternatively, you can press [F1] (WRITE).
The Audio CD Write screen will appear.

```
SONG 001        |---|001-01|00:00:00-00.00|
AUDIO CD:WRITE:TRACK AT ONCE
    [TRACK]      [DISC]      [GAP]
  [ TR AT ONCE ] [ DISC.ONCE ] [ PRE GAP ] [    --- ]
```

5 Move the cursor to the TR AT ONCE icon and press [ENTER/YES].

Alternatively, you can press [F1] (TR AT ONCE). The Track At Once screen will appear.

```
SONG 001        |---|001-01|00:00:00-00.00|
AUDIO CD:WRITE:TRACK AT ONCE

        Track  9/10 - 2    [          ]
                           *MASTER VTRACK*
  [   --- ]  [   --- ]  [   --- ]  [   --- ]
```

6 Use [CURSOR] and the TIME/VALUE dial to choose the track and V-Track that you want to write.

7 Press [F4] (GO).

The Write Speed screen will appear.

```
SONG 001        |---|001-01|00:00:00-00.00|
AUDI              SETUP

        Write Speed?   x8

                                  [ENTER]
  [   --- ]  [   --- ]  [   --- ]  [   GO ]
```

8 Use the TIME/VALUE dial to set the write speed.

Alternatively, if you want to use the write speed that is currently displayed, proceed to Step 9.

Write speed

x2 (352 kbps) Writes twice as fast.

x4 (704 kbps) Writes four times as fast.

x8 (1408 kbps) Writes eight times as fast.

9 Press [ENTER/YES].

The message "Write Sure?" will appear.

10 Press [ENTER/YES].

The message "Now Writing..." will appear and writing to the audio CD will begin. When writing has been completed, the message "Finalize OK?" will be displayed.

11 If you intend to write additional songs to the same CD-R disc, press [EXIT/NO]. Alternatively, press [ENTER/YES] if no more songs will be added to this disc.

If you press [ENTER/YES], the message "Finalizing..." will appear and the finalization process will begin. When the message "Complete!" appears, it indicates that the finalization has been completed. For more detailed information regarding finalization, refer to "What is finalization?" (p. 67).

12 Press [EXIT/NO] several times to return to the top screen.

13 Press the CD-R/RW drive's EJECT button to eject the disc.
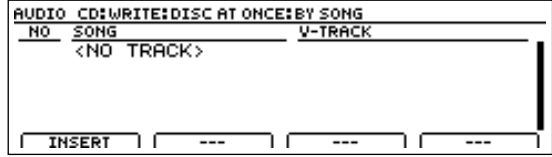
This completes the writing process.
It may take a period of several seconds before the disc is actually ejected.

NOTE

- The range of available write speeds can sometimes be limited by the type of media being used. In such a case, the BR-1600CD will allow you to select only the supported speeds.
- If you are using CD-R or CD-RW discs intended for high-speed writing, the frequency of write errors may increase if the x2 or x4 speed is selected. It is recommended that you use the x8 speed for high-speed discs.
- Although you could be forgiven for thinking that the x8 speed setting creates CD-R/RWs in half the time of the x4 setting, a slightly longer time will be required in practice. The data recorded in the BR-1600CD's audio track is converted into CD format during the writing process, and this accounts for the extra time requirement.

Writing several songs at once (Disc At Once By Song)
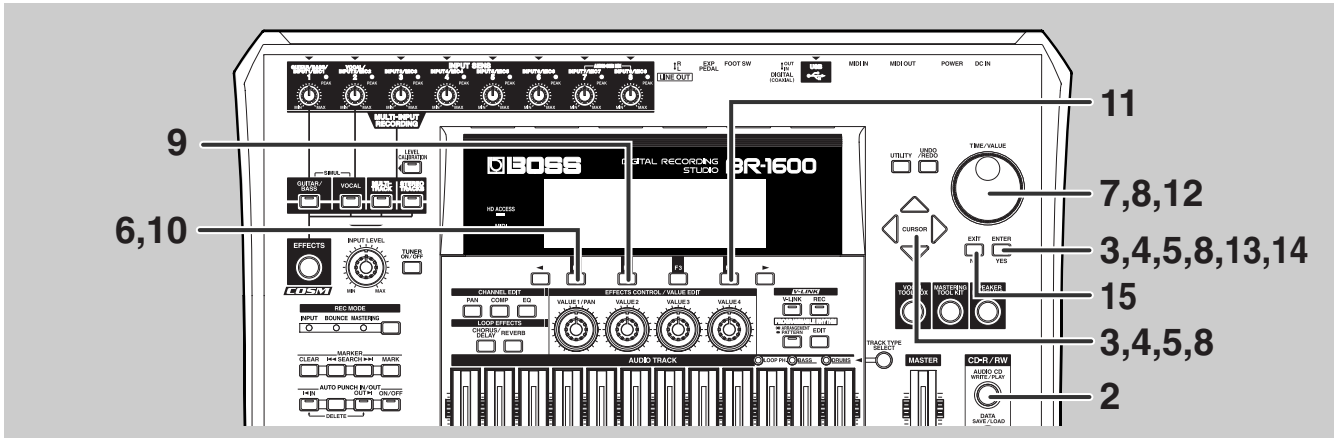
1 Insert an unrecorded CD-R or CD-RW disc into the CD-R/RW drive.

2 Press [AUDIO CD WRITE/PLAY].

The Audio CD screen will appear.

3 Move the cursor to WRITE and press [ENTER/YES].

Alternatively, you can press [F1] (WRITE).
The Audio CD Write screen will appear.

4 Move the cursor to the DISC. ONCE icon and press [ENTER/YES].

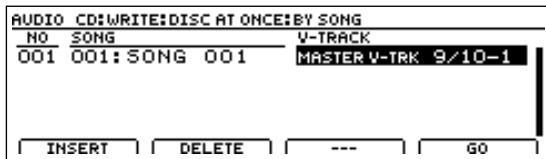Alternatively, you can press [F2] (DISC. ONCE).
The Disc At Once screen will appear.

5 Move the cursor to the BY SONG icon and press [ENTER/YES].

Alternatively, you can press [F1] (BY SONG).
The Disc At Once By Song screen will appear.

NOTE

- If the message "Not Blank Disc!" appears, it means that the CD-R disc already contains data. In such a case, replace the disc with an unrecorded one.
- If the message "Erase Disc?" appears, it means that the CD-RW disc already contains data. If you then press [ENTER/YES], the BR-1600CD will begin erasing data from the CD-RW disc. Once this process has been completed, you can proceed to the following steps using the empty CD-RW disc.

6 Press [F1] (INSERT).

Songs can now be selected for writing.

7 Use the TIME/VALUE dial to select the song that you want to write.

8 Move the cursor to the right to display the screen, and then use the TIME/VALUE dial to set the V-Track that you want to write.

```
AUDIO CD:WRITE:DISC AT ONCE:BY SONG
 NO  SONG              V-TRACK
 001 001:SONG 001      MASTER V-TRK 9/10-1

   INSERT     DELETE       ---        GO
```

At this time, "MASTER V-TRK" will be indicated for the V-Track that was most recently used for mastering (i.e., the final mastering track). This can be used as a guide for setting the correct V-Track.

NOTE

Only stereo tracks can be selected for writing, and you will not be able to select mono tracks at this time.

9 To cancel selection of a song, press [F2] (DELETE).

The selection will be canceled.

10 To insert a song just before a song that has already been selected, move the cursor to the position you want to insert, and then press [F1] (INSERT).

A new song will be inserted.

11 Repeat Steps 6 through 10 to select all of the songs you want to write, and then press [F4] (GO).

The Write Speed screen will appear.

12 Use the TIME/VALUE dial to set the write speed.

Alternatively, if you want to use the write speed that is currently displayed, proceed to Step 13.

Write Speed:

x2 (352 kbps)   Writes twice as fast.

x4 (704 kbps)   Writes four times as fast.

x8 (1408 kbps)   Writes eight times as fast.

13 Press [ENTER/YES].

The message "Write Sure?" will appear.

14 Press [ENTER/YES].

The message "Now Writing..." will appear and writing to the audio CD will begin. When this process has been completed, the finalization will start automatically. When the message "Complete!" appears, it indicates that writing has been fully completed.

15 Press [EXIT/NO] several times to return to the top screen.

16 Press the CD-R/RW drive's EJECT button to eject the disc.

This completes the writing process.

For details regarding listening to the audio CD that you have just created, refer to "Listening to your audio CD (Audio CD Play)" (p. 70).

It may take a period of several seconds before the disc is actually ejected.

NOTE

- The range of available write speeds can sometimes be limited by the type of media being used. In such a case, the BR-1600CD will allow you to select only the supported speeds.
- If you are using CD-R or CD-RW discs intended for high-speed writing, the frequency of write errors may increase if the x2 or x4 speed is selected. It is recommended that you use the x8 speed for high-speed discs.
- Although you may think that the x8 speed setting creates CD-R/RWs in half the time of the x4 setting, a slightly longer time will be required in practice. The data recorded in the BR-1600CD's audio track is converted into CD format during the writing process, and this accounts for the extra time requirement.

Dividing long tracks and writing as multiple songs (Disc At Once By Marker)

When audio CDs are created from live performances, non-stop DJ mixes, and other tracks recorded continuously over long periods of time, these long tracks can end up being written to the CD as a single song.

With the BR-1600CD, however, you can use the marker function to set divisions at the desired points within such an audio track so that it can be written as separate songs.

☞ For more detailed information regarding markers, refer to "Placing markers in your song (Marker)" (Owner's Manual; p. 48).

Using this function, you can create audio CDs containing live performances and non-stop DJ mixes with song divisions at the appropriate points.

Applying markers at song divisions (CD Track Marker)

The first step in this process is to position markers at the desired song divisions using the following procedure. A marker applied in this way is referred to as a "CD Track Marker."
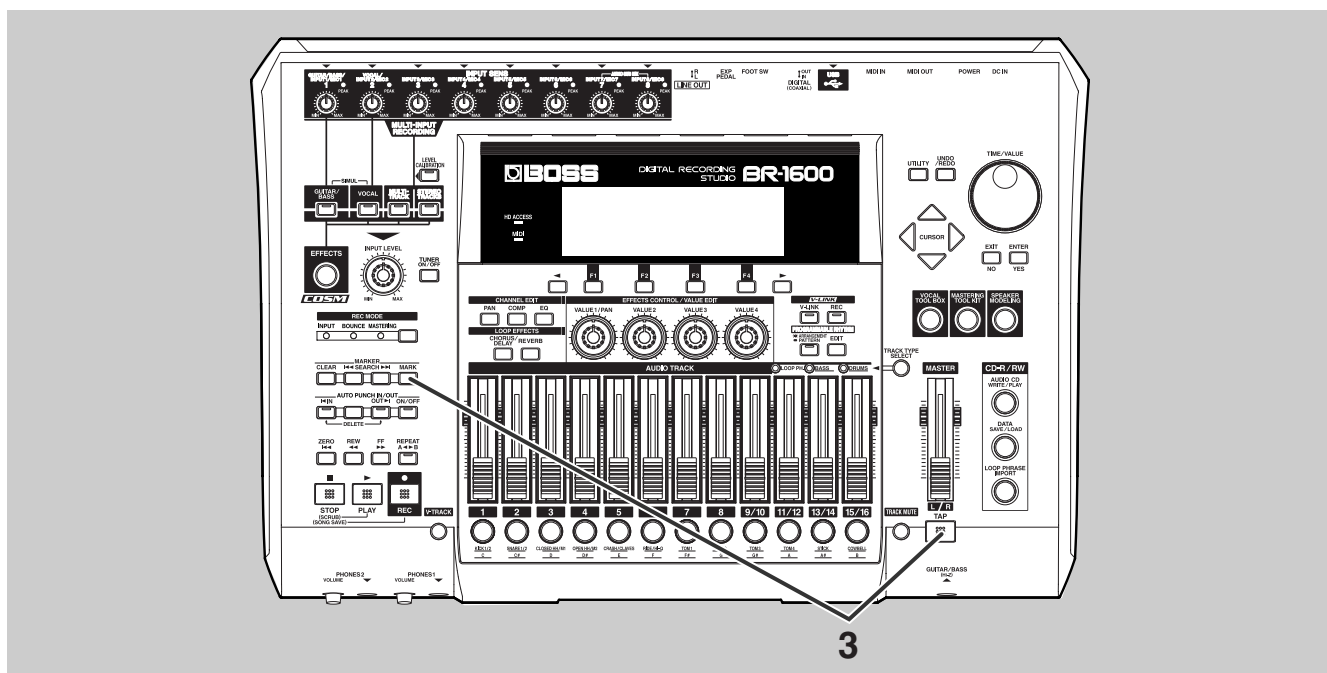
1 Record the performance that you want to write to the audio CD as a stereo track (on any of the tracks from 1/2 through 15/16).

2 Move the current position to a point at which the song is to be divided.

3 **Hold down [TAP] and press [MARK].**

A CD track marker is created at that point, and a "T" will appear in the top screen's Marker box. At the same time, the CD track number is automatically set as that marker's name (i.e. CD01).

```
SONG 001        00:1 00:1-01 00:00:00-00.00
EFFECTS         INPUT      TRACK        MIX
CLEAN JC-120                                0
MARK   T  CD01                             4
TEMPO  120.0                               12
CHD.      CMaj                             24
REM. 127h49m 12345678 123456789101112131415161 R  48
```

4 **Repeat Step 2 and Step 3 for each of the points at which you want the track to be divided.**

NOTE

Any CD track markers accidentally created at the wrong position can be easily removed. ("Clearing markers" (Owner's Manual; p. 48))

5 **If you wish to create an audio CD using these settings, save the current song (p. 56).**

This completes the division of the song and the preparation for writing it to a CD-R/RW disc. Let's now write the tracks and make an audio CD.

NOTE

- Data cannot be written to an audio CD between the beginning of an audio track (i.e., time zero) and the first CD track marker. If you want to write to an audio CD from the very start of an audio track, press [ZERO] to return to the start of that track and then carry out Step 3.
- CD track markers cannot be created within 100 ms of one another. If this prevents a marker from being positioned, clear the pre-existing marker and then carry out Step 3. ("Clearing markers" (Owner's Manual; p. 48))
- Be sure to save your song before creating an audio CD. Settings will not be stored until your song is saved, and this can result in song divisions not being recognized correctly during the writing process.
- A maximum of 99 songs can be written to a single audio CD. If you try to set a CD track marker that will result in this number being exceeded, the message "Marker Memory Full!" will be displayed and you won't be able to set it.
- Audio CD standards require that a CD track be at least four second long. CD track markers that define a CD track lasting less than four seconds are disregarded when the CD is being created.

MEMO

What is finalization?

In addition to audio data, information such as the position and time of this data is also written to audio CDs, and this process is known as "Finalizing." If you intend to play your audio CD on a standard CD player, it is important that finalization be carried out. Once this has been done, however, you will not be able to add any more songs to the CD. For this reason, you should aim to carry out the finalization of a CD-R/RW disc only when it is nearly full of songs.

If you don't finalize:

It will not be possible to play your audio CD on a standard CD player until it has been finalized; however, you can keep adding songs to the disc until this process is carried out. The CD-R disc that is not finalized during the writing process can be finalized later on. For more details regarding methods for finalization after the writing of audio data, refer to "Enabling playback on CD players (Finalize)" (Owner's Manual; p. 218).

The BR-1600CD features a number of other convenient functions for use during the creation of audio CDs. For more details, refer to "Convenient functions for audio CD creation" (Owner's Manual; p. 216).
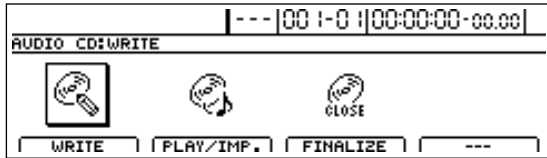
Writing to an CD-R/RW

We will now write the songs set up using the CD track markers to a new CD-R or CD-RW.
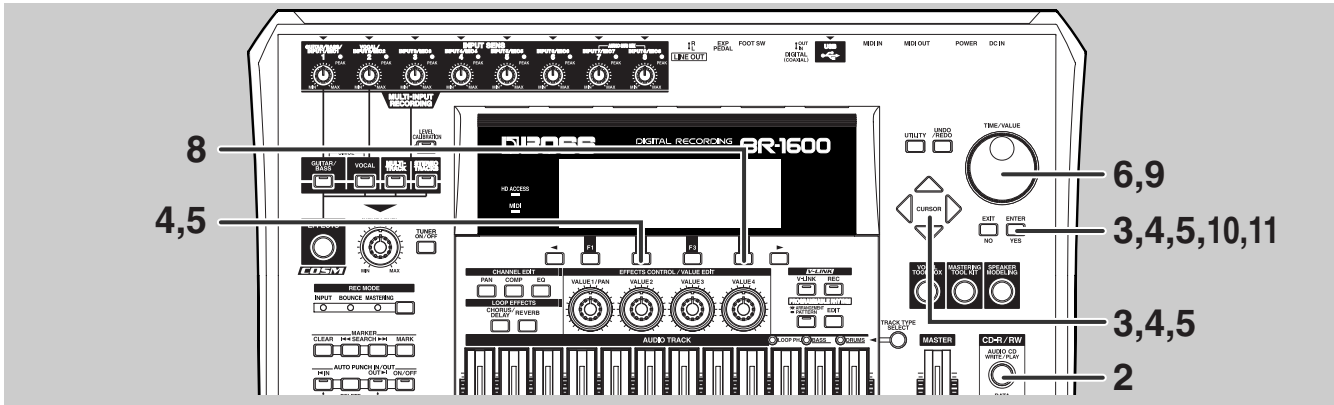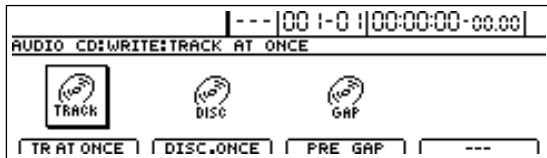

1 Insert an unrecorded CD-R or CD-RW disc into the CD-R/RW drive.

2 Press CD-R/RW [AUDIO CD WRITE/PLAY].

The Audio CD screen will appear.

3 Move the cursor to WRITE and press [ENTER/YES].

The Audio CD Write screen will appear.

4 Press [F2] (DISC.ONCE).

The Disc At Once screen will appear.

5 Press [F2] (BY MARK).

The Disc At Once By Mark screen will appear.

6 Use the TIME/VALUE dial to select the audio tracks that you want to write to the CD.

7 Confirm that the list of CD track markers is correct.

Move the cursor up and down to check the whole list.

8 Press [F4] (GO).

The message "Write Speed" will appear.

9 Use the TIME/VALUE dial to set the write speed.

Write Speed:

x2 (352 kbps)   Writes twice as fast.

x4 (704 kbps)   Writes four times as fast.

x8 (1408 kbps)   Writes eight times as fast.

10 Press [ENTER/YES].

The message "Write Sure?" will appear.

11 Press [ENTER/YES] once again.

The message "Now Writing..." will appear and writing of the audio CD will begin. When the message "Complete!" appears, it indicates that writing has been completed.

NOTE

- If the CD-R disc already contains data, the message "Not Blank Disc!" will appear and writing will not be possible. Always use an empty disc.

- If the CD-RW disc already contains data, the message "Erase Disc?" will be displayed. If you then press [ENTER/YES], the BR-1600CD will begin erasing data from the CD-RW disc.

- The audio track chosen as a source must be stereo.

- If the audio track contains no recorded audio data or if no CD track markers have been set up in the recorded performance, "NO TRACK" will be displayed in the list and writing will not be possible.

- Audio CD specifications require that songs be at least four seconds in length. CD track markers that set up any song of less than four seconds in length will be ignored when the CD is being created.

- If the total length of the songs to be written exceeds the CD-R/RW disc's maximum recording time, the message "CD Full!" will appear and writing will not be possible. In such a case, change the positioning of the CD track markers (Owner's Manual; p. 49), use track cut (Owner's Manual; p. 62), or use track erase (Owner's Manual; p. 63) to reduce the total time to less than the disc's maximum recording time.

- The range of available write speeds can sometimes be limited by the type of disc being used. In such a case, the BR-1600CD will allow you to select only the supported speeds on step 9.

- To cancel writing while this operation is in process, press [EXIT/NO]. When the message "Cancel?" appears, press [ENTER/YES] to confirm cancellation. (A certain amount of time may pass between pressing of [EXIT/NO] and display of the confirmation message.) Please note, however, that no guarantee can be made regarding the state of the data written before cancellation. Care must also be taken with CD-R discs in particular as this media cannot be written to a second time.

- You will not be able to eject a disc during the writing process, even if you press EJECT button.

Listening to your audio CD (Audio CD Play)

Let's now listen to the audio CD we have just created using the BR-1600CD's CD-R/RW drive. In addition to CD-R discs, this drive can be used to play back CD-RW discs that cannot be played on standard CD players. Naturally, you will also be able to listen to commercially produced audio CDs on this drive, and it can even play back audio CDs created using the BR-1600CD that have not yet been finalized.

MEMO

Songs recorded on an audio CD are often referred to as "tracks." Be careful to avoid confusing these tracks with the BR-1600CD's audio tracks.
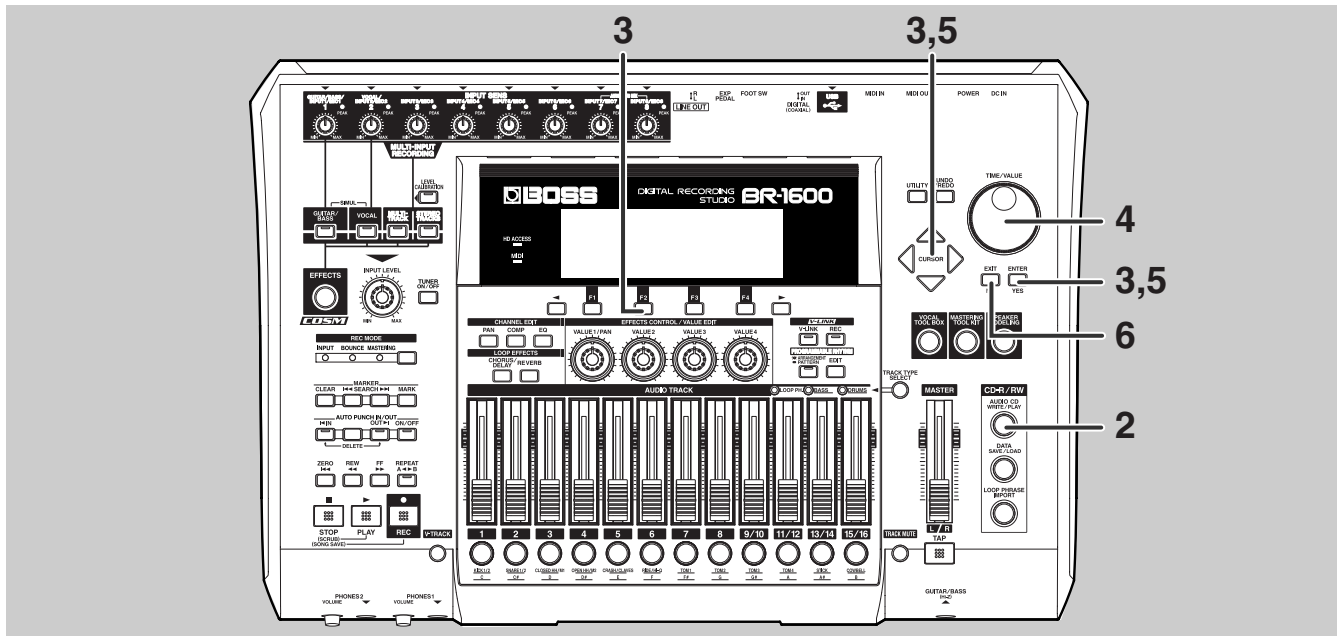
1 **Insert the audio CD into the CD-R/RW drive.**

2 **Press [AUDIO CD WRITE/PLAY].**

The Audio CD screen will appear.

3 **Move the cursor to PLAY/IMP. and press [ENTER/YES].**

Alternatively, you can press [F2] (PLAY/IMP.).

The message "Now Checking..." will appear initially, and the menu screen for the audio CD player will then be displayed.

Here, the songs included in the audio CD will be listed from TRACK01 up as far as TRACK 99.
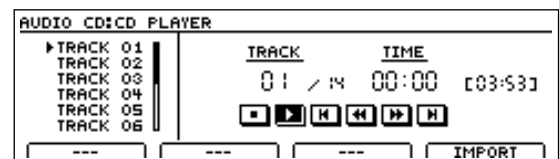
4 **Use the TIME/VALUE dial to select the song that you want to listen to.**

5 Move the cursor to the ▶ icon and press [ENTER/YES].

Playback of the audio CD will begin.

```
AUDIO CD:CD PLAYER
  TRACK 02       TRACK        TIME
  TRACK 03
  TRACK 04        07  / 14   00:02  [03:48]
  TRACK 05
  TRACK 06       ■ ▮▮ ◄◄ ◄◄ ►► ►◄
 ▶TRACK 07
   ---        ---        ---      IMPORT
```
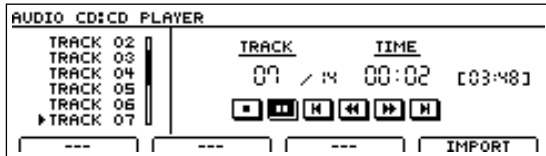
You can move the cursor to the following icons and press [ENTER/YES] to control playback in various ways.

- ▶ : Play
- ▮▮ : Pause
- ■ : Stop
- ►► : Fast forward
- ◄◄ : Rewind
- ►► : Skip forward to the next song
- ◄◄ : Skip back to the beginning of the song or to the previous song

6 If you want to stop playback of the audio CD, press [EXIT/NO] several times to return to the top screen.

7 Press the CD-R/RW drive's EJECT button to eject the disc.

It may take a period of several seconds before the disc is actually ejected.

> **NOTE**
>
> When an audio disc is inserted into the CD-R/RW drive, the message "Now Checking..." may remain on the screen for a relatively long time. This period of time is required for reading of the data stored on the audio CD and it is not the result of a malfunction.

Index

MEMO

MEMO

BOSS

BOSS Corporation