Eight-Track Digital Recorder

Model D-108

Quick Operation Guide

Welcome to D-108

Thank you for choosing the Fostex D-108.
The D-108 is an eight-track digital multitracker equipped with sixteen additional tracks. It supports E-IDE hard disks and SCSI drive disks (such as a Zip drive, MO drive, or fixed disk) as the recording and playback media. Please read this Quick Operation Guide before using your D-108.

This Quick Operation Guide introduces basic operations and preparation procedure. To make the best use of your D-108, please also read the Owner's Manual for detailed information.

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<Recording media>

The D-108 is not equipped with recording media for recording and playback. Please read the section from page 4 to prepare the recording media to record, play back, and edit data on the D-108. For more information on a recording media supported by the D-108, refer to the "List of the drives with operation guaranteed" in the main User's Guide.

<Damages>

Fostex is not responsible for any direct or consequential damages caused by operating the D-108 and/or a connected E-IDE or SCSI drive and/or disk.

<Copyrights>

It is prohibited by law to use materials recorded on the D-108 from music CDs and/or video tapes for which copyrights belong to a third party for commercial concerts, broadcasts, sales, and/or distribution, except for your personal entertainment.

Package contents

Make sure that the package contains all the items listed below. (The illustrations may not precisely match the appearance of the actual items.) If you find that items are missing, contact your local dealer.

D-108 main unit

Detachable controller

Hard disk fixing screw
Use these screws to fix the hard disk to the removable case. (Refer to page 6 for more information.)

Lock-unlock key
Use this key when you install the removable case with the hard disk in the D-108. (Refer to page 7 for more information.)

Dust cover
Install this cover over the connectors on the removable case after you install the hard disk. (Refer to page 7 for more information.)

Insulation seals
Use these seals when you install the hard disk into the removable case. (Refer to page 7 for more information.)

Removable case
Install a hard disk into this removable case. (Refer to page 5 for more information.)

Recording media

The D-108 is not equipped with recording media (also called "a current drive" in this Guide), such as a hard disk. You need to prepare a current drive to make a recording.

The D-108 supports an E-IDE hard disk (that can be installed in the included removable case), and an external SCSI drive (MO, Zip, or fixed hard disk drive) (that can be connected to the SCSI connector on the rear panel of the D-108). (Note: Using an MO, Zip, or fixed disk may limit the number of recording tracks, depending on the disk capacity.)

Be sure to use a drive and a disk with operation guaranteed by Fostex. For more information on disks supported by the D-108, refer to the "List of drives with guaranteed operation" in the main Owner's Mnual.

To use an E-IDE hard disk as a current drive, refer to the "Using an E-IDE hard disk" section on the following page. To use an external SCSI drive, refer to the "Using a SCSI drive" section. If you are using both types of drives, refer to the "Using two current drives" and "Selecting a current drive" sections.

Using an E-IDE hard disk

The D-108 has a slot for an optional hard disk. First you need to install a hard disk into the removable case included in the D-108 package before you install it into the slot.

The following instructions assume that you have already purchased an E-IDE hard disk unit. Prepare the following items for hard disk installation:


Removable case Hard disk unit Dust cover Fixing screws Insulation seals Lock-unlock key

<Note>
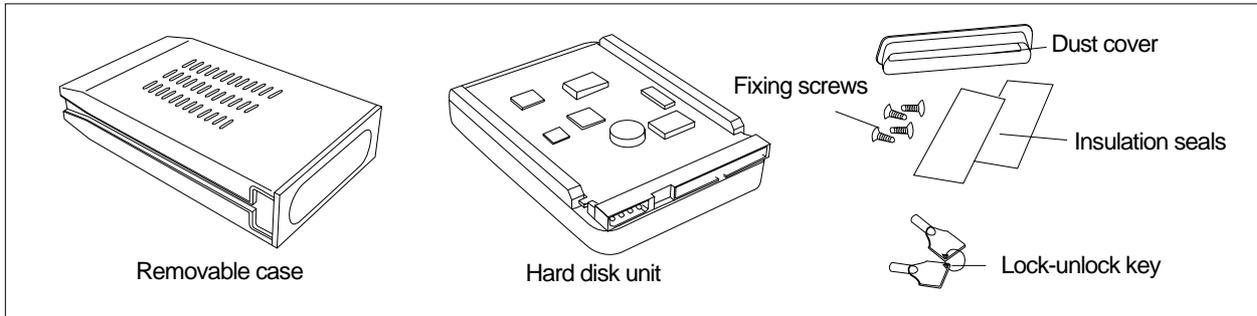
Be sure to turn off the power to the D-108 (or remove the power cable from the AC outlet) before installing a hard disk.

Installing a hard disk in a removable case

First, you need to disassemble the removable case included in the package so that you can install a hard disk into it.

Disassembling the removable case

1. Apply your thumb to the edge of the case on the connector side as shown in the figure, and slightly pull the cover in the direction of the arrow.

2. Apply your thumbs to the side of the case and open the cover. In the same manner, open the cover on the other side. (*Caution:* Be careful not to pinch your fingers.)


<Notes on handling a hard disk>
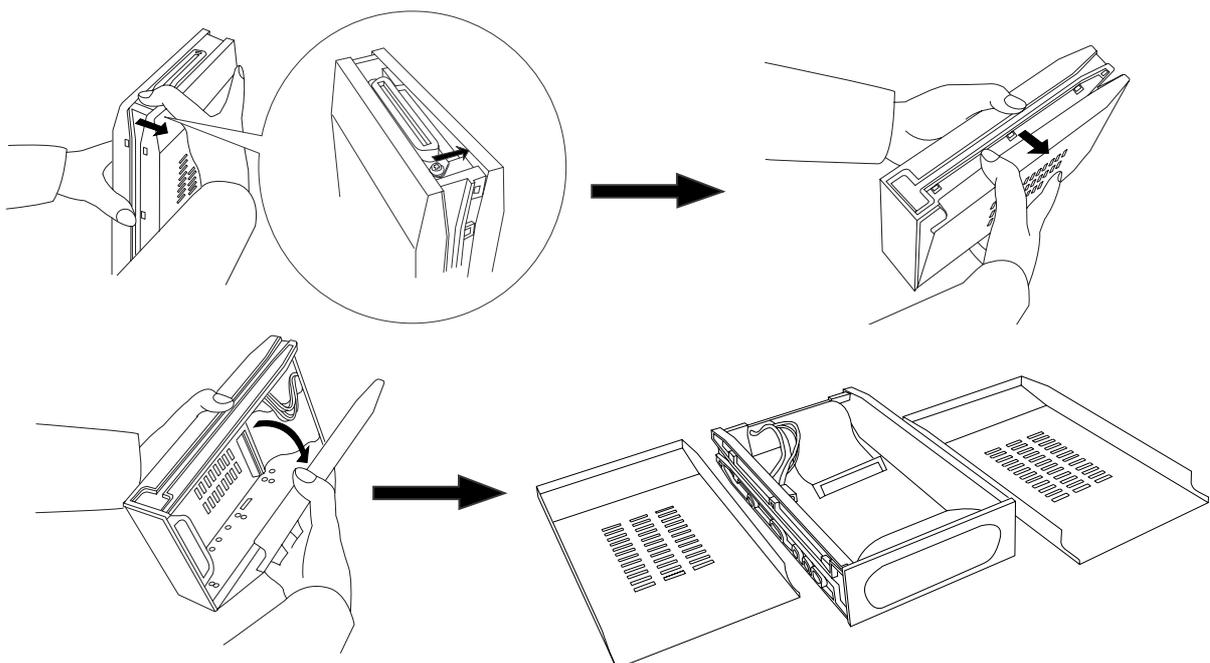
- A hard disk is a high-precision device. Do not apply any impact to the disk when and after you install it in the case. Do not leave the disk near a device that generates a strong magnetic field. Choose a level and stable surface for installation. Be careful not to injure yourself. Fostex is not liable for any malfunction or damage to the hard disk caused by mishandling.

- You need to set the DIP (Jumper) switch on the hard disk to "MASTER" before you install it into the removable case. If the switch is set to "SLAVE," the hard disk will not function correctly.
  Refer to the instruction manual that came with your hard disk for more information on the DIP (Jumper) switch setting.

Connecting cables

1.Connect the cables in the removable case to the connectors on the rear of the hard disk.
As shown in the figure, first connect the power supply cable. Make sure that you connect the cables securely in the correct direction.
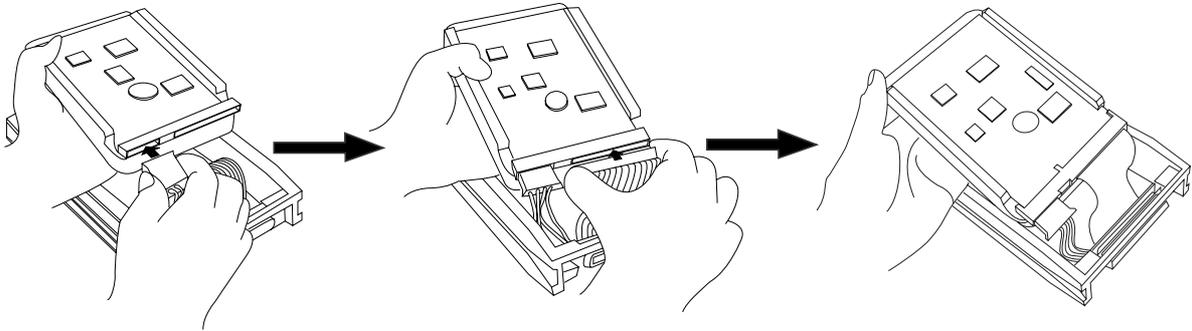

<Note on the connectors>
Some connectors on the hard disks may be too tight to connect cables easily. Do not apply excessive force to such connectors to avoid injury or damage to the hard disk.

Fixing the hard disk to the case

1.Align the screw holes.
As shown in the figure, align the screw holes on the side of the disk with the holes on the case.

2.Insert four included fixing screws (two screws on each side) and tighten them.
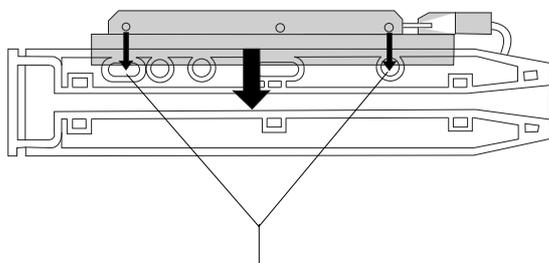
Align the screw holes on the other side of the hard disk with the holes on the case.
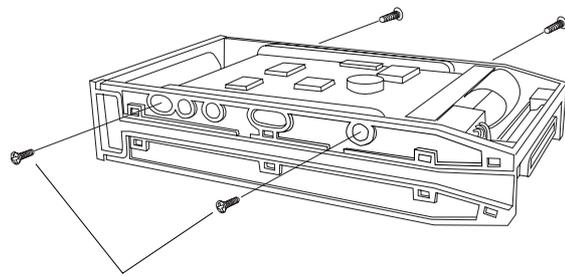
Tighten four screws (two on each side).

<Note on tightening the screws>
Do not tighten the screws too much. Otherwise, you may damage the case.

Assembling the case

> **<Note>**
> *When you assemble the case, follow the note below:*
> *If a projecting part on the hard disk touches the cover, apply the insulation seal (included in the package) to the surface of the case where the part would touch. If you use the disk with its part touching the cover, a short-circuit may occur, leading to a malfunction.*

1.Assemble the case by installing the covers.

After you assemble the case, store the case in a place not subject to magnetic fields. If you remove the case from the D-108 and store or move the unit, cover the connectors on the removable case with the dust cover (included in the package) to protect the hard disk from building up static electricity and dust. Do not touch the connectors with your fingers to avoid static electricity.

Installing the removable case in the D-108

1. Remove the blank panel that covers the slot for the disk on the front panel of the D-108. (Note: Do not insert your fingers into the slot when the slot cover is open. Otherwise, electrical shock or injury may occur.)

2. Install the removable case (containing a hard disk inside) into the slot.
Push in the case with the correct side facing toward you. (Use both hands to push it in so that the surface of the case and the front panel become flush.)

3. Use the included key to lock the removable case.
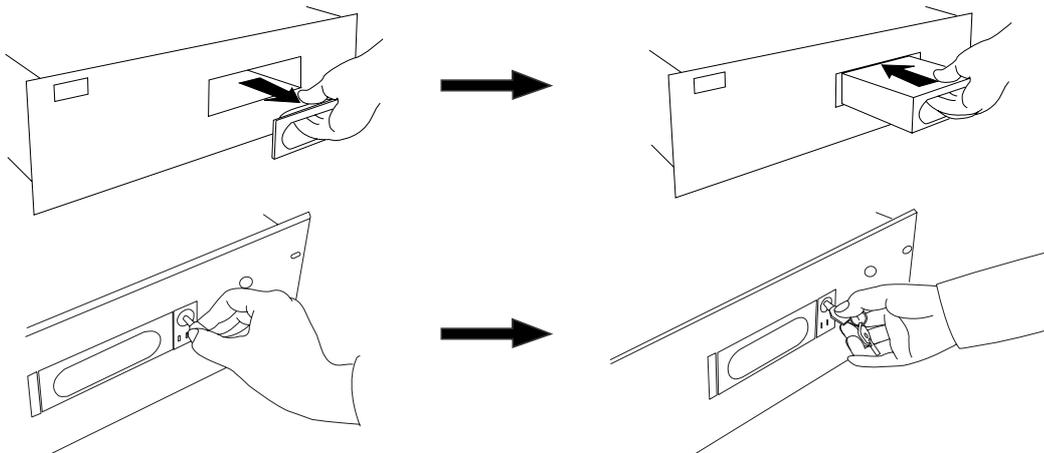
Connecting a detachable controller

1. Attach a detachable controller (included) to the hooks on the front panel.

2. Securely insert the controller's connector cable to the connector on the front panel.
Instead of using the controller, you may use an optional extension cable (Model 8551). Consult your dealer for more information.
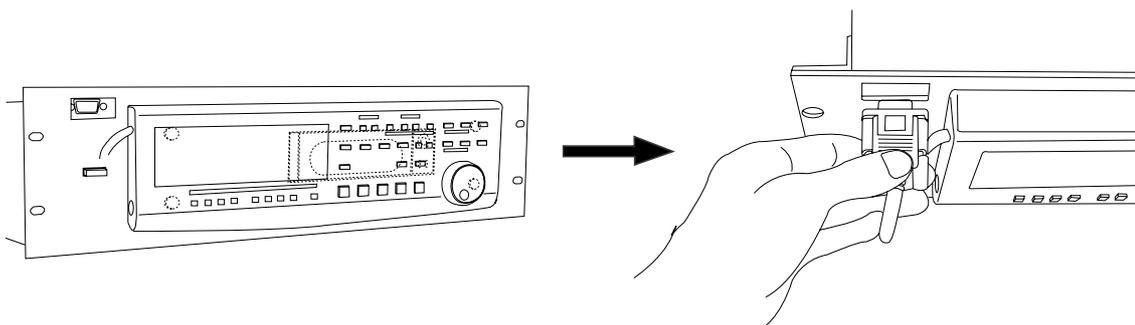
Formatting a disk

After installing the hard disk in the D-108, you need to format the hard disk for recording and playback. (This applies to new disks and those that have been used with a computer.)

Connect the D-108's power cable to the AC outlet.

> *<Note>*
> Be sure to connect the power cable to an AC outlet of the voltage specified in the User's Guide.

Turn on the power to the D-108.

The display indicates the ROM version and date, messages [Initializing...], [Current IDE Drv], [model name], then [Unformat!], and finally indicates the Disk format menu. ("****" represents the name of the hard disk model.)

IDE ********* [?] SETUP
FORMAT
44.1kHz
SURE? — Flashing
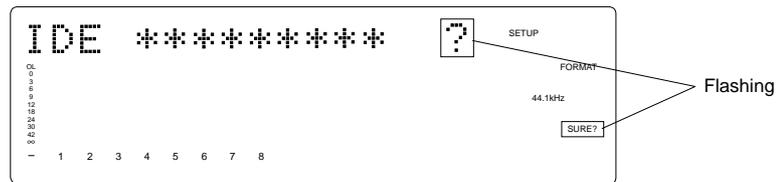
Press the EXECUTE/YES key.

The Record mode selection appears and the [?] mark and [SURE?] flash on the display. This means that the D-108 is ready to format the installed E-IDE hard disk in [8track format] Record mode.

8track format[?] SETUP
FORMAT
44.1kHz
SURE? — Flashing
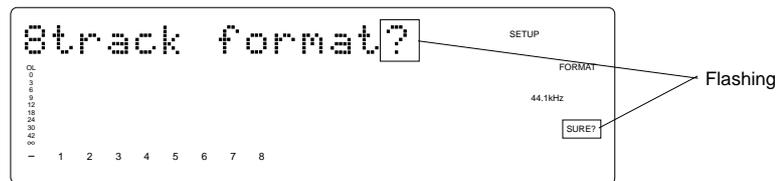
Press the EXECUTE/YES while holding down the RECORD button.

The size of unformatted area on the hard disk appears on the display, and counts down as the formatting progresses. (The following example shows a disk with 2.0GB of unformatted space.)
Also, the segments in the "∞" column of the level meters light up, and they turn off one by one starting from the right end. It will take a while to complete formatting, especially if you are formatting a large-capacity disk.

This indicates the size of the unformatted area on the hard disk.

IDE DRV   2.0GB SETUP
REMAIN
FORMAT
44.1kHz
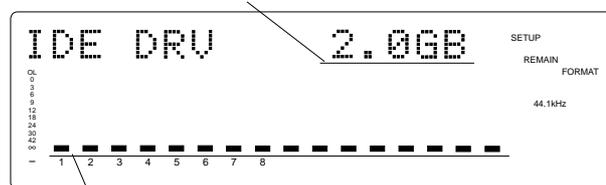
The segments turn off one by one from the right end as the formatting progresses.

When the format operation is complete, the screen changes as follows and disk operation stops.

SETUP
FORMAT
44.1kHz
COMPLETED! — When the format operation is complete, [COMPLETED!] appears and the disk stops.

Track indicators 1-8 light up.

8
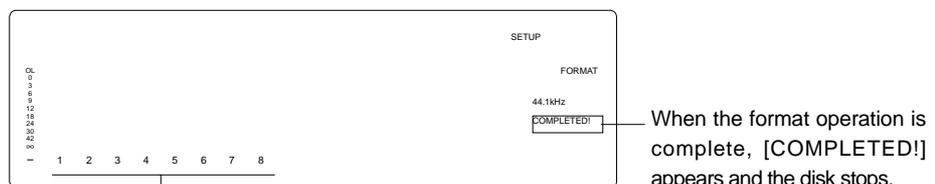
Press the EXIT/NO key or the STOP button.

The screen changes from the format menu in SETUP mode to the ABS Time Base display.

```
00m00s00f P01  ABS

OL
0
3
6
9
12
18                                    44.1kHz
24
30
42
∞
–   1   2   3   4   5   6   7   8
```
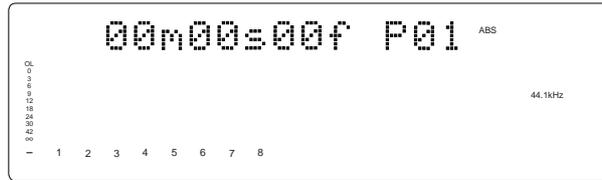
When you format the hard disk one Program (*1) is automatically set up, and "ABS 00m 00s 00f" (ABS Time Base - *2) appears, indicating that the top of the Program is located.
Now, you can start recording, playback, and editing on the D-108 using the installed hard disk.


(*1) Program:

You can set up a maximum of 99 Programs, limited by the available space on your hard disk. You can select any Program to perform recording, playback, and edit (Program Select function). You may also name the Programs to facilitate managing individual songs (Program Title Edit function). You can delete unnecessary Programs (Program Delete function). For more information, refer to the User's Guide.

(*2) Time Base:

This document and the User's Guide use the word "Time Base" frequently. This refers to the units to indicate the current transport position of the recorder, in other words, Absolute Time.
The D-108 also uses MTC (MIDI timecode) and BAR/BEAT/CLK (bar/beat/clock). An MTC value is a relative time value calculated by adding an MTC offset value to the ABS time value. BAR/BEAT/CLK indicates a position within a song of D-108's tempo map based on the MIDI clock position pointer. You can switch to any of these units as follows. For more information on the Time Base, refer to the User's Guide.

- When ABS Time Base appears on the display, hold down the DISP SEL key and press the EXECUTE/YES key repeatedly to switch among these units.
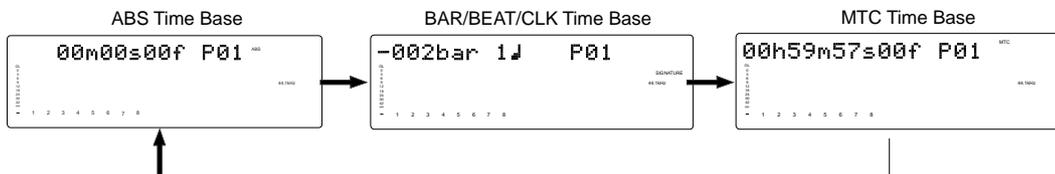
ABS Time Base → BAR/BEAT/CLK Time Base → MTC Time Base

```
ABS Time Base           BAR/BEAT/CLK Time Base        MTC Time Base
00m00s00f P01  ABS      -002bar 1♩    P01             00h59m57s00f P01  MTC
          44.1kHz                        SIGNATURE 44.1kHz              44.1kHz
1 2 3 4 5 6 7 8         1 2 3 4 5 6 7 8               1 2 3 4 5 6 7 8
```


Checking the available recording time (REMAIN) on a formatted disk

It is a good idea to check the available recording time after you format the disk. To do so, press the DISP SEL key to display the REMAIN time indication, which indicates the available recording time and recording space in the selected Time Base unit. (The following example shows a disk with 6 hours 38 minutes 54 seconds (06h 38m 54s) of available recording time and 2.0GB of space.)

<Note>

The REMAIN time values are based on a mono track recording. If you wish to record on multiple tracks, you can find out how many minutes of a song you can record by dividing the REMAIN time value by the number of tracks. Check the REMAIN value each time before you make a new recording.


Time remaining —
```
06h38m54s   2.0GB        REMAIN
OL
0
3
6
9
12                               44.1kHz
18
24
30
42
∞
–   1   2   3   4   5   6   7   8
```
— Space remaining
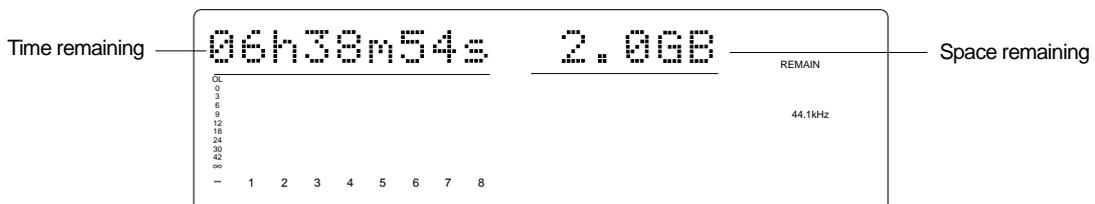
Press the DISP SEL key to return to the previous Time Base display.

Using a SCSI drive

The D-108 has a SCSI terminal to connect an external SCSI drive, which enables you to use an MO, Zip, or fixed drive as a current disk drive.

For more information on SCSI drives supported by the D-108, refer to the "List of drives with guaranteed operation" in the User's Guide.

The following instructions assume that you already have an external SCSI drive and disk.

MO drive & MO disk

SCSI cable

zip drive & zip cartridge

SCSI terminator

* You can also use a fixed SCSI disk.
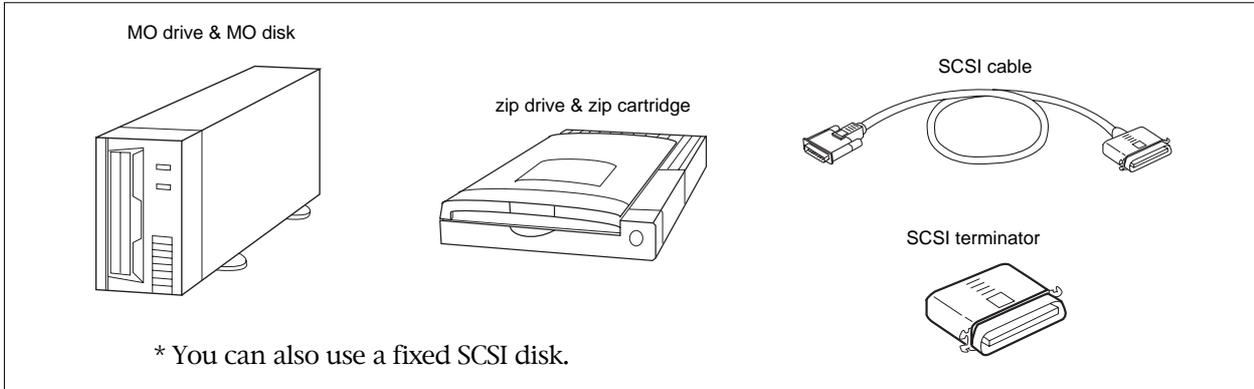
Installing a detachable controller to the D-108

To use only a SCSI drive as the current drive, first you need to install a detachable controller to the D-108. Do not remove the blank panel on the drive slot to avoid electrical shock.

Do not touch the blank panel. Leave it as is.

Install the detachable controller using the hooks on the front panel of the D-108.

Connect and secure the connector of the detachable controller using screws.
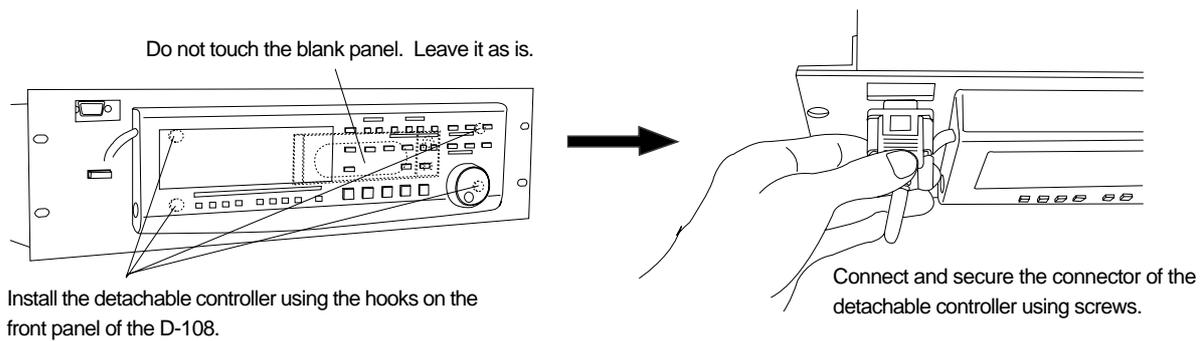
Connecting a SCSI drive to the D-108

Connect the external SCSI drive to the SCSI connector (D-sub, 25-pin) on the rear panel of the D-108. Read the following notes on handling SCSI drives and disks, and the "Notes on connections" and "SCSI ID number setting" sections thoroughly.

> **<Notes on handling SCSI drive and disks>**
> • SCSI drives and disks are made of precision parts. Follow the instruction below when you handle or store them.
> * Do not drop them or apply strong impact to them.
> * Do not expose them to strong vibrations.
> * Do not expose them to substantial changes in temperature or humidity.
> * Do not locate them in dusty places.
> * Do not expose them to dripping water.
> * Do not place them near devices that generate strong magnetic fields.
>
> • Malfunction or misuse of the unit may cause the data recorded on SCSI disks to be erased. We recommend that you save important recordings to a DAT, adat, or SCSI disk. Fostex is not responsible for any damages due to erased data or any consequential damages caused by use of the D-108.

Be sure to install the SCSI terminator.

Connect the SCSI cable securely.

<Notes on connection>
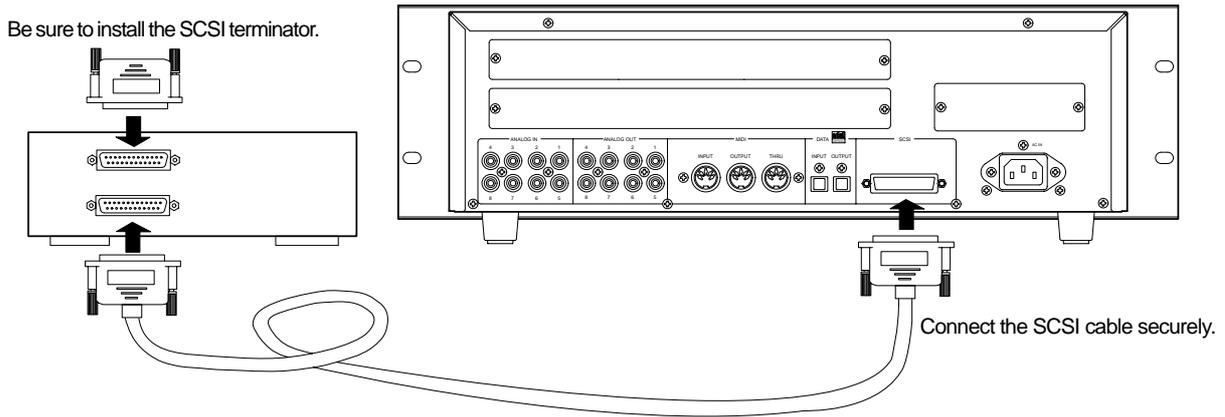
- Before making connections, make sure that both the D-108 and the SCSI drive are turned off.

- Up to two SCSI drives may be connected on a SCSI chain with the D-108.
  Connect one SCSI drive as a "current drive" for real-time recording/playback. (Refer to "SCSI ID number setting" below.)
  Refer to the main Owner's Manual for more information on connecting a SCSI drive as a back-up drive.

back-up drive (ID=6)   current drive (SCSI ID=any number other than "6")
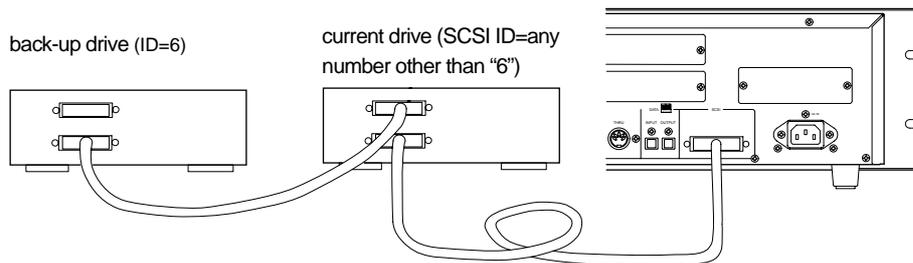
- The SCSI connector on the D-108 is a 25-pin connector compatible with Macintosh computers. Use a cable with connectors that conform to the standards for connecting a SCSI drive.

- The last SCSI drive on the SCSI chain should be terminated. Install a SCSI terminator, or turn the termination switch to "on" if the drive has a termination switch (like a Zip drive).

<SCSI ID number setting>

- Be sure to set the SCSI ID number for the SCSI drive correctly, according to the purpose of the drive (as a current drive or a back-up drive). The ID setting is very important.

Using the SCSI drive as a current drive	➡	Select any number from 0 to 5, but not "6."
Using the SCSI drive as a back-up drive	➡	Select "6."

Formatting a SCSI disk

After you make the connection, follow the steps below to format a removable or fixed disk in a SCSI drive. To perform real-time recording and playback on the D-108, you need to format a disk.

The instructions here assume that only a removable SCSI drive is connected to the D-108 as the current drive, and an E-IDE hard disk is not installed.

Connect the power cables for the D-108 and the SCSI drive to an AC outlet.

> **<Note>**
> Be sure to connect the power cable to an AC outlet of the correct voltage as specified in the User's Guide.

Turn on the power to the D-108 and the SCSI drive.

The ROM version and date of the D-108 appears, then the following series of messages appear, depending on the type of SCSI drive (removable or fixed).

Removable SCSI drive disk

```
Initializing...
                              44.1kHz
  - 1 2 3 4 5 6 7 8
```

```
No Disk

  - 1 2 3 4 5 6 7 8
```

Fixed SCSI drive disk

```
Initializing...
                              44.1kHz
  - 1 2 3 4 5 6 7 8
```

```
Current SCSI Drv
                              44.1kHz
  - 1 2 3 4 5 6 7 8
```

```
*******
                              44.1kHz
  - 1 2 3 4 5 6 7 8
```

```
Unformat!

  - 1 2 3 4 5 6 7 8
```

The SCSI ID number and the name of the connected SCSI drive appear. If you are using a fixed disk, press the EXECUTE/YES key to proceed to Record mode selection.

```
ID# *********   ?    SETUP
                          FORMAT
                          44.1kHz
  - 1 2 3 4 5 6 7 8       SURE?
```

Insert an unformatted disk in the SCSI drive.

The D-108 indicates [Unformat!] on the display, then the Format menu in SETUP mode, indicating the SCSI drive ID number.

```
Unformat!

  - 1 2 3 4 5 6 7 8
```

```
ID# *********   ?    SETUP
                          FORMAT
                          44.1kHz
  - 1 2 3 4 5 6 7 8       SURE?
```
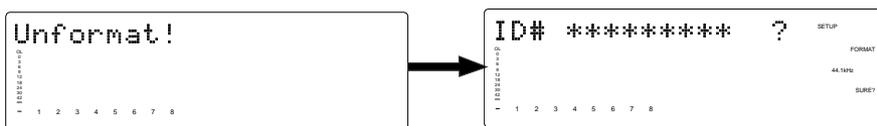
Press the EXECUTE/YES key.

The D-108 indicates the menu for Record mode selection. The default selection is [8track format?]. Another option is [4track format?]. (Refer to the following page for more details.)

```
8track format?     SETUP
                          FORMAT
                          44.1kHz
  - 1 2 3 4 5 6 7 8       SURE?
```

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Use the JOG dial to select the desired Record mode.

You may select [8track format] or [4track format]. [8track format] is a common selection.
If you also wish to use the disk on a four-track multitracker, FD-4, for recording and playback, select [4track format].
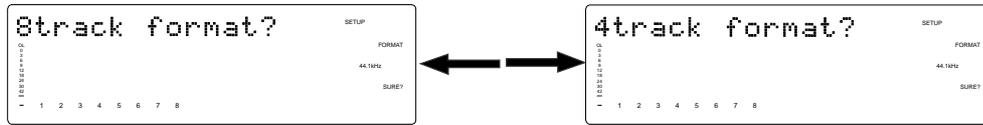

Record mode	8-track format	4-track format
Quantization	16 bit linear	16 bit linear
Sampling frequency	44.1kHz/48kHz	44.1kHz/48kHz
Available recording time	About 17min/100MB (converted one track)	About 17min/100MB (converted one track)
Compatible media	E-IDE hard disk SCSI fixed disk	SCSI removable disk (MO disk, Zip disk) SCSI fixed disk
Recording track	8 tracks	4 tracks
Recording capability	* 8-track simultaneous recording of adat digital inputs or eight analog inputs * 8-track simultaneous recording of S/P DIF digital signals (two inputs) and analog signals (six inputs)	* 4-track simultaneous recording of S/P DIF digital signals (two inputs) and analog signals (two inputs) * 4-track simultaneous recording of four analog inputs * 4-track simultaneous recording of adat digital inputs (from adat outputs 1-4)
Save/load	Save and load using a back-up SCSI drive, DAT, or adat	Save and load using a back-up SCSI drive, DAT, or adat

> **<Note>**
> Actual available recording time obtained by disk formatting may vary depending on the disk type.

Press and hold down the [RECORD] button and press the EXECUTE/YES key.

When the D-108 starts formatting, it displays the size of the unformatted area on the disk, and counts down as formatting proceeds. Also, the segments in the "∞" column of the level meters light up, and turn off one by one starting at right, indicating the status of the format operation. It will take a while to complete formatting, especially if you are formatting a large-capacity disk.
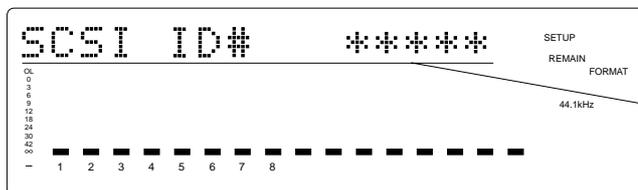

The [#] mark indicates the SCSI ID number and the [*****] mark indicates the size of unformatted area on the hard disk (e.g., 350MB).

When the format operation is completed, the screen changes as follows and the disk operation stops.


[COMPLETED!] appears and the disk stops.

13
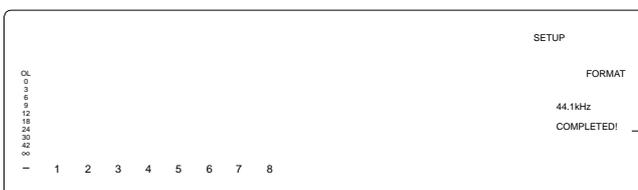
Press the EXIT/NO key or the STOP button.

The D-108 quits the format menu in SETUP mode, and the display changes to ABS Time Base indication.

```
00m00s00f S01  ABS

                           44.1kHz

  1  2  3  4  5  6  7  8
```

Formatting in [8track format] mode:
Track indicators 1-8 light up on the display.

```
00m00s00f S01  ABS

                           44.1kHz

  1  2  3  4
```
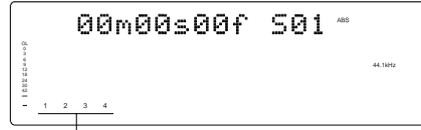
Formatting in [4track format] mode:
Track indicators 1-4 light up on the display.

One Program (*1) is automatically set up after the disk format operation, and "ABS 00m 00s 00f" (ABS Time Base - *2) appears, indicating that the top of the Program is located.
Now, you can start recording, playback, and editing on the D-108 using the connected SCSI disk.

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*(*1) Program:*

You can set up a maximum of 99 Programs, depending on the available space on your SCSI disk. You can select any Program to perform recording, playback, and edit (Program Select function). You may also name the Programs to facilitate song management (Program Title Edit function). You can delete unnecessary Programs (Program Delete function). For more information, refer to the User's Guide.

Programs on the SCSI disk are numbered with prefix "S" (e.g., [S01]) to differentiate them from the Programs on the E-IDE hard disk (e.g., [P01]).

---

*(*2) Time Base:*

Refer to page 8 for an explanation and additional information on the selection of Time Bases.

Checking the available recording time (REMAIN) on a formatted disk

It is a good idea to check the available recording time after you format the disk. To do so, press the DISP SEL key to display the REMAIN time indication, which indicates the available recording time and recording space in the selected Time Base. The following example shows a disk with 42 minutes 54 seconds of available recording time and 225 MB of space.

<Note>

The REMAIN time values are based on a mono track recording. If you wish to record on multiple tracks, you can find out how many minutes of a song you can record by dividing the REMAIN time value by the number of tracks. Check the REMAIN value before you make each new recording.

Time remaining ————
```
00h42m54s   225MB
                           REMAIN

OL
0
3
6
9
12
18
24
30
42
∞                          44.1kHz

 —   1   2   3   4   5   6   7   8
```
———— Space remaining
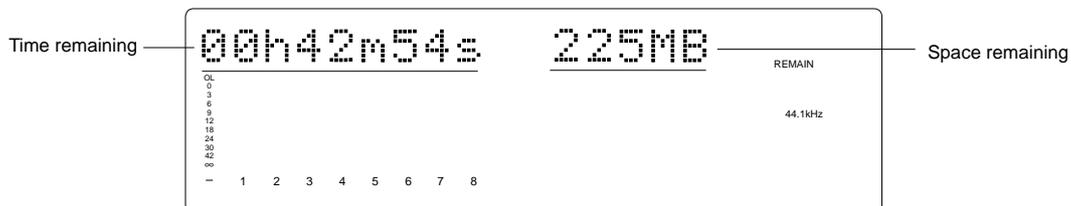
Press the DISP SEL key to return to the previous Time Base display.

### *<Ejecting the removable disk from the SCSI drive>*

Press and hold down the STOP button and press the EXIT/NO key to eject the disk from the SCSI drive.

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Using two current drives

In addition to using an E-IDE hard disk or a SCSI drive as the sole current drive, you may also use an E-IDE hard disk installed in the D-108 along with a SCSI drive connected to the unit. To format these two current drives, follow the steps below.

When you turn on the power to all the devices, usually the E-IDE hard disk will start up as the current drive. Therefore, you will first format the E-IDE hard disk, then use the [Disk Format?] menu in the SETUP menu to format the SCSI disk.

These instructions assume that you have finished formatting the E-IDE hard disk according to the procedure described on page 8 and that now you are going to format the SCSI drive disk. Currently, the display indicates the top of Program 1 (ABS 0) which was created after the hard disk format operation.
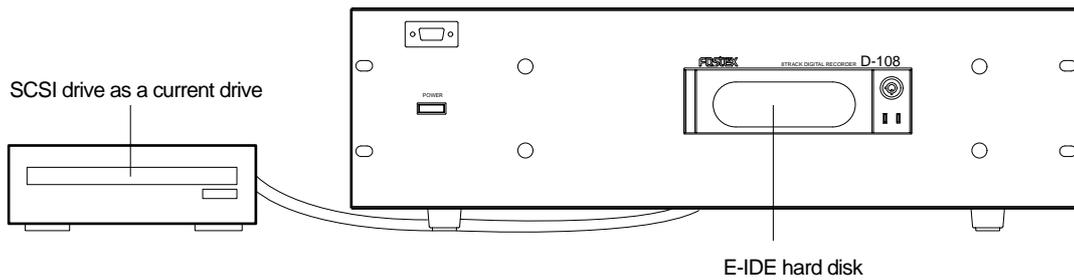
SCSI drive as a current drive

E-IDE hard disk

1. Press the DISP SEL key twice to enter SETUP mode.

```
00m00s00f P01  ABS
```
Usual Time Base display

```
06h38m54s 2062MB  REMAIN
```
REMAIN display

```
#0001  SETUP
```
SETUP mode display
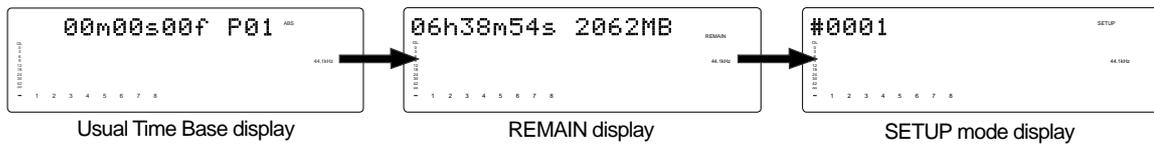
2. Press the EXECUTE/YES key.

The D-108 enters SETUP mode and displays the SETUP mode menu used prior to shut down.
With the default setting, [Drive Sel.?] menu appears.

```
Drive Sel.? IDE  SETUP
```
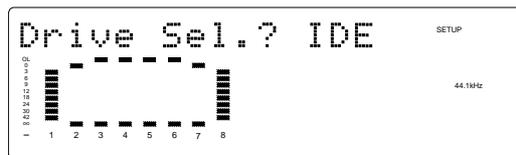
3. Turn the JOG dial to select the [Disk Format?] menu and press the EXECUTE/YES key.

[IDE] flashes, indicating the IDE disk is currently selected.

```
DiskFormat ?  SETUP   FORMAT
```
```
DiskFormat  IDE  SETUP   FORMAT
```
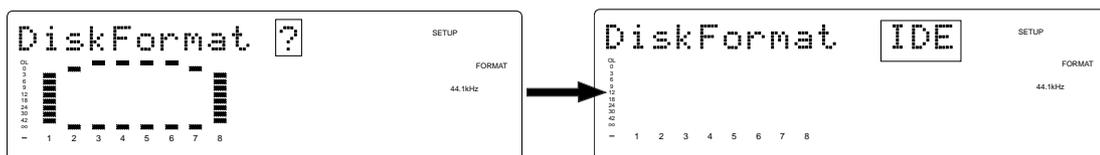
4. Turn the JOG dial clockwise to change [IDE] to [SCSI#] and press the EXECUTE/YES key.

[No SCSI Disk!] appears momentarily, then a flashing [SCSI #] appears.

```
DiskFormat SCSI#  SETUP  FORMAT
```
```
No SCSI Disk!
```
```
DiskFormat SCSI#  SETUP  FORMAT
```

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5. Insert an unformatted SCSI disk into the drive and press the EXECUTE/YES key.

The display asks whether you wish to format the SCSI disk. ("#" represents the SCSI ID number, and "*****" represents the disk name.) The "?" mark of [SURE?] flashes.

```
ID# *********   ?    SETUP
                          FORMAT
                     44.1kHz
                          SURE?
  1  2  3  4  5  6  7  8
```

6. Press the EXECUTE/YES key again.

The Record mode selection menu appears on the display.
The rest of the procedure is the same as described on page 13. Select the desired Record mode and execute the format operation. When the format operation is completed, press the EXIT/NO key or the STOP button to exit SETUP mode. The display automatically shows the Time Base indication for the E-IDE hard disk. To use the SCSI drive as a current drive, you need to switch the current drive setting as explained in the following "Selecting a current drive" section.

> **<Note>**
> To eject the SCSI disk after formatting, press the EJECT button on the SCSI drive.

Selecting a current drive

As explained earlier, turning on the power to the D-108 and both E-IDE and SCSI drives causes the E-IDE hard disk to start up as a current drive. If you wish to use the SCSI drive as a current drive, you need to set the [Drive Sel.?] (Selecting a current drive) menu in SETUP mode. Follow the steps below to do so. These instructions assume that the Time Base indication for the E-IDE hard disk appears on the display and that the recorder section is stopped.

1. Press the DISP SEL key twice to enter SETUP mode.

2. Press the EXECUTE/YES key.

The D-108 enters SETUP mode and shows the SETUP mode menu used prior to shutdown.
With the default setting, the [Signature Set?] menu appears.

3. Turn the JOG dial to select the [Drive Sel.?] menu and press the EXECUTE/YES key.

[IDE] flashes, indicating the IDE disk is currently selected.

```
Drive Sel.? IDE   SETUP           Drive Sel.  IDE   SETUP
                    44.1kHz                            44.1kHz
  1 2 3 4 5 6 7 8                   1 2 3 4 5 6 7 8
```
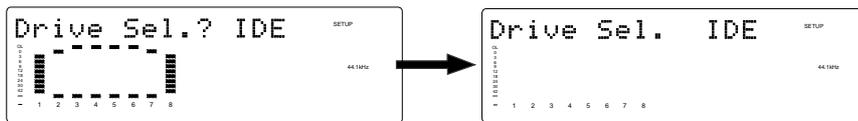
4. Turn the JOG dial clockwise to select [SCSI#] and press the EXECUTE/YES key.

SCSI ("#" represents the SCSI ID of the SCSI drive) is selected as a current drive.

```
Drive Sel.  SCSI#  SETUP          Drive Sel.?SCSI#  SETUP
                    44.1kHz                            44.1kHz
  1 2 3 4 5 6 7 8                   1 2 3 4 5 6 7 8
```
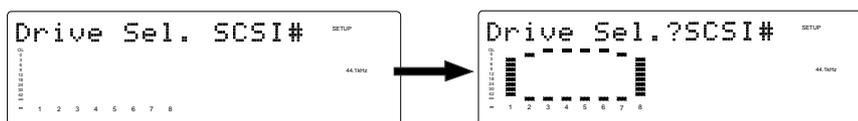
5. Press the EXIT/NO key or the STOP button.

The D-108 exits SETUP mode and indicates the top of the Program on the SCSI disk (ABS 0).

```
  00m00s00f  S01  ABS
                    44.1kHz
  1 2 3 4 5 6 7 8
```
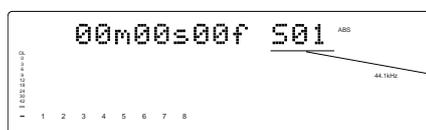
When the SCSI drive is selected as a current drive, the Program number's prefix changes from "P" to "S."

If you wish to switch the current drive from the SCSI drive to the E-IDE hard disk, turn off and on the power to the D-108, or use the [Drive Sel.?] menu as explained above.

Connecting a mixer

The D-108 features recorder functions and has eight analog inputs (ANALOG IN 1-8) and eight analog outputs (ANALOG OUT 1-8).

To make multi-track recordings using the D-108, connect it to an external mixing console as shown in the figure below. Basically, the ideal mixer for this setup should have eight TAPE INs and eight BUSS OUTs (or GROUP OUTs). However, you may also use a mixer with eight TAPE INs and four BUSS OUTs.

> **<Note>**
> Be sure to turn off the power to all devices before connecting the mixing console.

Connecting a mixer that has eight TAPE INs and eight BUSS OUTs (or GROUP OUTs)

Connect TAPE INs 1-8 of the mixer to ANALOG OUTs 1-8 of the D-108, and connect BUSS OUTs (GROUP OUTs) 1-8 to ANALOG INs 1-8 of the D-108. With this example, you can make simultaneous eight-track recordings.

Mixing console

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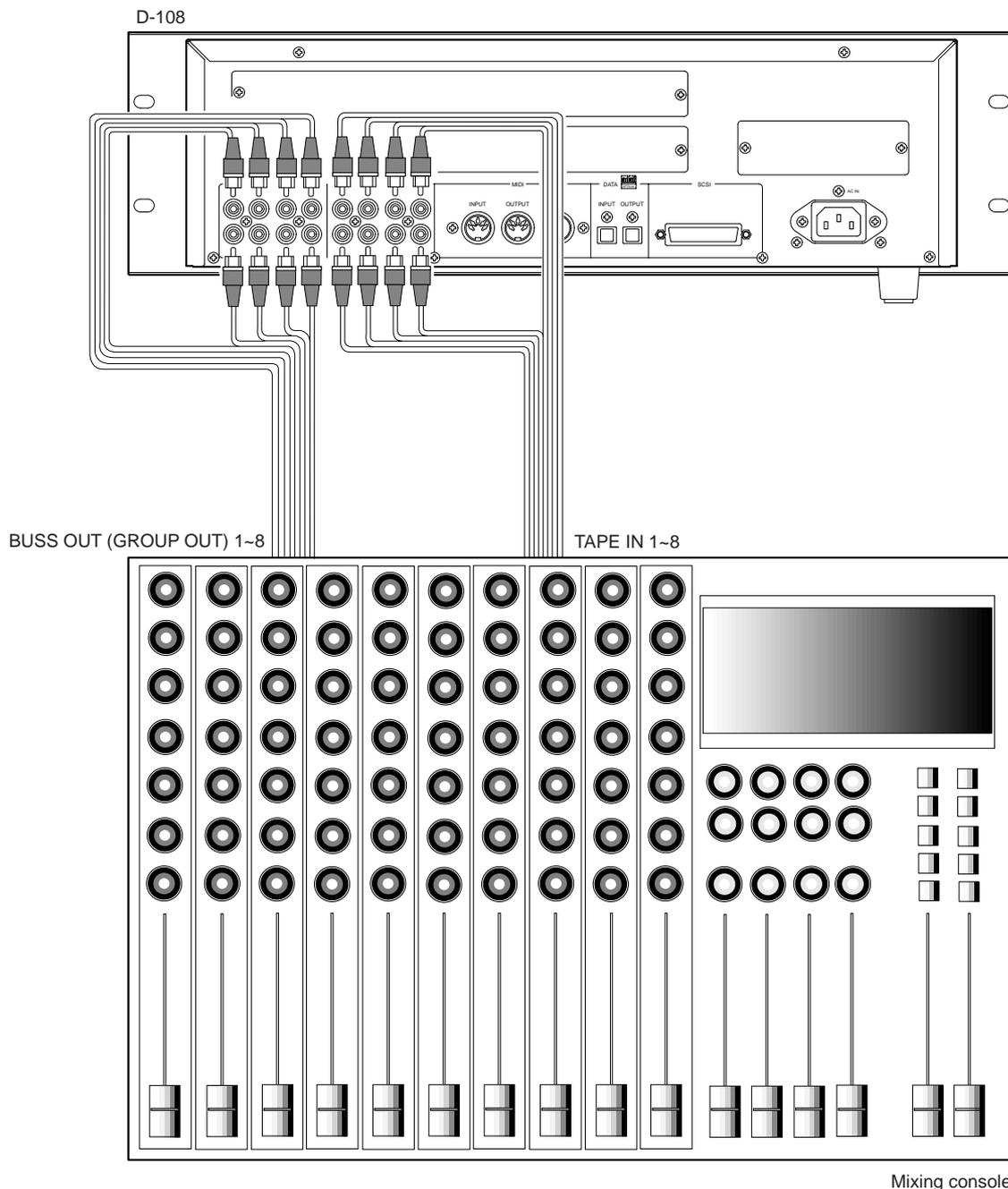
Connecting a mixer that has eight TAPE INs and four BUSS OUTs (or GROUP OUTs)

Connect TAPE INs 1-8 of the mixer to ANALOG OUTs 1-8 of the D-108, and connect BUSS OUTs (GROUP OUTs) 1-4 to ANALOG INs 1-4 of the D-108.

In this case, first record Tracks 1-4, then re-patch the cables to record Tracks 5-8. It would be convenient to connect a patch bay between the D-108's ANALOG INs and the mixer's BUSS OUTs (GROUP OUTs) so that you can make connections from the front.

D-108

PATCHBAY

BUSS OUT (GROUP OUT) 1~4   TAPE IN 1~8

Mixing console

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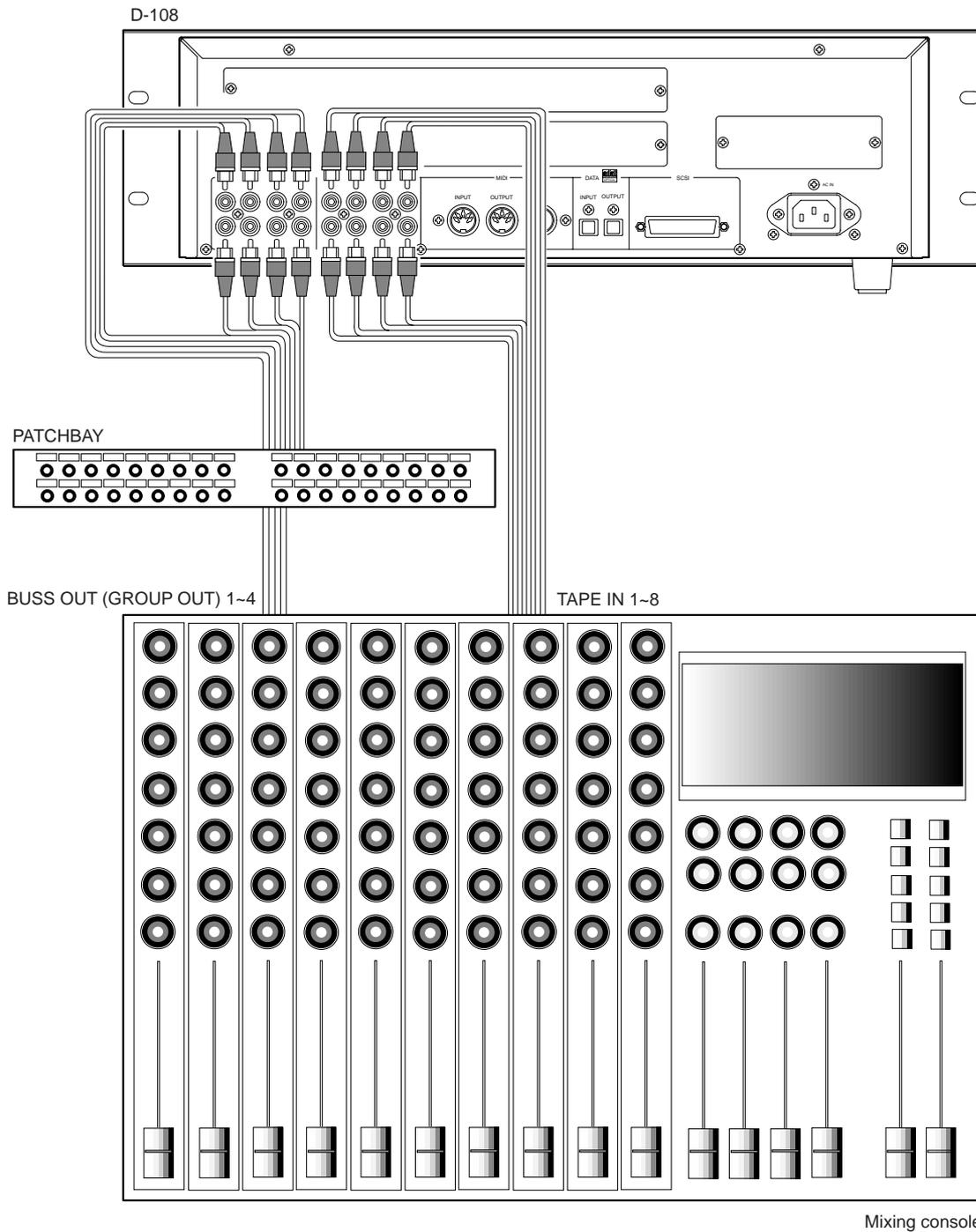
Basic recording

After you finish preparing a recording media and connecting a mixer, you can start basic recording using the D-108.

Initial settings

You need to reset all the controls on the D-108 to their initial settings according to the controls and switches on the mixer before you proceed to the next step. This procedure is called "Initialize" in this Guide and in the User's Guide. The buttons and switches on the D-108 should be reset as shown below. Remember to "initialize the D-108" before you start a new session.

Turn off AUTO RTN mode and AUTO PLAY mode. (AUTO RTN and AUTO PLAY indicators turn off.)

The STORE key and RECALL key LEDs turn off.

Locate the top of the selected Program (ABS 0).

Turn off AUTO PUNCH mode. (The REHEARSAL and TAKE LEDs go off.)

Turn off the SHIFT key LED.

Set all RECORD TRACK select keys to "SAFE." (The track indicators (square frames) turn off.)

Stop the recorder. (The STOP button LED turns off.)

Turn off the Vari Pitch function. (The VARI PITCH key LED turns off.)

Setting sampling frequency

You can select a sampling frequency of 44.1kHz or 48kHz on the D-108. The sampling frequency setting does not affect sound quality too much if you are using only analog signals. However, it becomes important if you transfer digital signals to and from an external digital device. For example, when you make a digital recording from a CD player, you need to set the D-108's sampling frequency to 44.1kHz since the CD's sampling frequency is 44.1kHz. If you use adat digital signals of 48kHz, you need to set the D-108's sampling frequency to 48kHz.

In this way, set the sampling frequency to match that of the digital signals to be recorded. The default setting of the sampling frequency (right after formatting or selecting a new Program) is "44.1kHz."

If you use this setting, you do not need to perform the steps described on the next page. You can check the current sampling frequency on the display.

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> **<Notes on setting the sampling frequency>**
> - Selecting a sampling frequency of 48kHz will cause the hard disk space to be used more than the setting of 44.1kHz, and the available recording time will be shorter. This will be reflected on the REMAIN value.
>
> - Do not change the sampling frequency during a session (except for a special case). If you change the setting, data will be played at different speeds and the values stored in the memory keys (time value or bar/beat/clock) will be changed.

The following procedure assumes that the D-108 is powered on and the top of Program 1 (ABS 0) is located and shown on the display.

> <Sampling frequency menu>
> - Default setting: 44.1kHz
> - Options: 44.1kHz, 48kHz
> - The frequency can be set for each Program.
> - The setting can be saved and loaded as part of the song data.
> - The setting is stored after the power is turned off.

1. Press the DISP SEL key repeatedly to select the SETUP mode display.

Pressing the key twice will change the display from the REMAIN indication to the SETUP display. ([SETUP] flashes.)

```
00m00s00f P01  ABS
                          44.1kHz
   1  2  3  4  5  6  7  8
```

```
06h38m54s  2.0GB  REMAIN
                          44.1kHz
   1  2  3  4  5  6  7  8
```

```
#0001              SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```
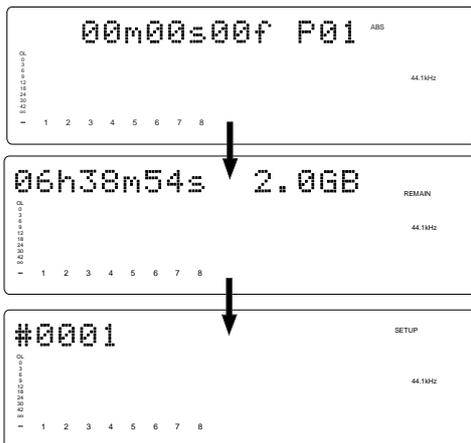
2. Press the EXECUTE/YES key

The display shows the first layer of the SETUP mode menu. (With the default setting, the [Drive Sel.?] menu appears.)

```
Drive Sel.? IDE   SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```
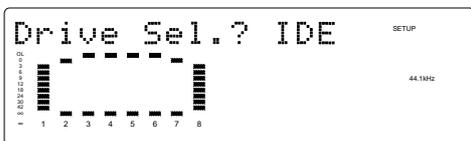
3. Turn the JOG dial to select the [SampleRate?*** (setting the sampling frequency)] menu.

The SETUP menu title and the current sampling frequency (44.1kHz or 48kHz) appear on the display. (With the default setting, the sampling frequency is set to 44.1kHz.) You can use the SHUTTLE dial or the HOLD/> key to select the menu.

```
SampleRate? 44.1   SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```
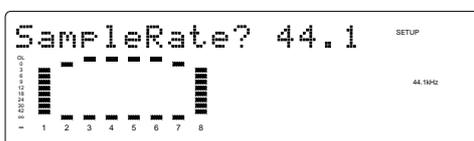
4. Press the EXECUTE/YES key.

The display changes as follows and the current sampling frequency value (44.1 or 48) flashes.

```
SampleRate   44.1   SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```
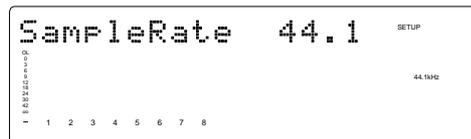
5. Turn the JOG dial to select the desired sampling frequency.

As you turn the dial, two sampling frequencies toggle.

```
SampleRate   44.1   SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```

```
SampleRate   48.0   SETUP
                          44.1kHz
   1  2  3  4  5  6  7  8
```
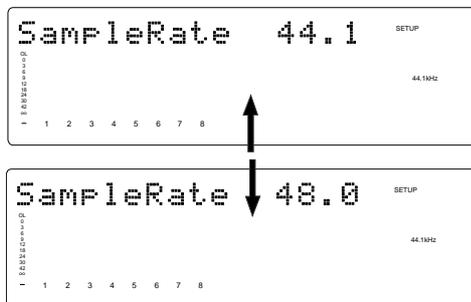
6. Press the EXECUTE/YES key.

The selection of the sampling frequency is confirmed.

7. Press the EXIT/NO key or the STOP button to quit SETUP mode.

The previous Time Base indication appears and the selected sampling frequency value lights up on the display.

Basic analog recording

The following explanation assumes that the D-108 has been connected to an external mixing console (as explained in the "Connecting a Mixer" section), and that the audio is input from the mixer's BUSS OUT (or GROUP OUT) into the D-108's ANALOG IN.

- Initialize the D-108.
- Check the sampling frequency. Select the desired sampling frequency, if necessary.
  Do not change the sampling frequency until you finish the session.

1, 5   **4**   **6**

2   **3**   **7**
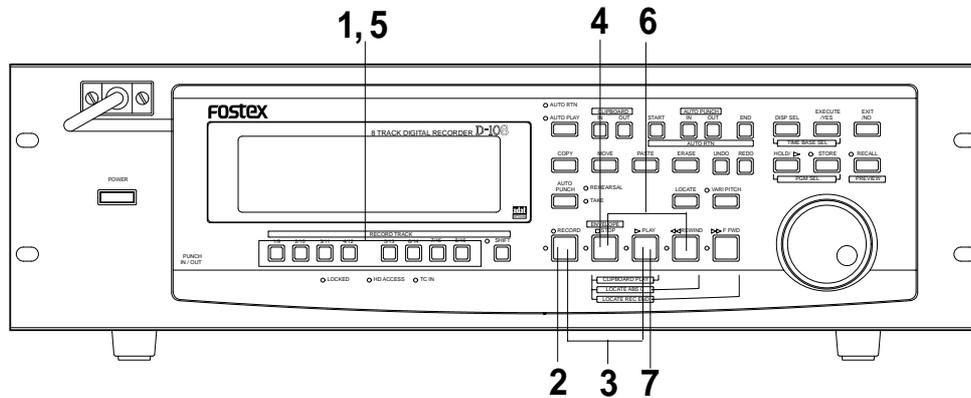
Selecting a recording track

1. Press the RECORD TRACK select key of the desired recording track to set it in READY mode.
The "ready" track indicator (a small square) flashes on the display.

```
00m00s00f  P01  ᴬᴮˢ

                                44.1kHz

  1  2  3  4  5  6  7  8
```
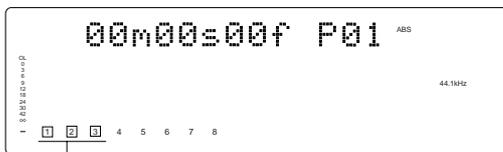
A small square of the "ready" track flashes.

Adjusting the recording level

The D-108 does not have any recording level controls. You need to adjust the recording level on the device that outputs recording data. Use the group master faders on the mixer (faders that control the output level of BUSS OUTs 1-8). Set the recording tracks on the D-108 to input monitoring status so that you can check the level adjustment.

2. Press the RECORD button once. (The RECORD LED flashes.)
The "ready" tracks enter the input monitoring status. As you raise the group output level on the mixer, the level meter segments of the ready tracks light up. Adjust the level so that the [0] to [3] level segments of the level meter light up at the highest peak.
If the "OL" segments of the meter light up, the recording level is too high. If the recording level is too high on a digital recorder, the recording signal may distort, unlike an analog recorder. Especially, if you are recording vocal or acoustic instruments, the recording level may suddenly peak. In this case, you may want to lower the signal peak by applying a compressor/limiter using an insertion connector.

Starting recording

3. Hold down the RECORD button and press the PLAY button.
The flashing RECORD LED and the track indicator (a small square) light up steadily.

Stopping recording

4. Press the STOP button.
When the recorder section is stopped, the [Pls Wait!] message appears on the display momentarily, then the current position appears. The ready track indicators flash.

Playing the recorded tracks

5. Press the RECORD TRACK select keys for the ready tracks to set the tracks in the safe status.
The flashing track indicators turn off.

6. Hold down the STOP button and press the REWIND button to locate the top of the Program (ABS 0).
The top of the Program is immediately located in LOCATE ABS 0 mode.

7. Press the PLAY button.
The playback starts from the top of the Program. Adjust the level of input signal at TAPE IN on the mixer and monitor the sound.

Repeat the procedure described above to record more tracks (mono track or multiple tracks). You can record eight different sound sources on the D-108 simultaneously.


<Undo and redo recording>
If you make a mistake or you are not satisfied with the recording, you can "undo" recording. Refer to the "Undo and redo recording" section below.

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Undo and redo recording

Everybody makes mistakes. If you make a mistake in recording, you can restore and re-do the data that existed before the mistake occurred.

These functions are called "Undo" and "Redo," and are executed by the UNDO key and REDO keys on the control panel.

The Undo function enables you to cancel the latest recording or edit and restore the previous state. Using the Redo function after using the Undo function enables you to cancel the Undo operation and restore the latest recording or edit. These functions have some limitations as described in the <Note> below.

<Note>

You can repeatedly use the Undo/Redo functions until you perform one of the following operations:

* You make a new recording.
* You perform a new edit (Copy/Paste, Move/Paste, Auto Punch in/out, Erase, etc.).
* You turn off the power to the D-108.
* You select a different Program.
* You eject a disk.
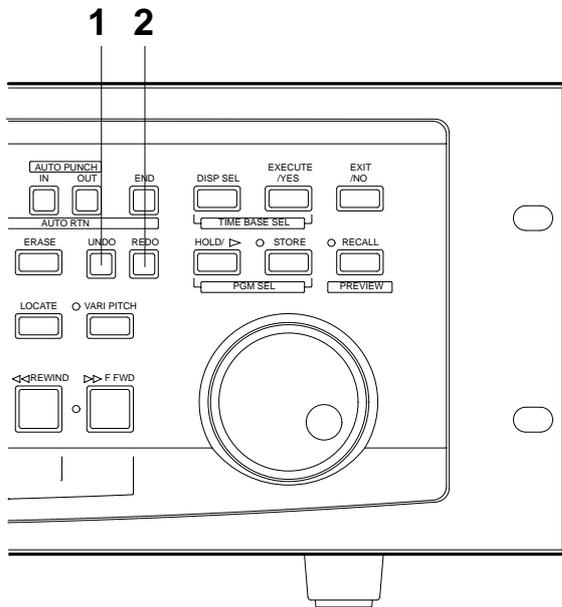
1. After making a recording (or playing back a newly recorded data), press the UNDO key.

The D-108 displays [Undo!], then [COMPLETED !], and displays the previous Time Base indication.
Undoing the recording will restore the status obtained before recording.
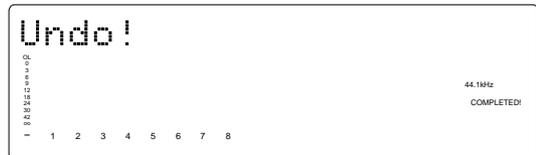
2. To cancel the undo operation, press the REDO key again.

The D-108 displays [Redo!], then [COMPLETED !], and displays the previous Time Base indication.
Performing the Redo operation will cancel the Undo operation and restore the state obtained after recording.
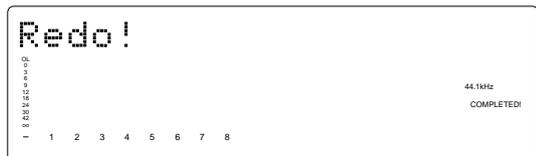
Multitrack recording using overdubbing

Multitrack recording is a term for the series of processes in which you record various sound sources to different tracks and combine them into two mixes (L and R). This recording involves an important process called "overdubbing," in which you record additional sound sources to different tracks while monitoring the input sound and listening to the recorded sound. The following procedure assumes that you have already recorded a rhythm section using a drum machine on Track 1.

> • Initialize the D-108.
> • Check the sampling frequency. Select the desired sampling frequency, if necessary.
>   Do not change the sampling frequency until you finish the session.

1. Press the RECORD TRACK select key of the desired overdubbing track to set it in READY mode.
The "ready" track's indicator (a small square) flashes on the display.

2. Press the RECORD button once.
The ready tracks enter input monitoring status, and the other tracks enter playback monitoring status.

3. Press the PLAY button to play the Program from the beginning. (Rehearsal)
Adjust the level of the playback monitoring sound (rhythm sound on Track 1) on the mixer. Play the sound source to overdub and adjust the recording level on the mixer.

4. When you finish rehearsing, locate the top of the Program for the actual take.

5. Press and hold down the RECORD button and press the PLAY button. (Take)
Play the sound source accompanying the Track 1 sound in the same way as during the rehearsal.

6. When you finish overdubbing, stop the recorder, locate the top of the Program, and play the overdubbed sound as explained in the "Basic Recording And Playback."
If you are not satisfied with your overdubbing, perform the Undo function and record again.

In the same way, overdub the necessary tracks.

Ping-pong recording

Ping-pong recording is a recording process in which you mix the playback sound of multiple tracks and record the mix on an empty track. Ping-pong recording enables you to use previously-recorded tracks in a new recording. In this way, you can overdub more sound sources using a limited number of tracks. The following procedure explains how to ping-pong record the sound sources recorded on Tracks 1-6 to Tracks 7 and 8. Once you ping-pong record the tracks, you cannot apply effects to the individual tracks. If necessary, apply effects on the mixer prior to ping-pong recording.

> • Initialize the D-108.
> • Check the sampling frequency. Select the desired sampling frequency, if necessary.
>   Do not change the sampling frequency until you finish the session.

1. Locate the top of the Program.

2. Press the RECORD TRACK select keys for Tracks 7 and 8 to set the tracks to READY mode.

3. Press the RECORD button once. (Rehearsal)

4. Play the Program on the D-108 from the beginning to send Tracks 1-6 sounds to Tracks 7 and 8, and adjust the recording level and the effect balance.

5. Locate the top of the Program.

6. Press and hold down the RECORD button on the D-108 and press the PLAY button. (Take)

7. When you finish ping-pong recording, stop the D-108 and play Tracks 7 and 8.
If you are not satisfied with your overdubbing, perform the Undo function and record again.
After ping-pong recording, you can erase unnecessary data from Tracks 1-6 so that you can use them for new recordings.
Instead of emptying the tracks, you may use the "Track Exchange" menu in SETUP mode to move data to additional tracks. Refer to the main User's Guide for more information.

Mixdown

After overdubbing and ping-pong recording, you can mix all track data into two channel stereo data and record it onto your master recorder. This final process of multitrack recording is called "mixdown."
The mixdown signals are usually output from the mixer's STEREO OUT L/R. Connect the master recorder inputs to the STEREO OUT L/R connectors.

> • Initialize the D-108.
> • Check the sampling frequency. Select the desired sampling frequency, if necessary.
>   Do not change the sampling frequency until you finish the session.

1. Set all tracks to the SAFE status.

2. Locate the top of the Program on the D-108.

3. Set the master recorder to REC-STANDBY mode.

4. Play the Program from the beginning and adjust the recording level on the master recorder while adjusting the tonal quality and mix balance of the playback sound from the mixer. (Rehearsal)
Adjust the input level on the master recorder so that the STEREO OUT L/R meters on the mixer respond to the same degree as the level meters on the master recorder.

5. Locate the top of the Program.

6. Start recording on the master recorder. (Take)

7. Press the PLAY button on the D-108 to start playing the Program from the beginning.

8. When mixdown is completed, stop the master recorder and the D-108.

Recording in a new Program

The explanation so far has been based on one Program set up when you format a current drive (E-IDE hard disk or SCSI disk). You may create up to 99 Programs, depending on the available disk space. Multiple Programs do not interfere with each other. You can record, play, and edit each Program independently, which facilitates song management. This section explains how to set up a new Program on the disk. Refer to the main User's Guide for more information regarding Programs.

1. While the D-108 is stopped, hold down the HOLD/ > key and press the STORE key.
The display indicates [Select PGM!] momentarily, then shows the title of Program 1. The Program number and [SURE?] flash.

```
P01[#0001                        PGM

                                 44.1kHz

                          SURE?
   1  2  3  4  5  6  7  8
```
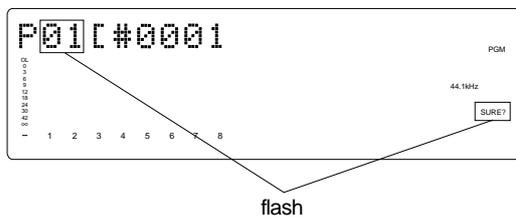
flash

2. Turn the JOG dial clockwise to select [New Program?].
The "?" mark of [New Program?] , and [SURE?] flash, indicating that you can set up a new Program.

```
New Program?                     PGM

                                 44.1kHz

                          SURE?
   1  2  3  4  5  6  7  8
```

flash
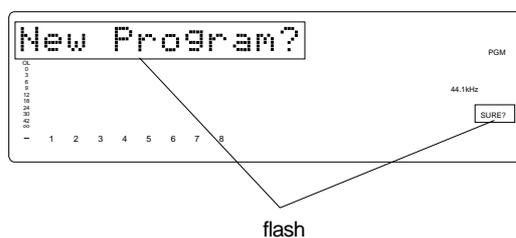
3. Press the EXECUTE/YES key.
The D-108 sets up a new Program (Program 2) and enters the [Title Edit] menu in SETUP mode, showing the following display. In this example, we use the default title. You can change the title later. Refer to the User's Guide for more information.

```
TitleEdit PGM02?               SETUP

                                 44.1kHz

   1  2  3  4  5  6  7  8
```
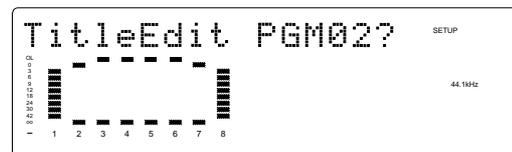
4. Press the EXIT/NO key.
The D-108 exits SETUP mode, and the top of Program 2 in ABS Time Base (ABS 0) appears.

```
        00m00s00f P02    ABS

                                 44.1kHz

   1  2  3  4  5  6  7  8
```
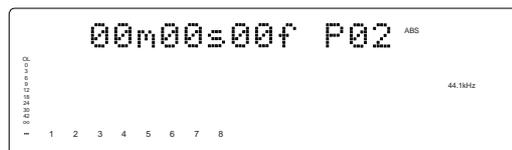
Refer to the next page for more information on how to select the desired Program from multiple Programs on the disk.

<Selecting the desired Program from multiple Programs>

If you have set up multiple Programs on the disk, you first need to select the target Program prior to recording, playback, or edit. To select a Program, follow the steps below. Do not select a different Program until you finish the session.

1. While the D-108 is stopped, hold down the HOLD/> key and press the STORE key.

   [Select PGM!] appears momentarily, then the number and title of the current Program appear.

2. Turn the JOG dial clockwise or counter-clockwise.

   The numbers and titles of the Programs on the disk appear in turn.

3. Select the desired Program number and press the EXECUTE/YES key.

   The top of the selected Program appears in ABS Time Base (ABS 0).

Basic Locate function

The Locate function enables you to locate the desired point (move the current position of the recorder) immediately. There are two locate methods: storing the desired locate point (time or bar/beat/clock value) into the memory keys, and locating the point without storing it.

This section explains "Locating the top of the Program" and "Locating the last recording point in the Program" and do not involve storing locate points. Refer to the User's Guide for information on storing and locating locate points.

> On the D-108, the top of the Program on the disk is called "ABS 0" and the end of the recorded area is called "REC END." (If the Program has no data recorded, ABS 0 corresponds to REC END.) You can use this function to locate the ABS 0 or REC END point immediately, regardless of the current recorder position.
>
> ABS 0   REC END
>
> [Recorded area]
>
> ← Locating ABS 0 — | — Locating REC END →
>
> Current position
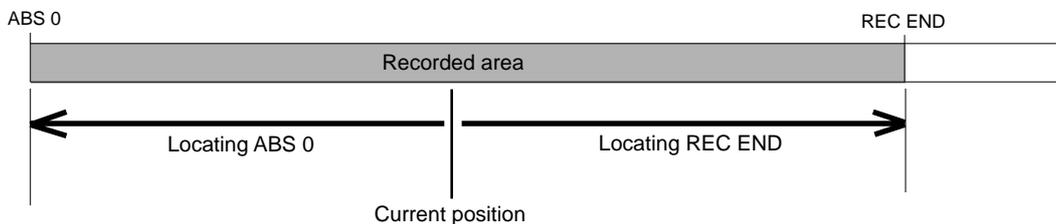
Locating the top of the Program

You can immediately move to the top of the Program (ABS 0), regardless of the current position of the Program.

1. Press and hold down the STOP button, and press the REWIND button.
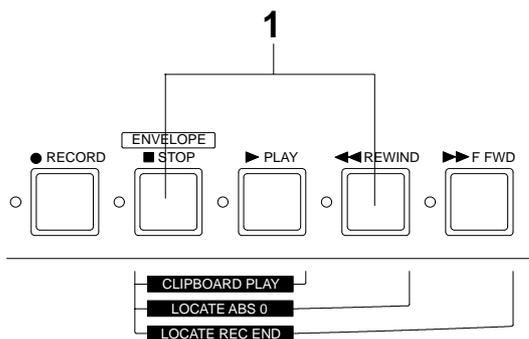
Locating the end of the recorded area of the Program

You can immediately move to the end of the recorded area of the Program, regardless of the current position of the Program.

1. Hold down the STOP button and press the F FWD button.
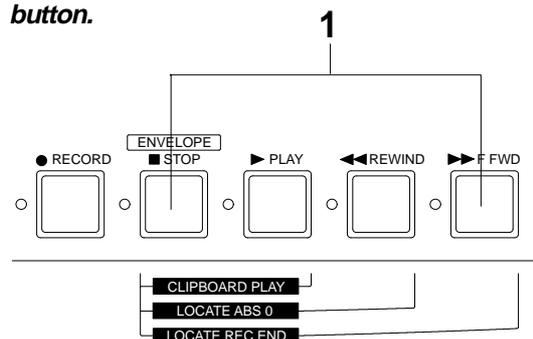
Playback using the Vari-pitch function

This section explains how to change the playback speed of the recorder using the Vari Pitch function.
You can set the playback speed in the range of +6.0% to -6.0% in 0.1% increments. The VARI PITCH key turns
Vari Pitch mode on and off. When the function is turned on, the VARI PITCH LED lights up.
When the function is turned off, the LED turns off.

> • Initialize the D-108.
> • Check the sampling frequency. Select the desired sampling frequency, if necessary.
>   Do not change the sampling frequency until you finish the session.

2, 3, 5, 6

1   **4**   **3**
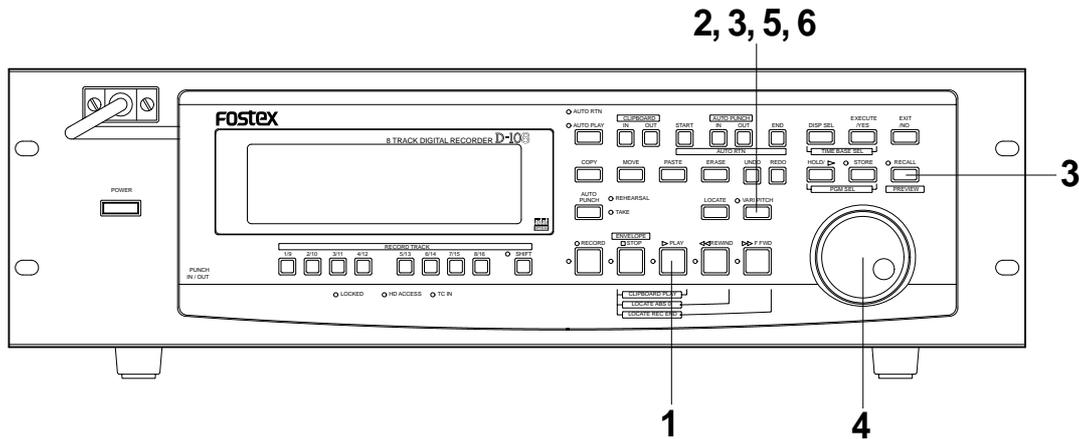
1. Press the PLAY button to play the D-108.

2. Press the VARI PITCH key.

The VARI PITCH key LED lights up on the display,
indicating that the Vari Pitch function is turned on.

3. Press the RECALL key, then press the VARI PITCH key.

The current pitch data flashes on the display, indicating
that you can change the pitch data now. (The [%] mark
flashes.)

```
Vari Speed= 0.0%
```
OL
0
3
6
9
12
18
24
30
42
∞   44.1kHz

–   1   2   3   4   5   6   7   8
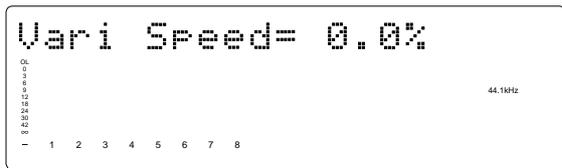
4. Set the desired pitch data using the JOG dial.

Rotating the JOG dial enables you to hear changes in
playback speed. Rotating the dial clockwise increases
the speed, and rotating it counter-clockwise decreases
the speed.

> To continue the playback with the Vari Pitch function on,
> press the EXIT/NO key.
> The D-108 exits Vari Pitch data edit mode, indicates the
> previous Time Base display, and continues playing with
> the Vari Pitch you just set.

5. To turn off Vari Pitch mode, press the VARI PITCH key.

The VARI PITCH LED turns off, the Vari Pitch function
is cancelled, and the D-108 resumes playback at normal
speed.

6. If you wish to play back data at the current Vari Pitch again, press the VARI PITCH key to turn the LED on.

You can turn the Vari Pitch function on and off and
edit the pitch data while the D-108 is playing or stopped,
but not during recording.
However, if the Vari Pitch function has already been
turned on and the pitch data was specified before you
started recording, the D-108 will record using the
current Vari Pitch.

> **<Note>**
> • Even if the pitch data is 0.0% (no speed
>   change), pressing the VARI PITCH key will still
>   turn on the VARI PITCH function. The speed
>   is not changed, but the Vari Pitch is turned
>   on.
>
> • The Vari Pitch function is automatically turned
>   off under the following conditions:
>
>   1. You have turned off and on the power to the D-108. (The
>   pitch data will be reset to 0.0%.)
>
>   2. You have set "Slave mode setting" in SETUP mode to ON.
>   (The pitch data previously set will be maintained.)
>
>   3. You have specified a track (or adat) for "Digital input track
>   setting" in SETUP mode, and [DIGITAL] lights up on the
>   display. (The pitch data previously set is retained.) Or, [EXT
>   SYNC] lights up on the display as the D-108 synchronizes
>   with the Digital In clock or WORD IN.

Owner's Manual reference pages

This section lists the reference page numbers for the D-108's functions and features explained in the Owner's manual.

Reference page

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