

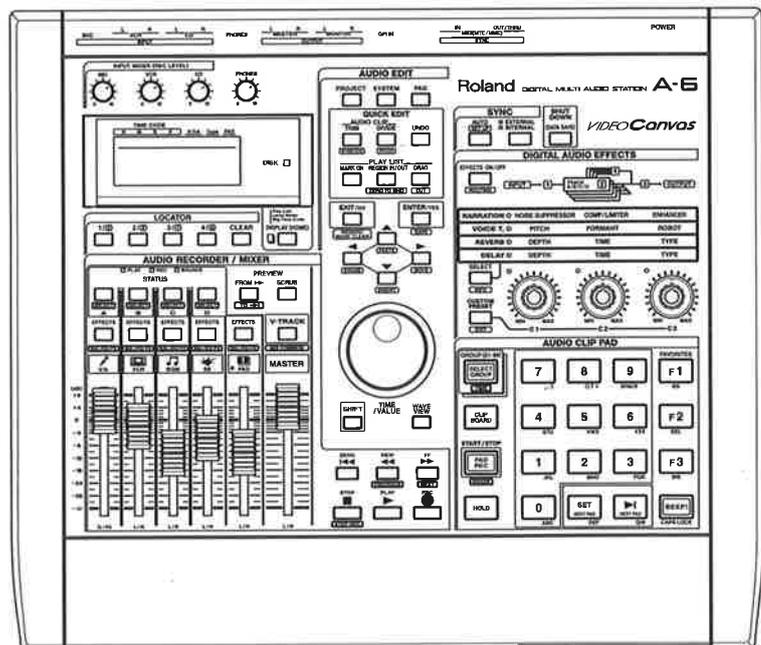
DIGITAL MULTI AUDIO STATION **A-6**

VIDEO Canvas

OWNER'S MANUAL

Congratulations on your purchase of the Roland A-6 Digital Multi Audio Station.

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3, 4), and "IMPORTANT NOTES" (p. 5). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Quick Start, Owner's Manual, and Appendices should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.



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	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
ATTENTION: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR		
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
10. The product should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

For the USA

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.

Do not modify the plug provided with the product — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

For the U.K.

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: 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, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or 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.

The product which is equipped with a THREE WIRE GROUNDING TYPE LINE PLUG must be grounded.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About WARNING and CAUTION Notices

 WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
 CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The  symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The  symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The  symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual. 
- Do not open or perform any internal modifications on the unit. 
- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces. 
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged. 
- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit. 
- Protect the unit from strong impact. (Do not drop it!) 
- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through. 
- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page. 
- Always turn the unit off and unplug the power cord before attempting installation of the hard disk (HDP A6 series; p. 146). 

CAUTION

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit. 
- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children. 
- Never climb on top of, nor place heavy objects on the unit. 
- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit. 
- Before moving the unit, disconnect the power plug from the outlet, and pull out all cords from external devices. 
- Before cleaning the unit, turn off the power and unplug the power cord from the outlet (p. 23). 
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet. 
- Install only the specified hard disk (HDP A6 series). Remove only the specified screws (p. 146). 

IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2-4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of losing important data, we recommend that you periodically save a backup copy of important data you have stored in the Zip disk.

- Unfortunately, it may be impossible to restore the contents of data that was stored on a storage device (e.g., hard disk or Zip disk), once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.)
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

Handling the Disk Drive

For details on hard disk handling, refer also to the instructions that accompanied your hard disk.

- Before performing any of the following actions, be sure to perform the shutdown procedure. Failure to do so may result in loss of project data or damage to the hard disk.
 - Turning off the power of the A-6
 - Turning off the power of the disk drive connected with SCSI connector
 - Removing a disk from a removable disk drive connected with SCSI connector

When the A-6 DISK indicator or Zip drive busy indicator is lit, it means that data is being written to or from the hard disk. If you are using a zip drive, confirm that this indicator is not lit before removing disks.

- While using the A-6, be careful not to subject the unit to vibration or shock, and avoid moving the unit while the power is turned on.
- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure the installation does not exceed the permissible range.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the drive, which will adversely affect the operation of the drive and/or damage removable disks. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.

About SCMS

The A-6 does not implement SCMS. This design decision was made with the intent that SCMS should not restrict the creation of original compositions which do not violate copyright law.

? SCMS (p. 165)

Concerning Copyright

The law prohibits the unauthorized recording, public performance, broadcast, sale, or distribution etc. of a work (CD recording, video recording, broadcast, etc.) whose copyright is owned by a third party.

Roland will take no responsibility for any infringement of copyright that you may commit in using the A-6.

Disclaimer of Liability

Roland will take no responsibility for any direct damages, consequential damages, or any other damages which may result from your use of the A-6. These damages may include but are not limited to the following events which can occur when using the A-6.

- Any loss of profit that may occur to you.
- Permanent loss of your music or data.
- Inability to continue using the A-6 itself or a connected device.

About the License Agreement

The A-6 is designed to allow you to reproduce material to which you have copyright, or material which the copyright owner has granted you permission to copy. Accordingly, reproduction of music CDs or other copyrighted material without the permission of the copyright owner, other than for your own personal use and enjoyment (private use) constitutes copyright infringement, which may incur penalties. Consult a copyright specialist or special publications for more detailed information on obtaining such permission from copyright holders.

Notational Conventions Used in This Manual

Names for individual buttons and knobs are **printed in square brackets** ([]).

Example: [SHIFT] indicates the SHIFT button.

Messages that appear in the display are indicated by **quotation marks (" ") about them.**

Example: When shutting down, the message "You May Turn Off" appears in the display.

Portions of the manual beginning with an asterisk (*) and NOTE explain points which are especially important.

Meanings for words indicated by ? are explained in "Terminology" (p.164).

The explanations in this manual include illustrations that depict what should typically be shown by the display. Note, however, that your unit may incorporate a newer, enhanced version of the system (e.g., includes newer sounds), so what you actually see in the display may not always match what appears in the manual.

The Process That Led to the Birth of the A-6

Image Editing up to the Present

Of course, you can enjoy merely watching material recorded with a video camera. However, by deleting footage of scenes that go on too long in recorded video shoots, rearranging sequences, and dubbing to a different tape, you can add even greater depth of expression. You can then also hand out copies of your creations to friends and acquaintances, and enter your works in video contests as well.

However, editing video with the analog video equipment available up to now (such as VHS and 8mm) is a laborious process, and usually involves cutting unneeded footage from recorded tape. One has to seek out the necessary scenes while rewinding and fast forwarding any number of tapes, any number of times. Moreover, dubbing brings on a loss of quality in the images. For the home video hobbyist, the editing of videos leaves a lasting impression as a major undertaking.

Editing with Digital Video

Now, on the other hand, falling prices in the last several years have brought about the popularization of digital video (DV). With digital video, the editing process is simple and incurs almost no loss of image quality, paving the way to the age of easy video production. The idea that one can produce—at home, with a basic level of skill—superb broadcast-quality videos suitable for airing on television is no longer a dream.

Editing Sound with Video Canvas

Try watching a television program with the volume turned all the way down. Next, try listening to the sound of the program, but with the screen obscured. Either way, you really notice that something is missing, that it's not "all there." This illustrates the truly intimate relationship between sound and image. At Roland, it didn't seem right that the advent of digital video, with its high-quality images, hadn't also brought easy-to-use, high-quality sound editing along with it.

The four types of sound that are used in video editing are referred to as "narration," "BGM" (background music), "soundtrack recorded by the video camera," and "sound effects." The **Roland A-6 Video Canvas Digital Multi-Audio Station** can be used to record and play back these sounds, and lets you copy and dub with next to no loss of sound quality. What's more, by using an optional synch interface, you can synchronize the starting and stopping of playback on video decks with the A-6, and use it to play sound at designated moments (such as during segues and scene switches).

We feel that with the A-6, you can proceed to show your full creative powers and create excellent video productions.

CONTENTS

USING THE UNIT SAFELY	3
IMPORTANT NOTES	4
Notational Conventions Used in This Manual	5
The Process That Led to the Birth of the A-6	6

Chapter 1 Before You Start

Do You Have All the Accessories?	10	Front and Rear Panels.....	11
Look at What You Can Do with the Roland A-6	10		

Chapter 2 Try Out the Sounds

Connections.....	15	Listen to the Demo Songs.....	22
Turning the Power On.....	16	When Turning Off the Power.....	23
Listen to the Demo Clips.....	18		

Chapter 3 Try Recording (Part 1)

What is a "Track?"	24	Recording to Other Tracks.....	32
Recording Pad Sounds to the Tracks (Track Recording 1)	26	Recording Sounds from External Devices to the Tracks (Track Recording 2)	36
Listening to the Recorded Sounds	28	Saving Your Work.....	40
When Recording Mistakes Are Made	30	To Avoid Accidentally Deleting Your Work.....	42

Chapter 4 Try Recording (Part 2)

What is "Sampling?"	44	When the Sample is Bad.....	50
Recording Sounds to the Pads (Sampling)	44	Listening to Sampled Effects	51

Chapter 5 Use with the Video

What is "Synchronizing?"	53	Recording by Pressing the Pads One at a Time (STEP REC)	58
Items Necessary for Synchronizing	53		
Connecting	53		
Synchronizing Recording.....	56		

Chapter 6 Edit the Recording

A Note About Editing Audio	62	Erasing ([ERASE])	70
Determining the Range to Be Edited.....	62	Cutting ([CUT])	71
Moving ([MOVE])	65	Splitting Clips (SPLIT).....	72
Pasting to a Different Location ([PASTE]).....	67	Changing Where Sound Begins or Ends.....	73
Inserting at a Different Location ([INSERT]).....	69		

CONTENTS

Chapter 7 Make a Master Tape

Registering and Calling Up Time Locations	76	Finishing Up the Project	83
Previewing Techniques (PREVIEW)	78	When the Timing of the Images and Sound Don't Match	86
Adjusting the Tone Quality	81		

Chapter 8 Different Ways to Play the Pads

Playing Pads and Tracks (Maximum Number of Simultaneous Voices)	88	Having the Clip Sounds Begin Gradually	89
Using the FAVORITES Pads	88	Muting Specified Clips	90
Using Next Pad	88	Having the Sound Continue When the Pad is Released	91
Repeated Playing of a Clip	89	Checking Sounds Assigned to Clips	91

Chapter 9 Try Processing a Clip

What is "Processing?"	92	Changing Where the Sound Begins and Ends	94
Changing the Order of the Clips	92	Changing the Clip Length	96
Making Copies of Clips	92	Changing the Pitch of the Clip	97
Deleting Clips	93	Dividing a Single Clip (DIVIDE)	98
Adjusting Clip Volume	94	Making Reversed Clips	100

Chapter 10 Using the Special Effects (EFFECTS)

Arrangement (Routing) of the Effects	101	List of Algorithms for Each Effect	110
Selecting the Effects (PATCH)	103	01 Reverb & Gate	110
Adjusting the Effects	103	02 EZ Delay (Easy Delay)	112
Using the Realtime Effects Knobs	105	03 DELAY RSS	113
Saving Effects to the User Patches	105	04 Multi Tap Delay	114
List of Preset Effect Patches	106	05 4 BUTTON CHORUS 320	115
Reverb (13 Presets)	106	06 Stereo Flanger	116
Delay (4 Presets)	106	07 80s Phaser	116
Chorus (2 Presets)	106	08 Stereo Dynamics Processor	117
Flanger (2 Presets)	106	09 Parametric EQ	118
Phaser (2 Presets)	106	10 GraphicEQ (Graphic Equalizer)	119
Dynamics Processor (6 Presets)	107	11 Isolator & Filter	119
Parametric Equalizer (5 Presets)	107	12 Center Cancellor	120
Graphic Equalizer (3 Presets)	107	13 Hum Cancellor	121
Isolator (2 Presets)	107	14 Mic Simulator	122
Center Cancel (1 Preset)	107	15 Vocal Multi	123
Hum Cancel (2 Presets)	107	16 GuitarMulti	124
Mic Simulator (13 Presets)	108	17 Voice Trans (Voice Transformer)	126
Vocal (8 Presets)	108	18 Stereo Pitch Shifter	127
Guitar (Presets)	108	19 Phonograph (Phonograph <Analog Record Simulator>)	128
Voice Transformer (5 Presets)	109	20 Radio Tuning	129
Pitch Shifter (3 Presets)	109	21 Narration	129
Lo-Fi (3 Presets)	109		
Samples (20 Presets)	109		

Chapter 11 Other Convenient Functions

Recording Over Sounds That Are Played.....	130	Maintaining/Holding the [SHIFT] Function	135
Lifting the Mute on Tracks and Playing Tracks Simultaneously	131	Freeing Up More Disk Space	136
Naming Pad Groups.....	132	Initializing the Hard Disk	136
Closing Gaps Between Clips in Pads.....	133	Restoring the Sound Library	138
Protecting The Pad Groups.....	133	Restoring the A-6 to Conditions When Purchased	139
Playing Back Clips Continuously (Auto Play Clip) ...	134	Using the A-6 with External MIDI Devices	139
Connecting a GPI Device or Foot Switch.....	135	Correcting Problems with the Disk	140

Chapter 12 The Multi I/O Expansion

Installing the Multi I/O Expansion	141	Using the Digital Connectors	141
Using XLR Connectors	141	Using the SCSI Connector	143

Installing the Hard Disk.....	146
About MIDI	147
About SCSI	148
Troubleshooting	149
Message List	153
Parameter List.....	155
MIDI Implementation.....	157
Glossary	164
Specifications	166
Index.....	168

Chapter 1 Before You Start

Do You Have All the Accessories?

The following items should be packed in the A-6's carton. Please take a moment to confirm that you have received all of the items listed below.

- A-6
- Power cord
- Owner's Manual

Look at What You Can Do with the Roland A-6

Start and Stop the A-6 from a Connected Video Cassette Recorder (Synchronizer)

With the optional SI-80S Video MIDI Sync Interface, you can use the timing code from a VCR or video camera to start and stop the playing of sounds from the A-6.

Record Narration and Instrumental Performances (Recorder)

Record CD-like sound with the ease of an ordinary tape recorder.

Play Sounds by Tapping the Pad (Trigger Play)

Assign a variety of sounds (BGM, effects, narration, and so on) to the A-6's fourteen pads, and play these sounds just by tapping the pads.

Add Particular Effects to the Sound (Effect)

You can add effects that give the sounds special characteristics, such as reverberation for concert-hall sound (Reverb effect) and repetition of the beginning of the sound (Delay effect).

Process and Edit Recorded Sounds (Editor)

You can change the sounds you have recorded, altering their pitches and length, or getting an effect like that of a tape recorder playing in reverse.

Audio CD Provided (Sound Library)

An audio CD is included with the internal hard disk. With over 400 different BGM (background music) and effects sounds assembled on this disc, you can begin making your own productions the day you get your A-6.

Use with Other Instruments for Even More Advanced Use

By combining with other devices such as those listed below, you can get even more out of the A-6.

Multi I/O Expansion **A6-OP1** :

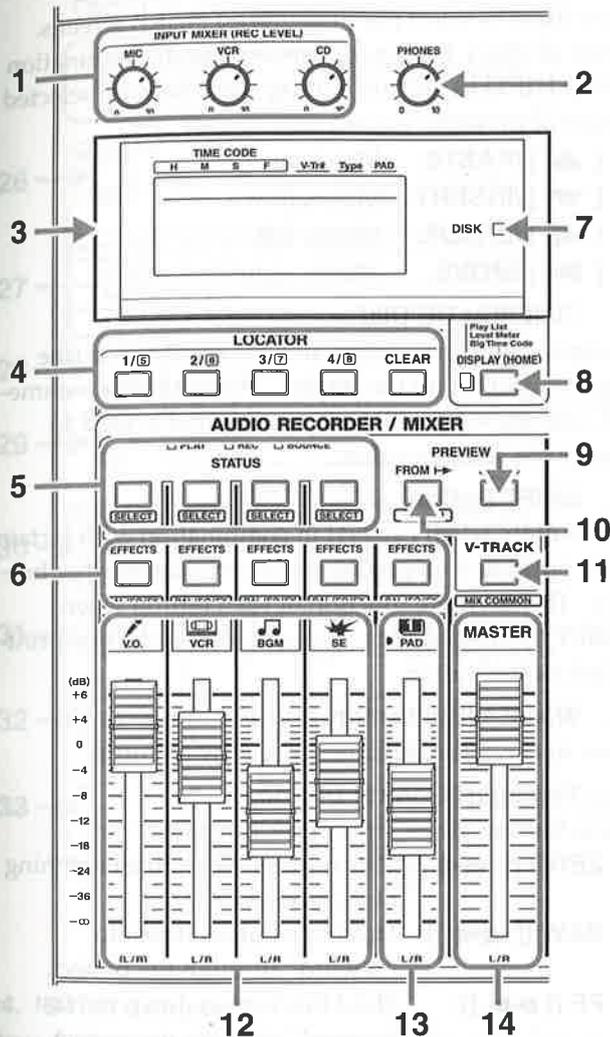
This gives you use of even more input and output connectors.

Video MIDI Synch Interface **SI-80S**:

Allows the A-6 to share time code with video cassette recorders and other devices.

Front and Rear Panels

Front Panel (Buttons and Dial)



5 STATUS Buttons

These buttons are used to determine the playback, recording, and mute status for each track. The status is switched each time a button is pressed as shown below, with the button's indicator showing the current status.

- PLAY:** Green
- MUTE:** Off
- REC:** Red
- BOUNCE (Source):** Orange (Used only in Audio Recording (p.131))

6 EFFECTS Button

This is used when effects are added to sounds on pads and tracks.

7 DISK Indicator

This indicator is lit whenever data is being read from or written to the internal hard disk. When the optional A6-OP1 Multi I/O Expansion Board is installed, then the indicator also lights during reading and writing of data to and from a connected Zip drive.

8 DISPLAY (HOME) Button

This returns to the display the screen that appears when the power is switched on (normal playback status). In addition, this switches the Basic screens (Playlist, Level Meter, Big Time Code, and others) that are displayed.

9 SCRUB Button

When turned on, the tiny interval between the specified track's current position on and the point just before or after it is played back repeatedly. By rotating the [TIME VALUE] dial, you can get at the exact point you want, just as with real scrub (manually rotating the reels on an analog tape recorder).

10 FROM (TO) Button

Each time this is pressed, the short segment is played back from the current position to the point just before it.

When pressed while [SHIFT] is held down, a tiny segment from the point just before the current position on to the current position itself it is played back.

11 V-TRACK Button

Press this when you want to switch V-tracks (p.33).

12 V.O./VCR/BGM/SE Faders

This/These adjust the volume for each track.

13 PAD Fader

This adjusts the volume of sounds made when the pads are tapped.

14 MASTER Fader

These adjust the overall volume (the volume from the MASTER jacks.

1 INPUT MIXER (REC LEVEL) Knobs (MIC, VCR, CD)

These adjust the input sensitivity for the signal from each input connector. When no input jack is in use, we recommend that these knobs be turned completely counterclockwise (to the left to 0).

2 PHONES Knob

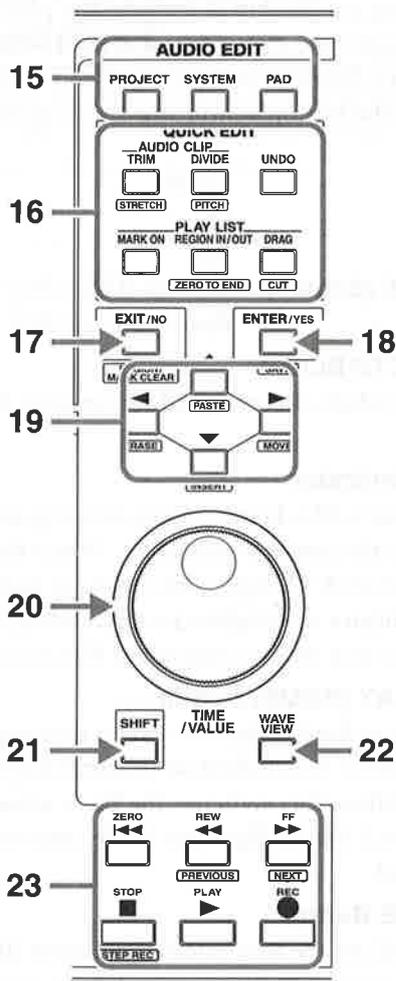
This controls the headphone volume.

3 Display Screen

Various information related to operation of the A-6 is indicated here. The display switches among a variety of screens used for the different functions. For example, the Level Meter screen appears in the display when the power is turned on.

4 LOCATOR Buttons

With these four buttons, you can mark up to eight different points of your choice in the project. By pressing the buttons, you can instantly jump to these project positions.



15 AUDIO EDIT Button

Press this when processing sounds you have finished recording, or when making overall system settings to the A-6.

- PROJECT:** Edits the entire project
- SYSTEM:** Makes overall system settings to the A-6
- PAD:** Processes sound recorded to the pads

16 QUICK EDIT Button

Use this when you want to conduct simple editing of the piece while in the Playlist screen or Audio clip pad.

- TRIM (STRETCH):** The Trim screen is displayed.
- DIVIDE (PITCH):** The Divide screen is displayed.
- UNDO:** This is pressed to undo edits.
- MARK ON:** This selects the clip to be edited.
- REGION IN/OUT (ZERO TO END):** This specifies the segment to be edited.
- DRAG (CUT):** This moves the selected clip.

17 EXIT/NO Button

Press this to undo designation of ranges, to cancel operations, and to exit screens. Additionally, press this button to reply "No" to messages displayed on the screen.

18 ENTER/YES Button

Press this to execute operations and to select screens. Additionally, press this button to reply "Yes" to messages displayed on the screen.

19 CURSOR Buttons

Press these to select parameters and switch screens. When in Quick Edit (p.62), press these in combination with [SHIFT] to execute editing operations on selected ranges of projects.

- [▲] /PASTE: Moves up.
- [▼] /INSERT: Moves down.
- [◀] /ERASE: Moves left.
- [▶] /MOVE: Moves right.

20 TIME/VALUE Dial

In normal playback status, this moves the time (the current position) of the project. When setting parameters with the CURSOR buttons, this dial is used to change the settings value.

21. SHIFT Button

This button, when pressed in combination with certain other buttons, changes the function of those other buttons. The alternate function of each button when [SHIFT] is pressed with it is indicated in the box printed below the button.

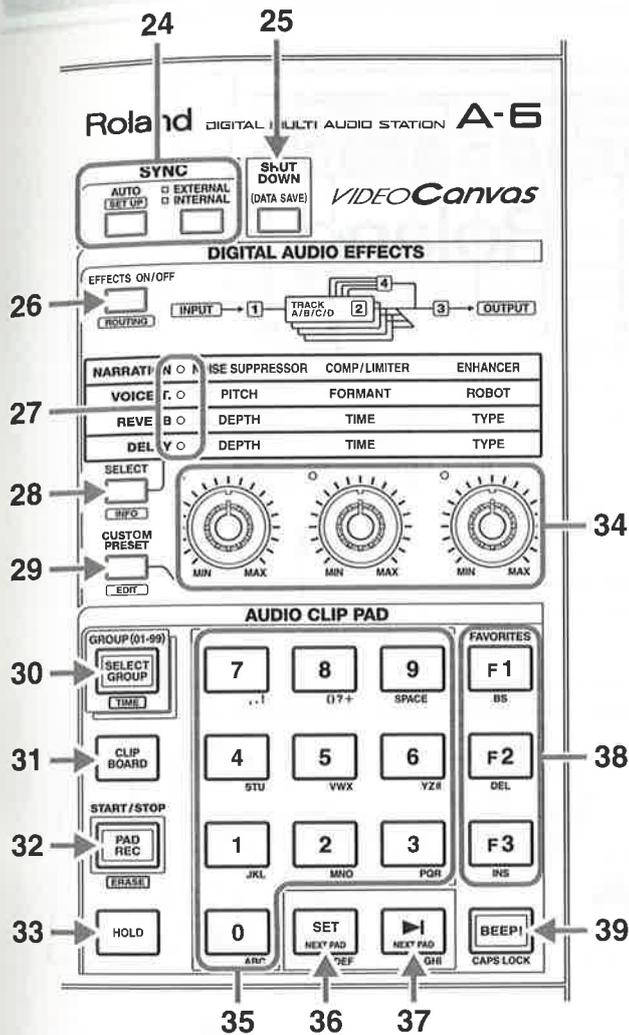
22. WAVE VIEW Button

Press to check the recorded sound (waveform).

23 Transport Control Buttons

These buttons run the Recorder functions.

- ZERO ([◀◀]):** This returns you to the beginning of the project.
- REW ([◀]):** Hold this button down to "rewind" through the project.
- FF ([▶▶]):** Hold this button down to "fast forward" through the project.
- STOP ([■]):** Press to stop playback or recording of the project.
- PLAY ([▶]):** Pressing this begins playback from the current time (current position) in the project.
- REC ([●]):** Press this when recording narration or sound effects to the tracks.



24. SYNC Buttons

Press these to synchronize actions with video cassette recorders and other devices.

AUTO (SET UP):

Synchronization with time code is switched on and off automatically. Normally, this is selected.

EXTERNAL/INTERNAL:

Press this when you only want the A-6 to run, or when you want operations to be synchronized with the video cassette recorder at all times.

25 SHUT DOWN (DATA SAVE) Button

Press this when shutting down the A-6 and saving projects.

26 EFFECTS ON/OFF

This switches the effects on and off.

27 Effects Select Indicator

This indicator lights up, showing which effect is currently in use.

28 SELECT/INFO Button

Each press of this button switches in turn through the four currently enabled effects indicated on the panel. When pressed in combination with [SHIFT], the current status of the [EFFECTS] knob appears in the display.

29 CUSTOM PRESET Button

Press this button to call up effects that do not appear on the panel.

30 SELECT GROUP Pad

Press this pad to switch pad groups.

31 CLIPBOARD Pad

Pressing this pad while pressing one of the pads temporarily takes the sound effect (or other sound material) assigned to the pad and moves it to this pad. For example, you would use this pad when reassigning one pad's sound effect to another pad.

32 PAD REC Button

Press this when recording narration or sound effects to pads. In addition, you can use this to start and stop recording in the screen.

33 HOLD Pad

Press this pad to have the pad sound continue playing even after the pad is released.

34 EFFECTS Knobs (C1, C2, C3)

These adjust the amount of effect applied to the sound. You can also store parameters for each knob's effect. When the current knob positions are at their effective settings, the indicator at the upper left of each knob lights up.

35 0-9 (PAD)

You can assign up to ten different sounds (such as narration and sound effects) and have them play just by pressing the pads. These are also used as keys for inputting characters, for example when naming projects.

36 SET NEXT PAD Button

When using the Next Pad function (p.88), press this to select the first pad to be played.

37 [▶] (NEXT PAD) Button

Each time this is pressed, the sound assigned to each pad is played back in sequence, following the pads' numerical order.

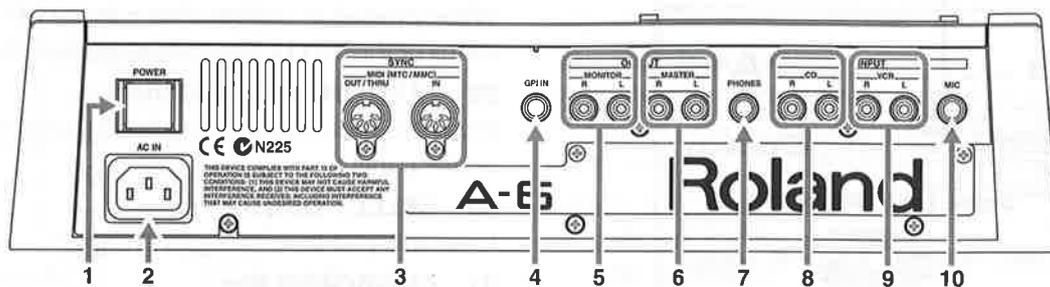
38 FAVORITES Buttons (F1, F2, F3)

The sounds on the pads assigned to these buttons remain unchanged even when the pad group is switched. It is a good idea to assign to these buttons the narration or sound effects that you often use, regardless of the project.

39 BEEP Button

The "beep," or warning signal is assigned with this button.

Rear Panel (Connectors)



1 POWER Switch

This switches the power to the A-6 on and off.

2 AC IN Jack

The power cord included with the A-6 is connected here.

3 SYNC MIDI (MTC/MMC) Connectors (IN, OUT/THRU)

Ordinarily, an external MIDI device is connected here. With the SI-80S Video MIDI Sync Interface, you can connect a video cassette recorder.

4 GPI IN Jack

This is for connecting GPI-compatible devices. You can use an external device to run various operations on the A-6, such as starting and stopping playback and playing recorded sounds (p.91).

5 OUTPUT MONITOR Jacks (L, R)

These are auxiliary audio output jacks. Use them for sending signals to external effects devices or for the Pad Cue function (p.91).

6 OUTPUT MASTER Jacks (L, R)

These are the audio output jacks. Output volume is adjusted with the MASTER fader on the top panel.

7 PHONES Jack

You can connect a pair of stereo headphones here. The volume is adjusted with the PHONES knob on the top panel.

8 INPUT CD Jacks (L, R)

These are stereo input jacks for audio signals. Connect a CD player or other device for recording effects or other sounds.

9 INPUT VCR Jacks

There are stereo input jacks for audio signals. Connect the video cassette recorder's audio out here for simultaneous recording of the sound portion.

10 INPUT MIC Jack

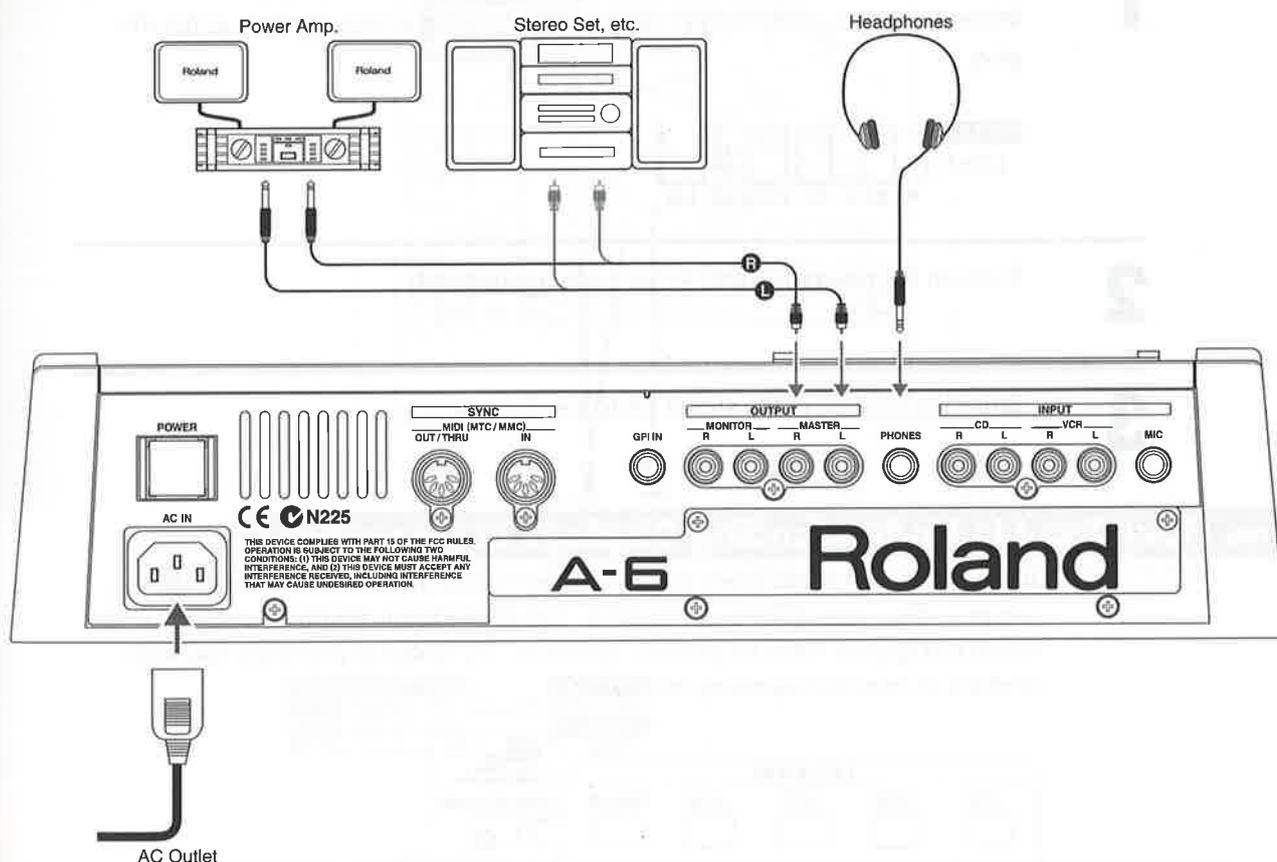
This is an input jack for audio signals. Connect a microphone here to record narration or other sounds.

Chapter 2 Try Out the Sounds

Connections

- Please prepare the following for use with the A-6.
- Internal hard disk (HDP A6 Series)
 - Stereo audio equipment (such as your home stereo set or a PA system) and stereo headphones

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



The same sounds are played from both the PHONES jack and the MONITOR (L, R) jacks. At the time you purchase your A-6, all sounds are set to be output through the MASTER jacks.

Additionally, the A-6 is set so that the sound output from the MONITOR jacks is the same as that from the MASTER jacks.

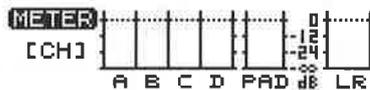
For instructions on installation of the internal hard disk, please read "Setting Up the Optional Hard Disk" (p. 9 in Quick Start) and "Installing the Hard Disk" (p.146).

Turning the Power On

Once the connections have been completed (p. 15), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

NOTE Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.

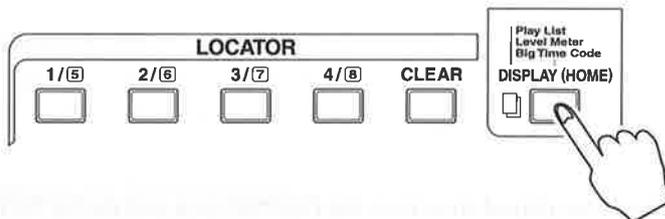
- 1 Press the POWER switch on the rear panel. This turns on the power to the A-6. When the A-6 is ready for operation, the following screen appears in the display.



- 2 Turn on the power to your stereo audio equipment.
- 3 Raise the volume of the stereo set to a suitable level.

If You Have Trouble Understanding Displays or Operations

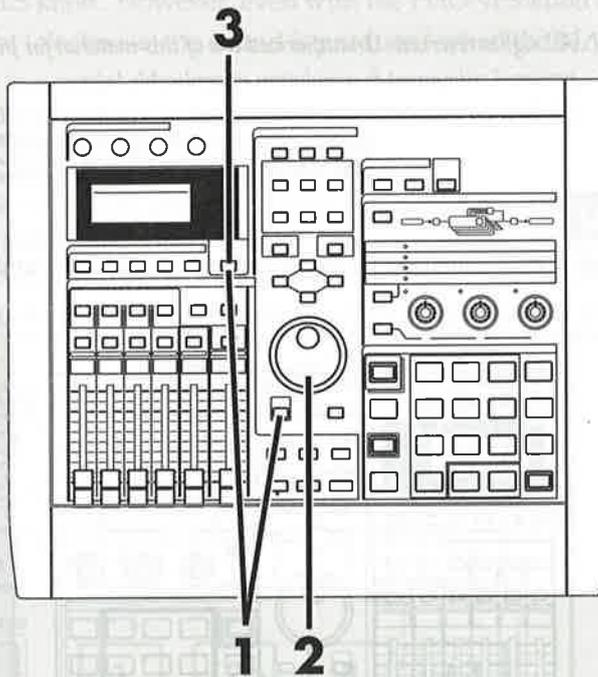
If you find an unfamiliar screen displayed or are having difficulty understanding a certain procedure, press [DISPLAY (HOME)]. This allows you to return immediately to the screen that appears when the power is turned on. Try whatever procedure you were working on from the beginning once more.



- If an operation has been performed incorrectly or cannot be executed correctly, an error message appears in the display. When this occurs, please refer to "Message List" (p.153), and carry out the specified measure.
- If after performing an operation using the prescribed procedure the result still differs from that stated in the "Quick Start" manual (provisional) or in the "Owner's Manual," please refer to "Troubleshooting" (p.149).
- If the above steps do not resolve your problem, contact the customer information center, a nearby Roland Service Station, or your Roland dealer.

If Viewing the Display is Difficult

The brightness of the display screen changes depending on the viewing angle, temperature, and length of continuous use. If the display is difficult to see, carry out the following steps to adjust the display.



- 1 While holding down [SHIFT], press [DISPLAY (HOME)]. "INFORMATION" appears in the display.

```

INFORMATION
PRJ Demo Project 06h41m
GRP Demo-01         PrsDate
Disp Contrast  8  98%
  
```

↑
Contrast

- 2 Rotate the [TIME/VALUE] dial. Adjust the value until the proper screen contrast is achieved.
- 3 Press [DISPLAY (HOME)]. The previous screen reappears in the display.



You can change the screen brightness directly by holding down [CLEAR] and rotating the [TIME/VALUE] dial.

Listen to the Demo Clips

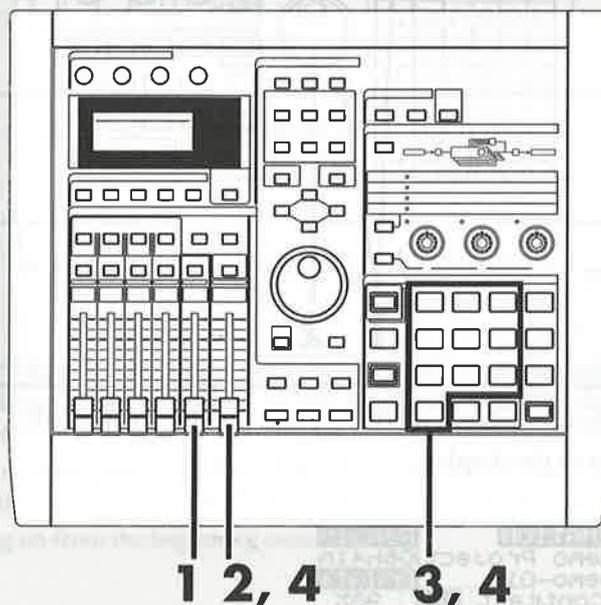
Prerecorded on the A-6's internal hard disk you will find **sounds (the Demo Clips)**, which can be used as is for sound effects and background music. Let's first take a listen to the Demo Clips.

NOTE

*All rights reserved. Unauthorized use of this material for purposes other than private, personal enjoyment is a violation of applicable laws.
No data for the music that is played will be output from MIDI OUT.*

Playing Sounds (Pads)

The sounds (Demo Clips) are recorded on the pads that are illuminated red ([0]-[9]).



- 1** Move the PAD fader until it is at approximately the 0 dB level.
- 2** Completely lower the MASTER fader.
- 3** Press one of the pads that are illuminated red ([0]-[9]) to play sounds.
- 4** While pressing the pad, slowly raise the MASTER fader to adjust the volume.

NOTE

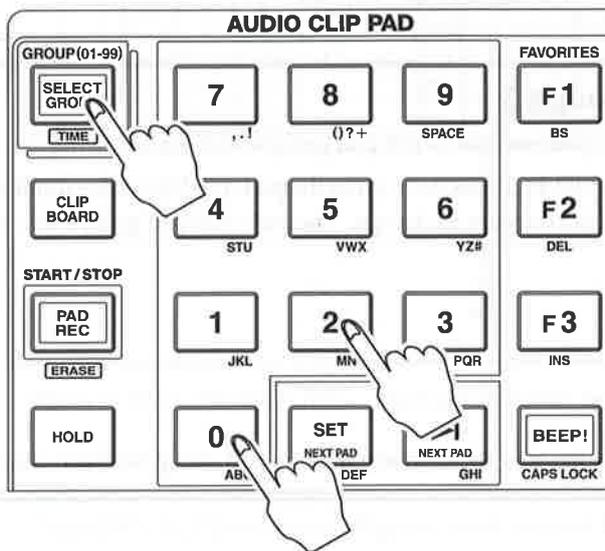
Do not forcefully strike the pads. Hitting or pressing the pads with greater force than is necessary may result in malfunction or damage to the unit. Pressing the pads with greater force does not result in any change of volume.

Adjusting the Volume

- The volume of the sound output from the MASTER jacks are adjusted with the MASTER fader.
- Adjust the volume for headphones connected to the PHONES jack with the PHONES knob. However, even with the PHONES knob turned all the way to the right (clockwise), no sound is produced when the MASTER fader is completely lowered.

Try Playing Various Sounds (Pad Group)

Ten different sounds (clips) are assigned to Pads [0]-[9]. This collection of ten clips is called a **pad group**. The A-6 can hold up to 99 different pad groups, so with ten clips in each group, a total of 990 sound clips may be stored with the pads. Now try switching pad groups, and see the variety of sounds you can get.

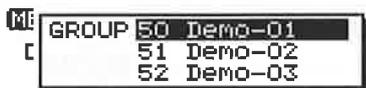


- 1 Press [SELECT GROUP].
- 2 Check the group number for the pad group you want to switch to, and press the pads corresponding to the numerals comprising the pad group number, **being sure to press a two-digit number**. For example, when you wish to switch to Pad Group 2, press [0] [2]. Or, to switch to Pad Group 99, press [9] [9]. For the moment, let's switch to Pad Group 51. Press the pads [5] followed by [1].
- 3 Press the pads to play the sounds.
Confirm that the pad group has indeed been changed.

Switching Pad Groups 2

You can also switch pad groups using the following procedure. Use this method if suitable to your particular situation.

- 1 Press [SELECT GROUP]. The list of pad groups appears in the display.



- 2 Rotate the [TIME/VALUE] dial until the number of the pad group to which you want to change appears in the top of the display. At this point, switch to Pad Group 52. Rotate the [TIME/VALUE] dial so that "GROUP 52" appears in the top row of the display.
- 3 Press [ENTER/YES].
- 4 Press the pads to play the sounds.

Confirm that the pad group has indeed been changed.

Switching Pad Groups 3

For Pad Groups 1–9 only, you can also switch pad groups with the following procedure.

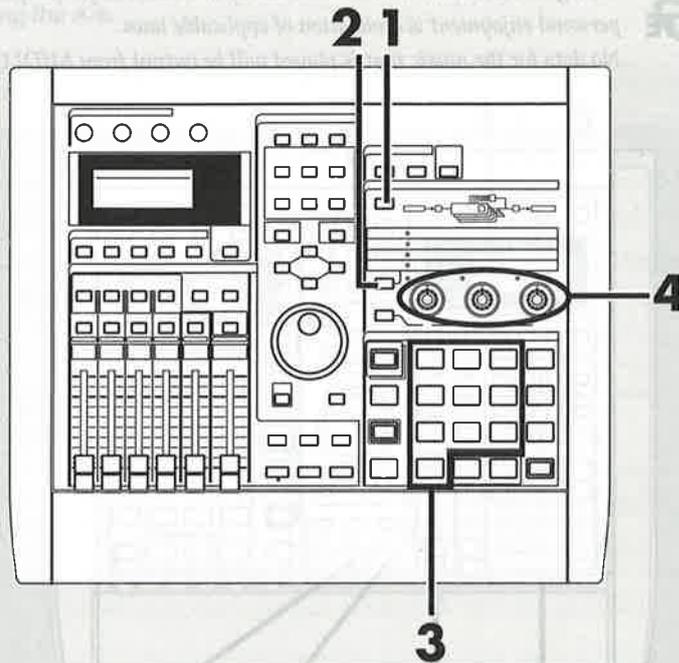
- 1 While holding down [SELECT GROUP], press the pad ([1]–[9]) whose number corresponds to the pad group to which you want to change. The pads and pad groups are related as shown below.

- [1]: Pad Group 1
- [2]: Pad Group 2
- ⋮
- [9]: Pad Group 9

- 2 Press the pads to play the sounds. Confirm that the pad group has been changed.

Adding Reverberation and Delay Effects (Effect)

You can add the reverberation (reverb) of a concert hall to the sounds played when the pads are pressed, and have the same sound repeated any number of times (delay). These are referred to as **effects**.



- 1** Press [EFFECTS ON/OFF]. The button lights red.
- 2** Press [SELECT] one or more times until the red **REVERB** indicator lights.
- 3** Sounds play when the pads are pressed. Check the amount of reverb affect in the sound. By pressing [SELECT] in Step 2 so that the **DELAY** indicator is lit, the delay effect is added instead of reverb.
- 4** By rotating the effects knobs, you can adjust the amount of effect added to the sound. The effects obtained by rotating each of the effects knobs is described below.

When [REVERB] is selected:

- C1 knob: Adjusts the amount of reverb
- C2 knob: Adjusts the reverb duration
- C3 knob: Switches the reverb type (room size)

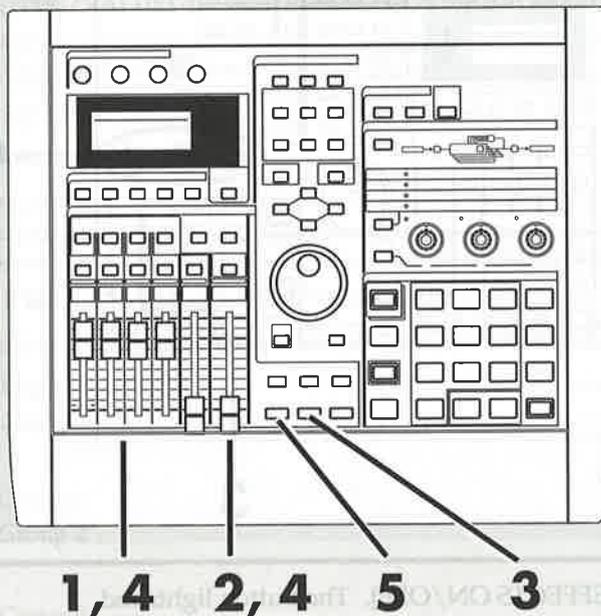
When [DELAY] is selected:

- C1 knob: Adjusts the amount of delay
- C2 knob: Adjusts the delay time (the amount of time before the delay is heard)
- C3 knob: Switches the delay type (direction from which the delay is heard)

Listen to the Demo Project

The A-6 features Demonstration performances prerecorded on the internal hard disk. After listening to the demo clips, check out the demo project.

NOTE *All rights reserved. Unauthorized use of this material for purposes other than private, personal enjoyment is a violation of applicable laws.
No data for the music that is played will be output from MIDI OUT.*



- 1** Position all the channel faders (V.O., VCR, BGM, and SE) at the 0 dB level.
- 2** Completely lower the MASTER fader.
- 3** Press [▶] (PLAY). Playback of the demo performances begins.
- 4** Slowly raise the MASTER fader to adjust the volume. Playback location, the Level meter, and other information appear in the display. Try adjusting the level of the narration, sound effects, and other sounds by raising and lower the channel faders.

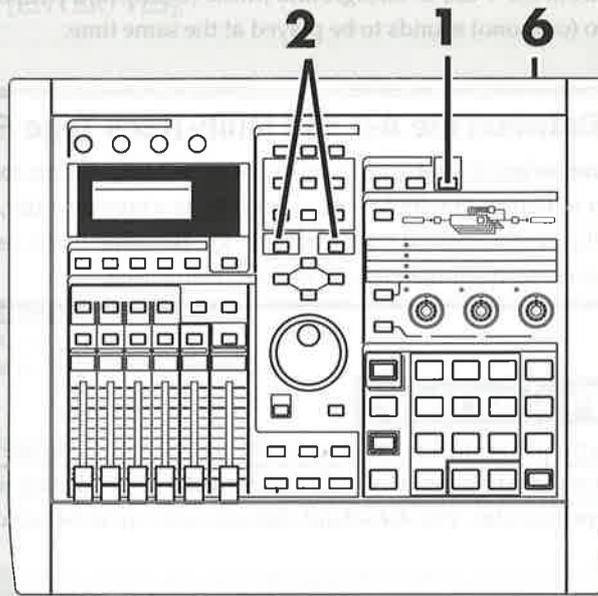


- 5** When you are finished, press [■] (STOP) to stop the demo performances.

Try Out the Sounds

When Turning Off the Power

Shutting off the power without making the necessary preparations causes the content of any unsaved performances to be lost, and may also result in damage to the unit. To turn off the power safely, always carry out the following procedure when you are finished using the A-6.



- 1** Press [SHUT DOWN]. The message "Save Cur. Project? (Overwrite Only.)" appears in the display.
When the demo performance is selected, "Project is Protected" appears in the display.
- 2** Press [YES] if you wish to save the current project. If you do not want to save the project, then press [NO].
- 3** Make sure that "Completed. You May Turn Off." appears in the display.
- 4** Lower the volume of the connected audio set.
- 5** Turn off the connected audio set's power.
- 6** Press the POWER switch on the A-6's rear panel to turn off the power to the A-6.

NOTE

Due to its rotational inertia, the hard disk continues to spin after the power is switched off. Subjecting the hard disk to physical shock at this time may result in damage to the disk. Wait about thirty seconds after switching off the power before transporting an A-6 with the internal hard disk installed.

Chapter 3 Try Recording (Part 1)

What is a "Track?"

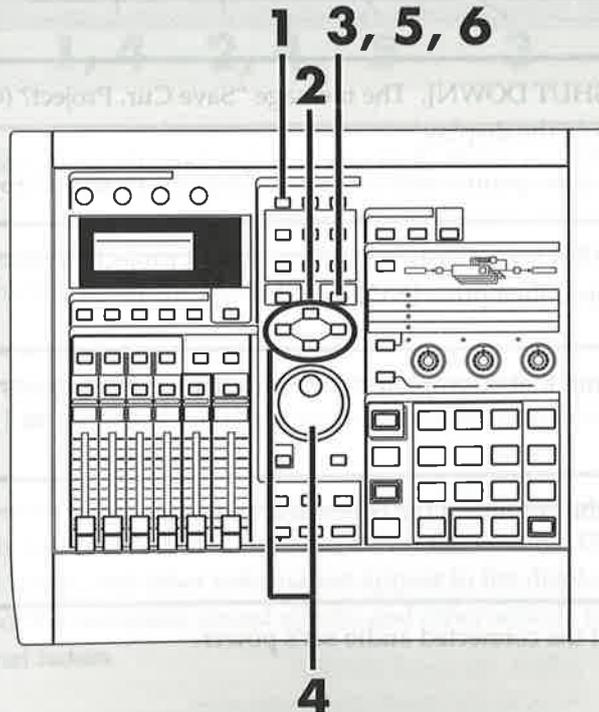
Besides the pads ([0]-[9]) that can be pressed to play sounds, the A-6 also features a section in which you can arrange as well as record and play back sounds in a time-based format. This is called a track. The number of tracks is like the number of lanes in a road. For example, on a typical four-track MTR (multi-track recorder), four monaural sounds can be played simultaneously. The A-6 features four stereo tracks (A: Narration (vocal); B: Sound from the VCR; C: Background Music (BGM); and D: Sound Effects), allowing four stereo (or mono) sounds to be played at the same time.

Differences Between the A-6 and Multi-Track Tape Recorders

With the A-6, narration and sound effects are not recorded to a cassette tape, but rather to a disk (hard disk) similar to that used with MD recorders. With a tape recorder, the amount of recording time depends on the predetermined length of tape. On the other hand, recording time is dependent on the storage capacity, or memory, of the disk being used.

Preparing to Record (Project New)

The demo project is already recorded to the tracks. Now prepare a new place. Preparing this area for recording, which is called a **Project**, can be likened to putting a new cassette in your tape recorder. The A-6's hard disk can store up to 64 separate Projects.



- 1 Press [PROJECT].
- 2 Check to make sure that "New" is highlighted in the display.
- 3 Press [ENTER/YES].
- 4 In this screen, you can name the newly created Project. Press [◀] and [▶] and rotate the [TIME/VALUE] dial to select the characters for the name.

```

Project Name
CREATE NEW PROJECT
No. 02
Name [NewProject02]
Character to be Changed

```

- 5 Press [ENTER/YES]. The following appears in the display.

```

CREATE NEW PROJECT
Save Cur. Project?
<Overwrite Only.>

```

- 6 When you want keep the current project by overwriting, press [ENTER/YES]; if not, press [EXIT/NO].
- 7 Once the new Project is created, the initial screen reappears in the display.

When the Current Project is a Demo Song

When a demo project or other write-protected work is selected as the current project (p.42), the following message appears in the display at Step 5. Press [ENTER/YES].

```

ARE YOU SURE?
<Project Not Saved>

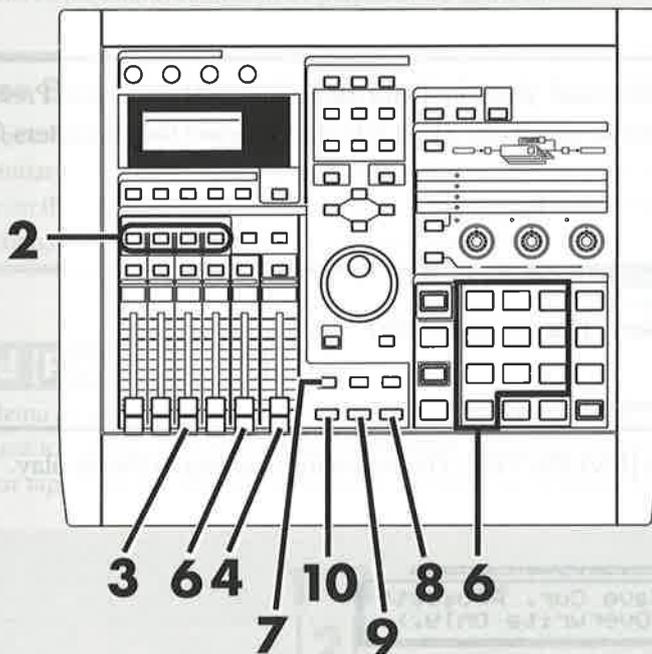
```

Recording Pad Sounds to the Tracks (Track Recording 1)

Recording Sound to Go With the Images

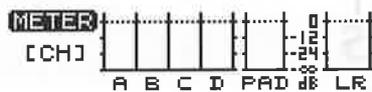
Try pressing the pads timed to match the video images shown, and record the Clips (BGM, sound effects, and so on) to a track. First prepare a video cassette that has already been edited.

Try Recording (Part 1)

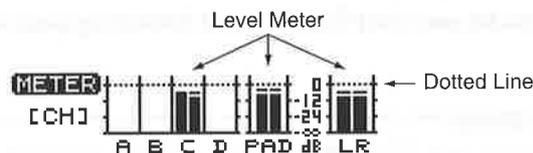


Play

- 1 Rewind the video all the way to the beginning.
- 2 Determine the track to be used for recording. Press [STATUS] for the track onto which you want to record. The button blinks red. Only one track can be recorded at a same time. You cannot have more than one [STATUS] button blink at a same time. At this time, select Track C (BGM) for recording.
- 3 Set the fader of the track to be recorded somewhere near 0 dB. This fader is for checking the sound of the pad being recorded. This does not determine the recording level. Sounds may be recorded even when you are not able to hear them.
- 4 Raise the MASTER fader to a suitable level.
- 5 Check to make sure that "METER [CH]" appears in the display. If not displayed, press [DISPLAY (HOME)] one or more times until it is.



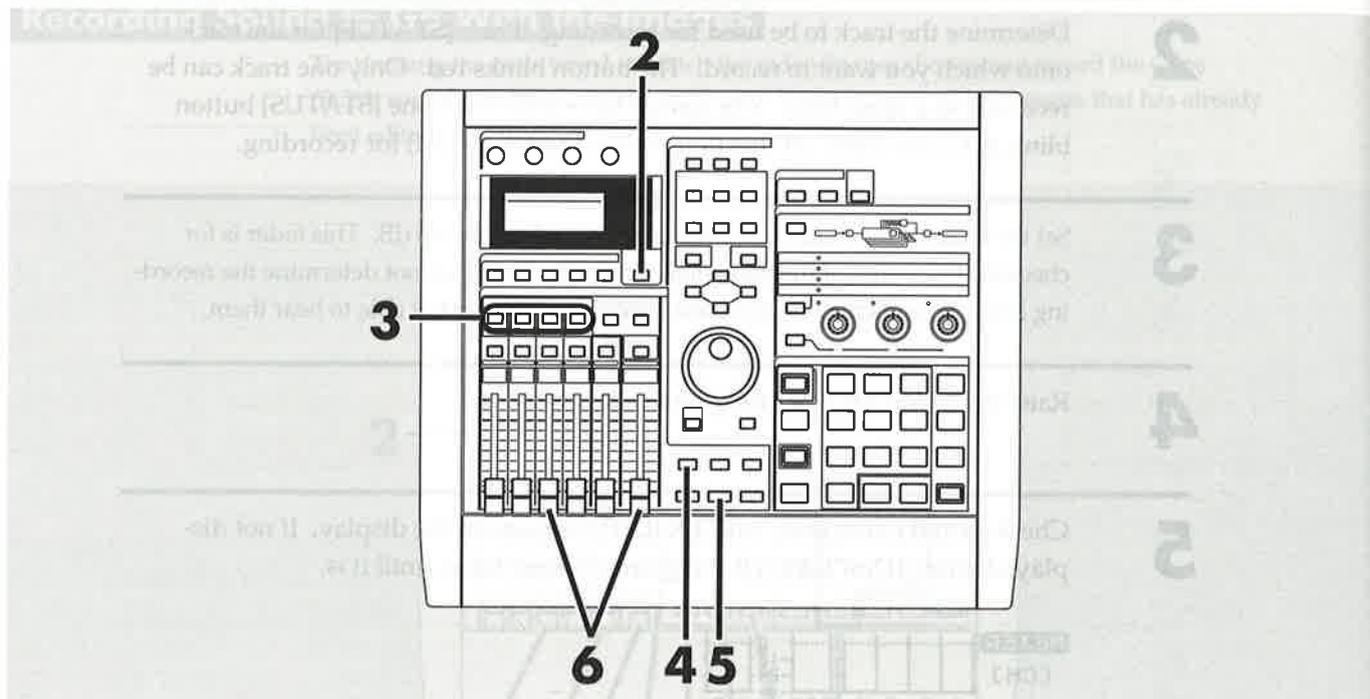
- 6 Press the pads. While confirming that the Clips are audible, raise the PAD fader until the level meters fluctuate at as high a level as possible without crossing the dotted line near the top of the screen.



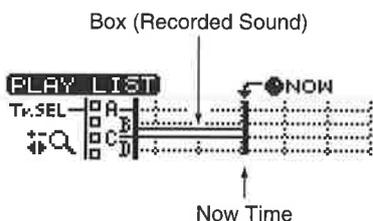
- 7 Press [] (ZERO).
- 8 Press [] (REC). The button blinks red.
- 9 Simultaneously press the video cassette recorder's Play button and [] (PLAY) on the A-6. Recording begins automatically. Press the pads as the images change as well as at any other appropriate times.
- 10 When recording is finished, press [] (STOP).
- 11 Press the Stop button on the video cassette recorder.

Listening to the Recorded Sounds

Now, play back the Sounds recorded to the track.



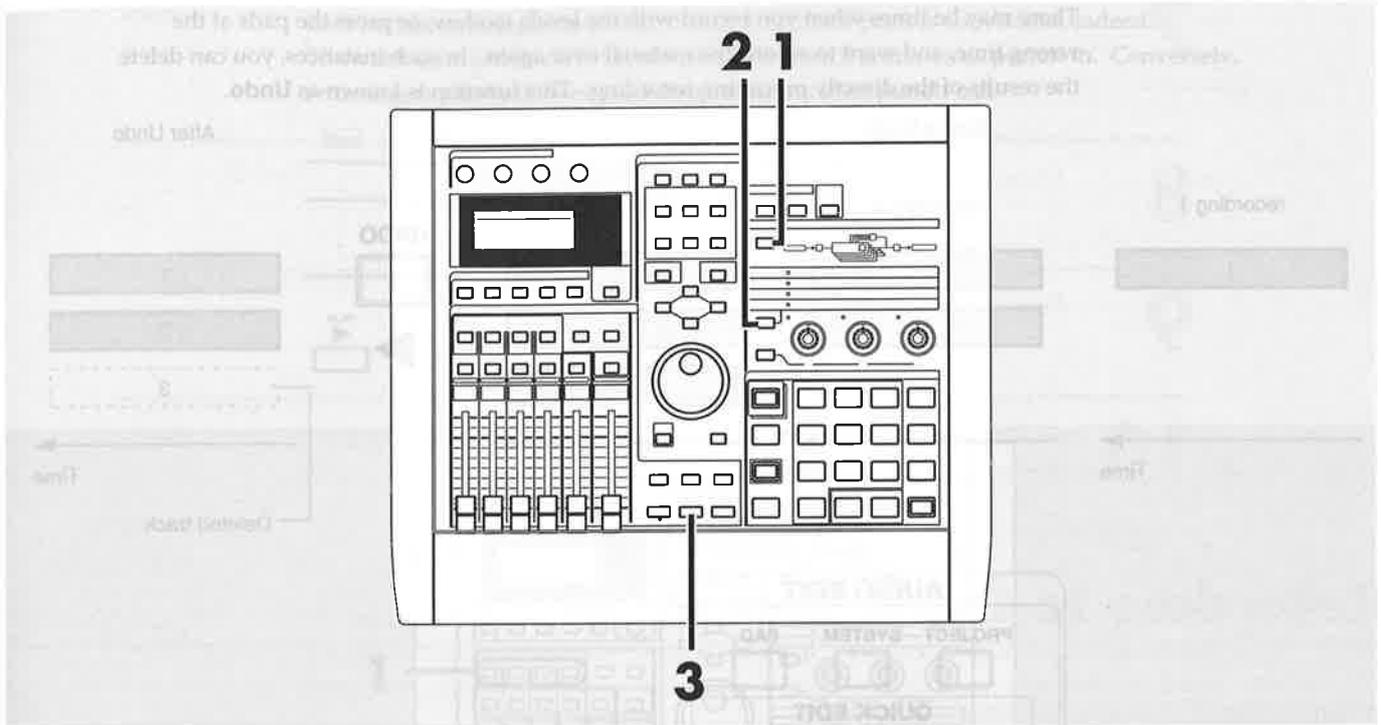
- 1** Rewind the video all the way to the beginning.
- 2** Press [DISPLAY (HOME)] one or more times until "PLAY LIST" appears in the display. Check to make sure that the recorded Sounds appear in the box in the display.



- 3** Press [STATUS] for the track recorded to in the previous section. The button lights green.
- 4** Press [ZERO].
- 5** Simultaneously press the video cassette recorder's Play button and [PLAY] on the A-6.
- 6** Adjust the fader for the track being played back and the MASTER fader to obtain a comfortable listening level. Did the recording turn out as you expected?

Playing Back with Special Effects

As with the pad sounds when they were played, you can add special effects (reverb and echo) to the sounds recorded to the tracks.

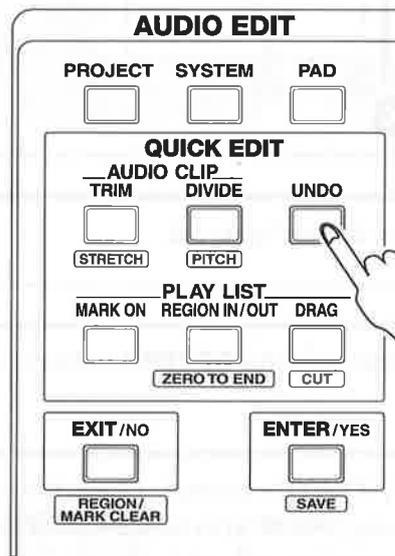
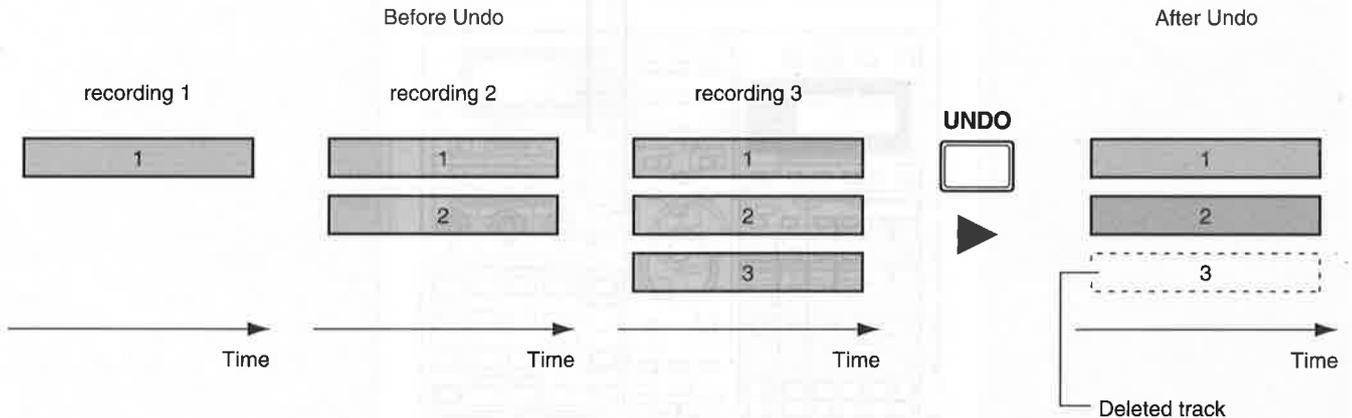


- 1** Press [EFFECTS ON/OFF]. The button lights red.
- 2** Press [SELECT] one or more times until the **REVERB** indicator also lights red.
- 3** Sounds are played when [▶] (PLAY) is pressed. Check the amount of effect applied to the sound. By pressing [SELECT] in Step 2 so that the **DELAY** indicator is lit, the delay effect is added instead of reverb.

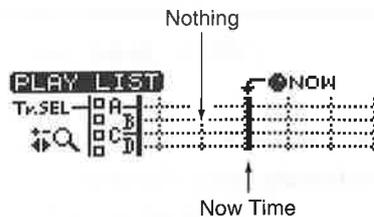
When Recording Mistakes Are Made

Undoing a Recording Operation

There may be times when you record with the levels too low, or press the pads at the wrong time, and want to record the material over again. In such instances, you can delete the results of the directly preceding recording. This function is known as **Undo**.



- 1** Make sure the button indicator is lit, then press [UNDO].
- 2** The immediately preceding recording is deleted. Confirm that the box no longer appears in the display.

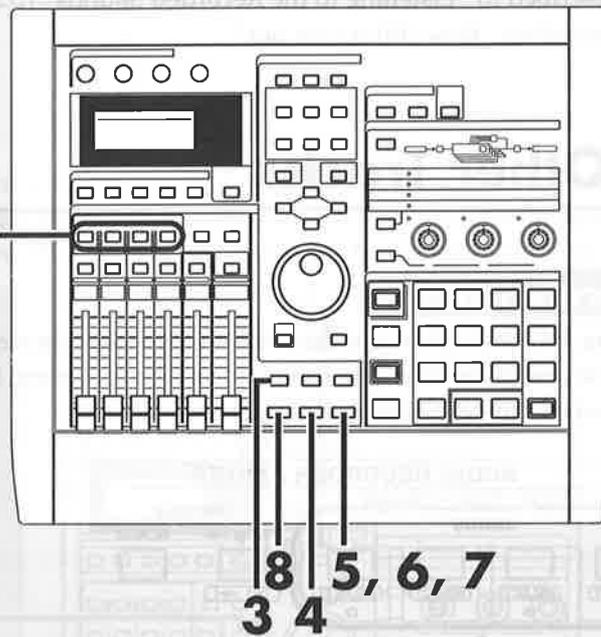
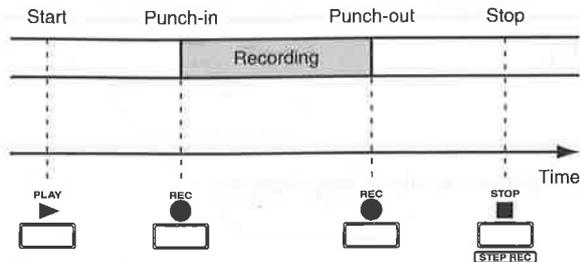


- 3** If you press [UNDO] once more, the box reappears in the display, and you can again listen to the recording that was just deleted. Each time [UNDO] is pressed toggles back and forth between the "deletion" and "restoration" of the recording.

Recording Over Only One Portion of a Recording

There may be other times when in listening over something you have just recorded, even though you don't think you need to do the entire recording over again, you may have made a mistake in playing the pads here and there, or maybe got the timing wrong. In such instances, being able to record over only those parts is convenient, indeed.

To switch from playback to record status on a track is known as **punch in**. Conversely, returning to playback from recording status is called **punch out**.



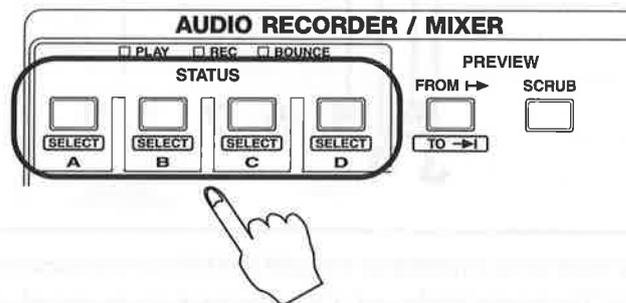
- 1** Determine the track to be rerecorded. Press [STATUS] for the track to which you want to record. The button blinks red. Only one track can be recorded at a same time. You cannot have more than one [STATUS] button blinking red simultaneously.
- 2** As described in "Recording Sound to Go With the Images" (p.26), set the recording sensitivity.
- 3** Press [◀◀] (ZERO).
- 4** Simultaneously press the video cassette recorder's Play button and [▶] (PLAY) on the A-6.
- 5** Press [●] (REC) at the points where you want to record over the material. The button changes from blinking red to a steady red light, and recording begins. Press the pads as the images change as well as at any other appropriate times.

- 6 When recording is finished, press [●] (REC) once again.
- 7 Each time that [●] (REC) is pressed, it switches between record and playback status. If there are any other locations that you want to rerecord, repeat Steps 5 and 6.
- 8 Press [■] (STOP).
- 9 Press the video cassette recorder's Stop button.
- 10 As described in "Listening to the Recorded Sounds" (p.28), check the results of the recording. How did it turn out?

Recording to Other Tracks

Recording to a Separate Track

With the A-6, while listening to the Phrases on the track just recorded, you can then also record on a separate track. This is convenient when you want, for example, to play sound effects while adding BGM to the video images.

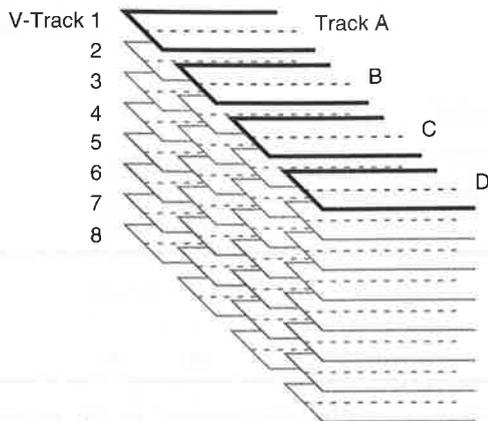


- 1 Determine the track to be played back. Press [STATUS] for the track to which you want to playback. Press [STATUS] as needed to change the button light to green. While up to four tracks can be played back simultaneously, the [STATUS] for tracks on which no phrase is recorded cannot be made to light green.
- 2 Determine the track to be recorded. Press [STATUS] for the track to which you want to record. The button blinks red. Only one track can be recorded at a same time. You cannot have more than one [STATUS] button blinking red simultaneously.
- 3 As described in "Recording Sound to Go With the Images" (p.26), record and check the result of the new recording.

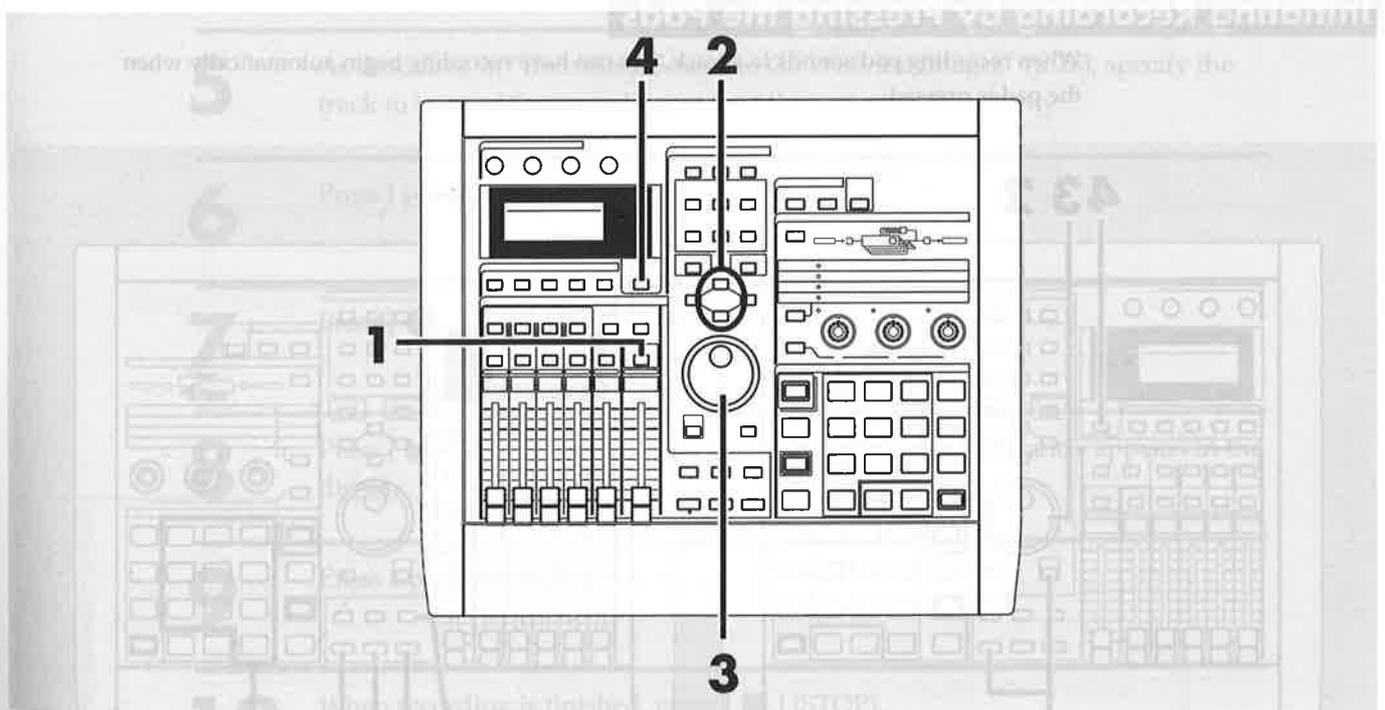
Recording on Auxiliary Tracks

On the A-6, four stereo tracks can be played back simultaneously, while one track can be used for recording.

Each track is composed of eight auxiliary tracks, and you can select any of them to be used for recording or playback. In other words, using a maximum of four tracks, each composed of eight auxiliary tracks, you can record a performance with 32 stereo tracks, and then from the various auxiliary tracks on each track you can select any one for playback. These auxiliary tracks are called **V-tracks**.

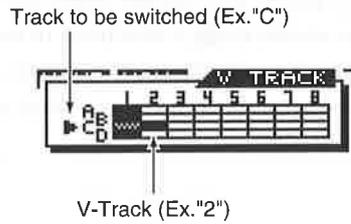


It can be convenient to switch back and forth among these V-tracks when, for example, preparing a number of different BGM tracks to be played along with a certain video image, and then listening and comparing to find which one goes best with that image.



- 1** Press [V-TRACK].
- 2** Press [▲] or [▼] to move the triangle "▶" to the group of V-tracks (A: Narration; B: Sound Recorded with the Camera; C: BGM; or D: Sound Effects) among which you want to switch back and forth. For example, move the triangle to "C" if you want to switch among the BGM V-tracks.

- 3** By rotating the [TIME/VALUE] dial, you can select the V-track to be recorded or played back. Here, the "2" from the previously selected example is indicated.



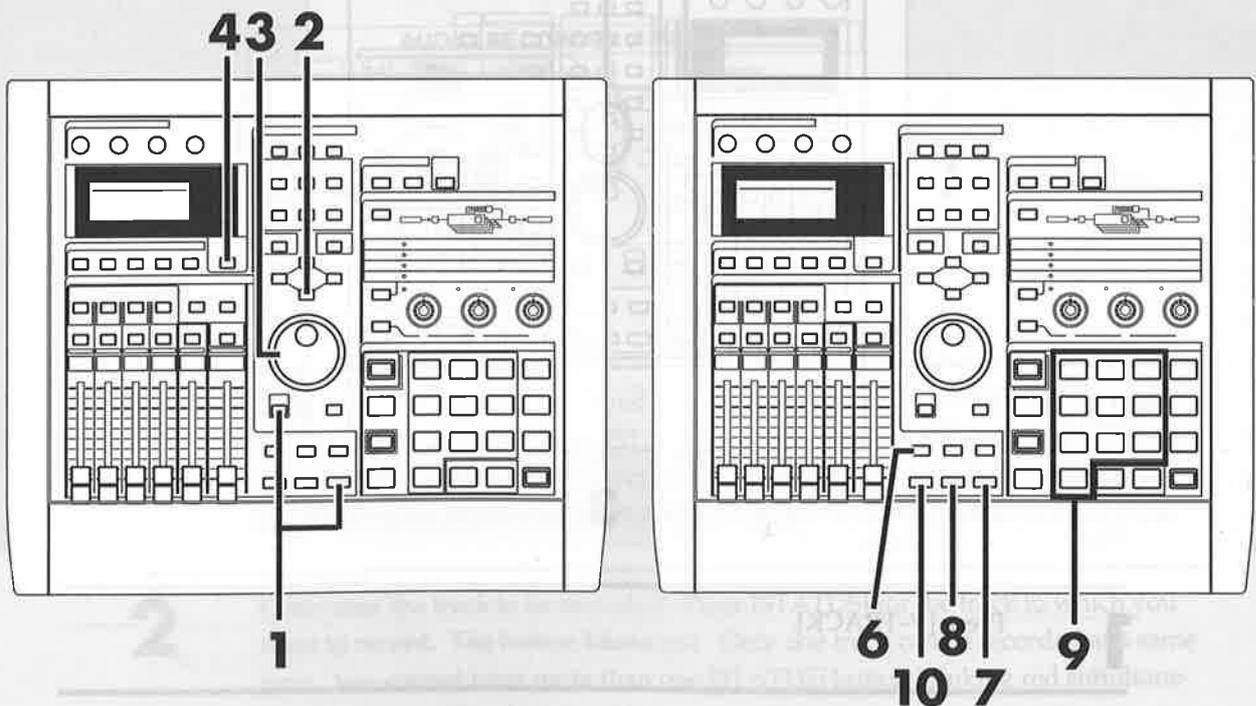
- V-Track to be recorded or played back
- ▨ V-Track onto which clips are recorded
- V-Track with no clips recorded on them

- 4** Press [DISPLAY (HOME)].

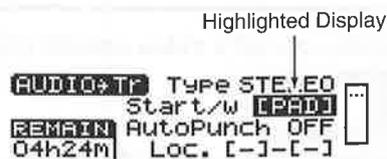
- 5** As described in "Recording Sound to Go With the Images" (p.26), record and check the result of the recording.

Initiating Recording by Pressing the Pads

When recording pad sounds to a track, you can have recording begin automatically when the pad is pressed.



- 1 While holding down [SHIFT], press [●] (REC).
- 2 Press [▼] until "Start/w" is highlighted in the display.
- 3 Rotate the [TIME/VALUE] dial. For the present, select "PAD."



Start/w (Start With)

This selects the method used to start the recording.

[▶]: [▶] (PLAY button)

[PAD]: Pads (e.g. [0]–[9])

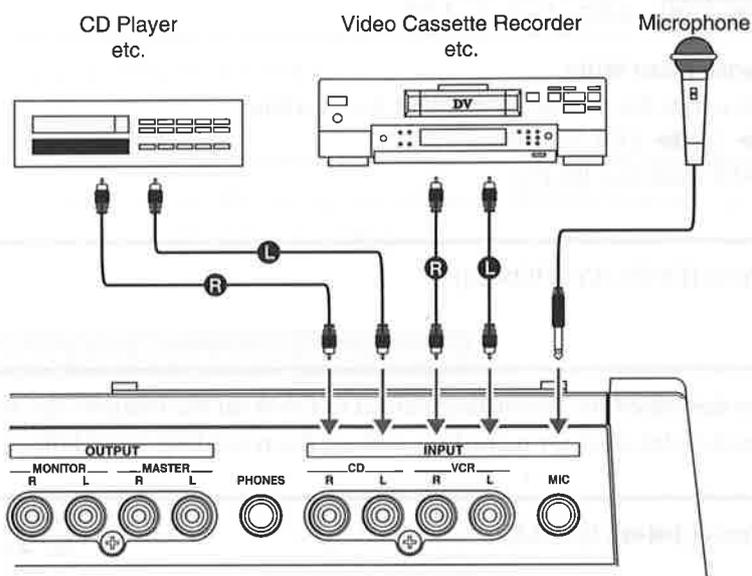
- 4 Press [DISPLAY (HOME)].
- 5 As described in "Recording Sound to Go With the Images" (p.26), specify the track to be used for recording and set the recording sensitivity.
- 6 Press [⏪] (ZERO).
- 7 Press [●] (REC). The button blinks red.
- 8 Press [▶] (PLAY) on the A-6. "Hit Pad to REC Start" instantly appears in the display.
- 9 Press a pad. Recording begins.
- 10 When recording is finished, press [■] (STOP).
- 11 As described in "Listening to the Recorded Sounds" (p.28), check the results of the recording. Did it turn out as expected?

Recording Sounds from External Devices to the Tracks (Track Recording 2)

Try recording sounds from an external devices, such as a video cassette recorder, CD player, or microphone.

When Connecting External Devices

- 1 Completely lower the A-6's MASTER fader.
- 2 Referring to the following diagram, connect a video cassette recorder or microphone to the INPUT jack.



Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:

1. Changing the orientation of the microphone(s).
2. Relocating microphone(s) at a greater distance from speakers.
3. Lowering volume levels.

When Connecting a Microphone

You can connect most dynamic mics and electret condenser mics used in general vocal and instrumental miking. However, the following do not operate properly, even when connected directly to the A-6.

- Business-use condenser mics that require phantom power

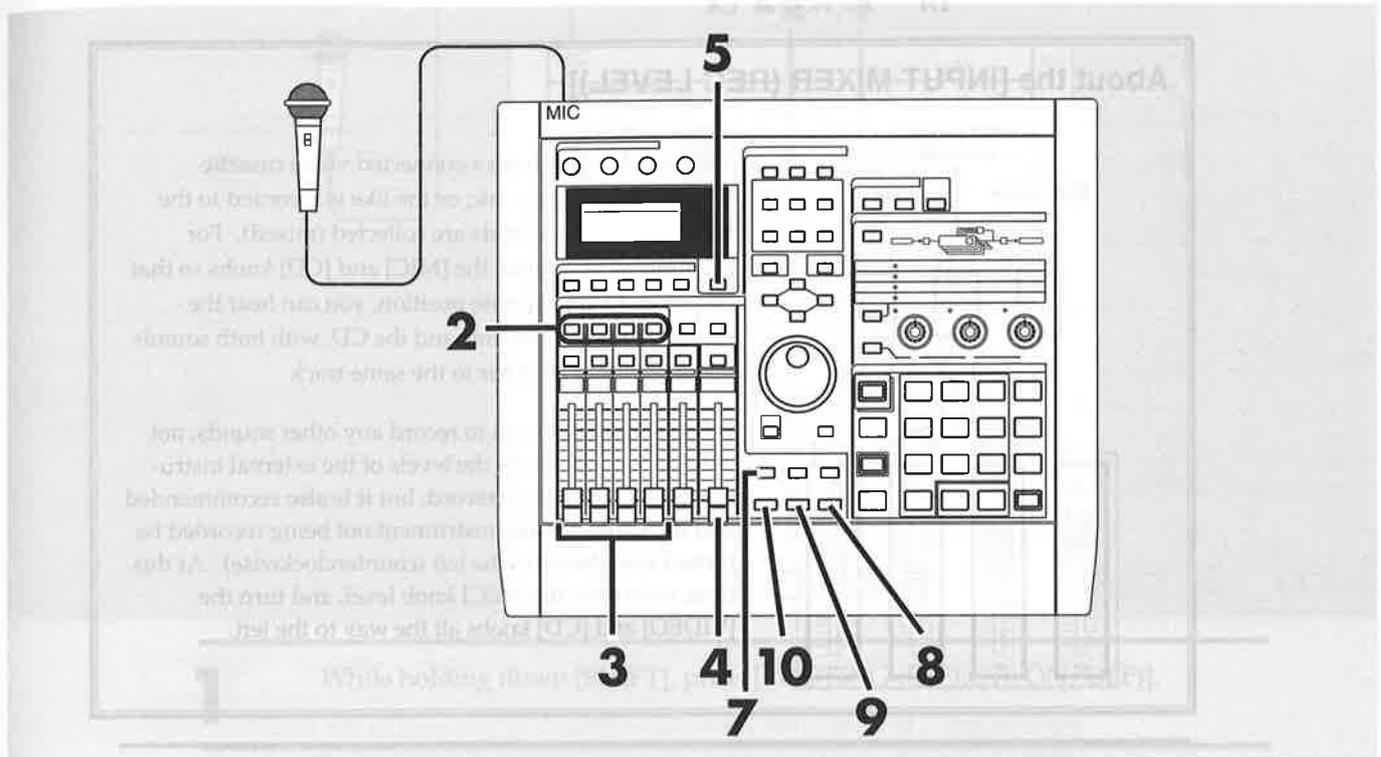
? Phantom (p.165)

- Stereo mics with tip/ring/sleeve-type plugs (the same kind of plug used with stereo headphones)
- Mics with extremely low output

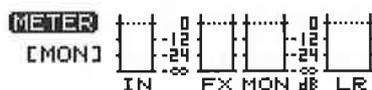
Recording External Sounds

Speech other than the words actually spoken by people appearing in videos, such as the thoughts of the characters or voice-overs describing the story, is referred to as **narration**. Narration is very effective when you want to express something that just cannot be conveyed by what is happening on the screen alone.

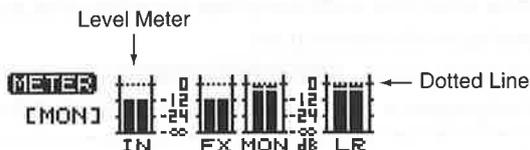
Here, record some narration to a track, timing the narration to match what is happening in the video images. First prepare a video cassette that has already been edited.



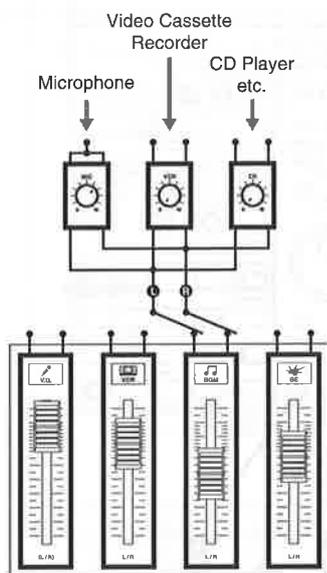
- 1** Rewind the video all the way to the beginning.
- 2** Determine the track to be used for recording. Press [STATUS] for the track onto which you want to record. The button blinks red. Only one track can be recorded at a same time. You cannot have more than one [STATUS] button flash at a same time. At this time, select Track A (V.O.) for recording.
- 3** Set the fader of the track to be recorded somewhere near 0 dB. This fader is for checking the sound of the pad being recorded. This does not determine the recording level. Sounds may be recorded even when you are not able to hear them.
- 4** Raise the MASTER fader to a suitable level.
- 5** Press [DISPLAY (HOME)] one or more times until "METER MON" is appears in the display.



- 6 Speak into the mic. While confirming that your voice is audible, rotate the [INPUT MIXER (REC LEVEL)] [MIC] knob until the level meters fluctuate at as high a level as possible without crossing the dotted line near the top of the screen.



About the [INPUT MIXER (REC LEVEL)]



The sounds input from a connected video cassette recorder, CD player, mic, or the like is recorded to the track after all the sounds are collected (mixed). For example, as you rotate the [MIC] and [CD] knobs so that each is in an appropriate position, you can hear the sounds from both the mic and the CD, with both sounds being recorded together to the same track.

When you do not wish to record any other sounds, not only do you raise only the levels of the external instruments you do want to record, but it is also recommended that the knobs for any instrument not being recorded be turned completely to the left (counterclockwise). At this time, raise only the [MIC] knob level, and turn the [VIDEO] and [CD] knobs all the way to the left.

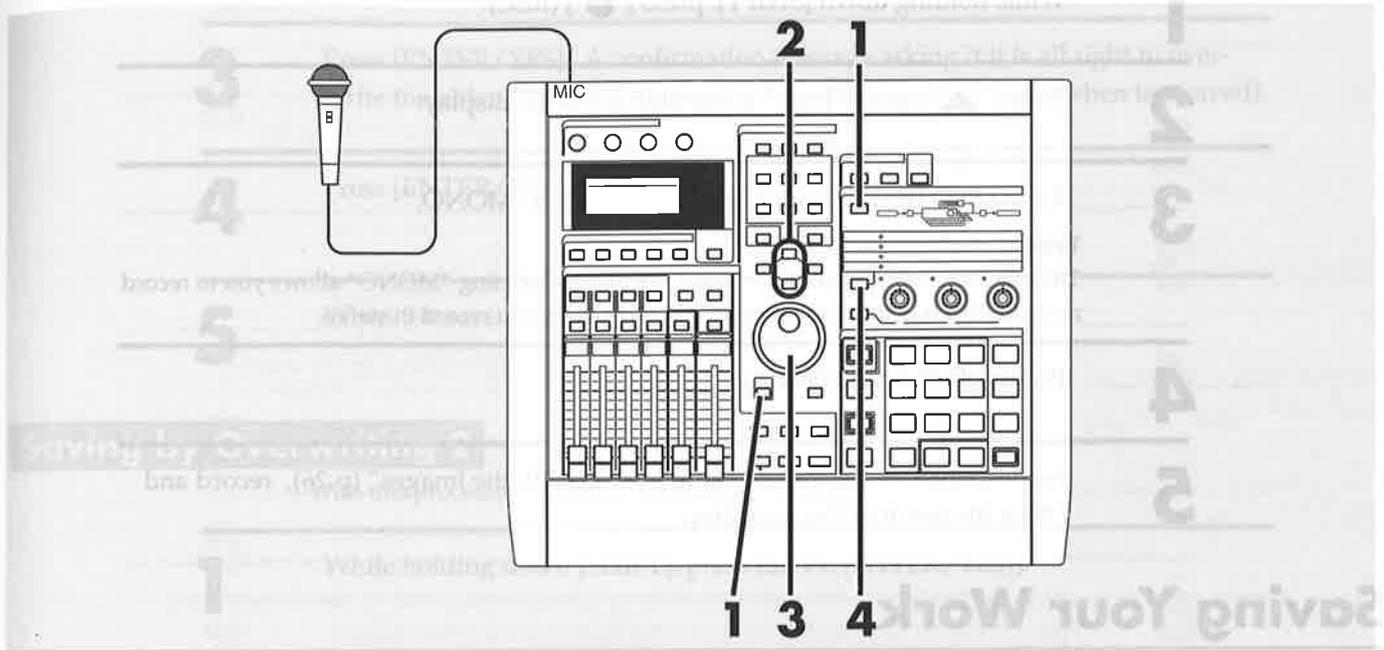
- 7 Press [◀◀] (ZERO).
- 8 Press [●] (REC). The button flashes red.
- 9 Simultaneously press the video deck's Play button and [▶] (PLAY) on the A-6. Recording begins automatically. Add narration as the images change as well as at any other appropriate times.

NOTE If recording does not start even though you press [▶], "Start/w" may be set as "PAD." Please set it to "[▶]."

- 10 When recording is finished, press [■] (STOP).
- 11 Press the Stop button on the video deck.
- 12 As described in "Listening to the Recorded Sounds" (p.28), check the results of the recording. Did it turn out as you thought it would?

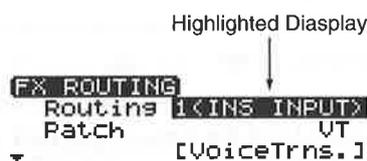
When Recording Narration

You may discover that the sound of your voice as recorded on tape evokes a different image than that you get when listening to your own voice in ordinary speech. Furthermore, you might find yourself somehow getting a bit shy when recording your own voice for narration. For this kind of situation, add some effects to change the quality of your voice when it is recorded.



1 While holding down [SHIFT], press [ROUTING (EFFECTS ON/OFF)].

2 Press [▲] or [▼] until "Routing" is highlighted in the display.



3 Rotate the [TIME/VALUE] dial to select "1 (INS INPUT)."

4 Press [SELECT] one or more times until the indicator next to [VOICE T.] lights red.

5 Record the narration using the procedure described in "Recording External Sounds." This time, you can change the vocal qualities by rotating the [EFFECTS] knobs. Rotating these knobs gives you the following effects.

- C1 knob: This adjusts vocal pitch. For example, you can make a male voice sound feminine, or a woman's voice masculine.
- C2 knob: This adjusts the vocal sound by changing the apparent length of the vocal cords. For example, you can get a "duck voice" like that when you speed up a tape recorder, or a slightly muffled "giant's voice."
- C3 knob: Turning this all the way to the right gives you robot-like voices without any modulation or intonation.

Selecting Stereo and Monaural

Your A-6 was set when you purchased it to be able to record in stereo. If you should particularly want to conduct monaural (mono) recordings, then carry out the procedure below. A mono recording uses roughly half the disc space as does a stereo recording of equivalent length. It is recommended that you record in stereo whenever you have ample disk space.

- 1** While holding down [SHIFT], press [●] (REC).
- 2** Press [▲] until "Type" is highlighted in the display.
- 3** Rotate the [TIME/VALUE] dial. Here, select "MONO."
Type
 This selects either monaural or stereo recording. Selecting "MONO" allows you to record monaurally. It is recommended that in most cases you record in stereo.
- 4** Press [DISPLAY (HOME)].
- 5** As described in "Recording Sound to Go With the Images" (p.26), record and check the result of the recording.

Saving Your Work

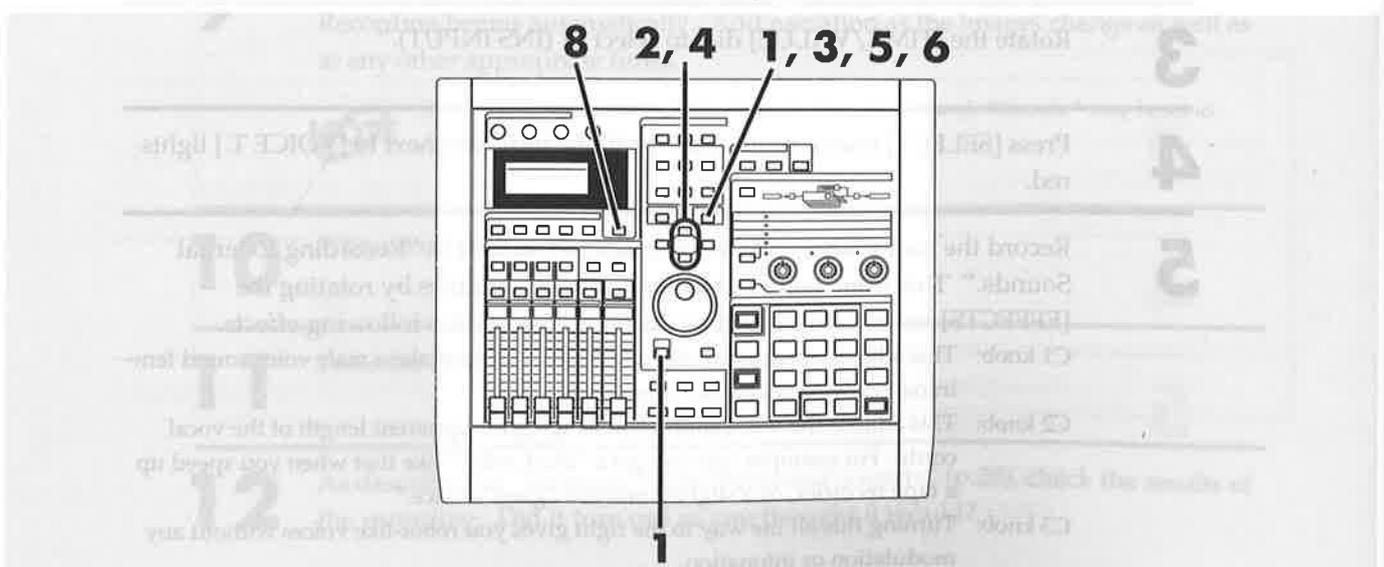
Phrases recorded onto tracks are lost when the power is simply turned off. Additionally, the data is also lost if the power is cut unexpectedly due to an accident of power outage.

Phrases that have been lost cannot be retrieved or restored to the previous conditions. To avoid this sort of mishap, save your work to the hard disk.

NOTE When working with important data, or when working on the A-6 for extended periods, frequent saving is highly recommended.

Saving by Overwriting 1

This procedure overwrites and saves all projects, including data representing levels of currently selected effects added to the sound and the status of playback and recording tracks. This is the process most commonly used.



- 1 While holding down [SHIFT], press [SAVE (ENTER/YES)].
- 2 Press [▲] or [▼] until "Overwrite ALL" is highlighted in the display.
- 3 Press [ENTER/YES]. A confirmation message asking if it is all right to overwrite the older version of the work (that is, the work as it was when last saved).
- 4 Press [ENTER/YES] once again.
- 5 When the save is finished, "Completed." appears in the display.

Saving by Overwriting 2

With this procedure, the effect settings are not saved.

- 1 While holding down [SHIFT], press [SAVE (ENTER/YES)].
- 2 Press [▲] or [▼] until "PROJECT" is highlighted in the display.
- 3 Press [ENTER/YES].
- 4 Press [▲] or [▼] until "Overwrite" is highlighted in the display.
- 5 Press [ENTER/YES]. A confirmation message asking if it is all right to overwrite the older version of the work (that is, the work as it was when last saved).
- 6 Press [ENTER/YES] once again.
- 7 When the save is finished, "Completed." appears in the display.
- 8 Press [DISPLAY (HOME)].

Saving Project as a New Project

Use the following procedure to save the current project with a different name, without overwriting the present work (thus leaving it as it is). This is convenient when, for example, you want to create a number of different sounds for a certain image, and then compare them.

- 1 While holding down [SHIFT], press [SAVE (ENTER/YES)].
- 2 Press [▲] or [▼] until "PROJECT" is highlighted in the display.
- 3 Press [ENTER/YES].
- 4 Press [▲] or [▼] until "Save As New" is highlighted in the display.
- 5 Press [ENTER/YES].
- 6 In this screen, you can name the new project. Press [◀] [▶] and rotate the [TIME/VALUE] dial to select the characters for the name.

Project Name

SAVE PROJECT AS...

To No. 02

New Name [NewProject02]

Character to be Changed

- 7 Press [ENTER/YES].
- 8 When the save is finished, "Completed." appears in the display.

To Avoid Accidentally Deleting Your Work

Roland has considered the possibility that, even with your work saved to the disk, it could still be overwritten by mistake when saving, or accidentally deleted. To counter this sort of problem, you can protect projects with a setting that prevents them from overwriting or deletion. Once protected, projects cannot be overwritten or deleted. Only projects already saved to the disk can be protected. The project that is currently called up is not one such project. This is to allow continued recording and editing of the current project. However, if you attempt to save normally by overwriting at this time, the message "Project is Protected." appears in the display, and you cannot proceed with operations. When you want to save by overwriting, either first remove the protection or save the project as a separate project.

Protecting Your Files

- 1 Press [PROJECT].
- 2 Press [▲] or [▼] until "Protection" is highlighted in the display.
- 3 Press [ENTER/YES]. The message "TURN PRJ. PROTECTION" appears in the display.
- 4 Rotate the [TIME/VALUE] dial until the name of the project you want to be protected.

```
TURN PRJ. PROTECTION
01[NewProject01]onDisk
<Now OFF → Turn ON>
[ENTER] to Do.
```
- 5 After making sure that "(Now OFF→Turn ON)" appears in the display, press [ENTER/YES].
- 6 The project is protected, and the message in the screen changes to "(Now ON→Turn OFF)."
- 7 Press [DISPLAY (HOME)].

Removing Protection from a Project

- 1 Press [PROJECT].
- 2 Press [▲] or [▼] until "Protection" is highlighted in the display.
- 3 Press [ENTER/YES]. The message "TURN PRJ. PROTECTION" appears in the display.
- 4 Rotate the [TIME/VALUE] dial until the name of the project you want the protection to be removed from appears in the display.

```
TURN PRJ. PROTECTION
01[NewProject01]onDisk
<Now ON → Turn OFF>
[ENTER] to Do.
```
- 5 After making sure that "(Now ON→Turn OFF)" appears in the display, press [ENTER/YES].
- 6 Protection is removed, and the message in the screen changes to "(Now OFF→Turn ON)."
- 7 Press [DISPLAY (HOME)].

Chapter 4 Try Recording (Part 2)

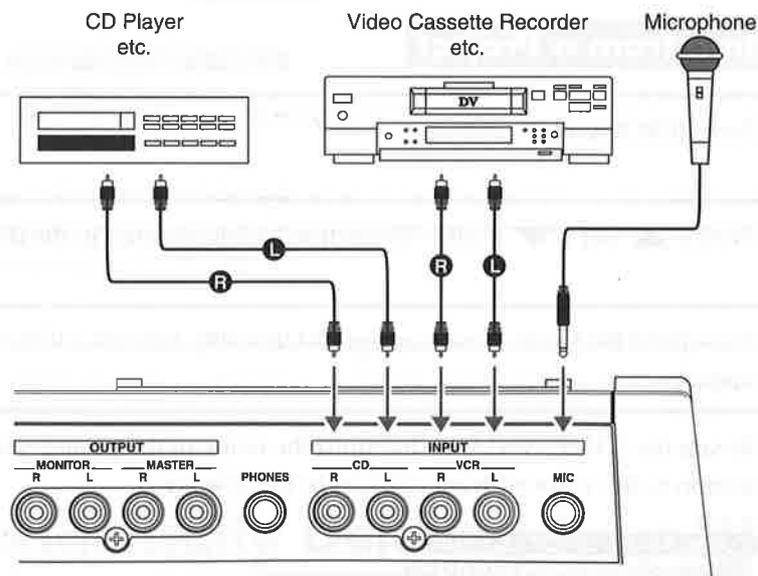
What is "Sampling?"

In addition to the tracks (A–D) used for time-based recording and playback of sounds, the A-6 also features a set of pads ([0]–[9], [F1]–[F3], and [BEEP]) which can be tapped or pressed to play sounds. The pads are like keys on a keyboard. For example, the pads have a one-to-one sounds relationship when pressed, just as do the white and black keys on a keyboard. On the A-6, sounds are assigned to each of the fourteen pads ([0]–[9], [F1]–[F3], and [BEEP]), with up to four different sounds can be played simultaneously. The general process of digitizing audible sounds and then recording those numbers is known as **sampling**. On the A-6, **sampling** especially refers to the recording of sounds to the pads.

Recording Sounds to the Pads (Sampling)

When Connecting to External Devices

- 1 Completely lower the A-6's MASTER fader.
- 2 Referring to the following figure, connect a video cassette recorder or microphone to the INPUT jack.



Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:

NOTE

1. Changing the orientation of the microphone(s).
2. Relocating microphone(s) at a greater distance from speakers.
3. Lowering volume levels.

When Connecting Microphones

You can connect most general-purpose dynamic or electret condenser microphones used for miking vocals or instruments. With the following mics, however, do not operate properly when connected to the A-6.

- Condenser mics for office use that require phantom power

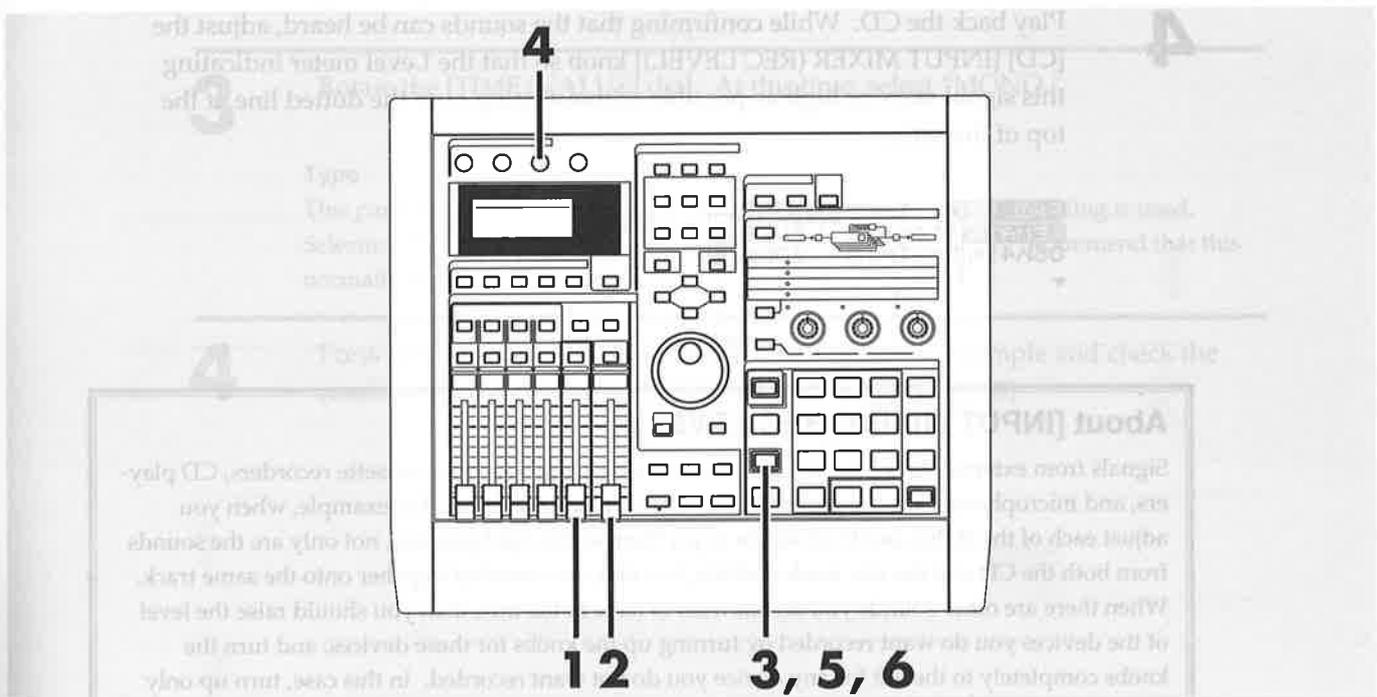


Phantom (p.164)

- Stereo mics with TRS (tip/ring/sleeve) plugs (the same configuration as that used for headphone plugs).
- Mics with extremely low output levels

Sampling

Here, let's sample sounds from a connected CD player, mic, or other device and record them to the pads. Please select a pad group (01-49) other than the group containing the demo clips (p.19).



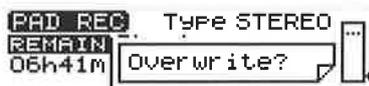
1 Position the PAD fader around 0 dB. This fader lets you check the sound recorded on the pad. It does not determine the recording level.

2 Raise the MASTER fader to a suitable level.

- 3 Press [PAD REC] (START/STOP). The pads flash red. At the same time, the lowest-numbered pad ([0]–[9]) lights, indicating that the pad is selected as the sampling destination.

When Sounds Have Been Assigned to All the Pads

- 3-1 When all pads have sounds recorded to them, the message "Select PAD" appears in the display. At such times, press a different pad to which you can sample the sound.
- 3-2 "Overwrite?" appears in the display. If you don't mind the sound currently recorded to that pad being replaced by the new sound, then the press [ENTER/YES].



- 3-3 If you want to quit sampling to the selected pad, change the pad group (p.19).

- 4 Play back the CD. While confirming that the sounds can be heard, adjust the [CD] [INPUT MIXER (REC LEVEL)] knob so that the Level meter indicating this signal stays as high as possible without going over the dotted line at the top of the screen.



About [INPUT MIXER (REC LEVEL)]

Signals from external devices you may have connected, such as video cassette recorders, CD players, and microphones, are combined (mixed) before being recorded. For example, when you adjust each of the [MIC] and [CD] knobs to get them at the right position, not only are the sounds from both the CD and the mic made audible, but they are recorded together onto the same track. When there are other sounds you do not wish to have in the mix, then you should raise the level of the devices you do want recorded by turning up the knobs for these devices, and turn the knobs completely to the left for any device you do not want recorded. In this case, turn up only the CD knob, and turn the [MIC] and [VCR] knobs all the way to the left.

- 5 Play back the CD once more. Press [PAD REC] (START/STOP) to be timed match with the sound. Sampling then begins.
- 6 Press [PAD REC] (START/STOP) once more. "Completed." appears in the display to return to the normal display.

Selecting Stereo and Mono

When purchased, the A-6 is set to enable stereo sampling. For times when you particularly want to get monaural samples, perform the following procedure.

Mono sampling allows you to make samples of the same length as stereo samples while using about half the memory. As long as you have sufficient disk space, we recommend that you conduct your recordings in stereo.

1 Press [PAD REC] (START/STOP). The pad blinks red.

2 Press [▲] until "Type" is highlighted in the display.

Highlighted Display
↓

```

PAD REC  Type STEREO
REMAIN Start/w LEV.3
06h41m PreTris 20ms
  
```

3 Rotate the [TIME/VALUE] dial. At this time, select "MONO."

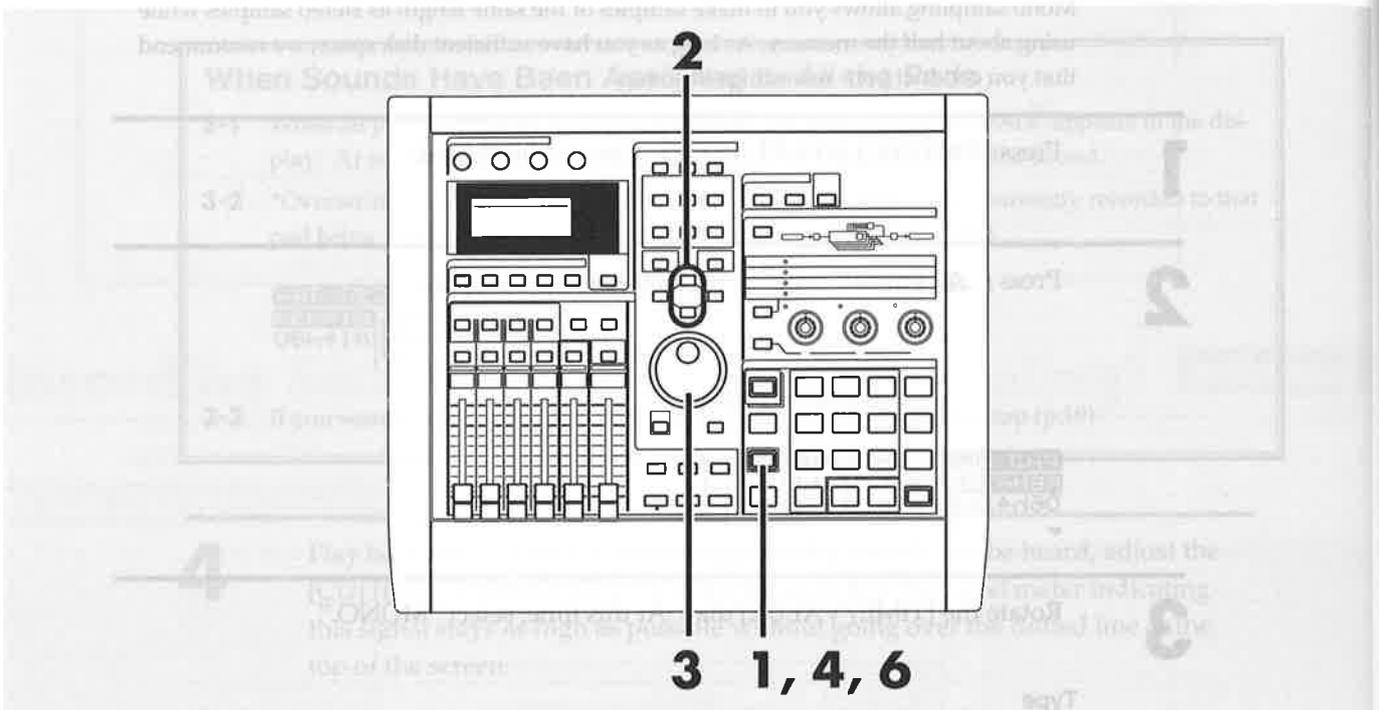
Type

This parameter determines whether monaural sampling or stereo sampling is used. Selecting "MONO" puts the A-6 in monaural sampling mode. We recommend that this normally be left in "STEREO."

4 Press [PAD REC] (START/STOP) to begin sampling. Sample and check the result using the procedures described in "Sampling" (p.45).

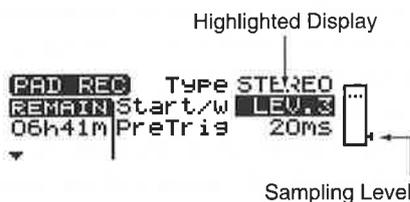
Adjusting the Point at Which Sampling Begins

When shipped, the A-6 is set to begin automatically when sound is input. You can also adjust the volume level at which sampling is begun.



1 Press [PAD REC] (START/STOP).

2 Press [▲] or [▼] until "Start/w" is highlighted in the display.



3 Rotate the [TIME/VALUE] dial. At this time, select "LEV.3."

Start/w (Start With)

This selects the method by which sampling is begun.

MANUAL: Sampling starts when [PAD REC] (START/STOP) is pressed.

LEV.1-LEV.8: This determines the level of the input signal required to initiate the sampling. The higher the number set, the higher the input signal needed to begin sampling.

PAD: Sampling starts when a pad is pressed.

[▶]: Sampling starts when [▶] (PLAY) is pressed (p.130).

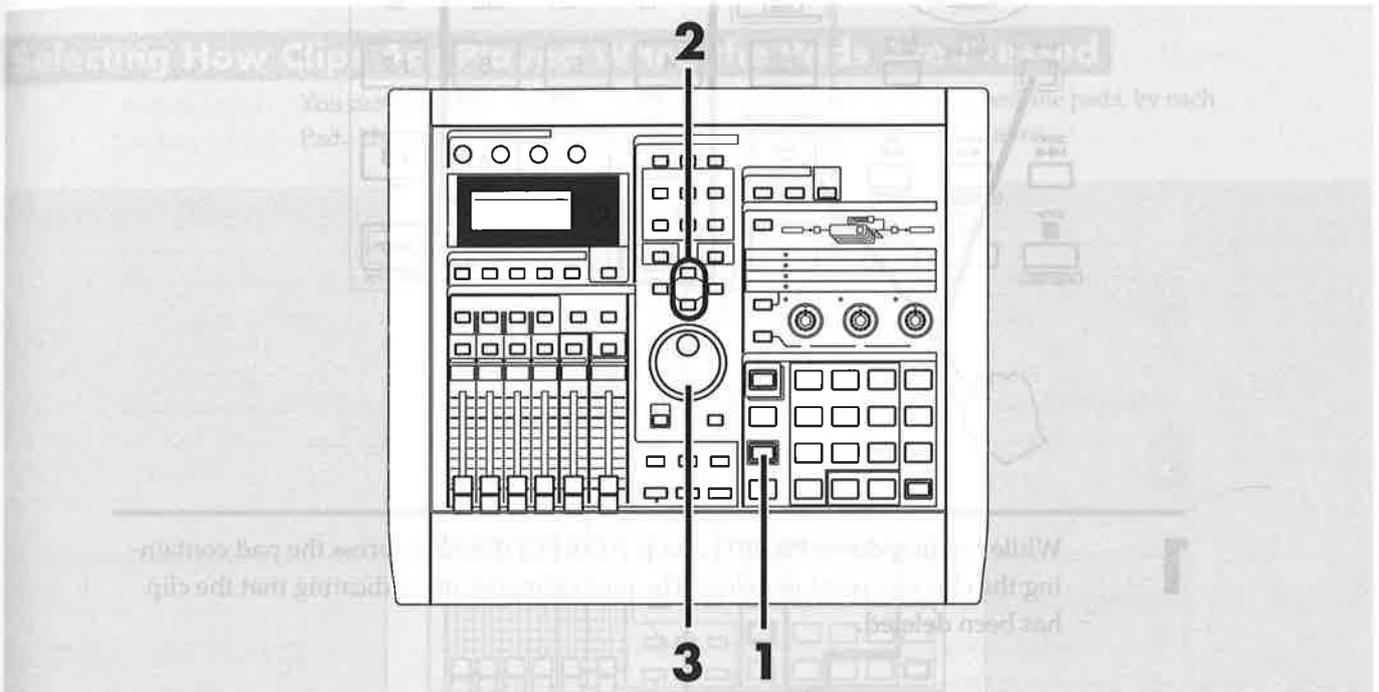
4 Proceed with the sampling using the procedures described in "Sampling" (p.45). This time, when [PAD REC] (START/STOP) is pressed, "Waiting Signal..." appears in the display, and the A-6 is put in sampling standby mode.

5 Sampling begins when sound of sufficient volume are input. If you want to cancel the sampling, press [PAD REC] (START/STOP).

6 Press [PAD REC] (START/STOP) once more. Sampling is finished. Check the results of the sampling.

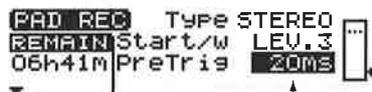
Prevent the Omission of the Start of the Sample

In the above description of setting the A-6 so that sampling starts automatically, we see that depending on how the setting is made, sounds at the beginning of the sample can end up being omitted. To avoid this, you can set the A-6 to begin sampling just slightly before input of the louder sound that triggers sampling.



1 Press [PAD REC] (START/STOP).

2 Press [▲] or [▼] until "PreTrig" is highlighted in the display.



Highlighted Display

3 Rotate the [TIME/VALUE] dial.

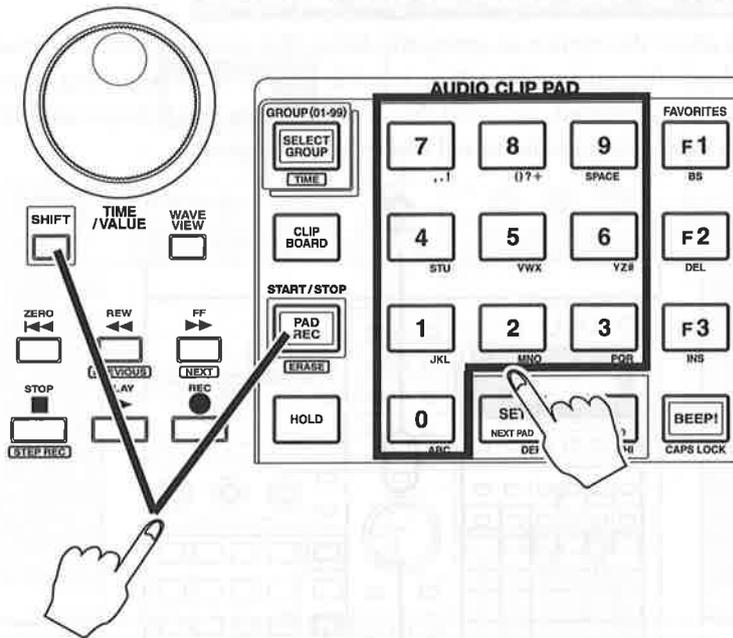
PreTrig (PreTrigger)

This determines the amount of time (OFF, 20, 40, 80, 160, or 320 ms) before the set beginning that sampling is to actually begin.

4 Sample and check the result using the procedures described in "Beginning Sampling Automatically" (p.48).

When the Sample is Bad

Sampled clips are automatically saved to the disk. In contrast to Track Recording, no special operation is needed to save the data. When you get a poor sample, then press that sample's pad to select it as the sampling destination, the redo the sample. In addition, when you have a clip that you don't especially need, you can delete the clip from the pad.



- 1 While holding down [SHIFT] and [PAD REC] (ERASE), press the pad containing the clip you want to delete. The pad light goes off, indicating that the clip has been deleted.

Listening to Sampled Sounds

Number of Clips That Can Be Played Simultaneously

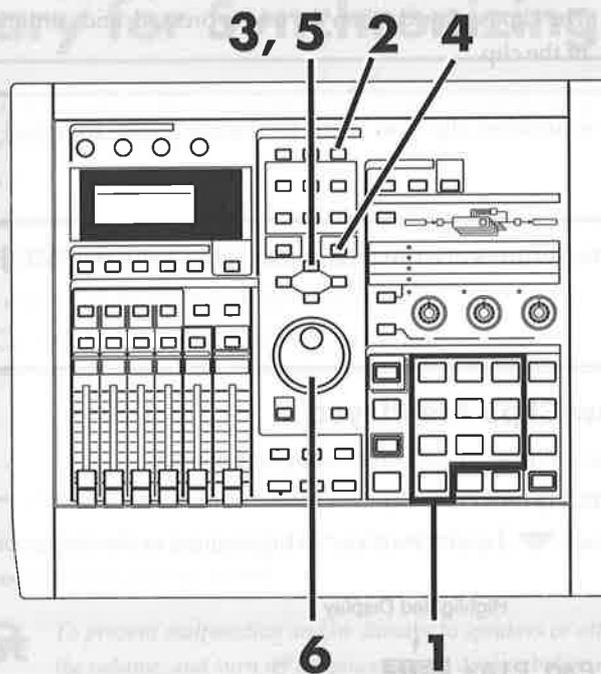
A maximum of four clips can be played simultaneously. If more than four pads are pressed, the more recently pressed pads take priority, and the clips of previously pressed pads stop playing. Clips also stop playing when the pad group is switched.

You can also play clips when playing back tracks. However, a single pad still takes the place of one track. Sounds from tracks take priority over sounds from the pads, so if, for example, Tracks A–C are being played back, then only one pad sound can be played.

This also means that if Tracks A–D are being played back, then no sounds from the pads may be played.

Selecting How Clips Are Played When the Pads Are Pressed

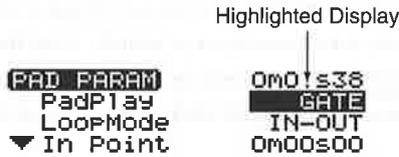
You can determine the way clips are played with the way you press the pads, by each Pad. Use of this feature will depend on your particular needs or aims.



- 1** Press the pad whose method of playing you want to change.
- 2** Press [PAD].
- 3** Press [▲] until "Set Pad Param?" is highlighted in the display.
- 4** Press [ENTER/YES].

5 Press [▲] until "PadPlay" is highlighted in the display.

6 Rotate the [TIME/VALUE] dial.



PadPlay

This determines the way clips are played when the pads are pressed.

GATE: The clip is played when the pad is pressed, and stops when the pad is released.

TRIGGER: The clip is played when the pad is pressed, but does not stop when the pad is released. Press the pad once more to stop playing the sound.

TO END: The clip is played when the pad is pressed, and continues playing until the end of the clip.

7 If there is another clip you want to change, press that pad and repeat Step 6.

8 When the settings are finished, press [DISPLAY (HOME)].

Selecting How Clips Are Played 2

You can select how a clip is played before sampling as well.

- 1** Press [PAD REC] (START/STOP).
- 2** Press [▲] or [▼] until "PadPlay" is highlighted in the display.



- 3** Rotate the [TIME/VALUE] dial.
This determines the way clips are played when the pads are pressed.

PadPlay

This determines the way clips are played when the pads are pressed.

GATE: The clip is played when the pad is pressed, and stops when the pad is released.

TRIG: The clip is played when the pad is pressed, but does not stop when the pad is released. Press the pad once more to stop playing the sound.

END: The clip is played when the pad is pressed, and continues playing until the end of the clip.

- 4** Press [PAD REC] (START/STOP) to begin sampling. Sample and check the result using the procedures described in "Sampling" (p.45).

Chapter 5 Use with the Video

What is "Synchronizing?"

Up until the previous chapter, timing of the playback was coordinated by pressing the video cassette recorder's PLAY button and [▶] on the A-6 at the same time. Although this is the simplest way to match sound to images, discrepancies may arise due to the way the buttons are pressed or how well or poorly the devices perform. No matter how hard you work on getting just the right background music or effect sound, this problem can really diminish the intended effect.

When used in combination with the SI-80S Video MIDI Sync Interface, the A-6 can then receive and use time code (RC time code) from the video cassette recorder.

In this case, whenever you play back, stop, fast forward, rewind and so on, the A-6's operations conform to whatever the video cassette recorder is doing. This makes the operation of running both devices separately unnecessary. This **operation of multiple devices through the use of a shared time code** is referred to in this Owner's Manual as **synchronizing**.

Items Necessary for Synchronizing

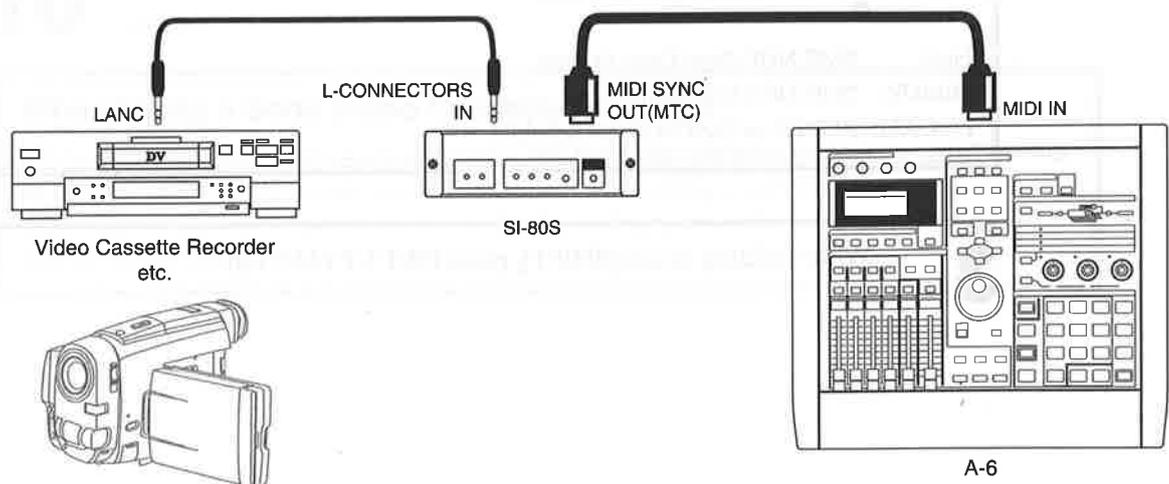
The following items are necessary to synchronize operation of the A-6 to the video cassette recorder's time code.

- The A-6
- A video device (such as Hi-8 or DV) that uses RC Time Code (LANC)
- SI-80S (Video MIDI Synch Interface: sold separately)
- MIDI cable (included the SI-80S package)
- LANC cable (included the SI-80S package)

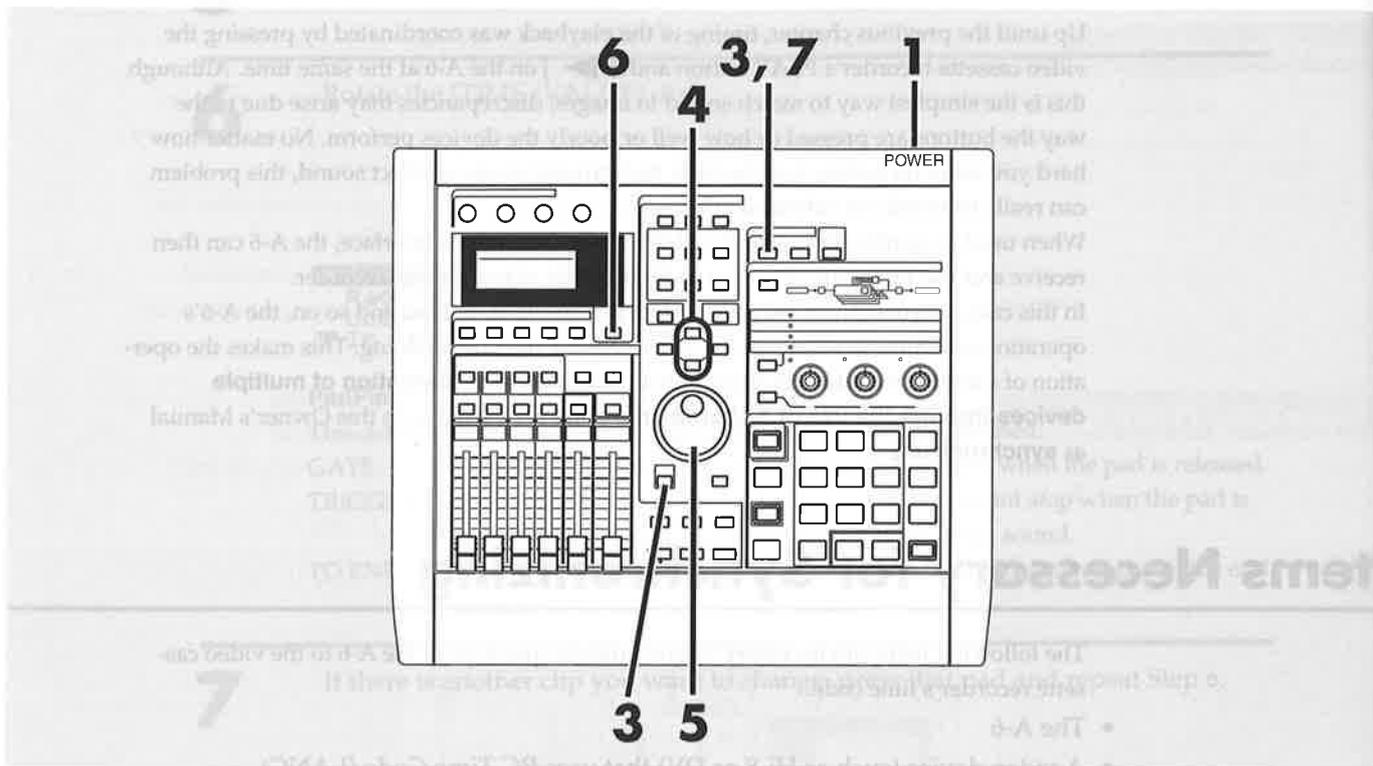
Connecting

Connect each device as shown below, then referring to the owner's manuals for your video equipment and the SI-80S.

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



Synchronizing Playback



- 1** Turn on the power for each device.
- 2** Match the SI-80S's time code type to the time code type used by the video cassette recorder. Do this with the SI-80S's [SELECT].

NTSC Format Time Code

NTSC format video devices generally use the following the type of time code. You should use this as your reference when setting the time code type.

? *NTSC Format (p.164)*

- Hi-8: 29.97 NDF (Non-Drop Frame)
- MiniDV: 29.97 DF (Drop Frame)
- DVCAM: 29.97DF or 29.97NDF (Switchable)

- 3** While holding down [SHIFT], press [SET UP (AUTO)].

- 4** Press [▲] or [▼] until "MTC Type" is highlighted in the display.

```

SYNC SETUP
SyncSource
MTC Type
▼ MMC Mode
Rx: ???
INTERNAL
29.970
MASTER

```

Highlighted Display

- 5** Rotate the [TIME/VALUE] dial.

MTC Type

You can select from five time codes for the A-6 (30, 29.97N, 29.97D, 25, 24). Set this to match the time code type used by the video cassette recorder and SI-80S.

- 6** Press [DISPLAY (HOME)] one or more times until the Big Time Code screen appears in the display.

```

HOUR MIN. SEC. FRAME
00:00:00:00

```

- 7** Make sure that [AUTO (SET UP)] button is lit. If not, press [AUTO (SET UP)].

- 8** Display the video cassette recorder's time code on the monitor screen (TV).

- 9** Press the PLAY button on the video cassette recorder. Playback on the A-6 begins at the same time playback begins on the video cassette recorder. Check to make sure that the video time code shown on the video cassette recorder's screen is the same as that appearing in the A-6's display.

- 10** Press the video cassette recorder's STOP button. The A-6 stops along with the video.

When Using a Sony Video Cassette Recorder

If you are using a Sony video cassette recorder, **set the video cassette recorder's LANC setting to "Slave"** so that the time code can be transmitted. This setting is unnecessary when using a video camera. For instructions on how to make this setting, please refer to the owner's manual for your particular device.

Synchronizing Recording

An Overview of the Process of Creating Sounds

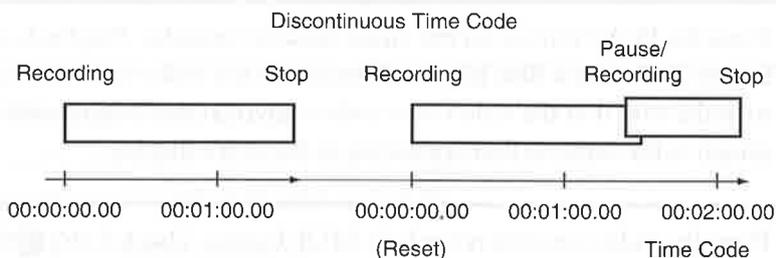
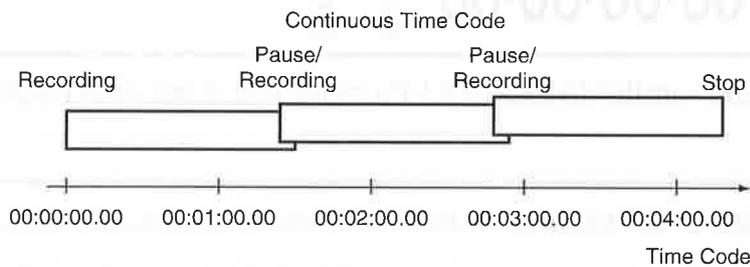
The following describes the general process of creating sounds for edited video tape.

1. Complete editing of the images.
2. Connect the video cassette recorder and the A-6 (including the SI-80S).
3. Record the sound on the videotape (simultaneously recorded with the images) to the A-6 (to the VCR track or other track).
4. Record effect sounds and background music to the A-6.
5. Adjust the timing and volume balance, then complete editing of the sound.
6. Combine the images from the videotape and the sound from the A-6 to create the master tape.

Before Recording

For the video cassette recorder and the A-6 to be synchronized, the time code recorded on the videotape must be continuous. First complete editing of the video images beforehand, then make a master tape that contains continuous time code.

On many consumer video cassette recorders, the time code is automatically continued even with repeated switching between record and pause. However, if the power to the video cassette recorder is cut during editing, or if images are recorded with blank space inserted between them, the time code may be reset.



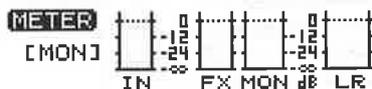
If it happens that the time code is reset, then one or more portions on that one tape will have the same time code recorded to them. In such instances, since the A-6 cannot distinguish the time code it should be following, accurate synchronization cannot be achieved. If necessary, make another copy of the edited tape.

Video Production Hints

- The time code may be unstable at the beginning of the tape or at points on the tape just after recording is begun. Thus, it is a good idea to leave a little space blank for the first few seconds, thus making the recording slightly longer.
- In order to ensure continuous time code for recording, be sure that preceding portions containing recorded images are rewind precisely to their beginnings. You can make sure the time code is continuous by rewinding several frames from that position, then while the final portion of the preceding images are visible in the monitor, pressing the RECORD button.
- For the reasons cited above, we recommend that you also leave a little extra space the end of shooting, making the portion somewhat longer.

Recording the Video Sound (VCR)

- 1 Connect the video cassette recorder's audio output connector to one of the input connectors (VCR or other) on the A-6.
- 2 Determine the track to be used for recording. Press [STATUS] for the track onto which you want the sounds recorded. The button blinks red.
- 3 Position the fader for the recording track at around 0 dB.
- 4 Raise the [MASTER] fader to a suitable level.
- 5 Press [DISPLAY (HOME)] one or more times until "METER MON" is appears in the display.



- 6 Press the PLAY button on the video cassette recorder. While confirming that the sound recorded with the video can be heard, adjust the [VCR] [INPUT MIXER] knob so that the Level meter indicating this signal remains at as high a level as possible without going over the dotted line at the top of the screen.
- 7 Stop the video, and move to the beginning of the segment you want to record.
- 8 Press the A-6's [●] (REC). The button blinks red.
- 9 Press the video cassette recorder's PLAY button. Recording that is automatically synchronized to the images then begins.
- 10 When the recording is finished, press the video cassette recorder's STOP button.

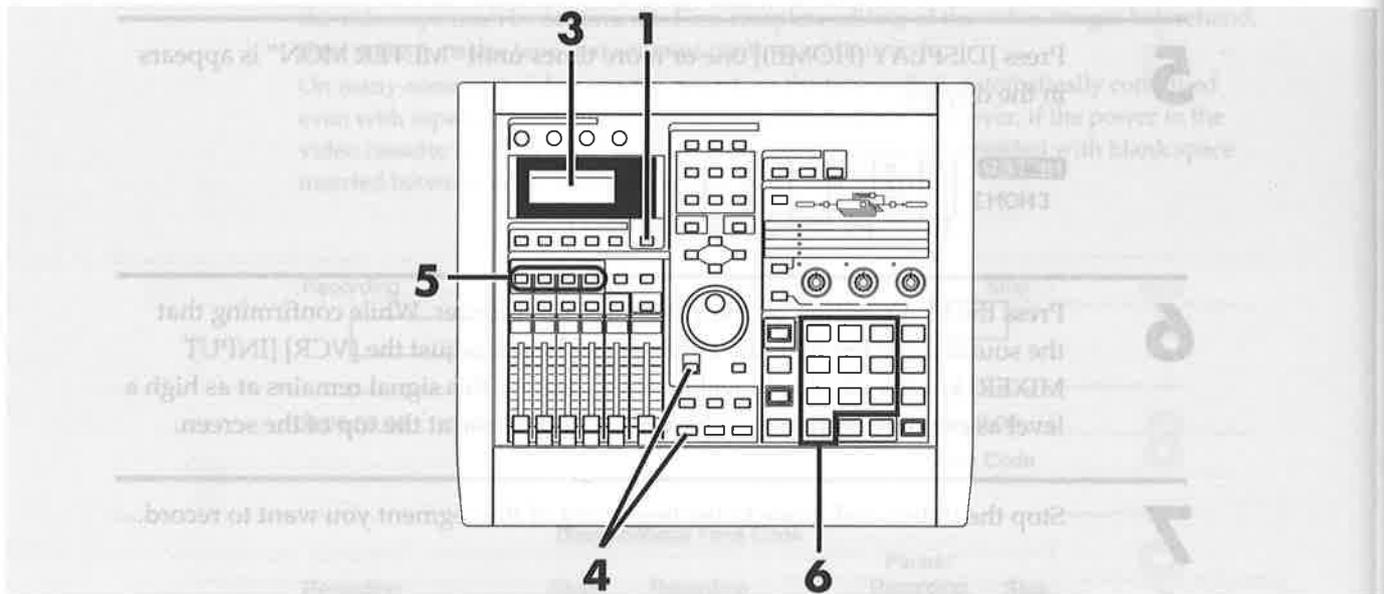
Recording by Pressing the Pads One at a Time (STEP REC)

With the A-6, you can take the sounds played when you press the pads and then paste them to the tracks, all while the project is stopped (rather than while being played back). This is referred to as **Step Recording (STEP REC)**.

For example, when recording a number of background music, effect sound, narration, or other clips, all within a short time, pressing the pads in real time can pose a big problem. Furthermore, if you want to add an effect sound at the exact moment a particular scene change occurs, then there is a good chance that, if you try this with Track Recording, the timing will be off slightly. STEP REC is a convenient function in these and similar situations.

Track Recording and STEP REC

In STEP REC, only the timing with which the pads are pressed and released is recorded to the tracks. The sounds themselves are not recorded to the tracks each time the pads are pressed. Thus, no additional space on the hard disk is used up.



- 1** Press [DISPLAY (HOME)] to display the Playlist screen.
- 2** Play back the video, and pause at the point where you want to record. If necessary, you can use the jog dial or other means to display the exact image to which you want to record.
- 3** Look at the A-6's display to confirm that the video's time code matches that of the A-6.
- 4** While holding down [SHIFT], press [■] (STEP REC).
- 5** Press [STATUS] for the track to which you want to record. The button blinks red.
- 6** Press the pad. The clip is recorded to the track, and the Playlist screen reappears in the display.
- 7** Rewind the video a few seconds and then play it back. Confirm that the clip has been recorded.

Adjusting the Length of Recorded Clips

You can predetermine the length of a clip before recording it.

- 1 While holding down [SHIFT], press [■] (STEP REC).
- 2 Press [▲] until "Length" is highlighted in the display.
- 3 Rotate the [TIME/VALUE] dial.



Length

This determines the length of the clip to be recorded.

PAD: The length of the clip recorded is the same as the length of the clip assigned to the pad.

GATE: The clip is recorded only for the duration the pad is pressed.

1-59 sec: The clip is recorded for the designated length of time (1-59 seconds).

1-10 min: The clip is recorded for the designated length of time (1-10 minutes).

- 4 Check the results of the pasting.

Pad Operation with "Length" Set to "GATE"

Depending on the "PadPlay" setting (p.52) for the pad to which it is assigned, the clip you want to record may behave differently than when played by pressing the pad. One could say that the duration of a sound becomes the length of the recorded clip.

When "PadPlay" is set to "GATE": The clip plays from the time the pad is pressed to when it is released.

When "PadPlay" is set to "TRIG": The clip plays from the time the pad is pressed to when it is pressed again. However, when "Loop" (p.89) is set to "Off," the clip plays from the time the pad is pressed all the way until the sound stops playing.

When "PadPlay" is set to "END": The clip plays from the time the pad is pressed up until the point where the sound stops playing.

Synchronizing an Image with the End of a Clip

There may be times, for example, when you want to have an effect sound finish playing at the end of a scene, as the words "The End" are superimposed on the screen. In instances such as this, you can use STEP REC to time it so that the end of the clip is matched to the image.

1 While holding down [SHIFT], press [] (STEP REC).

2 Press [] until "Type" is highlighted in the display.

3 Rotate the [TIME/VALUE] dial.



Highlighted Display

Type

When "IN" is selected, the clip is recorded so that the beginning of the clip occurs at the current time location.

When "OUT" is selected, the clip is recorded so that the end of the clip comes at the current time location.

4 Record and check the results of the recording.

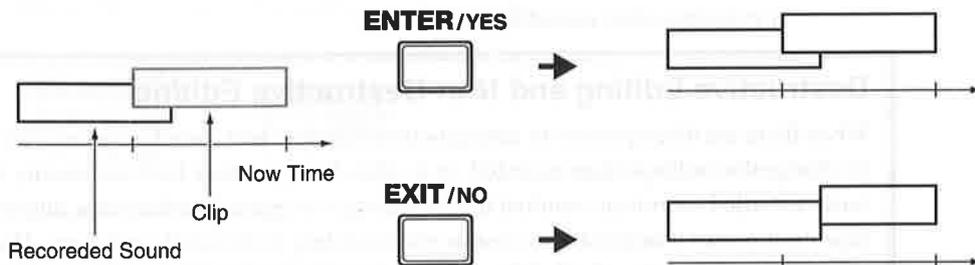
When Clips Overlap with Other Sounds

The following warnings appear in the display whenever the clip you are attempting to record is about to overlap any existing sound that comes before or after it. However, these warnings are not displayed if the something is recorded at the current location on the track to which you want to record the clip.

When "Type" is set to "IN," if the end of the clip being recorded will overlap with the sound that comes after it:



When "Type" is set to "OUT," if the beginning of the clip being recorded will overlap with the sound that comes before it:



Pressing [YES (ENTER)] causes the preceding or following sound is overwritten by the recorded clip. When you press [NO (EXIT)], the clip is recorded only to that portion of the segment that does not cause the preceding or following sound to be overwritten.

Chapter 6 Edit the Recording

A Note About Editing Audio

After recording the clips and arranging them on the tracks, you can move them so that they play elsewhere in the project, copy and paste them to other locations, and delete them as well. This allows easy editing of projects, such as when you want to have an effect sound or background music timed precisely with an image, or if you want to re-edit a videotape after recording to the A-6.

Destructive Editing and Non-Destructive Editing

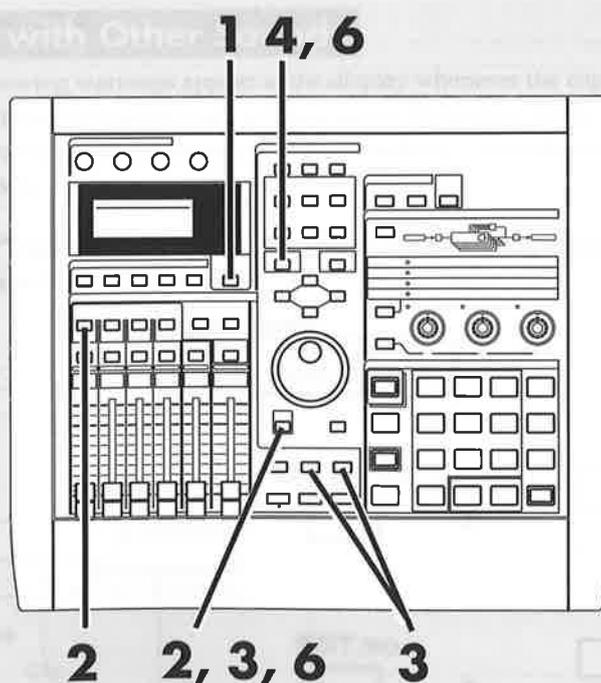
When there are discrepancies in timing between images and sound, or when you want to correct or change the audio portion recorded on a video, then you may find it necessary to delete previously recorded sounds or conduct the recording over again. In either case, altering the original tape itself makes it impossible to restore the recording to its initial conditions. This method of editing is known as **destructive editing**.

Conversely, the A-6 saves sounds to the disk just as they are, and the sounds (clips) are then played as needed by pasting them to the tracks. This lets you easily get the timing between sounds and images right merely by adjusting the point at which the clip is played. Since no changes are made to the original sounds, then even if you think you have a failure on your hands, you can go back and repeat the editing process as many times as you like. This method of editing is referred to as **non-destructive editing**.

Determining the Range to Be Edited

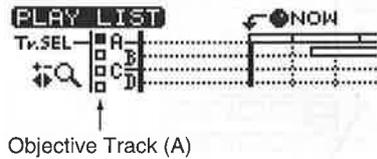
Before editing, first determine the clip you want to work on and specify the range, or "region" to be edited within that clip.

Selecting the Clip for Editing



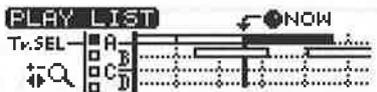
1 Press [DISPLAY (HOME)] one or more times until "PLAYLIST" appears in the display.

2 While holding down [SHIFT], press [SELECT (STATUS)] for the track (A-D) on which the clip you want to edit is recorded. The "Tr.Sel" block is displayed in black, indicating the selection of that track.



3 While holding down [SHIFT], press [PREVIOUS (◀◀)] or [NEXT (▶▶)] to call up the start or end of each clip on the track. Call up the start of the clip you want to edit.

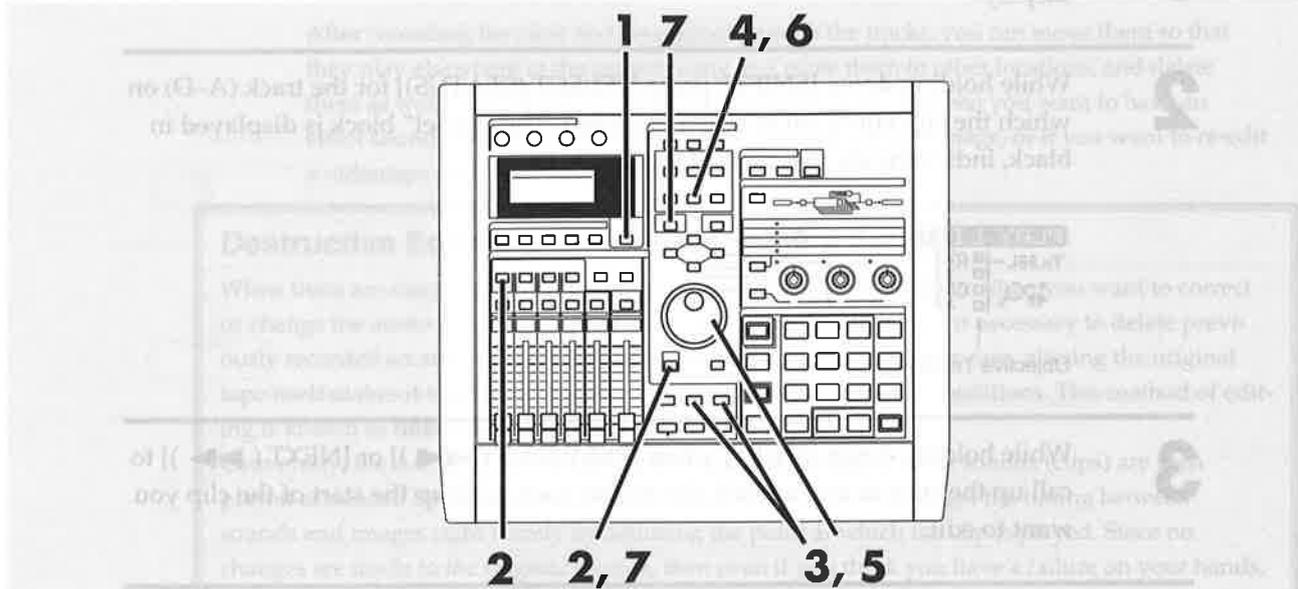
4 Press [MARK ON]. The selected clip is displayed in black.



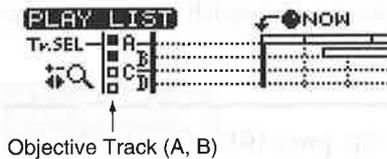
5 You can select two or more clips simultaneously. In such instances, repeat Steps 2-4.

6 If you want to select a different clip, press [REGION/MARK CLEAR (EXIT/NO)] while holding down [SHIFT], then repeat the procedure from Step 1.

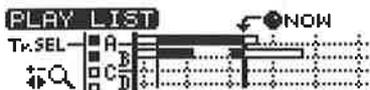
Selecting the Range to Be Edited



- 1** Press [DISPLAY (HOME)] one or more times until "PLAYLIST" appears in the display.
- 2** While holding down [SHIFT], press [SELECT (STATUS)] for the track (A–D) on which the clip you want to edit is recorded. The "Tr.Sel" block is displayed in black, indicating the selection of that track.



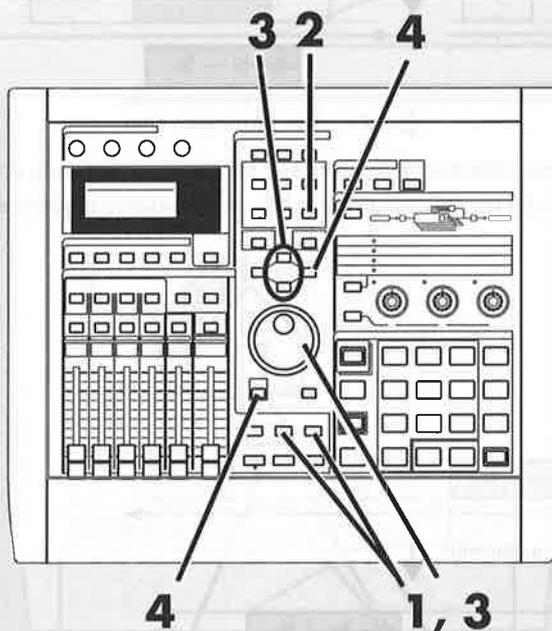
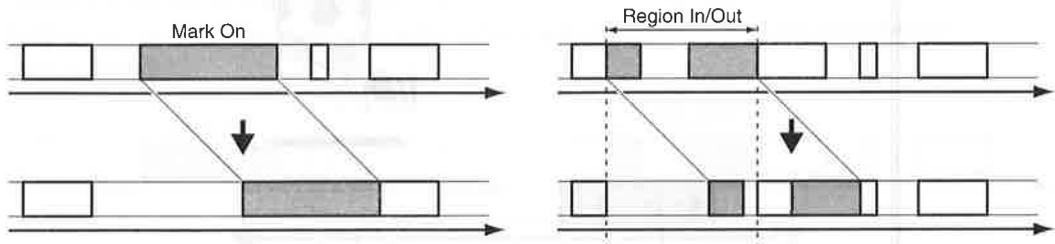
- 3** Call up the beginning point of the region to be edited. You can do this a number of ways, for example by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial.
- 4** Press [REGION IN/OUT].
- 5** Call up the end point of the region to be edited. Again, you can do this a number of ways, such as by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial.
- 6** Press [REGION IN/OUT] once more. The clip containing the selected region is displayed in black. By holding down [SHIFT] while pressing [ZERO TO END (REGION IN/OUT)] in Step 4, you can select the entire clip, from beginning to end, as the region targeted for editing.



- 7** If you want to reselect the region, press [MARKER CLEAR (EXIT/NO)] while holding down [SHIFT], then repeat the procedure from Step 1.

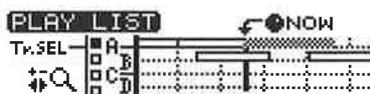
Moving ([MOVE])

You can reposition clips or specified portions of clips at other points (or tracks) in a Project, allowing you to correct poor timing between the images and sound. Carry out this procedure after first specifying the clip or region to be moved.



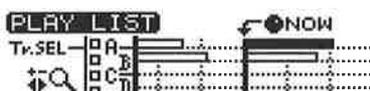
1 Call up the time location to be used as the move source reference by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial.

2 Press [DRAG]. The clip or selected region is indicated by a dotted line.



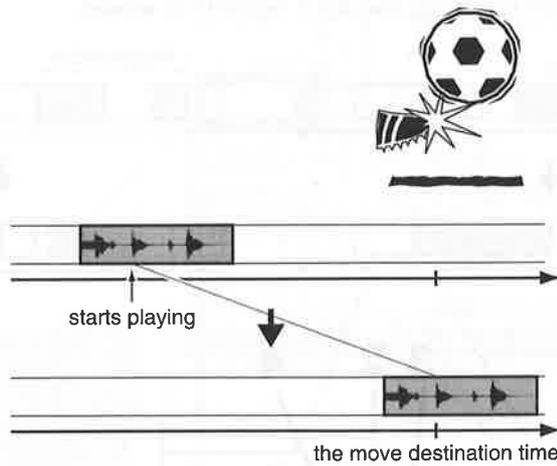
3 Call up the location to be used as the move destination by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial. You can select the track containing the paste destination by pressing [▲] or [▼].

4 While holding down [SHIFT], press [MOVE (▶)]. Confirm that the clip or specified region was indeed moved.

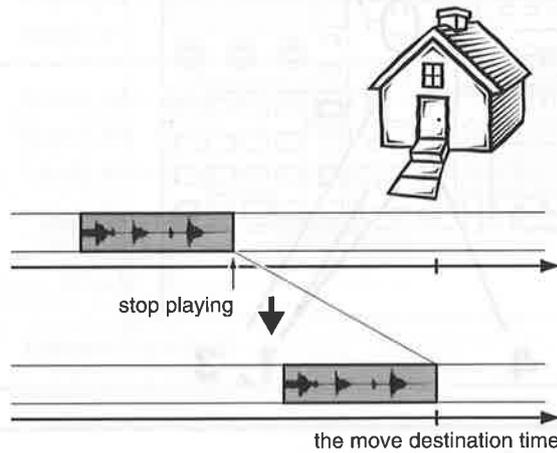


Move Reference Location

As an example, if you want to add an effect sound at the exact moment a ball is kicked, then you can make the instant the sound starts be the reference point for the move source.

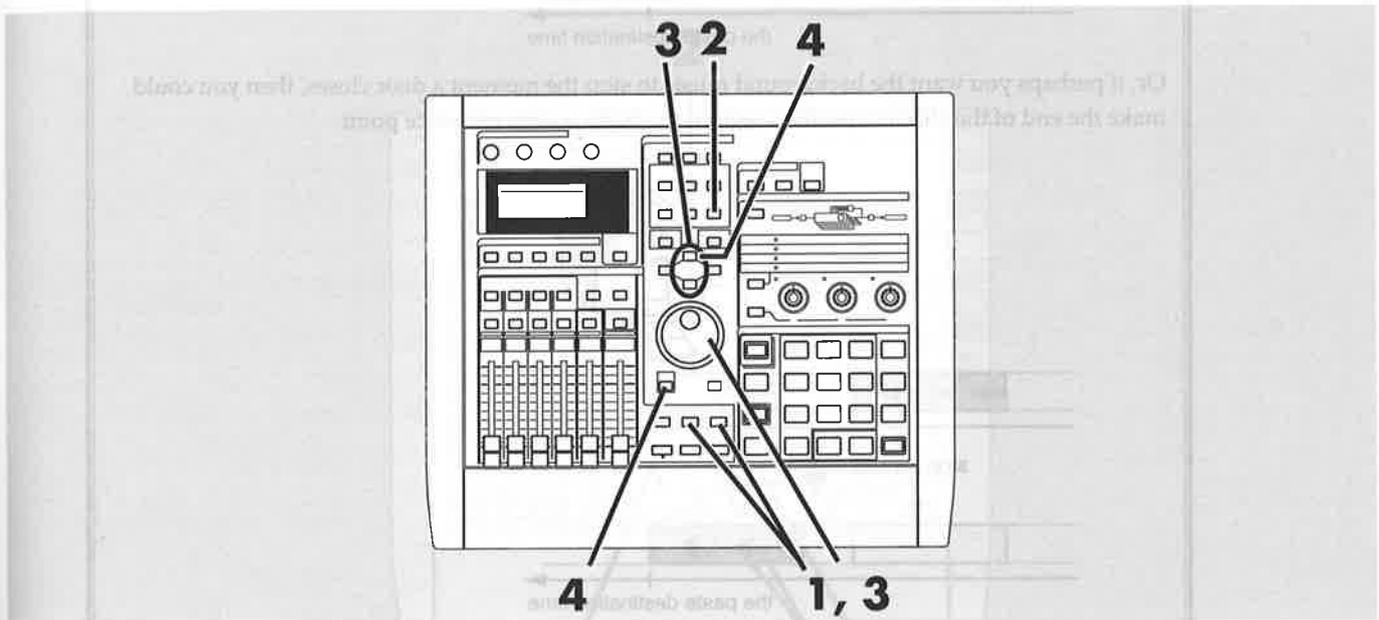
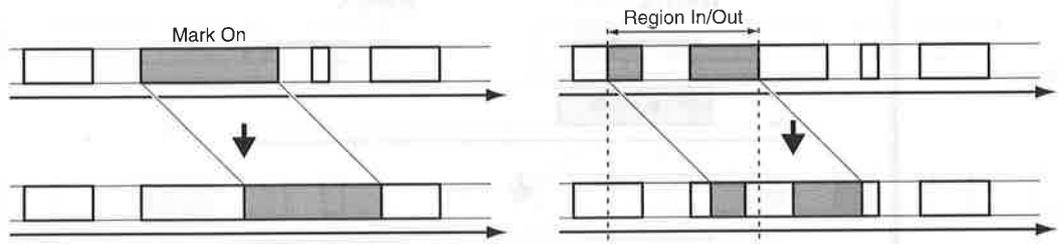


Or, if perhaps you want the background music to stop the moment a door closes, then you could make the end of the clip (or specified region) the move source reference point.



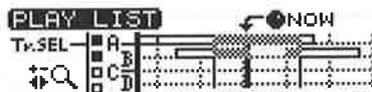
Pasting to a Different Location ([PASTE])

You can paste clips or specified regions of clips to other points (or tracks) in a Project. This is convenient when you want a certain effect sound or background music to be repeated, and is useful for other applications as well. Carry out this procedure after first specifying the clip or region to be pasted. In this case, any sounds already recorded at the paste destination are overwritten by the pasted sounds.



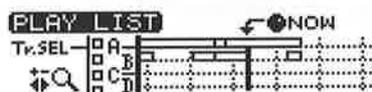
1 Call up the time location to be used as the paste source reference by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial.

2 Press [DRAG]. The clip or selected region is indicated by a dotted line.



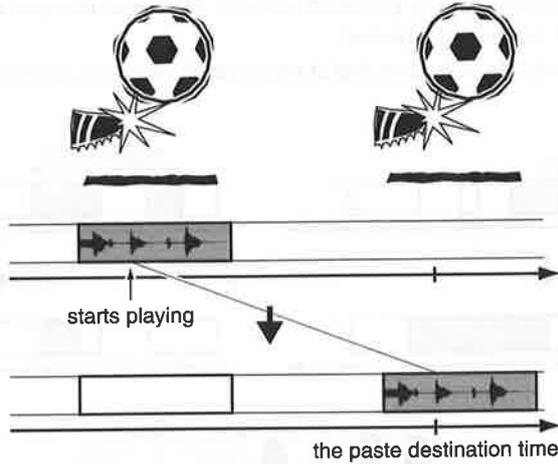
3 Call up the location to be used as the paste destination by pressing [◀◀ (REW)] or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial. You can select the track for the paste destination by pressing [▲] or [▼].

4 While holding down [SHIFT], press [PASTE (▲)]. Confirm that the clip or specified region was indeed pasted.

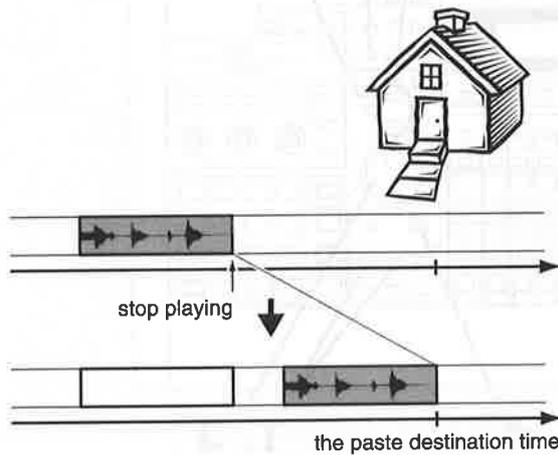


Paste Reference Location

As an example, if you want to add an effect sound at the exact moment a ball is kicked, then you can make the instant the sound starts be the reference point for the paste source.

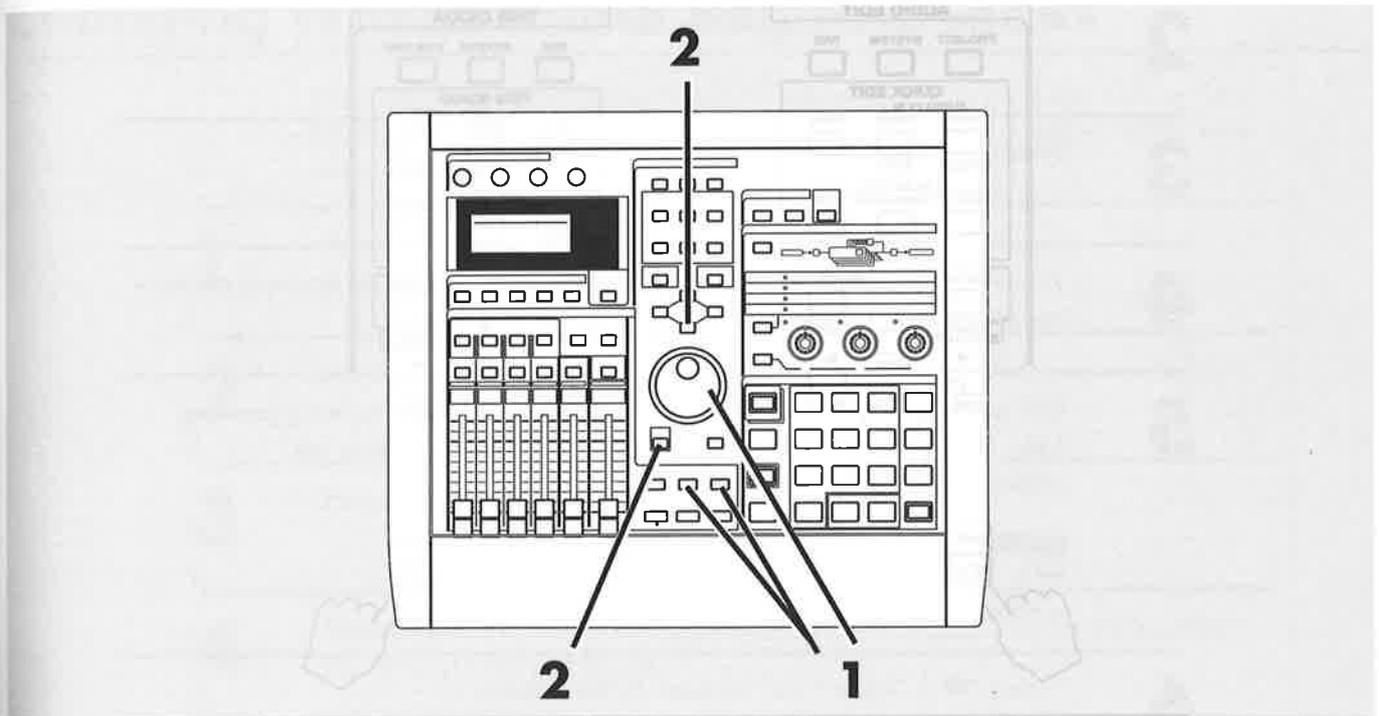
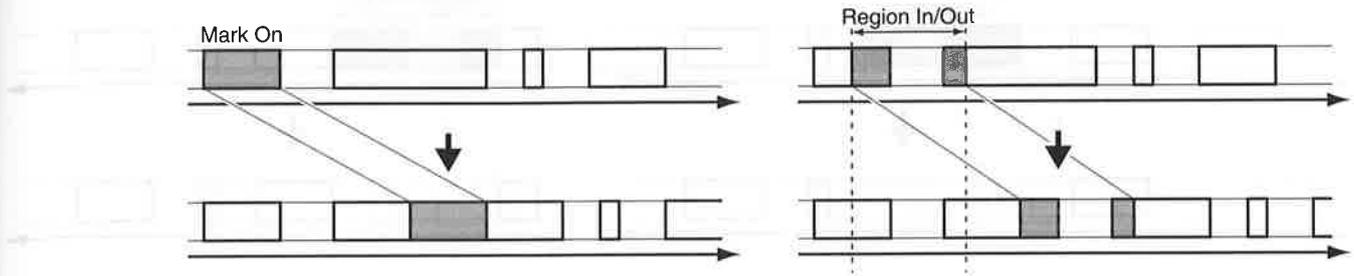


Or, if perhaps you want the background music to stop the moment a door closes, then you could make the end of the clip (or specified region) the paste source reference point.



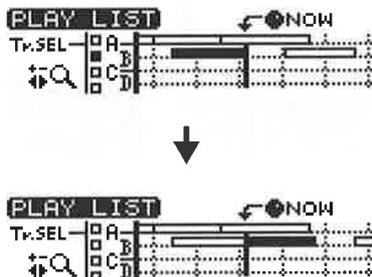
Inserting at a Different Location ([INSERT])

You can paste clips or specified regions of clips to other points in a Project. This is convenient if, for example, you want a certain effect sound or background music to be played repeatedly. Carry out this procedure after first specifying the clip or region to be pasted. In this case, any sounds already recorded at location or track acting as the paste destination are only moved back by the length of the pasted sounds.



1 Press [◀◀ (REW)] or [▶▶ (FF)] or rotate the [TIME/VALUE] dial to call up the location of the insert destination.

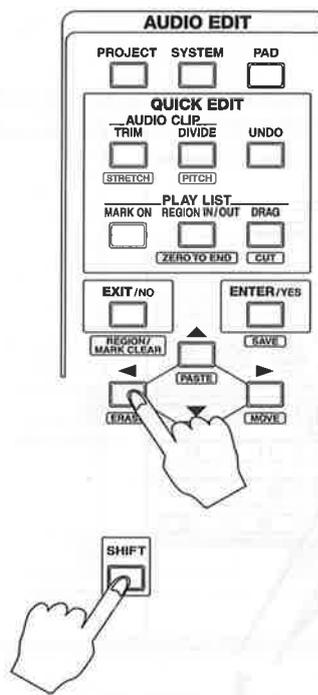
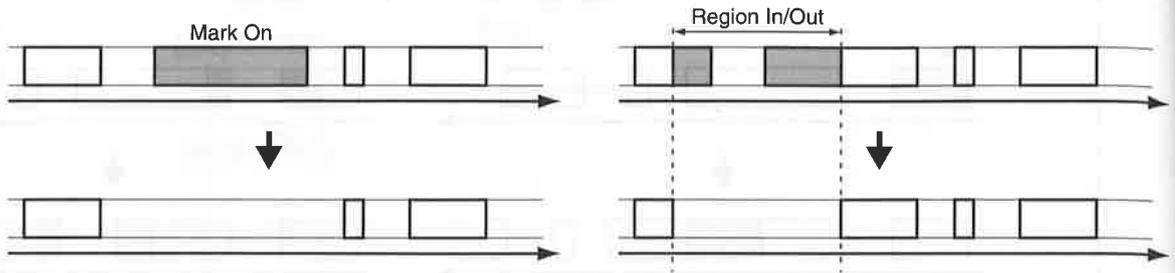
2 While holding down [SHIFT], press [INSERT (▼)]. Confirm that the clip or specified region has been inserted.



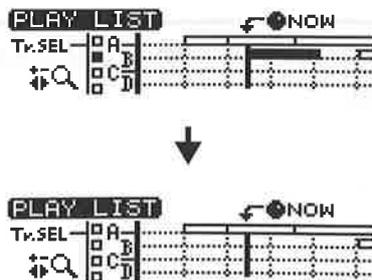
Erasing ([ERASE])

You can erase clips or specified regions of clips. Carry out this procedure after first specifying the clip or region to be deleted.

Erased clips or specified regions of a clips become silent. Any other existing clips recorded after the silent segment remain where they are, and are not moved forward.



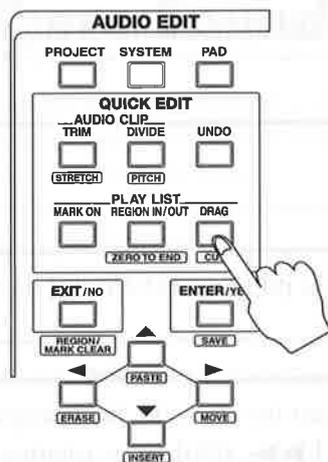
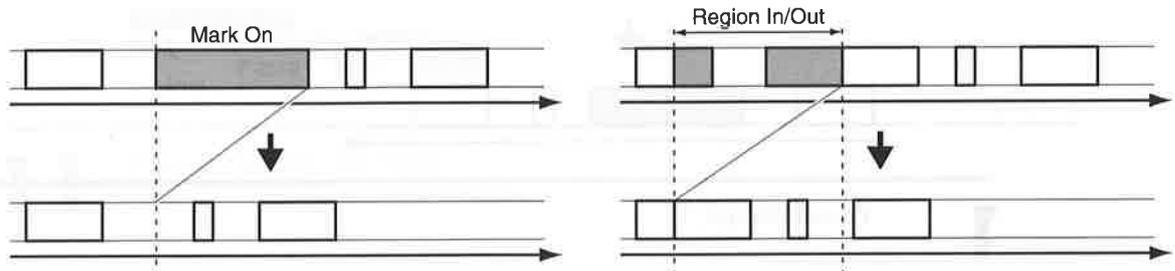
- 1 While holding down [SHIFT], press [ERASE (◀)]. Confirm that the clip or specified region has been erased.



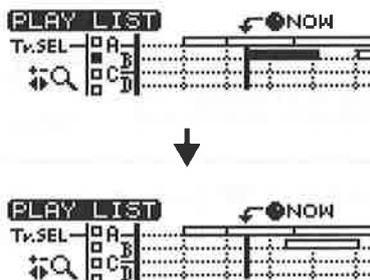
Cutting ([CUT])

You can cut clips or specified regions of clips as well. Carry out this procedure after first specifying the clip or region to be deleted.

When clips or specified regions of a clips are cut, the clips that follow are then moved forward.

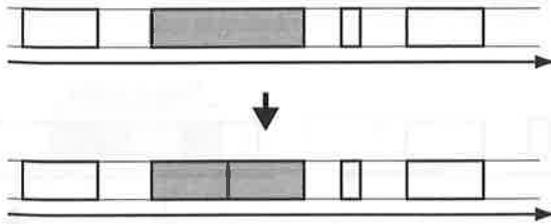


- 1 While holding down [SHIFT], press [CUT (DRAG)]. Confirm that the clip or specified region has been deleted.



Splitting Clips (SPLIT)

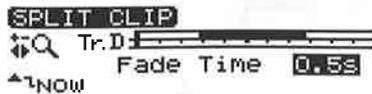
You can also divide a specified clip. This is convenient in such situations as when you want to divide continuous narration on a track and extract only the necessary part.



- 1** Press [PROJECT].
- 2** Press [▼] until "Split Clip?" is highlighted in the display.
- 3** Press [ENTER/YES].
- 4** While holding down [SHIFT], press [SELECT (STATUS)] for the track containing the clip you want to split.
- 5** Call up the location where you want the clip split, for example by pressing [▶ (PLAY)], [◀◀ (REW)], or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial. The split clip is displayed in black.



- 6** Press [▼]. "Fade Time" appears in the display.
- 7** Rotate the [TIME/VALUE] dial.



FadeTime

This sets the amount of time (OFF, 0.1–16s seconds) used for fading into or out of the split clip.

- 8** Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.

9 Press [ENTER/YES] once more. The splitting of the clip is executed.

10 After the split is finished, "Complete" appears in the display. Confirm that the clip has been split.

```

SPLIT CLIP
#Q Tr.D:
  Fade Time 0.5S
  NOW
    
```

11 Press [DISPLAY (HOME)].

Changing Where Sound Begins or Ends

When you have an unneeded portion at the beginning or ending of a clip, you can "trim" the clip, or adjust the point at which the sounds in the clip begin or end so that the unnecessary parts are not played.

1 Press [PROJECT].

2 Press [▼] until "Trim Clip?" is highlighted in the display.

3 Press [ENTER/YES].

4 While holding down [SHIFT], press [SELECT (STATUS)] for the track containing the clip you want to trim.

5 Call up the clip you want trim, for example by pressing [◀◀ (REW)], or [▶▶ (FF)], or by rotating the [TIME/VALUE] dial. The clip to be trimmed is displayed in black.

```

TRIM CLIP
#Q Tr.D:
  Trimin 00:01:17:26
  Out 00:01:22:25
  EDIT
  NOW
    
```

6 Press [▲] or [▼] until the value to be adjusted is highlighted in the display.

7 Rotate the [TIME/VALUE] dial.

```
TRIM CLIP
Tr.D:
TrimIn 00:01:17:25
Out 00:01:22:25

TRIM CLIP
Tr.D:
TrimIn 00:01:18:25
Out 00:01:22:25
```

TrimIn

This adjusts the point at which the sounds in the clip begin.

TrimOut

This adjusts the point at which the sounds in the clip end.

Level

This adjust the volume (0-100) of the clip.

FadeIn

This setting determines the amount of time it takes (OFF, 0.1-16 seconds) the clip volume to change from zero to the volume set in the "Level." No fade-in is made when set to "OFF."

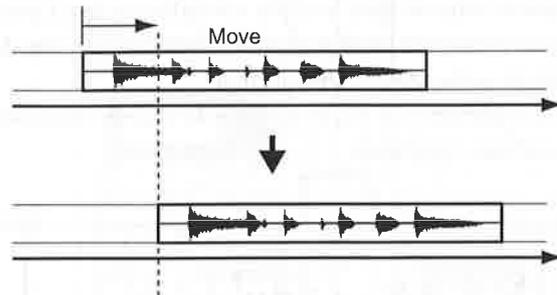
FadeOut

This setting determines the amount of time it takes (OFF, 0.1-16 seconds) the clip volume to change from the volume set in the "Level" to zero. No fade-out is made when set to "OFF."

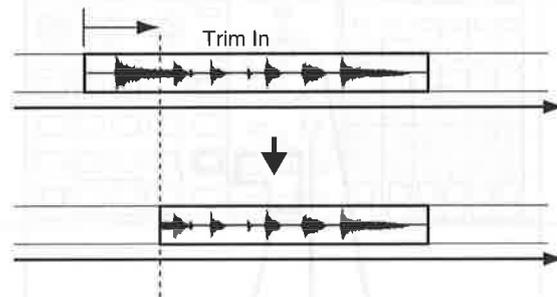
8 Press [DISPLAY (HOME)].

The Difference Between Move and Trim In/Trim Out

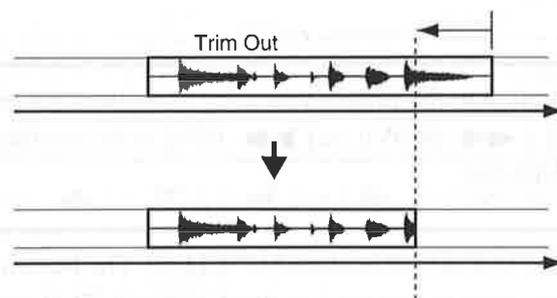
Move: Although the location where the clip begins to play is changed, the relationship between the start and end positions of the clip itself remain unchanged.



Trim In: This also changes the starting point of the clip itself while changing the location where the clip begins to play.



Trim Out: This also changes the ending position of the clip itself while changing the location where the clip stops playing.

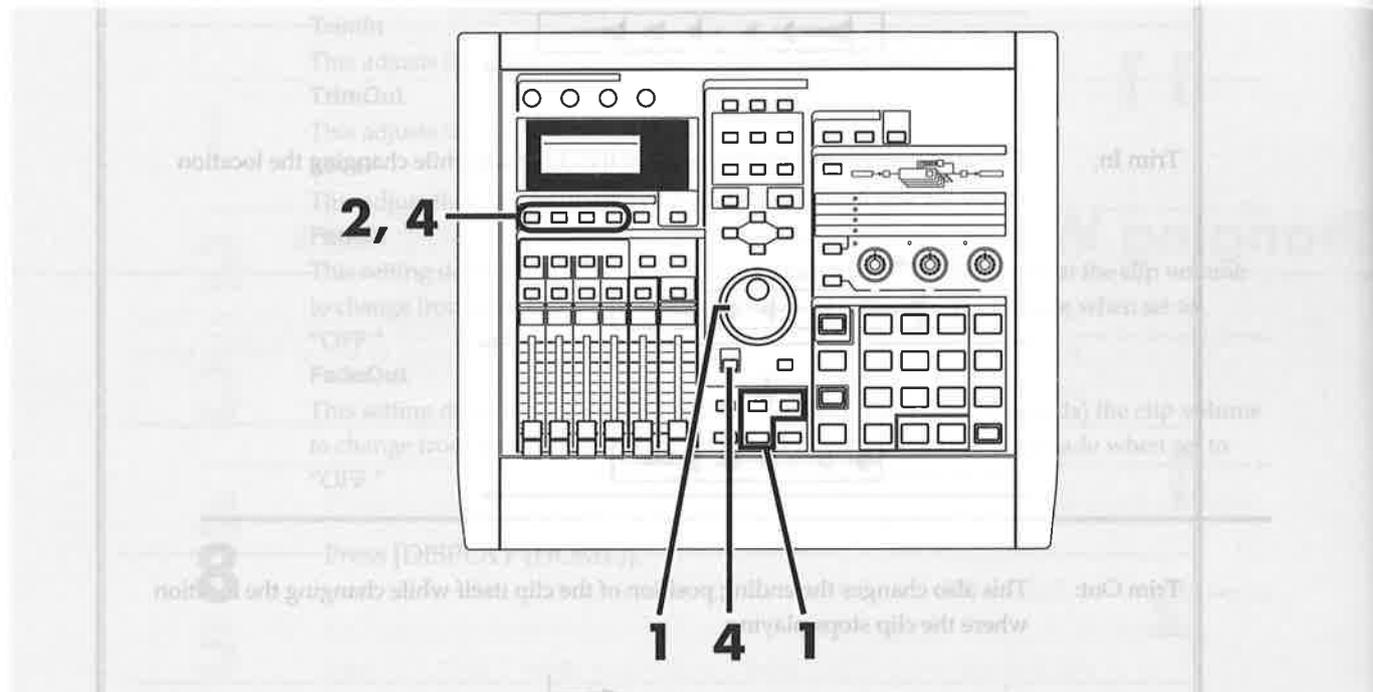


Chapter 7 Make a Master Tape

Registering and Calling Up Time Locations

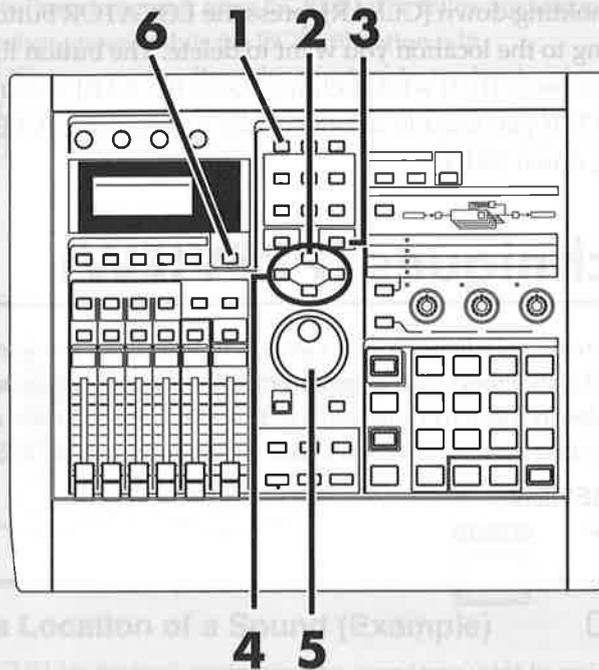
On the A-6, you can register points in a Project to mark where you want to listen to something again or if you want to record over. Unlike with a tape recorder, you can instantly call up these locations with no time used for rewinding or fast forwarding. This function, which by calling up registered locations instantly takes you to the desired point in the project, is referred to as the **LOCATOR** function.

The following is an explanation of the procedures to register locations and then to call up locations that have been registered.

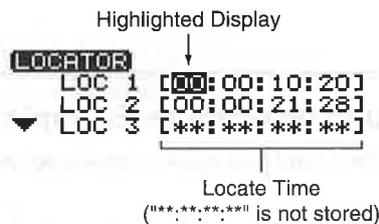


- 1** Call up the location in the project you want to register, for example by pressing [▶] (PLAY), [◀◀] (REW), or [▶▶] (FF), or by rotating the [TIME/VALUE] dial.
- 2** Press one of the LOCATOR buttons [1/5]–[4/8]. The button lights up. For example, if you want to register Locator 1, press [1/5]. If you want to register Locator 5, then press [1/5] while holding down [SHIFT].
- 3** When you want to register a number of locations in the project, then simply repeat Steps 1 and 2.
- 4** To move a registered location, press the LOCATOR buttons [1/5]–[4/8] (those that are lit) once more. For example, when moving to the location registered to Locator 1, press [1/5]. If you want to move to the location registered to Locator 5, then press [1/5] while holding down [SHIFT].
- 5** Registered locators are lost when the power is cut or turned off. Save the Project to the disk (p.40) as needed.

Fine Adjustments to Registered Locations



- 1** Press [PROJECT].
- 2** Press [▲] or [▼] until "Locator?" is highlighted in the display.
- 3** Press [ENTER/YES]. The registered location is displayed.
- 4** Press [▲], [▼], [◀], or [▶] to highlight the fine adjust value in the display.



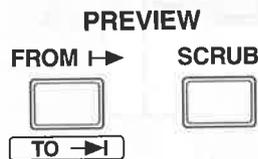
- 5** Rotate the [TIME/VALUE] dial.
- 6** When you are finished with the fine adjustment, press [DISPLAY (HOME)]. The initial screen reappears in the display.
- 7** Save the Project to the disk (p.40) as needed.

Deleting Registered Locations

- 1 While holding down [CLEAR], press the LOCATOR buttons [1/5]–[4/8] corresponding to the location you want to delete. The button light goes off. For example, press [1/5] while holding down [CLEAR] if you want to delete Locator 1. If you want to delete Locator 5, then press [CLEAR] and [1/5] while holding down [SHIFT].

Previewing Techniques (PREVIEW)

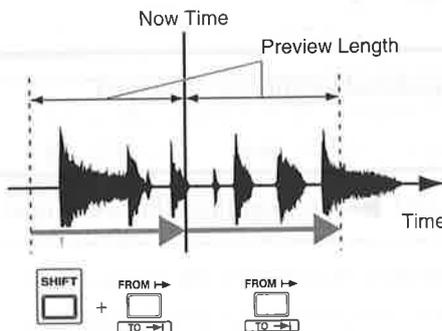
When recording and editing Projects, there will be times when you want to find precise locations to be edited in the Project, such as the starting point of a sound or region to be moved. In such instances, specify a length of time before and after the current location, and then play back the Project, checking the sounds on each track while gradually moving through the specified interval.



Using [FROM (TO)]

You can set the length of playback time for the tracks you want to listen for 1.0–10.0 seconds leading up to or starting from the current time in this project. Press each buttons while the project is stopped.

- [FROM]: Plays back the specified period once starting from the current location
 [SHIFT]+[TO (FROM)]: Plays back the specified period once up to the current location



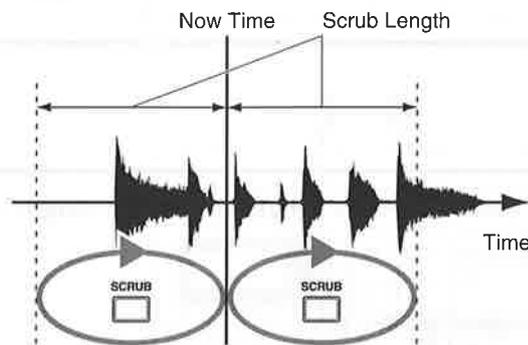
Locating the Beginning of a Sound (Procedure Example)

1. Press [STATUS] for the track containing the sound you want to review several times to let the button lights green.
2. Press [▶] (PLAY).
3. Play back the Project until you reach the location containing the sound you want to check and press [■] (STOP).
4. Alternate between pressing [FROM] and pressing [TO (FROM)] with [SHIFT] held down to see whether the beginning of the sound appears either before or after the current location.
5. If [TO (FROM)] and [SHIFT] are pressed, rotate the [TIME/VALUE] dial until the beginning of the sound can just be heard.
6. If pressing [FROM], then rotate the [TIME/VALUE] dial until you reach the very beginning of the sound.
7. Now the beginning of the sound has been located. To easily find this location later on, register the location with the Locator function (p.76).

Using [SCRUB]

Scrub allows repeated playback of a specified interval (25–100 ms) on a designated track. With the Project stopped, press [SCRUB]. The following buttons function as described below when pressed while the [SCRUB] button is lit.

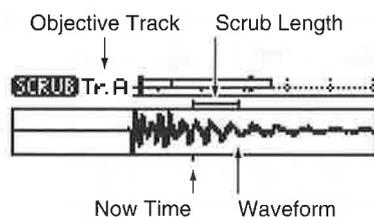
- [STATUS]: Press this to select the track to be played back.
- [FROM]: Press this to repeat playback from the current location.
- [SHIFT] + [TO (FROM)]: Press this to repeat playback up to the current location.



Finding the Location of a Sound (Example)

1. Press [STATUS] for the track containing the sound you want to review several times to let the button lights green.
2. Press [▶] (PLAY).
3. Play back the Project until you reach the location where you want to view and press [■] (STOP).
4. Press [SCRUB]. The button lights, and the designated segment is played back repeatedly. Select the range of the segment to be played back by pressing [FROM] and pressing [TO (FROM)] with [SHIFT] held down.
5. Press [STATUS] of the track on which to run scrub playback.
6. If [TO (FROM)] and [SHIFT] are pressed in Step 4, rotate the [TIME/VALUE] dial until just before the sound becomes audible.

If pressing [FROM], then rotate the [TIME/VALUE] dial until you reach the very beginning of the sound. The change in the sound being played back (the waveform) is shown in the display, making this a good way to determine the beginning of the sound.



7. Now the beginning of the sound has been located. Press [SCRUB] once more; the button light goes off.
8. To easily find this location later on, register the location with the Locator function (p.76).

Changing the Preview Length

- 1 Press [SYSTEM].
- 2 Press [▲] until "Set System Param?" is highlighted in the display.
- 3 Press [ENTER/YES].
- 4 Press [▲] or [▼] until "Preview Length" or "Scrub Length" is highlighted in the display.

Highlighted Display

```

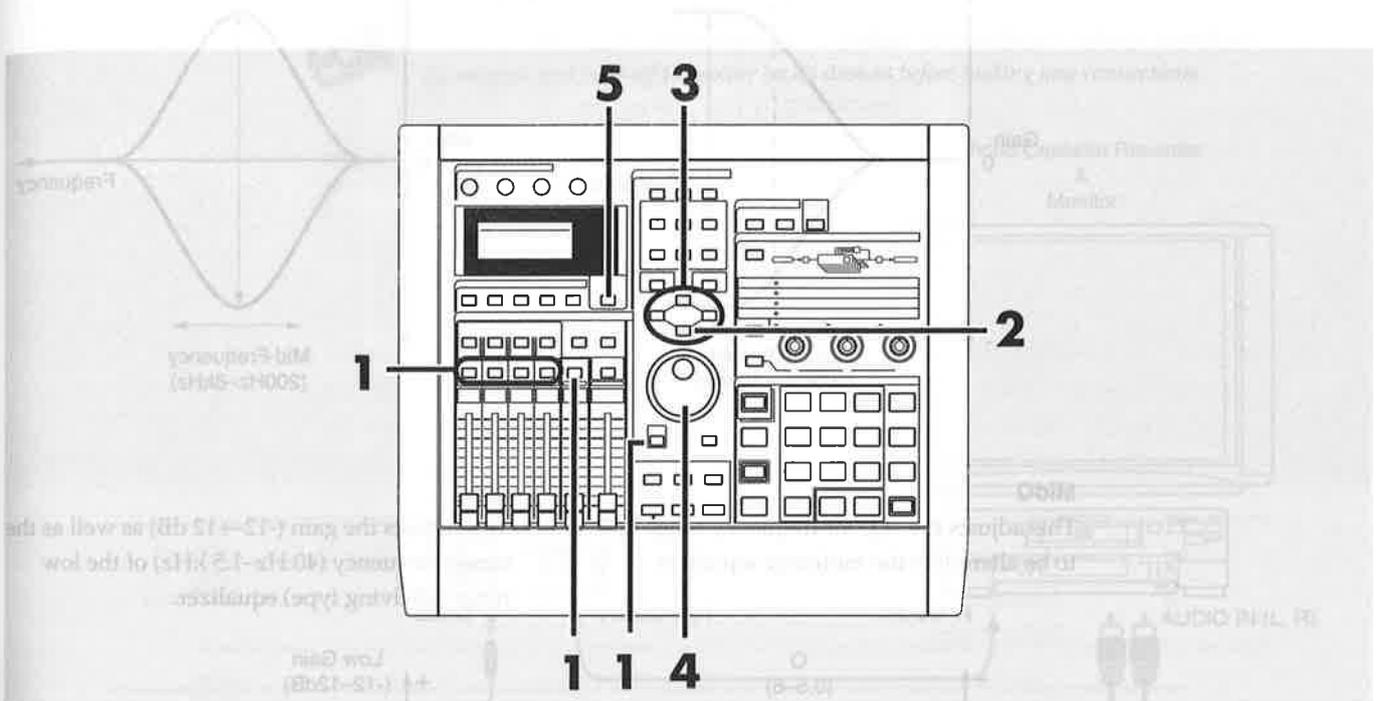
SYSTEM COMMON          TRACK
▲ Mon<PrePunch>
PreviewLength 1.0sec
▼ ScrubLength 45msec
    
```

- 5 Rotate the [TIME/VALUE] dial.
 - PreviewLength**
This sets the playback time (1.0–10.0 seconds) when [FROM] is pressed or when [SHIFT] and [TO] are pressed.
 - ScrubLength**
This sets the playback time (25–100 ms) when [SCRUB] is pressed.
- 6 When the setting is finished, press [DISPLAY (HOME)]. The initial screen reappears in the display.

Adjusting the Tone Quality

Each track features a three-band parametric equalizer (low range, midrange, and high range). Check out the equalizer to adjust the quality of the sound on the tracks. Equalizer adjustments are made to one track at a time.

NOTE When adjusting the equalizer while sounds are being played, you may heard popping or crackling noises. This does not indicate any kind of malfunction. If you find this noise bothersome, then make the equalizer adjustments while no sounds are being played.



1 While holding down [SHIFT], press [EFFECTS] for the track you want to equalize. By holding down [SHIFT] and pressing the pad [EFFECTS], you can adjust the overall equalization of a pad's clip.

2 Press [▼] until "EQ" appears in the display.

3 Press [▲], [▼], [◀], or [▶] until the value to be adjusted is highlighted in the display.

4 Rotate the [TIME/VALUE] dial. The status of the equalizer settings (the curve) is displayed on the screen.



5 When the adjustments are finished, press [DISPLAY (HOME)]. The initial screen reappears in the display.

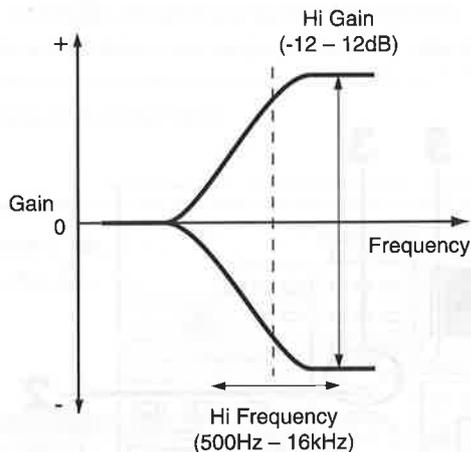
6 Save the Project to the disk (p.40) as needed.

EQ (Equalizer Switch)

This switches the equalizer on and off.

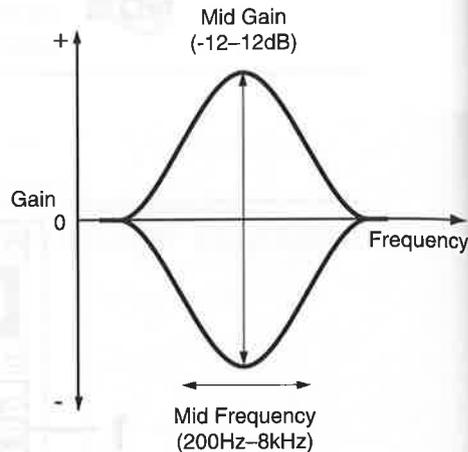
High

This adjusts the gain (-12 to +12 dB) as well as the center frequency (500 Hz to 16 kHz) of the high range (shelving type) equalizer.



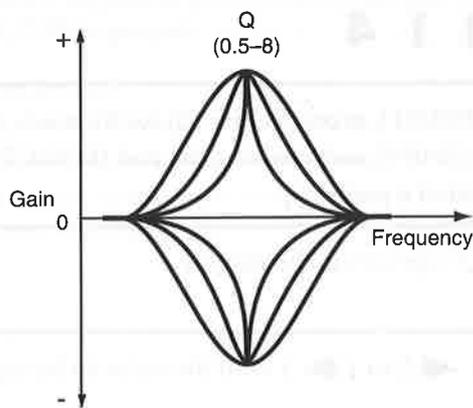
Mid

This adjusts the gain (-12 to +12 dB) as well as the center frequency (200 Hz to 8 kHz) of the midrange (peaking type) equalizer.



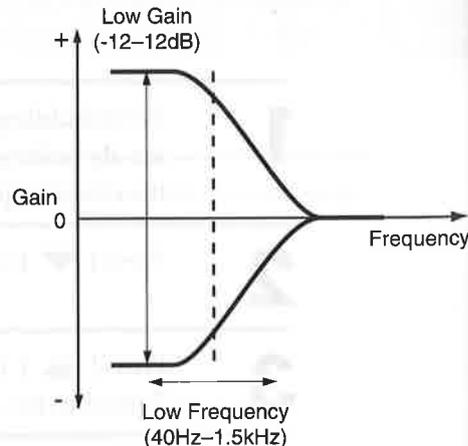
MidQ

This adjusts the "Q," or frequency range (0.5-8) to be altered by the midrange equalizer.



Low

This adjusts the gain (-12 to +12 dB) as well as the center frequency (40 Hz to 1.5 kHz) of the low range (shelving type) equalizer.

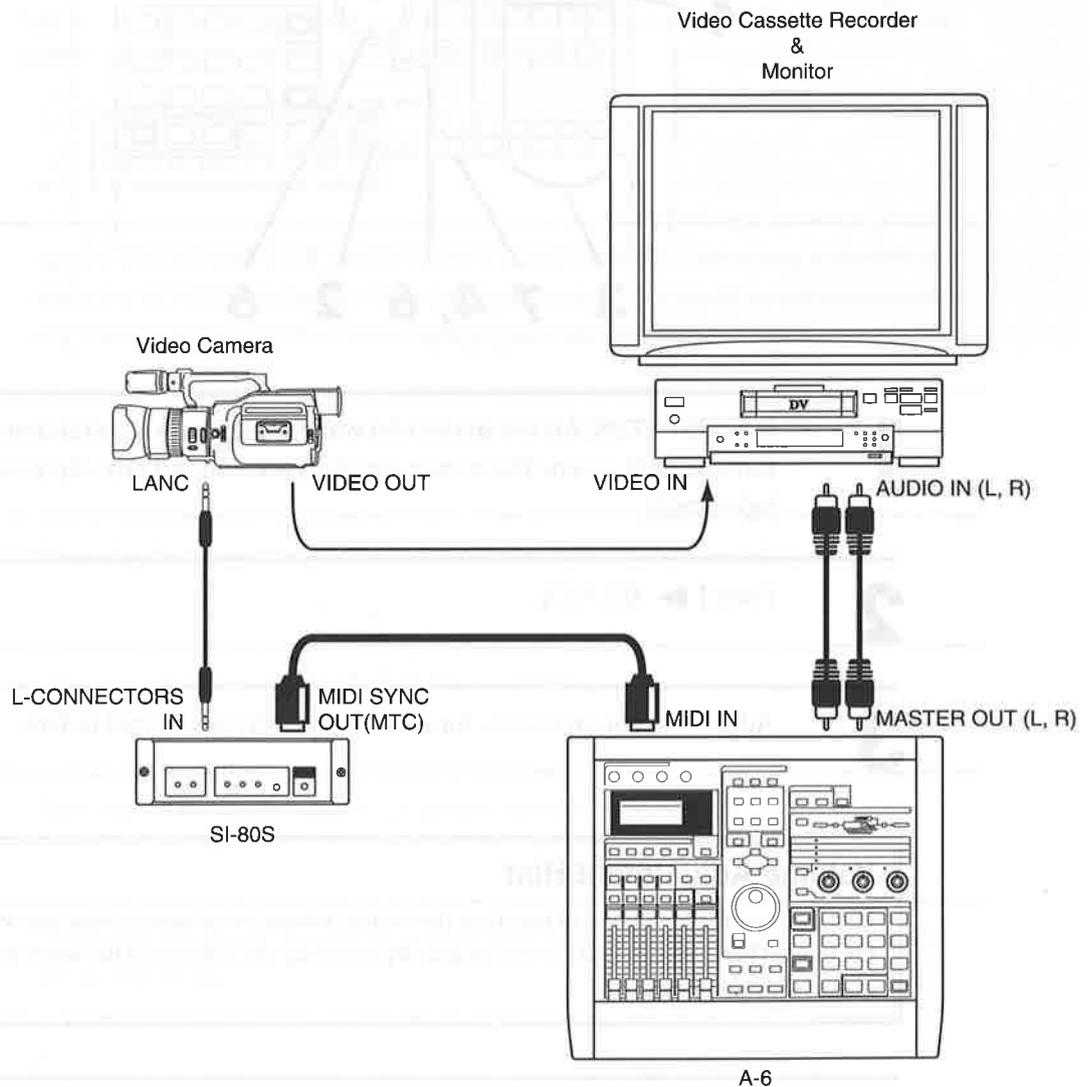


Finishing Up the Project

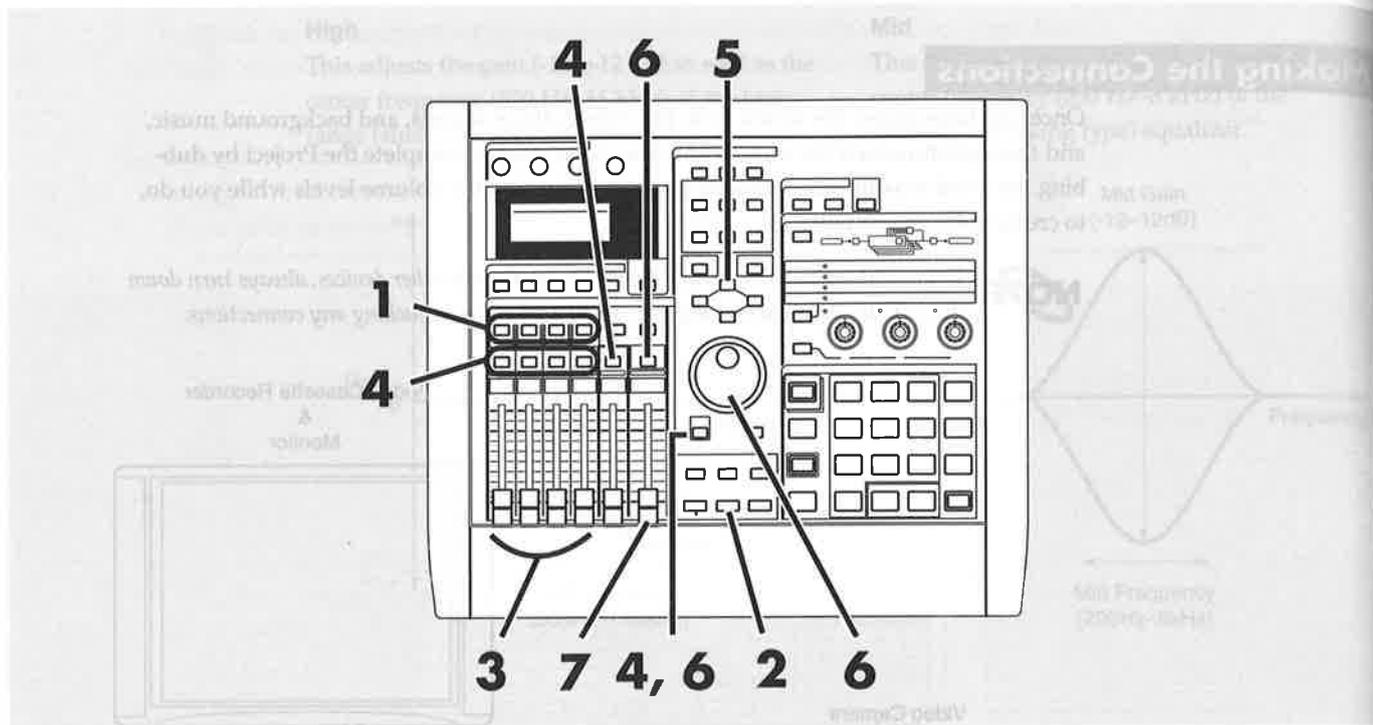
Making the Connections

Once you have added the sound from the video, effects sounds, and background music, and then synchronized the sounds with the video images, complete the Project by dubbing the work to your video cassette recorder, adjusting the volume levels while you do, to create your master tape.

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



Making the Master Tape



1 Press [STATUS] for the tracks you want to play back several times to let the buttons light green. The button for the track without any clip pasted does not light green.

2 Press [▶ (PLAY)].

3 Adjust the volume levels for each track with the channel faders.

Volume Adjustment Hint

First determine the volume of the track (narration, effects, or whatever) that you want to stand out the most. Then you can balance the sounds by lowering the volume of the other tracks relative to that of the main track.

4 If you want to adjust the left-right balance of any track, hold down [SHIFT] and press [EFFECTS] for the track to be adjusted, then carry out Steps 5 and 6. If no adjustment is needed, proceed to Step 7. By holding down [SHIFT] and pressing the pad [EFFECTS], you can adjust the pad's overall left-right balance.

5 Press [▲] until "Balance" is highlighted in the display.

6 Rotate the [TIME/VALUE] dial.



You can check the volume and left-right balance of the tracks or pads by holding down [SHIFT] and pressing [MIX COMMON (V-TRACK)].



7 Adjust the volume level on the video cassette recorder. Raise the A-6's volume with the MASTER faders so that the signal as high as possible without exceeding the input limit of the video cassette recorder (without causing distortion).

8 Put the video cassette recorder for recording in record mode.

9 Press the PLAY button on the playback device (video camera).

10 When recording is finished, stop the recorder.

11 Press the STOP button on the playback device (video camera).

12 Check the results of the dubbing. Rewind the playback device and play back the dubbed tape.

When the Timing of the Images and Sound Don't Match

If the A-6 is stopped during operation, it may cause the timing between the images and sound to be thrown off. For example, the overall sound may lag behind the video portion. If you encounter this kind of a situation, try the following procedures to correct the problem.

When the A-6 Stops During Operation

Transmission of the synchronization signals sent by the SI-80S may be unstable.

- 1 While holding down [SHIFT], press [SET UP (AUTO)] for SYNC.
- 2 Press [▼] until "MTC ErrorLevel" is highlighted in the display.
- 3 Rotate the [TIME/VALUE] dial.

```

SYNC SETUP      Rx: ???
▲ MMC Mode     SLAVE
MTC ErrorLevel  5
▼ Offset 00:00:00:00
    
```

Highlighted Display

ErrorLevel

This adjusts the interval (0-10) at which receiving conditions are checked when synchronizing operation of the A-6 using synchronization signals sent by the SI-80S. During synchronous operation, the A-6 regularly confirms the status of the synchronization signals being received, and stops the current operation if it detects a break in the stream of synchronization signals. In such instances, although increasing the interval may possibly make reception of synchronization signals somewhat problematic, it may also improve stability and allow synchronous operation to continue.

- 4 Press [DISPLAY (HOME)].

When the Timing of Images and Sound Is Incorrect

If the sounds appear to be either too advanced or too retarded relative to the video image, you can adjust the Project's playback locations so that they match those of the video image. This is called **Offset**.

1 While holding down [SHIFT], press [SET UP (AUTO)] for SYNC.

2 Press [▼] until "Offset" is highlighted in the display.

3 Rotate the [TIME/VALUE] dial.

Highlighted Display

```

SYNC SETUP          RM: ???
▲ Offset 00:00:10:00
  Fine          10ms
  SyncOut       OFF
  
```

Offset

When discrepancies arise in the timing of the video and Project time locations, this is used to insert a time interval equivalent to the difference between the playback location of the Project and the video time location. For example, let us say that you want the sounds at "00:00:10:00" on the Project to be played when the video is at "00:00:30:00." Use the following procedure to introduce this offset.

(Video time location) - (Project playback location)
 = (00:00:30:00) - (00:00:10:00)
 = (00:00:20:00)

4 Press [▼]. "Fine" is highlighted in the display.

5 Rotate the [TIME/VALUE] dial as you need.

Fine

This sets the fine adjustment (-100+100 ms) when correcting subframe timing discrepancies.

6 Press [DISPLAY (HOME)].

Hints for Making Master Tapes

- Because of the difference between the speed of light and the speed of sound, (sonic) information generally enters your ears later than (visual) information reaches your eyes. Therefore, when it seems that you can't correct the timing no matter how you try, slightly retard the sound relative to the image to achieve a more natural feeling in the finished product.
- When, instead dubbing the master tape to a new tape, you use offset recording to make a new master tape on a fully edited DV tape, set the offset to "-00:00:00:05" to have the timing of sound and images match.

Chapter 8 Different Ways to Play the Pads

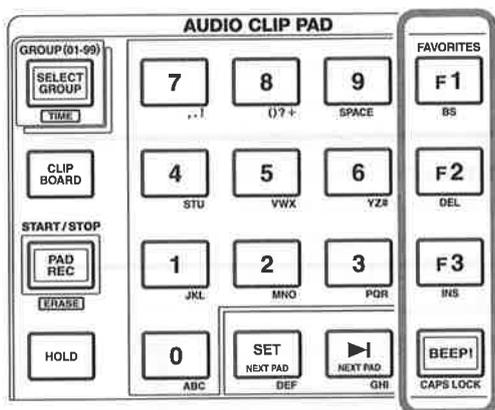
Playing Pads and Tracks (Maximum Number of Simultaneous Voices)

When playing back the tracks, any one pad sound occupies the equivalent of one track. In addition, playback of tracks takes priority over the playing of pad sounds. Thus, if all tracks (A-D) are in playback mode (if all track [STATUS] buttons are green), then no pads sounds can be played.

When you want to layer sounds by playing pad clips while playing back tracks at the same time, turn off at least one of the tracks. The number of tracks with unlit [STATUS] buttons equals the number of pad sounds that can be played.

Using the FAVORITES Pads

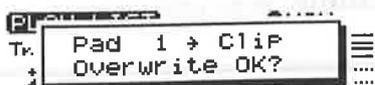
Four of the pads are labelled as "FAVORITES" ([F1]-[F3] and [BEEP]). The clips assigned to these pads remain the same even when pad groups are switched. It can be convenient to assign frequently used sounds, such as a "beep" warning sound, that you want to play without the sound being change, even when pad groups are switched.



You cannot sample directly to the FAVORITES pads.

After first sampling a clip to another pad, you can then assign it to a FAVORITES pad.

1. Press [CLIPBOARD] while pressing the pad containing the clip that you want to assign to the FAVORITES pads. The [CLIPBOARD] pad lights. If the [CLIPBOARD] pad is already lit (if it is already holding a clip), "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip in the Clipboard to be deleted, then press [EXIT/NO].

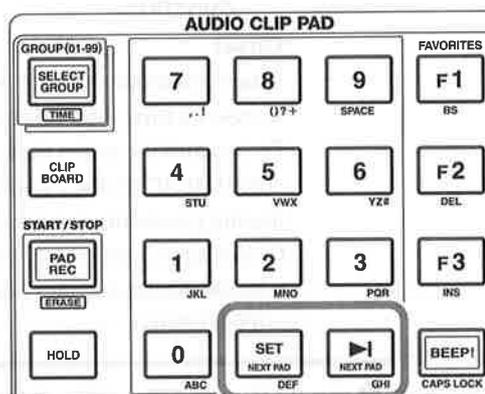


2. While pressing [CLIPBOARD], press the FAVORITES pad ([F1]-[F3] or [BEEP]) to which you want the clip assigned. That FAVORITES pad lights, and the clip is deleted from the Clipboard. If the [FAVORITES] pad is already lit (if it is already holding a clip), "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip in the FAVORITES pad to be deleted, then press [EXIT/NO].

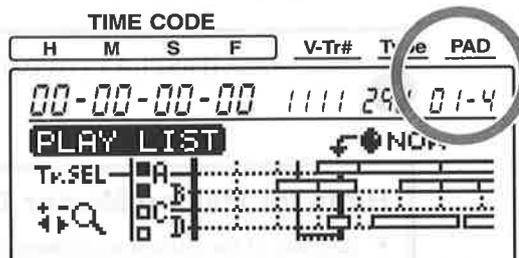
* Any clip pasted to the Clipboard is lost when the power is cut or turned off.

Using Next Pad

You can have the clips assigned to the Audio Clip Pads play in sequence with the press of one button. This is called the **Next Pad function**. This is convenient when, for example, you are pressing pads to go with video images while recording the clips to the tracks.



1. Begin by calling up the pad group (p.19) containing the clip you want played first.
2. While pressing [SET (NEXT PAD)], press the pad to which the clip you want played first is assigned. The pad number appears in the PAD digit area of the display.



3. Press [▶] (NEXT PAD). The pad ([0]-[9]) containing the clip currently playing begins to flash; the clip is played to the end.
4. The pad clips are subsequently played in numerical order each time [▶] (NEXT PAD) is pressed.

5. To stop playing the clips, press [SET (NEXT PAD)].

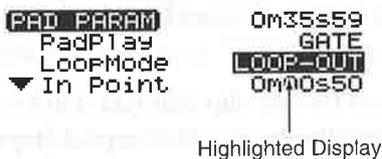
* If [▶ (NEXT PAD)] is pressed after Clip [9], Clip [0] in the following pad group is played. Additionally, if [▶ (NEXT PAD)] is pressed after Clip [9] in Pad Group 99 plays, then Clip [0] in Pad Group 1 is played.

Repeated Playing of a Clip

You can continuously repeat playback of a clip from beginning to end, or for some other specified segment of the clip. This is known as **Loop**. This is convenient for Track Recording of a short piece of background music that is played back repeatedly.

* If more than four pads are pressed, then clips that are not being looped are prevented from preempting any looped sounds.

1. Press the pads for the clips to be played repeatedly.
2. Press [PAD].
3. Press [▲] until "Set Pad Param?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▼] until "LoopMode" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.



LoopMode

This determines whether pad sounds are played back repeatedly or not.

- OFF: Playback is not repeated.
- IN-OUT: The clip is repeatedly played back from beginning to end.
- LOOP-OUT: The clip is repeatedly played back for a set interval (from a point within the clip to the end of the clip).

7. Press [DISPLAY (HOME)]. The LoopMode setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

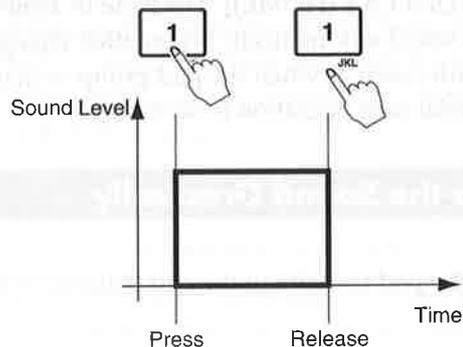
* Please read "How to Set the Interval To Be Repeated" (p.95).

Having the Clip Sounds Begin Gradually

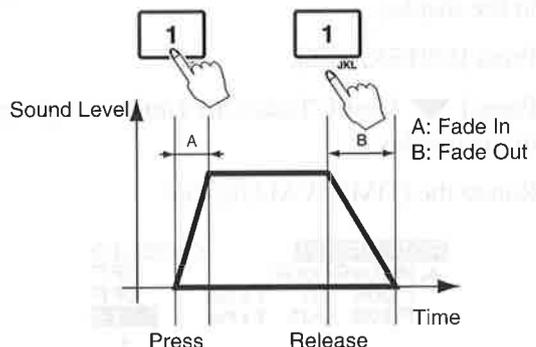
Normally, sounds begin the instant the pad is pressed, and then stop the instant the pad is released.

However, you can also have the sounds begin gradually when the pad is pressed, and gradually stop after the pad is released. This gradual starting of the sound is called **Fade In**, and the gradually stopping is referred to as **Fade Out**.

Normal



Fade In/Out

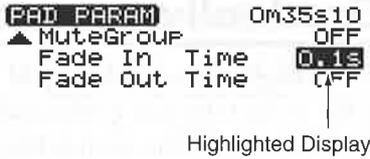


To Start the Sound Gradually

1. Press the pad containing the clip that you want to fade in.
2. Press [PAD].
3. Press [▲] until "Set Pad Param?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▼] until "Fade In Time" is highlighted in the display.

Different Ways to Play the Pads

6. Rotate the [TIME/VALUE] dial.



Fade In Time

This selects the time (OFF, 0.1, 0.2, 0.5, 1, 2, 4, 8, or 16 seconds) for the clip to begin playing after the pad is pressed. When "OFF" is selected, the sound begins to play as soon as the pad is pressed.

7. Press [DISPLAY (HOME)]. The Fade In Time setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

To Stop the Sound Gradually

1. Press the pad containing the clip that you want to fade out.
2. Press [PAD].
3. Press [▲] until "Set Pad Param?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▼] until "Fade Out Time" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.



Fade Out Time

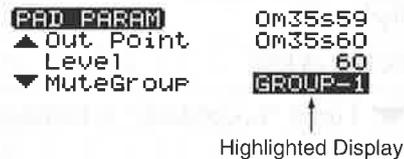
This selects the time (OFF, 0.1, 0.2, 0.5, 1, 2, 4, 8, or 16 seconds) for the clip to stop playing after the pad is released. When "OFF" is selected, the sound stops playing as soon as the pad is released.

7. Press [DISPLAY (HOME)]. The Fade Out Time setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Muting Specified Clips

You can mute any clips that you neither need or want to be played simultaneously. This is referred to as **Mute Group**. Clips in the same mute group cannot be played at the same time, regardless of the number of available voices. By assigning to the same mute group the clips that are not to be played together, you can thus prevent other clips from being cut off while in progress.

1. Press the pads containing the clips to be assigned to the mute group.
2. Press [PAD].
3. Press [▲] until "Set Pad Param?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▼] until "MuteGroup" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.



MuteGroup

Assign to the same mute group (GROUP 1–GROUP 7) any clips that you don't want to be played simultaneously. When set to "OFF," no clips are muted.

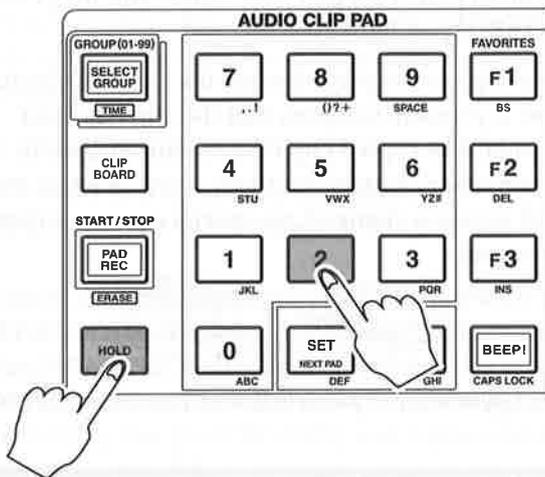
7. Press a pad for any clip that you don't want to be played simultaneously, then repeat Steps 6 and 7.
8. After you have finished making the settings, press [DISPLAY (HOME)]. MuteGroup settings are saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Having the Sound Continue When the Pad is Released

When "PadPlay" is set to except "GATE," the clip continues to play even after you release the pad (p.52). Similarly, you can have a clip that is set to play only while its pad is pressed (when "PadPlay" is set to "GATE") continue playing even after you release the pad. This is called **Hold**.

** Held sounds continue to play (i.e., have priority) even when more than four pads are pressed at a time.*

1. Press the pad containing the clip to be held.
2. While continuing to hold down the pad, press [HOLD]. The [HOLD] pad lights. The clip continues playing even when its pad and the [HOLD] pad are released.



3. Repeat Steps 1 and 2 for any other clips you want held.
4. Press [HOLD] once more. The [HOLD] pad light goes off, and the clips stop playing.

Checking Sounds Assigned to Clips

There may be times while in the middle of Track Recording or making your master tape when you want to check the clips assigned to the pads. In such instances, you can have the pads play through the PHONES and MONITOR jacks instead of the MASTER jacks. This is known as **Pad Cue**.

1. While holding down [SHIFT], press the pad containing the clip you want to check.
The sounds from this pad are not output via the MASTER jacks. Now you can check the sounds with headphones or by connecting a stereo set to the MONITOR jacks.

** When tracks or other clips are being played back, Pad Cue can be used as long as the total number of voices playing simultaneously does not exceed the maximum of four voices.*

** You cannot adjust the level of the pads played back with pad cue with the master fader. Please use pad fader and headphone knob.*

Chapter 9 Try Processing a Clip

What is "Processing?"

You can make a number of adjustments to clips sampled to the pads, including changing the volume, pitch, and length of the sounds in the clips. There are two methods used for this: creating a new clip on a different pad; and only changing the settings for the same pad. This manual combines descriptions of both methods under the heading of **processing clips**.

Clips Selected for Processing

The processing operations explained in this chapter (including changing the volume, pitch, and length of the sounds) effect clips assigned to pads. **These procedures have no effect on clips (sounds) pasted to the tracks using the Step Recording (p.58).** Before carrying out the following procedures, first select the pad group containing the clip you want to process. If the clip you want to process has already been pasted to a track, then process the original clip on the pad, then paste it to the track once again.

Undoing the Immediately Preceding Operation

Some processes explained in this chapter, **once executed, can be returned the clip to conditions current immediately before the operation is carried out, but only if no subsequent operation has been executed.** This function is called **Undo**. If after being executed an operation can be undone, then the [UNDO] button lights. If you decide that you want to undo the operation, press [UNDO]. If you discover that pressing [UNDO] ends up undoing something that you didn't intend it to, then press [UNDO] once more. The undo operation is itself undone, and conditions as they were immediately following execution of the operation are restored.

Changing the Order of the Clips

A clip assigned to one pad can be moved to a different pad. This is convenient when you want to change the order in which the clips are played using the Next Pad function.

1. While holding down [SHIFT] and the pad containing the clip you want to move, press [CLIPBOARD]. The pad light goes off, and the [CLIPBOARD] pad lights.
2. While pressing [CLIPBOARD], press the move destination pad. That pad now lights, and the [CLIPBOARD] pad light goes off.
3. The clip is now played when the move destination pad is pressed. Confirm that the clip has been moved. The moved clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

* If the [CLIPBOARD] pad or move destination pad is already lit, "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip pasted to the [CLIPBOARD] pad or to the move destination pad to be deleted, then press [EXIT/NO].

Making Copies of Clips

This operation copies a clip and assigns the copy to a different pad.

Copying a Single Clip

1. While holding down the pad containing the clip you want to copy, press [CLIPBOARD]. The [CLIPBOARD] pad lights.
2. While pressing [CLIPBOARD], press the copy destination pad. That pad now lights, and the [CLIPBOARD] pad light goes off.
3. The clip is now played when the copy destination pad is pressed. Confirm that the clip has been copied. The copied clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

* If the [CLIPBOARD] pad or copy destination pad is already lit, "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip pasted to the [CLIPBOARD] pad or to the copy destination pad to be deleted, then press [EXIT/NO].

Copying a Pad Group

1. Press [PAD].
2. Press [▲] or [▼] until "Copy Group?" is highlighted in the display.
3. Press [ENTER/YES].
4. Confirm that "Source" is highlighted in the display, then rotate the [TIME/VALUE] dial to select the pad group to be copied.
5. Press [▼]. "To" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial to select the copy destination.

```
COPY GROUP
Source 50|Demo-01  ]
To 48|                ]
```

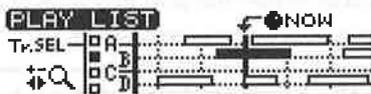
7. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.

8. Press [ENTER/YES] once more. The copy is executed.
9. When the copying is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The copied pad group is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

* If the even one clip is assigned to a pad in the copy destination pad group, the confirmation message "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip to be deleted, then press [EXIT/NO].

Taking Clips Pasted to Tracks and Copying Them to Pads

1. Press [DISPLAY (HOME)] one or more times until the Playlist screen appears in the display.
2. While holding down [SHIFT], press [STATUS] for the track containing the clip that you want copied to the pads.
3. Call up the location of the clip to be copied.
4. Press [MARK ON]; the button lights. The clip that is to be copied to the pads is highlighted.



5. While holding down [MARK ON], press [CLIPBOARD]. The [CLIPBOARD] pad lights, and the [CLIP SELECT] light goes off.
6. Press [CLIPBOARD] to play the sound of the clip being copied, making sure the clip is the one you want.
7. While pressing [CLIPBOARD], press the copy destination pad. That pad now lights, and the [CLIPBOARD] pad light goes off.
8. The clip now is played when the copy destination pad is pressed. Confirm that the clip has been copied. The copied clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

* If the [CLIPBOARD] pad or copy destination pad is already lit, "Overwrite OK?" appears in the display. Press [ENTER/YES]. If you do not want the clip pasted to the [CLIPBOARD] pad or to the copy destination pad to be deleted, then press [EXIT/NO].

Deleting Clips

You can delete unneeded clips to free up more pads.

Deleting a Single Clip

1. While holding down [SHIFT] and [PAD REC] (ERASE), press the pad ([0]–[9]) containing the clip you want to delete. The pad light goes off, indicating that the clip has been deleted.

Erasing a Pad Group

1. Press [PAD].
2. Press [▼] until "Erase Group?" appears in the display.
3. Press [ENTER/YES].
4. Rotate the [TIME/VALUE] dial to select the pad group to be erased.

ERASE GROUP

Target: [0] Demo-01 []

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
6. Press [ENTER/YES] once more. The pad group is erased.
7. When the erasing is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Adjusting Clip Volume

The volume of each clip when its pad is pressed can be set individually. This is convenient when you want to balance the volume between the pads.

1. Press [PAD].
2. Check to see that "Set Pad Param?" is highlighted in the display.
3. Press [ENTER/YES].
4. Press [▼] until "Level" is highlighted in the display.

```
PAD PARAM      0m02s57
▲ Loop Point  ***M***S**
  Out Point    1m02s08
▼ Level        100
```

5. Rotate the [TIME/VALUE] dial. At this time, you can check the volume of the clips by pressing the pads.
6. When you are finished adjusting the volume, press [DISPLAY (HOME)]. The clip volume settings are saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

To Play Clips at a Different Volume

The volume of the pads is unrelated to the force with which they are played. A pad always plays at the same volume whether it is pressed strongly or weakly. If you want the pad to play at different volumes, first make copies of the clip it contains, then adjust the volume of each of the copied clips.

1. Press the Quick Edit [TRIM] button.
2. Press the pad whose starting point, or "in point," you want to adjust.
3. Make sure that "In Point" is highlighted in the display.
4. Press [◀] or [▶] until the unit of adjustment (minutes, seconds or 1/100 seconds) is highlighted in the display. In most cases, you will adjust by 1/100 seconds.

```
PAD PARAM      0m02s57
▲ In Point     0m59s51
  Loop Point   ***M***S**
▼ Out Point    1m02s08
```

5. Rotate the [TIME/VALUE] dial. You can press the pad to check the clip. At this point, you may also check the beginning of the clip by pressing [FROM] and [SHIFT] with [TO], or by pressing [SCRUB].

```
SCRUB          InP  0m59s51
```

6. When you are finished with the adjustment, press [DISPLAY (HOME)]. The "In Point" setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Adjusting the Starting Point of the Sound 2

- 3-1. With "In Point" highlighted in the display, press [ENTER/YES]. The sounds used are played back from the beginning of the clip.
- 3-2. Press [ENTER/YES] once more at the point where you want the sounds to begin.
- 3-3. Press the pad to check the result.

Adjusting the End Point of the Sound

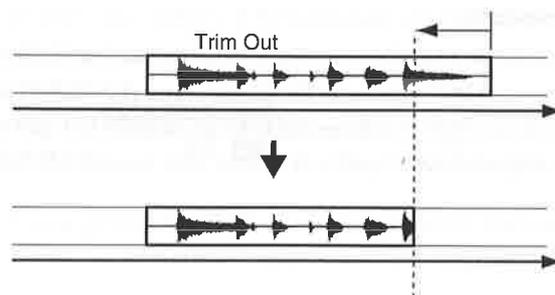
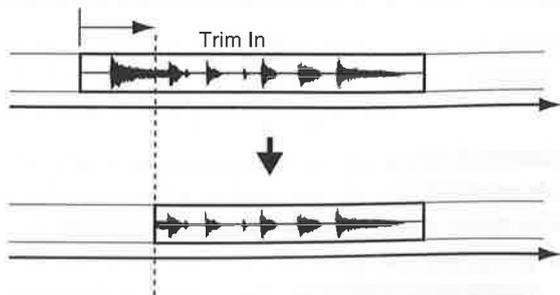
When you have unneeded sounds at the end of a clip, or otherwise want the ending portion of the clip omitted, this lets you change the point at which the clip sound finishes.

Changing Where the Sound Begins and Ends

This adjusts the positions at which the sounds in a sampled clip begin and end when the pad is pressed.

Adjusting the Starting Point of the Sound

In cases such as when you have unneeded sounds at the beginning of a clip, or otherwise want the beginning portion of the clip omitted, this lets you change the point at which the clip sound starts.

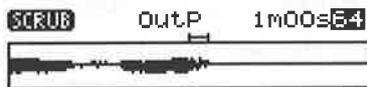


1. Press the Quick Edit [TRIM] button.
2. Press the pad whose end, or "out point," you want to adjust.
3. Press [▼] until "Out Point" is highlighted in the display.
4. Press [◀] or [▶] until the unit of adjustment (minutes, seconds or 1/100 seconds) is highlighted in the display. In most cases, you will adjust by 1/100 seconds.

```

PAD PARAM      0m02s57
▲ In Point     0m59s51
  LOOP Point   ***M**S**
▼ Out Point    1m02s08
    
```

5. Rotate the [TIME/VALUE] dial. You can press the pad to check the clip. For more efficient editing of extremely lengthy samples, play the sounds starting a little before the end of the clip. Furthermore, pressing [FROM] and [SHIFT] with [TO] or pressing [SCRUB] can be effective when you want to check the end of the clip.



6. When you are finished with the adjustment, press [DISPLAY (HOME)]. The "Out Point" setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Adjusting the Ending Point of the Sound 2

- 3-1. With "Out Point" highlighted in the display, press [ENTER/YES]. The sounds used in the clip are played back from the beginning of the clip.
- 3-2. Press [ENTER/YES] once more at the point where you want the sounds to stop.
- 3-3. Press the pad to check the result.

Removing Empty Portions at the Beginnings and Ends of Clips

This automatically removes any blank portions that may come before the clip starts to play or after the clip is finished.

1. Press [PAD] button.
2. After making sure that "Trim?" is highlighted in the display, press [ENTER/YES].
3. Press the pad containing the empty sections at the start and end of the sound.

4. Press [▲] and [▼] to highlight the various parameters in the display. Rotate the [TIME/VALUE] dial.

```

TRIM
▲ Trim In      FORWARD
  Out          OFF
Threshold      LEV3
    
```

Trim In

This sets the start point of the search identifying the blank portion starting from the clip's current starting point, and causes the clip to begin at the point where the volume exceeds the "Threshold" setting.

OFF: No search is made.

FORWARD: The search is initiated at the present location, and proceeds in the forward direction.

REVERSE: The search is initiated at the present location, and proceeds in reverse.

Trim Out

This sets the start point of the search identifying the blank portion starting from the clip's current end point, and causes the clip to end at the point where the volume crosses the "Threshold" setting.

OFF: No search is made.

FORWARD: The search is initiated at the present location, and proceeds in the forward direction.

REVERSE: The search is initiated at the present location, and proceeds in reverse.

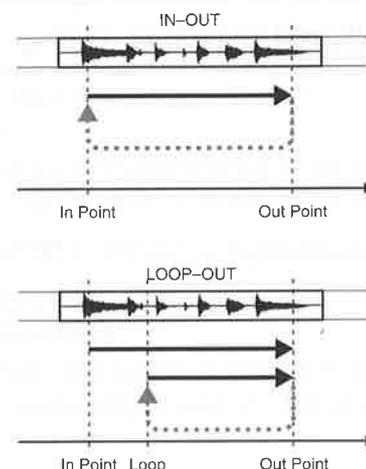
Threshold

This determines the volume level (LEV1-LEV8) necessary for detection of the empty sections. The higher the numeral, the greater the volume these sections can have while still being regarded as containing no sound.

5. Press [ENTER/YES].
6. When removal of the empty sections is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Changing the Starting Point of a Loop

You can have a clip repeat playback, or "loop," from a point other than the beginning of the clip itself, but only when the clip is set to "LOOP-OUT" in "LoopMode" (p.89). This adjustment cannot be made when the clip is set to "OFF" or "IN-OUT."



Try Processing a Clip

1. Press [PAD].
2. After making sure that "Set Pad Param" is highlighted in the display, press [ENTER/YES].
3. Press the pad whose loop start point you want to adjust.
4. Press [▼] until "Loop Point" is highlighted in the display.
5. Press [◀] or [▶] until the unit of adjustment (minutes, seconds or 1/100 seconds) is highlighted in the display. In most cases, you will adjust by 1/100 seconds.

```

PAD PARAM      0m05s64
▲ In Point    0m50s51
  Loop Point  0m55s00
▼ Out Point   1m00s64
    
```

6. Rotate the [TIME/VALUE] dial. You can press the pad to check the clip. For more efficient editing of extremely lengthy samples, play the sounds starting a little before the clip's loop start point. At this point, you may also check the loop start point of the clip by pressing [FROM] and [SHIFT] with [TO], or by pressing [SCRUB].

```

SCRUB  LOOPP  0m55s00
    
```

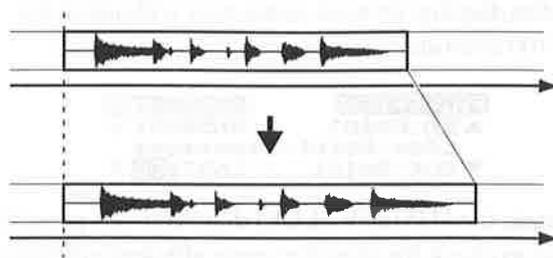
7. When you are finished with the adjustment, press [DISPLAY (HOME)]. The new loop start point setting is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Changing the Starting Point of a Loop 2

- 3-1. When "Loop Point" is highlighted in the display, press [ENTER/YES]. The sounds are played back from the beginning of the clip.
- 3-2. Press [ENTER/YES] once more at the point where you want the loop to begin.
- 3-3. Press the pad to check the result.

Changing the Clip Length

You can alter the length of a clip (the amount of time the clip plays) while leaving the in point and out point as they are, and then assign the new clip to a different pad. This function is known as **Stretch**. This is convenient when, for example, you want to fit narration lasting 5.5 seconds into a five-second period.



1. While holding down [SHIFT], press [STRETCH (TRIM)].

```

TIME STRETCH
Source      GROUP01-0
To          GROUP01-1
▼ Ratio     100.0%
    
```

2. Confirm that "Source" is highlighted in the display.
3. Press the pad containing the clip whose length you want to adjust. You can also rotate the [TIME/VALUE] dial to select the pad containing the clip.
4. Press [▼]. "To" is highlighted in the display.
5. Press the pad to which you want to assign the changed clip. You can also rotate the [TIME/VALUE] dial to select the pad to which you want the clip assigned.
6. Press [▼] until "Ratio" or "New Time" is highlighted in the display.
7. Rotate the [TIME/VALUE] dial. "Ratio" and "New Time" values are changed in corresponding with each other. Select the one that you find easier to set.

Ratio

This determines the ratio of extension or compression (50–150%) of the clip being changed.

New Time

This sets the new length of the clip in terms of time, i.e., minutes, seconds, and 1/100 seconds.

8. Press [ENTER/YES].

- When the stretch is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The changed clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Matching One Clip to the Length of a Different Clip

In situations such as when background music or effect sounds are inserted into a clip, you may want to have one clip match the length of another clip. In such instances, use the following procedure, starting at Step 8.

- Press [▼] until "Match/w" is highlighted in the display.

```

TIME STRETCH
▲ NewTime      0:02.26
  Match/w     GROUP01-5
                x 1
    
```

- Press the pad containing the reference clip (the clip whose length is to be matched). You can also rotate the [TIME/VALUE] dial to select the reference clip.
- Press [▼].
- Rotate the [TIME/VALUE] dial. Determine the "stretch ratio," or length of the clip relative to the reference clip (1/16–16 times the length). For example, when you want the clip to be the same length as the reference clip, select a stretch ratio of "x1"; if half the length, select "x1/2"; if you want to double the length, select "x2."

* If the length of the reference clip and the clip being changed are differ greatly, or if the stretch ratio exceeds the allowable range (the "Ratio" setting must be between 50% and 150%), then the stretch cannot be executed.

Changing the Pitch of the Clip

You can change the pitch of the clip (how high or low the sound is) while leaving the length of the clip unaffected. This is known as **Change Pitch**.

Change Pitch changes only the pitch of the source clip, and then assigns the clip to a different pad.

* Change Pitch takes more time than other processes. In addition, the quality of the sound is somewhat inferior to that of the original clip.

- While holding down [SHIFT], press [PITCH (DIVIDE)].

```

CHANGE PITCH
  Source      Group01-0
    To       Group01-1
▼ Grade      5
    
```

```

CHANGE PITCH
▲ Grade      5
  NewPitch   2
  P.Fine     48
    
```

- Confirm that "Source" is highlighted in the display.
- Press the pad containing the clip whose pitch you want to change. You can also rotate the [TIME/VALUE] dial to select the pad containing this source clip.
- Press [▼]. "To" is highlighted in the display.
- Press the pad to which you want to assign the changed clip. You can also rotate the [TIME/VALUE] dial to select the pad to which you want the clip assigned.
- Press [▼]. "Grade" is highlighted in the display.
- Rotate the [TIME/VALUE] dial.

Grade

This determines the sound quality (1–5) of the newly created clip. Generally, the higher the value set, the less degradation is suffered in the process; however, wavering or oscillation may still be audible in some clips. Try different settings and select the one that is most appropriate.

- Press [▼]. "NewPitch" is highlighted in the display.
- Rotate the [TIME/VALUE] dial.

NewPitch

This adjusts the degree of change in the pitch relative to the source clip in semitone (half-step) units (-12–+12).

- Press [▼]. "P.Fine" is highlighted in the display.
- Rotate the [TIME/VALUE] dial.

P.Fine (Pitch Fine)

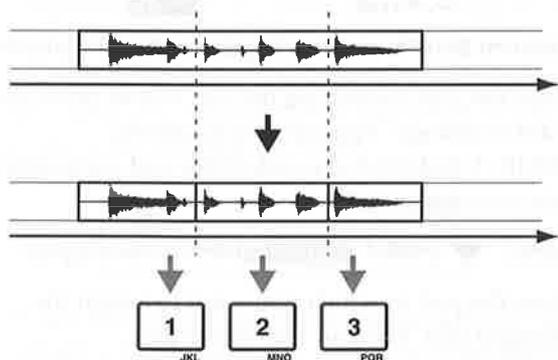
This fine tunes the degree of change in the pitch relative to the source clip in cents (1/100 of a semitone) units (-100–+100).

Try Processing a Clip

12. Press [ENTER/YES].
13. When the Change Pitch is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The new clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Dividing a Single Clip (DIVIDE)

You can separate a long clip that you have sampled, and assign the resulting portions to different pads. This is convenient when, for example, you want to sample perhaps one page of spoken narration, and then assign each sentence to a different pad. The divided clips are created by copying the source clip and then adjusting the range over which each of the resulting clips plays. They are saved in the selected pad and following empty pads.



Setting the Division Point and Dividing the Clip

Use this procedure to specify one point within the clip, and then divide the clip at that point.

1. Adjust the out point of the source clip (p.94). This out point then becomes the division point for the clip.
2. Press [DIVIDE].

```
DIVIDE
Source To      GROUP01-0
          To      GROUP01-1
▼ Type          OUT POINT
```

3. Confirm that "Source" appears in the display, then rotate the [TIME/VALUE] dial to select the pad containing the clip you want to divide.
4. Press [▼]. "To" is highlighted in the display.
5. Rotate the [TIME/VALUE] dial to select the pads to which you want to save the divided clips.
6. Press [▼]. "Type" is highlighted in the display.

7. Rotate the [TIME/VALUE] dial.

Type

This determines the division method. For now, select "OUT POINT."

OUT POINT: The clip is divided at the point where the clip stops playing.

AUTO (0.5–2.0): This divides the clip at "empty" sections (lasting from 0.5 to 2.0 seconds).

MANUAL: This sets the division at the point where [ENTER/YES] or [SET (NEXT PAD)] is pressed.

8. Press [ENTER/YES]. If you do not want to divide the clip, then press [EXIT/NO].
9. When the divide is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The divided clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Dividing Automatically

This automatically divides the clip during empty sections, then assigns the resulting clips to multiple pads.

1. Press [DIVIDE].

```
DIVIDE
Source To      GROUP01-0
          To      GROUP01-1
▼ Type          AUTO 0.5

DIVIDE
▲ Type          AUTO 0.5
Threshold      LEV1
Trim           ON
```

2. Confirm that "Source" appears in the display, then rotate the [TIME/VALUE] dial to select the pad containing the clip you want to divide.
3. Press [▼]. "To" is highlighted in the display.
4. Rotate the [TIME/VALUE] dial to select the pads to which you want to save the divided clips.
5. Press [▼]. "Type" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.

Type

This determines the division method. In this case, select "AUTO (0.5)," "AUTO (1.0)," "AUTO (1.5)," or "AUTO (2.0)," according to the length of the empty sections you are trying to detect. In most cases, "AUTO (0.5)" is a good choice.

OUT POINT: The clip is divided at the point where the clip stops playing.

AUTO (0.5–2.0): This divides the clip at empty sections (lasting from 0.5 to 2.0 seconds).

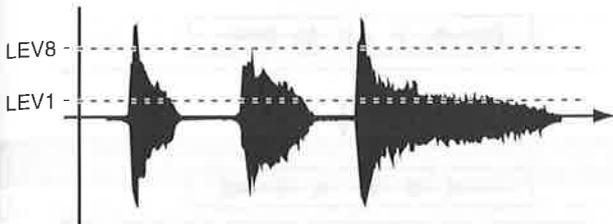
MANUAL: This sets the division at the point where [ENTER/YES] or [SET (NEXT PAD)] is pressed.

7. Press [▼]. "Threshold" is highlighted in the display.

8. Rotate the [TIME/VALUE] dial.

Threshold

This determines the volume level (LEV1-LEV8) necessary for detection of the empty sections. The higher the numeral, the greater the volume these sections can have while still being regarded as having no sound.

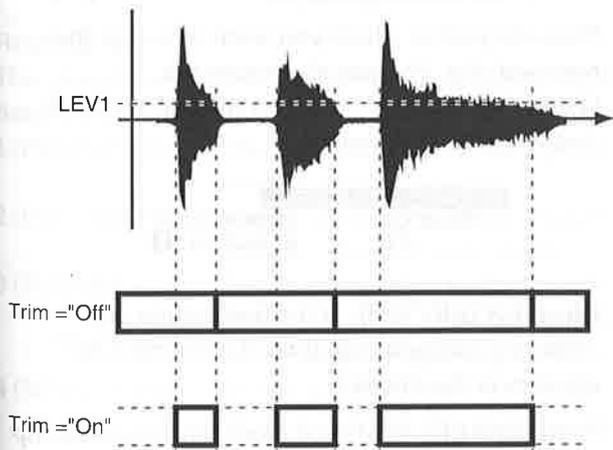


9. Press [▼]. "Trim" is highlighted in the display.
10. Rotate the [TIME/VALUE] dial.

Trim

Setting this to "On" selects the point at which the volume first exceeds "Threshold" after the silent portion as the **point at which the next clip begins to play**. This should normally be set to "On."

When set to "Off," each clip just starts right at the end of the previous clip.

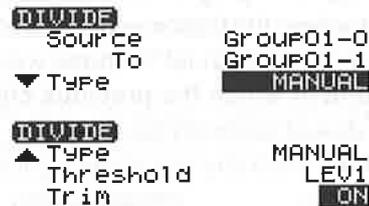


11. Press [ENTER/YES]. If you decide not to divide the clip at this point, then press [EXIT/NO].
12. When the divide is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The divided clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Dividing the Clip While Listening to It

You can press a button to divide a clip while listening to it.

1. Press [DIVIDE].



2. Confirm that "Source" appears in the display, then rotate the [TIME/VALUE] dial to select the pad containing the clip you want to divide.
3. Press [▼]. "To" is highlighted in the display.
4. Rotate the [TIME/VALUE] dial to select the pads to which you want to save the divided clips.
5. Press [▼]. "Type" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.

Type

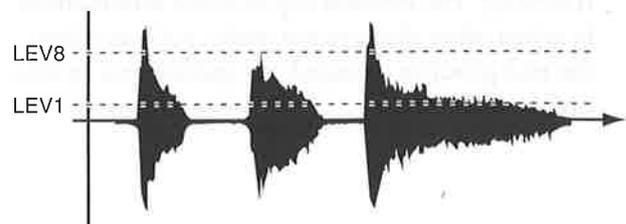
This determines the division method. Now select "MANUAL."

- END POINT: The clip is divided at the point where the clip stops playing.
- AUTO (0.5-2.0): This divides the clip at empty sections (lasting from 0.5 to 2.0 seconds).
- MANUAL: This sets the division at the point where [ENTER/YES] or [SET (NEXT PAD)] is pressed.

7. Press [▼]. "Threshold" is highlighted in the display.
8. Rotate the [TIME/VALUE] dial.

Threshold

When "Trim" is set to "ON," this sets the volume level used to determine the point on the clip where the sound starts and ends. The higher the numeral, the greater the volume these sections can have while still being regarded as having no sound.



9. Press [▼]. "Trim" is highlighted in the display.

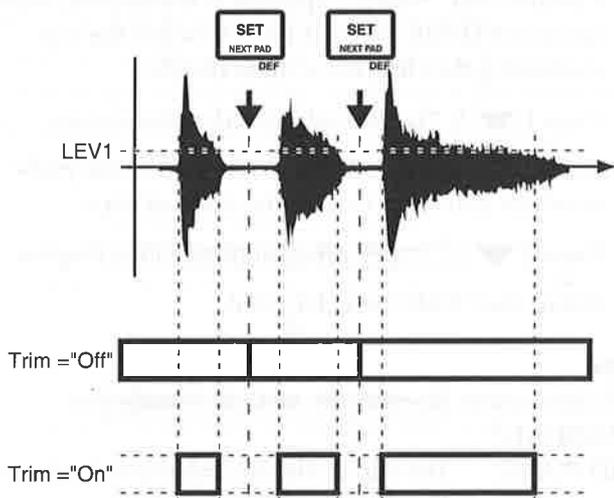
Try Processing a Clip

10. Rotate the [TIME/VALUE] dial.

Trim

When set to "On" this selects the point at which the volume first exceeds "Threshold" after the point at which the button is pressed as the **point at which the current clip begins to play**. Similarly, going back from the point where the button is pressed to the point where point where "Threshold" volume was exceeded is made the **point at which the previous clip stops playing**. This should normally be set to "On."

When set to "Off," each clip just starts right at the end of the previous clip.



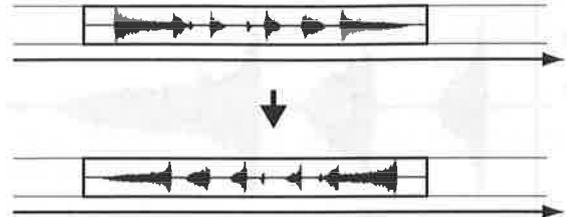
11. Press [ENTER/YES]. The clip is played from its beginning.
12. Press [SET (NEXT PAD)] at the point you want to divide the clip. You can divide the clip in up to nine places. If you want to quit before you are finished with the dividing, then press [ENTER/YES]. This leaves in place any divisions made up to that point. If you do not want to have the clip divided at all, then press [EXIT/NO].



13. When the divide is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The divided clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Making Reversed Clips

This reverses a clip's playback direction, playing the clip from end to beginning, while creating a new clip for the reversed sound. This is called **Create Reversal**. This lets you achieve the affect resembling that of a tape recorder running in reverse.



1. Press [PAD].
2. Press [▼] until "Create Reversal" appears in the display.
3. Confirm that "Source" is highlighted in the display.
4. Press the pad with the clip you want to run in reverse. You can also rotate the [TIME/VALUE] dial to select the pad containing this source clip.
5. Press [▼]. "To" is highlighted in the display.
6. Press the pad to which you want to assign the reversed clip. You can also rotate the [TIME/VALUE] dial to select the pad to which you want the clip assigned.

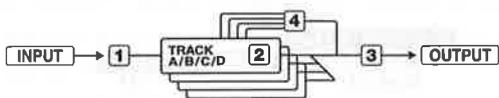
```
CREATE REVERSAL
Source  GROUP01-0
To      GROUP01-1
```

7. Press [ENTER/YES]. If the destination pad already contains a clip, then "Overwrite OK?" appears in the display.
8. Press [ENTER/YES] once more. The reversed clip is created.
9. When creation of the reversed clip is finished, "Completed" appears in the display. Press [DISPLAY (HOME)]. The newly created clip is saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Chapter 10 Using the Special Effects (EFFECTS)

Arrangement (Routing) of the Effects

Depending on the sound to which the effects are added, you may select the routing arrangement of the effects. Use them according to your particular aims.



[1] To Record Sounds with Effects Added (INSERT)

Use this method when you want to take sounds input from the MIC jack or INPUT (VCR) jacks that have effects added them, and then record these sounds to the tracks.

1. While holding down [SHIFT], press [ROUTING (EFFECTS ON/OFF)].
2. Confirm that "Routing" is highlighted in the display, then rotate the [TIME/VALUE] dial.

```
FX ROUTING
Routing 1<INS INPUT>
Patch      UT
          [VoiceTrns.]
```

Routing

This determines where the effects are directed. At this time, select "1 (INS INPUT)."

- 1 (INS INPUT): Effects are applied to the input sounds.
 - 2 (INS TRK A-D): Effects are applied to the sounds on any one selected track (A-D).
 - 3 (INS MST): Effects are applied to the sounds on all tracks (A-D). Only the sounds with effects added are played.
 - 4 (SEND/RTN): Effects are applied to the sounds on all tracks (A-D). The source sound and effects are mixed.
 - (FX PATCH) Effects are applied to certain routing 1-4 which stored to each effects patch (p.104).
3. Press [DISPLAY (HOME)].
 4. Press [EFFECTS ON/OFF]. The button lights red, indicating that the effects are turned on.
 5. Press [EFFECTS ON/OFF] once more; the button light goes out, and the effects are turned off.

[2] To Add Effects Only to One Track (INSERT)

This method adds effects to just one of the tracks A-D after recording of the tracks has been completed. Use this method, for example, when you want to add effects only to the narration.

1. While holding down [SHIFT], press [ROUTING (EFFECTS ON/OFF)].
2. Confirm that "Routing" appears in the display, then rotate the [TIME/VALUE] dial.

```
FX ROUTING
Routing 2<INS TRK-A>
Patch      UT
          [VoiceTrns.]
```

Routing

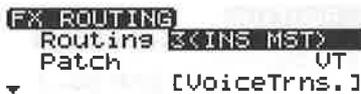
This determines where the effects are directed. This time, select any of the choices "2 (INS TRK-A)" - "2 (INS TRK-D)".

- 1 (INS INPUT): Effects are applied to the input sounds.
 - 2 (INS TRK A-D): Effects are applied to the sounds on any one selected track (A-D).
 - 3 (INS MST): Effects are applied to the sounds on all tracks (A-D). Only the sounds with effects added are played.
 - 4 (SEND/RTN): Effects are applied to the sounds on all tracks (A-D). The source sound and the sound with effects added are mixed.
 - (FX PATCH) Effects are applied to certain routing 1-4 which stored to each effects patch (p.104).
3. Press [DISPLAY (HOME)].
 4. Press [EFFECTS ON/OFF]. The button lights red, indicating that the effects are turned on. Simultaneously, the [EFFECTS] button for the track you want effects added to also lights.
 5. Press [EFFECTS ON/OFF] once more; the button light goes out, and the effects are turned off. Simultaneously, [EFFECTS] for the track to which you want effects added starts blinking

[3] To Add Effects to all Tracks (INSERT)

This method adds effects to all the tracks A-D and all pads after recording of the tracks has been completed. Use this method when you want to add effects to the entire Project.

1. While holding down [SHIFT], press [ROUTING (EFFECTS ON/OFF)].
2. Confirm that "Routing" is highlighted in the display, then rotate the [TIME/VALUE] dial.



Routing

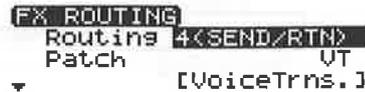
This determines where the effects are directed. Now, select "3 (INS MST)."

- 1 (INS INPUT): Effects are applied to the input sounds.
- 2 (INS TRK A-D): Effects are applied to the sounds on any one selected track (A-D).
- 3 (INS MST): Effects are applied to the sounds on all tracks (A-D). Only the sounds with effects added are played.
- 4 (SEND/RTN): Effects are applied to the sounds on all tracks (A-D). The source sound and the sound with effects added are mixed.
- (FX PATCH) Effects are applied to certain routing 1-4 which stored to each effects patch (p.104).

3. Press [DISPLAY (HOME)].
4. Press [EFFECTS ON/OFF]. The button lights red, indicating that the effects are turned on. Simultaneously, [EFFECTS] for the all tracks you want effects added to also light.
5. Press [EFFECTS ON/OFF] once more; the button light goes out, and the effects are turned off. Simultaneously, the [EFFECTS] light for any tracks with effects added also go out.

[4] To Mix the Source and Effects Sounds (SEND/RETURN)

1. While holding down [SHIFT], press [ROUTING (EFFECTS ON/OFF)].
2. Confirm that "Routing" is highlighted in the display, then rotate the [TIME/VALUE] dial.

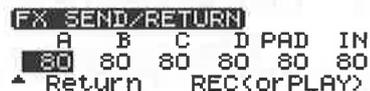


Routing

This determines where the effects are directed. Select "4 (SEND/RTN)."

- 1 (INS INPUT): Effects are applied to the input sounds.
- 2 (INS TRK A-D): Effects are applied to the sounds on any one selected track (A-D).
- 3 (INS MST): Effects are applied to the sounds on all tracks (A-D). Only the sounds with effects added are played.
- 4 (SEND/RTN): Effects are applied to the sounds on all tracks (A-D). The source sound and the sound with effects added are mixed.
- (FX PATCH) Effects are applied to certain routing 1-4 which stored to each effects patch (p.104).

3. Press [▼].



4. The effect send level (0-127) can be set individually for each of the tracks (A-D), pads, and inputs. Press [◀] or [▶] until setting value that you want to adjust is highlighted in the display, then rotate the [TIME/VALUE] dial to change the values.
5. Press [▼]. "Return" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial.

Return

This determines where the returned effect sound is added.

REC(or PLAY): The effects are returned to the MASTER jacks during playback, and to the tracks during recording. Use this method when you want to record sounds with effects added.

PLAY: The effects are returned to the MASTER jacks, whether during playback or recording.

7. Press [DISPLAY (HOME)].

Using the Special Effects

Assigning Parameters to the Realtime Effects Knobs

Assigning effects parameters to the Realtime Effects knobs lets you easily change settings values just by turning the knobs (C1-C3). Read this section along with "Using the Realtime Effects Knobs" (p.105).

1. Press [CUSTOM PRESET]. The button lights.
2. While holding down [SHIFT], press [EDIT (CUSTOM PRESET)].
3. Press [▶] until "CTL" is highlighted in the display.
4. Press [ENTER/YES].

```
FX CTRL          <=>RANGE
C1:  VoT ON Pitch
C2:  VoT ON Form.
C3:  VoT ON Robot
```

5. Press [▲] or [▼] until the knob you want to assign is highlighted in the display.
6. Rotate the [TIME/VALUE] dial to select the setting parameter that can be changed by the Realtime Effects Knob.
7. Press [▶].

```
FX CTRL          ASSIGN<->
C1:  -63++ 63
C2:  -63++ 63
C3:  OFF++ ON
```

8. Press [▲], [▼], [◀], or [▶] or rotate the [TIME/VALUE] dial to determine the range within which the setting values can change when the knob is turned. Pressing [◀] one or more times returns you to the screen for selecting the settings parameters.
9. Press [DISPLAY (HOME)]. The initial screen reappears in the display. Pressing [EXIT/NO] returns you to the status current in Step 4.

Saving Different Routings to Different Patches

You can store different effect routings to different Patches. This setting is effective only when "-- (FX PATCH)" is selected for the "Routing" (p.101).

1. Press [CUSTOM PRESET]. The button lights.
2. While holding down [SHIFT], press [EDIT (CUSTOM PRESET)].
3. Press [▶] until "LOC" is highlighted in the display.
4. Press [ENTER/YES].

```
FX LOCATION
PatchLoc [KINS INPUT]
          <Now Invalid>
Mixer... [4<SEND/RTN> ]
```

5. Determine the effect routing. Rotate the [TIME/VALUE] dial. The "Routing" setting is also indicated. When "Routing" is not set to "-- (FX PATCH)," "Now Invalid" appears in the display. In this case, the effect routing settings are invalid.

Using the Realtime Effects Knobs

The effect settings can be adjusted instantly with the Realtime Effects knobs.

1. Press [SELECT]. Each press of the button switches the screen, in sequence, from "Narration" to "Voice Transformer" to "Reverb" to "Delay," and then back to "Narration." The panel indicators light to indicate which effects is currently being used.
2. Rotate C1–C3. At this time, when [SHIFT] is held down while [SELECT] is pressed, conditions for the current effects are shown in the display.



The red indicator to the upper right of each of the Realtime Effects knobs lights when the knob positions match the actual effects settings for their respective effects. Immediately after switching to a different effects patch, the effect settings change to those saved to the new effects patch. If at this point the position of a Realtime Effects knob does not match the effect setting, the indicator light then goes out. When you rotate the Realtime Effects knobs, the settings values reflect the knobs' positions.

Changing the Way the Realtime Effects Knobs Work

1. Press [SYSTEM].
2. Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].
3. Press [▼] until "KnobControl" is highlighted in the display.
4. Rotate the [TIME/VALUE] dial.

KnobControl

This lets you select the way the Realtime Effects knobs function.

JUMP: This changes the setting to the actual value the instant the knob is rotated.

NULL: The effect does not change until the position of the Realtime Effects knob corresponds to the actual settings value.

5. Press [DISPLAY (HOME)]. The "Knob control" setting is saved automatically at certain times, such as when you quit.

Saving Effects to the User Patches

Changes to effect settings are lost when the power is turned off or if you switch to a different patch. Save your effect settings to the User Patches. The range settings assigned to the Realtime Effects knobs are also saved at this time.

1. While holding down [SHIFT], press [ENTER/YES].
2. Press [▼] until "EFFECTS Patch" is highlighted in the display.
3. Press [ENTER/YES].

```
SAVE EFFECTS PATCH
Patch U 2 [VT:VoiceT.]
New Name [VT:VoiceT.]
```

4. Select the User patch to which you want to save the settings. If you are changing a Preset patch, the save destination patch is indicated as "****" in the display. Specify a User patch number (U01–U99) for the save destination patch.
5. You can change the patch name by pressing [▼]. Press [◀] or [▶] to highlight the character to be changed, then rotate the [TIME/VALUE] dial.
6. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
7. Press [ENTER/YES] once more. The effect is saved. Any settings previously stored in the save destination patch are lost when the new patch is saved.
8. Press [DISPLAY (HOME)].

* Do not turn off the power as long as "KEEP POWER ON!" is displayed.

Saving panel effects

You can store your settings of panel effects, just like "Saving Effects to the User Patches."

1. Press [SELECT] to select one of the panel effects.
2. Press [ENTER/YES] while holding down [SHIFT].
3. Press [▼] to highlight "EFFECTS Patch".
4. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
5. Press [ENTER/YES] once more. Do not turn off the power as long as "KEEP POWER ON!" is displayed.
6. "Completed" appears in the display, and press [DISPLAY (HOME)].

List of Preset Effect Patches

Reverb (13 Presets)

Number	Patch Name	Algorithm	Description
P01	RV:MidRoom	<Rev>	Reverb sound of middle of room
P02	RV:LrgHall	<Rev>	Large concert hall reverb
P03	RV:Cathdrl	<Rev>	Cathedral reverb
P04	RV:SoftAmb	<Rev>	Reverb in space with few reflections
P05	RV:RoomAmb	<Rev>	Lively room
P06	RV:LrgClub	<Rev>	Reverbration of large dance floor
P07	RV:ClubFlr	<Rev>	Reverbration of small dance floor
P08	RV:LngCave	<Rev>	Reverb similar to that found in deep cave
P09	RV:Garage	<Rev>	Garage-type reverb for drums
P10	RV:Plate	<Rev>	Bright plate reverb
P11	RV:Gated	<Rev>	Typical gate reverb; sensitivity (GT Thr) adjusted with control knob
P12	RV:Revers	<Rev>	Reverse gate reverb
P13	RV:Duckn'	<Rev>	Ducking reverb; reverb turned off at high input levels

Delay (4 Presets)

Number	Patch Name	Algorithm	Description
P14	DL:Digi?	<EzD>	Stereo digital delay
P15	DL:RSS Alt	<RSS>	RSS delay with alternate panning
P16	DL:MultAmb	<MTD>	Ambient effect with ten individual short delays.
P17	DL:PingPon	<MTD>	Special effect utilizing tap delay

Chorus (2 Presets)

Number	Patch Name	Algorithm	Description
P18	CH:SDD/3+4	<SDD>	Roland SDD-320 (button 3+4)
P19	CH:RSSrumd	<RSS>	Surround effect by RSS for monaural sources.

Flanger (2 Presets)

Number	Patch Name	Algorithm	Description
P20	FL:HardJet	<BF2>	Typically brash short flanger
P21	FL:Hi-Band	<BF2>	Two BOSS HF-2s connected in stereo

Phaser (2 Presets)

Number	Patch Name	Algorithm	Description
P22	PH:4stage	<Phs>	Vintage four-stage type phaser
P23	PH:See-Saw	<Phs>	See-Saw phasing between L/R (eight-stage type)

Dynamics Processor (6 Presets)

Number	Patch Name	Algorithm	Description
P24	DN:DanceEQ	<Dyn>	Equalization for dancing
P25	DN:Loudnes	<Dyn>	Loudness
P26	DN:Hard+GT	<Dyn>	Hard comp/gate for dancing
P27	DN:TotalCp	<Dyn>	Total Compression for broadcast mixes and similar applications
P28	DN:Limiter	<Dyn>	Stereo Limiter
P29	DN:Enhance	<Dyn>	Stereo Enhancer

Parametric Equalizer (5 Presets)

Number	Patch Name	Algorithm	Description
P30	PE:Overhd	<PEA/PEB>	For drum kit: overhead mic; collects entire drum kit
P31	PE:Bass	<PEA/PEB>	For electric bass: tight, wide-range bass sound
P32	PE:Sax	<PEA/PEB>	For alto and soprano sax: high-range gain control mellows sound
P33	PE:ElecGtr	<PEA/PEB>	Setting keeps lead guitar from being buried in overall mix
P34	PE:NylonGt	<PEA/PEB>	Transparent fret sound; gain control on fret sound's high range

Graphic Equalizer (3 Presets)

Number	Patch Name	Algorithm	Description
P35	GE:TotalE1	<GEA/GEB>	Lows and highs boosted; "just right" sound
P36	GE:TotalE2	<GEA/GEB>	Narrowed range of low and high cut, consistent overall sound
P37	GE:SpaceEQ	<GEA/GEB>	Special effect: stereo output from mono input

Isolator (2 Presets)

Number	Patch Name	Algorithm	Description
P38	IS:HiCancl	<Iso>	Isolator high-range cancel
P39	IS:Low-Phs	<Iso>	Stereo anti-phase effect for low range

Center Cancel (1 Preset)

Number	Patch Name	Algorithm	Description
P40	CC:VoCancl	<C.C>	Vocal canceller (removes sounds in middle of stereo field)

Hum Cancel (2 Presets)

Number	Patch Name	Algorithm	Description
P41	HC:Quiet60	<HmC>	Cancels 60Hz hum noise
P42	HC:Quiet50	<HmC>	Cancels 50Hz hum noise

Using the Special Effects

Mic Simulator (13 Presets)

Number	Patch Name	Algorithm	Description
P43	MS:57->58	<MSA/MSB>	Converts all-purpose dynamic mic sound to dynamic vocal mic sound - brings out midrange
P44	MS:57->421	<MSA/MSB>	Converts all-purpose dynamic mic sound to dynamic instrument mic sound - used for drums, guitar amps, and the like
P45	MS:57->451	<MSA/MSB>	Converts all-purpose dynamic mic sound to small condenser mic sound - used for acoustic guitar, cymbals, and the like
P46	MS:57->87	<MSA/MSB>	Converts all-purpose dynamic mic sound to large condenser mic sound - used for vocals and live instruments
P47	MS:57->47	<MSA/MSB>	Converts all-purpose dynamic mic sound to vintage condenser mic sound - used for vocals and instruments
P48	MS:57-Line	<MSA/MSB>	Nullifies any special characteristics of all-purpose dynamic mics, averaging frequency characteristics
P49	MS:DR->421	<MSA/MSB>	Converts Roland DR-20 sound to dynamic instrument mic sound
P50	MS:DR->451	<MSA/MSB>	Converts Roland DR-20 sound to small condenser mic sound - used for acoustic guitar, cymbals, and the like
P51	MS:DR->87	<MSA/MSB>	Converts Roland DR-20 sound to large condenser mic sound - used for vocals and live instruments
P52	MS:10->58	<MSA/MSB>	Converts headset mic sound to dynamic vocal mic sound
P53	MS:10->87	<MSA/MSB>	Converts headset mic sound to large condenser mic sound
P54	MS:Mini-57	<MSA/MSB>	Converts mini condenser mic sound to all-purpose dynamic mic sound
P55	MS:Mini-87	<MSA/MSB>	Converts mini condenser mic sound to large condenser mic sound

Vocal (8 Presets)

Number	Patch Name	Algorithm	Description
P56	VO:VocalFx	<Vocal Multi>	Basic vocal recording/mixdown setting
P57	VO:JazzVo	<Vocal Multi>	Natural effect: jazz club warmth added to reverb and vocals
P58	VO:RockVo	<Vocal Multi>	Special sound processed with Limiter/Enhancer and Unison effect
P59	VO:Naratin	<Vocal Multi>	Extensive compression for narration
P60	VO:BigChrs	<Vocal Multi>	Stereo breadth added; effect simulating larger groups of people
P61	VO:Club DJ	<Vocal Multi>	Fat sound from pitch shifting; good for DJs
P62	VO:AMRadio	<Vocal Multi>	Hard compression with narrow-band characteristics
P63	VO:BulHorn	<Guitar Multi>	Simulated sound from hand-held mic or old radio

Guitar (Presets)

Number	Patch Name	Algorithm	Description
P64	GT:RockLed	<Guitar Multi>	Straight distortion with delay
P65	GT:LA Lead	<Guitar Multi>	Lead guitar with compression and chorus
P66	GT:MetalJt	<Guitar Multi>	Distortion with metallic flange
P67	GT:Country	<Guitar Multi>	Clean sound with compression and delay

Voice Transformer (5 Presets)

Number	Patch Name	Algorithm	Description
P68	VT:M to Fm	<VoT>	Male to female voice conversion
P69	VT:Fm to M	<VoT>	Female to male voice conversion
P70	VT:MaleDuo	<VoT>	Duet sound: female voice added to single male
P71	VT:FemlDuo	<VoT>	Duet sound: male voice added to single female
P72	VT:Robot	<VoT>	Robotic speech sound

Pitch Shifter (3 Presets)

Number	Patch Name	Algorithm	Description
P73	PT:ST Dtun	<Psf>	Stereo detune: heavy sound
P74	PT:OctDown	<Psf>	Pitch shift: down one octave
P75	PT:TriadCd	<Psf>	Creates chords from single tones; switches major and minor chords

Lo-Fi (3 Presets)

Number	Patch Name	Algorithm	Description
P76	LF:Vinyl33	<Dsk>	Virtual 33 RPM vinyl record
P77	LF:SP disk	<Dsk>	Virtual SP record with noise from old-style needle
P78	LF:BadTune	<Rad>	AM radio; knob tuning effect

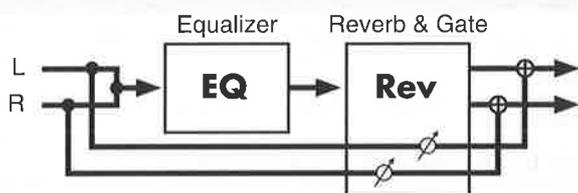
Samples (20 Presets)

Number	Patch Name	Algorithm	Description
P79	01>Rev&Gat	<Rev>	(p.110)
P80	02>ezDelay	<EzD>	(p.112)
P81	03>DlayRSS	<RSS>	(p.113)
P82	04>MTDelay	<MTD>	(p.114)
P83	05>4butn C	<SDD>	(p.115)
P84	06>FlingBx2	<BF2>	(p.116)
P85	07>80sPhas	<Phs>	(p.116)
P86	08>CompEtc	<Dyn>	(p.117)
P87	09>ParamEQ	<PEA/PEB>	(p.118)
P88	10>GraphEQ	<GEA/GEB>	(p.119)
P89	11>Iso&Fil	<Iso>	(p.119)
P90	12>Ct.Canc	<C.C>	(p.120)
P91	13>HumCanc	<HmC>	(p.121)
P92	14>MicSimu	<MSA/MSB>	(p.122)
P93	15>VocMult	<Vocal Multi>	(p.123)
P94	16>GtrMult	<Guitar Multi>	(p.124)
P95	17>VoTrans	<VoT>	(p.126)
P96	18>Pit-Sft	<Psf>	(p.127)
P97	19>Records	<Dsk>	(p.128)
P98	20>Radio	<Rad>	(p.129)
P99	21>Naratin	<Narration>	(p.129)

List of Algorithms for Each Effect

01 Reverb & Gate

This digital reverb creates a variety of room and hall reverberation sounds. A 3-band equalizer is connected in series before the reverb. Furthermore, the gate function provides additional special effects. This is normally used with the send/return method.



High Type SHELV, PEAK
High Gain -12+12 dB
High Freq 1.4-20.0 kHz
High Q 0.3-16.0

Just as with the low-frequency equalizer, this sets the gain, center frequency, and Q for the high-frequency equalizer.

Out Level -12+12 dB
 This sets the output volume.

Rev (Reverb & Gate)

This is a high-quality digital reverb. It is equipped with a gate function to cut the reverb sound as it is produced, providing you with gated reverb, reverse reverb, ducking reverb, and other particular effects.

Type HALL, ROOM, AMBI, PLATE

You can choose the reverb types.

HALL: This simulates large hall reverb.

ROOM: This simulates room reverb.

AMBI: Move the mike back to pick up more of the kit to get a sound with greater space and depth.

PLATE: This simulates the sound of plate reverb used in the recording studio.

Room Size 5-40 m

This sets the size of the room. For example, the setting "10m" gives you reverb as it would sound in a space with 10-meter walls.

Rev Time (Reverb Time) 0.1-32 sec

This sets the length (in seconds) of the reverb sound.

Pre Delay 0-200 msec

This sets the delay between the time source sound is first played and the point at which the reverb sound is played. This indicates distance from the source of the sound.

Diffusion 0-100

Increasing this value intensifies the sense of spatial width. This is effective when playing back sounds in stereo.

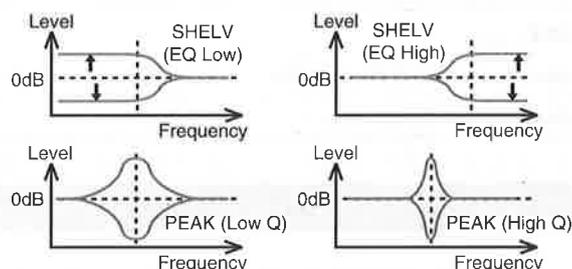
Density 0-100

Increasing this value makes the reverb sound denser. Reduce the density when using hall and garage reverbs.

Early Ref. (Early Reflection) 0-100

Raising the value for this setting increases the volume of the initial reflections. (Early reflections are the direct reflections of the walls. You can hear these sounds as they spread out in the initial reverb sound.)

EQ (3-Band Equalizer)



Low Type SHELV, PEAK

This switches the Low EQ curve characteristics (peaking-type/shelving-type).

Low Gain -12+12 dB

This sets the gain (boost or cut) of the equalizer.

Low Freq 20-2000 Hz

This sets the reference for the frequency range to be boost or cut. With the peaking-type equalizer, this means the center frequency; with the shelving-type equalizer, this becomes the cutoff frequency.

Low Q 0.3-16.0

This sets the bandwidth, or "Q" of the sound that is boost or cut when the low-frequency equalizer is set to the peaking type. This is disabled when the shelving-type equalizer is in effect.

Mid Gain -12+12 dB

Mid Freq 200-8000 Hz

Mid Q 0.3-10.0

Just as with the low-frequency equalizer, these set the gain, center frequency, and Q for the midrange equalizer. This equalizer is peaking-type only.

LoDampFreq (Low Damp Frequency) 50 Hz–4000 Hz

This sets the upper frequency limiting the range to be dampened. The Low Damp effect rapidly dampens the low frequency range of the reverb sound, resulting in a cleaner reverb effect.

LoDampGain (Low Damp Gain) -36 dB–0 dB

This sets the amount of the Low Damp effect.

HiDampFreq (High Damp Frequency) 1 kHz–20 kHz

In the natural world, the high frequencies in reverberation die out very quickly. High Damp, by attenuating the higher frequencies first, makes the reverb sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain (High Damp Gain) -36 dB–0 dB

This sets the amount of the High Damp effect. By combining low damp and high damp, you can indicate the qualities of the room such as surface material (or the sound absorption properties thereof).

HiCutFreq (High Cut Frequency) 0.2 kHz–20 kHz

This gently cuts the upper frequencies of the reverb sound, making the reverberation more stable. This alteration does not change with time.

GT Switch (Gate Switch) OFF, ON

This cuts the reverb sound output according to the volume of the source sound, turning the gate function on and off.

GT Mode (Gate Mode) GATE, DUCK

GATE: (Gate Reverb) When the source volume falls below a certain level, the gate closes, resulting in an effect similar to a gated reverb cutting off the reverb sound.

DUCK: (DuckingReverb) When the source volume gets high enough, the gate closes, which gives a ducking-type reverb effect. Stop the reverb sound only the input loud sound so that prevent the play sound become unclear.

GT Thresh (Threshold Level) 0–100

This sets volume level of the source sound needed to close the gate and cut the reverb sound.

GT Attack (Attack Time) 1–100

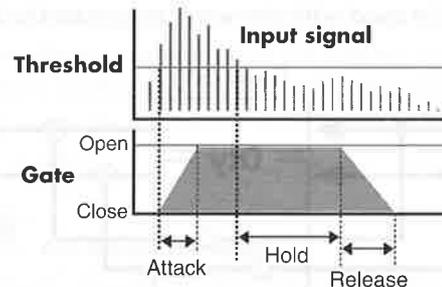
This sets the time it takes for the gate to fully open after being triggered.

GT Hold (Hold Time) 1–100

This sets the time it takes for cutting of the reverb sound to start from the instant the source sound reaches the threshold level.

GT Release (Release Time) 1–100

This sets the elapsed time between moment the gate begins to close to when it is fully close after the hold time has elapsed.

**FX Level 0–100**

This sets the volume of the reverb sound. When using the insert method, first get a rough balance between the reverb and the dry sounds, then lower the level a little.

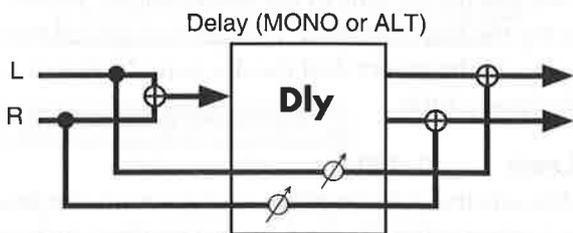
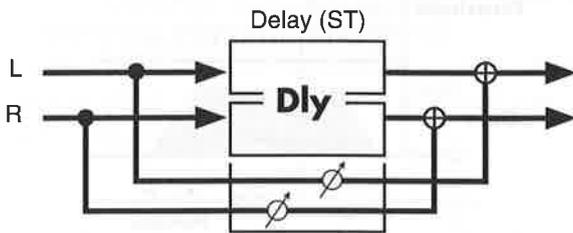
Dry Level 0–100

This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

* When using the gate function to get special reverb effects, make setting the gate easier by using longer reverb times. In such instances, instead of using Low Damp or High Damp to change the tone, do this with the High Cut frequency settings or through equalization at an earlier stage. To get sharp gate reverb, make the attack and release times extremely short, and set expression time to match the rhythm with the hold time setting. To get reverse reverb, sufficiently lengthen the attack time, and keep the release time short.

02 EZ Delay (Easy Delay)

This is a simple digital delay featuring high-quality sound. You can set length of the delay to get long echoes or fat, thick sounds. This algorithm is normally used with the send/return method.



Dly (Easy Delay)

This digital delay can be switched between stereo, mono, and alternate settings. It features a maximum delay of 1200 msec (1.2 seconds).

Type MONO, ST, ALT

MONO (Monaural): This is a single-input, dual-output delay. Stereo sound is mixed before being input.

ST (Stereo): This is a dual-input, dual-output delay. The delay sound output features the same stereo placement as that of the input.

ALT (Alternate): The left and right output of this alternate delay is the reverse of the input.

Time 1–1200 msec

This sets the delay time, that is, the elapsed time between the source sound and the delay sound. When in mono or stereo mode, the settings value is limited to the range allowed by the left-right shift settings. In alternate mode, this is limited to 1–600 milliseconds.

L-R Shift L1199–R1199 msec

This shifts the location from where the sound appears to originate by increasing the delay sound only on the left or the right. Depending on the time setting, settings values may be limited. This is disabled in alternate mode.

L-R Order L>>R, L<<R

In alternate mode, this setting determines which side plays the delay sound before the other (with L>>R, the left side is expressed first; when set to L<<R, the right side is expressed first). This is enabled only in alternate mode.

Feedback 0–100

This sets the times for the repeated delay sound. When set to 0, each delayed sound is played only once.

LoDampFreq (Low Damp Frequency) 50 Hz–4000 Hz

The Low Damp effect rapidly dampens the low frequency range of the delayed sound, resulting in a cleaner delay effect. This sets the upper frequency limiting the range to be dampened.

LoDampGain (Low Damp Gain) -36 dB–0 dB

This sets the amount of the Low Damp effect.

HiDampFreq (High Damp Frequency) 1 kHz–20 kHz

In the natural world, the high frequencies die out very quickly. By attenuating the higher frequencies first, High Damp makes the delay sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain (High Damp Gain) -36 dB–0 dB

This sets the amount of the High Damp effect.

FX Level (Overall Effects Level) 0–100

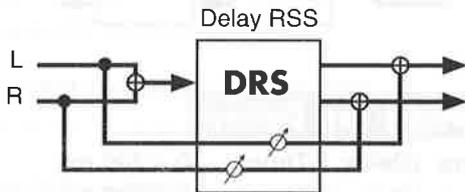
This sets the volume of the delayed sound. When using the insert method, first get a rough balance between the reverb and the dry sounds, then lower the level a little.

Dry Level 0–100

This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

03 DELAY RSS

This is a single-in/dual-out delay with RSS effects added to the output. When heard through stereo speakers, a space of 90 degrees between the left and right sides (of your head) opens up and a wider, three-dimensional delay sound can be heard within that space. This is usually added with the send/return method.

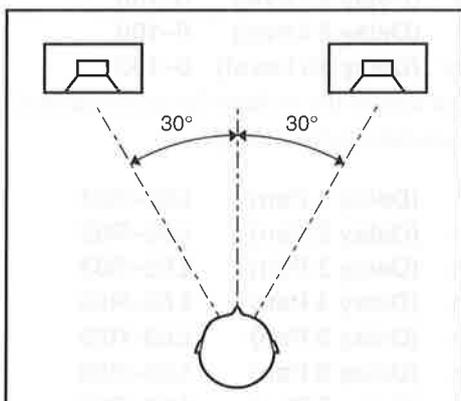


? RSS (p.164)

Notes on Using RSS

To exhibit the RSS effect to the fullest extent, take note of the following points.

- RSS works best in rooms where there is little reverberation.
- One-way speakers are most appropriate. However, coaxial or virtual coaxial speakers may also be used.
- Keep speakers as far away from side walls as possible.
- Do not position the left and right speakers with too much distance between them.
- Listen from the optimal position, as shown below.



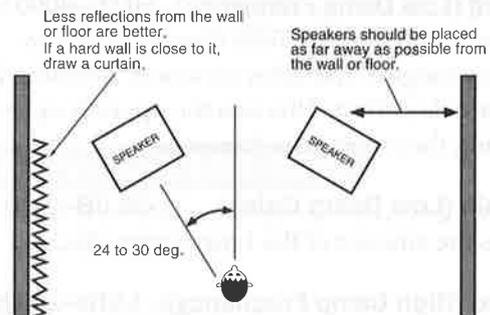
Notice on Package with RSS

RSS is an effect that gives the sound device three-dimensional sound with an ordinary stereo system. Monitoring environment is critical in exhibiting the RSS effect to the fullest extent. We recommend that packaging for products containing songs that use the RSS patch carry the following description at the time of sale.



For Stereo Speakers

This sound is made to be played specifically through speakers. The proper effect cannot be obtained if listened to through headphones.



DRS (Delay RSS)

This single-input delay adds the RSS effect for widened spatial characteristics.

Time 1–1200 msec

This sets the elapsed time between the source sound and the delay sound (the delay time) in millisecond units. The settings value is limited to the range allowed by the left-right shift and RSS shift settings.

Feedback 0–100

This sets the delay sound repeat time. When set to 0, the delayed sound is played only once.

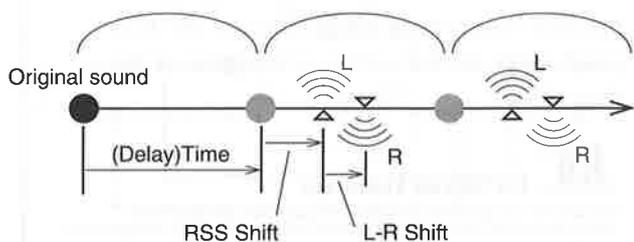
RSS Shift -1199–0–+1199 msec

The further increases the delay time only of sounds processed through RSS before the sounds are played. The settings value is limited to the range allowed by the delay time and left-right shift settings.

Using the Special Effects

L-R Shift L1199–R1199 msec

This shifts the location from where the sound appears to originate by increasing the delay sound only on the left or the right. The settings value is limited to the range allowed by the delay time and left-right shift settings.



LoDampFreq (Low Damp Frequency) 50 Hz–4000 Hz

The Low Damp effect rapidly dampens the low frequency range of the delayed sound, resulting in a cleaner delay effect. This sets the upper frequency limiting the range to be dampened.

LoDampGain (Low Damp Gain) -36 dB–0 dB

This sets the amount of the Low Damp effect.

HiDampFreq (High Damp Frequency) 1 kHz–20 kHz

In the natural world, the high frequencies die out very quickly. By attenuating the higher frequencies first, High Damp makes the delay sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain (High Damp Gain) -36 dB–0 dB

This sets the amount of the High Damp effect.

FX Level (Overall Effects Level) 0–100

Mono.D (Monaural Delay Level) 0–100

RSS D (Monaural Delay Level) 0–100

This sets the volume of the delay sound. Set levels for the monaural delay and RSS delay sounds individually, and then adjust the total level of the overall effect.

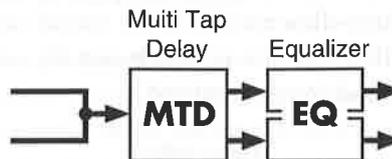
Dry Level 0–100

This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

* You can better interpret the RSS effect by setting the monaural delay level to 0. However, with the L-R shift set to 0 (no shift), the RSS effect may be difficult to hear.

04 Multi Tap Delay

This delay features ten delay times, each of which can be set individually. 3-band equalization is added to the output.



MTD (Multi Tap Delay)

Dly 1 Time (Delay 1 Time)	0–1200 ms
Dly 2 Time (Delay 2 Time)	0–1200 ms
Dly 3 Time (Delay 3 Time)	0–1200 ms
Dly 4 Time (Delay 4 Time)	0–1200 ms
Dly 5 Time (Delay 5 Time)	0–1200 ms
Dly 6 Time (Delay 6 Time)	0–1200 ms
Dly 7 Time (Delay 7 Time)	0–1200 ms
Dly 8 Time (Delay 8 Time)	0–1200 ms
Dly 9 Time (Delay 9 Time)	0–1200 ms
Dly 10 Time (Delay 10 Time)	0–1200 ms

You can adjust the delay time for each of the ten delay sounds individually.

Dly 1 Lev (Delay 1 Level)	0–100
Dly 2 Lev (Delay 2 Level)	0–100
Dly 3 Lev (Delay 3 Level)	0–100
Dly 4 Lev (Delay 4 Level)	0–100
Dly 5 Lev (Delay 5 Level)	0–100
Dly 6 Lev (Delay 6 Level)	0–100
Dly 7 Lev (Delay 7 Level)	0–100
Dly 8 Lev (Delay 8 Level)	0–100
Dly 9 Lev (Delay 9 Level)	0–100
Dly 10 Lev (Delay 10 Level)	0–100

You can adjust the volume level for each of the ten delay sounds individually.

Dly 1 Pan (Delay 1 Pan)	L63–R63
Dly 2 Pan (Delay 2 Pan)	L63–R63
Dly 3 Pan (Delay 3 Pan)	L63–R63
Dly 4 Pan (Delay 4 Pan)	L63–R63
Dly 5 Pan (Delay 5 Pan)	L63–R63
Dly 6 Pan (Delay 6 Pan)	L63–R63
Dly 7 Pan (Delay 7 Pan)	L63–R63
Dly 8 Pan (Delay 8 Pan)	L63–R63
Dly 9 Pan (Delay 9 Pan)	L63–R63
Dly 10 Pan (Delay 10 Pan)	L63–R63

You can adjust the pan setting for each of the ten delay sounds individually.

FB DelayTime (Feedback Delay Time) 1–1200 ms

This sets the delay repeat time when feedback is applied.

Feedback (Feedback Level) 0–100

Feedback returns the delayed sound back to the delay input. This adjusts the level of the delayed sound that is returned. The higher the value, the more times the delayed sound is fed back into the input. Setting the value too high may result in unpleasant oscillating sounds.

FX Level (Effects Level) 0–100

This sets the volume level of the delay sound.

Dry Level (Dry Level)

This sets the volume level of the dry sound.

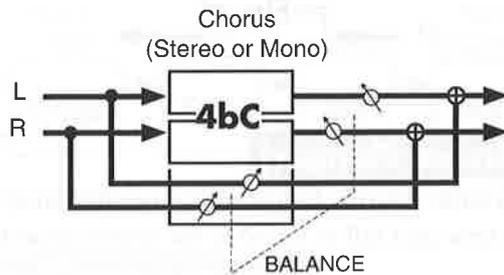
EQ (Equalizer)

These parameters are the same as those in the 3-band equalizer in Algorithm 01 (Reverb & Gate) (p.110).

Low Type	SHELV, PEAK
Low Gain	-12–+12 dB
Low Freq	20–2000 Hz
Low Q	0.3–16.0
Mid Gain	-12–+12 dB
Mid Freq	200–8000 Hz
Mid Q	0.3–16.0
High Type	SHELV, PEAK
High Gain	-12–+12 dB
High Freq	1.4–20.0 kHz
High Q	0.3–16.0
Out Level	-12–+12 dB

05 4 BUTTON CHORUS 320

This algorithm is a reproduction of Roland's SDD-320 spatial expression effect. This effect adds breadth to the stereo output. Although the insert method was used to add the SDD-320's effect, you can set this algorithm so that it can be used with the send/return method as well.

**4bc (Virtual SDD-320)**

This is an effect that gives the sound greater fullness and breadth.

Input MONO, ST

This setting determines whether the stereo sound input is converted to monaural output (MONO) or not (ST) (this was accomplished on the SDD-320 by connecting to different jacks).

ModeButton 1-4, 1+4, 2+4, 3+4

The SDD-320 featured four mode buttons which were pressed to change the way the effect worked. This setting simulates the buttons that were pressed (setting this to "1+4" simulates the effect achieved by pressing the 1 and 4 buttons simultaneously).

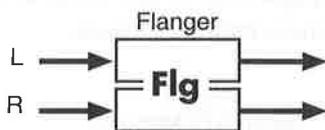
Dry/FX Bal (Dry/Effects Balance) 0–100

This adjusts the volume balance of the source sound and the effect. With a setting of 50, the volume of the source and the SDD-320 are equally balanced. Set to 0 for source only; at 100, only the sound from the SDD-320 is output. Set this to 100 when using the send/return method.

- * *Setting different mode buttons subtly changes the effect. Try each mode and select the one that best suits your aims. Roland's SDD-320, released in 1979 and in production for about eight years, is an analog effect that adds spaciousness to the sound. The panel features just five buttons (OFF and four MODE buttons); the different buttons are pressed to select the effect. Although a type of chorus effect, it features a natural sound, without a lot of oscillation. Even today, this model is a big favorite of many remix artists and musicians.*

06 Stereo Flanger

This algorithm features a pair of the same flanger circuits as that in the BOSS line compact flangers connected in parallel for stereo input. This algorithm is added using the insert method.



Flg (Stereo Flanger)

This adds a particular metallic-sounding modulation (rise and fall in pitch) to the source sound.

Model Type **NORM, HI-B**

This selects the model of simulated flanger.

NORM: (Normal type <BOSS BF-2>)

HI-B: (High-Band type <BOSS HF-2>) This setting raises the flanger sound one octave above that at the NORM setting.

Manual **0–100**

This sets the center frequency for the effect. This changes the pitch of the flanger's metallic sound.

Depth **0–100**

This sets the depth of the flanger's modulating sound.

Rate **0–100**

This sets the rate of the swelling of the flanger sound.

Resonance **0–100**

This sets the intensity of the flanger's effect. Take care to prevent this sound from damaging your ears or your playback equipment. To stop oscillation sounds immediately, press [EFFECTS ON/OFF].

LFO Phase **0–180 deg**

This adjusts left and right phase shift in the oscillator that produces the wavering effect. This changes the timing of the rise and fall of the modulation in the left and right channels. At 0deg (0 degrees), the left and right pitches rise and fall together. At 180 degrees, they are completely opposite.

Cross FB (Cross Feedback) **-100–+100**

This setting takes the input sounds from the right and left channels and returns them through the opposite channel's flanger, resulting in an even stronger flanging effect. A positive setting causes the inputs to be returned in phase; a negative setting produces outputs with inverted phase. Setting the Cross Feedback value too high may result in extreme oscillation. Take care to prevent this sound from damaging your ears or your playback equipment. To stop oscillation sounds immediately, press [EFFECTS ON/OFF].

Cross Mix **-100–+100**

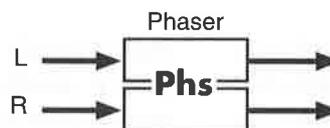
This setting takes the flanging sound from each of the right and left channels and mixes it with the flanging sound of the opposite channel.

A positive setting causes the inputs to be returned in phase; a negative setting produces outputs with inverted phase.

* *Cross Feedback and Cross Mix are effects that you cannot get even by actually connecting two flangers in parallel. These parameters have been added in this algorithm are intended for use in stereo. As a "hidden" technique, set a negative value for the Cross Mix effect (invert the phases) to get a stereo flanging effect that features a particular floating sensation.*

07 80s Phaser

This algorithm features two analog-type phasers arranged in parallel, making the effect good for use in stereo. The sound is added to the source sound as it cycles in and out of phase, creating the distinctive phaser modulation. This algorithm is used with insert method. With the send/return method, the effect is further mixed in with the source sound, which may weaken the effect.

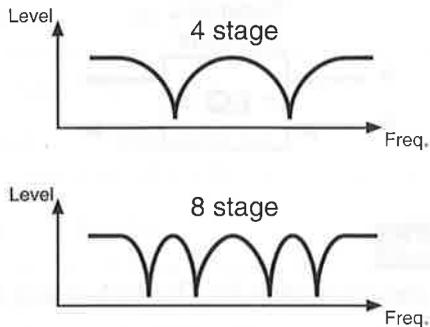


Phs (Stereo Phaser)

This effect features two linked monaural phasers arranged in parallel.

Shift Mode 4STG, 8STG

This sets the number of stages in the phase shift circuit (four or eight). Setting this to eight stages increases the number of points with cancelled frequencies, which sharpens the effect.

**CenterFreq (Center Frequency)** 0-100

This sets the center frequency of the phaser effect applied. The phaser effect frequency range rises as the value is increased.

Resonance 0-100

The more this value is increased, the stronger this distinctive effect becomes. However, setting the Resonance value too high can result in extreme oscillation. Take care to prevent this sound from damaging your ears or your playback equipment. To stop oscillation sounds immediately, press [EFFECTS ON/OFF].

LFO1 Rate 0-100**LFO2 Rate** 0-100

These set the modulation rate.

LFO1 Depth 0-100**LFO2 Depth** 0-100

These set the depth of the swelling sound.

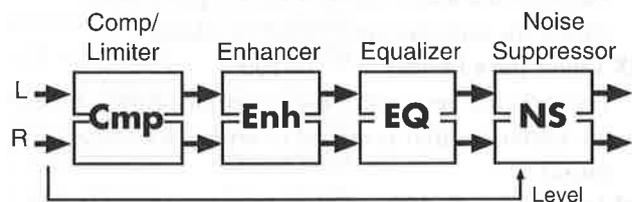
LFO1 Phase NORM, INV**LFO2 Phase** NORM, INV

These set the phase of the modulation left and right. When set to Normal (NORM), the phase is unchanged; when inverted (INV), the phase is inverted.

* This algorithm reproduces the sound of the 2U rack-mounted phasers of the early 1980s. Two monaural single-input, single-output phasers are arranged in parallel, allowing the creation of complex modulation patterns. The LFO1 and LFO2 have different modulation rates. LFO1 creates an extremely slow modulation; that of LFO2 is faster. You can set the phase of each one independently. With a large swelling sound from LFO1 and a very short, phase inverted wavering from in LFO2, you can create a sound producing a sensation of great breadth.

08 Stereo Dynamics Processor

This features a comp/limiter, enhancer, 3-band equalizer, and noise suppressor, all connected in series. This is convenient as an overall effect applied during mixdown, or as a way to fix input sounds when sampling. Use the insert method with this algorithm.

**Cmp (Comp/Limiter)**

This effect includes a compressor, which controls inconsistencies in sound levels by suppressing high sound levels while lifting weaker signals, in addition to a limiter that prevents the signal from reaching exceedingly high levels.

Threshold -60-0 dB

This sets the volume level at which the compression begins.

Attack 0-100

This sets the time after the threshold level is crossed for compression to begin.

Release 0-100

This sets the time for compression to stop after the sound falls back under the threshold level.

Ratio 1.5:1, 2:1, 4:1, 100:1

This sets the compression ratio of the source sound to the output sound.

Out Level -60-+12 dB

This sets the output volume.

* When used as a limiter, set the Ratio to 100:1 with a short attack and release times. If the volume exceeds the threshold, the sound is suppressed the instant the excess input is detected.

Using the Special Effects

Enh (Enhancer)

This effect regulates the high-end overtones, clarifying the sound and the sound contour.

Sens 0–100

This sets the degree to which the Enhancer effect is applied.

Frequency 1.0–10.0 kHz

This sets the lower limit of the frequencies to which the enhancement effect is added.

MIX Level (Mix Level) 0–100

This sets the amount of the overtones produced by the Enhancer that is mixed in with the source sound.

Out Level 0–100

This sets the output volume.

EQ (3-Band Equalizer)

These parameters are the same as those in the 3-band equalizer in Algorithm 1 (Reverb & Gate) (p.110).

Low Type SHELV, PEAK

Low Gain -12+12 dB

Low Freq 20–2000 Hz

Low Q 0.3–16.0

Mid Gain -12+12 dB

Mid Freq 200–8000 Hz

Mid Q 0.3–16.0

High Type SHELV, PEAK

High Gain -12+12 dB

High Freq 1.4–20.0 kHz

High Q 0.3–16.0

Out Level -12+12 dB

NS (Noise Suppressor)

This suppresses noise (such as background noise and hum from mics) at times when no sound is being played. The noise suppressor looks at the input level at the beginning of the effects chain, and when there is no input, suppresses any output at the end.

Threshold 0–100

This sets the volume level at which starts muting. Set the value higher when there is a lot of noise, and if there is less noise, decrease the value.

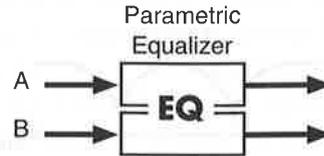
Release 0–100

This sets the time from when the noise suppression starts to the point where the volume reaches 0.

* This effect is lost if the threshold level is set too low, while setting it too high mutes even the sounds you want to hear. Furthermore, if the release time is set too long, the noise suppression then becomes distracting; when set too short, it sounds unnatural. Adjust to obtain the most suitable settings for the input noise conditions at any given time.

09 Parametric EQ

This is four-band parametric equalizer can be used as either two monaural equalizers or a single stereo equalizer.



Lnk (Link)

This is the link switch for Channels A and B.

Link Sw. (Link Switch) OFF, ON

When set to Off, each of the two channels works independently as a mono channel equalizer. When set to On, both equalizer channels work simultaneously on Channel A. (The Channel B settings are disregarded.)

PEQA/PEQB (Parametric Equalizer)

This is a four-band parametric equalizer.

In Level -60+12 dB

This adjusts the level before the signal passes through the equalizer.

Low Type SHELV, PEAK

This switches the Low EQ curve characteristics (peaking-type/shelving-type).

Low Gain -12+12 dB

This sets the gain (boost or cut) of the equalizer's low range.

Low Freq 20–2000 Hz

This adjusts the Low EQ center frequency.

Low Q 0.3–16

This sets the "Q", or frequency range over which the sounds passing through the Low EQ are boost or cut. The higher the value set, the narrower the range.

LoMid Gain -12+12 dB

This sets the gain (boost or cut) of the equalizer's Low-Mid range.

LoMid Freq 200–8000 Hz

This adjusts the Low-Mid EQ center frequency.

LoMid Q 0.3–16

This sets the "Q", or frequency range over which the sounds passing through the Low-Mid EQ are boost or cut. The higher the value set, the narrower the range.

HiMid Gain -12→+12 dB

This sets the gain (boost or cut) of the equalizer's High-Mid range.

HiMid Freq 200–8000 Hz

This adjusts the High-Mid EQ center frequency.

HiMid Q 0.3–16

This sets the "Q", or frequency range over which the sounds passing through the High-Mid EQ are boost or cut. The higher the value set, the narrower the range.

High Type SHELV, PEAK

This switches the High EQ curve characteristics (peaking-type/shelving-type).

High Gain -12→+12 dB

This sets the gain (boost or cut) of the equalizer's high range.

High Freq 1.4–20.0 kHz

This adjusts the High EQ center frequency.

High Q 0.3–16

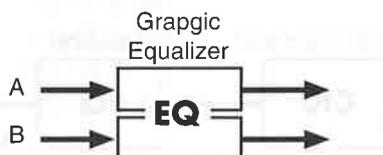
This sets the "Q", or frequency range over which the sounds passing through the High EQ are boost or cut. The higher the value set, the narrower the range.

Out Level -60→+12 dB

This sets the volume after the signal passes through the equalizer.

10 GraphicEQ (Graphic Equalizer)

This simulates a 10-band graphic equalizer. It can be used as either two monaural equalizers or a single stereo equalizer.

**Lnk (Link)**

These parameters are the same as those in Lnk in Algorithm 09 (Parametric Equalizer) (p.118).

Link Sw. (Link Switch) OFF, ON

GEQA/GEQB (Graphic Equalizer)

This simulates a 10-band graphic equalizer.

In Level -60→+12 dB

This adjusts the level before the signal passes through the equalizer.

31.2 Hz (Gain) -12→+12 dB**62.5 Hz (Gain)** -12→+12 dB**125 Hz (Gain)** -12→+12 dB**250 Hz (Gain)** -12→+12 dB**500 Hz (Gain)** -12→+12 dB**1 kHz (Gain)** -12→+12 dB**2 kHz (Gain)** -12→+12 dB**4 kHz (Gain)** -12→+12 dB**8 kHz (Gain)** -12→+12 dB**16 kHz (Gain)** -12→+12 dB

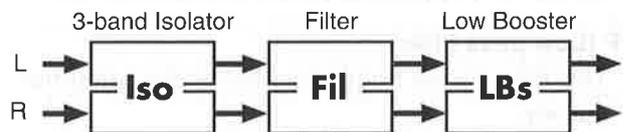
This sets the gain (boost or cut) for each of the equalizer's frequencies.

Out Level -60→+12 dB

This sets the volume after the signal passes through the equalizer.

11 Isolator & Filter

This features a 3-band isolator, filter, and low booster that are connected in series in stereo.

**Iso (3-Band Isolator)**

This effect separates the input sound into three frequency ranges—High, Mid, and Low—and boosts or cuts each range.

Level High -60 dB→+4 dB**Level Mid** -60 dB→+4 dB**Level Low** -60 dB→+4 dB

Each frequency range—High, Mid, or Low—can be boost or cut. At -60 dB, the sound becomes inaudible. A level of 0 dB is equivalent to the input level of the sound.

Using the Special Effects

AntiPhs Md (Mid Anti-Phase On/Off) ON, OFF
Level (Mid Anti-Phase Level) 0-100
AntiPhs Lo (Low Anti-Phase On/Off) ON, OFF
Level (Low Anti-Phase Level) 0-100

This turns the Anti-Phase function on and off and sets level settings for the low and mid frequency ranges. When turned on, the phase from the opposite stereo channel is inverted and added to the signal. Depending on the level settings, you can achieve an effect that sounds as if only a particular part is being boosted. (This is effective only in stereo.)

* Functions featured in machines consider standard equipment for remix artists and pro DJs have been carefully analyzed and reproduced. Ordinary equalizers allow some sound to persist even when the gain is turned down all the way. In contrast, the Isolator completely cuts off the sound. By switching the effect on and off, and by changing levels in real time, you can have the sound of specific parts appear and disappear.

Fil (Filter)

These filters allow you to greatly affect the frequency characteristics of the input sound. There are four types from which to select.

Type LPF, BPF, HPF, NOTCH

This sets the type of filter used.

LPF (Low pass filter)

This filter passes frequencies below the cutoff frequency.

BPF (Band pass filter)

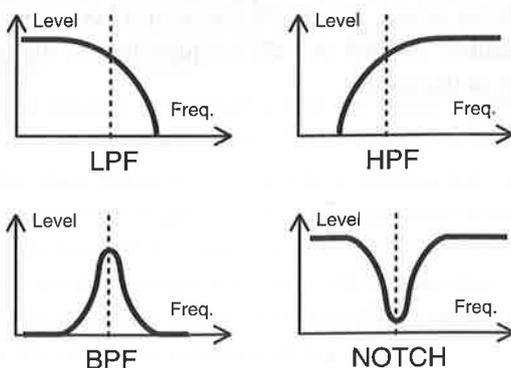
This filter passes frequencies near the cutoff frequency.

HPF (High pass filter)

This filter passes frequencies above the cutoff frequency.

NOTCH (Notch filter)

This filter passes frequencies other than those near the cutoff frequency.



Slope (oct) -12 dB, -24 dB

This sets the filter's slope characteristics at the cutoff frequency (-24 dB at one octave: steep; -12 dB at one octave: shallow).

CutOffFreq (Cutoff Frequency) 0-100

This sets the filter's cutoff frequency. The closer this is set to zero, the lower the cutoff frequency; the closer to 100, the higher the frequency.

Resonance 0-100

This sets the filter's resonance level. Raising the setting increases resonance near the cutoff frequency, giving the sound a particular characteristic. If the Resonance value is set too high, another sound (oscillation) begins to appear. Take care to prevent this sound from damaging your ears or your playback equipment. To stop oscillation sounds immediately, press [EFFECTS ON/OFF].

Gain 0-24 dB

This compensates for the drop in volume in the cutoff frequency range in some filters. The level of correction increases as the value is increased, raising the volume.

LBs (Low Booster)

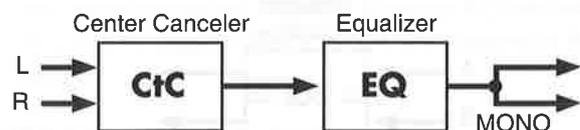
This adds emphasis to the low end to create a fuller bass sound.

BoostLevel 0-100

Increasing this value gives you a heavier low end (this effect may be hard to distinguish with certain Isolator and filter settings).

12 Center Canceller

Center Canceller is an effect that cuts out the sounds positioned in the center of the stereo field. In addition to this, it features a 3-band parametric equalizer connected in series. Use the insert method with this algorithm.



CtC (Center Canceller)

This cuts sounds (such as vocals) placed in the center of the stereo field.

Position (Cancel Position) -50+50

This is for finer adjustment of the cut position. This can be adjusted so that the sound is cut to a great extent.

Lo-F Limit (Low Frequency Limit) THRU, 20–2000 Hz

Hi-F Limit (High Frequency Limit) 1.0–20.0 kHz, THRU

These set the upper (Hi-F) and lower (Lo-F) limits of the frequency range to be cut. When "THRU" is selected, there is no limit on the frequencies to be cut.

* With this effect, output is converted to mono. Although you can get a similar effect by using the Anti-Phase function in Algorithm 11 (Isolator + Filter), this algorithm differs in that you can specify the upper and lower frequency limits of the effect. This is especially effective when cutting vocals, for example.

* This has no effect when the input sound is monaural. Additionally, even with stereo input, the amount of cut may differ depending on the particular recording.

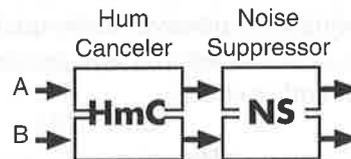
EQ (3-Band Equalizer)

These parameters are the same as those in the 3-band equalizer in Algorithm 01 (Reverb & Gate) (p.110).

Low Type	SHELV, PEAK
Low Gain	-12+12 dB
Low Freq	20–2000 Hz
Low Q	0.3–16.0
Mid Gain	-12+12 dB
Mid Freq	200–8000 Hz
Mid Q	0.3–16.0
High Type	SHELV, PEAK
High Gain	-12+12 dB
High Freq	1.4–20.0 kHz
High Q	0.3–16.0
Out Level	-12+12 dB

13 Hum Canceller

This removes unpleasant hum from the sound. Noise suppression is added to the output.

**HC Hum Canceller**

This removes unpleasant hum from the sound.

Frequency 20.0–800.0 Hz

This sets the frequency at which the hum is removed. Hum is removed at the selected frequency as well as multiples of that frequency. Set this to the frequency of your power source.

Width 10–40%

This sets the bandwidth of the filter removing the hum.

Depth 0–100

This sets the depth of the filter removing the hum.

Threshold 0–100

This sets the level at which the Hum Canceller becomes effective. When the signal falls below the specified level, only the hum is removed the signal. At the maximum value, the hum is removed at all times, regardless of the signal level.

Lo-F Limit (Low Frequency Limit) THRU, 20–2000 Hz

This sets the minimum frequency for the Hum Canceller function. When "THRU" is selected, all frequencies that can be played back through the A-6 are processed with the Hum Canceller.

Hi-F Limit (High Frequency Limit) 1.0–20.0 kHz, THRU

This sets the maximum frequency for the Hum Canceller function. When "THRU" is selected, all frequencies that can be played back through the A-6 are processed with the Hum Canceller.

NS (Noise Suppressor)

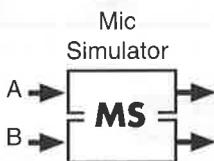
These parameters function the same way as those in the Noise Suppressor in Algorithm 08 (Stereo Dynamics Processor) (p.118).

Threshold 0–100

Release 0–100

14 Mic Simulator

This effect takes sounds recorded using standard dynamic mics, pin mics, or line signals, and converts them so that they sound as if they were recorded using an expensive studio-quality condenser mic. This also lets you add proximity effect, distance, and other effects.



Lnk (Link)

These parameters function the same way as those in Lnk in Algorithm 09 (Parametric Equalizer) (p.118).

Link Sw. (Link Switch) OFF, ON

MSA/MSB (Mic Simulator)

This effect converts the characteristics of inexpensive, all-purpose mics to those of expensive, studio-quality mics (microphone→microphone conversion). It makes signals that have already been recorded in your Project sound as if the changes in sound quality were made through mic selection and placement. This also adds characteristics of microphones to instrument sounds recorded through line input (line→microphone conversion).

Mic.Conv. (Mic Converter) OFF, ON

This switches the Mic Converter on and off. When turned off, the TypeIn, TypeOut, and Phase settings are disabled.

TypeIn DR-20, SML.D, HED.D, MIN.C, FLAT
This selects the type of mic to be used for recording.

DR-20: Roland DR-20 (dynamic mic manufactured by Roland)

SML.D: Small dynamic mic used for miking instruments, vocals, and the like

HED.D: Headset-type dynamic mic

MIN.C: Mini condenser mic

FLAT: Line input

TypeOut SML.D, VOC.D, LRG.D, SML.C, LRG.C, VNT.C, FLAT

This selects the type of mic simulated.

SML.D: Dynamic mic for general use with instruments and vocals. Perfect for guitar amps and snare drums.

VOC.D: Dynamic mic especially known for use with vocals. Features exceptional midrange presence. For vocals.

LRG.D: Dynamic mic with extended low range. For bass drums, toms, and similar applications.

SML.C: Small condenser mic for use with instruments. Features a particularly fine high range. For use with metal percussion instruments and acoustic guitars.

LRG.C: Flat-response condenser mic. For vocals, narration, live instruments, and the like.

VNT.C: Vintage condenser mic. For vocals, instruments, and the like.

FLAT: Mic with flat frequency response characteristics. Use this when you want the sound of a mic used for miking larger groups.

* When a condenser-type mic is selected in TypeOut, low-range noise transmitted through the mic stand may be accentuated due to the mic's low range characteristics. In such instances, either cut out any unnecessary low end with bass cut filter, or equip the mic stand with an isolation mount (a mic holder with rubber or other shock absorbing material).

Phase NORM, INV

This selects the mic phase.

NORM: In phase to the input.

INV: Inverted phase to the input.

Bass Cut (Bass Cut Filter) OFF, ON

This filter cuts out popping and other such noises as well as unneeded low end sounds. Switching this on creates a simulated bass cut filter. When turned off, the Freq setting is disabled.

Freq (Frequency) Thru, 20–2000 Hz

This adjusts the bass cut filter's cutoff frequency.

Distance OFF, ON

Microphones tend to accentuate the low end the closer they are placed to the source sound. This is known as the proximity effect. Switching on this effect simulates frequency characteristics and timing differences that change with distance. When turned off, the ProxFx, Interval settings are disabled.

Prox.Fx (Proximity Effect) -12+12

Microphones tend to accentuate the low end the closer they are placed to the source sound. This effect simulates those qualities, and compensates for the low end characteristics that change with distance. Positive settings bring the mic closer to the source, and negative settings put the mic at a greater distance.

Interval 0-3000 cm

This simulates the time difference that changes with distance from the source.

Limiter OFF, ON

This effect compresses high-level signals, thereby preventing distortion.

Freq (Frequency) THRU, 20-2000 Hz

This adjusts the level detector cutoff frequency.

Level -60+24 dB

This sets the Limiter's output level.

Thresh (Threshold) -60-0 dB

This sets the volume level at which the Limiter begins to work.

Attack 0-100

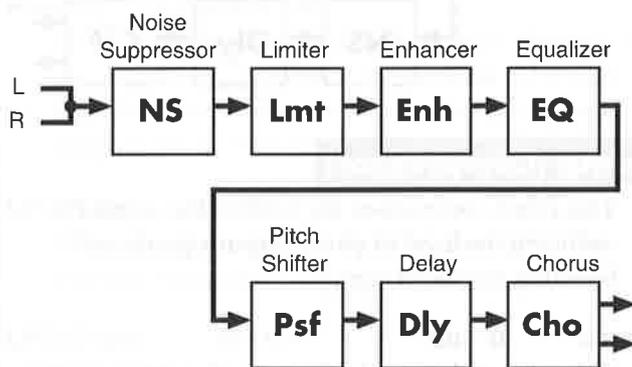
This sets the time for the Limiter to begin working after the input level exceeds the threshold level.

Release 0-100

This sets the time for the effect to stop after the sound falls back under the threshold level.

15 Vocal Multi

This is a multi-effects for vocals.



NS (Noise Suppressor)

These parameters function the same way as those in the Noise Suppressor in Algorithm 08 (Stereo Dynamics Processor) (p.118).

Threshold 0-100

Release 0-100

LMT (Limiter/De-Esser)

You can use either the Limiter or De-esser functions of this effect. The limiter is an effect that compresses high-level signals, thereby preventing distortion. De-esser is an effect that cuts the sibilance in vocals, giving sounds a softer quality.

Modes LMT, DES

This determines whether the Limiter or De-esser function is used.

LMT Level (Limiter Level) -60-12 dB

This sets the level of the signal passing through the Limiter.

LMT Thresh (Limiter Threshold) -60-0 dB

This adjusts the level of the signal at which the Limiter begins to function (the threshold level).

LMT Release (Limiter Release) 0-100

This adjusts the time for the Limiter to stop functioning after the signal falls back under the threshold level.

DES Sens (De-esser Sens) 0-100

This adjusts the sensitivity of the de-esser effect based on the input level.

Freq (De-esser Frequency) 1.0-10.0 kHz

This adjusts the frequency to which the De-esser effect is applied. The effect works best at higher frequencies than that of the settings.

Enh (Enhancer)

These parameters have the same functions as the Noise Suppressor Enh in Algorithm 08 (Stereo Dynamics Processor) (p.117).

Sens 0-100

Frequency 1.0-10.0 kHz

Mix Level 0-100

Out Level 0-100

Using the Special Effects

EQ (3-Band Equalizer)

These parameters function in the same way as those in the equalizer in Algorithm 01 (Reverb & Delay) (p.110).

Low Type	SHELV, PEAK
Low Gain	-12+12dB
Low Freq	20-2000Hz
Low Q	0.3-16.0
Mid Gain	-12+12dB
Mid Freq	200-8000Hz
Mid Q	0.3-16.0
High Type	SHELV, PEAK
High Gain	-12+12 dB
High Freq	1.4-20.0kHz
High Q	0.3-16.0
Out Level	-12+12dB

PSf (Pitch Shifter)

This effect changes the pitch of the source sound.

Pitch -12+12

This adjusts the pitch in semitone (half-step) increments.

Fine -100+100

This finely adjusts the pitch shift.

FX Level 0-100

This sets the volume of the pitch-shifted sound.

Dry Level 0-100

This sets the volume of the direct sound.

Dly

These parameters function in the same way as those in the Delay in Algorithm 02 (EZ Delay) (p.112).

Type	MONO, ALT
Time	1-1200 msec
Feedback	0-100
FX Level	0-100
Dry Level	0-100

Cho (Chorus)

This effect adds breadth to the sound, making it "fatter."

CH-R Modu. (Right Channel Modulation Phase)
NORM, INV

This is ordinarily set to NORM. When set to INV (INVERT), the modulation (rising and falling sound) in the right channel is inverted against the left channel. This gives an effect in which the modulation in the left and right channels is reversed.

Rate 0-100

This sets the chorus modulation cycle time.

Depth 0-100

This sets the chorus modulation depth.

FX Level (Effect Level) 0-100

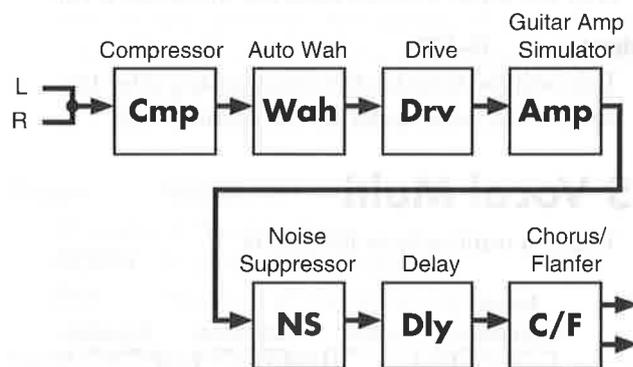
This adjusts the chorus volume level.

Dry Level 0-100

This adjusts the volume level of the direct sound.

16 GuitarMulti

This is a multi-effect for guitars.



Comp (Compressor)

This effect compresses the level of the signal by reducing the level of strong input signals and boosting low-level signals.

Attack 0-100

This adjusts the attack strength when the sound is input.

Level 0-100

This adjusts the Compressor volume level.

Sustain 0-100

This adjusts the length of time that the compressor continues to raise and hold the level of weak input.

Tone 0-100

This adjusts the compressor tone.

Wah (Auto Wah)

Wah is an effect created by the periodic change in a filter's frequency characteristics, giving a particular kind of tone change. You can get the wah effect by changing the volume of the input sound or by using cyclical time-based changes.

Filter Type LPF, BPF

This selects the type of filter used to make the wah. This selects either the BPF (band pass filter) or LPF (low pass filter).

When set to BPF, the wah effect occurs within a narrow frequency range; setting this to LPF produces the wah effect over a wide range of frequencies.

Frequency 0-100

This sets the reference frequency for the wah effect (the frequency at which the wah starts).

Peak 0-100

This sets the amount of wah effect near the reference frequency. The range narrows as the value increases; lower the value to get the wah effect over a wider range.

Trig.Sens (Trigger Sens) 0-100

Sets the sensitivity level when wah is added through changes in the source sound volume. The wah effect is added at lower volumes as the volume increases.

Polarity DOWN, UP

When the wah effect is added through changes in the source sound volume, this setting is for selecting whether the effect is to be added to the high frequencies (UP) or lower frequencies (DOWN).

LFO Rate 0-100

This adjusts the cycle time when the wah effect changes cyclically.

LFO Depth 0-100

This sets the depth of the wah sound when the effect changes cyclically. Set this to 0 when changes in the effect are not based on time cycles.

Drv (Drive)

This effect adds distortion, "spreading" the sound.

Type METAL, DS, OD

This selects the effect type.

METAL: This distorts the sound most.

DS: This is what most consider the typical distortion effect.

OD: This provides the mildest distortion of the three settings.

Gain 0-100

This sets the amount of distortion.

Level 0-100

This sets the volume of the effect sound.

Tone 0-100

This adjusts the tone character.

Setting becomes valid when TYPE is DS or OD.

High Gain 0-100

This sets the gain of the high range.

Setting becomes valid when TYPE is METAL.

Mid Gain 0-100

This sets the gain of the midrange.

Setting becomes valid when TYPE is METAL.

Low Gain 0-100

This sets the gain of the low range.

Setting becomes valid when TYPE is METAL.

Sim (Guitar Amp Simulator)

This simulates the sound of a guitar amplifier.

Type SMALL, BUILTIN 2STACK, 3STACK

This selects the guitar amp type.

SMALL: Small amp

BUILTIN: Built-in type amp

2STACK: Stack of two large amps

3STACK: Stack of three large amps

NS

These parameters function the same way as those in the Noise Suppressor in Algorithm 08 (Stereo Dynamics Processor) (p.118).

Threshold 0-100**Release 0-100**

Dly (Delay)

These parameters function in the same way as those in the Delay in Algorithm 02 (EZ Delay) (p.112).

- Type MONO, ALT
- Time 1–1200 msec
- Feedback 0–100
- FX Level 0–100
- Dry Level 0–100

C/F (Chorus/Flanger)

This provides you with chorus or flanger effects to suit your needs. Chorus is an effect that adds breadth and fullness to the sound. The flanger gives you effect that is like a jet sound rising and falling.

Mode CHORS, FLANG

This selects either the chorus or the flanger.

Mod LR Phs (Left-Right Modulation Phase)

NORM, INV

This sets the phase when the chorus or flanger sound is mixed in with the source sound in the left and right channels. When this is set to NORM, the channels are in phase; when set to INV (inverted), the phases of left and right channels are inverted relative to each other.

Rate 0–100

This sets the chorus or flanger modulation cycle time.

Depth 0–100

This sets the chorus or flanger modulation depth.

Manual 0–100

This sets the center frequency at which the chorus or flanging effect is applied.

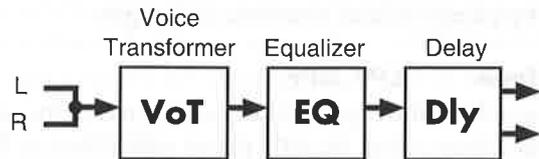
Resonance 0–100

The more this value is increased, the stronger this distinctive effect becomes. If the Resonance value is set too high, another sound (oscillation) begins to appear.

17 Voice Trans (Voice Transformer)

This effect, by controlling the keynote (root tone) and the formant independently, lets you create a variety of voice characteristics.

? **Formant** (p.165)



When Inputting Vocals

- When inputting vocal sounds, do so for only one person at a time. The effect does not function properly with multiple voice input.
- Do not let the vocals from speakers enter the mic. This is the same as using multiple voices, so the effect does not function properly.
- We recommend using a unidirectional mic. Additionally, be sure to speak as closely to the mic as possible.

VoT (Voice Transformer)

This effect, by controlling the keynote (root tone) and the formant independently, lets you create a variety of voice characteristics.

Robot Sw (Robot Switch) OFF, ON

This switches the Robot function on and off. When this is switched on, all sounds are output at the same pitch, regardless of the input pitch, resulting in vocal sounds without any intonation.

Pitch -63+63

This adjusts the voice character pitch.

Formant -63+63

This adjusts the voice character formant.

Dry/FX Bal (Dry Effect Balance) 0–100

The adjusts the volume balance of the voice character sound and the regular vocal sound.

Using the Special Effects

EQ (Equalizer)

These parameters are the same as those in the 3-band equalizer in Algorithm 01 (Reverb & Gate) (p.110).

Low Type	SHELV, PEAK
Low Gain	-12+12 dB
Low Freq	20-2000 Hz
Low Q	0.3-16.0
Mid Gain	-12+12 dB
Mid Freq	200-8000 Hz
Mid Q	0.3-16.0
High Type	SHELV, PEAK
High Gain	-12+12 dB
High Freq	1.4-20.0 kHz
High Q	0.3-16.0
Out Level	-12+12 dB

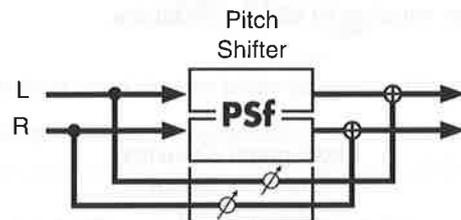
Dly (Delay)

These parameters function in the same way as those in the Delay in Algorithm 02 (EZ Delay) (p.112).

Type	MONO, ALT
Time	1-1200 msec
Feedback	0-100
FX Level	0-100
Dry Level	0-100

18 Stereo Pitch Shifter

This algorithm features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down. This algorithm can be used with either the insert method or the send/return method.

**Psf (Stereo Pitch Shifter)**

This effect changes the pitch of the source sound. The degree of pitch shift can be set separately for each channel.

Stereo Link ON, OFF

This selects whether the pitch shift in left and right channels are to be linked or set independently. When set to "ON," the right channel pitch shifter settings conform to those set for the left channel.

Grade 1, 2, 3, 4, 5

This sets the quality of the effect sound. The higher the value is set, the more natural-sounding the effect is; however, this increases the delay from the source sound as well. Depending on the setting, you may be able to hear some disruption of the sound in drums and other parts, so select the setting after listening to the sound at different settings.

L ch Pitch (Left Channel Pitch)	-12+12
Fine (Left Channel Fine Pitch)	-100+100
R ch Pitch (Right Channel Pitch)	-12+12
Fine (Right Channel Fine Pitch)	-100+100

These set the degree of left and right pitch shift. You can adjust the pitch shift in semitones with "Pitch" and in cents (1/100 of a semitone) with "Fine" for minute adjustment of the pitch shift. When Stereo Link is on, changes to the right channel settings are disregarded.

FX Level 0-100

This sets the volume of the effect.

Dry Level 0-100

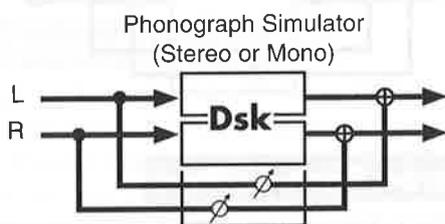
This sets the volume of the source sound.

* When simply changing the pitch of the source sound, set the dry level to 0 and use with the insert method.

19 Phonograph (Phonograph <Analog Record Simulator>)

This algorithm reproduces the sound of an analog record played on a record player. This includes the various noises characteristic of records and the uneven rotation of older turntables.

* This algorithm is usually added with the insert method.



Dsk (Phonograph)

This produces an effect that makes sound appear to be from an analog record being played.

Input MONO, ST

Use this setting to select either a stereo or monaural record player for the effect.

SignalDist (Signal Distortion) 0-100

This sets the amount of distortion. The higher the value is set, the more the sound is distorted.

Freq.Range (Frequency Range) 0-100

This sets the frequency characteristics of the playback system. Lowering the value degrades the characteristics, making the sound appear to come from an older system.

Disk Type LP, EP, SP

This sets the turntable rotation speed. This influences the cycles of scratches and noises being played.

LP: 33 1/3 rpm

EP: 45 rpm

SP: 78 rpm

Noise Total 0-100

This is the overall noise level.

Scratch 0-100

This simulates scratches on the record.

Dust 0-100

This simulates noise from dust on the record.

Hiss 0-100

These settings add the noise peculiar to analog records. The noises increase as the values are raised. Set each of the Scratch, Dust, and Hiss noise levels to get a balance, then adjust the overall amount of noise with the Total Noise Level control.

W/F Total (Total Wow and Flutter) 0-100

This is the overall amount of the rotational irregularity.

Wow 0-100

This is the overall amount of long-cycle rotational irregularity.

Flutter 0-100

This is the overall amount of short-cycle rotational irregularity.

Random 0-100

This is the overall amount of random rotational irregularity.

These settings determine the rotational irregularities of the record player. Set each of the Wow, Flutter, and Random levels to get a balance, then adjust the overall depth of the effect with the Total Wow/Flutter control.

FX Level 0-100

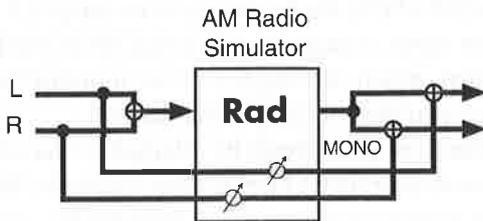
This sets the volume of the effect sound. It is ordinarily set to 100.

Dry Level 0-100

This sets the volume of the source sound. It is ordinarily set to 0. Raise this when you want to mix in the source sound. When reproducing the sound of very old records such as SPs, you can make it sound more realistic by using monaural input. This effect continues to make the noises during the record's "silent" portions. To quickly turn off this noise, press [EFFECTS ON/OFF] to remove the effect.

20 Radio Tuning

This algorithm reproduces the sound of an AM radio playing. This is usually added with the insert method.



Rad (AM Radio Simulator)

This effect makes the source sound appear to be played from an AM radio.

Tuning -50+50

This setting adjusts the amount of noise that occurs when the radio is tuned. A setting of 0 corresponds to exact tuning.

Noise Level 0-100

This sets the noise level.

Freq.Range 0-100

This sets the frequency characteristics of the radio. Lowering the value worsens the characteristics, making the sound appear to be coming from a small radio speaker.

FX Level 0-100

This sets the volume of the effect sound. It is ordinarily set to 100.

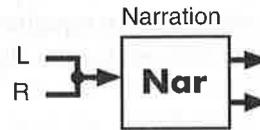
Dry Level 0-100

This sets the volume of the source sound. It is ordinarily set to 0. Raise this when you want to mix in the source sound.

* When the Noise Level is set to anything other than 0, the radio noise continues even when there is no source sound. When inserting the effect into MASTER OUT, the noise does not stop. To quickly turn off this noise, press [EFFECTS ON/OFF] to remove the effect.

21 Narration

This is a combination of effects most suitable for narration. These adjust the overall level for each effect.



NoiseSup. (Noise Suppressor) 0-100

This adjusts the Noise Suppressor (p.118) level.

Comp./Lim (Comp/Limiter) 0-100

This adjusts the Comp/Limiter (p.117) level.

Enhancer (Enhancer) 0-100

This adjusts the Enhancer (p.117) level.

Chapter 11 Other Convenient Functions

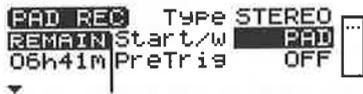
Recording Over Sounds That Are Played

Clips that are pasted on Track A–D, or clips sounded when the pads are pressed can be sampled again. At this time, you can add effects or equalizer adjustments along with the sound and create new clips by sampling together.

Sampling Pad Sounds To A Different Pad

You can layer up to three pad sounds, after which you can then sample over them to another pad.

1. Press [PAD REC].
2. Press [▼] until “Start/w” is highlighted in the display.
3. Rotate the [TIME/VALUE] dial to select “PAD.”



4. Press the pad to be played back. While checking the meter at the very left of the display, adjust the level by moving the PAD fader.
5. Press the sampling destination pad.
6. Determine the recording level. While confirming that the sound is audible, adjust the PAD fader so that the meter fluctuates at as high a level as possible without crossing the dotted line at the upper portion of the display screen.
7. Press [PAD REC] (START).
8. When the pad to be played back is pressed, sampling begins automatically.
9. When you have finished sampling, press [PAD REC] (STOP). Check the result of the sampling.

When Adding Effects While Sampling

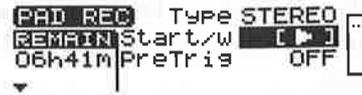
When inserting effects while sampling, set “Routing” to “1 (INS INPUT)” (p.101).

Sampling Track Sounds to the Pads

You can combine up to three track sounds, and then sample over them to a pad.

1. Press [PAD REC].
2. Press [▼] until “Start/w” is highlighted in the display.

3. Rotate the [TIME/VALUE] dial to select [▶].



4. Press [STATUS] for the tracks to be sampled. The button lights orange. At this point, when the button turns green, although you can monitor the tracks, you cannot sample that sound. Furthermore you cannot be selected for recording or monitoring ([STATUS] button cannot be lit either orange or green) for all four tracks.
5. Press [▶] (PLAY). The selected tracks are played back.
6. Determine the recording level. While confirming that the sound is audible, adjust the Track fader so that the meter fluctuates at as high a level as possible without crossing the dotted line at the upper portion of the display screen.
7. Press [◀◀] (ZERO). Alternatively, you can call up the point in the project at which you want to begin.
8. Press [PAD REC] (START).
9. When [▶] (PLAY) is pressed, sampling begins automatically.
10. When you have finished sampling, press [PAD REC] (STOP). Check the result of the sampling.

Techniques for Use During Sampling

- If sounds are being input through the MIC jack or INPUT jacks (VCR, CD), those sounds can be sampled together with the track sounds. If not being used, turn down the Input Mixer (recording level) knob all the way down (to 0).
- If a pad is pressed and its clip played, the sound is also sampled along with the other sounds. However, when three of the tracks' [STATUS] buttons are lit either green or orange, the pad clip does not play, due to the voice limit.

Recording Track Sounds To Another Track

You can mix the sounds played back from multiple tracks and record the mix to one track.

1. Press [◀◀ (ZERO)]. Alternatively, you can call up the point in the project at which you want to start recording over.
2. Press [STATUS] for the track on which you want to record, causing the button to blink red.
3. Press [STATUS] for the tracks to wish to play back, causing the buttons to light orange.
4. Press [SYSTEM].
5. Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].
6. Press [▲] or [▼] until "Mon(PrePunch) is highlighted in the display.
7. Rotate the [TIME/VALUE] dial. Here, select "SOURCE."

```
SYSTEM COMMON
DigitalIn OFF
Mon(PrePunch) SOURCE
PreviewLength 1.0sec
```

Mon(PrePunch) (PrePunch Monitor)

This selects the sound to the monitored.

SOURCE: This monitors the sound from mics and CD input, as well as playback of tracks you want to record over.

TRACK: This monitors the sound from tracks that have already been recorded.

8. While holding down [SHIFT], press [BAL/EQ/FX (EFFECTS)] for the tracks being played back.
9. Here, you can adjust the volume, stereo balance, effect send level, and equalizer for the playback tracks. Press [▲], [▼], [◀], or [▶] and rotate the [TIME/VALUE] dial to carry out these operations (p.81).

```
TRACK A
Level | Balance 00
< 0> | Fx Send 80
v-EQ.

TRACK A EQ ON MidQ 0.5
      | Hi 10kHz/± 0
      | Mid 2.0kHz/± 0
^ L ↔ H | Low 80Hz/± 0
```

10. Press [DISPLAY (HOME)] to display the Channel Meter screen.
11. Press [▶ (PLAY)]. Check to make sure that the level meter for the channel being recorded moves in response to the fader for the playback being moved. The meter for the track being recorded moves as the recording level meter.
12. Adjust the playback track faders to achieve the balance between the recording and the tracks. Set the level so that the meter for the record destination track fluctuates within as high a range as possible without exceeding acceptable levels.

13. Press [■ (STOP)].
14. Press [◀◀ (ZERO)]. Alternatively, call up the point in the project at which you want to do the recording over.
15. Press [● (REC)].
16. Press [▶ (PLAY)]. Recording begins.
17. When you have finished recording, Press [■ (STOP)]. Check the result of the recording.

Techniques for Use During Recording

- If sounds are being input through the MIC jack or INPUT jacks (VCR, CD), those sounds can be recorded together with the track sounds. If not being used, turn down the Input Mixer (recording level) knob all the way down (to 0).
- If a pad is pressed and its clip played, the sound is also recorded along with the other sounds. However, when three of the tracks' [TRACK] buttons are lit either green or orange, the pad clip does not play, due to the voice limit.
- The monitor volume is adjusted with the channel fader for the track being recorded. Moving this fader does not affect the recording level in any way.

Lifting the Mute on Tracks and Playing Tracks Simultaneously

The normal process during playback of projects is as follows:

- When [STATUS] is pressed to switch a track from muted status (light off) to playback status (green light on), a brief moment is required for the sounds to actually begin playing.
- When a pad is held down so that the clip it contains continues to play, pressing [▶] temporarily stops all pads from playing.

You can avoid these problems by turning on **Track Voice Reserve**.

1. Press [PROJECT].
2. Press [▼] until "Set Name" is highlighted in the display.
3. Press [ENTER/YES].
4. Press [▼] until "Tr.VoiceReserve" is highlighted in the display.

```
PROJECT NAME
Name [Demo Project]
Tr.VoiceReserve ON
```

Other Convenient Functions

5. Rotate the [TIME/VALUE] dial to select "ON."

6. Press [DISPLAY (HOME)].

* Track Voice Reserve is stored for each project separately. If the Save procedure is not carried out, then the changes in the settings become ineffective when the power is cut or turned off, or if another project is called up.

Turning on the Track Voice Reserve function involves the following effects and limitations.

Effects:

- During playback of the project, pressing the green [STATUS] switches the button to blinking green (playback standby mute). Pressing [STATUS] once more while in this mode restores the steady green light, and instantly begins the playback of the sounds on the track.
- To change the [STATUS] button to blinking green (playback standby mute) before starting playback of the project, hold down [■ (STOP)] and press a [STATUS] button that is lit green. This way, the pad (clip) continues playing during playback even if [▶ (PLAY)] is pressed.

Limitations:

- Even while the project is stopped, the maximum number of pads that can be played simultaneously is limited to the number of [STATUS] that are not lit.
- [STATUS] buttons that are not lit cannot be switched to green during playback of the project.
- During playback of the project, [STATUS] buttons that are lit green cannot be switched off (instead, the green light switches from steady to blinking).

Naming Pad Groups

You can name each of the 99 pad groups using up to ten characters for each name (pad group name). Pad group names are indicated in the screen when their respective pad groups are copied (p.92), erased (p.93), and in other operations. Additionally, by pressing [DISPLAY (HOME)] while holding down [SHIFT], you can confirm the name of the pad group currently playing.

You may find it convenient to use some of the following in pad group names.

- Clip types ("BGM," "SE," "Voice," and so on)
- Names of Projects that mainly use that group
- Memos such as dates when clips contained in the pads were sampled (such as "Aug.7, '98" or "5/12 pm9:30").

1. Beforehand, select the pad group you want to name.

2. Press [PAD].

3. Press [▼] until "Set Group Param?" is highlighted in the display.

4. Press [ENTER/YES].

5. Confirm that "Name" appears in the display.

```
GROUP PARAM
Name      [Demo-03]  ]
FootSwAssign  0
```

6. Press [◀] or [▶] until the position for the character is highlighted in the display.

7. Rotate the [TIME/VALUE] dial. The characters are displayed in order.

8. Repeat Steps 6 and 7 to name the different pad groups.

9. Press [DISPLAY (HOME)]. The names added to the pad groups are saved automatically when other changes are made, such as when the pad group is changed; no special save operation is necessary.

Using The Pads as Character Input Buttons

When the position for the character you want to change is highlighted in the display, you can use the pads as character input buttons. In this case, no sounds are played even when the pads are pressed.

[0]–[9]: These pads input characters. The characters printed change each time the buttons are pressed.

[F1]: The left of the highlighted character is deleted, and all characters following are moved forward one space.

[F2]: The highlighted character is erased.

[F3]: A space is inserted at the position of the highlighted character.

[BEEP]: Pressing this pad toggles the indicator light on and off; while on, characters are input in upper case.

Closing Gaps Between Clips in Pads

You can take clips dotted all over the Pad Groups 01–99, pack them in a number of adjacent pad groups, then assign new numbers to the groups. This is referred to as **renumbering**.

For example, with Clips A, B, C, ..., Q, and R in Pad Groups 01–04 arranged as shown, use the following procedure to set the range within Pad Groups 02–03, and renumber the pads.

		PAD Number									
		0	1	2	3	4	5	6	7	8	9
PAD Group 01		A	B	-	-	-	-	C	-	-	D
02		-	E	F	-	G	-	-	H	-	I
03		J	-	-	K	L	M	-	N	O	-
04		-	P	-	-	Q	-	-	-	-	R



		PAD Number									
		0	1	2	3	4	5	6	7	8	9
PAD Group 01		A	B	-	-	-	-	C	-	-	D
02		E	F	G	H	K	J	K	L	M	N
03		O	-	-	-	-	-	-	-	-	-
04		-	P	-	-	Q	-	-	-	-	R

Groups 01 and 04 are left as is. Groups 02 and 03 are targeted for the renumber process, and grouped together.

1. Press [PAD].
2. Press [▼] until "Renumber?" is highlighted in the display.
3. Press [ENTER/YES].

RENUMBER

From 50[Demo-01]
To 50[Demo-04]

4. Confirm that "From" is highlighted in the display, then rotate the [TIME/VALUE] dial to select the number of the pad group that you want to be renumbered first.
5. Press [▼]. "To" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial to select the number of the pad group that you want to be renumbered end.
7. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
8. Press [ENTER/YES].
9. When the renumber operation is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Protecting The Pad Groups

To avoid mishaps the clips assigned to the pads, such as loss of samples due to accidents in procedures or unintended overwriting, you can use the Protect function. Pad groups and the clips they contain behave in the following fashion when **Protect** is in effect.

- If you try to sample to the group, the warning message "Group is Protected." appears on the screen. Sampling cannot be carried out.
- The clips' parameter settings screens ([PAD] → "Set Pad Param? → [ENTER/YES]) cannot be selected.
- The pad groups' parameter settings screens ([PAD] → "Set Group Param? → [ENTER/YES]) cannot be selected.
- When an attempt to edit the pad groups by changing the contents, trying to delete pad groups or clips, or through other procedures, the warning message is displayed, and the editing is not allowed.
- When an attempt is made to copy or move pad groups or clips, or carry out another similar editing operation that involve specifying a write destination, these operations cannot be carried out if the write destination is protected.
- When carrying out the pad groups' Renumber process, specified ranges within pad group numbers that are protected cannot be processed.

Applying Protect to Pad Groups

1. Press [PAD].
2. Press [▼] until "Group Protection" is highlighted in the display.
3. Press [ENTER/YES].
4. Rotate the [TIME/VALUE] dial to select the pad group to which protection is to be applied.
5. Check to see that "(Now OFF → Turn ON)" appears in the display, then press [ENTER/YES].

TURN GRP PROTECTION
50[Demo-01]
(Now OFF → Turn ON)
[ENTER] to Do.

6. Press [DISPLAY (HOME)]. Protect ON/OFF settings are saved automatically when other changes are made, such as when the power is turned off; no special save operation is necessary.

Removing Protect from Pad Groups

1. Press [PAD].
2. Press [▼] until "Group Protection" is highlighted in the display.
3. Press [ENTER/YES].
4. Rotate the [TIME/VALUE] dial to select the pad group to which protection is to be released.
5. Check to see that "(Now ON → Turn OFF)" appears in the display, then press [ENTER/YES].

```

TURN GRP PROTECTION
50 [Demo-01 ]
<Now ON → Turn OFF>
[ENTER] to Do.
    
```

6. Press [DISPLAY (HOME)]. Protect ON/OFF settings are saved automatically when other changes are made, such as when the power is turned off; no special save operation is necessary.

The Difference Between Project Protect and Pad Group Protect

You can also apply the Protect feature to entire Projects (p.43). **This protects Projects on the hard disk.** Therefore, you can still make changes to the Project currently called up. However, it cannot be protected from overwriting.

For this, applying protection to the pad group (including the clips it contains) prohibits data-changing operations themselves.

Playing Back Clips Continuously (Auto Play Clip)

Up to 990 clips can be played back without breaks. By recording content from an external video cassette recorder, MD recorder, DAT recorder, or similar device, you can save (back up) on external devices the "sound data" as clips on the hard disk.

To recover the clips, please sample the backed up audio data to a pad again, and then execute Auto Divide (p.98).

1. Connect the A-6's MASTER jacks or DIGITAL OUT connector (if provided with the A6-OP1) to the input jack of an external video cassette recorder, MD recorder, DAT recorder, or other such device.
2. Press [PAD].
3. Press [▼] until "Auto Play Clip?" appears in the display.
4. Press [ENTER/YES].

5. Press [▲] or [▼] or rotate the [TIME/VALUE] dial.

```

AUTO PLAY CLIP
From          GROUP50-0
To            GROUP54-9
▼ Interval    0.5s
    
```

```

AUTO PLAY CLIP
▲ To          GROUP54-9
Interval      0.5s
Fader Ctrl 1  OFF
    
```

From (Play From)

This selects the group (Group 01–99) and pad (0–9) of the first clip that is to be played back.

To (Play To)

This selects the group (Group 01–99) and pad (0–9) of the end clip that is to be played back.

Interval

This sets the interval (0.5, 1.0, 1.5, or 2.0 seconds) between the end of one clip and the beginning of playback of the following clip. This corresponds to the "break" or blank space between audio clips. When sampling saved sound data again using the A-6, this setting helps make use of the Auto Divide function (p.98) more effectively.

FaderCtrl (Fader Control)

This determines the working of the PAD fader and MASTER fader when Auto Play Clip is in progress.

ON: Fader movements affect the volume levels. This lets you adjust playback levels based on whatever the recording levels are.

OFF: Fader movements have no effect on the volume levels. Regardless of recording levels, playback levels are fixed, and the PAD and MASTER faders are set at 0 dB.

* When set to "OFF," then if a clip with high volume levels is played, that volume cannot be turned down with the A-6. In such cases, use external devices to adjust the volume levels.

6. Put the video cassette recorder, MD recorder, or other device in record mode.
7. Press [ENTER/YES]. The clips are played back continuously. Pad blinks as that is being played back.
8. If it appears that the remaining recording time on the tape or disk is going to be insufficient, press [EXIT/NO]. Playback of the clips is paused. Replacing the tape or disk and putting the recording device back in record mode, press [ENTER/YES] once again.
9. When all of the clips have been played back, "Completed" appears in the display. Stop the video cassette recorder or MD recorder.
10. Press [DISPLAY (HOME)].

Connecting a GPI Device or Foot Switch

You can connect a GPI device or foot switch (such as the optional DP-2 or BOSS FS-5U; sold separately) to the GPI jack on the rear panel.

To Switch the Input for the GPI Jack

1. Press [SYSTEM].
2. Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].
3. Press [▼] until "FSW Type" is highlighted in the display.
4. Rotate the [TIME/VALUE] dial.

```

SYSTEM COMMON
▲ FSW Func      PLAY/STOP
FSW Type       GPI
▼ ShiftLock    OFF
  
```

FSW Type (Foot Switch Type)

Set this to "GPI" when connecting a GPI device. When connecting a foot switch, set "DP-2."

5. Press [DISPLAY (HOME)].
6. Press [SHUT DOWN (DATA SAVE)]. If required, save the Project and turn off the power.
7. Power up once more.

* The "FSW Type" setting goes into effect when the power is turned on.

To Switch to the Foot Switch Function

1. Press [SYSTEM].
2. Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].
3. Press [▲] or [▼] until "FSW Func" is highlighted in the display.
4. Rotate the [TIME/VALUE] dial.

```

SYSTEM COMMON
▲ PreviewLength 1.0sec
ScrubLength    45msec
▼ FSW Func     PLAY/STOP
  
```

FSW Func (Foot Switch Function)

This selects the function of the connected GPI device or foot switch.

PLAY/STOP: Plays back and stops the Project.
 SAMPL TRIG: Plays specified clips in each pad group.
 PUNCH I/O: Function is the same as [● (REC)]. This is used to toggle between record and playback during Punch In and Punch Out Recording.

5. Press [DISPLAY (HOME)].

To Play the Specified Clip in Each Pad Group

When "FSW Func" is set to "SAMPL TRIG," then you can press the foot switch to play the pad clip specified beforehand for each pad group.

1. Before starting, call up pad group containing the clip you want to play.
2. Press [PAD].
3. Press [▼] until "Set Group Param?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▼] until "FootSw Assign" is highlighted in the display.
6. Rotate the [TIME/VALUE] dial to specify the pad numbers (1-16).

```

GROUP PARAM
Name [Demo-03 ]
FootSwAssign [0]
  
```

7. Press [DISPLAY (HOME)]. Confirm that the specified clip is played when the foot switch is pressed.

Maintaining/Holding the [SHIFT] Function

Pressing the [SHIFT] button in conjunction with a other buttons results in a function other than that produced by pressing those buttons alone. The function obtained by pressing the button with [SHIFT] held down is printed beneath these buttons. You can set the A-6 so that the function of [SHIFT] being held down continuously is maintained.

1. Press [SYSTEM].
2. Confirm that "Set System Param?" is highlighted in the display, the press [ENTER/YES].
3. Press [▼] until "ShiftLock" is highlighted in the display.

Other Convenient Functions

4. Rotate the [TIME/VALUE] dial.

```
SYSTEM COMMON
▲ FSW Type
  ShiftLock
▼ KnobControl

GPI
OFF
JUMP
```

ShiftLock

OFF: The Shift function is effective only while [SHIFT] is pressed. Normal conditions return when the button is released.

ONCE: The Shift function is maintained when [SHIFT] is pressed. Once any other button is pressed, the Shift is executed, and the Shift is then lifted. The Shift can also be removed by pressing [SHIFT] again.

ON: The Shift function is maintained when [SHIFT] is pressed. The Shift is not removed even when other buttons are pressed. To remove the Shift function, press [SHIFT] once more.

5. Press [DISPLAY (HOME)].

Freeing Up More Disk Space

With the A-6, even when part of a Project or a clip on a pad is deleted, free space on the disk does not increase immediately. To increase the amount of time available for recording, execute the **Cleanup Disk** procedure. Running Cleanup Disk completely deletes any unnecessary data from the sounds saved on the hard disk.

When You Want to Delete a Project

You need to delete unnecessary project before executing "Cleanup Disk."

1. Press [PROJECT].
2. Press [▼] until "Delete?" is highlighted in the display.
3. Press [ENTER/YES].
4. Rotate the [TIME/VALUE] dial until the name of the Project you want to deleted appears in the display. The Project currently called up cannot be deleted.

```
DELETE PROJECT
DELETE>02 NewProject02
```

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" then appears in the display.
6. Press [ENTER/YES] once more.
7. When the deletion is finished, "Completed" appears in the display.

If you attempt to delete a Project that is protected, the warning message appears in the display. Additionally, even when a Project is deleted, the amount of time on the disk available for recording does not increase until the Cleanup disk procedure is executed.

Running Cleanup Disk

1. Press [SYSTEM].
2. Press [▼] until "Cleanup Disk?" is highlighted in the display.
3. Press [ENTER/YES].
4. Confirm that "Type" is highlighted in the display, then rotate the [TIME/VALUE] dial.

```
CLEANUP DISK
Type          QUICK
```

Type

This selects the Cleanup Disk method to be used.

QUICK: This only deletes data for sounds that are not used at all. This is normally selected.

STANDARD: Data for sounds that are not used at all, as well as beginnings, endings, and other portions of the data that are not used in actually producing the sounds are deleted.

5. Press [ENTER/YES]. The confirmation message "You Can NOT Undo. ARE YOU SURE?" appears in the display.
6. Press [ENTER/YES] once more. The progress of the operation is indicated by a graph in the display.
7. When Cleanup Disk is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Initializing the Hard Disk

The hard disk installed at the time of purchase (HDP A6 Series) can be used just as it is. Additionally, a Sound Library has been recorded on the disk to help you get started creating your own works right away. However, if you discover any malfunctioning of the disk, you can remedy the problem by initializing (formatting) the hard disk. Furthermore, when creating either numerous or particularly lengthy Projects, by removing the Sound Library by formatting the disk, you can secure more disk space for additional recording time.

* By rerecording the audio CD included with the hard disk, you can always restore the sound Library to the hard disk, restoring it to conditions at the time of purchase (p.138).

Initializing (Formatting) the Entire Hard Disk

This initializes the entire internal hard disk, regardless of the currently selected partition. All data save in all partitions are lost. Save Projects or Pad Groups as necessary using a video cassette recorder, MD recorder, Zip disk, or other means.

Partition

The total disk capacity that can be handled by the A-6 is 2000 MB. When using a disk drive with greater amounts of memory, the disk must be divided into 2000 MB sections. These sections are referred to as **partitions**. A single disk drive can be set up to have a maximum of 8 partitions. For example, with the 2100 MB Hard disk, you can use a total of two partitions.

1. Press [SYSTEM].
2. Press [▼] until "Format Disk?" appears in the display.
3. Press [ENTER/YES].
4. Press [▲] or [▼] to highlight the various parameters in the display. Rotate the [TIME/VALUE] dial to change the parameter settings.

```

FORMAT DISK
TargetDrive INTERNAL
FormatType QUICK
    
```

TargetDrive

This selects the drive (INTERNAL, EXT.ID 0-EXT.ID 6) to be initialized. At this time, select "INTERNAL."
 INTERNAL: The internal hard disk is initialized.
 EXT.ID 0-EXT.ID 6: The external Zip disk is initialized (when the Multi I/O Expansion is installed).

Format Type

This selects the initialization method. Normally, "QUICK" (logical formatting only) may be selected. If you are experiencing problems with the hard disk, selecting "FULL" (physical as well as logical formatting) can be effective. In addition, when "TargetDrive is set to except "INTERNAL," "*****" appears in the display, preventing selection of the formatting method.

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE" appears in the display.

6. Press [ENTER/YES] once more. If protection has been applied to the hard disk, a message asking if formatting is acceptable appears in the display.
7. Press [ENTER/YES] yet one more time.
8. When initialization (formatting) is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Initializing Partitions (Initialize)

This initializes only the hard disk's currently selected partition (Initialize). All content in Projects, pad groups, and other data saved on that partition are completely removed, while the contents of other partitions are left remaining. However, the partition size (2000 MB) cannot be changed.

1. Press [SYSTEM].
2. Press [▼] until "Init Partition" appears in the display.
3. Press [ENTER/YES].

```

INIT PARTITION
Initialize
Current Partition.
ARE YOU SURE?
    
```

4. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
5. Press [ENTER/YES] once more.
6. When initialization (Initialize) is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Selecting Partitions

Each partition on the A-6's hard disk is assigned a number (0-7), and is then treated as an independent entity. Select a specific partition from all partitions included on the hard disk as the working partition for recording and playback.

When Using the 2100 MB Hard Disk

When using the 2100 MB Hard Disk, there are two partition sizes you can set: 2000 MB (=0) or 1000 MB (=1). Normally, select the 2000 MB partition (= 0).

1. Press [SYSTEM].
2. Press [▼] until "Select Partition?" appears in the display.

Other Convenient Functions

3. Press [ENTER/YES].
4. Confirm that "ToPartition" is highlighted in the display, then rotate the [TIME/VALUE] dial.

```
SELECT PARTITION
ToPartition      *1
```

ToPartition

This selects the number (1–8) corresponding to the partition to be targeted (used) for recording and playback. The range of numbers that may be selected depends on the number of partitions created on the disk. Additionally, "*" appears next to the number corresponding to the currently selected partition on the disk.

5. Press [ENTER/YES].
6. "Save Cur. Project?" appears in the display. Press [ENTER/YES] once more. If you want to switch partitions without saving the current Project, press [EXIT/NO].
7. When the partition is selected, "Completed" appears in the display. Press [DISPLAY (HOME)].

Restoring the Sound Library

When purchased, the HDP A6 Series hard disk includes a **Sound Library (Groups 54–99, with approximately 400 sounds), with the sounds pre-assigned to the pads.**

When part or all of the Sound Library is lost, whether from deletion of individual clips or initialization of the hard disk itself, the Sound Library can be restored to the original conditions at the time of purchase by rerecording the included audio CD back to the hard disk.

1. Connect the audio output jacks of your CD player to the A-6's INPUT jacks (CD).
2. Place the audio CD included with the hard disk (the first CD) in the CD player.
3. Press [DISPLAY (HOME)] until "METER [MON]" appears in the display.
4. Put the CD player in Play mode. Adjust the INPUT MIXER (CD) knob recording sensitivity so that the "IN" meter fluctuates at as high a level as possible without crossing the dotted line.

* "Full Level/1 kHz Sine Wave" is recorded on Track 1 of the audio CD included with the hard disk (the first CD). Adjust the recording sensitivity as you listen to this signal.

5. Press [SYSTEM].
6. Press [▼] until "Restore CD Clips?" is highlighted in the display.
7. Press [ENTER/YES].
8. Confirm that "TargetCD" is highlighted in the display, then rotate the [TIME/VALUE] dial to select the number of the audio CD to be loaded.

```
RESTORE CD CLIP
Target CD #1
<You CANNOT Undo.>
```

9. Place the CD specified in Step 8 in the CD player.
10. Press [ENTER/YES].
11. The confirmation message "ARE YOU SURE?" appears in the display. Press [ENTER/YES] once more. If the hard disk does not contain sufficient memory available to load the CD, "Can't Restore" then appears in the display. In this situation, the CD cannot be loaded. Run the Cleanup Disk (p.136) procedure or use other means to secure more disk space.
12. Press [ENTER/YES] once more. When "Waiting Signal" appears in the display, start playback of the CD.
13. When playback of the CD is finished, press [EXIT/NO]. The recorded audio data is divided into individual audio clips and assigned to pad groups and pads according to the arrangement of the Sound Library.
14. When the clip assignments are finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

About the Division/Assignment of Clips

- Even after the audio CD has finished playing back, if [EXIT/NO] is not pressed after a fixed time has passed, sampling automatically stops, and division and assignment of the clips commences.
- If the CD stops playing, or if for any reason there is no sound for a set time, or if [EXIT/NO] is pressed, stopping playback of the audio while in progress, sampling then stops automatically, and division and assignment of the clips commences.

Restoring the A-6 to Conditions When Purchased

Restoring the Original System Settings

You can restore the settings made when [SYSTEM] is pressed, such as Preview Length (p.80) and Shift Lock (p.135), to conditions as they were when you purchased the unit.

1. Press [SYSTEM].
2. Press [▼] until "Init SystemParam?" is highlighted in the display.
3. Press [ENTER/YES]. A confirmation message asking if restoring the system settings is acceptable appears in the display.

```
INIT SYS-PARAM
Initialize all
System Parameters.
ARE YOU SURE?
```

4. Press [ENTER/YES] once more. If you do not wish to restore the settings, press [EXIT/NO].
5. When the settings are returned to their original state, "Completed" appears in the display. Press [DISPLAY (HOME)].

Restoring the Original Effect Settings

You can restore the user Patch and Effects settings to conditions as they were when you purchased the unit.

1. Press [SYSTEM].
2. Press [▼] until "Init FX Patch?" is highlighted in the display.
3. Press [ENTER/YES]. A confirmation message asking if restoring the system settings is acceptable appears in the display.
4. Confirm that "Target" is highlighted in the display, then rotate the [TIME/VALUE] dial.

```
INIT FX PATCH
Target ALL
```

Target

This selects the User Patch or Patches to be restored to original conditions.

PANEL: The four panel Patches.

ALL: All User Patches and the four panel Patches.

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
6. Press [ENTER/YES] once more. If you do not wish to restore the settings, press [EXIT/NO].
7. When the effect Patch settings are returned to their original state, "Completed" appears in the display. Press [DISPLAY (HOME)].

Using the A-6 with External MIDI Devices

The A-6 can be operated by connected MIDI devices. For more detailed information, please read "About MIDI" (p.147).

Playing Clips with a MIDI Keyboard

With a MIDI keyboard connected to the MIDI (MTC/MMC) IN connector on the A-6's rear panel, you can play clips in the currently selected pad group with the MIDI keyboard.

Conversely, by connecting a MIDI sound device to the MIDI OUT connector on the rear panel, you can press the pads to play sounds from the sound device.

1. Press [SYSTEM].
2. Press [▼] until "Set MIDI Param?" is highlighted in the display.
3. Press [ENTER/YES].
4. Press [▲] or [▼] to highlight each parameter in the display. Rotate the [TIME/VALUE] dial to change any of the parameters necessary.

```
MIDI
Pads Ch.          [FX01]
Note(Pad0)       48(C 3)
▼ Mixer Send     ON
```

```
MIDI
▲ Note(Pad0)     48(C 3)
Mixer Send      ON
Out/Thru Select  OUT
```

Pads Ch. (Pad Channel)

This selects the MIDI channel used for receiving MIDI Note messages, or for sending MIDI Note messages when the pads are pressed.

OFF: MIDI Note messages are not sent or received.

Rx01-Rx10: MIDI Note messages are received on Channels 1-10.

Tx01-Tx10: MIDI Note messages are transmitted on Channels 1-10.

Note(Pad0) (Note Number)

This selects the Note Number (0 (C)-112 (E8)) played by Pad 0 when MIDI Note messages are received, or, when MIDI Note messages are transmitted, the Note Number (0 (C)-112 (E8)) played when Pad 0 is pressed.

Pads and MIDI Note Messages

MIDI Note messages use fourteen continuous numbers corresponding to the pad numbers. The original factory settings for the relationship between the pads and MIDI Note Numbers (the numbers indicating the key positions) is described below. Thus, the pad on the A-6 that is sounded is determined by the key that is played on the MIDI keyboard.

PAD	0	1	2	3	4	5	6
MIDI Note	C3 48	C#3 49	D3 50	D#3 51	E3 52	F3 53	F#3 54
PAD	7	8	9	F1	F2	F3	BEEP
MIDI Note	G3 55	G#3 56	A3 57	A#3 58	B3 59	C4 60	C#4 61

Out/Thru Select

This switches the function of the MIDI OUT/THRU connector.

When set to "OUT," MIDI messages are sent. Select this setting when you want to use the pads to play sounds on an external MIDI sound device. When set to "THRU," MIDI messages received from the MIDI IN connector are then sent out unchanged.

5. Press [DISPLAY (HOME)].

Switching Pad Groups

Only fourteen selected pad groups can be used to play clips using MIDI Note messages. To switch pad groups, use Program Change messages. Program Change messages 1-99 are effective when sent to the A-6. These can be used to select Pad Groups 1-99 in sequence. Program Numbers 100-128 have no effect.

* For more detailed information, please read "MIDI Implementation" (p.157).

Correcting Problems with the Disk

If for whatever reason the internal hard disk you are currently using is not functioning well, you can return the disk to conditions in which the disk functions normally while leaving as much of the data with no problems untouched. **This process is run each time the power is turned on, with a message appearing only if there is a problem.** If no message appears, it indicates that there is currently no problem with the disk.

If "Loose Area" is Indicated

The "Loose Area" message indicates a problem with the disk. Carry out the following steps to correct the problem.

1. After confirming that "Loose Area" is indeed indicated, press [ENTER/YES].
2. "Recover Loose Area. SURE?" appears in the display. Press [ENTER/YES] once more.
3. When recovery is finished, the A-6 automatically returns the Home screen to the display.

Loose Area

There is an anomaly whereby a section on the hard disk that is not being used in any Project is incorrectly recognized as effective data. In such situations, the A-6 then cannot record data to these areas. These areas where the problem occurs are known as **loose areas**.

If "Cross Link" is Indicated

The "Cross Link" message indicates a problem with the disk. However, this problem is not one open to restoration. You can return the disk to a condition in which it can operate normally by deleting the areas where the problem occurs.

* **This operation does not restore any problem data.** Any problem areas are completely erased. Therefore, some clips may no longer be heard, and Projects themselves may be deleted with the problem areas.

1. After confirming that "Cross Link" is indeed indicated, press [ENTER/YES].
2. "Delete Error Area. SURE?" appears in the display. Press [ENTER/YES] once more. To cancel the operation, press [EXIT/NO].
3. When deletion is finished, the A-6 automatically returns the Home screen to the display.

Cross Link

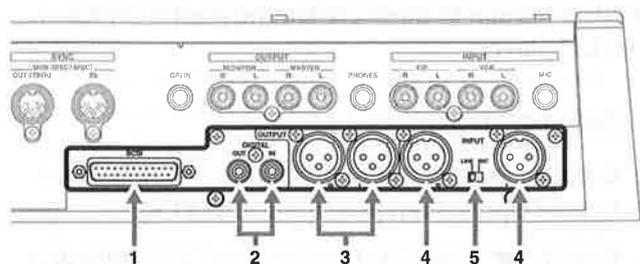
This is a problem in which an area on the hard disk is incorrectly recognized as being used in more than one Project. In such situations, a completely different clip may start playing during playback of a Project. This type of problem is known as **Cross Link**.

Chapter 12 The Multi I/O Expansion

Installing the Multi I/O Expansion

You can install the optional **Multi I/O Expansion A6-OP1** in the A-6's rear panel. For more on installing the A6-OP1, get in touch with your nearest Roland Service Station, or consult your Roland dealer.

Feature Names and Functions



1 SCSI Connector

This is a DB-25 type SCSI connector used for connecting the optional Zip drive.

2 DIGITAL Connectors (IN, OUT)

These are coaxial-type digital I/O connectors that conform to S/P DIF. They are not able to input analog audio signals.

? S/P DIF (p.164)

3 OUTPUT Connectors

These are XLR-type (male) analog output connectors. The output from these connectors are the same as that from the MASTER jacks.

4 INPUT Connectors

These are XLR-type (female) analog input connectors. The recording levels for sounds input through these connectors are adjusted with the **(INPUT MIXER (REC LEVEL)) VCR knobs** on the top panel.

* When simultaneously inputting sounds through the XLR connectors (INPUT) and the INPUT jacks (VCR), the sounds are recorded after being mixed. However, their volume levels cannot be adjusted independently.

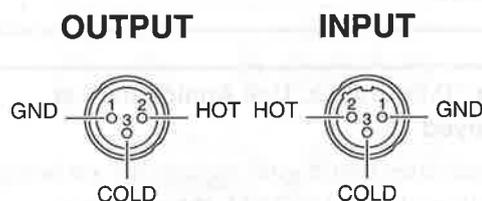
5 MIC/LINE Switch

This toggles the input between mic level (-20 dBu) and line level (+4 dBu) according to the signal input from the INPUT jacks. Set this to MIC when connecting microphones directly to the A-6; when connecting to a mixer or other such device, set this to LINE. However, even with the switch in the MIC position, the recording level can be adjusted with the **(INPUT MIXER (REC LEVEL)) VCR knobs** on the top panel.

* When nothing is connected to the INPUT jacks, we recommend switching to LINE for better sound quality.

Using XLR Connectors

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



Using the Digital Connectors

The A-6 can record digital signals output from digital audio devices such as CD players, MD recorders, and Roland's VS-1680 just as they are.

* The A-6's digital interface conforms to S/P DIF. When recording digital signals, use digital audio devices that conform to these standards.

Monitoring Digital Signals

You can monitor digital signals that have the same sampling rate as compact discs (44.1 kHz). Other digital signals, such as those of some DAT recorders (48kHz) and from satellite broadcasts (32kHz), cannot be monitored.

1. Use a coaxial cable to connect the A-6's DIGITAL IN connector and the digital audio device's digital output connector.
2. Press [SYSTEM].
3. Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].

- Confirm that "Digital In" is highlighted in the display, then rotate the [TIME/VALUE] dial to make the setting.

```

SYSTEM COMMON
DigitalIn ON
Mon<PrePunch> SOURCE
▼ PreviewLength 1.0sec
    
```

Digital In

Selecting "ON" enables the digital connection with external digital devices. The A-6 can then monitor and record digital signals input from digital devices. When you want to record analog audio, set this to "OFF."

- Press [DISPLAY (HOME)].

When "D.In Locked" is Displayed

This indicates that the A-6 is ready to monitor digital signals input through the DIGITAL IN connector.

When "D.In Unlock. Use Analog In?" is Displayed

This indicates that digital signals are not being input through the DIGITAL IN connector. Digital signals cannot be monitored at this point.

* Adjusting the input levels when recording or sampling is not necessary. Signals input through the DIGITAL IN connector can be recorded as is.

To Prohibit Digital Copying

When using a digital connection to record from the A-6 to a DAT recorder or MD recorder, you can prohibit digital copying of the finished data or of the data from the disk.

For example, only one digital copy of a regular CD to an MD is permitted. Once a digital copy has been made to the MD, no further digital connections can be made using that MD. With this function, tapes and MDs containing digital copies from the A-6 behave in identical fashion to those containing digital copies from CD players.

- Press [SYSTEM].
- Confirm that "Set System Param?" is highlighted in the display, then press [ENTER/YES].
- Press [▼] until "D.CopyProtect" is highlighted in the display.
- Rotate the [TIME/VALUE] dial.

```

SYSTEM COMMON
▲ ShiftLock OFF
KnobControl JUMP
D.COPYProtect ON
    
```

D.CopyProtect (Digital Copy Protect)

This determines whether or not digital copies of the tape or MD being recorded are to be prohibited. If you want to prevent such digital copies from being made, set this to "ON."

- Press [DISPLAY (HOME)].

With this operation, further digital copies from master tapes containing digital mixdowns made with DAT recorders or other digital devices cannot be made.

* Some DAT recorders do not conform to SCMS or cannot be connected digitally to CD players. If the Digital Protect switch is set to "ON" when such a DAT recorder is used, then the digital output of the A-6 cannot be recorded by the DAT recorder. In such instances, switch the Digital Protect switch to "OFF."

? SCMS (p.164)

Using the SCSI Connector

The A-6's SCSI connector can be used for connecting an Zip drive. Please read the owner's manual for your Zip drive in conjunction with this manual.

Before Using the Zip Drive

Regarding Installation of the Zip Drive

- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure the installation does not exceed the permissible range.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the Zip drive, which will adversely affect the operation of the drive and/or damage Zip disks. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.
- To insert a Zip disk, push it gently but firmly into the drive; it will click into place. To remove a Zip disk, press the EJECT button firmly. Do not use excessive force to remove a Zip disk which is lodged in the drive.
- Never attempt to remove a Zip disk from the Zip drive while the drive is operating (the indicator is lit); damage could result to both the Zip disk and the Zip drive.
- Remove any Zip disk from the Zip drive before powering up or down.
- To prevent damage to the Zip disk drive's heads, always try to hold the Zip disk in a level position (not tilted in any direction) while inserting it into the Zip drive. Push it in firmly, but gently. Never use excessive force.

Handling Zip Disks

- Zip disks contain a plastic disk with a thin coating of magnetic storage medium. Microscopic precision is required to enable storage of large amounts of data on such a small surface area. To preserve their integrity, please observe the following when handling Zip disks:
 - Never touch the magnetic medium inside the disk.
 - Do not use or store Zip disks in dirty or dusty areas.
 - Do not subject Zip disks to temperature extremes (e.g., direct sunlight in an enclosed vehicle). (storage temperature: -22-+51°C, humidity: 10-90%)
 - Do not expose Zip disks to strong magnetic fields, such as those generated by loudspeakers.
- The identification label should be firmly affixed to the Zip disk. Should the label come loose while the Zip disk is in the Zip drive, it may be difficult to remove the Zip disk.
- Put the Zip disk back into its case for storage.
- Zip disks don't have a "write protect" tab which can protect the disk from accidental erasure. When needed, use the Project Protect function (p.43) to protect your projects.

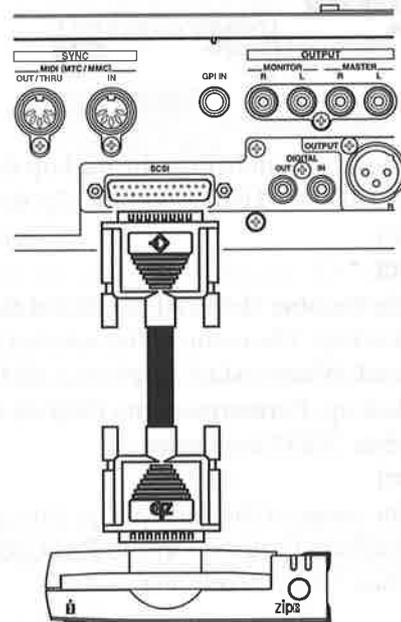
To Connect the Zip Drive

The A-6 and the Zip drive are connected as described below.

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

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

Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.



1. Turn on the Zip drive's power switch.
2. Press the POWER switch on the rear panel to power up the A-6.
3. Turn on the power to the audio device.
4. Raise the volume of the audio device to a suitable level.

* For more detailed instructions about connecting the Zip drive and information about the necessary settings, please read the "About SCSI" (p.148).

Saving your work to Zip disks (Backup)

The Projects and Pad Groups saved to the internal hard disk can also be saved to Zip disks. This is referred to as making a **backup**.

1. Press [SYSTEM].
2. Press [▼] until "Backup?" is highlighted in the display.
3. Press [ENTER/YES].
4. Press [▲] or [▼] to highlight each parameter in the display. Rotate the [TIME/VALUE] dial to make any necessary changes in the settings.

```
BACKUP
  ToDrive   Ext.ID 5
  TargetProject 03
  [NewProject03]

BACKUP
  [NewProject03]
  Group (From) 50
  (To)         99
```

ToDrive

This selects the SCSI number for the backup destination drive (EXT.ID0-6). Here, select the Zip drive (EXT.ID5 or 6).

TargetProject

This selects the number (1-99, ALL, OFF) of the Project you wish to backup. The name of the selected Project is also indicated. When "ALL" is selected, all Projects are then backed up. Furthermore, no Projects are backed up when "OFF" is selected.

Group (From)

This selects the range of the Pad Groups (first group) you wish to backup. Furthermore, no Pad Groups are backed up when "OFF" is selected.

Group (To)

This selects the range of the Pad Groups (end group) you wish to back up.

* You cannot backup the FAVORITES pads. If you want to backup the clip pasted the FAVORITES pads, copy them to empty pads first.

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display. Insert the first disk into the Zip drive.
6. Press [ENTER/YES] once more. The backup operation is begun. The progress of the backup is indicated in the display.
7. If one Zip is insufficient due to the large amounts of memory used in the Project or Pad Groups, the disk is ejected and "Insert Disk" appears in the display. Insert the next disk, then the backup operation continues automatically. At this time, to record the order in which the disks are used in the back up, we recommend writing the corresponding disk number on each disk's label.
8. When using multiple Zip disks in backing up your data, "Insert Disk #" (# refers to the disk number) finally appears in the display. Insert each disk in sequence.
9. When the backup is finished, "Completed" appears in the display. Press [DISPLAY(HOME)].

Loading Your Work from Zip disks (Recover)

This recovers the Projects and Pad Groups saved on the Zip disks to the internal hard disk. This process is called **Recover**.

1. Insert the (first) Zip disk to be recovered into the Zip drive.
2. Press [SYSTEM].
3. Press [▼] until "Recover?" is highlighted in the display.
4. Press [ENTER/YES].
5. Press [▲] or [▼] to highlight each parameter in the display. Rotate the [TIME/VALUE] dial to make any necessary changes in the settings.

```
RECOVER
  FromDrive   Ext.ID 5
  TargetProject 03
  [NewProject03]

RECOVER
  [NewProject03]
  Group (From) 01
  (To)         01
```

FromDrive

This selects the SCSI number for the recover source drive (EXT.ID0-6). Here, select the Zip drive (EXT.ID5 or 6).

TargetProject

This selects the number (1-64, ALL, OFF) of the Projects you wish to recover. The name of the selected Project is also indicated. When "ALL" is selected, all Projects that were backed up are recovered. Furthermore, no Projects are backed up when "OFF" is selected.

Group (From)

This selects the range of the Pad Groups (first group) you wish to recover. This number is also selects the number of the destination Pad Group in the internal hard disk. When "ALL" is selected, all Pad Groups that were backed up are recovered. Furthermore, no Pad Groups are recovered when "OFF" is selected.

Group (To)

This selects the range of the Pad Groups (end group) you wish to recover.

6. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.

If "No Disk Space" is Indicated

If the message "No Disk Space" appears in the display, it means that the space required for completing the recover process is not available on the hard disk. Run the Cleanup Disk procedure (p.136), or initialize the hard disk to secure more disk space.

7. Press [ENTER/YES] once more. The recover operation is begun. The progress of the recover is indicated in the display.
8. When multiple Zip disks have been used in backing up your data. "Insert Disk #" (# refers to the disk number) appears in the display. Insert the next disk in the sequence. The recover progress continues automatically.
9. When the recover is finished, "Completed" appears in the display. Press [DISPLAY(HOME)].

Initializing (Formatting) Zip Disks

If for whatever reason a Zip disk is not functioning well, or the Zip disk containing a Project backed up on it cannot be recognized, you can format the Zip disk for reuse. However, all data saved on the Zip disk is permanently lost.

Even when formatted, the Zip disks cannot be used for any other purpose other than backing up data. For example, the Zip disks cannot be used for sampling or for recording tracks.

1. Press [SYSTEM].
2. Press [▼] until "Format Disk?" appears in the display.
3. Press [ENTER/YES].
4. Press [▲] or [▼] to highlight each parameter in the display. Rotate the [TIME/VALUE] dial to make any changes in the settings.

```

FORMAT DISK
TargetDrive Ext.ID 5
FormatType *****
  
```

TargetDrive

This selects the drive (INTERNAL, EXT.ID 0-EXT.ID 6) to be initialized. At this time, select "EXT.ID 5" or "EXT.ID 6."

INTERNAL: The internal hard disk is initialized.
EXT.ID 0-EXT.ID 6: The external Zip disk is initialized (when the Multi I/O Expansion is installed).

5. Press [ENTER/YES]. The confirmation message "ARE YOU SURE?" appears in the display.
6. Press [ENTER/YES] once more.
7. When the formatting is finished, "Completed" appears in the display. Press [DISPLAY (HOME)].

Installing the Hard Disk

The A-6 accepts installation of Roland HDP A6 series hard disks (hard disk drive units).

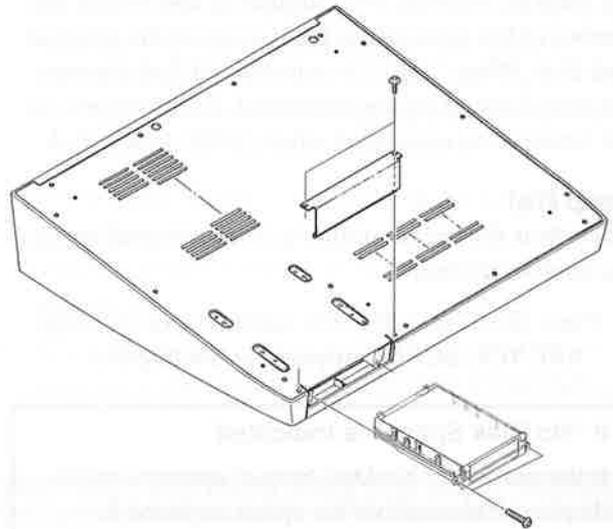
Precautions When Installing a Hard Disk

- Use a Phillips screwdriver of a size appropriate for the head of the screw (a no. 2 screwdriver). If the screwdriver is the wrong size, the screw heads may be stripped, or you may not be able to turn the screws.
- To remove the screws, rotate the screwdriver counterclockwise. To tighten the screws, rotate the screwdriver clockwise.



- When handling the hard disk, remove screws only as directed in the instructions.
- Take care not to drop any screws into the interior of the A-6's chassis.
- The front panel cover which was removed must not be left unattached. When you are finished installing the hard disk, be sure to re-attach the cover as before.
- Do not touch any of the printed circuit pathways or connection terminals.
- Be careful not to cut your hand on the edge of the installation opening.
- When circuit board installation is complete, double-check your work.

1. Turn off the power of the A-6, and disconnect all cables connected to the unit.
2. Remove the front panel cover from the A-6.
3. With the warning sticker on the hard disk facing downward, slide it gently into the installation slot, and press it firmly all the way in. When doing so, let the grooves of the installation hardware slide along the protruded part of the A-6's chassis.



4. When the hard disk has been pressed all the way in, use the screws that you removed to fasten the hard disk in place.
5. After folding down the handle on the front of the hard disk, re-attach the panel cover as it was originally. Now, you completed installing internal hard disk.
6. Follow the procedure described in "Turning On the Power" (p. 16), confirm that the A-6 start up properly.

About MIDI

This section explains the basic concepts of MIDI, and how the A-6 handles MIDI messages.

What is MIDI

MIDI stands for **Musical Instrument Digital Interface**. It is a worldwide standard that allows electronic musical instruments and personal computer to exchange musical performance data and messages such as sound selections. Any MIDI-compatible device can transmit musical data (as appropriate for the type of device) to any other MIDI-compatible device, regardless of its manufacturer or model type.

MIDI connectors

MIDI messages (the data handled by MIDI) are transmitted and received using the following three types of connectors. On the A-6, MIDI OUT and MIDI THRU are handled by a single connector, which can be switched to act as the desired connector (p. 140).

MIDI IN: This receives MIDI messages from external MIDI devices.

MIDI OUT: This transmits MIDI messages from the A-6.

MIDI THRU: This re-transmits all MIDI messages that were received at MIDI IN, without modifying them.

MIDI channels

MIDI is able to send information over a single MIDI cable independently to two or more MIDI devices. This is made possible by the concept of MIDI channels. You can think of MIDI channels as being somewhat similar in function to the channels on a television. By changing the channel of a TV set, you can view a variety of programs being transmitted by different broadcast stations. This is because data is received only from the transmitter whose channel is selected on the receiver. In the same way, a MIDI device whose receive channel is set to "1" will receive only the data being transmitted by another MIDI device whose transmit channel is also set to "1."

MIDI messages

There are types of MIDI message as below.

Note messages:

These messages are used to play notes. On a keyboard, these messages transmit the key (note number) that was pressed, and how strongly it was pressed (velocity). Use this when you want to use an external keyboard to play the pads in the A-6's pad groups (p. 139).

Program Change messages:

These messages are for the purpose of selecting sounds, and contain a program number of 1-128. The A-6 uses these messages to select pad group and effects (p. 140).

Control Change messages:

In general, these messages are used to transmit information such as vibrato, hold, and volume etc., that makes a performance more expressive. The various functions are differentiated by a controller number from 0-127, and the controller number is defined for each function. The functions that can be controlled on any given device will depend on that device.

Exclusive messages:

Unlike note messages and control change messages, exclusive messages are used to transmit settings that are unique to a particular device.

MIDI implementation chart

MIDI allows a variety of electronic musical instruments to communicate with each other. However it is not necessarily the case that all devices will be able to communicate using all types of MIDI message. They can only communicate using those types of MIDI message that they have in common.

Each owner's manual for a MIDI device includes a MIDI Implementation Chart. This chart shows you at a glance the types of MIDI message that can be transmitted and received. By comparing the implementation charts of two devices, you will be able to see the types of message with which they will be able to communicate.

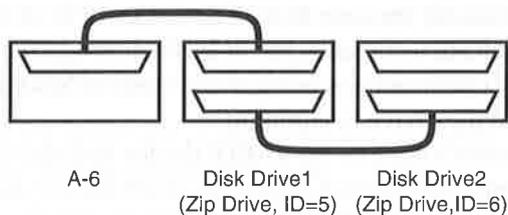
About SCSI

SCSI stands for **Small Computer System Interface**. It is a data transfer standard that allows large amounts of data to be sent and received. With the Multi I/O Expansion A6-OP1 installed the A-6, you can connect a Zip drive to the SCSI connector. This section describes the procedures and precautions taken when using these devices.

Zip drives are precision devices. If they are connected or used incorrectly, not only may they fail to operate correctly, but the data on the Zip disk can be lost or, in the worst case, the Zip drive itself may be damaged. Please be sure to read the manual for your Zip drive.

About Connections

Up to 2 Zip drives can be connected to the SCSI connector of the A-6. Use SCSI cable to connect the disk drives, connecting as shown below. SCSI connectors are not distinguished by input and output ends, so you may attach either end of the cable to the devices. Devices connected in this fashion are referred to as a **SCSI chain** or **daisy chain**.



- The A-6 features a DB-25 type connector (female). After checking your Zip drive to see what kind of SCSI connector it uses, connect it with the appropriate cable.
- Keep SCSI cables as short as possible, and use only cables which have an impedance that is compatible with the SCSI standard ($110\Omega \pm 10\%$), and that are completely shield.
- Do not allow the total length of all SCSI cables connecting the chain of Zip drives to exceed 6.5 meters.
- Do not connect or disconnect SCSI cables when the power of any device is turned on.

About Terminators

To protect against return noise, the device at each end of a SCSI chain must have a terminating resistance. This is referred to as a terminator. Since the A-6 is one end of the SCSI chain, its internal terminator is normally in effect. Connect a terminator only to the last external drive in the chain. There are two types of terminators, those that can be switched on and off (internal) and those that are attached using SCSI connections (externally attached). Select the method appropriate for the Zip drive you are using.

- Do not use two terminators. For example, avoid attaching an external-type terminator to a Zip drive if the drive's internal terminator is set to "On."

About SCSI ID Numbers

Each Zip drive is distinguished by its SCSI ID number (5, 6). This means that when two or more Zip drives are connected, you must make settings so that the SCSI ID numbers of the Zip drives do not conflict (coincide). If the SCSI ID numbers conflict, the A-6 will not be able to correctly recognize the Zip drives. With the factory settings, the A-6 is set to SCSI ID number 7.

Troubleshooting

If you encounter problems with the operation of the A-6, first check the following points. If after these steps the problem is still unresolved, consult your nearest Roland service center or authorized Roland distributor. If you have trouble understanding any message that is displayed, please refer to the Message List (p.153).

There is No Sound

There is no sound whatsoever

- Is the power of the A-6 or any connected device turned on?
- Are all of the connections correct? (p. 15)
- Is any of the connection cables broken?
- Is the amp or mixer volume turned up?
- Is the Master fader up?

There is no sound through the headphones

- Is the headphones knob (PHONES) turned up?

Sounds input from external sources are not being output

- Are the input mixers (MIC, VCR and CD) turned up?
- Are the cables connected correctly?

There is no pad (clip) sound

- Is the clip on an assigned pad (one that is illuminated)?
- Was the sound sampled with no signal?
- Is the pad fader in the mixer turned up?
- Is the volume setting (Level) for the individual samples turned up?

→Press [PAD], then select "1. Set Pad Param?," and adjust the volume level.

- Including tracks, are there four stereo sounds being played?

* If all the tracks' [STATUS] are illuminated green (PLAY), then press [STATUS] for any tracks that are not presently needed.

* If Track Voice Reserve (p. 131) is on and all the tracks' [STATUS] are illuminated green (PLAY), even when the song is stopped, no pad sounds are played.

→Press [PROJECT] and select "Set Name?," and then turn the Tr.VoiceReserve off.

* Pads in the same mute group (p. 90) are prevented from being played simultaneously.

There is no sound from the project (tracks)

- Are the track faders up?
- Are any track [STATUS] illuminated green (PLAY)?
- Are the tracks empty or recorded with no signal?

* If extremely short clips (shorter than about 0.3 seconds) are created in Event Realtime Recording, then portions of the preceding and following phrases may not be played back (depending on the placement of the phrases).

There is no sound only when the effects are in use

- Is there an effects patch inserted which completely cuts off the sound?

→Press [EFFECT ON/OFF] to turn the effects off.

- Is the output level of the inserted effects patch raised?

→Hold down [SHIFT] and press [EDIT (CUSTOM PRE-SET)], and then press [ENTER/YES] to call up the level screen; turn up the output level of the effects patch.

Unintended effects are added to the sound

- Are the internal effects turned on?

→Press [EFFECT ON/OFF] to turn the effects off.

Playback of Projects and Clips (Pads)

The sound from the pad does not stop

- Is the clip "PadPlay" setting set to "TO END"?

→Because the sound continues to the point where the clip stops playing, on long samples you may get the feeling that the sound will never end.

* If the pad's loop setting (p. 89) is set to "OFF," then the sound stops at the end point, regardless of the "PadPlay" settings.

The Project is not played in the right pitch

- Have you added an effect that features pitch changes (such as Stereo Pitch Shifter)?

→Press [EFFECT ON/OFF] to turn the effects off.

During playback, the sound is not immediately produced, even when [STATUS] is switched the illumination to green (PLAY)

- Is Track Voice Reserve (p. 131) turned off?

→Press [PROJECT] and select "Set Name?," then turn the "Tr.VoiceReserve" on.

The Project does not play back, even when [▶] (PLAYBACK) is pressed ([▶] is blinking)

- Is the song's "SyncSource" setting (p. 55) set to "Ext. MTC"?

→Switch the song's "SyncSource" setting to "AUTO" .

Regarding Track Audio Recording and Sampling

Sampling does not begin, even when [PAD REC] is pressed

- Is the appropriate "Start/w" setting (p. 48) selected?

The effects sounds can not be recorded or sampled

- Are the effects not being inserted in the MASTER OUT?

→To add effects to the entire sound when recording or sampling, set the effects position to "1 (INS INPUT)."

- Is the "Return" setting in the FX SEND/RETURN screen set to "PLAY-ONLY" (when the send/return method is in use)?

→When the effects sounds are to be recorded, select "REC(or PLAY)." (Hold down [SHIFT] and press [ROUTING] to call up the FX ROUTING screen, and in the second screen's "Return" settings, select "REC (or PLAY)").

The sound being recorded right before and after punching in and out cannot be monitored

- Is the "PrePunch" setting set to "TRACK" (p. 131)?

→Hold down [SHIFT] and press [SYSTEM], select "SOURCE" for the "PrePunch" setting.

The recorded or sampled sound is very distorted or noisy

- Is the input level at the appropriate setting?

→Set levels correctly in both the Level Meter screen and the Sampling screen.

- Is the distortion a result of mixing multiple channels or pads?

* When bouncing tracks, or in other situations, distortion can result from excessive levels caused by the addition of the sounds from multiple channels during mixing.

→Lower the faders.

- Is a distortion effect being applied to the sound?

* Depending on the equalizer settings, the sound may be distorted even when not at excessive levels.

- Is any input sensitivity knob not currently in use turned up?

→To avoid additional noise, completely turn down any input sensitivity knob not in use.

The recording comes out in monaural sound

- Is the sampling or the recording "Type" setting set to "MONO" (p. 47)?
- Does the effects patch you are using feature monaural output?

When Recording Pad Sounds to the Tracks, the very beginning of the sound is missing

- Is the "Start/w" setting (p. 48) value "LEV 1-8" set too high?

When Using the Internal Effects

The effects can not be applied

- Is [EFFECTS ON/OFF] turned on (illuminated)?

Effects using in the send/return method can not be applied

- Are any channel [EFFECTS] on (illuminated)?

→ Press the track [EFFECTS] to turn them on.

- Is the effects send level for each channel set to 0?

→ Hold down [SHIFT] press [ROUTING] to select the FX SEND/RETURN in the second screen and rotate the [TIME/VALUE] dial to increase the value for each effects send level.

The effects parameters cannot be controlled by the Effects knobs

- Is the parameter you are trying to adjust assigned to the Effects knobs? (p. 104)
- Is the changing range of the parameter set correctly? (p. 104)
- * If the system's "Knob Control" setting (p. 105) set to "NULL," the settings value does not change until the position of the Effects knob is the same as that corresponding to the current value.

→ If necessary, switch the setting to "JUMP."

Disks and Memory

Even when sounds on tracks and pads are erased, the remaining recording time (remain time) does not increase

- Have you carried out the Cleanup Disk operation (p. 136)?
- * When waveforms on the disk are shared by samples created by copying, dividing, or in other operations, then even if the Cleanup Disk operation is carried out, remaining recording time still may not be freed up.

When Using the A-6 with Other MIDI Devices

The overall MIDI performance is poor

- Is the MIDI cable connected properly?
- Is the MIDI cable broken?
- Is the "Out/Thru Select" setting (p. 140) correct?
- * When set to "THRU," the MIDI OUT/THRU connector functions as a Thru connector.

The pad sounds don't reflect the note messages from the external device

- Does the pad receive channel match the send channel of the external MIDI device that is sending the signals?
- Press [SYSTEM], then select "Set MIDI Param?" and set the "Pads Ch." setting so that it matches that of the external MIDI device.

MIDI drum pads (such as the SPD-20) are connected, but the sound is cut off right after being played, or

repeated striking sounds cannot be played

- Is the "PadPlay" pad parameter setting at "TO END" (p. 52)?

The A-6 and the connected external MIDI device are not well synchronized

- Are the parameters related to synchronization (p.54-55) properly set?

When Augmenting the A-6 with the A6-OP1

The input signal from DIGITAL IN is not audible

- Is the system's "Digital In" setting correct?
→ Press [SYSTEM] followed by [ENTER/YES], then set "Digital In" to "ON".
- Are digital signals being sent from the external device?
→ Some audio devices do not output digital signals except while in Play mode. In such instances, after putting the audio device in Standby (Pause) mode, put the A-6 in record mode or other desired status.
- Is the sample rate compatible?
→ The only input signals the A-6 can use are 44.1kHz digital signals. The A-6 cannot receive/handle 32kHz or 48kHz digital signals.
- Are the formats of the digital signals matched?
→ Use digital audio devices conforming to the S/P DIF format.
* Some multitrack recorders using specialized formats cannot be connected to the A-6.

The external Zip drive is not being recognized

- Are SCSI connections and terminator settings correct? (p. 148)
- Are any Zip drive device ID numbers being used by more than one device? (p. 148)
- Is the power to any Zip drive not turned on?

Other Problems

Previous data is not being saved on the hard disk (when the power is on)

→ Before turning off the power, carry out the quit procedure and save your data to the disk. (Saving Data, p. 40)

The data on the hard disk is corrupted or damaged

- Damaged or corrupted data cannot be restored (data must be backed up first).
- * In some cases, by selecting "FULL" for the format type (p.137), such disks may be used as blank disks. However, since these disks may be damaged or broken, do not store important data on them.
 - * Damaged data may be caused by the following:
 - Disks reaching the end of useful life
 - Turning off the power while the disk is running.
 - Subjecting disks to magnetism or strong physical shocks.
 - Using disks in operating environment other than those stipulated in "IMPORTANT NOTES" (p.4) or in the printed material included with the A-6.

Viewing the display is difficult because it is completely white (or completely dark)

→ Adjust the contrast.

- * You can adjust the contrast by holding down [CLEAR] and rotate the [TIME/VALUE] dial.

Message List

ARE YOU SURE?

Are you sure to delete or change the data?

Audio REC → Track

Audio recording to the track is ready.

Group is Protected.

Cannot execute because the pad group is protected.

Canceled.

Procedure is canceled.

Can't Execute.(Out of 50%–150%)

Time stretch cannot be executed because the stretch ratio is out of limit (50%–150%).

Can't Make New Proj.

Cannot execute because the total number of audio waveforms (or projects) exceeds the limit per hard disk.

↑ Change? (YES/NO)

Change to the displayed effects patch?

Creating phrase...

New phrase is being created. (for step recording)

D.In Locked.

Digital input received the signal correctly.

D.In Unlock.Use Analog In?

Digital input does not receive the signal. Do you use analog input?

Disk Full.

Procedure is interrupted because the disk memory is fully occupied.

Disk is NOT Ready.

Disk is not inserted in the external Zip drive.

Disk Medium Error.

Read/write from/to the disk is not completed. There may be some defect on the disk surface.

Drive Too Busy.

Cannot playback completely because phrase is too short and the location is too close for the disk speed.

Hit [SET] to Divide

Hit [SET (NEXT PAD)] at the point you wish to divide the clip. (for manual divide of clip)

Hit ENTER to Set

Hit [ENTER/YES] at the point you wish to set. (for setting start point, etc. of clip)

Hit Pad to REC start.

Hit any of the clip pads to start recording.

KEEP POWER ON!

Data is being saved to the internal memory. Never switch the power off.

Memory Full.

Cannot execute because of the lack of project event memory.

No Disk Space.

Cannot execute because remaining recording time is not enough.

No Memory for UNDO. Continue?

Project event memory is not enough and you cannot undo once you execute. Do you continue to proceed?

Now Recording...

Now sampling is proceeded. Press [PAD REC] again to stop.

Now Saving.....

Data is being saved to the hard disk. Please wait momentarily.

Processing.....

Operation is in progress. Please wait momentarily.

Overwrite?

Overwrite OK?

Clip is existed on the pad you selected, and will be lost by overwriting. Are you OK? (for pad recording and pad editing)

Over 64 Projects.

Total number of projects exceeds the limit (64 projects) and cannot be executed.

Message List

Pre-Punch Monitor source → TRACK

Recording monitor source (p. 131) is set to "TRACK."

Pre-Punch Monitor track → SOURCE

Recording monitor source (p. 131) is set to "SOURCE."

Preset FX Patch used. Overwrite Prj. only, ARE YOU SURE?

Preset effects patch is used in the project, and only project data but effects setting is overwritten. Are you sure?

Project is Protected.

Project is protected and cannot be executed.

Save Cur. Project? (Overwrite Only.)

Do you save the current project before executing?

SCSI Checking...

Checking the connection of SCSI device (external drive).

Select One.

Multiple clips are selected and cannot be executed.
Mark only one clip.

Select Pad

Press a pad to which you want sample the sounds.

Select Track

Select a track to which you want record.

Wrong Disk.

Wrong disk is inserted. Please insert the correct disk.
(for creating backup disk)

Parameter List

SAMPLE PARAMETER

([PAD] "Set Sample PAD?")

Parameter	Value
PadPlay	GATE, TRIG, TO END
LoopMode	OFF, IN-OUT, LOOP-END
InPoint	00m 00s 00-99mm59s 99
LoopPoint	00m 00s 00-99mm59s 99
OutPoint	00m 00s 00-99mm59s 99
Level	0-100
MuteGroup	OFF, GROUP-1-GROUP-7
Fade In	OFF, 0.1, 0.2, 0.5, 1, 2, 4, 8, 16
Fade Out	OFF, 0.1, 0.2, 0.5, 1, 2, 4, 8, 16

GROUP PARAMETER

([PAD] "Set Group Param?")

Parameter	Value
Name	(10 characters)
FootSwAssign	0-9

SYSTEM PARAMETER

COMMON ([SYSTEM] "Set System Param?")

Parameter	Value
Digital In	OFF, ON
Mon(PrePunch)	SOURCE, TRACK
PreviewLength	1.0-10 sec
ScrubLength	25-100 msec
SongSave Confirm	ON, OFF
FSW Func	PLAY/STOP, SAMPL TRIG, PUNCH I/O
FSW Type	DP-2, GPI
ShiftLock	OFF, ONCE, ON
KnobControl	JUMP, NULL
D.CopyProtect	OFF, ON

MIDI ([SYSTEM] "Set MIDI Param?")

Parameter	Value
Pads Ch.	Rx01-Rx10, Tx01-Tx10, OFF
Note(Pad0)	0(C -)-118(A#8)
Mixer Send	OFF, ON
Out/Thru Select	OUT, THRU

DISPLAY CONTRAST ([SHIFT] + [DISPLAY])

Parameter	Value
Disp Contrast	1-16

PROJECT PARAMETER

PROJECT PARAMETER ([PROJECT] "Set Name")

Parameter	Value
Name	(12 characters)
Tr.VoiceReserve	ON, OFF

SYNC SETUP ([SHIFT] + [SET UP (AUTO)]) (SYNC)

Parameter	Value
SyncSource	INTERNAL, Ext.MTC, AUTO
MTC Type	30, 29.97N, 29.97D, 25, 24
MMC Mode	OFF, MASTER, SLAVE
MTCError Level	1-10
MTCOffset	-04:00:00:00-23:59:59:29
MTC Fine	-100-+100ms
Sync Out	OFF, MTC

LOCATOR SETUP ([PROJECT] "Locator?")

Parameter	Value
LOC 1-LOC 8	00:00:00:00-23:59:59:29

MIXER COMMON SETUP ([SHIFT] + [MIX COMMON])

Parameter	Value
MasterLevel	0-127
Balance	L63-L01, 0, R01-R63

MIXER TRACK (A-D) SETUP ([SHIFT] + A-D [EFFECTS])

Parameter	Value
(Track) Level	0-127
Balance	L63-L01, 0, R01-R63
FX Send	0-127
EQ Switch	ON, OFF
High Freq	500 Hz-16 kHz
Gain	-12-+12 dB
Mid Freq	200 Hz-8.0 kHz
Gain	-12-+12 dB
Q	0.5, 1.0, 2.0, 4.0, 8.0
Low Freq	40 Hz-1.5 kHz
Gain	-12-+12 dB

MIXER PAD SETUP ([SHIFT] + [EFFECTS](PAD))

Parameter	Value
Level	0-127
Balance	L63-L01, 0, R01-R63
FX Send	0-127
EQ Switch	ON, OFF
High Freq	500 Hz-16 kHz
Gain	-12-+12 dB
Mid Freq	200 Hz-8.0 kHz
Gain	-12-+12 dB
Q	0.5, 1.0, 2.0, 4.0, 8.0
Low Freq	40 Hz-1.5 kHz
Gain	-12-+12 dB

FX ROUTING ([SHIFT] + [ROUTING])

Parameter	Value
Ruting	1 (INS INPUT), 2 (INS TRK-A) 2 (INS TRK-B), 2 (INS TRK-C) 2 (INS TRK-D), 3 (INS MST) 4 (SEND/RTN), -- (FX PATCH)

Parameter List

Parameter List

* In addition to the PROJECT PARAMETER described above, the followings are saved into the disk as each project's information.

Each track's STATUS settings, Assignment of phrases on the tracks, Effects ON/OFF and Patch selection, etc.

* About the EFFECTS PATCH PARAMETERS, please refer to the section of each algorithm (p. 110-129).

COMMON (SYSTEM) PARAMETER

Parameter	Value
System Name	...
...	...

PROJECT PARAMETER

Parameter	Value
Project Name	...
...	...

TRACK PARAMETER

Track No.	Track Name	Status	...
1	...	...	...
2	...	...	...
...

EFFECTS PATCH PARAMETER

Track No.	Effect No.	Effect Name	...
1	1	...	...
...

SAMPLE PARAMETER

Parameter	Value
...	...

GROUP PARAMETER

Parameter	Value
...	...

SYSTEM PARAMETER

Parameter	Value
...	...

COMMON (SYSTEM) PARAMETER

Parameter	Value
...	...

PROJECT PARAMETER

Parameter	Value
...	...

TRACK PARAMETER

Track No.	Track Name	Status	...
1	...	...	...
2	...	...	...
...

EFFECTS PATCH PARAMETER

Track No.	Effect No.	Effect Name	...
1	1	...	...
...

1. RECOGNIZED RECEIVE DATA

■ Channel Voice Message

● Note On/Off

Receive the note number which is designated with "Note (Pad0)", in the MIDI channel number which is designated with "Pads ch=Rx01-Rx10" in the system parameter "2. Set MIDI Param?".

Status	Second	Third
9nH	mmH	llH

n = MIDI Channel No.: 00H-09H (ch.1-ch.10) (*1)
 0AH (ch.11) (*2)
 mm = Note No.: 00H-7FH (0-127)
 ll = Velocity: 01H-7FH (1-127) / 00H = NOTE OFF

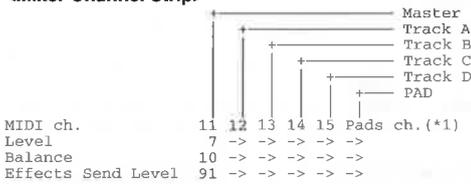
● Control Change

Status	Second	Third
BnH	mmH	llH

n = MIDI Channel No.: 0AH-0EH (ch.11-ch.15: see below)
 mm = Mixer Parameter No.: (see below)
 ll = Mixer Parameter Value: 00H-7FH (0-127)

Mixer Parameter and MIDI Channel/Control Change No.

<Mixer Channel Strip>



*1: When Pads ch is set to except OFF.

○ Bank select (MSB/LSB)

Switches the effect bank of Preset/User.

Status	Second	Third
BnH	00H	mmH
BnH	20H	llH

n = MIDI Channel No.: 0AH (ch.11)
 mm = upper byte of bank number: 00H, 40H (0, 64)
 ll = lower byte of bank number: 00H

Bank Select		Program Change	Patch Number
MSB	LSB		
00H	00H	00H-62H (0-98)	Preset #01-#99
40H	00H	00H-62H (0-98)	Preset #01-#99
40H	00H	64H-67H (100-103)	Panel Effect

● Program Change

Works as bank switch when MIDI channel number is set for playing the sample.
 Works as Effects patches switch when channel number is set to 0AH.

Status	Second
CnH	ppH

n = MIDI Channel No.: 00H-09H (ch.1-ch.10) (When Pads ch is set to Rx01-Rx10)
 0AH (ch.11)
 pp = Program No.: 00H-62H (0-98), 64H-67H (100-103)

■ System Common Messages

● MIDI Time Code Quarter Frame Messages

The transmitted time counts are summed to "MTC Offset Time/Fine" as the project top is "00:00:00:00". The A-6 synchronizes with the time counts which are summed to "MTC Offset Time/Fine" as the project top is "00:00:00:00" if the PROJECT parameter "Sync Source" is "Ext.MTC or Auto".

Status	Second
FIH	mmH (= 0nnndddd)

nnn = Message type: 0 = Frame count LS nibble
 1 = Frame count MS nibble
 2 = Seconds count LS nibble
 3 = Seconds count MS nibble
 4 = Minutes count LS nibble
 5 = Minutes count MS nibble
 6 = Hours count LS nibble
 7 = Hours count MS nibble

dddd = 4 bit nibble data: 0H-FH (0-15)

If the upper and lower 4 bits of the count are combined, these bit fields are assigned as follows.

Frame Count	Seconds Count	Minutes Count	Hours Count
xxxx	xx	xx	x
yyyy	yyyyyy	yyyyyy	yy
Reserved (000)	Reserved (00)	Reserved (00)	Reserved (0)
Frame No. (0-29)	Seconds Count (0-59)	Minutes Count (0-59)	Time Code type
			0 = 24 Frames/Sec 1 = 25 Frames/Sec 2 = 30 Frames/Sec (Drop Frame) 3 = 30 Frames/Sec (Non Drop Frame)
zzzzz			Hours

■ System Exclusive Message

Status	Data Bytes	Status
F0H	iiH, ddH, ..., eeH	F7H

Byte	Description
F0H	Status of System Exclusive Message
iiH	Manufacturer ID
	41H Roland's Manufacturer ID
	7EH Universal Non Realtime Message
	7FH Universal Realtime Message
ddH	Data: 00H-7FH (0-127)
eeH	Data
F7H	EOX (End of System Exclusive Message)

● Universal System Exclusive Message

○ INQUIRY MESSAGE

◇ MIDI Machine Control Commands

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, aaH, ..., bb	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
aaH	Command
bbH	Command
F7H	EOX (End of System Exclusive Message)

* See "2. MIDI Machine Control" section.

◇ MIDI Machine Control Responses

Status	Data Bytes	Status
F0H	7FH, Dev, 07H, aaH, ..., bb	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
07H	MMC Response Message
aaH	Response
bbH	Response
F7H	EOX (End of System Exclusive Message)

* See "2. MIDI Machine Control" section.

2. MIDI Machine Control

■ MIDI Machine Control Details

● STOP (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 01H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
01H	STOP (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 stops immediately.

● PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 02H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
02H	PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 goes into the playback condition.

● DEFERRED PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 goes into the playback condition after the locate operation.

● FAST FORWARD (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 goes into the fast forward condition.

● REWIND (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 05H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
05H	REWIND (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 goes into the rewind condition.

● RECORD STROBE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 06H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
06H	RECORD STROBE
F7H	EOX (End of System Exclusive Message)

If the transport switch [REC] was pressed out of the recording condition, the A-6 transmits as the device ID 7FH.

● RECORD EXIT

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 07H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
07H	RECORD EXIT
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 exits from the record condition.

● MMC RESET

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 0DH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
0DH	MMC RESET
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 resets all communication channels related with MMC.

● WRITE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 40H, ccH, ddH, eeH, ..., ffH, ...	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
40H	WRITE
ccH	Information Bytes follows the command
ddH	The name of the writable Information Field
eeH	Information Field Format
ffH	Field names and data
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 writes the data to the specified information field.

● MASKED WRITE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 41H, 04H, ddH, eeH, ffH, ggH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
41H	MASKED WRITE
04H	Number of Bytes follows the command
ddH	The name of the masked type writable Information Field
eeH	Byte number to write in the Bit Map
ffH	Bit location of the bit map byte to change
ggH	New data to write to the specified bit map byte
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 writes the data to the specified bit map byte.

● LOCATE (MCP)

○ Format 1—LOCATE [I/F]

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 44H, 02H, 00H, nnH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
44H	LOCATE (MCP)
02H	Number of Bytes
00H	"1/F" sub command
nnH	Information Field (08H, 09H, 0AH, 0BH, 0CH, 0DH, 0EH, 0FH)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 locates the selected time location stored to the specified information field.

○ Format 2—LOCATE [TARGET]

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 44H, 06H, 01H, hrH, mnH, scH, frH, ffH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
44H	LOCATE (MCP)
06H	Number of Bytes
01H	"TARGET" sub command
hrH, mnH, scH, frH, ffH	Standard Time with Sub Frame
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 locates the specified time location received from the command.

● MOVE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 4CH, 02H, ddH, ssH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
4CH	MOVE
02H	Number of Bytes
ddH	Name of the Efficient Destination Information Field (08H, 09H, 0AH, 0BH, 0CH, 0DH, 0EH, 0FH)
ssH	Name of the Efficient Source Information Field (01H)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the A-6 transfers the data on the selected source information field to the destination Information Field, if the name of both information fields is efficient.

3. TRANSMITTED DATA

■ Channel Voice Message

● Note On/Off

When "Pad ch." in the SYSTEM parameters (2.Set MIDI?) is "Tx01-Tx10", MIDI note number/velocity of MIDI channel number which is assigned to the Metronome is transmitted.

Status	Second	Third
9nH	mmH	llH

n = MIDI Channel No.: 00H-09H (ch.1-ch.10) (*1)
 mm = Note No.: 00H-7FH (0-127)
 ll = Velocity: 64H (100) / 00H = NOTE OFF

● Control Change

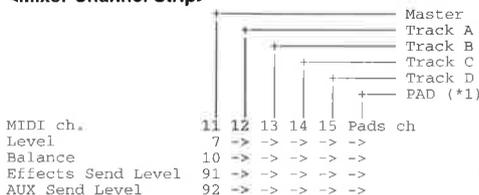
Parameters on the Mixer section can be received and transmitted by the control change messages when "Mixer Send" in the SYSTEM parameter is set to "ON".

Status	Second	Third
BnH	mmH	llH

n = MIDI Channel No.: 0AH-0FH (ch.11-ch.16: see below)
 mm = Mixer Parameter No.: (see below)
 ll = Mixer Parameter Value: 00H-7FH (0-127)

Mixer Parameter and MIDI Channel/Control Change No.

<Mixer Channel Strip>



*1: When Pads ch is set to except OFF.

MIDI Implementation

■ System Common Messages

● MIDI Time Code Quarter Frame Messages

MIDI Time Code Quarter Frame Messages can be transmitted while the A-6 is running (Playing or Recording) if the PROJECT parameter "Sync Source" is "INTERNAL" and "Sync Out" is "MTC". The transmitted time counts are summed to "MTC Offset Time/Fine" as the project top is "00:00:00:00".

Status	Second
F1H	mmH (= 0nnrdddd)
nnn = Message type:	0 = Frame count LS nibble 1 = Frame count MS nibble 2 = Seconds count LS nibble 3 = Seconds count MS nibble 4 = Minutes count LS nibble 5 = Minutes count MS nibble 6 = Hours count LS nibble 7 = Hours count MS nibble
dddd = 4 bit nibble data:	0H-FH (0-15)

If the upper and lower 4 bits of the count are combined, these bit fields are assigned as follows.

Frame Count	xxxxxyyy
xxx	Reserved (000)
yyyy	Frame No. (0-29)
Seconds Count	xyyyyyyy
xx	Reserved (00)
yyyyyy	Seconds Count (0-59)
Minutes Count	xyyyyyyy
xx	Reserved (00)
yyyyyy	Minutes Count (0-59)
Hours Count	xyyzzzzz
x	Reserved (0)
yy	Time Code type
	0 = 24 Frames/Sec 1 = 25 Frames/Sec 2 = 30 Frames/Sec (Drop Frame) 3 = 30 Frames/Sec (Non Drop Frame)
zzzzz	Hours

■ System Exclusive Message

Status	Data Bytes	Status
F0H	iiH, ddH, ..., eeH	F7H
Byte	Description	
F0H	Status of System Exclusive Message	
iiH	Manufacturer ID	
	41H Roland's Manufacturer ID	
	7EH Universal Non Realtime Message	
	7FH Universal Realtime Message	
ddH	Data: 00H-7FH (0-127)	
eeH	Data	
F7H	EOX (End of System Exclusive Message)	

● Universal System Exclusive Message

◇ MIDI Machine Control Commands

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, aaH, ..., bbH	F7H
Byte	Description	
F0H	Status of System Exclusive Message	
7FH	Universal System Exclusive Message Realtime Header	
7FH	Device ID	
06H	MMC Command Message	
aaH	Command	
bbH	Command	
F7H	EOX (End of System Exclusive Message)	

* See "4. MIDI Machine Control" section.

◇ MIDI Machine Control Responses

Status	Data Bytes	Status
F0H	7FH, 7FH, 07H, aaH, ..., bbH	F7H
Byte	Description	
F0H	Status of System Exclusive Message	
7FH	Universal System Exclusive Message Realtime Header	
7FH	Device ID	
07H	MMC Response Message	
aaH	Response	
bbH	Response	
F7H	EOX (End of System Exclusive Message)	

* See "4. MIDI Machine Control" section.

4. MIDI Machine Control

■ MIDI Machine Control Details

● STOP (MCS)

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 01H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
01H	STOP (MCS)
F7H	EOX (End of System Exclusive Message)

If the transport switch [STOP] was pressed, the A-6 transmits as the device ID 7FH.

● DEFERRED PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the transport switch [PLAY] was pressed, the A-6 transmits as the device ID 7FH.

● RECORD STROBE

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 06H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
06H	RECORD STROBE
F7H	EOX (End of System Exclusive Message)

If the transport switch [REC] was pressed out of the recording condition, the A-6 transmits as the device ID 7FH.

● RECORD EXIT

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 07H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
07H	RECORD EXIT
F7H	EOX (End of System Exclusive Message)

If the transport switch [REC] was pressed while recording, the A-6 transmits as the device ID 7FH.

● MMC RESET

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 0DH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
0DH	MMC RESET
F7H	EOX (End of System Exclusive Message)

When powered on and project loaded the A-6 transmits as the device ID 7FH.

● LOCATE (MCP)

○ Format 2—LOCATE [TARGET]

Status	Data Bytes	Status
F0H	7FH, 7FH, 06H, 44H, 06H, 01H, hrH, mnH, scH, frH, ffH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
7FH	Device ID
06H	MMC Command Message
44H	LOCATE (MCP)
06H	Number of Bytes
01H	"TARGET" sub command
hrH, mnH, scH, frH, ffH	Standard Time with Sub Frame
F7H	EOX (End of System Exclusive Message)

If the efficient locate switch is pressed, the A-6 transmits as the device ID 7FH.

● The efficient Information Field

The followings are the efficient Information Field on the A-6.

The name of the efficient destination Information Field:

01H	SELECTED TIME CODE
08H	GP0 / LOCATOR 1
09H	GP1 / LOCATOR 2
0AH	GP2 / LOCATOR 3
0BH	GP3 / LOCATOR 4
0CH	GP4 / LOCATOR 5
0DH	GP5 / LOCATOR 6
0EH	GP6 / LOCATOR 7
0FH	GP7 / LOCATOR 8
4FH	TRACK RECORD READY

5. Appendices

● Decimal and Hexadecimal table

(Hexadecimal number is shown with H.)

In MIDI documentation, data values and addresses/sizes of system exclusive messages etc, are expressed as hexadecimal values for each 7 bits.

The following table shows how these correspond to decimal numbers.

dec	hex	dec	hex	dec	hex	dec	hex
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

- Decimal values such as MIDI channel, bank select, and program change are listed as one (1) greater than the values given in the above table.
- A 7-bit byte can express data in the range of 128 steps, For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of $aa \times 128 + bb$.
- In the case of values which have a \pm sign, 00H = -64, 40H = ± 0 , and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ± 0 , and 7F 7FH = +8191.
- Data marked "nibbled" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of $a \times 16 + b$.

<Ex.1> What is 5AH in decimal system?

5AH = 90 according to the above table.

<Ex.2> What in decimal system is 12034H in hexadecimal of every 7 bit?

12H = 18, 34H = 52 according to the above table. So $18 \times 128 + 52 = 2356$.

<Ex.3> What in decimal system is 0A 03 09 0D in nibble system?

0AH = 10, 03H = 3, 09H = 9, 0DH = 13 according to the table.
So $((10 \times 16 + 3) \times 16 + 9) \times 16 + 13 = 41885$.

<Ex. 4> What in nibble system is 1258 in decimal system?

```

16) 1258
   78 ... 10
16)  4 ... 14
   0 ...  4
    
```

0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH According to the table.
So it is 00 04 0E 0AH.

● Example of system exclusive message and Checksum calculation

On Roland system exclusive message (DT1), checksum is added at the end of transmitted data (in front of F7) to check the message is received correctly. Value of checksum is defined by address and data (or size) of the system exclusive message to be transmitted.

◇ How to calculate checksum (Hexadecimal number is shown with H)

Checksum is a value which lower 7 bit of the sum of address, size and checksum itself turns to be 0.

If the address of the system exclusive message to be transmitted is aa bb ccH and data or size is dd ee ffH,

$$\begin{aligned}
 &aa + bb + cc + dd + ee + ff = \text{sum} \\
 &\text{sum} / 128 = \text{quotient and odd} \\
 &\text{When odd is 0, 0 = checksum} \\
 &\text{When odd is other than 0, } 128 - \text{odd} = \text{checksum}
 \end{aligned}$$

MIDI Machine Control (MMC) Command, Information Field / Response Reference

● Commands Recognized

Command	Action
01H STOP	STOP
02H PLAY	PLAY
03H DEFERRED PLAY	PLAY
04H FAST FORWARD	FF
05H REWIND	REW
06H RECORD STROBE	REC/PUNCH IN
07H RECORD EXIT	PUNCH OUT
0DH MMC RESET	RESET
40H WRITE	Write to Information Fields
41H MASKED WRITE	Set Track Status Information Fields
44H 00H LOCATE 1/F	LOCATE (Read Locator)
44H 01H LOCATE TARGET	LOCATE (Designated Time)
4CH MOVE	Move between Information fields

● Commands Transmitted

Command	Action
01H STOP	STOP
03H DEFERRED PLAY	PLAY
06H RECORD STROBE	REC/PUNCH IN
07H RECORD EXIT	PUNCH OUT
0DH MMC RESET	RESET
44H 01H LOCATE TARGET	LOCATE

● Valid Information Fields / Response

Information Field	Interpret	Valid Commands
01H SELECTED TIME CODE	Current Time	MOVE (FROM)
08H GP0/LOCATE POINT	Locator 1	MOVE (FROM), MOVE (TO), WRITE
09H GP1	Locator 2	MOVE (FROM), MOVE (TO), WRITE
0AH GP2	Locator 3	MOVE (FROM), MOVE (TO), WRITE
0BH GP3	Locator 4	MOVE (FROM), MOVE (TO), WRITE
0CH GP4	Locator 5	MOVE (FROM), MOVE (TO), WRITE
0DH GP5	Locator 6	MOVE (FROM), MOVE (TO), WRITE
0EH GP6	Locator 7	MOVE (FROM), MOVE (TO), WRITE
0FH GP7	Locator 8	MOVE (FROM), MOVE (TO), WRITE
4FH TRACK RECORD READY	Track Status	MASKED WRITE, WRITE

- A-6 transforms the Information Fields GP0-GP7 which are written by the MMC WRITE COMMAND (40H) to MEASURE/BEAT/TICK format data which accord with current tempo and time signature, and then registers them to the locators 1-8.

MIDI Implementation Chart

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-15 1-15	1-15 1-15	
Mode	Default Messages Altered	Mode 3 x *****	Mode 3 x x	
Note Number	True Voice	100 *****	0-127 0-127	
Velocity	Note ON Note OFF	1-127 x 9n, v = 0	o x	
After Touch	Key's Ch's	x x	x x	
Pitch Bend		x	x	
Control Change	0, 32 7 10 91	o o o o	o o o o	Bank Select (Effects) Level Balance Effects Send Level
Program Change	True #	x ***** *****	o *1 0-98 0-98, 100-103	Pad Group Effects Patch
System Exclusive		x	x	
Common	Quarter Frame Song Position Song Select Tune	o *2 x x x	o *3 x x x	
System Realtime	Clock Commands	x x	x x	
Aux Messages	All Sounds OFF Reset All Controllers Local ON/OFF All Notes OFF Active Sensing System Reset	x x x x o x	o x x o (123-127) o x	
Notes		*1 Change Pad Group when MIDI CH = 1-10. Change Effects Patches when MIDI CH = 11. *2 "SyncSource" = "INTERNAL" and "SyncOut" = "MTC" *3 "SyncSource" = "Ext. MTC"		

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

o: Yes
x: No

DAT

Short for **Digital Audio Tape**. This refers both to the system of recording digitized sound to magnetic tape, as well as to the tapes themselves. Besides digital audio signals, all song information is recorded on the tape, including starts and track data, information to allow or prevent copying, etc.

Formants

A formant is an important element which determine the character of a vocal sound. It is a fixed overtone whose location is determined by the size of the vocal chords. Conventional pitch shifters modify the pitch in a way that changes even the location of the formants (which by nature do not change). For example when a conventional pitch shifter raises the pitch, a "duck voice" is produced as if the vocal chords had shrunk, and when the pitch is lowered a "giant voice" is produced as if the vocal chords had expanded. The Voice Transformer modifies the basic pitch and the formant separately, allowing a variety of voice characters to be created.

Frame

Similar to the individual frames in a roll of movie film, the numerous still pictures that are displayed in rapid succession to create a moving video image are also known as "frames." About thirty of these frames are shown each second.

GPI

GPI stands for **General Purpose Interface**. This is a control jack provided on professional and consumer video devices such as video editors and title superimposers. By connecting this control jack to the foot switch jack of the A-6 and setting the Foot Switch Assign to "GPI," the connected device will be able to playback/stop the A-6.

MMC

MMC is an acronym for **MIDI Machine Control**. This is a rule that defines how MIDI system exclusive message can be used to control multiple recording devices from a single device. The A-6 supports MMC. In addition to project playback, stop and fast-forward, you can also select the tracks for recording, etc.

MTC

MTC stands for MIDI Time Code. This is a group of messages which are transmitted and received between MIDI devices to synchronize their operation. Unlike MIDI Clock messages, MTC specifies an absolute time. Like SMPTE time code, MTC also supports a variety of frame rates. If you wish to use MTC to synchronize the operation of two devices, both devices must be set to the same frame rate.

NTSC Format

Color television format used in Japan, the United States, and other countries. Tapes recorded in the NTSC format cannot be played back on video decks utilizing the SECAM format/PAL formats.

Phantom Power

This is a method of providing electric power to condenser mics via the mic cables. Generally, a mixer's internal phantom power source supplies 6–48 volts (DC). Supplying phantom power to dynamic mics, audio playback devices, or other such equipment may result in damage to the equipment. Turn the phantom power switch on only when connecting condenser mics which need phantom power; otherwise, leave it switched off.

RSS

RSS stands for **Roland Sound System**. This is an effect which allows a sound source to be placed in three-dimensional space when played back on a conventional stereo system. The sound can be placed not only in front of the listener, but also directly to the side, above, below, and behind the listener.

S/P DIF

S/P DIF stands for **Sony/Philips Digital Interface Format**. This is a specifications for transmitting and receiving stereo digital audio signals between digital audio devices. The A-6 provides coaxial connectors which support S/P DIF (with A6-OP1).

SCMS

SCMS stands for Serial Copy Management System. This is a function that protects the rights of copyright holders by prohibiting recording via a digital connection for more than two generations. When digital connections are made between digital recorders that implement this function, SCMS data will be recorded along with the audio data. Digital audio data which contains this SCMS data cannot again be recorded via a digital connection.

SCSI

SCSI stands for **Small Computer System Interface**. This is a data transmission method that can transmit large amounts of data in a short time. Since the A-6 has a SCSI connector, external Zip drive, can be connected.

SECAM Formats/PAL Formats

Color television formats used in Europe and other areas. Tapes recorded in the SECAM or PAL formats cannot be played back on video decks designed for the NTSC format.

SMPTE time code

This is a signal format defined by the American organization SMPTE (Society of Motion Picture and Television Engineers) which is used to synchronize the operation of video or audio devices. SMPTE specifies "hours:minutes:seconds:frames" to indicate the address of each frame of a video image. For this reason, there are a variety of frame rates.

Terminator Power

This refers to the power supplied to external type active terminators.

Zip Drive

A magnetic disk drive format standardized by Iomega Corporation. Disks that can be used for reading and writing data with Zip drives are called Zip disks. Similar to 3.5-inch floppy disks in size and usage, one Zip disk can store 100 MB of data.

Specifications

A-6

Digital Multi Audio Station Video Canvas

Tracks

Tracks: 4 stereo

V-Tracks: 32 stereo (4 stereo tracks x 8 V-Tracks)

* One stereo pair of tracks can be recording simultaneously.

Maximum Polyphony

4 stereo (total)

Maximum Useful Capacity

16 G bytes: 2 G bytes (capacity) x 8 (partition)

Audio Data Format

A-6 Original (R-DAC)

Internal Memory

Pad Groups: 99

Pad Clips: 994 (10 pad x 99 group + 4 (favorite))

Projects: 64

Effect Patches: 99 (preset) + 99 (user) + 4 (panel)

Channel Equalizer

3 band parametric (HI, MID, LOW)

(5 channel: Track A - D, PAD)

Signal Processing

AD Conversion: 20 bits, 64 times over sampling

DA Conversion: 20 bits, 128 times over sampling

Internal Processing: 24 bits (mixer section)

Sample Rate

44.1 kHz

Recording Time (at 2 G bytes, conversion in stereo track)

9 hours approx. (Including Demo Clips on the HDPA6 series hard disk)

* Times may be slightly depending on the times of recording procedure.

Number of Track Clips

Approx. 2,000 clips per 1 project

Synchronization

MIDI MTC/MMC (Master, Slave)

Frequency Response

10 Hz - 21 kHz (+0/-3 dB)

Nominal Input Level (variable)

Mic: -50 - -20 dBu

VCR: -10 - +4 dBu

CD: -10 - +4 dBu

Input L, R (Available with A6-OP1 is installed.)

(Mic): -50 - -20 dBu

(Line): -10 - +4 dBu

Input Impedance

MIC: 100 k ohms

VCR: 47 k ohms

CD: 47 k ohms

Input L, R (Available with A6-OP1 is installed.):
6 k ohms

Nominal Output Level

Master Out: -10 dBu

Monitor Out: -10 dBu

Output L, R (Available with A6-OP1 is installed.):
+4 dBu

Output Impedance

Master Out: 2 k ohms

Monitor Out: 2 k ohms

Headphones: 10 ohms

Output L, R (Available with A6-OP1 is installed.):
600 ohms

Recommended Load Impedance

Master Out: 10 k ohms or greater

Monitor Out: 10 k ohms or greater

Headphones: 4 - 600 ohms

Output L, R (Available with A6-OP1 is installed.):
10 k ohms or greater

S/N Ratio (Line AD/DA total, IHF-A, typ.)

Master Out: 92 dB

Monitor Out: 92 dB

Display

69.0 x 25.0 mm (with backlit)

Connectors

Mic In Jack (1/4 inch phone type)
VCR In Jacks L, R (RCA phone type)
CD In Jacks L, R (RCA phone type)
Master Out Jacks L, R (RCA phone type)
Monitor Jacks L, R (RCA phone type)
Headphones Jack (Stereo 1/4 inch phone type)
GPI In Jack (1/4 inch phone type)
MIDI Connectors (IN, OUT/THRU)

* Available with the Multi I/O Expansion "A6-OP1" is installed.

SCSI Connector (DB-25 type)
Digital In Connector (Coaxial type)
Digital Out Connector (Coaxial type)
Input L, R (XLR type, balanced, line/mic selective)
Output L, R (XLR type, balanced)

Power Supply

AC 117 V, AC 230 V or AC 240 V

Power Consumption

16 W (Including internal hard disk)

Dimension

394 (W) x 343 (D) x 99 (H) mm
15-9/16 (H) x 13-9/16 (D) x 3-15/16 (H) inches

Weight

4.1 kg (Excluding internal hard disk and A6-OP1)
9 lbs 1 oz

Accessories

AC Cord
Quick Start
Owner's Manual

Options

Internal Hard Disk Drive Unit: HDPA6 Series
Multi I/O Expansion: A6-OP1
Video MIDI Sync Interface: SI-80S

(0 dBu = 0.775 V rms)

* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

Index

4 button chorus 320115
80's phaser116

A

A6-OP1141
Auto Play Clip134

B

Backup144
Big Time Code55

C

Center Canceler120
Change Pitch97
Cleanup Disk136
Clip26
Clipboard88
Copy92
Copyright5
Create Reversal100
Cross Link140
Cut71

D

DV6
Delay21, 29
Delay RSS113
Delete93
Delete Project136
Demo Project22
Destructive Edit62
Digital Copy142
Digital Video6
Display Contrast17
Divide72
Divide98
Drop Frame54

E

EZ Delay112
Effects21
Equalizer81, 110
Erase70

F

Fade In89
Fade Out89
Favorite Pad88

Foot Switch135
Format136

G

Graphic Equalizer119
Guitar Multi124

H

Hard Disk4
Hum Canceler121

I

Initialize137
Insert69
Isolator & Filter119

L

LANC53
Length59
Locator76
Loop89
Loose Area140

M

MTC Type55
Master Tape83
Mic Simulator122
Move65
Multi I/O Expansion141
Multi Tap Delay114

N

Narration129
Next Pad88
Non-destructive Edit62
Non-drop Frame54

O

Offset87

P

PAD GROUP19
Pad18
Pad Group19
PadPlay52
Paste67
Phonograph128

Playlist.....	58
PreTrig.....	49
Previewing.....	78
Protect.....	133
Punch In.....	31
Punch Out.....	31

R

RC time code.....	53
Radio Tuning.....	129
Rearranging.....	92
Recover.....	144
Renumber.....	133
Reverb.....	21, 29
Reverb & Gate.....	110

S

S/P DIF.....	141
SCMS.....	5
SI-80S.....	53
Shift Lock.....	136
Slave.....	55
Sound Library.....	138
Split.....	72
Start/w.....	48
Step Recording.....	58
Stereo Dynamics Processor.....	117
Stereo Flanger.....	116
Stereo Pitch Shifter.....	127
Stretch.....	96
Synchronizing.....	53

T

Time Code.....	53
Track.....	26
Track Recording.....	58
Track Voice Reserve.....	131
Trim In.....	74
Trim Out.....	74
Type.....	47, 60

U

Undo.....	30, 92
-----------	--------

V

Vocal Multi.....	123
Voice Transformer.....	126

X

XLR connector.....	141
--------------------	-----

Z

Zip disk.....	4
---------------	---

Information

When you need repair service, call your nearest Roland/EDIROL Service Center or authorized Roland/EDIROL distributor in your country as shown below.

Roland

ARGENTINA

Instrumentos Musicales S.A.
Florida 638
(1005) Buenos Aires
ARGENTINA
TEL: (01) 394 4029

BRAZIL

Roland Brasil Ltda.
R. Coronel Octaviano da Silveira
203 05522-010
Sao Paulo BRAZIL
TEL: (011) 843 9377

MEXICO

Casa Veerkamp, s.a. de c.v.
Av. Toluca No. 323 Col. Olivar de
los Padres 01780 Mexico D.F.
MEXICO
TEL: (525) 668 04 80

La Casa Wagner de
Guadalajara s.a. de c.v.
Av. Corona No. 202 S.J.
Guadalajara, Jalisco Mexico
C.P.44100 MEXICO
TEL: (03) 613 1414

PANAMA

Productos Superiores, S.A.
Apartado 655 - Panama 1
REP. DE PANAMA
TEL: 26 3322

VENEZUELA

Musiland Digital C.A.
Av. Francisco de Miranda,
Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
VENEZUELA
TEL: (02) 285 9218

NEW ZEALAND

Roland Corporation (NZ) Ltd.
97 Mt. Eden Road, Mt. Eden,
Auckland 3, NEW ZEALAND
TEL: (09) 3098 715

INDIA

Rivera Digitec (India) Pvt. Ltd.
409, Nirman Kendra,
off Dr. Edwin Moses Road,
Mumbai 400011, INDIA
TEL: (022) 498 3079

KOREA

Cosmos Corporation
Service Station
261 2nd Floor Nak-Won Arcade
Jong-Ro ku, Seoul, KOREA
TEL: (02) 742 8844

TAIWAN

ROLAND TAIWAN
ENTERPRISE CO., LTD.
Room 5, 9fl. No. 112 Chung Shan
N.Road Sec.2, Taipei, TAIWAN,
R.O.C.
TEL: (02) 561 3339

VIETNAM

Saigon Music Distributor
(Tan Dinh Music)
306 Hai Ba Trung, District 1
Ho chi minh City
VIETNAM
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Moon Stores
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State of BAHRAIN
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Tel-Aviv-Yaho ISRAEL
TEL: (03) 6823666

JORDAN

AMMAN Trading Agency
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825 Amman 11118 JORDAN
TEL: (06) 641200

KUWAIT

Easa Husain Al-Yousifi
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KUWAIT
TEL: 5719499

LEBANON

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Chahine Building, Achrafieh
Beirut, LEBANON
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TEL: 423554

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Trading Establishment
Middle East Commercial Center
Al-Khobar Dharan Highway
W/hamood st.
P. O. Box 3631 Al-Khobar
31952 SAUDIARABIA
TEL: (03) 898 2332

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Technical Light & Sound
Center
Khaled Ibn Al Walid St.
P.O.Box 13520
Damascus - SYRIA
TEL: (011) 2235 384

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Barkat Sanayi ve Ticaret
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86/6 Taksim, Istanbul TURKEY
TEL: (0212) 2499324

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Instruments Co.
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U.A.E.
P.O. Box 8050 DUBAI, U.A.E
TEL: (04) 360715

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11341 EGYPT
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(02) 4185531

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Nairobi Republic of KENYA
TEL: (2) 338 346

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Ste Clotilde REUNION
TEL: 28 29 16

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Juta Street)
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Republic of SOUTH AFRICA
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre Claremont
7700
Republic of SOUTH AFRICA
TEL: (021) 64 4030

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Neu-Rum Siemens-Strasse 4
6063 Innsbruck AUSTRIA
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Roland Benelux N. V.
Houtstraat 1 B-2260 Oevel-
Westerlo BELGIUM
TEL: (014) 575811

BELORUSSIA

TUSHE
UL. Rabkorovskaya 17
220001 MINSK
TEL: (0172) 764-911

CYPRUS

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17 Diagorou St., P.O.Box 2046,
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TEL: (02) 453 426

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Roland Scandinavia A/S
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Fin-00201 Helsinki, FINLAND
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Roland Elektronische
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Handelsgesellschaft mbH.
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GERMANY
TEL: (040) 52 60090

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20, Alexandras St. & Bouboulinas
54 St, 106 82 Athens, GREECE
TEL: (01) 8232415

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Intermusica Ltd.
Warehouse Area 'DEPO' Pf.83
H-2046 Torokbalint, HUNGARY
TEL: (23) 511011

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The Dublin Service Centre
Audio Maintenance Limited
11 Brunswick Place Dublin 2
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Viale delle Industrie, 8
20020 Arese Milano, ITALY
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Lilleakerveien 2 Postboks 95
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? SCMS (p. 165)

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