

Roland®

DIGITAL STUDIO WORKSTATION

VS-880

OWNER'S MANUAL

QUICK START

OWNER'S MANUAL

VS-8F1 Preset Patch list

Notes when using a zip drive

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Roland®

DIGITAL STUDIO WORKSTATION

VS-880

QUICK START

Introduction

Thank you for purchasing the Roland VS-880 Digital Studio Workstation.

The VS-880 is an all-in-one type multitrack digital disk recorder that combines a hard disk recorder and a digital mixer in a single unit. The audio signal remains in the digital domain through all steps, from recording to mixdown and output. Furthermore, many editing operations that were not possible on conventional multitrack analog tape recorders can be accomplished on the VS-880.

The documentation of the VS-880 consists of two manuals; "Quick Start" and "Owner's Manual." Quick Start explains how to set up the VS-880, do a recording, play back material, and save a song—along with other basic procedures. If you are using the VS-880 for the first time, read Quick Start first.

Conventions used in this manual

- Individual buttons are printed in square brackets []. Button groups are indicated as ** buttons, without brackets. Example: [EDIT], EDIT CONDITION buttons

- Some buttons have more than one button name. These indicate the function that the button performs when [SHIFT] is pressed or when in a different mode. When giving only the "secondary" function name would make it difficult to know which button is meant, both button names will be given, with the current function given first. Example: [SOLO (EDIT)], [SEL (CH EDIT)]

- The VS-880 has two buttons marked PLAY. In this manual, these are distinguished as follows.

[PLAY (DISPLAY)]: the button at the lower right of the screen

[PLAY]: the recorder operation button

- In the mixer section, a knob/button/indicator/fader of a specific channel is sometimes indicated by adding the channel number. Example: the PAN 1 knob, fader 3

- Paragraphs beginning with an asterisk (*) explain points which are especially important. In the Quick Start, a NOTE mark is used instead of an asterisk (*).

- The contents of displays pictured in this manual may differ from the settings of the VS-880 when you purchased it.

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Preparations

Installing an internal hard disk

One IDE-standard hard disk (2.5 inch size) can be installed into the VS-880. If an internal hard disk is installed, the VS-880 system will be compact and easy to transport. Furthermore, there will be no need to make complex settings and no problems with faulty connections (unlike those which could occur when an external disk is used). We recommend that you install an internal hard disk when using the VS-880.

Roland sells a separate HDP88-DL hard disk drive unit for internal installation. For installation of an internal hard disk, please contact a nearby Roland service center or your dealer.

< Cautions when installing an internal hard disk >

● When installing the hard disk, remove screws only as directed.



● A hard disk being used for the first time on the VS-880 must be initialized by the VS-880 after installation. When a hard disk is initialized, any data which was on that hard disk will be erased. If you will be installing a hard disk that has already been used by another device, make sure that it does not contain any important data.

● The temporary fastening screws included with the hard disk are not required for installation into the VS-880. When installing the hard disk into the VS-880, use the screws that are attached to the disk slot of the VS-880.

● Make sure that you use a philips screwdriver of the appropriate size for the screws. If the screwdriver is the wrong size, the head of the screws may become stripped and inoperable.

● Be careful that the screws you remove do not drop into the VS-880.

● 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 you finish installation, check that the hard disk has been installed correctly.

< Hard disk handling >

● Hard disks are precision devices. When an internal hard disk has been installed in the VS-880, handle it with special care. In particular, the following actions will damage not only the data recorded on the hard disk, but also the hard disk itself.

Dropping or jarring the unit

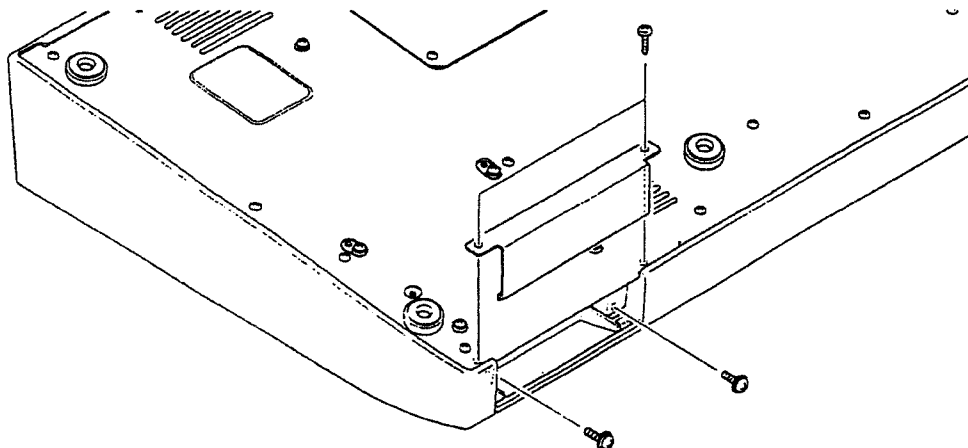
Vibrating the unit during operation

Moving the unit with the power turned on

● For details on hard disk handling, refer also to the owner's manuals of the hard disk and of the VS-880.

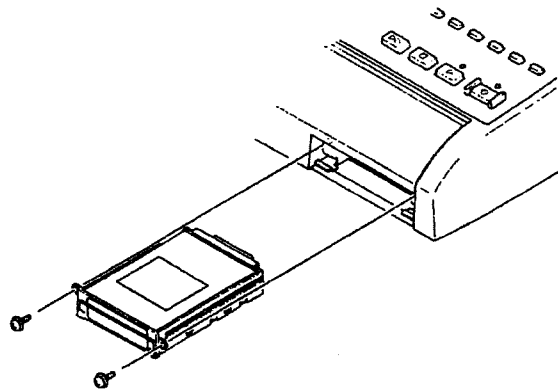
1 Turn off the power of the VS-880, and disconnect the power cable from the AC inlet.

2 Remove the cover from the front panel of the VS-880, and remove the two screws located on either side of the installation slot.



3 Install the hard disk.

With the warning sticker on the hard disk facing upward, 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 protruding part of the VS-880's chassis. When the hard disk has been pressed all the way in, use the screws that you removed to fasten the hard disk in place.



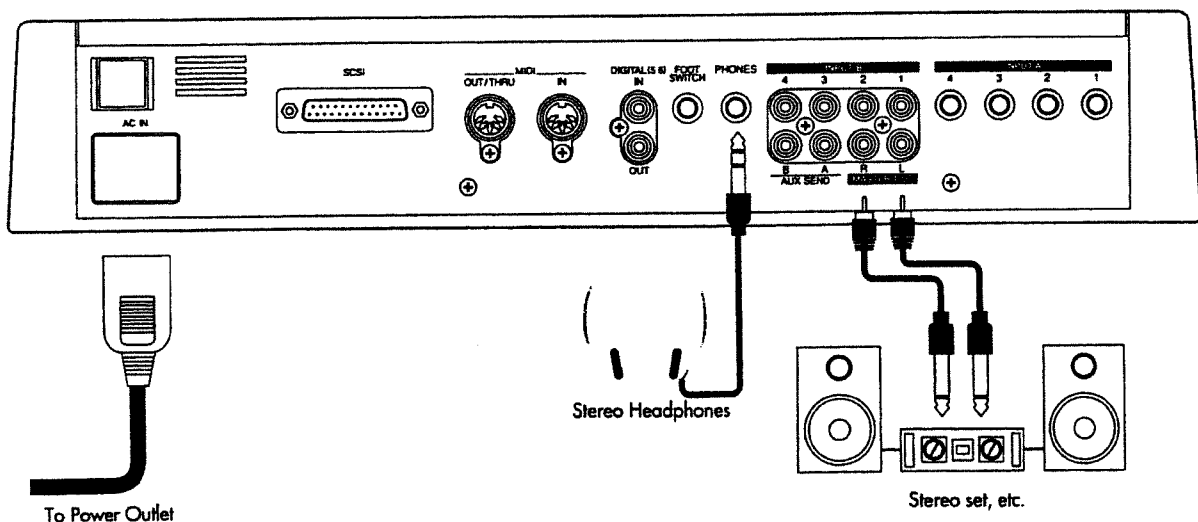
4 After folding down the handle on the front of the hard disk, re-attach the front panel cover as it was originally.

This completes installation of the hard disk.

Connecting audio equipment

NOTE

Before making connections, make sure that the power is turned off for all devices. If the power is on when you make connections, disk drive or speakers may be damaged.



Connect the MASTER OUT jacks of the VS-880 to the input jacks of your audio system. The MASTER OUT jacks are RCA phono type. Make connections using a cable that has the appropriate connectors for the jacks on both devices. If you are using headphones, connect them to the rear panel PHONES jack. The PHONES jack outputs the same sound as the MASTER OUT jack. The headphone volume can be adjusted by the PHONES knob.



The VS-880 has four jacks that output analog audio. With the factory settings, all audio signals will be output from the MASTER OUT jacks.

Turning on the power

When all connections have been made correctly, turn on the power in the following procedure.



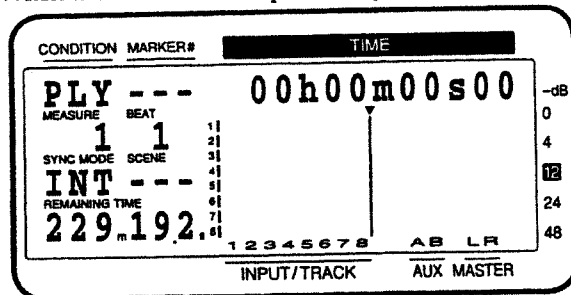
After a hard disk has been installed, the operation that will occur when the VS-880 is turned on for the first time will depend on the type of internal hard disk. The explanation is divided into two sections: "● If a hard disk containing a demo song was installed" and "● If an un-initialized hard disk was installed." Please read the section that is appropriate for your situation.

● If a hard disk containing a demo song was installed

Hard disks which contain a demo song have already been initialized, and can be used by the VS-880 just as they are.

1 Turn on the VS-880 power.

When the VS-880 starts up correctly, "PLY" will appear in the upper left of the display, like this:



This condition is called "play condition."



After power is turned on, the disk drive(s) must be properly identified, then certain required data must be loaded. Thus, a short amount of time is needed before the unit is ready for operation. If the display shows "SYS Init. Drive = NoDrv," the internal hard disk is not being detected. Turn the power off, and make sure that the hard disk is installed correctly.

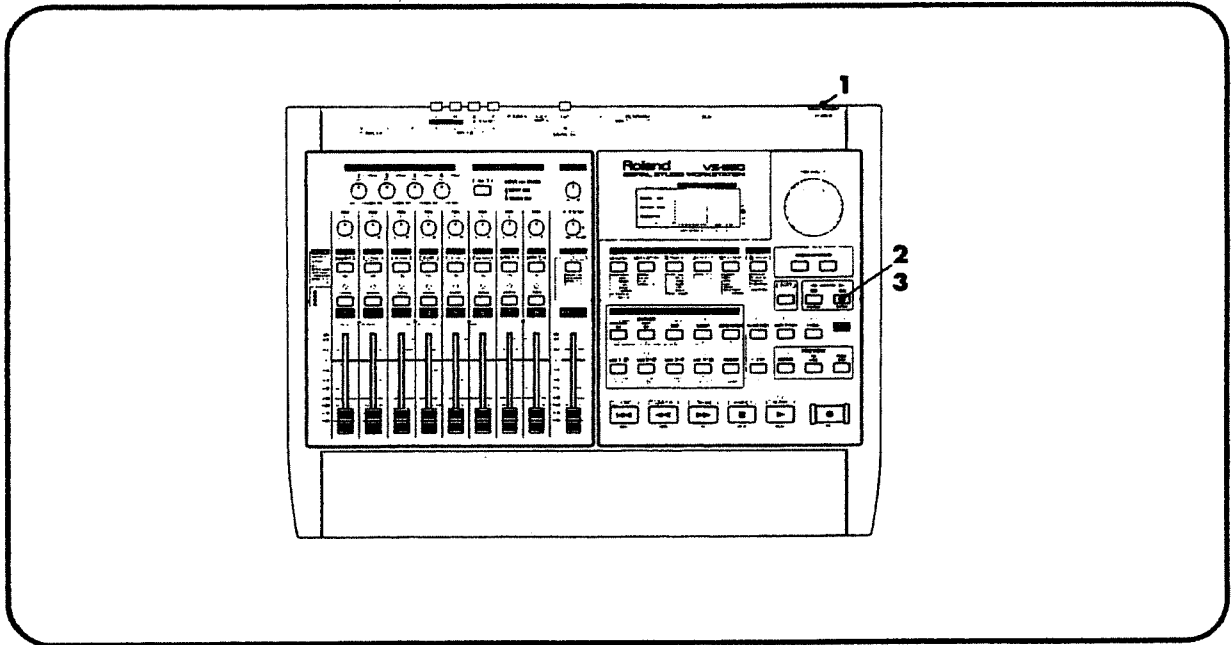
2 Turn on the power of your audio devices, and raise the volume of the audio devices to appropriate levels.

● If an un-initialized hard disk was installed

New hard disks or hard disks which have been used by some other device cannot be used by the VS-880 as they are. Before such hard disks can be used by the VS-880, they must be initialized. Use the following procedure to initialize the hard disk.

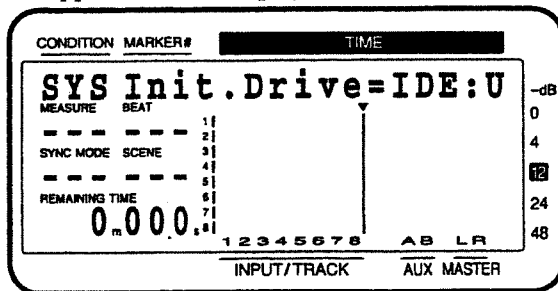


When a hard disk that has been used by another device is initialized, all data that was stored on that disk will be lost. Backup the data if necessary.



1 Turn on the VS-880 power.

The upper line of the display will indicate "SYS Init. Drive=IDE:U."



If the display shows "SYS Init. Drive = NoDrv," the internal hard disk is not being detected. Turn the power off, and make sure that the hard disk is installed correctly.

2 Press [YES].

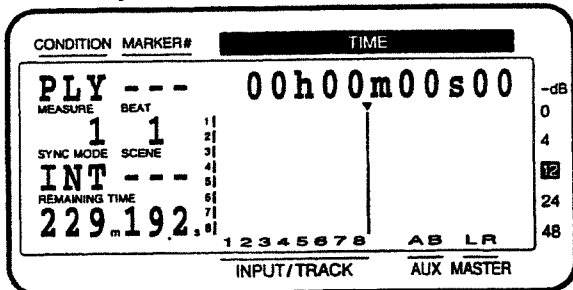
A message of "SYS Init. IDE: U Sure?" will ask for confirmation.

3 Press [YES] once again.

The hard disk will be initialized. If you decide not to initialize, press [NO].

NOTE Initialization of a hard disk will take a considerable amount of time. This is not a malfunction. Do not turn the power off until initialization is complete.

When initialization has been completed correctly, the VS-880 will automatically be restarted. When the VS-880 starts up correctly, "PLY" will appear in the upper left of the display, like this:



This condition is called "play condition."

4 Turn on the power of your audio devices, and raise the volume of the audio devices to appropriate levels.

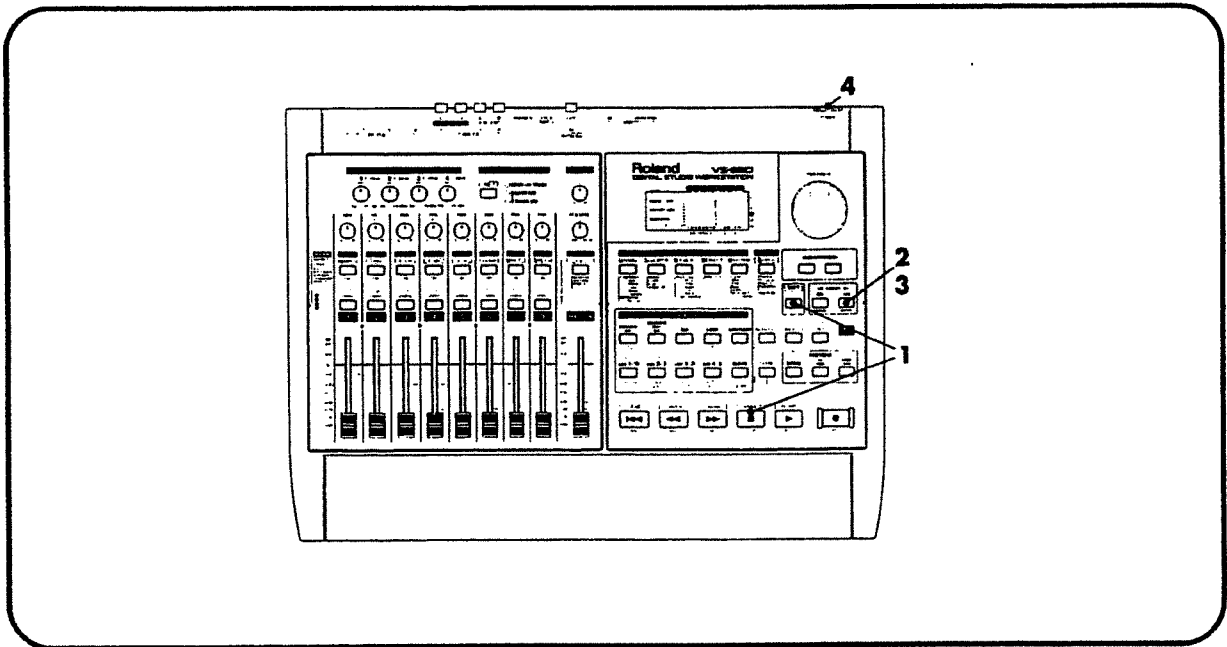
NOTE If you experience problems when using the VS-880, first refer to "Troubleshooting" (Owner's Manual; p.86) and check the relevant items. If an incorrect operation has been performed, or if an operation could not be executed correctly, an error message will appear in the display. Refer to "Error messages" (Owner's Manual; p.88) and perform the specified measure. If this does not resolve the problem, contact a nearby Roland service center or your dealer.

Turning off the power

The recorded performance will be lost if you simply turn the power off. In order to turn the power off safely, you must first make sure that the performance has been saved to hard disk, and that the hard disk heads are parked. This procedure is referred to as Shutdown. Before turning off the power, perform the following shutdown procedure.



If you turn off the power without performing the shut-down operation, the data may not be saved correctly, or the hard disk may be damaged.



1 While holding down [SHIFT], press [SHUT/EJECT (STOP)].
The upper line of the display will indicate "SHUT/EJECT?."

2 Press [YES]. (To cancel, press [NO].)
The display indicate "STORE Current?."

3 If you wish to save the current song, press [YES]. If you do not wish to save it, press [NO]. If you have selected the demo song, press [NO].
When shut down is complete, the display will indicate "PowerOFF/RESTART."

4 Turn off the VS-880 power.

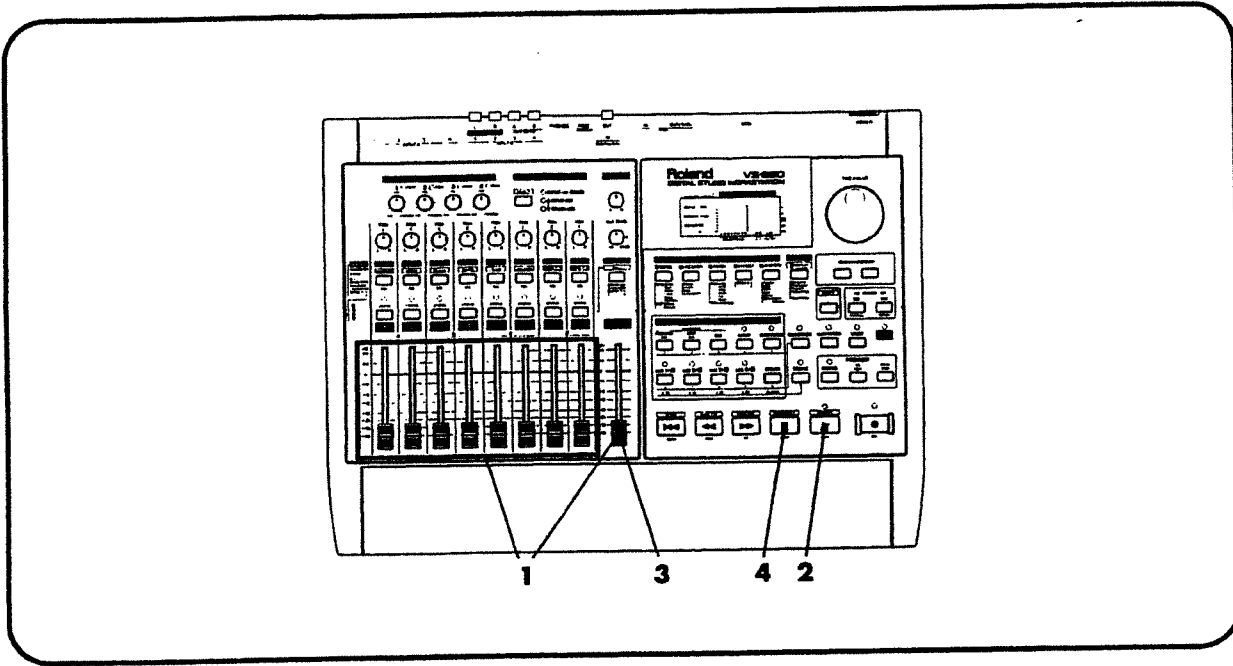


The disk platter inside a hard disk will continue to rotate for a time by its momentum after the power is turned off. If a physical shock is applied to the unit during this time, the hard disk may be damaged. Avoid moving the unit for about 30 seconds after turning the power off.

Listening to the demo song

If a hard disk containing a demo song is installed, you can listen to the demo song. Listen to the demo song before you continue.

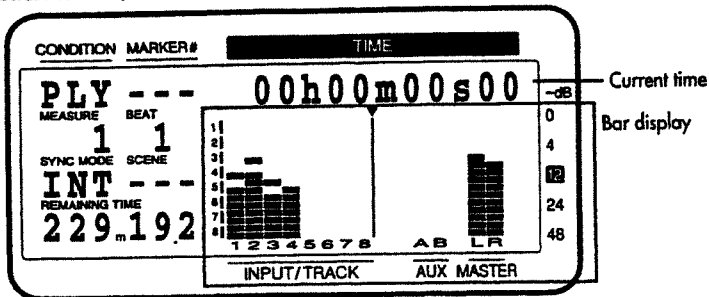
NOTE If a new hard disk, or a hard disk that formerly was used by a different device is installed, it will not be possible to hear the demo song.



1 Move all channel faders to the 0 dB position, and pull down the master fader.

2 Press [PLAY] to begin playback of the song.

3 Gradually raise the master fader to adjust the volume.
The current time will be displayed in the TIME field, and the bar display will indicate the level changes of each track (lever meter).



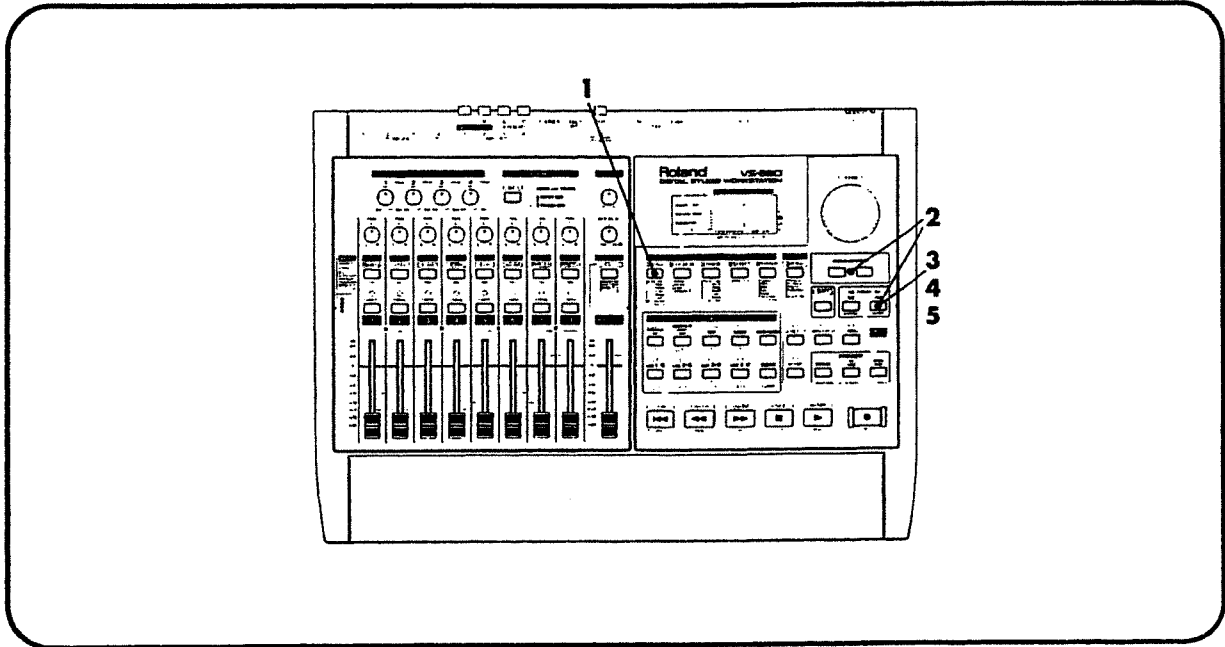
4 When playback ends, press [STOP] to stop.

Creating a new song

Recording cannot take place while the demo song is selected.
To record, first follow the steps below and create a new song.



When a new song is created, you may specify the sample rate and recording mode for the song. If you wish to set these to something other than the default settings, refer to "Creating a new song" (Owner's Manual; p.42).



1 Press [SONG].

2 Use the PARAMETER[<<] [>>] keys to access "SNG Song New?" in the top line of the display, and press [YES].

3 Press [YES] once again.
The "SNG Create New Song?" confirmation message will appear.

4 Press [YES] twice more.
The "STORE Current?" confirmation message will appear. This message is asking whether you want to store the current song to hard disk.

5 If you wish to save the current song, press [YES]. If you do not wish to save the current song, press [NO]. If you have selected the demo song, press [NO].

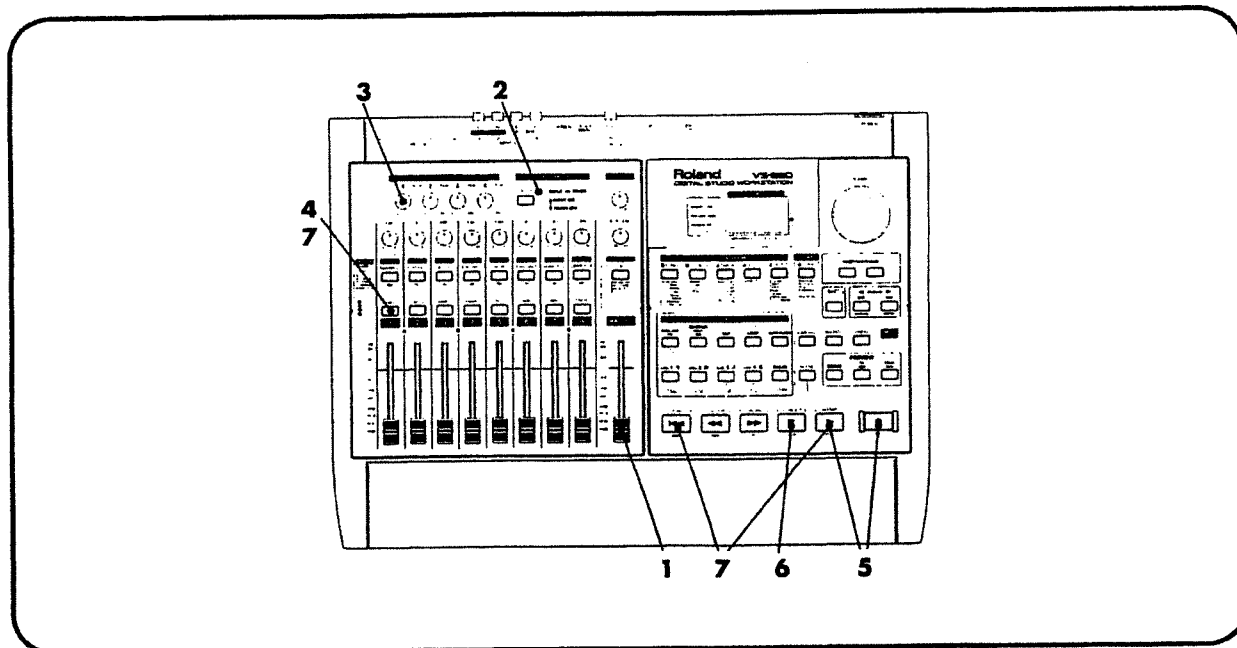
A new song will be created, and the display will indicate "Complete."



The demo song's Song Protect setting is turned on so it cannot be overwritten (Owner's Manual; p.60). This means that if you press [YES] when the demo song is selected, the message "Song Protected" will appear, and the procedure cannot be continued.

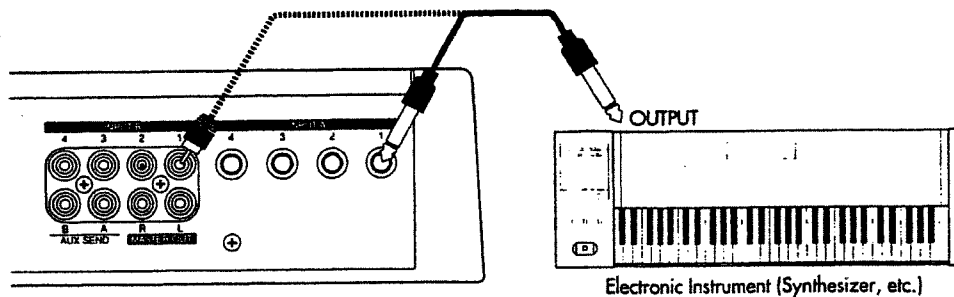
Recording

Now connect your instrument, and record a performance.



1 Turn down the master fader of the VS-880, and connect your instrument to the INPUT 1 jack.

There are two types of input jacks: INPUT A and B. Connect to the type that matches the connector on your cable.



2 Make sure that the INPUT → TRACK indicator is lit.

Whenever this indicator is lit, it means you are in the INPUT → TRACK mode (Owner's Manual; p. 24). If the indicator is dark, hold down [SHIFT] and press MIXER MODE [SELECT].

3 Use the INPUT SENS 1 knob to adjust the input sensitivity.

Raise the volume of your instrument as high as possible so that the input level is high. Raise the input sensitivity as high as possible without causing the PEAK indicator to light. Try to get it so the level normally moves within the range of -12 to 0 on the level meter.

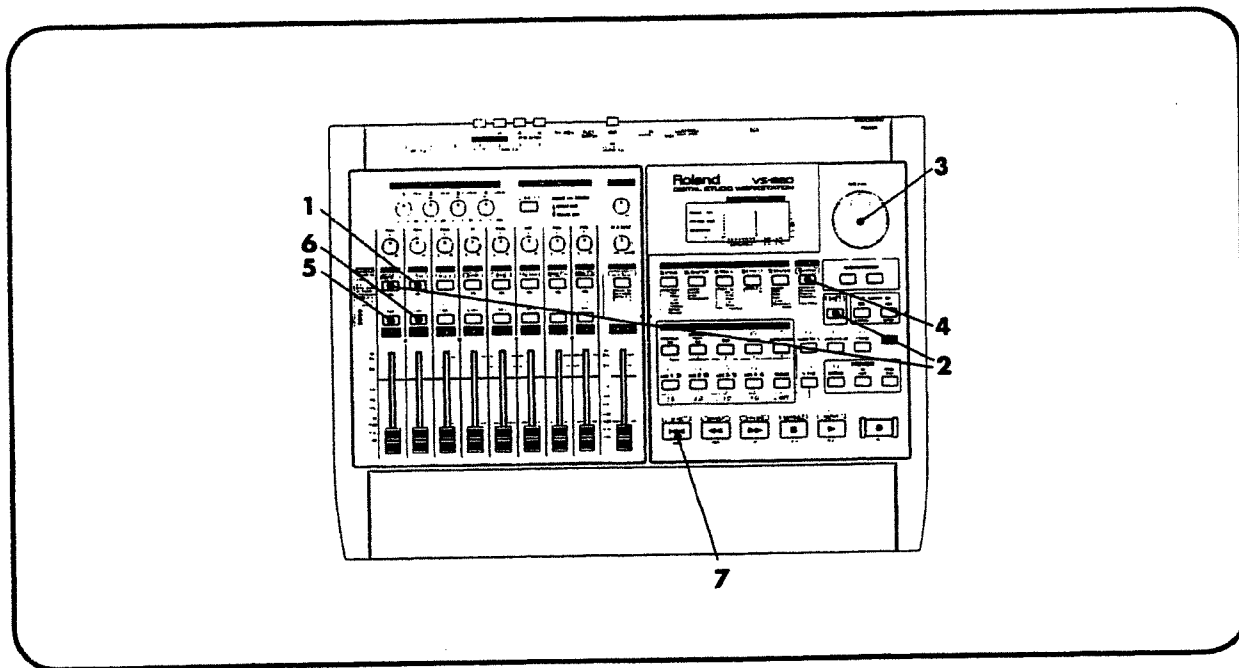


In INPUT → TRACK mode, the channel faders and MASTER fader affect the output level. This means that even if you move these faders during recording, the recorded sound will not be affected. You may adjust the sound to a volume convenient for listening.

-
- 4** **Press the channel 1 [STATUS] to make the button indicator blink in red.**
Track 1/V-track 1 has now been specified for recording. At the default settings for channel 1, INPUT 1 is selected as the input source, so in this case it will not be necessary to select the input source.
 - 5** **Press [REC] to make the button indicator blink in red, and press [PLAY] to start recording.**
 - 6** **When you finish recording, press [STOP].**
 - 7** **Listen to the performance that you just recorded. Press channel 1 [STATUS] to make the button indicator light in green (the condition in which a recorded performance can be played back). Press [ZERO] to return to the beginning of the song, and press [PLAY] to start playback.**
-

Multi-track recording

Multi-track recording allows you to record additional performances on other tracks while you listen to previously recorded tracks. This procedure is known as “overdubbing.” In this section, we will record an additional performance to track 2 while listening to the performance already recorded on track 1. At the default settings, INPUT 2 is selected as the input source for channel 2, so it will not be possible to record the input source of INPUT 1 to track 2. Thus, you will need to switch the input source of channel 2 to INPUT 1 before you begin recording.

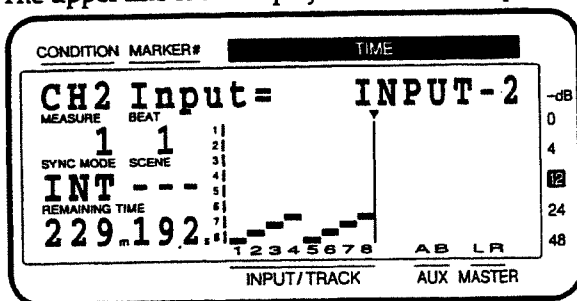


1 Press channel 2 [CH EDIT].

The upper left of the display will indicate “CH2,” allowing you to make settings for channel 2.

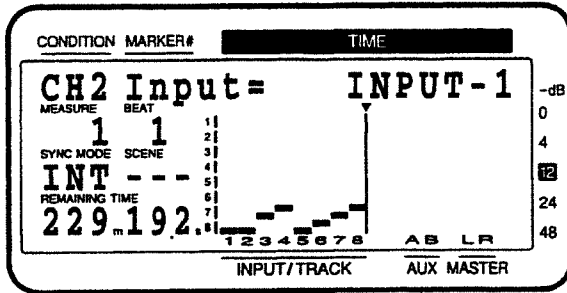
2 Hold down [SHIFT] and press the channel 1 [CH EDIT (Input/BUSS)].

The upper line of the display will indicate “Input=,” allowing you to select the input source.



At this time the bar display will indicate the input source that is specified for each channel. The horizontal axis 1—8 indicates the track numbers, and the vertical axis indicates the input source. From bottom to top, the input sources are INPUT 1, INPUT 2, INPUT 3, INPUT 4 ... In the above display, channels 1 and 5 are using INPUT 1, channels 2 and 6 are using INPUT 2, channels 3 and 7 are using INPUT 3, and channels 4 and 8 are using INPUT 4.

3 Use the **TIME/VALUE** dial to select "INPUT-1."



4 Press **[PLAY (DISPLAY)]** to return to Play condition.

5 Press channel 1 **[STATUS]** several times to make the button indicator light in green.

In this condition the performance recorded on track 1 can be played back.

6 Press channel 2 **[STATUS]** several times to make the button indicator blink in red.

Recording has now been selected for track 2/V-track 1.

7 Press **[ZERO]** to return to the beginning of the song, and use the "Recording" (p.10) procedure to record your performance.

When you begin recording, the performance that is recorded on track 1 will play back. While listening to this performance, record an additional performance to track 2.



The **[STATUS]** indicator of each channel indicates the status of the corresponding track. The track status will change each time you press **[STATUS]**. If you do not want a particular track to play back, turn off the **[STATUS]** indicator of that track.

Orange (SOURCE): The specified input source of the track can be monitored

Blinking red (REC): The track is specified for recording

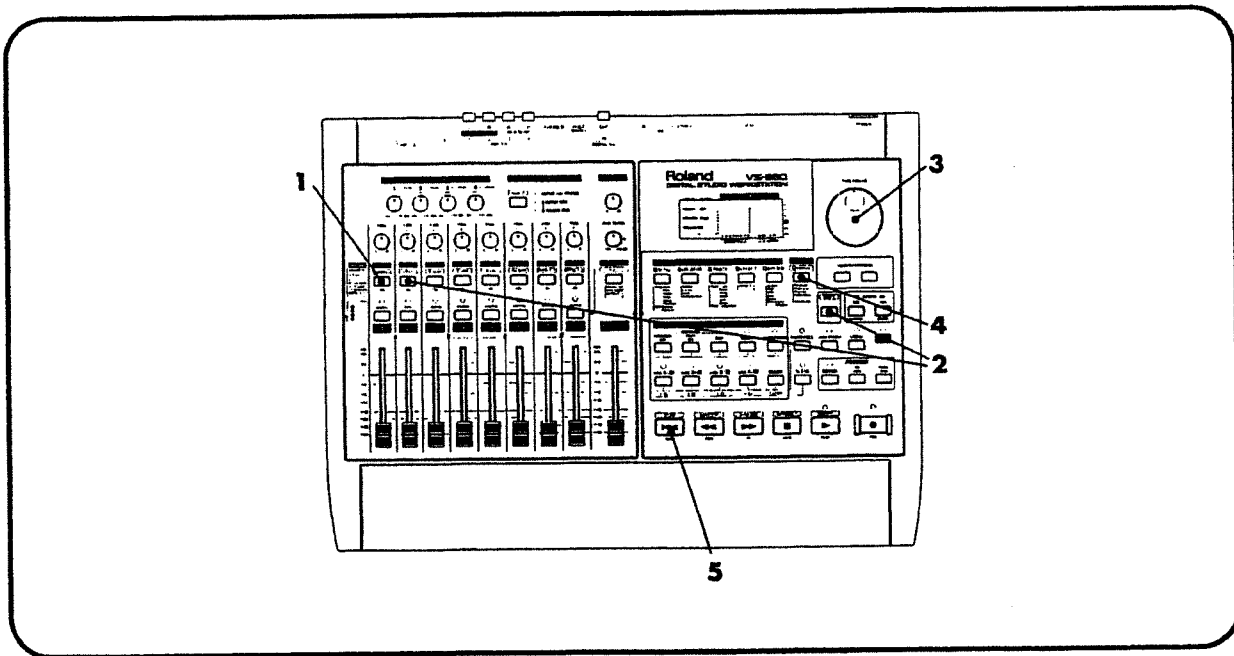
Green (PLAY): The track is ready to play back

Dark (MUTE): Neither the track's recorded sound nor its input source will be heard

Recording on V-track 2

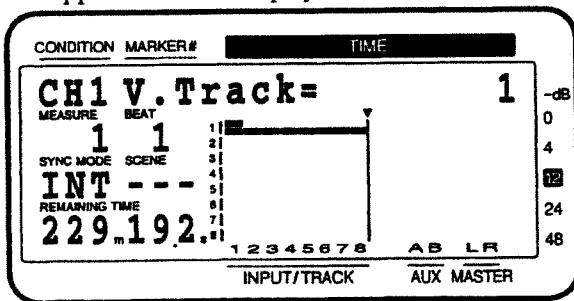
The VS-880 has 8 tracks, and each of these tracks itself contains 8 tracks referred to as "V-tracks." By using all of these tracks to their full potential, you can create recordings of up to 64 (8 x 8) tracks.

To record on V-track 2 of track 1, use the following procedure.



1 With song playback stopped, press channel 1 [CH EDIT].
The upper left of the display will indicate "CH1," allowing you to make settings for channel 1.

2 Hold down [SHIFT] and press channel 2 [CH EDIT (V.Track)].
The upper line of the display will indicate "V.Track=," allowing you to select the V-track.

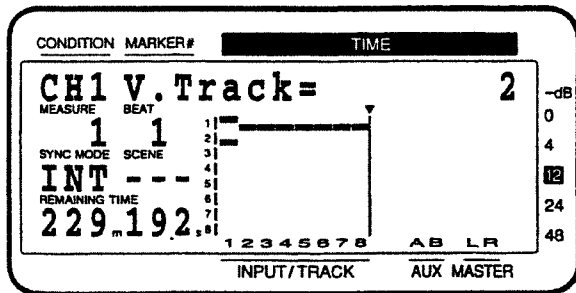


MEMO At this time, the bar display will indicate the V-tracks on which sound has been recorded, and the V-track which is selected for each track. 1—8 in the horizontal axis are the track numbers, and 1—8 in the vertical axis are the V-track numbers.

A = displayed on the upper line of the V-track number indicates that sound has been recorded in that V-track. In the above display, sound has been recorded in track 1/V-track 1.

A = displayed on the lower line of the V-track number indicates that that V-track is selected. In the above display, V-track 1 is selected for all tracks 1—8.

3 Use the **TIME/VALUE** dial to select **V-track 2**.

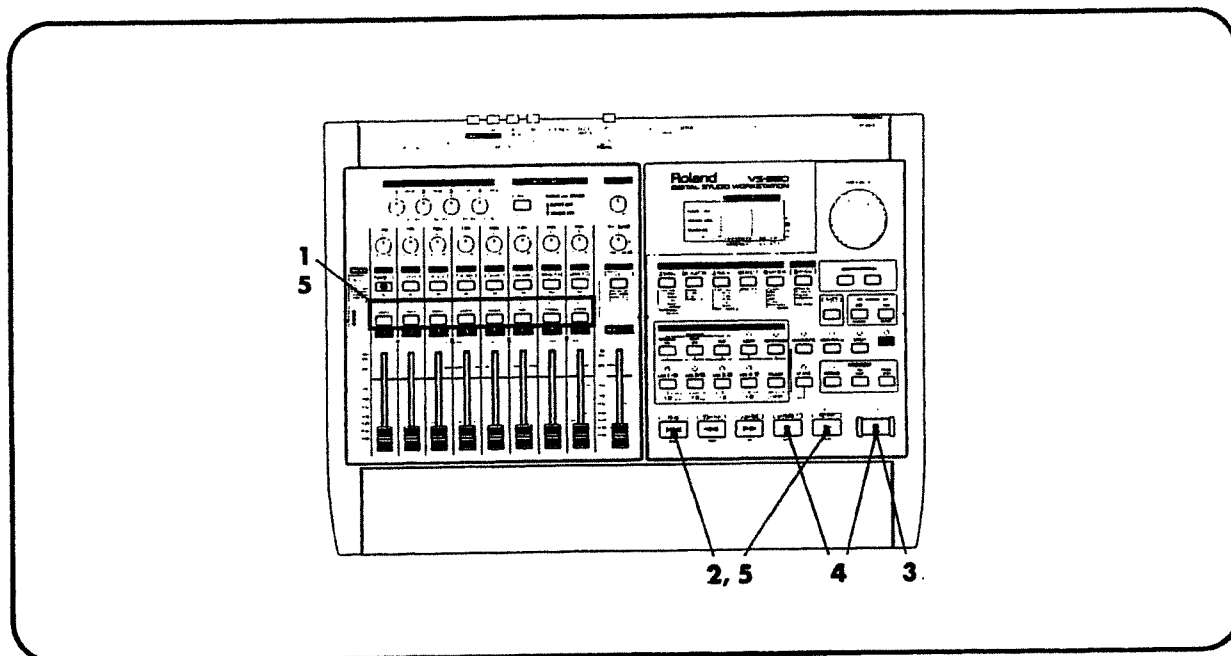


4 Press **[PLAY (DISPLAY)]** to return to Play condition.

5 Press **[ZERO]** to return to the beginning of the song, and record your performance using the procedure "Recording" (p.10).

Re-recording a specific section

After listening to a performance you recorded, there may be times when you would like to re-do the recording. Rather than re-recording the entire performance, it is often convenient to re-record just specific sections, using the procedure given below.



1 Press [STATUS] several times for the track you wish to re-record, to make the button indicator blink in red.

2 Press [ZERO] to return to the beginning of the song, and press [PLAY] to begin playback.

NOTE If you have modified the recording level (the INPUT SENS 1 knob or the output level of your instrument) since you first recorded, you will have to re-adjust the recording level before you record. During playback, you can alternate between the track playback and the input source by pressing [STATUS] for the track that you wish to re-record. Compare the two levels, and adjust the recording level so that there is no difference between them.

3 At the location where you wish begin re-recording, press [REC].

When you press [REC], and button indicator will light in red, and you will enter recording mode. Re-record your performance.

4 When you finish recording, press [REC] once again to return to playback mode, and then press [STOP] to stop.

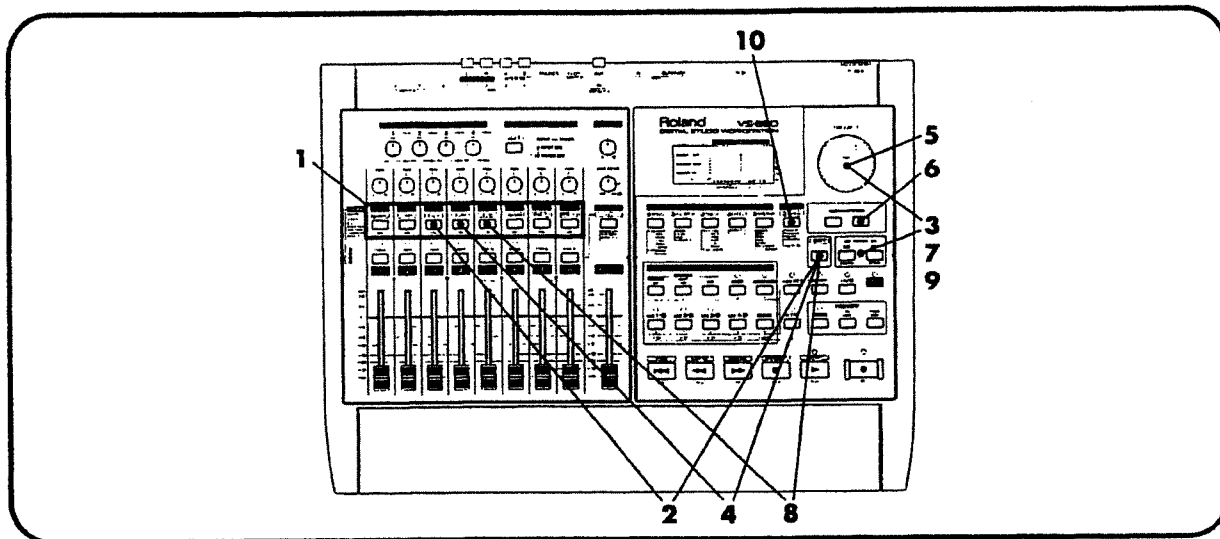
5 Now you can listen to the re-recorded performance. Press [STATUS] for the track you re-recorded to make the button indicator light in green (this indicates playback mode). Press [ZERO] to return to the beginning of the song, and press [PLAY] to begin playback.

Using the equalizer to adjust the tone

Each channel provides a 3-band (low, mid, high) parametric equalizer. Here's how to use the equalizer to adjust the tone of each track.



When the mixer mode is at either INPUT MIX or TRACK MIX mode, the equalizer will function as a 2-band (low, high) parametric equalizer.

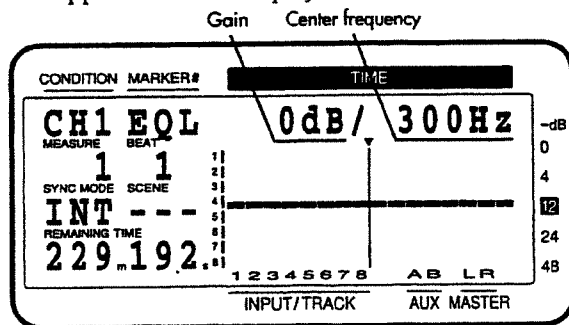


1 Press [CH EDIT] for the track whose tone you wish to adjust.

The specified channel number will appear in the upper left of the display.

2 To adjust the low range equalizer, hold down [SHIFT] and press channel 3 [CH EDIT (EQ Low)].

The upper line of the display will indicate "EQL," and you will be able to adjust the low range equalizer.



3 Use CURSOR [◀] [▶] so that the parameter you wish to adjust (gain or center frequency) is blinking, and use the TIME/VALUE dial to modify the value.

Play back the song as you make adjustments so that you can hear the results.



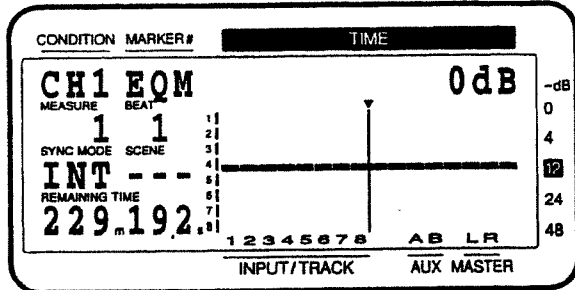
The bar display will show the equalization curve for the values that you specify.



If you adjust the equalizer while sound is playing, you may hear a "popping" or "sputtering" noise. This is not a malfunction. If this noise is a problem, make adjustments while sound is not playing.

4 To adjust the mid range equalizer, hold down [SHIFT] and press channel 4 [CH EDIT (EQ Mid)].

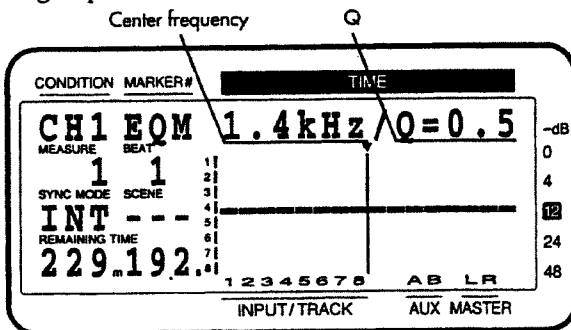
The upper line of the display will indicate "EQM," and you will be able to adjust the mid range equalizer.



5 Use the TIME/VALUE dial to adjust the gain of the mid range equalizer.

6 Press PARAMETER [▶▶].

The upper line of the display will switch, allowing you to adjust the center frequency and Q of the mid range equalizer.



7 Use CURSOR [◀] [▶] to make the parameter you wish to edit (center frequency or Q) blink, and use the TIME/VALUE dial to modify the value.

8 To adjust the high range equalizer, hold down [SHIFT] and press channel 5 [CH EDIT (EQ Hi)].

The upper line of the display will indicate "EQH," and you will be able to adjust the high range equalizer.

9 Use CURSOR [◀] [▶] so that the parameter you wish to adjust (gain or center frequency) is blinking, and use the TIME/VALUE dial to modify the value.

10 When you have finished making settings, press [PLAY (DISPLAY)] to return to Play condition.

Using the VS8F-1 to apply effects

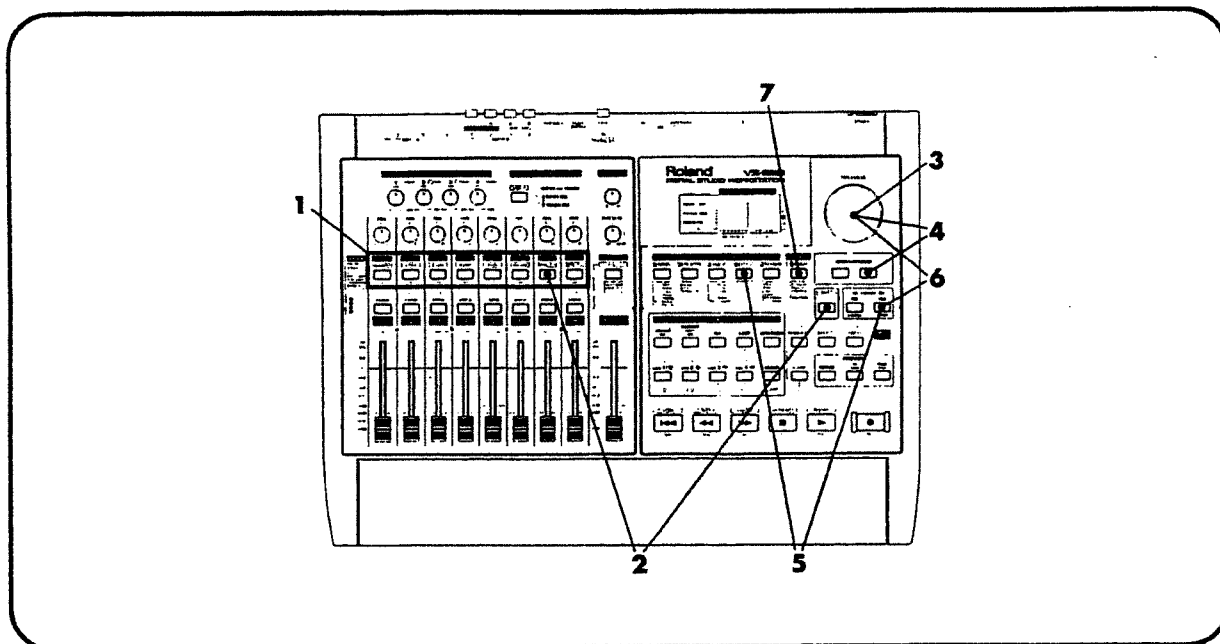
If an optional VS8F-1 effect expansion board is installed in the VS-880, high quality stereo effects will be available for your use.

If a VS8F-1 has been installed in your VS-880, here's how to apply reverb or delay to the entire song.



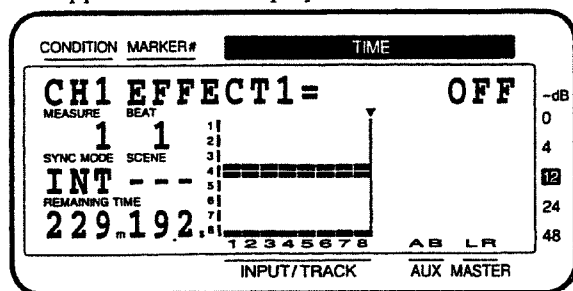
For instructions on how to install the VS8F-1, and details on using the effects, refer to the VS8F-1 Owner's Manual.

When you wish to use your own effect devices, refer to "Use an external effect device" (p.23).



1 Press [CH EDIT] for the channel to which you wish to apply an effect.
The specified channel number will appear in the upper left of the display.

2 Hold down [SHIFT] and press channel 7 [CH EDIT (EFFECT-1)].
The upper line of the display will indicate "EFFECT 1=," allowing you to make effect settings.

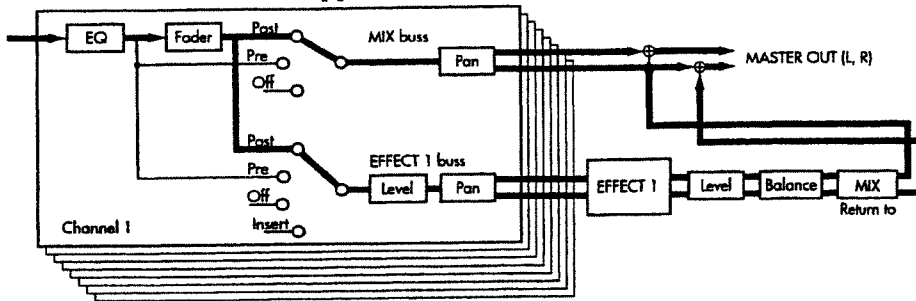


If the display indicates "No Effect Board," a VS8F-1 has not been installed in your VS-880. If this message is displayed, it will not be possible to make effect settings.

If this message appears even though a VS8F-1 is installed, the VS8F-1 has not been installed correctly. Perform the shutdown procedure (p.7) and turn the power off. Then re-install the VS8F-1 correctly.

3 Use the TIME/VALUE dial to select "PstFade."

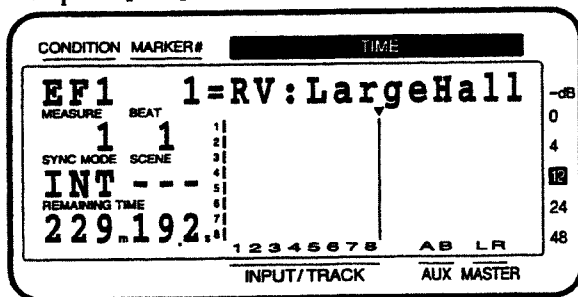
This will cause effects to be applied. With this selection, the signal flow will be as follows.



4 Adjust the send level (input level) for the effect. Press PARAMETER [▶▶] to get the "EFFECT1 Send" display. Rotate the TIME/VALUE dial to adjust the send level. Play back the song and adjust the volume balance between the direct sound and the sound processed by the effect.

5 Press [EFFECT]. In response to the "EFFECT-1 PRM?" message, press [YES].

The number and name of the currently selected effect will appear, allowing you to select the type of effect. If the display shows "EFFECT-2 PRM?," press PARAMETER [▶▶] to get the "EFFECT-1 PRM?" display and then press [YES].



6 Use the TIME/VALUE dial to select the type of effect (Patch), and press [YES].

As you rotate the TIME/VALUE dial, the number and name of the displayed effect will change, and will be blinking. When you press [YES], the display will stop blinking, and the effect that is displayed will be selected.



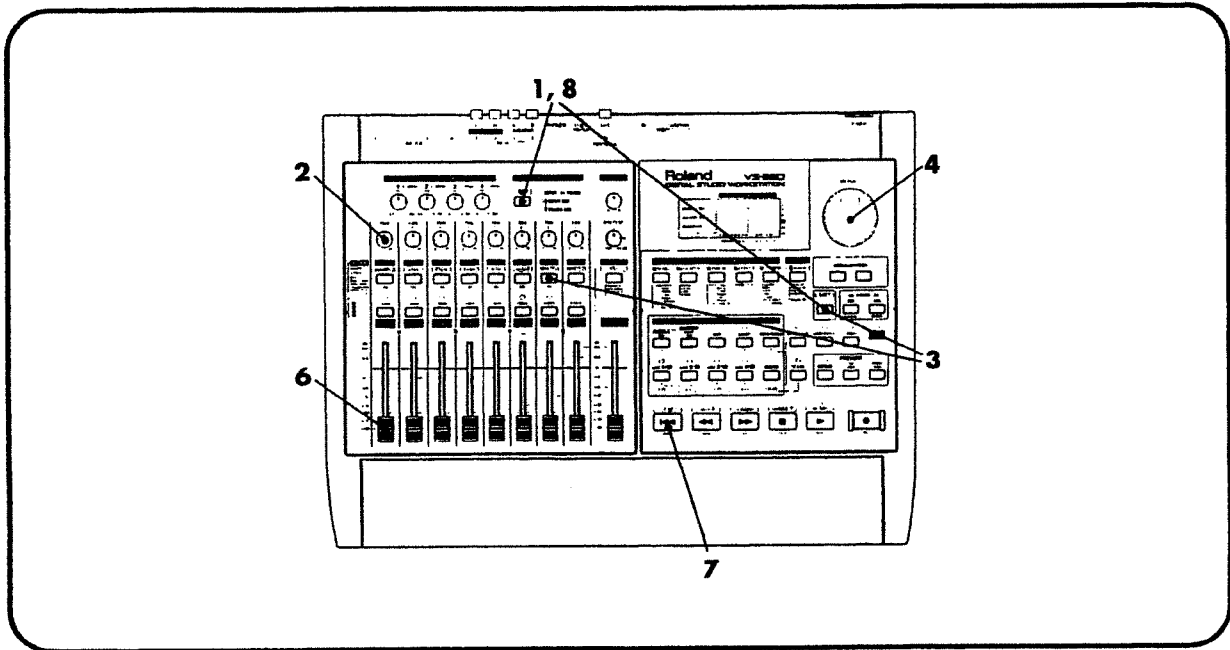
Each of the 200 effects is assigned a number 1—200. They are referred to as "Patches." 1—100 are Preset Patches (which cannot be modified), and 101—200 are User Patches (whose settings can be modified). At the factory settings, the User Patches contain the same effects as the Preset Patches.

The contents of the Preset Patches are listed in the included VS8F-1 Preset Patch list sheet. Some of the Preset Patches are of a type which add an effect sound to the original sound (Loop), while others are of a type which modifies the original sound itself (Insert). Since in this example we want to apply an effect to the entire song, select a Loop type effect patch.

7 After you have selected an effect patch, press [PLAY (DISPLAY)] to return to Play condition.

Using the VS8F-1 to record effects

In the preceding section you used the VS8F-1 to apply an effect to the entire song. Now let's apply an effect to the input source of INPUT 1 and record the sound processed by the effect to track 1.



1 Hold down [SHIFT] and press MIXER MODE [SELECT].

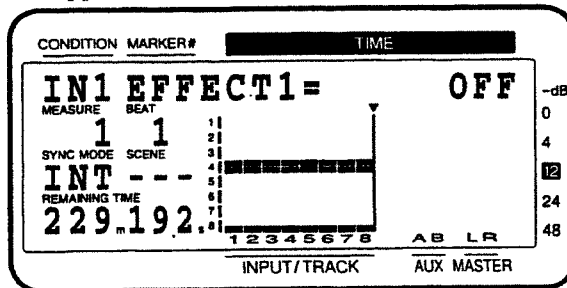
The INPUT MIX indicator located at the right of the button will light, and the VS-880 will be in INPUT MIX mode. If the TRACK MIX indicator located below it is lit (TRACK MIX mode), press MIXER MODE [SELECT] once again.

2 Rotate the channel 1 PAN knob fully left.

Since in this example we will be recording only track 1, we will have the effect sound sent to the REC bus 1.

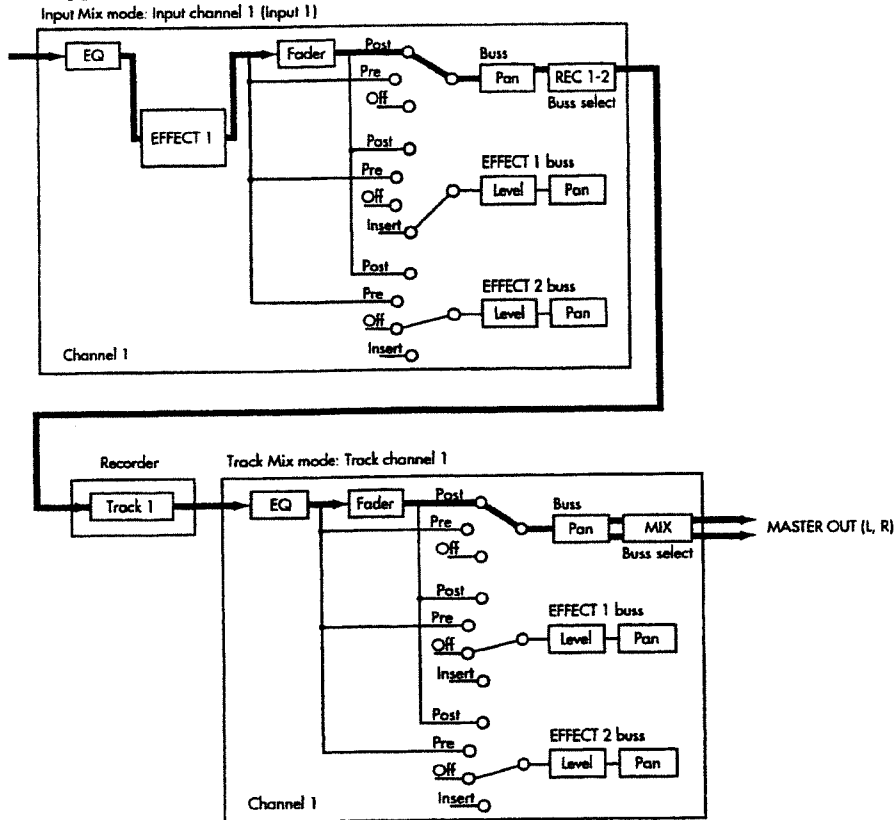
3 Hold down [SHIFT] and press channel 7 [CH EDIT (EFFECT1)].

The upper line of the display will indicate "EFFECT 1=" allowing you to make effect 1 settings.



4 Use the TIME/VALUE dial to select "Insert."

This applies the effect to the input source of INPUT 1. In this case the signal flow will be as follows.



5 Using the procedure of steps 5–7 in the previous section, select an Insert type effect patch.

6 While playing your input source, use the channel 1 fader to adjust the recording level.

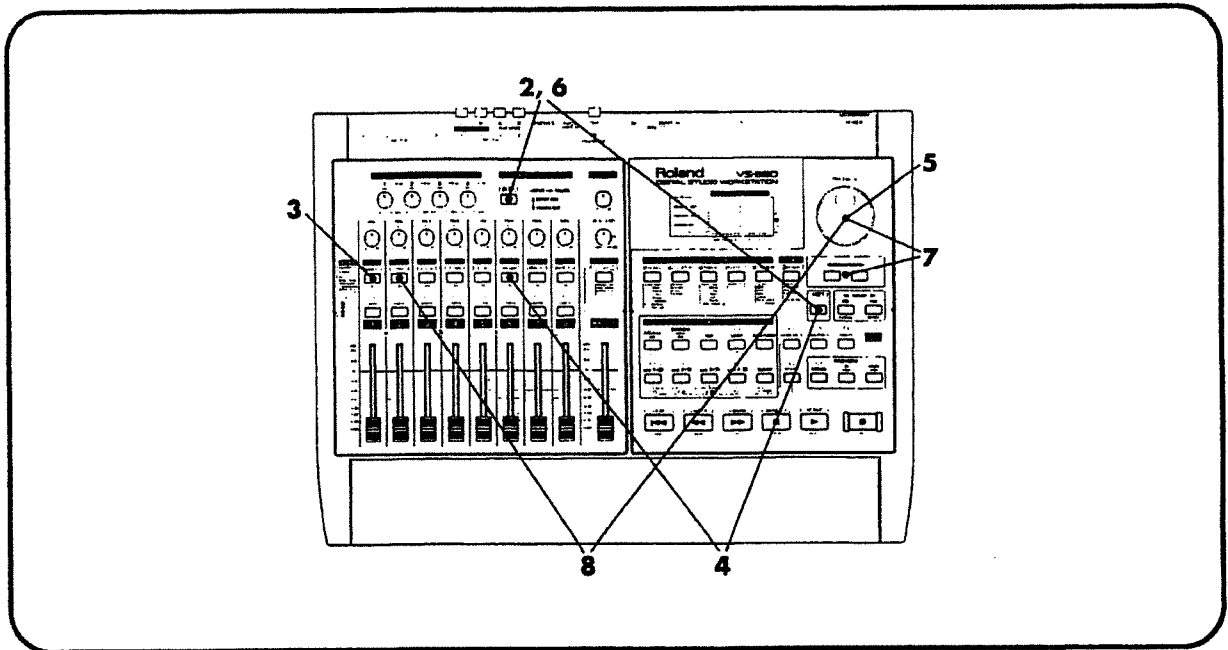
7 Press [ZERO] to return to the beginning of the song, then use the procedure described in "Recording" (p. 10) to record a performance.

8 When you have finished recording, hold down [SHIFT] and press MIXER MODE [SELECT].

The INPUT → TRACK indicator will light, and the mixer mode will return to INPUT → TRACK mode.

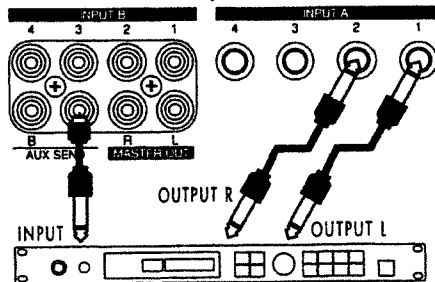
Using an external effect device

In this section we will use an external effect device to apply reverb or delay as we play back the performance that was recorded on track 1.



1 Connect your external effect device as follows.

Use an AUX SEND jack as the effect send jack, and two INPUT jacks as the effect return jacks.



2 Hold down [SHIFT] and press MIXER MODE [SELECT].

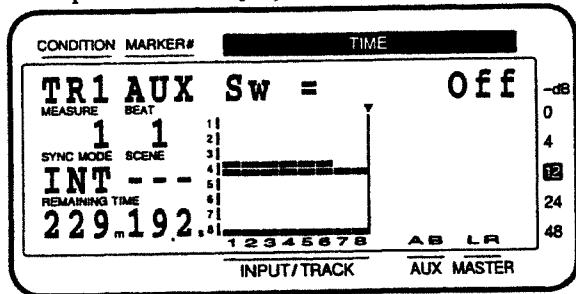
The TRACK MIX indicator located at the right of the button will light, and the VS-880 will be in TRACK MIX mode. If the INPUT MIX indicator located above it is lit (INPUT MIX mode), press MIXER MODE [SELECT] once again.

3 Press channel 1 [CH EDIT].

The upper left of the display will indicate "TR1," allowing you to make settings for track 1.

4 Hold down [SHIFT] and press channel 6 [CH EDIT (AUX Send)].

The top line of the display will indicate "AUX Sw=," allowing you to make AUX bus settings.



5 Use the TIME/VALUE dial to select "PreFade."

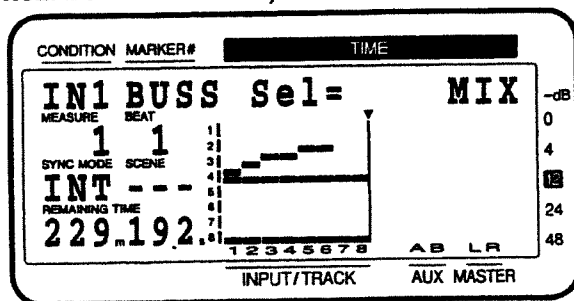
With this setting, the sound of track 1 will be output from the AUX SEND jack.

6 Press MIXER MODE [SELECT].

The INPUT MIX indicator located at the right of the button will light, and the mixer mode will be INPUT MIX mode.

7 Press PARAMETER [◀] [▶] several times to get the "BUSS Sel=" display, and use the TIME/VALUE dial to select "MIX."

With these setting, the sound of the external effect device being input to the INPUT 1 jack will be output from the MASTER OUT jack.



8 Press channel 2 [CH EDIT] to switch to channel 2, and use the TIME/VALUE dial to select "MIX."

With these setting, the sound of the external effect device being input to the INPUT 2 jack will be output from the MASTER OUT jack.

9 The external effect device can now be used. Play back the song, and make adjustments on the external effect device for the amount of the effect and the balance between the processed and direct sound.



In INPUT MIX mode and TRACK MIX mode, the internal structure of the mixer is different than when in INPUT → TRACK mode. This means that unless you thoroughly understand the signal flow when making mixer settings, the results will not be what you expect. Normally you should leave the VS-880 set in INPUT → TRACK mode. Hold down [SHIFT] and press MIXER MODE [SELECT] to return to INPUT → TRACK mode.

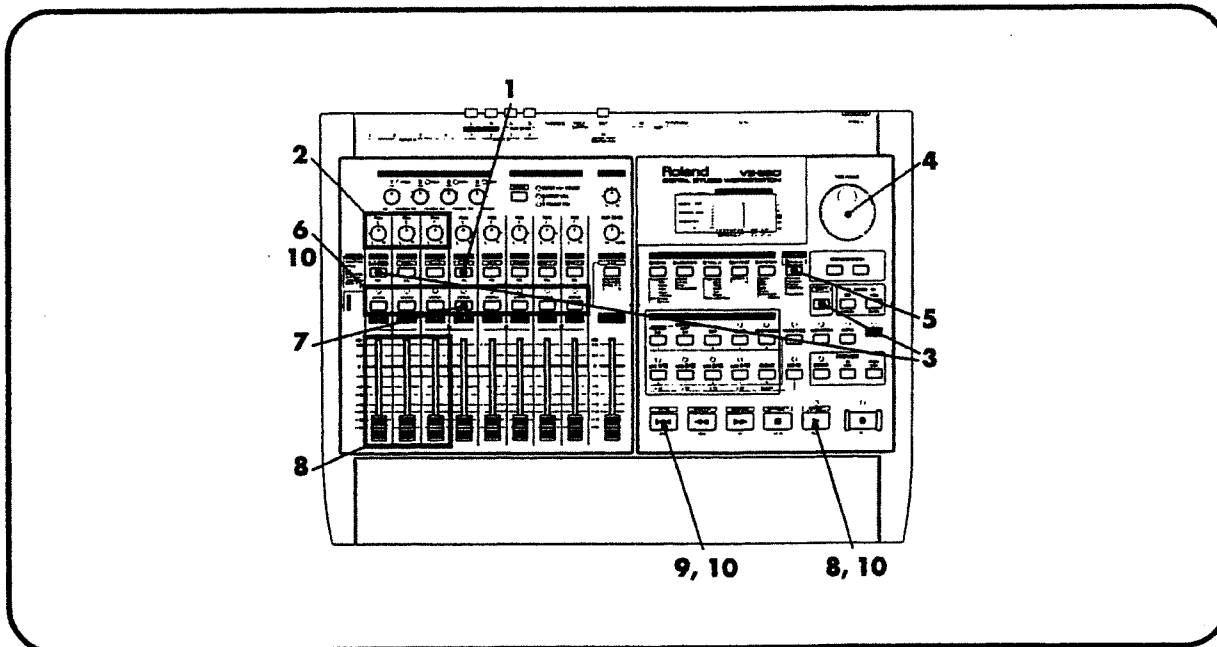
Combining the contents of tracks

You can mix the performances recorded on two or more tracks and re-record them onto a different empty track. This operation is known as “track bouncing.” It is a convenient technique to use when you have run out of free tracks.

In this section, we will mix the performances recorded on tracks 1—3, and re-record the result in mono on track 4.



Equalizer (p.17) and effect (p.19, 23) settings are made for individual tracks. For this reason you should not use track bouncing for tracks on which you will later want to apply individual equalizer or effect settings.



1 Press channel 4 [CH EDIT].

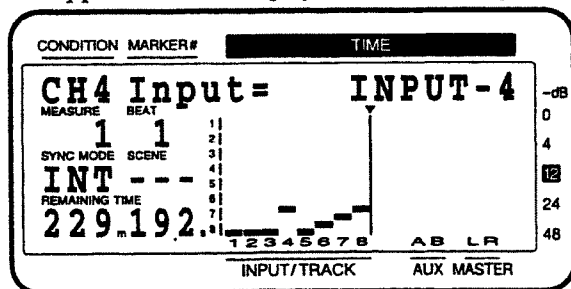
The upper left of the display will indicate “CH4,” allowing you to make settings for channel 4.

2 Rotate the PAN knobs of channels 1—3 fully left.

Since in this example we will be recording only on track 1, we are sending the sound of tracks 1—3 to the left side of the MIX bus.

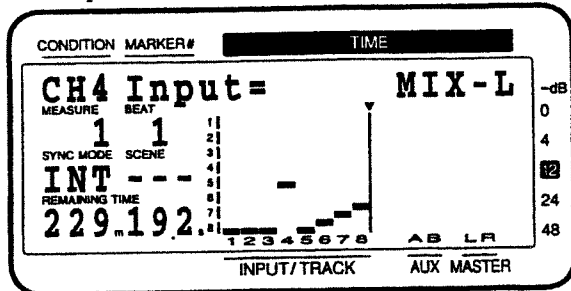
3 Hold down [SHIFT] and press channel 1 [CH EDIT (Input/BUSS)].

The upper line of the display will indicate “Input=,” allowing you to select the input source.



-
- 4** Use the **TIME/VALUE** dial to select **"MIX-L."**

The output of tracks 1—3 will now be input to channel 4.



-
- 5** Press **[PLAY (DISPLAY)]** to return to Play condition.

-
- 6** Press the channel 1—3 **[STATUS]** several times to make the indicators light in green. Also make sure that the channel 5—8 **STATUS** indicators are dark. If any indicators are not dark, press the corresponding button several times to turn its indicator off.

-
- 7** Press channel 4 **[STATUS]** several times to make the button indicator blink in red.

These settings specify that the playback of tracks 1—3 will be recorded on track 4.

-
- 8** Press **[PLAY]** to begin playback, and use the faders of channels 1—3 to adjust the volume balance.

Make the volume as high as possible without distorting the sound.

-
- 9** Press **[ZERO]** to return to the beginning of the song, and then record using the procedure given in "Recording" (p.10).

-
- 10** Listen to the playback of the sound that was recorded on track 4. Press the track 1—3 **[STATUS]** several times to turn off the button indicators. Press the track 4 **[STATUS]** several times to make the button indicator light in green. Press **[ZERO]** to return to the beginning of the song, and then press **[PLAY]** to start playback.
-

Saving a song

Your recorded performance will be lost if you simply turn the power off. The recorded performance will also be lost if the power is turned off by accident. In such cases the original data cannot be recovered.

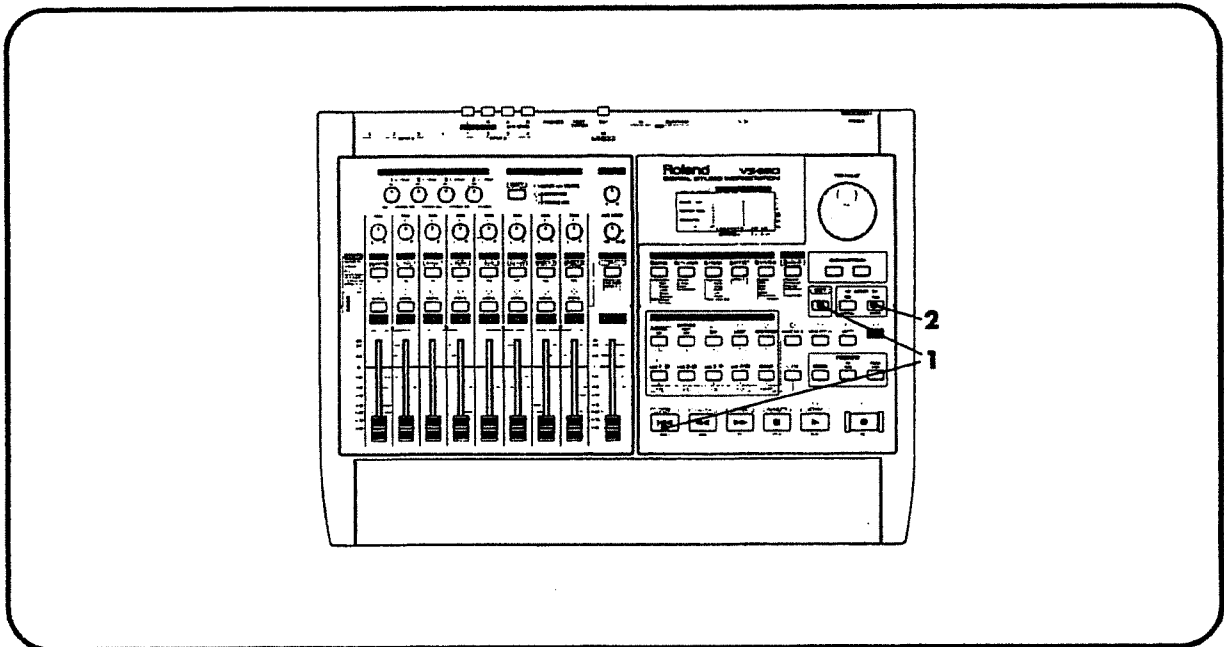
To avoid loss of data, use the following procedure to save your performance to disk.



When creating an important song, or when using the VS-880 for an extended time, it is a good idea to save the song frequently.



The song must be saved when you change songs or perform the shutdown procedure. When these procedures are performed, a message will ask "STORE Current?", asking you whether you wish to save the song. For your response to this message, refer to "Turning off the power" (p.7).



1 Hold down [SHIFT] and press [STORE (ZERO)].

The upper line of the display will indicate "STORE OK?"

2 Press [YES].

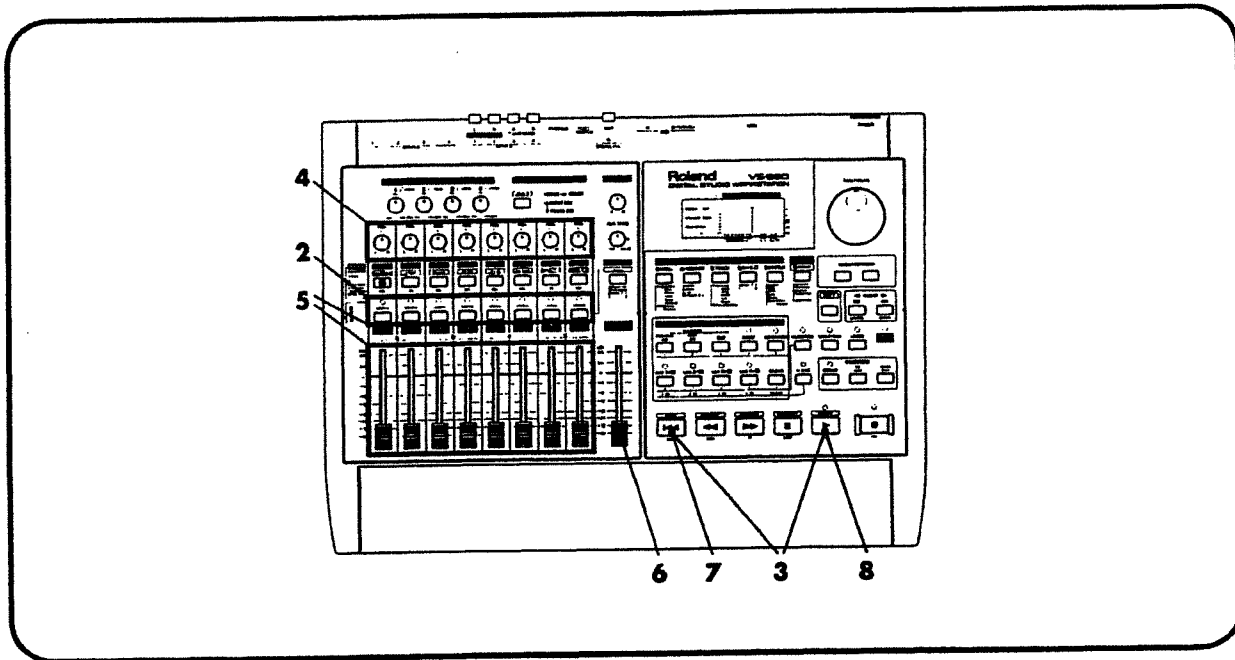
When the song has been saved to the hard disk, the display will briefly indicate "Complete."

Creating a master tape

When you have finished recording a song, adjust the balance (volume, equalizer, pan) of the various tracks to create a two-channel (stereo) mix, and record it to your two-track recorder (cassette, DAT, MD recorder etc.). This process is referred to as "mixdown."



This section will explain how to record an analog signal from the MASTER OUT jacks. If you wish to record the digital signal from the DIGITAL OUT jacks to a digital recorder, refer to "Creating a master tape" (p.21) of the Owner's Manual.



1 Connect your recorder to your audio system.

For tips on making connections, refer to the owner's manuals for your audio gear.

2 Choose a track whose pan setting you wish to adjust, and press the [STATUS] of that track to make the button indicator light green. For the other tracks, make sure that their STATUS indicators are dark (so that the sound is muted).

3 Press [ZERO] to return to the beginning of the song, and press [PLAY] to play back the song.

4 Use the PAN knob of the track that is playing to adjust the pan (the stereo position).

To adjust the pan setting for the other tracks, repeat steps 2—4.



If necessary, use the equalizer to adjust the tone. For details on equalizer adjustments, refer to "Using the equalizer to adjust the tone" (p.17).

5 Adjust the volume of each track. Make the STATUS indicators light in green for all the tracks you wish to mix, and use the channel faders to adjust the volume.

First decide how loud you want the main tracks of the song (vocals or guitar melody, etc.) to be. It is a good idea to create a balance in which the volume of the other tracks is lower than the main tracks. Listen to the overall song, and make fine adjustments to pan and equalizer for each track.

6 Adjust the recording level of the recorder.

Using the master fader to adjust the volume of the VS-880, make it as high as possible without causing an input overload on the recorder.

7 Press the [ZERO] of the VS-880 to return to the beginning of the song, and put your recorder in record ready mode.

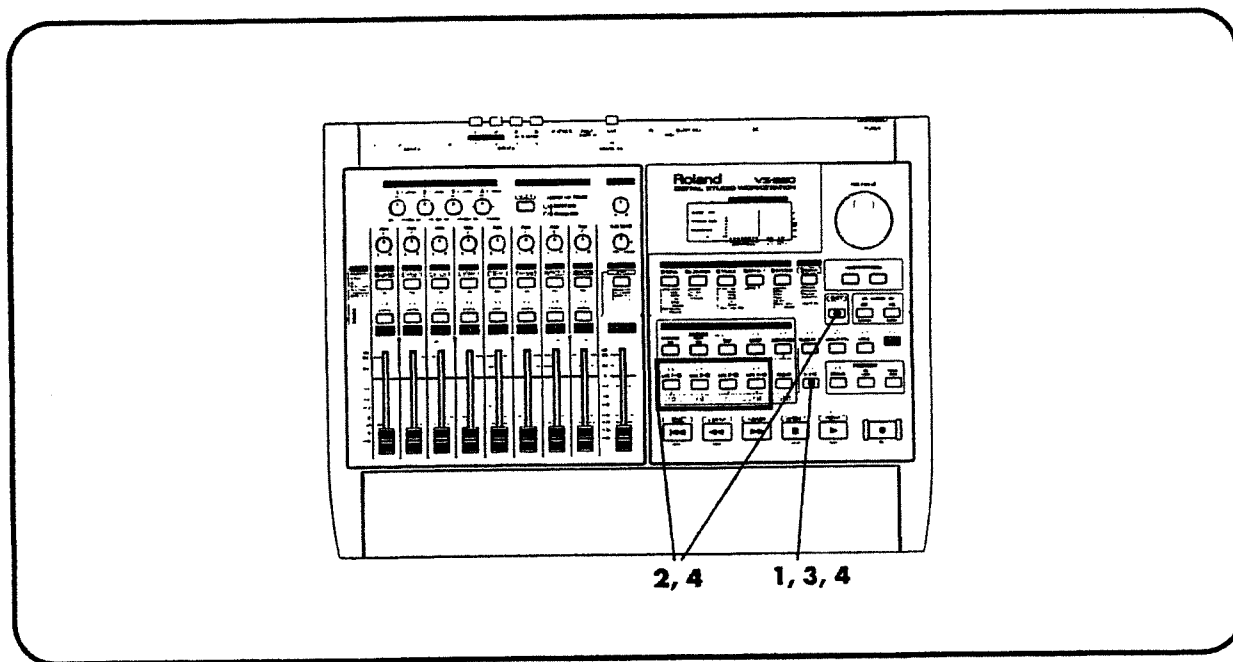
8 Start recording on your recorder, and press the VS-880's [PLAY] to play back the song.

9 When the mixdown is complete, stop the VS-880 and the master recorder.

Saving mixer settings

On an analog multitrack recorder, the only way to reproduce the settings of a mixer is to make a written note of the mixer settings. However the VS-880 is able to store the mixer settings, and can recall them at a later time. A set of mixer settings is referred to as a "scene." Up to 8 mixer scenes can be stored as part of each song. This is also a convenient way of comparing different mixing balances that you have stored.

When you wish to store the mixer settings as a scene, use the following procedure. If you are using a VS8F-1, the effect settings will also be stored as part of the scene.



1 After you have made the desired mixer settings, press [SCENE].

The button indicator will light. When the SCENE indicator is lit, the [LOC 1/5]—[LOC 4/8] LOC buttons have the function of storing or recalling mixer scenes.

2 Use the LOC buttons to specify the scene number in which the mixer settings will be stored.

To store to a scene number 1—4, press [LOC 1/5]—[LOC 4/8]. To store to a scene number 5—8, hold down [SHIFT] and press [LOC 1/5]—[LOC 4/8]. When the mixer settings have been stored, the indicator of that button will light.

3 When the settings have been stored, press [SCENE] once again to make the button indicator go dark.

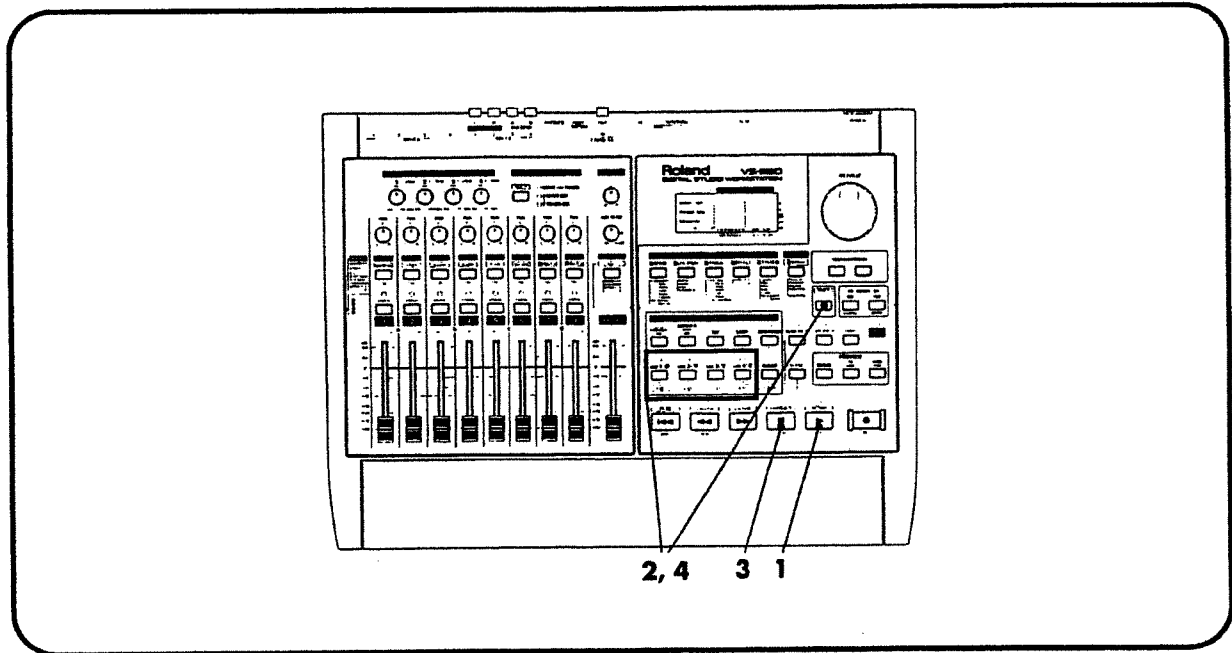
4 To recall the settings you stored, press [SCENE] to make the button indicator light, and then use the LOC buttons to select the scene number that you wish to recall.



When mixer settings are recalled, the settings of the mixer will change, but the locations of the knobs and faders will remain the same. This means that the actual settings will differ from the locations of the knobs or faders.

Easy ways to move where you want to in a song

The VS-880 allows you to store time locations in a song. If you store the location of sections you want to hear repeatedly or places that you wish to re-record, you can jump to that location immediately. This is called the Locate function. Up to 8 locations (LOC 1—8) can be stored for each song. Some analog tape recorders have a similar capability, but since the VS-880 is a digital disk recorder, you will never have to wait for tape to be rewound or fast-forwarded. Here's how to store a time location, and recall a stored time location.



1 Press [PLAY] to play back the song.

2 When you arrive at the desired time, press a LOC button to specify the locate number (LOC 1—8). If you wish to store additional locations in the song, continue playback and press other buttons at the desired times.

To store a location to LOC 1—4, press [LOC 1/5]—[LOC 4/8]. To store a location to LOC 5—8, hold down [SHIFT] and press [LOC 1/5]—[LOC 4/8].

When a locate time has been stored, the indicator of that button will light.

3 When you have finished storing locations, press [STOP] to stop the song.

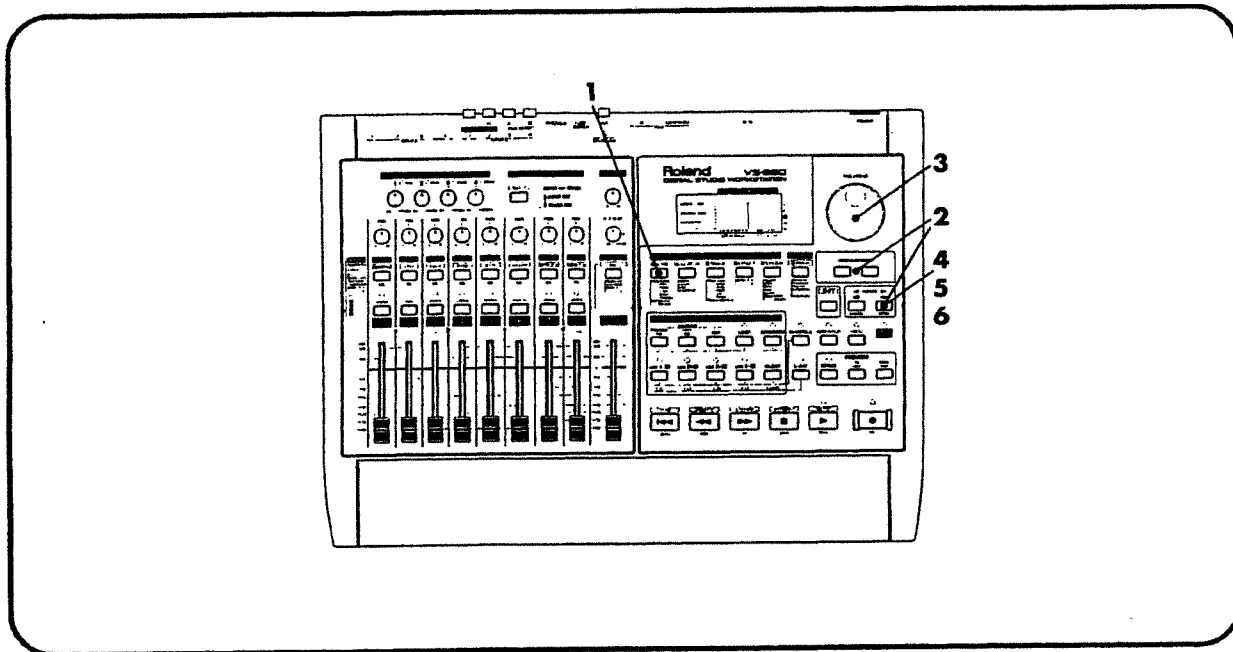
4 To move to a location that was stored, press a LOC button to specify the desired locate number.



LOC buttons whose indicator is dark do not contain a stored location. Pressing a button whose indicator is dark will not change the current time.

Selecting another song

To select another song that is stored on the hard disk, use the following procedure.



1 Press [SONG].

2 Use PARAMETER [◀] [▶] to get the "SNG Song Select?" display, and press [YES].

The upper line of the display will indicate the name of the currently selected song.

3 Rotate the TIME/VALUE dial to get the name of the desired song.

As you rotate the TIME/VALUE dial, the names of the songs recorded on the hard disk will appear in order of their song number.

4 Press [YES].

The display will ask "SNG SelectSong Sure?"

5 Press [YES] once again.

The "STORE Current?" confirmation message will appear. This message is asking you whether you wish to store the current song to the hard disk.

6 If you wish to store the song, press [YES]. If not, press [NO].

When the song has changed, the display will indicate "Complete."

When you want to ■■■ (Owner's Manual topical index)

The functions introduced in this Quick Start manual are only a part of the functions of the VS-880. This topical index lists the various things that the VS-880 lets you do, and gives the page of the Owner's Manual on which each topic is explained. Please take full advantage of the VS-880's functionality, and enjoy multitrack recording.

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Glossary

Comping

The process of creating a single recording from multiple takes. i.e.: In many cases a single vocal recording on one track may not have the best version of a singer's performance. Engineers cut and paste sections of multiple tracks together to get one complete useful recording. This process is known as "comping" and the final outcome is called a "comp."

COSM (Composite Object Sound Modeling)

COSM was first introduced with Roland's VG-8 V-Guitar System. COSM processing electronically reproduces all of the stages of a guitar signal chain, including the placement of the pickup, the tape and body of the guitar, the amp processor, the speakers and cabinets, and the microphone and placement of the microphone at the speaker.

These models are extremely accurate and allow great control over the sound of any guitar. The VS8F-1 Effect Expansion Board for the VS-880 includes some of the COSM preamplifier and speaker models.

DAT (Digital Audio Tape)

A recording medium that records audio signals to tape digitally, via a hardware recording device called a DAT Recorder.

Insert

When a track is routed to a buss such as an effects buss using an INSERT path, the audio goes to the effect buss and then directly back to the channel in the mixer. Therefore, there is no "dry" sound of the original without the effect because the only audio path is through the effect and then to the mixer. INSERTS are used when you don't want to hear the original sound without the processing, i.e.: when you use a compressor on a voice.

MTC (MIDI Time Code)

MIDI Time Code is a synchronization signal that is digitally sent through MIDI for synchronization of absolute time between audio devices. Similar to SMPTE, MTC can have different frame rates for synchronization. See SMPTE for more details.

MMC (MIDI Machine Control)

MIDI controller messages sent from one device to another via MIDI to start recording, playing, and arming tracks for recording.

Phantom Power

Some professional condenser microphones need external D.C. (direct current) power that is supplied through the same cable as the audio signal. This external power is called phantom power. Many professional recording mixing consoles supply phantom power. In the cases where phantom power is required, but not available from a mixer, you can use an external power supply for the microphone.

Pointer Based Editing

When you record sounds into the VS-880, they are stored on the hard drive. Once on the drive, the original recording is never changed. All of the editing, copying and moving of the sound is actually just moving and copying "pointers" to the original sound. These pointers indicate when to start and stop playing all or part of the original recording. The advantage to this way of working is that copying or moving or erasing part of a track is only changing these pointers. Pointers take up virtually no disk space, and the VS-880 can write or change pointers instantly. That allows you to copy all 8 tracks of a song instantly to another location without using additional disk space. The fact that the VS-880's editing is Pointer Based is also why it can have 999 levels of UNDO. The original audio is never touched, just the pointers that tell the VS-880 when to play and stop playing the original audio.

Pre-Fader / Post-Fader

Audio signals from an external source or a recorded track come into a mixer and are then routed to a buss such as the Mix Output. If the audio signal is routed to the Mix Output buss PRE-Fader, then the faders won't have any effect on the level of the sound in the mix.

If the source or track is routed POST-Fader, then the fader will control the level to the Mix Output buss. Generally, tracks will be routed to the Mix Output buss or the Aux buss POST-Fader. You might route a track POST-Fader to the Mix Output and PRE-Fader to the Effects Buss if you are adding reverb to a sound and you want to fade out the "dry" original sound and leave the reverb sound playing. This technique could be used at the end of a song or possibly for a sound effect like somebody yelling as they fall off a cliff.

Random Access

See Pointer Based Editing.

As the VS-880's play structure is pointer based, it is possible to instantly jump from one location in the song to another. There is no "tape" or material to move through, there are only pointers to reposition (which happens very quickly). This makes locating and moving or copying material in the VS-880 instant.

RSS (Roland Sound Space)

Roland Sound Space is a 3-Dimensional processor that allows you to move sound towards and around the listener from playback on only two speakers. In a mono system, sound comes from one source. The only controls are volume and EQ. Stereo allows the sound to be moved from left to right. Adding reverb allows depth to be added to a mix by moving sounds away from the listener. RSS is the next level of processing. It allows sound to be moved towards the listener, to the side of the listener or even above, below and behind the listener. It is used for adding great dimension to a mix, for special effects (a percussion part or vocal hook) or for sound effects for film and video.

Scrubbing

The VS-880's Scrub mode will playback a very short loop of audio selected from a track on the hard drive. This is similar to the skip or cue mode on a DAT or CD player. With this short loop of audio, you can "scrub" across the audio using the Time/Value dial to find where the initial attack of a sound begins, allowing you to search for minute edit points on a track.

The VS-880's scrubbing feature makes it very easy to find your edit points because you can always hear them at their original pitch. The editing resolution for finding edits on the VS-880 is 1/30000th of a second, allowing you to do very precise edits.

SCSI (Small Computer System Interface)

SCSI is a protocol for high-speed recording and data transfer between computer devices.

Shelving EQ

Shelving EQ gets its name from the plateau, or "shelf," that's created when you boost or cut it. This type of equalization supplies a constant amount of boost or attenuation (cut) at all frequencies above or below a certain point.

SMPTE (Society of Motion Picture and Television Engineers) Time Code

A synchronization code developed for video designed for frame edge lockup of multiple video and audio devices. SMPTE is calculated in Hours:Minutes:Second:Frames. There are several different types of SMPTE frame rates, ie: 30 frames per second, 29.97 fps non-drop, 29.97 fps drop, 25 fps (European standard) and 24 fps (used for film). The VS-880 supports all types of MTC which corresponds to all types of SMPTE. You only need to use the JLCooper PPS-2 to interface between a SMPTE source and the VS-880. The VS-880 also will resolve (exactly lock to) the frame edge of the SMPTE or MTC. This means that the lock will not drift or go out of sync even if the song or project is very long.

S/PDIF (Sony/Philips Digital Interface Format)

A digital recording format that conforms to the AES/EBU consumer standard for the high-speed transfer of two channels of digital audio data. The VS-880 has a coaxial S/PDIF connector that allows you to connect digitally to a consumer or professional DAT recorder or CD player.

Sync Track

The VS-880 has a SYNC TRACK that is independent from the 8 recording tracks. You can record a TEMPO MAP from a drum machine or sequencer and then use this map to synchronize the VS-880 to the sequencer. In this case, the VS-880 would be the Master and the sequencer would be the Slave.

Tempo Map

A TEMPO MAP includes bar and beat, tempo and time signature information for part or all of a song. This information can be used to make editing easier. You can edit or locate to an exact bar and beat rather than an absolute time reference. Tempo Maps can also be used to synchronize external drum machines or sequencers. The tempo map generates MIDI Clock information and Song Position Pointer information that will start and stop a sequencer at an exact location and keep it playing in perfect sync.

In the VS-880, you can create a tempo map from scratch before you start recording a song. There are MIDI and Click metronome outputs to allow the recording process to be in time with the tempo map. You can also create a Tempo Map after you have recorded part or all of a song. See SYNC TRACK for another way to use MIDI sync information.

Time Compression

An operation that allows you to expand or compress the playback time of recorded material to a specified time length. Usually when playback time is compressed or expanded, the playback pitch is affected. On the VS-880, you can select whether the playback pitch will change in correlation to the compression / expression ratio, or whether the original playback pitch will be preserved. The time compression feature of the VS-880 can therefore be used to change the tempo of a drum loop without changing the pitch. It can also be used to correct the pitch of a vocal note that is sung out of tune.

Vari-pitch

Vari-pitch allows you to speed up or slow down the playback of the VS-880 in order to match the tuning of instruments that are difficult or impossible to tune to your existing recorded tracks. A typical instrument that Vari-pitch would be useful for would be an acoustic piano.

Virtual Tracks

Virtual tracks are additional areas to record you takes and ideas. Each track on the VS-880 has 8 virtual tracks. You can play one of these at a time per track, using the others to hold earlier performances or different edits. You can edit several virtual tracks together for a composite edit. You can even bounce several virtual tracks to another virtual track to make a mix of these tracks.

For example: If you need to bounce some background vocals together to make room for some guitar parts, you can use the virtual tracks to store the original vocal parts that you have bounced. Unlike a tape based system, you can then add new material on the tracks you have bounced from and still keep the originals in case you want to re-mix the bounce later.

Roland®

DIGITAL STUDIO WORKSTATION

VS-880

OWNER'S MANUAL

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 8). 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, this manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

This owner's manual is organized as follows. Read this manual after you have finished working through the separate Quick Start.

Chapter 1: From multi-track recording to creating a master tape

This chapter explains the procedure from multi-track recording to creating a master tape. Within this process, you will also learn how to use the Tap Marker and Locate functions for convenient editing, and how to perform punch-in recording to re-record just a specific area. Since all these functions are basic to using the VS-880, please work through this section, trying out each of the procedures.

Chapter 2: Understanding how the VS-880 is organized

This chapter discusses how the VS-880 is organized internally, and explains basic operations. In order to understand the VS-880, please be sure to read this chapter.

Chapter 3: Various procedures

This chapter explains various things which will be useful to know as you operate the VS-880. Read this chapter as necessary.

Chapter 4: Edit condition functions

This chapter explains the functions of the VS-880 for each of the edit conditions. Read this chapter as necessary.

Chapter 5: Using external devices

This chapter explains how the VS-880 handles MIDI messages, and the operations that can be done using MIDI messages. Read this chapter when you wish to use the VS-880 with another MIDI device.



Appendices

When the VS-880 does not perform the way that you expect, read the section on "Troubleshooting." If an error message appears during operation, consult the "Error message list" and take the appropriate action.

This section also contains supplementary materials such as a "Parameter list" and the "MIDI implementation chart."

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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 onto 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. (The only exception would be where Quick Start manual provides specific instructions which should be followed in order to put in place user-installable options; see p. 3.)
- 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.

⚠ WARNING

- Before using the unit in a foreign country, consult with your dealer, or qualified Roland service personnel.
- Always turn the unit off and unplug the power cord before attempting installation of the Hard disk drive unit (HDP88 series) or Effect expansion board VS8F-1.

⚠ 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.
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.
- When installing the Hard disk drive unit (HDP88 series) or Effect expansion board VS8F-1, remove only the specified screws.

Main features

The VS-880 is a digital studio workstation that combines a multitrack digital disk recorder and a digital mixer into a single unit. By itself, the VS-880 performs all signal processing in the digital domain, from recording to mixdown and output to PA equipment.

Digital disk recorder

- The digital disk recorder provides 8 tracks, and each of these tracks has 8 "V-tracks" (virtual tracks). This plentiful array of tracks allows you to record several takes of a performance and then select the best one. It can also be used to let you compare the results of editing to the original.
- Non-destructive editing can be performed, a capability which is not possible on tape-based analog multi-track recorders. This means that you can use the Undo function to return to the un-edited data, and re-do an edit as many times as desired.
- The Preview function lets you playback a specified area before and after the current location. This is a convenient way to find a location at which you wish to begin playback.
- The Locate function lets you memorize up to 8 different time locations within a song, and jump to the memorized location at the touch of a button. This is a convenient way to specify an editing range.
- The Tap Marker function lets you place a symbol (mark point) at a desired location of a song. Up to 1000 points can be placed in a song. As with the Locate function, this is also a convenient way to specify an editing range, etc.

Digital mixer

- The digital mixer has three mixer modes, selectable as appropriate for your situation.
 - INPUT → TRACK mode: This is the easy-operation mode, in which the input sources and the recorder tracks are mixed into the 8 channels. Normally you will use this mode.
 - INPUT MIX mode / TRACK MIX mode: These modes allow you to separately control the input sources and the recorder tracks. Use these modes when you wish to perform advanced mixing.
- Mixer settings can be controlled by MIDI messages from an external MIDI device. Also, an external MIDI sequencer can be used for compu-mix (mixing automation).

Easy-to-operate controls

- The VS-880 can be operated as easily as conventional analog multi-track recorders. You will be able to enjoy the advantages of digital recording from the day that you purchase it.
- The large LCD screen provides visual confirmation of many settings at once. In particular, the bar display provides a graphical indication of the level meter, pan and fader settings, and the track record status.

A full complement of connectors

- Four analog audio inputs are provided, and you have the choice of using either 1/4" phone jacks or RCA phono type jacks. The input sensitivity of each jack can be adjusted from line level (+4 dBm) to mic level (-50 dBm). For output, RCA phono type master out jacks (stereo) and AUX send jacks (two output) are provided.
- A SCSI connector is standard, allowing you to connect external disk drives such as hard disks or removable disks.
- Coaxial type digital I/O connectors are provided, allowing recording/playback of digital audio with another digital audio device (CD player, DAT recorder, MD recorder, etc.)
- MIDI connectors (IN, OUT/THRU) allow MIDI messages to be transmitted and received. The VS-880 can be used with a MIDI sequencer for compu-mix, or synchronized with a MIDI sequencer.

- In addition to the tracks which record the audio signals, the VS-880 has a sync track which can record MIDI Clock data. By using this sync track, the VS-880 can be synchronized even with a MIDI sequencer which does not implement MTC (MIDI Time Code) or MMC (MIDI Machine Control).

A full array of options

- If an HDP-88 series hard disk (2.5 inch) is installed internally, the VS-880 will be a self-contained, compact, and portable recording system. In contrast to when external disk drives are used, there will be no possibility of problems resulting from faulty connections. We recommend that you install an internal hard disk when using the VS-880.
- If a VS8F-1 effect expansion board is installed, a wide variety of effects will be available for use on the VS-880.

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Important notes

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2 and 3, 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 mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.

- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and Data

- Please be aware that all data contained in the unit's memory may be lost when the unit is sent for repairs. Important data should always be backed up on a DAT recorder or an external disk drive (e.g., hard disk or MO disk). During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Roland assumes no liability concerning such loss of data.

Disk drive handling

Disk drives are precision devices. When handling a VS-880 that has an internal hard disk installed, or when handling an external disk drive, observe the following precautions.

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

- Before performing the following actions, be sure to perform the shut-down operation. If you fail to perform the shut-down operation, not only the data recorded on the hard disk, but also the hard disk itself may be damaged.

Turning off the power of the disk drive

Turning off the power of the VS-880

Removing a disk from a removable disk drive

- While the MIDI/DISK indicator of the VS-880 or the disk drive busy indicator is lit, data is being transferred to or from the disk drive. If you are using a removable disk drive, make sure that this indicator is dark before removing the disk.

- Place the unit in a stable and level location that is not affected by vibration from external sources. If the unit is tilted severely, this may have harmful effects on the operation of the disk drive.

- While using the VS-880, be careful not to subject the unit to vibration or shock, and avoid moving the unit while the power is turned on. When transporting the unit, pack it in its original shipping carton.

- 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.

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.

The VS-880 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. Roland will take no responsibility for any infringement of copyright that you may commit in using the VS-880.

< About 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.

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 VS-880. These damages may include but are not limited to the following events which can occur when using the VS-880.

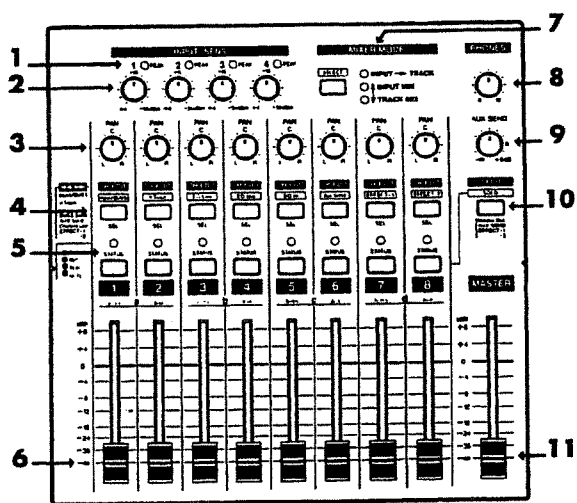
- Any loss of profit that may occur to you
- Permanent loss of your music or data
- Inability to continue using the VS-880 itself or a connected device

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 unit's memory on a DAT recorder or an external disk drive (e.g., hard disk or MO disk).
- Unfortunately, it may be impossible to restore the contents of data that was stored DAT recorder or an external disk drive (e.g., hard disk or MO 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.

Front and rear panels

Mixer section



1. PEAK indicators

These indicators allow you to avoid distortion of the sound being input at the input jacks (1-4). The peak indicators will light red when the signal reaches -6 dBm before clipping level. Adjust the input sensitivity so that the peak indicators do not light.

2. INPUT SENS (input sensitivity) knobs

These knobs adjust the sensitivity of the input jacks (1-4). Rotate a knob fully right for mic level (-50 dBm), and fully left for line level (+4 dBm).

3. PAN knobs

These knobs adjust the pan (location in the stereo output) of each channel.

4. CH EDIT / SEL (channel edit/select) buttons

Use these buttons when you wish to make settings for a mixer channel. The names of the parameter groups that can be set for each channel are printed below CH EDIT. To directly specify a particular group, you can hold down [SHIFT] and press the button for that group name. When editing a song, use these buttons to select tracks for editing.

5. STATUS buttons

These buttons switch the status of each channel. The current status is shown by the button indicator.

SOURCE (orange): The input source assigned to the channel is being output.

REC (blinking red): Recording is selected for the track assigned to the channel.

PLAY (green): The track assigned to the channel will playback.

MUTE (dark): The channel is muted (silent).

6. Channel faders

Use these faders to adjust the volume level of each channel.

7. SELECT button

This button switches the operating mode of the mixer. The current mixer mode is shown by the indicators located at the right of the button. Each time you press the button, you will alternate between INPUT MIX mode and TRACK MIX mode. To change from INPUT → TRACK mode to INPUT MIX mode / TRACK MIX mode, hold down [SHIFT] and press the button. Use the same operation to move in the other direction.

INPUT → TRACK mode

INPUT MIX mode

TRACK MIX mode

8. PHONES knob

This knob adjusts the volume of the headphones.

9. AUX SEND knob

This knob adjusts the output level of the AUX SEND jacks.

10. EDIT/SOLO button

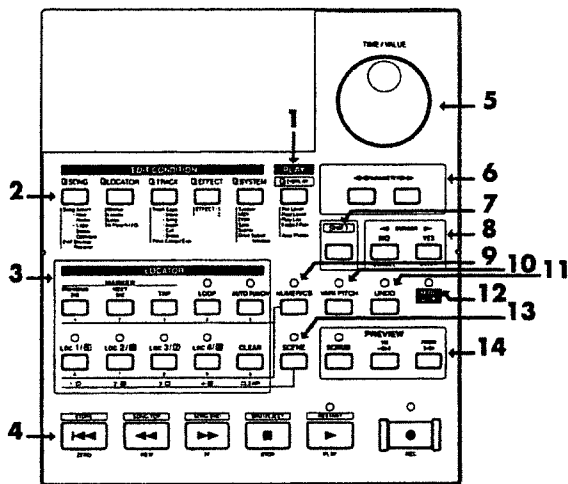
Press this button to make settings for the master section of the mixer.

To use the Solo function to monitor only a specific channel, hold [SHIFT] while you press the button.

11. Master fader

Use this fader to adjust the overall output level.

Recorder section



1. PLAY/DISPLAY button

Press this button to return from making a setting (edit condition) back to normal status (play condition). To switch display items in the bar display, hold down [SHIFT] and press this button.

2. EDIT CONDITION buttons

The functions and parameters of the VS-880 are organized within these buttons. To use a desired operation, press the appropriate button.

3. LOCATOR buttons

Press these buttons when using the Locator function or the Tap Marker function.

When the NUMERICS indicator is lit, these buttons function as numeric keys to directly input numbers. When the SCENE indicator is lit, these buttons are used to store and recall scenes (snapshots of mixer settings).

4. Transport control buttons

These buttons are used to operate the recorder.

[ZERO]: Return the current time to "00h00m00s00" (zero return).

[REW]: While the button is held down, the current time will be moved backward. This corresponds to the rewind button on a tape recorder.

[FF]: While the button is held down, the current time will be moved forward. This corresponds to the fast-forward button on a tape recorder.

[STOP]: Stop song recording/playback.

[PLAY]: Start song recording/playback from the current time.

[REC]: Press this button to record a song.

5. TIME/VALUE dial

Normally (i.e., in Play condition), this dial is used to move the current time. When making settings (i.e., in Edit condition), this dial is used to modify parameter values.

6. PARAMETER buttons

Use these buttons to switch the parameter display.

7. SHIFT button

This button is used in conjunction with other buttons to access additional functions of that button. For details refer to "Special key operations" (p.90).

8. CURSOR buttons, NO/YES buttons, CANCEL/ENTER buttons

When a YES/NO response is required during an operation, use these button to reply. When two or more parameters are shown in the display, use these buttons to select parameters.

9. NUMERICS button

When this button is pressed to make the indicator light, the ten LOCATOR buttons will act as numeric keys to enter numerical values.

10. VARI PITCH button

Press this button when you wish to change the playback pitch.

11. UNDO button

Press this button to cancel a recording that you have made. Also, after performing a song edit operation, you can press this button to return to the condition before editing. When undo is executed, the button indicator will light.

12. MIDI/DISK indicator

This indicator will light green when MIDI messages are being received, and red when data is being written or read on the disk drive. If both of these are occurring, the indicator will light orange.

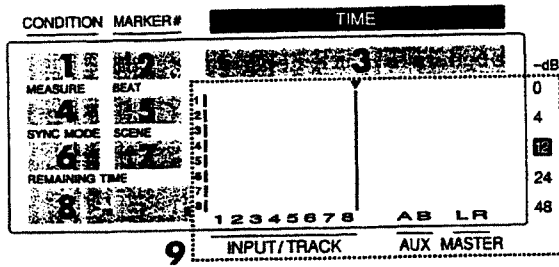
13. SCENE button

Press this button when you wish to memorize or recall scenes (snapshots of the mixer settings).

14. PREVIEW button

Press this button to use the Preview function that plays back a specific length before and after the current location.

Display section



1. CONDITION

This indicates the current condition.

PLY: Play (normal)

CHn: Channel edit (n=1-8, a-d) (in INPUT → TRACK MIX mode)

INn: Channel edit (n=1-8, a-d) (in INPUT MIX mode)

TRn: Channel edit (n=1-8, a-d) (in TRACK MIX mode)

MST: Master block edit

SNG: Song edit

LOC: Locator edit

TRK: Track edit

EFF: Effect edit

SYS: System edit

- ♦ The channel edit display will depend on the currently selected mixer mode. Also, channels for which Channel Link is OFF will be displayed as 1-8, and channels for which it is ON will be displayed as a-d.

2. MARKER

This shows the mark point number for the current time. If a mark point has not been assigned to the current time, the closest mark point number located before the current time will be shown.

3. TIME

This shows the current time of the song.

4. MEASURE

This shows the current measure of the song.

5. BEAT

This shows the current beat of the song.

6. SYNC MODE

This indicates the current sync mode (method of synchronization).

7. SCENE

This shows the currently used scene number (mixer setting). An asterisk "*" shown at the beginning of the scene number indicates that the current mixer settings have been modified since the scene was recalled.

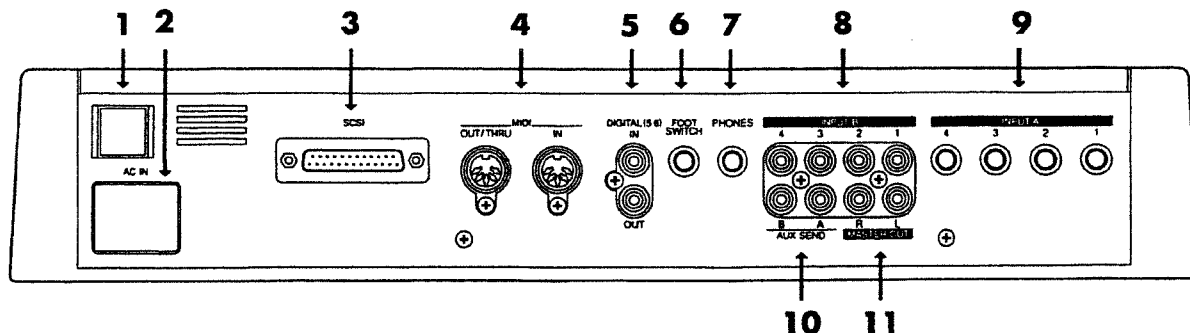
8. REMAINING TIME

This shows the remaining length of time available for recording.

9. Bar display

In Play condition, the item selected by [DISPLAY (PLAY)] are shown graphically. While you are making a setting, data for the setting being made is displayed graphically.

Rear panel



1. POWER switch

This switch turns the VS-880 power on/off.

2. AC IN (AC inlet)

Connect the included power cable here.

3. SCSI connector

This is a DB-25 type SCSI connector for connecting disk drives such as hard disks or removable disks. If you wish to connect a disk drive, refer to "Using an external disk drive" (p.48).

4. MIDI connectors (IN, OUT/THRU)

External MIDI devices (MIDI controllers, MIDI sequencers, etc.) can be connected here.

IN: This connector receives MIDI messages. Connect it to the MIDI OUT connector of the external MIDI device.

OUT/THRU: This connector can be used either as a MIDI OUT or as a MIDI THRU connector. With the factory settings, it will function as a MIDI OUT connector.

5. DIGITAL (5,6) connectors (IN, OUT)

These are coaxial-type digital I/O connectors (conforms to S/P DIF).

IN: This inputs a digital audio signal (stereo).

OUT: This outputs a digital audio signal (stereo). The sound is the same as that of the MASTER OUT jacks.

* To record a digital audio signal, it is not sufficient to simply connect a digital audio device to the DIGITAL IN connector. When inputting a digital audio signal, refer to "Recording a digital audio signal" (p.33).

* The DIGITAL connector is not able to input or output analog audio signals.

6. FOOT SWITCH jack

An optional foot switch can be connected here to control recorder operations, mark point settings, and punch in/out operations etc. by foot switch. With the factory settings, a foot switch will start/stop the recorder. To change this function, refer to "Using a footswitch" (p.17).

7. PHONES jack

An optional set of headphones can be connected here. The PHONES jack outputs the same sound as the MASTER OUT jack.

8. INPUT B jacks (1-4)

9. INPUT A jacks (1-4)

These are input jacks for analog audio signals. INPUT A are 1/4" phone jacks, and INPUT B are RCA phono jacks. You may use either type of jack. If cables are connected to both types, the INPUT A jacks will take priority. Use the INPUT SENS knob to adjust the input sensitivity of each input.

10. AUX SEND jacks (A,B)

11. MASTER OUT jacks (L,R)

These are output jacks for analog audio signals (RCA phono type).

With the factory settings, all signals will be output from the MASTER OUT jacks, and there will be no output from the AUX SEND jacks. The output will be determined by the settings of the mixer's master section and the settings of each channel.

The AUX SEND jacks can also be used as send jacks for connecting external effect units (p.51).

Chapter 1: From multi-track recording to creating a master tape

This chapter explains the procedure from multi-track recording to creating a master tape. Within this process, you will also learn how to use the Locate and Tap Marker functions for convenient editing, and how to perform punch-in recording to re-record just a specific area. Since all these functions are basic to using the VS-880, please work through this section, trying out each of the procedures.

Basic recording procedure

Although the VS-880 is a digital multitrack recorder, recording procedure is the same as for an analog multitrack recorder, as shown below.

1. Record the basic tracks of the song; drums and bass, etc.
2. While playing back the drums and bass tracks, record instruments such as guitar etc. on other tracks (overdubbing).
3. The VS-880 can simultaneously playback up to 8 tracks. If you wish to simultaneously playback more than 8 tracks, you will need to record two or more tracks onto a different track in order to reduce the data to 8 or fewer tracks (track bouncing).
4. Adjust equalization, pan, and volume level for each track, and mix down to your master recorder.

Placing marks in a song

The VS-880 allows you to place marks at any desired location in a song. For example if you have placed marks at the beginning of a section, at the beginning of the sound, or at convenient locations for editing, you can easily jump to these times. Use the Locate function to memorize specific times in a song, and use the Tap Marker function to place marks in the song. Use these two functions as appropriate.

■ Using the Locate function

The [LOC 1/5]–[LOC 4/8] buttons allow you to memorize up to 8 time locations within the song. The time locations memorized by these LOC buttons are referred to as “locate points.” Since you can jump to these locations simply by pressing a button, it is convenient to use them to memorize locations which you will want to access frequently. Locate points are also a convenient way to specify areas for looping or for auto punch-in recording.

Memorizing the current time

1. Specify the locate point number that you wish to use. To use a locate point 1–4, press a [LOC 1/5]–[LOC 4/8] button. To use a locate point 5–8, hold down [SHIFT] and press a [LOC 1/5]–[LOC 4/8]. When the time has been memorized, the button indicator will light.

Memorizing the time of a Mark Point

1. Find the mark point (see next page) that you wish to memorize, and then specify the locate point number that you wish to use. To use a locate point 1–4, press a [LOC 1/5]–[LOC 4/8] button. To use a locate point 5–8, hold down [SHIFT] and press a [LOC 1/5]–[LOC 4/8]. When the time has been memorized, the button indicator will light.

Memorizing a time as you playback/record a song

1. Start playing back or recording the song, and when you reach the time that you wish to memorize, specify the locate point number that you wish to use. To use a locate point 1–4, press a [LOC 1/5]–[LOC 4/8] button. To use a locate point 5–8, hold down [SHIFT] and press a [LOC 1/5]–[LOC 4/8]. When the time has been memorized, the button indicator will light.

Moving to a Locate Point

1. Use the LOC buttons to specify the locate point of the time to which you want to move.

Clearing a Locate Point

1. While holding down [CLEAR], use the LOC buttons to specify the locate point that you wish to clear. When a locate point has been cleared, the button indicator will go dark.

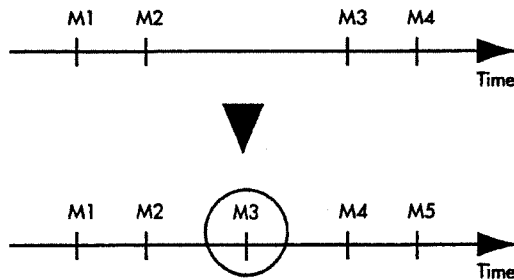
■ Using the Tap Marker function

The Tap Marker function lets you assign up to 1000 marks (mark points) to each song. To move to a mark point, you can either directly specify the mark point number, or move to successive mark points. This lets you move through a song in a way similar to using the index search buttons of a CD player. Mark points can also be used to specify loop areas or the area for auto punch-in recording.

< Mark point numbers >

Each mark point is assigned a number 000-999, in the order of its time location. This means that if you add a new mark point at a location earlier than an existing mark point, the numbers of the subsequent mark points will be incremented.

For example if you add a mark point located after mark point 2, subsequent mark points will be renumbered as shown in the following diagram



* An interval of at least 0.1 seconds must exist between mark points. It will not be possible to add a new mark point if a mark point already exists at a location closer than 0.1 seconds away.

Adding a Mark Point to the current time

1. Press [TAP], and a mark point will be added to the current location.

Adding a Mark Point while playing back / recording a song

1. Begin playing back / recording a song, and press [TAP] when you reach the desired location. A mark point will be added at the time at which you pressed the button.

Moving to a Mark Point

1. To move to the mark point located before the current time, press [PREVIOUS]. Each time you press the button you will move to the next mark point. To move to the mark point located after the current time, press [NEXT].

Directly specifying a Mark Point

1. Use CURSOR[◀][▶] to make the mark point number displayed in the MARKER field of the display blink.

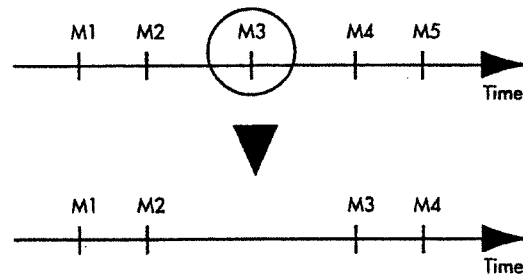
2. Use the TIME/VALUE dial to specify the mark point number to which you wish to move.

To directly specify a mark point number, first press [NUMERICS] to make the button indicator light. When the NUMERICS indicator is lit, the ten LOCATOR buttons 0-9 will act as numeric keys to specify numbers. The numeral entered by each button is printed below the button. Next, after using the LOCATOR buttons to specify the number, press [ENTER (YES)] to finalize the mark point number. For example if you wish to specify "10," press buttons in the order of [1 (PREVIOUS)], [0 (CLEAR)], and [ENTER (YES)].

Clearing a Mark Point

Assigning mark points makes searching convenient, but creating too many mark points can actually make searching less convenient. It is a good idea to clear (erase) mark points that are no longer necessary.

1. Move to the mark point that you wish to clear (erase).
2. While holding down [CLEAR], press [TAP] and the mark point will be cleared. If mark points exist after the mark point that was cleared, the subsequent mark point numbers will be incremented.



Clearing all Mark Points

1. While holding down [SHIFT], hold down [CLEAR] and press [TAP]. The display will ask "Clear ALL Marker?" so press [YES]. To cancel without clearing, press [NO].

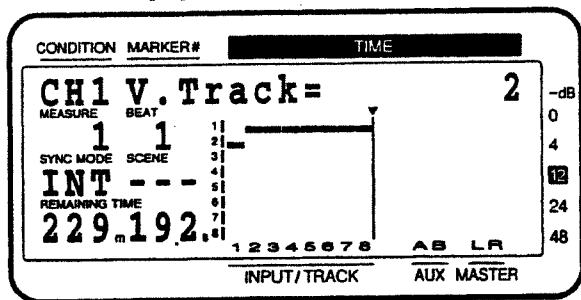
Switching V-tracks

The VS-880 has eight tracks on which music can be recorded and played back. Each of these tracks has eight V-tracks on which music can be recorded. When playing back a song, you can select one V-track for each track. In other words, you can use up to 64 tracks to record a performance, and select up to 8 of these tracks for playback.

In this way, unlike when using a conventional multitrack tape recorder, there is no need for you to erase previously-recorded material. Also, you are free to record different "takes" or variations of the same material to different V-tracks, and switch between V-tracks to compare the performances.

To switch V-tracks, use the following procedure.

1. Press [CH EDIT] for the track whose V-track you wish to switch, and use PARAMETER [◀◀] [▶▶] to get the "V.Track=" display.



2. Use the TIME/VALUE dial to select a V-track.
3. When the procedure is completed, press [PLAY (DIS-PLAY)] to return to Play condition.

Record while playing back other tracks (Overdubbing)

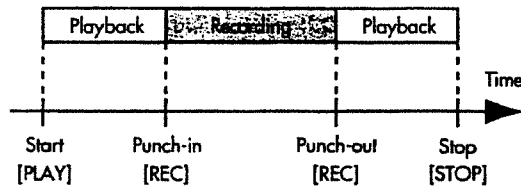
The process of newly recording a track while playing back previously recorded tracks is called "overdubbing." Here we will explain the procedure using the example of playing back a stereo recording that was recorded on tracks 1 and 2, and recording other instruments on tracks 3 and 4. Connect INPUT 3-4 jacks to the instruments that you wish to newly record.

1. Make sure that the mixer mode is set to INPUT → TRACK mode (the INPUT → TRACK indicator is lit). If another mixer mode is selected, hold down [SHIFT] and press [SELECT].
2. Make sure that the track status for tracks 1/2 (the tracks for playback) is set to PLAY (the STATUS indicator is lit green). If the status is not PLAY, press the [STATUS] button for that channel several times.
3. Set the track status for tracks 3/4 (the tracks for recording) to REC (the STATUS indicator is blinking red). For track 3, press [STATUS 3] several times, and for track 4 press [STATUS 4].
4. Select input 3 as the input source for track 3, and input 4 as the input source for track 4. For track 3, press channel 3 [CH EDIT], then press PARAMETER [◀◀] several times until "CH3 Input=" is displayed, and use the TIME/VALUE dial to select "INPUT 3." In the same way, select "INPUT 4" as the input source for track 4.
5. Make pan settings for tracks 3/4. In this example we will be recording tracks 3/4 in stereo, so set the PAN 3 knob fully left (L63), and the PAN 4 knob fully right (R63).
6. While producing sound on the instruments to be recorded, adjust the input levels. Adjust input 3 using the INPUT SENS 3 knob, and input 4 using the INPUT SENS 4 knob.
7. Press [ZERO] to return to the beginning of the song. Then press [REC] to enter record ready mode (the REC indicator blinks red), and press [PLAY] to begin recording.
8. When you finish recording press [STOP].
9. Listen to the recorded result. Press [ZERO] to return to the beginning of the song, and make the channel 3 and 4 STATUS indicators light green. Press [PLAY] to playback.

Re-recording a specific area (Punch-in recording)

Sometimes a recording will contain just one or two sections that were not played correctly, or that you wish to re-record. In such cases, you can use punch-in recording to re-record only a specific area.

"Punch-in" refers to the action of switching from playback mode to record mode. Conversely, "punch-out" refers to the switch back to play mode. In other words, you will punch-in at the beginning of the area that you wish to re-record, and punch-out at the end of the area.



* By using the Undo function (p.40) you can return to the condition before re-recording.

There are three methods to perform punch-in recording. Use the method appropriate for your situation.

Manual punch-in

In this method, you punch-in and punch-out by pressing a button or a footswitch. When you are both playing the instrument and operating the recorder by yourself, it is usually not practical to reach over and press a button. In such cases, use an optional footswitch.

Auto punch-in

In this method, you specify beforehand the area to be re-recorded, so that when playback reaches that point, recording will begin automatically. This is convenient when you need to punch-in/out at a precise time, or when you want to punch-in/out automatically so that you can concentrate on your playing.

Auto punch-in using the loop function

In this method, the same area can be re-recorded repeatedly. Since the recorded result can be heard immediately after the recording, you can continue recording until you are satisfied.

■ Using the buttons (Manual punch-in)

1. Set the track status to REC for the track that you wish to re-record (the STATUS indicator blinks red).
2. Playback the song from the beginning, and use the INPUT SENS knob to adjust the level of the input source. During song playback, you can press [STATUS] to switch between monitoring the input source and the track. Listen to compare the track to be re-recorded with the input source, and adjust the level so that there is no volume difference.
3. Playback the song from a location slightly before where re-recording will begin.
4. At the point where you wish to re-record, press [REC] to punch-in, and re-record the vocal or instrumental part. To punch-out, press [REC] (or [PLAY]) once again. Each time you press [REC], you will alternately punch-in and punch-out, so if there is another area that you wish to re-record, repeat the same operation.
5. When you finish recording, press [STOP].
6. Check the re-recorded result. After switching the track status of the newly recorded tracks back to PLAY (the STATUS indicator lights green), playback from the beginning of the song.

■ Using a footswitch (Manual punch-in)

If you wish to use an optional footswitch to punch-in/out, connect the footswitch to the FOOT SWITCH jack. Then use the following procedure to set the function of the FOOT SWITCH jack so that it can be used for punching in/out.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [<< || >>] to get the "SYS System PRM?" display, and press [YES].
3. Use PARAMETER [<< || >>] to get the "SYS FootSW=" display, and use the TIME/VALUE dial to select "Record."
4. Press [PLAY (DISPLAY)] to return to Play condition.

■ Re-recording a specified area (Auto punch-in)

Auto punch-in recording lets you automatically punch-in and punch-out at previously specified locations. This is convenient when you need to punch-in/out at a precise time, or when you want to punch-in/out automatically so that you can concentrate on your playing.

Specify the area to be re-recorded

Before you begin recording, set the times for punch-in and punch-out. There are three ways to set these times. Use the method appropriate for your situation.

Using Locate Points

1. While holding down [AUTO PUNCH], specify the locate point for the time at which you want to punch-in, and then without releasing [AUTO PUNCH], specify the locate point for the punch-out time.

Using Mark Points

Adjacent mark points can be used to set the punch-in and punch-out times.

1. Move to the mark point located at the desired punch-in time.
2. While holding down [AUTO PUNCH], press [NEXT], and then without releasing [AUTO PUNCH], press [PREVIOUS].

Specifying the points while playing back the song (Tap Marker)

1. Playback the song. When you reach the desired punch-in location, hold down [AUTO PUNCH] and press [TAP]. Continue holding down [AUTO PUNCH], wait for the desired punch-out location, and then press [TAP] once again

Recording

1. For the track to be re-recorded, set the track status to REC (the STATUS indicator blinks red).
2. Use the INPUT SENS knob to adjust the level of the input source. During song playback, you can press [STATUS] to switch between monitoring the input source and the track. Listen to compare the track to be re-recorded with the input source, and adjust the level so that there is no volume difference.
3. If you press [AUTO PUNCH] while the song is stopped, the AUTO PUNCH indicator will light and you will be ready to use auto punch-in recording.

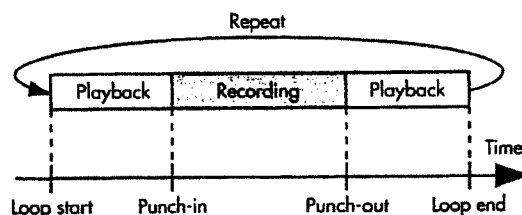
4. Move to a time before the location that you wish to re-record, press [REC] to enter record ready mode, and press [PLAY]. When the specified punch-in location is reached, punch-in will occur automatically, so re-record the vocal or instrumental part. When the specified punch-out location is reached, the channel will automatically return to playback mode.

5. When you finish recording, press [STOP].

6. Check the re-recorded result. After switching the track status of the newly recorded tracks back to PLAY (the STATUS indicator lights green), playback from the beginning of the song.

■ Repeatedly record over the same area (Loop + Auto punch-in)

The loop function lets you repeatedly playback a specified area (the loop). If the loop function is used for punch-in recording, you will be able to hear the recorded result immediately. If the result is not what you wanted, you can continue re-recording.



* To specify the area for re-recording (the punch-in point and punch-out point), refer to the previous section "Auto punch-in."

Specify the loop area

Before you begin recording, specify the begin and end times for the loop. There are three ways to specify the loop times. Use the method appropriate for your situation.

* Make settings so that the loop completely includes the area to be re-recorded (i.e., from the punch-in point to the punch-out point). If the area to be re-recorded is not completely within the loop, recording may not start at the specified location, or may be interrupted in the middle of the area for recording.

Using Locate Points

1. While holding down [LOOP], specify the locate point for the time at which you want to begin the loop, and then without releasing [LOOP], specify the locate point for the end of the loop.

Using Mark Points

Adjacent mark points can be used to set the beginning and end of the loop.

1. Move to the mark point located at the desired time for the beginning of the loop.
2. While holding down [LOOP], press [NEXT], and then without releasing [LOOP], press [PREVIOUS].

Specifying the points while playing back the song (Tap Marker)

1. Playback the song. When you reach the desired location for the beginning of the loop, hold down [LOOP] and press [TAP]. Continue holding down [LOOP], wait for the desired location for the end of the loop, and then press [TAP] once again.

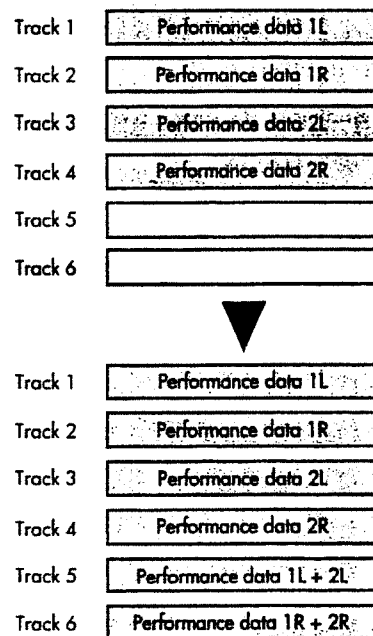
Recording

1. For the track to be re-recorded, set the track status to REC (the STATUS indicator blinks red).
2. Use the INPUT SENS knob to adjust the level of the input source. During song playback, you can press [STATUS] to switch between monitoring the input source and the track. Listen to compare the track to be re-recorded with the input source, and adjust the level so that there is no volume difference.
3. With playback stopped, press [LOOP] to make the LOOP indicator light. Then press [AUTO PUNCH] to make the AUTO PUNCH indicator light. You are now ready to record.
4. Press [PLAY]. Playback will begin from the loop start location. When the loop end location is reached, playback will return to the loop start location and continue.
5. If you wish to re-record, press [REC] to begin recording. When [REC] is pressed, recording will occur in the specified area the next time the song is played back. Re-record the new performance. On the next playback, you can hear the newly re-recorded performance. If you are not satisfied, press [REC] and try again.
6. When you finish recording, press [STOP]. Playback the song from the beginning to check the result once again. Press [LOOP] to turn off the LOOP indicator, and press [AUTO PUNCH] to turn off the AUTO PUNCH indicator. After switching the track status of the newly recorded track back to PLAY (the STATUS indicator lights green), playback from the beginning of the song.

Combining two or more tracks (Track bouncing)

The VS-880 can simultaneously playback up to 8 tracks. If you wish to playback the contents of more than 8 tracks, or if you run out of empty tracks, you can merge the contents of two or more tracks onto a different track. This procedure is called "track bouncing."

In this section, we will give the example of using the MIX buss to mix the contents of two stereo pairs on tracks 1/2 and tracks 3/4 to tracks 5/6.



- * Repeating the track bounce operation will eventually affect the sound quality, but this is not a malfunction. Keep track bouncing operations to the necessary minimum.

1. Assign the outputs of tracks 1–4 to the MIX buss. Press channel 1 [CH EDIT], and then use PARAMETER [◀◀ || ▶▶] to get the "CH1 MIX Sw=" display. Use the TIME/VALUE dial to select a setting of "PstFade." In the same way, set the outputs of tracks 2–4 to "PstFade" as well.
2. Rotate the PAN 1 and PAN 3 knobs fully left (L63), and the PAN 2 and PAN 4 knobs fully right (R63).
3. Select the MIX buss as the input source to be recorded for tracks 5 and 6. Press channel 5 [CH EDIT]. Then use PARAMETER [◀◀ || ▶▶] to get the "CH5 Input=" display. Use the TIME/VALUE dial to select "MIX-L." In the same way, set the output of track 6 to "MIX-R."

* With these settings, it will not be possible to monitor the output of channels 5/6. This is because the output of tracks 5/6 that is routed through the MIX buss is not re-input into tracks 5/6, to avoid creating a feedback loop.

4. Make settings so that the signal of the MIX buss is output from the MASTER OUT jacks.

Press [EDIT] in the master section, and use PARAMETER [◀◀][▶▶] to get the "MST Master Mode=" display. Then use the TIME/VALUE dial to select "MIX."

5. Set the track status of tracks 1–4 to PLAY, and the track status of tracks 5/6 to REC. Playback the song, and use the faders of channels 1–4 to adjust the volume balance. At this time, raise the volume level as far as possible without causing distortion.

6. Return to the beginning of the song, press [REC], and then press [PLAY] to begin recording.

7. When you finish recording, press [STOP].

8. Check the result that was recorded on tracks 5/6. In this example, tracks 1–4 and tracks 5/6 have the same contents, so set the track status of tracks 1–4 to MUTE, and the track status of tracks 5/6 to PLAY.

Mixing down to a master tape

When you finish recording the song, adjust the balance of each track (equalizer, pan, and volume level), and record the mix to a two-channel stereo master tape. This process is called "mixdown."

Using the equalizer to adjust the tone

A parametric equalizer is provided for each channel. First make equalizer adjustments separately for each channel. If you have recorded any stereo pairs, be sure that the same settings are made for both tracks. Then, while paying attention to the overall balance, make final adjustments for equalizer, pan, and volume level for each channel.

* If you adjust the equalizer while listening to the sound, you may notice a clicking noise. This is not a malfunction. If the noise is objectionable, make adjustments while the sound is not playing.

1. Press [CH EDIT] for the channel whose equalizer setting you wish to adjust.

2. Use PARAMETER [◀◀][▶▶] to step through the parameters that can be set for each channel. Select the equalizer-related parameters, and use the TIME/VALUE dial to modify the value. Use CURSOR [◀][▶] to select the parameter to be adjusted; gain or center frequency (or Q).

The bar display will graphically show the equalizer settings.

EQ Switch: To use the equalizer, first turn this "On." Unless this is "On" you will not be able to select equalizer-related parameters.

EQ Low: Gain and center frequency for the low range

EQ Mid: Gain and Q (the sharpness of the change) for the middle range

EQM F: Center frequency for the middle range

EQ Hi: Gain and center frequency for the high range

3. Make adjustments for the other channels in the same way. When you finish making settings for all channels, press [PLAY (DISPLAY)] to return to Play condition.

Adjusting volume level and pan

You can use the channel faders to adjust the volume level of each track, and the PAN knobs to adjust the pan of each track, but here we will explain how to make adjustments when in Channel Edit condition.

To adjust the volume level of each track, first adjust the volume level for the track containing the most important part of the song (e.g., the vocal or melodic instrument). Then, relative to the volume level of that track, lower the volume levels of other tracks to create the desired balance.

1. Press [CH EDIT] for the channel whose volume level and pan you want to adjust.

2. Use PARAMETER [◀◀] [▶▶] to step through the parameters that can be set for each channel. Select the desired parameter, and use the TIME/VALUE dial to modify the value.

The bar display will graphically show the volume level and pan settings of each channel.

MIX Sw: Select "PstFade" so that the channel faders can be used.

MIX Level: Adjust the volume level.

MIX Pan: Adjust the pan.

3. In the same way, make adjustments for the other channels as well. When you finish making adjustments for all channels, press [PLAY (DISPLAY)] to return to Play condition.

< About the display >

If you modify the volume levels in Channel Edit condition, the position of the channel faders may not match the actual volume level settings. In this case, an asterisk "*" will be displayed after the displayed position. When the bar display shows the fader position, the current position of the channel fader will blink. The same applies to the pan display.

To make the channel faders match the actual value, move the channel faders to the actual value.

Creating a master tape (Mixdown)

When the balance of the tracks has been completed, use your stereo recorder (cassette tape recorder, DAT recorder, MD recorder, etc.) to create a stereo master tape.

* The digital interface of the VS-880 conforms to S/P DIF. If you wish to record the digital signal, use a digital recorder that is compatible with these standards.

1. Connect the recorder to the VS-880.

If you are using analog connections, use an RCA phono type cable to connect the input jacks of your recorder to the MASTER OUT jacks of the VS-880.

If you are using digital connections, use an RCA phono type coaxial cable to connect the digital input connector (coaxial) of your digital recorder to the DIGITAL OUT connector of the VS-880.

2. If you have connected a digital recorder by a digital connection, make settings on your digital recorder so that it will record from its digital input. Also, set the sample rate of the recorder to match the sample rate at which the song was recorded (44.1 kHz). Many digital recorders automatically sense the sample rate of the recording source, so that it is unnecessary to make this setting manually.

* Some DAT recorders are not able to record a digital signal at a sample rate of 44.1 kHz. In this case, use analog connections instead, and set the digital recorder to record from its analog input.

* If you do not know the song's sample rate and recording mode, you can check these settings in the song select page (p.59).

3. Adjust the recording level of the recorder.

Use the master fader to adjust the output level of the VS-880, setting it as high as possible without overloading the input of the recorder. Set the recording level of the recorder so that the level meters indicate as high as possible without causing distortion.

4. Press [ZERO] on the VS-880 to return to the beginning of the song, and put your recorder in record ready mode.

5. Press [PLAY] on the VS-880, and begin recording on your recorder. If you wish to produce a fade-in or fade-out, use the master fader of the VS-880.

6. When you finish recording, stop the recorder and the VS-880.

Chapter 2: Understanding how the VS-880 is organized

This chapter discusses basic concepts of the VS-880, how it is organized internally, and explains basic operations. In order to understand the VS-880, please be sure to read this chapter.

What is the VS-880?

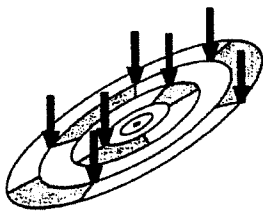
The VS-880 is a multi-track digital disk recorder that combines a digital disk recorder and a digital mixer in a single unit. The VS-880 provides the same basic functionality expected of conventional analog tape recorders, such as "simultaneous recording of multiple tracks" and "synchronization with MIDI devices." In addition, it has features that are possible only with digital recording, such as "data transfer that minimizes deterioration of sound quality" and "undo-able editing," providing a high level of convenience in music production and video editing.

Digital disk recorders

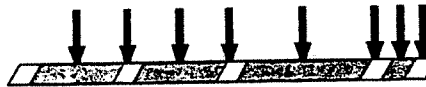
Unlike DAT recorders, which use tape, digital disk recorders record sound (music) on a disk, as do MD recorders. Music that is recorded on disk can be recalled and played back immediately, no matter where it is located on the disk. This is also obvious from the difference in speed at which you can move to the beginning of a song on a DAT recorder and on an MD recorder.

The ability to freely move to data regardless of the time or sequence at which it was recorded is known as "random access." In contrast, having to move to data in the order of the time or sequence at which it was recorded is known as "sequential access."

random access



sequential access



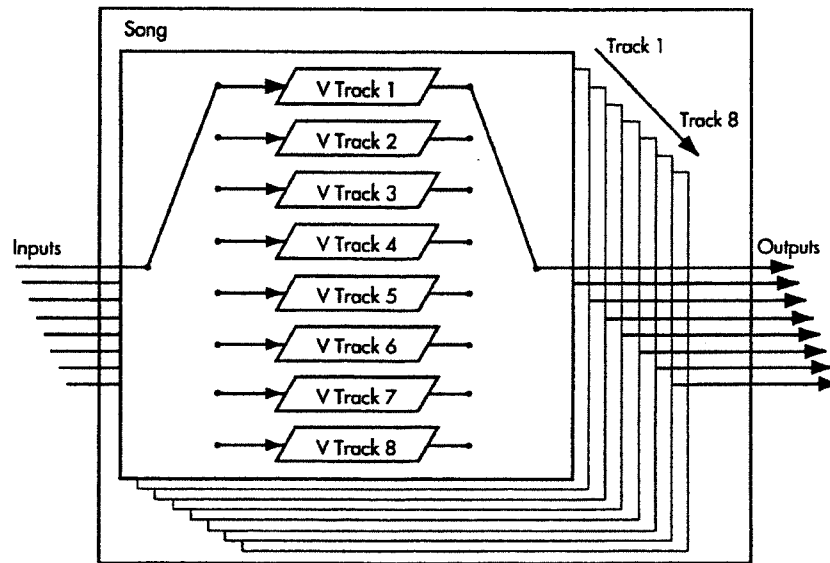
One of the most important features of digital disk recorders is that they allow re-recording and editing that does not affect the sound quality.

On a multi-track analog tape recorder, it is necessary to erase a previously made recording in order to modify it. Also if you wish to change the organization of a song, you must re-record it from the beginning. This type of editing which re-writes the original data is known as "destructive editing."

In contrast, multi-track digital disk recorders allow you to use an Undo function to cancel the editing operation and return to the data as it was before editing. Furthermore, since copying data has negligible effect on the sound, you can copy the original data before editing and save it. It is also easy to copy parts of the data to different locations, or to erase specified portions of the data. Editing of this type which allows the original data to be recovered is known as "non-destructive editing."

The recorder section of the VS-880 has 8 tracks for recording and playing back sound. Each of these tracks has 8 more tracks, each of which can contain recorded sound. This means that you can record your song using up to 64 tracks (8 x 8). The 8 tracks associated with each of the 8 record/playback tracks are called "V-tracks."

For playback, you can specify the V-track that will be played by each track. Up to 8 tracks can be played back simultaneously. On the VS-880, an entire set of these 64 tracks used in a composition is called a "song."



Digital mixer

The digital mixer specifies the input/output status of the recorder section.

As external inputs, the VS-880 provides four analog input jacks and 1 digital in connector. As external outputs, two master out jacks and two AUX send jacks are provided. You can freely specify which external input will be recorded on which track, and output from which output jack.

The way in which the digital mixer functions is selected by the mixer mode. The available mixer modes can be broadly divided into two types, based on their internal structure. One of these is further divided into another two, because of differences in the panel controls.

- INPUT → TRACK mode
- INPUT MIX mode and TRACK MIX mode

< Tracks, channels, and sources >

In this manual, the terms "tracks," "channels" and "sources" appear frequently. Here are definitions of what is meant by these terms. As you read, be aware of the meaning behind each term.

Track: A location in the recorder where signals are recorded.

Channel: A pathway for external input signals or signals that have been recorded on a track of the recorder section.

Source: An external signal input to the mixer section, or a signal recorded in the recorder section.

< Switching mixer modes >

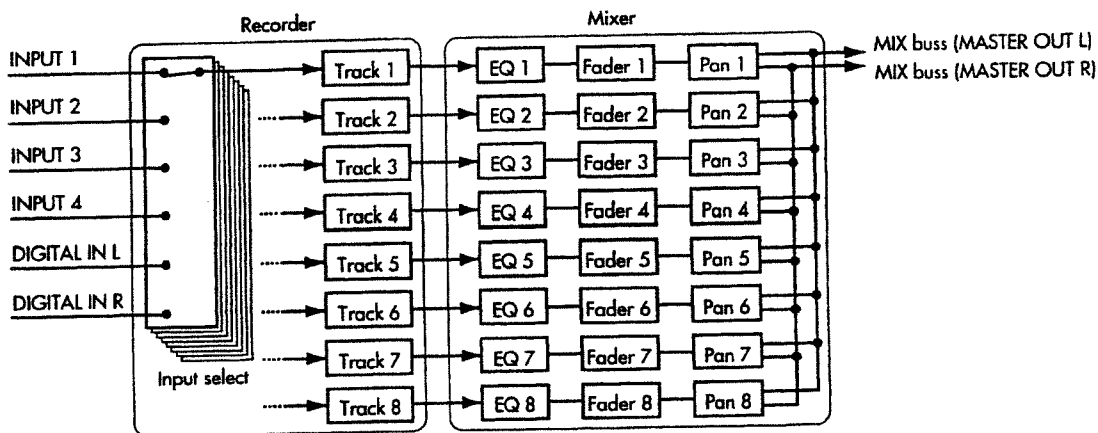
To switch mixer modes, use the MIXER MODE "SELECT" button. The current mixer mode is shown by the indicators located at the right of the button.

To switch from INPUT → TRACK mode to INPUT MIX mode or TRACK MIX mode, hold down [SHIFT] and press [SELECT]. If you once again hold down [SHIFT] and press [SELECT], you will return to INPUT → TRACK mode. INPUT MIX mode and TRACK MIX mode will alternate each time you press [SELECT].

■ INPUT → TRACK mode

In this mixer mode, the tracks (1–8) of the recorder section and the channels (1–8) of the mixer section are in a one-to-one correspondence. Each input source will be input directly to the corresponding track, so the final balance between the tracks can be adjusted when you mixdown to a master tape. This is the mode that you will normally use, for example when you wish to record simply, or to record musical ideas or phrases that occur to you.

The following diagram shows the basic structure of INPUT → TRACK mode. For details refer to the “Block diagram” (p.95).



Input

The input source can be selected independently for each track. Also, though it is not shown in the above diagram, you can specify the MIX buss as an input source. This allows you to merge the playback of two or more tracks and re-record it on a single track (“track bouncing”).

Equalizer

The equalizer (EQ) provided for each channel is a three-band parametric equalizer with high (shelving type), middle (peaking type), and low (shelving type) bands. If you do not wish to use an equalizer it can be switched off.

Output

The signals from each channel pass through the MIX buss and are combined into a stereo signal, and then output from the MASTER OUT jack. The same signal is also output from the PHONE jack and the DIGITAL OUT connector.

You can also make settings so that the signal from each channel is output from the AUX SEND jacks, allowing these jacks to be used as effect send jacks for connection to external effect units. In addition, by making settings so that separate signals are output from the MASTER OUT jacks and the AUX SEND jacks, you can use four-channel output.

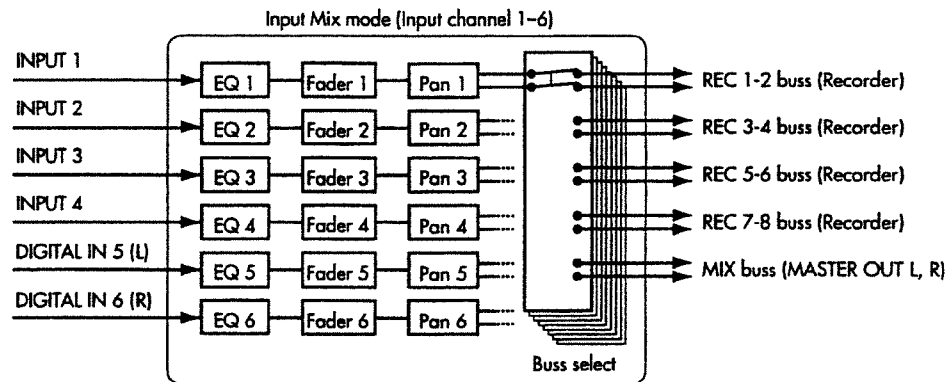
■ INPUT MIX mode and TRACK MIX mode

In these two mixer modes, the external input sources (6 sources) and recorder tracks 1–8 can be mixed separately. Channels which are controlling external input sources are referred to as “input channels,” and channels which are controlling recorder tracks are referred to as “track channels.”

However since the VS-880 is not able to control all of these channels simultaneously, you will need to switch the operation of the mixer back and forth. When using the mixer to control external input sources, switch to INPUT MIX mode. To control recorder tracks, switch to TRACK MIX mode.

Use these mixer modes when you wish to mixdown 8 recorder tracks together with external input sources, or when you wish to record the input sources onto the tracks with the balance settings (equalizer, volume, pan) that you have made for them.

The following diagram shows the simplified structure of INPUT MIX mode and TRACK MIX mode. For details, refer to “Block Diagram” (p.95).

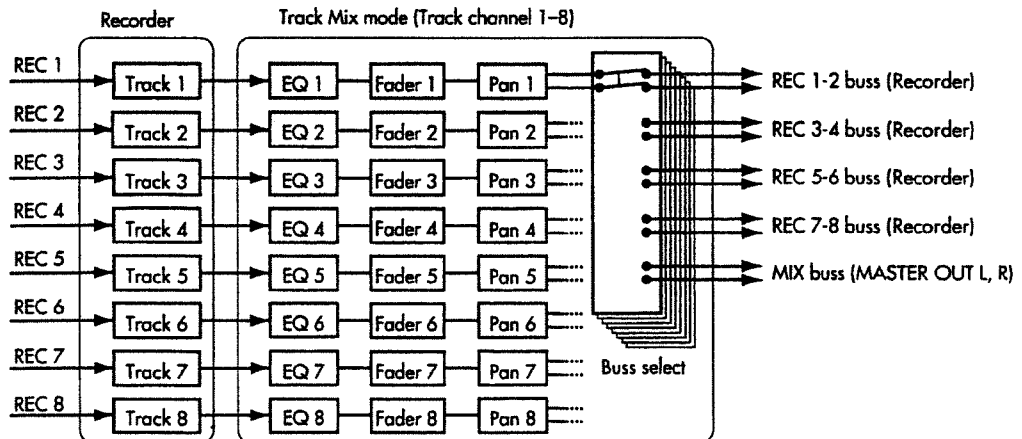


Input channels

The external input source controlled by each input channel 1–6 is fixed; channel 1 controls INPUT 1, channel 2 controls INPUT 2, etc. Input channels 5 and 6 correspond to DIGITAL IN (5, 6). Since input channels 7 and 8 do not exist, operating mixer channels 7 or 8 will not do anything.

When recording an external input source into the recorder, select the REC buss of the recording destination track. When you wish to mix the performance being recorded into the recorder with an external input source, select the MIX buss so that the sound will be sent from the MASTER OUT jacks.

The equalizer (EQ) of each channel will operate as a two-band parametric equalizer with high (shelving type) and low (shelving type) bands. Unlike INPUT → TRACK mode, the mid (peaking type) band of the parametric equalizer cannot be used.



Track channels

The track controlled by each track channel 1-8 is fixed; channel 1 controls track 1, channel 2 controls track 2, etc.

The equalizer (EQ) of each channel will operate as a two-band parametric equalizer with high (shelving type) and low (shelving type) bands. Unlike INPUT → TRACK mode, the mid (peaking type) band of the parametric equalizer cannot be used.

The signals of the track channels will be combined into a stereo signal via the MIX buss, and output from the MASTER OUT jacks.

Also, you can specify any of the REC busses as the output destination of the track signals. This allows you to merge two or more tracks and re-record the result into a different track (track bouncing).

Output

The signals of each channel for which the MIX buss is selected will be combined into a stereo signal and output from the MASTER OUT jack. The same signal will also be sent from the PHONES jack and from the DIGITAL OUT connector.

Since you can also make settings so that the signal of a channel is output from the AUX SEND jacks, you can use them as effect send jacks for connection to an external effect device. In addition, you also have the possibility of using 4-channel output, by outputting separate signals from the MASTER OUT jacks and the AUX SEND jacks.

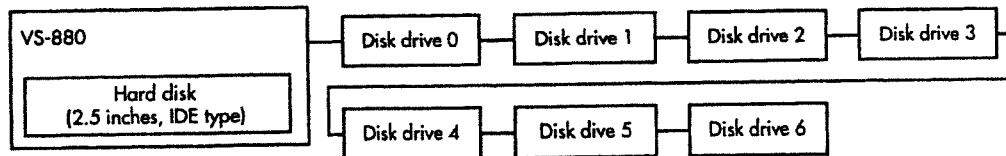
Data management

This section explains how the VS-880 uses disk drives, and how song data is handled.

■ Disk drives

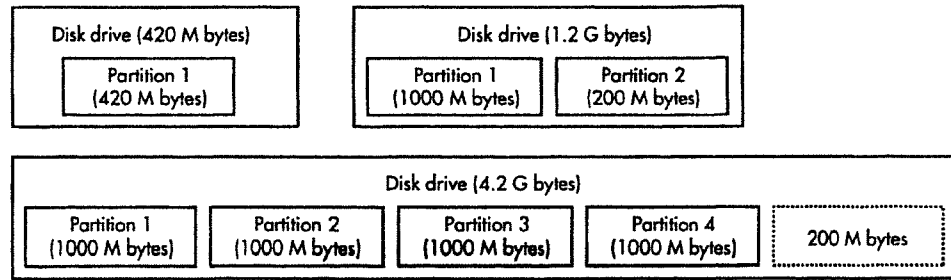
One IDE-type hard disk (2.5 inch size) can be installed inside the VS-880, and up to 7 disk drives can be connected to the SCSI connector.

The VS-880 and the external disk drives are identified by SCSI ID numbers (0-7). This means that if two or more SCSI devices are connected, you must make sure that the SCSI ID number of each device is set to avoid conflicting with another device. If the SCSI ID numbers conflict, the VS-880 will not be able to correctly recognize the disk drives. With the factory settings, the VS-880's SCSI ID number is set to 7.



The VS-880 is able to manage either 500 M bytes or 1000 M bytes (1 G bytes) of disk space at one time. If you use a disk drive that is larger than this, the disk must be partitioned into 500 M bytes / 1000 M bytes partitions. (A partition is a way of dividing a disk into separate areas.) Unless you have a special reason to divide a disk into smaller areas, you should use 1000 M bytes partitions. The VS-880 can divide a disk drive into up to 4 partitions.

- If a 420 M bytes disk drive is partitioned with a 500 M bytes partition, a single 420 M bytes partition will be created.
- If a 1.2 G bytes disk drive is partitioned with 1000 M bytes partitions, a 1000 M bytes partition and a 200 M bytes partition will be created.
- If a 4.2 G bytes disk drive is partitioned with 1000 M bytes partitions, four 1000 M bytes partitions will be created. The remaining 200 M bytes cannot be used.



In this way, each partition of a disk drive is handled by the VS-880 as a separate disk drive. When using the VS-880, you must specify which partition of which disk drive is to be used. The currently used partition is referred to as the "current drive."

■ Song data

Song data includes the following data. Up to 200 songs can be stored in each partition of a disk drive.

- Playback data of all V-tracks
- MIDI clocks of the sync track
- Points specified for the song (marker points, locate points, loop points, auto punch-in/punch-out points)
- Scene memory (mixer settings)
- Vari-pitch settings
- System settings (system, MIDI, disk, sync, scene)
- Effect 1/2 settings (if the VS8F-1 effect expansion board is installed)

Operating the VS-880

This section explains how operations on the VS-880 are organized, basic operation, and the main operations in Play condition.

■ Operational modes (Condition)

The VS-880 provides many functions, and these functions are grouped into "Conditions." In order to perform an operation, you must select the condition in which the desired operation is found. The VS-880 has the following eight conditions.

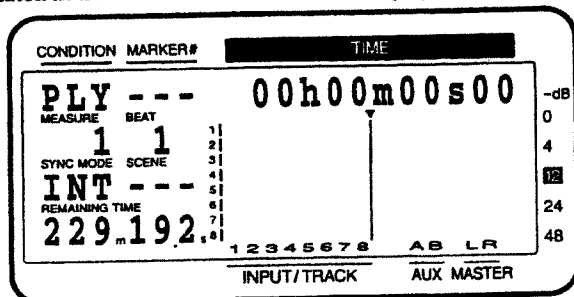
- **Play condition:** Here you can perform normal playback/recording. Each time the power is turned on, the VS-880 will be in Play condition.
- **Channel Edit condition:** Here you can set the status of each mixer channel, select input sources, switch V-tracks, and make equalizer settings, etc.
- **Master Block Edit condition:** Here you can make settings for the master section of the mixer, such as master level and AUX send level.
- **Song Edit condition:** Here you can perform song-related operations, such as naming a song, switching songs, and creating a new song.
- **Locator Edit condition:** Here you can modify the times of the various points specified in a song, such as locate points and mark points.
- **Track Edit condition:** Here you can edit the playback data recorded in a track, for example by copying data between tracks or erasing it.
- **Effect Edit condition:** Here you can make effect settings. This condition can be selected only if the VS8F-1 effect expansion board (sold separately) is installed.
- **System Edit condition:** Here you can make settings that affect the entire VS-880, such as disk drive settings and settings related to MIDI synchronization.

■ Basic operation

This section explains basic operation of the VS-880. Please be sure to read this section, so that you will understand each type of operation.

Selecting a condition

To select an edit condition, press the button for the desired condition. The selected condition will be indicated in the CONDITION field of the display. To return to Play condition, press [PLAY (DISPLAY)].



Button	Condition	Display
[CH EDIT] for each channel	Channel Edit	CH (n) (INPUT → TRACK mode) IN (n) (INPUT MIX mode) TR (n) (TRACK MIX mode)
master section [EDIT]	Master Block Edit	MST
[SONG]	Song Edit	SNG
[LOCATOR]	Locator Edit	LOC
[TRACK]	Track Edit	TRK
[EFFECT]	Effect Edit	EFF
[SYSTEM]	System Edit	SYS

* For Channel Edit condition, the channel numbers (n) will be displayed as 1-8 if Channel Link is off, and as a-d if Channel Link is on. Channel Link is a function that makes it easier to control adjacent channels as a stereo source (p.36).

Selecting from the operation menu

If Song Edit, Track Edit, or System Edit conditions are selected, messages ended by a question mark such as "SYS System PRM?" will appear. This indicates the operation menu. Use PARAMETER [◀◀] [▶▶] to select the operation menu, and press [YES] to finalize. When you press [YES], the parameters which can be set from that menu will appear.

If System Condition is selected, there will be cases in which parameters are displayed directly, without an operation menu being displayed. This is so that the previously selected parameter can be selected. To return to the menu, press [SYSTEM] once again.

Selecting parameters

Use PARAMETER [◀◀] [▶▶] to select the parameter that you wish to change. If two or more parameters are displayed simultaneously, use CURSOR [◀] [▶] to make the value of the desired parameter blink.

Modifying a value

When the value that you wish to modify is blinking, use the TIME/VALUE dial to modify the value. Rotating the dial to the left will decrease the value, and rotating it to the right will increase the value. If you rotate the TIME/VALUE dial while holding down [SHIFT], the value will increase or decrease at ten times the normal rate.

You can use the ten buttons of the LOCATOR group as numeric keys to directly specify a value. When the [NUMERICS] button is pressed to make the indicator light, the ten LOCATOR buttons will enter the numerals printed on each button. For example if you wish to specify the value "10," press the buttons in the order of [1 (PREVIOUS)], [0 (CLEAR)], then [ENTER (YES)]. To input a negative (-) value, press [0 (CLEAR)] twice before entering the number. To return the ten LOCATOR buttons to their normal function, press [NUMERICS] once again to make the button indicator go dark.

Executing an operation

To execute an operation such as switching songs or copying a track, use the following procedure.

In Song Edit condition, make settings for each parameter and press [YES]. A message will ask you to confirm execution. To execute, respond by pressing [YES]. To cancel, press [NO].

In Track Edit condition, make settings for each parameter in order, and at the end a message will ask you to confirm execution. To execute, press [YES]. To cancel, press [NO].

For some operations, an additional message will ask for confirmation. In this case, press [YES] again to execute. A second confirmation message will appear for operations which cannot be undone using the Undo function (p.40).

■ Switching the Mixer Mode

The current mixer mode is shown by the indicator located at the right of MIXER MODE [SELECT]. Use the following procedure to switch the mixer mode. The reason that this procedure is required is to prevent you from accidentally selecting a mixer mode that radically changes the internal structure of the mixer.

To switch from INPUT → TRACK mode to INPUT MIX mode or TRACK MIX mode, hold down [SHIFT] and press [SELECT]. If you once again hold down [SHIFT] and press [SELECT], you will return to INPUT → TRACK mode. INPUT MIX mode and TRACK MIX mode will alternate each time the [SELECT] button is pressed.

■ Switching the Track Status

The status of each track (track status) is shown by the button indicators. The track status can be switched by the [STATUS] button of each channel. To switch directly to REC track status, hold down [REC] and press [STATUS]. To switch directly to PLAY track status, hold down [STOP] and press [STATUS]. The track status can be switched regardless of the mixer mode you are in.

SOURCE (orange): The specified input source can be monitored.

REC (blinking red): Recording is selected for the track.

PLAY (green): The track will playback.

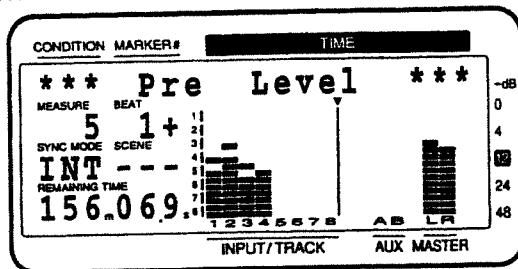
MUTE (dark): The track is muted (silent).

* The VS-880 can record up to 4 tracks simultaneously. This means that it is not possible to select a track status of REC for five or more tracks.

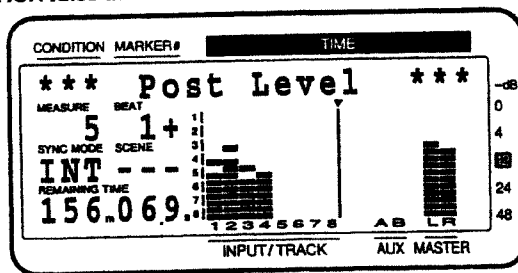
■ Switching the bar display

In Play condition, you can hold down [SHIFT] and press [DISPLAY (PLAY)] to switch the contents of the bar display. In Edit condition, the contents of the display will change depending on the selected parameter or operation.

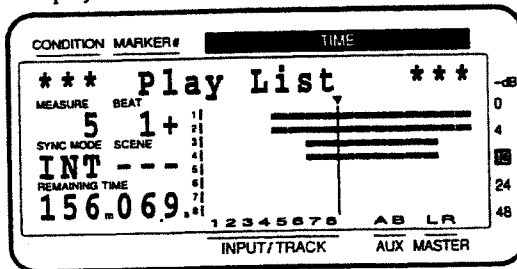
- **Pre Level:** The volume of each channel before passing through the channel faders will be displayed. The AUX and MASTER fields indicate the respective volume levels of the signal after passing through the AUX knob and the master fader.



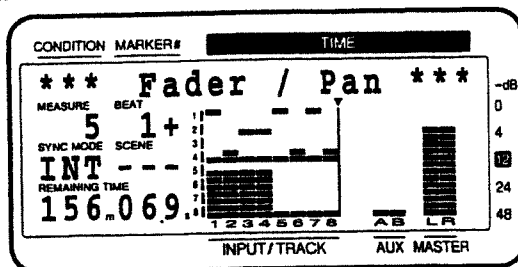
- **Post Level:** The volume of each channel after passing through the channel faders will be displayed. The AUX and MASTER fields indicate the respective volume levels of the signal after passing through the AUX knob and the master fader.



- **Play List:** The way in which sound is recorded in the various tracks before and after the current time will be displayed.



- **Fader/Pan:** The settings of the master fader and the PAN knob and fader of each channel will be displayed. If the displayed location of the PAN knobs or faders is different than the actual location (as when the mixer mode has been switched), the current location of the PAN knob or fader will blink.



■ Moving the current time

The current time can be moved in the following ways.

< Current time display >

The current time shown in the display is MTC (MIDI Time Code), and is shown in the format “** hours ** minutes ** seconds ** frames.” This corresponds to SMPTE time code as well. SMPTE time code is a standard created by SMPTE (Society of Motion Picture and Television Engineers) in the United States, and is used to indicate each frame of a video image. SMPTE time code is used in video editing, etc.

The type of time code that is used differs between devices. If you use MTC to synchronize the VS-880 with another device, you will have to set both devices to the same type of time code. With the factory settings, the VS-880 is set to 30 frames (non-drop) per second (p.75).

Moving to the earliest recorded sound (Song Top)

To move to the earliest location in the song that contains recorded sound, use the following procedure.

1. Hold down [SHIFT] and press [SONG TOP (REW)]. The V-track selected for each track will be checked, and you will move to the location that contains the first sound recorded in the song.

Moving to the last recorded sound (Song End)

To move to the last location in the song that contains recorded sound, use the following procedure.

1. Hold down [SHIFT] and press [SONG END (FF)]. The V-track selected for each track will be checked, and you will move to the location that contains the last sound recorded in the song.

Moving by frames

- To move in steps of 1 frame, rotate the TIME/VALUE dial.
- To move in steps of 10 frames, hold down [SHIFT] and rotate the TIME/VALUE dial.
- To move in steps of approximately 1/10 frame, press CURSOR [▶] and then rotate the TIME/VALUE dial. When you press CURSOR [▶], an arrow “←” will appear at the beginning of the displayed time code, and the frame number display will change to a sub-frame number display (approximately 1/100 frame). To return to the frame display, press CURSOR [◀] once.
- To move in steps of approximately 1/100 frame, press CURSOR [▶] and then hold down [SHIFT] and rotate the TIME/VALUE dial.

Moving by measure/beat

The MEASURE field in the display will indicate the measure number of the current location, and the BEAT field will indicate the beat number of the current location. With the factory settings, these values will be calculated for a tempo of 120 (quarter notes per minute) and a time signature of 4/4. For details on setting the measure and beat, and how they correspond to the song, refer to “Using the metronome” (p.34).

1. Select the value that you wish to change.
To move in steps of a measure, use CURSOR [◀|▶] to make the number in the MEASURE field blink.
To move in steps of a beat, make the number in the BEAT field blink.
2. Change the value.
Use the TIME/VALUE dial to select the measure number or beat number to which you want to move. To return to using the TIME/VALUE dial to move in steps of a frame, press CURSOR [▶] several times to make the display stop blinking.

■ Saving song data (Song store)

Song data that you recorded or edited will be lost if you simply turn the power off. You must be sure to use the Shutdown procedure before turning the power off, so that the data will be saved onto the disk drive. When you switch songs or change the current drive, song data will be saved automatically.

If you wish to save the currently selected song data to a disk drive separately from these operations, use the following procedure.

* It is not possible to recover lost song data. When handling important song data, or when using the VS-880 for an extended session, we recommend that you save song data frequently.

1. Hold down [SHIFT] and press [STORE (ZERO)].
2. A message will ask "STORE OK?" If you wish to store the song data, press [YES]. When the song has been stored, you will return to the previous condition.

■ If the display asks "STORE Current?"

When you execute an operation such as creating a new song, selecting a different song, or song copy on the VS-880, a confirmation message of "STORE Current?" will appear. This is asking you whether you wish to store the currently selected song to the disk drive.

If you wish to store the currently selected song and then execute the operation, press [YES]. If you wish to execute the operation without saving the current song, press [NO].

If the Song Protect setting of the song is ON, pressing [YES] will cause a message of "Song Protected" to be displayed briefly. Then, without executing the operation, the VS-880 will return to the status it was in before execution was attempted. Song Protect is a setting which can be made for each song, to prevent accidental rewriting of a song stored on the disk drive.

If you wish to execute the operation without saving the currently selected song, repeat the procedure once again, and press [NO] in reply to the "STORE Current?" message. If you wish to save the currently selected song and then execute the operation, turn Song Protect OFF (p.60). Then, repeat the procedure once again, and press [YES] in reply to the "STORE Current?" message.

■ Re-starting the VS-880

To restart the VS-880 without turning off the power, use the following procedure.

1. Execute the shut-down procedure.
2. The display will indicate "PowerOFF/RESTART," so hold down [SHIFT] and press [RESTART (PLAY)].

Chapter 3: Various procedures

This chapter explains various things which will be useful to know as you operate the VS-880. Read this chapter as necessary.

Recording digital audio signals

In order to record the output of a digital audio device such as a CD player, DAT recorder, MD recorder, or DCC recorder directly into the VS-880 as a digital audio signal, you must make the appropriate settings. There are also several points which you must be aware of. This section explains the process from the preparations for recording a digital audio signal to specifying the digital audio signal as the input source. The rest of the recording procedure is the same as when recording an analog signal, and will be omitted from the explanation.

- * The digital interface of the VS-880 conforms to S/P DIF. If you wish to record a digital signal, use a digital audio device that is compatible with these standards.

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.

The VS-880 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. Roland will take no responsibility for any infringement of copyright that you may commit in using the VS-880.

< About 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

Connecting a digital audio device

Use a RCA phono type coaxial cable to connect the DIGITAL IN connector of the VS-880 to the digital output connector (coaxial) of your digital audio device.

Match the sample rate

In order to record a digital audio signal, the sample rate of the song must be set to match the sample rate of the input source. The song created when a disk drive is initialized will have a sample rate of 44.1 kHz. If the sample rate of the input source is other than 44.1 kHz, create a new song with that sample rate (p.42).

Turn off the Vari-pitch function

The VS-880 has a Vari-pitch function (p.37) that allows you to change the playback pitch of the song. Although the audible result is that the pitch is being changed, in actuality, the sample rate is being modified. This means that if you are using the Vari-pitch function, the sample rate will not match the input source, and digital signals cannot be recorded. Before recording, make sure that the VARI PITCH indicator is dark. If it is lit, press [VARI PITCH].

Set the master clock for the sample rate

If you wish to record a digital signal, make the following setting so that the sample rate of the incoming digital audio signal will determine the sample rate of the VS-880's master clock.

- * With this setting, the VS-880 will not operate in the following situations; if no external digital device is connected, or if the external digital audio device is turned off, or if the sample rate of the external digital audio device is different than the VS-880's song. If you are not recording from an external digital audio device, set this to "INT".

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.

2. Use PARAMETER [◀◀][▶▶] to get the "SYS System PRM?" display, and press [YES].

3. Press PARAMETER [◀◀] to get the "SYS MasterClk=" display, and use the TIME/VALUE dial to select "DIGITAL."

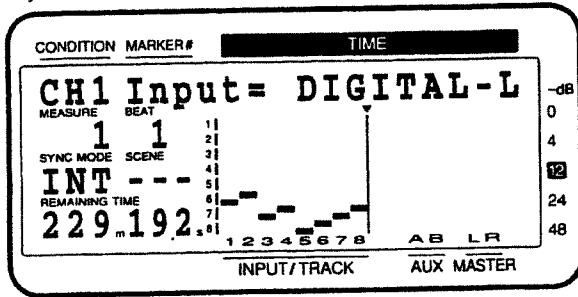
- * If the display indicates "Digital In UnLock," a digital audio signal is not being sent from the external digital audio device, or the sample rate of the external digital audio device differs from the sample rate of the song. Determine the reason for this display and take the appropriate action.

4. Press [PLAY (DISPLAY)] to return to Play condition.

Select an input source

Here we will explain how to select an input source, using the example of recording a digital signal on tracks 1/2.

1. Specify the DIGITAL IN connector as the input source. For track 1, press channel 1 [CH EDIT] and then use PARAMETER [◀|▶] to get the "CH1 Input=" display. Use the TIME/VALUE dial to select "DIGITAL-L." In the same way, select "DIGITAL-R" for track 2.



Using the metronome

No matter how accurately one tries to play, listening to the recording play back sometimes reveals inaccuracies in rhythm or tempo. The VS-880 provides a metronome (click) that can be sounded at a specified tempo. By listening to the metronome as you play your instrument, you will be able to record a more accurate performance.

When using the metronome, you will need to set the tempo and time signature. For a newly created song, the time signature is 4/4 and the tempo is 120 quarter notes per minute. By making the appropriate settings, you can change this tempo/time signature or make the tempo change mid-way through the song.

This tempo setting will also be the basis for the measure number and beat number that appears in the display. If you first set the tempo for a song before you start recording, and then use the metronome as you record, you will be able to view and move the current time location as measures and beats. Also, you will be able to use measure numbers to specify the area for song editing, so that you can edit the song in a more musical way.

< Using the metronome during recording >

The metronome will begin sounding when recording or playback begins. However you may sometimes wish to hear a count-in on the metronome to help you catch the tempo before recording begins. In such cases, you can set aside the first few measures of the recording to be only for the count-in, and not record on those measures.

The metronome sound is only for the purpose of helping you keep your playing in time, and will not be recorded with the sound of your instrument.

Sounding the metronome

Here's how to specify how the metronome will sound.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.

2. Use PARAMETER [◀|▶] to get the "SYS System PRM?" display, and press [YES].

3. Use PARAMETER [◀|▶] to access the following parameters, and use the TIME/VALUE dial to set each parameter.

MetroOut: Select "INT" so that the metronome sound will be output from the MASTER OUT jacks.

MetroLevel: Adjust the volume level of the metronome sound.

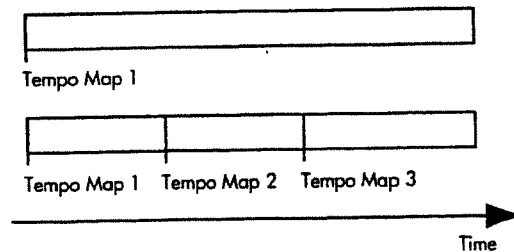
MetroMode: If you want the metronome to sound only during recording, select "RecOnly." If you want it to sound during both recording and playback, select "Rec&Play."

4. This completes the metronome settings. Press [PLAY (DISPLAY)] to return to Play condition.

Changing the tempo (Tempo Map)

The tempo of a song is determined by the "Tempo Map." The tempo map lets you specify changes in tempo for each measure. Starting at the specified measure, it changes to a given tempo at the given beat. Tempo maps are numbered sequentially from the beginning of the song as tempo map 1, tempo map 2, and tempo map 3, etc.

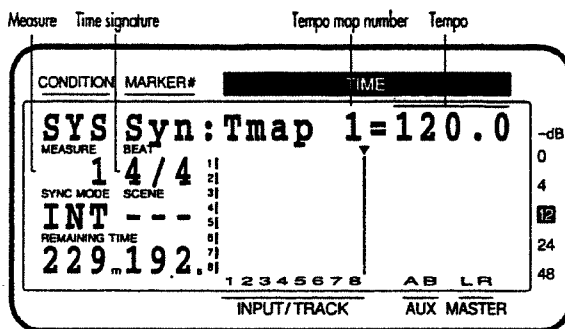
Tempo map 1 is already specified at the beginning of the song, and determines the initial tempo of the song. To change the tempo at a subsequent measure, create a new tempo map at each location where you want the tempo to change. Up to 50 tempo maps can be created.



Changing the initial tempo of the song

To change the initial tempo of the song, use the following procedure to change the setting of tempo map 1.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀][▶] to get the "SYS Sync/tempo?" display, and press [YES].
3. Use PARAMETER [◀][▶] to make the display read "SYS Syn: Tmap1=120." The display below means that tempo map 1 starts at measure 1, and specifies a time signature of 4/4 and a tempo of 120 quarter notes per minute.



4. Set the tempo and time signature. Each time you press CURSOR [▶], the blinking area will step through the tempo map number, tempo, starting measure, and time signature. Move the blinking area to the value that you wish to change, and use the TIME/VALUE dial to modify the value. (It is not possible to change the starting measure of tempo map 1.) When you press CURSOR [◀], the tempo map number will blink.
5. Press [PLAY (DISPLAY)] to return to Play condition.

Changing the tempo from a later measure

To change the tempo from a measure mid-way in the song, use the following procedure to create a new tempo map. Tempo maps are numbered in sequence from the beginning of the song; tempo map 1, tempo map 2, tempo map 3, etc. This means that tempo map settings must be made in the order that the tempo will change. Also, it is not possible to specify a starting measure that is located earlier than the starting measure of a previously created tempo map.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀][▶] to get the "SYS Sync/tempo?" display, and press [YES].
3. Use PARAMETER [◀][▶] to get the "SYS Syn: Tmap1=" display.

4. Create tempo map 2.

With the tempo map number blinking, rotate the TIME/VALUE dial to the right to select "SYS Syn: Tmap2=<New>" and then press [YES] to create tempo map 2. The tempo and time signature of tempo map 2 will be the same as for tempo map 1, and the starting measure will be the measure following the starting measure of tempo map 1. Press CURSOR [▶] to make the blinking area to the parameter (tempo, starting measure, time signature) that you wish to change, and use the TIME/VALUE dial to change the value.

5. Tempo map 2 has now been created. If you wish to continue and make settings for tempo map 3, move the blinking area to the tempo map number and repeat step 4.

6. When you finish making settings, press CURSOR [◀] to make the tempo map number blink, and press [PLAY (DISPLAY)] to return to play condition.

Modifying tempo map settings

To modify tempo map settings, use the following procedure.

< Limitations on changing the starting measure >

Tempo maps are numbered from the beginning of the song as tempo map 1, tempo map 2, tempo map 3, etc. This means that it is not possible to modify the starting measure of a tempo map to make it earlier than the starting measure of the previous tempo map, or later than the starting measure of the following tempo map. For example if tempo map 2 has a starting measure of "8" and tempo map 4 has a starting measure of "16," the starting measure of tempo map 3 can be modified only in the range of "9-15."

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀][▶] to get the "SYS Sync/tempo?" display, and press [YES].
3. Use PARAMETER [◀][▶] to get the "SYS Syn: Tmap1=" display, and use the TIME/VALUE dial to select the tempo map that you wish to change.
4. Press CURSOR [▶] to make the blinking area to the item (tempo, starting measure, time signature) that you wish to change, and use the TIME/VALUE dial to modify the value.
 - * Since tempo map 1 is the initial tempo of the song, it is not possible to modify the starting measure setting of "1."
5. When you finish making settings, press CURSOR [◀] to make the tempo map number blink, and press [PLAY (DISPLAY)] to return to Play condition.

Deleting a tempo map

To delete a tempo map that is no longer needed, use the following procedure. If tempo maps exist following the tempo map that was deleted, their tempo map number will be incremented forward by 1.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀◀][▶▶] to get the "SYS Sync/tempo?" display, and press [YES].
3. Use PARAMETER [◀◀][▶▶] to get the "SYS Syn: Tmap1=" display.
4. Delete the tempo map.
Use the TIME/VALUE dial to select the tempo map that you wish to delete, and press [CANCEL (◀)]. However, since tempo map 1 is the initial tempo of the song, it cannot be deleted.
5. Press [PLAY (DISPLAY)] to return to Play condition.

Using the mixer to control a stereo source (Channel Link)

When recording or playing back a stereo source, normal mixer operation requires you to control the left and right channels separately. This makes it inconvenient to control the left/right volume balance or equalizer settings. In such cases, turn on the Channel Link function so that a pair of channels can be controlled in stereo.

When Channel Link is on, odd- and even-numbered adjacent channels will be paired as shown below, and the settings of each odd-numbered channel will be the same as the settings of the corresponding even-numbered channel. When the settings of one channel are modified, the settings of the paired channel will change in the same way.

- Channel 1: stereo a (left)
- Channel 2: stereo a (right)
- Channel 3: stereo b (left)
- Channel 4: stereo b (right)
- Channel 5: stereo c (left)
- Channel 6: stereo c (right)
- Channel 7: stereo d (left)
- Channel 8: stereo d (right)

The PAN knob and faders of each channel will function as follows.

Odd-numbered channel faders: will adjust the volume level of the stereo signal output to the MIX buss or the REC buss.

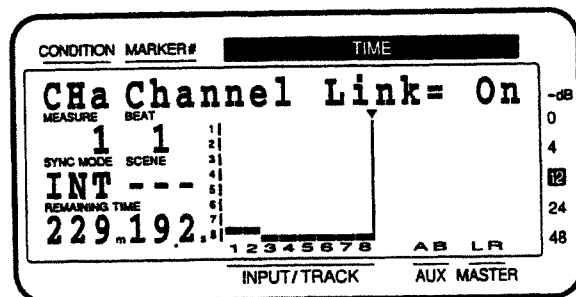
Odd-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the MIX buss or the REC buss.

Even-numbered channel faders: will adjust the volume level of the stereo signal output to the AUX buss (A, B).

Even-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the AUX buss (A, B).

To turn on Channel Link, use the following procedure.

1. Press [CH EDIT] for one of the channels for which you want to turn on Channel Link.
2. Press PARAMETER [▶▶] to get the "Channel Link=" display, and use the TIME/VALUE dial to turn it "On." In the bar display, the channels for which Channel Link was turned on will blink.



3. Press [PLAY (DISPLAY)] to return to Play condition.

Monitoring a specific channel (Solo)

When making equalizer adjustments or during mixdown, it is often convenient to be able to monitor just the sound of a specific channel. Although it would be possible to individually mute each of the channels that you didn't want to hear, this is inconvenient. In such cases, you can use the Solo function to monitor only a specific channel and mute all the other channels.

To use the Solo function, use the following procedure.

1. On the channel that you wish to monitor, press [STATUS] to select the signal that you wish to monitor; either the input source or the track.
2. Hold down [SHIFT] and press [SOLO (EDIT)] in the master section. The display will briefly indicate "SOLO Mode ON," indicating that the Solo function is on. The display in the CONDITION field will alternate between the name of the current condition and "sol," also indicating that the Solo function is on.
3. Press [STATUS] for the channel that you wish to monitor, and only that channel will be monitored. The STATUS indicator will light green if you are monitoring the recorder, or blink orange if you are monitoring the input source. At this time you can make adjustments to the channel fader, pan, and equalizer. Monitor and Mute will alternate each time you press [STATUS], allowing you to monitor two or more channels. Channels which were muted before the Solo function was turned on cannot be monitored even if their [STATUS] button is pressed. Also, when you are monitoring just one channel, pressing the [STATUS] button of that channel will let you monitor all channels.
4. To turn off the Solo function, hold down [SHIFT] and press the [SOLO (EDIT)] button of the master section once again. The display will briefly indicate "EXIT SOLO Mode," and the Solo function will be turned off.

* If you begin punch-in recording when Solo is on, Solo will automatically be turned off.

Changing the playback pitch of a song (Vari-pitch)

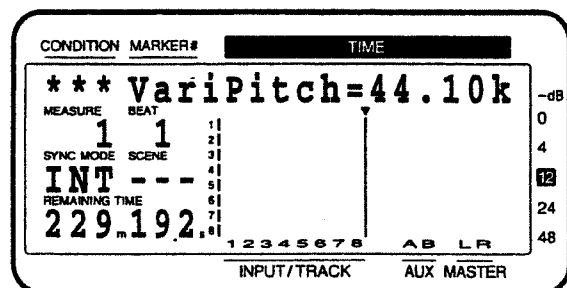
When recording an ensemble, all the instruments normally tune to an instrument such as an acoustic piano whose tuning cannot easily be changed. However it is sometimes necessary to record (overdub) an acoustic piano onto an existing recording. In this case if the pitch of the recording is different than the pitch of the acoustic piano, something must be done about it.

In such cases, use the Vari-pitch function. Vari-pitch changes the playback speed of the recorder. When the playback speed changes, the pitch of the playback will also change. In this way, by changing the playback speed, you can make the pitch of the recording match the pitch of the instrument to be newly recorded. Vari-pitch can be used not only to compensate for pitch differences, but also creatively to produce special effects.

If you wish to use the Vari-pitch function, use the following procedure to set the pitch.

* The audible result of Vari-pitch is a change in playback speed, but in actuality the sample rate is being modified. This means that when recording a digital signal into the VS-880 or when recording the digital output of the VS-880 into another device, you must return Vari-pitch to the normal pitch. Recording will not be possible with settings other than normal pitch.

1. Press [VARI PITCH] to make the button indicator light. When the button indicator is lit, the playback pitch will change in accordance with the Vari-pitch setting. Since Vari-pitch is initially set to normal pitch, the playback pitch will not change yet.
2. To modify the Vari-pitch setting, hold down [SHIFT] and press [VARI PITCH]. The display will indicate the current Vari-pitch setting (sample rate). While playing back the song to check the actual pitch, use the TIME/VALUE dial to modify the setting.



3. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition. You can also return to Play condition by holding down [SHIFT] and pressing [VARI PITCH] once again.

4. Now when you press [VARI PITCH] to make the indicator light, playback will occur at the specified pitch.

Storing mixer settings (Scene)

Up to 8 sets of mixer settings can be stored for each song. A stored set of mixer settings is called a "scene," and can be recalled at the touch of a button. For example if during mix-down you wish to compare different mixing balances, you can store each different mixer setting as a scene.

Storing the current mixer settings

1. Press [SCENE] to make the button indicator light. When the SCENE indicator is lit, the [LOC 1/5]–[LOC 4/8] LOC buttons will act to store or recall scenes. The bar display will indicate the current settings of the mixer.
2. Store the current mixer settings as a scene. To store the settings to a scene 1–4, press a button [LOC 1/5]–[LOC 4/8]. To store the settings to a scene 5–8, hold down [SHIFT] and press a button [LOC 1/5]–[LOC 4/8]. When the mixer settings have been stored, the button indicator will light.
3. When you finish storing the scene, press [SCENE] once again to turn off the button indicator.

< About the display >

The SCENE field in the display indicates the currently selected scene number. If an asterisk "*" appears at the beginning of the scene number, this indicates that the current mixer settings differ from the scene settings. I.e., after recalling the scene, the faders or PAN knobs etc. have been moved to change the mixer settings.

Recalling a scene

- * Before selecting a scene, you must stop song recording/playback. It is not possible to select a scene during recording/playback.
1. Press [SCENE] to make the indicator light. When you press the button, the current settings of the faders and pan will appear in the bar display.
 2. Press a LOC button to specify the scene that you wish to recall.
 3. When the scene has been recalled, press [SCENE] to turn off the button indicator.

Recalling a scene without affecting the current fader values

When a scene is recalled, the fader values will change to the recalled settings, but the locations of the faders will not change. This means that the locations of the faders will not match their actual values. When the locations do not match the values, the bar display will blink to indicate the actual fader values.

If you want just the fader values to remain unchanged when you recall a scene, make the following settings.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀] [▶] to get the "SYS Scene Mode?" display, and press [YES].
3. In the "SYS Scene Mode=" display, use the TIME/VALUE dial to select "KeepF."
4. After making the setting, press [PLAY (DISPLAY)] to return to Play condition.

Clearing the settings of a scene

1. Press [SCENE] to make the button indicator light.
2. Clear the scene settings. While holding down [CLEAR], press the LOC button for the scene that you wish to clear. The settings will be cleared and the button indicator will go dark.
3. After the settings have been cleared, press [SCENE] to make the button indicator go dark.

Searching for a precise time (the Preview function)

When editing a song, you will often need to determine precise times such as where the sound begins, the beginning of a break, or the area for auto punch-in recording, etc. On the VS-880 you can use the Preview function to find precise time locations.

The Preview function has three buttons, each with a different operation. Use the one appropriate for your situation.

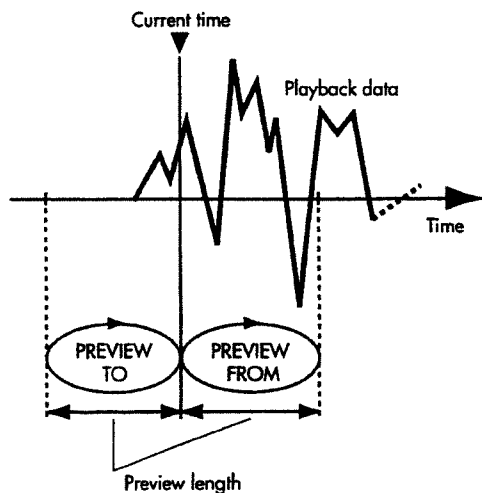
■ Using [TO] and [FROM]

The [TO] and [FROM] buttons let you playback a specified area of time (1.0–10.0 sec) before and after the current time. By using this function as you gradually move the area, you can accurately determine the desired time.

Each button performs the following function. The preview length is initially set to 1.0 seconds, but you may change this as necessary.

[TO]: The preview length length ending at the current time will playback once.

[FROM]: The preview length length beginning at the current time will playback once.



Finding the location where the sound begins (example)

1. Make settings so that the track(s) you wish to monitor will playback, start the song playing back, and stop at the time where the sound begins.
2. First press [TO] or [FROM] to playback the recorded before and after the current time, to determine whether the beginning of the sound is earlier or later than the current time. Next, move the current time until you can hear a bit of the beginning of the sound when you press [TO]. Finally, move the current time until the sound begins precisely when you press [FROM].

3. When you find the precise location where the sound begins, place a mark point at the current time or store the current time in a locate point so that you will be able to easily find it later.

Adjusting the preview length

1. Hold down [SHIFT] and press either [TO] or [FROM] to adjust the preview length. While pressing [TO] or [FROM] to check the actual playback time, use the TIME/VALUE dial to adjust the time.

2. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition.

■ Using [SCRUB]

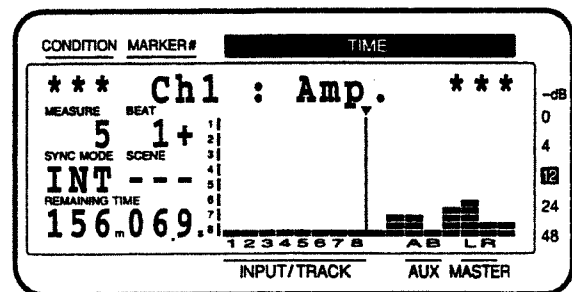
Press [SCRUB] when you wish to determine more accurately the location where sound begins.

Similarly to [TO] and [FROM], [SCRUB] lets you playback a specified area before and after the current time. To select whether the area before or the area after the current time will be played back, press [TO] or [FROM].

When you press [SCRUB] the button indicator will light, and the specified area will be played back repeatedly. When you are finished, press [SCRUB] once again to make the button indicator go dark.

Only the single track that is specified will be played back. If you wish to playback other tracks, press the [SEL (CH EDIT)] button of that track to select it. The playback time (25–100 msec) is shorter than when [TO] and [FROM] are used. The initial value of 45 msec, but you may change this as necessary.

The waveform of the sound being played back is displayed in the bar display, providing a visual check.



Finding the location where sound begins (example)

1. Press [SCRUB] to make the button indicator light, and the specified area will be played back repeatedly. To select whether the area before or the area after the current time will be played back, press [TO] or [FROM].
2. Use [SEL (CH EDIT)] to select the track that you wish to check.

3. If you are playing back the area before the current time, adjust the time so that you just miss hearing the sound. If you are playing back the area following the current time, adjust the time so that you hear the very beginning of the sound.

4. When you have found the precise location where the sound begins, press [SCRUB] once again to end the procedure. Also, place a mark point at the current time or store the current time in a locate point so that you will be able to easily find it later.

Adjusting the scrub length

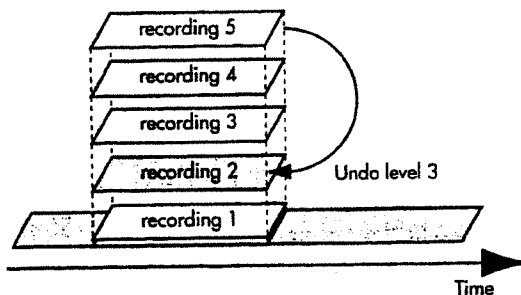
1. Hold down [SHIFT] and press [SCRUB], and you will be able to adjust the scrub length. Press [SCRUB] once again to hear the actual playback area, and use the TIME/VALUE dial to adjust the setting.

2. When you finish, press [PLAY (DISPLAY)] to return to Play condition.

Canceling recording/editing (the Undo/Redo function)

While using the VS-880, there may be times when a recording does not proceed as you wish, or when you would like to re-do an operation. In such cases, use the Undo function. The Undo function cancels the operation that you have performed, and returns the data to its previous condition. To cancel the last-performed Undo operation, you can use the Redo function.

When using the Undo function, you will specify the number of previous steps that will be undone. For example, suppose that you use punch-in recording to perform five consecutive re-recordings of the same location. If you later decide to return to the condition of the second recording (step 2), you would set the Undo function to return to the condition of three steps earlier (Undo Level 3).



If, after executing the Undo operation, you decide to return to the condition of step 5, execute the Redo operation. However if you once again record (step 3') after returning to the condition of recording number 2, the recordings 3-5 that were canceled by the Undo operation will be lost. This means that if after step 3' you use the Undo operation to return to the previous step, you will return to the condition of step 2.

< Operation history >

Recording or editing operations performed after creating a song are recorded together with the song data as its operation history, and the data itself is also preserved without being erased. For example, suppose that you perform 10 recording operations on song 1 and then create song 2. The operation history of song 2 is newly recorded from the time when song 2 was created. If you subsequently select song 1 again, the history of the 10 previous recording operations will still be there.

The Undo function refers to the operation history of the currently selected song, and restores the song to the condition in which it was the specified number of operations ago. In the case of song 1 in this example, you will be able to cancel the 10 recording operations that were performed. A maximum of 999 levels of operation history is recorded for each song.

< Operations which can be undone >

The Undo function allows you to undo recording operations and editing operations performed in Track Edit condition. Operations performed in Song Edit condition cannot be undone. When executing an operation which cannot be undone by the Undo function, a confirmation message will appear twice before allowing you to execute the operation.

When you execute the Song Optimize function, the "undo-able" data will be erased from the disk drive, meaning that it will no longer be possible to undo the recording/editing operations that were performed up to that point.

Canceling an operation (Undo)

1. Press [UNDO].

2. The display will show "UNDO Level=". Use the TIME/VALUE dial to specify the number of operations which will be undone.

3. To execute the Undo function, press [YES]. If you decide not to undo, press [NO]. When Undo is executed, the UNDO indicator will light.

Canceling the last Undo (Redo)

The Redo function can be executed if the UNDO indicator is lit. If the song data is saved, for example by your selecting another song, the UNDO indicator will go out and the Undo function will no longer be available.

1. Hold down [SHIFT] and press [UNDO]. When Redo is executed, the UNDO indicator will go dark.

Canceling only the previous operation

If you most frequently use the Undo function to undo just the previously performed recording/editing operation (i.e., undo level 1), you may prefer not to be bothered with the messages that appear when the [UNDO] button is pressed. In this case, make the following settings so that just the previous operation will be undone immediately when the [UNDO] button is pressed.

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.

2. Use PARAMETER [◀◀ || ▶▶] to get the "SYS System PRM?" message, and press [YES].

- Use PARAMETER [◀][▶] to get the "SYS UNDO MESSAGE=" and use the TIME/VALUE dial to set this "Off."
- When the setting has been made, press [PLAY (DIS-PLAY)] to return to Play condition.

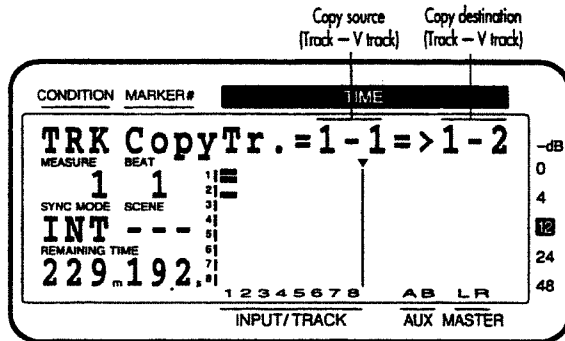
Comparing the edited result with the original data (V-track)

Since the VS-880 has Undo and Redo functions, recording and editing operations can be redone as many times as you like. You also have the option of copying the original data to the same time location of a different V-track before editing, and then comparing the edited and original data. With this technique, you then will be able to copy the desired sections from various tracks to assemble them into a single track.

■ Copying and comparing recorded data

The following procedure shows the example of copying the data from V-track 1 of track 1 to V-track 2, and then comparing the performances of V-tracks 1 and 2.

- Make settings so that V-track 1 of track 1 can be played back (p.16).
- Press [TRACK], use PARAMETER [◀][▶] to get the "TRK Track Copy?" display, and press [YES]. Now you can select the copy source track, and the copy destination track and V-track.



- Specify the copy source and copy destination tracks. Press track 1 [SEL (CH EDIT)], and V-track 1 of track 1 will be selected as the copy source. Next press CURSOR [▶] to make the copy destination display blink, press track 1 [SEL (CH EDIT)], and use the TIME/VALUE dial to select V-track 2 as the copy destination.

- Press PARAMETER [▶] to step through the setting items that determine how the copy will take place. Use the TIME/VALUE dial to set each parameter.

St (start point): Specify the starting time of the copy source data.

Frm (from point): Specify the time of the copy source data that will be copied to the To point. For this example, set this parameter to the same time as the Start point.

End (end point): Specify the ending time of the copy source data.

To (to point): Specify the base time of the copy destination. For this example, set this parameter to the same time as the Start point.

Copy Time: Specify the number of times (1-99) that the data will be copied. For this example, select "1."

- After you have pressed PARAMETER [▶] to step through all the parameters, a confirmation message will appear. Press [YES] to execute the copy. When the copy is completed, you will return to Play condition.

Now edit the data of one of the V-tracks as desired.

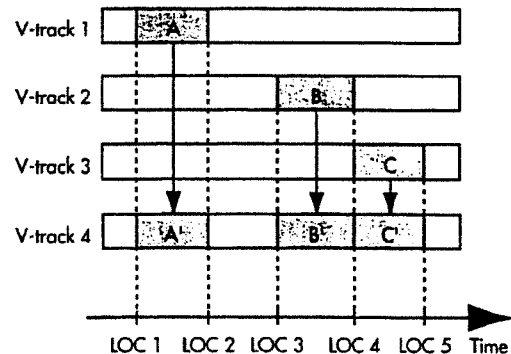
- Compare V-tracks 1 and 2.

Press channel 1 [CH EDIT]. Then hold down [SHIFT] and press channel 2 [V.Track (CH EDIT)]. Now you will be able to switch V-tracks. Use the TIME/VALUE dial to select a V-track, and playback the song. It is not possible to switch V-track during playback. To switch V-tracks, you must first stop playback.

■ Assembling the desired sections into a single V-track

After listening to the recordings on each V-track, suppose that you wanted to use the intro from V-track 1 and the break from V-track 2, etc. In such cases, copy the desired sections to a different V-track to assemble the sections into a single V-track.

The following procedure shows an example in which sections recorded on V-tracks 1, 2, and 3 of track 1 are assembled by copying them onto V-track 4.



1. Switch V-tracks, and register Locate points for the times at which you wish to copy data from them (p.14). For this example, use LOC 1-5.
2. Prepare V-track 1 of track 1 for playback.
3. Press [TRACK], use PARAMETER [◀][▶] to get the "TRK Track Copy?" display, and press [YES]. The display will allow you to select the copy source track, and copy destination track and V-track.
4. Specify the copy source and copy destination track. Press [SEL (EDIT)] of track 1, and V-track 1 of track 1 will be selected as the copy source. Next, press CURSOR [▶] to make the copy destination field blink, press [SEL (EDIT)] of track 1, and use the TIME/VALUE dial to select V-track 4 as the copy destination.
5. As you repeatedly press PARAMETER [▶▶], the copy setting items will be displayed consecutively. For these items, use [LOC 1/5]-[LOC 4/8] to make settings.
 - St (Start point): Specify the starting time of the copy source data. For V-track 1 specify "LOC 1."
 - Frm (From point): Specify the time of the copy source data which will be copied to the To Point. For V-track 1, specify "LOC 1" just as you did for the Start Point.
 - End (End point): Specify the ending time of the copy source data. For V-track 1, specify "LOC 2."
 - To (To point): Specify the base time of the copy destination. For V-track 1, specify "LOC 1" just as you did for the Start Point.
 - Copy Time: Specify the number of copies (1-99). In this example, specify "1."
6. As you repeatedly press PARAMETER [▶▶], a confirmation message will appear at the end. Press [YES] to execute the copy. When the copy has been completed, you will return to Play condition.
7. Using the same procedure as steps 2-6, copy the desired areas of V-tracks 2 and 3 to V-track 4. When you have finished copying, select V-track 4 and check the playback of the assembled data.

Creating a new song

The VS-880 allows you to create up to 200 songs on one disk drive. To create a new song on the currently selected disk drive, use the following procedure.

< Recording mode >

On the VS-880, the recording mode setting allows you to select a sound quality appropriate for the material being recorded and a recording time appropriate for the remaining capacity of your disk drive. This recording mode setting is set when you create a new song. The following recording modes are available. Use the mode appropriate for your situation.

Mastering (MAS): Of the four modes, this provides the highest sound quality; equal to a CD player or a DAT recorder. However a song for which this mode is selected will function as a 4-track recorder (tracks 1-4). Tracks 5-8 cannot be used. This mode is suitable for a recording in which you will use mainly 2-channel stereo editing.

Multitrack 1 (MT1): While preserving high sound quality, the recording time will be approximately twice that of "mastering" mode. This mode is suitable for when you will be doing a lot of track bouncing.

Multitrack 2 (MT2): While preserving high sound quality, this mode offers longer recording times than "multitrack 1." Normally you should use this mode.

Live (LV): Of the four modes, this allows the longest recording times. For example if you are recording 4 tracks onto a 1 G byte disk, this mode allows more than 2 hours of continuous recording. Since this mode allows long recording without worrying about disk drive capacity, it is especially suitable for recording a live performance.

< Recording time >

When you create a new song, you must set the Sample Rate in addition to the Recording Mode. The recording times for each setting are as follows (1 G byte capacity, 1 track).

Recording mode	Sample rate		
	48.0 kHz	44.1 kHz	32.0 kHz
Mastering	185 minutes	202 minutes	278 minutes
Multitrack 1	371 minutes	404 minutes	557 minutes
Multitrack 2	495 minutes	539 minutes	742 minutes
Live	594 minutes	646 minutes	891 minutes

* The above-listed recording times are approximate. Times may be slightly shorter depending on the specifications of the disk drive and on the number of songs that were created.

< If the display indicates "Disk Too Slow!" >

If this message appears while recording or playing back a song, the disk drive was not able to keep up with the rate at which the data needed to be written or read. In this case, create a new song with a lower sample rate or recording mode than the current song, and try the recording once again

1. Press [SONG], use PARAMETER [◀][▶] to get the "SNG Song New?" display, and press [YES].
 2. The display will indicate "SNG SampleRate=", so use the TIME/VALUE dial to select the sample rate (48, 44.1, 32 kHz). If you will be recording digital audio signals from an external digital audio device, set this parameter to match the sample rate of the external device.
 3. Press PARAMETER [▶]. The display will show "Record Mode=", so use the TIME/VALUE dial to select the record mode.
 4. Press [YES]. A confirmation message of "SNG Create NewSong ?" will appear, so press [YES] twice. To cancel, press [NO].
- When the new song has been created, you will automatically return to Play condition, and the created song will be selected.

< Song numbers >

Newly created songs will be given a name such as "InitSong 001." The number following the name is the song number. This name can be modified later (p.60).

On the VS-880, songs on each disk drive are managed by their song number. A newly created song will be assigned the lowest unused song number. For example if the current drive contains songs up to song number 5, a newly created song will be number 6. If an earlier-numbered song had been erased, the new song would have that number.

Adjusting the display brightness

Depending on the location where the VS-880 is placed, the display may sometimes be difficult to read. In such cases, use the following procedure to adjust the display contrast (0-15).

Adjustment procedure 1

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use PARAMETER [◀][▶] to get the "SYS System PRM?" display, and press [YES].
3. Use PARAMETER [◀][▶] to get the "SYS LCD Contrast=" display and then use the TIME/VALUE dial to adjust the contrast.
4. When you finish making the setting, press [PLAY (DISPLAY)] to return to Play condition.

Adjustment procedure 2

1. Press [PLAY (DISPLAY)] once. Then hold down [PLAY (DISPLAY)] and rotate the TIME/VALUE dial to adjust the contrast. The display will show the current setting.
2. When you finish making the setting, release [PLAY (DISPLAY)].

Copying song data

The VS-880 allows you to copy song data to another disk drive. By connecting a magneto-optical disk drive or a removable hard disk drive (hereafter referred to as removable disk drives) to the VS-880 and copying song data to that disk, you can backup song data.

The VS-880 also allows you to backup song data to a DAT recorder. However when the time required to perform the backup and questions of reliability are considered, it is better to use a removable disk drive. Roland recommends that you use this method to make your backups.

If you are using a removable disk drive as a place to backup song data, you may use a slower drive that is not suitable for song recording or playback.

Song data can be copied in the following two ways. Use the method that is appropriate for the specifications and free capacity of your disk drive.

● Playable

Normally you will use this method to copy song data. If song data is copied using this method, you can specify the copy destination disk drive as the current drive, and directly perform operations such playback or undoing a recording.

● Archive

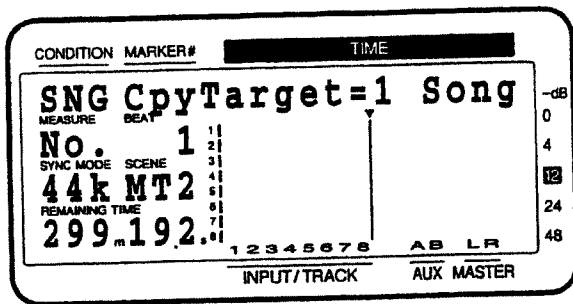
Use this method when you are using a removable disk drive and several disks will be required to copy the specified song data.

When song data is copied using this method, the song data will be converted into a data format specifically for saving (archive format). This means that it will not be possible to directly playback etc. the song data by specifying the saving destination disk drive as the current drive. If you wish to use the song data which was copied, you will need to load the archive data into the current drive using the appropriate procedure.

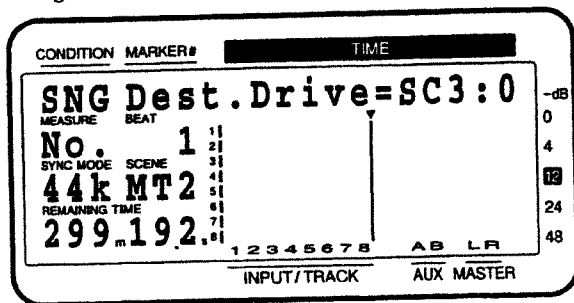
■ Copying song data (Playable)

Normally you will use this method to copy song data. With this method, even if song data already exists in the copy destination disk drive, the newly copied song will be added to the data.

1. When copying song data to an external disk drive, connect the disk drive as explained in "Connecting an external disk drive" (p.48).
2. Press [SONG], use PARAMETER [◀◀||▶▶] to get the "SNG Song Copy" display, and press [YES]. If you have connected a removable disk drive, the display will indicate "SNG CpyMode=." Use the TIME/VALUE dial to set this to "Playable."
3. Press PARAMETER [▶▶] to get the "SNG CpyTarget=" display, and use the TIME/VALUE dial to select the song that you wish to copy. If you wish to copy the currently selected song, select "1 Song." To copy all songs from the current drive, select "All."



4. Press PARAMETER [▶▶] to get the "SNG Dest.Drive=" display, and use the TIME/VALUE dial to select the copy destination disk drive. The internal hard disk will be shown as "TDE," and external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number.



5. Press [YES], and "SNG Copy to ***:*" will appear ("***:*" indicates the disk drive and partition number of the copy destination). If it is OK to copy the data, press [YES] twice. To cancel the operation, press [NO]. If "ALL" is specified as the target, a confirmation message will ask you whether you want to initialize the copy destination disk drive. If you wish to initialize the copy destination disk drive and copy the song data, press [YES]. In this case, all song data that had been saved on the copy destination disk drive will be lost. If you wish to copy without initializing, press [NO]. When the copy operation is successfully completed, you will return to Play condition.

*< If the display indicates "Disk Memory Full" >
If this message appears during copying, the copy operation has been halted either because the disk drive has insufficient free space, or the copy destination disk drive would contain more than 200 songs (the maximum number of songs) However any song data which has been completely copied before this message appeared will still be usable*

■ Copying song data as an archive (Archive)

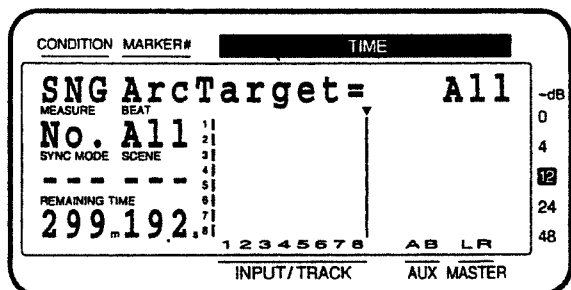
Use this method when using a removable disk drive and two or more disks are required in order to copy the specified song data. In order to use song data which has been copied with this method, you must use the procedure of the following page to load the archived song data from the removable disk back into the current drive.

*< Disk handling >
When using this operation to copy song data, the disk will be initialized to hold archive-type song data. This means that this operation can be executed using even a disk which has not been initialized by the VS-880 However be aware that if you use this operation to copy data to a disk which already contains song data, all of the previously saved song data will be lost
A disk on which song data has been archived cannot be selected as the current drive in the way that a disk containing conventional song data can be If you attempt to select an archive disk as the current drive, it will be recognized as an un-initialized disk drive.*

1. Connect the disk drive as explained in "Connecting an external disk drive" (p.48).
2. Press [SONG], use PARAMETER [◀◀||▶▶] to get the "SNG Song Copy" display, and press [YES].
3. The display will indicate "SNG CpyMode=," so use the TIME/VALUE dial to set this to "Archive."

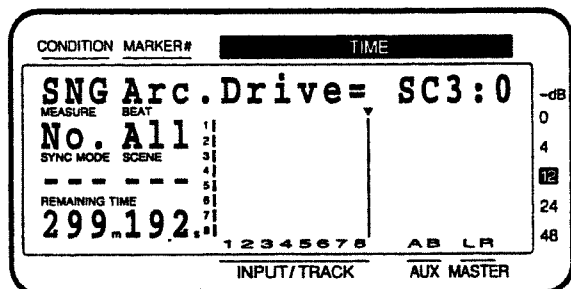
4. Press PARAMETER [▶▶] to get the "SNG ArcTarget=" display, and use the TIME/VALUE dial to select the song that you wish to copy.

If you wish to copy the currently selected song, select "1 Song." To copy all songs from the current drive, select "All."

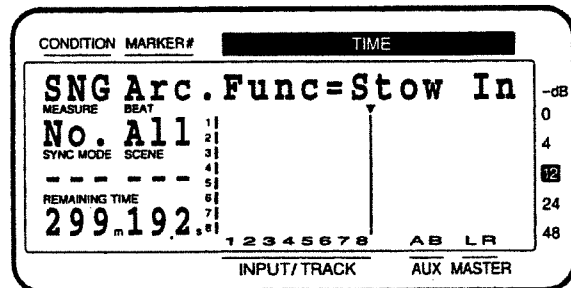


5. Press PARAMETER [▶▶] to get the "SNG Arc.Drive=" display, and use the TIME/VALUE dial to select the copy destination disk drive.

The external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number. For this operation, you will be able to select only removable disk drives which are connected to the SCSI connector.



6. Press PARAMETER [▶▶] to get the "SNG Arc.Func=" display, and use the TIME/VALUE dial to select "Stow In."



7. Press [YES], and "SNG Stow In ***:*" will appear ("***:*" indicates the disk drive and partition number of the copy destination). If it is OK to copy the data, press [YES] twice. To cancel the operation, press [NO].

When the display shows "PleaseInsertDisk", insert the next disk and press [YES] to continue the copy operation.

When the copy operation is successfully completed, you will return to Play condition. After the data has been copied, write the disk number on the label of each archive disk so that you will know the correct sequence for loading the data.

■ Loading archive-type song data

When you wish to use archive-song data that was saved to a removable disk drive, use the following procedure to load the song data into the current drive.

1. Press [SONG], use PARAMETER [◀◀][▶▶] to get the "SNG Song Copy?" display, and press [YES].

2. The display will indicate "SNG CpyMode=." Use the TIME/VALUE dial to select "Archives."

3. Press PARAMETER [▶▶] to get the "SNG ArcTarget=" display, and use the TIME/VALUE dial to select the song that you wish to load.

To load the data of a single song, select "1 Song." To load all the song data, select "All."

4. Press PARAMETER [▶▶] to get the "SNG Arc.Drive=" display, and use the TIME/VALUE dial to select the removable disk drive from which the data will be loaded.

External disk drives will be displayed as "SC0-SC7." The number following each disk drive indicates the partition number.

5. Press PARAMETER [▶▶] to get the "SNG Arc.Func=" display, use the TIME/VALUE dial to select "Extract," and press [YES].

A confirmation message will appear, asking if you wish to initialize the current drive. If you wish to initialize the current drive and load the archive-type song data, press [YES]. In this case, all song data which had been saved on the current drive will be lost. If you wish to load without initializing, press [NO].

If you have inserted a disk on which the data of two or more songs has been saved together and you also selected "1 Song" in step 4, the names of the saved song data will be displayed. Use the TIME/VALUE dial to select the song data that you wish to copy, and press [YES].

6. The display will indicate "SNG Extract ***:*" ("***:*" indicates the disk drive and partition number of the copy source). If it is OK to copy the data, press [YES] twice. To cancel the operation, press [NO].

When the display shows "PleaseInsertDisk", insert the next disk and press [YES] to continue the copy operation.

When the data has been copied correctly, you will return to Play condition.

Backing up song data to a DAT recorder

Song data created on the VS-880 can be saved using a DAT recorder. This procedure is referred to as "backup." The procedure of loading the previously backed up song data into the VS-880 is referred to as "recover." The song data that is backed up includes the data of all V-tracks, and song settings such as locate points, mark points, and scene settings.

Make backups of your data as a precaution against unforeseen problems, or when your disk drive is full and no more recording is possible. We recommend that important data be backed up twice, using separate tapes.

Since DAT tapes are easily transported, this is convenient when you wish to exchange song data with a friend who also has a VS-880, or when you have a VS-880 both at home and in the studio.

< Cautions for backup >

- Backup cannot be done using devices other than a DAT recorder, such as an MD recorder or a DCC recorder.

- If a backup requires two or more tapes, use tapes of identical length so that they will be used most effectively. Also, be sure to note the recorded sequence on the labels of each tape.

- Do not use 180 minute DAT tapes, since they contain thinner tape and are prone to problems such as stretching and becoming entangled in the recorder mechanism

- If your DAT recorder processes the data internally so that the playback data is different than the recorded data, backup cannot be performed correctly

- When song data is being backed up, sound will not be output from the analog output jacks of the VS-880.

- When backing up song data, turn the volume down to the minimum position for any playback equipment (amps etc.) that are connected to the DAT recorder. The song data being sent to the DAT recorder consists of special signals that are recorded on disk. If this sound is monitored from the DAT recorder at a high volume, your speakers and/or your hearing may be damaged.

- Roland will take no responsibility in the event that data is lost due to a backup failure. Also, Roland can not guarantee any backed up data regardless of the capabilities or condition of the DAT recorder.

■ Backing up

This procedure backs up the data of the specified song from the currently drive.

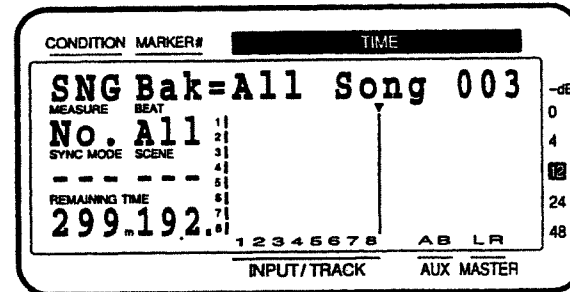
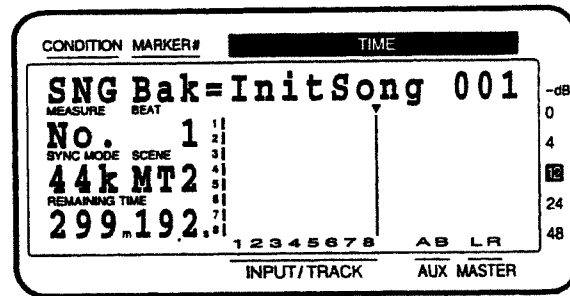
1. Connect your DAT recorder to the VS-880.

Use an RCA phono type coaxial cable to connect the VS-880's DIGITAL OUT connector to the digital input connector (coaxial) of your DAT recorder. Set your DAT recorder to record digital signals.

* Normally, the sample rate at which data is transmitted is set at 48 kHz. This sample rate has no relation to the sample rate of the song data. If your DAT recorder requires you to set the sample rate, set it to 48 kHz.

2. Press [SONG]. Then use PARAMETER [◀◀||▶▶] to get the "SNG DAT Backup?" display, and press [YES].

3. The display will indicate "SNG Bak=," so use the TIME/VALUE dial to select the song that you wish to backup. If you wish to backup all song data in the current drive, select "ALL."



4. Specify the time at which the backup operation will be paused.

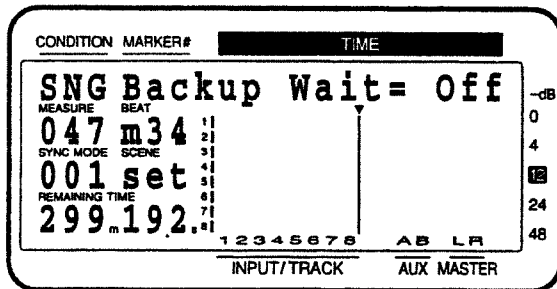
Press PARAMETER [▶▶] to get the "SNG Tape Len=" display. Use the TIME/VALUE dial to set a time that is slightly shorter than the maximum length of your tape. If you are using two or more tapes of different recording lengths, specify the length of the shortest tape.

5. Specify whether or not the data transmission will be slowed down.

Press PARAMETER [▶▶] to get the "SNG Backup Wait=" display. If you are using a disk drive that reads and writes data more slowly, such as a magneto-optical disk drive, set this "ON." If this setting is "ON," the backup will take longer, but there will be fewer problems with data transmission.

6. I have ready the required number of tapes.

The MEASURE field will show the approximate length of time required to perform the backup. The SYNC MODE field will show the number of tapes required for the backup. Prepare the displayed number of tapes.



7. Begin the backup.

Press [YES] to get the "Backup Ready?" display, and press [YES]. The display will indicate "Please Rec DAT," so put your DAT recorder in record mode. Press [YES] once again, the backup will begin. At this time, time displayed in the MEASURE field will begin counting down.

If the backup does not fit on a single tape, the backup will be paused at the specified time. At that time, insert the next tape, resume recording on the DAT recorder, and press [YES]. The backup will continue.

* To halt the operation, press [NO]. You can halt the operation even during the backup, but in this case it will not be possible to recover the song data back into the VS-880.

7. When the backup operation is completed, the display will indicate "Please Stop DAT." Press [YES] to end the procedure, and stop the DAT recorder.

8. Press [PLAY (DISPLAY)] to return to Play condition.

■ Loading backed-up data (Recover)

To load song data that was backed-up on a DAT recorder, use the following procedure. If two or more songs were saved together during the backup, the data of all songs will be loaded.

1. Connect the recorder to the VS-880.

Using an RCA phono type coaxial cable, connect the DIGITAL IN connector of the VS-880 to the digital output of your DAT recorder.

2. Insert the tape which contains the song data into the DAT recorder. If the song data is backed up on two or more tapes, insert the first tape. Then prepare the tape to playback from the beginning.

3. Press [SONG]. Then use PARAMETER [◀◀][▶▶] to get the "SNG DAT Recover?" display, and press [YES].

4. Begin the recover operation.

Use PARAMETER [◀◀][▶▶] to get the "SNG Recover Ready?" display, and press [YES].

The display will indicate "Init ***.* OK?." If you wish to initialize the current drive and recover the song data, press [YES]. In this case, all song data which had been saved on the current drive will be lost. If you wish to recover without initializing, press [NO].

5. The display will indicate "Please Play DAT." Begin playback of the song data, and loading will begin. If the data was backed up on two or more tapes, the recover operation will pause when the tape finishes playing back. Insert the next tape, press [YES], and begin playback.

* To halt the operation, press [NO]. You can halt the operation even during recover, but in this case it will not be possible to playback the song data.

6. When the recover operation is completed, the display will indicate "Please Stop DAT." Press [YES] to end the procedure, and stop the DAT recorder.

7. Press [PLAY (DISPLAY)] to return to Play condition.

Using an external disk drive

The SCSI connector of the VS-880 allows you to connect disk drives such as hard disks and magneto-optical disk drives. This section explains the procedure required for using an external disk drive.

- * Disk drives are precision devices. If they are connected or used incorrectly, not only may they fail to operate correctly, but the data on the disk can be lost or even the disk drive itself may be damaged. In addition to the explanation in this section, please be sure to read and observe the explanations in the manual for your disk drive.
- * A disk drive being used for the first time with the VS-880 must be initialized by the VS-880. When a disk drive is initialized, all data on that disk drive will be lost. Before using a disk drive that has been used by another device, make sure that it is OK to erase the data.

< About IDE >

"IDE" stands for "Integrated Device and Electronics." This is the standard data transmission method used by the hard disk drives of recent personal computers. The HDP88 series hard disk drives (sold separately) that can be installed in the VS-880 are IDE compatible.

< About 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 VS-880 has a SCSI connector, external SCSI devices such as hard disks or removable disk drive etc. can be connected.

< Removable disk drives >

Many types of disk drive allow you to remove the disks. In this manual, these disk drives are referred to as "removable disk drives."

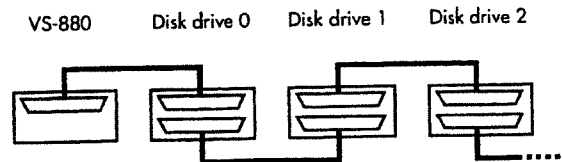
■ Connecting a disk drive

Up to 7 disk drives can be connected to the SCSI connector of the VS-880. This section will explain how to make disk drive connections, and how to make the necessary settings. Whenever you connect a SCSI device, be sure to check the following points.

- Connectors and cables
- Terminators
- SCSI ID numbers

Connectors and cables

SCSI cables are used to connect disk drives as shown below. Since there is no difference between a SCSI input and output, it does not matter which connector you use. This type of connections is referred to as a "SCSI chain" or a "daisy chain."



Use the following SCSI cables (optional) to connect disk drives. There are two types of SCSI cables, depending on the shape of their connector. Purchase the type of cable that is appropriate for your disk drive.

- C-5025-6: Amphenol 50-pin connector ↔ 25-pin D-sub type connector, 6 feet (approximately 182 cm)
- C-5050-3: Amphenol 50-pin connector ↔ Amphenol 50-pin connector, 3 feet (approximately 91 cm)

When making connections, observe the following points.

- Keep SCSI cables as short as possible, and use only cables which have an impedance (110 ohms +/-10%) that is compatible with the SCSI standard, and are completely shield.
- Do not allow the total length of all SCSI cables connecting the chain of disk drives to exceed 6.5 meters.
- Do not connect or disconnect SCSI cables when the power of any device is turned on.

Terminators

The device at each end of a SCSI chain must have a terminator (a terminating resistance). Since the VS-880 is one end of the SCSI chain, it contains an internal terminator. This means that a terminator must be connected only to the external drive which is the last in the chain. For details on attaching a terminator, refer to the owner's manual of your disk drive.

If your disk drive takes an external terminator, make settings so that the +5 terminator power is supplied from the SCSI connector (terminator) of that disk drive. Unless the terminator power is supplied, the operation of the SCSI chain will not be stable. However if the fuse inside the disk drive has been blown, etc., so that power is not being supplied, attaching a terminator will have the opposite effect of causing operation to become more unstable. In such cases, consult the manufacturer of your disk drive.

SCSI ID numbers

Each disk drive is distinguished by its SCSI ID number (0-7). This means that when two or more disk drives are connected, you must make settings so that the SCSI ID numbers of the disk drives do not conflict (coincide). If the SCSI ID numbers conflict, the VS-880 will not be able to correctly recognize the disk drives.

With the factory settings, the VS-880 is set to SCSI ID number 7. Set the disk drives you are connected to ID numbers other than 7.

■ Power-on sequence

Turn the power on for the connected devices in the following sequence. If this sequence is not observed, the VS-880 will not be able to correctly recognize the disk drives.

1. The disk drive to which the terminator is attached.
2. The disk drives which are not terminated.
3. The VS-880.
4. Devices connected to the input jacks and MIDI connectors.
5. Devices connected to the output jacks.

* If no hard disk is installed internally and only a removable disk drive is connected, please insert the disk into the disk drive before turning on the power of the VS-880. If a disk is not inserted first, the display will indicate "SYS Init. Drive=NoDrv" and the VS-880 will not recognize that disk. If this happens, insert the disk, and then hold down [SHIFT] and press [RESTART (PLAY)] to re-start the VS-880.

■ Initializing a disk drive

Before using a new disk drive or a disk drive that was used by another device, you must initialize the disk drive so that it can be used by the VS-880. Use the following procedure.

1. If you have connected a removable disk drive, insert a disk into the disk drive.
2. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
3. Use PARAMETER [◀][▶] to get the "SYS Drive Initialize" display, and press [YES].
4. The display will indicate "Init.Drive," so use the TIME/VALUE dial to select the disk drive that you wish to initialize (IDE, SC0-SC7). The number of the disk drive indicates its SCSI ID number.
5. Press PARAMETER [▶] to get the "PhysicalFmt" display, and use the TIME/VALUE dial to select whether or not the disk will be physically formatted. If the disk drive has been used by another device, select "On." If the disk drive is new, physical formatting has probably been performed, so in this case select "Off."

6. Press PARAMETER [▶] to get the "Partition" display. Use the TIME/VALUE dial to select the size of the partition. Normally you will select "1000 MB."

7. Press [YES] to get the "SYS Init.***: U OK?" display ("***" will indicate the disk drive to be initialized). Press [YES], and a message of "SYS Init.***: U Sure?" will ask for confirmation. Press [YES] once again to execute initialization. To cancel initialization, press [NO].

When initialization ends correctly, the VS-880 will automatically re-start, and enter Play condition.

* When initializing a large-capacity disk drive, be aware that some time will be required. This is not a malfunction. The progress of initialization will be shown in the display, so be sure not to turn the power off until initialization is complete.

Exchanging disks of a removable disk drive

Here is the procedure for exchanging the disk of a removable disk drive connected to the VS-880.

If the removable disk drive is not specified as the current drive, you can press the eject button of the disk drive at any time to exchange disks. However if the disk is selected as the current drive, you must make sure that the song data is properly saved to the disk before removing it. Also, you must re-specify the current drive after exchanging the disk. To exchange disks on the current drive, use the following procedure.

1. Shut down the VS-880.
Hold down [SHIFT] and press [SHUT/EJECT (STOP)]. The display will indicate "SHUT/EJECT?", so press [YES].
2. When the display indicates "PowerOFF/RESTART," exchange disks.
3. Re-start the VS-880.
Hold down [SHIFT] and press [RESTART (PLAY)]. The VS-880 will restart, and the song of the exchanged disk will be selected.

Switching disk drives / partitions

If you wish to record a song on another disk drive or partition, use the following procedure to switch the current drive.

1. If you wish to specify a removable disk drive as the current drive, insert the disk.
2. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
3. Use PARAMETER [◀◀][▶▶] to get the "SYS Drive Select" display, and press [YES]. When you press [YES], the connected disk drives will be scanned.
4. When the connected disks have been scanned, the current drive will be displayed. Use the TIME/VALUE dial to select the disk drive.
The internal hard disk is displayed as "IDE," and external disk drives are displayed as "SC0-SC7" (the number is the SCSI ID number). Numbers following the disk drive name are partition numbers. For example, external disk drive 1, partition 2 would be specified as "SC1: 2."
5. When you have made your selection, press [YES]. The display will indicate "SYS Change to," so press [YES] once again to execute the change of current drive. To cancel, press [NO].

Mixing an external input source and the recorder

The VS-880 is normally able to use 8 channels to control the recorder tracks and the input sources. This means that if you use all 8 tracks, it will no longer be possible to input external sources. In such cases, you can select a mixer mode that allows you to mix all recorder (8 channels) and external input sources (6 channels).

There are two mixer modes; INPUT MIX mode for controlling external input sources by the mixer, and TRACK MIX mode for controlling recorder tracks. These two modes switch the function of the front panel mixer. For details refer to "Digital mixer" (p.23).

The explanation in this section will use the example of mixing recorder tracks 1-8 with a stereo source being input to the INPUT 1/2 jacks, for output to the MASTER jacks.

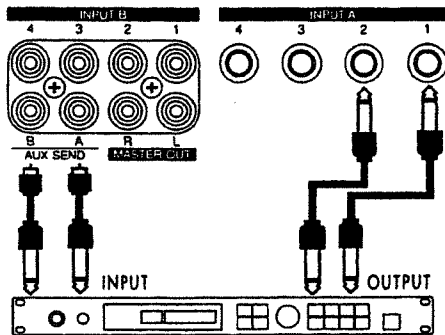
1. Switch the mixer mode to TRACK MIX mode.
Hold down [SHIFT] and press [SELECT]. When TRACK MIX mode is selected, the TRACK MIX indicator will light. If the INPUT MIX indicator is lit, press [SELECT] once again.
2. Assign the outputs of track channels 1-8 to the MIX buss.
Press channel 1 [CH EDIT], and set the relevant parameters as follows. Use PARAMETER [◀◀][▶▶] to select the parameters, and use the TIME/VALUE dial to set the values. Make the same settings for channel 2-8.
TR1 BUSS Sw=PstFade
TR1 BUSS Sel=MIX
3. Press [SELECT] to switch to INPUT MIX mode.
4. Assign the outputs of input channels 1 and 2 to the MIX buss.
Press channel 1 [CH EDIT], and set the relevant parameters as follows. Use PARAMETER [◀◀][▶▶] to select the parameters, and use the TIME/VALUE dial to set the values. Make the same settings for channels 2.
IN1 BUSS Sw=PstFade
IN1 BUSS Sel=MIX
5. Make settings so that the signal of the MIX buss will be output from the MASTER OUT jacks.
Press [EDIT] in the master block, and then use PARAMETER [◀◀][▶▶] to get the "MST Master Mode=" display, and use the TIME/VALUE dial to select "MIX."
6. This completes settings. Press [PLAY (DISPLAY)] to return to Play condition.
To use the mixer to control external input sources, select INPUT MIX mode. To use the mixer to control the recorder, select TRACK MIX mode.

Using external effect units

This section gives two examples of using external effect devices. Refer to these explanations when you wish to use your own effect devices.

■ Applying effects to the song playback

When using external effects, use the AUX SEND jacks as effect send jacks. Here, we will use the example of applying effects to a stereo performance recorded on tracks 1/2. We will use the INPUT 1 and 2 jacks as effect return jacks. Connect your effect device as shown below.



1. Switch the mixer mode to TRACK MIX mode. Hold down [SHIFT] and press [SELECT]. When TRACK MIX mode is selected, the TRACK MIX indicator will light. If the INPUT MIX indicator is lit, press [SELECT] once again.
2. Assign the outputs of tracks 1 and 2 to the AUX buss alone. Press channel 1 [CH EDIT], and set the relevant parameters as follows. Use PARAMETER [◀◀][▶▶] to select the parameters, and use the TIME/VALUE dial to set the values. Make the same settings for channel 2.
TR1 BUSS Sw=Off
TR1 AUX Sw=PreFade
TR1 AUX Pan=L63 (TR2 AUX Pan=R63)
3. Press [Select] to switch to INPUT MIX mode.
4. Assign the output of inputs 1 and 2 to the MIX buss. Make settings using the same procedure as in step 2.
IN1 BUSS Sw=PstFade
IN1 BUSS Sel=MIX
IN1 BUSS Pan=L63 (IN2 BUSS Pan=R63)
5. Make settings so that the signal of the MIX buss is output from the MASTER OUT jacks. Press the master block [EDIT]. Then use PARAMETER [◀◀][▶▶] to get the "MST Master Mode=" display, and use the TIME/VALUE dial to select "MIX."

6. Now the effects can be applied. Press [PLAY (DISPLAY)] to return to Play condition.

7. Playback the song, and adjust the way in which effects are applied.

Use the "AUX Level" parameters of track channels 1 and 2, and the AUX knob of the master section to adjust the level of the signal sent to the external effect unit. Use the faders of channel 1 and 2 to adjust the signal level from the effect sound. However this balance will depend on the effect that you use, so you should adjust the volume level on the external effect unit, and leave the VS-880 fixed at an appropriate volume level.

■ Applying effects during track bouncing

Track bouncing is the procedure by which the data recorded on two or more tracks is merged. At this time, you may apply effects to specific tracks.

Here, we will give the example of bouncing two stereo recordings made on tracks 1/2 and tracks 3/4 onto tracks 7/8 as you apply effects only to tracks 1/2.

Connect your effect device as explained in the previous section.

1. Switch the mixer mode to TRACK MIX mode. Hold down [SHIFT] and press [SELECT]. When you switch to TRACK MIX mode, the TRACK indicator will light. If the INPUT MIX indicator is lit, press [SELECT] once again.
2. Assign the outputs of tracks 1 and 2 to the AUX buss alone. Press channel 1 [CH EDIT], and set the relevant parameters as follows. Use PARAMETER [◀◀][▶▶] to select parameters, and use the TIME/VALUE dial to set the value. Make the same settings for channel 2.
TR1 BUSS Sw=Off
TR1 AUX Sw=PreFade
TR1 AUX Pan=L63 (TR2 AUX Pan=R63)
3. Assign the outputs of tracks 3 and 4 to REC buses 7-8. Make settings in the same way as in step 2.
TR3 BUSS Sw=PstFade
TR3 BUSS Sel=7-8
TR3 BUSS Pan=L63 (TR4 BUSS Pan=R63)
4. Assign the outputs of tracks 7 and 8 to the MIX buss. TR7 BUSS Sw=PstFade
TR7 BUSS Sel=MIX
TR7 BUSS Pan=L63 (TR8 BUSS Pan=R63)
5. Press [SELECT] to switch to INPUT MIX mode.
6. Assign the outputs of inputs 1 and 2 to REC buses 7-8.
IN1 BUSS Sw=PstFade
IN1 BUSS Sel=7-8
IN1 BUSS Pan=L63 (IN2 BUSS Pan=R63)

7. Make settings so that the signals of the MIX buss are output from the MASTER OUT jacks.

Press the master section [EDIT], and then use PARAMETER [◀◀ || ▶▶] to get the "MST Master Mode=" display, and use the TIME/VALUE dial to select "MIX."

8. Now effects can be applied. Press [PLAY (DISPLAY)] to return to play condition.

9. Set the track status of track 1-4 to PLAY, and the track status of tracks 7 and 8 to REC. Then playback the song and adjust the way in which effects are applied. When you finish adjusting, record.

Use the track channels 1 and 2 "AUX Level" and the master section AUX knob to adjust the signal level sent to the external effect unit. Use the faders of input channels 1 and 2 to adjust the signal level from the effect. However this will change depending on the effect device that you use, so it is best to adjust the volume level on the external effect device, and fix the VS-880 at an appropriate volume level.

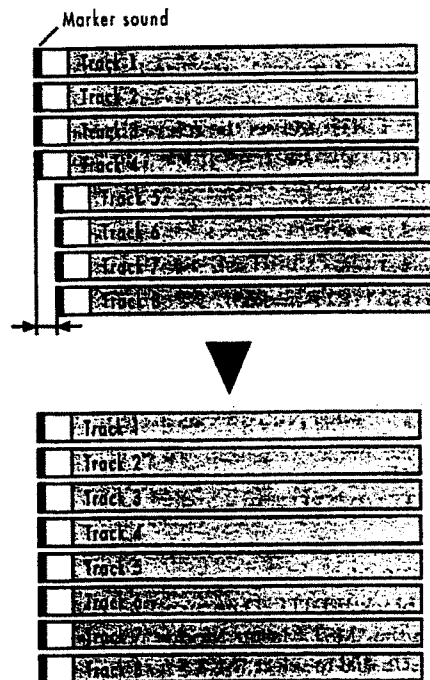
Copying the sound from an 8-track MTR to the VS-880

If you wish to re-record a recording of more than 4 channels from another MTR to the VS-880, it will not be possible to record all tracks at once. This means that in some cases, the recorded data will become skewed in time. This section explains how to correct the skew that may occur in such cases.

The VS-880 can record up to 4 track simultaneously. This means that, for example, if you wish to record from an 8-track MTR onto the VS-880, you will have to record in two passes of 4 channels each. If your MTR implements MTC (MIDI Time Code) or MMC (MIDI Machine Control), the MTR and the VS-880 can be synchronized for recording so that the timing of the two passes is identical. However if your MTR cannot be synchronized with the VS-880, the timing at which recording begins will be slightly different.

In such cases, you should record a sound on all tracks which will act as a marker before re-recording the performance to the VS-880. The marker sound should be one that it is easy to cue to, such as a clock striking the hour. After recording all the data to the VS-880, you can slide the data of the tracks so that the marker sounds are precisely aligned, thus correcting any time deviation that the tracks may have.

Here, we will explain in broad outline the procedure for re-recording 8 tracks from an MTR to the VS-880. For details on each step, refer to the relevant pages given.



1. Re-record the playback of tracks 1–4 from the MTR to tracks 1–4 of the VS-880. Then register the time at which the marker sound appears as locate point 1.

 "Using the Locate function" (p.14)

 "Finding a precise time" (p.39)

2. Re-record the playback of tracks 5–8 from the MTR to tracks 5–8 of the VS-880. In the same way for this data as well, register the time at which the marker sound appears as locate point 2.

3. If there is a difference in timing between locate points 1 and 2, move one of the sets of tracks forward or backward so that both marker sounds will sound simultaneously.

For example if you wish to move tracks 5–8 to the timing of tracks 1–4, select tracks 5–8 as move source, and select the same tracks as the move destination. Then set "St" to locate point 2, "End" as the end of the playback data, "Frm" as locate point 2, "To" as locate point 1, and then execute the move operation.

 "Moving data (Track Move)" (p.67)

4. Press [PLAY (DISPLAY)] to return to Play condition. Playback the song, and check that the tracks are all aligned correctly.

Chapter 4: Edit condition functions

This chapter explains the functions of the VS-880 for each of the edit conditions. Read this chapter as necessary.

Mixer channel settings (Channel Edit condition)

This section explains the parameters which can be set for each channel of the mixer. The parameters that are available will differ depending on the mixer mode which is selected. These settings can be stored in a song as a Scene (p.38).

INPUT → TRACK mode

Input (Input select)
MIX Sw (Mix switch)
MIX Level
MIX Pan / Mix Bal (Mix balance)
V.Track (V-track)
EQ Switch (Equalizer switch)
EQL (Equalizer low): gain, frequency
EQM (Equalizer middle): gain
EQH (Equalizer high): gain, frequency
AUX Sw (AUX switch)
AUX Level
AUX Pan / AUX Bal (AUX balance)
Channel Link

INPUT MIX mode

BUSS Sw (Buss switch)
BUSS Sel (Buss select)
BUSS Level
BUSS Pan / BUSS Bal (Buss balance)
EQ Switch (Equalizer switch)
EQL (Equalizer low): gain, frequency
EQH (Equalizer high): gain, frequency
AUX Sw (AUX switch)
AUX Level
AUX Pan / AUX Bal (AUX balance)
Channel Link

TRACK MIX mode

BUSS Sw (Buss switch)
BUSS Sel (Buss select)
BUSS Level
BUSS Pan / BUSS Bal (Buss balance)
V.Track (V-track)
EQ Switch (Equalizer switch)
EQL (Equalizer low): gain, frequency
EQH (Equalizer high): gain, frequency
AUX Sw (AUX switch)
AUX Level
AUX Pan / AUX Bal (AUX balance)
Channel Link

■ Modifying the settings

1. Press [CH EDIT] for the channel that you wish to modify, and the available parameters will appear in the upper line of the display.

2. Use PARAMETER [◀][▶] to select the parameter that you wish to modify, and use the TIME/VALUE dial to modify the value.

For equalizer settings, two parameter values will appear. In this case, use CURSOR [◀][▶] to make the blinking area to the value that you wish to modify.

The parameter group names of the parameters can be set for each channel are printed below the [CH EDIT] button of each channel. To directly access a specific parameter group, hold down [SHIFT] and press the [CH EDIT] button for that parameter group.

3. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition.

■ Explanation of the parameters (INPUT → TRACK mode)

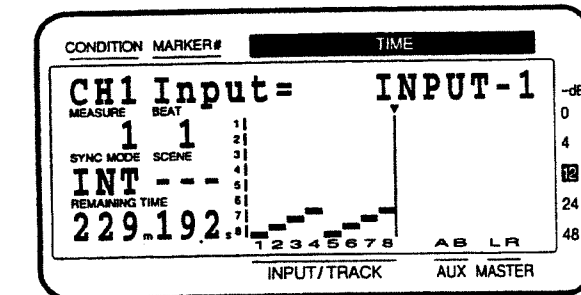
* On channels for which Channel Link (p.36) is "On," modifying a value on one channel will cause the setting of the other channel to change correspondingly.

Input (input select)

This selects the input source of each channel. If Channel Link is on, stereo sources can be selected.

When Channel link is off: INPUT 1-4, DIGITAL-L, DIGITAL-R, MIX-L, MIX-R, AUX-A, AUX-B

When Channel Link is on: INPUT-12, INPUT 34, DIGITAL, MIX, AUX-AB



MIX Sw (mix switch)

This selects how the signal will be sent to the MIX buss. If "Off" is selected, the MIX Level and MIX Pan/MIX Bal parameters will not be available.

Off: not sent.

PreFade: The signal before passing through the channel fader will be sent to the MIX buss.

PstFade: The signal after passing through the channel fader will be sent to the MIX buss.

MIX Level

This sets the volume level (0-127) of the signal output to the MIX buss.

MIX Pan

MIX Bal (mix balance)

On channels for which Channel Link is "Off," this sets the panning (L63-0-R63) of the stereo signal which is output to the MIX buss. A setting of "L63" is full left, "0" is center, and "R63" is full right.

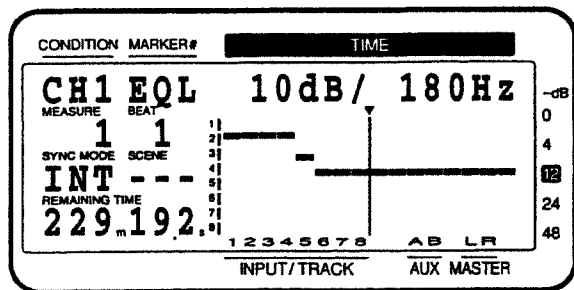
On channels for which Channel Link is "On," this sets the left/right volume balance (L63-0-R63) at which the stereo signal of the paired channels is output to the MIX buss.

V.Track (V-track)

This selects the V-track (1-8) for recording or playback.

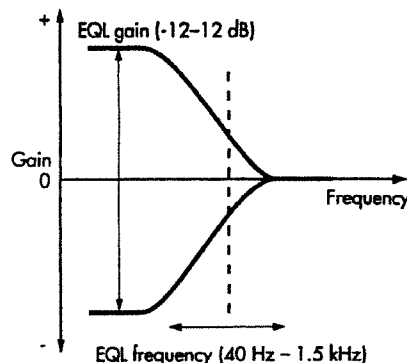
EQ Switch (equalizer switch)

If you wish to use the equalizer, set this "On." If not, set this "Off." When equalizer settings are being made, the equalization curve will be shown graphically in the bar display. If this is "Off" the equalizer-related parameters will not be available.



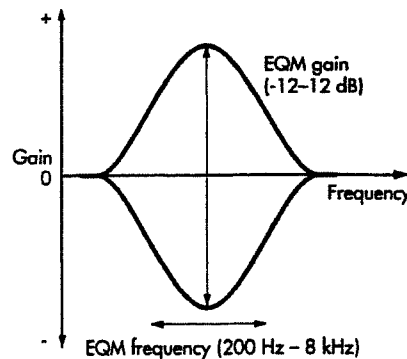
EQL (equalizer low)

This sets the gain (-12-12 dB) and center frequency (40 Hz -1.5 kHz) for the low-range equalizer (shelving type).



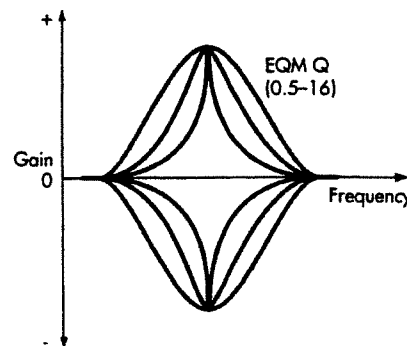
EQM (equalizer middle)

This sets the gain (-12-12 dB) for the middle-range equalizer (peaking type).



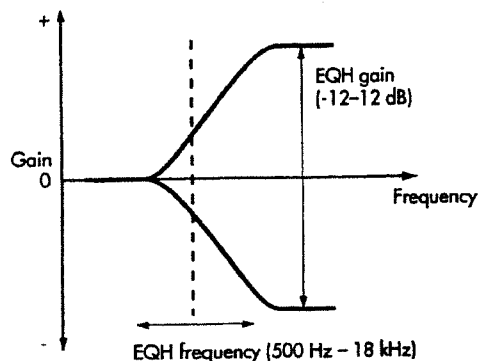
EQM F (equalizer middle frequency / Q)

This sets the center frequency (200 Hz-8 kHz) and the Q (0.5-16) for the middle-range equalizer (peaking type). Q determines the way in which the gain of the frequency range is affected. Higher values will produce a sharper change.



EQH (equalizer high)

This sets gain (-12–12 dB) and center frequency (500 Hz–18 kHz) for the high-range equalizer (shelving type).



AUX Sw (AUX switch)

This selects the way in which the signal is sent to the AUX buss. If "Off" is selected, the AUX Level and AUX Pan/AUX Bal parameters will not be available.

Off: not sent.

PreFade: The signal before passing through the channel fader will be sent to the AUX buss.

PostFade: The signal after passing through the channel fader will be sent to the AUX buss.

AUX Level

This sets the volume level (0–127) of the signal output to the AUX buss.

AUX Pan

AUX Bal (AUX balance)

On channels for which Channel Link is "Off," this sets the panning (L63–0–R63) of the stereo signal which is output to the AUX buss. A setting of "L63" is full left, "0" is center, and "R63" is full right.

On channels for which Channel Link is "On," this sets the left/right volume balance (L63–0–R63) at which the stereo signal of the paired channels is output to the AUX buss.

Channel Link

This function makes it easier to control a stereo source.

When Channel Link is turned "On," the following odd- and even-numbered adjacent channels will be paired, and the settings of each odd-numbered channel will be the same as the settings of the corresponding even-numbered channel. When the settings of one channel are modified, the settings of the paired channel will change in the same way.

- Channel 1: stereo a (left)
- Channel 2: stereo a (right)
- Channel 3: stereo b (left)
- Channel 4: stereo b (right)
- Channel 5: stereo c (left)
- Channel 6: stereo c (right)
- Channel 7: stereo d (left)
- Channel 8: stereo d (right)

The PAN knob and faders of each channel will function as follows.

Odd-numbered channel faders: will adjust the volume level of the stereo signal output to the MIX buss or the REC buss.

Odd-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the MIX buss or the REC buss.

Even-numbered channel faders: will adjust the volume level of the stereo signal output to the AUX buss (A,B).

Even-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the AUX buss (A,B).

■ Explanation of the parameters (INPUT MIX mode / TRACK MIX mode)

- * On channels for which Channel Link (p.36) is "On," modifying a value on one channel will cause the setting of the other channel to change correspondingly.

BUSS Sw (buss switch)

This selects the way in which the signal is sent to the buss selected by Buss Select. If "Off" is selected, the BUSS Sel, BUSS Level, and BUSS Pan/BUSS Bal parameters will not be available.

Off: not sent.

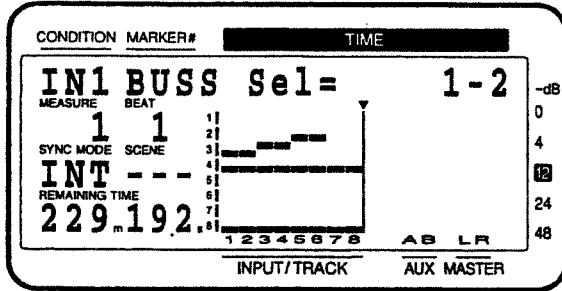
PreFade: The signal before passing through the channel fader will be sent to the buss.

PostFade: The signal after passing through the channel fader will be sent to the buss.

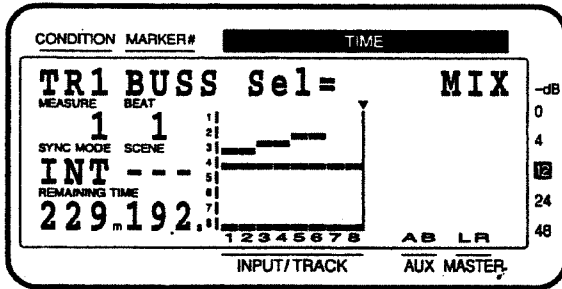
BUSS Sel (buss select)

This selects the output destination buss (MIX, 1-2, 3-4, 5-6, 7-8). The numerals of the value indicate the REC buss numbers.

INPUT MIX mode



TRACK MIX mode



BUSS Level

This sets the volume level (0-127) of the signal output to the buss selected by Buss Select.

BUSS Pan

BUSS Bal (buss balance)

On channels for which Channel Link is "Off," this sets the panning (L63-0-R63) of the stereo signal which is output to the MIX buss or REC buss. A setting of "L63" is full left, "0" is center, and "R63" is full right.

On channels for which Channel Link is "On," this sets the left/right volume balance (L63-0-R63) at which the stereo signal of the paired channels is output to the MIX buss or REC buss.

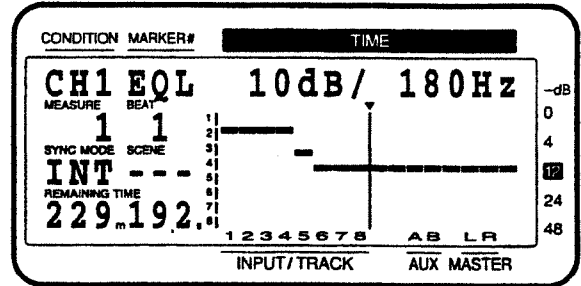
V.Track (V-track)

This selects the V-track (1-8) for recording or playback.

* In INPUT MIX mode you can make settings only for the input channels, and you will not be able to switch V-tracks.

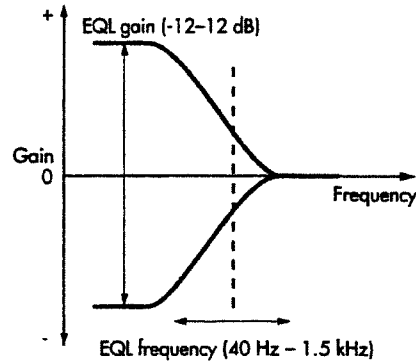
EQ Switch (equalizer switch)

If you wish to use the equalizer, set this "On." If not, set this "Off." When equalizer settings are being made, the equalization curve will be shown graphically in the bar display. If this is "Off" the equalizer-related parameters will not be available.



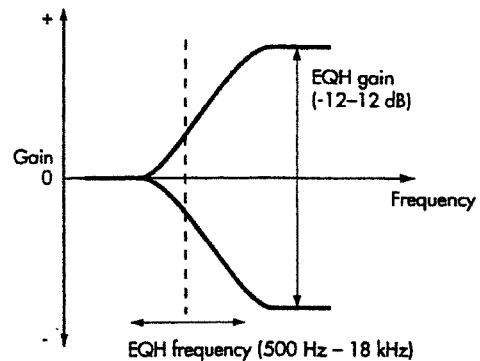
EQL (equalizer low)

This sets the gain (-12-12 dB) and center frequency (40 Hz -1.5 kHz) for the low-range equalizer (shelving type).



EQH (equalizer high)

This sets gain (-12-12 dB) and center frequency (500 Hz-18 kHz) for the high-range equalizer (shelving type).



AUX Sw (AUX switch)

This selects the way in which the signal is sent to the AUX buss. If "Off" is selected, the AUX Level and AUX Pan/AUX Bal parameters will not be available.

Off: not sent.

Prefade: The signal before passing through the channel fader will be sent to the AUX buss.

Postfade: The signal after passing through the channel fader will be sent to the AUX buss.

AUX Level

This sets the volume level (0–127) of the signal output to the AUX buss.

AUX Pan

AUX Bal (AUX balance)

On channels for which Channel Link is "Off," this sets the panning (L63–0–R63) of the stereo signal which is output to the AUX buss. A setting of "L63" is full left, "0" is center, and "R63" is full right.

On channels for which Channel Link is "On," this sets the left/right volume balance (L63–0–R63) at which the stereo signal of the paired channels is output to the AUX buss.

Channel Link

This function makes it easier to control a stereo source.

When Channel Link is turned "On," the following odd- and even-numbered adjacent channels will be paired, and the settings of each odd-numbered channel will be the same as the settings of the corresponding even-numbered channel. When the settings of one channel are modified, the settings of the paired channel will change in the same way.

- Channel 1: stereo a (left)
- Channel 2: stereo a (right)
- Channel 3: stereo b (left)
- Channel 4: stereo b (right)
- Channel 5: stereo c (left)
- Channel 6: stereo c (right)
- Channel 7: stereo d (left)
- Channel 8: stereo d (right)

The PAN knob and faders of each channel will function as follows.

Odd-numbered channel faders: will adjust the volume level of the stereo signal output to the MIX buss or the REC buss.

Odd-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the MIX buss or the REC buss.

Even-numbered channel faders: will adjust the volume level of the stereo signal output to the AUX buss (A,B).

Even-numbered channel PAN knobs: will adjust the left/right volume balance of the stereo signal output to the AUX buss (A,B).

Mixer master section settings (Master Block Edit condition)

This section explains the parameters which can be set in the master section of the mixer. These settings can be stored in a song as a Scene (p.38).

Master Mode (Master out mode)

Master Level

Master Bal (Master balance)

AUX Level

AUX Bal (AUX balance)

■ Modifying the settings

1. Press [EDIT] in the master section, and the available parameters will appear in the upper line of the display.
2. Use PARAMETER [◀◀ || ▶▶] to select the parameter that you wish to modify, and use the TIME/VALUE dial to modify the value.
3. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition.

■ Explanation of the parameters

Master Mode (Master out mode)

This selects the buss whose signal will be output from the MASTER OUT jacks.

- MIX: MIX buss (stereo)
- M+A: MIX buss (stereo) and AUX buss A (mono)
- M+B: MIX buss (stereo) and AUX buss B (mono)
- MAB: MIX buss (stereo) and AUX buss (stereo)
- A-: AUX buss A (mono)
- B-: AUX buss B (mono)
- A+B: AUX buss (stereo)
- 1-2: REC busses 1-2
- 3-4: REC busses 3-4
- 5-6: REC busses 5-6
- 7-8: REC busses 7-8

* If INPUT → TRACK mode is selected, it will not be possible to select REC busses.

Master Level

This sets the output level (0–127) of the MASTER OUT jacks.

Master Bal (Master balance)

This sets the left/right volume balance (L63–0–R63) of the stereo signal which is output from the MASTER OUT jacks.

AUX Level

This sets the output level (0–127) of the AUX SEND jacks.

AUX Bal (AUX balance)

This sets the left/right volume balance (L63–0–R63) of the stereo signal which is output from the AUX SEND jacks.

Song-related operations (Song Edit condition)

This section explains the following song-related operations.

- Selecting a song (Song Select)
- Creating a new song (Song New)
- Naming a song (Song Name) / Protecting song data (Song protect)
- Copying a song (Song Copy)
- Erasing a song (Song Erase)
- Erasing unnecessary playback data (Song Optimize)
- Saving to a DAT recorder (DAT Backup)
- Loading song data from a DAT recorder (DAT Recover)

■ Basic procedure

Here is the basic procedure for operations in Song Edit condition. This basic procedure will be omitted in the following explanations.

1. Press [SONG], and the song menu will appear in the upper line of the display.
 2. Use [SONG] or PARAMETER [◀◀][▶▶] to select the desired item, and press [YES].
 3. Use PARAMETER [◀◀][▶▶] to select the parameter that you wish to change, and use the TIME/VALUE dial to modify the value. If two or more parameters are displayed, use CURSOR [◀][▶] to make the blinking area to the value of the parameter that you wish to modify.
 4. When you have made settings for all parameters, press [YES].
A message will ask for confirmation. If you wish to execute, press [YES] in response to this message. Once again, a message asking for re-confirmation will blink, so press [YES] once again to execute. When the operation has been completed, you will return to Play condition.
To cancel the operation, press [NO]. You will return to the immediately previous step.
- * You can display the execute confirmation message by pressing [YES] while setting any of the parameters.

■ Selecting a song (Song Select)

This selects a different song that was saved on the current drive (the currently selected disk drive).

If you wish to select a song that was saved on another disk drive, first switch the current drive (p.50).

1. Press [SONG], select "SNG Song Select?," and press [YES].
2. The names of the songs saved on the current drive will be displayed. Select a song and execute.
An asterisk "*" will be displayed at the beginning of the currently selected song. The sample rate of the song will be displayed in the SYNC MODE field, and the recording mode of the song will be displayed in the SCENE field.

■ Creating a new song (Song New)

This creates a new song on the current drive. When a new song is created, the newly created song will be selected so that you can begin recording immediately.

< Recording mode >

On the VS-880, the recording mode setting allows you to select a sound quality appropriate for the material being recorded and a recording time appropriate for the remaining capacity of your disk drive. This recording mode setting is set when you create a new song. The following recording modes are available. Use the mode appropriate for your situation

Mastering (MAS): Of the four modes, this provides the highest sound quality; equal to a CD player or a DAT recorder. However a song for which this mode is selected will function as a 4-track recorder (tracks 1–4). Tracks 5–8 cannot be used. This mode is suitable for a recording in which you will use mainly 2-channel stereo editing.

Multitrack 1 (MT1): While preserving high sound quality, the recording time will be approximately twice that of "mastering" mode. This mode is suitable for when you will be doing a lot of track bouncing.

Multitrack 2 (MT2): While preserving high sound quality, this mode offers longer recording times than "multitrack 1." Normally you should use this mode.

Live (LV): Of the four modes, this allows the longest recording times. For example if you are recording 4 tracks onto a 1 Gbyte disk, this mode allows more than 2 hours of continuous recording. Since this mode allows long recording without worrying about disk drive capacity, it is especially suitable for recording a live performance.

< If the display indicates "Disk Too Slow!" >

If this message appears while recording or playing back a song, the disk drive was not able to keep up with the rate at which the data needed to be written or read. In this case, create a new song with a lower sample rate or recording mode than the current song, and try the recording once again.

1. Press [SONG], select "SNG Song New?," and press [YES].
2. Set the following items, and execute.
 Sample Rate: Select the sample rate (48, 44.1, 32 kHz). If you will be recording a digital signal from a digital audio device, set this to match the sample rate of that device.
 Record Mode (Recording mode): Select the desired Recording mode.

When a 1 G bytes hard disk is used, recording times (for 1 track) will be as follows.

Recording mode	Sample rate		
	48.0 kHz	44.1 kHz	32.0 kHz
Mastering	185 minutes	202 minutes	278 minutes
Multitrack 1	371 minutes	404 minutes	557 minutes
Multitrack 2	495 minutes	539 minutes	742 minutes
Live	594 minutes	646 minutes	891 minutes

* The above-listed recording times are approximate. Times may be slightly shorter depending on the specifications of the disk drive and on the number of songs that were created

< Song numbers >

Newly created songs will be given a name such as "InitSong 001." The number following the name is the song number. This name can be modified later (see the following page).

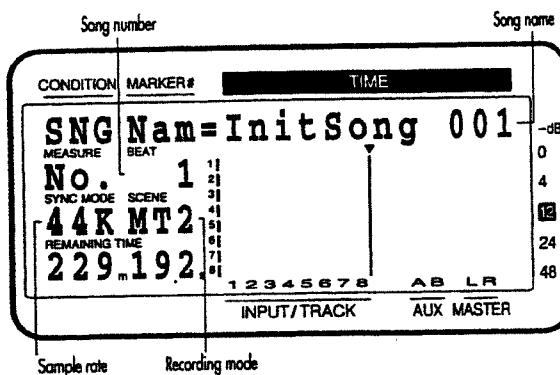
On the VS-880, songs on each disk drive are managed by their song number. A newly created song will be assigned the lowest unused song number. For example if the current drive contains songs up to song number 5, a newly created song will be number 6. If an earlier-numbered song had been erased, the new song would have that number.

■ Naming a song (Song Name) / Protecting song data (Song Protect)

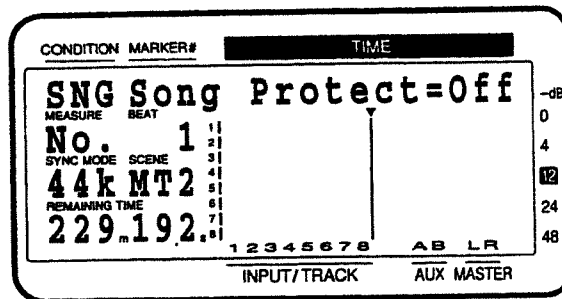
This operation changes the name of the currently selected song.

It is also possible to change the Song Protect setting during this procedure. Song Protect is a setting which protects songs saved on a disk drive from being accidentally re-written. It is a good idea to turn Song Protect ON for important song data. However when a disk drive is initialized, all data will be erased even if protect is turned on.

1. Press [SONG], select "SNG Song Name?," and press [YES].
2. The song name will be displayed. Use CURSOR [◀|▶] to move the blinking area to the character that you wish to modify, and use the TIME/VALUE dial to select the character. If you wish to move rapidly through the characters, hold down [SHIFT] while you rotate the TIME/VALUE dial.



3. Press PARAMETER [▶▶] to get the "Song Protect=" display. To protect the song data, set this "On."



4. When you finish setting the name and/or protect, press [PLAY (DISPLAY)] to return to Play condition.

■ Copying song data (Playable)

This operation copies the currently selected song to the current drive or to another disk drive. The copied song will be saved to the lowest song number which does not contain song data.

By copying song data to a removable disk drive, you can save song data. If you are copying the data for backup purposes, you may use a slower disk drive which would not be suitable for recording or playback.

* For details refer to "Copying song data" (p.43).

< Copying to the current drive >

The copied song will have the same name as the copy source. This means that if you copy to the current drive, a single disk drive will contain two songs of the identical name. In this case, modify one of the song names so that you will be able to distinguish the two songs.

1. If you wish to copy song data to an external disk drive, connect the disk drive as explained in "Connecting an external disk drive" (p.48).

2. Press [SONG], select "SNG Song Copy?" and press [YES].

If you have connected a removable disk drive, the display will indicate "SNG CpyMode=" Select "Playable."

3. Make settings for the following items, and execute the operation.

CpyTarget (Copy target): Select the song that you wish to copy. If you wish to copy the currently selected song, select "1 Song." To copy all songs from the current drive, select "All."

Dest.Drive (Destination drive): Select the copy destination disk drive. The internal hard disk will be shown as "IDE," and external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number.

If "ALL" is specified as the target, a confirmation message will appear, asking you whether you want to initialize the copy destination disk drive. If you wish to initialize the copy destination disk drive, press [YES]. If not, press [NO].

< If the display indicates "Disk Memory Full" >

If this message appears during copying, the copy operation has been halted either because the disk drive has insufficient free space, or the copy destination disk drive would contain more than 200 songs (the maximum number of songs). However any song data which has been completely copied before this message appeared will still be usable

■ Copying song data as an archive (Archive)

Use this method to copy song data when you are using a removable disk drive and two or more disks will be required in order to copy the specified song data.

When a song is copied using this method, the song data is converted into an archival format. This means that it will not be possible to select the copy destination disk drive as the current drive, or to playback the song data directly.

In order to use song data which has been copied by this method, you must use the procedure of the following page to load the archived song data from the removable disks back into the current drive.

< Disk handling >

When using this operation to copy song data, the disk will be initialized to hold archive-type song data. This means that this operation can be executed using even a disk which has not been initialized by the VS-880. However be aware that if you use this operation to copy data to a disk which already contains song data, all of the previously saved song data will be lost.

A disk on which song data has been archived cannot be selected as the current drive in the way that a disk containing conventional song data can be. If you attempt to select an archive disk as the current drive, it will be recognized as an un-initialized disk drive.

1. Connect the disk drive as explained in "Connecting an external disk drive" (p.48).

2. Press [SONG], select "SNG Song Copy" display, and press [YES].

3. Make settings for the following items, and execute the operation. If during execution, the display indicates "PleaseInsertDisk", insert the next disk, and press [YES] to continue the copy operation.

CpyMode (Copy mode): Select "Archives."

ArcTarget (Archive target): Select the song that you wish to copy. If you wish to copy the currently selected song, select "1 Song." To copy all songs from the current drive, select "All."

Arc.Drive (Archive drive): Select the copy destination disk drive. The external disk drives will be shown as "SC0-SC7." The number following each disk drive indicates the partition number. For this operation, you will be able to select only removable disk drives which are connected to the SCSI connector.

Arc.Func (Archive function): Select "Stow In."

■ Loading archive-type song data

When you wish to use archived song data that was saved to a removable disk drive, use the following procedure to load the song data into the current drive.

1. Press [SONG], select "SNG Song Copy?," and press [YES].

2. Make settings for the following items, and execute the operation.

A confirmation message will appear, asking you whether you want to initialize the current drive. If you wish to initialize, press [YES]. If not, press [NO].

If the display shows "Insert Disk ***" during the operation, insert the next disk and press [YES] to continue the copy operation.

If you have inserted a disk on which the data of two or more songs has been saved together and you also selected "1 Song" as the Archive Target, make all settings and press [YES] to see the names of the saved song data. Select the song data that you wish to copy, and press [YES].

CpyMode (Copy mode): Select "Archives."

ArcTarget (Archive target): Select the song that you wish to load. To load the data of a single song, select "1 Song." To load all the song data, select "All."

Arc.Drive (Archive drive): Select the removable disk drive from which the data will be loaded.

Arc.Func (Archive function): Select "Extract."

■ Erasing song data (Song Erase)

This erases song data from the current drive.

1. Press [SONG], select "SNG Song Erase?," and press [YES].

2. The names of the songs stored on the current drive will appear. Select the song that you wish to erase, and execute. An asterisk "*" will appear at the beginning of the currently selected song. If the currently selected song has been erased, the lowest-numbered song in the current drive will be selected.

■ Erasing unnecessary playback data (Song Optimize)

When operations such as overdubbing and punch-in recording are repeated, the old data will remain in the disk drive. In some cases, significant amounts of memory can be occupied by this unnecessary data, decreasing the available space on the current drive, and shortening the length of time available for recording.

The Optimize operation erases this unnecessary data from the disk drive, increasing the available disk space.

1. Press [SONG], and select "SNG Song Optimize?," press [YES].

2. The display will ask "SongOptimize Ok?," so press [YES].

3. The display will ask "Optimize Sure?," so press [YES] and the Optimize operation will be executed.

Depending on the situation, an appreciable length of time will be required for the Optimize operation to be completed. This is not a malfunction. Do not turn the power off until the Optimize operation is completed.

■ Saving to a DAT recorder (DAT Backup)

Song data created on the VS-880 can be saved using a DAT recorder. This procedure is referred to as "backup." The procedure of loading the previously backed up song data into the VS-880 is referred to as "recover." The song data that is backed up includes the data of all V-tracks, and song settings such as locate points, mark points, and scene settings.

Make backups of your data as a precaution against unforeseen problems, or when your disk drive is full and no more recording is possible. We recommend that important data be backed up twice, using separate tapes.

Since DAT tapes are easily transported, this is convenient when you wish to exchange song data with a friend who also has a VS-880, or when you have a VS-880 both at home and in the studio.

* For details refer to "Saving song data on a DAT recorder" (p.46).

1. Digitally connect your DAT recorder to the VS-880.

2. Press [SONG], select "SNG DAT Backup?," and press [YES].

3. Make settings for the following items.

Back (backup): Select the song that you wish to backup. If you wish to backup all song data on the current drive, select "ALL."

Tape Len (Tape length): Specify the interval at which backup will be paused. Set this appropriately for the length of tape on which you are recording.

Backup Wait: If this is "On," the data transmission speed will be slower. When using a disk drive whose data read/write speed is slower, turn this "On."

SampleRate: Specify the sample rate used for the backup. Normally you will set this to 48 kHz.

* The sample rate used when transmitting song data has no connection to the sample rate of the song data. If your DAT recorder requires you to set the sample rate for recording, set it to match this sample rate.

4. Start recording on your DAT recorder, and at the "Backup Ready?" message, press [YES] to begin backup. When the backup is paused at the interval time, change tapes, begin recording, and press [YES].

■ Loading song data from a DAT recorder (Recover)

This operation loads song data that was saved on a DAT recorder. If data for two or more songs was saved together during the backup operation, the data of all the songs will be loaded. If you wish to load only the data for a specific song, use the following procedure for "Checking the names of songs saved to a DAT recorder (Name)."

* For details refer to "Saving song data to a DAT recorder" (p.46).

1. Digitally connect the DAT recorder to the VS-880, and cue the song that you wish to load.

2. Press [SONG], select "SNG DAT Recover?" and press [YES].

3. Select "SNG Recover Ready?" and press [YES]. The display will ask "STORE OK?"

4. Press [YES]. A confirmation message will appear, asking you whether you want to initialize the current drive. If you wish to initialize, press [YES]. If not, press [NO]. The display will indicate "Please Play DAT." Then it will indicate "Waiting Start ID," and the song data can now be loaded.

5. Begin tape playback, and loading of the song data will begin.

If the backup occupies two or more tapes, the procedure will be paused when a tape finishes playing back. Insert the next tape and press [YES], and start playback of the tape.

6. When the recover operation is completed, the display will indicate "Please Stop DAT." Press [YES] to end the procedure, and stop the DAT recorder.

7. Press [PLAY (DISPLAY)] to return to Play condition.

■ Checking the names of songs saved to a DAT recorder (Name)

This operation lets you check the names of song data that was saved to a DAT recorder. Even if you have saved the data of two or more songs in a single backup operation, you can check the name of each song.

This operation also allows you to load selected song data into the VS-880. When the Recover operation is used, the data for all songs which were saved together by the backup operation will be loaded. However with this operation (Name), only the song data that you specify will be loaded.

1. Digitally connect the DAT recorder to the VS-880, and cue the song.

2. Press [SONG], select "SNG DAT Recover?" and press [YES].

3. Select "SNG Name Ready?" and press [YES]. The display will indicate "Please Play DAT."

4. Begin tape playback, and the song names will be checked. When checking is completed, the song names will be displayed. If two or more song names were saved together, rotate the TIME/VALUE dial to check the song names. If you only wanted to check the song names, press [PLAY (DISPLAY)] to return to Play condition.

5. If you wish to load song data, select the desired song name, and press [YES]. A confirmation message will appear, asking you whether you want to initialize the current drive. If you wish to initialize, press [YES]. If not, press [NO]. The display will indicate "Please Play DAT."

6. Playback the song data from the beginning, and the song data will be loaded.

If the backup occupies two or more tapes, the operation will pause when a tape finishes playing back. At this time, the display will indicate the number of the tape that should now be inserted. Insert the specified tape and press [YES], and start tape playback.

* If you wish to cancel the operation, press [NO]. It is possible to cancel even during the Recover operation, but in this case, the song data will not be playable.

7. When the recover operation is completed, the display will indicate "Please Stop DAT." Press [YES] to end the procedure, and stop the DAT recorder.

8. Press [PLAY (DISPLAY)] to return to Play condition.

■ Checking the condition of song data recorded to DAT tape (Verify)

This operation checks the condition of song data that was recorded to DAT tape.

If the data is not recorded correctly, it is possible that the tape has been scratched or stretched. If the original song data still exists in the disk drive, perform the backup operation once again to a different DAT tape.

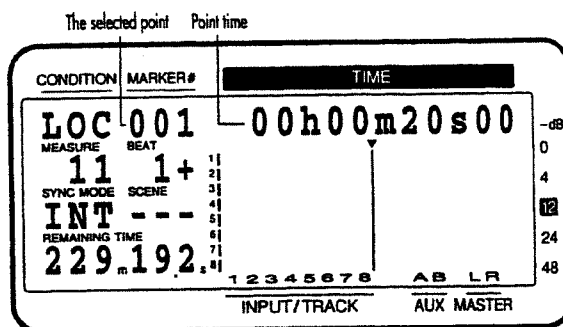
1. Press [SONG], select "SNG DAT Recover?" and press [YES].
2. Select "SNG Verify Ready?" and press [YES]. The display will indicate "Please Start DAT."
3. Start tape playback, and checking of the song data will begin. If the backup occupies two or more tapes, the operation will pause when the tape playback ends. Insert the next tape and press [YES], and start tape playback again. If no problems were found with the condition of the backed up song data, the display will indicate "Complete." If a problem was found, a warning message will be displayed. Song data for which a warning message was displayed could not be read correctly.
4. When the "Please Stop DAT" message appears, press [YES] and stop the DAT recorder.
5. Press [PLAY (DISPLAY)] to return to Play condition.

Modifying the time of a point (Locator Edit condition)

The following types of points can be specified in a song. The procedure for setting these points have been explained in chapter 1. Here, we will explain how to modify the time of a point that has already been set.

- Locate points of the Locate function
- Mark points of the Tap Marker function
- Loop area for the Loop function
- Recording area for auto punch-in recording

1. Press [LOCATOR], and a display will appear allowing you to modify the timing of the points.



2. Press one of the [LOCATOR] buttons or use PARAMETER [◀◀][▶▶] to select the point whose timing you wish to modify. If you select a point which has not been set for the song, the display will indicate "--". Now you can operate the TIME/VALUE dial (or press a LOC button) to set the current time to that point. In this case, it is not possible to use the LOCATOR buttons as numeric keys to specify the point.

Use [PREVIOUS] and [NEXT] to switch between Mark point numbers. Use [LOC 1/5]–[LOC 4/8] to switch Locate point numbers.

- 001, 002...: Mark points
- loc1, loc2...: Locate points
- lpSt: Starting point of the loop area
- lpEd: End point of the loop area
- APIn: Auto punch-in point
- APOt: Auto punch-out point

3. Rotate the TIME/VALUE dial to modify the timing of the displayed point. You can also use the methods explained in "Changing the current time" (p.31) to modify the time.

If you wish to audition the playback before or after the point, use the Preview function (p.39).

4. When you finish making changes, press [PLAY (DISPLAY)] to return to Play condition.

Modifying a track (Track Edit condition)

This section explains the track editing functions.

- Copying (Track Copy)
- Moving (Track Move)
- Erasing (Track Erase)
- Exchanging (Track Exchange)
- Inserting blank space (Track Insert)
- Cutting (Track Cut)
- Modifying the playback time (Time compression/expansion)

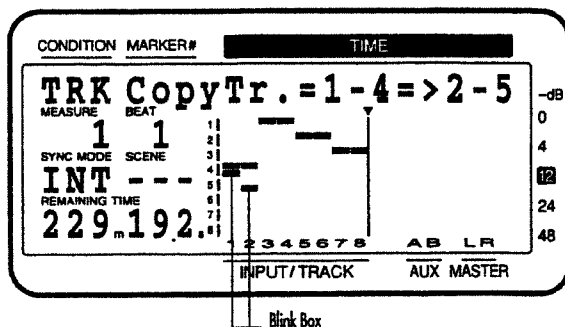
Basic procedure

Here is the basic procedure for Track Edit condition. In the explanations which follow, this basic procedure will be abbreviated.

1. If you are performing a Copy/Move/Exchange operation, select the V-track that contains the source data, so that that data can be played back.
2. Press [TRACK], and the Track Edit condition functions will appear in the upper line of the display. Use [TRACK] or PARAMETER [◀◀][▶▶] to select the desired function, and press [YES].
3. First you will select the track and V-track to which the operation will apply. To select a track, press the [(SEL) CH EDIT] button for that track. To select a V-track, use the TIME/VALUE dial.

If you are performing a Copy/Move/Exchange operation, specify both the source track and the destination track. To do this, use CURSOR [◀][▶] to make the blinking area to a selection, and specify the desired track. For the various operations of Track Edit condition, you can execute an operation with the same settings for two or more tracks.

When selecting tracks, tracks which contain playback data will be shown in the bar display. The numbers in the horizontal axis are track numbers, and the numbers in the vertical axis are V-track numbers. Track areas that contain playback data will be lit. Tracks which are selected for modification will blink.



4. Press PARAMETER [▶▶] to step through the items, and use the TIME/VALUE dial to make settings for each one. To return to a previous item, press PARAMETER [◀◀].

In items that require you to specify a time, you can do so by selecting a Mark point or a Locate point, or by using the operations explained in "Changing the current time" (p.31). To audition the playback before and after the point, use the Preview function (p.39).

5. As you press PARAMETER [▶▶] to step through the settings, a message will appear at the end, asking you to confirm execution. If you wish to execute, press [YES]. A reconfirmation message will blink, so press [YES] once again to execute. When execution is complete, you will return to Play condition.

To cancel execution, press [NO]. You will return to the previous condition.

- * If after hearing the results of the operation you wish to return to the original data, use the Undo function (p.40).

< About the bar display >

- When tracks are being selected, the bar display will indicate the status of track selection. At this time, you can view the play list in the bar display by holding down [SHIFT] and pressing [PLAY (DISPLAY)]. To return to the previous display, once again hold down [SHIFT] and press [PLAY (DISPLAY)].

- When an item requiring a time setting is selected, the bar display will show the play list. At this time, you can view the amplitude profile and the track selection status by holding down [SHIFT] and pressing [PLAY (DISPLAY)]. The amplitude profile lets you view the waveform recorded in the selected track. Use the [(SEL) CH EDIT] buttons to select the track whose amplitude profile will be displayed.

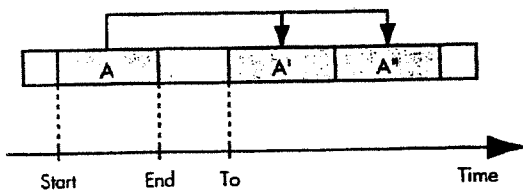
■ Copying (Track Copy)

This operation copies the playback data of a specified area to another location. This operation lets you copy the data of two or more tracks at once, or copy the specified data to a specified location two or more times in succession. When you wish to use a phrase that is recorded in a track, or when a song contains a phrase that is repeated, the Copy operation will let you create the song more efficiently.

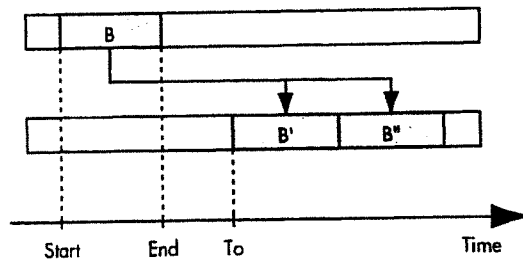
Normally, the data will be copied starting at the specified copy destination time. However it is also possible to specify the copy destination time as a base time at which a specific sound occurs. This is done using the "Frm (From)" setting item.

For example suppose that you wish to copy a sound effect of a time bomb ticking and then exploding, and that you want to place the explosion at a specific timing location. Normally, you would have to calculate the time until the explosion in order to specify the copy destination time. However in such cases, you can specify "From" as "the copy source time at which the explosion begins," and specify "To" (the base time of the copy destination) as "the copy destination time at which you want the explosion to occur." This lets you copy the data with the explosion placed at precisely the right timing.

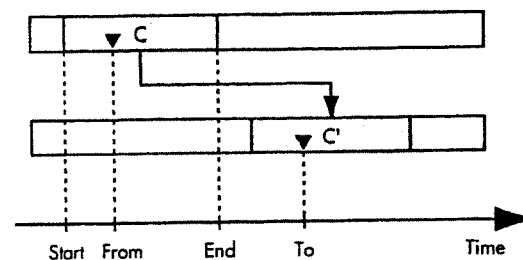
Example 1: Copying twice to the same track



Example 2: Copying twice to a different track



Example 3: Copying using the "Frm" setting

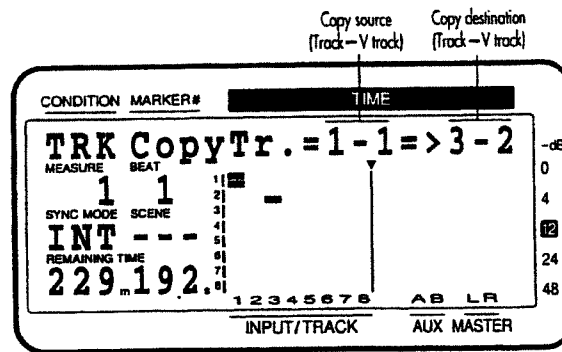


* If playback data exists at the copy destination, that data will be overwritten.

* Playback data of a channel for which Channel Link is ON cannot be copied to a track whose channel has a Channel Link setting of OFF. Nor is the converse possible.

1. Select the V-track that contains the copy source playback data, and prepare that data for playback.

2. Press [TRACK], select "TRK Track Copy?," and press [YES]. The display will let you select the copy source track, and the copy destination track and V-track.



3. Use [SEL (CH EDIT)] to select the copy source track. When the copy source track is selected, the V-track selected for that channel will be the copy source V-track. Next, press CURSOR [▶] to make the copy destination field blink, use [SEL (CH EDIT)] to select the copy destination track, and use the TIME/VALUE dial to select the copy destination V-track.

If you wish to perform a copy operation with the same settings for other tracks, select the copy source and copy destination tracks, and press CURSOR [▶] once again. Now you can specify the new copy source and copy destination tracks. In this case, it will not be possible to select copy destination tracks that have already been selected as copy source tracks.

If you wish to cancel the copy operation for a track, use PARAMETER [◀◀][▶▶] to display the settings for that track, and press [CANCEL (NO)] twice.

4. Set the following items, and execute the copy operation.

St (start point): Specify the starting time of the copy source playback data.

End (end point): Specify the ending time of the copy source playback data.

Frm (from point): Specify the time of the copy source playback data that will correspond to the To point. Normally you will set this to be the same as the Start point.

To (to point): Specify the base time of the copy destination.

Copy Time: Specify the number of copies (1-99).

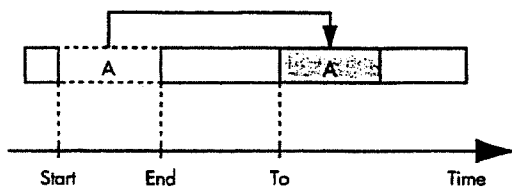
■ Moving (Track Move)

This operation moves the playback data of the specified area to another location. This can be used to correct skewed timing that occurred during recording. This operation can move the timing of two or more tracks of playback data at once.

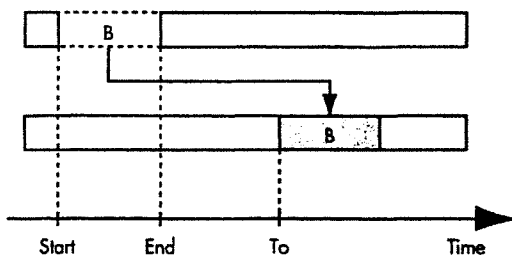
Normally when moving playback data, the data will be moved so that it begins at the move destination timing. However it is also possible to move the data relative to a location within the data at which a specific sound occurs. To do so, use the "Frm (From)" setting.

For example suppose that you wish to move a sound effect of a time bomb ticking and then exploding, so that the explosion occurs at a specific timing location. Normally, you would have to calculate the time until the explosion in order to specify the move destination time. However in such cases, you can specify "From" as "the move source time at which the explosion begins," and specify "To" (the base time of the move destination) as "the move destination time at which you want the explosion to occur." This lets you move the data with the explosion placed at precisely the right timing.

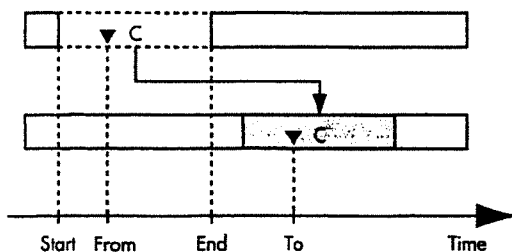
Example 1: Moving within the same track



Example 2: Moving to a different track



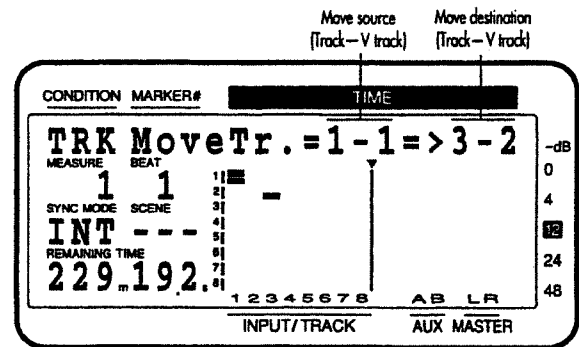
Example 3: Moving using the "Frm" setting



* If playback data exists at the move destination, that data will be overwritten.

- * Playback data of a channel for which Channel Link is ON cannot be moved to a track whose channel has a Channel Link setting of OFF. Nor is the converse possible.
- * The length of the data to be moved must be greater than 0.5 seconds. If data shorter than 0.5 seconds is moved, the sound will not playback.
- * Do not leave sound within 0.5 seconds before or after the section of data that is moved. Any sound which was within 0.5 seconds of the moved data will not playback.

1. Select the V-track that contains the move source playback data, and prepare that data for playback.
2. Press [TRACK], select "TRK Track Move?," and press [YES]. The display will let you select the move source track, and the move destination track and V-track.



3. Use [SEL (CH EDIT)] to select the move source track. When the move source track is selected, the V-track selected for that channel will be the move source V-track. Next, press CURSOR [▶] to make the move destination field blink, use [SEL (CH EDIT)] to select the move destination track, and use the TIME/VALUE dial to select the move destination V-track.

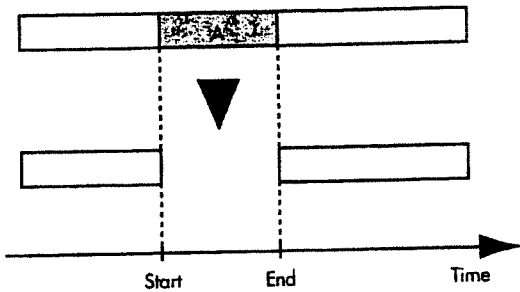
If you wish to perform a move operation with the same settings for other tracks, select the move source and move destination tracks, and press CURSOR [▶] once again. Now you can specify the new move source and move destination tracks. In this case, it will not be possible to select move destination tracks that have already been selected as move source tracks.

If you wish to cancel the move operation for a track, use PARAMETER [◀][▶] to display the settings for that track, and press [CANCEL (NO)] twice.

4. Set the following items, and execute the copy operation.
 - St (start point): Specify the starting time of the move source playback data.
 - End (end point): Specify the ending time of the move source playback data.
 - Frm (from point): Specify the time of the move source playback data that will correspond to the To point. Normally you will set this to be the same as the Start point.
 - To (to point): Specify the base time of the move destination.

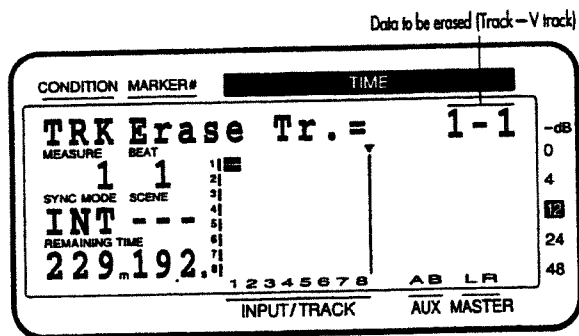
Erasing (Track Erase)

This operation erases playback data from the specified area. If this operation is used to erase playback data, even if playback data exists after the area that was erased, it will not be moved forward. To use the analogy of a tape recorder, this operation is like recording silence over an unwanted section of the tape.



* Do not leave sound within 0.5 seconds before or after the area to be erased. Any sound which was within 0.5 seconds of the erased data will not playback.

1. Press [TRACK], select "TRK Track Erase?," and press [YES]. The display will allow you to select the track and V-track from which playback data will be erased.



2. Use [SEL (CH EDIT)] to select the track from which data will be erased, and use the TIME/VALUE dial to select the V-track.

If you wish to execute the Track Erase operation with the same settings for other tracks as well, press [SEL (CH EDIT)] for the additional tracks that you wish to erase, and use the TIME/VALUE dial to specify the V-track that you wish to erase. If you wish to cancel the erase operation for a track, use PARAMETER [◀][▶] to display the setting of that track, and press [CANCEL (NO)].

If you wish to select all V-tracks of a specified track, use the TIME/VALUE dial to select "*". If you wish to select all V-tracks of all tracks, select "*- *".

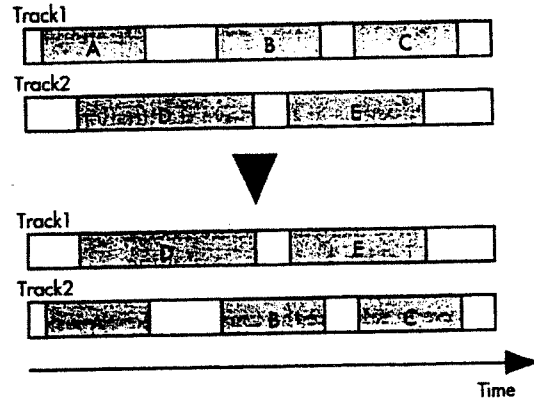
3. Make settings for the following items, and execute the track erase operation.

St (start point): Specify the time location at which the data to be erased begins.
 End (end point): Specify the time location at which the data to be erased ends.

Exchanging (Track Exchange)

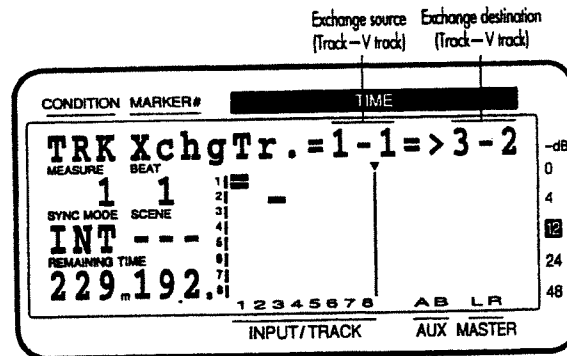
This operation exchanges the playback data of two tracks.

Example: Exchanging tracks 1 and 2



* Playback data of a channel for which Channel Link is ON cannot be exchanged with a playback data whose channel has a Channel Link setting of OFF. Nor is the converse possible.

1. Select one of the V-tracks that you wish to exchange, and prepare that data for playback.
2. Press [TRACK], select "TRK Track Exchange?," and press [YES]. The display will let you select the exchange source track and the exchange destination track and V-track.



3. Use [SEL (CH EDIT)] to select the exchange source track. When you select the exchange source track, the V-track selected for that channel will be selected as the exchange source V-track. Next, press CURSOR [▶] to make the exchange destination blink, use [SEL (CH EDIT)] to select the exchange destination track, and use the TIME/VALUE dial to select the exchange destination V-track.

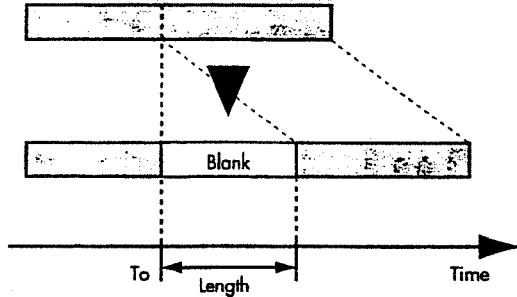
If you wish to execute the Track Exchange operation with the same settings for other tracks as well, select the exchange source and exchange destination tracks, and then press CURSOR [▶] once again. You will be able to specify a new set of tracks to be exchanged. In this case, it is not possible to set the exchange destination track to a track that was already specified as an exchange source track.

If you wish to cancel the exchange operation for certain tracks, use PARAMETER [◀][▶] to display the settings for those tracks, and press [CANCEL (NO)] twice.

4. Execute the track exchange operation.

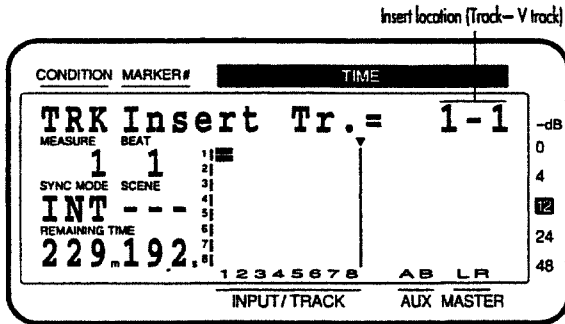
■ Inserting blank space (Track Insert)

This operation inserts blank space at the specified location. When you wish to add a phrase into the playback data, you can insert a blank of the appropriate length, and then record the phrase into the blank area.



* Do not leave sound within 0.5 seconds before or after the area into which the data will be inserted. Any sound which was within 0.5 seconds of the inserted data will not playback.

1. Press [TRACK], select "TRK Insert?", and press [YES]. The display will let you select the track and V-track into which the blank will be inserted.



2. Use [SEL (CH EDIT)] to select the insert destination track, and use the TIME/VALUE dial to select the insert destination V-track.

If you wish to execute the Track Insert operation with the same settings for other tracks as well, press [SEL (CH EDIT)] for the additional tracks that you wish to insert, and use the TIME/VALUE dial to specify the insert destination V-track. If you wish to cancel the insert operation for a track, use PARAMETER [◀◀][▶▶] to display the setting of that track, and press [CANCEL (NO)].

If you wish to insert a blank into all V-tracks of the specified track, use the TIME/VALUE dial to select "*"*. If you wish to insert a blank into all V-tracks of all tracks, select "* - *".

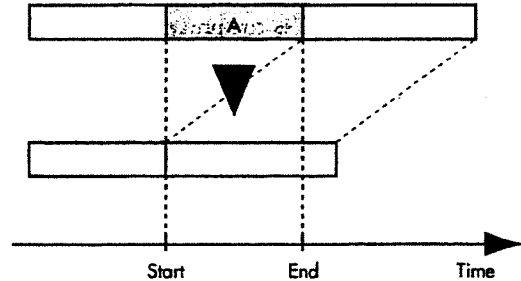
3. Make settings for the following items, and execute the track insert operation.

To (to point): Specify the time location at which the blank will be inserted.

Len (length): Specify the time length of the blank.

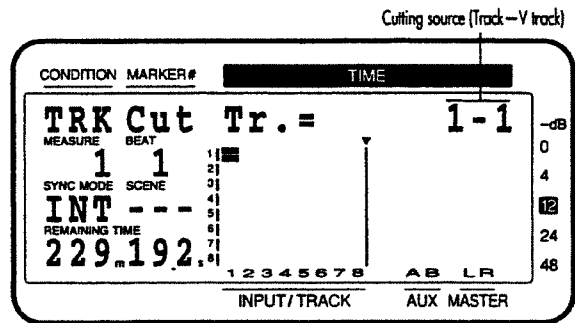
■ Cutting (Track Cut)

This operation cuts playback data from the specified area. When playback data is cut using this operation, any playback data following the data that was cut will move forward to fill the gap. To use the analogy of a tape recorder, this operation is like cutting an unwanted portion out of an audio tape, and splicing the ends.



* Do not leave sound within 0.5 seconds before or after the area to be cut. Any sound which was within 0.5 seconds of the cut data will not playback.

1. Press [TRACK], select "TRK Cut?", and press [YES]. The display will let you select the track and V-track from which playback data will be cut.



2. Use [SEL (CH EDIT)] to select the track from which data will be cut, and use the TIME/VALUE dial to select the V-track from which data will be cut.

If you wish to execute the Track Cut operation with the same settings for other tracks as well, press [SEL (CH EDIT)] for the additional tracks that you wish to cut, and use the TIME/VALUE dial to specify the V-track that you wish to cut. If you wish to cancel the cut operation for a track, use PARAMETER [◀◀][▶▶] to display the setting of that track, and press [CANCEL (NO)].

If you wish to cut data from all V-tracks of the specified track, use the TIME/VALUE dial to select "*"*. If you wish to cut data from all V-tracks of all tracks, select "* - *".

3. Make settings for the following items, and execute the track cut operation.

St (starting point): Specify the starting time location of the data which is to be cut.

End (end point): Specify the ending time location of the data which is to be cut.

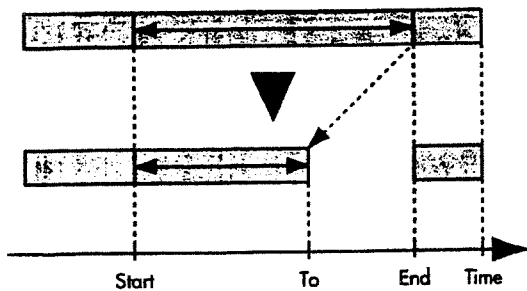
■ Modifying the playback time (Time compression/expansion)

This operation allows you to expand or compress the playback time of a song to the specified time length. You can specify a compression/expansion of 75–125%, but extreme settings will produce a more adverse effect on the sound quality. We recommend that you normally keep compression/expansion within a range of 93–107%.

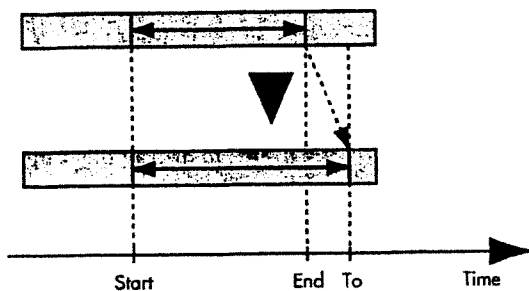
Usually when playback time is compressed or expanded, the playback pitch is affected correspondingly. For example if the playback time is halved, the playback pitch will rise one octave. On the VS-880, you can select whether the playback pitch will change in correspondence to the compression/expansion ratio, or whether the original playback pitch will be preserved.

- * Time Compression/Expansion creates a new song with a different playback time. For this reason, it will not be possible to execute it if the current drive does not have sufficient space.
- * It is not possible to make settings where the times from the Start Point to the End Point or from the Start Point to the To Point are less than 0.5 seconds.
- * When compressing the data, do not compress it to a time length of 0.5 seconds or shorter. If it is compressed to 0.5 seconds or less, it will not be played.

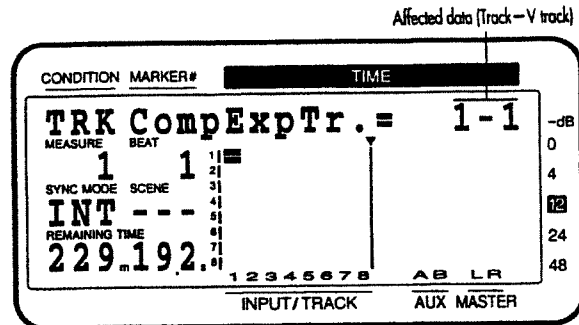
Example 1: Compression



Example 2: Expansion



1. Press [TRACK], select "TRK Time Comp/Exp.?", and press [YES]. The display will let you select the track and V-track to which the operation will apply.



2. Use [SEL (CH EDIT)] to select the track to be affected, and use the TIME/VALUE dial to select the V-track. If you wish to select all V-tracks of the selected track, use the TIME/VALUE dial to select "* - *".
If you wish to execute the Time Compression/Expansion operation with the same settings for other tracks as well, press [SEL (CH EDIT)] for the additional tracks that you wish to compress or expand, and use the TIME/VALUE dial to specify the V-track that will be compressed or expanded. If you wish to cancel the Compression/Expansion operation for a track, use PARAMETER [◀|▶] to display the setting of that track, and press [CANCEL (NO)].

3. Make settings for the following items, and execute the operation.

Start (start point): Specify the time location at which the change in playback time will start.

End (end point): Specify the time location at which the change in playback time will end.

To (to point): Specify the ending time location that will result from the compression/expansion.

Pitch: If you want the playback pitch to change as a result of the compression/expansion, set this to "Vari." If not, set this to "Fix."

Type: Specify the type of conversion. Select "A" for vocals or narrations, "B" for slow-tempo songs such as slow ballads, and "C" for fast-tempo songs such as rock.

Amplitude: Specify the volume level ratio (50, 60, 70, 80, 90, 100%) that will result from conversion. Normally you should use the default value of "60%." If the volume level after conversion is too low, use the Undo function to return to the original data, increase the amplitude settings, and try the operation again. However be aware that excessively high settings can cause noise to occur in the data.

- * To cancel the operation, press [CANCEL (NO)].

Overall settings for the VS-880 (System Edit condition)

This section explains how to make the settings that affect the VS-880 operating environment, and how to select and initialize disk drives.

- System settings
- MIDI settings
- Disk drive settings
- Synchronization settings
- Scene settings
- Disk drive selection
- Disk drive initialization

■ Procedure for making settings

1. Press [SYSTEM]. If a message with a question mark such as "SYS System PRM?" does not appear, press [SYSTEM] once again.
2. Use [SYSTEM] or PARAMETER [◀◀][▶▶] to select the desired item, and press [YES].
3. Use PARAMETER [◀◀][▶▶] to select the parameter that you wish to modify, and use the TIME/VALUE dial to modify the value. If two or more parameters are displayed, use CURSOR [◀][▶] to make the blinking area to the parameter that you wish to modify.

4. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition.

For the disk drive Selection and Initialization operations, make settings for all parameters and then press [YES]. A message will ask you to confirm execution, so press [YES] if you wish to execute. A blinking message will ask you to re-confirm, so press [YES] once again. (To cancel, press [NO].) When the operation has been executed, you will return to Play condition.

■ System settings

MasterClk (Master clock)

This sets the master clock for the sample rate. When inputting an analog source, select "INT." When inputting a digital source, select "DIGITAL." When "DIGITAL" is selected, it will not be possible to playback or record a song unless a digital signal is being sent to the DIGITAL IN connector.

INT: The sample rate will be determined by the VS-880's internal clock.

DIGITAL: The sample rate will be determined by the digital signal being input from the DIGITAL IN connector.

TimeDispFmt (Time display format)

This sets the way in which the standard time is shown in the TIME field of the display. Normally, leave this set to "REL." If you are using MTC to synchronize the VS-880 from an external MIDI device, set this to "ABS" if appropriate.

REL: The starting time of the song will be displayed as "00h00m00s00."

ABS: The time specified by Offset will be added to the display.

Ofs (Offset)

When using MTC from an external device to synchronize the VS-880, the Offset setting lets you match the song playback timing with the MTC timing.

Set the Offset to the difference between "MTC time" and the "time that you want the song to playback." For example if you want song time "00h10m00s00" to playback when MTC time "01h00m00s00" is reached, set the offset as follows.

$$(01h00m00s00) - (00h10m00s00) = (00h50m00s00)$$

Marker Stop

Turn this "On" when you want song playback to automatically halt at time locations where a Mark point exists.

RecordMon (Record monitor)

This specifies how monitoring will occur for channels whose track status is set to REC.

AUTO: When a song is played back in record ready mode (when the REC indicator is blinking), data recorded in the tracks will be monitored, and during recording (when the REC indicator is lit), the input sources will be monitored. At this time, you can press [STATUS] to switch between monitoring the track and the input source. While you are monitoring the input source, the STATUS indicator will alternately light red and orange.

When performing punch-in recording, select "AUTO."

SOURCE: The input source will always be monitored.

	<u>Stopped</u>	<u>During playback</u>	<u>During recording</u>
AUTO	input source	track/input source	input source
SOURCE	input source	input source	input source

VariPitch

This sets the playback pitch when the Vari-pitch function is used. The value is displayed as a sample rate. Make vari-pitch settings while actually listening to the song playback.

- * Although the audible result of Vari-pitch is that the pitch is being changed, in actuality, the sample rate is being modified. This means that you cannot use Vari-pitch while recording digital audio signals to a digital audio device. If this is set to other than the standard pitch, digital recording will not be possible.

FootSw (Foot switch assign)

This sets the function of the foot switch connected to the FOOT SWITCH jack.

Play/Stop: The song will alternately playback and stop each time the foot switch is pressed.

Record: The foot switch will have the same function as the [REC]. Use this to switch between recording and playback during manual punch-in recording.

TapMarker: The foot switch will have the same function as the [TAP]. A Mark point will be placed at the time location where you press the foot switch.

Next: The foot switch will have the same function as the [NEXT]. Each time you press the foot switch, you will move to the next Mark point.

Previous: The foot switch will have the same function as the [PREVIOUS]. Each time you press the foot switch, you will move to the previous Mark point.

GPI: A GPI trigger signal received from the FOOT SWITCH jack will control song playback/stop.

< About 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 VS-880 and setting the Foot Switch Assign to "GPI," the connected device will be able to playback/stop the VS-880.

FadeLength (Fade length)

When recording is begun or ended, unpleasant noise may occur. So that this noise is not heard when the song is played back, the VS-880 fades the start and end of the recording in and out. This parameter sets the fade in/out time (10, 20, 30, 40, 50 ms).

Scrub Len (Scrub length)

This sets the time length (25–100 ms) that is played back when the Preview function [SCRUB] button is pressed.

PreviewLen (Preview length)

This sets the time length (1.0–10.0 sec) that is played back when the [TO] or [FROM] button of the Preview function is pressed.

MetroOut (Metronome output)

When you wish to use a metronome to keep time as you record, the metronome sound (click) can be output from the VS-880. The timing of the metronome sound will depend on the tempo map settings (p.34).

Off: The metronome sound will not be output.

INT: The metronome sound will be output from the MASTER OUT jacks.

MIDI: A Note message will be transmitted from MIDI OUT connector as the metronome. Select this when you wish to play the metronome using a sound of an external MIDI sound source.

- * When transmitting a Note message as the metronome, set the MIDI Thru switch (p.73) to "Out." You will also need to make settings for the Metronome Channel, Accent Note, Accent Velocity, Normal Note, and Normal Velocity (p.73).

MetroLevel (Metronome level)

Adjust the volume level (0–127) of the metronome sound.

MetroMd (Metronome mode)

Specify how the metronome will sound.

RecOnly: The metronome will sound only during recording.

Rec&Play: The metronome will sound during both recording and playback.

UNDO MSG (Undo message)

If, when [UNDO] is pressed, you want the previous operation to be undone immediately without a confirmation message appearing, set this "Off." Normally you should set this "On."

LCD Contrast

This adjusts the brightness (0–15) of the display. Higher values will produce a darker display.

Init Mix / SysPRM? (Initialize mixer / System parameters)

This lets you reset the Channel Edit, Master Block Edit, and System Edit parameters to the default settings for when a song is created. However the settings for the volume level, pan, and master section volume level will be according to the position of the front panel knobs/faders.

This operation is convenient when you wish to re-do the mixer settings.

* This operation will not cause song, scene, tempo map, or sync track data to be lost. Also, the system parameter settings for IDE Drive, SCSI Self ID, and Scene Mode will not be initialized.

1. Press [SYSTEM], select "SYS System PRM?" and press [YES].
2. Use PARAMETER [▶▶] to select "SYS Init Mix/PRM?" and press [YES].
3. The display will indicate "SYS Init PRM Sure?" If you are sure that you want to initialize to the default values, press [YES]. If you decide not to initialize, press [NO]. When initialization has been completed correctly, you will return to PLAY condition.

■ MIDI settings

DeviceID (Device ID)

This sets the Device ID number (1–32) that is used when exchanging exclusive messages (mixer parameters) with an external MIDI device. Exclusive messages can be transmitted and received between devices which have the same Device ID number setting.

MIDIThr (MIDI thru switch)

This selects the function of the MIDI OUT/THRU connector. With the factory settings, this is set to "Out."

Out: The connector will transmit MIDI messages from the VS-880. Select this when you want to transmit metronome Note messages or mixer parameter settings (control change messages or exclusive messages).

Thru: MIDI messages received at the MIDI IN connector will be retransmitted from the connector without change.

SysEx.Rx (System exclusive receive switch)

If you wish to receive exclusive messages, set this "On." Exclusive messages can be received when in Play condition.

SysEx.Tx (System exclusive transmit switch)

If you wish to transmit exclusive messages, set this "On." In order for exclusive messages to be transmitted, the MIDI Thru Switch must also be turned "Out."

MMC (MMC mode)

This setting determines how the VS-880 will implement MMC.

Off: MMC will neither be transmitted nor received.

MASTER: MMC will be transmitted. The VS-880 will be the master device for external MIDI equipment.

SLAVE: MMC will be received. The VS-880 will be a slave device for external MIDI equipment.

MetronmCh (Metronome channel)

Specify the MIDI channel (1–16) on which Note messages for the metronome will be transmitted.

* When MIDI messages are used to control mixer parameters, MIDI channels 1–15 will be used. In this case, set the metronome channel to 16.

Acc.Note (Accent note)

Specify the note number (C₀–G₉) for the downbeat of the metronome. If you are using a drum set, this will determine the percussion instrument that will sound.

Acc.Velo (Accent velocity)

Specify the strength (1–127) of the metronome downbeat.

Nrm.Note (Normal note)

Specify the note number (C₀–G₉) for the upbeat of the metronome. If you are using a drum set, this will determine the percussion instrument that will sound.

Nrm.Velo (Normal velocity)

Specify the strength (1–127) for the metronome upbeat

CtrlLocal (Mixer control local switch)

Specify whether movements of the PAN knobs and faders of the channels will affect the actual pan and volume level.

CtrlType (Mixer control type)

Select the type of MIDI messages that will be used when transmitting mixer settings to an external MIDI device, or when MIDI messages from an external MIDI device are used to control the mixer. Normally, you should select Control Change messages.

Off: MIDI messages related to mixer operation will not be transmitted or received.

C.C.: Control Change messages

Excl: Exclusive messages

When using control change messages to control mixer parameters, mixer channels will correspond with MIDI channels as follows.

Channels for which Channel Link is on will use control change messages of the MIDI channel of the odd-numbered mixer channel. Control change messages received on the MIDI channel of the even-numbered mixer channel will be ignored.

INPUT → TRACK mode

<u>MIDI channel</u>	<u>Mixer channel</u>
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
15	master

INPUT MIX mode / TRACK MIX mode

<u>MIDI channel</u>	<u>Mixer channel</u>
1	track channel 1
2	track channel 2
3	track channel 3
4	track channel 4
5	track channel 5
6	track channel 6
7	track channel 7
8	track channel 8
9	input channel 1
10	input channel 2
11	input channel 3
12	input channel 4
13	input channel 5
14	input channel 6
15	master

Controller numbers correspond to the channel parameters as follows.

<u>Controller numbers</u>	<u>Mixer parameters</u>
16	EQ L Gain
17	EQ L Freq.
18	EQ M Gain
19	EQ M Freq.
20	EQ M Q
21	EQ H Gain
22	EQ H Freq.
7	MIX Send Level
10	MIX Send Pan/Bal
23	AUX Send Level
24	AUX Send Pan/Bal

Controller numbers correspond to the master section parameters as follows.

<u>Controller numbers</u>	<u>Mixer parameters</u>
7	Master Level
10	Master Balance
23	AUX Level
24	AUX Balance

■ Disk drive settings

IDE DRV (IDE drive)

When an internal hard disk is installed, set this "On" so that the VS-880 will recognize the hard disk. The next time the power is turned on, the internal hard disk will be recognized.

If this is set "On" even though an internal hard disk is not installed, approximately 30 seconds of additional time will elapse after the power is turned on, while the VS-880 determines whether or not an internal hard disk is present. If an internal hard disk is not installed, this should be set "Off."

SCSI Self (SCSI self ID)

This sets the SCSI ID number (0-7) of the VS-880 itself. Set this so that there is no conflict with the SCSI ID numbers of any disk drives which are connected. Normally this should be left at 7. If you change the setting, it will become effective the next time the power is turned on.

■ Synchronization settings

Set these parameters when you wish to synchronize the VS-880 with external MIDI devices.

Source (Sync source)

This determines how the VS-880 will synchronize with other devices.

INT: The VS-880 will be controlled by its own internal clock. Select this setting when you are not synchronizing with other devices, or when you want external MIDI devices to be controlled by synchronization signals from the VS-880.

EXT: The VS-880 will be controlled by synchronization signals (MTC) from an external MIDI device. In this case, the VS-880 will not operate unless it is receiving MTC signals. Select this setting when you want to use MTC from an external MIDI device to control the VS-880.

Gen (Sync generator)

This selects the type of synchronization signal that will be transmitted from the MIDI OUT connector. When using a synchronization signal from the VS-880 to synchronize external MIDI devices, set this to the desired type of synchronization signal.

Off: Synchronization signals will not be transmitted.

MTC: MIDI Time Code will be transmitted.

MIDI Clk: MIDI Clock will be transmitted.

SyncTr: MIDI Clock data recorded on the sync track will be transmitted.

ErrLevel (Error level)

When MTC from an external MIDI device is used to synchronize the VS-880, this parameter sets the interval (0–10) at which the MTC reception status will be checked. If MTC is not transmitted continuously, the VS-880 will check the MTC, and will halt synchronized operation if a problem is found. In such cases, increase the checking interval so that synchronized operation will continue even if there are slight problems with MTC reception.

MTC Type

This sets the type of MTC. Check the specifications of the MIDI devices that you are using, and select the appropriate type of MTC on the VS-880.

30: 30 frames per second non-drop format. This is used by audio devices such as analog tape recorders, and for NTSC format black and white video (used in the US and Japan, etc.).

29N: 29.97 frames per second non-drop format. This is used for NTSC format color video (used in the US and Japan, etc.).

29D: 29.97 frames per second drop format. This is used for NTSC format broadcast color video (used in the US and Japan, etc.).

25: 25 frames per second frame rate. This is used in SECAM format / PAL format video (used in Europe, etc.), and for audio equipment and film.

24: 24 frames per second frame rate. This is used for film in the US.

< Non-drop format and drop format >

NTSC format VCRs use two formats; non-drop and drop. In non-drop format, the frames are continuous. However in drop format, two frames are skipped at the beginning of each minute except for the minutes which fall at ten-minute intervals.

In most video production and music production, continuous frames are easier to handle, so non-drop format is widely used. However in broadcast studios, where time code must match actual clock time, drop format is widely used.

Tempo

This sets the tempo (25.0–250.0) of the tempo map. The measure and beat shown in the display, the metronome sound, and the MIDI Clock signals sent from the VS-880 will be according to this tempo setting.

Measure

This sets the starting measure (1–999) of the tempo map. The measure and beat shown in the display, the metronome sound, and the MIDI Clock signals sent from the VS-880 will be according to this tempo setting.

Beat

This sets the time signature (1/1–8/1, 1/2–8/2, 1/4–8/4, 1/8–8/8) of the tempo map. The beats shown in the display, the metronome sound, and the MIDI Clock signals sent from the VS-880 will be according to this time signature setting.

Sync Tr.Rec? (Sync track recording)

This records MIDI Clock data from an external MIDI device onto the sync track (p.80).

■ Scene settings**SYS Scene Mode**

This setting determines the fader settings when a Scene is recalled.

All: Fader settings will change to the settings of the scene that was recalled. In this case, when a scene is recalled, the location of the faders on the front panel will no longer match the actual fader settings.

KeepF: The mixer settings of the scene that was recalled will be applied with the exception of the fader settings. This means that even when a scene is recalled, fader settings will still match the location of the faders on the front panel.

■ Disk drive selection

When this item is selected, the VS-880 will scan the disk drives that are connected. After selecting the desired disk drive, press [YES] to get the "SYS Change to" message, and press [YES] once again to execute the change in disk drive.

Select Drv (Select drive)

Select the disk drive and partition that you wish to use. For example to select partition 2 of external disk drive 1, specify "SC1: 2".

Internal hard disk: IDE: 0–IDE: 3

External disk drive: SC0: 0–SC0: 3, SC1: 0–SC1: 3, ... SC7: 0–SC7: 3

■ Disk drive initialization

Before using a new disk drive, a new magneto-optical disk, or a disk drive that has been used by a different device, the disk drive must be initialized for use by the VS-880.

If this item is selected, make settings for the following items, get the "SNG Init.***: U OK?" display, and press [YES]. ("***" indicates the disk drive to be initialized.) A message of "SNG Init. ***: U Sure?" will ask for re-confirmation, so press [YES] to execute initialization (To cancel, press [NO]). When initialization has been completed correctly, the VS-880 will automatically be re-started, and will enter Play condition.

- * When initializing a large-capacity disk drive, be aware that some time will be required. This is not a malfunction. The progress of initialization will be shown in the bar display, so be sure not to turn the power off until initialization is complete.

< The newly created song >

When a disk drive is initialized, a new song will be created in that drive. The new song will be named "InitSong 001," and will have a sample rate of "44.1 kHz" and a recording mode of "MT2" (Multitrack 2).

If you want the song to have a different sample rate or recording mode, create a separate new song, and then erase the song that was created by initialization.

Init.Drive (Initialize drive)

Select the disk drive that will be initialized.

PhysicalFmt (Physical format)

If you want physical formatting to be performed at the same time, turn this "On." Physical formatting will check an empty disk drive or a disk drive that was used by another device for faulty blocks and mark the faulty blocks so that they will not be used, and will optimize the arrangement of the blocks.

When using a hard disk that was used by another device, or when using a new magneto-optical disk, turn this "On." Most new hard disks have already been physically formatted, so in this case, turn this "Off." If physical formatting is "On," more time will be required until initialization is completed.

Partition

This sets the size of the partitions (500, 1000 M bytes). Unless you have a particular need for smaller partitions, select 1000 M bytes.

Up to 4 partitions can be created. This means that if 1000 M byte partitions are used, a single disk drive can manage up to 4000 M bytes. If you use a disk drive that is large than 4000 M bytes, it will be detected as a 4000 M byte disk drive, and it will not be possible to use the remaining capacity.

Chapter 5: Using external devices

This chapter explains how the VS-880 handles MIDI messages, and the following operations that can be done using MIDI messages.

- Using a MIDI sound source to play the metronome
- Synchronized operation with a MIDI sequencer
- Controlling the mixer from a MIDI sequencer (Compu-mix)

About MIDI

This section explains the basic concepts of MIDI, and how the VS-880 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 VS-880, MIDI OUT and MIDI THRU are handled by a single connector, which can be switched to act as the desired connector.

MIDI IN: This receives MIDI messages from external MIDI devices.

MIDI OUT: This transmits MIDI messages from the VS-880.

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

The VS-880 uses the following types of MIDI message.

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). On the VS-880, these messages are used when you use a MIDI sound source to play the metronome sound.

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.

On the VS-880, these messages are used in a completely different way than on most instruments; they are used to control mixer parameters.

Exclusive messages

Unlike note messages and control change messages, exclusive messages are used to transmit settings that are unique to a particular device. On the VS-880, exclusive messages can be used to control mixer parameters (in the same way as control change messages). Normally, control change messages are easier to handle, so they should be used rather than exclusive messages. Exclusive messages intended for different units are distinguished by their Device ID, rather than by MIDI channel. When exclusive messages are to be transmitted or received, you must set the Device ID of both units to a matching setting.

MIDI implementation chart

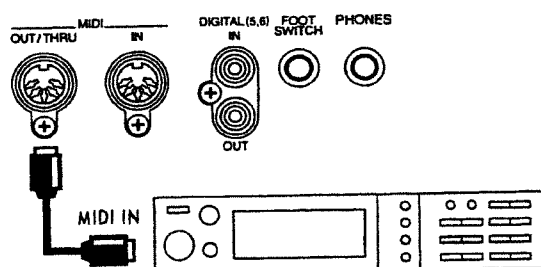
MIDI allows a variety of electronic musical instruments to communicate with each other. However it is not necessarily the case that all devices will be able to communicate using all types of MIDI message. They can only communicate using those types of MIDI message that they have in common.

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.

Using a MIDI sound source to play the metronome

A MIDI sound source can be used to play the metronome with a sound of your choosing. For the metronome tempo and time signature settings, refer to "Using the metronome" (p.34).

1. Use a MIDI cable to connect the VS-880 and your MIDI sound source as follows.



2. Make sure that the MIDI OUT/THRU connector is set for use as a MIDI OUT connector. With the factory settings, MIDI OUT is selected. Press [SYSTEM], select "SYS MIDI PRM?", select "SYS MID: MIDIThr=", and make sure that it is set to "Out."
3. Make settings so that the metronome will sound using MIDI. Press [SYSTEM], select "SYS System PRM?", and set the following parameters.
 - MetroOut:** Set this to "MIDI." If this is not set to "MIDI," the parameters of the following step can not be selected.
 - MetroMode:** If you want the metronome to sound only during recording, select "Rec Only." If you want it to sound during both recording and playback, select "Rec&Play."
4. Make settings for the MIDI messages that will produce the metronome sound. Press [SYSTEM], select "SYS MIDI PRM?", and set the following parameters.
 - MetronmCh:** Select the MIDI channel on which the metronome note messages will be transmitted. Set this to match the MIDI receive channel of your MIDI sound source.
 - Acc.Note:** Select the note number (C₀-G₉) for the downbeat of the metronome. If you are playing a drum set, this will select the percussion instrument.
 - Acc.Velo:** Specify the velocity (1-127) of the metronome downbeat.
 - Nrm.Note:** Select the note number (C₀-G₉) for the upbeats of the metronome. If you are playing a drum set, this will select the percussion instrument.
 - Nrm.Velo:** Specify the velocity (1-127) of the upbeats of the metronome.
5. This completes metronome settings. Press [PLAY (DIS-PLAY)] to return to Play condition.

Synchronizing with a MIDI sequencer

The VS-880 can be operated in synchronization with a MIDI sequencer. Synchronization can be accomplished in one of the following three ways. Use the method that is appropriate for your situation. However if MIDI Clock is used, it will be possible to synchronize a MIDI sequencer from the VS-880 (VS-880 as master), but it will not be possible to synchronize the VS-880 from the sequencer (VS-880 as slave).

- Using MTC (MIDI time code)
- Using the tempo map
- Using the sync track

* For details on MIDI sequencer operation, refer to the owner's manual for your sequencer.

■ Using MTC

This section explains how the VS-880 can be synchronized with a MIDI sequencer that implements MTC (MIDI Time Code). When using MTC, you can choose whether to have the VS-880 be the master that controls the MIDI sequencer, or whether the MIDI sequencer will be the master that controls the VS-880.

< Types of MTC >

The VS-880 allows you to select the following types of MTC. Check the specifications of the MIDI devices that you are using, and select the appropriate type of MTC on the VS-880.

30: 30 frames per second non-drop format. This is used by audio devices such as analog tape recorders, and for NTSC format black and white video (used in the US and Japan, etc.).

29N: 29.97 frames per second non-drop format. This is used for NTSC format color video (used in the US and Japan, etc.).

29D: 29.97 frames per second drop format. This is used for NTSC format broadcast color video (used in the US and Japan, etc.).

25: 25 frames per second frame rate. This is used in SECAM format / PAL format video (used in Europe, etc.), and for audio equipment and film.

24: 24 frames per second frame rate. This is used for film in the US.

< Non-drop format and drop format >

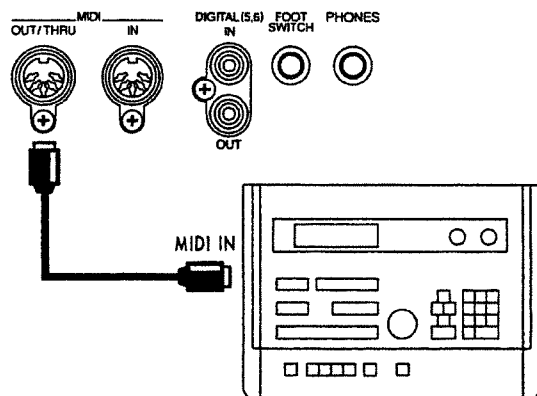
NTSC format VCRs use two formats; non-drop and drop. In non-drop format, the frames are continuous. However in drop format, two frames are skipped at the beginning of each minute except for the minutes which fall at ten-minute intervals.

In most video production and music production, continuous frames are easier to handle, so non-drop format is widely used. However in broadcast studios, where time code must match actual clock time, drop format is widely used.

Synchronizing the MIDI sequencer to the VS-880

When you want to synchronize the MIDI sequencer to the VS-880, use the following procedure.

1. Use a MIDI cable to connect the VS-880 and the MIDI sequencer as follows.



2. Make sure that the MIDI OUT/THRU connector is set for use as a MIDI OUT connector. With the factory settings, MIDI OUT is selected.

Press [SYSTEM], select "SYS MIDI PRM?", select "SYS MID: MIDIThr=", and make sure that it is set to "Out."

3. Make settings so that MTC will be used for synchronization.

Press [SYSTEM], select "SYS Sync/Tempo ?", and set the following parameters.

Gen.: Set this to "MTC."

MTC Type: Select the desired type of MTC.

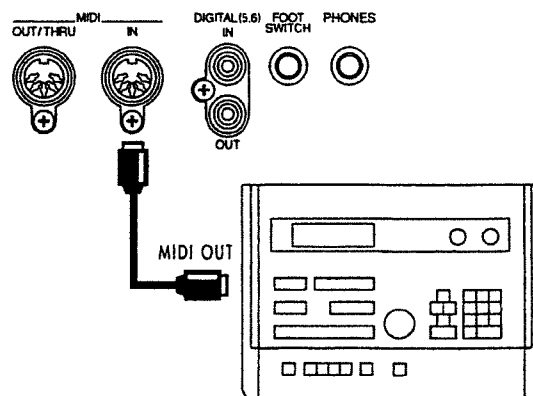
4. This completes synchronization settings for the VS-880. Press [PLAY (DISPLAY)] to return to Play condition.

5. Make settings on your MIDI sequencer so that it will synchronize to incoming MTC, and prepare it to begin playback of MIDI song data. When you start playback on the VS-880, the MIDI sequencer will begin playback in synchronization.

Synchronizing the VS-880 to the MIDI sequencer

When you want to synchronize the VS-880 to the MIDI sequencer, use the following procedure.

1. Use a MIDI cable to connect the VS-880 and the MIDI sequencer as follows.



2. Make settings so that the VS-880 will synchronize to incoming MTC messages.

Hold down [SHIFT] and press [SYSTEM]. The display in the SYNC MODE field will change from "INT" to "EXT," and the VS-880 will synchronize to MTC messages from an external device.

3. Select the type of MTC.

Press [SYSTEM], select "SYS Sync/Tempo ?", select "SYS Syn: MTC Type=", and select the type of MTC.

4. This completes synchronization settings on the VS-880. Press [PLAY (DISPLAY)] to return to Play condition.

5. Make settings on your MIDI sequencer so that it will transmit MTC. On the VS-880, press [PLAY] to prepare for playback. Start playback on the MIDI sequencer, and the VS-880 will begin playback in synchronization.

■ Using the tempo map

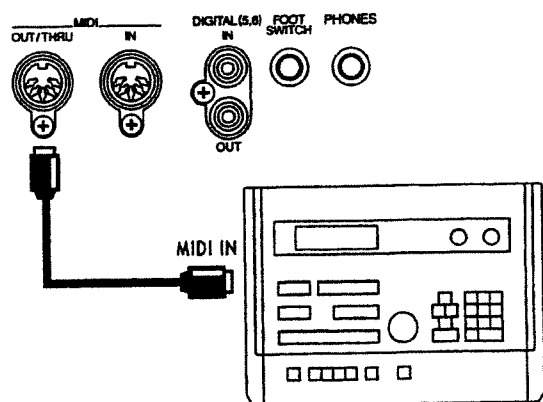
A MIDI sequencer which does not implement MTC or MMC can be synchronized to the VS-880 using MIDI Clock. There are two methods of synchronization using MIDI Clock; using the tempo map and using the sync track. In this section, the method of using the tempo map is explained.

< Notice when using the tempo map for synchronization >

When using the tempo map, use a song that was recorded using the metronome. The tempo and time signature of the metronome are determined by the tempo map, so if you have been recording in time with the metronome, the recorded performance will match the timing of the tempo map. However if you created the tempo map after recording the song, the timing of the song will not match the tempo map, and correct synchronization will not be possible.

For details on using the metronome, refer to "Using the metronome" (p.34).

1. Use a MIDI cable to connect the VS-880 and the MIDI sequencer as follows.



2. Make sure that the MIDI OUT/THRU connector is set for use as a MIDI OUT connector. With the factory settings, MIDI OUT is selected.

Press [SYSTEM], select "SYS MIDI PRM?", select "SYS MID: MIDIThr=", and make sure that it is set to "Out."

3. Make settings so that MIDI Clock will be used for synchronization.

Press [SYSTEM], select "SYS Sync/Tempo ?", select "SYS Syn:Gen.=", and set this to "MIDIclk."

4. This completes synchronization settings for the VS-880. Press [PLAY (DISPLAY)] to return to Play condition.

5. Make settings on your MIDI sequencer so that it will synchronize to incoming MIDI clock messages, and prepare it to begin playback of MIDI song data. When you start playback on the VS-880, the MIDI sequencer will begin playback in synchronization.

■ Using the sync track

In this section, the method of using the sync track is explained.

In addition to the tracks for recording audio signals, the VS-880 has a separate sync track for recording MIDI Clock signals. This means that unlike conventional analog multitrack recorders, it is not necessary to reserve one of the audio tracks for recording the sync signal.

To use the sync track, the MIDI clock of the MIDI song data to which you want to synchronize must first be recorded onto the sync track. Then, transmit the recorded MIDI clock data to the MIDI sequencer to synchronize the MIDI song data. In this way, while the method of using the tempo map explained in the previous section synchronizes the performance to the VS-880 song, this method of using the sync track synchronizes the performance to the MIDI song data. Thus, this is a convenient method to use when the MIDI song data has been created earlier than the VS-880 song.

In particular, when synchronizing to MIDI song data in which the tempo gradually becomes faster or slower, using the tempo map allows more precise following of tempo changes, compared to the tempo map in which tempo is set for each measure.

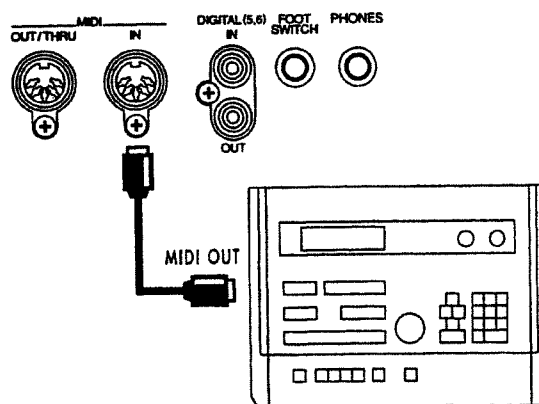
< Notice for synchronization >

The MIDI clock data recorded in the sync track is transmitted after song playback or recording begins. This means that if the music begins at the moment that playback begins, the MIDI sequencer will have to start playing back the MIDI song data at the same time that it receives the first MIDI clock data. In some cases, this can cause synchronization to be initially unstable.

If this problem occurs, insert several measures of blank space at the beginning of the VS-880 song and the MIDI sequencer song.

Recording MIDI clock data to the sync track

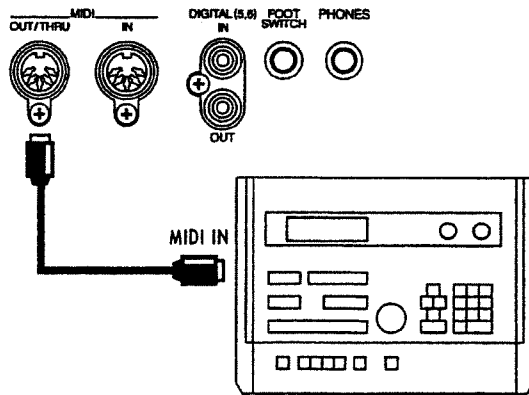
1. Use a MIDI cable to connect the VS-880 and the MIDI sequencer as follows.



2. Press [SYSTEM], select "SYS Sync/Tempo ?", and select "SYS SYN: Sync Tr.Rec?" Press [YES], and the display will indicate "Wait for Start," and the sync track will be ready to record MIDI clock data.
3. Start playback of the MIDI song data, and the MIDI clock data will be recorded on the sync track.
 - * While MIDI clock data is being recorded onto the sync track, the input sources can be monitored, but audio tracks cannot be recorded or played back.
4. When the MIDI song data finishes playing back, the VS-880 will automatically stop recording MIDI clock data, and will return to Play condition.

Synchronizing a MIDI sequencer to the VS-880

1. Use a MIDI cable to connect the VS-880 and the MIDI sequencer as follows.



2. Make sure that the MIDI OUT/THRU connector is set for use as a MIDI OUT connector. With the factory settings, MIDI OUT is selected. Press [SYSTEM], select "SYS MIDI PRM?", select "SYS MID: MIDIThr=", and make sure that it is set to "Out."
3. Make settings so that the MIDI clock data recorded on the sync track will be used for synchronization. Press [SYSTEM], select "SYS Sync/Tempo ?", select "SYS Syn:Gen=", and set this to "SyncTr."
4. This completes synchronization settings for the VS-880. Press [PLAY (DISPLAY)] to return to Play condition.
5. Make settings on your MIDI sequencer so that it will synchronize to incoming MIDI clock messages, and prepare it to begin playback of MIDI song data. When you start playback on the VS-880, the MIDI sequencer will begin playback in synchronization.

Controlling the mixer from a MIDI sequencer (Compu-mix)

The VS-880 can transmit mixer settings and operations as MIDI messages. If VS-880 mixer settings and operations during song playback are recorded as MIDI song data to a MIDI sequencer, the song can later be played back to automatically control the VS-880's mixer from the MIDI sequencer. This type of control is called "Compu-mix."

The mixer can be controlled using Control Change messages or System Exclusive messages.

Here, we will explain the general process for when using control change messages. For details refer to the appropriate pages.

< When using exclusive messages >

When performing a compu-mix, you should normally use control change messages. However if the use of control change messages would affect other MIDI devices in your setup, you may use system exclusive messages instead.

Correspondence between MIDI channels and controller numbers

MIDI channels correspond with mixer channels as follows. Channels for which Channel Link is on will use control change messages of the MIDI channel of the odd-numbered mixer channel. Control change messages received on the MIDI channel of the even-numbered mixer channel will be ignored.

INPUT → TRACK mode

<u>MIDI channel</u>	<u>Mixer channel</u>
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
15	master

INPUT MIX mode / TRACK MIX mode

<u>MIDI channel</u>	<u>Mixer channel</u>
1	track channel 1
2	track channel 2
3	track channel 3
4	track channel 4
5	track channel 5
6	track channel 6
7	track channel 7
8	track channel 8
9	input channel 1
10	input channel 2
11	input channel 3
12	input channel 4
13	input channel 5
14	input channel 6
15	master

Controller numbers correspond to the channel parameters as follows.

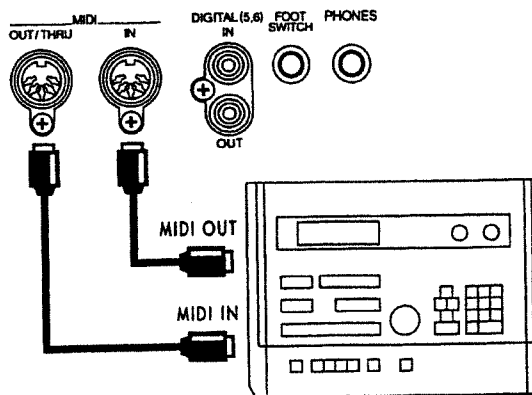
<u>Controller numbers</u>	<u>Mixer parameters</u>
16	EQ L Gain
17	EQ L Freq.
18	EQ M Gain
19	EQ M Freq.
20	EQ M Q
21	EQ H Gain
22	EQ H Freq.
7	MIX Send Level
10	MIX Send Pan/Bal
23	AUX Send Level
24	AUX Send Pan/Bal

Controller numbers correspond to the master section parameters as follows.

<u>Controller numbers</u>	<u>Mixer parameters</u>
7	Master Level
10	Master Balance
23	AUX Level
24	AUX Balance

Preparations

1. Use two MIDI cables to connect the VS-880 and the MIDI sequencer as follows.



2. Press [SYSTEM], select "SYS MIDI PRM?", and press [YES]. Make the following settings for the relevant parameters.

- MIDI Thr: Out
- CrLocal: On
- CrType: C.C.

3. When you finish making settings, press [PLAY (DISPLAY)] to return to Play condition.

4. Make settings on both devices so that the MIDI sequencer will synchronize to the VS-880. On the MIDI sequencer, make settings so that MIDI messages received at its MIDI IN connector will not be re-transmitted from its MIDI OUT connector.

"Synchronized with a MIDI sequencer" (p.78)

< Notice for synchronization >

So that the compu-mix will be accurately played back, record the initial settings of the mixer at the beginning of the MIDI song data. However if the music begins at the moment that playback begins, the VS-880 will have to adjust its mixer settings at the same moment that song playback begins. In some cases, this can cause the initial operation to slow down. If this problem occurs, insert several measures of blank space at the beginning of the VS-880 song and the MIDI sequencer song.

Recording mixer operations

1. Make the initial mixer settings in preparation for playing back the song.
2. Put the MIDI sequencer in record mode, and begin playback on the VS-880.
3. When playback begins, immediately hold down [SHIFT] and press [SCENE] to record the initial settings of the mixer. Then, as you listen to the song, adjust the faders etc. of the mixer as appropriate.
4. When the song playback ends, stop the VS-880. The mixer settings have now been recorded. Save the MIDI song data on a floppy disk, etc.

< Recording the initial settings of the mixer beforehand >

If you want to record just the initial settings of the mixer before playing back the song, use the following procedure.

1. After making the initial settings for song playback, store the settings as a scene. In this case, make settings so that fader settings will also change when a scene is recalled.

"Storing mixer settings (Scene)" (p.38)

2. Start recording on the MIDI sequencer, and recall the VS-880 scene. When the scene is recalled, the settings of the scene will be transmitted and recorded on the MIDI sequencer. Recall the scene while the song is stopped. It is not possible to recall a scene while a song is playing back. After storing the scene, do not change the settings of the mixer until you start recording mixer operations. If you change the mixer settings before you start recording, the compu-mix will not reproduce the mixer operations correctly.
-

Performing a compu-mix

1. Cue the MIDI song data and the VS-880 song.
2. Start playback on the VS-880, and the mixer will be controlled by the MIDI song data as the song plays back.
3. When playback ends, stop the VS-880.

Appendices

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Troubleshooting

When the VS-880 does not perform the way you expect, check the following points before you suspect a malfunction. If this does not resolve the problem, contact servicing by your dealer or qualified Roland service personnel.

■ Problems with sound

No sound

- The power is not turned on for the VS-880 and the connected devices.
- The audio cables are not connected correctly.
- The audio cables are broken.
- The volume is turned down on the connected mixer or amp.
- The master fader of the VS-880 is turned down.
- The output jacks which are connected are different than the output jacks selected in the master section of the mixer (p.58).

Specific channel does not sound

- The volume level of the channel is turned down. When the mixer mode is switched etc., the actual volume levels may not match the position of the faders. In this case, move the faders up and down to match the settings.
- The track status is set to MUTE (the STATUS indicator is dark).
- The Solo function (p.37) is being used. Channels which were muted before the Solo function was used cannot be monitored even if [STATUS] is pressed.

Cannot record

- The track status of the recording destination is not set to REC (STATUS indicator blinks red).
- The disk drive has insufficient capacity.
- If the mixer mode is INPUT → TRACK, the specified input source is not selected for the recording destination (p.54).
- In INPUT MIX mode or TRACK MIX mode, the REC buss is not selected for the input source to be recorded (p.57).

Cannot record digitally

- The master clock is not set to "DIGITAL" (p.71).
- The sampling rate of the recording destination song is different than the sampling rate of the digital audio device. Match the sample rate setting of the digital audio device to the setting of the song. If it is not possible to change the sample rate of the digital audio device, you must create a new song with that sample rate.
- The Vari-pitch function is on (the VARI PITCH indicator is lit). Press [VARI PITCH] to turn off the button indicator.

Noise and distortion appear in the recorded sound

- Input sensitivity settings are inappropriate. If input sensitivity settings are too high, the recorded sound will be distorted. If they are too low, the recorded sound will be buried by noise. Adjust the INPUT SENS knob so that the level meters move as high as possible without causing the PEAK indicator to light.
- In INPUT MIX mode or TRACK MIX mode, the equalizer is being used. Some equalizer settings may cause the sound to distort even if the PEAK indicator does not light. Re-adjust the equalizer.
- If noise or distortion occurred as a result of track bouncing, the track output levels were too high.

Playback pitch is wrong

- The Vari-pitch function is on (the VARI PITCH indicator is lit). Press [VARI PITCH] to turn off the button indicator.

■ Disk drive problems

Internal hard disk is not detected

The IDE drive switch is set Off (p.74).

External drive is not detected

- The disk drive is not connected correctly (p.48).
- The device ID numbers of two or more disk drives are conflicting.
- The disk drive has not been initialized on the VS-880 (p.49).
- If you are using a removable disk drive, re-select the disk drive after inserting the disk (p.49).

Disk drive does not operate correctly

A terminator is not correctly attached to the disk drive (p.48).

■ Synchronization problems (does not synchronize)

When synchronizing a MIDI sequencer to the VS-880

- The MIDI cable is not connected correctly.
- The MIDI cable is broken.
- The MIDI Thru switch is not set to "Out" (p.73).
- The sync generator is not set to the appropriate synchronization method (MTC, MIDI Clock, Sync Track) (p.74).
- The sync source is not set to "INT" (p.74).
- If you are using MTC, the two devices are not set to the same type of MTC (p.75).
- If you are using the sync track, MIDI clock data has not been recorded on the sync track.
- The settings of the MIDI sequencer are not correct.
- The MIDI sequencer is not ready to playback.

When synchronizing the VS-880 to a MIDI sequencer

- The MIDI cable is not connected correctly.
- The MIDI cable is broken.
- The VS-880 cannot be synchronized using a method other than MTC (p.74).
- The sync source is not set to "EXT" (p.74).
- The two devices are not set to the same type of MTC (p.75).
- The settings of the MIDI sequencer are not correct.
- The VS-880 is not ready to playback.
- If synchronization is interrupted, it is possible that either MTC reception is poor or the MIDI cable is broken. If MTC reception is only slightly defective, you can set the Error Level (p.75) to get around the problem.

■ Other problems

When the power is turned on, the previous data was not saved correctly

It is likely that the VS-880 power was turned off without performing the shut-down process. The lost data cannot be recovered.

Data on the disk drive was damaged

The following situations can result in damage to the data on a disk drive. Re-initialize the disk drive (and also execute physical formatting) (p.49).

- The VS-880 power was turned off without performing the shut-down process.
- The power was turned off while the disk drive was operating.
- A strong shock was applied to the disk drive.
- The disk drive or SCSI cable was connected or disconnected while the power was still turned on.

Error messages

If an error occurs in operation, or if an operation could not be processed correctly, an error message will appear. Refer to the displayed error message and take the appropriate action.

Aborted Command Illegal Request

Situation: This disk drive cannot be used by the VS-880.

Already Selected

Situation: The currently selected disk drive was selected.

Action: If you wish to switch to another disk drive, re-select the disk drive.

Arbitration Fail

Busy Status

Check Condition

Status Error

Wait For BUS Free

Situation: Normal communication with the disk drive could not be accomplished.

Action: Make sure that the disk drive is connected correctly.

Can't Communicate

Drive Time Out

Message Error

Phase Mismatch

Undefined Sense

Unit Attention

? Unknown Error

Situation: There is a problem with the connections to the disk drive.

Action: Make sure that the disk drive is connected correctly.

Digital In Unlock

Situation 1: A digital signal is not being input to the DIGITAL IN connector.

Action 1: Press [YES], and then make sure that power of the digital equipment is turned on and that the digital equipment is connected correctly.

Situation 2: The sample rate specified for the song is different than the sample rate of the digital device connected to the DIGITAL IN connector.

Action 2: Press [YES], and set the sample rates of both devices to match.

Disk Memory Full

Situation 1: There is insufficient free area on the disk.

Action 1: Erase unneeded data. Or, select a different disk drive.

Situation 2: The maximum number of songs that can be recorded on a disk drive (200) has been exceeded.

Action 2: Delete unneeded songs. Or, select a different disk drive.

Disk Write Error

Situation: An error occurred while writing data to the disk drive.

Action: The song data has not been correctly saved to disk. Back up the song data to a DAT recorder, initialize the disk drive, and restore the backed up song data to the disk drive.

Drive Too Slow

Situation 1: If this message appears when you first begin using a disk drive with the VS-880, the disk drive is not fast enough.

Action 1: When using this disk, create a new song with a lower sample rate or recording mode, and record using this song.

Situation 2: If this message appears after you have been using the disk drive with the VS-880, the data on the disk drive has become fragmented, causing delays in reading and writing data.

Action 2: Either use the track bouncing operation to re-record playback data to another track, or use the optimize operation. If the same message appears even after these measures have been taken, copy the song data to another disk drive and initialize the disk drive that produced the problem.

Hardware Error

Situation: There is a problem with the disk drive.

Action: Contact the manufacturer or dealer of the disk drive.

Medium Error

Situation: There is a problem with the disk drive media.

Action: This disk cannot be used by the VS-880.

Memory Full

Reason: There is no further free space in the internal memory of the VS-880.

Action: Use the Track Bouncing operation to combine two or more tracks of playback data into a single track, and delete the original playback data. Alternatively, perform the Song Optimize operation (p.62).

No Effect Board

Situation: A VS8F-1 effect expansion board (sold separately) is not installed.

Action: This operation can be performed only if a VS8F-1 is installed.

Not Formatted

Situation 1: The disk drive has not been initialized by the VS-880.

Action 1: Initialize the disk drive.

Situation 2: If this appears for a disk drive that has been initialized by the VS-880, there is a problem with the connections to the disk drive.

Situation 2: Make sure that the disk drive is connected correctly.

Not Ready

Situation: The disk drive is not ready.

Action: Wait a short time.

No Drive Ready

Situation: No disk drive is connected. Or, an internal hard disk is not installed.

Action: Make sure that the disk drive is connected correctly.

SCSI ID Error

Situation: The SCSI ID numbers of two or more disk drives are conflicting.

Action: Make settings so that the SCSI ID numbers do not conflict (p.74).

Song Protected

Reason: Since Song Protect is ON, the operation cannot be executed.

Action: If you wish to execute the operation without saving the currently selected song, repeat the procedure, and press [NO] in reply to the "STORE Current?" message.

If you wish to save the currently selected song before executing the operation, turn Song Protect OFF (p.60). Then, repeat the operation, and press [YES] in reply to the "STORE Current?" display.

SPC Not Available

Situation: The SCSI components of the VS-880 have malfunctioned.

Action: Contact servicing by your dealer or qualified Roland service personnel.

Write Protected

Situation: The disk drive is protected.

Action: If you are using a removable disk drive, perform the shut-down procedure, and remove the disk and set its protect tab to the write permit position. Then re-insert the disk, and start up the VS-880 once again.

Special key operations

This is a list of the operations performed by pressing a combination of buttons, or by using a button together with the TIME/VALUE dial.

MIXER MODE buttons

[SHIFT] + [SELECT]

Switch between INPUT → TRACK mode and INPUT MIX / TRACK MIX mode

CH EDIT buttons

[SHIFT] + [Input/BUSS (CH EDIT)]

To the input select setting page (in INPUT → TRACK mode)

To the buss select setting page (in INPUT MIX / TRACK MIX mode)

To the V-track setting page (in INPUT → TRACK / TRACK MIX mode)

[SHIFT] + [V.Track (CH EDIT)]

To the equalizer low gain / frequency setting page

[SHIFT] + [EQ Low (CH EDIT)]

To the equalizer mid gain setting page (in INPUT → TRACK mode)

[SHIFT] + [EQ Mid (CH EDIT)]

To the equalizer high gain / frequency setting page

[SHIFT] + [EQ Hi (CH EDIT)]

To the AUX switch setting page

[SHIFT] + [AUX Send (CH EDIT)]

To the effect 1 switch setting page (if a VS8F-1 is installed)

[SHIFT] + [EFFECT-1 (CH EDIT)]

To the effect 2 switch setting page (if a VS8F-1 is installed)

[SHIFT] + [EFFECT-2 (CH EDIT)]

Turn on the solo function

[SHIFT] + [SOLO (EDIT)]

EDIT CONDITION buttons

[SHIFT] + [SYSTEM]

Switch sync sources

Transport control buttons

[SHIFT] + [STORE (ZERO)]

Store song data to the disk drive

[SHIFT] + [SONG TOP (REW)]

Move to the time where the first sound of the song is recorded

[SHIFT] + [SONG END (FF)]

Move to the time where the last sound of the song is recorded

[SHIFT] + [SHUT/EJECT (STOP)]

Shut-down

[SHIFT] + [RESTART (PLAY)]

Re-start (after shut-down)

[REC] + [STATUS]

Switch the track status to REC (indicator blinks red)

[STOP] + [STATUS]

Switch the track status to PLAY (indicator lights green)

LOCATOR buttons

[SHIFT] + LOC button

Register a locate point 5-8

[SHIFT] + [CLEAR] + LOC button

Clear the setting of a locate point 5-8

[SHIFT] + [TAP]

To the Tempo Map setting page

[CLEAR] + [TAP]

Erase a mark point

[SHIFT] + [CLEAR] + [TAP] → [YES]

Erase all mark points

Other

[SHIFT] + [VARI PITCH]

To the vari pitch setting page

[SHIFT] + [UNDO]

Execute Redo (if the UNDO indicator is lit)

[SHIFT] + [SCENE]

Transmit the condition of the digital mixer as MIDI data from the MIDI OUT connector

[SHIFT] + [SCRUB]

To the Scrub Length setting page

[SHIFT] + [TO]

To the Preview Length setting page

[SHIFT] + [FROM]

To the Preview Length setting page

[SHIFT] + [PLAY (DISPLAY)]

Switch the bar display

[PLAY] and TIME/VALUE dial

To the Display Contrast setting page

[SHIFT] and TIME/VALUE dial

Modify the value at 10 times the usual speed

In Play condition, move the current time in 10-frame units

In Play condition when an "←" is displayed at the beginning of the time code display, move the current time in units of approximately 1/100 frame.

Parameter list

■ Mixer Parameters (channel)

* If channel link is ON, the Pan parameter will change to the Balance parameter.

INPUT→TRACK Mode

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Input Select	Input	INPUT-1 – INPUT-4, DIGITAL-L, DIGITAL-R, MIX-L, MIX-R, AUX-A, AUX-B	INPUT-1 – 4
Mix Switch	MIX Sw	Off, PreFade, PstFade	PstFade
Mix Level	MIX Level	0–127	current panel settings
Mix Pan/Balance	MIX Pan/MIX Bal	L63–0–R63	current panel settings
V-Track	V.Track	1–8	1
Equalizer Switch	EQ Switch	Off, On	On
Equalizer Low Gain	EQL	-12–12 dB	0 dB
Equalizer Low Frequency	EQL	40 Hz – 1.5 kHz	300 Hz
Equalizer Mid Gain	EQM	-12–12 dB	0 dB
Equalizer Mid Q	EQM Q	0.5–16	0.5
Equalizer Mid Frequency	EQM F	200 Hz – 8 kHz	1.4 kHz
Equalizer High Gain	EQH	-12–12 dB	0 dB
Equalizer High Frequency	EQH	500 Hz – 18 kHz	4 kHz
AUX Switch	AUX Sw	Off, PreFade, PstFade	Off
AUX Level	AUX Level	0–127	100
AUX Pan/Balance	AUX Pan/AUX Bal	L63–0–R63	0
Channel Link	Channel Link	Off, On	Off

* If channel link is ON, the Input Select setting values will be INPUT-12, INPUT-34, DIGITAL, MIX, and AUX-AB.

INPUT MIX Mode

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
BUSS Switch	BUSS Sw	Off, PreFade, PstFade	PstFade
BUSS Select	BUSS Sel	MIX, 1-2, 3-4, 5-6, 7-8	1-2, 3-4, 5-6, 7-8
BUSS Level	BUSS Level	0–127	100
BUSS Pan/Balance	BUSS Pan/BUSS Bal	L63–0–R63	0
Equalizer Switch	EQ Switch	Off, On	On
Equalizer Low Gain	EQL	-12–12 dB	0 dB
Equalizer Low Frequency	EQL	40 Hz – 1.5 kHz	300 Hz
Equalizer High Gain	EQH	-12–12 dB	0 dB
Equalizer High Frequency	EQH	500 Hz – 18 kHz	4 kHz
AUX Switch	AUX Sw	Off, PreFade, PstFade	Off
AUX Level	AUX Level	0–127	100
AUX Pan/Balance	AUX Pan/AUX Bal	L63–0–R63	0
Channel Link	Channel Link	Off, On	Off

TRACK MIX Mode

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
BUSS Switch	BUSS Sw	Off, PreFade, PstFade	PstFade
BUSS Select	BUSS Sel	MIX, 1-2, 3-4, 5-6, 7-8	MIX
BUSS Level	BUSS Level	0–127	100
BUSS Pan/Balance	BUSS Pan/BUSS Bal	L63–0–R63	0
V-Track	V.Track	1–8	1
Equalizer Switch	EQ Switch	Off, On	On
Equalizer Low Gain	EQL	-12–12 dB	0 dB
Equalizer Low Frequency	EQL	40 Hz – 1.5 kHz	300 Hz
Equalizer High Gain	EQH	-12–12 dB	0 dB
Equalizer High Frequency	EQH	500 Hz – 18 kHz	4 kHz
AUX Switch	AUX Sw	Off, PreFade, PstFade	Off
AUX Level	AUX Level	0–127	100
AUX Pan/Balance	AUX Pan/AUX Bal	L63–0–R63	0
Channel Link	Channel Link	Off, On	Off

■ Mixer Parameters (master)

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Master Out Mode	Master Mode	MIX, M+A, M+B, MAB, -A-, -B-, A+B	MIX
Master Level	Masterlevel	0-127	current panel settings
Baster Balance	Master Bal	L63-0-R63	current panel settings
AUX Level	AUX Level	0-127	current panel settings
AUX Balance	AUX Bal	L63-0-R63	0

* In INPUT MIX mode or TRACK MIX mode, the Master Out Mode setting values will be "MIX, M+A, M+B, MAB, -A-, -B-, A+B, 1-2, 3-4, 5-6, 7-8."

■ System Parameters

System

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Master Clock	MasterClk	INT, DIGITAL	INT
Time Display Format	TimeDispFmt	ABS, REL	ABS
Offset	Ofs	00h00m00s00 - 23h59m59s00	00h00m00s00
Marker Stop	Marker Stop	Off, On	Off
Record Monitor	RecordMon	AUTO, SOURCE	AUTO
Vari Pitch	VariPitch	24.06-50.43 kHz (32 kHz) 24.06-50.48 kHz (44.1 kHz) 24.06-50.43 kHz (48 kHz)	32.00 kHz 44.10 kHz 48.00 kHz
Foot Switch Assign	FootSw	Play/Stop, Record, TapMarker, Next, Previous, GPI	Play/Stop
Fade Length	FadeLength	10, 20, 30, 40, 50 ms	10 ms
Scrub Length	Scrub Len	25-100 ms	45 ms
Preview Length	PreviewLen	1.0-10.0 s	1.0 s
Metronome Output	MetroOut	Off, INT, MIDI	Off
Metronome Level	MetroLevel	0-127	100
Metronome Mode	MetroMd	Rec Only, Rec&Play	Rec Only
Undo Message	UNDO MSG	Off, On	On
Contrast	LCD Contrast	0-15	7

* The settable range for Offset will change slightly depending on the MTC type (sync parameter).

MIDI

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Device ID	DeviceID	1-32	17
MIDI Thru Switch	MIDIThr	Out, Thru	Out
System Exclusive Receive Switch	SysEx.Rx	Off, On	Off
System Exclusive Transmit Switch	SysEx.Tx	Off, On	Off
MMC Mode	MMC	Off, MASTER, SLAVE	MASTER
Metronome Channel	MetronmCh	1-16	10
Accent Note	Acc.Note	C_0-G_9	C#2
Accent Velocity	Acc.Velo	1-127	100
Normal Note	Nrm.Note	C_0-G_9	C#2
Normal Velocity	Nrm.Velo	1-127	60
Mixer Control Local Switch	CtrLocal	Off, On	On
Mixer Control Type	CtrType	Off, C.C., Excl	C.C.

Disk

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
IDE Drive	IDE Drv	Off, On	On
SCSI Self ID	SCSI Self	0-7	7

Sync

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Sync Source	Source	INT, EXT	INT
Sync Generate	Gen.	Off, MTC, MIDIClk, SyncTr	Off
Error Level	ErrLevel	0-10	5
MTC Type	MTC Type	30, 29N, 29D, 25, 24	30
Tempo Map Number	-	1-50	1
Tempo	-	25.0-250.0	120.0
Measure	-	1-999	-
Beat	-	1/1-8/1, 1/2-8/2, 1/4-8/4, 1/8-8/8	4/4

Scene

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Scene Mode	Scene Mode	All, KeepF	ALL

Drive Select

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Select Drive	Select Drv	IDE :0-3, SC0: 0-SC7: 3	-

Drive Initialize

<u>Parameter name</u>	<u>Display</u>	<u>Value</u>	<u>Initial value</u>
Initialize Drive	Init.Drive	IDE: 0-3, SC0: 0-SC7: 3	-
Physical Format	PhysicalFmt	Off, On	Off
Partition	Partition	500, 1000 MB	1000 MB

MIDI Implementation Chart

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-15 1-16	1-15 *****	
Mode Default Messages Altered	mode 3 X *****	mode 3 X X	
Note Number : True Voice	0-127 *1 *****	X X	
Velocity Note ON Note OFF	1-127 *1 X 9n, V=0	X X	
After Touch Key's Ch's	X X	X X	
Pitch Bend	X	X	
Control Change	7 O 10 O 12 O 13 O 14 O 15 O 16 O 17 O 18 O 19 O 20 O 21 O 22 O 23 O 24 O 25 O 26 O 27 O 28 O	O X X X X O O O O O O O O O O O O O	*2 Send Level/Master Level Send Pan/Master Balance Master -L Level Meter Master -R Level Meter AUX -L Level Meter AUX -R Level Meter EQ L Gain EQ L Freq EQ M Gain EQ M Freq EQ M Q EQ H Gain EQ H Freq AUX Send Level AUX Send Pan EFFECT-1 Send Level EFFECT-1 Send Pan EFFECT-2 Send Level EFFECT-2 Send Pan
Program Change : True #	X *****	X	
System Exclusive	O *3	O *4	*5
System Common : Quarter Frame: : Song Pos : Song Sel : Tune	O *6 O *7 X X	O *6 X X X	
System Real Time : Clock : Commands	O *7 O	O *8 O	
Aux Message : All sound off : Reset all controllers : Local ON/OFF : All Notes OFF : Active Sense : System Reset	X X X X X X	X X X X X X	
Notes	*1 Settable only for MIDI metronome *2 Only when "MID: CtrType=C C" *3 Only when "MID:SysEx Tx=On" *4 Only when "MID:SysEx Rx=On"	*5 Mixer settings when "MID:CtrlType=Exc" and MMC *6 Only when "Syn:Gen =MTC" *7 Only when "Syn:Gen =MIDiclk (or SyncTr)" *8 Only when recording "Sync Track"	

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

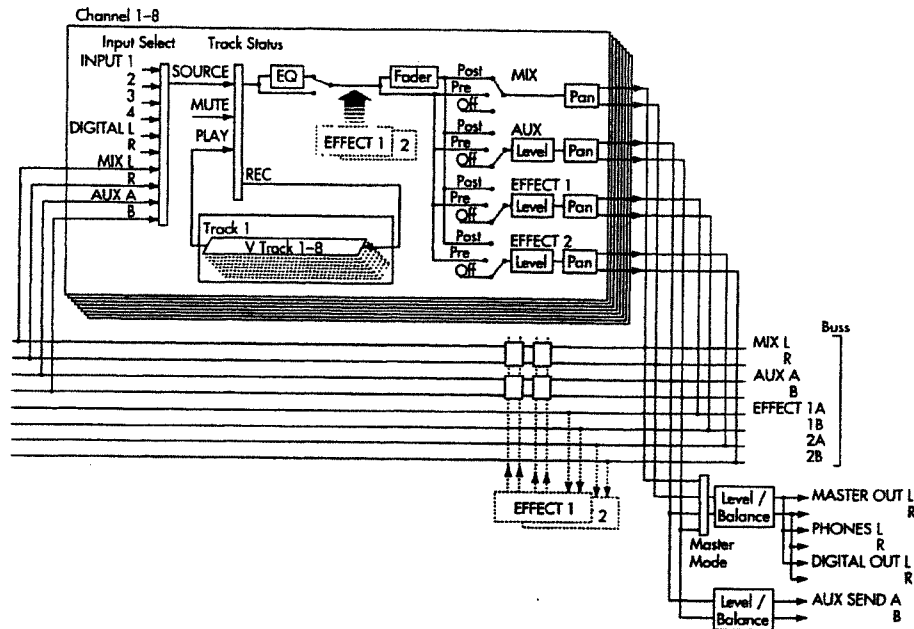
Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

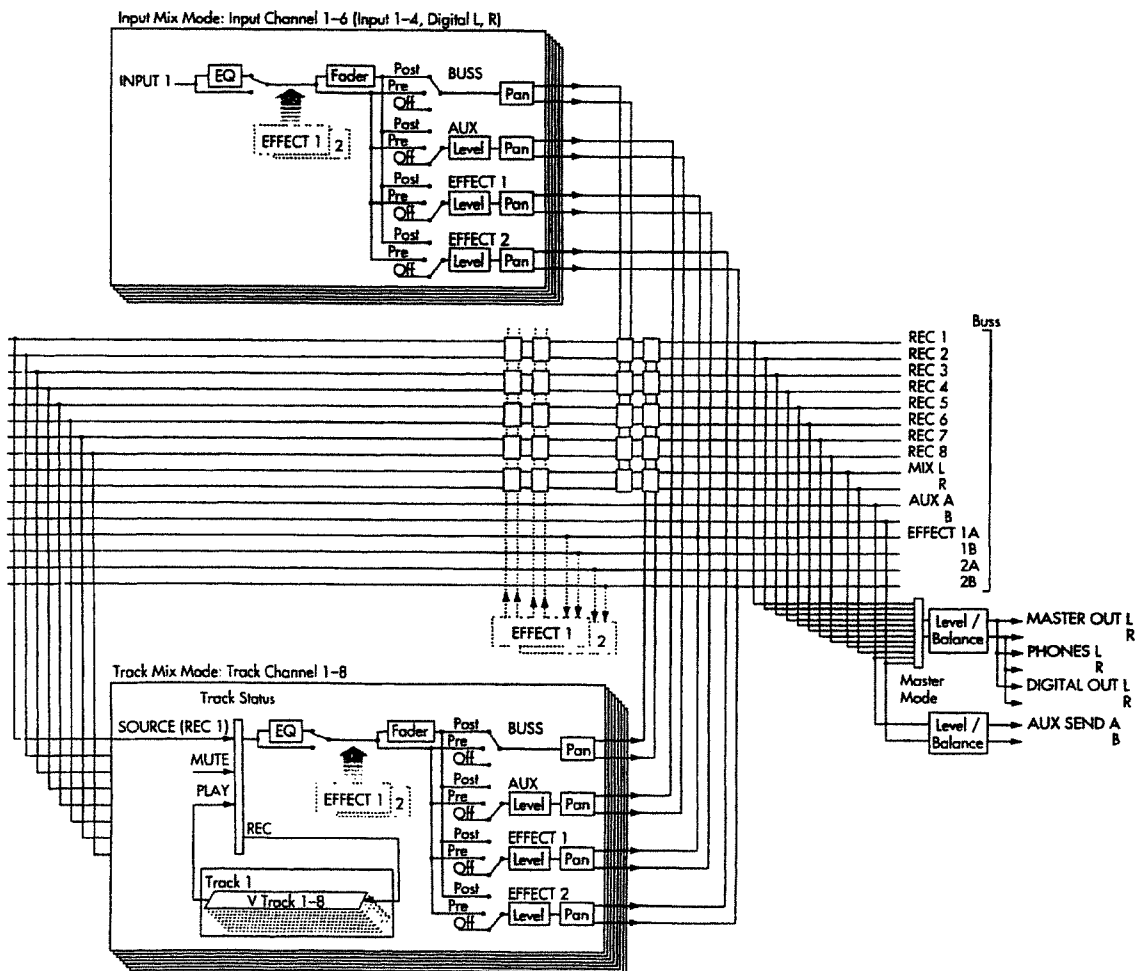
Note: The VS-880 can use control change messages to control mixer operations, but the functions of the control numbers are unique to the VS-880, and are different than those defined by the MIDI specification

Block diagram

■ INPUT → TRACK mode



■ INPUT MIX mode and TRACK MIX mode



Specifications

VS-880: Digital Studio Workstation

● **Tracks**

Track: 8
V-Track: 64 (8 V-Tracks per each Track)

* Up to 4 tracks can be recorded simultaneously, and up to 8 tracks can be played back simultaneously.

● **Maximum Useful Capacity**

32 G bytes: 1 G bytes x 4 (Partition) x 8 (Disk Drive)

● **Songs**

200 (each partition)

● **Equalizer**

HI, MID, LOW (at INPUT→TRACK mode)
HI, LOW (at INPUT MIX or TRACK MIX mode)

● **Data Format**

Mastering (MAS)
Multitrack 1 (MT1)
Multitrack 2 (MT2)
Live (LIV)

● **Signal Processing**

AD Conversion: 18 bit, 256 times oversampling
DA Conversion: 18 bit, 8 times oversampling
Internal Processing: 24 bit (mixer section)

● **Sample Rate**

48.0 kHz, 44.1 kHz, 32.0 kHz

● **Frequency Response**

Sample Rate	Frequency Response
48.0 kHz	10 Hz - 22.6 kHz (+0/-3 dB)
44.1 kHz	10 Hz - 21.0 kHz (+0/-3 dB)
32.0 kHz	10 Hz - 15.5 kHz (+0/-3 dB)

● **Total Harmonic Distortion**

0.08 % or less (INPUT SENS = -10 dBm, 1 kHz at nominal output level, recording mode: MAS)

● **Recording Time (at 1 G bytes, 1 track)**

Recording mode	Sample rate		
	48.0 kHz	44.1 kHz	32.0 kHz
Mastering	185 minutes	202 minutes	278 minutes
Multitrack 1	371 minutes	404 minutes	557 minutes
Multitrack 2	495 minutes	539 minutes	742 minutes
Live	594 minutes	646 minutes	891 minutes

* The above-listed recording times are approximate. Times may be slightly shorter depending on the specifications of the disk drive and on the number of songs that were created.

● **Nominal Input Level (Variable)**

Input A: -50 - +4 dBm
Input B: -50 - +4 dBm

● **Input Impedance**

Input A: 20 kΩ
Input B: 20 kΩ

● **Nominal Output Level**

AUX Send: -10 dBm
Master Out: -10 dBm

● **Output Impedance**

AUX Send: 1.6 kΩ
Master Out: 1.6 kΩ
Headphone: 100 Ω

● **Recommended load Impedance**

AUX Send: 10 kΩ or greater
Master Out: 10 kΩ or greater
Headphone: 8-50 Ω

● **Residual Noise Level (input terminated with 1 kΩ,**

INPUT SENS = +4 dBm, IHF-A, typ.)
AUX Send: -91 dBm or less
Master Out: -91 dBm or less

● **Interface**

SCSI: DB-25 type
Digital I/O: Coaxial (conforms to S/P DIF)

● **Display**

70.6 x 24.5 mm (LCD)

● **Connectors**

SCSI Connector (DB-25 type)
MIDI Connectors (IN, OUT/THRU)
Digital In Connector (coaxial type)
Digital Out Connector (coaxial type)
Foot Switch Jack (1/4 inch phone type)
Headphone Jack (1/4 inch phone type)
Input A Jacks 1 to 4 (1/4 inch phone type)
Input B Jacks 1 to 4 (RCA phono type)
AUX Send Jacks A, B (RCA phono type)
Master Out Jacks L, R (RCA phono type)

● **Power Supply**

AC 117 V, AC 230 V, or AC 240 V

● **Power Consumption (including Internal hard disk)**

22 W

● **Dimensions**

434 (W) x 317 (D) x 88 (H) mm
17-1/8 (W) x 12-1/2 (D) x 3-1/2 (H) inches

● **Weight**

4.0 kg (excluding Internal Hard Disk)
8 lbs 14 oz

● **Accessories**

AC Cord
Owner's Manual

● **Options**

Internal Hard Disk Drive Unit: HDP88 Series
Effect Expansion Board: VS8F-1

0 dBm = 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.

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This product complies with the requirements of European Directives EMC 89/336/EEC and LVD 73/23/EEC

For Europe

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

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

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

Unauthorized changes or modification to this system can void the users authority to operate this equipment
This equipment requires shielded interface cables in order to meet FCC class B Limit

For the USA

CLASS B NOTICE

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

For Canada

CLASSE B AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

Preset Patch List Roland®

By installing a VS8F-1 on the VS-880, you can access the range of effects listed below.

No.	Patch Name	Algorithm	Type	Input	Comment
-----	------------	-----------	------	-------	---------

<Reverb> (18 preset)

1	RV:LargeHall	Reverb	Loop	Mono	Large concert hall reverberation.
2	RV:SmallHall	Reverb	Loop	Mono	Small hall reverberation.
3	RV:Strings	Reverb	Loop	Mono	Reverberation optimized for delicate highs of strings.
4	RV:PianoHall	Reverb	Loop	Mono	Rich and warm reverberation optimized for pianos.
5	RV:Orch Room	Reverb	Loop	Mono	Reverberation of large-capacity rooms such as big banquet halls.
6	RV:VocalRoom	Reverb	Loop	Mono	Room reverb suitable for vocals and chorus.
7	RV:MediumRm	Reverb	Loop	Mono	Warm and naturally spacious room reverb.
8	RV:LargeRoom	Reverb	Loop	Mono	Simulated acoustics of wide rooms with lots of reverberation.
9	RV:CoolPlate	Reverb	Loop	Mono	Distinctive bright plate reverb.
10	RV:Short Plt	Reverb	Loop	Mono	Shorter plate reverb.
11	RV:Vocal Plt	Reverb	Loop	Mono	Crystal-clear reverb optimized for vocals.
12	RV:Soft Amb.	Reverb	Loop	Mono	Simulated reverberation of a room with minimal wall reflections.
13	RV:Room Amb.	Reverb	Loop	Mono	Natural reverberation of rooms with good acoustics, suitable for drums and guitars.
14	RV:Cathedral	Reverb	Loop	Mono	Acoustics of a very large, high-ceilinged church.
15	RV:Long Cave	Reverb	Loop	Mono	Simulated reverberation of deep caves.
16	RV:GarageDr.	Reverb	Loop	Mono	Natural reverb that enhances unique drum sounds.
17	RV:Rock Kick	Reverb	Loop	Mono	Reverb with many low-frequency components, suitable for rock kicks.
18	RV:RockSnare	Reverb	Loop	Mono	Rich and thick sounding reverb suitable for rock snares.

<Gate Reverb> (4 preset)

19	RV:BriteGate	Gate Reverb	Loop	Mono	Slightly brighter gate reverb.
20	RV:Fat Gate	Gate Reverb	Loop	Mono	Dynamic reverb sound with powerful mids and lows.
21	RV:ReverseGt	Gate Reverb	Loop	Mono	A reverse gate commonly used as a special effect.
22	RV:PanningGt	Gate Reverb	Loop	Mono	A special effect with gate reverb shifting from left to right.

<Delay> (9 preset)

23	DL:Short Dly	Delay	Loop	Mono	An ambience effect that adds depth to the sound by doubling.
24	DL:MediumDly	Delay	Loop	Mono	Natural echo optimized for vocals.
25	DL:LongDelay	Delay	Loop	Mono	Long delay suited for brass and analog synth solos.
26	DL:AnalogDly	Delay	Loop	Mono	Analog sound with gradually diminishing feedbacking highs.
27	DL:Tape Echo	Stereo Delay Chorus	Loop	Stereo	Simulated tape echo with distinctive wow flutter.
28	DL:Karaoke	Stereo Delay Chorus	Loop	Stereo	Intense reverberation that effectively enhances karaoke vocals.
29	DL:Multi-Tap	Stereo Delay Chorus	Loop	Stereo	Spacious reflections using positioning delay at any point along the stereo soundfield
30	DL:MitTapAmb	Multi Tap Delay	Loop	Mono	An ambience effect using 10 short delay units.
31	DL:Ping Pong	Multi Tap Delay	Loop	Mono	A special effect using tap delay.

<Vocal> (10 preset)

32	VO:Vocal Efx	Vocal Multi	Insert	Mono	Basic setup for recording / mixdown of vocals.
33	VO:JazzVocal	Vocal Multi	Insert	Mono	A natural sounding jazz club-like ambience for warm reverb well-suited for vocals.
34	VO:RockVocal	Vocal Multi	Insert	Mono	Sound featuring limiter / enhancer processing as well as a unison effect.
35	VO:Narration	Vocal Multi	Insert	Mono	An effect with heavy compression, used for narration.
36	VO:BigChorus	Vocal Multi	Insert	Mono	A spacious-sounding stereo effect similar to increasing the number of vocalists.
37	VO:Club DJ	Vocal Multi	Insert	Mono	A club DJ-tailored effect that uses a pitch shifter to make voices lower.
38	VO:AM-Radio	Vocal Multi	Insert	Mono	Sound featuring hard compression and narrower frequency range.
39	VO:PlusTwo	Stereo Pitch Shifter Delay	Insert	Stereo	A special effect that adds two more voices using a pitch shifter.
40	VO:Robot Efx	Stereo Pitch Shifter Delay	Insert	Stereo	SF movie-like effect using a pitch shifter.
41	VO:Bull Horn	Guitar Multi 3	Insert	Mono	Simulated effect of sound produced from a Bull Horn or old radio.

<Guitar > (11 preset)

42	GT:Rock Lead	Guitar Multi 2	Insert	Mono	Straight distortion sound with delay.
43	GT:LA Lead	Guitar Multi 2	Insert	Mono	Lead guitar sound with tasty compression and chorus applied.
44	GT:MetalLead	Guitar Multi 1	Insert	Mono	Metal sound with dynamic, ultrahigh gain distortion.
45	GT:Metal Jet	Guitar Multi 1	Insert	Mono	Distortion together with a metallic effect achieved by flanging.
46	GT:CleanRithm	Guitar Multi 1	Insert	Mono	Clean sound with compression and chorus applied.
47	GT:DiedClean	Vocal Multi	Insert	Mono	Superclean sound like line recording directly into the console.
48	GT:Delay Rif	Guitar Multi 2	Insert	Mono	Delay sounds at dotted eighth note intervals when a 120 BPM riff is played.
49	GT:Acoustic	Vocal Multi	Insert	Mono	Optimized for electroacoustic guitars.
50	GT:BluesDrv.	Guitar Multi 3	Insert	Mono	Crunchy overdrive sound suited to blues and R&R.
51	GT:Liverpool	Guitar Multi 3	Insert	Mono	Crunchy sound often heard on '60s British rock.
52	GT:Country	Guitar Multi 3	Insert	Mono	Clean sound featuring distinctive compression and delay.

No	Patch Name	Algorithm	Type	Input	Comment
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<Guitar Amp Simulator> (9 preset)

53	GA:JazChorus	Guitar Amp Simulator	Insert	Mono	Roland JC-120 amp. Sounds more authentic when used with chorus for mixdown.
54	GA:CleanTwin	Guitar Amp Simulator	Insert	Mono	U.S. tube combo amp circa "black panel."
55	GA:Vin.Tweed	Guitar Amp Simulator	Insert	Mono	'50s U.S. tube amp overdrive.
56	GA:BluesDrv.	Guitar Amp Simulator	Insert	Mono	Old British amp crunchy overdrive.
57	GA:MatchLead	Guitar Amp Simulator	Insert	Mono	Hot-rodded British combo amp.
58	GA:StudioCmb	Guitar Amp Simulator	Insert	Mono	Favourite late '70s amp of studio musicians.
59	GA:JMP-Stack	Guitar Amp Simulator	Insert	Mono	Late '60s British stacks.
60	GA:SLDN Lead	Guitar Amp Simulator	Insert	Mono	An '80s amp known for versatile distortion.
61	GA:5150 Lead	Guitar Amp Simulator	Insert	Mono	Big tube amp standard for American heavy metal.

<Bass> (5 preset)

62	BS:D1'edBass	Vocal Multi	Insert	Mono	Slight limiting and equalization optimized, ideal for line recording applications.
63	BS:MikedBass	Guitar Amp Simulator	Insert	Mono	A miked speaker box with four 12"s.
64	BS:CompBass	Stereo Multi	Insert	Stereo	Hard-compressed sound optimized for slaps.
65	BS:Auto Wah	Guitar Multi 2	Insert	Mono	Synth bass like sound added with auto wah essential for '70s funk.
66	BS:EFX Bass	Stereo Delay Chorus	Insert	Stereo	Solo-optimized sound with depth and spaciousness added through delay and chorus.

<Stereo Multi> (5 preset)

67	CL:Comp	Stereo Multi	Insert	Stereo	Stereo type compression optimized for broadcast mixing.
68	CL:Limitter	Stereo Multi	Insert	Stereo	A convenient effect for analog mastering because it can limit peak signals.
69	EQ:Loudness	Stereo Multi	Insert	Stereo	Applies EQ curve with slightly boosted lows and highs.
70	EQ:Fat Dance	Stereo Multi	Insert	Stereo	Hard compression plus equalizing for dance music.
71	EQ:ThinJngl	Stereo Multi	Insert	Stereo	Limitter and EQ processing for FM radio and TV broadcasting.

<Chorus/Flanger/Phaser/PitchShifter> (9 preset)

72	CH:Lt Chorus	Stereo Delay Chorus	Insert	Stereo	Natural stereo chorus with shallow depth for spacious, crystal-clear sound.
73	CH:Deep Cho	Stereo Delay Chorus	Insert	Stereo	Intense stereo chorus that adds depth and spaciousness to the sound.
74	CH:DetuneCho	Stereo Pitch Shifter Delay	Insert	Stereo	Chorus with left and right channels separately pitch shift-detuned up and down.
75	FL:LtFlanger	Stereo Flanger	Insert	Stereo	Stereo flanger with slight modulation.
76	FL:Deep Fl	Stereo Flanger	Insert	Stereo	Deeper stereo flanger for metallic jet swooshing sound.
77	PH:Lt Phaser	Stereo Phaser	Insert	Stereo	Lighter 4-stage stereo phaser suitable for synth strings.
78	PH:DeepPhase	Stereo Phaser	Insert	Stereo	Deep phaser effective for electronic piano and clavinet sounds.
79	PS:-4thVoice	Vocal Multi	Insert	Mono	Adds sound down a fourth to the direct sound.
80	PS:ShimmerUD	Stereo Pitch Shifter Delay	Insert	Stereo	A special effect with left channel pitch rising and right channel pitch dropping over time.

<Same as Algorithm> (20 preset)

81	Reverb	Reverb	Loop	Mono	Refer to page 16 of the VS8F-1 Owner's Manual.
82	Delay	Delay	Loop	Mono	Refer to page 17 of the VS8F-1 Owner's Manual.
83	StDly-Chorus	Stereo Delay Chorus	Insert	Stereo	Refer to page 18 of the VS8F-1 Owner's Manual.
84	StPS-Delay	Pitch Shifter Delay	Insert	Stereo	Refer to page 19 of the VS8F-1 Owner's Manual.
85	Vocoder	Vocoder	Insert	Mono	Refer to page 19 of the VS8F-1 Owner's Manual.
86	2ch RSS	2ch RSS	Insert	2ch	Refer to page 20 of the VS8F-1 Owner's Manual.
87	Delay RSS	Delay RSS	Insert	Mono	Refer to page 20 of the VS8F-1 Owner's Manual.
88	Chorus RSS	Chorus RSS	Insert	Mono	Refer to page 21 of the VS8F-1 Owner's Manual.
89	GuitarMulti1	Guitar Multi 1	Insert	Mono	Refer to page 21 of the VS8F-1 Owner's Manual.
90	GuitarMulti2	Guitar Multi 2	Insert	Mono	Refer to page 22 of the VS8F-1 Owner's Manual.
91	GuitarMulti3	Guitar Multi 3	Insert	Mono	Refer to page 23 of the VS8F-1 Owner's Manual.
92	Vocal Multi	Vocal Multi	Insert	Mono	Refer to page 24 of the VS8F-1 Owner's Manual.
93	Rotary	Rotary	Insert	Mono	Refer to page 25 of the VS8F-1 Owner's Manual.
94	GuitarAmpSim	Guitar Amp Simulator	Insert	Mono	Refer to page 25 of the VS8F-1 Owner's Manual.
95	St Phaser	Stereo Phaser	Insert	Stereo	Refer to page 26 of the VS8F-1 Owner's Manual.
96	St Flanger	Stereo Flanger	Insert	Stereo	Refer to page 26 of the VS8F-1 Owner's Manual.
97	DualComp/Lim	Dual Compressor/Limiter	Insert	2ch	Refer to page 27 of the VS8F-1 Owner's Manual.
98	Gate Reverb	Gate Reverb	Loop	Mono	Refer to page 27 of the VS8F-1 Owner's Manual.
99	MultiTapDly	Multi Tap Delay	Insert	Mono	Refer to page 28 of the VS8F-1 Owner's Manual.
100	Stereo Multi	Stereo Multi	Insert	Stereo	Refer to page 29 of the VS8F-1 Owner's Manual.

TYPE

Loop: Direct Level is set to "0." Connect this Patch to the effects buss.

Insert: This Patch mixes the direct sound and effected sound. Insert it into a channel.

For details regarding connection, refer to page 8 of the VS8F-1 Owner's Manual.

You cannot select preset Patches 1 through 22, 81 and 98 for EFFECT2.

These Patches must be used for EFFECT1.

Notes when using a Zip drive

A Zip drive manufactured by Iomega Corporation USA can be connected to the VS-880 via the SCSI connector and used as an external removable disk drive. Follow the instructions in the section "Connecting a disk drive" of the owner's manual (p.48) and connect the Zip drive to the VS-880. When connections are complete, follow the procedure "Initializing a disk drive" (p.49) to initialize the disk of the Zip drive (including physical formatting).

* The SCSI ID number of the Zip drive can be set either to "5" or "6." If other disk drives are also connected, make sure that their SCSI ID numbers do not conflict.

Using a Zip drive for backup

If you wish to use a Zip drive to backup song data, there are particular limitations. Refer to "Copying song data" (owner's manual p.43) to copy song data from the internal hard disk.

Using a Zip drive as the current drive

The VS-880 can use a Zip drive as the current drive (the drive for recording and playback). In this case, please note the following points.

● Number of tracks

A Zip drive is not able to write or read data as fast as a hard disk. This means that if you are using a Zip drive as the current drive (the drive for recording and playback), you may get a message of "Disk Too Slow!" in some cases, and correct playback will not be possible.

In order to avoid such problems as far as possible when playing back a song from a Zip drive, refer to the following table and limit the number of simultaneously played back tracks as appropriate for the sample rate and recording mode settings of the song.

Recording mode	Sample rate		
	48.0 kHz	44.1 kHz	32 kHz
Mastering	3 (2)	4 (2)	4 (4)
Multitrack 1	7 (6)	7 (5)	8 (6)
Multitrack 2	7 (6)	8 (7)	8 (8)
Live	8 (8)	8 (8)	8 (8)

* Numbers in parentheses () are guidelines for numbers of tracks in songs in which operations such as punch-in recording or track copy are performed repeatedly.

* If the "Disk Too Slow" message appears, refer to the "Error messages" (owner's manual p.88) and take the appropriate action.

* A sample rate of "44.1 kHz" and a recording mode of "MT2 (multitrack 2)" will be set for the song which is created automatically when a disk is initialized, or for a newly created song if you do not specify the sample rate and recording mode.

● Automatic sleep mode

When data reading or writing operations have not occurred for a specific interval of time on the Zip drive, it will automatically reduce the disk rotation speed to reduce power consumption and extend the life of the disk. This is referred to as automatic sleep mode.

When a Zip drive is used with the VS-880, if a 30 minute interval elapses without data being written to or read from the Zip drive, the rotation speed of the disk will automatically be reduced. If you begin recording in this state, the first part of the recording may not be recorded correctly, since a certain interval of time is required for the disk to return to its normal rotational speed. In order to avoid such problems, press [STOP] before you begin recording. When you press [STOP] the disk will return to its normal rotational speed.

● Approximate recording times

The following table shows the approximate recording times that are possible on a single disk (100 M bytes) with the Zip drive (times shown are for a single track).

Recording mode	Sample rate		
	48.0 kHz	44.1 kHz	32 kHz
Mastering	18 minutes	19 minutes	27 minutes
Multitrack 1	36 minutes	39 minutes	54 minutes
Multitrack 2	48 minutes	58 minutes	72 minutes
Live	58 minutes	63 minutes	87 minutes

(recording times are approximate)

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