# ≡EDIROL≡

STUDIO Canvas
SD-90

Getting Started

Thank you, and congratulations on your choice of the Edirol SD-90.

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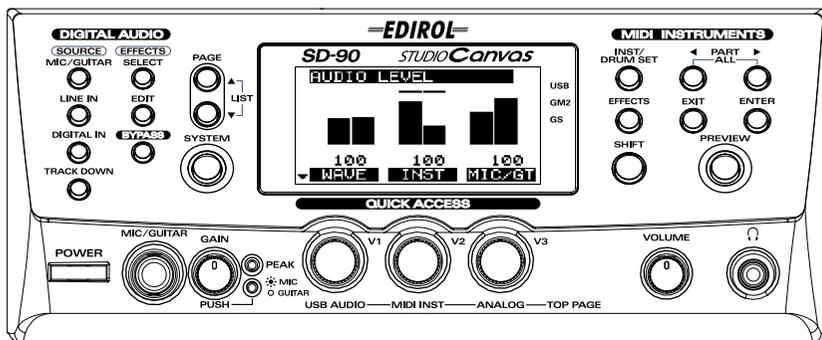
What is USB?

USB stands for Universal Serial Bus. It is a new interface used to connect various peripheral devices to a computer.s

USB allows more than one peripheral device to be connected via a single USB cable, and also allows data to be transmitted more rapidly than conventional serial ports.

Peripherals can also be connected or disconnected with the power turned on, and the computer will automatically recognize the peripheral that has been plugged in. (Some peripherals may require settings or other operations to be performed.)

About SCMS

SCMS (Serial Copy Management System) is a function that protects the rights of the copyright owner by prohibiting second-generation or later copying via a digital connection to a consumer digital audio device such as a DAT recorder or MD recorder. When a recording is made via a digital connection on a digital recorder that has this function, SCMS data will be recorded along with the digital audio signal. A digital audio signal containing this SCMS data cannot be recorded again via a digital connection.

SCMS on the SD-90

On the SD-90, SCMS will affect operation only for digital signals input from an external device. If a digital audio signal containing SCMS data is input from a MD or other media that was digitally copied from a commercial music CD, the SD-90 will operate as follows.

When inputting from the SD-90's digital input connector:

- The SD-90 cannot record this signal on your computer.
- Nor will the sound be output from the analog output (master output jacks, headphone jack) or digital output connector.

When inputting from the SD-90's analog inputs (line in jacks):

- Recording can be performed as usual.

A note regarding copyright

* *Unauthorized recording, public performance, broadcast, sale, or distribution of a work (CD recording, video, broadcast, etc.) whose copyright is owned by a third party is forbidden by law. Any infringement on the rights of a third party you may commit using the SD-90 is solely your own responsibility, and no responsibility shall be born by the manufacturer of the SD-90. Unauthorized duplication, even for purposes of personal use, of a copyrighted work belonging to a third party by circumventing technical means of protection such as SCMS constitutes infringement of the copyright of that third party, and is forbidden by law.*

Contents

Check the contents of the package

The following items are included in the SD-90 package. After opening the package, check to see whether any items are missing. If any items are missing, please contact the dealer from whom you purchased the SD-90.

*   *The SD-90 package does not include an external amp or speakers, headphones, or audio cables. You will need to provide these separately.*

❏SD-90

This is a **Studio Canvas** unit with digital input/output jacks and USB audio interface.
It supports **General MIDI 2**, **GS format** (the universal specification for Roland sound generators), and the **XGlite** promoted by Yamaha Corporation.
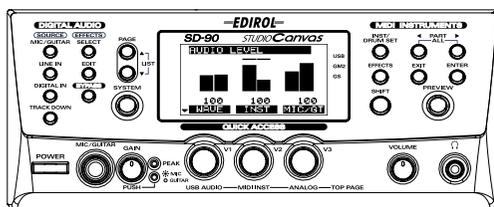
❏AC cord

This is the only AC cord you should use with the SD-90.
Do not use any AC cord other than the supplied one, since doing so may cause malfunction.
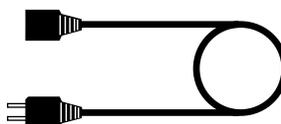
❏CD-ROM

This contains drivers used by the SD-90, and demo songs.

⚠ *DO NOT play a CD-ROM disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result.*

❏USB cable

This connects the SD-90 to your computer.

MEMO
You may want to mark the relevant check box as you confirm the presence of each item.

☑

MEMO
For details on General MIDI 2, GS format, and XGlite, please refer to the SD-90 owner's manual.

MEMO
Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty CD-ROM discs may not be read properly. Keep your discs clean using a commercially available CD cleaner.

4

☑Getting Started

This is the manual you are holding. Please read this first.

This manual explains how to install the drivers and make the settings required in order to use the SD-90. Starting at the beginning, please read the sections that are relevant to your system.
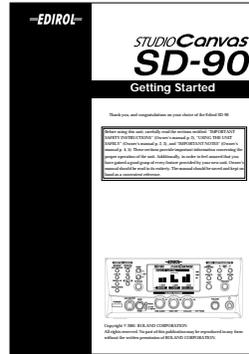
❏Owner's Manual

This is the owner's manual for the SD-90. Read this to gain in-depth information concerning the use of the SD-90, and the numerous functions it offers.
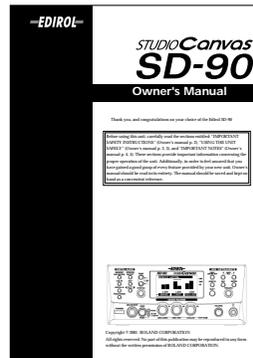
Connections with audio equipment

Connect the audio outputs (analog) of the SD-90 to your audio playback equipment. You will need the following items.

- SD-90
- Audio cables (RCA phono - RCA phono)
- Audio playback equipment such as an amp and speakers, or a stereo system

*   *Before making connections to other equipment, you must turn down the volume of all equipment to avoid malfunctions or speaker damage.*

*   *To avoid short circuits or broken connections, grasp the plug when disconnecting a cable.*

*   *Use the included cables to make connections. If you are using a connection cable made by another manufacturer, please note the following.*

    *   *Some connection cables contain a resistor. Do not use a cable with a built-in resistor to connect with the SD-90. Doing so may make the sound extremely weak, or inaudible. For details on your cable, please contact its manufacturer.*

1

Lower the volume of your audio playback equipment.

2

Connect the SD-90's **OUTPUT1 (audio output 1) jacks** to the input jacks of your audio playback equipment. If you are using headphones, connect them to the **headphone jack** ⌒ located on the front panel of the SD-90.
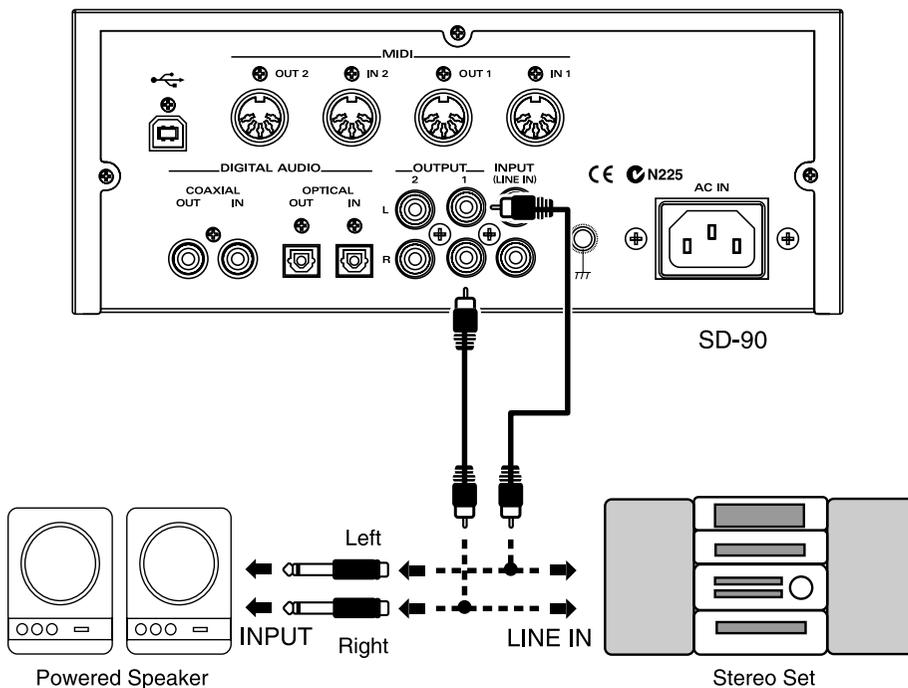
Getting Connected and Installing Drivers (Windows)

If you are using a Macintosh computer, please proceed to **Getting Connected and Installing Drivers (Macintosh)** (p. 24).

The following items are required for connections and installation. Remove them from the SD-90 package, and have them ready.

- SD-90
- AC cord
- USB cable
- CD-ROM

What is a driver?

A "driver" is software that transfers data between the SD-90 and application software running on your computer, when your computer and the SD-90 are connected by a USB cable. The driver sends data from your application to the SD-90, and from the SD-90 to your application.
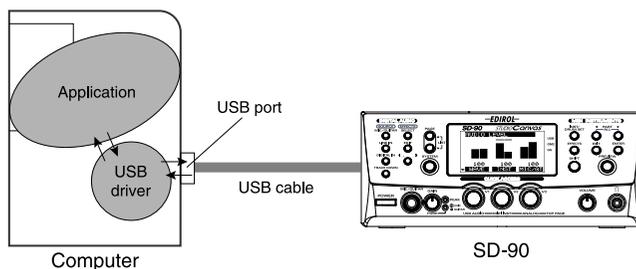
Installing the driver and settings

The installation procedure will differ depending on your system.
Please proceed to one of the following sections, depending on the system you use.

■ Windows 2000 users

WDM driver and MME driver

The CD-ROM contains two types of driver for Windows 2000.
Before you install the driver, select the driver that will be appropriate for the application you want to use.

WDM driver

You should use this driver if you have specified WDM driver mode for SONAR or a similar application. This will provide the highest-quality audio performance.

* *It is not possible to use 24-bit audio with applications that do not have a WDM driver mode, such as Cool Edit or Media Player.*

MME driver

This driver allows you to use 24-bit audio even from applications that do not have a WDM driver mode, such as Cool Edit.

* *It is not possible to use the MME driver from WDM driver mode of an application such as SONAR.*

It is not possible to install both the WDM driver and the MME driver. You must select one beforehand, and install only that driver. If after installing one of these drivers you decide to change drivers, you must first delete the already-installed driver and then install the new driver. (->**Deleting the driver** (p. 47))

Installing the driver

The WDM driver and the MME driver can be installed using the same procedure.

1

With the SD-90 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2

Log on to Windows as a **user with administrative privileges** (such as Administrator).

3

Open the **System Properties** dialog box.

Click the Windows **Start** button, and from the menu that appears, select **Settings | Control Panel**. In **Control Panel**, double-click the **System** icon.

4

Open the **Driver Signature Options** dialog box.

Click the **Hardware** tab, and then click **[Driver Signing]**.

5

Make sure that "**File signature verification**" is set to "**Ignore**."

If it is set to "**Ignore**", simply click **[OK]**.
If it is not set to "**Ignore**", make a note of the current setting ("**Warn**" or "**Block**"). Then change the setting to "**Ignore**" and click **[OK]**.

6

Close the **System Properties** dialog box.
Click **[OK]**.

7

Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

8

Prepare the CD-ROM.

Insert the CD-ROM into the CD-ROM drive of your computer.
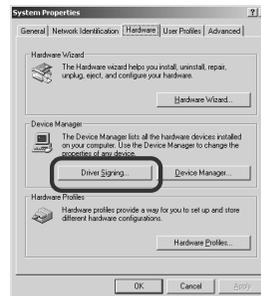
NOTE

If you have already connected the SD-90 to your computer and the "**Add new hardware wizard**" is displayed, find the **Readme_e.htm** file in the **Driver\Win2000\WDM** or **Driver\Win2000\MME** folder of the CD-ROM, and under "Troubleshooting," read the section entitled "**You attempted to install using the above procedure, but were not able to**."

MEMO

If you changed **"File signature verification"** in **step 5**, you must restore the previous setting after you have installed the driver.
(->**If you changed "File signature verification"** (p. 12))

9
Open the "**Run...**" dialog box.

Click the Windows **Start** button.
From the menu that appears, select "**Run...**"
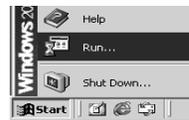
10
In the dialog box that appears, input the following into the "**Open**" field, and click **[OK]**.

If installing the WDM driver

D:\Driver\Win2000\WDM\Setupinf.exe

If installing the MME driver

D:\Driver\Win2000\MME\Setupinf.exe
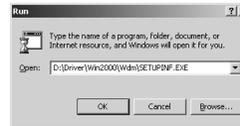
11
The **SETUPINF** dialog box will appear.

You are now ready to install the driver. Drag the title bar to move the **SETUPINF** dialog box into the upper part of the screen.

*   *Do not click **[OK]** at this time.*
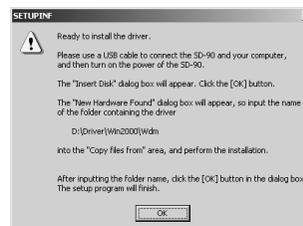
12
With the power turned off, use a USB cable to connect the SD-90 to your computer.

13
Set the SD-90's mode select switch to the ON position.

Connect the AC cord to the SD-90's AC IN, and connect the plug of the AC cord to an electrical outlet.

If in **step 5** the "**File signature verification**" setting was not set to "**Ignore**", a "**Digital signature not found**" dialog box will appear.

If "File signature verification" is set to "Warn,"

1.   Click **[Yes]**.

2.   Continue the installation.

If "File signature verification" is set to "Block"

1.   Click **[OK]**.

2.   When the "**New hardware detection wizard**" appears, click [Finish].

3.   Perform the installation as described in the "Troubleshooting" section on **Device Manager shows "?", "!", or "USB Composite Device"** (p. 37).

MEMO

In this manual, the location of folders and files is given in terms of the file path, using **** as the delimiter. For example, **WDM\Setupinf.exe** indicates the **Setupinf.exe** file found in the **WDM** folder

NOTE

The drive name "**D:**" may be different for your system. Specify the drive name of your CD-ROM drive.

MEMO

If a message of "**The driver is already installed**" appears, you can connect the SD-90 to your computer and use it.

14

The **Insert disk** dialog box will appear.

Click **[OK]**.

NOTE

If the Insert disk dialog box does not appear, please read The **The "Insert Disk" dialog box does not appear** (p. 37)

15

The **Files Needed** dialog box will appear.

In the **Copy files from** field, type the folder name that is shown in the **Setupinf** dialog box, and click **[OK]**.

If in **step 5** the "**File signature verification**" setting was not set to "**Ignore**", a "**Digital signature not found**" dialog box will appear.

If "File signature verification" is set to "Warn,"

1. Click **[Yes]**.

2. Continue the installation.

If "File signature verification" is set to "Block"

1. Click **[OK]**.

2. When the **"New hardware detection wizard"** appears, click [Finish].

3. Perform the installation as described in the "Troubleshooting" section on **Device Manager shows "?", "!", or "USB Composite Device"** (p. 37).

16

The **"Found New Hardware Wizard"** may be displayed.

Verify that **"EDIROL SD-90 (WDM)"** or **"EDIROL SD-90 (MME)"** is displayed, and click **[Finish]**.
If the **"Find new hardware wizard"** dialog box is not displayed, proceed to **step 17**.

17

Restart Windows.

The **System Settings Change** dialog box may appear. Click **[Yes]**. Windows will restart automatically.
If the **System Settings Change** dialog box does not appear, restart Windows from the **Start** menu.

11

If you changed "File signature verification"

If you changed the **"File signature verification"** setting in **step 5**, restore the original setting after Windows restarts.

1. After Windows restarts, log in to Windows as a user with **administrative privileges**, (such as **Administrator**).

2. In the Windows desktop, right-click the **My Computer** icon, and from the menu that appears, select **Properties**. The **System Properties** dialog box will appear.

3. Click the **Hardware** tab, and then click **[Driver signature]**. The **Driver signature options** dialog box will appear.

4. Return the **"File signature verification"** setting to the original setting (either **"Warn"** or **"Block"**), and click **[OK]**.

5. Click **[OK]**. The System properties dialog box will close.

Next, specify the **audio and MIDI input and output** destinations.
(-> **Audio and MIDI input and output destinations** (p. 13)

Audio and MIDI input and output destinations

In order to perform the following steps, you must log on and make settings as the same user who will be actually using the SD-90 (**a user with administrative privileges**, such as **Administrator**).

1

Open **Control Panel**.

Click the Windows Start button, and select Settings - Control Panel.

2

Open the **Sounds and Multimedia Properties** dialog box.

Double-click the **Sounds and Multimedia** icon.

Sounds and Multimedia

3

Specify the "**Preferred device**." Click the **Audio** tab. Click the **Sound playback** field, **Sound Recording** field, and **MIDI Music Playback** field, and make the following selections from the list that appears.

Sound Playback	EDIROL SD-90 Out
Sound Recording	EDIROL SD-90 In
MIDI Music Playback	EDIROL SD-90 PART A

4

Close the **Sound and Multimedia Properties** dialog box.

Click **[OK]**.

Next, you need to specify the **hard disk transfer mode**.
(-> **Specifying the hard disk transfer mode** (p. 14)

Specifying the hard disk transfer mode

1
Click the Windows **Start** button, and from the menu that appears, choose **Settings | Control Panel**. The **Control Panel** will appear.

2
Double-click the **System** icon. The **System Properties** dialog box will appear.

3
Click the **Hardware** tab.

4
Click **Device Manager** located at the right of the **Device Manager** field.

5
In the list that appears, double-click **IDE ATA/ATAPI controller**.

6
Double-click **Primary IDE Channel**. The **Primary IDE Channel Properties** dialog box will appear.

7
Click the **Advanced Settings** tab.

8
Check whether the **Current Transfer Mode** for **Device 0** and **Device 1** is **UltraDMA mode** (or **DMA mode**).

If the **current transfer mode** is **UltraDMA mode** (or **DMA mode**), proceed to **step 10**.
If it is **PIO mode**, select **DMA if available** from the pulldown menu of **Transfer Modes**.

9
Click **[OK]**. If a dialog box appears, recommending that you restart your computer, click **[Yes]**. The computer will restart automatically.

10
Click the ⊠ button of the **Device Manager**.
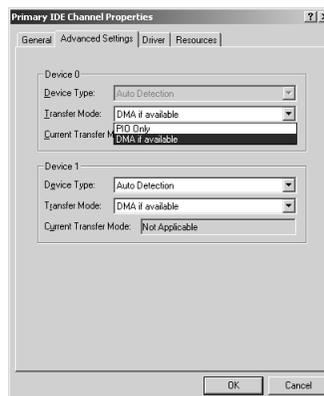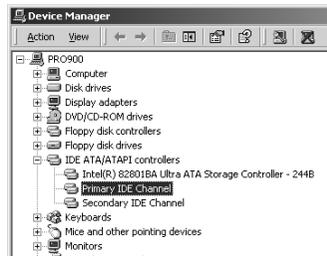
11
In the **System Properties** dialog box, click **[Close]** (or **[OK]**). The **System Properties** dialog box will close.

Next, you need to check whether the connections, driver installation, and settings were made correctly.
(->**Check whether there is sound** (p. 22)

MEMO

If the **current transfer mode** was already set to **UltraDMA** mode in **step 8**, click **[OK]** in **step 11**.

■ **Windows Me/98 users**

Installing the driver

1
   With the SD-90 disconnected, start up Windows.

   Disconnect all USB cables other than those for a USB keyboard or USB mouse.

2
   Exit all currently running software (applications).

   Also, close any open windows. If you are using a virus checker or similar software, be sure to exit this as well.

3
   Prepare the CD-ROM.

   Insert the CD-ROM into the CD-ROM drive of your computer.

4
   Open the **Run...** dialog box.

   Click the Windows **Start** button. From the menu that appears, select **Run...**.

5
   In the "**Open**" field of the dialog box that appears, type "**D:\Driver\Win98Me\Setupinf.exe**" and click **[OK]**.

6
   Open the **SETUPINF** dialog box.

   You are now ready to install the driver. Drag the title bar to move the **SETUPINF** dialog box into the upper part of the screen.

   * *Do not click **[OK]** at this time.*

7
   With the power turned off, use a USB cable to connect the SD-90 to your computer.

8
   Turn on the power of the SD-90.

   Connect the AC cord to the SD-90's AC IN jack, and insert the AC cord's plug into an AC power outlet. Then, turn on the power of the SD-90.

NOTE

If the SD-90 is already connected to your computer and a message of "**Add New Hardware Wizard**" is displayed, go to the **CD-ROM** folder named **Driver\Win98Me**, open the file **Readme_e.htm**, and read the "**Troubleshooting**" section entitled "**You attempted to install using the above procedure, but were notable to.**"

MEMO

In this manual, the location of folders and files is given in terms of the file path, using **** as the delimiter. For example, **Win98Me\Setupinf.exe** indicates that the **Setupinf.exe** file is located in the **Win98Me** folder.

NOTE

The drive name "**D:**" may be different depending on your system. Type the name of your CD-ROM drive.

MEMO

If a message of "**The driver is already installed**" appears, you can connect the SD-90 to your computer and use it.

MEMO

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

9

If you are using Windows 98, an **Insert disk** dialog box will appear.

Click **[OK]**.

10

The New Hardware dialog box will appear.

In the File copy source field, type the folder name that is shown in the SETUPINF dialog box, and click [OK].

11

Once the driver has been installed, the New hardware dialog box will close.

In the SETUPINF dialog box, click [OK]. The SETUPINF dialog box will close.

Next, specify the audio and MIDI input and output destinations.
(-> **Audio and MIDI input and output destinations** (p. 18)

Audio and MIDI input and output destinations

●**Windows Me users**

If you are using a Windows 98, please proceed to page 19.

1

Open **Control Panel**.

Click the Windows **Start** button,
and select **Settings - Control** Panel.

MEMO

Depending on your
system, the Sound and
Multimedia icon may not
be displayed in the Control
Panel. In this case, click the
text "Show all Control
Panel options" located in
the left of the Control
Panel.

2

Open the **Sounds and Multimedia Properties** dialog
box.

Double-click the **Sounds and Multimedia** icon.

Sounds and
Multimedia

3

Specify the "**Preferred device**." Click
the **Audio** tab. Click the **Sound
Playback** field, **Sound Recording** field,
and **MIDI Music Playback** field, and
make the following selections from the
list that appears.

Sound Playback	EDIROL SD-90 Out
Sound Recording	EDIROL SD-90 In
MIDI Music Playback	EDIROL SD-90 PART A

4

Close the **Sound and Multimedia
Properties** dialog box.

Click **[OK]**.

Next you will specify the hard disk transfer mode.
(->**Specifying the hard disk transfer mode** (p. 20)

●**Windows 98 users**

1
Open **Control Panel**.

Click the Windows **Start** button, and select **Settings - Control Panel**.

MEMO

Depending on your system, the Sound and Multimedia icon may not be displayed in the Control Panel. In this case, click the text "Show all Control Panel options" located in the left of the Control Panel.
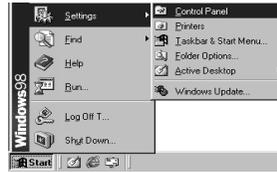
2
Open the **Multimedia Properties** dialog box.

Double-click the **Multimedia** icon.

Multimedia

3
Specify the "**Preferred device**." Click the **Audio** tab. Click the **Playback** field and **Recording** field, make the following selections from the list that appears, and click **[Apply]**.

Playback	EDIROL SD-90 Out
Recording	EDIROL SD-90 In
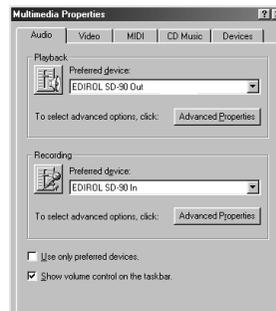
4
Specify the "**MIDI output**."

Click the MIDI tab. Add a check mark to **[Single instrument]**, click **[EDIROL SD-90 PART A]** in the list, and then click **[Apply]** (or **[OK]**).

5
Close the **Multimedia Properties** dialog box.

Click **[OK]**.

Next you will specify the hard disk transfer mode.
(-> **Specifying the hard disk transfer mode** (p. 20))

Specifying the hard disk transfer mode

1
Click the Windows **Start** button, and from the menu that appears, choose
Settings | Control Panel. The **Control Panel** will appear.

2
Double-click the **System** icon. The **System Properties** dialog box will
appear.

3
Click the **Device Manager** tab.

4
Double-click the **Disk drives** in the list. A list of the connected disk drives
will appear.

5
Double-click the hard disk drive
that you are using (example:
GENERIC IDE DISKTYPE47). The
hard disk properties dialog box
will appear.

6
Click the **Settings** tab.

7
Verify whether the **DMA** option
has a check mark. If it has a check
mark, click **[Cancel]**, and proceed
to **step 10**. If it does not have a
check mark, check **DMA**.

8
If the unsupported hardware
warning dialog box appears, click
[OK].

9
Click **[OK]**.

The **hard disk properties** dialog
box will close.
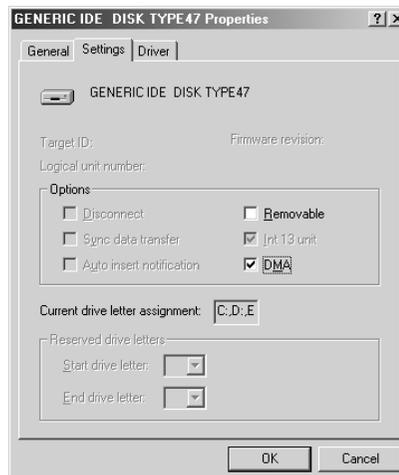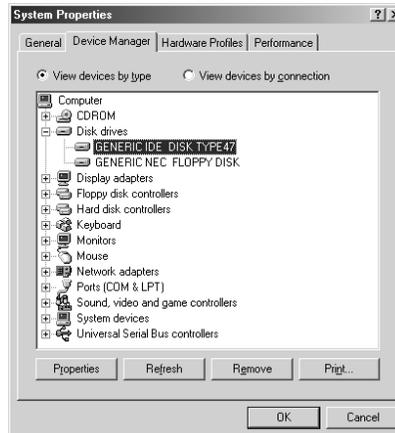
MEMO

DMA
DMA is an abbreviation
for Direct Memory Access.
It is a transfer method
used to exchange audio
data between your
sequencer program and
the SD-90 (the audio
device).

20

10
In the **System Properties** dialog box, click **[Close]** (or **[OK]**). The **System Properties** dialog box will close.

11
If a dialog box appears, suggesting that you restart your computer, click **[Yes]**. The computer will restart automatically.

Connections and driver installation have now been completed.

Next you will check whether connections, driver installation, and settings were made correctly.

MEMO

If **DMA** already had a check mark in **step 7** (i.e., if you clicked **[Cancel]**), click **[OK]** in **step 10**.

Check whether there is sound

Next, play back the sample data to verify that the driver installation and settings were performed correctly.

■ Playing back the sample data (audio)

Here we will use standard Windows functionality to play back the sample data (audio). The sample data is found on the CD-ROM.

1

Prepare the CD-ROM.

Insert the CD-ROM into the CD-ROM drive of your computer.

2

From the **DemoSong \ Wav** folder of the CD-ROM, drag **passing(.wav)** to your desktop, copying it.

3

Right-click the copied file **passing(.wav)**, and select **Properties** (**Play** for Windows 2000).
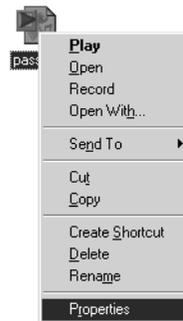
Play
Open
Record
Open With...

Send To ▶

Cut
Copy

Create Shortcut
Delete
Rename

Properties

4

Play back the sample data.

Click the **Preview** tab, and then click the ▶ button.

passing Properties

General | Details | Preview

Preview of passing

OK   Cancel   Apply

Was the sample data played back?

If it was played back correctly, this means that the computer and the SD-90 are connected correctly, and that the drivers have been installed correctly.

NOTE

Unauthorized use of the song data included with this product for any purpose other than personal enjoyment is forbidden by law. You may not duplicate this data or use it in a derivative work without the permission of the copyright holder.

MEMO

What you actually see on your computer screen may be different, depending on your computing environment and the operating system you're using.

MEMO

If it did not play back correctly, refer to **Troubleshooting** (p. 34) to determine the reason. This section contains information on how to solve problems such as no sound, or failure to play back correctly.

■ **Playing back the sample data (MIDI)**

Here we will use standard Windows functionality to play back the sample data (MIDI). The sample data is found on the CD-ROM.

1

Prepare the CD-ROM.

Insert the CD-ROM into the CD-ROM drive of your computer.

2

From the **DemoSong \ MIDI** folder of the CD-ROM, drag **14WINDOC(.MID)** to your desktop, copying it.

3

Right-click the copied file **14WINDOC(.MID)**, and select **Properties** (**Play** for Windows 2000).

MEMO

What you actually see on your computer screen may be different, depending on your computing environment and the operating system you're using.

4

Play back the sample data.

Click the **Preview** tab, and then click the ▶ button.

MEMO

If it did not play back correctly, refer to **Troubleshooting** (p. 34) to determine the reason. This section contains information on how to solve problems such as no sound, or failure to play back correctly.

Was the sample data played back?

If it was played back correctly, this means that the computer and the SD-90 are connected correctly, and that the drivers have been installed correctly.

23

Getting Connected and Installing Drivers (Macintosh)

If you are using a Windows computer, please proceed to **Getting Connected and Installing Drivers (Windows)** (p. 7).

The following items are required for connections and installation. Remove them from the SD-90 package, and have them ready.

- SD-90
- USB cable
- AC cord
- CD-ROM

What is a driver?

A "driver" is software that transfers data between the SD-90 and application software running on your computer, when your computer and the SD-90 are connected by a USB cable. The driver sends data from your application to the SD-90, and from the SD-90 to your application.
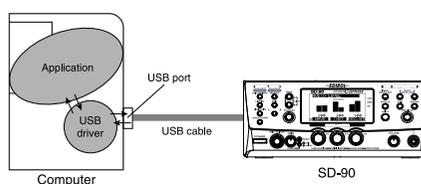
Installing the driver and settings

■ Connecting your Macintosh

1
Turn off the power of the Macintosh and all peripheral devices connected to the Macintosh.

2
With the power turned off, use the USB cable to connect the SD-90 and the Macintosh.

3
Turn on the peripheral devices connected to the Macintosh, except for the SD-90. Then turn on the power of the Macintosh itself.

* Do not turn on the power of the SD-90 at this time.

If the power of the SD-90 is turned on, a message like the following will appear when the Macintosh is started up. Perform the steps described below as appropriate for the message that is displayed.
If the screen indicates:
"Driver required for USB device 'unknown device' is not available. Search for driver on the Internet?"
-> click **[Cancel]**.
If the screen indicates:
"Software required for using device 'unknown device' cannot be found. Please refer to the manual included with the device, and install the necessary software."
-> click **[OK]**.

Use either OMS or FreeMIDI as the MIDI driver.

If you are using OMS.................................... (p. 25)

If you are using FreeMIDI .... (p. 29)

*   *Either OMS or FreeMIDI must be installed in your Macintosh, as appropriate for the sequencer software you are using.*

■ Installing the SD-90 driver (OMS)

Use the following procedure to install the SD-90 driver.

The included **SD-90 OMS driver** is an add-on module for using the SD-90 with OMS. In order for you to use it, **OMS must already be installed on the hard disk from which you started up**.

*   *Disconnect the SD-90 from the Macintosh before you perform the installation.*

About OMS

If you would like to learn more about **OMS**, refer to **OMS_2.3_Mac.pdf** (online manual) in the **OMS2.3.8E** folder within the OMS folder of the CD-ROM. You will need the Adobe Acrobat Reader in order to view **OMS_2.3_Mac.pdf**.

MEMO

OMS can be found in the **OMS2.3.8E** folder within the OMS folder of the CD-ROM.

MEMO

The latest version of Adobe Acrobat Reader can be downloaded from the Adobe website. http://www.adobe.com (This URL may change without notice.)

1

Exit all currently running software (applications).

If you are using a virus checker or similar software, be sure to exit this as well.

2

Prepare the CD-ROM.

Insert the CD-ROM into the CD-ROM drive.

3

Double-click the **SD-90 OMS Driver-E Installer** icon (found in the **Driver E - OMS** folder of the CD-ROM) to start up the installer.

SD-90 OMS Driver-E Installer

4

Verify the installation location, and click **[Install]**.

5

If a message like the following is displayed, click **[Continue]**.

The other currently running applications will exit, and installation will continue.

This installation requires your computer to restart after installing this software. Click Continue to automatically quit all other running applications. Click Cancel to leave your disks untouched.

Cancel   Continue

25

6

A dialog box will indicate **Installation completed**.

Click **[Restart]** to restart your Macintosh.

7

With the power turned off, use a USB cable to connect to the SD-90 to your computer

8

Switch ON the SD-90's Power switch.

Power switch

Connect the AC cord to the SD-90's AC IN, and insert the AC cord's plug into an AC power outlet. Then, turn on the power of the SD-90.
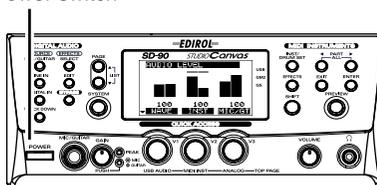
MEMO

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

OMS settings

1

From the CD-ROM, drag the **Driver E-OMS-Settings** folder to the hard disk of your Macintosh to copy it.

Settings

2

In the **Opcode-OMS Application** folder where you installed OMS, double-click **OMS Setup** to start it up.

OMS Setup

3

If a dialog box like the one shown here appears, click **[Turn It Off]**. A confirmation dialog box will then appear, so click **[OK]**.

AppleTalk

AppleTalk is on. It is used for connecting your computer to network services, such as file servers and printers. But it can make MIDI communication less reliable.

If you choose Turn It Off, don't disconnect AppleTalk yet.

CAUTION: OMS may not turn off AppleTalk as reliably as Apple's system software.

Options...   Leave It On   Turn It Off

4

The Create New Setup dialog box will appear.

Click **[Cancel]**. If you accidentally clicked OK, click **[Cancel]** in the next screen.

Create a New Studio Setup

A studio setup document is a list of your MIDI devices and cables between them.

You use it to tell applications what's in your studio.

Click OK to have OMS automatically locate your MIDI devices and build a new studio setup document.

Cancel   OK

5

Choose "**Open**" from the File menu.

From the **Settings** folder that you copied in **step 1**, select the **SD-90 USB** file, and click **[Open]**.

File	Edit	Studio	Help	
New Studio Setup				⌘N
Open...				⌘O
Open Current Studio Setup				⌘U
Close				⌘W
Save				⌘S
Save As...				
Save And Make Current				⌘M
Page Setup...				
Print...				⌘P
Quit				⌘Q

A screen like the one shown here will appear.
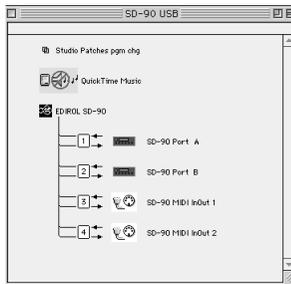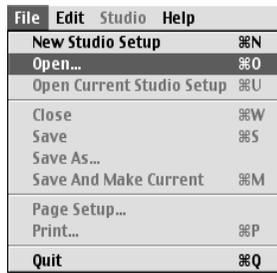
6

From the **Edit** menu, select **OMS MIDI Setup**. In the **OMS MIDI Setup** dialog box that appears, check **Run MIDI in background**, and click **[OK]**.

7

From the **File** menu, choose **Make Current**. If you are unable to select **Make Current**, it has already been applied, and you may continue to the next step.

A diamond mark (◇) indicated the settings are enabled.
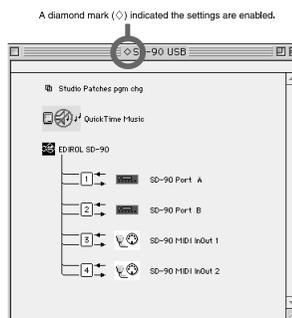
8

Verify that MIDI transmission and reception can be performed correctly. From the **Studio** menu, choose **Test Studio**.

Studio	Help	
New Device...	⌘D	
New Patcher...		
MIDI Cards & Interfaces...		
Add Device Per Port...		
Auto-Detect Devices...		
MIDI Device Info...		
Device Icon...		
Different In/Out Ports		
Test Studio	⌘T	
Sort by Port/Name		

9

When you move the mouse cursor near the sound generator icon, the cursor will change to a ♪ shape. Click on the sound generator icons that are encircled in the following illustration. If sound is heard from the SD-90, the settings are correct. If MIDI is not being transmitted, the Macintosh will produce an alert sound.
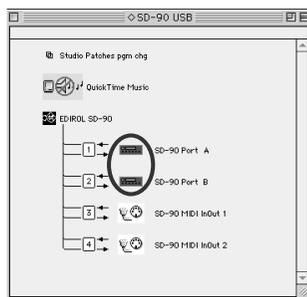
10 Exit **OMS Setup**.

From the File menu, choose **[Exit]**. If the **AppleTalk confirmation** dialog box appears, click **[OK]** to close the dialog box.
This completes connections for the SD-90 and Macintosh, and installation of the MIDI driver. Now, MIDI data can be input and output (recorded and played).

MEMO

Additional information about the ports
SD-90 Port A:
Sends/receives data for SD-90 part group A

SD-90 Port B:
Sends/receives data for SD-90 part group B

SD-90 MIDI InOut1:
Sends/receives data from the SD-90's MIDI IN 1/OUT 1 connectors

SD-90 MIDI InOut2:
Sends/receives data from the SD-90's MIDI IN 2/OUT 2 connectors

MEMO

If the SD-90 does not produce sound, refer to **No sound** (p. 39).

■ Installing the SD-90 driver (FreeMIDI)

Use the following procedure to install the SD-90 driver. The included **SD-90 FreeMIDI driver** is an add-on module for using the SD-90 with FreeMIDI. In order to use it, **FreeMIDI must be installed on the hard disk from which you started up**.

* Disconnect the SD-90 from the Macintosh before beginning the installation.

Use the following procedure to install the SD-90 driver.

1
Exit all currently running software (applications).

If you are using a virus checker or similar software, be sure to exit this as well.

2
Prepare the CD-ROM.

Insert the CD-ROM into the CD-ROM drive.

3
Double-click the **SD-90 FM Driver - E Installer** icon (found in the **Driver E - FreeMIDI** folder of the CD-ROM) to start up the installer.

4
Click **[Install]**.

5
A dialog box will inform you that you will need to restart your Macintosh when installation is finished. Click **[Continue]**.

6
When the installation is complete, click **[Restart]**.

7
With the power turned off, use a USB cable to connect to the SD-90 to your computer

8
Switch ON the SD-90's Power switch.

Connect the AC cord to the SD-90's AC IN, and insert the AC cord's plug into an AC power outlet. Then, turn on the power of the SD-90.

FreeMIDI settings

1
From the CD-ROM, copy the **Driver E - FreeMIDI - Settings** folder onto the hard disk of your Macintosh.

2
Open the **FreeMIDI Applications** folder from the location into which you installed FreeMIDI, and double-click the **FreeMIDI Setup** icon to start it up.

MEMO

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

3
When **"OMS is installed on this computer..."** appears, click **[FreeMIDI]**.

4
The first time the software is started up, a dialog box saying "**Welcome to FreeMIDI!**" will appear. Click **[Continue]**.

5
When the **FreeMIDI Preferences** dialog box appears, click **[Cancel]**.

6
When the **About Quick Setup** dialog box appears, click **[Cancel]**. From the **File** menu, choose **Open**. Select **SD-90USB** from the **Settings** folder you copied in **step 1**, and click **Open**.

7
Verify that MIDI transmission and reception occur correctly.

From the **MIDI** menu, choose **Check Connections**.

8
The mouse cursor will change to the shape of a note. Click the sound generator icons encircled in the diagram at right.

If you hear sound, MIDI messages are being sent from the Macintosh to the SD-90.
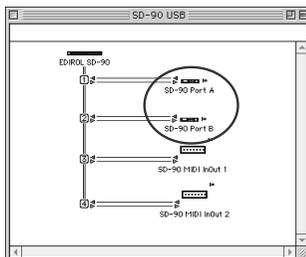
Does the SD-90's INST level meter move?

If the INST level meter in the SD-90's display is moving but you do not hear sound, check whether the volume of the SD-90 or your speaker system has been lowered. If the INST level meter does not move, check the connections and OMS settings once again.

After settings have been made correctly, choose the **MIDI** menu command **Check Connections** once again, and perform **step 8**.

9
Once again choose the **MIDI** menu command **Check Connections** to end the test.

10
From the **File** menu, choose **Quit** to exit **FreeMIDI Setup**.

MEMO

Additional information about the ports
SD-90 Port A:
Sends/receives data for SD-90 part group A

SD-90 Port B:
Sends/receives data for SD-90 part group B

SD-90 MIDI InOut1:
Sends/receives data from the SD-90's MIDI IN 1/OUT 1 connectors

SD-90 MIDI InOut2:
Sends/receives data from the SD-90's MIDI IN 2/OUT 2 connectors

MEMO

If the SD-90 does not produce sound, refer to **No sound** (p. 39).

■ Installing the ASIO driver

About the ASIO driver

This section explains how to install the ASIO driver that allows the SD-90 to be used by your sequencer software or audio editing software. For details on installation and settings of the ASIO driver, be sure to also read the **Driver E - ASIO - Setting ASIO Driver-E** document on the CD-ROM.

The SD-90 cannot play back audio data from the Macintosh's sound manager (such as audio CDs and alert sounds).
You can use it from sequencer software or audio editing software that supports ASIO 1.0.

The ASIO driver of the SD-90 supports the following audio input/output channels.
- Audio input   24/16 bit   1 stereo ch. (2 monaural chs.)
- Audio output   24/16 bit   1 stereo ch. (2 monaural chs.)

Installing the ASIO driver

First you must install your ASIO-compatible software.
Here we will explain how to install the ASIO 1.0 16 bit-compatible driver.

1

From the [Driver]-[ASIO] folder of the CD-ROM, copy [SD-90 ASIO1.0 16bit] to the [ASIO Drivers] folder within the folder of the ASIO-compatible software you are using (e.g., Cubase VST, Logic Audio, Digital Performer, or Metro).

If your ASIO-compatible software supports ASIO 2.0 or recording/playback of 24 bit audio data, using the following drivers will provide a higher quality environment.

ASIO-compatible software		Driver to use
ASIO2.0-compatible	24 bit compatible	
✕	✕	SD-90 ASIO 1.0 16 bit
✕	○	SD-90 ASIO 1.0 24 bit
○	✕	SD-90 ASIO 2.0 16 bit
○	○	SD-90 ASIO 2.0 24 bit

2

If the power of the SD-90 is not turned on, turn on the power.

MEMO

ASIO (Steinberg Audio Stream In/Out Interface) This is an audio interface standard promoted by the Steinberg Corporation. When the SD-90 is used with ASIO-compatible software, the synchronization precision will be improved, allowing a more sophisticated music production environment.

NOTE

Roland cannot guarantee the operation of, nor provide support regarding sequencer software and audio editing software produced by another manufacturer. Please contact the manufacturer of the software you are using.

NOTE

If you use **SD-90 ASIO 2.0 16-bit** or **SD-90 ASIO 2.0 24-bit** with software that does not support ASIO 2.0, it will not operate correctly.

NOTE

If you use **SD-90 ASIO 1.0 24-bit** or **SD-90 ASIO 2.0 24-bit** with software that does not support 24-bit audio data, it will not operate correctly.

3 Start up your ASIO-compatible software (e.g., Cubase VST, Logic Audio, Digital Performer, Metro).

4 Open the Audio setting dialog box of your ASIO-compatible software, and select **[SD-90 ASIO 16bit]** as the **ASIO Device**.

MEMO

The Audio setting dialog box will be named differently depending on your software. For details refer to the manual of your software.

■ **Settings for your sequencer software**

As an example, we will describe how to make settings in Cubase VST.

If your sequencer software is set to monitor audio data during recording, the audio data will loop, and will not be recorded correctly. Monitoring of audio data during recording must be turned off. For details on this setting, refer to the manual of the sequencer software you are using.

Settings for Cubase VST

The explanation in this manual is based on the English version of Cubase VST 5.0. Please be aware that some screens and menu items may be named differently in other versions of the software.

1

In Cubase VST, execute **Options - AudioSetup - System...**.

2

As the **ASIO Device**, select **SD-90ASIO16bit**.
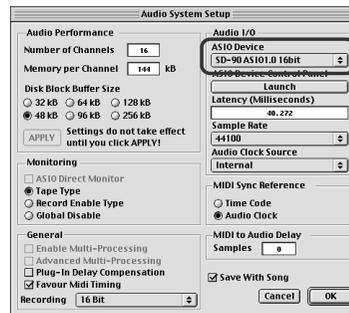
3

For the **Monitoring** setting, select **Global Disable**.

4
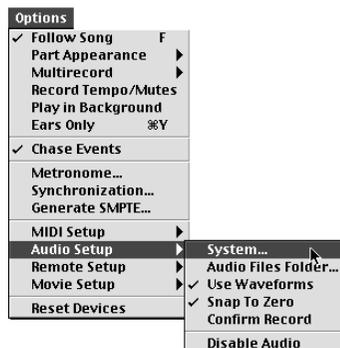
Click **[OK]**.

⚠ NOTE

Roland cannot guarantee operation of or provide support regarding sequencer software and audio editing software produced by another manufacturer. Please contact the manufacturer of the software you are using.

MEMO
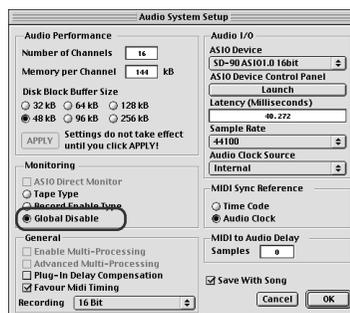
For details on how to synchronize the audio data and MIDI data, refer to the manual for your sequencer software.

Troubleshooting

If an unexpected problem occurs while using the SD-90, read this chapter first. It contains numerous tips for resolving problems.

If you are using Windows or Macintosh for the first time, and as a result find it difficult to follow the procedural explanations, please refer to the manuals that came with your computer or operating system.

Troubleshooting is organized according to different operating systems. Refer to the icon(s) at the left of the title to find the items you need.

Windows Macintosh Problems common to Windows and Macintosh

Windows Problems occurring only in Windows

Macintosh Problems occurring only in Macintosh

Problems related to the USB driver

Windows Macintosh Cannot install the driver correctly

- **Is the CD-ROM correctly inserted into your CD-ROM drive?**
  Installation is not possible unless the CD-ROM included with the SD-90 is inserted in your CD-ROM drive. Make sure that the CD-ROM is correctly inserted into your CD-ROM drive.

- **Is the CD-ROM or the lens of the CD-ROM dirty?**
  If the CD-ROM or the lens of the CD-ROM drive is dirty, the installer may not work correctly. Clean the disc and/or lens using a commercially-available CD cleaner or lens cleaner.

- **Are you installing the software from a networked CD-ROM drive?**
  The software cannot be installed from a networked CD-ROM drive.

- **Is there sufficient free space on your hard disk?**
  Delete unneeded files to increase the amount of free space. After deleting the unneeded files, empty the recycling bin.

- **Is the SD-90 connected correctly?**
  Make sure that the USB connector of your computer is connected to the SD-90 by a USB cable. Check this, and if you are using Windows, close the **Sound and Multimedia Properties** dialog box (**Multimedia** Properties in Windows 98), re-open the same dialog box once again, and specify the audio and MIDI input/output destinations.
  (**"Audio and MIDI input and output destinations"** (p. 13), (p. 18))

- **Is the power of the SD-90 turned on?**
  Make sure that the SD-90's POWER switch has been pressed inward. Check this, and if you are using Windows, close the **Sound and Multimedia Properties** dialog box (**Multimedia Properties** in Windows 98), re-open the same dialog box once again, and specify the audio and MIDI input/output destinations.

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Windows

- Using the procedure for **"Deleting the driver"** (p. 47), delete the USB audio device driver installed in your computer, and then re-install the SD-90 driver as described in **"Getting Connected and Installing Drivers (Windows)"** (p. 7). Also check whether there is any "**Unknown device**" in "**Other devices**" or "**Universal Serial Bus Controllers**." If you find any, delete them.

Macintosh

- **Is OMS or FreeMIDI installed?**
  The SD-90 driver cannot be installed unless **OMS** or **FreeMIDI** are installed. Please install **OMS** or **FreeMIDI**. (OMS -> p. 25, FreeMIDI -> p. 29)

Macintosh SD-90 is not detected when making OMS or FreeMIDI settings

- **Is the SD-90 detected?**
  Turn the power of the SD-90 off, then on again.

  Reconnect the USB cable.

  If other USB devices are connected, connect only the SD-90.

  It is possible that the Macintosh did not correctly detect and initialize the SD-90. Leave the SD-90's USB cable connected, and restart your Macintosh. If it is still not detected, shut down your Macintosh, and then restart it.

  The SD-90 will not be detected if it is connected to the USB connector on the Macintosh keyboard. Please connect the SD-90 to a USB connector on the Macintosh itself.

- **Are you using only OMS?**
  If you are using OMS, the system will not operate correctly if FreeMIDI is installed. Delete FreeMIDI-related files from the Extensions folder.

Windows An "Unknown driver found" dialog box appears, and you are unable to install the driver

Windows "Find new hardware wizard" does not execute automatically

Windows "Find new hardware wizard" ends before the process is completed

- **It may take about 15 seconds (or more) after the USB cable is connected for the SD-90 to be detected.**

- **Is the USB cable connected correctly?**
  Make sure that the SD-90 and your computer are correctly connected via a USB cable.

- **Is USB enabled on your computer?**
  Refer to the operation manual for your computer, and make sure that USB is enabled.

- **It has been found that in some cases, not all of the Windows 98 files required to support audio via USB are installed when a computer is shipped.**
  Please contact the manufacturer of your computer.

- **Does your computer meet the USB specifications?**
  If you are using a computer that does not fulfill the electrical requirements of the USB specifications, operation may be unstable. In this case, you may be able to solve the problem by connecting a USB hub.

- **Does "Unknown device" appear for "Other device" or "Universal serial bus controller"?**
  Use the following procedure to delete "**Other device**" (Universal Serial Bus Controller) "**Unknown device**," and then restart your computer.

  1. In the Windows **Control Panel**, double-click System. The **System Properties** dialog box will appear.

  2. Click the **Device Manager** tab. For Windows 2000, click the **Hardware** tab, and then click the **[Device Manager]** button.

  3. Double-click "**Other device**" or "**Universal Serial Bus Controller**" to display a list of devices.

  4. From the list, select the unknown device and click **[Delete]**.

  5. In the dialog box that asks you to confirm the deletion, click **[OK]**.

  6. Verify that "**Other device**" or "**Unknown device**" is not displayed in the list, and click **[Close]** to close the dialog box.

Windows "Found unknown device" appears even though you installed the driver

If your computer or USB hub has two or more USB connectors, and you connect the SD-90 to a USB connector to which the SD-90 has never been connected before, the "**Unknown device**" dialog box may appear even on a computer onto which you have already installed the driver.
Refer to **"Getting Connected and Installing Drivers (Windows)"** (p. 7), and install the driver once again. This is not a malfunction.

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Windows **Can't install/delete/use the driver in Windows 2000**

- **Did you log on to Windows as a user with administrative privileges?**
  In order to install/delete/re-install the driver in Windows 2000, you must be logged into Windows as a user with administrative privileges, such as Administrator. For details, please contact the system administrator for your computer system.

- **Did you make "Driver signature settings"?**
  In order to install/re-install the driver, you must make "**File signature settings**." Make settings as described in **"Installing the driver"** (p. 9).

Windows **Windows 2000 displays a "Digital signature was not found" dialog box**

- **Did you perform the steps in "Make file signature settings"?**
  In order to install/re-install the driver, you must make the settings described in "File signature settings." Use the following procedure to check the settings.

  1. Open the **Control Panel**, and double-click **System**.

  2. Click the **Hardware** tab, and then click **[Driver signature]** button. The "**Driver signature options**" dialog box will appear.

  3. Make sure that the "**File signature verification**" setting is "**Ignore**." If it is set to "**Ignore**," click the **[OK]** button. If not, make a note of the current setting, change it to "**Ignore**," and then click the **[OK]** button.

Windows **Device Manager shows "?", "!", or "USB Composite Device"**

Windows **The "Insert Disk" dialog box does not appear**

Use the following procedure to re-install the driver.

1. Turn off the power of your computer, and start up Windows with all USB cables disconnected (except for keyboard and mouse).

2. After Windows restarts, use a USB cable to connect the SD-90 to your computer.

3. Turn on the power of SD-90.

4. Click the Windows **[Start]** button, and from the menu that appears, choose **Settings | Control Panel**.

5. Double-click the **System** icon. The **System Properties** dialog box will appear.

6. Click the **Device Manager** tab.

7. Check whether you can see an indication of "**?Composite USB Device**, **?USB Device**, **!USB Device**," or "**USB composite device**" displayed below "**Sound, Video, and Game Controllers**, **Other Devices**," or "**Universal Serial Bus Controller**." If you find any such indication, select it and click **[Delete]**.

8. A dialog box will ask you to confirm deletion of the device. Verify the contents of the dialog box, and then click **[OK]**. In the same way, delete all indications of "**?Composite USB Device**," "**?USB Device**," "**USB Device**," and "**USB composite device**" that you find.

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9. If you find **EDIROL SD-90** USB Driver with a yellow "**!**" or a red "**?**" displayed beside it, delete this in the same way.

10. When you have finished deleting the unwanted devices, click **[OK]** in the **System Properties** dialog box.

11. Turn off the power of the SD-90, then delete the driver. **"Deleting the driver"** (p. 47)

12. Restart Windows. Then install the driver once again.**"Getting Connected and Installing Drivers (Windows)"** (p. 7).

* If the problem still occurs after you have taken the above measures, please refer also to the Readme file for the USB driver. The Readme file is on the CD-ROM.

[Location]

Windows 2000 users:

In the CD-ROM,

> **Driver\Win2000\WDM\README_E** (if using the WDM driver)
> **Driver\Win2000\MME\README_E** (if using the MME driver)

Windows Me/98 users:

In the CD-ROM,

> **Driver\Win98ME\WDM\README_E**

Problems when using the SD-90

_{Windows Macintosh} Operating system becomes unstable

- **Operation becomes unstable when the computer is started up with the SD-90 already connected**
  Please start up your computer with the SD-90 disconnected, and then connect the SD-90. On a computer that uses a USB keyboard, starting up the computer with the SD-90 already connected may cause operation to become unstable. In this case, start up the computer with the SD-90 disconnected, and then connect the SD-90.

_{Windows Macintosh} No sound

- **Have you specified the audio data output destination for your operating system?**
  You must specify the **SD-90** as the audio data output destination for your computer.For details on how to make this setting, refer to Settings and checking.
  (Windows,**"Audio and MIDI input and output destinations"** (p. 13), (p. 18)∕
  Macintosh, **"OMS settings"** (p. 26), **"FreeMIDI settings"** (p. 29))

- **Have you specified the audio data output destination for your playback software?**
  For some software such as Cool Edit Pro LE, you must specify the **SD-90** as the audio data output destination. For details on this setting, refer to the operation manual for your application.

- **Are you running multiple applications?**
  If multiple applications are running simultaneously, an error message may be displayed. If this occurs, click **[OK]** and exit the other applications.
  Even if an application window is closed, it is still running if it appears in the taskbar. Be sure to exit unneeded applications displayed in the taskbar.

- **Was the driver installed correctly?**
  In order for you to play back audio data via the SD-90, the driver must be installed. For installation and settings, refer to "**Getting Connected and Installing Drivers**" (Windows, p. 7∕ Macintosh, p. 24).

- **Is your audio playback equipment (e.g., stereo system) connected correctly?**
  Make sure that the USB connector of your computer is connected to the SD-90 by a USB cable. Make sure that the SD-90's **OUTPUT 1** (audio output 1) jacks are connected by audio cables to the input jacks of your audio playback equipment. For details on connections, refer to **"Connections with audio equipment"** (p. 6).

- **Is the power of your audio equipment turned on?**
  Make sure that the power is turned on for your audio equipment (e.g., stereo) and the SD-90.

- **Are the various volume settings of the SD-90 set appropriately?**
  The front panel of the SD-90 has separate knobs that adjust the audio and MIDI volumes. Adjust each knob.

- **Is your computer in Suspend or Sleep mode?**
  If so, get your computer to resume normal operation, then exit all applications that are using the SD-90. Next, turn the SD-90's power off, then switch it on again.

- **Did you reconnect the USB cable or turn the power of the SD-90 off and on?**
  Exit all applications that are using the SD-90, and turn the power of the SD-90 off and then on once again.

- **As the output of the audio tracks, have you selected "Game compatible device" or "Voice modem"?**
  If a game compatible device or a voice modem (the actual names will differ depending on your computer) is selected as the port for the audio tracks of your software, the audio tracks may not play back. Do not select these devices as ports.

Macintosh

- **Is OMS/FreeMIDI set correctly?**
  As described in **"OMS settings"** (p. 26) or **"FreeMIDI settings"** (p. 29), check the OMS or FreeMIDI settings. Also make sure that the device for MIDI IN/OUT is correctly selected in the MIDI settings of your MIDI sequencer software.

Windows Macintosh

- **Does the INST level meter move in the SD-90 display?**
  If the INST level meter is moving but you do not hear sound, check whether the volume of the SD-90 or your speakers has been lowered. If the INST level meter of the SD-90 is not moving, recheck the connections and **"OMS settings"** (p. 26)/**"FreeMIDI settings"** (p. 29).

Macintosh

- **Is the OMS setup enabled?**
  If a diamond-shaped symbol is not displayed at the left edge of the title area in the OMS setup window, the setup is not enabled. From the OMS File menu, choose "Enable setup."
  (**"OMS settings"** (p. 26))

Windows Macintosh

- **Has your computer been set to enter Sleep mode?**
  If your computer enters Sleep mode, exit the software you are using, and then restart your computer. We recommend that you set your computer to not use Sleep mode.

Can't play back MIDI

Windows

- **Has the MIDI device you are using been set correctly?**
  In order to record/play MIDI tracks using the SD-90, you must correctly install the SD-90 driver (**"Installing the driver and settings"** (p. 7)). Also make sure that the input port and output port are set as follows in your software.

INPUT port	OUTPUT port
EDIROL SD-90 MIDI IN 1	EDIROL SD-90 PART A
EDIROL SD-90 MIDI IN 2	EDIROL SD-90 PART B

Macintosh

- **Has the MIDI device you are using been selected correctly?**
  Select either **[SD-90 Port A]** or **[SD-90 Port B]** as the MIDI output device. MIDI will not be output if you select **[EDIROL SD-90]**.

Windows
Macintosh

- **Are the track outputs set correctly?**
  MIDI tracks to which no MIDI playback device is assigned will not be heard. If you want to play back a MIDI track, you must make sure that the MIDI device you want to use is displayed in your software as the MIDI output port. For details, refer to the owner's manual for your software.

Macintosh Can't record MIDI

- **Has the MIDI input device you are using been selected correctly?**
  Select either **[SD-90InOut 1]** or **[SD-90MIDI InOut 2]** as the **MIDI input device**. MIDI will not be input if you select **[EDIROL SD-90]** as the input port.

Windows **Macintosh** Distortion occurs in the sound from devices connected to the input jacks

- **Is the Peak indicator lit in red?**
  If you are inputting audio through the **MIC/GUITAR jack** or the **INPUT jacks**, use the **GAIN knob** to reduce the input level.

Windows **Macintosh** Sound from devices connected to the input jack is not heard in the headphones

- **Is the GAIN knob turned up far enough?**
  Turn the knobs clockwise to adjust the volume.

- **Is the recording source set correctly on the SD-90 itself?**
  Refer to the SD-90 owner's manual for details on the SD-90's recording source settings.

Windows **Macintosh** Volume from a device connected to the input jacks is too low

- **Are you using a cable that has a built-in resistor?**
  Use a cable without a built-in resistor (e.g., Roland PCS series).

- **Is the external input level of the SD-90 itself raised appropriately?**
  Refer to the SD-90 owner's manual for details on setting the external input level of the SD-90.

Windows **Macintosh** Mic sound is not loud enough

Press the **GAIN knob** to switch the **GUITAR/MIC indicator** to **MIC (lit)**.

Windows Macintosh Cannot hear the audio sound

Windows Macintosh Noise is heard during audio playback

In some cases, you may also be able to solve this problem by grounding the chassis of your computer, or the grounding connector of the AC power supply plug of your computer. In addition, you can check whether any devices that produce a strong magnetic field are located nearby, such as a television or microwave oven.

Also check the troubleshooting item **"Sound is interrupted during audio playback"** (p. 43)

- **Is a mic or guitar still connected?**
  If a mic or guitar is connected to the SD-90, disconnect the mic or guitar, and turn the **Gain knob** all the way to the left.
  Disconnect any audio devices you are not using.

- **Are two or more audio devices such as the SD-90 or a mixer connected to your computer?**
  Try connecting only a single SD-90 unit, and check whether the noise disappears. If numerous audio devices are connected to a computer, noise may occur depending on your system. In such cases, connect only the SD-90 to your computer.

Macintosh

- **Does your sequencer software support ASIO 2.0?**
  If your ASIO-compatible software does not support ASIO 2.0, it will not operate correctly if you use **[SD-90 ASIO2.0 16bit]** or **[SD-90 ASIO2.0 24bit]** as the ASIO driver.
  In this case, select either **[SD-90 ASIO1.0 16bit]** or **[SD-90 ASIO1.0 24bit]** as the ASIO driver.

Macintosh

- **Does your sequencer software support 24-bit audio?**
  If your ASIO-compatible software does not support 24-bit audio input/output, it will not operate correctly if you select **[SD-90 ASIO1.0 24bit]** or **[SD-90 ASIO2.0 24bit]** as the ASIO driver. In this case, select either **[SD-90 ASIO1.0 16bit]** or **[SD-90 ASIO2.0 16bit]** as the ASIO driver.

Macintosh

- **Is the SD-90 connected to a USB hub?**
  Try connecting the SD-90 directly to the USB connector of the Macintosh itself.

Macintosh

- **Are you using a USB device other than the SD-90?**
  Try turning off the power of all USB audio devices other than the SD-90.

Macintosh Noise occurs while recording audio

- **Is audio data monitoring turned on?**
  If the setting in your sequencer software that allows audio data to be monitored during recording is turned on, the audio data will loop, and will not be recorded correctly. Audio data monitoring must be turned off during recording. For details on this setting, refer to the owner's manual for the software you are using.

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Sound is interrupted during audio playback

Windows
Macintosh

- **Are many applications running on your computer?**
  If you use many applications or start up other applications during playback, playback may be interrupted, depending on your computer system. Please exit unneeded applications, and try again. If this does not resolve the problem, try restarting your computer.

- **Have you switched the mixer routing?**
  Do not switch the mixer routing during playback/recording. The sound will be interrupted the instant you switch the routing.

Windows

- **Graphic accelerators may cause noise to be heard during audio playback.**
  Use the following procedure to turn the graphic accelerator "**Off**."

  1. In the Windows **Control Panel**, double-click the **Screen Properties** dialog box, and click the **Settings** tab.

  2. Click **Details**, and in the properties that appear, click the **Performance** tab. For Windows 2000, click the **Troubleshooting** tab.

  3. In the graphic, set the **Hardware accelerator** slider to **None**, and click **[OK]**.

  4. In the **Screen Properties** dialog box, click **[OK]** to close the dialog box. Then restart your computer.

Windows

- **Try using the following procedure to change your disk drive settings.**
  The following setting item may not exist on some computers.

  1. In the Windows **Control Panel**, double-click **System**.

  2. Click the **Device Manager** tab.

  3. Double-click **Disk Drives** to see the **list of devices**.

  4. From the list, select **GENERIC IDE DISK TYPE??**, and click Properties to access the **GENERIC IDE DISK TYPE?? Properties** dialog box.
     * *In the ?? field of GENERIC IDE DISK TYPE??, there will be a number that differs depending on your computing environment.*

  5. Click the **Settings** tab, place a check mark in the check box for the **DMA** option, and click **[OK]** to close the dialog box.
     * *Depending on your system, a DMA Settings dialog box may appear. Check the contents, and click either [OK] or [Cancel].*

  6. In the **System Properties** dialog box, click **[OK]** to close the dialog box. Then restart your computer.

Windows
Macintosh

- **Try installing more memory.**
  Installing more memory will increase the performance of your computer. For details on how to install more memory, refer to the operation manual for your computer.

Windows
Macintosh

- **Does your computer satisfy the requirements of the USB standard?**
  If you are using a computer (such as a computer that you yourself assembled) that does not satisfy the electrical requirements of the USB specifications, you may experience interruptions in the audio. If this occurs, you may be able to solve the problem by connecting a USB hub that contains its own power supply.

Windows

- **On some computers, audio playback may be interrupted due to the Power Management settings in the Control Panel.**
  The Power Supply Properties that you see when you double-click **Power Management** will differ depending on your computer system. One example is given below, but you should also refer to the operation manual for your computer. Some computers may not have all of the following setting items.

  1. Click the Windows Start button, and select **Settings | Control Panel** to open the **[Control Panel]**.

  2. In **Control Panel**, double-click **System** to open the **System Properties** dialog box.

  3. Click the **Device Manager** tab.

  4. Double-click **System Devices** to display the **list of devices**.

  5. From the list, select **Advanced Power Management Support**. Then click **Properties** to open the **Advanced Power Management Support Properties** dialog box.

  6. Click the **Settings** tab, and in **Troubleshooting**, place a check in the check box for **Don't Poll Power Supply Status**. Then click **[OK]**.

  7. In the System Properties dialog box, click **[OK]**.

  8. Restart Windows.

Windows

- **In some cases you may be able to solve this problem in the "EDIROL SD-90Driver settings" dialog box.**
  For details, refer to the section "**Part of the playbacks wrong: e.g., notesare broken offprematurely, or somenotes are lost**" within the **README_E** file located in the folder in which you installed the CD-ROM.

**Windows
Macintosh**

**Depending on the virtual memory setting or network-related settings, noise may occur.
Please make the following settings before use.**

- In Chooser of the **Apple menu**, set AppleTalk to "**Inactive**."(This setting is not changed as a result of turning off **AppleTalk**, as requested by OMS when sequencer software is started up. You must change the setting yourself using the "**Chooser**.")

- In the "**Memory**" Control Panel, set Virtual Memory to "**Off**."

- Depending on the way in which you connect to the Internet, use the SD-90 with the following settings.

  If you connect to the Internet via a LAN cable
  Use while the LAN cable is connected.

  If you connect to the Internet via the internal modem port, or are not connected to the Internet
  In the "**TCP/IP**" **Control Pane**l, set "**Connect via**" to "**PPP**."
  After you have made the settings, restart your Macintosh.

  * *Do not use software that accesses the network (such as a Web browser) at the same time that you are using sequencer software or audio editing software.*

Macintosh

- **Try increasing the Buffer Size in the ASIO Driver control panel. The name of the settings dialog box will differ depending on your software.**

  * *If you change the **buffer size**, you must exit the software and then restart it.*

  * *Roland can make no guarantee of, nor provide support regarding the operation of sequencer software and audio editing software made by another manufacturer. Please contact the manufacturer of the software you are using.*

  fig.ASIO-04
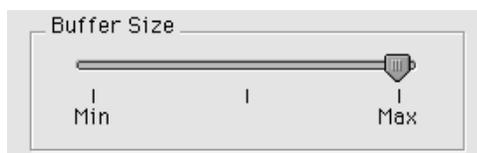
● **Cubase VST users**
Execute the **Options - Audio Setup - System...** menu command, and click the **Launch** button in the dialog box that appears.

● **Logic Audio users**
Execute the **Audio - Audio Hardware & Drivers...** menu command, and click the **Control Panel** in the dialog box that appears.

● **Digital Performer users**
Execute the **Basics - MOTU Audio System options - Configure Hardware Driver...** menu command, and click the **Configure Driver** button in the dialog box that appears.

● **Metro users**
Execute the **Setup - Digital Audio** menu command, and in the dialog box that appears, click the **Recording Options ...** button. In the ASIO Setup dialog box that then appears, click the **Control Panel** button.

Macintosh Digitally recorded sound is distorted, is at the wrong pitch, or contains noise

If you are using a long optical digital cable, noise may be produced when the cable is connected, or the sound may be distorted. We recommend that you use optical digital cables that are no longer than one meter in length.

- **Does the sampling frequency setting of your application match the setting of the SD-90's sampling frequency switch?**
  Set the sampling frequency of the SD-90 itself to match the sampling frequency of your application.

Windows Macintosh Playback or recording halts midway through, and then becomes impossible

- **Was a heavy processing load experienced while using the SD-90, such as accessing the CD-ROM drive or a network?**
  If an operation involving a heavy processing load is performed while the SD-90 is in use, it may not operate correctly. If this occurs, stop playback/recording, and then try resuming playback/recording. If you are still unable to play back/record, exit all applications that use the SD-90, switch off the SD-90, then turn it on again.

Macintosh Can't record/play 48 kHz audio data

- **Does your software support 48 kHz audio data?**

- **Is the sampling frequency of the SD-90 set to 48 kHz?**
  For details on how to switch the sampling frequency, refer to the SD-90 owner's manual.

Macintosh Can't record/play 24-bit audio data

- **Does your software support 24-bit audio data?**

- **Is your software set to record/play 24-bit audio data?**
  Have you selected [SD-90 ASIO1.0 24bit] or [SD-90 ASIO2.0 24bit] as the ASIO driver?

Windows Recording produces a silent (blank) file

- **Try setting the bit rate to "16 bit or higher."**
  If you are using Windows 98 Second Edition and your recording software is set to a bit rate setting of 8 bits, a silent file may be created, effectively making recording impossible. If this occurs, set the bit rate to "**16 bit or higher**," and you will be able to record normally.

- **In your operating system, is the audio data input destination set correctly?**

- **On your recording software, is the audio data input destination set correctly?**

Windows Macintosh Can't record digitally

- **Data containing SCMS flags cannot be recorded digitally.**
  The SD-90 implements **SCMS** (p. 2), so when data containing SCMS flags (e.g., data that's been digitally copied from a commercial music CD to an MD or other medium) is input via the digital input connector, the SD-90 will not permit this to be recorded on the computer.

- **Does the sampling frequency setting of your application match the setting of the SD-90's sampling frequency switch?**
  Set the sampling frequency of the SD-90 itself to match the sampling frequency of your application.

- **Digital data that is not of the consumer digital audio device format cannot be recorded.**

Deleting the driver

If you were unable to install the driver according to the procedure given, the SD-90 may not be recognized correctly by the computer. In this case, use the following procedure to delete the driver, and then follow the procedure in "**Getting Connected and Installing Drivers**" (Windows, p. 7; Macintosh, p. 24) to install the driver once again.

Windows 2000 users

In order to delete (uninstall) the driver, a user with **administrative privileges** such as **Administrator** must be logged onto Windows. For details, contact the system administrator of your computer.

1. With all USB cables disconnected, start Windows. (USB keyboard and USB mouse excepted)

2. Log on to Windows as a user with **administrative privileges** (such as **Administrator**).

3. After connecting the SD-90 to your computer via a USB cable, turn on the power of the SD-90.

4. Exit all applications before deleting the driver.

5. Open the **Control Panel**, and double-click **System**.

6. Click the **Hardware** tab, and in the "**Device Manage**r" area, click **[Device Manager]**.

7. Double-click "**Sound, Video, and Game Controllers**" to view the **list of devices**.

8. From the list, click "EDIROL SD-90 (WDM)" or "EDIROL SD-90 (MMX)" to select it. Then right-click, and from the menu that appears, select "Delete."

   * *If "**EDIROL SD-90 (WDM)**" or "**EDIROL SD-90 (MMX)**" does not appear in the list, refer to the* **"Can't install/delete/use the driver in Windows 2000"** *(p. 37) in "**Troubleshooting**."*

9. A dialog box will ask you to confirm that you want to delete the device. Verify the contents of the dialog box, and click **[OK]**.

10. Close the **Device Manager** window, and click **[OK]** in **System Properties**.

11. Disconnect the USB cable from the SD-90.

12. Restart Windows.

Windows Me/98 users

1. With all USB cables disconnected, start up Windows. (USB keyboard and USB mouse excepted)

2. After connecting the SD-90 to your computer via a USB cable, turn on the power of the SD-90.

3. Exit all applications before deleting the driver.

4. Open the **Control Panel**, and double-click **System**.
   * *Depending on the state of your computer, **System** may not appear in the **Control Panel**. In this case, click "**Show all control panel options**."*

5. Click the **Device Manager** tab.

6. Double-click "**Sound, video, and game controllers**" to see a list of devices.

7. From the list, click "**EDIROL SD-90**" to select it, and click **[Delete]**.

8. A dialog box will appear, asking you to confirm that you want to **delete the driver**. Verify the contents, and click **[OK]**.

9. Click **[Close]** to close System Properties.

10. Disconnect the USB cable from the SD-90.

11. In **Control Panel**, click **Folder Options** and then click the **Display** tab. (In Windows 98, click **Start | Settings | Folder Options**)

12. In **Detailed Settings** of the **Display** tab, remove the check mark for "**Don't display extensions of associated files**," click "**Show all files and folders**," and then click **[OK]**. (In Windows 98, this will be "**Show all files**.")

13. Click Start | Find | Files or folders.

14. In "Search location," select "Local hard drive." Then in "Name of file or folder," type "*0016.*" and click [Begin search].

15. Of the files that are found, delete the five files **Rdas0016.DLL**, **Rddp0016.dat**, **Rddv0016.drv**, **Rdvx0016.vxd**, and R**dwm0016.sys**. If the list shows Rdif0016.inf or **RolandRDIF0016.INF**, delete these files as well.
    * *Never delete any file other then the files specified here.*

16. Restart Windows.

Macintosh users

1. Turn off the power of the SD-90.
   Also disconnect the USB cable (by which the SD-90 is connected) from your Macintosh.

2. From the system extensions folder, drag "**USB SD-90 Driver**" into the trash to delete it.

3. Drag the ASIO driver that you installed in **"Installing the ASIO driver"** (p. 31) into the trash to delete it.

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