AKAI professional

DPS12

DIGITAL PERSONAL STUDIO

Operator's Manual

Rev.2 1/09/98

WARNING

The DPS12 is designed to be used in a standard household environment.

Power requirements for electrical equipment vary from area to area. Please ensure that your DPS12 meets the power requirements in your area. If in doubt, consult a qualified electrician or Akai Professional dealer.

120 VAC   @ 60 Hz for USA and Canada
220~240 VAC   @ 50 Hz for Europe

PROTECTING YOURSELF AND THE DPS12

- Never touch the AC plug with wet hands.

- Always disconnect the DPS12 from the power supply by pulling on the plug, not the cord.

- Allow only an Akai Professional dealer or qualified professional engineer to repair or reassemble the DPS12. Apart from voiding the warranty, unauthorized engineers might touch live internal parts and receive a serious electrical shock.

- Do not put, or allow anyone to put any object, especially metal objects, into the DPS12.

- Use only a household AC power supply. Never use a DC power supply.

- If water or any other liquid is spilled into or onto the DPS12, disconnect the power, and call your dealer.

- Make sure that the unit is well-ventilated, and away from direct sunlight.

- To avoid damage to internal circuitry, as well as the external finish, keep the DPS12 away from sources of direct heat (stoves, radiators, etc.).

- Avoid using aerosol insecticides, etc. near the DPS12. They may damage the surface, and may ignite.

- Do not use denatured alcohol, thinner or similar chemicals to clean the DPS12. They will damage the finish.

- Modification of this equipment is dangerous, and can result in the functions of the DPS12 being impaired. Never attempt to modify the equipment in any way.

- Make sure that the DPS12 is always well-supported when in use (either in a specially-designed equipment rack, or a firm level surface).

- In order to assure optimum performance of your DPS12, select the setup location carefully, and make sure the equipment is used properly. Avoid setting up the DPS12 in the following locations:

    1. In a humid or dusty environment
    2. In a room with poor ventilation
    3. On a surface which is not horizontal
    4. Inside a vehicle such as a car, where it will be subject to vibration
    5. In an extremely hot or cold environment

WARNING
THIS APPARATUS MUST BE EARTHED
IMPORTANT

This equipment is fitted with an approved non-rewireable UK mains plug.

To change the fuse in this type of plug proceed as follows:

1) Remove the fuse cover and old fuse.
2) Fit a new fuse which should be a BS1362 5 Amp A.S.T.A or BSI approved type.
3) Refit the fuse cover.

If the AC mains plug fitted to the lead supplied with this equipment is not suitable for your type of AC outlet sockets, it should be changed to an AC mains lead, complete with moulded plug, to the appropriate type. If this is not possible, the plug should be cut off and a correct one fitted to suit the AC outlet. This should be fused at 5 Amps.

If a plug without a fuse is used, the fuse at the distribution board should NOT BE GREATER than 5 Amp.

PLEASE NOTE: THE SEVERED PLUG MUST BE DESTROYED TO AVOID A POSSIBLE SHOCK HAZARD SHOULD IT BE INSERTED INTO A 13 AMP SOCKET ELSEWHERE.

The wires in this mains lead are coloured in accordance with the following code:

> **GREEN** and **YELLOW** —EARTH
> **BLUE**   —NEUTRAL
> **BROWN**   —LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, please proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal which is marked with the letter E or with the safety earth symbol ⏚ or coloured GREEN or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

THIS APPARATUS MUST BE EARTHED

Ensure that all the terminals are securely tightened and no loose strands of wire exist.

Before replacing the plug cover, make certain the cord grip is clamped over the outer sheath of the lead and not simply over the wires.

6D-En

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VENTILATION

Do not prevent the unit's ventilation, especially by placing the unit on the soft carpet, in a narrow space, or by placing objects on the unit's chassis—top, side, or rear panels. Always keep the unit's chassis at least 10 centimeters from any other objects.

31C-En

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

32-En

FCC WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

21B-En

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

27-En

COPYRIGHT NOTICE

The AKAI DPS12 is a computer-based device, and as such contains and uses software in DISKs and ROMs. This software, and all related documentation, including this Operator's Manual, contain proprietary information which is protected by copyright laws. All rights are reserved. No part of the software or its documentation may be copied, transferred or modified. You may not modify, adapt, translate, lease, distribute, resell for profit or create derivative works based on the software and its related documentation or any part there of without prior written consent from AKAI Electric Co. Ltd, Yokohama, Japan.

WARRANTY

AKAI Electric Co. Ltd. warrants its products, when purchased from an authorized "AKAI professional" dealer, to be free from defects in materials and workmanship for a period of 12 (twelve) months from the date of purchase. Warranty service is effective and available to the original purchase only, and only on completion and return of the AKAI Warranty Registration Card within 14 days of purchase.

Warranty coverage is valid for factory-authorized updates to AKAI instruments and their software, when their installation is performed by an authorized AKAI Service Center, and a properly completed Warranty Registration has been returned to your "AKAI professional" dealer.

To obtain service under this warranty, the product must, on discovery of the detect, be properly packed and shipped to the nearest AKAI Service Center. The party requesting warranty service must provide proof of original ownership and date of purchase of the product.

If the warranty is valid, AKAI will, without charge for parts or labor, either repair or replace the defective part(s). Without a valid warranty, the entire cost of the repair (parts and labor) is the responsibility of the product's owner.

AKAI warrants that it will make all necessary adjustments, repairs and replacements at no cost to the original owner within 12 (twelve) months of the purchase date if:

1) The product fails to perform its specified functions due to failure of one or more of its components.

2) The product fails to perform its specified functions due to defects in workmanship.

3) The product has been maintained and operated by the owner in strict accordance with the written instructions for proper maintenance and use as specified in this Operator's Manual.

Before purchase and use, owners should determine the suitability of the product for their intended use, and owner assumes all risk and liability whatsoever in connection therewith. AKAI shall not be liable for any injury, loss or damage, direct or consequential, arising out of use, or inability to use the product.

The warranty provides only those benefits specified, and does not cover defects or repairs needed as a result of acts beyond the control of AKAI, including but not limited to:

1) Damage caused by abuse, accident, negligence. AKAI will not cover under warranty any original factory disk damaged or destroyed as a result of the owner's mishandling.

2) Damage caused by any tampering, alteration or modification of the product: operating software, mechanical or electronic components.

3) Damage caused by failure to maintain and operate the product in strict accordance with the written instructions for proper maintenance and use as specified in this Operator's Manual.

4) Damage caused by repairs or attempted repairs by unauthorized persons.

5) Damage caused by fire, smoke, falling objects, water or other liquids, or natural events such as rain, floods, earthquakes, lightning, tornadoes, storms, etc.

6) Damage caused by operation on improper voltages.

IMPORTANT NOTE: This warranty becomes void if the product or its software is electronically modified, altered or tampered with in any way.

AKAI shall not be liable for costs involved in packing or preparing the product for shipping, with regard to time, labor, or materials, shipping or freight costs, or time or expense involved in transporting the product to and from AKAI Authorized Service Center or Authorized Dealer.

AKAI will not cover under warranty an apparent malfunction that is determined to be user error, or owner's inability to use the product.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED CONDITION OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

AKAI hereby excludes incidental or consequential damages, including but not limited to:

1) Loss of time.
2) Inconvenience
3) Delay in performance of the Warranty.
4) The loss of use of the product.
5) Commercial loss.
6) Breach of any express or implied warranty, including the Implied Warranty of Merchantability, applicable to this product.

Table of contents

Chapter 1: Outline of the DPS12

This chapter describes the features of the DPS12 and the name of its parts and functions. It also describes the DPS12's unique conceptual design and operating method. Akai recommends that you read this chapter thoroughly even though you may already be quite familiar with multitrack recorders and mixing consoles.

Features of the DPS12

The DPS12 has the following features:

- The DPS12 includes a hard disk recorder that enables you to perform 12-track recording/playback, and a 20-channel digital mixer. You can record and mix down on a single DPS12 as if you were using a multitrack recorder.

- The DPS12 provides you with 12 recording/playback tracks (physical tracks) and 250 data storage tracks (virtual tracks). Switching among virtual tracks that are assigned to physical tracks allows you to record multiple takes of the same part or phrase and later select the best take for mixdown.

- The mixer section is fully loaded with EQ, Pan, two AUX sends, and Level capabilities. In addition to 12 TRACK MIX channels that control the output from the recorder tracks, 8 THRU MIX channels are available to directly control input signals from the INPUT jacks. You can mix down the signal from a connected synthesizer, tone module, and/or external effect processor while playing back 12 tracks on the recorder section.

- A JAZ drive can be installed for removable media. Switching JAZ disks will expand the available recording space without limits. Up to 1GB of data can be continuously recorded.

  > ➤ **NOTE :** *This manual has been prepared based on the unit with Jaz drive installed internally. If your unit is not equipped with Jaz drive, read Jaz drive in the manual as an appropriate drive connected.*

- Up to six external hard disks and/or MO drives can be connected to the SCSI connector for backup and recording.

- Connecting a MIDI device, such as a MIDI sequencer, allows for sync master or slave operation. Using MMC (MIDI Machine Control) also enables you to remote-control the DPS12 from a connected external device.

- Up to 100 locate points in songs can be named and stored. You can immediately jump to any specified locate point with an easy operation. A "Quick Locate function" that assigns locate points to the keys on the front panel is also available.

- The DPS12 offers an improved and integrated edit function. You can specify track(s) to edit, and the range of various editing operations, such as Copy & Paste, Cut & Paste, and Copy & Insert.

- The DPS12 is equipped with a scene memory that stores mix settings. You can create several mix configurations with different balance and EQ settings. You can also adjust the mix-related parameters via MIDI. Combining this with a MIDI sequencer will enable a mix automation.

- Installing an optional effect board, EB2M, will provide you with two-channel, internally-connected digital effects. This enables you to handle all signals, from recording through the application of effects to mixdown, in the digital domain.

Parts and functions

This section describes the part names and functions. The names of the controls on the top panel are shown in brackets [ ].

Top panel
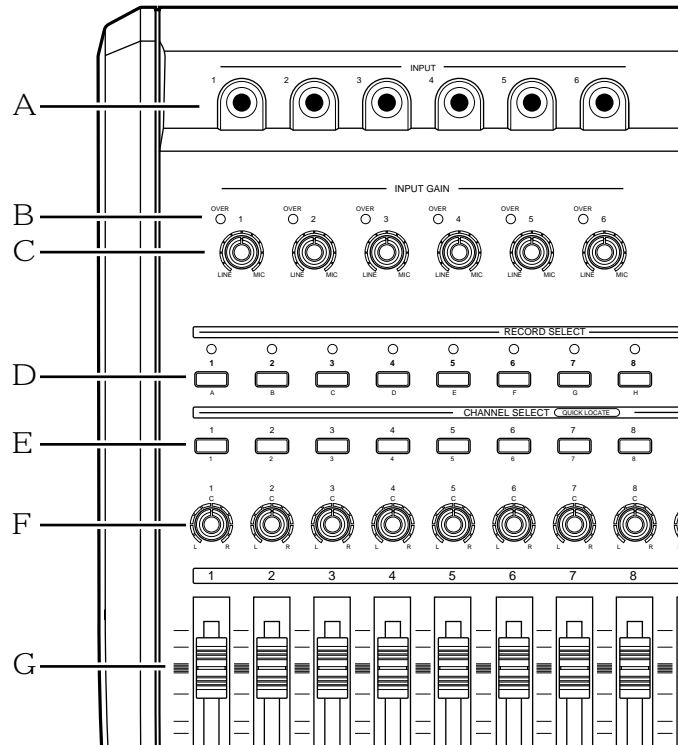
1 **INPUT jacks 1–6**

Connect line-level electronic instruments, such as a synthesizer, and microphones to these analog input jacks. The signal input from these jacks will be routed to the tracks of the recorder section or to the mixer section, depending on the settings. These input jacks accept balanced stereo signals.
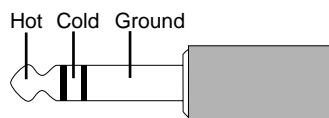
Balanced signal input

2 **Peak indicators**

These indicators light up when the signals input from the INPUT jacks 1–6 clip.

3 **[INPUT GAIN] controls 1–6**

Use these controls to adjust the gain of the signals input from the INPUT jacks 1–6.

4 **[RECORD SELECT] keys**

Use these keys to select a recording track (physical track). When these keys are turned on, the LEDs above them flash, indicating that the corresponding tracks enter recording-standby mode. Pressing the keys again will cancel the standby mode. When the [SOLO] key (J) is turned on, these buttons are used to select solo channels.

5 **[CHANNEL SELECT] keys**

These keys are used to select channels for edit or mixer operations. They are also used to specify the locate point for the Quick Locate function.

6 **[PAN] controls**

These knobs are used to adjust the panning (stereo position) of the TRACK MIX channels.

7 **Channel faders**

These faders control the level of TRACK MIX channels.
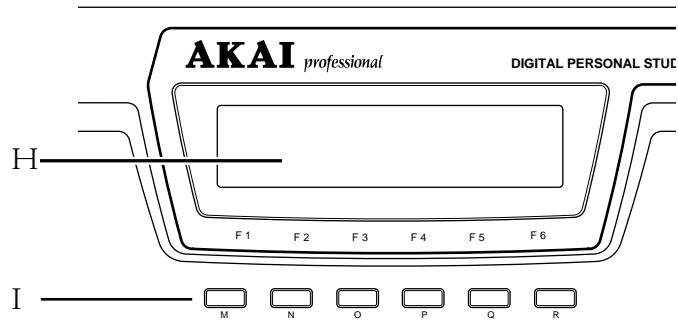
8 **Display**

This LCD display indicates various information required for operating the DPS12, such as the time counter and level meter.

9 **Function keys ([F1] – [F6])**

These keys are used to execute or turn on/off the functions that appear on the bottom row of the display.
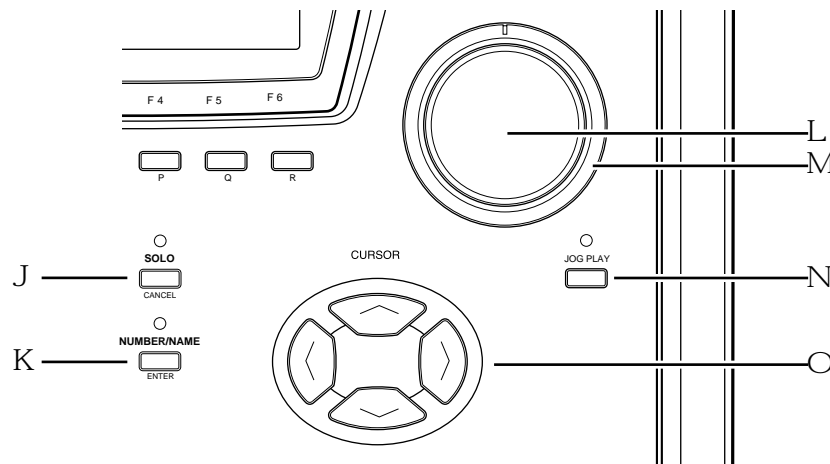
J **[SOLO] ([CANCEL]) key**

This key enables the Solo function in the mixer section. When this key is turned on, you can monitor the tracks selected via the [RECORD SELECT] keys. It is also used as a [CANCEL] key to cancel the entry of numeric values or characters.

K **[NUMBER/NAME] ([ENTER]) key**

This key enables the input of numeric values and characters. When this key is turned on, the LED above this key flashes, and you can enter the numbers, alphabets, and symbols, using the keys on the top panel that have the corresponding labels below them. This key is also used as an [ENTER] key that confirm the entry of the values and characters.

L **[JOG] dial**

This dial is used to change the setting or value of an item selected by the cursor on the display. When the [JOG PLAY] key N is turned on, you can perform jog-playback depending on the speed and direction in which you rotate the dial.

M **[SHUTTLE] dial**

This dial is used to select one digit of a time field value to be changed that was displayed via the [JOG] dial. When the [JOG PLAY] key N is turned on, you can perform shuttle-playback depending on the angle and direction of this dial.

N **[JOG PLAY] key**

This key enables jog-playback and shuttle playback. When this key is turned on, the waveform of a selected channel appears on the display, and you can perform jog-playback via the [JOG] dial and shuttle-playback via the [SHUTTLE] dial.

○ **[CURSOR] key**

The cursor key is used to move the cursor (highlighted part) on the display to select an item to set.
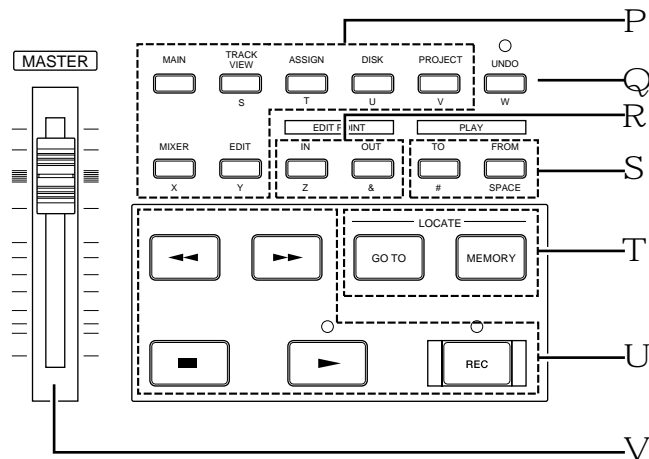
P **Mode keys ([MAIN] key / [TRACK VIEW] key / [ASSIGN] key / [DISK] key / [PROJECT] key / [MIXER] key / [EDIT] key)**

These keys are used to switch among various operating modes (MAIN mode, TRACK VIEW mode, MIXER mode, etc.). The [MAIN], [TRACK VIEW], and [MIXER] keys are effective even during the recording or playback operation, while the other keys are effective only when the operation is stopped.

Q **[UNDO] key**

This key is used to cancel the recording or editing operation you just performed. When you press this key right after you perform recording or editing, the previous status is restored and the LED above the [UNDO] key lights up (Undo). Pressing the [UNDO] key again restores the status obtained when you performed the recording or editing operation, and the LED turns off (Redo).

> ✎ **TIP :** *The range of the Undo level parameter (to set how many previous operations can be restored via the [UNDO] key) is 0 to 250. If the Undo level is set to "2" or higher, press the [UNDO] key, then enter the number of possible undo operations.*

R **Edit point keys ([IN] key / [OUT] key)**

These keys are used to store IN/OUT points that are used to specify the range for the Auto Punch In/Out function and Edit function.

S **Edit play keys ([TO] key / [FROM] key)**

These keys are used for the Edit Play function that plays back data from or to the current stop position.

T **Locate keys ([MEMORY] key / [GO TO] key)**

These keys are used to store the locate point (the position information in a song) and move the current position on the DPS12 to any locate point.

U **Transport buttons**

These keys are used to control the transport operation of the DPS12, such as recording, playback, stop, etc. Each button has the following function:

- [REC] button .... This button is used to record. Pressing the [►] button while holding down the [REC] button causes a track with its [RECORD SELECT] key on to enter recording mode. Recording mode is also entered when you press the [REC] button while holding down the [►] button during playback (Punch In).

- [►] button .... This button is used to play back data. Pressing this button during recording cancels recording, and playback continues (Punch Out).

- [■] button .... This button is used to stop recording, playback, fast forward, and rewind.

4

- [◄◄] button .... This button is used to rewind. Pressing this button while the transport section is stopped causes the time counter on the display to count backward at high speed. Pressing and holding down this button during playback causes fast reverse playback for as long as you hold it down (Review).

- [►►] button .... This button is used to fast forward. Pressing this button while the transport section is stopped causes the time counter on the display to count forward at high speed. Pressing and holding down this button during playback causes fast playback for as long as you hold it down (Cue).

Ⅴ **[MASTER] fader**

This fader adjusts the master level of the mixer section.

Front panel

PHONES

LEVEL
MIN ▬▬▬ MAX

iomega **jaz**

A   B   C
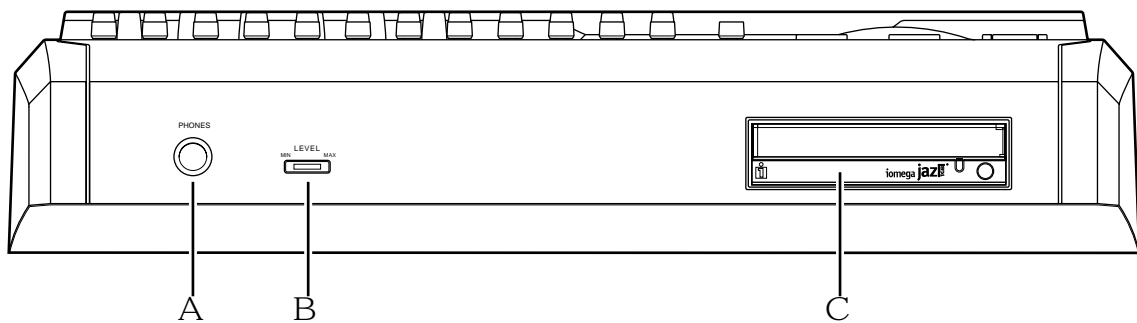
1 **PHONES (headphones) jack**

Connect monitoring headphones to this jack, which outputs the same signal as that output from the MASTER OUT jacks on the rear panel.

2 **LEVEL (headphones level) control**

This control adjusts the volume level of the headphones connected to the PHONES jack.

3 **Internal drive (JAZ drive)**

This is reserved for mounting internal drive.

Rear panel

POWER
ON ▬ ▬ OFF

FOOT SW.   SCSI   MIDI
OUT/THRU IN

OPTICAL
OUT   IN

AUX SEND
A   B

MASTER OUT
L   R

H   G   F   E   D   C   B   A
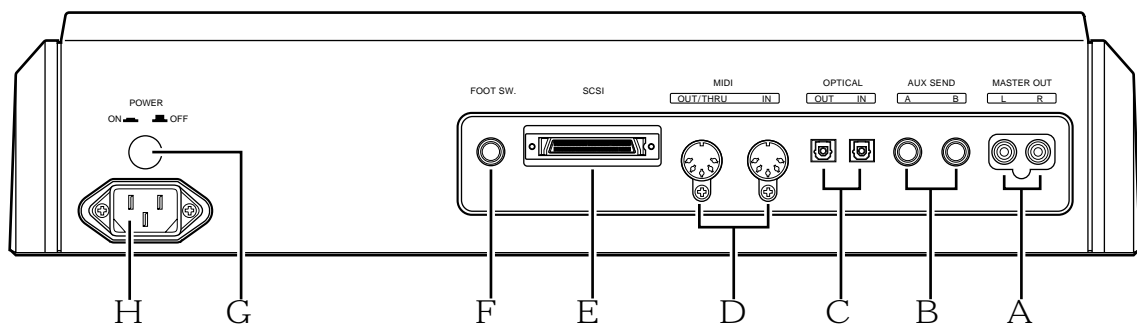
1 **MASTER OUT L/R jacks**

These jacks output a stereo signal that is a mix of each channel (TRACK MIX channels + THRU MIX channels) of the mixer section.

2 **AUX SEND (AUX send) A/B jacks**

These jacks output a signal from each channel of the mixer section (TRACK MIX channels + THRU MIX channels) to Send A/B. (If AUX TYPE is set to STEREO, a left signal and right signal will be output from jack A and jack B respectively.)

5

3 **OPTICAL IN/OUT jacks**

These jacks are used to transmit digital audio signals to and from a connected external digital device, such as a DAT recorder. Depending on the settings, digital signals input from the OPTICAL IN jack are sent to the tracks in the recorder section (physical tracks), or directly to the mixer section. The OPTICAL OUT jack outputs the same signal as the digital signal output from the MASTER OUT jacks 1 .

4 **MIDI IN, OUT/THRU connectors**

These connectors are used to transmit sync signals and control signals to and from a connected external MIDI device, such as a MIDI sequencer.

5 **SCSI connector**

This connector is used to connect an external hard disk or MO drive.

6 **FOOT SW. (foot switch) jack**

This jack is used to connect a foot switch to control the Punch In/Out operation and playback/stop operation with your foot.

7 **POWER switch**

This switch turns on/off the power to the DPS12.

8 **Power connector**

Connect the included power cable here.

Using a JAZ drive

If you have a JAZ drive installed on the DPS12, you can store audio data and other information on a JAZ disk inserted in the drive's slot. A JAZ disk is a storage medium with a capacity of 1 GB, and can accommodate audio data of up to three hours sixteen minutes (at a sampling rate of 44.1kHz in monaural).
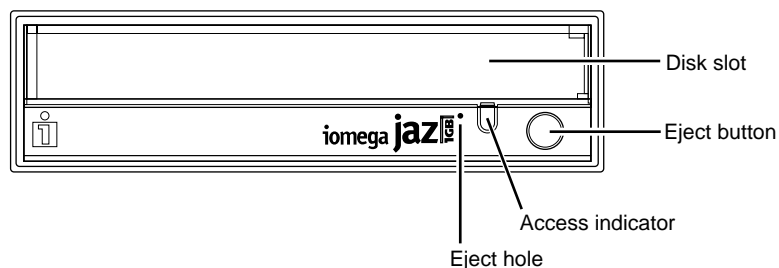
Inserting and ejecting a JAZ disk

Follow the procedure below to insert and eject a JAZ disk.

■ **Inserting a JAZ disk**

1. **Make sure that the power to the DPS12 is turned on.**

⚠ **CAUTION :** *Be sure to turn on the power to the DPS12 before you insert a JAZ disk into the optional JAZ drive. Never force the disk.*

2. **Hold the JAZ disk with the label side facing up and the metal shutter side directed toward the slot, then insert the disk into the drive.**
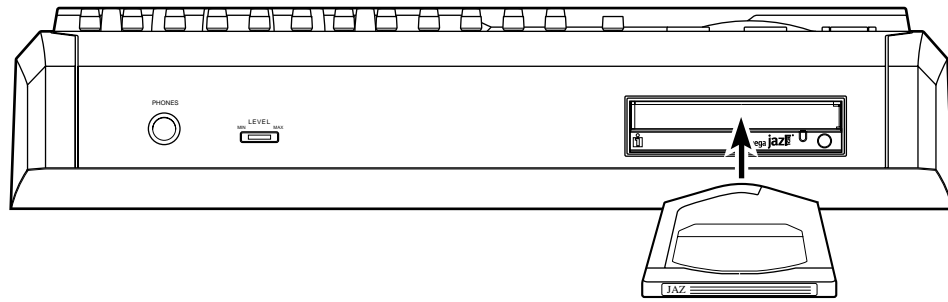
■ **Ejecting a JAZ disk**

1. **Press the eject button on the JAZ drive.**
   The access indicator flashes for a while, then the JAZ disk is ejected about 2 cm beyond the slot.

2. **Remove the disk carefully.**
   Insert the disk in the case that came with the disk, and store it in a safe place.

⚠ **CAUTION :** *Never force a JAZ disk in or out of its slot. Doing so may damage not only the disk but the JAZ drive.*

➥ **NOTE :** *If you need to eject a JAZ disk while the power to the DPS12 is turned off, insert and gently push a thin wire or a straightened paper clip into the eject hole of the JAZ drive to eject the disk. Akai is not responsible for damage to the JAZ disk or loss of data caused by a forced eject operation.*

Notes on using a JAZ drive

- To be able to use a JAZ disk on the DPS12, you need to format a disk first. (Refer to page 22, 106 for information on how to format a disk.)

- Make sure that the power to the DPS12 is turned on when you insert or eject a JAZ disk. If you turn on or off the power to the DPS12 while a JAZ disk is inside the drive, the disk may be damaged and data may be lost.

- The JAZ drive automatically enters sleep mode (disk spinning is stopped) if it is not accessed for about 30 minutes. Therefore, it may take a while to exit sleep mode if you start playing back or recording after a period of time. This is not a malfunction.

- After you eject a JAZ disk from the drive, always store the disk in its protective case.

- Do not open, apply any force, or drop liquid on the shutter of a JAZ disk. Otherwise, the disk may be damaged and data may be lost.

- When the access indicator (an LED on the front panel) of the JAZ drive is lit, do not move the DPS12. Remove the JAZ disk before moving the DPS12.

- The eject button is disabled while the DPS12 accesses data on the disk (such as while recording or playing).

- Do not open the dust door of the JAZ drive slot manually. Do not insert anything other than a JAZ disk into the disk slot. Otherwise, dust may enter the drive or the JAZ drive may be damaged.

- If a JAZ disk is damaged for some reason, its data will be lost forever. We recommend that important data be backed up to an external hard disk or an MO drive. (Refer to page 99 for information on backing up data.)

About external SCSI devices

The rear panel of the DPS12 is equipped with a half-pitch 50-pin SCSI connector (SCSI-2 standard), which you can connect to an external hard disk or MO drive to back up, record, or play back data.

➤➤ **NOTES :**

• *Some models of external SCSI devices may not be compatible with the DPS12. Also, you may not be able to record or playback, or you may have only a limited number of tracks available for simultaneous multitrack recording and playback.*

• *Consult AKAI technical support for more information on the manufacturers and models of external SCSI devices that are compatible with the DPS12.*

Connecting an external SCSI device

■ Connecting a single SCSI device

Use a SCSI cable to connect the DPS12 and one SCSI device.
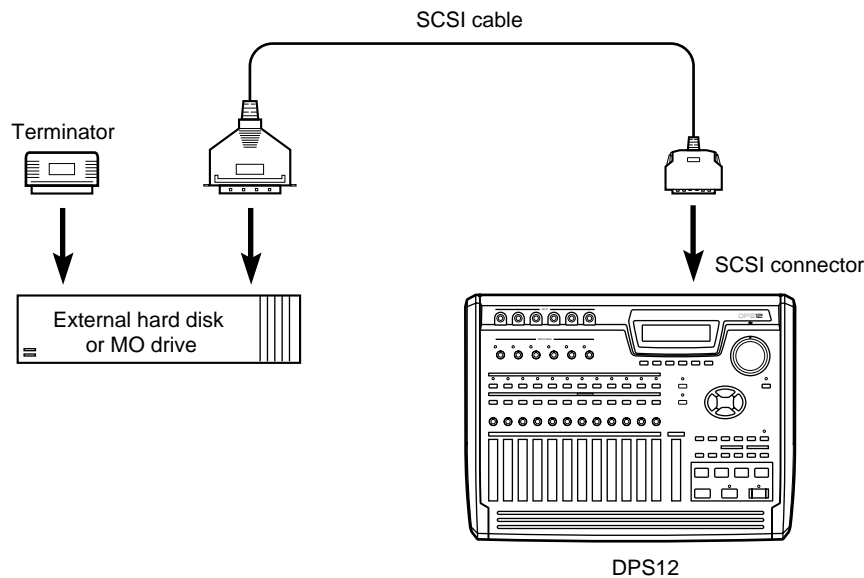
Example of connecting a single SCSI device to the DPS12

Install a terminator on the SCSI device. If the SCSI device has a built-in active terminator, turn it on. (Refer to the instruction manual that came with the SCSI device for more information on how to turn on the active terminator.) Set the SCSI ID number of the external SCSI device to any number other than 4 or 6.

✎ **TIPS :**

• *A terminator is a device that terminates the end of the SCSI connection. Usually, you install the terminator on the SCSI device on the SCSI connector that is not connected to the SCSI cable. Some SCSI devices may have a built-in active terminator that performs termination electrically. In this case, turn the terminator on/off using the dedicated switch.*

• *SCSI devices recognize and identify each other using an identification of 0–7 called the SCSI ID. The factory SCSI ID setting of the DPS12 is 6 (changeable), and the ID of the JAZ drive is 4 (fixed). You need to use other numbers as SCSI IDs for other connected SCSI devices.*

■ Connecting multiple SCSI devices

Use a daisy chain connection to connect multiple SCSI devices as shown below:
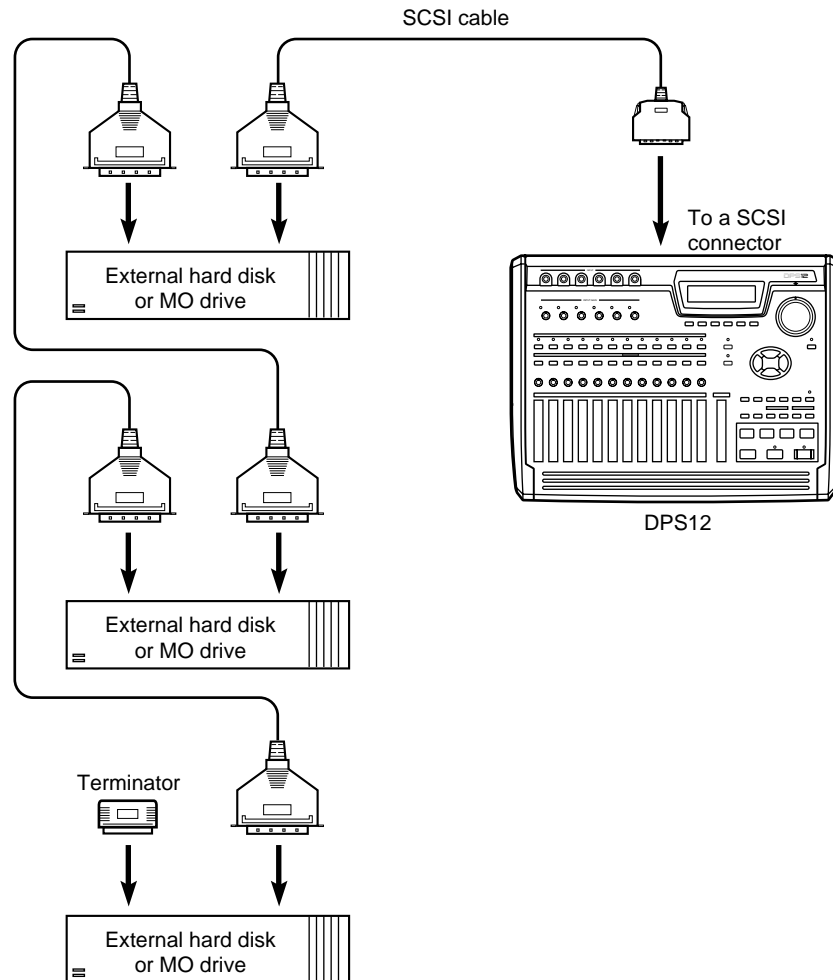
Connecting multiple SCSI devices

Install a terminator on the last SCSI device in the daisy chain. (If the SCSI device has a built-in active terminator, turn it on.) The default SCSI ID of the JAZ drive is set to 4 and the SCSI ID of the DPS12 is set to 6. Therefore, set the SCSI ID of all external SCSI devices to a number other than 4 or 6.

⚠ **CAUTION :** *Turn off the power to all devices before performing SCSI connection.*

➤➤**NOTES :**
- *Use a short, high-quality SCSI cable, if possible. Using too long a cable or a low-quality cable may cause an error.*
- *You need to format the disk before you can use the external hard disk or MO drive connected to the DPS12. (Refer to page 22, 106 for more information on how to format the disk.)*
- *To record and play back data to the connected hard disk or MO drive, you need to specify the drive as the current drive (currently selected drive). (Refer to page 104 for more information on how to specify the current drive.)*
- *You cannot record one continuous stream of data to multiple disks.*

About Projects

The DPS12 manages songs by treating them as "Projects." A Project contains audio data, mixer settings, locate points (position information in a song), and scene memory (mix parameter settings).

The internal hard disk can store multiple Projects. However, the DPS12 can handle only one Project at a time. When the power to the DPS12 is turned on, the DPS12 reads the first Project in the disk. You may want to specify another Project on the disk to be read or create a new Project, if necessary.
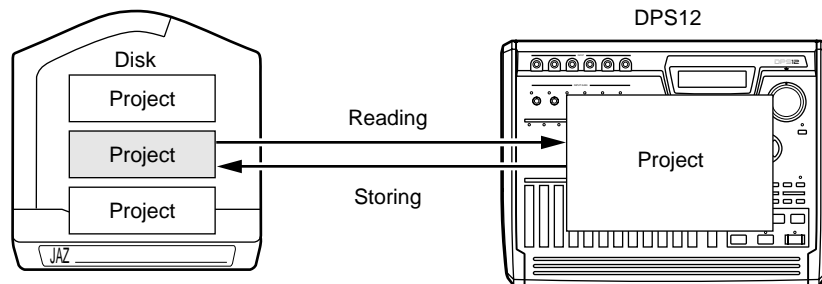
About physical tracks and virtual tracks

The DPS12 performs recording and playback by assigning 250 virtual tracks to 12 physical tracks.

"Physical track" is a track that is used to record, play back, and edit in normal way. **Physical tracks 1–12 correspond to the [RECORD SELECT] 1–12 keys on the top panel.** Pressing any of these keys causes the corresponding LED to flash and the corresponding track to enter recording standby mode.

"Virtual track" is used to store recorded audio data. You cannot control virtual tracks. However, you can still record, play back, and edit them by assigning them to physical tracks. **The DPS12 provides 250 virtual tracks, which you can assign to any of 12 physical tracks.**

The following example shows Virtual tracks 3, 10, and 6 assigned to physical tracks 1, 2, and 3 respectively.
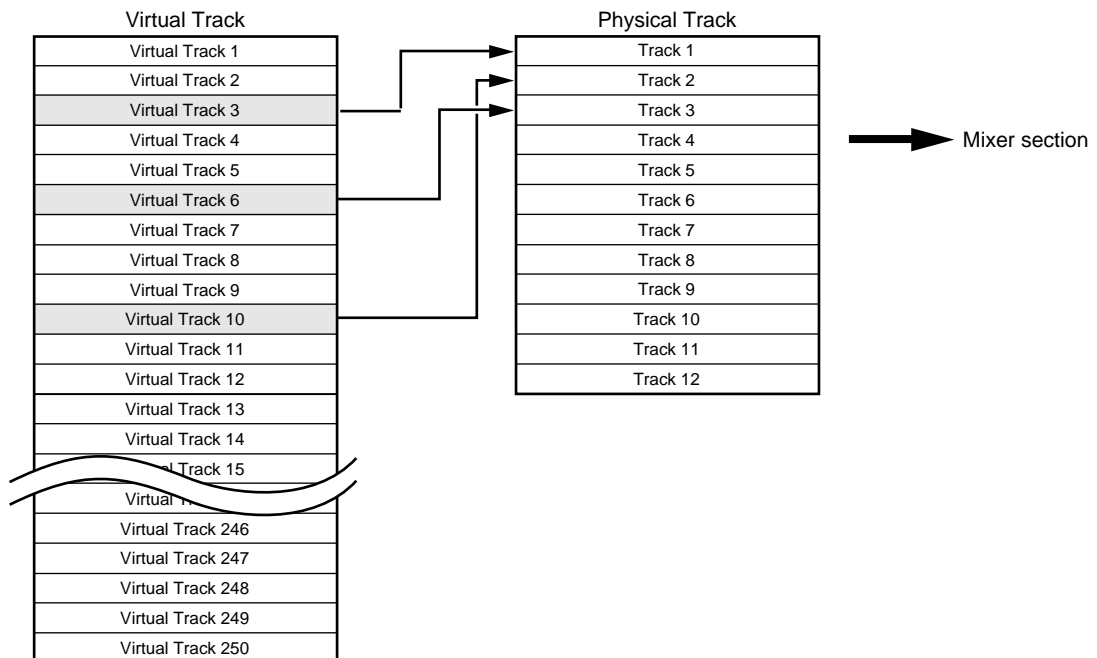
For example, you can switch virtual tracks that are assigned to recording tracks (physical tracks) to record multiple takes of your solo performance. In this way, you can later select the best take for mixdown. You can also store data in a virtual track to perform ping-pong recording onto the data repeatedly until you are satisfied. Virtual tracks have various applications, and you can use the DPS12 without being limited to twelve tracks.

> ✎ **TIP :** *You can also name virtual tracks.*

TRACK MIX channels and THRU MIX channels

The DPS12's mixer section offers eight channels (called "THRU MIX channels") that enable you to control input signals that come directly from the INPUT jacks, as well as twelve channels (called "TRACK MIX channels") that you can control for panning and level from the top panel.

Normally, you can record and mix down audio data using only the TRACK MIX channels. However, the THRU MIX channels are useful when you wish to overdub external sound sources while playing back twelve tracks in the recorder section.

The following diagram shows a basic signal flow. When the DPS12 is in default status, use the TRACK MIX channels to record and mix down data.
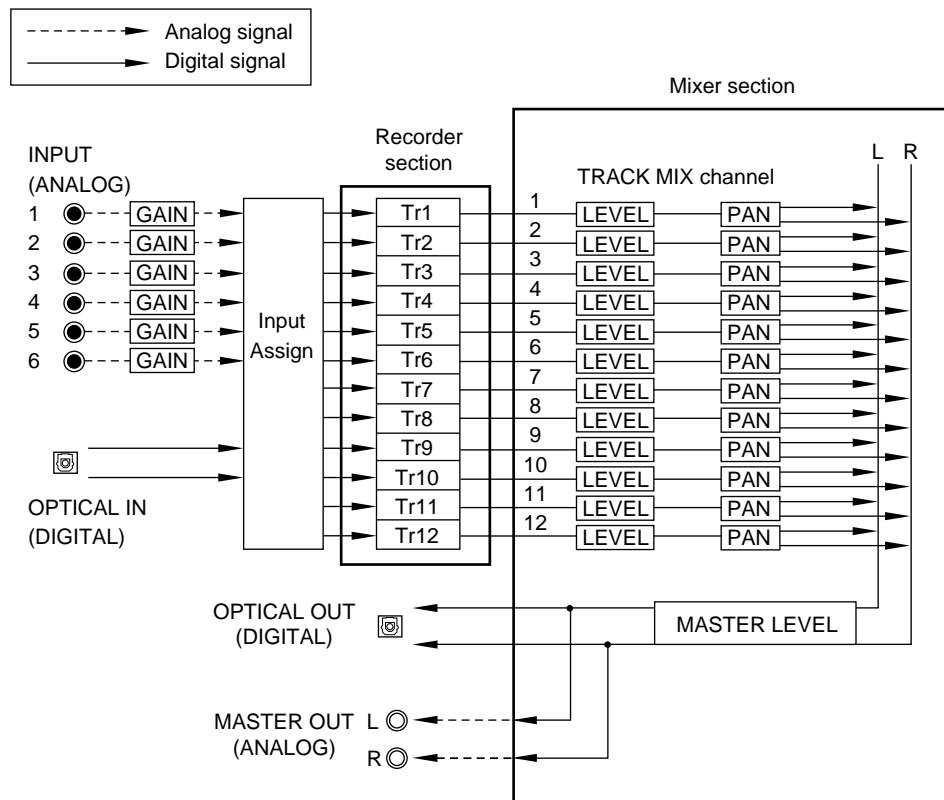
A typical signal flow when only TRACK MIX channels are used

• Signals input from the INPUT jacks (analog/digital) are adjusted for the gain via the GAIN controls, then routed to the Input Assign section and assigned to each physical track. (Track assignment is performed in Assign mode. See page 52 for more information.)

• Physical tracks 1–12 of the recorder section are directly routed to TRACK MIX channels 1–12 of the mixer section. Usually, input signals routed from the INPUT jacks are sent from recording-ready tracks to the mixer section, and the recorder playback signals are sent from other tracks to the mixer section.

• You can set the level and pan of the signals sent to the TRACK MIX channels, using the faders and the PAN controls on the top panel before mixing down to a stereo signal. You can also adjust the mix-related parameters, such as channel on/off, EQ, and AUX send A/B. (These settings are available in Mixer mode. Refer to page 58 for more information.)

• The master level of the stereo mix signal is adjusted by the master fader on the top panel. This signal is output from the MASTER OUT jacks (analog) and the OPTICAL OUT jacks (digital).

You can also send the input signals at the INPUT jacks directly to the mixer section, instead of sending them to the recorder section. In this case, you can use the THRU MIX channels. The following diagram shows a typical signal flow when the THRU MIX channels are used.
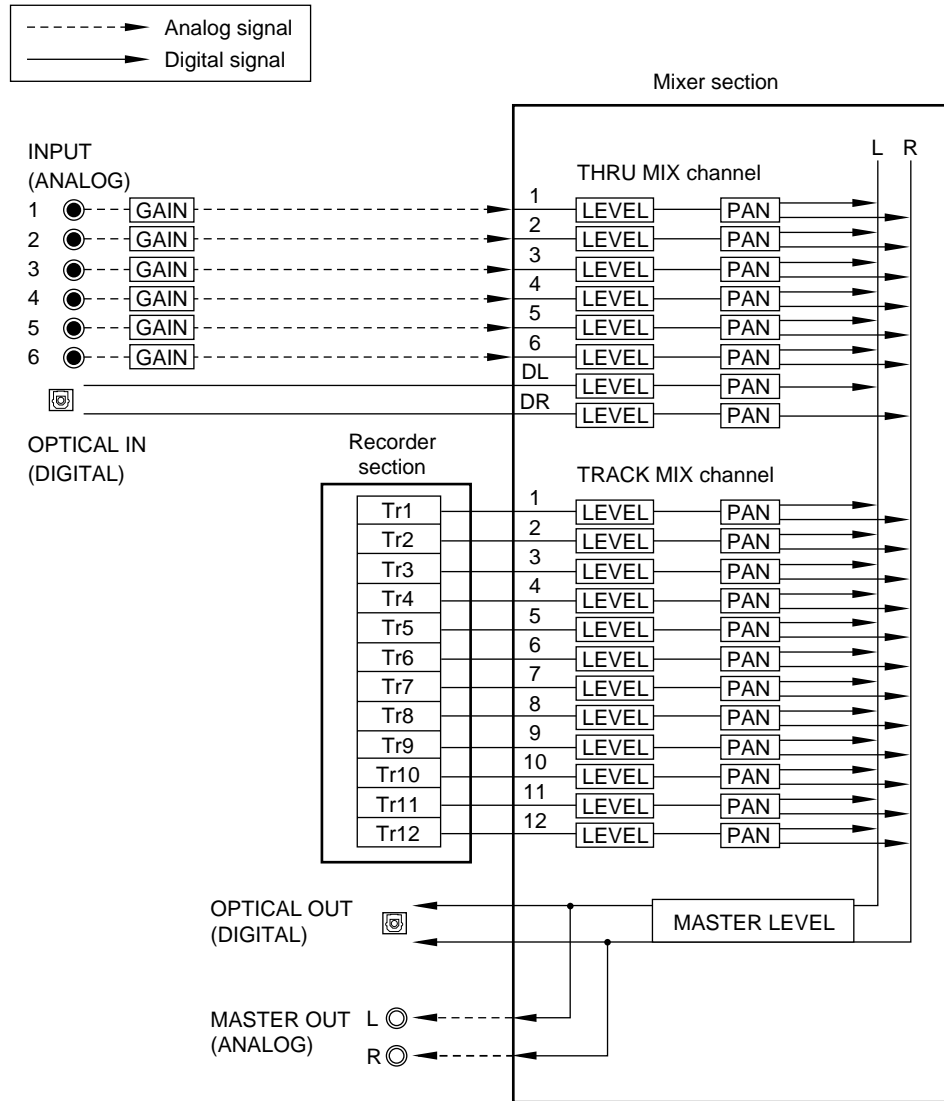
A typical signal flow when both TRACK MIX channels and THRU MIX channels are used

- You can route each input signal to a THRU MIX channel or to the recorder section individually. In this example, all input signals are sent to the THRU MIX channels. (This routing is done in Assign mode. Refer to page 52 for more information.)

- You can also set the mix-related parameters, such as the level, pan, channel on/off, EQ, and AUX send A/B, for the signals sent to the THRU MIX channels, as well as the signals sent to the TRACK MIX channels. Use Mixer mode to set the mix parameters for the THRU MIX channels. You cannot control the level and pan from the top panel. (Refer to page 58 for more information on Mixer mode.)

- The stereo mix signal of the THRU MIX channels and TRACK MIX channels is adjusted for the master level by the master fader on the top panel, then output from the MASTER OUT jacks (analog) and the OPTICAL OUT jacks (digital).

- You can use two-channel (A/B) internal effects in the digital domain if you have an optional effects board EB2M installed. In this case, each channel's AUX send A/B functions as an effect send. The return signal from the internal effects can be routed to the tracks for recording, or routed directly to the mixer section via the THRU MIX channels.

INPUT GAIN

INPUT 1 (analog)
INPUT 2 (analog)
INPUT 3 (analog)
INPUT 4 (analog)
INPUT 5 (analog)
INPUT 6 (analog)
INPUT L (digital)
INPUT R (digital)

MIXER THRU

THRU EQ

ASSIGN THRU

LEVEL

MIXER THRU

SOLO

PAN

SEND B PRE/POST

SEND A PRE/POST

SEND A LEVEL

SEND B LEVEL

ASSIGN FX RTN

ASSIGN SOURCE

LEVEL 1-12

TRACK EQ

SOLO

PAN 1-12

SEND B PRE/POST

SEND A PRE/POST

SEND A LEVEL

SEND B LEVEL

PLAY MONITOR
MAIN
CONTROL PANEL

REC   PLAY
PHYSICAL TRACK
ASSIGN   V.TRK
VIRTUAL TRACK
HARD DISK

MIXER TRACK

MIXER THRU

MULTI
MULTI

ASSIGN FX RTN

MIXER EFFECT

SEND-A MASTER

SEND-B MASTER

AUX SEND A
AUX SEND B

* Any effects operation requires an optional EB2M effect board installed.

MASTER OUT L (analog)
MASTER OUT R (analog)
DIGITAL OUT L (digital)
DIGITAL OUT R (digital)

MASTER LEVEL

A B L R

*AUX mode is set to stereo.

THRU signal
or
TRACK playback signal

LEVEL

SOLO

PAN

AUX SEND PRE/POST

SEND LEVEL

SEND PAN

A B L R

Signal block diagram

About a scene memory

The DPS12 can store a set of mix parameter settings as a scene, and recall the scene later. A scene is stored as part of the Project in the disk. You can store multiple scenes in one Project. For example, you may store multiple scenes with different balance and EQ settings for mixdown, and audition and compare different mixes.

The following main parameters are stored in a scene.

- Channel level/master level settings (See page 61.)

- Channel panning (See page 61.)

- Channel AUX send A/B settings (send level, pre/post selection) (See page 64.)

- Channel EQ setting (See page 62.)

About DPS12's user interface

This section explains the basic operation of the DPS12, such as using the display and changing the values.

Using the display

Various information required for operating the DPS12, such as the current position, mix parameter settings, etc., appears on the display. The information varies depending on which key you operate (such as a mode key, edit point key, locate key, etc.).

■ Screen

A display that appears when you press a mode key is called "screen." For example, the following display is a MAIN screen that is recalled when you turn on the power to the DPS12 or when you press the [MAIN] key. You will use this screen for recording and playback.
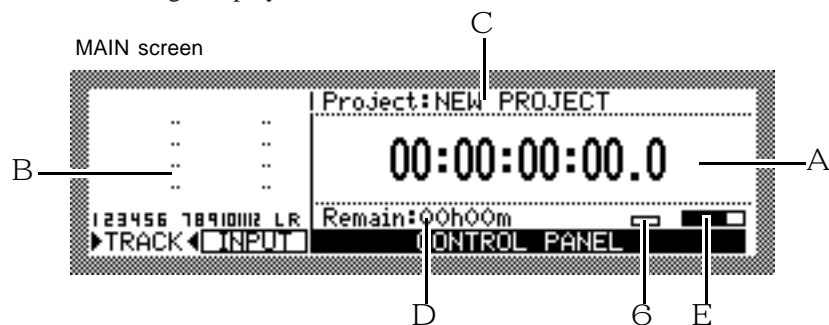
MAIN screen

The MAIN screen shows the following information:

1   Time counter .... Indicates the current transport position. You can enter a value into the time counter to move to a desired position.

> ✎ **TIP :** *The DPS12 displays the time counter using hour, minute, second, frame, and sub-frame unit. The term "frame" is borrowed here from the world of motion picture film and video, in which each still image from the sequence of images that appear or a strip of film is called a "frame." You can change the number of frames in the Control Panel (page 88). A sub-frame is a unit obtained by dividing a frame by ten.*
>
>
>
> hour   minute   second   sub-frame
> frame

2   Level meter .... Indicates the output level of the physical tracks, the input level at the INPUT jacks, or the output level of the AUX send A/B or the master output.

3   Project name .... Indicates the name of the Project you are currently working on.

4   Remaining time .... Indicates the remaining time available for recording on the disk.

5 Busy meter .... This meter indicates that the disk is being accessed. The more the meter is moves, the more frequently the disk is being accessed.

6 Disc access indicator ... This indicator lights up when the disk is being accessed.

Pressing any mode key other than the [MAIN] key in the MAIN screen will show the screen of the corresponding mode. For example, pressing the [TRACK VIEW] key will switch to Track View mode and the TRACK VIEW screen will appear.

The TRACK VIEW screen indicates the length of recorded data for each physical track in a bar graph. Remember that depending on which mode key you press, the screen will change.

■ Function key display

Sometimes, function names appear on the bottom of the screen as shown below. These are the functions that correspond to function keys ([F1] key – [F6] key).
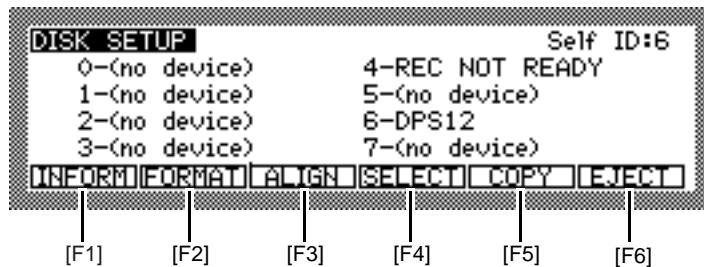
Function keys are special keys in that each of them does not have a single fixed function, but has different functions depending on the screen currently shown in the display. For example, pressing the [F2] key in the DISK SETUP screen as shown above will execute the disk format function.

■ Control panel

Pressing one of the [F3] – [F6] keys in the [MAIN] screen will switch the screen to the Control Panel screen as shown below.

MAIN screen

↓

Press one of [F3] – [F6] keys.

↓
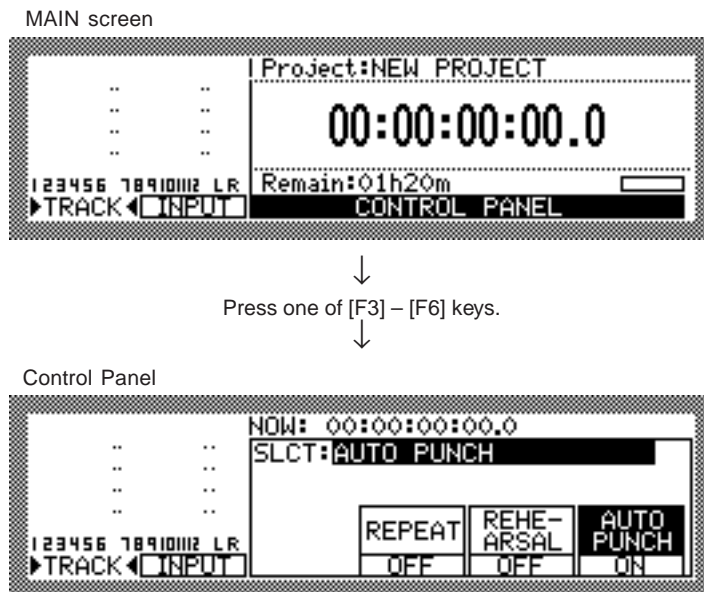
Control Panel

The Control Panel screen is used to set various parameters on the DPS12. Pressing a mode key after the setting is complete will take you to the corresponding mode screen.

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■ **Field and cursor**

The parameter values that are shown on the display and that can be modified are called "fields." The high-lighted part of the screen is called the "cursor." The field currently highlighted by the cursor indicates that the field is selected for editing. If there are multiple fields in a screen, use the [CURSOR] key to move the cursor to the desired field.

CURSOR   CURSOR
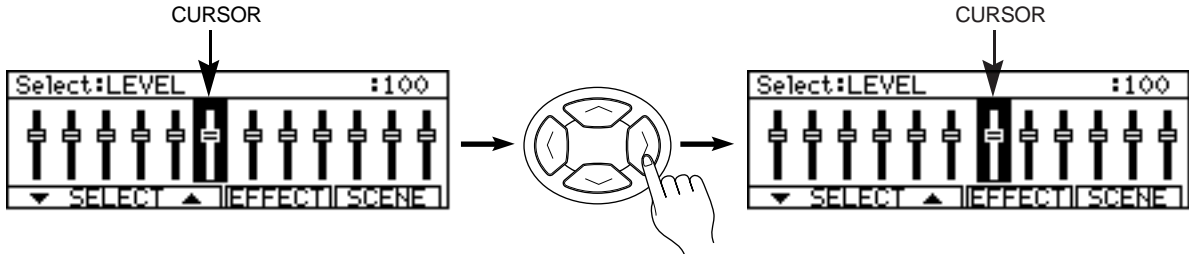
Fields are categorized as follows:

• **Select field**
  This type of field offers options you choose from.

• **Numeric field**
  In this type of field, you can change the parameter value.

• **Time field**
  In this type of field, you can change the time on the counter and the locate point.
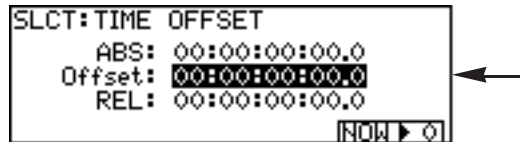
• **Character field**
  This type of field is used to name the locate point, virtual tracks, and Projects.

• **Graphic field**
  This type of field indicates the mix parameter settings graphically.

■ **Window**

When you press the [UNDO] key, [GO TO] key, or [MEMORY] key, a window appears on the screen.

```
            LOCATE MEMORY
       Press CHANNEL SELECT or
       IN/OUT key to memorize.
       Time: 00:02:54:09.7
12345  Name:(no name)
▶TRA  CANCEL STORE TO LOCATE LIST
```

A window is used to make a setting or operate a function that varies depending on the key you pressed. As you do in a normal screen, you can change the parameter settings by moving the cursor to the desired parameter, or use the function keys to execute the desired function. After the function or operation is complete, the previous screen will be restored.

Changing a setting or a value

This section describes how to change the time on the counter, and the settings and values of the fields.

■ **Using the [JOG] dial to change the setting (select field/numeric field/time field/graphic field)**

Use the JOG dial to edit the parameter settings of the select fields, numeric fields, time fields, and graphic fields.

1. Use the [CUROSOR] key to move the cursor to the field you wish to edit.
2. Rotate the [JOG] dial to change the setting.

SLCT:AUTO PUNCH → SLCT:VARI PITCH

Undo level:249 → Undo level:250

00:00:00:00.0 → 00:00:00:00.1

Select:LEVEL :100 → Select:LEVEL :109
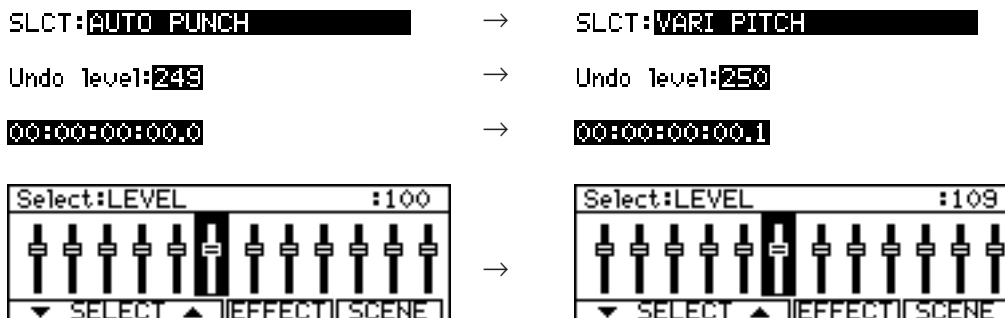
> ✎ **TIP :** Use the [SHUTTLE] dial to select a digit to edit when a time field is selected. First rotate the [SHUTTLE] dial to select a digit to change, then use the [JOG] dial to change the value.

NOW: 00:00:00:00.0 → NOW: 00:00:00:00.0 → NOW: 00:00:00:00.0

■ **Entering a numeric value directly (time counter/time field)**

You can use the keys on the top panel to directly enter a value for the time counter, and time field on the MAIN screen. Follow the steps below:

1. **Use the [CURSOR] key to move the cursor to a time field.**

> ➥**NOTE :** *You do not need this step when you enter the time for the time counter in the MAIN screen.*

2. **Press the [NUMBER/NAME] key.**
   The [NUMBER/NAME] key's LED flashes, and the keys on the top panel function as numeric keys.

3. **Use the [CHANNEL SELECT] 1–10 keys to enter a desired number (1–9, 0).**
   The [CHANNEL SELECT] 1–10 keys function as numeric keys 1–9, 0.

   For example, if you wish to enter 1 hour 25 minutes 43 seconds for the time counter or a time field, press the [CHANNEL SELECT] 1–10 keys in the following order:

   __:__:__:__.1 → __:__:__:_1.2 → __:__:__:12.5 → __:__:_1:25.4

     → __:__:12:54.3 → _1:25:43:00.0

4. **Press the [NUMBER/NAME] key again.**
   This time, the [NUMBER/NAME] key functions as an [ENTER] key. The [NUMBER/NAME] key's LED turns off, and the entered number is confirmed. If you wish to cancel the entered number, press the [SOLO] key (which functions as a [CANCEL] key) to go back to the previous display.

■ **Using the [JOG] dial to enter characters (character field)**

1. **Use the [CURSOR] key to move the cursor to a character field.**

   ```
   Time: 00:02:54:09.7
   Name:(no name)
   CANCEL STORE TO LOCA
   ```

2. **Press the [NUMBER/NAME] key.**
   The [NUMBER/NAME] key's LED flashes and an underline appears under the first character in the character field. This underline indicates that you can enter a character.

   ```
   Time: 00:02:54:09.7
   Name:_
   CANCEL STORE TO LOCA
   ```
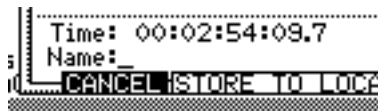
3. **Rotate the [JOG] dial to select a character to enter.**
   The following numbers, letters, and symbols can be selected by the [JOG] dial.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	[	¥	]	^	_	└
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	¯		!
"	#	$	%	&	'	(	)	*	+	,	-	.	/	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?	@	

   ```
   Time: 00:02:54:09.7
   Name:M
   CANCEL STORE TO LOCA
   ```
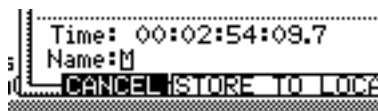
4. **Use the [CURSOR] key or the [SHUTTLE] dial to move the underline to the second character position.**

    While the [NUMBER/NAME] key's LED is flashing, you can move the underline back and forth using the [CURSOR] key or the [SHUTTLE] dial.

    ```
    Time: 00:02:54:09.7
    Name:M_
    CANCEL STORE TO LOCA
    ```
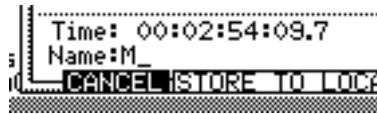
5. **Repeat Steps 3 and 4 to complete naming.**

    If you enter a wrong character, use the [CURSOR] key or the [SHUTTLE] dial to move the underline to the character you wish to correct.
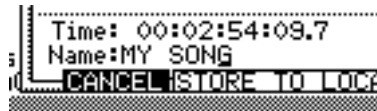
    ```
    Time: 00:02:54:09.7
    Name:MY SONG
    CANCEL STORE TO LOCA
    ```

6. **Press the [NUMBER/NAME] key again.**

    This time, the [NUMBER/NAME] key functions as an [ENTER] key. The [NUMBER/NAME] key's LED turns off, and the entered characters are confirmed. If you wish to cancel the entered character, press the [SOLO] key (which functions as a [CANCEL] key) to return to the previous display.

■ Entering characters directly (character field)

You can enter characters directly into a character field by using the keys on the top panel.
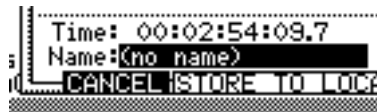
1. **Use the [CURSOR] key to move the cursor to a character field.**

    ```
    Time: 00:02:54:09.7
    Name:(no name)
    CANCEL STORE TO LOCA
    ```

2. **Press the [NUMBER/NAME] key.**

    The [NUMBER/NAME] key's LED flashes, and the keys on the top panel function as number/letter keys. Alphabets, numbers, and symbols are printed below the keys. The following characters can be entered.

1	2	3	4	5	6	7	8	9	0	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
W	X	Y	Z	&	#	(Space)																									

3. **Press the key that corresponds to an alphabet, number, or symbol you wish to enter.**

    The character that corresponds to the pressed key is entered and the underline moves to the right.

    ```
    Time: 00:02:54:09.7
    Name:M_
    CANCEL STORE TO LOCA
    ```

4. **Repeat Step 3 repeatedly to complete naming.**
5. **Press the [NUMBER/NAME] key again.**

    This time, the [NUMBER/NAME] key functions as an [ENTER] key. The [NUMBER/NAME] key's LED turns off, and the entered characters are confirmed. If you wish to cancel the entered character, press the [SOLO] key (which functions as a [CANCEL] key) to return to the previous display.

Chapter 2: Recording on the DPS12

This chapter describes basic operations of the DPS12, including recording preparation, recording the first part, overdubbing, mixdown to a master recorder.

Connections

The diagram below is an example of basic connections for recording on the DPS12.
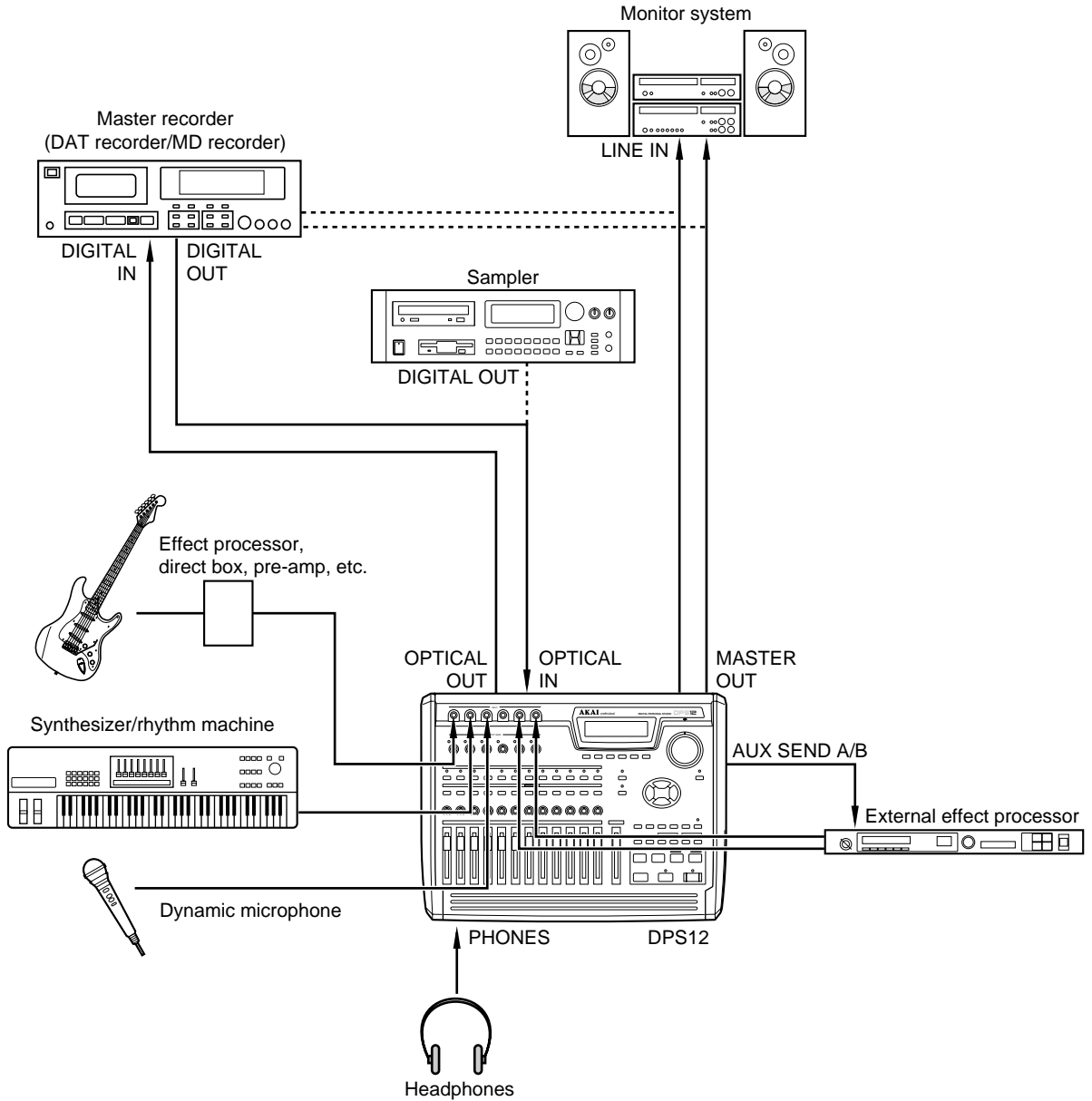
⚠ **CAUTION :** *Make sure that you turn off the power to all equipment before making connections.*

➥ **NOTE :** *DIGITAL OUT jacks on AKAI sampler are of the coaxial type. You will need an optical converter to connect a sampler to input digital signals to the DPS12.*

■ **Connecting sound sources**

You can connect line-level instruments, such as a synthesizer or a rhythm machine, and dynamic microphones directly to INPUT jacks 1–6. We recommend that you connect instruments with a high output impedance, such as an electric guitar or a bass guitar, via a compact effect processor, pre-amp, or direct box.

■ **Connecting a monitor system**

Connect a monitor system, such as audio equipment, to the MASTER OUT jacks. If you are using the DPS12 with a master recorder connected all the time, connect the output jacks of the master recorder to the monitor system.

■ **Connecting a master recorder**

If you use a master recorder that has digital input jacks, such as a DAT recorder or an MD recorder, connect the OPTICAL OUT jacks of the DPS12 to the digital input jacks of the master recorder, and the output jacks of the master recorder to the monitor system.

> ✎ *TIP :* *If the digital I/O jacks of the master recorder are coaxial, you will need an optical/coaxial converter.*

Similarly, if you use an analog recorder as the master recorder, connect the MASTER OUT jacks of the DPS12 to the input jacks of the master recorder, and the output jacks of the master recorder to the monitor system.

In either case, switch the master recorder to input monitoring status (monitoring the input signal) in order to record or play back on the DPS12, and switch the recorder to tape monitoring status (monitoring the playback sound) in order to play back the master recorder.

■ **Connecting a device that has digital output jacks**

To input signals from a device that has digital output jacks, such as a DAT recorder, MD recorder, sampler, etc., into the DPS12, connect the digital output jacks of the external device to the OPTICAL IN jacks of the DPS12.

> ➟ *NOTE :* *When you connect digital inputs, make sure that the sampling rate of the connected digital device matches that of the DPS12. (See page 73.)*

■ **Connecting an external effect unit**

To use external effects, such as reverb and delay, connect the AUX SEND A/B jacks of the DPS12 to the input jacks of the external effect unit, and the output jacks of the effect units to the INPUT jacks of the DPS12.

Preparing to record

This section explains the necessary preparations for recording.

Turning on the power to the DPS12

1. Turn on the power to the peripheral devices, excluding the DPS12 and the monitor system.

The sequence for turning on the power to each device is: peripheral devices (such as tone generator, external SCSI device) $\longrightarrow$ DPS12 $\longrightarrow$ monitor system.

Reverse this order when you turn off the power.

2. Turn on the power to the DPS12.

> ⚠ **CAUTION :** *Do not insert a JAZ disk into the JAZ drive on the front panel before you turn on the power to the DPS12. If you turn the power on or off while a JAZ disk is inserted in the drive, the disk may be damaged and recorded data may be lost.*

When you turn on the power to the DPS12, the following initial screen appears.

```
DPS12 Version:1.00      Searching for disk.....
Controller Revision:2
Memory Test             Insert formatted disk
Controller Initialize OK  or press SKIP.
SCSI Initialize OK
DSP Initialize OK                    [SKIP]
```
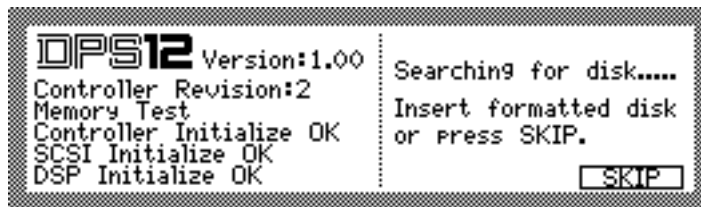
3. Press the SKIP [F6] key.

The following screen (called the MAIN screen) appears on the display.

```
                  |Project:NEW PROJECT
        ..    ..
        ..    ..     00:00:00:00.0
        ..    ..
123456 78910II12 LR |Remain:00h00m      ▉▯
▶TRACK◀[INPUT]      CONTROL PANEL
```

4. Turn on the power to the monitor system.

Formatting a JAZ disk

Before you can use a JAZ disk on the DPS12, you first need to format the disk. Follow the procedure below to format a disk. (Ignore this procedure if you use a pre-formatted disk.)

1. Insert a JAZ disc into the JAZ drive.

2. Press the [DISK] key.

The display changes as follows:

```
DISK SETUP                    Self ID:6
   0-(no device)    4-REC NOT READY
   1-(no device)    5-(no device)
   2-(no device)    6-DPS12
   3-(no device)    7-(no device)
[INFORM][FORMAT][ALIGN][SELECT][COPY][EJECT]
```
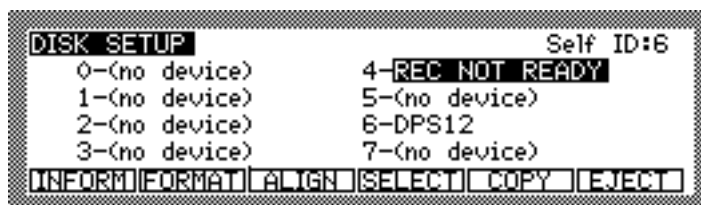
This is a DISK SETUP screen where you can make settings for the JAZ drive or an external hard disk. In this example, the screen shows the status of connected drives with SCSI ID numbers 0–7. The SCSI ID of the JAZ drive is 4, and that of the DPS12 is 6. Also, this DISK SETUP screen displays six functions on the bottom line, which you can recall using the [F1] – [F6] keys.

3. Use the [CURSOR] key to move the cursor to the select field for SCSI ID 4, and press the FORMAT
[F2] key.
The following window appears.

```
┌────────── FORMAT DISK ──────────┐
│            SCSI ID=4            │
│ Format operation:█FORMAT█       │
│ ................................ │
│ Formatting will totally wipe    │
│ selected disk!!                 │
│ █CANCEL█               █DO IT█  │
└─────────────────────────────────┘
```

4. Rotate the [JOG] dial to select FORMAT for the select field that currently indicates Format opera-
tion.

> ⚠ **CAUTION :** *When you perform the format operation, all existing data on the disk will be erased. If an
> external SCSI device, such as a hard disk or an MO drive is connected to the SCSI connector of the
> DPS12, make sure that the SCSI ID field in this screen is set to "4" (internal JAZ drive) so that you will
> not erase important data from other disks.*

5. Press the DO IT [F5] key.
The CAUTION!! window appears, asking whether you are sure you want to format the disk.

```
┌────────── CAUTION!! ──────────┐
│            SCSI ID=4          │
│                               │
│     FORMATTING WILL TOTALLY   │
│     WIPE THIS DISK!!          │
│ █CANCEL█              █DO IT█ │
└───────────────────────────────┘
```

6. Press the DO IT [F5] key again.
The following window appears during the format operation.

```
┌────────── Processing..... ──────────┐
│                                     │
│            Please wait.             │
│                                     │
│                                     │
└─────────────────────────────────────┘
```
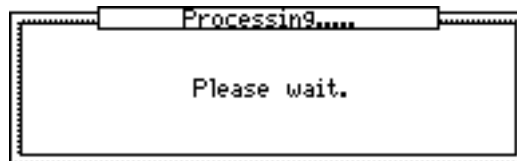
> ✎ **TIPS :**
> • *To cancel the format operation and go back to the DISK SETUP screen in Step5, 6, press the CANCEL*
>   *[F2] key instead of the DO IT [F5] key.*
> • *If you use an external SCSI device, such as a hard disk or an MO drive, you need to format it. Select the*
>   *SCSI ID for the corresponding external SCSI device in Step 2, then continue with the procedure.*

Creating a new Project

Since the DPS12 requires that at least one project exists on the current disk for recording, the following window for creating a new Project automatically appears when the format operation is complete.

```
┌────────┤ NEW PROJECT ├────────┐
│ Project name:NEW PROJECT      │
│                               │
│  Pressing DO IT will create   │
│  new empty project.           │
│                        ┌DO IT┐ │
└───────────────────────────────┘
```

The **Project name** field indicates the name of the Project you are creating.

1. **Press the [NUMBER/NAME] key.**
   An underline appears as follows, enabling you to name a new Project.

```
┌────────┤ NEW PROJECT ├────────┐
│ Project name:NEW PROJECT      │
│                               │
│  Pressing DO IT will create   │
│  new empty project.           │
│                        ┌DO IT┐ │
└───────────────────────────────┘
```
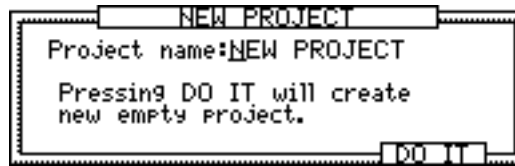
2. **Use the [JOG] dial, or alphabet keys and the [CURSOR] key, or the [SHUTTLE] dial to enter characters.**

```
┌────────┤ NEW PROJECT ├────────┐
│ Project name:SONG 1           │
│                               │
│  Pressing DO IT will create   │
│  new empty project.           │
│                        ┌DO IT┐ │
└───────────────────────────────┘
```
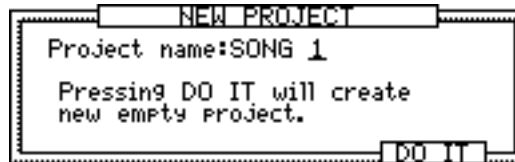
> ✐ **TIP :** *Refer to page 18, 19 for information on how to enter characters.*

3. **Press the [NUMBER/NAME] ([ENTER]) key to confirm the name.**

```
┌────────┤ NEW PROJECT ├────────┐
│ Project name:SONG 1           │
│                               │
│  Pressing DO IT will create   │
│  new empty project.           │
│                        ┌DO IT┐ │
└───────────────────────────────┘
```
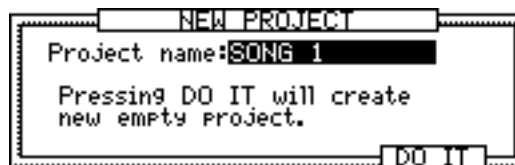
> ➤ **NOTE :** *If you do not press the [NUMBER/NAME] ([ENTER]) key, the changed name will not be confirmed.*

4. **Press the DO IT [F5] key.**
   The DPS12 creates a new Project with a new name, and the display returns to the MAIN screen.

MAIN screen and TRACK VIEW screen

The MAIN screen or TRACK VIEW screen can be useful when you are recording or playing back on the DPS12. (You can use the transport function and the locate function on either screen.) This section explains how to use the **MAIN screen** and **TRACK VIEW screen**.

MAIN screen

The MAIN screen is a start point for various operations on the DPS12. When you turn on the power to the DPS12, this screen always appears if a formatted disk (that contains a Project) is in the disk slot. The following information is included in the MAIN screen.
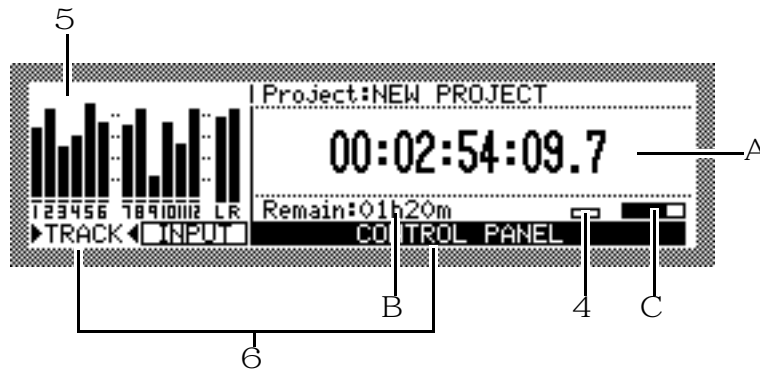
1 **Time counter**

The time counter indicates the current recording or playback time. You can also enter a time value here to move to the desired position. (See page 47.)

2 **Remaining time**

This field indicates a remaining time available for recording on the JAZ disk (or a connected external hard disk). If some tracks have been selected by the [RECORD SELECT] keys, this field indicates the total of available recording time on those tracks. If all [RECORD SELECT] keys are turned off, this field indicates available recording time for a single track.

3 **Busy meter**

This meter indicates that the inserted JAZ disk (or the connected external hard disk) is being accessed. The more the meter is moving, the more frequently the disk is being accessed.

4 **Disc access indicator**

This indicator lights up when the disk is being accessed.

⚠ **CAUTION :** *Do not turn off the power to the DPS12 while the disk is being accessed. Otherwise, the JAZ disk or connected external hard disk may be damaged, and the data may be lost forever.*

5 **Level meter**

The level meters indicate input levels and output levels. The meters have two different functions: TRACK level meter and INPUT level meter. These functions are switched via the **TRACK** [F1] key/ **INPUT** [F2] key. (▶◀ mark appears on the selected function's name.)

Level meters when INPUT is selected

Maximum (clipping)

- 1–6 .... Input level of analog INPUT jacks 1–6

- DLR .... Input level of digital OPTICAL IN jacks L/R

- SAB .... Output level of AUX send A/B

- LR .... Output level of master L/R

Level meters when TRACK is selected

Maximum (clipping)

Already recorded tracks

- **1 – 12** .... Output level of tracks 1–12
- **LR** .... Output level of master L/R

6 **Function display**

The names of the functions appear on the bottom of the screen. The [F1] key/[F2] key are used to switching the INPUT level meters/TRACK level meters, and the [F3] key – [F6] key are used to recall the Control Panel.

TRACK VIEW screen

Pressing the [TRACK VIEW] key while the MAIN screen is displayed will cause the DPS12 to enter TRACK VIEW mode, and the TRACK VIEW screen will appear. In this screen, data in each track is represented by a bar graph, if any, and the range between the IN point and the OUT point (used to specify the range for the Auto Punch In/Out operation or the edit functions) is highlighted. This screen is useful when you mark the Auto Punch In/Out points or specify the range for editing.
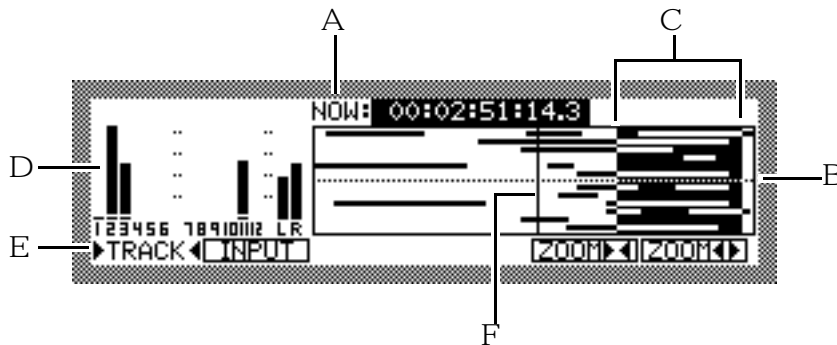
1 **NOW: field**

This time field indicates the current position. You can also enter the time directly.

2 **Bar graph**

If a track contains data, it is represented by a bar graph. Any recorded area (even if it is a silence) is represented by a bar graph.

3 **IN point/OUT point range**

The range between the IN point and the OUT point is highlighted.

4 **Level meters**

These are the same level meters as those that appear in the MAIN screen.

5 **Function display**

The names of the functions appear on the bottom of the screen. The [F1] key and [F2] key are used to switch between the INPUT level meters and TRACK level meters, and the [F5] key and the [F6] key are used to zoom in and out on the bar graphs.

6 **Now point**

This vertical line indicates the position currently shown in the **NOW** field.

Recording the first track

This section explains how to record the first track, using an example of recording a rhythm machine connected to the INPUT jacks 1/2 into tracks 1/2.

Recording signal flow

The diagram below shows the signal flow for recording tracks 1 and 2.
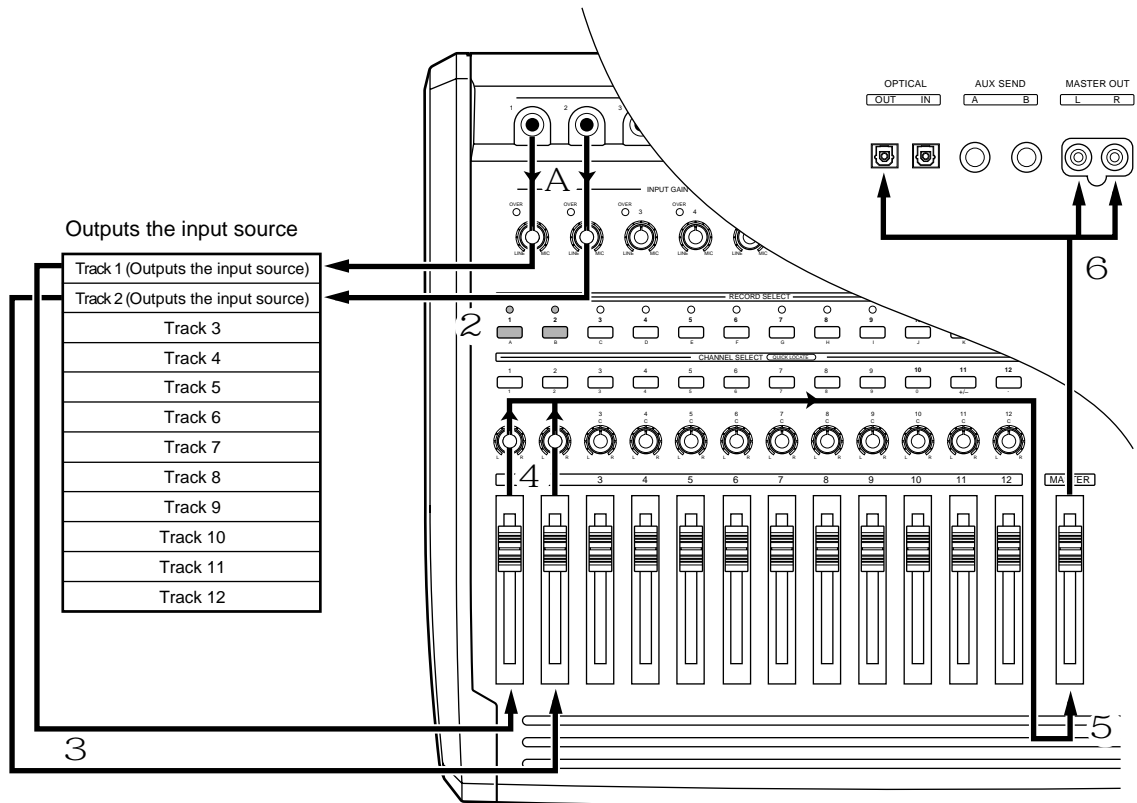
Recording signal flow

1 With the DPS12's default settings, signals input at INPUT jacks 1/2 are sent via [INPUT GAIN] controls to physical tracks 1/2 of the recorder section.

2 Press the [RECORD SELECT] keys 1 and 2 on the top panel to cause tracks 1 and 2 to enter recording-ready status.

3 Output signals from tracks 1 and 2 are directed to TRACK MIX channels 1/2 of the mixer section. At this time, the input source signals (the signal input to the tracks selected by the [RECORD SELECT] keys) are output whether the transport section is stopped or recording.

4 You may adjust the level and pan setting of the TRACK MIX channel 1/2 signals using the channel faders 1/2 and the [PAN] controls 1/2 on the top panel.

5 Signals that have passed through the channel faders and the [PAN] controls are mixed into a stereo signal, then routed to the [MASTER] fader.

6 The signal adjusted by the [MASTER] fader for output level is output from the MASTER OUT jacks and the OPTICAL OUT jacks.

Recording to the first track

1. **Connect the output jacks of a rhythm machine to INPUT jacks 1/2.**

2. **Press the [RECORD SELECT] keys 1/2.**
   When you turn on the [RECORD SELECT] key (and its LED flashes in red), the corresponding track enters record ready mode. The type of signal output from each track varies depending on the status of the DPS12 and the status of the [RECORD SELECT] key for each track.

	Stop	Playback	Recording
Tracks that have their [RECORD SELECT] keys turned on	Input source	Track playback	Input source
Tracks that have their [RECORD SELECT] keys turned off	—	Track playback	Track playback

   In this example, the input source signal (the currently-input rhythm machine sound) is output from tracks 1/2 when the DPS12 is stopped or recording.

   > ✐ **TIP :** *You can also monitor the input source through the tracks that have their [RECORD SELECT] keys on during the playback operation. Refer to page 54 for more information.*

3. **Play the rhythm machine, and adjust the [INPUT GAIN] controls 1/2 while checking the level meters, so that the peak indicators will not light up with the maximum signal level.**
   Try to raise the [INPUT GAIN] controls as high as possible while making sure that the peak indicators do not light up.

   > ✐ **TIP :** *With the DPS12's default setting, the INPUT jacks 1–6 are internally routed to tracks 1–6 and 7–12. However, you can change the input assignment to each track. Refer to page 90 for more information.*

4. **Raise the channel faders 1/2 and the [MASTER] fader to the position marked with ☰ and pan the signals using the [PAN] controls 1/2.**
   Raise the channel faders 1/2 and the [MASTER] fader to monitor the rhythm machine sound via the MASTER OUT jacks. Use the [PAN] controls to set the panning.

   > ➥ **NOTE :** *Remember that the signal you are monitoring now is a signal output from the recorder section, not a signal input to the recorder section. Operating the channel faders and the [PAN] controls will not affect a signal recorded to a track. However, you can apply equalization to the input source signals to record to a track. Refer to page 62 for more information.*

5. **Press the TRACK [F1] key and check the tracks 1/2 output level and the master L/R output level.**

   > ✐ **TIP :** *With the DPS12's default settings, the TRACK level meters indicate the output level of the pre-fader signals (before the signal passes the channel faders). However, you can change this to the post-fader signal (the signals that passed through the channel faders). Refer to page 95 for more information.*

6. **Press the [►] key while holding down the [REC] key.**
   Recording starts on the tracks that have the [RECORD SELECT] keys turned on.

7. **Press the [▪] key when recording is complete.**
   At this time, "_" appears at the TRACK level meters 1/2, which means that these tracks have recorded data.

Indicating that tracks 1/2 have recorded data. ———

```
                              │Project:NEW PROJECT
    ··        ··              │
    ··        ··              │ 00:00:00:00.0
    ··        ··              │
 T23456 78910112 LR │Remain:01h20m          ■□
▶TRACK◀ INPUT │        CONTROL  PANEL
```
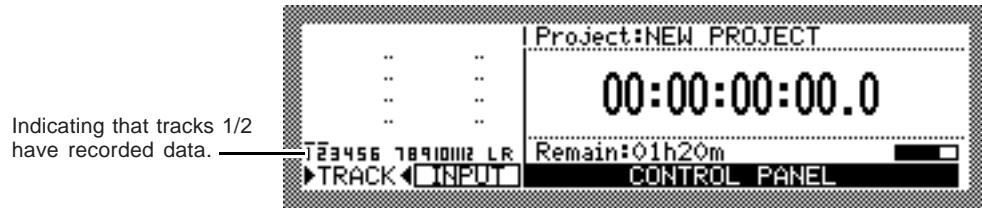
8. **Press the [◄◄] key to check the recorded tracks.**

   > ✎ **TIP :** *To locate a point, you can use various methods besides using the transport keys. Refer to "Chapter 3: Transport/Locate operation."*

9. **Press the [►] key to start playback from the top of the song.**
   When the DPS12 play back data, you can monitor the recorder's playback sound through any track, regardless of the on/off status of their [RECORD SELECT] keys.

10. **If you are satisfied with the recording on the tracks, press the [RECORD SELECT] keys 1/2 to cancel the record-ready status of tracks 1/2.**
    The LED of the corresponding [RECORD SELECT] keys turns off.

Using a locate point

After you have finished recording the first track, you may want to store the points (time values) where a tune or tone changes, such as the end of the intro, the start of the chorus, bridge, etc., as locate points before you start recording the next track. If you store locate points, they are useful when you wish to start recording in the middle of the song or redo recording repeatedly, since a simple key operation will locate the desired point (this operation is called "locating"). The PDS12 offers quick locate points that can be assigned to the [CHANNEL SELECT] keys 1–12, as well as normal locate points that can be named and stored in a list. This section describes how to store the quick locate points.

1. **Press the [►] key to play back the song from the beginning.**

2. **Press the [MEMORY] key at the point you wish to store as a quick locate point.**
   The display shows the LOCATE MEMORY window, in which you can store the locate point.

```
┌──────── LOCATE MEMORY ────────┐
│    Press CHANNEL SELECT or    │
│    IN/OUT key to memorize.    │
│                               │
│  Time: 00:02:54:09.7          │
│  Name:(no name)               │
│  CANCEL STORE TO LOCATE LIST  │
└───────────────────────────────┘
```

> ✏ **TIP :** *You can stop the transport section at a desired point and press the [MEMORY] key to store a quick locate point.*

3. **Press any one of the [CHANNEL SELECT] keys 1–12.**
   The LOCATE MEMORY window closes and the desired point is stored as a quick locate point in the selected [CHANNEL SELECT] key.

> ✏ **TIPS :**
> • *You may store locate points in the [IN] key and [OUT] key, instead of the [CHANNEL SELECT] keys. However, since the [IN] key and [OUT] key are also used to specify Punch In/Out points and edit regions, you may wish to first use the [CHANNEL SELECT] keys to store the locate points.*
> • *You can also name the locate points and store them in the list in the LOCATE MOEMRY window. Refer to "Chapter 3: Transport/Locate operation."*

4. **Repeat Steps 2–4 until necessary quick locate points are all stored.**

5. **To locate the stored quick locate point, press the [GO TO] key when the DPS12 is stopped.**
   The LOCATE LIST window appears where you can perform the locate operation.

```
┌──────── LOCATE LIST ────────┐
│  Select:GO TO               │
│                             │
│                             │
│  CANCEL TO◄RTN GO►END DO IT │
└─────────────────────────────┘
```
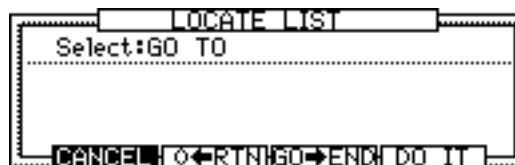
6. **Press the [CHANNEL SELECT] key that is assigned to the quick locate point.**
   The LOCATE LIST window closes and the DPS12 locates the specified point.

> ✏ **TIP :** *You can select a locate point stored in the list in the LOCATE LIST window or locate the top or the end of the song. Refer to "Chapter 3: Transport/Locate operation" for more information.*

Overdubbing

"Overdubbing" is a recording operation in which you record another part in a new track while monitoring the playback sound from tracks that have already been recorded. In this example, we overdub a bass guitar sound on track 3 while listening to the rhythm machine recorded on tracks 1 and 2.

Overdubbing signal flow

The diagram below shows a typical signal flow of overdubbing in track 3 while monitoring tracks 1/2.
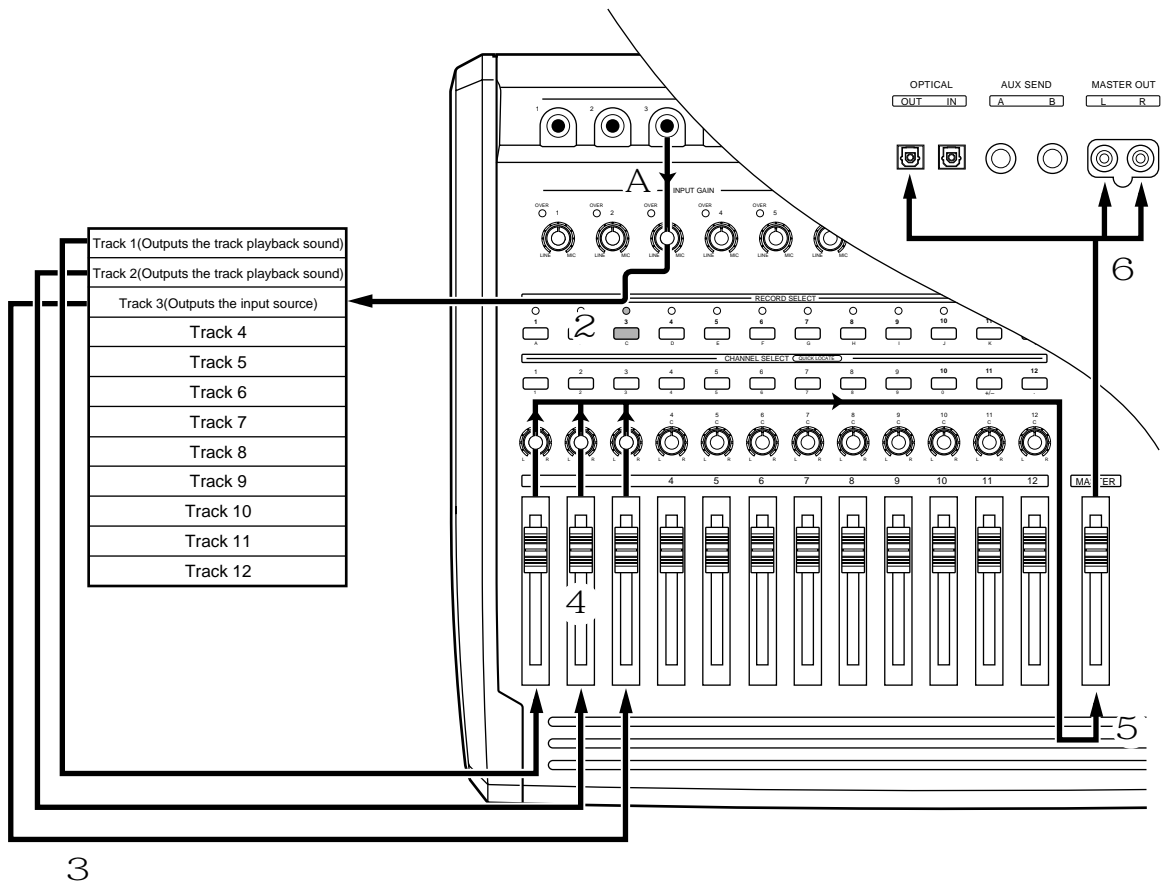
Overdubbing signal flow

1 With the DPS12's default settings, signal input at the INPUT jacks 3 is sent via [INPUT GAIN] controls to physical track 3 of the recorder section.

2 . Press the [RECORD SELECT] key 3 on the top panel to place track 3 in recording ready status.

3 Output signals from tracks 1–3 are directed to TRACK MIX channels 1–3 of the mixer section.

4 You may adjust the level and pan settings of the TRACK MIX channel 1–3 signals using channel faders 1–3 and [PAN] controls 1–3 on the top panel.

5 Signals that passed through the channel faders and the [PAN] controls are mixed into a stereo signal, then routed to the [MASTER] fader.

6 The signal adjusted by the [MASTER] fader for the output level is output from the MASTER OUT jacks and the OPTICAL OUT jacks.

Overdub operation

1. **Connect the bass guitar to INPUT jack 3, and press the [RECORD SELECT] key of track 3.**
   Track 3 enters record ready mode. At this time, you can monitor the input source through track 3. You can apply equalization to the input source signals to record to a track. Refer to page 62 for more information.

2. **Play the bass guitar, and use [INPUT GAIN] control 3 to adjust the signal level while checking the level meters, so that the peak indicator will not light up even when the volume level reaches the maximum.**

   > ✍ *TIP : With the DPS12's default setting, INPUT jack 3 is internally routed to tracks 3 and 9. However, you can change the input assignment for each track. Refer to page 54 for more information.*

3. **Raise channel fader 3 to an appropriate position, then set [PAN] control 3 to the center position.**
   Now, you can monitor the bass guitar sound panned to the center.

4. **Press the [►] key while holding down the [REC] key.**
   Track 3 starts recording. Tracks 1 and 2 (for which the [RECORD SELECT] keys are turned off) output the track playback sound (that is, the previously recorded rhythm machine) and track 3 (for which the [RECORD SELECT] key is turned on) outputs the input source (the currently-input bass guitar). You can check the TRACK level meter for the output level of each track and the output level of the master L/R.

5. **When recording is complete, press the [■] key to stop the DPS12.**

   > ✍ *TIP : If you practice the electric bass before actually recording while listening to the drum sound, set the* **Monitor in Play** *field of PLAY MONITOR on the Control Panel to* **REC SOURCE** *(See page 90.) In this way, you can monitor the input sources while those tracks that have their [RECORD SELECT] keys turned on play the recorded data.*

Using the Undo/Redo functions

If you are not satisfied with a recording, you can use the Undo function to cancel the previous recording. With the DPS12's default setting, the undo level is set to "1." (The undo level is a parameter that determines the number of previous operations you can undo. The setting "1" means that you can restore one previous operation.) You can set this value in the range of 0 to 250, inclusive. (See page 95 for more information.) The operation of the Undo function differs slightly different between undo level 1 and undo level 2 or higher.

Undo level = 1 (default setting)

1. **Right after you make a recording, press the [UNDO] key.**
   One previous take that was recorded or edited is stored on the disk. Pressing the [UNDO] key causes the DPS12 to return to the status before the most current recording or edit. The LED above the [UNDO] key will light up. (Undo)

2. **If you wish to cancel the undo operation, press the [UNDO] key again.**
   Pressing the [UNDO] key again after the undo operation will restore the status obtained before you performed the undo operation. The LED will turn off. (Redo) However, if you made a new recording or edit after the undo operation, the take that was cancelled by the first undo operation will be discarded.

- Undo level = 1
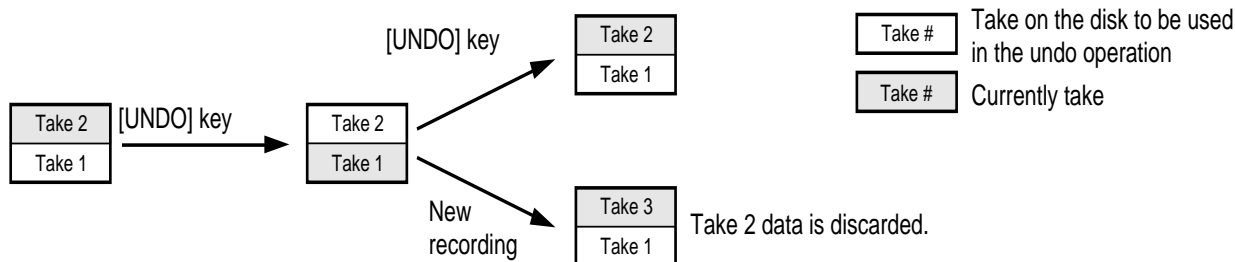
Undo level = 2 or higher

When the undo level is set to 2 or higher, the corresponding number of takes are stored on the disk. Press the [UNDO] key and specify the number of operations you wish to be able to return to.

1. **Right after recording or editing is complete, press the [UNDO] key.**
   The UNDO window appears, in which you may specify the number of operations you wish to undo.

```
                    UNDO

        Number of steps: 4

    CANCEL                    DO IT
```

2. **Turn the [JOG] dial to enter the number of undo operations.**
   For example, if you wish to return to the fourth previous status, enter "4."

3. **Press the DO IT [F5] key.**
   The DPS12 returns to the previous status you specified, and the LED above the [UNDO] key lights up.

4. **Press the [UNDO] key again to cancel the undo operation.**
   The UNDO window appears again and you can set the number of undo operations. At this time, setting the **Number of Steps** field to "0" and pressing the **DO IT** [F5] key will restore the status obtained before the undo operation, and the LED will turn off (Redo). However, if you have made mad a new recording or edit after the undo operation, the take that was cancelled by the first undo operation will be discarded.

• **Undo level = 5**

| Take # | Take in the disk to be used in the undo operation |

| Take # | Current take |

Take 6
Take 5
Take 4
Take 3
Take 2
Take 1

[UNDO] key
Number of steps: 4

Take 6
Take 5
Take 4
Take 3
Take 2
Take 1

Returns to the fourth previous status.

[UNDO] key
Number of steps: 0

Take 6
Take 5
Take 4
Take 3
Take 2
Take 1

Returns to the previous status.

[UNDO] key
Number of steps: 2

Take 6
Take 5
Take 4
Take 3
Take 2
Take 1

Returns to the second previous status.

New recording

Take 7
Take 2
Take 1

Take 3, 4, 5, and 6 data are discarded.

> ➤➤**NOTES :**
> • *Remember that the higher the undo level, the greater the data that must be stored on the disk, thus reducing available recording time.*
> • *If you set the undo level to 0, pressing the [UNDO] key will not activate the Undo function.*

Punch In/Out

The Punch In/Out function enables you to re-record only a specified region on an already-recorded track. The DPS12 offers a "Manual Punch In/Out function" that uses the transport keys and a foot switch, and an "Auto Punch In/Out function" that automatically performs the punch in/out operation at specified positions. In this example, we will modify part of the bass guitar performance recorded on track 3, using the Auto Punch In/Out function. First, you need to specify and store the punch in point (IN point) and the punch out point (OUT point).

1. **Press the [►] key to play back the song from the beginning.**

2. **Press the [MEMORY] key at the point where you wish to punch in.**
   The LOCATE MEMORY window appears.

```
┌─────────────────────────────┐
│      LOCATE MEMORY           │
│  Press CHANNEL SELECT or     │
│  IN/OUT key to memorize.     │
│ ...........................  │
│  Time: 00:02:54:09.7         │
│  Name:(no name)              │
│  CANCEL STORE TO LOCATE LIST │
└─────────────────────────────┘
```

3. **Press the [IN] key.**
   The LOCATE MEMORY window closes and the captured time is stored in the [IN] key. You can use the time (point) stored in the [IN] key (this is called "IN point") as a locate point, as well as a punch in point.

4. **In the same way, store the punch out point (OUT point) in the [OUT] key.**

5. **Press one of the [F3] – [F6] keys while the MAIN screen is displayed.**
   The Control Panel appears, where you can make various settings for the DPS12.

```
┌──────────────────────────────────────────┐
│         NOW: 00:00:00:00.0               │
│  ··      ··  SLCT:AUTO PUNCH             │
│  ··      ··                              │
│  ··      ··                              │
│  ··      ··  ┌──────┬──────┬──────┐      │
│ 123456 78910IIl2 LR│REPEAT│REHE- │AUTO  │ │
│ ►TRACK◄ INPUT      │      │ARSAL │PUNCH │ │
│                    │ OFF  │ OFF  │ OFF  │ │
└──────────────────────────────────────────┘
```

6. **Make sure that the AUTO PUNCH Control Panel shown above appears on the display. If another Control Panel appears, turn the [JOG] dial to recall the AUTO PUNCH Control Panel.**
   The AUTO PUNCH control Panel has three select fields: REPEAT, REHEARSAL, and AUTO PUNCH. Use the [F4] – [F6] keys to switch these fields on/off.

7. **Press the [F6] key to set only the AUTO PUNCH field to on.**
   Now the Auto Punch In/Out function is turned on.

```
┌────────────────────────────────┐
│ SLCT:AUTO PUNCH                │
│                                │
│ ┌──────┬──────┬──────┐         │
│ │REPEAT│REHE- │AUTO  │         │
│ │      │ARSAL │PUNCH │         │
│ │ OFF  │ OFF  │ ON   │         │
│ └──────┴──────┴──────┘         │
└────────────────────────────────┘
```
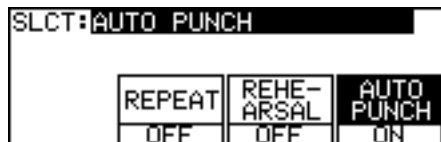
8. **Locate a point a little before the punch in point.**

> ✎ **TIP :** *It can be helpful to store a point about two measures before the punch in point as a quick locate point.*

9. **Make sure that [RECORD SELECT] key 3 is turned on.**

10. **Press the [►] key.**
    Playback starts. The [REC] key's LED flashes. At this time, you can monitor the playback sound (previously-recorded sound) via track 3.

11. **When the punch in point is reached, start playing the bass guitar.**
    When the time counter value reaches the IN point, the [REC] key's LED lights up, and the standby track starts recording (Auto Punch In). The signal you monitor through the recording track switches to the input source signal (the currently-recording sound).

    When the time counter value reaches the OUT point, the [REC] key's LED turns off and the DPS12 automatically resumes playback (Auto Punch Out).

12. Press the [■] key to stop playback.

> ✎ *TIPS :*
> • *When you punch out, the AUTO PUNCH field of the AUTO PUNCH Control Panel is automatically set to off. If you are going to perform the punch in/out operation repeatedly, it is convenient to have this Control Panel displayed all the time during the operation.*
> • *Refer to "Chapter 4: Punch In/Out" on page 48 for more information on the Punch In/Out function.*

Mixdown

You can repeat the steps described thus far to record up to twelve tracks. However, this is not the completion of your masterpiece. Next, you will need to set the level and pan for each recorded track, and record the data onto a connected DAT tape recorder or cassette tape recorder. This phase of the recording process is called "mixdown."

Mixdown signal flow

The following diagram shows the signal flow during mixdown.
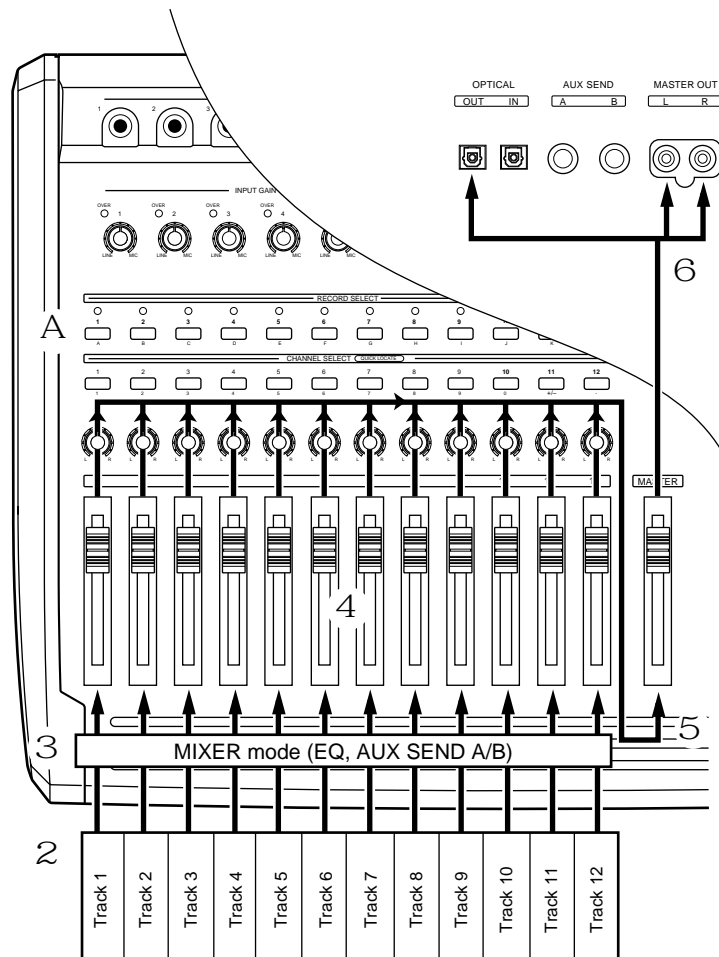
Signal flow during mixdown

1 Turn all the [RECORD SELECT] keys off on the top panel.

2 The playback sound from tracks 1–12 is directly routed to TRACK MIX channels 1–12 of the mixer section.

3 If necessary, adjust the EQ (equalizer) and AUX send level settings for each channel in Mixer mode.

4 Use channel faders 1–12 and [PAN] controls 1–12 on the top panel to set the level and pan for the TRACK MIX channels 1–12.

5 Signals that passed through the channel faders and the [PAN] controls are mixed into a stereo signal and fed to the [MASTER] fader.

6 The signal adjusted by the [MASTER] fader for the output level is output to the master recorder connected to the MASTER OUT jacks or OPTICAL OUT jacks.

Mixdown procedure

1. **Make sure that a master recorder is connected to the MASTER OUT jacks or the OPTICAL OUT jacks.**
   If a monitor system is connected to the output jacks of the master recorder, set the recorder to input monitor mode (to monitor the input signal).

2. **Turn off all the [RECORD SELECT] keys 1–12.**

3. **Play back the song from the beginning on the DPS12, and adjust the channel faders, the channel [PAN] controls, and the [MASTER] fader to appropriate positions.**
   At this time, you can check the output level of the tracks and the output level of the Master L/R by observing the TRACK level meters. Adjust the channel faders and the [MASTER] fader so that the master L/R output level does not reach the maximum level.

4. **When you are satisfied with the level and pan settings, rewind the song to the top.**

5. **Start recording on the master recorder, then start playback on the DPS12.**

6. **When the end of the song is reached, stop the master recorder and the DPS12.**

7. **Rewind the master recorder to the top of the song, then play the song.**
   If a monitor system is connected to the output jacks of the master recorder, set the recorder to tape monitor mode (to monitor the playback signal).

Using Mixer mode

As explained thus far, you can use the [PAN] controls and the channel faders to adjust panning and levels for the TRACK MIX channels 1–12 of the mixer section. However, the mixer section offers more mix parameters. For example, each of the TRACK MIX channels 1–12 has a two-band EQ (DPS12's default setting) and the AUX send A/B parameters. These mix parameters are controlled in Mixer mode. This section explains how to use Mixer mode during mixdown.

1. **Press the [MIXER] key in Main mode or Track View mode.**
   The DPS12 enters Mixer mode, and the following MIXER screen appears.

2. **Press the TRACK [F1] key.**
   To set mix parameters in Mixer mode, first you need to select the channels you wish to work on: TRACK MIX channels (TRACK) or THRU MIX channels (THRU) . When you use Mixer mode during mixdown, you will usually press the TRACK [F1] key to select the TRACK MIX channels.
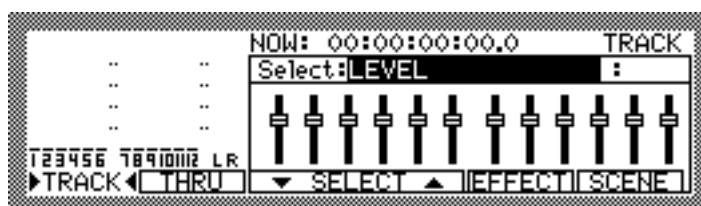
3. **Use the [CHANNEL SELECT] keys on the top panel to select the channel for which you wish to set the parameters.**
   In Mixer mode, the [CHANNEL SELECT] keys are used to select the desired channel. When the TRACK MIX channels are selected, use the [CHANNEL SELECT] keys 1–12 to select TRACK MIX channels 1–12. The cursor moves to a graphic field for the selected channel.

   > ✎ **TIP :** *You may also move the cursor to a graphic field for any channel, using the [CURSOR] key.*

4. **Select the SELECT ▼ [F3] key and the SELECT ▲ [F4] key to select a mix parameter.**
   The following mix parameters can be selected when the DPS12 is set to default.

   • EQ HIGH FREQ (base frequency of high range)

   • EQ HIGH LEVEL (level of high range)

   • EQ LOW FREQ (base frequency of low range)

   • EQ LOW LEVEL (level of low range)

   • EQ ON/OFF (equalizer on/off)

   • AUX SEND-A (AUX send A level)

   • AUX-A PRE/POST (AUX send A pre/post switch)

   • AUX SEND-B (AUX send B level)

   • AUX-B PRE/POST (AUX send B pre/post switch)

   • PAN (panning)

   • LEVEL (level)

   • CHANNEL (channel on/off)

   • SETUP (selecting EQ/AUX type)

   • MIDI CONTROL (Setting used to control the mixer section via MIDI)
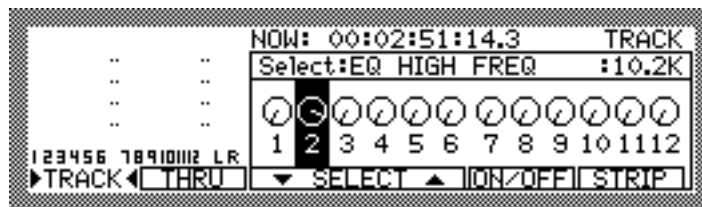
   Example: The EQ HIGH FREQ parameter for TRACK MIX channel 2 is selected.

   > ✎ **TIP :** *you may also use the [CURSOR] key to move the cursor to the* **Select:** *field, then rotate the [JOG] dial to select a different parameter.*

5. **Rotate the [JOG] dial to change the parameter value.**
   The selected channel parameter changes its value.
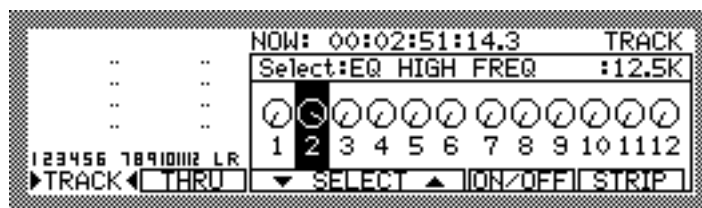
   Example: The EQ HIGH FREQ parameter for TRACK MIX channel 2 is changed to 12.5K.

> ✎ *TIP : You can use the transport functions and the locate function in Mixer mode in the same way as in Main mode and Track View mode. With the MIXER screen displayed, you can set the mix parameters while playing the tracks.*

6. In the same way, set the other mix parameters and the parameters for other channels.

> ✎ *TIPS :*
> *   *Refer to "Chapter 6: Mixer Function (Mixer mode)" on page 58 for more information on Mixer mode.*
> *   *You can store a set of mix parameter settings in Mixer mode as a scene. For more information, see page 69.*

Completing the operation on the DPS12

Follow the steps below to turn off the power to the DPS12 and connected peripheral devices after you finish recording or mixdown.

1. Press the eject button of the JAZ drive to eject the JAZ disk.

> ⚠ *CAUTION : Be sure to eject a JAZ disk from the JAZ drive before you turn off the power to the DPS12. If you turn off the power to the DPS12 while a JAZ disk is inserted in the drive, the disk may be damaged.*

2. Turn off the power to the devices in the following order: monitor system → DPS12 → peripheral devices, such as a tone generator, SCSI device, etc.

> ✎ *TIPS :*
> *   *All track audio data and setup data for the Project you were just working on is automatically stored on the JAZ disk (or the external hard disk).*
> *   *AKAI recommends that you back up important Projects to an external SCSI device or DAT recorder. For more information, see page 99.*

Chapter 3: Transport/Locate operation

This chapter describes the transport and locate operations of the DPS12.

Transport operation

You may perform locate operations and shuttle playback using the [JOG] and [SHUTTLE] dials, and part playback using the [TO] and [FROM] keys, as well as the usual transport operations using the transport buttons.

Transport button operation
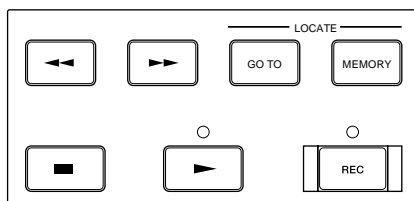
The following table includes operational information for each transport button.

	Recording	Playing back	Stop	Fast Forward	Rewind
REC	—	Pressing the [REC] button while holding down the [►] button causes the DPS12 to start recording (Punch in). The LED lights up.	Pressing the [REC] button while holding down the [►] button causes the DPS12 to start recording. The LED lights up.	—	—
►	Recording is cancelled, and normal playback resumes (Punch out). The LED lights up.	—	Normal playback resumes. The LED lights up.	Playback starts.	Playback starts.
■	Stops.	Stops.	—	Stops.	Stops.
◄◄	—	Rewinds while playing back sound (review).	Normal rewind.	Switches to rewind.	Rewind at higher speed.
►►	—	Fast forward while playing back sound (cue).	Normal fast forward.	Fast forward at higher speed.	Switches to fast forward.

Using the [JOG] dial and the [SHUTTLE] dial
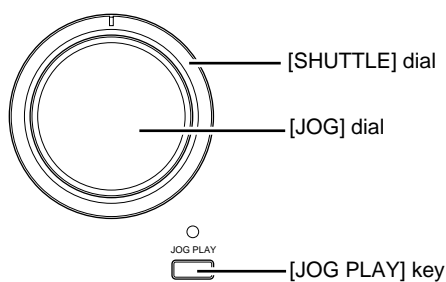
Using the [JOG] dial and the [SHUTTLE] dial enables you to play back data at the desired speed.

1. **Press the [JOG PLAY] key on the top panel.**
   The [JOG PLAY] key's LED lights up and the transport section enters Jog Play mode, in which you can perform the jog/shuttle playback.

   The screen displays the waveform of the data in the selected track. The selected number appears in the upper right corner of the screen.
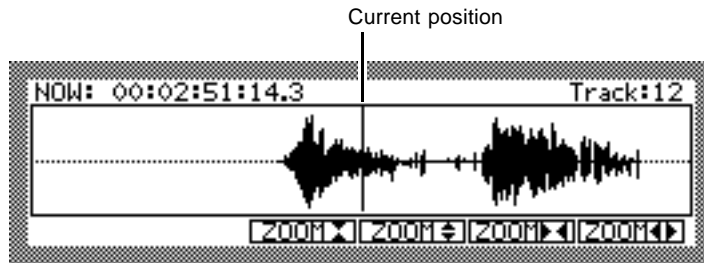
   Current position

2. **Use the [CHANNEL SELECT] key to select a track to play.**

3. **Operate the [JOG] dial or the [SHUTTLE] dial.**
   The screen indicates the waveform of the selected track data and displays a vertical line that indicates the current position. As you operate the [JOG] or [SHUTTLE] dial to play data, the vertical line moves back and forth following the direction in which you rotate the dial. If the playback via the [JOG] or [SHUTTLE] dial exceeds the range shown in the screen, the vertical line disappears. However, when you stop the playback, the waveform appears on the display, with the point (at which you stopped the playback) located in the center of the display. In JOG PLAY mode, the [JOG] and the [SHUTTLE] dials have the following function:

- **[JOG] dial**
  Rotating the [JOG] dial plays back the selected track data in the direction and speed that correspond to the direction and speed of the rotation. This function is useful when you wish to find a particular position in a song, such as specifying the IN/OUT points.

  counterclockwise: reverse playback at a corresponding speed

  clockwise: playback at a corresponding speed
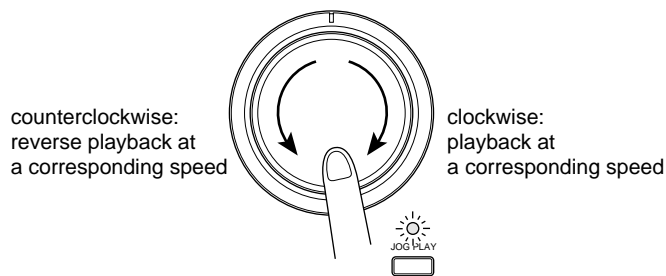
- **[SHUTTLE] dial**
  Rotating the [SHUTTLE] dial plays back the selected track data in the direction and speed that correspond to the direction and speed of the rotation. The playback speed varies between one fourth (1/4) times speed and normal speed depending on the degree to which you rotate the dial. This function is useful when you wish to find an approximate position in a song.

  reverse playback at one fourth times speed
  reverse playback at half speed
  reverse playback at normal speed

  playback at one fourth times speed
  playback at half speed
  playback at normal speed

40
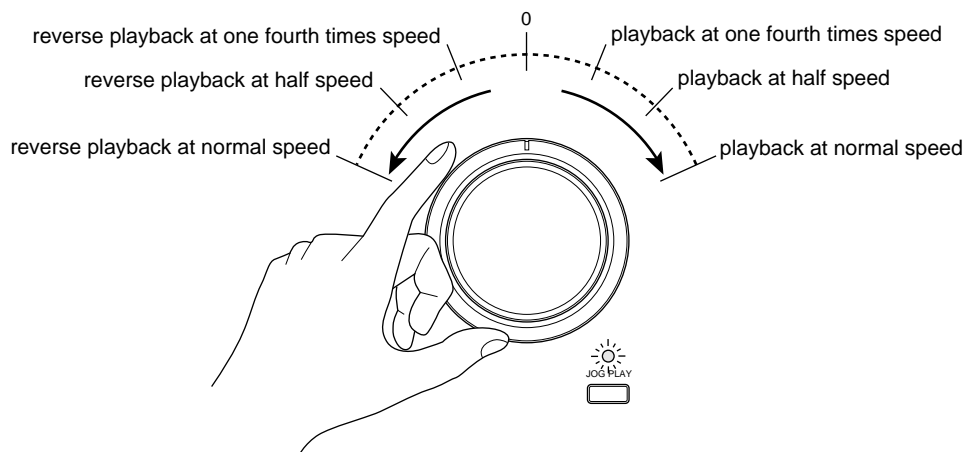
4. **Press the [JOG PLAY] key again when the JOG/SHUTTLE playback is complete.**
The [JOG PLAY] key's LED turns off, and the [JOG] and [SHUTTLE] dials restore their original function.

> ✎ **TIP :** *The track selected in Step 2 is stored after you turn the [JOG PLAY] key off. If you press the [JOG PLAY] key again, the last track you selected will be selected again.*

Using [TO] key and [FROM] key
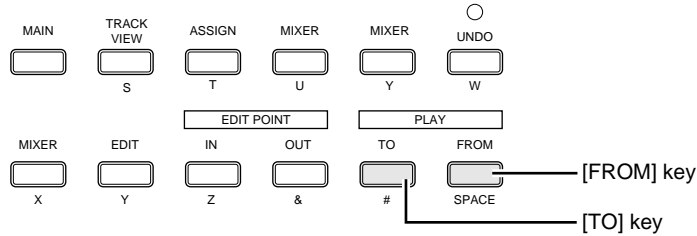
When the transport section of the DPS12 is stopped, pressing the [TO] key will play from a point a few seconds preceding the current time to the current time, and pressing the [FROM] key will play the part from the current position to a point a few seconds after the current time. This function is useful when you wish to audition the data at the current time, or to listen to the same part repeatedly. Operate the [TO] and [FROM] keys as follows:

■ [TO] key

When you press the [TO] key while the DPS12 is stopped, playback starts from a point a few seconds (specified) preceding the current stopped point and stops at the point where you pressed the [TO] key. The duration of playback (To time) is specified on the Control Panel. See page 90 for more information.
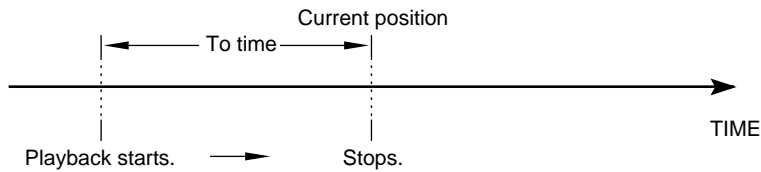
■ [FROM] key

When you press the [FROM] key while the DPS12 is stopped, playback starts and continues for the specified number of seconds, then returns and stops at the point where you pressed the [FROM] key. The duration of playback (From time) is specified on the Control Panel. See page 90 for more information.
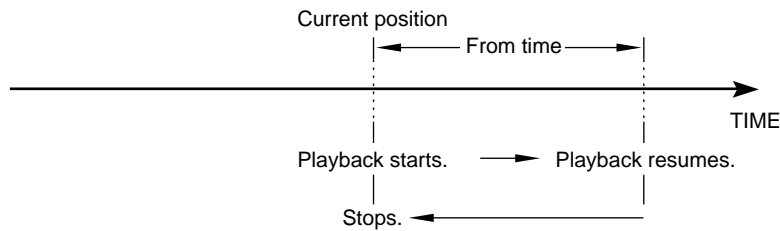
> ✎ **TIP :** *Pressing the [FROM] key during the TO playback operation will cause the DPS12 to continue playing back skipping over the NOW point. (That is, the DPS12 will play back the amount of "To time" + "From time.")*

Locate operation

You may specify up to 100 points (locate points) in a song and store them in a locate list to help you locate points quickly. The DPS12 also features a Quick Locate function that enables you to assign a locate point to a key on the panel and locate the point with a simple key operation. This section explains various locate operations.

Storing locate points

You can name and store up to 100 points in the locate list. The [MEMORY] key is used to store the locate points.
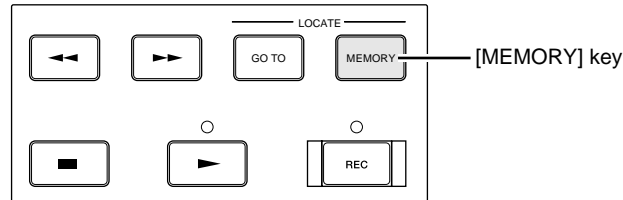
1. Press the [MEMORY] key at the position you wish to store during recording or playback.
The time shown on the time counter is captured as a locate point, and the LOCATE MEMORY window appears on the screen as shown below:

1 This field indicates the current position when the [MEMORY] key is pressed.

2 This field indicates the name of the locate point.

> ✍ **TIP :** *You can capture the value of the time counter using the [MEMORY] key while the transport section is stopped.*

2. Name the locate point, if necessary.
You can assign a name, such as "INTRO" or "CHORUS." Use the [CURSOR] key to move the cursor (a highlighted part) to the field (2) and enter characters.

> ✍ **TIP :** *Refer to page 18, 19 for information on entering characters.*

3. Press the STORE TO LOCATE LIST ([F3]–[F5] keys).
The point is stored in the locate list and the window is closed.

* To cancel the operation without storing the point, press the CANCEL [F2] key.

Moving to a locate point

You can recall a locate point stored in the locate list to locate a point. Use the [GO TO] key to recall a stored locate point.
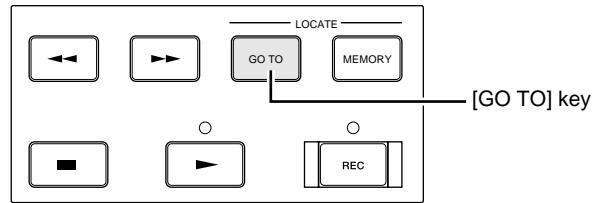
[GO TO] key

1. Press the [GO TO] key while the DPS12 is stopped.

> ➟ **NOTE** : *The [GO TO] key is disabled except in Main mode, Track View mode, and Mixer mode.*

The LOCATE LIST window appears.

1 This select field indicates the locate function to be executed.

2 This select field indicates the locate list. Use the [CURSOR]△/▽ keys or the [JOG] dial to scroll up and down the list.

2. Use the [CURSOR]△/▽ keys to select a desired locate point from the list.

3. Press the DO IT [F5] key.
The DPS12 locates the selected locate point and the window is closed.

* Press the CANCEL [F2] key to cancel the locate operation.

> ✎ **TIP :** *Press the [CURSOR] ◁/▷ keys while the cursor is within the list to move the cursor to the* Select: *field.*

Locating the zero position of the time counter

When the LOCATE LIST window is displayed, the DPS12 can also locate the zero position of the time counter (zero return). If the time counter indicates the ABS value (absolute time value), the time position at the top of the Project is located. If the time counter indicates the REL value (relative time value), the DPS12 locates the zero position of the relative time.

1. Press the [GO TO] key while the DPS12 is stopped.
The LOCATE LIST window appears.

2. Press the ⟳←RTN [F3] key.
The DPS12 locates the zero position of the time counter and the window closes.

Locating the end point of a song

The DPS12 can locate the end point of a song while the LOCATE LIST window is displayed.

1. Press the [GO TO] key while the DPS12 is stopped.
The LOCATE LIST window appears.

```
                LOCATE LIST
    Select:GO TO
    00:00:00:03.0-INTRO
    00:00:11:10.0-A MELO

    CANCEL O RTN GO END DO IT
```

2. Press the GO→END [F3] key.
The DPS12 locates the end point of the song and the window closes.

> ➦**NOTE :** *The end point of the song means the last position of the sound data in physical tracks 1–12.*

Deleting a locate point from the locate list

You can delete a locate point stored in the locate list as follows:

1. Make sure that the MAIN screen is displayed and the transport section of the DPS12 is stopped.

2. Press the [GO TO] key.
The LOCATE LIST window appears.

```
                LOCATE LIST
    Select:ERASE                    ——— A
    00:00:00:03.0-INTRO
    00:00:11:10.0-A MELO

    CANCEL O RTN GO END DO IT
```

3. Move the cursor to field 1 , then turn the [JOG] dial to select ERASE.

4. Use the cursor keys to select a locate point you wish to delete.

5. Press the DO IT [F5] key.
The selected locate point is deleted.

> ➦**NOTE :** *Press the CANCEL [F2] key to close the LOCATE LIST window.*

Using the Quick Locate function

The Quick Locate function enables you to assign locate points to the [CHANNEL SELECT] 1–12 keys and [IN]/[OUT] keys to locate a point immediately. This function is useful when you wish to play back or record from the same position repeatedly.

[CHANNEL SELECT] keys

[IN] key   [OUT] key
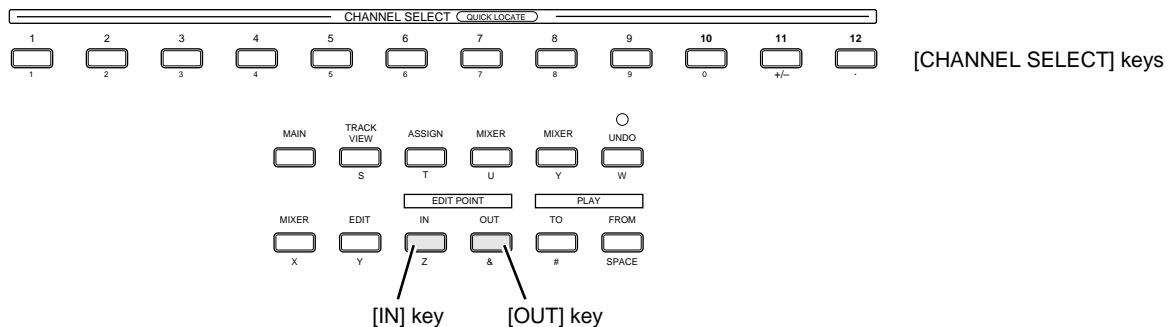
■ **Storing quick locate points (IN point/OUT point)**

1. **Press the [MEMORY] key to capture the desired locate point.**

```
┌──────── LOCATE MEMORY ────────┐
│  Press CHANNEL SELECT or      │
│  IN/OUT key to memorize.      │
│ ·····························  │
│ Time: 00:00:12:15.4           │
│ Name:(no name)                │
│ CANCEL STORE TO LOCATE LIST   │
└───────────────────────────────┘
```

2. **Press one of the [CHANNEL SELECT] 1–12 keys or the [IN] or [OUT] key.**
   The captured locate point is stored in the specified key, and the window closes.

> ✎ **TIP :** *The points stored in the [IN] key (IN point) and the [OUT] key (OUT point) are used to specify the range for the Auto Punch In/Out function (see page 50), Repeat function (see page 45), and Edit function (see page 80).*

■ **Using the stored quick locate points (IN point/OUT point)**

1. **Press the [GO TO] key.**
   The LOCATE LIST window appears.

```
┌──────── LOCATE LIST ────────┐
│  Select:GO TO               │
│ ··························· │
│ 00:00:00:03.0-INTRO         │
│                             │
│ CANCEL 0←RTN GO→END DO IT   │
└─────────────────────────────┘
```

2. **Press one of the [CHANNEL SELECT] 1–12 keys or the [IN] or [OUT] key.**
   The DPS12 locates the point stored in the key you pressed and the window closes.

Repeat function

Repeat function plays back data between the IN point and the OUT point.

1. **Use the [MEMORY] key, [IN] key, and [OUT] key to store the IN point and the OUT point.**

2. **In the MAIN screen, press one of the [F3]–[F6] keys to recall the Control panel**

```
┌─────────────────────────────────────┐
│ ··    ··    NOW: 00:02:51:14.3       │
│ ··    ··    SLCT:AUTO PUNCH ────────── A
│ ··    ··                             │
│ ··    ··   ┌──────┬──────┬──────┐    │
│ 123456 78910II12 LR│REPEAT│REHE- │AUTO │   │
│ ▶TRACK◀ INPUT │    │ARSAL │PUNCH│    │
│            │ OFF  │ OFF  │ OFF  │    │
│            └──────┴──────┴──────┘    │
└─────────────────────────────────────┘
                 │
                 B
```
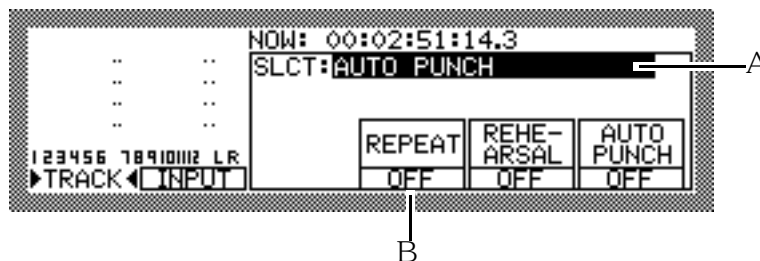
> ✎ **TIP :** *Refer to page 86 for more information on the Control Panel.*

3. **Move the cursor to the select field** 1 **and rotate the [JOG] dial to select** AUTO PUNCH

4. **Press the [F4] key to set the select field REPEAT 2 to ON.**

5. **Press the [▶] key.**

The data between the IN point and the OUT point is repeatedly played.

If you start playing back from a position before the OUT point, the playback continues up to the OUT point, then returns to the IN point.

If you start playing back from a position after the OUT point, the IN point is located, then playback starts.

Using the [IN] and [OUT] keys to play data between the [IN] point and the [OUT] point

You can use the [IN] key and [OUT] key to directly enter the IN/OUT points or to play data between the IN/OUT points. This is useful when you wish to check the position of the auto punch in/out points or a range to be edited.

1. **Make sure that the transport section of the DPS12 is stopped.**

2. **Press the [IN] key or the [OUT] key.**

The IN/OUT Points window appears, enabling you to set the IN/OUT points.
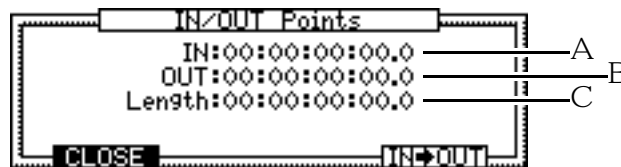
This window provides you with the following information.

1 **IN** .... This is a time field that indicates the time of the IN point.

2 **OUT** .... This is a time field that indicates the time of the OUT point.

3 **Length** .... This field indicates the time (duration) between the IN and OUT points.

> ✎ **TIP :** *You can move the cursor to the IN/OUT time field and change the IN/OUT point. (As you change the point, the value of the* **Length** *field changes.)*

3. **Press the IN➜OUT [F5] key.**

The range between the IN point and the OUT point is played once.

Entering a time value in the counter

You may enter a time in the counter on the MAIN screen to locate the corresponding position. Follow the procedure below:

1. Press the [NUMBER/NAME] key on the MAIN screen.
The time counter value disappears enabling you to enter a desired value. At this time, the [CHANNEL SELECT] keys 1–10 function as number keys.

2. Use the [CHANNEL SELECT] keys 1–10 to enter the desired time value.
For example, if you enter 1 ⟶ 2 ⟶ 3 ⟶ 4 ⟶ 5 ⟶ 6, the time counter indicates the numbers in the following order.

3. When you finish entering the value, press the [NUMBER/NAME] key again.
The DPS12 locates the position that corresponds to the time value.

> ✒ *TIP : Press the [SOLO] ([CANCEL]) key to cancel the entered value.*

Chapter 4: Punch In/Out

Punch In/Out is a function that enables you to re-record only a specified part of the already recorded track(s). This function is useful when you wish to correct mistakes in a recorded performance or extend the recording. This chapter describes various uses of the Punch In/Out function.

Manual Punch In/Out

Manual Punch In/Out is to perform the punch in/out operation manually. You may use the transport buttons on the DPS12 or a connected foot switch to use this function.

Punch In/Out operation using the transport buttons

The [►] key and the [REC] key are used in this Punch in/out operation.

1. **Locate a position a little before the punch in point.**

2. **Use the [RECORD SELECT] key to select a recording track.**
   The selected track enters record ready mode.

3. **Press the [►] button.**
   The playback starts, and the [►] button's LED lights up. You can monitor the recorder's playback (previously-recorded sound) through the record-ready track.

4. **When the punch in point is reached, press the [REC] button while holding down the [►] button.**
   The [REC] button's LED lights up, and the selected track starts recording. The monitoring signal through the recording track changes to that of the input source (currently recording performance).

   > ✍ **TIP :** *If the REHEARSAL parameter on the Control Panel has been turned on, the DPS12 enters "Rehearsal mode" in which you can practice the punch in operation before you record a real punch in take. Refer to page 51 for more information.*

5. **When the punch out point is reached, press the [►] button.**
   The recording is cancelled and the DPS12 resumes playback.

6. **Press the [■] button to stop playback.**
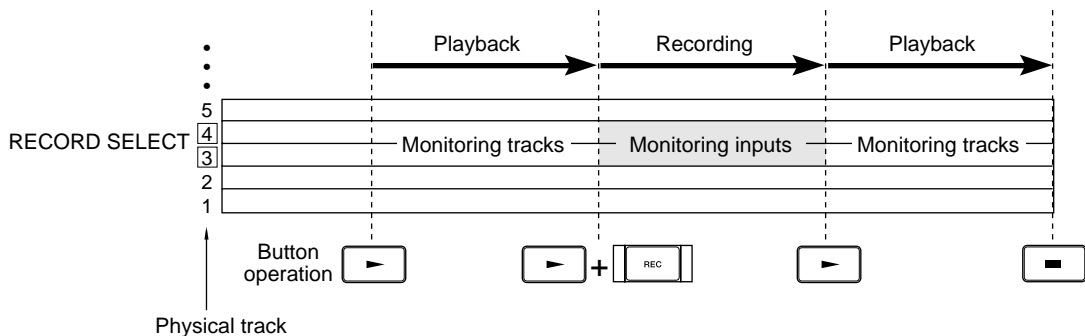
Punch In/Out operation using the transport buttons

Punch In/Out operation using a foot switch

This section explains how to perform the punch in/out operation using a foot switch. This is useful when you are playing instruments with both hands and you need to use your foot to punch in and out. With the exception of performing the punch in/out operation with a foot switch, the operation of the DPS12 itself is the same as the punch in/out operation using the transport buttons.

1. Select **FOOT SWITCH** for the Control Panel and set the **Function** parameter to **PUNCH IN/OUT**. (Refer to page 94 for information on the Control Panel.)

```
NOW: 00:02:51:14.3
SLCT:FOOT SWITCH


     Function:PUNCH IN/OUT

123456 78910III2 LR
▶TRACK◀[INPUT]
```

2. Connect a foot switch to the FOOT SW. jack on the rear panel.

> ➤➤ *NOTES :*
> - *There are two types of foot switches: normal open (the contact is open when it is not pressed), and normal closed (the contact is closed when it is not pressed). If a foot switch has been connected to the DPS12, when you turn on the power to the DPS12, it automatically detects the type of foot switch connected. You can use either type of foot switch. If a foot switch is not connected to the DPS12, when you turn on the power to theDPS12, it automatically selects normal open mode.*
> - *Do not use a latch-type foot switch (open/close switching type) since it will not be detected correctly.*

3. Locate a position a little before the punch in point.

4. Use the [RECORD SELECT] key to select a recording track.
   The selected track enters record ready mode.

5. Press the [►] button.
   Playback starts, and the [►] button's LED lights up.

6. When the punch in point is reached, press the foot switch.

> ✎ *TIP :If the REHEARSAL parameter on the Control Panel has been turned on, the DPS12 enters "Rehearsal mode," in which you can practice the punch in operation before you record an actual punch in take. Refer to page 51 for more information.*

7. When the punch out point is reached, press the foot switch.
   The recording is cancelled and the DPS12 resumes playback.

8. Press the [■] button to stop playback.
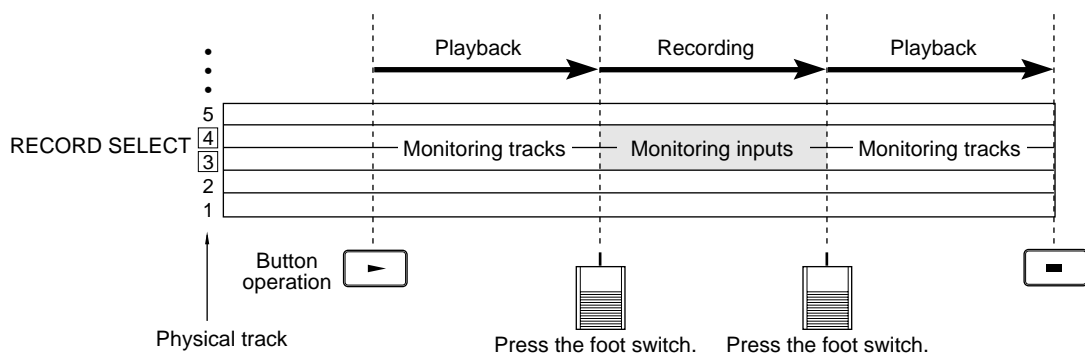
Punch In/Out operation using the foot switch

Auto Punch In/Out

Auto Punch In/Out is a function that automatically executes the punch in/out operation if you have specified punch in/out points. The benefit of this function is that you can concentrate on your performance without being distracted by the transport operation.

1. **Specify the desired punch in/out points as IN and OUT points.**
   The IN point and OUT point are used to perform the Auto Punch In/Out function. Refer to page 33 for more information on setting the IN/OUT points.

2. **Select AUTO PUNCH for the Control Panel, and set the AUTO PUNCH parameter to "ON". (Refer to page 86 for more information on the Control Panel.) The Auto Punch In/Out function now turns on.**

3. **Locate a position a little before the auto punch in point (a little before the IN point).**

4. **Use the [RECORD SELECT] key to select a recording track.**
   The selected track enters record ready mode.

5. **Press the [►] button.**
   Playback starts with the [REC] button's LED flashing. You can monitor the recorder's playback (previously-recorded sound) through the record-ready track.

   When the counter reaches the IN point time, the [REC] button's LED lights up, and the selected track starts recording. The monitor signal through the recording track changes to that of the input source (the currently-recording performance).

   > ✎ **TIP :** *If the REHEARSAL parameter on the Control Panel has been turned on, the DPS12 enters "Rehearsal mode," in which you can practice the punch in operation before you record an actual punch in take. Refer to page 51 for more information.*

   When the counter reaches the OUT point time, the [REC] button's LED turns off and the DPS12 resumes playback (Auto Punch Out).

6. **Press the [■] button to stop playback.**
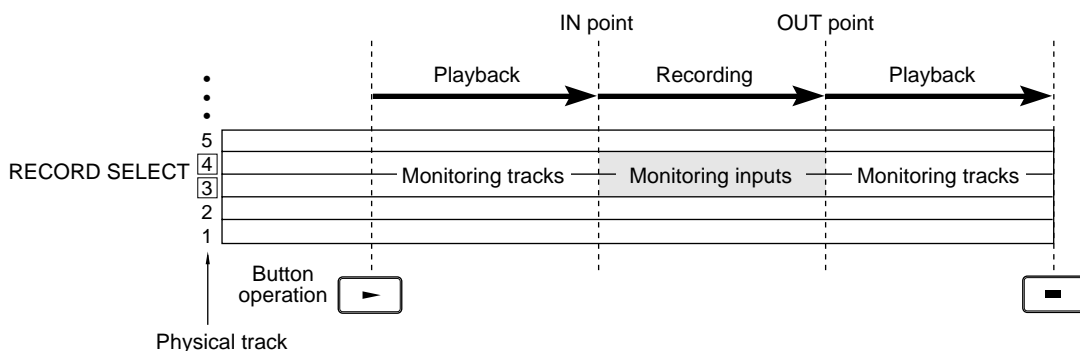
Auto Punch In/Out operation

> ➤ **NOTES :**
> • *When the auto punch in/out operation is complete, the AUTO PUNCH parameter of the Control Panel is set to off. If you wish to perform the auto punch in/out operation repeatedly, it is convenient to have this Control Panel displayed all the time. (At this time, it is a good idea to specify a position a little before the IN point as a quick locate point.)*
> • *If you press the [►] key between the IN point and the OUT point in Step 5 as mentioned above, recording will start immediately.*

Punch In/Out Rehearsal

Rehearsal is a function that enables you to practice playing instruments or singing a song, pretending to punch in/out record. When the IN point is reached, the signal monitored through the record ready track changes from the recorder's playback sound to the input source signal, but nothing is actually recorded. The Rehearsal function is available for both Manual and Auto Punch In/Out functions. In this section, we offer the example of rehearsing the auto punch in/out operation and explain how to use the function.

1. **Specify the desired punch in/out points as IN and OUT points.**

2. **Select AUTO PUNCH for the Control Panel, and set the AUTO PUNCH parameter to "ON". (Refer to page 86 for more information on the Control Panel.)**

3. **In the same Control Panel, set the REHEARSAL parameter to "ON".**
   The Rehearsal function is now turned on.

4. **Locate a position a little before the auto punch-in point (a little before the IN point).**

5. **Use the [RECORD SELECT] key to select a recording track.**
   The selected track enters record-ready mode.

6. **Press the [►] button.**
   The playback starts and the [REC] button's LED flashes. You can monitor the recorder's playback (previously-recorded sound) through the record-ready track.

   When the counter reaches the IN point time, the monitoring signal through the record-ready track changes to that of the input source (the currently recording performance). However, the [REC] button's LED continuous to flash flashing, and no signal is recorded in the record-ready track.

   When the counter reaches the OUT point time, the DPS12 resumes normal playback.

7. **Press the [■] button to stop playback.**
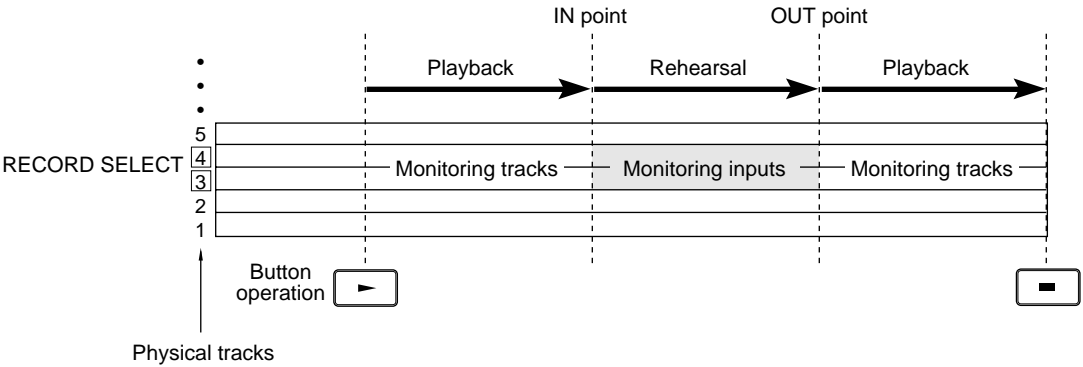
Auto Punch In/Out Rehearsal

➡ **NOTE :** *In Rehearsal mode, the AUTO PUNCH parameter is not turned off even if the punch out point (OUT point) is passed.*

Chapter 5: Assigning Input Signals and Virtual Tracks (Assign Mode)

This chapter describes functions and operations in Assign mode, in which you can assign input signals and virtual tracks.

About Assign mode

When the DPS12 is set to default, signals input at INPUT jacks 1–6 on the top panel are distributed to physical tracks 1–6 and 7–12 of the Recorder section. Physical tracks 1–12 are assigned to virtual tracks 1–12. In Assign mode, you can change the assignments of input signals and virtual tracks.

Pressing the [ASSIGN] key recalls the following ASSIGN screen:
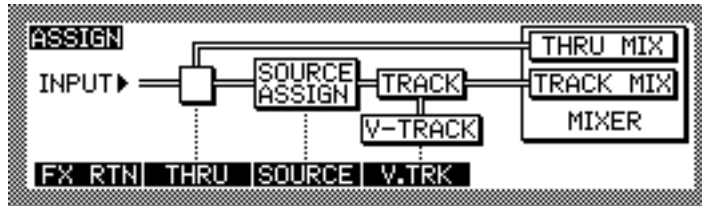
Use the [F1] – [F4] keys to set the following items on the ASSIGN screen.

- **FX RTN** [F1] key .... You can select a routing of effect return signals input from the analog INPUT jacks. Refer to page 119 for more information on the effects.

> **➯NOTE :** *Any effects operation requires an optional EB2M effect board installed.*

- **THRU** [F2] key .... Input signals are routed to the TRACK MIX channels of the Mixer section via the Recorder section, or routed to the THRU MIX channels of the Mixer section directly.

- **SOURCE** [F3] key .... You can select the tracks to which the input signals in the Recorder section are routed.

- **V.TRK** [F4] key .... Any of 250 virtual tracks can be assigned to twelve physical tracks.

Switching between TRACK MIX and THRU MIX (THRU)

When you press the **THRU** [F2] key in the ASSIGN screen, the following screen appears. As a destination for the input signal, you can select either **SOURCE ASSIGN** (signals are sent to the TRACK MIX channels of the Mixer section via the Recorder section), or **THRU MIX** (signals are sent directly to the THRU MIX channels of the Mixer section.)
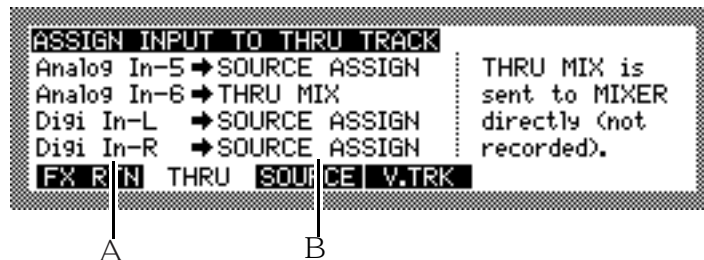
1 This field allows you to select the type of input: **Analog In** (analog INPUT jacks) 1–6 or **Digi In** (OPTI-CAL IN jacks) L/R.

2 This select field allows you to switch between **SOURCE ASSIGN** and **THRU MIX**
With the **SOURCE ASSIGN** setting, the input signal is routed to the SOURCE ASSIGN section, then to the Recorder section, then to the TRACK MIX channels of the Mixer section. Use this setting for normal recording.

When SOURCE ASSIGN is selected:
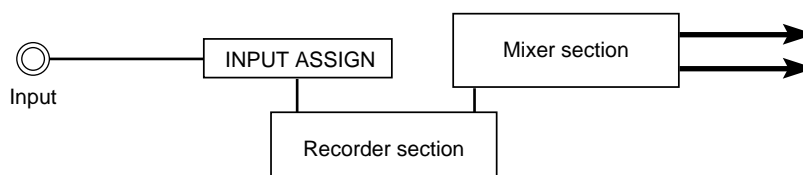
With the **THRU MIX** setting, the input signal is routed directly to the THRU MIX channels of the mixer section. Use this setting when you wish to add an analog input signal or a digital input signal to the 12-track playback sound.

When THRU MIX is selected:
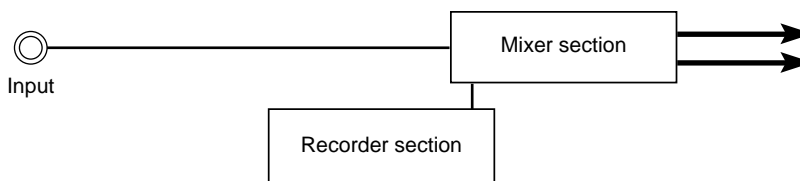
> ✎ **TIP :** *Refer to page 11 for information on the signal flow of the TRACK MIX channels and THRU MIX channels.*

> ➥**NOTE :** *If the EQ of a THRU MIX channel is turned on in Mixer mode, equalization will be applied to the corresponding input source. If you do not wish to record signals to a track without equalization applied, turn off the EQ of the THRU MIX channel. Refer to page 13 for more information.*

Follow the steps below to switch between SOURCE ASSIGN and THRU MIX.

1. **Using the [CURSOR] key, move the cursor up and down to select the input signal for which you wish to change the destination.**

   Example: The analog INPUT jack 5 is selected. It has been set to "SOURCE ASSIGN".

2. **Rotate the [JOG] dial to switch between SOURCE ASSIGN and THRU MIX.**

   Example: The analog INPUT jack 5 is now set to "THRU MIX".

   The input signal at analog INPUT jack 5 is sent directly to the THRU MIX channel of the Mixer section. You can adjust the level and pan settings for this signal separately from the recorder track playback sound.

> ➥**NOTE :** *The input signal with the THRU MIX setting is not routed to the Recorder section, and thus cannot be recorded on the tracks. If you wish to record the input signal, select SOURCE ASSIGN. For those inputs that are not to be recorded on the tracks, such as effect return signals or external sound source signals, select THRU MIX.*

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Assigning input sources to tracks (SOURCE)

Pressing the **SOURCE** [F3] key in Assign mode causes the following screen to appear. In this screen, you may assign input signals to each physical track.

```
ASSIGN INPUT SOURCE TO TRACK 1-12
ANALOG IN-1  ➡ Track 1 │ Input in lowercase
ANALOG IN-2  ➡ Track 2 │ letters is routed
ANALOG IN-3  ➡ Track 3 │ to THRU MIX (not
ANALOG IN-4  ➡ Track 4 │ recorded).
 FX RTN   THRU   SOURCE   V.TRK
```

A   B
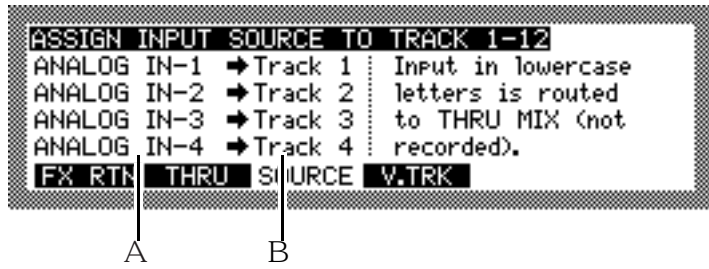
1   This is a select field in which you can assign input signals to physical tracks. Select from **ANALOG IN** (analog INPUT jacks) 1–6, **DIGITAL IN** (OPTICAL IN jacks) L/R, **MASTER** (master output of the Mixer section) L/R, and **AUX OUT** (AUX SEND in Mixer mode) A/B.

> ✎ **TIP :** *MASTER L/R and AUX OUT-A/B are special options used for ping-pong recording (mixing multiple tracks and recording the mix onto another track). Refer to page 77 for more information.*

2   This field is for display only and indicates a physical track (1–12). This field is for display purposes only.

When the DPS12 is set to default, the signals from analog INPUT jacks 1–6 are distributed to physical tracks 1–6 and 7–12, as shown below.
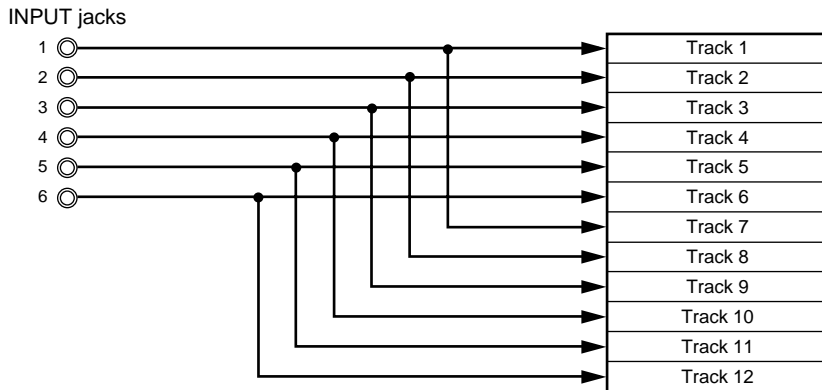
For example, when the DPS12 is set to default and you wish to record the sound of a synthesizer connected to INPUT jacks 1 and 2, you need to re-patch the synthesizer to INPUT jacks 3 and 4. However, if you assign INPUT jacks 1 and 2 to tracks 3 and 4, you can record the synthesizer sound to tracks 3 and 4 without re-connecting the instrument.
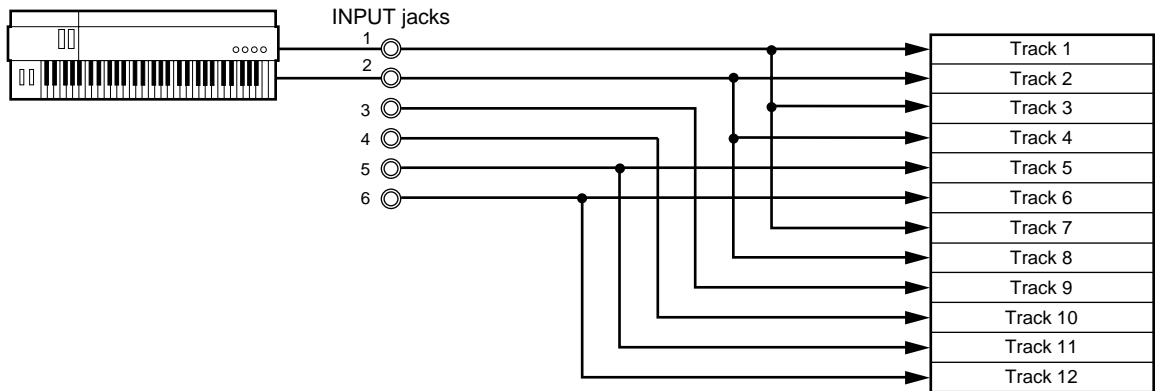
Follow the procedure below to assign input signals to tracks:

1. **Use the [CURSOR] key to move the cursor up and down and select a track for which you wish to change the input signal assignment.**

```
ASSIGN INPUT SOURCE TO TRACK 1-12
ANALOG IN-1  ➡Track 1 │ Input in lowercase
ANALOG IN-2  ➡Track 2 │ letters is routed
ANALOG IN-3  ➡Track 3 │ to THRU MIX (not
ANALOG IN-4  ➡Track 4 │ recorded).
FX RTN│ THRU │ SOURCE │ V.TRK
```

Example: Track 3 is selected and analog INPUT jack 3 has been assigned to that track.

2. **Turn the [JOG] dial to select other input.**

```
ASSIGN INPUT SOURCE TO TRACK 1-12
ANALOG IN-1  ➡Track 1 │ Input in lowercase
ANALOG IN-2  ➡Track 2 │ letters is routed
ANALOG IN-1  ➡Track 3 │ to THRU MIX (not
ANALOG IN-4  ➡Track 4 │ recorded).
FX RTN│ THRU │ SOURCE │ V.TRK
```

Example: Analog INPUT jack 1 is assigned to track 3.

Now the signal from analog INPUT jack 1 is routed to track 3. (In this example, the same signal is also sent to track 1.)

> ➤*NOTE :* *You may route a single input signal to multiple tracks, but you cannot route multiple input signals to a single track.*

If the destination of the signal is specified as a THRU MIX channel in "Switching between TRACK MIX / THRU MIX" (page 52), the signal is indicated in lower case letters as follows.

```
ASSIGN INPUT SOURCE TO TRACK 1-12
ANALOG IN-1  ➡Track 1 │ Input in lowercase
ANALOG IN-2  ➡Track 2 │ letters is routed
ANALOG IN-1  ➡Track 3 │ to THRU MIX (not
analog in-4  ➡Track 4 │ recorded).
FX RTN│ THRU │ SOURCE │ V.TRK
```

Example: The destination of the INPUT jack 4 signal is set to "THRU".

In this example, the signal of INPUT jack 4 is sent directly to the Mixer section, and is not sent to track 4.

Assigning a virtual track to a physical track

Pressing the **V.TRK** [F4] key in Assign mode causes the following screen to appear. In this screen, you can assign up to 250 virtual tracks to physical tracks 1–12.

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
      1-V.TRACK 1      ➡Track 1
      2-V.TRACK 2      ➡Track 2
     30-(unused)       ➡Track 3
      4-V.TRACK 4      ➡Track 4
 FX RTN  THRU  SOURCE  V.TRK         ERASE
```

① ② ③
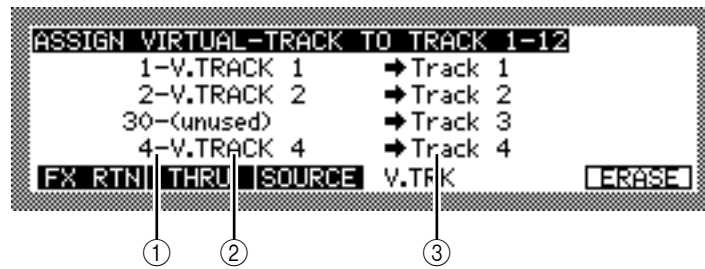
① This select field allows you to select one of the 250 virtual tracks. The value indicates a virtual track number (1–250).

② This character field indicates the name of the virtual track.

③ This field indicates an assigned physical track (1–12). This field is for display purposes only.

A virtual track that does not contain any recorded data is indicated as **(unused)**. On the other hand, a virtual track that contains recorded data is indicated as **V.Track**### (### is replaced by the virtual track number). (In the example shown above, virtual tracks 1, 2, and 4 already have recording data). You can change the name of any virtual track.

Follow the procedure below to assign virtual tracks to physical tracks.

1. Use the [CURSOR] key to move the cursor up and down and select a physical track (1–12).

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
      1-V.TRACK 1      ➡Track 1
     ■2-V.TRACK 2      ➡Track 2
     30-(unused)       ➡Track 3
      4-V.TRACK 4      ➡Track 4
 FX RTN  THRU  SOURCE  V.TRK         ERASE
```
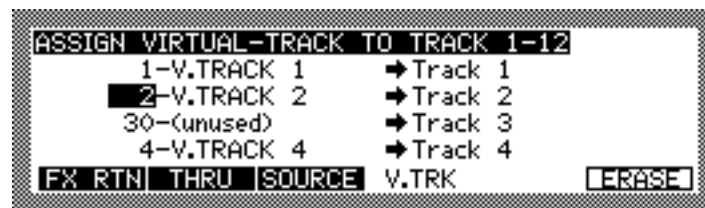
Example: Physical track 2 is selected and has been assigned virtual track 2.

At this time, make sure that the cursor is located at the virtual track number.

2. Turn the [JOG] dial to select a virtual track number (1–250).

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
      1-V.TRACK 1      ➡Track 1
     ■5-(unused)       ➡Track 2
     30-(unused)       ➡Track 3
      4-V.TRACK 4      ➡Track 4
 FX RTN  THRU  SOURCE  V.TRK         ERASE
```
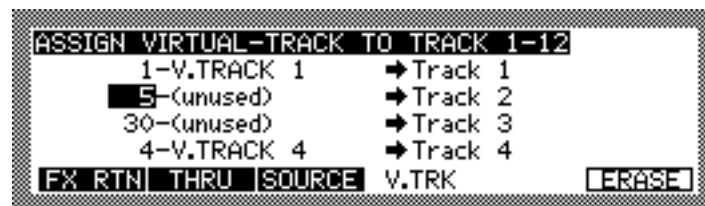
Example: Virtual track 5 (not recorded) is assigned to physical track 2.

3. **To name a virtual track, move the cursor to the character field of the virtual track you wish to name, then press the [NUMBER/NAME] key.**
   An underline appears at the top of the character field in which you can enter a name.

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
       1-V.TRACK 1    ➡Track 1
       5-(unused)     ➡Track 2
      30-(unused)     ➡Track 3
       4-V.TRACK 4    ➡Track 4
 FX RTN  THRU  SOURCE  V.TRK         ERASE
```
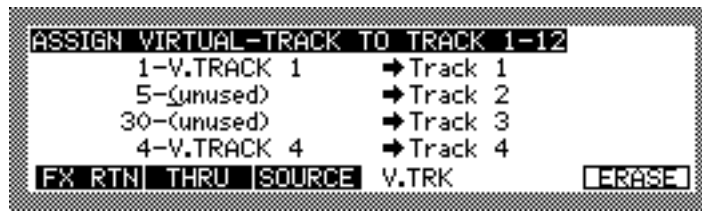
4. **Use the [JOG] dial or the keys on the top panel to enter a name for this virtual track.**
   Refer to page 18, 19 for information on entering characters.

   After entering characters, press the [NUMBER/NAME] key to confirm the name.

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
       1-V.TRACK 1    ➡Track 1
       5-SOLO GT 1    ➡Track 2
      30-(unused)     ➡Track 3
       4-V.TRACK 4    ➡Track 4
 FX RTN  THRU  SOURCE  V.TRK         ERASE
```
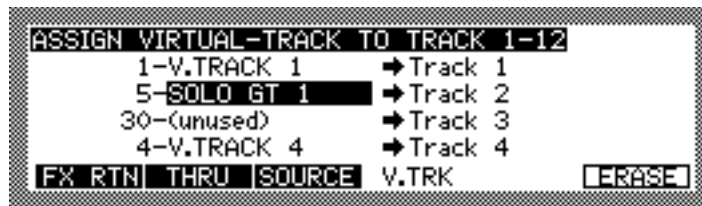
> ➤ *NOTES :*
> * *When the DPS12 is set to default, virtual tracks 1–12 are assigned to physical tracks 1–12.*
> * *You cannot assign a single virtual track to multiple physical tracks. For example, if virtual track 1 has already been assigned to physical track 1, you cannot assign virtual track 1 to another physical track. If you wish to assign virtual track 1 to another physical track, first assign another virtual track to physical track 1.*

TRACK ERASE function

You may erase the contents of a whole track selected.

1. **While the ASSIGN VIRTUAL TRACK screen is displayed, move the cursor to the virtual track you want to erase and press the ERASE [F6] key.**
   The following window appears.

```
              CAUTION!!
   V.Track= 1-V.TRACK  1

   DO IT will erase track data.
   This is irreversible (No UNDO)!
    CANCEL              DO IT
```
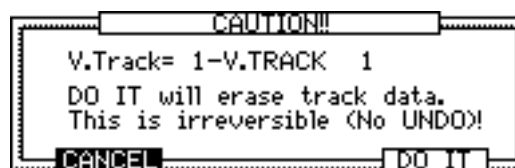
2. **Press the DO IT [F5] key.**
   The whole contents of the selected track will be erased. Press the CANCEL [F2] key to cancel the operation.

> ⚠ *CAUTION : Once the track data is erased, it cannot be recovered (No UNDO). Use extra caution when you use this TRACK ERASE function.*

Chapter 6: Mixer Function (Mixer Mode)

This chapter describes the functions and operations in Mixer mode, as well as the scene memories that store the Mixer mode settings.

About Mixer mode

The DPS12 has an internal 20-channel (TRACK MIX channel x 12, THRU MIX channel x 8) digital mixer. Mixer mode is used to control mix parameters, such as the channel level, pan, EQ, AUX send A/B, and channel on/off settings. You can also store and recall a set of mix parameter settings as a scene memory in Mixer mode.

Pressing the [MIXER] key displays the following mixer screen. (You can also display this screen during recording or playback.)
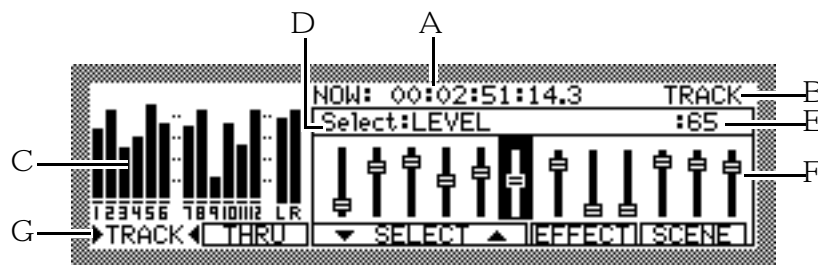
This screen contains the following information.

1 This value indicates the current position.

2 This field indicates the selection: TRACK MIX channel (**TRACK**) or THRU MIX channel (**THRU**).

3 This bar graph indicates the output level or the input level of each track.

4 This field indicates the currently-selected mix parameter.

5 This field indicates the value of the mix parameter for the currently-selected channel.

6 This area shows a graphical field or a select field, depending on the currently-selected mix parameter.

7 The functions of the function keys are shown here. The function keys have the following functions.

- **TRACK** [F1] key/ **THRU** [F2] key .... Used to switch between TRACK MIX channels and THRU MIX channels. This function is global for all screens.

- **SELECT▼** [F3] key/ **SELECT▲** [F4] key ...... Used to select a mix parameter. This function is global for all screens.

- [F5] key/[F6] key .... The function of these keys differs depending on the selected mix parameter.

Basic operation in Mixer mode

You can use the faders and controls on the DPS12 to adjust the TRACK MIX channel's level and pan settings. To adjust other mix parameter settings, follow the steps below.

1. Press the **TRACK** [F1] key or the **THRU** [F2] key to select TRACK MIX channel or THRU MIX channel respectively.

> ✎ *TIP : To set a mix parameter in Mixer mode, first you need to specify whether you are making a setting for TRACK MIX channels or THRU MIX channels. Refer to page 52 for more information on TRACK MIX and THRU MIX.*

If you press the **TRACK** [F1] key, TRACK MIX channels are selected and the level meters indicate the output level of each track.

If you press the **THRU** [F2] key, THRU MIX channels are selected and the level meters indicate the input level of INPUT jacks.

2. **Use a [CHANNEL SELECT] key on the top panel to select the channel whose settings you wish to adjust.**

In mixer mode, you use [CHANNEL SELECT] keys to select desired channels. The [CHANNEL SELECT] keys correspond to the following channels:

■ **When TRACK MIX channels are selected:**
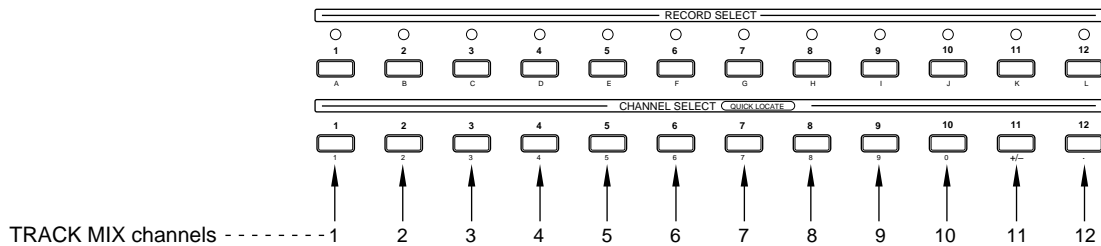
■ **When THRU MIX channels are selected:**
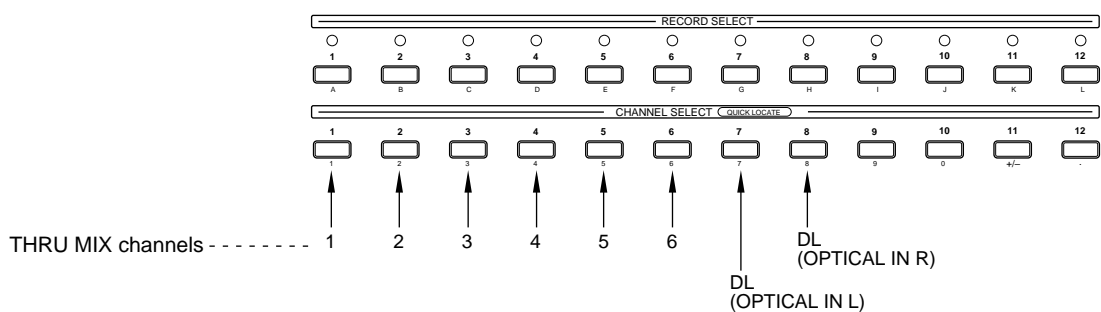
When you select a channel using the [CHANNEL SELECT] key, the cursor moves to a graphical field on the screen that corresponds to that channel.

Example: TRACK MIX channel 2 is selected.

If you press multiple [CHANNEL SELECT] keys simultaneously, you can select the corresponding channels at once.

```
NOW: 00:02:51:14.3       TRACK
Select:LEVEL             :100
```

Example: TRACK MIX channels 3 and 4 are selected.

> ✎ *TIPS :*
> - *You can use the [CURSOR] key to move the cursor to the graphical field of a desired channel, instead of using the [CHANNEL SELECT] key to select the channel. However, in this case you cannot select multiple channels simultaneously.*
> - *You cannot use the [CHANNEL SELECT] keys to select the MASTER SEND A parameter (AUX SEND-A screen), MASTER SEND B (AUX SEND-B screen) parameter, and MASTER PARAMETER (LEVEL screen). Use the [CURSOR] key to move the cursor to the desired parameter.*

3. **Use the SELECT▼ [F3] key/SELECT▲ [F4] key to select a mix parameter.**
   Pressing the [F3] key scrolls the parameters downward, and pressing the [F4] key scrolls the parameters upward.

```
NOW: 00:02:51:14.3       TRACK
Select:EQ HIGH FREQ    :10.2K
```
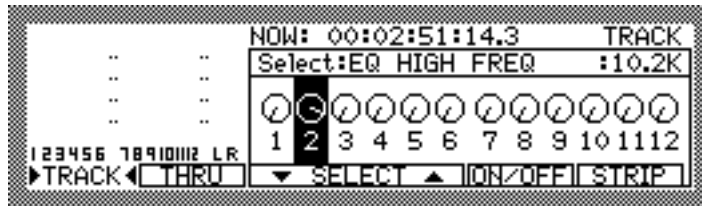
Example: The parameter EQ HIGH FREQ is selected. This parameter has been set to 10.2K for the currently-selected TRACK MIX channel 2.

> ✎ *TIP : You can also use the [CURSOR] key to move the cursor to the Select: field, then turn the [JOG] dial to select the desired parameter.*

4. **Turn the [JOG] dial to adjust the parameter value.**
   The selected channel parameter will change.

```
NOW: 00:02:51:14.3       TRACK
Select:EQ HIGH FREQ    :12.5K
```
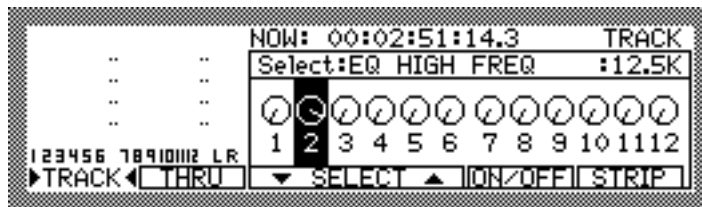
Example: The EQ HIGH FREQ parameter for TRACK MIX channel 2 is changed to 12.5K.

> ✎ *TIP : If you selected multiple channels in Step 2 above, you can use the [JOG] dial to adjust the parameter values for the multiple channels simultaneously.*

Level/pan settings

LEVEL

You can adjust the input level of each channel (LEVEL) and the master output level (MASTER).

Range: 0–127
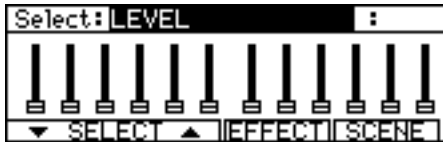
■ **When TRACK MIX channels are selected:**   ■ **When THRU MIX channels are selected:**
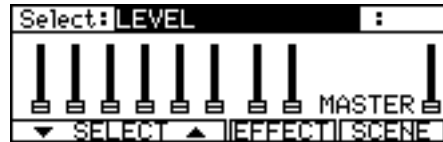
> 🖉 **TIPS :**
> • *Since the channel faders on the top panel always allows you to adjust the TRACK MIX channel level, you can use the faders to set the track level even when the THRU MIX channels are selected.*
> • *You can use the [MASTER] fader on the top panel to adjust the master output level.*

When this screen is displayed, the [F5] key and the [F6] key function as follows:

• **EFFECT** [F5] key ... Recalls the screen used to set the internal effects. (Needs optional EB2M)

• **SCENE** [F6] key ...... Recalls the SCENE MEMORY window used to store and recall a scene memory.

> ➥**NOTE :** *If you use the [JOG] dial to change the level of the TRACK MIX channels, the fader position and the actual value of the level will not match. This condition is indicated by a dot (·) that appears above the graphic field of the screen.*

PAN

You can adjust the stereo image for the channels (PAN).

Range: R63–0–L63
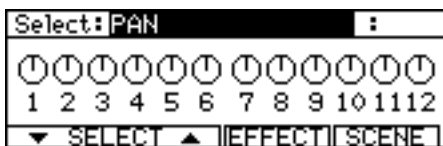
■ **When TRACK MIX channels are selected:**   ■ **When THRU MIX channels are selected:**
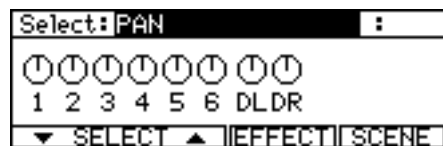
> 🖉 **TIP :** *Since the [PAN] controls on the top panel always allows you to adjust the TRACK MIX channels' PAN setting, you can use the [PAN] controls to set the track pan setting even when the THRU MIX channels are selected.*

When this screen is displayed, the [F5] key and the [F6] key function as follows:

• **EFFECT** [F5] key ... Recalls the screen used to set the internal effects. (Needs optional EB2M)

• **SCENE** [F6] key ...... Recalls the SCENE MEMORY window used to store and recall a scene memory.

> ➥**NOTE :** *If you use the [JOG] dial to change the TRACK MIX channels' pan setting, a dot (·) appears above the graphic field, indicating that the position of the [PAN] control on the top panel and the actual value do not match.*

Equalizer settings

You can set the parameters for the 3-band (HIGH – shelving type, MID – peaking type, and LOW – shelving type) equalizer.

> ➵ **NOTE :** *You can use the 3-band equalizer for up to six channels. If you wish to apply equalization to all twelve channels, switch to the 2-band (HIGH, LOW) equalizer. With a sampling rate of 48kHz, 3-band equalization can be applied to up to five channels, and 2-band equalization to up to ten channels.*

Turning the equalizer on/off (EQ ON/OFF)

This parameter allows you to enable (ON) the EQ for each channel or disable (OFF). The box will be highlighted for the channel with the EQ on.

Range: ON/OFF
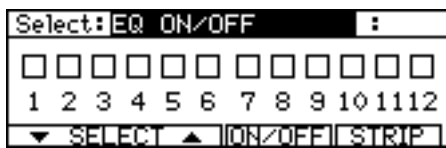
■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**

The maximum number of channels to which you can apply equalization simultaneously varies depending on the type of EQ (3-band or 2-band) you select for the SETUP parameter (see page 68) and the sampling rate.

> ➵ **NOTE :** *When you turn on the EQ for the THRU MIX channel, equalization is always applied to the input source, even when you are recording signals from the input jacks to tracks. If you do not wish to apply equalization during recording, set this parameter to OFF. Refer to page 13 ("Signal flow") for more information.*

While this screen is displayed, the [F5] key and the [F6] key function as follows:

- **ON/OFF** [F5] key .... switches EQ on/off for the selected channel.

- **STRIP** [F6] key .... displays all the EQ parameters for the selected channel. See page 64 for more information.

Setting the frequency rate (EQ HIGH/MID/LOW FREQ)

Channel EQ FREQ parameters allow you to set the base frequency for each range.

Range:　　HIGH: 500 – 18kHz
　　　　　　MID: 200 – 8kHz
　　　　　　LOW: 40 – 1.5kHz

■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**

> ➵ **NOTE :** *When the 2-band EQ is selected, the EQ MID FREQ parameter does not appear. Use the SETUP parameter to switch between the 3-band EQ and 2-band EQ. Refer to page 68 for more information.*

While this screen is displayed, the [F5] key and the [F6] key function as follows:

- **ON/OFF** [F5] key .... switches EQ on/off for the selected channel. To check the on/off status of the selected channel EQ, select the EQ ON/OFF parameter (see page 62).

- **STRIP** [F6] key .... displays all the EQ parameters for the selected channel. See page 64 for more information.

Setting the level (EQ HIGH/MID/LOW LEVEL)

The EQ LEVEL parameters determines the level of each range for each channel.

Range: –12dB – 0 – +12dB

■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**

```
Select:EQ HIGH LEVEL    :
 ◯◯◯◯◯◯ ◯◯◯◯◯◯
 1 2 3 4 5 6 7 8 9 10 11 12
 ▼ SELECT ▲  ON/OFF  STRIP
```

```
Select:EQ HIGH LEVEL    :
 ◯◯◯◯◯ ◯◯
 1 2 3 4 5 6 DLDR
 ▼ SELECT ▲  ON/OFF  STRIP
```

While this screen is displayed, the [F5] key and the [F6] key function as follows:

- **ON/OFF** [F5] key .... switches EQ on/off for the selected channel. To check the on/off status of the selected channel EQ, select the EQ ON/OFF parameter (see page 62).

- **STRIP** [F6] key .... displays all the EQ parameters for the selected channel. See page 64 for more information.

> ➤ *NOTE : When the 2-band EQ is selected, the EQ MID LEVEL parameter does not appear.*

Setting the band width (EQ MID WIDTH)

The EQ MID WIDTH parameter determines the band width of the mid-range for each channel.

Range: 0.5 – 16

■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**

```
Select:EQ MID WIDTH     :
 ◯◯◯◯◯◯ ◯◯◯◯◯◯
 1 2 3 4 5 6 7 8 9 10 11 12
 ▼ SELECT ▲  ON/OFF  STRIP
```

```
Select:EQ MID WIDTH     :
 ◯◯◯◯◯ ◯◯
 1 2 3 4 5 6 DLDR
 ▼ SELECT ▲  ON/OFF  STRIP
```

While this screen is displayed, the [F5] key and the [F6] key function as follows:

- **ON/OFF** [F5] key .... switches EQ on/off for the selected channel. To check the on/off status of the selected channel EQ, select the EQ ON/OFF parameter (see page 62).

- **STRIP** [F6] key .... displays all the EQ parameters for the selected channel. See page 64 for more information.

> ➤ *NOTE : When the 2-band EQ is selected, the EQ MID WIDTH parameter does not appear.*

Displaying all EQ parameters of a given channel (STRIP)

You can display on the screen a set of all EQ-related parameters of a given channel. This is called "EQ STRIP." This function is useful when you wish to focus on controlling the EQ of a single channel. When one of the EQ parameters is selected, press the **STRIP** [F6] key. The following EQ strip screen appears.
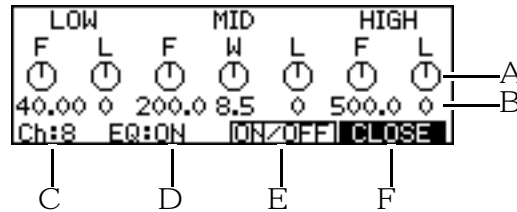
* This screen is an EQ strip for the 3-band EQ.

The EQ strip screen has the following information:

1 This graphical field enables you to adjust the EQ parameters.

2 This field shows the value of the EQ parameters.

3 This field indicates the current channel. To select another channel, move the cursor to this field and turn the [JOG] dial. If you have selected multiple channels using the [CHANNEL SELECT] keys, "*" appears next to the channel number.

4 This field indicates the on/off status of the EQ.

5 Pressing the ON/OFF toggles the EQ on and off.

6 Pressing the **CLOSE** [F6] key closes the EQ strip screen and returns you to the previous screen.

To adjust the parameters in the EQ strip, use the [CURSOR] key to move the cursor to the desired parameter field, and turn the [JOG] dial to change the value.

AUX send settings

The DPS12 provides a two-channel AUX send. You can set the SETUP: **AUX type** parameter to select whether the AUX send signals are two-channel monaural signals (**2 MONO**) or a pair of stereo signals (**STEREO**). The parameters that appear vary depending on the **AUX type** setting.

● When "2 MONO" is selected:

Send level setting (AUX SEND-A(B))

This parameter enables you to adjust the level of the signal routed from each channel to AUX send A (AUX SEND-A or B), and the master level of the send A (B) signal (SEND MASTER).

Range: 0–127
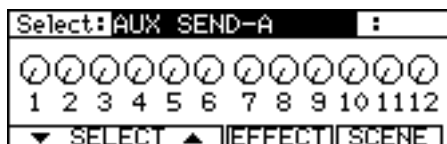
■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**
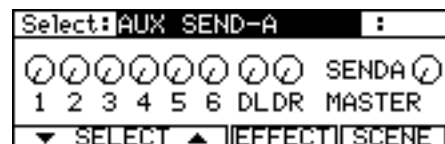
The signal sent from each channel to AUX send A (B) is routed to the SEND A (B) MASTER parameter and output from the AUX SEND A (B) jacks. The same signal is also sent to effect A (B).

> ✎ **TIP :** Refer to Chapter 13 (page 119) for more information on the optional internal effects.

Mixer section
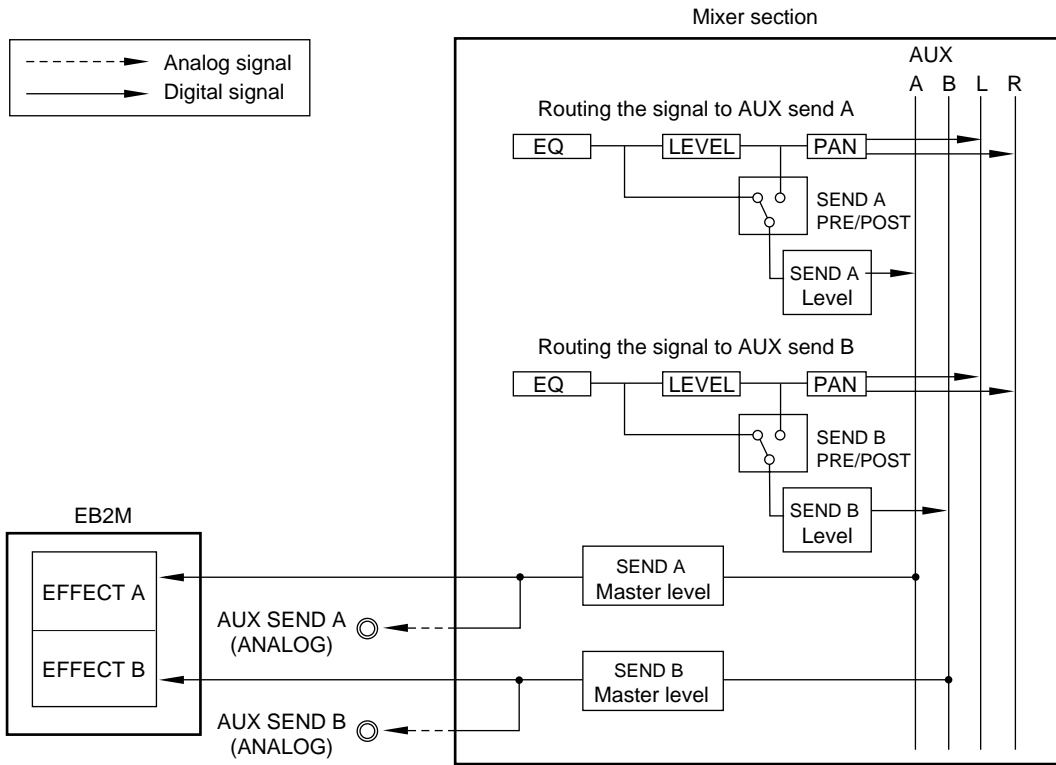
Flow of AUX send A (B) signals

> ✎ **TIP :** *You cannot select the SEND A (B) MASTER parameter using the [CHANNEL SELECT] key. Use the [CURSOR] key to move the cursor to the field.*

When this screen is displayed, the [F5] key and the [F6] key function as follows:

- **EFFECT** [F5] key .... Recalls the screen used to set the internal effects. (Needs optional EB2M)

- **SCENE** [F6] key .... Recalls the SCENE MEMORY window used to store and recall a scene memory.

Selecting PRE/POST (AUX A (B) PRE/POST)

This parameter sets whether the channel signal sent to AUX send A (B) is routed from the pre-fader position (PRE) or from the post-fader position (POST). When you select POST, a box above the selected channel number will be highlighted.

Range: PRE/POST
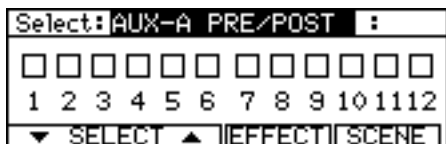
■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**
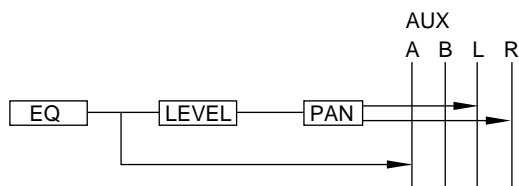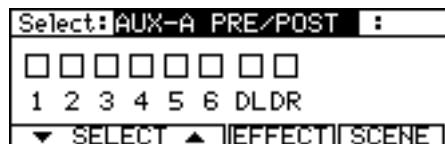
"PRE" is selected for AUX send A: *"POST" is selected for AUX send A:*
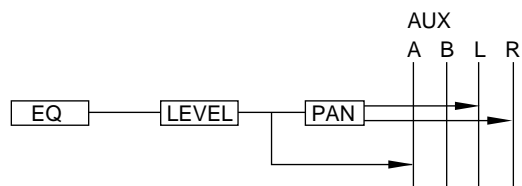
65

When this screen is displayed, the [F5] key and the [F6] key function as follows:

- **EFFECT** [F5] key .... Recalls the screen used to set the internal effects. (Needs optional EB2M)
- **SCENE** [F6] key .... Recalls the SCENE MEMORY window used to store and recall a scene memory.

● When "STEREO" is selected:

Send pan setting (AUX SEND PAN)

This parameter enables you to set a stereo image (PAN) of the channel signal sent to AUX send.

Range: R63–0–L63

■ **When TRACK MIX channels are selected**

■ **When THRU MIX channels are selected**

Send level setting (AUX SEND LEVEL)

This parameter enables you to adjust the level and the send master level (SEND MASTER) of the channel signal sent to AUX send.

Range: 0–127

■ **When TRACK MIX channels are selected**

■ **When THRU MIX channels are selected**

The channel signal sent to AUX send is routed to the SEND MASTER parameter, and is output from the AUX SEND A (L) and B (R) jacks. The same signal is sent to effect A/B.
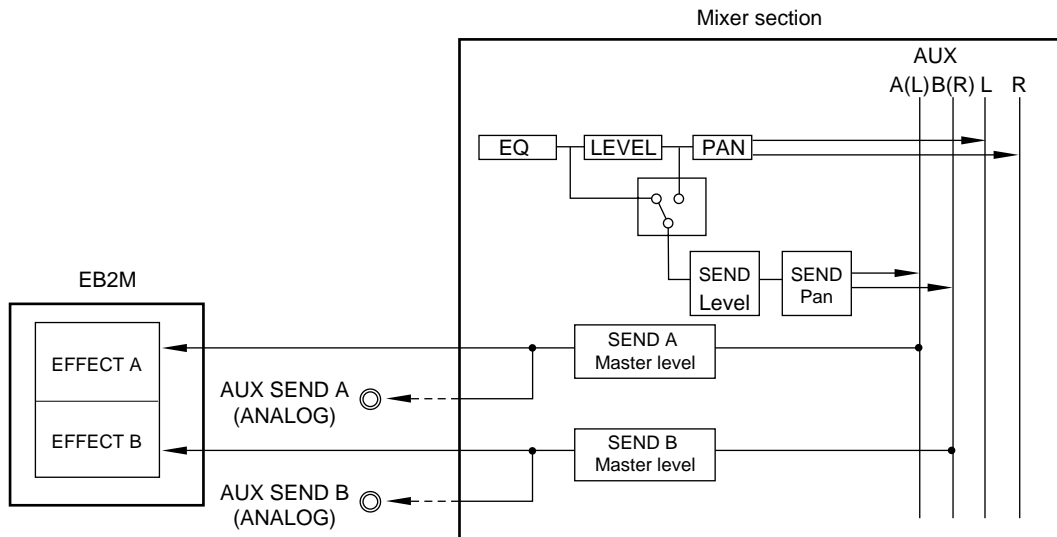
AUX SEND signal flow (STEREO)

✐ **TIP :** *You cannot select the SEND MASTER parameter using the [CHANNEL SELECT] key. Use the [CURSOR] key to move the cursor to the field.*

When this screen is displayed, the [F5] key and the [F6] key function as follows:

- **EFFECT** [F5] key .... Recalls the screen used to set the internal effects. (Needs optional EB2M)

- **SCENE** [F6] key .... Recalls the SCENE MEMORY window used to store and recall a scene memory.

Selecting PRE/POST (AUX PRE/POST)

This parameter sets whether the channel signal sent to AUX send is routed from the pre-fader position (PRE) or from the post-fader position (POST). When you select POST, a box above the selected channel number will be highlighted.

Range: PRE/POST

■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**

```
Select:AUX PRE/POST    :
□□□□□□ □□□□□□
1 2 3 4 5 6 7 8 9 10 11 12
 ▼ SELECT ▲ ‖EFFECT‖ SCENE ‖
```

```
Select:AUX PRE/POST    :
□□□□□□ □□
1 2 3 4 5 6 DLDR
 ▼ SELECT ▲ ‖EFFECT‖ SCENE ‖
```

When this screen is displayed, the [F5] key and the [F6] key function as follows:

- **EFFECT** [F5] key .... Recalls the screen used to set the internal effects. (Needs optional EB2M)

- **SCENE** [F6] key .... Recalls the SCENE MEMORY window used to store and recall a scene memory.

Other settings

Channel ON/OFF (CHANNEL)

You can switch each channel on and off (mute). A box above the channel number with the ON setting is highlighted.

Range: ON/OFF

■ **When TRACK MIX channels are selected**   ■ **When THRU MIX channels are selected**
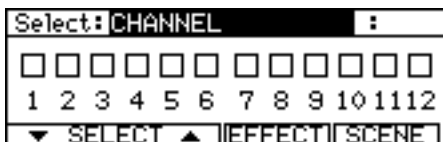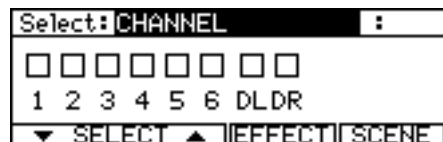
```
Select:CHANNEL    :
□□□□□□ □□□□□□
1 2 3 4 5 6 7 8 9 10 11 12
 ▼ SELECT ▲ ‖EFFECT‖ SCENE ‖
```

```
Select:CHANNEL    :
□□□□□□ □□
1 2 3 4 5 6 DLDR
 ▼ SELECT ▲ ‖EFFECT‖ SCENE ‖
```

When this screen is displayed, the [F5] key and the [F6] key function as follows:

- **EFFECT** [F5] key .... Recalls the screen used to set the internal effects.

- **SCENE** [F6] key .... Recalls the SCENE MEMORY window used to store and recall a scene memory.

SETUP

These parameters enable you to select the type of EQ and AUX. To change the setting, use the [CURSOR] key to move the cursor to the desired field and turn the [JOG] dial.

```
Select:SETUP
      EQ type:3BAND          ──── A
      AUX type:STEREO        ──── 2
  ▼  SELECT  ▲
```

1 **EQ type:**
This select field enables you to select a type of EQ.

3BAND .... Selects a 3-band EQ.
2BAND .... Selects a 2-band EQ.

2 **AUX type:**
This select field enables you to select a type of AUX.

2 MONO .... AUX signals are treated as 2-channel monaural signals.
STEREO .... AUX signals are treated as a stereo pair signal.

MIDI settings (MIDI CONTROL)

This screen is used to set up and control data transfer with an external MIDI device. To change a parameter setting, use the [CURSOR] key to move the cursor to the desired field, then turn the [JOG] dial to change the setting. You can also use the [F5] and [F6] keys to output the current mix parameter settings via MIDI OUT.

```
Select:MIDI CONTROL
    Control via MIDI:16        ──── A
    Tx mixer changes:16        ──── 2
  ▼  SELECT  ▲  SEND MIX DATA:  ──── C
```

1 **Control via MIDI:**
This field is used to set up a MIDI channel that receives MIDI data to control the mix parameters using the external MIDI data.

1–16 .... Enables you to select a MIDI receive channel (1–16).
OFF .... MIDI data is not received.

2 **Tx mixer changes:**
This numeric field enables you to set up a MIDI channel that transmits MIDI data when the mix parameters are changed.

1–16 .... Enables you to select a MIDI transmit channel (1–16).
OFF .... MIDI data is not transmitted.

3 **SEND MIX DATA**[F5] key / [F6] key
These function keys are used to output the current mix parameter settings as MIDI data. Pressing the [F5] or [F6] key while this screen is displayed will output the mix parameter settings, such as the LEVEL, EQ, and PAN settings, as Control Change data from the MIDI OUT connector. In this way, you can store the Mixer mode settings in a sequencer.

> ➠ *NOTE : Before you use this function, make sure that the* **Tx mixer changes** *parameter is set to any option other than* **OFF**.

SCENE MEMORY

In Mixer mode, you may name the mix parameter settings, such as LEVEL, EQ, and PAN, and store them in a scene memory. A stored scene can be recalled any time the transport section is stopped. A scene is stored in the disk as part of the project.

While any screen other than the EQ or SETUP screen is selected in Mixer mode, pressing the **SCENE** [F6] key will cause the following SCENE MEMORY window to appear.

```
┌──────────────SCENE MEMORY──────────────┐
│         1-SCENE 1                       │
│         2-SCENE 2                       │
│                                         │
│   CLOSE   ERASE   RECALL   STORE        │
└─────────────────────────────────────────┘
```
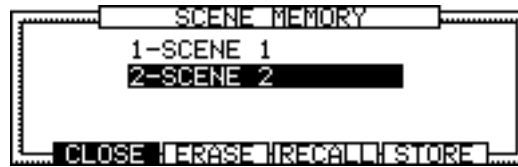
The SCENE MEMORY window displays a list of the stored scenes. Use the [F2] – [F5] keys to select a function you wish to execute. Each function key has the following function:

- **CLOSE** [F2] key .... Closes the SCENE MEMORY window and returns you to a normal screen.
- **ERASE** [F3] key .... Erases a stored scene.
- **RECALL** [F4] key .... Recalls a stored scene.
- **STORE** [F5] key .... Stores the current mix parameter settings to a scene memory.

Storing a scene

Follow the procedure below to store a scene.

1. **Press the STORE [F5] key while the SCENE MEMORY window is displayed.**
   The current mix parameter settings will be stored with a name **(scene memory)** and added to the scene memory list.

```
┌──────────────SCENE MEMORY──────────────┐
│         1-SCENE 1                       │
│         2-SCENE 2                       │
│         3-(scene memory)                │
│   CLOSE   ERASE   RECALL   STORE        │
└─────────────────────────────────────────┘
```
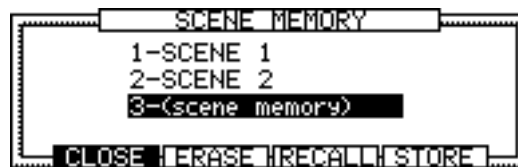
2. **If necessary, press the [NUMBER/NAME] key and name this scene.**
   In the SCENE MEMORY window, you can name the scene that currently contains the cursor. Refer to page 18, 19 for information on entering characters.

3. **Press the CLOSE [F2] key to quit the scene memory operation.**

Recalling a scene

Follow the procedure below to recall a stored scene.

1. **Use the [CURSOR] key to move the cursor up and down in the SCENE MEMORY window to select a scene to recall.**

```
┌──────────────SCENE MEMORY──────────────┐
│         1-SCENE 1                       │
│         2-SCENE 2                       │
│         3-(scene memory)                │
│   CLOSE   ERASE   RECALL   STORE        │
└─────────────────────────────────────────┘
```
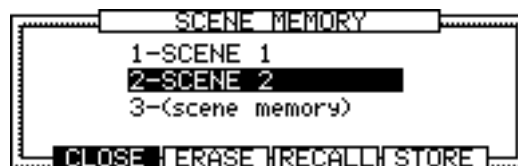
2. **Press the RECALL [F4] key.**
The scene is recalled, and the DPS12 returns to the last Mixer mode that was obtained before you recalled the scene memory.

```
Select:LEVEL          :
 | | | | | | | | | | | |
 | | | | | | | | | | | |
 ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟
 ▼  SELECT  ▲ EFFECT SCENE
```
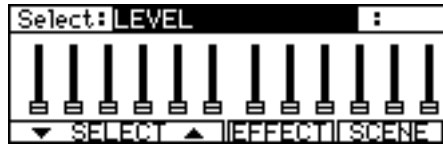
➤ *NOTES :*
- *When you recall a scene, the current Mixer parameter settings are replaced with those in the recalled scene. If necessary, store the current Mixer parameter settings before you recall a scene.*
- *The LEVEL parameter and PAN parameter settings for the TRACK MIX channels that are recalled may sometimes not match the actual position of the controllers on the top panel (faders and [PAN] controls). If a parameter setting does not match the position of the actual control, a dot (•) appears in the graphical field.*

```
Select:LEVEL          :
 | | | ˙ | | | | | | | |
 | | | | | | | | | | | |
 ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟ ⊟
 ▼  SELECT  ▲ EFFECT SCENE
```

- *This screen example shows that the level value for TRACK MIX channels 3 and 4 do not match the actual position of the channel faders. In this case, move the corresponding channel faders past the current setting values, and the dot will disappear and the bar graph will indicate a new level to match the current fader position. Note that you cannot change the value by moving the fader until a dot indicator disappears.*

Erasing a scene

Follow the procedure below to erase a stored scene.

1. **In the SCENE MEMORY window, move the cursor to select the scene you wish to erase.**

```
        SCENE MEMORY
   1-SCENE 1
   2-SCENE 2
   3-(scene memory)

   CLOSE  ERASE  RECALL  STORE
```

2. **Press the ERASE [F4] key.**

```
        SCENE MEMORY
   1-SCENE 1
   2-(scene memory)


   CLOSE  ERASE  RECALL  STORE
```
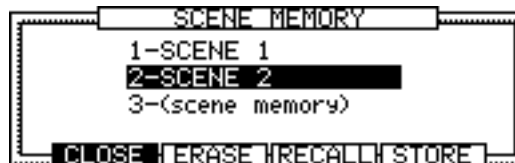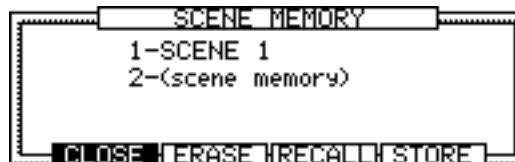
The selected scene will be erased.

Chapter 7: Advanced technique for mixing

The DPS12 is designed for ease of operation from recording to mixdown, similar to a cassette multitrack recorder. It also enables you to combine various functions for more advanced mixing operations. This chapter introduces advanced techniques for mixing with the DPS12.

Mixing and recording several input signals

On the DPS12, you can assign input channels (INPUT jacks 1–6, OPTICAL IN jacks) to physical tracks. However, you may sometimes wish to mix multiple input sources to record them onto Tracks 1–2. For example, it is useful if you can feed individual instrument sounds from the INDIVIDUAL OUT jacks of a rhythm machine or a sampler into the DPS12, then mix them in stereo with appropriate pan and level settings, and record the stereo mix to two tracks. In the following example, we feed sound sources to INPUT jacks 1–6, mix them into stereo, and record the mixed signal onto Tracks 1 and 2.

1. Connect the sound sources you wish to mix into stereo and record to INPUT jacks 1–6.

2. Press the THRU [F2] key in Assign mode.
   The DPS12 displays a screen in which you can route input signals to the recorder section as input sources or to the THRU MIX channels of the mixer section.

```
ASSIGN INPUT TO THRU/TRACK
Analog In-1 ➡SOURCE ASSIGN     THRU MIX is
Analog In-2 ➡SOURCE ASSIGN     sent to MIXER
Analog In-3 ➡SOURCE ASSIGN     directly (not
Analog In-4 ➡SOURCE ASSIGN     recorded).
FX RTN  THRU  SOURCE  V.TRK
```

3. Route all Analog In-1 – Analog In-6 to THRU MIX
   The input signals from INPUT jacks 1–6 are sent to the THRU MIX channels of the mixer section.

4. Press the THRU [F2] key in Mixer mode, and set the pan, level, and EQ for THRU MIX channels 1–6.
   At this time, use the channel LEVEL parameters and the [MASTER] fader to adjust the levels so that the THRU level meters 1–6 (input level at INPUT jacks 1–6) and the L/R meters (output level of master L/R) in Mixer mode do not reach the maximum level.

5. Press the SOURCE [F3] key in Assign mode.
   The DPS12 displays a screen in which you can assign each input signal to an individual track (physical track).

```
ASSIGN INPUT SOURCE TO TRACK 1-12
analog in-1 ➡ Track 1     Input in lowercase
analog in-2 ➡ Track 2     letters is routed
analog in-3 ➡ Track 3     to THRU MIX (not
analog in-4 ➡ Track 4     recorded).
FX RTN  THRU  SOURCE  V.TRK
```
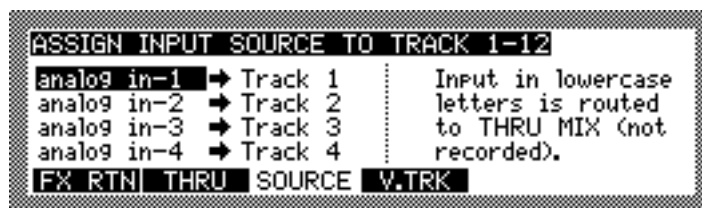
6. Assign MASTER L and MASTER R to Tracks 1 and 2 respectively.

```
ASSIGN INPUT SOURCE TO TRACK 1-12
MASTER L    ➡ Track 1     Input in lowercase
MASTER R    ➡ Track 2     letters is routed
analog in-3 ➡ Track 3     to THRU MIX (not
analog in-4 ➡ Track 4     recorded).
FX RTN  THRU  SOURCE  V.TRK
```
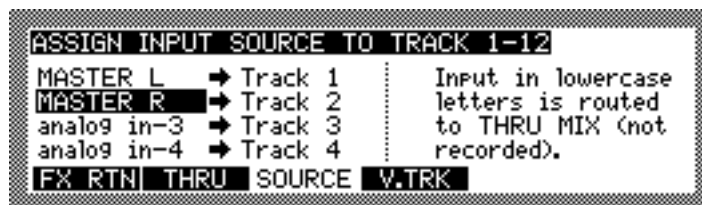
The L and R outputs in the mixer section are now assigned as input signals to Tracks 1 and 2.

7. **Press the [RECORD SELECT] keys 1 and 2.**
    Tracks 1 and 2 enter record waiting mode, and you can monitor the input sources (stereo mix source) for Tracks 1 and 2 at the MASTER OUT jacks and the OPTICAL OUT jacks.

8. **Start recording on the DPS12 and start playing back the sound source.**
    The signals input from INPUT jacks 1–6 are mixed in stereo and recorded onto Tracks 1 and 2.

Mixing several inputs via AUX

You may use AUX SEND connections to mix and record multiple input signals. This function is useful when you mix and record multiple input signals to tracks while listening to data already recorded to other tracks. In this example, we will mix sound sources connected to INPUT jacks 1–6 into stereo signals, then record them to Tracks 3 and 4.

1. **Connect the sound sources you wish to mix and record to INPUT jacks 1–6.**

2. **Press the `THRU` [F2] key in Assign mode.**
    The DPS12 displays a screen in which you can route input signals to the recorder section as input sources or to the THRU MIX channels of the mixer section.

```
ASSIGN INPUT TO THRU/TRACK
Analog In-1 ➡THRU MIX        THRU MIX is
Analog In-2 ➡THRU MIX        sent to MIXER
Analog In-3 ➡THRU MIX        directly (not
Analog In-4 ➡THRU MIX        recorded).
FX RTN  THRU  SOURCE  V.TRK
```

3. **Route all `Analog In-1`– `Analog In-6` to `THRU MIX` channels.**
    The input signals from INPUT jacks 1–6 are sent to the THRU MIX channels of the mixer section.

4. **Press the `SOURCE` [F3] key in Assign mode.**
    The DPS12 displays a screen in which you can assign each input signal to an individual track (physical track).

```
ASSIGN INPUT SOURCE TO TRACK 1-12
analog in-1 ➡ Track 1        Input in lowercase
analog in-2 ➡ Track 2        letters is routed
analog in-3 ➡ Track 3        to THRU MIX (not
analog in-4 ➡ Track 4        recorded).
FX RTN  THRU  SOURCE  V.TRK
```
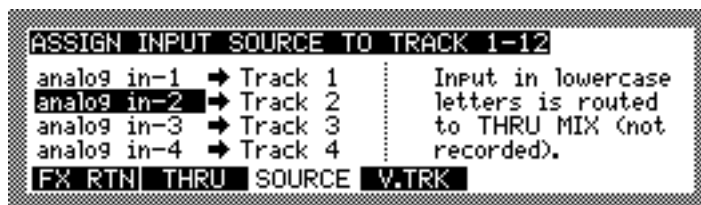
5. **Assign `AUX OUT-A` (left channel) and `AUX OUT-B` (right channel) to Tracks 3 and 4 respectively.**

```
ASSIGN INPUT SOURCE TO TRACK 1-12
analog in-1 ➡ Track 1        Input in lowercase
analog in-2 ➡ Track 2        letters is routed
AUX OUT-A  ➡ Track 3         to THRU MIX (not
AUX OUT-B  ➡ Track 4         recorded).
FX RTN  THRU  SOURCE  V.TRK
```
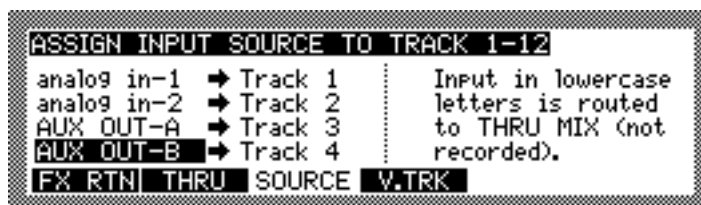
6. **Press the corresponding [RECORD SELECT] keys to set Tracks 3 and 4 in record waiting mode.**

    ⚠ *CAUTION : Make sure that the AUX SEND levels for tracks 3 and 4 are set to 0. If either level is not set to 0, a signal will loop, making a substantial noise.*

7. **Select `STEREO` for the `AUX type` field in Mixer mode, and set AUX PRE/POST for THRU channels 1–6 to `PRE`.**
    With these settings, the level settings for the mixer channels will not affect the AUX SEND signals.

    ➤ *NOTE : Set the THRU MIX channel level to 0.*

8. Adjust the level, PAN, and EQ for each channel.
Play the DPS12 and adjust the level and PAN of the playback sound for TRACK MIX channels 1 and 2. Then, set the level and PAN of AUX SEND for THRU MIX channels 1–6.

9. Start recording on the DPS12.
You can mix input signals from INPUT jacks 1–6 into stereo and record them onto Tracks 3 and 4 while listening to the sound from Tracks 1 and 2.

Digital input from an external device

The OPTICAL IN jacks on the rear panel of the DPS12 enable you to route digital audio signals output from the digital out jacks of a connected DAT recorder, CD player, or sampler into the DPS12. In this example, we will record digital audio signals output from a connected DAT recorder onto Tracks 1 and 2 of the DPS12.

1. Connect the digital output jacks of the DAT recorder and the OPTICAL IN jacks of the DPS12 using a standard optical cable.

> ✎ *TIP :* *If the digital output jacks of the DAT recorder are coaxial, you will need to use an optical/coaxial converter.*

> ➥ *NOTE :* *It is recommended to set the sampling rate of the DPS12 to match it to that of the digital input signal. It is possible to route a digital signal that uses a different sampling rate. However, the DPS12 will convert the sampling rate of the input signal so that it will match the rate set on the DPS12, resulting in changes in tonal quality.*

2. Press the `THRU` [F2] key in Assign mode.
The DPS12 displays a screen in which you can route input signals to the recorder section as input sources or to the THRU MIX channels of the mixer section.

```
ASSIGN INPUT TO THRU/TRACK
Analog In-1 ➡SOURCE ASSIGN    THRU MIX is
Analog In-2 ➡SOURCE ASSIGN    sent to MIXER
Analog In-3 ➡SOURCE ASSIGN    directly (not
Analog In-4 ➡SOURCE ASSIGN    recorded).
FX RTN  THRU  SOURCE  V.TRK
```

3. Set the `Digi In-L` and `Digi In-R` select field (for the input signals routed from the OPTICAL IN jacks) to `SOURCE ASSIGN`

```
ASSIGN INPUT TO THRU/TRACK
Analog In-5 ➡SOURCE ASSIGN    THRU MIX is
Analog In-6 ➡SOURCE ASSIGN    sent to MIXER
Digi In-L  ➡SOURCE ASSIGN    directly (not
Digi In-R  ➡SOURCE ASSIGN    recorded).
FX RTN  THRU  SOURCE  V.TRK
```

Now you can select input signals from the OPTICAL IN jacks as input sources for the physical tracks.

> ✎ *TIP :* *If you select `THRU MIX` here, input signals from the OPTICAL IN jacks will be sent to the THRU MIX channels in the mixer section. This selection is useful when you wish to overdub digital audio signals from a sampler during mixdown.*

4. Press the **SOURCE** [F3] key in Assign mode and assign **DIGITL L** and **DIGITAL R** to Tracks 1 and 2 respectively.


```
ASSIGN INPUT SOURCE TO TRACK 1-12
DIGITAL L    ➡ Track 1      Input in lowercase
DIGITAL R    ➡ Track 2      letters is routed
analo9 in-3  ➡ Track 3      to THRU MIX (not
analo9 in-4  ➡ Track 4      recorded).
FX RTN  THRU  SOURCE  V.TRK
```
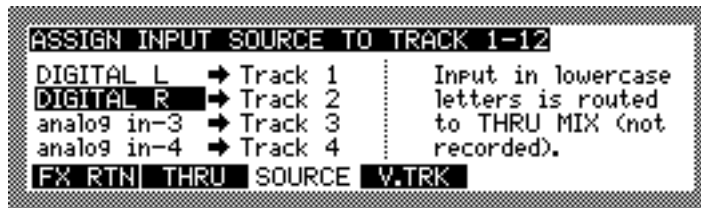
Input signals from the OPTICAL IN jacks will be assigned to physical tracks 1 and 2.

5. Set Tracks 1 and 2 to record waiting mode, and start recording.

Using the Solo function

The mixer section of the DPS12 provides a Solo function that allows specified channels to be routed to Master L/R. This function is useful when you wish to monitor only certain input signals or tracks. The Solo function is available whenever the transport operations on the DPS12 are available (that is, in Main mode, Track View mode, Mixer mode, and when the Control Panel is displayed).

1. Press the [SOLO] key to use the Solo function.
   The [SOLO] key LED flashes and the Solo function is enabled.

> ➤ **NOTE :** *If you press the [SOLO] key in Main mode, Track View mode, or when the Control Panel is displayed, the function indication for the [F1] and [F2] keys will change from* **TRACK** *and* **INPUT** *to* **TRACK** *and* **THRU**, *as seen in Mixer mode. This means that you can use the [F1] and [F2] keys to toggle between TRACK MIX channels and THRU MIX channels. A symbol* ▶◀ *appears along with the function indication for the currently-selected channels.*

• When TRACK MIX channels are selected


```
                          Project:NEW PROJECT
                          00:02:54:09.7
123456 7891011R LR       Remain:01h20m
▶TRACK◀ THRU             CONTROL PANEL
```

• When THRU MIX channels are selected


```
                          Project:NEW PROJECT
                          00:02:54:09.7
123456 DLR SAB LR        Remain:01h20m
 TRACK ▶ THRU ◀          CONTROL PANEL
```

2. Press the **TRACK** [F1] key to solo a TRACK MIX channel, or press the **THRU** [F2] key to solo a THRU MIX channel.

3. Use the [RECORD SELECT] keys to select an individual channel to monitor.
   Use a corresponding [RECORD SELECT] key to select a channel. Each [RECORD SELECT] key corresponds to a channel, as follows:

■ When TRACK MIX channels are selected

TRACK MIX channels   1   2   3   4   5   6   7   8   9   10   11   12

■ When THRU MIX channels are selected

THRU MIX channels   1   2   3   4   5   6   DL   DR
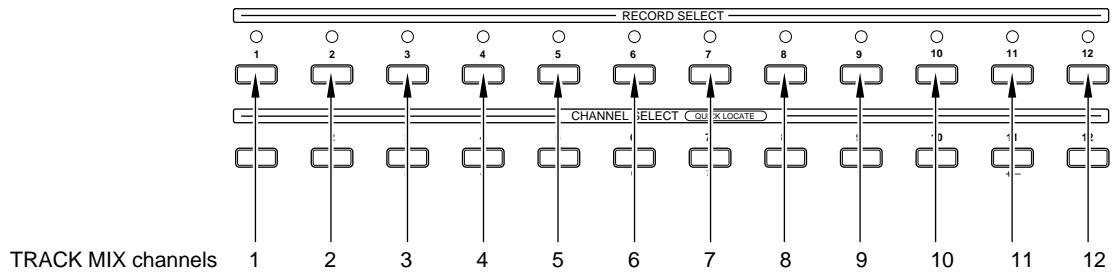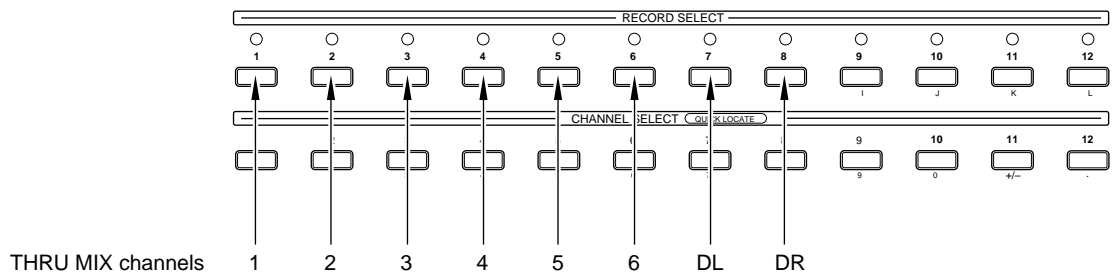
Only the selected channel signals are output from the MASTER OUT jacks or the OPTICAL OUT jacks. You can select multiple channels, or select TRACK MIX channels and THRU MIX channels simultaneously.

➠**NOTE :** *Since the [RECORD SELECT] keys are used to select channels for the Solo function, you cannot change the tracks' record waiting mode.*

✐ *TIP :* *If you set all TRACK MIX channels to solo, you can mix down while using the [RECORD SELECT] keys to turn the channels on and off in real-time.*

4. **Press the [SOLO] key to cancel the Solo function.**
The [SOLO] key LED turns off and the Solo function is cancelled.

✐ *TIP :* *The DPS12 memorizes the solo channels you select using the [RECORD SELECT] keys during the Solo operation and retains them until the power to the unit is turned off. When you turn on the Solo function, the same channels are automatically selected.*

Using virtual tracks

The DPS12 provides 250 virtual tracks for twelve physical tracks. You cannot directly control the virtual tracks, but you can record, play, and edit them by assigning them to the physical tracks. For example, if you record each take in several virtual tracks for overdubbing a given part, you can select the best take for mixdown later. This section explains how to record multiple takes of a guitar solo while switching the virtual tracks assigned to physical track 12.

1. **Press the V.TRK [F4] key in Assign mode before you start recording the first guitar solo take.**
   The DPS12 displays a screen where you can assign up to 250 virtual tracks to twelve physical tracks.

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
     1-V.TRACK  1    ➡ Track  1
     2-V.TRACK  2    ➡ Track  2
     3-V.TRACK  3    ➡ Track  3
     4-V.TRACK  4    ➡ Track  4
 FX RTN| THRU |SOURCE  V.TRK        [ERASE]
```

   With the default setting, the DPS12 assigns virtual tracks 1–12 to physical tracks 1–12. Tracks that already have data are named V.Track ### (### is the number of the virtual track), and empty tracks are indicated as (unused).

2. **Move the cursor to the track name field for Track 12, and press the [NUMBER/NAME] key to name the track GT-SOLO1.**

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
     9-V.TRACK  9    ➡ Track  9
    10-V.TRACK10     ➡ Track 10
    11-V.TRACK11     ➡ Track 11
    12-GT-SOLO1      ➡ Track 12
 FX RTN| THRU |SOURCE  V.TRK        [ERASE]
```
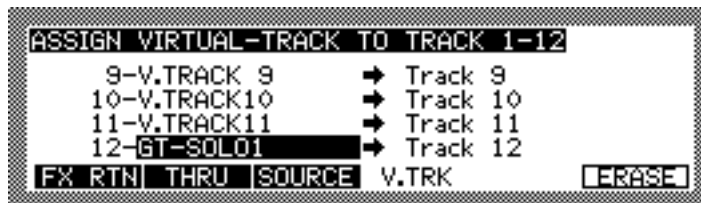
3. **Return to the MAIN screen and record the first guitar solo take to Track 12.**
4. **Press the V.TRK [F4] key in Assign mode to display Track 12 again.**
5. **Move the cursor to the virtual track number field 12.**

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
     9-V.TRACK  9    ➡ Track  9
    10-V.TRACK10     ➡ Track 10
    11-V.TRACK11     ➡ Track 11
    12-GT-SOLO1      ➡ Track 12
 FX RTN| THRU |SOURCE  V.TRK        [ERASE]
```
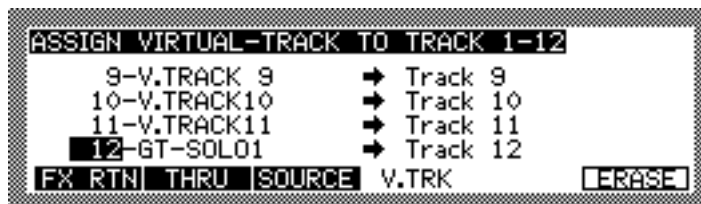
6. **Turn the [JOG] dial to assign an unused virtual track to Track 12.**

```
ASSIGN VIRTUAL-TRACK TO TRACK 1-12
     9-V.TRACK  9    ➡ Track  9
    10-V.TRACK10     ➡ Track 10
    11-V.TRACK11     ➡ Track 11
    13-(unused)      ➡ Track 12
 FX RTN| THRU |SOURCE  V.TRK        [ERASE]
```
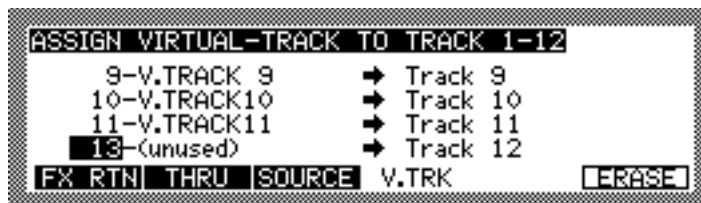
   New virtual track 13 is assigned to physical track 12.

7. **Move the cursor to the track name field and name the track GT-SOLO2.**
8. **Repeat steps 3–7 to record several takes.**
   Even if you change the virtual track assigned to a physical track, the previous virtual track remains on the disk, and you can assign it to any physical track for mixdown.

Physical tracks		Virtual tracks
Track 1	←	V.TRK 1
Track 2	←	V.TRK 2
Track 3	←	V.TRK 3
Track 4	←	V.TRK 4
Track 5	←	V.TRK 5
Track 6	←	V.TRK 6
Track 7	←	V.TRK 7
Track 8	←	V.TRK 8
Track 9	←	V.TRK 9
Track 10	←	V.TRK 10
Track 11	←	V.TRK 11
Track 12	←	GT-SOLO1
		GT-SOLO2
		GT-SOLO3
		GT-SOLO4
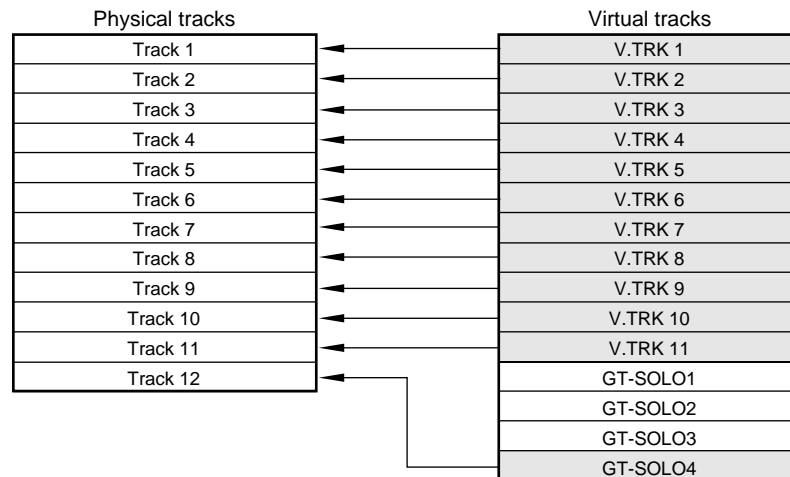
You can also assign these recorded virtual tracks to multiple physical tracks simultaneously. This function is useful when you wish to use the edit functions (see page 80) to extract the best parts from each track to create a final take.

Physical tracks		Virtual tracks
Track 1	←	GT-SOLO1
Track 2	←	GT-SOLO2
Track 3	←	GT-SOLO3
Track 4	←	GT-SOLO4
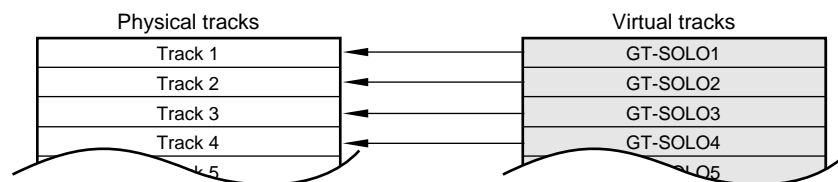
Digital ping-pong recording

A "ping-pong recording" is an operation that enables you to mix multiple tracks and record the mix onto another track. The DPS12 performs ping-pong recording within the digital domain. The following section explains how to mix physical tracks 1–10 signals into stereo and ping-pong record to physical tracks 11–12.

1. **While playing back data on the DPS12, use the channel faders 1–10 and [PAN] controls to adjust the level and panning for TRACK MIX channels 1–10. If necessary, select TRACK MIX channels in Mixer mode to set the EQ and other mix parameters.**
   At this time, use the [MASTER] fader so that the LR level meters (the output level of Master L/R) do not reach the maximum level.

2. **Press the SOURCE [F3] key in Assign mode.**
   The DPS12 displays a screen in which you can assign input signals to each track (physical track).

```
ASSIGN INPUT SOURCE TO TRACK 1-12
analog in-1 ➡ Track 1      Input in lowercase
analog in-2 ➡ Track 2      letters is routed
analog in-3 ➡ Track 3      to THRU MIX (not
analog in-4 ➡ Track 4      recorded).
FX RTN  THRU  SOURCE  V.TRK
```
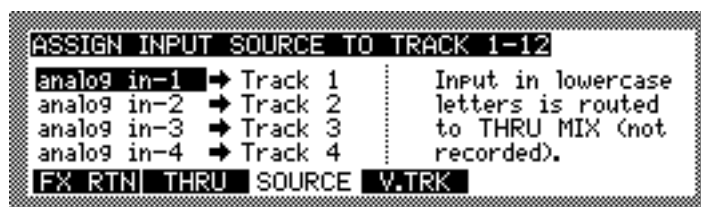
3. Assign **MASTER L** and **MASTER R** to Tracks 11 and 12.

```
ASSIGN INPUT SOURCE TO TRACK 1-12
analog in-3  ➡ Track 9    │ Input in lowercase
analog in-4  ➡ Track10    │ letters is routed
MASTER L     ➡ Track11    │ to THRU MIX (not
MASTER R     ➡ Track12    │ recorded).
 FX RTN  THRU  SOURCE  V.TRK
```
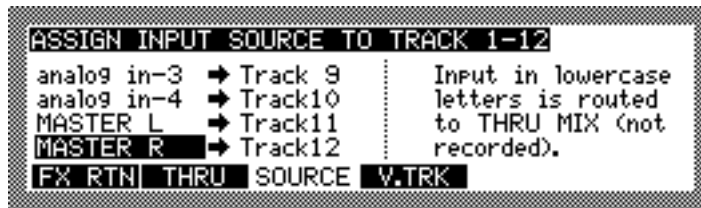
The L/R outs of the mixer section are assigned as input signals to Tracks 11 and 12.

4. Press the [RECORD SELECT] keys 11 and 12.
Tracks 11 and 12 enter record waiting mode.

5. Start recording on the DPS12.
TRACK MIX channels 1–10 signals are mixed in stereo and recorded onto Tracks 11 and 12.

> ✎ **TIP :** *When you are using an external effect unit or an optional internal effect, route the effect return signals to Master L/R via THRU MIX channels to perform ping-pong recording with the effects applied. Refer to page 78 for more information on using an external effect unit, and page 120 for more information on using an optional internal effect processor.*

Using an external effect unit for mixdown

Using the DPS12's AUX SEND A/B jacks enables you to send channel signals to an external effect unit and mix the effect return signals with dry source sounds. This section explains how to use the AUX SEND A jack to apply an external reverb effect with stereo output during mixdown.

1. Connect the AUX SEND A jack of the DPS12 to the input jack of an external reverb effect unit, and connect the output jack of the reverb effect unit to INPUT jacks 1 and 2 of the DPS12. At this time, make sure that the reverb effect unit outputs only the effect sound (reverb sound).

2. Press the **TRACK** [F1] key in Mixer mode, and raise the AUX SEND-A parameter for the TRACK MIX channel to which you wish to apply reverb.

3. Press the **THRU** [F2] key in Mixer mode, and use the SEND A MASTER parameter to adjust the AUX SEND A master level.
Signals sent from the channels to AUX SEND A are input to the reverb effect unit. At this time, adjust the SEND A MASTER parameter so that the SA meter of the THRU level meters in Mixer mode (the output level of AUX SEND A) will not reach the maximum level. If the signals are still clipping at the input of the reverb effect unit, lower the input level on the reverb effect unit.

4. Use the [INPUT GAIN] controls 1 and 2 to adjust the input level of the effect return signals routed to INPUT jacks 1 and 2.

5. Press the **THRU** [F2] key in Assign mode.
The DPS12 displays a screen in which you can route input signals to the recorder section as input sources or to the THRU MIX channels of the mixer section.

```
ASSIGN INPUT TO THRU/TRACK
Analog In-1 ➡ SOURCE ASSIGN  │ THRU MIX is
Analog In-2 ➡ SOURCE ASSIGN  │ sent to MIXER
Analog In-3 ➡ SOURCE ASSIGN  │ directly (not
Analog In-4 ➡ SOURCE ASSIGN  │ recorded).
 FX RTN  THRU  SOURCE  V.TRK
```

6. Route **Analog In-1** and **Analog In-2** to **THRU MIX**.
The input signals at INPUT jacks 1–2 are sent to the THRU MIX channels of the mixer section.

7. **Select THRU MIX channels in Mixer mode, and use the PAN parameters for THRU MIX channels 1 and 2 to expand the panning. Also, use the LEVEL parameters to adjust the level of the effect sound.**
   The MASTER OUT jacks and the OPTICAL OUT jacks output a mix signal of the TRACK MIX channels (source sound) and THRU MIX channels (effect sound).

   > ➠ *NOTE : Make sure that the AUX SEND-A parameters for THRU MIX channels 1 and 2 are set to 0 before you raise the LEVEL parameters. If they are not set to 0, signal loops will be generated, which may damage the monitor speakers.*

   > ✎ *TIP : You can apply equalization to the THRU MIX channel 1/2 effect return signals.*

8. **Repeat steps 2, 3, and 7 while playing back the DPS12 to fine-adjust the channel send level and return level.**

Adding sounds during mixdown

The DPS12 is capable of playing back up to twelve physical tracks via the TRACK MIX channels in the mixer section. Send signals from INPUT jacks 1–6 and/or the OPTICAL IN jacks to THRU MIX channels to mix with TRACK MIX channels. For example, if you have a MIDI sequencer sync with the DPS12, you can mix up to eight channels of signals from synthesizers or samplers. This section explains how to add more signals from INPUT jacks 1 and 2 during mixdown. (See page 109 for more information on synchronizing a MIDI sequencer to the DPS12.)

1. **Connect the sound sources you wish to add to INPUT jacks 1 and 2, and use the [INPUT GAIN] controls 1 and 2 to adjust the input levels.**

2. **Press the `THRU` [F2] key in Assign mode.**
   The DPS12 displays a screen in which you can route input signals to the recorder section as input sources or to the THRU MIX channels of the mixer section.

   ```
   ASSIGN INPUT TO THRU/TRACK
   Analog In-1 ➡ SOURCE ASSIGN       THRU MIX is
   Analog In-2 ➡ SOURCE ASSIGN       sent to MIXER
   Analog In-3 ➡ SOURCE ASSIGN       directly (not
   Analog In-4 ➡ SOURCE ASSIGN       recorded).
   FX RTN   THRU   SOURCE  V.TRK
   ```

3. **Route `Analog In-1` and `Analog In-2` to `THRU MIX`**
   The input signals at INPUT jacks 1 and 2 are sent to THRU MIX channels 1 and 2 of the mixer section.

4. **Select THRU MIX channels in Mixer mode, and set the LEVEL, PAN, and EQ parameters for the THRU MIX channels 1 and 2.**

5. **Play the DPS12 and start mixdown.**
   The TRACK MIX channel signals and THRU MIX channel signals are mixed and routed via the MASTER OUT jacks and OPTICAL OUT jacks to the master recorder.

Chapter 8: Edit technique (Edit mode)

The DPS12 provides various editing capabilities in Edit mode. You can specify a range of audio data in a physical track to copy to a different position or another track. You can also delete the specified portion of data. For example, you may use the same chorus or guitar phrase repeatedly, or you may move all track data to a different position to change the structure of the song. This chapter describes the various editing techniques available in Edit mode.

Using an Edit mode screen

Edit mode enables you to edit audio data recorded in the tracks of the DPS12 using various methods. Press the [EDIT] key when the transport section is stopped. The DPS12 enters Edit mode, displaying the following EDIT screen.
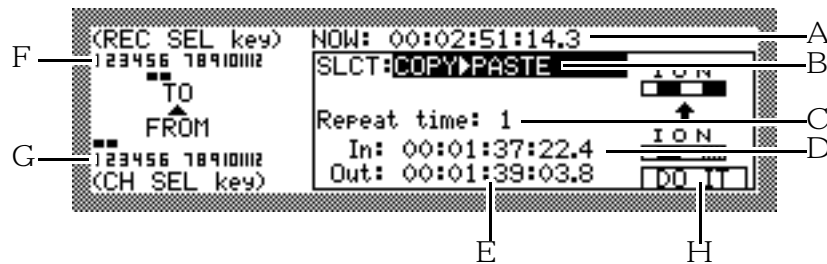
The Edit mode screen contains the following information:

1 This field indicates the current position when the DPS12 enters Edit mode. In this position (called the "NOW point"), you execute various edit commands.

2 This select field enables you to select a type of edit command.

3 This field indicates an optional parameter that corresponds to the type of edit command. For example, if you are using the **COPY→ PASTE** edit command, this will be a numeric field to set the number of paste operations (**Repeat Time**).

4 /5

These are time fields to specify a range for the edit operation. The **In** field uses the IN point set by the [IN] key, and the **Out** field uses the OUT point set by the [OUT] key. You can also move the cursor to these field to change the IN/OUT points.

6 /7

The values of these fields change depending on the edit command you selected in the field 2 .

For example, if you selected an edit command that enables you to copy or cut a specified range of data and overwrite existing data or insert new data at a destination point or track (i.e., a command such as **COPY→ PASTE** or **CUT→ INSERT**), field 6 indicates "TO track" (a destination track) and field 7 indicates "FROM track" (a source track).

Example: TO tracks are Tracks 1 and 2, and FROM tracks are Tracks 3 and 4.

If you selected an edit command that functions only for certain tracks, such as **INSERT SILENCE**, field 6 indicates an "EDIT track" (a track to be edited).

```
(REC SEL key)       NOW: 00:02:51:14.3
123456 78910III2   SLCT:INSERT SILENCE        N
  ■■                                        □ □
Edit track                                    ↑
                    Insert time                N
(CH SEL key)        :00:01:39:03.8           DO IT
```

Example: Tracks 1 and 2 are selected as EDIT tracks.

> ✎ **TIP :** *Use the [RECORD SELECT] key to select a TO track and the EDIT track, and use the [CHANNEL SELECT] key to select a FROM track.*

8 **DO IT** [F6] key

This function key is used for the edit operations.

Basic operations in Edit mode

Follow the steps below to perform basic operations in Edit mode.

1. **Store the IN point and OUT point to specify a range to edit in Main mode.**
   Use the [MEMORY] key, [IN] key, and [OUT] key to store the IN/OUT points. Refer to page 33 for more information.

> ✎ **TIP :** *If you wish to specify a precise point, press the [JOG PLAY] key and turn the [JOG] dial to find the point while listening to the sound.*

> ➳ **NOTE :** *This operation is not necessary for the* **INSERT SILENCE** *edit command.*

2. **Stop the transport operation at the position where you wish to start editing (NOW point).**

> ➳ **NOTE :** *This operation is not necessary for the* **CUT ▶ DISCARD** *edit command.*

3. **Press the [EDIT] key when the DPS12 is stopped.**
   The DPS12 enters Edit mode. The settings made in Steps 1 and 2 are reflected in the In, Out, and NOW point fields on the screen.

```
(REC SEL key)       NOW: 00:05:00:00.0                — NOW point
123456 78910III2   SLCT:COPY▶PASTE       I O N
      TO                                □ ■
      ▲                                   ↑
    FROM            Repeat time:99       I O N
123456 78910III2      In: 00:00:03:00.0  ■■          — IN point
(CH SEL key)        Out: 00:00:10:00.0   DO IT
```
OUT point
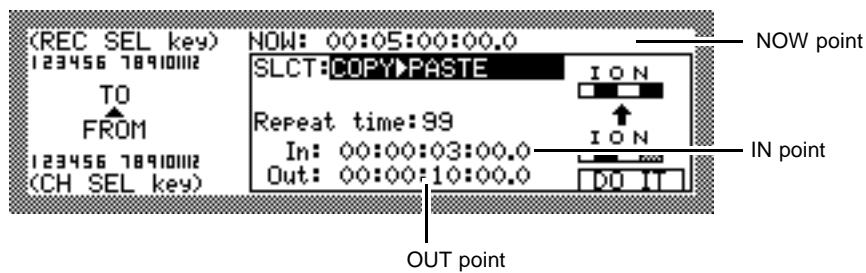
4. **Specify an edit command in the** **SLCT:** **field.**
   Refer to "Type and function of edit commands" on the next page for more details on edit commands.

5. **Adjust the position of the IN point and OUT point if necessary.**
   Use the [CURSOR] key to move the cursor to the In: time field or the Out: time field, and use the [JOG] dial to change the value, or use the [NUMBER/NAME] key to enter a value directly.

6. **Use the [CHANNEL SELECT] key and the [RECORD SELECT] key to select a FROM track and a TO track (or EDIT track).**
    The selected tracks appear as follows on the screen.

    Example: This setting is used to cut Track 2 and paste it to Track 1 99 times.

7. **Press the DO IT [F6] key.**
    The Edit command is executed.

> ✎ **TIP :** *You can undo the execution of edit commands using the Undo function. Refer to page 32 for more information on the Undo function.*

Type and function of edit commands

This section explains the type and function of edit commands.

COPY → PASTE

This edit command enables you to copy data between the IN and OUT points and paste it to the area that begins with the NOW point. The data between the IN and OUT points remains intact, and the existing data in the destination area after the NOW point is overwritten.
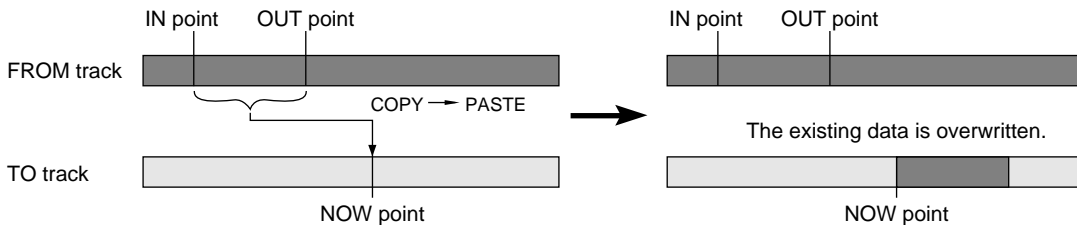
> ✎ **TIP :** *You can repeatedly paste the copied data between the IN and OUT point at the NOW point. Move the cursor to the* **Repeat times:** *field and turn the [JOG] dial to specify the number of repeats.*

> ➥ **NOTE :** *You may select multiple tracks as FROM track and TO track.*

• If the same number of tracks are specified as FROM tracks and TO tracks, the edit command will be executed for the tracks in the order of the track number.
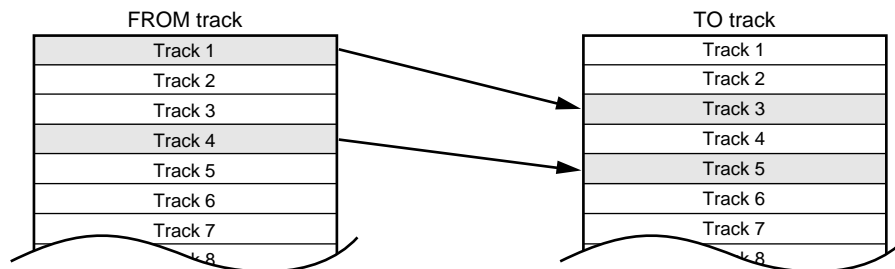
• If the number of TO tracks is smaller than the number of FROM tracks, the edit command will be executed for the number of TO tracks in the order of the FROM track number.

FROM track
Track 1
Track 2
Track 3
Track 4
Track 5
Track 6
Track 7

TO track
Track 1
Track 2
Track 3
Track 4
Track 5
Track 6
Track 7
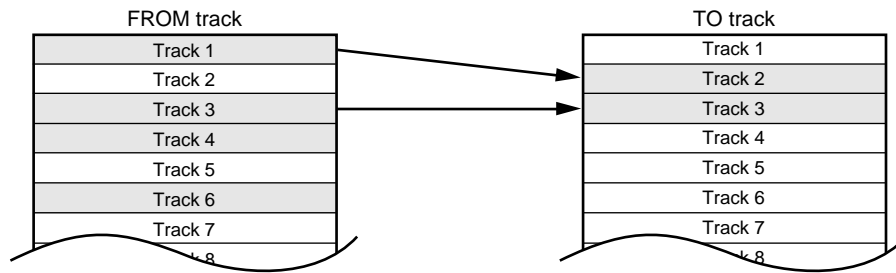
• If the number of TO tracks is larger than the number of FROM tracks, the edit command will be executed for the number of FROM tracks in the order of the TO track number.

FROM track
Track 1
Track 2
Track 3
Track 4
Track 5
Track 6
Track 7

TO track
Track 1
Track 2
Track 3
Track 4
Track 5
Track 6
Track 7
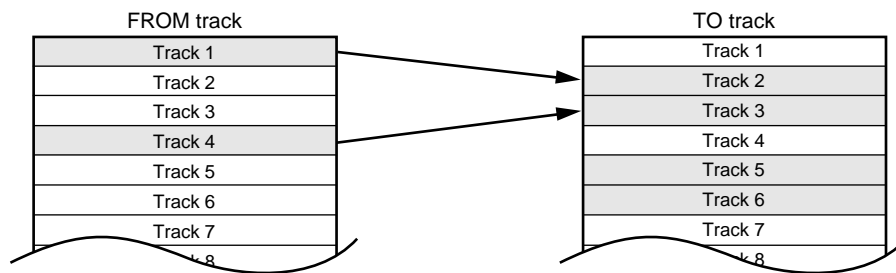
COPY → INSERT

This command enables you to copy data between the IN and OUT points and insert it after the NOW point. The copy source data between the IN and OUT point will remain intact, and the existing data in the destination after the NOW point will move forward in time.
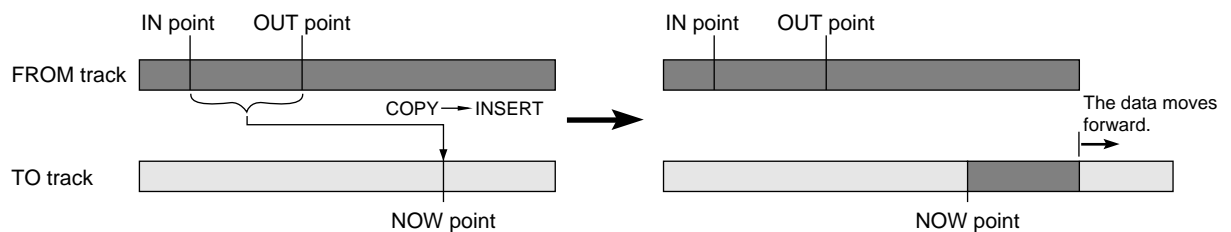
➤➤ **NOTE :** *You may select multiple tracks as FROM tracks and TO tracks respectively. Refer to the NOTE of "COPY → PASTE" on page 82 for more information.*

✐ **TIP :** *You may repeatedly insert the copied data after the NOW point, if necessary. Move the cursor to the* **Repeat times:** *field and turn the [JOG] dial to specify the number of repeat operations.*

CUT → PASTE

This command enables you to cut (delete) data between the IN point and OUT point, and paste the data after the NOW point. Silence will be created between the IN and OUT point, and the existing data in the destination will be overwritten.

> ➥ **NOTE :** *You may select multiple tracks as FROM tracks and TO tracks respectively. Refer to the NOTE of "COPY → PASTE" on page 82 for more information.*

> ✎ **TIP :** *You may repeatedly insert the cut data after the NOW point, if necessary. Move the cursor to the* `Repeat times:` *field and turn the [JOG] dial to specify the number of repeat operations.*

CUT → INSERT

This command enables you to cut data between the IN and OUT points and insert it after the NOW point. The source data between the IN and OUT point will be replaced with silence, and the existing data in the destination after the NOW point will move forward in time.

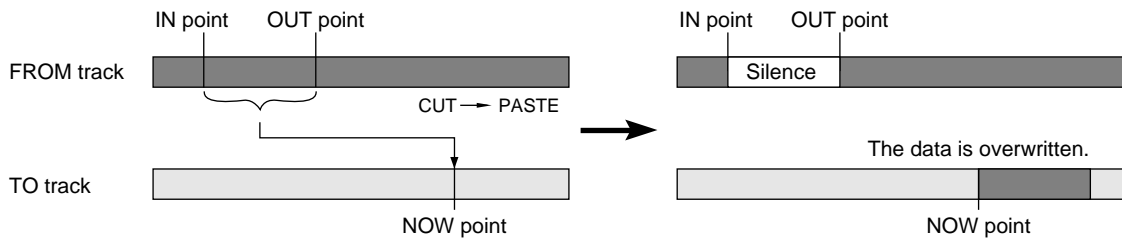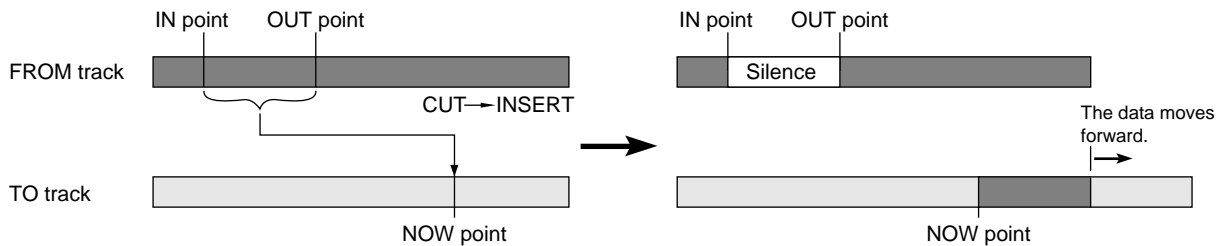> ➥ **NOTE :** *You may select multiple tracks as FROM tracks and TO tracks respectively. Refer to the NOTE under the heading "COPY → PASTE" on page 82 for more information.*

> ✎ **TIP :** *You may repeatedly insert the cut data after the NOW point, if necessary. Move the cursor to the* `Repeat times:` *field and turn the [JOG] dial to specify the number of repeat operations.*

INSERT SILENCE

This command enables you to insert silent data after the NOW point. The existing data after the NOW point will move forward by the time duration of the inserted silence. The time duration of the silence is set in the `Insert time` field. Move the cursor to this field, and press the [NUMBER/NAME] key to enter a value, or turn the [JOG] dial to set the value.
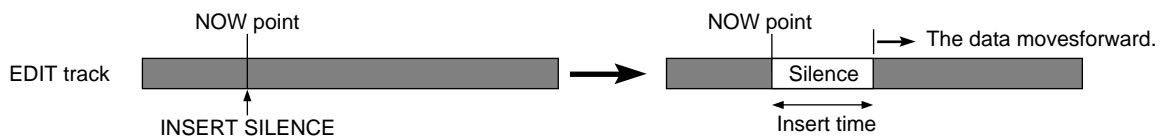
CUT → DISCARD

This command enables you to cut data between the IN point and OUT point. The data is deleted and replaced with a silence.

IN point   OUT point   IN point   OUT point

EDIT track   →   Silence

CUT → DISCARD
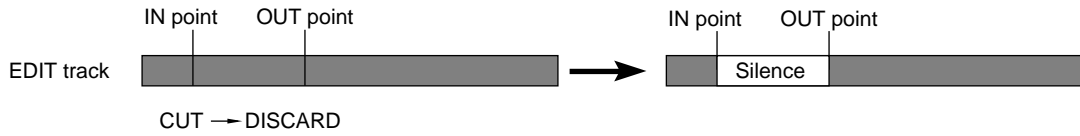
CUT → MOVE

This command enables you to cut data between the IN point and OUT point. The data after the OUT point moves backward to the IN point.

IN point   OUT point   IN point

EDIT track   →

CUT → MOVE   ← The data moves backward
                                                       to the IN point.
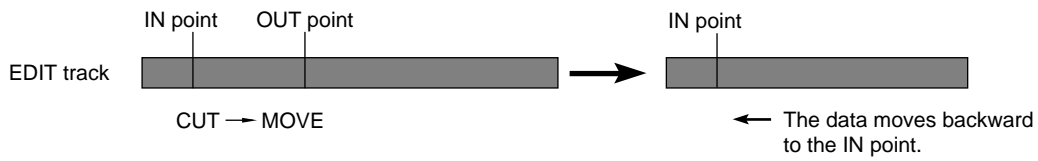
Chapter 9: Control Panel

This chapter describes the functions and operations of the Control Panel used for the setting of the DPS12 operation.

Basic operation of the Control Panel

The Control Panel is a screen in which you can set various internal parameters related to the DPS12 operation. To recall the Control Panel, press the **CONTROL PANEL**([F3] – [F6] keys) in the MAIN screen. (You may also recall the Control Panel during recording or playback.) The Control Panel displays the following information.
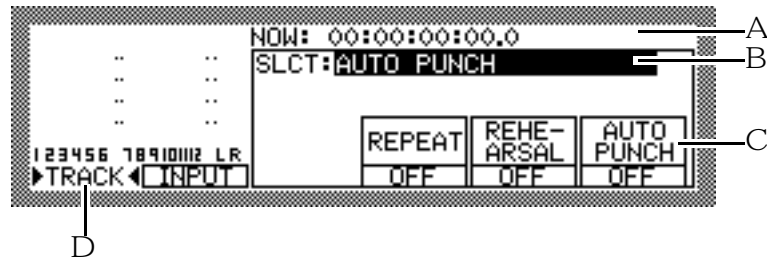
1 This time field is the same as the time counter in the MAIN screen, indicating the current transport position (NOW point). Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial or press the [NUMBER/NAME] key to enter a time value.

> *✎ TIP : While the Control Panel is displayed, you may enter a time value in this field to locate a desired point during recording or playback.*

2 This select field is used to select an item to set. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to select an item.

3 This area indicates a different parameter depending on the item you have selected for field 2.

4 These level meters indicate the level of input signals and the output level of playback signals from the tracks. The operating method for these level meters is the same as that in the MAIN screen. (See page 25.)

Control Panel parameters

This section explains the function and operation of all parameters in the Control Panel.

AUTO PUNCH (Setting Auto Punch In/Out points)

This function has parameters related to the Auto Punch In/Out function.
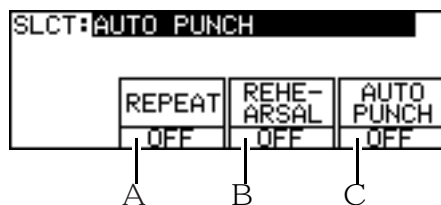
Here you can turn the REPEAT, REHEARSAL, and AUTO PUNCH parameters on and off. Use the [F4] – [F6] keys to turn them on/off. When you turn on the parameters, the **OFF** indicators on the bottom change to **ON** and the corresponding parameter names are highlighted.

```
SLCT:AUTO PUNCH

        REPEAT  REHE-   AUTO
                ARSAL   PUNCH
          ON     OFF     OFF
```

The parameters have the following functions:

1 **REPEAT** [F4] key (repeat)
   When this parameter is turned on, the PDS12 plays back data between the IN point and OUT point (specified by the [IN] and [OUT] keys) repeatedly. See page 45 for more information.

2 **REHEARSAL** [F5] key (rehearsal)
   When this parameter is turned on, actual recording is not performed. Only the monitoring source (input or track playback) is changed. You can use this function for rehearsing the Auto Punch In/Out operation. See page 51 for more information.

3 **AUTO PUNCH** [F6] key (Auto Punch)
   When this parameter is turned on, you can perform Auto Punch In/Out. After the Auto Punch In/Out operation is complete, this parameter automatically turns off. See page 50 for more information.

> ✎ **TIP :** *You may want to have this Control Panel displayed during the repeated Auto Punch In/Out operations.*

VARI PITCH

This function utilizes parameters to adjust the recording and playback speeds.

```
SLCT:VARI PITCH

    Amount:100%          VARI
                         PITCH
                          ON

          A              2
```
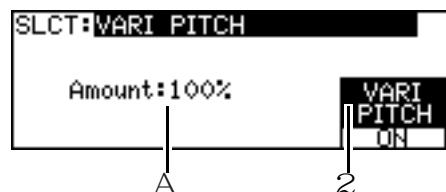
The DPS12 provides a Vari Pitch function that enables you to change recording and playback speeds. You can set the speed variation and on and off in this screen.

1 **Amount** (pitch variation)
   This numeric field allows you to specify the amount of speed variation in percentage, based on 100% as a standard speed. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to adjust the value.

2 **VARI PITCH** [F6] key (Vari Pitch on/off)
   Use the [F6] key to toggle the Vari Pitch function on and off. When the function is turned on, the recording and playback speeds use the value specified in the **Amount** field.

TIME DISPLAY (Setting the time counter display)

This function has the following parameters related to the time counter display.

```
SLCT:TIME DISPLAY
        Style:TIME ───────────── A
         Type:ABSOLUTE ────────── B
   Frame rate:30D ──────────────── C
```

In this screen, you can select a format for the time counter, select absolute time or relative time, and set a frame rate. The parameters have the following functions.

1 **Style** (display format)

This select field enables you to set a format for the time displayed on the time counter and in various time fields. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to select the setting. There are two options.

- **TIME** (time display) .... time/minute/second/frame/sub-frame

- **BAR.BEAT.CLOCK**(measure display) .... measure/beat/clock

```
              | Project:NEW PROJECT
  ..     ..   |
  ..     ..   |   00:00:00:00.0
  ..     ..   |
123456 789101112 LR | Remain:01h20m         ▭
▶TRACK◀ INPUT    |      CONTROL PANEL
```

When **TIME** *is selected*

```
              | Project:NEW PROJECT
  ..     ..   |
  ..     ..   |    0001.01.00
  ..     ..   |
123456 789101112 LR | Remain:01h20m         ▭
▶TRACK◀ INPUT    |      CONTROL PANEL
```

When **BAR.BEAT.CLOCK** *is selected*

➤ **NOTE :** *Changes in this parameter value will be reflected on all time indications on the DPS12.*

✎ **TIP :** *While you are synchronizing a MIDI sequencer to the MIDI clock transmitted from the DPS12, selecting* **BAR.BEAT.CLOCK** *will allow you to specify the locate points and/or edit points in steps of measures and beats.*

2 **Type** (switching between absolute time and relative time)

This parameter enables you to select absolute time or relative time as the time counter value. Use the [CURSOR] key to move the cursor to this field, then use the [JOG] dial to set the parameter. There are two options.

- **ABSOLUTE** .... Absolute time referenced to the DPS12's internal zero point (00:00:00:00.0).

- **RELATIVE** .... Relative time referenced to any zero point you set (00:00:00:00.0).

✎ **TIP :** *Use the TIME OFFSET Control Panel to specify a zero point for relative time. (See page 89.)*
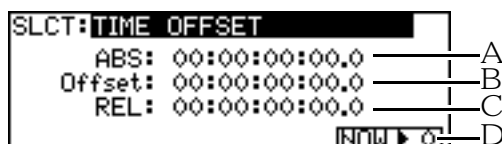
3 **Frame rate**

This parameter enables you to select a frame rate (the number of frames per second) that appears on the time counter and time fields. Options are **24**, **25**, **30** (30 frames, non-drop), **29.97**, **30D** (30 frame, drop).

> ➥**NOTE :** *Match the frame rate of the DPS12 and a connected external device to synchronize the system using MIDI timecode.*

TIME OFFSET (offset of relative time)

This function allows you to set an offset for the relative time indication on the time counter.

```
SLCT:TIME OFFSET
      ABS: 00:00:00:00.0 ———————A
   Offset: 00:00:00:00.0 ———————B
      REL: 00:00:00:00.0 ———————C
                    NOW ▶ 0: ———D
```

You can set an offset from the relative time (i.e., the amount of time slipped (offset) from the absolute time). There are three ways to set this parameter: enter an offset time value, enter the start point of relative time, or capture the current time on the fly and use it as the start point of relative time. The parameters have the following functions.

1 **ABS** (absolute time)

This display only field indicates the current position of the DPS12 in absolute time.

2 **Offset** (offset time)

This time field allows you to set an offset time from the absolute time. This field is interlocked with the **REL** field 3 . If you move the cursor to this field and use the [JOG] dial or the [NUMBER/NAME] key to change the value, the value of the **REL** field will change.

3 **REL** (Relative time)

This display indicates the current position of the DPS12 in relative time. A relative time value is obtained by subtracting an offset value from the absolute time (ABS). Move the cursor to this field, and use the [JOG] dial or the [NUMBER/NAME] key to change the value. Along with the change, the **Offset** value will change accordingly.

4 **NOW ▶ 0** [F6] key (resetting the current time to zero)

You can reset the absolute time based on the current time as the zero point. Press this key, and the **REL** field will be reset to **00:00:00:00.0** and the **offset** value will be automatically set. You can perform this operation on the fly.

TO/FROM TIME (time settings for the [TO] key and [FROM] key)

You can set the start and end points at which playback starts when you press the [TO] key and [FROM] key.

```
SLCT:TO/FROM TIME
      To time : 3sec ──────── A
    From time : 3sec ──────── B
```
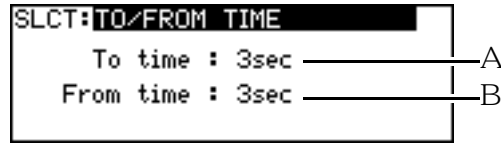
The following parameters enable you to set the point at which playback starts when you press the [TO] key, and the point at which playback ends when you press the [FROM] key.

1 **To time**
   This numeric field enables you to set the number of seconds to back up from the current position to start playback when you press the [TO] key. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set a value between one and ten seconds (in steps of one second).

2 **From time**
   This numeric field enables you to set how many seconds to move forward from the current position to end playback when you press the [FROM] key. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set a value between one and ten seconds (in steps of one second).

PLAY MONITOR (selecting a monitoring source during playback)

You can select track monitor source during playback.

```
SLCT:PLAY MONITOR

  Monitor in play:REC SOURCE ──── A
```

While the DPS12 is playing, you can switch between input signals and track playback signals to monitor physical tracks that have their [RECORD SELECT] keys turned on.

1 **Monitor in play**(monitoring source during playback)
   Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to select one of the following options.

   • **REC SOURCE** .... Input signals assigned to the tracks are selected for monitoring. The TRACK level meters indicate the level of the input signals.

   • **PLAYBACK** .... Track playback signals assigned to the tracks are selected for monitoring. The TRACK level meters indicate the output level of the track signals.

> ✎ **TIP :** *With the default setting, this parameter is set to* **PLAYBACK** *Set this parameter to* **REC SOURCE** *to rehearse recording (i.e., the [RECORD SELECT] key of a recording track is turned on) or set the input level while listening to recorded tracks.*

Sync (synchronization)

You can set various parameters for the syncing operation via the MIDI IN and OUT jacks.

```
SLCT:SYNC
     Type:MIDI CLOCK/MASTER ─────── A
                           ┌─────────┐
                           │  SYNC   │
Device ID:0                │  OFF    │ ──── 2
                           └─────────┘
          └─ 3
```

The following parameters are used to synchronize the DPS12 to an external MIDI device or to control the DPS12 remotely from an external MIDI device. (See page 109 for more information on synchronization and remote control.)

1 **Type** (Selecting the type of sync signal)

Type (Selecting the type of sync signal)
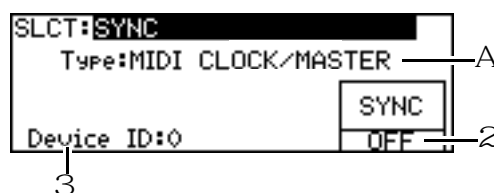This field enables you to select a method for synchronizing the DPS12 to an external MIDI device. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to select one of the following three options.

- **MIDI CLOCK/MASTER**
  Song Position Pointer and MIDI clock are transmitted from the MIDI OUT jack.

- **MTC/MASTER**
  MIDI timecode (MTC) is transmitted from the MIDI OUT jack. The MTC format conforms to the frame rate specified by the **Frame rate** parameter in the TIME DISPLAY Control Panel. (See page 88.)

- **MTC/SLAVE**
  The DPS12 receives MIDI timecode (MTC) at the MIDI IN jack and synchronizes to the timecode. The MTC format conforms to the frame rate specified by the **Frame rate** parameter in the TIME DISPLAY Control Panel. (See page 88.)

- **OFF**
  Any sync signals are transmitted.

> ➡ *NOTE : If you use the DPS12 as a master device for sync operation, you need to set the* **Out/Thru** *parameter in the MIDI Control Panel to* **OUT**. *(See page 94.)*

2 **SYNC ON/OFF** [F6] key (Sync on/off)

This select field enables you to switch the sync operation on and off. When this field is set to **OFF**, the DPS12 does not transmit or receive any sync signal, regardless of the settings 1 . Use the [F6] key to switch between on and off.

3 **Device ID**

This field enables you to set the device ID of a connected external device, such as a MIDI sequencer, that sends MMC (MIDI Machine Control) to the DPS12's MIDI IN jack to control the transport section of the DPS12. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set the device ID in the range of 0 to 126.

> ➡ *NOTE : To control the DPS12 from an external device using MMC, the device ID of the external transmission device and that of the DPS12 should match. See page 114 for more details.*

SAMPLING RATE

You can select a sampling rate and digital clock source for the DPS12.

```
SLCT:SAMPLING RATE
           FS:44.1kHz ──────── ①
     Digital sync:INTERNAL ──── ②
Runs at 48kHz(INT) when set to
DIGITAL IN and missing(clock).
```
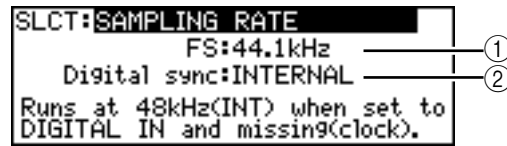
You can choose a sampling rate of 48kHz, 44.1kHz, or 32kHz, and select a digital clock in this Control Panel. The following parameters are available.

① **FS (sampling rate)**

This field enables you to select a sampling rate for the DPS12 operation. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to select one of the following three sampling rates.

- **48kHz**

  This sampling rate provides the highest tonal quality, but the available recording time is the shortest. This rate is used by many DAT recorders.

- **44.1kHz**

  This standard rate is generally used on CDs and MDs.

- **32kHz**

  Tonal quality is slightly lower, but available recording time is the longest. You can select this option if tonal quality is not critical.

> ➼ **NOTE :** *When the digital input signal is used, match the sampling rate to that of an external device.*

② **Digital sync**

This field enables you to select whether the DPS12 operates in reference to the internal clock or to an external digital clock. Use the [CURSOR] key to move the cursor to this field, then turn the [JOG] dial to toggle between these two options.

- **INTERNAL (internal clock)**

  The DPS12 references the internal clock. Select this option when the digital input is not used.
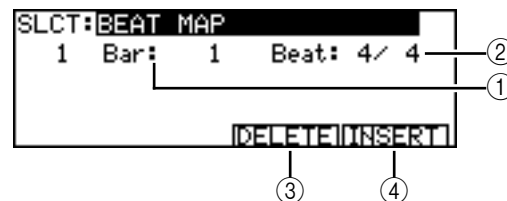
- **DIGITAL IN (external clock)**

  The DPS12 synchronizes the digital clock information derived from the digital input signal.

> ➼ **NOTE :** *The digital input signal can be used while* **Digital sync** *is set to* **INTERNAL** *However, as the input signal is converted to synchronize to the internal clock of the DPS12, the tonal quality may be changed. In such a case, set the* **Digital sync** *to* **DIGITAL IN** *and match the setting of* **FS** *to that of the digital input signal.*

BEAT MAP

You can set a time signature for a Project.

```
SLCT:BEAT MAP
  1 Bar:   1   Beat: 4/ 4 ──── ②
                            ──── ①

               [DELETE][INSERT]
```
                  ③   ④

If you selected **BAR.BEAT.CLOCK** for the time counter format, or if you are going to synchronize an external device to the Song Position Pointer and MIDI clock transmitted from the DPS12, you need to set time signatures for the Project. (If the time signature does not match that of the actual song and you try to play back from the middle of the song, the time value indicated on the time counter and the playback position of the MIDI
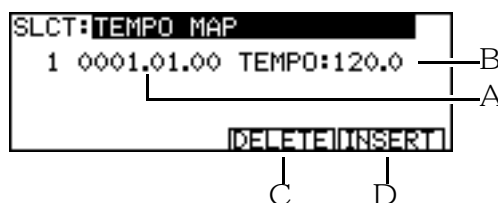
sequencer may slip from the playback sound of the DPS12.) In this Control Panel, you need to enter the time signature information in the measure in which the time signature changes. The parameters and function keys have the following functions.

1 **Bar** (the number of a measure)
Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to specify the number of the measure that contains the existing time signature information. However, the number of a measure should not exceed the number of measures that contain time signature information.

2 **Beat** (time signature)
Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set a time signature. The range is from 1/4 to 32/32.

3 **DELETE** [F5] key (Deleting time signature information)
Pressing the [F5] key will delete the time signature information located at the cursor.

4 **INSERT** [F6] key (Inserting time signature information)
Pressing the [F6] key will insert new time signature information in the current measure (the measure indicated in the **NOW:** field).

> ➥ *NOTE : The default setting of the beat map is 4/4. You cannot move or erase this information, but you can change it.*

TEMPO MAP

You can set tempo information for a Project.

```
SLCT:TEMPO MAP
  1 0001.01.00 TEMPO:120.0 ──── B
                            ──── A

                  [DELETE][INSERT]
                      │       │
                      C       D
```

When an external device, such as a MIDI sequencer, synchronizes to the Song Position Pointer and MIDI clock transmitted from the DPS12, the tempo settings of the MIDI sequencer are ignored. Therefore, you need to specify the tempo of the MIDI clock on the DPS12. In this Control Panel, you can enter tempo information (the number of quarter notes played in a minute) at the point where the tempo changes. The parameters and function keys include the following functions.

1 **Position of tempo change**
Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to change the existing tempo information in steps of bars, beats, and clocks. However, the number of a measure should not exceed the number of measures that already have the tempo information.

2 **TEMPO**
Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set the tempo. The range is from 30 to 300.

3 **DELETE** [F5] key (Deleting tempo information)
Pressing the [F5] key will delete tempo information located at the cursor.

4 **INSERT** [F6] key (Inserting time signature information)
Pressing the [F6] key will insert new tempo information in the current measure (the measure indicated in the **NOW:** field).

> ➥ *NOTE : The first measure of the beat map contains a tempo of 120 as a preset. You cannot move or erase this tempo information, but you can change the information.*

FOOT SWITCH

You can select a function for a connected foot switch.

```
SLCT:FOOT SWITCH

      Function:PUNCH IN/OUT
```

In this Control Panel, you can select a function for a foot switch connected to the FOOT SW jack on the rear panel. Use the [CURSOR] key to move the cursor to the **Function** field, and turn the [JOG] dial to select one of the following options.

- **PUNCH IN/OUT**...................... This option is used to perform the Punch In/Out operation.
- Others (**PLAY**, **STOP**, etc.) .... The foot switch operates in the same way as when you press the corresponding key on the top panel.

MIDI (Selecting a function of the MIDI OUT/THRU jack)

You can set a function for the MIDI OUT/THRU jack.

```
SLCT:MIDI

      Out/Thru:THRU
```
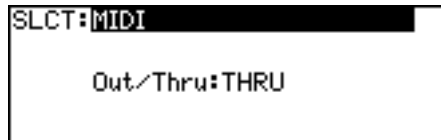
You may select whether the MIDI OUT/THRU jack is used as a MIDI OUT jack or a MIDI THRU jack. Use the [CURSOR] key to move the cursor to the **Out/Thru** field, and turn the [JOG] dial to select one of the following options.

- **THRU**... The MIDI OUT/THRU jack functions as a MIDI THRU jack. The signal received at the MIDI IN jack will be output as is, and no signal inside the DPS12 will be output.
- **OUT** .... The MIDI OUT/THRU jack functions as a MIDI OUT jack.

> ➥ **NOTE :** *If you use the DPS12 as a sync master device to send MTC or MIDI clock to an external device, you need to set this parameter to* **OUT**.

LCD CONTRAST

You can adjust the contrast of the LCD display.

```
SLCT:LCD CONTRAST
      LCD Contrast: 7

   Hold STOP and turn JOG
                   (anytime)
```
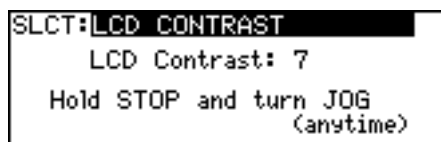
You can adjust the contrast of the LCD display according to your environment. Use the [CURSOR] key to move the cursor to the **LCD Contrast** field, and turn the [JOG] dial to set the contrast in the range of 0 to 127.

> ✐ **TIP :** *You can also change the contrast by holding down the [■] key on the top panel and turning the [JOG] dial. You can use this method while another screen is displayed.*

OTHER (other setting)

You can set parameters related to the level meters and the Undo function.

```
SLCT:OTHERS
        Meter:POST ———————————A
        Undo level:250 ————————B
```
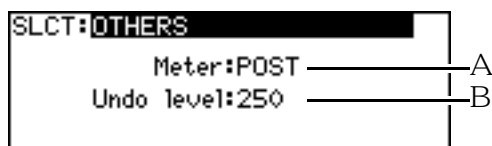
In this Control Panel, you can toggle between pre and post faders for the level meter indication, and set how many previous operations can be restored by the Undo function. The following parameters are available.

1 **Meter** (level meter indication)

This field enables you to select whether the level meters in Main mode and Mixer mode indicate the pre fader levels or the post fader levels. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to switch between **PRE** (pre fader) and **POST** (post fader).

2 **Undo level**

This numeric field enables you to set the number of previous edits or recording operations that can be restored by using the [UNDO] key on the top panel. Use the [CURSOR] key to move the cursor to this field, and turn the [JOG] dial to set the level in the range of 0 to 250.

> ➤➤*NOTE :* *If you set the* **Undo level** *parameter to* **0***, the [UNDO] key will be disabled. If you set the* **Undo level** *parameter to* **1***, pressing the [UNDO] key will restore the last (previous) edit or recording.*
> *If you set the level too high, a large amount of disk space will be used to store the previous data when you overdub or edit data. If there is not enough space on the disk, set the undo level to a lower value.*

Chapter 10: Project management (Project mode)

This chapter describes various methods to manage Projects.

What is a Project?

The DPS12 manages recorded songs as "Projects." Each Project contains the following information.

- Audio data in physical tracks and virtual tracks
- Mix parameter settings in Mixer mode
- Scene memories
- Assign mode settings
- Locate point, quick locate point, IN point, and OUT point
- Control Panel settings (a part of settings are not included)
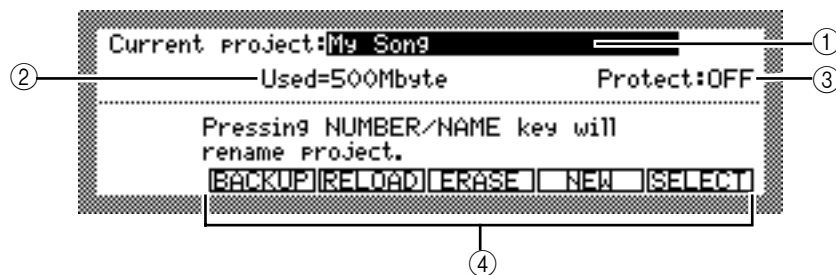- Project name
- Protect on/off

You can store multiple Projects on a disk, but the DPS12 can handle only one Project at a time. The project being processed on the DPS12 is called the "current Project." If a disk does not have enough space to accommodate Projects, you may erase unnecessary Projects from the disk, or back-up data to an external SCSI device or DAT recorder.

> ✎ **TIPS :**
> - *When you turn on the power to the DPS12 and load data from the disk, it will automatically recall the first Project (a Project you accessed the last time) in the Project list stored in the disk.*
> - *If you make recording or edits in the current Project, those changes will be automatically stored.*

Using the Project mode screen

Project mode is used to manage Projects. When you press the [PROJECT] key while the transport section is stopped, the DPS12 enters Project mode, and the following PROJECT screen appears.

The PROJECT screen contains the following information.

1 **Current project**(Project name)
This field indicates the name of the current Project. Use the [CURSOR] key to move the cursor to this field, and press the [NUMBER/NAME] key to enter characters. (Refer to pages 18 and 19 for more information on entering characters.)

2 **Used** (Project size)
This field indicates the size of the current Project on the disk.

3 **Protect** (protect on/off)
This field enables you to select whether or not the current Project is protected. Turning the [JOG] dial toggles between **ON** and **OFF**. If this field is set to **ON**, the current Project is protected, and you are unable to make recordings or edits in this Project. In general, set this field to **OFF**.

4 **This area indicates the functions assigned to the function keys in Project mode.**

- **BACKUP** [F2] key .... Creates a back-up file of the Project.

- **RELOAD** [F3] key .... Recalls a back-up Project.

- **ERASE** [F4] key .... Erase a Project in the current disk.

- **NEW** [F5] key .... Creates a new Project in the current disk.

- **SELECT** [F6] key .... Selects the current Project.

Creating a new Project

You need to create a new Project to make a new recording. Follow the steps below to create a new Project.

1. **Press the NEW [F5] key in Project mode.**
The following NEW PROJECT window appears.

```
┌────────── NEW PROJECT ──────────┐
│ Project name:NEW PROJECT ├───── Project name
│                                 │
│      Pressing DO IT will create │
│      new empty project.         │
│ CANCEL                    DO IT │
└─────────────────────────────────┘
```

2. **Name the Project, if necessary.**
Pressing the [NUMBER/NAME] key enables you to enter characters. (See pages 18 and 19 for more information on entering characters.)

3. **Press the DO IT [F5] key.**
The DPS12 creates a new Project and returns to the MAIN screen.

> ✎ *TIP : Press the* **CANCEL** *[F2] key to cancel the creation of the new Project.*

> *NOTES:*
> - *When you format a disk, the DPS12 automatically displays the NEW PROJECT window.*
> - *When you create a new Project, the previous Project is automatically stored. You can recall it at any later time.*

> ✎ *TIP : You can also change the name of the Project in the PROJECT screen.*

Recalling a Project

When you recall a Project from the disk, the Project becomes the current Project, and audio track data, mix parameters, input assignments, and various other parameters change to reflect the current Project. Follow the steps below to recall a Project from the disk.

1. Press the SELECT [F6] key in Project mode.
The SELECT PROJECT window displays the Project list.

```
╓──────── SELECT PROJECT ────────╖
║ Project                 Size   ║
║ ┌────────────────────────────┐ ║
║ │My Song ver.1        342Mbyte│║
║  My Song ver.2        332Mbyte ║
║  DEMO SONG            205Mbyte ║
║ ▐CANCEL▌                 DO IT ║
╙────────────────────────────────╜
```

The left column of the list indicates the Project names (**Project**), and the right column indicates the size of the Projects (**Size**).

2. Use the [CURSOR] key to move the cursor up and down to select a Project to recall.

3. Press the DO IT [F5] key.
The DPS12 recalls the selected Project and returns to the PROJECT screen.

> ✐ **TIP :** *Press the CANCEL [F2] key to cancel the creation of the new Project.*

> ➺ **NOTE :** *When you turn on the power to the DPS12 and load data from the disk, it will automatically recall the first Project (a Project you accessed for the last time) in the Project list stored in the disk.*

Erasing a Project

If the disk cannot accommodate the data, erase unnecessary Projects from the disk until you retrieve sufficient space. Follow the steps below to erase Projects from the disk.

> ⚠ **CAUTION :** *Erasing Projects will permanently delete all related data. Be sure to back-up important Projects to an external SCSI device or DAT recorder. (See page 99.)*

1. Press the ERASE [F4] key in Project mode.
The ERASE PROJECT window displays the Project list.

```
╓──────── ERASE PROJECT ────────╖
║ Project                 Size   ║
║ ┌────────────────────────────┐ ║
║ │My Song ver.1        342Mbyte│║
║  My Song ver.2        332Mbyte ║
║  DEMO SONG            205Mbyte ║
║ ▐CANCEL▌                 DO IT ║
╙────────────────────────────────╜
```

The left column of the list indicates the Project names (**Project**), and the right column indicates the size of the Projects (**Size**).

2. Use the [CURSOR] key to move the cursor up and down to select a Project to erase.

3. Press the DO IT [F5] key.
A window appears, asking you to confirm the erase operation.

```
╓──────────── CAUTION!! ────────────╖
║   Project:My Song ver.1           ║
║                                   ║
║        Pressing ERASE will        ║
║        erase this project!!       ║
║ ▐CANCEL▌                   ▐ERASE▌║
╙───────────────────────────────────╜
```

4. **Press the ERASE [F5] key to execute the erase operation.**
   The DPS12 erases the selected Project and returns to the PROJECT screen.

> ✎ **TIP :** *Press the* CANCEL *[F2] key to cancel the erase operation.*

> ➥ **NOTE :** *If the disk has only one Project and you erase the current Project, the NEW PROJECT window automatically appears.*

Backing up a Project to an external device

If you do not have a backup of your Projects, you may lose the Projects forever if the JAZ disk or the external SCSI device malfunctions or if you erase the Projects accidentally. To avoid this disaster, Akai recommends that you back-up important Projects to an external SCSI device or DAT recorder. Follow the steps below to back-up your Projects.

■ Back-up to a SCSI device

You may back-up data to a SCSI device, such as a hard disk or MO drive.

> ➥ **NOTE :** *In this case, any data that exists on the back-up destination drive will be erased and replaced with back-up data.*

1. **Press the BACKUP [F2] key in Project mode.**
   The following window appears.

```
            ┌──────── DATA BACKUP ────────┐
1 ────────── Device:SCSI      SCSI ID:5 ──────── 3
            Project:NEW PROJECT ──────────── 2
            Format operation:FORMAT ────── 4
            └─ CANCEL ────────────── DO IT ─┘
```

2. **Move the cursor to the Device field 1 and select "SCSI".**
   You can select SCSI (SCSI device) or DAT (DAT recorder)" as a back-up device in the Device field.

3. **Select a Project to back-up in the Project field 2.**

4. **Set the SCSI ID (0–7) of the backup device in the SCSI ID field 3.**
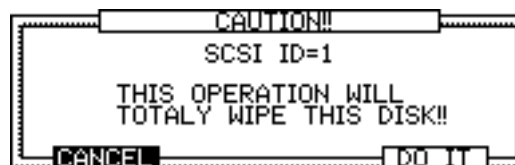   This field 3 changes depending on the device you selected in field 1. If you selected SCSI, the SCSI ID field appears here, enabling you to set the SCSI ID of the backup device.

5. **Select whether you wish to format the backup disk in the select field 4.**
   If you select FORMAT in the Format Operation field, the DPS12 formats the disk, then backs up the data. If you select ERASE, the DPS12 backs up data without formatting the disk.

> ➥ **NOTE :** *If you select* ERASE *for the* Format Operation *field, the DPS12 erases data on the disk and backs up the Projects. If you select* FORMAT*, the DPS12 formats the disk completely, then backs up the Projects. Therefore, the latter takes more time.*

6. **Press the DO IT [F5] key. The following window appears to confirm the operation.**

```
            ┌──────── CAUTION!! ────────┐
                    SCSI ID=1

               THIS OPERATION WILL
               TOTALY WIPE THIS DISK!!
            └─ CANCEL ────────── DO IT ─┘
```

7. **Press the DO IT [F5] key.**
   The DPS12 executes the backup operation. When the operation is complete, the display returns to the PROJECT screen.

> ✎ **TIP :** *Press the* CANCEL *[F5] key to cancel the backup operation.*

> **NOTES:**
> - *You cannot directly access backup data on an external SCSI device directly. You must first load the backup data into the DPS12. See page 99. If you wish to make a copy of the Project that you can access directly, use the Copy function in Disk mode. (See page 107.)*
> - *In Disk mode (see page 103), make sure that the DPS12 recognizes the drive of the SCSI ID you are going to set.*
> - *You can create only one backup Project per disk. You cannot backup multiple Projects on a disk or mix Project data and backup the data to a disk.*

■ **Backing up in multiple disks**

If the size of the data to be backed up is larger than the destination removable disk, you may backup into multiple disks.

Execute the backup operation as usual. When the first disk becomes full, the Change Disk window appears.

```
┌──────────── Change Disk ────────────┐
│                                      │
│  Insert a new disk and press DO IT.  │
│  Format operation:FORMAT             │
│  CANCEL                     DO IT    │
└──────────────────────────────────────┘
```

Insert a new disk, then select **FORMAT** or **ERASE** in the **Format operation** field. Press the **DO IT** [F5] key to continue the backup operation.

> ➤ **NOTES :**
> - *If you press the **CANCEL** [F2] key at this time, the backup operation will be cancelled and the backup data on the first disk will not be usable.*
> - *Reload data from disks in the order in which you backed up.*

■ **Backing up in an external DAT recorder**

You can use an external DAT recorder to backup the Project in a DAT tape.

1. **Use a standard optical cable to connect the OPTICAL OUT jack on the rear panel of the DPS12 and the digital input jack on a DAT recorder.**

> ➤ **NOTE :** *You need to use an optical/coaxial converter if the digital input jacks of the DAT recorder are coaxial.*
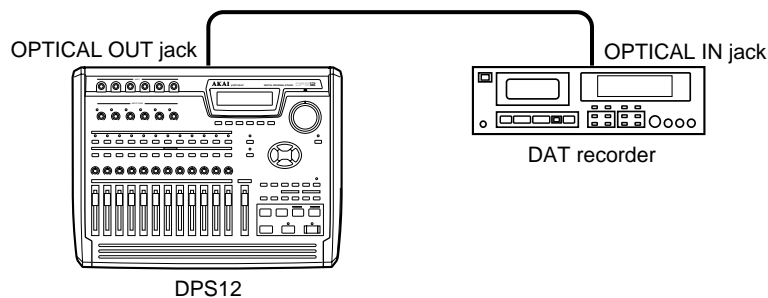
OPTICAL OUT jack   OPTICAL IN jack

DAT recorder

DPS12

2. **Press the BACKUP [F2] key in Project mode.**
   The following window appears.

```
┌──────────── DATA BACKUP ────────────┐
│                                      │
│        Device:DAT ─────────── A      │
│        Project:NEW PROJECT ── B      │
│        Sampling freq:48kHz ── C      │
│  CANCEL                     DO IT    │
└──────────────────────────────────────┘
```

3. **Move the cursor to the select field ① and select DAT.**

4. **Move the cursor to the select field ② and select a Project for backup.**

5. **Move the cursor to the select field ③ and select a sampling rate for recording on the DAT recorder (32kHz, 44.1kHz, 48kHz).**
   If you select DAT in field ①, select field ③ becomes the Sampling freq field, where you can select a sampling rate for the backup operation.

6. **Press the DO IT [F6] key.**
   The following window appears.

```
┌─────── DATA BACKUP ───────┐
│                           │
│   Now, start recording DAT│
│   and press START.        │
│                           │
│ CANCEL              START  │
└───────────────────────────┘
```

7. **Start recording on the DAT recorder and press the START [F5] key.**
   Start the backup operation. When the operation is complete, the display returns to the PROJECT screen.

> ➔ *NOTE :*
> • *The time required for the backup operation depends on the sampling rate.*
> • *The backup data does not contain the UNDO data.*

> ⚠ *CAUTION : Do not monitor the audio via the DAT during the backup operation. Since audio and other data is transmitted as a digital signal, an attempt to monitor it may damage the speakers.*

> ✎ *TIP : Press the CANCEL [F2] key to cancel the backup operation.*

Reloading the backup Project

Follow the steps below to reload the backup Project from an external DAT or SCSI device.
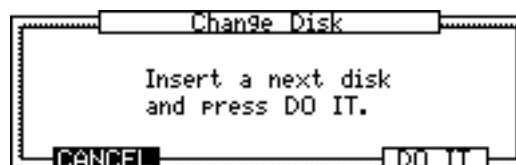
■ Loading from a SCSI device

1. **Press the RELOAD [F3] key in Project mode.**
   The DATA RELOAD window appears.

```
┌─────── DATA RELOAD ───────┐
│      Device:SCSI          │
│    SCSI ID:5              │
│                           │
│ CANCEL              DO IT  │
└───────────────────────────┘
```
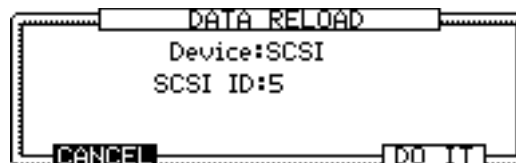
2. **Select SCSI in the Device field.**

3. **Select the SCSI ID in the SCSI ID field for the disk from which you wish to reload the backup data.**

4. **Press the DO IT [F5] key.**

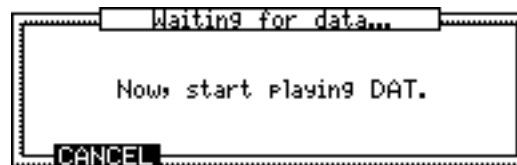> ➔ *NOTE : If you are reloading data stored on multiple disks, the following window appears. Insert the next disk.*
>
> ```
> ┌─────── Change Disk ───────┐
> │                           │
> │   Insert a next disk      │
> │   and press DO IT.        │
> │                           │
> │ CANCEL              DO IT  │
> └───────────────────────────┘
> ```

> ✎ *TIP : Press the CANCEL [F2] key to cancel the reload operation.*

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■ Reloading from a DAT

1. **Press the RELOAD [F3] key in Project mode.**
   The DATA RELOAD window appears.

```
┌──────────── DATA RELOAD ────────────┐
│            Device:DAT                │
│                                      │
│                                      │
│ CANCEL                       DO IT   │
└──────────────────────────────────────┘
```

2. **Select DAT in the Device field.**

3. **Press the DO IT [F5] key.**
   The DPS12 waits for the data to be loaded.

```
┌──────────── Waiting for data... ────────────┐
│                                              │
│         Now, start playing DAT.              │
│                                              │
│ CANCEL                                       │
└──────────────────────────────────────────────┘
```

4. **Play the DAT tape that contains the backup data.**
   When the reload operation is complete, the display returns to the PROJECT screen.

⚠ **CAUTION :** *Do not monitor the audio via the DAT during the backup operation. Since audio and other data is transmitted as a digital signal, an attempt to monitor it may damage the speakers.*

✎ **TIP :** *Press the CANCEL [F2] key to cancel the reload operation.*

Chapter 11: Using a disk (Disk mode)

This chapter explains Disk mode, in which you can set up an internal JAZ disk and external SCSI devices.

Notes on handling a disk

⚠ **CAUTION :** *Be sure to eject a JAZ disk from the drive before you turn off the power to the DPS12. Similarly, turn on the power to the DPS12 first before inserting a JAZ disk into the drive.*

The DPS12 searches and detects disks connected to the SCSI bus in order of SCSI ID when the power is turned on. It then starts up the first detected disk that contains a Projects and specifies it as the current disk (working disk). (At this time, backup disks and unformatted disks are not selected.)

Removable disks, such as JAZ disks, will not be detected until they are inserted. To use a removable disk as the current disk, insert a disk immediately after you turn the power on.

If the DPS12 does not find disk that contains a Project in the SCSI bus, it will continue to search for one while the start-up screen is displayed. At this time, pressing the **SKIP** [F6] key will cause a new Project to start with a recording time of zero.
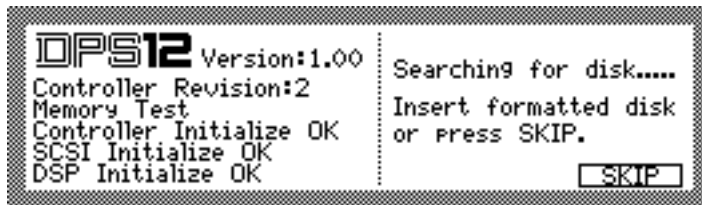
➡ **NOTE :** *Refer to page 22 for more information on starting and formatting a disk and creating a Project.*

Using the Disk mode screen

Disk mode enables you to control the internal JAZ drive and an external SCSI device. Pressing the [DISK] key while the transport section is stopped will set the DPS12 to Disk mode. The following DISK SETUP screen appears.

This screen contains the following information.

1 **Self ID:** (ID number)
This field allows you to set the SCSI ID of the DPS12. Make sure that you assign a unique number that is not used as the SCSI ID of another device. The new SCSI ID number takes effect when you move to a subsequent screen. The default setting is "6".

➡ **NOTE :** *If you try to change the SCSI ID number to a number assigned to another connected device, the value will not change.*

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2 **0–7 (drive condition)**

These fields indicate the current drive condition of each SCSI ID. You can also select a drive to operate. Each field has the following meaning.

- **(no device)**............... No device is connected.

- **REC NOT READY**...... A device is detected, but you need to format it or erase data to use it. If no disk is inserted in the removable drive, or a backup disk or unformatted disk is inserted, this message appears.

- **REC READY**............... You can use this disk for recording on the DPS12. The disk has already been formatted on the DPS12 in Disk mode.

- **NOW SELECTED**......... A formatted disk has been connected and selected as the current disk.

These indications are updated whenever you press the [DISK] key.

> ➡**NOTE :** *If* **(no device)** *appears even if an external SCSI device is connected, press the DISK key again. If the same message appears again, turn off the power to the DPS12 and check the connections.* **REC NOT READY** *appears if a backup disk (that the DPS12 cannot access directly) is connected.*

3 **This area indicates the functions assigned to the function keys in Disk mode.**

- **INFORM** [F1] key ..... Press to display current drive information.

- **FORMAT** [F2] key .... Press to erase or format the current disk.

- **ALIGN** [F3] key .... Press to arrange data on the current disk.

- **SELECT** [F4] key .... Press to select the current drive.

- **COPY** [F5] key .... Press to copy data from the current disk to a SCSI device.

Changing the current drive

The "current drive" refers to the a drive on which you record or play back. If you select an external hard disk as the current drive, you can record and play audio data on the external hard disk.

> ➡**NOTE :** *Some types of hard disks may not be able to record or play. Consult AKAI Customer service for information on compatible external hard disks.*

Follow the steps below to change the current drive.

1. **While the DISK SETUP screen is displayed, move the cursor to the SCSI ID number of the SCSI device you wish to assign as the current drive.**

```
DISK SETUP                    Self ID:6
  0-(no device)      4-NOW SELECTED
  1-(no device)      5-REC NOT READY
  2-(no device)      6-DPS12
  3-REC READY        7-(no device)
 INFORM FORMAT  ALIGN SELECT  COPY  EJECT
```
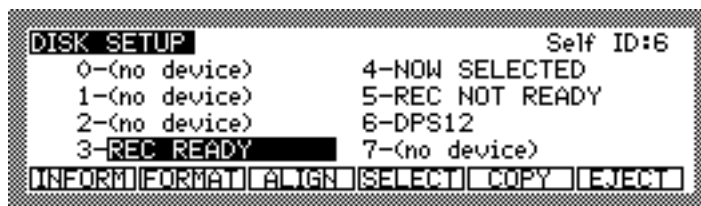
Example: A drive with SCSI ID number 3 is selected.

2. Press the **SELECT** [F4] key.
   The SELECT DISK window appears.

```
╔═══════ SELECT DISK ═══════╗
║                           ║
║         SCSI ID=3         ║
║     Pressing DO IT will   ║
║     select this disk.     ║
║ CANCEL              DO IT ║
╚═══════════════════════════╝
```

   Example: A drive with the SCSI ID number 3 is selected as the current drive.

3. Press the **DO IT** [F5] key.
   The device with **SCSI ID=3** becomes the current drive, and the DPS12 returns to the DISK SETUP screen.

   ➤**NOTES :**
   - *When the current drive is changed, the first Project in the Project list stored in the new current drive is automatically recalled.*
   - *If you select a drive that does not have the* **REC READY** *indication, the DPS12 displays an error.*

Viewing the drive information

You may view the type, manufacturer, used space, and available space of the connected drive. Follow the steps below.
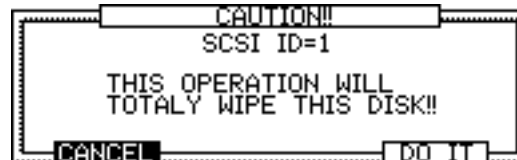
1. **While the DISK SETUP screen is displayed, move the cursor to the SCSI ID number of the drive whose data you wish to review.**

   ➤**NOTE :** *You cannot view the information of a drive that is not connected.*
   ---

2. Press the **INFORM** [F1] key.
   The DISK INFORMATION window appears. This window is only for display purposes. You cannot change any parameters.

```
╔═══════ DISK INFORMATION ═══════╗
║ Device=                     ─── A
║ Vender=                     ─── B
║   Ver.=                     ─── C
║   Used=500Mbyte  Free=500Mbyte ─ D
║ CLOSE                          ║
╚════════════════════════════════╝
```
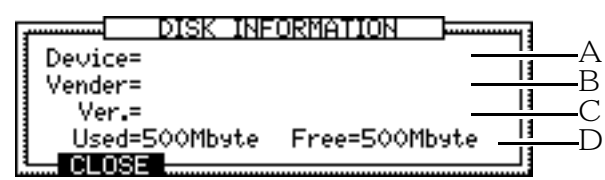
   The following information is included in this window.

   1 **Device** = (device name)
      This field indicates the type of the drive.

   2 **Vendor** = (manufacturer)
      This field indicates the name of the drive manufacturer.

   3 **Ver.** = (version number)
      This field indicates the version number of the drive.

   4 **Used** = (used space) **Free=** (available space)
      These fields indicate the amount of used and available space.

3. Press the **CLOSE** [F2] key to close the window.
   The DPS12 returns to the DISK SETUP screen.

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Formatting a disk

You may format a current disk using one of the following two methods: format and erase.

Formatting is an operation that writes format information to the disk, enabling it to be used on the DPS12. To use a new JAZ disk or an external hard disk, you first need to format it. Also, you may wish to re-format a formatted disk that is causing a write/read error to occur. This operation takes a while to complete.

Erasing is an operation that deletes all data on a formatted disk. This operation takes a relatively short time.

⚠ **CAUTION** : *In either case, please note that all information on the disk will be deleted.*

Follow the steps below to format a disk.

1. **While the DISK SETUP screen is displayed, move the cursor to the SCSI ID number of the disk you wish to format.**

2. **Press the FORMAT [F2] key.**
   The FORMAT DISK window appears.

   ```
            FORMAT DISK
            SCSI ID=1                    ──────A
   Format operation:FORMAT               ──────B
   ·······························
       Formatting will totally wipe
         selected disk!!
   CANCEL                      DO IT
   ```

   This window includes the following information.

   1 This field indicates the selected SCSI ID number.

   2 This select field allows you to select the type of format operation (**FORMAT** / **ERASE**).

3. **Move the cursor to field 2 , then turn the [JOG] dial to select FORMAT or ERASE.**

4. **Press the DO IT [F5] key.**
   The CAUTION!! window appears, asking you if you wish to continue the format/erase operation.

   ```
            CAUTION!!
            SCSI ID=1

       THIS OPERATION WILL
       TOTALY WIPE THIS DISK!!
   CANCEL                      DO IT
   ```

5. **Press the DO IT [F5] key to execute the format/erase operation.**
   The format/erase operation will be executed. When the operation is complete, the DPS12 returns to the DISK SETUP screen.

   ✐ **TIP** : *Press the CANCEL [F2] key to cancel the format operation.*

   ➠**NOTE** : *When the format/erase operation is complete, the NEW PROJECT window automatically appears. Refer to page 97 for more information on creating a Project.*

Defragmenting a disk

Repeated recording and edit operations on the DPS12 fragments audio data written on the disk. If this fragmentation is significant, recording or playback may be interrupted. The DPS12 enables you to re-align the fragmented audio data ("defragment") to solve this problem. Follow the steps below to defragment a disk.

> ✎ *TIP : You can check the busy meter in the MAIN screen to see how frequently a disk is accessed. If the meter often appears as shown below, defragment the disk as soon as possible.*
>
> ▆▆▆▆▍
>
> *Frequent access*

> ➡**NOTE :** *When you record and edit on the DPS12 repeatedly, an alarm message may appear, indicating that there is not enough space on the disk, in actuality the hard disk has enough space available. This means that the internal audio management table (an area where audio data is managed) on the DPS12 does not have enough memory space. In this case, you can defragment the disk to reduce the used space in the audio management table and regain available space on the disk.*

1. **While the DISK SETUP screen is displayed, move the cursor to the SCSI ID of the drive you wish to defragment.**
2. **Press the `ALIGN` [F3] key.**
   The following window appears.

```
┌──────── DISK ALIGN ────────┐
│                            │
│  Align will clean up data  │
│  on disk.                  │
│  This may take a while.    │
│                      ┌─────┤
│                      │DO IT│
└──────────────────────┴─────┘
```
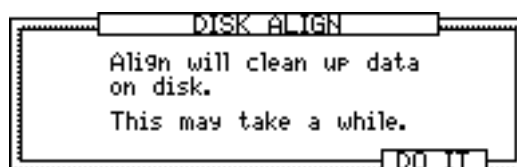
3. **Press the `DO IT` [F5] key.**
   The data alignment operation starts. It takes a few minutes to complete the operation. When it is complete, the DPS12 returns to the DISK SETUP screen.

> ➡**NOTE :**
> • *The content of the disk determines how long it will take to complete the alignment operation.*
> • *When the alignment operation is performed, the UNDO data will be lost.*

Copying data in the disk

You may copy all data in the current disk to another disk.

> ➡**NOTE :** *Data existing on the destination disk will be deleted and replaced with the copy source data.*

Follow the steps below.

1. **While the DISK SETUP screen is displayed, move the cursor to the SCSI ID of the copy source drive.**
2. **Press the `COPY` [F5] key in Disk mode.**
   The DISK COPY window appears.

```
┌──────── DISK COPY ─────────┐
│     Current drive ID=4     │
│        Copy to ID:▮        │
│   Format operation:FORMAT  │
├─────┐                ┌─────┤
│CANCEL│               │DO IT│
└─────┴────────────────┴─────┘
```
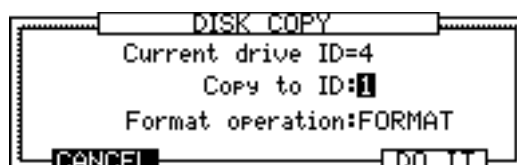
3. **Turn the [JOG] dial and specify the SCSI ID of the copy destination disk.**

4. **Select FORMAT (or ERASE) in the Format operation field.**
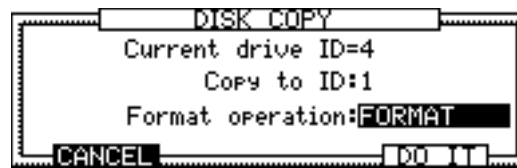
```
┌────────── DISK COPY ──────────┐
│        Current drive ID=4      │
│           Copy to ID:1         │
│    Format operation:FORMAT     │
└─CANCEL─────────────────DO IT──┘
```

5. **Press the DO IT [F5] key. The following window appears to confirm the operation.**

```
┌────────── CAUTION!! ──────────┐
│          SCSI ID=1             │
│                                │
│       THIS OPERATION WILL      │
│     TOTALY WIPE THIS DISK!!    │
└─CANCEL─────────────────DO IT──┘
```
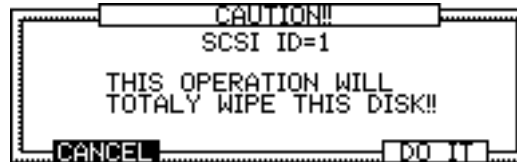
6. **Press the DO IT [F5] key.**
   After formatting or erasing the destination disk, the copy operation is executed. When the operation is complete, the DPS12 returns to the DISK SETUP screen.

> ✎ **TIP :** *Press the CANCEL [F2] key to cancel the operation.*

> ➦ **NOTE :**
> * *Make sure that the available space of the destination disk is larger than the size of the copy data. If it is smaller, an error message appears indicating that you cannot execute the copy operation. Also, you cannot copy two or more disks at a time, even if you specify a copy destination disk that has a large free space.*
> * *Once the FORMAT operation is started, the function will not be canceled until the Format operation is finished.*

Using a removable drive

```
DISK SETUP                Self ID:6
   0-(no device)    4-NOW SELECTED
   1-(no device)    5-REC NOT READY      ──① 
   2-(no device)    6-DPS12
   3-REC READY      7-(no device)
 INFORM FORMAT ALIGN SELECT COPY EJECT
                                    │
                                    ②
```
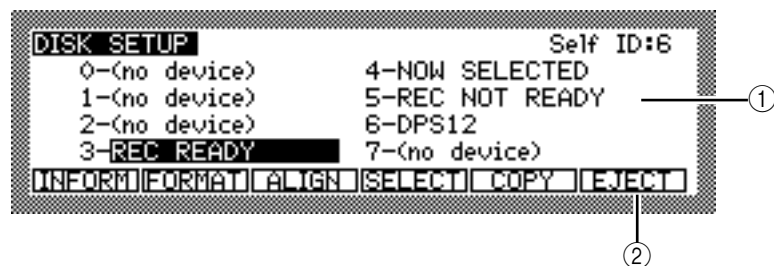
① If a removable drive is connected, but the disk is not inserted, **REC NOT READY** appears. If the disk is inserted, **REC READY** or **NOW SELECTED** appears.

② Pressing the **EJECT** [F6] key will eject a removable disk from the drive.

Chapter 12: MIDI applications

Connecting an external device, such as a MIDI sequencer, to the MIDI IN jack or the MIDI OUT/THRU jack of the DPS12 enables you to synchronize the DPS12 to the MIDI sequencer or record and play back the mix parameters via the MIDI sequencer. This chapter describes some examples of using the DPS12 via MIDI.

Synchronizing an external device to the DPS12 (MTC)

This application is an example of using the DPS12 as a sync master. In this setup, MTC (MIDI timecode) is supplied from the DPS12's MIDI THRU/OUT jack to a connected MIDI sequencer or to computer-based sequence software to sync the sequencer to the transport section of the DPS12. MTC contains timing information expressed in absolute time (hour/minute/second/frame). This setup is useful when you wish to sync the DPS12 to a MIDI sequencer with frame-accurate precision.

1. **Use a MIDI cable to connect the DPS12's MIDI OUT/THRU jack and the MIDI sequencer's MIDI IN jack.**
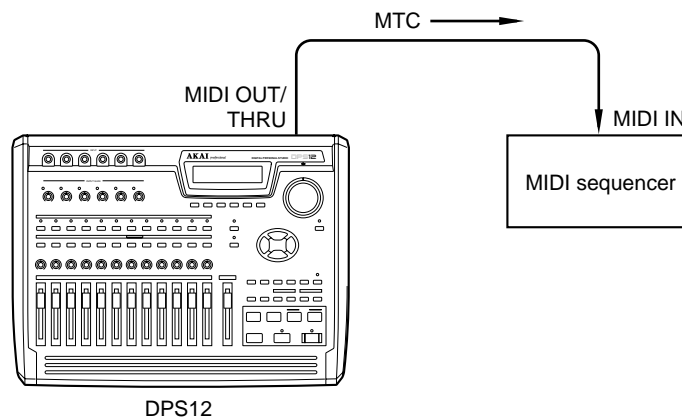

2. **Press the [F3] key – [F6] key in the MAIN screen, then turn the [JOG] dial to recall the MIDI Control Panel.**
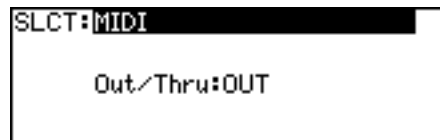
In this Control Panel, you can select whether the MIDI OUT/THRU jack will be used as a MIDI THRU jack (that is, signals received at the MIDI IN jack are output as is), or used as a MIDI OUT jack (that is, the signal of the DPS12 is output).

3. **Move the cursor to the Out/Thru: field, and select OUT.**

> ↦**NOTE** : *Be sure to select* OUT *for the* Out/Thru: *field if you wish to have the DPS12 output the sync signal.*

4. **Move the cursor to the SLCT: field, then turn the [JOG] dial to recall the SYNC Control Panel.**
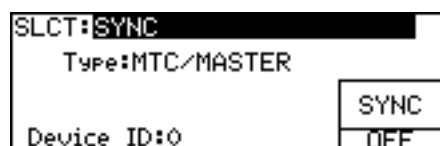
In this Control Panel, you can select the type of MIDI sync signal that the DPS12 transmits and receives.

5. Move the cursor to the **Type** field, and turn the [JOG] dial to select **MTC/MASTER**
   MTC is selected as a sync signal that the DPS12 transmits.

6. Press the [F6] key to set the **SYNC** field to **ON**.

```
SLCT:SYNC
      Type:MTC/MASTER

                        SYNC
Device ID:0              ON
```

7. To change the frame rate of the MTC (default = 30, non-drop), move the cursor to the **SLCT:** field,
   and turn the [JOG] dial to recall the TIME DISPLAY Control Panel.

```
SLCT:TIME DISPLAY
        Style:TIME
         Type:ABSOLUTE
     Frame rate:30
```

8. Move the cursor to the **Frame rate:** field, and select a frame rate of the MTC from **24**, **25**, **30** (30,
   non-drop), **29.97**, **30D** (30 drop).
   The **Frame rate:** field enables you to select a frame rate usually used for the time counter and the time
   fields. This setting is also reflected in the rate of the MTC that the DPS12 transmits and receives.

9. Set up the MIDI sequencer so that it will synchronize to an external MTC.

10. Start recording or play back the DPS12.
    While the DPS12 is recording or playing, the MTC appropriate for the time value of the DPS12 is transmitted
    via the MIDI OUT/THRU jack to the MIDI sequencer, and the MIDI sequencer synchronizes the MTC.

Synchronizing an external device to the DPS12 (MIDI Clock)

This example also uses the DPS12 as a sync master. However, sync signals supplied to an external device do not
constitute MTC, but MIDI Clock plus Song Position Pointer information. MIDI Clock is timing information in
which one beat consists of 24 clocks. Song Position Pointer is position information expressed as bar/beat/clock
values. The merits of MIDI Clock synchronization include the fact that combining MTC and other MIDI messages
does not affect the system, and that you can specify the locate position and edit region using bar/beat/clock values.
This method is suitable for the following applications:

• Using a MIDI sequencer or a workstation-type synthesizer that receives only MIDI Clock as a sync signal

• Recording or playing the DPS12's mix parameters on a MIDI sequencer in real-time. (See page 116.)

➤+*NOTES :*
• *If you use MIDI Clock as a sync signal, the tempo setting specified on the MIDI sequencer will be
  ignored.*
• *Tempo changes should be executed on the DPS12. (TEMPO MAP)*
• *Entering the time signature information of the song to which to sync will match the locate position and
  edit range to those of the MIDI sequencer.*

---

1. Use a MIDI cable to connect the DPS12's MIDI OUT/THRU jack and the MIDI sequencer's MIDI IN jack.

MIDI Clock +
Song Position Pointer ⟶

MIDI OUT/
THRU

MIDI IN

MIDI sequencer

DPS12

2. Press the [F3] key – [F6] key in the MAIN screen, then turn the [JOG] dial to recall the MIDI Control Panel.

```
SLCT:MIDI

        Out/Thru:OUT

```
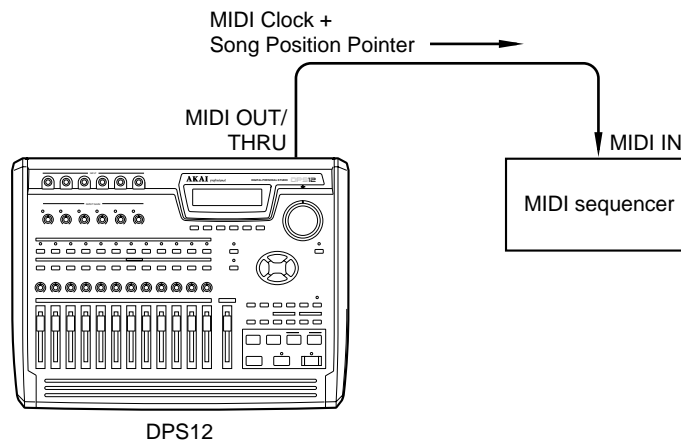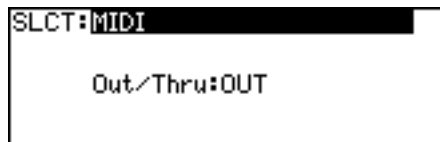
3. Move the cursor to the Out/Thru: field, and select OUT.
4. Move the cursor to the SLCT: field, then turn the [JOG] dial to recall the SYNC Control Panel.

```
SLCT:SYNC
   Type:OFF
                        SYNC
Device ID:0             OFF
```

5. Move the cursor to the Type field, and turn the [JOG] dial to select MIDI CLOCK/MASTER
   Song Position Pointer and MIDI Clock are selected as sync signals.

6. Press the [F6] key to set the SYNC field to ON.

```
SLCT:SYNC
   Type:MIDI CLOCK/MASTER
                        SYNC
Device ID:0              ON
```
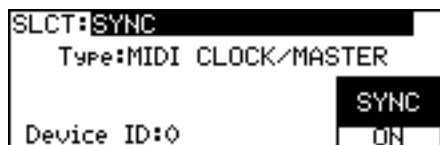
7. When you wish to view the current position in bar/beat/clock notation on the time counter and/or the time fields, move the cursor to the SLCT: field, then turn the [JOG] dial to recall the TIME DISPLAY Control Panel.

```
SLCT:TIME DISPLAY
        Style:TIME
         Type:ABSOLUTE
    Frame rate:30
```

111

8. Move the cursor to the **Style:** field and select **BAR.BEAT.CLOCK**

```
SLCT:TIME DISPLAY
           Style:BAR.BEAT.CLOCK
            Type:ABSOLUTE
      Frame rate:30
```

The DPS12's time counter and the time fields will use bar/beat/clock notation.

> ✎ **TIP :** *This is useful since you can specify the locate point and edit region in bar/beat/clock notation.*

9. Move the cursor to the **SLCT:** field, then turn the [JOG] dial to recall the BEAT MAP Control Panel.

```
SLCT:BEAT MAP
   1  Bar:    1    Beat: 4/ 4


                  [DELETE][INSERT]
```

10. Move the cursor to the **Beat:** field, and enter the first time signature of the song.
    If the time signature changes during the song, press the **INSERT** [F6] key to insert new time signature information, and adjust the position and the time signature value. See page 92.

11. Move the cursor to the **SLCT:** field, and turn the [JOG] dial to recall the TEMPO MAP Control Panel.

```
SLCT:TEMPO MAP
   1 0001.01.00 TEMPO:120.0


                  [DELETE][INSERT]
```

If the DPS12 supplies MIDI Clock to the MIDI sequencer, the tempo setting of the MIDI sequencer will be ignored. Therefore, you need to set the tempo in the TEMPO MAP Control Panel.

12. Move the cursor to the **TEMPO:** field, and enter the first tempo of the song.

```
SLCT:TEMPO MAP
   1 0001.01.00 TEMPO:100.0


                  [DELETE][INSERT]
```

If a tempo changes during the song, press the **INSERT** [F6] key to insert new tempo information, and adjust the position and value of the tempo. (See page 93.)

> ➤ **NOTE :** *You need to create a Beat Map first before you create a Tempo Map.*

13. Set the MIDI sequencer so that it will synchronize to the external MIDI Clock.

14. Start recording or playing back on the DPS12.
    When you perform a locate operation on the DPS12, it transmits Song Position Pointer (the position information in bar/beat/clock notation calculated based on the DPS12's absolute time, tempo information, and time signature information), and the MIDI sequencer will synchronize. When you start recording or playing back on the DPS12, it will transmit MIDI Clock, and the MIDI sequencer will synchronize.

Synchronizing the DPS12 to an external device (MTC)

In this example, the DPS12 is used as a sync slave device. MTC (MIDI timecode) is supplied from an external MIDI sequencer or computer-based sequence software to the DPS12, which will synchronize to the MIDI sequencer operation. This method is useful when you are using a device that cannot be used as a slave device in the sync system (such as an analog MTR).

1. Use a MIDI cable to connect the DPS12's MIDI IN jack and the MIDI sequencer's MIDI OUT jack.
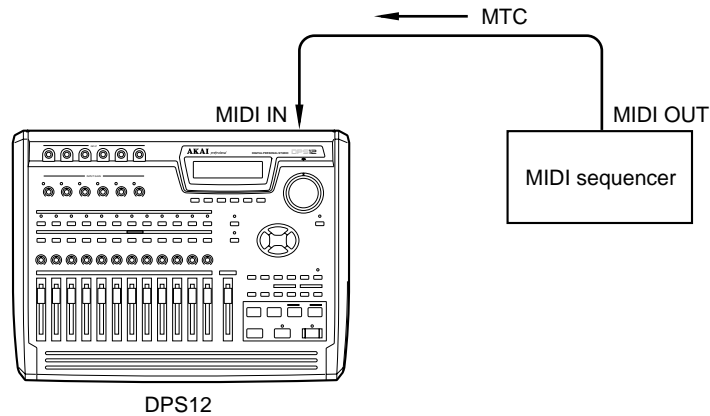
2. Move the cursor to the **SLCT:** field, then turn the [JOG] dial to recall the SYNC Control Panel.

3. Move the cursor to the **Type** field, and turn the [JOG] dial to select **MTC/SLAVE**

4. Press the [F6] key to set the **SYNC** field to **ON**.
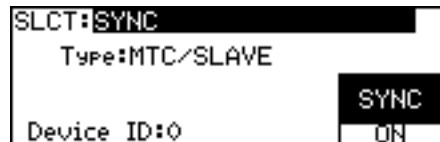
5. To change the frame rate of the MTC (default = 30, non-drop), move the cursor to the **SLCT:** field, turn the [JOG] dial to recall the TIME DISPLAY Control Panel.

6. Move the cursor to the **Frame rate:** field, and set the frame rate of the MTC to the rate of the syncing device. Options are **24**, **25**, **30** (30, non-drop), **29.97**, **30D** (30, drop).

7. Press the DPS12's PLAY button.
    The following window appears.
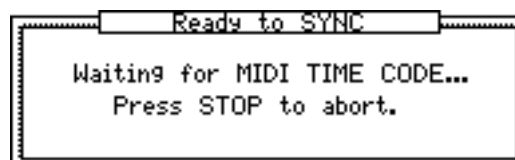
8. **Start the external device that supplies MTC to the DPS12.**
   When the DPS12 receives MTC, it starts playing, syncing to the MIDI sequencer.

> ✐ **TIP :** *If the MTC supplied from the external device passes through the zero point (00:00:00:00.0) of the DPS12's absolute time (ABS), the DPS12 will stop at the zero point. If you wish to have the DPS12 operate through the zero point, set the offset in relative time in the TIME OFFSET Control Panel (see page 89), and set the* **Type:** *parameter in the TIME DISPLAY Control Panel to* **RELATIVE** *(see page 88).*

> ➤ **NOTE :** *The DPS12 always uses the time value indicated on the display (NOW time) for sync operation. (BBC is excluded.)*

Controlling the DPS12 remotely from an external device (MMC)

You can send MMC (MIDI Machine Control) from an external device (such as a computer-based sequence software) to the DPS12 to remotely select and cancel recording tracks and control the transport section of the DPS12.

1. **Use a MIDI cable to connect the MIDI IN jack of the DPS12 and the MIDI OUT jack of an external device.**
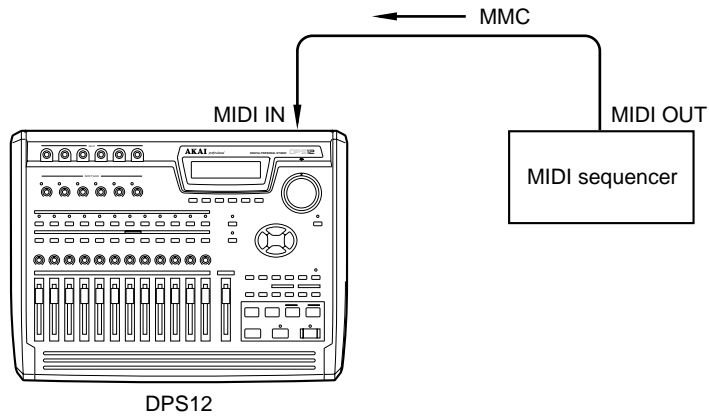
2. **Press the [F2] – [F6] keys in the MAIN screen, then turn the [JOG] dial to recall the SYNC Control Panel.**

3. **Move the cursor to the** **Device ID:** **field, and select the device ID number of the external device.**
   A device ID is an identification number that enables the DPS12 to identify each device connected via MIDI to the system. The ID of the device that transmits MMC should match the ID of the device that receives MMC in order for you to control the DPS12 via MMC. Refer to the manual that came with the external device or software for more information on setting the device ID on the corresponding device.

   If the device ID numbers match, the DPS12 can always receive MMC, and you can remotely control the selection of recording tracks and the transport section.

> ✐ **TIP :** *The DPS12 can also perform a sync operation with a MIDI sequencer while it is being controlled from the MIDI sequencer. Refer to "Syncing an external device to the DPS12 (MTC)" on page 109 and "Synchronizing an external device to the DPS12 (MIDI Clock)" on page 110.*

Recording and playing back a scene memory of the mix parameters

The DPS12 can transmit and receive a mix scene memory (mix parameter settings) as a series of MIDI Control Change messages. If you record this scene memory to a MIDI sequencer, you can play back the same mix settings each time you play the MIDI sequencer.

1. **Use MIDI cables to connect the MIDI IN/OUT jacks of the DPS12 to the MIDI OUT/IN jacks of a MIDI sequencer.**
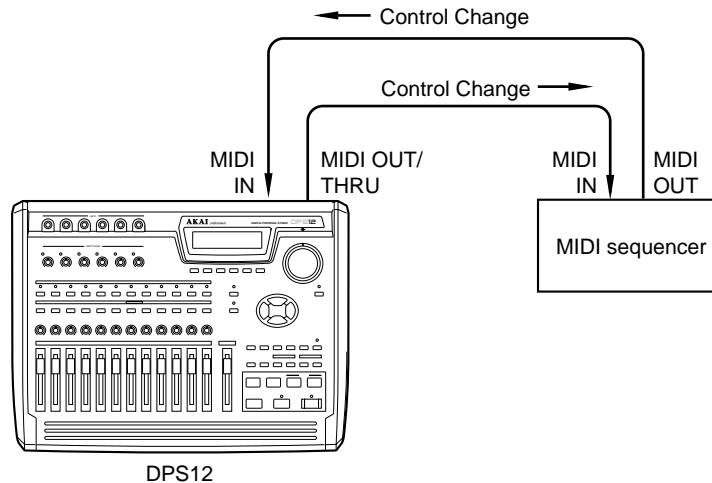
> ✎ *TIP :* *Make sure that the* **Out/Thru:** *field is set to* **OUT** *in the MIDI Control Panel.*

2. **Create a mix to be recorded as a scene memory, while playing the DPS12.**
3. **Use the SELECT▲ [F1] key or the SELECT▼ [F2] key in Mixer mode to recall the MIDI CONTROL parameters.**

```
Select:MIDI CONTROL
     Control via MIDI:16
     Tx mixer changes:16

  ▼  SELECT  ▲ ||SEND MIX DATA|
```

4. **Move the cursor to the Control via MIDI field, then turn the [JOG] dial to select a MIDI channel that transmits Control Change messages.**
5. **In the same manner, move the cursor to the Tx mixer changes: field, then turn the [JOG] dial to select a MIDI channel that receives Control Change messages.**

```
Select:MIDI CONTROL
     Control via MIDI:16
     Tx mixer changes:16

  ▼  SELECT  ▲ ||SEND MIX DATA|
```
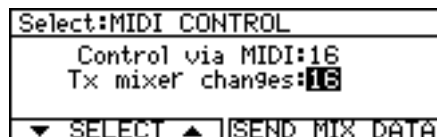
If the **Control via MIDI** field and **Tx mixer changes:** field are set to **OFF**, Control Change messages are not transmitted or received.

6. **Set the MIDI sequencer so that it will record Control Change messages transmitted from the DPS12.**

> ✎ *TIP :* *At this time, turn off the MIDI thru function of the MIDI sequencer (the function that allows MIDI messages received at the MIDI IN jack to be output from the MIDI OUT jack unaltered).*

7. Start recording on the MIDI sequencer.

8. Press the **SEND MIX DATA**[F5] – [F6] keys while the SETUP Control Panel is displayed.
   The current settings of the mix parameters are transmitted as a series of Control Change messages.

> ➤ **NOTE :** *Be sure not to stop the MIDI sequencer during transmission.*

9. When transmission is complete, stop the DPS12 and MIDI sequencer.

10. If you wish to send the recorded scene memory back to the DPS12, set the MIDI transmit channel of the MIDI sequencer track (that recorded the Control Change messages) to the same number as the MIDI receive channel of the DPS12 as specified in Step 5.

11. Play back the MIDI sequencer.

> ✎ **TIP :** *The DPS12 always receives Control Change messages of the MIDI channel specified in Step 5.*

Recording and playing back a mix automation

Real-time changes in the mix parameters can be output as Control Change messages. In addition, the parameters can be changed in real-time by Control Change messages sent from an external device. Recording and playing back these Control Change messages will enable you to automate mixing operations.

1. Use MIDI cables to connect the MIDI IN/OUT jacks of the DPS12 to the MIDI OUT/IN jacks of a MIDI sequencer.
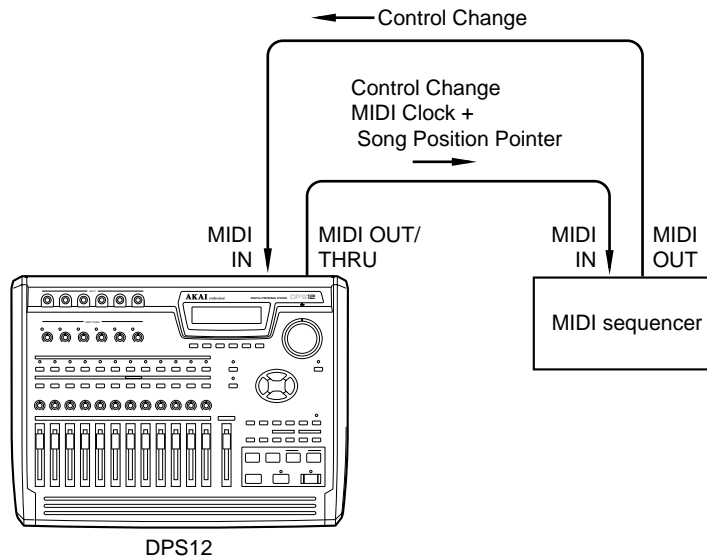
2. Set up the DPS12 and the MIDI sequencer for a sync operation, following the instructions under "Synchronizing an external device to the DPS12 (MIDI Clock)" on page 110.

> ➤ **NOTE :** *You can also use MTC to synchronize the DPS12 with a MIDI sequencer and record and play back Control Change messages.*

3. Use the **SELECT▲** [F1] key or the **SELECT▼** [F2] key in Mixer mode to recall the MIDI CONTROL parameters.

4. Select the DPS12's MIDI channel that transmits and receives Control Change messages in the `Control via MIDI` field and the `Tx mixer changes:` field respectively.

5. Create a mix beginning at the start position of the song on the DPS12, and follow the instructions under "Recording and playing back a scene memory of the mix parameters" to record the scene memory in the top position of the MIDI sequencer.
   When a mix automation is recorded, this scene memory will become the default value of the mix parameters.

> ➤ **NOTE :** *A scene memory that is used as a default setting of the mix parameters should be recorded in a position before the start point of the mix automation recording. Therefore, the top of the song should be later than 0001.01.00.*
>
> Time counter indication   0001.01.00   0003.01.00
>
> MIDI sequencer
>   Recording a scene memory
>   Recording a mix automation
>
>   Silence   The song starts.
>
> DSP12
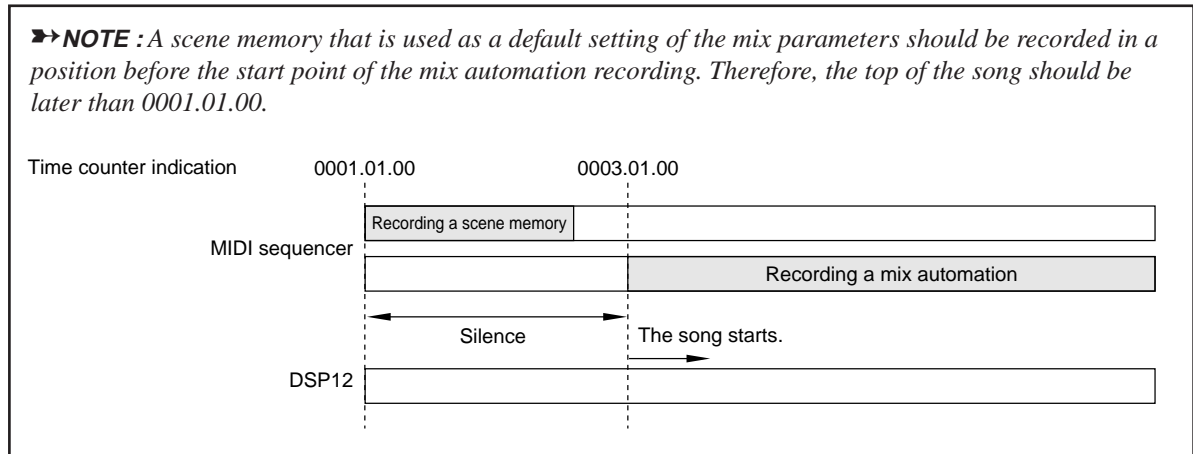
6. Set up the MIDI sequencer so that it will record Control Change messages while syncing to the external MIDI Clock, and set it to record waiting mode.

> ✎ **TIPS :**
> • *To record Control Change messages, it is a good idea to select a track that did not record a scene memory.*
> • *Turn off the MIDI thru function of the MIDI sequencer.*

7. **Start playing the DPS12.**
   The DPS12 transmits MIDI Clock via the MIDI OUT/THRU jack to the MIDI sequencer, and the MIDI sequencer synchronizes to the clock. (If you play the song from the top, the scene memory will be sent to the DPS12.)

8. **Use the faders and [PAN] keys on the top panel or use Mixer mode to adjust the mix parameters.**
   The mix parameter settings and their changes are set as Control Change messages and are recorded to the MIDI sequencer.

9. **When recording is complete, stop the DPS12 and MIDI sequencer.**

10. **To play back the mix parameter operations, set the track of the MIDI sequencer that recorded Control Change messages for playback, and match the MIDI transmit channel of that track to the DPS12's MIDI receive channel specified in Step 5.**

11. **Set up the MIDI sequencer so that it will synchronize to an external MIDI Clock, and set it to play-back waiting mode.**

12. **Play the DPS12 from the zero position of the time counter.**
    The MIDI sequencer synchronizes the DPS12, and after sending the scene memory settings to the DPS12, it plays back the changes to the mix parameters as the song proceeds.

> ✎ **TIP :** *The table on the next page shows the DPS12's mix parameters and the corresponding Control Change numbers. You can enter this Control Change data directly into the MIDI sequencer to control the mix parameters.*

DPS12 MIDI Control Change Assign Table

1	TRACK1	LEVEL	41	TRACK1	* AUX SEND-A	81			121	
2	TRACK2	LEVEL	42	TRACK2	* AUX SEND-A	82			122	
3	TRACK3	LEVEL	43	TRACK3	* AUX SEND-A	83			123	
4	TRACK4	LEVEL	44	TRACK4	* AUX SEND-A	84			124	
5	TRACK5	LEVEL	45	TRACK5	* AUX SEND-A	85			125	
6	TRACK6	LEVEL	46	TRACK6	* AUX SEND-A	86			126	
7	TRACK7	LEVEL	47	TRACK7	* AUX SEND-A	87			127	
8	TRACK8	LEVEL	48	TRACK8	* AUX SEND-A	88				
9	TRACK9	LEVEL	49	TRACK9	* AUX SEND-A	89				
10	TRACK10	LEVEL	50	TRACK10	* AUX SEND-A	90				
11	TRACK11	LEVEL	51	TRACK11	* AUX SEND-A	91				
12	TRACK12	LEVEL	52	TRACK12	* AUX SEND-A	92				
13	THRU1	LEVEL	53	THRU1	* AUX SEND-A	93				
14	THRU2	LEVEL	54	THRU2	* AUX SEND-A	94				
15	THRU3	LEVEL	55	THRU3	* AUX SEND-A	95				
16	THRU4	LEVEL	56	THRU4	* AUX SEND-A	96				
17	THRU5	LEVEL	57	THRU5	* AUX SEND-A	97				
18	THRU6	LEVEL	58	THRU6	* AUX SEND-A	98				
19	THRU7	LEVEL	59	THRU7	* AUX SEND-A	99				
20	THRU8	LEVEL	60	THRU8	* AUX SEND-A	100				
21	TRACK1	PAN	61	TRACK1	* AUX SEND-B	101	MASTER LEVEL			
22	TRACK2	PAN	62	TRACK2	* AUX SEND-B	102	AUX SEND-A MASTER			
23	TRACK3	PAN	63	TRACK3	* AUX SEND-B	103	AUX SEND-B MASTER			
24	TRACK4	PAN	64	TRACK4	* AUX SEND-B					
25	TRACK5	PAN	65	TRACK5	* AUX SEND-B					
26	TRACK6	PAN	66	TRACK6	* AUX SEND-B					
27	TRACK7	PAN	67	TRACK7	* AUX SEND-B					
28	TRACK8	PAN	68	TRACK8	* AUX SEND-B					
29	TRACK9	PAN	69	TRACK9	* AUX SEND-B					
30	TRACK10	PAN	70	TRACK10	* AUX SEND-B					
31	TRACK11	PAN	71	TRACK11	* AUX SEND-B					
32	TRACK12	PAN	72	TRACK12	* AUX SEND-B					
33	THRU1	PAN	73	THRU1	* AUX SEND-B					
34	THRU2	PAN	74	THRU2	* AUX SEND-B					
35	THRU3	PAN	75	THRU3	* AUX SEND-B					
36	THRU4	PAN	76	THRU4	* AUX SEND-B					
37	THRU5	PAN	77	THRU5	* AUX SEND-B					
38	THRU6	PAN	78	THRU6	* AUX SEND-B					
39	THRU7	PAN	79	THRU7	* AUX SEND-B					
40	THRU8	PAN	80	THRU8	* AUX SEND-B					

* If you set AUX type to STEREO, the Control Change numbers are assigned as follows:

41 — 60: AUX LEVEL

61 — 80: AUX PAN

Chapter 13: Using the effects

If you have installed an optional effect board EB2M, you can use various types of effects. This chapter describes their functions and usage.

> ➤ **NOTE :** *If the EB2M is not installed in the DPS12, the effect setting screens still appear. However, they will not respond to your operation.*

Effect signal flow

If you have installed an optional effect board EB2M in the DPS12, you can use two channels of stereo effects: EFFECT A and EFFECT B. Channel signals sent to AUX SEND A and B from the mixer channels are routed to EFFECT A and EFFECT B within the digital domain.

> ➤ **NOTE :** *Signals sent to EFFECT A and B are also output from the AUX SEND A/B jacks on the rear panel.*
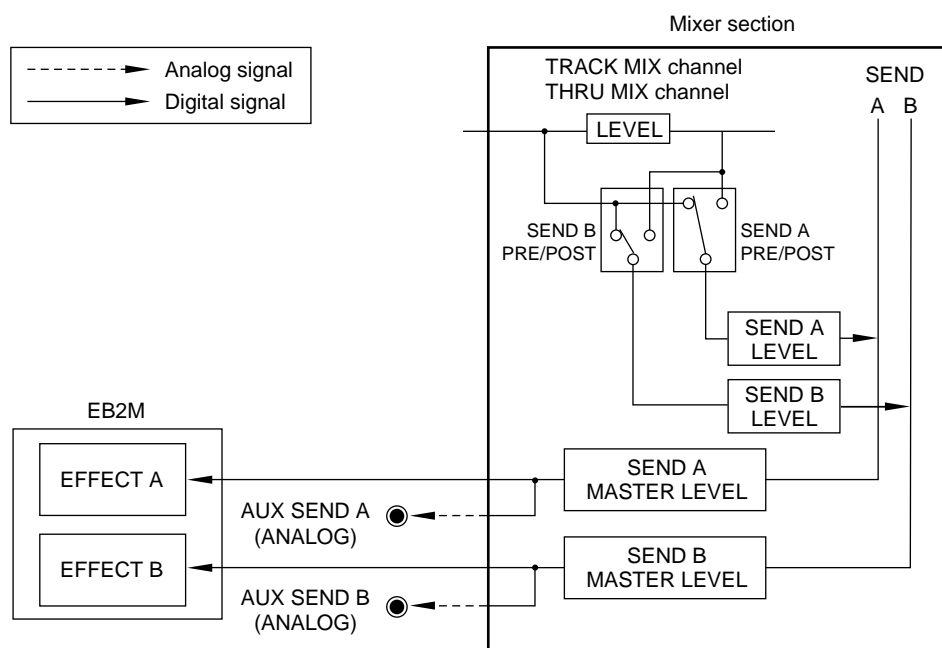
Stereo effect return signals sent from EFFECT A/B can be recorded on the tracks in the recorder section as analog input signals 3/4, 5/6 (or only 5/6) in the same way as usual input signals, or they can be sent to the THRU MIX channels in the mixer section and mixed with the track playback sound. (In this case, the corresponding analog inputs cannot be used for signal input.)

Global effects and Insert effects

The optional effect board offers 36 types of effects, and you can select a different effect for EFFECT A and B independently. These effects are divided into two categories as follows:

■ Global effects

These effects include reverb and delay, and output only effect sounds. They are usually applied to multiple parts.

If you are using Global effects during mixdown, you need to mix a dry sound and an effect sound in the mixer section, since the effect return signal includes only the effect sound.

■ Insert effects

These effects include an equalizer and compressor that process dry sounds directly, and also include a phaser that mixes and outputs dry sounds and effect sounds. They are mainly used only for certain parts of a song.

If you are using Insert effects on some channels during mixdown, you do not need to mix a dry sound and an effect sound, since the effect return signal includes a processed sound or a mixture of dry and effect sounds. Therefore, route the channel signal to which you wish to apply effects from the pre-fader position to AUX SEND A/B, and set the LEVEL parameter to 0.

Using effects for mixdown

The most common way to use effects is to apply them to the TRACK MIX channel signals during mixdown and record them in the master recorder. You can apply Global effects, such as reverb or delay, to multiple channels, or apply Insert effects, such as a compressor or phaser, only to a specified channel.

This section explains the basic operation for applying effects during mixdown.

Selecting an effect type

You need to first select an effect type before you can use the effect. "Effect type" is a parameter that determines the type of effect. You can select a different effect type for EFFECT A and B individually, and set the effect parameters, if necessary. Follow the steps below to select an effect type and set the parameters.

1. **Press the [MIXER] key to recall Mixer mode.**

2. **Recall a parameter other than `EQ` or `SETUP`, `MIDI CONTROL` in the SLCT field, and press the `EFFECT` [F5] key.**
   The following screen appears.

```
Type :MONO CHORUS        ────┐──A
  Rate1:10.0Hz    Depth1:127 ┐
  Rate2:10.0Hz    Depth2:127 ├──B
  Fdback:127         Pan:MID ┘
▶AUX A◀ AUX B  CLOSE
```
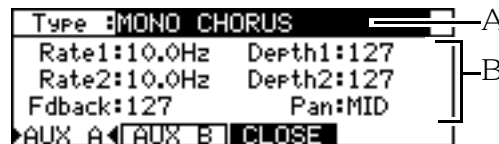
   This screen contains the following information.

   1 This select field enables you to select an effect type.

   2 This field enables you to set a parameter for the selected effect. The parameter varies depending on the effect type you selected.

3. **Press the `AUX A` [F3] key or `AUX B` [F4] key to select either EFFECT A or EFFECT B.**

```
Type :MONO CHORUS
  Rate1:10.0Hz    Depth1:127
  Rate2:10.0Hz    Depth2:127
  Fdback:127         Pan:MID
▶AUX A◀ AUX B  CLOSE
```
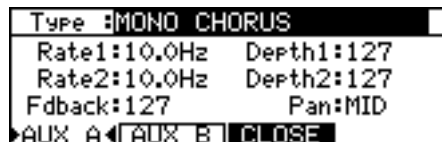
   Example: EFFECT A is selected.

4. **Move the cursor to the select field 1, and turn the [JOG] dial to select the effect type.**
   Field 2 changes according to the selected effect type.

> ➥**NOTE :** *The following operation varies slightly depending on whether you select Global effects or Insert effects here.*

> ✐ **TIP :** *Refer to "Effect type and parameter" on page 128 for more information on the type of effects and parameters and the differences between the Global effects and the Insert effects.*

5. **If necessary, move the cursor to the parameter you wish to adjust in field** 2 **, and turn the [JOG] dial to set the value.**

> ✎ *TIPS :*
> - *The parameters of some effect types are displayed over two screens. In this case, press the* **MORE** *[F6] key in the first screen to recall the second screen. Press the* **BACK** *[F6] key to return to the first screen.*
> - *Some effect types require you to switch between different effects manually. If you have selected one of these types, use the* **MANUAL** *[F6] key to switch the effects.*

6. **Press the** **CLOSE** **[F5] key to complete the effect settings and return to normal Mixer mode.**

Using effect return signals as analog inputs

You can use the effect return signals from EFFECT A and B as analog inputs 3–6 in Assign mode so that they can be input to the mixer section. Follow the steps below.

1. **While the transport section is stopped, press the [ASSIGN] key to recall Assign mode.**
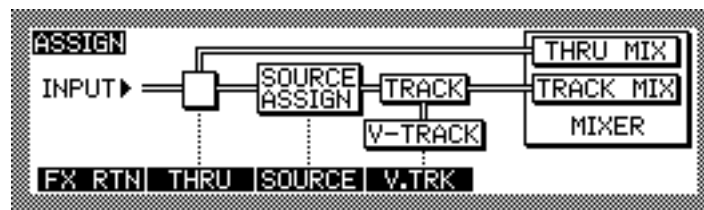
2. **Press the** **FX RTN** **[F1] key.**
   The following screen appears.
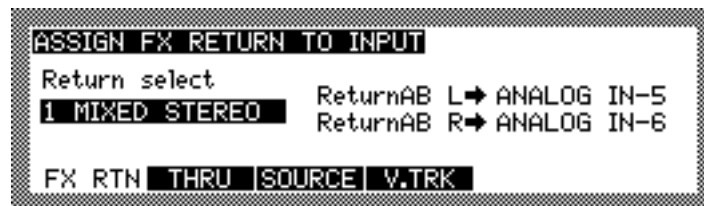
3. **Turn the [JOG] dial and select** **1 MIXED STEREO** **or** **2 STEREO PAIRS** **for the method by which to switch analog inputs to effect return signals.**
   There are three options for this field as follows.

> ➵ **NOTE :** *Depending on the EFFECT RETURN setting, the indication on the THRU screen and the SOURCE screen will change.*
>
> *If you have selected* **1 MIXED STEREO** *for the* **Return select** *field,* **Analog in-5** *changes to* **FX RTN-L** *and* **Analog in-6** *changes to* **FX RTN-R** *in the THRU screen. Also in the SOURCE screen,* **ANALOG IN-5** *changes to* **FX RTN-L** *and* **ANALOG IN-6** *changes to* **FX RTN-R**
>
> *If you have selected* **2 STEREO PAIRS** *for the Return select field,* **Analog in-3** *changes to* **FXA RTN-L,** **Analog in-4** *changes to* **FXA RTN-R,** **Analog in-5** *to* **FXB RTN-L,** *and* **Analog in-6** *to* **FXB RTN-R** *in the THRU screen. Also in the SOURCE screen,* **ANALOG IN-3** *changes to* **FXA RTN-L,** **ANALOG IN-4** *changes to* **FXA RTN-R,** **ANALOG IN-5** *to* **FXB RTN-L,** *and* **ANALOG IN-6** *to* **FXB RTN-R.**

- **1 MIXED STEREO**

  EFFECT A and B return signals L/R are mixed and routed as analog inputs 5 and 6. You cannot use analog INPUT jacks 5 and 6 to input external signals.
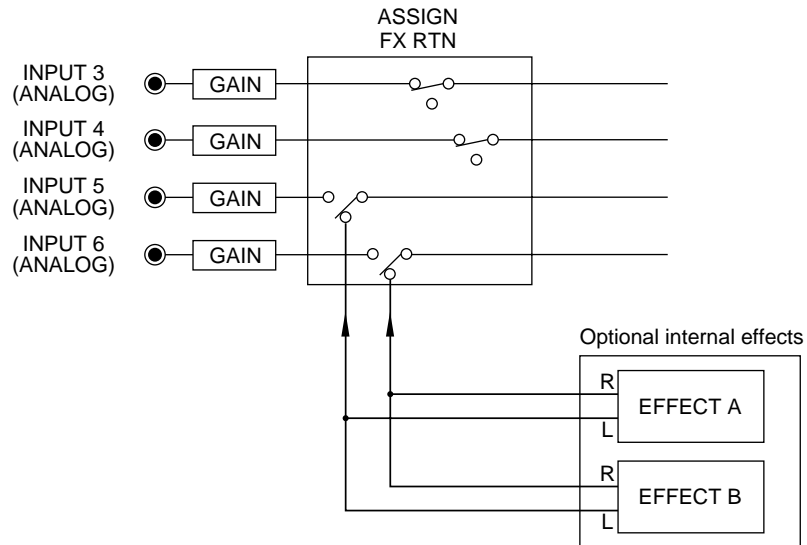
- **2 STEREO PAIRS**

  EFFECT A return signals L/R are routed as analog inputs 3 and 4, and EFFECT B return signals L/R are routed as analog inputs 5 and 6. You cannot use analog INPUT jacks 3–6 to input external signals.
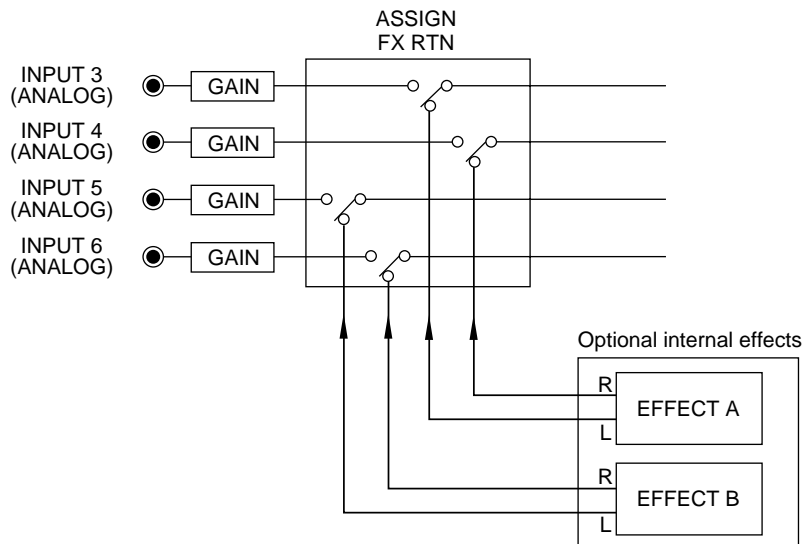
- **OFF**

  Effect return signals are not switched to analog input signals. (That is, you cannot use the effects.) You can use the analog INPUT jacks as usual.
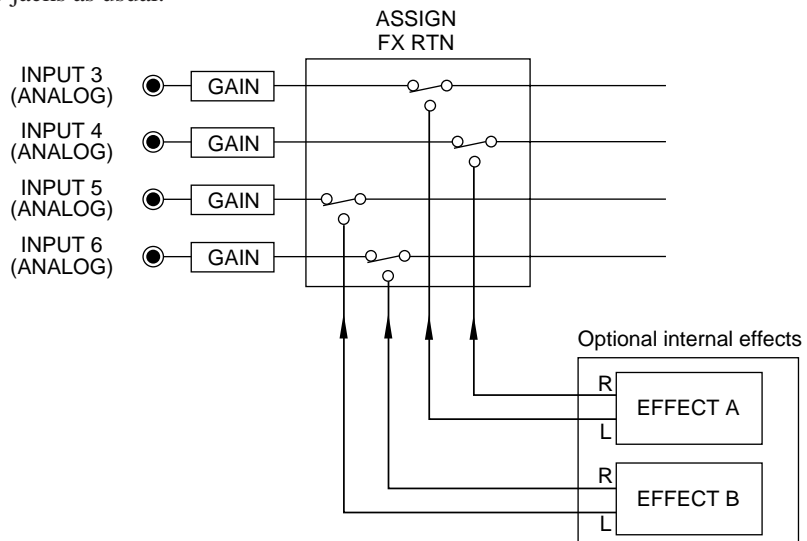
> ✎ **TIP :** *If you selected Global effects for both EFFECT A and B, you may want to select* **1 MIXED STEREO** *or* **2 STEREO PAIRS** *If you have selected Insert effects for either EFFECT A or B or both, you may want to select* **2 STEREO PAIRS**

Routing effect return signals to THRU MIX channels

You can send effect return signals that have been switched as analog input signals to the THRU MIX channels in the mixer section to mix them with the TRACK MIX channel signals (track playback). Follow the steps below to send the effect return signals to the mixer section.

1. Press the **THRU** [F2] key in Assign mode.
2. Select the analog inputs to which the effect return signals are routed, and select **THRU MIX** as their destination.

```
ASSIGN INPUT TO THRU TRACK
FXA RTN-L ➡ THRU MIX       ┊ THRU MIX is
FXA RTN-R ➡ THRU MIX       ┊ sent to MIXER
FXB RTN-L ➡ THRU MIX       ┊ directly (not
FXB RTN-R ➡ THRU MIX       ┊ recorded).
FX RTN  THRU  SOURCE  V.TRK
```

> Example: If you selected **2 STEREO PAIRS** in Assign mode, route **FXA RTN-L**, **FXA RTN-R**, **FXB RTN-L**, **FXB RTN-R**, to **THRU MIX**

Setting the effect send level

You may set the AUX send level of the TRACK MIX channels to which you wish to apply effects in Mixer mode. The operation will differ slightly depending on whether you selected Global effects or Insert effects.

■ If you selected Global effects

1. Select TRACK MIX channels in Mixer mode, and adjust the **AUX SEND-A** or **AUX SEND-B** level of the channel to which you wish to apply effects.
    AUX SEND A signal is sent to EFFECT A, and AUX SEND B signal is sent to EFFECT B. At this time, you can check the output level of AUX SENDs A/B using level meters SA/B. If the level is too high, adjust it using the channel SEND MASTER and AUX SEND-A/B parameters.

A

```
                          NOW: 00:02:51:14.3    THRU
                          Select:AUX SEND-A       :100
  ·· ·· ··
  ·· ·· ··                 G ⊘⊘⊘⊘⊘⊘ ⊘⊘ SENDA ⊘
  ·· ·· ··                 1 2 3 4 5 6 DLDR MASTER
  ·· ·· ··
123456 DLR SAB LR
 TRACK ▶ THRU ◀  ▼ SELECT ▲  EFFECT  SCENE
```
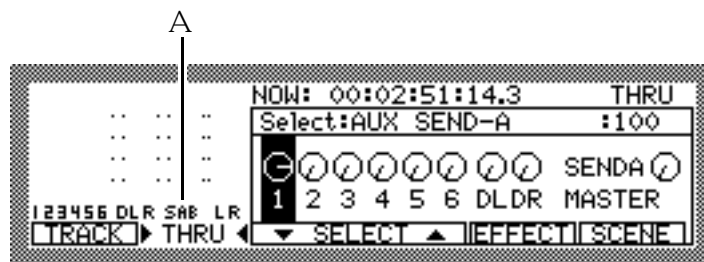
You can check the output level of AUX SEND A/B using the meter 1.

2. Recall the **AUX-A PRE/POST** and **AUX-B PRE/POST** parameters to select whether the signals sent to EFFECT A/B are routed from the pre-fader or post fader.

```
Select:AUX-A PRE/POST  :
 □ □ □ □ □ □  □ □ □ □ □ □
 1 2 3 4 5 6  7 8 9 10 11 12
 ▼ SELECT ▲  EFFECT  SCENE
```
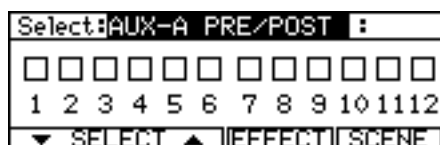
■ **If you selected Insert effects**

1. **Select TRACK MIX channels in Mixer mode, and adjust the AUX SEND-A or AUX SEND-B level of the channel to which you wish to apply effects.**
   At this time, you can check the output level of AUX SENDs A/B using level meters SA/B.

2. **Recall the `AUX-A PRE/POST` and `AUX-B PRE/POST` parameters to select `PRE` (pre-fader) to send channel signals to the Insert effects.**

3. **Recall the `LEVEL` parameter, and set the level of the channel signals sent to the Insert effects to 0.**
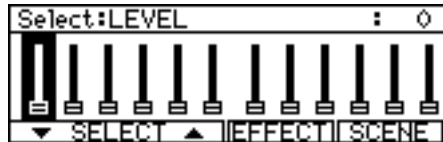
Now signals to which you wish to apply Insert effects are sent from the channel pre-fader position to AUX SENDs A and B, but they are not output at the master L/R.

Adjusting the effect return level

You can adjust the level, pan, and `EQ` parameters for the effect return signals sent to the mixer section in the THRU MIX channels of Mixer mode. Follow the steps below to adjust the level of the effect return signals.

1. **Switch to THRU MIX channels in Mixer mode, and recall the `LEVEL` parameter.**

2. **Select the THRU MIX channels to which the effect return signal is routed, and raise the `LEVEL`.**
   If you selected `2 STEREO PAIRS` in Assign mode, you can adjust the effect return level of EFFECT A on THRU MIX channels 3 and 4, and the level of EFFECT B on THRU MIX channels 5 and 6.

If you selected a Global effect, you can adjust only the level of the effect sound on THRU MIX channels. This effect sound will be mixed with the dry sound of the TRACK MIX channels, and output from the MASTER OUT jack and OPTICAL OUT jack.

If you selected an Insert effect, you can adjust the level of the mix of the dry and effect sounds. These signals are mixed with the sound of other tracks on TRACK MIX channels, then output from the MASTER OUT and OPTICAL OUT jacks.

> ➠ **NOTE :** *Make sure that the level of AUX SEND A (when EFFECT A is used) or AUX SEND B (EFFECT B is used) is set to Ø on the THRU MIX channels to which the effect return signals are input. If the level is set to any value other than Ø, the signals will loop.*

> ✎ **TIP :** *Refer to page 58 for more information on operations in Mixer mode.*

Recording sound to a track while applying an Insert effect

You may sometimes wish to record sound with an Insert effect applied via an input. This section describes an example in which we apply a stereo phaser of EFFECT A to the INPUT 1 signal and record on Tracks 5 and 6.

1. Press the **THRU** [F2] key in Assign mode, and set the input to which you wish to apply the effect to **THRU MIX**
   The input signal is routed to a THRU MIX channel in the mixer section.

```
ASSIGN INPUT TO THRU TRACK
Analog In-1 ➡ THRU MIX     │ THRU MIX is
Analog In-2 ➡ SOURCE ASSIGN │ sent to MIXER
Analog In-3 ➡ SOURCE ASSIGN │ directly (not
Analog In-4 ➡ SOURCE ASSIGN │ recorded).
FX RTN  THRU  SOURCE  V.TRK
```

Example: Analog input 1 is routed to **THRU MIX**

2. Press the **THRU** [F2] key in Mixer mode to select a THRU MIX channel, and set the **LEVEL** parameter of the THRU MIX channel to **0**.
   The THRU MIX channel signal is not sent to master L/R.

```
Select:LEVEL          :  0



 ▼  SELECT  ▲  EFFECT SCENE
```
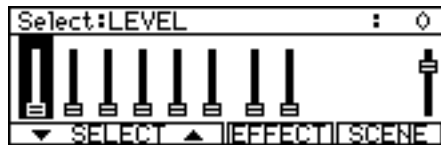
Example: Set the level of THRU MIX channel 1 to 0.

3. Recall the **AUX-A PRE/POST** parameter in Mixer mode (the parameter for switching between pre and post fader for AUX SEND A), and set the corresponding THRU MIX channel to **PRE**.

```
Select:AUX-A PRE/POST  :PRE
■ □ □ □ □ □  □ □
1 2 3 4 5 6 DLDR
 ▼  SELECT  ▲  EFFECT SCENE
```
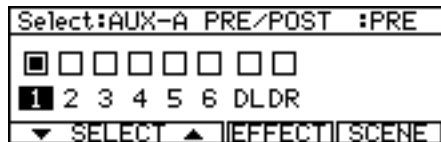
Example: AUX-A PRE/POST parameter for THRU MIX channel 1 is set to **PRE**.

4. Recall the **AUX SEND-A** parameter in Mixer mode, and set the AUX SEND A level for the corresponding THRU MIX channel to an appropriate level.
   The signal is routed from the pre-fader position of the THRU MIX channel to EFFECT A. At this time, you can check the AUX SEND A output level using the level meter (SA bar graph) in the left column of the screen.

```
                B      A

              NOW: 00:02:51:14.3    THRU
··  ··  ··    Select:AUX SEND-A     :100
··  ··  ··    ⊙○○○○○○○ SENDA ○
··  ··  ··    1 2 3 4 5 6 DLDR MASTER
··  ··  ··
123456 DLR SAB LR
 TRACK ▶ THRU ◀  ▼  SELECT  ▲  EFFECT SCENE
```
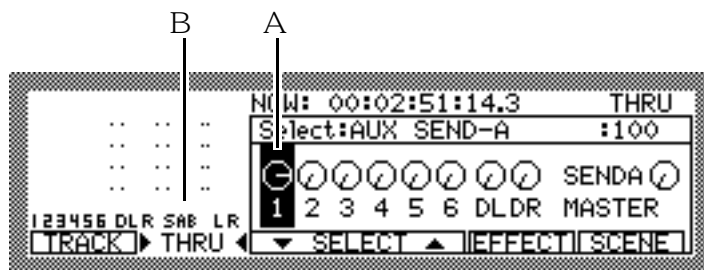
Example: Adjust the AUX-SEND-A parameter (1) for THRU MIX channel 1, and check the output level using the level meter 2.

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5. Press the **EFFECT** [F5] key in Mixer mode and select a type of Insert effect. Also, set the other effect parameters, if necessary.

```
Type :STEREO PHASER
  Rate:10.0Hz
 Depth:127
Fdback:127        Width:127
▶AUX A◀ AUX B  CLOSE
```
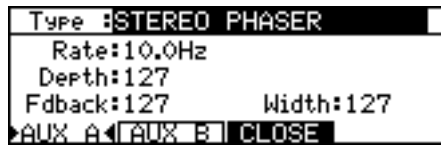
6. Press the **FX RTN** [F1] key in Assign mode, and select **2 STEREO PAIRS**
   The effect return signals from EFFECT A and B are switched to analog input signals 3/4 and 5/6.

```
ASSIGN FX RETURN TO INPUT
                  ReturnA L ➡ ANALOG IN-3
Return select     ReturnA R ➡ ANALOG IN-4
2 STEREO PAIRS    ReturnB L ➡ ANALOG IN-5
                  ReturnB R ➡ ANALOG IN-6
FX RTN  THRU  SOURCE  V.TRK
```

   Example: Set the effect return signals to **2 STEREO PAIRS** In this case, the effect return signals from EFFECT A are routed as analog inputs 3 and 4.

7. Press the **THRU** [F2] key in Assign mode, and set the corresponding analog inputs to **SOURCE ASSIGN**

```
ASSIGN INPUT TO THRU TRACK
Analog In-1 ➡ THRU MIX     THRU MIX is
Analog In-2 ➡ THRU MIX     sent to MIXER
FXA RTN-L ➡ SOURCE ASSIGN  directly (not
FXA RTN-R ➡ SOURCE ASSIGN  recorded).
FX RTN  THRU  SOURCE  V.TRK
```

   Example: Set the effect return signals from EFFECT A to **SOURCE ASSIGN**

8. Press the **SOURCE** [F3] key in Assign mode, and assign these analog inputs to tracks.

```
ASSIGN INPUT SOURCE TO TRACK 1-12
FXA RTN-L   ➡ Track 3   Input in lowercase
FXA RTN-R   ➡ Track 4   letters is routed
FXA RTN-L   ➡ Track 5   to THRU MIX (not
FXA RTN-R   ➡ Track 6   recorded).
FX RTN  THRU  SOURCE  V.TRK
```
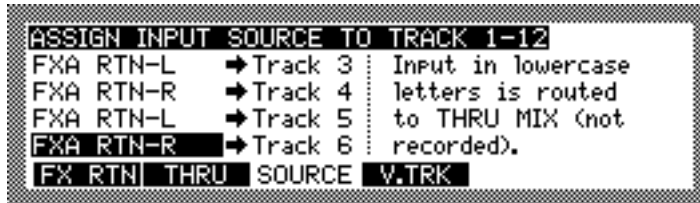
   Example: Assign the effect return signals from EFFECT A to Tracks 5 and 6.

   When you turn on the [RECORD SELECT] keys of the recording tracks and start recording, the sound will be recorded to the tracks with the effect applied.

> ➤ **NOTE :** *Make sure that the level of AUX SEND A (when EFFECT A is used) or AUX SEND B (EFFECT B is used) is set to ϴ on the TRACK MIX channels of the corresponding recording tracks. If the level is set to any value other than ϴ, the signals will loop.*

The following diagram illustrates the signal flow when you are using an Insert effect. (Dotted boxes indicate the steps described above.)

Optional internal effects

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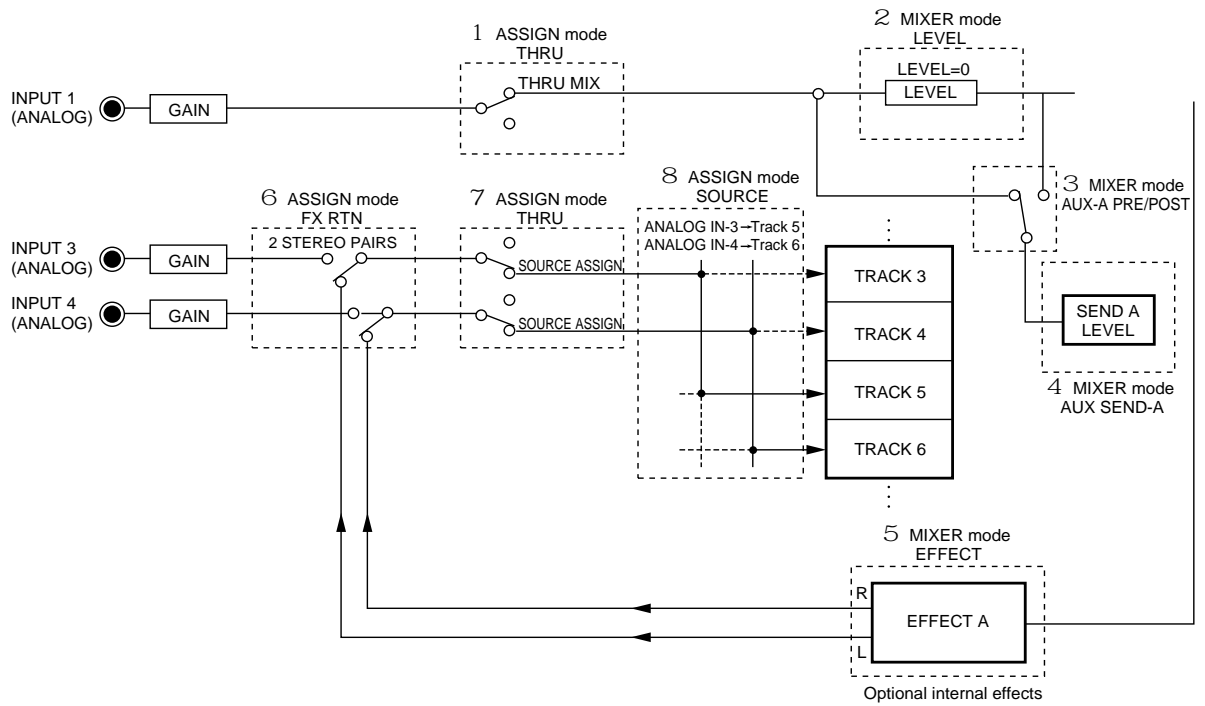
Effect type and parameter

This section describes the types and parameter functions of the optional internal effects. Global effects are indicated with (G) and Insert effects are indicated with (I) after their names.

When you select an effect type, recommended values appear for the parameters. These settings can be changed, if necessary.

MONO CHORUS (G)

This is a common chorus effect.
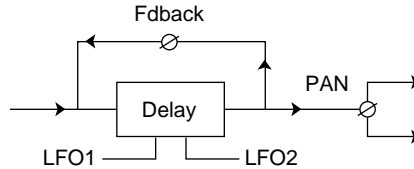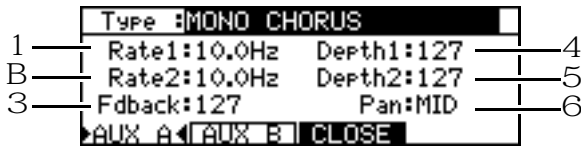
	Parameter	Setting range	Function
1	Rate1	0.1Hz – 10.0Hz	Adjusts the speed (rate) of LFO1.
2	Rate2	0.1Hz – 10.0Hz	Adjusts the speed of LFO2.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Depth1	0 – 127	Adjusts the depth of LFO1.
5	Depth2	0 – 127	Adjusts the depth of LFO2.
6	Pan	L63 – MID – R63	Adjusts the stereo image of the effect sound.

STEREO CHORUS (G)

This is a stereo chorus effect that adds the width and spread of the stereo image.

	Parameter	Setting range	Function
1	Rate1	0.1Hz – 10.0Hz	Adjusts the speed of LFO1.
2	Rate2	0.1Hz – 10.0Hz	Adjusts the speed of LFO2.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Depth1	0 – 127	Adjusts the depth of LFO1.
5	Depth2	0 – 127	Adjusts the depth of LFO2.
6	Width	0 – 127	Adjusts the width and spread of the stereo image.

XOVER CHORUS(G)

This is a variation of the STEREO CHORUS.

```
Type :XOVER CHORUS
1 ──── Rate1:10.0Hz  Depth1:127 ──── 4
B ──── Rate2:10.0Hz  Depth2:127 ──── 5
3 ──── Fdback:127      Width:127 ──── 6
▶AUX A◀ AUX B │ CLOSE
```

	Parameter	Setting range	Function
1	Rate1	0.1Hz – 10.0Hz	Adjusts the speed of LFO1.
2	Rate2	0.1Hz – 10.0Hz	Adjusts the speed of LFO2.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Depth1	0 – 127	Adjusts the depth of LFO1.
5	Depth2	0 – 127	Adjusts the depth of LFO2.
6	Width	0 – 127	Adjusts the width and spread of the stereo image.

MONO FLANGER (G)

This is a common flanger effect.
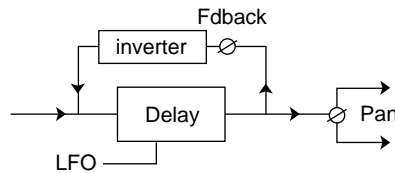
```
Type :MONO FLANGER
1 ──── Rate:10.0Hz  FB Inv:OFF ──── 4
B ──── Depth:127
3 ──── Fdback:127      Pan:MID ──── 5
▶AUX A◀ AUX B │ CLOSE
```

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount
4	FB Inv	ON/OFF	Inverses the phase of feedback signals when turned on.
5	Pan	L63 – MID – R63	Adjusts the stereo image of the effect sound.

STEREO FLANGER (G)

This is a flanger effect that adds width and spread.
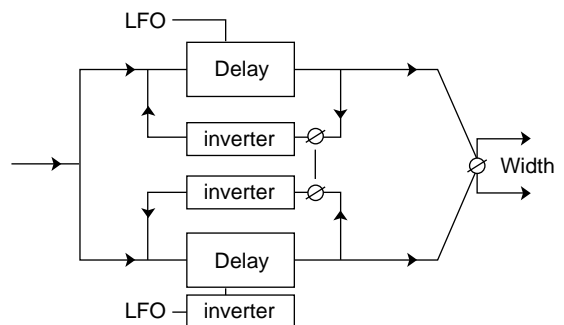
```
Type :STEREO FLANGER
1 ──── Rate:10.0Hz  FB Inv:OFF ──── 4
B ──── Depth:127
3 ──── Fdback:127    Width:127 ──── 5
▶AUX A◀ AUX B │ CLOSE
```

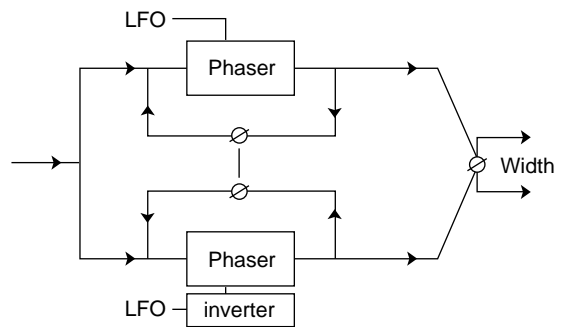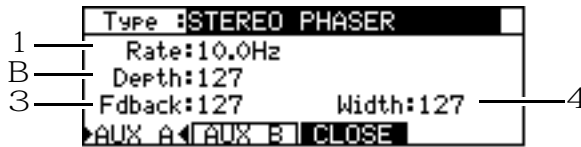|	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	FB Inv	ON/OFF	Inverses the phase of feedback signals when turned on.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

XOVER FLANGER (G)

This is a variation of the STEREO FLANGER.
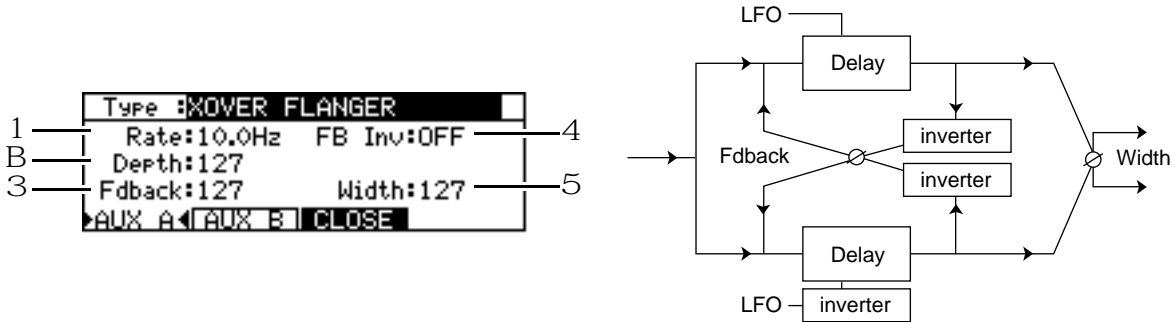
	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	FB Inv	ON/OFF	Inverses the phase of feedback signals when turned on.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

PAN FLANGER (G)

This effect adds an auto panning effect to the mono flanger.
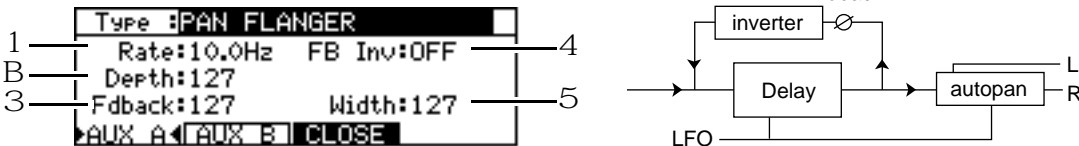
	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	FB Inv	ON/OFF	Inverses the phase of feedback signals when turned on.
5	Width	0 – 127	Adjusts the panning width.

MONO PHASER (I)

This is a common phaser effect.
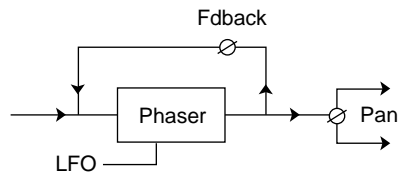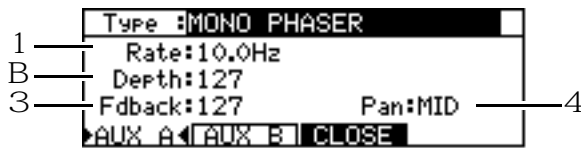
```
Type :MONO PHASER
   Rate:10.0Hz
  Depth:127
 Fdback:127        Pan:MID
▶AUX A◀ AUX B  CLOSE
```

1 —
B —
3 —
4 —

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Pan	L63 – MID – R63	Adjusts the stereo image of the effect sound.

STEREO PHASER (I)

This is a phaser effect that adds width and spread to the stereo image.

```
Type :STEREO PHASER
   Rate:10.0Hz
  Depth:127
 Fdback:127     Width:127
▶AUX A◀ AUX B  CLOSE
```

1 —
B —
3 —
4 —

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Width	0 – 127	Adjusts the width and spread of the stereo image.

XOVER PHASER (I)

This is a variation of the STEREO PHASER.
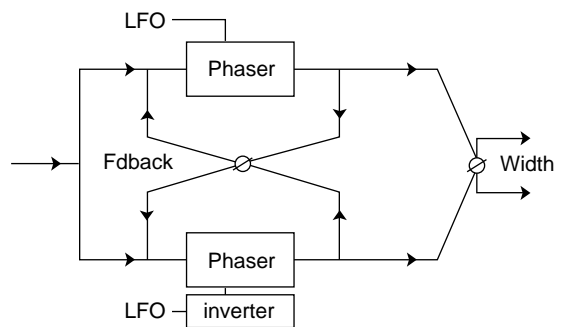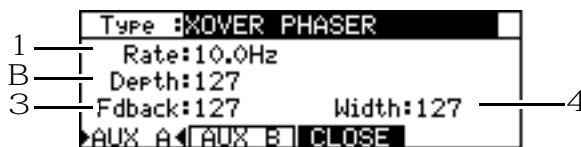
```
Type :XOVER PHASER
   Rate:10.0Hz
  Depth:127
 Fdback:127     Width:127
▶AUX A◀ AUX B  CLOSE
```

1 —
B —
3 —
4 —

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Width	0 – 127	Adjusts the width and spread of the stereo image.

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PAN PHASER (I)

This effect pans the sound image of the mono phaser effect sound to left and right.
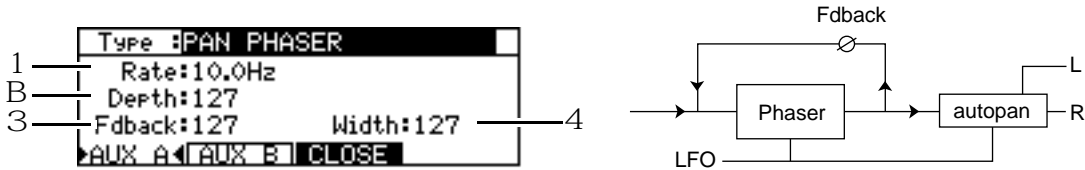
	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of LFO.
2	Depth	0 – 127	Adjusts the depth of LFO.
3	Fdback	0 – 127	Adjusts the feedback amount.
4	Width	0 – 127	Adjusts the panning width.

PITCH SHIFT (I)

This effect has a pitch shift with a range of +/– one octave, along with a delay effect, and can be set for the left channel and the right channel independently.
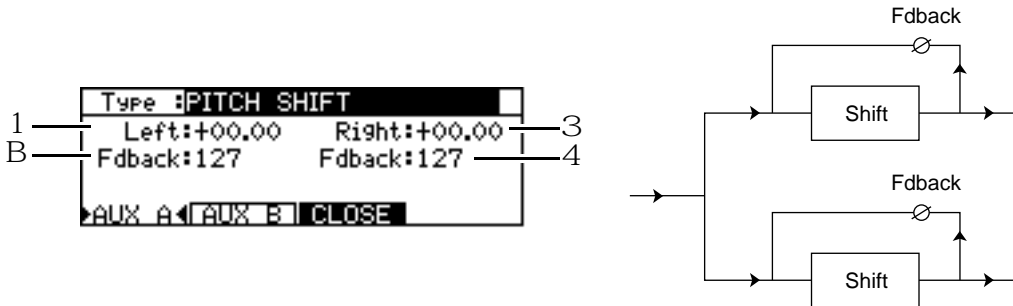
	Parameter	Setting range	Function
1	Left	−12.99 – +12.99	Adjusts the amount of pitch shift for the L channel.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back on the L channel.
3	Right	−12.99 – +12.99	Adjusts the amount of pitch shift for the R channel.
4	Fdback	0 – 127	Adjusts the amount of delay that is fed back on the R channel.

ROTARY SPEAKER (I)

This effect simulates rotary speakers. Use external MIDI Control Change messages or the function key on the DPS12 to switch between two rotation speeds (Rate1/Rate2).

When the DPS12 receives a specified Control Change message, **Rate1** is selected if the value falls between 0 and 63, and **Rate2** is selected if the value falls between 64 and 127. Pressing the **MANUAL** [F6] key will toggle between **Rate1** and **Rate2**.
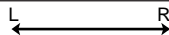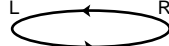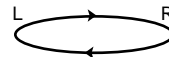
```
 1 ──── Type :ROTARY SPEAKER      ▮
        Rate1:10.0Hz    Init:R1   ──── 4
 B ──── Rate2:10.0Hz  MIDI ch:16  ──── 5
 3 ──── Accel:0.1sec  Ctrl No.:127 ──── 6
        ▸AUX A◂ AUX B  CLOSE  MANUAL
```

	Parameter	Setting range	Function
1	Rate1	0.1Hz – 10Hz	Adjusts the rotation speed (Rate1) of the speakers.
2	Rate2	0.1Hz – 10Hz	Adjusts the rotation speed (Rate2) of the speakers.
3	Accel	0.1sec – 10sec	Adjusts the time (duration) taken for switching from Rate 1 to Rate 2.
4	Init	R1/R2	Sets the initial rotation speed (Rate1/Rate2).
5	MIDI ch	1 – 16	Selects a MIDI channel that receives Control Change messages.
6	Ctrl No.	0 – 127	Sets a Control Change number to be received.

> ➥*NOTE : To avoid possible confusion, it is recommended that you select a different MIDI receive channel for Control Change messages to control mix parameters (see page 116) and for Control Change messages for this type of effect.*
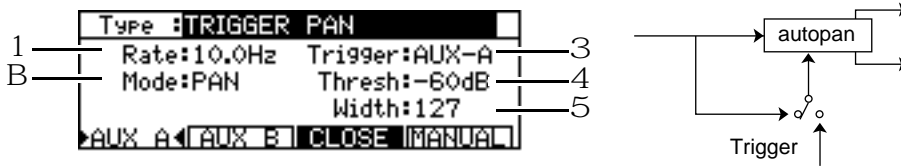
AUTO PAN (I)

This auto pan effect enables you to adjust the rotation and depth of rotation.

```
 1 ──── Type :AUTO PAN           ▮
        Rate:10.0Hz
 B ──── Mode:PAN
                    Width:127     ──── 3
        ▸AUX A◂ AUX B  CLOSE
```
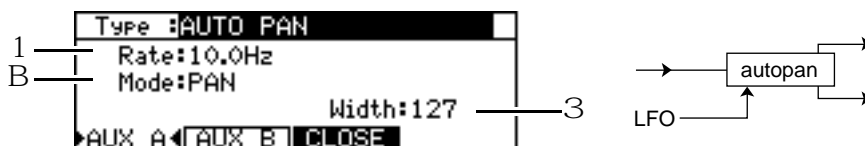
	Parameter	Setting range	Function	
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of panning.	
2	Mode	Pan	A common auto pan.	L ←→ R
		L>R	Simulates a sound source that rotates counter-clockwise and is listened to from in front.	L ⟲ R
		R>L	Simulates a sound source that rotates clockwise and is listened to from in front.	L ⟳ R
3	Width	0 – 127	Adjusts the panning width.	

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TRIGGER PAN (I)

This auto pan effect becomes enabled when the output level of AUX SEND A or AUX SEND B exceeds a certain level. You can also press the MANUAL [F6] key to start the auto pan effect manually.

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Adjusts the speed of panning.
2	Mode	Pan/L>R/R>L	Sets the effect of panning. (Refer to AUTO PAN.)
3	Trigger	AUX-A/AUX-B/MANUAL	Selects signals that enable the auto pan effect (AUX SEND A or AUX SEND B).
4	Thresh	–60dB – 0dB	Sets the signal level at which the auto pan becomes effective.
5	Width	0 – 127	Adjusts the panning width.

MONO DELAY (G)

This is a common delay effect.

	Parameter	Setting range	Function
1	Delay	1 – 1500ms	Adjusts the delay time.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back.
3	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound is cut.
4	Pan	L63 – MID – R63	Adjusts the stereo image of the effect sound.

PING PONG DELAY (G)

This delay effect pans the effect sound left and right.

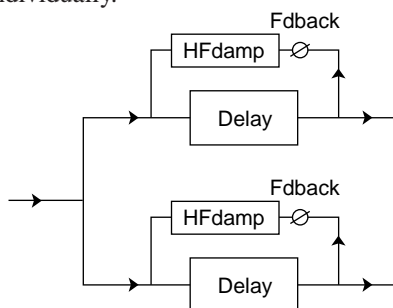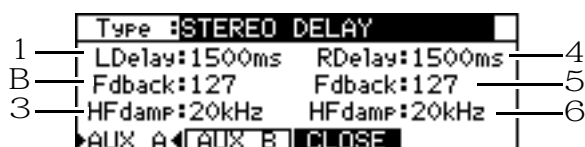|	Parameter	Setting range	Function
1	Delay	1 – 1500ms	Adjusts the delay time.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back.
3	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound is cut.
4	Width	0 – 127	Adjusts the panning width.

PANNING DELAY (G)

This delay effect pans the delay sound left, center, then right (LCR), or right, center, then left (RCL).

```
Type :PANNING DELAY       ■
   Delay:1500ms    Mode:LCR
Fdback:127
HFdamp:20kHz     Width:127
▶AUX A◀ AUX B  CLOSE
```

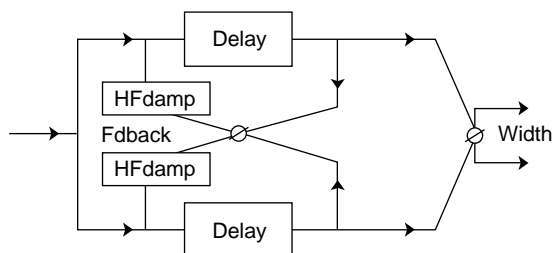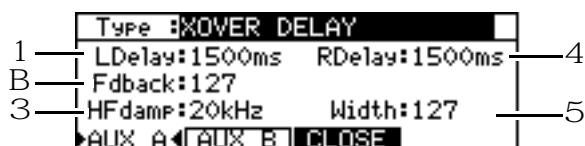|	Parameter	Setting range	Function
1	Delay	1 – 1500ms	Adjusts the delay time.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back.
3	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound is cut.
4	Mode	LCR/RCL	Sets the effect of panning.
5	Width	0 – 127	Adjusts the panning width.

STEREO DELAY (G)

This delay effect can be set for the left and right channels individually.

```
Type :STEREO DELAY        ■
LDelay:1500ms   RDelay:1500ms
Fdback:127      Fdback:127
HFdamp:20kHz    HFdamp:20kHz
▶AUX A◀ AUX B  CLOSE
```


	Parameter	Setting range	Function
1	LDelay	1 – 1500ms	Adjusts the delay time of the L channel.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back (Lch).
3	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound (Lch) is cut.
4	RDelay	1 – 1500ms	Adjusts the delay time of the R channel.
5	Fdback	0 – 127	Adjusts the amount of delay that is fed back (Rch).
6	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound (Rch) is cut.

XOVER DELAY (G)

This is a stereo delay effect that adds width and spread.

```
Type :XOVER DELAY         ■
LDelay:1500ms   RDelay:1500ms
Fdback:127
HFdamp:20kHz     Width:127
▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	LDelay	1 – 1500ms	Adjusts the delay time of the L channel.
2	Fdback	0 – 127	Adjusts the amount of delay that is fed back.
3	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound is cut.
4	RDelay	1 – 1500ms	Adjusts the delay time of the R channel.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

TAPE ECHO (G)

This delay effect simulates a three-head tape echo machine. You can set three delay times individually.

```
 Type :TAPE ECHO
1──Head 1:1500ms  Fdback:127──4
B──Head 2:1500ms  HFdamp:20kHz──5
3──Head 3:1500ms     Pan:MID──6
 ▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Head1	1 – 1500ms	Adjusts the delay time of Delay1.
2	Head2	1 – 1500ms	Adjusts the delay time of Delay2.
3	Head3	1 – 1500ms	Adjusts the delay time of Delay3.
4	Fdback	0 – 127	Adjusts the amount of delay that is fed back.
5	HFdamp	20Hz – 20kHz	Sets a frequency at which the higher range of the feedback sound is cut.
6	Pan	L63 – MID – R63	Adjusts the stereo image of the effect sound.

REVERB>SMALL ROOM (Small Room Reverb) (G)

This reverb effect simulates reverberations in a small room.

```
 Type :REVERB>SMALL ROOM
1──Pre-D:100ms  HFdamp:20kHz──4
B── Time:10sec
3── Diff:127      Width:127──5
 ▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Time	0.1 – 10sec	Adjusts the time of attenuation of reverberation.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	HFdamp	20Hz – 20kHz	Adjusts a high-frequency damp (the high range is attenuated) of reverberation.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

REVERB>BIG ROOM (Big Room Reverb) (G)

This reverb effect simulates reverberations in a big room.

```
 Type :REVERB>BIG ROOM
1──Pre-D:100ms  HFdamp:20kHz──4
B── Time:10sec
3── Diff:127      Width:127──5
 ▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Time	0.1 – 10sec	Adjusts the time of attenuation of reverberation.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	HFdamp	20Hz – 20kHz	Adjusts a high-frequency damp (the high range is attenuated) of reverberation.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

REVERB>SMALL HALL (Small Hall Reverb) (G)

This reverb effect simulates reverberations in a small hall.

```
 Type :REVERB>SMALL HALL
1─── Pre-D:100ms   HFdamp:20kHz ───4
B───  Time:10sec
3───  Diff:127     Width:127    ───5
▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Time	0.1 – 10sec	Adjusts the time of attenuation of reverberation.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	HFdamp	20Hz – 20kHz	Adjusts a high-frequency damp (the high range is attenuated) of reverberation.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

REVERB>BIG HALL (Big Hall Reverb) (G)

This reverb effect simulates reverberations in a big hall.

```
 Type :REVERB>BIG HALL
1─── Pre-D:100ms   HFdamp:20kHz ───4
B───  Time:10sec
3───  Diff:127     Width:127    ───5
▶AUX A◀ AUX B  CLOSE
```

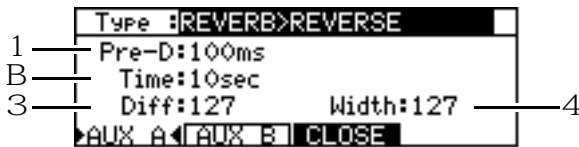|	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Time	0.1 – 10sec	Adjusts the time of attenuation of reverberation.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	HFdamp	20Hz – 20kHz	Adjusts a high-frequency damp (the high range is attenuated) of reverberation.
5	Width	0 – 127	Adjusts the width and spread of the stereo image.

REVERB>NON-LINEAR (Non-linear Reverb) (G)

This reverb effect (gate reverb) stops reverberation at a specified time.

```
Type :REVERB>NON-LINEAR
Pre-D:100ms
 Hold:127
 Diff:127      Width:127
▶AUX A◀ AUX B  CLOSE
```

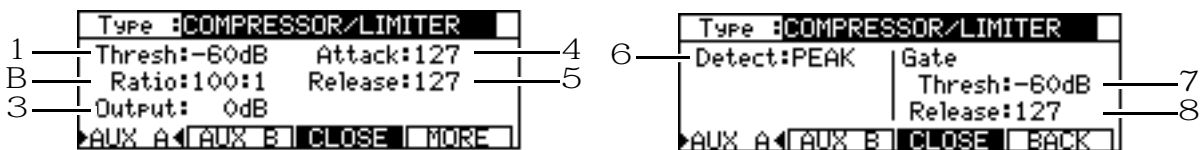|	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Hold	0 – 127	Adjusts the time (duration) until reverberation is stopped.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	Width	0 – 127	Adjusts the width and spread of the stereo image.

REVERB>REVERSE (Reverse Reverb) (G)

This reverb effect reverses the reverberations.

```
Type :REVERB>REVERSE
Pre-D:100ms
 Time:10sec
 Diff:127      Width:127
▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Pre-D	1 – 100ms	Adjusts the delay time of early reflections.
2	Time	0.1 – 10sec	Adjusts the time during which reversed reverberations are played.
3	Diff	0 – 127	Adjusts the density of reverberation.
4	Width	0 – 127	Adjusts the width and spread of the stereo image.

COMPRESSOR/LIMITER (I)

This effect suppresses signals with a certain level or higher and limits the dynamic range. Pressing the **MORE**/ **BACK** [F6] key switches the screens of the parameters.

```
Type :COMPRESSOR/LIMITER
Thresh:-60dB   Attack:127
 Ratio:100:1   Release:127
Output:  0dB
▶AUX A◀ AUX B  CLOSE  MORE
```

```
Type :COMPRESSOR/LIMITER
Detect:PEAK  Gate
              Thresh:-60dB
              Release:127
▶AUX A◀ AUX B  CLOSE  BACK
```

	Parameter	Setting range	Function
1	Thresh	−60dB – 0dB	Adjusts the threshold level at which the effect is enabled.
2	Ratio	2:1 – 100:1	Adjusts the compression ratio for signals that exceed the threshold level.
3	Output	−24dB – +24dB	Adjusts the level of effect sound.
4	Attack	0 – 127	Adjusts the attack time of the effect.
5	Release	0 – 127	Adjusts the release time of the effect.
6	Detect	PEAK	Changes in the signal level are closely detected.
		RMS	Averaged level changes are detected.
7	Thresh	−60dB – 0dB	Adjusts the threshold level at which the noise gate opens.
8	Release	0 – 127	Adjusts the release time of the noise gate.

EXPANDER (I)

This effect expands (boosts) signals with a certain level or lower and broadens the dynamic range.

```
Type :EXPANDER
① — Thresh:-00dB    Att:127 — ④
② —  Ratio:1:100    Rel:127 — ⑤
③ — Output:+00dB   Hold:127 — ⑥
  AUX A  AUX B  CLOSE
```

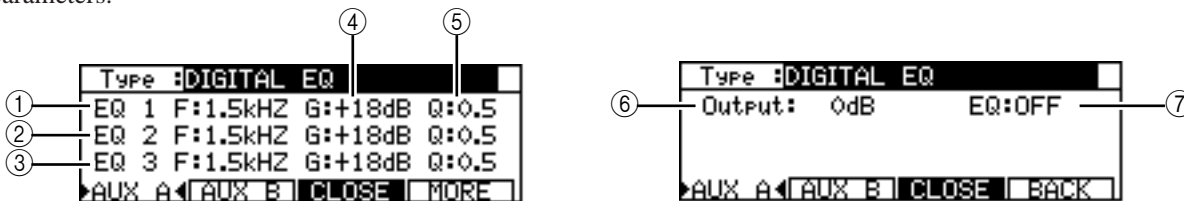|	Parameter	Setting range	Function
①	Thresh	−60dB − 0dB	Adjusts the level at which the effect is enabled.
②	Ratio	1:2 − 1:100	Adjusts the boosting ratio for signals that exceed the threshold value.
③	Output	−24dB − +24dB	Adjusts the level of the effect sound.
④	Att	0 − 127	Adjusts the attack time of the effect.
⑤	Rel	0 − 127	Adjusts the release time of the effect.
⑥	Hold	0 − 127	Adjusts the hold time of the effect.

NOISE GATE (I)

This dynamic effect mutes signals at a certain level or lower. This is useful for cutting noise during silent parts of a performance.

```
Type :NOISE GATE
① — Thresh:-60dB    Att:127 — ④
② —  Key:AUX-A      Rel:127 — ⑤
③ — Output:  0dB   Hold:127 — ⑥
  AUX A  AUX B  CLOSE
```

	Parameter	Setting range	Function
①	Thresh	−60dB − 0dB	Adjusts the level at which the gate opens or closes.
②	key	AUX-A/AUX-B	Selects the source signal that triggers the gate to open or close (AUX SEND A or AUX SEND B).
③	Output	−24dB − +24dB	Adjusts the level of the effect sound.
④	Att	0 − 127	Adjusts the attack time of the effect.
⑤	Rel	0 − 127	Adjusts the release time of the effect.
⑥	Hold	0 − 127	Adjusts the hold time of the effect.

DIGITAL EQ (I)

This is a three-band parametric equalizer. Pressing the **MORE/BACK** [F6] key will switch between the screens of the parameters.

```
            ④      ⑤
Type :DIGITAL EQ
① — EQ 1 F:1.5kHZ G:+18dB Q:0.5
② — EQ 2 F:1.5kHZ G:+18dB Q:0.5
③ — EQ 3 F:1.5kHZ G:+18dB Q:0.5
  AUX A  AUX B  CLOSE  MORE
```

```
Type :DIGITAL EQ
⑥ — Output:  0dB       EQ:OFF — ⑦

  AUX A  AUX B  CLOSE  BACK
```

	Parameter	Setting range	Function
①	EQ 1 F	20 − 20kHz	Sets a frequency for EQ1.
②	EQ 2 F	20 − 20kHz	Sets a frequency for EQ2.
③	EQ 3 F	20 − 20kHz	Sets a frequency for EQ3.
④	G	−18dB − +18dB	Set the level of EQ1–3.
⑤	Q	0.5 − 10	Set the curve for EQ1–3.
⑥	Output	−60dB − +24dB	Sets the level of the effect sound.
⑦	EQ	ON/OFF	Switches EQ on and off.

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AUTOWAH (I)

This effect adds a swelling wah.

```
Type :AUTOWAH
1 ──── Rate:10.0Hz
B ──── Depth:127
3 ──── Reso:127
▶AUX A◀ AUX B  CLOSE
```

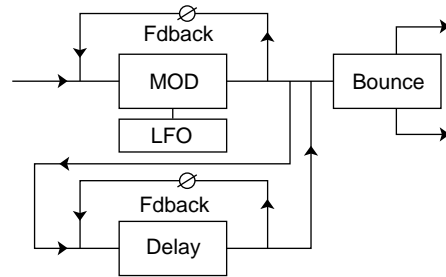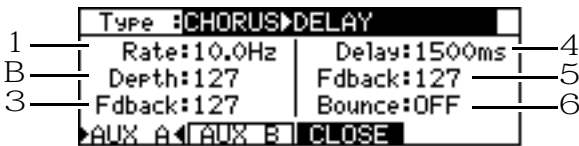|	Parameter	Setting range	Function
1	Rate	0.1 – 10.0Hz	Sets the speed (rate) of swelling (LFO) of the wah effect.
2	Depth	0 – 127	Sets the depth of the effect.
3	Reso	0 – 127	Sets the amount of resonance.

TOUCH WAH (I)

This effect adds a wah effect to signals at a certain level or higher.

```
Type :TOUCH WAH
1 ──── Thresh:-60dB
B ──── Depth:127
3 ──── Reso:127
▶AUX A◀ AUX B  CLOSE
```

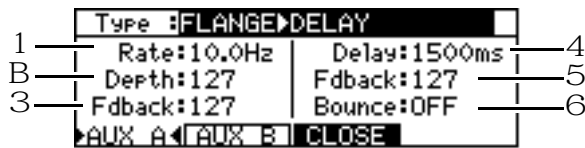|	Parameter	Setting range	Function
1	Thresh	–60dB – 0dB	Sets the signal level at which the wah effect becomes effective.
2	Depth	0 – 127	Sets the depth of the effect.
3	Reso	0 – 127	Sets the amount of resonance.

CHORUS>DELAY (G)

This effect consists of a chorus effect and a delay effect connected in series.

```
Type :CHORUS▶DELAY
1 ──── Rate:10.0Hz    Delay:1500ms ──── 4
B ──── Depth:127      Fdback:127   ──── 5
3 ──── Fdback:127     Bounce:OFF   ──── 6
▶AUX A◀ AUX B  CLOSE
```

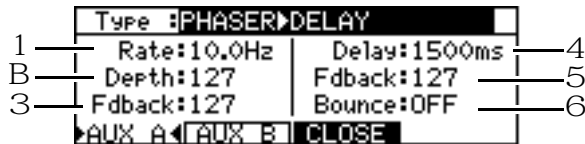|	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Sets the speed of LFO for the chorus effect.
2	Depth	0 – 127	Sets the depth of LFO for the chorus effect.
3	Fdback	0 – 127	Sets the amount of the chorus effect that is fed back.
4	Delay	1ms – 1500ms	Sets the delay time of the delay effect.
5	Fdback	0 – 127	Sets the amount of the delay effect that is fed back.
6	Bounce	ON/OFF	Pans the delay sound left and right when turned on.

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FLANGE>DELAY (G)

This effect consists of a flanger effect and a delay effect connected in series.

```
Type :FLANGE▶DELAY
1 ─── Rate:10.0Hz    Delay:1500ms ─── 4
B ─── Depth:127      Fdback:127    ─── 5
3 ─── Fdback:127     Bounce:OFF    ─── 6
▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Sets the speed of LFO for the flanger effect.
2	Depth	0 – 127	Sets the depth of LFO for the flanger effect.
3	Fdback	0 – 127	Sets the amount of the flanger effect that is fed back.
4	Delay	1ms – 1500ms	Sets the delay time of the delay effect.
5	Fdback	0 – 127	Sets the amount of the delay effect that is fed back.
6	Bounce	ON/OFF	Pans the delay sound left and right when turned on.

PHASER>DELAY (G)

This effect consists of a phaser effect and a delay effect connected in series.

```
Type :PHASER▶DELAY
1 ─── Rate:10.0Hz    Delay:1500ms ─── 4
B ─── Depth:127      Fdback:127    ─── 5
3 ─── Fdback:127     Bounce:OFF    ─── 6
▶AUX A◀ AUX B  CLOSE
```

	Parameter	Setting range	Function
1	Rate	0.1Hz – 10.0Hz	Sets the speed of LFO for the phaser effect.
2	Depth	0 – 127	Sets the depth of LFO for the phaser effect.
3	Fdback	0 – 127	Sets the amount of the phaser effect that is fed back.
4	Delay	1ms – 1500ms	Sets the delay time of the delay effect.
5	Fdback	0 – 127	Sets the amount of the delay effect that is fed back.
6	Bounce	ON/OFF	Pans the delay sound left and right when turned on.

Appendix

Specifications

Power supply	: AC 100 – 240V, 50/60Hz, 21W
Operating temperature	: 10˚C – 35˚C
Operating humidity	: 10% – 60% (no condensation allowed)
Dimensions (mm)	: 445 (W) x 98 (H) x 334 (D) (max. 443.5 measured on the projection)
Weight	: 4.3kg
Display	: 248 x 60 dots, backlit, graphical LCD
Recording media	: Internal JAZ drive (1Gbyte), or an external JAZ or hard disk
Sampling rate	: 48kHz, 44.1kHz, 32kHz

Recording time : Using a 1Gbyte JAZ disk (total recording time)

FS = 48kHz	approx. 3 hours (12 tracks x 15 minutes)	
FS = 44.1kHz	approx. 3 hours 16 minutes (12 tracks x 16.3 minutes)	
FS = 32kHz	approx. 4 hours 30 minutes (12 tracks x 22.5 minutes)	

Number of simultaneous recording tracks	: 8

Frequency response : 10Hz – 22kHz±2.0dB (FS = 48kHz)
10Hz – 20kHz±2.0dB (FS = 44.1kHz)
10Hz – 15kHz±2.0dB (FS = 32kHz)

Quantization bit	: 16 bits linear
ADC	: 18 bits, 64-times oversampling, Fifth order delta/sigma modulation
DAC	: 20-bits, 8-times oversampling, 1-bit delta/sigma method
Dynamic range	: 85dB or higher (terminal resistance 100 Ω)
Distortion	: 0.05% or less (standard level: 1kHz, FS=48kHz)
Channel crosstalk	: 75dB or higher (10kHz standard level, terminal resistance 100 Ω)
Wow and Flutter	: Lower than measurable limit
Analog audio input	: 6.3mm stereo phone jack (balanced/unbalanced connection)
Input level	: –46dBu – +4dBu (max. +19dBu, at 1kHz)
Impedance	: 15kΩ
Analog audio output	: 6.3mm stereo phone jack (balanced/unbalanced connection)

Output level : MASTER OUT : –10dBu (max. =5dBu, load impedance at 47kΩ)
AUX SEND : –10dBu (max. =5dBu, load impedance at 47kΩ)

Impedance : MASTER OUT : 1kΩ
AUX SEND : 100Ω
* 0dBu = 0.775Vrms

Stereo phone output x 1	: ø6.3mm stereo phone jack (max. output: 24mW, load impedance at 32 Ω)
Digital audio input	: Optical (SPDIF)
Digital audio output	: Optical (SPDIF)
Foot switch jack x1	: ø6.3mm phone jack
SCSI x 1	: Half-pitch 50-pin for external hard disks
Accessories	: 3-pin power cable (with a two-polar conversion plug) Owner's manual
Option	: EB2M (Effect Board)

The specifications are subject to change for improvements without notice.

MIDI Implementation Chart

Date: 11/97

Model DPS12

Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic channel	Default	X	X	
	Changed	X	X	
Mode	Default	X	X	
	Messages	X	X	
	Altered	**************		
Note		X	X	
Number:	True Voice	**************		
Velocity	Note On	X	X	
	Note Off	X	X	
After Touch	Key	X	X	
	Channel	X	X	
Pitch Bend		X	X	
Control Change		O	O	See page 118 for the Control Change assign table.
Program Change	Setting Range OFF, 1 ~ 16, OM	**************	X	
System Exclusive		O $^{(*1)}$	O $^{(*3)}$	MTC, MMC
System Common	: Song Position	O	X	
	: Song Select	X	X	
	: Tune	X	X	
System Real Time	: Clock	O $^{(*2)}$		
	: Command	O		Continue, Stop, Start
Aux Messages	: Local On/Off			
	: All Notes Off			
	: Active Sense			
	: Reset			
Notes		(*1) MTC is transmitted only in MTC OUT mode. (*2) They are SSP and CLOCK, and transmitted only when SYNC is ON. (*3) MMC System Exclusive is supported.		

Mode 1: OMNI ON, POLY   Mode 2: OMNI ON, MONO   O: Yes
Mode 3: OMNI OFF, POLY   Mode 4: OMNI OFF, MONO   X: No