



# DRW-0804P-D

**External DVD±R/RW Drive  
Dual Format**

User Guide



**E1561**

**First Edition V1**

**April 2004**

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# Notices

## Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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 manufacturer's 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 to 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.



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**WARNING!** The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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## Canadian Department of Communications Statement

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

**This class B digital apparatus complies with Canadian ICES-003.**

# ASUS contact information

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Web site [www.ASUSarabia.com](http://www.ASUSarabia.com)

# Safety information

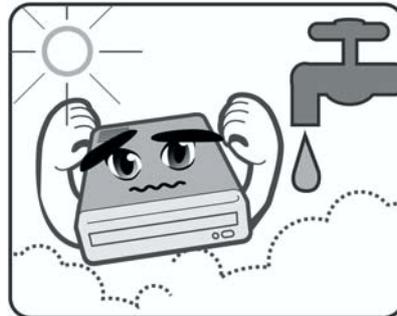
Observe the following precautions before installing and using the drive!

## Installation Notices

Do not place this device in an unstable position, or in one that vibrates.



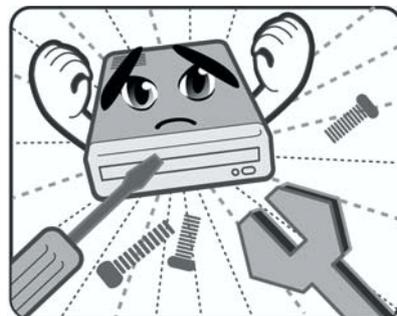
Do not place this device in areas where there is direct sunlight, high humidity, or damp condition.



Do not use or place this device near magnetic fields, televisions, or radios, where there is interference that can affect the performance of the drive.



Do not attempt to disassemble or repair the drive. Opening the drive can result to exposure to laser radiation.



## Using the device

- Do not place damaged or warped discs inside the device. A warped disc might break while in use and damage the device.
- Use of any controls, adjustments, or procedures other than those specified in this manual can result to hazardous radiation exposure.
- Do not attempt to disassemble the drive.
- Do not move the device from a cold to a warm or hot environment. Drastic change of temperature is harmful to the device.
- Before moving or uninstalling the drive, remove disc from it, if any.
- Prevent liquids or any metal to get into the device. If this situation occurs, contact your retailer for help.
- Do not use any evaporating solvents to clean the device. If you accidentally sprayed any solvent on the device, use a clean cloth to wipe it. You can also use a neutral cleaner to dilute the solvent to easily wipe it from the device.
- Try not to interrupt the supply of power while the device is in reading or writing mode.
- Do not place discs into the device immediately if they came from a cold environment, specially during cold seasons. Wait until the discs have reached room temperature.

## Conventions used in this guide

To make sure that you perform certain tasks properly, note the following symbols used throughout this manual.



**WARNING/DANGER:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Instructions that you **MUST** follow to complete a task.

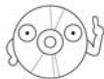


**NOTE:** Tips and additional information to help you complete a task.

# Package contents

Upon opening your ASUS DRW-0804P-D external drive package, check if all the following items are present and in good condition. If any of the items is damaged or missing, contact your retailer immediately.

- ASUS DRW-0804P-D external drive
- ASUS external drive stand
- USB 2.0 cable and IEEE 1394 cable
- Power cable and adapter
- Emergency eject pin and instruction
- User guide
- Multi-language quick installation poster
- Extra front bezel (1 pc.) and instruction
- Software CD (includes Windows® 98SE USB 2.0 driver)
- Fashionable travel bag



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The above items are available in retail boxes only.

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# Welcome!

Thank you for buying the **ASUS DRW-0804P-D Drive!**

Read the instructions and important information in this manual for proper use and installation of this device.

## Product introduction

### Specifications

The DRW-0804P-D has the following specifications:

<b>Write Speeds</b>	8X/6X/4X/2.4X on DVD+R 4x/2.4X on DVD+RW 8X/6X/4X/2X/1X on DVD-R 4X/2X/1X on DVD-RW 24X/16X/8X/4X on CD-R 24X/16X/10X/4X on CD-RW
<b>Maximum Read Speeds</b>	12X on DVD-ROM 40X on CD-ROM
<b>Interface</b>	USB 2.0 and IEEE1394
<b>Data Buffer Size</b>	2MB
<b>Random Access Time</b>	DVD-ROM: 140 ms CD-ROM: 130 ms
<b>Application discs</b>	DVD Single/Dual layer discs, DVD+R, DVD+RW, DVD-R, DVD-RW, CD-ROM Mode 1 CD-ROM/XA Mode 2 (form 1, form 2) Photo CD (single and multiple session) CD-DA, CD-Extra, CD-Text, CD-R, CD-RW, DVD-RAM
<b>Recording Format</b>	<b>DVD-R</b> DAO, Incremental, Multi-Border Recording <b>DVD-RW</b> Restricted Overwriting <b>DVD+R</b> Incremental Recording <b>DVD+RW</b> Random Recording <b>CD-R/RW</b> DAO, TAO, SAO, Packet Write
<b>OS Compatibility</b>	Windows® 98SE/ME/2000/NT/XP
<b>Dimensions</b>	155.6 (w) x 226 (d) x 50 (h) mm
<b>Mass</b>	1436 g



Refer to the section “Technical information” on page 26 for detailed specifications.

## Features

The ASUS DRW-0804P-D is an external DVD±R/RW drive that supports both 8X DVD-Write and 8X DVD+Write. The drive also enables 4X DVD-ReWrite, 4X DVD+ReWrite, 12X DVD-ROM, 24X CD-Write, 24X CD-ReWrite and 40X CD-ROM. The drive complies with the Universal Serial Bus 2.0 (USB 2.0) and IEEE 1394 specifications and comes equipped with the latest innovative technologies in DVD recording.

ASUS external DVD±R/RW drives are accentuated by the latest innovations in optical drive-recording technology, namely: *FlextraSpeed*<sup>™</sup>, *FlextraLink*<sup>™</sup>, DDSS II (Double Dynamic Suspension System II) and the Constant Angular Velocity (CAV) recording method.

The following sub-sections describe these technologies in detail.

### ***FlextraSpeed*<sup>™</sup> technology**

The ASUS *FlextraSpeed*<sup>™</sup> technology provides the optimum solution to ensure quality recording when using discs that require flexible speeds. The drive employs this technology that allows automatic recording speed adjustment based on the recording media.

In addition to the fact that there are low and high quality recording media, various other factors such as dye layer, temperature, humidity, dust, fingerprints, etc., affect the recording characteristics of recordable and rewritable discs. Due to these factors, some discs might not be able to stand the high-speed capabilities of the latest optical drives. The *FlextraSpeed*<sup>™</sup> technology solves this problem by automatic assessment of the disc quality and recording capability. The recording speed is based on these factors. If you use a high quality recording disc, you can maximize the recording capability of the drive and get the best quality output. If you use a low quality disc, the drive speed adjusts to the level that is most appropriate for the disc, still optimizing the disc recording capability.

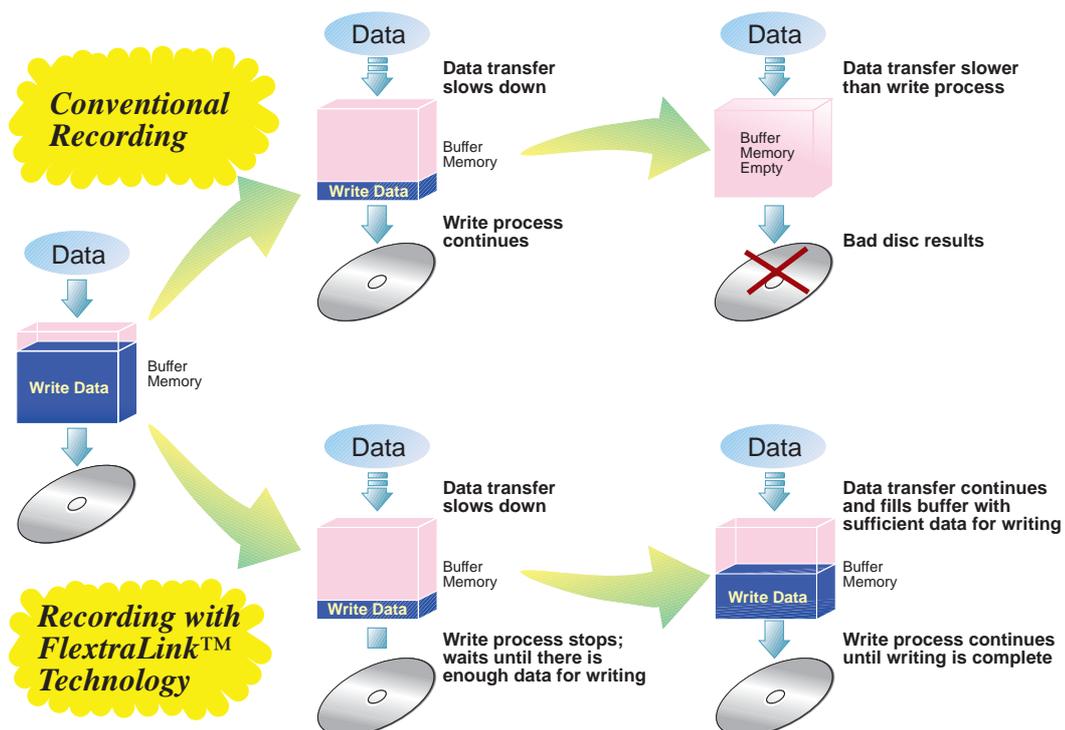
The *FlextraSpeed*<sup>™</sup> technology also helps maintain the drive because of the controlled motor rotation speeds and reduced noise caused by spindle air, thus prolonging the drive motor's life and ensuring high-quality recording.

## FlextraLink™ technology

The ASUS *FlextraLink*™ technology provides a seamless combination of flexibility and ultra-reliable recording quality.

*FlextraLink*™ incorporates a flexible strategy that prevents buffer underrun problems caused by an empty data buffer. This optical drive technology allows continuous monitoring of the data buffer status during the write process. Once the available data drops to approximately 1 percent of the total buffer capacity, the drive stops recording and marks the last write position. When new data is received from the host, it is loaded to the data buffer, and the laser is repositioned to link the new data with the data already written. *FlextraLink*™ uses minimal system resources so that your PC remains fully operational throughout the writing process, and available for other applications.

The diagram below shows the advantage of the *FlextraLink*™ recording technology.



**FlextraLink™ Technology Solution**

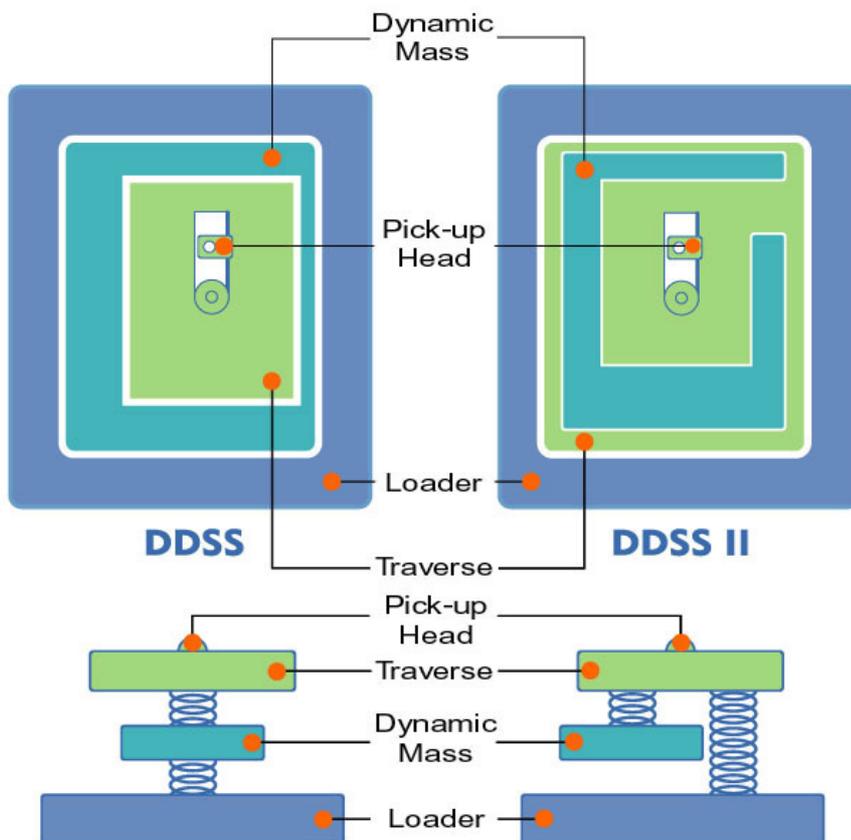


## Double Dynamic Suspension System (DDSS II)

The DDSS II is an enhanced follow-up to the DDSS anti-vibration system developed by ASUS. The DDSS technology is designed to reduce the vibration generated from spindle rotation of over 8900 rpm of 40X optical drives. The DDSS II improves this feature by handling up to over 10,000 rpm of the new 50X drives. In addition, the DDSS II stabilizes the pick-up head of the drive in both horizontal and vertical directions, making tracking and focusing even more precise.

Like the DDSS, the DDSS II vibration absorption structure contains a “dynamic mass” that can absorb the vibration caused by high revolution of spindle motor. However, the DDSS II moves the dynamic mass to be suspended to the chassis, thus providing more stability and accuracy when accessing data from the disc.

The following diagram illustrates the DDSS/DDSS II design structure.

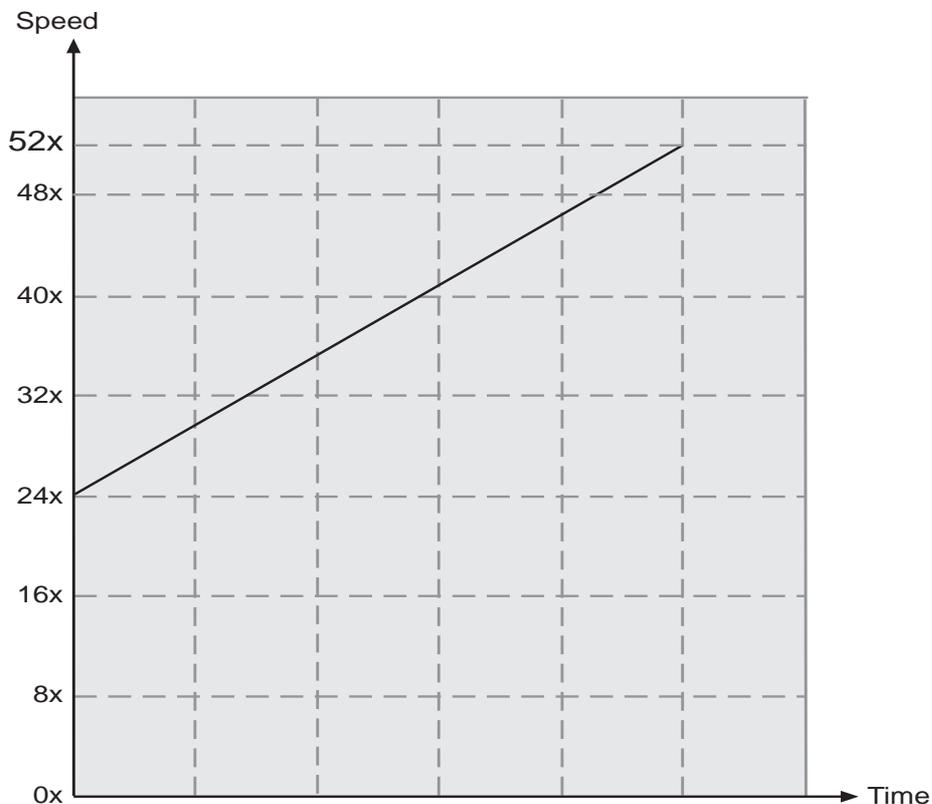


DDSS / DDSS II Design Structure

## Constant Angular Velocity (CAV) recording

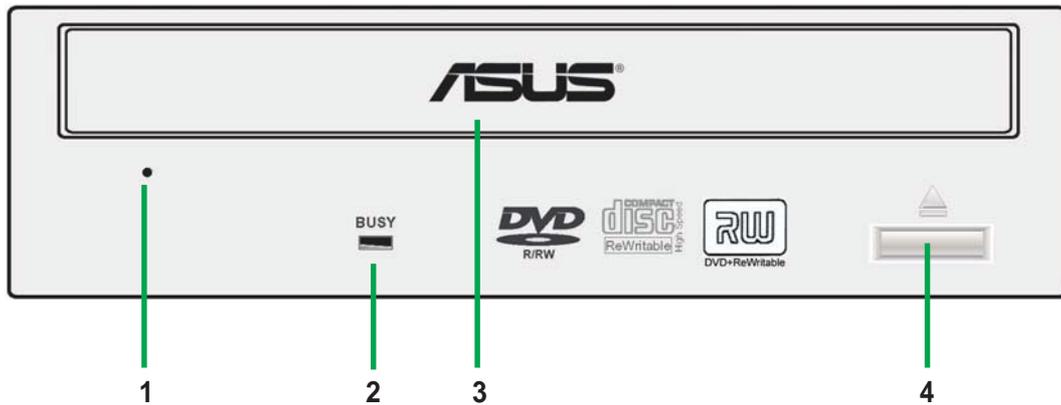
The drive employs the Constant Angular Velocity (CAV) recording method. With CAV recording, the drive spindle motor rotates the disc at the same speed regardless of the radial position of the pickup head. This means that there is a higher transfer rate when writing data to the outer tracks of the disc than to the inner tracks, as the head traverses a longer linear path on the outer than the inner part of the disc.

Although the transfer rates vary, and may not be at maximum, depending on the part of the disc being written to, the CAV method allows faster recording speed because the rotation speed does not have to change when the head writes data to different areas of the disc.



CAV Recording Method

## Front panel



### 1. Emergency eject pinhole

The Emergency Eject Pinhole allows you to manually eject a disc when the Eject Button does not work due to power failure or software problems. Insert the emergency eject pin into this hole to manually eject the tray and the disc. Refer to page 20 for details.



Turn off your computer before using the Emergency Eject Pinhole.

### 2. READ/WRITE indicator

This LED is lit (Green) when data is being read or written on the disc.

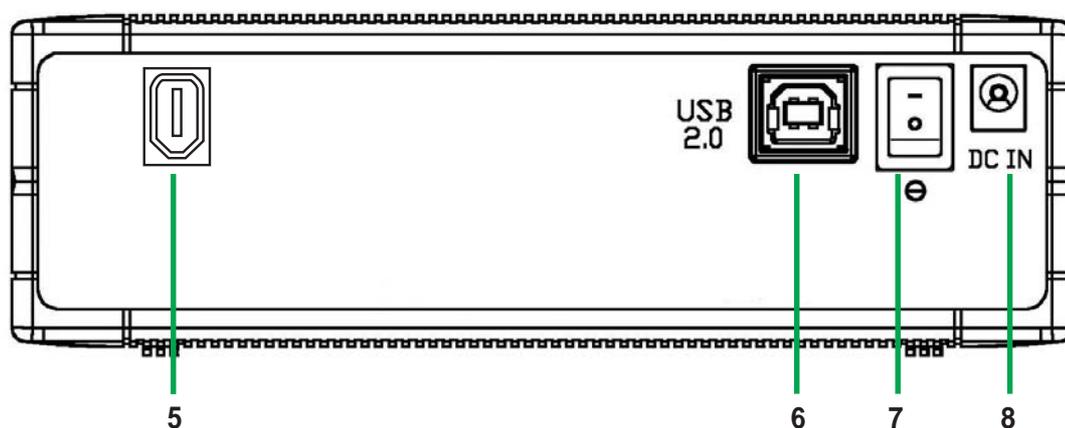
### 3. Disc loading tray

This tray holds the disc. Open the loading tray by pressing the Eject Button. Place a CD or DVD on the tray with the label side up. Press the Eject Button or push the front part of the tray to load the disc.

### 4. Eject button

Press this button to eject the tray and load or remove a disc.

## Rear panel



### 5. IEEE1394 port

This port provides high-speed connectivity for audio/video devices, storage peripherals, other PCs and or portable devices.

### 6. USB port

A standard Universal Serial Bus (USB 2.0) plug and play interface.

### 7. Power switch

Turns the power supply ON or OFF. Switching to “|” icon means ON and switching to “O” side means OFF.

### 8. Power connector

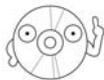
This connector is for the power adapter cable.

# Installation

## System requirements

Before installing and using the drive, make sure that your computer system meets the following requirements.

- IBM-compatible Pentium® II - 333 MHz or higher PC
- Windows® 98SE/ME/2000/XP operating system
- At least 64MB RAM (128MB recommended)



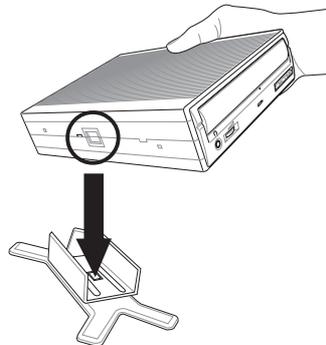
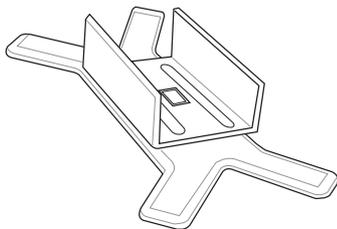
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Do not use a damaged or warped disc in the drive. The disc might break apart during use and cause potential body injury or damage to your drive.

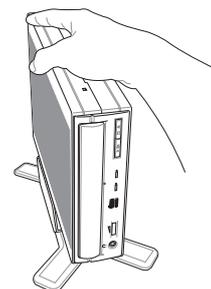
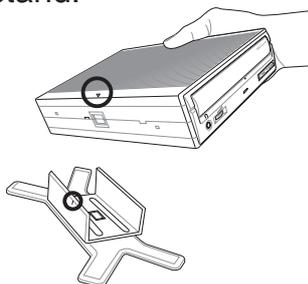
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## Drive placement

1. Remove the external drive and all the package contents from the box. Place them next to your computer.
2. Place the external drive stand on a stable surface.
3. Slide the drive into the stand, aligning the side groove to the rectangular slot on the stand.



4. For perfect fit and balance, make sure that the triangle on the drive aligns with the line on the stand.
5. Make sure that the drive is securely in place.

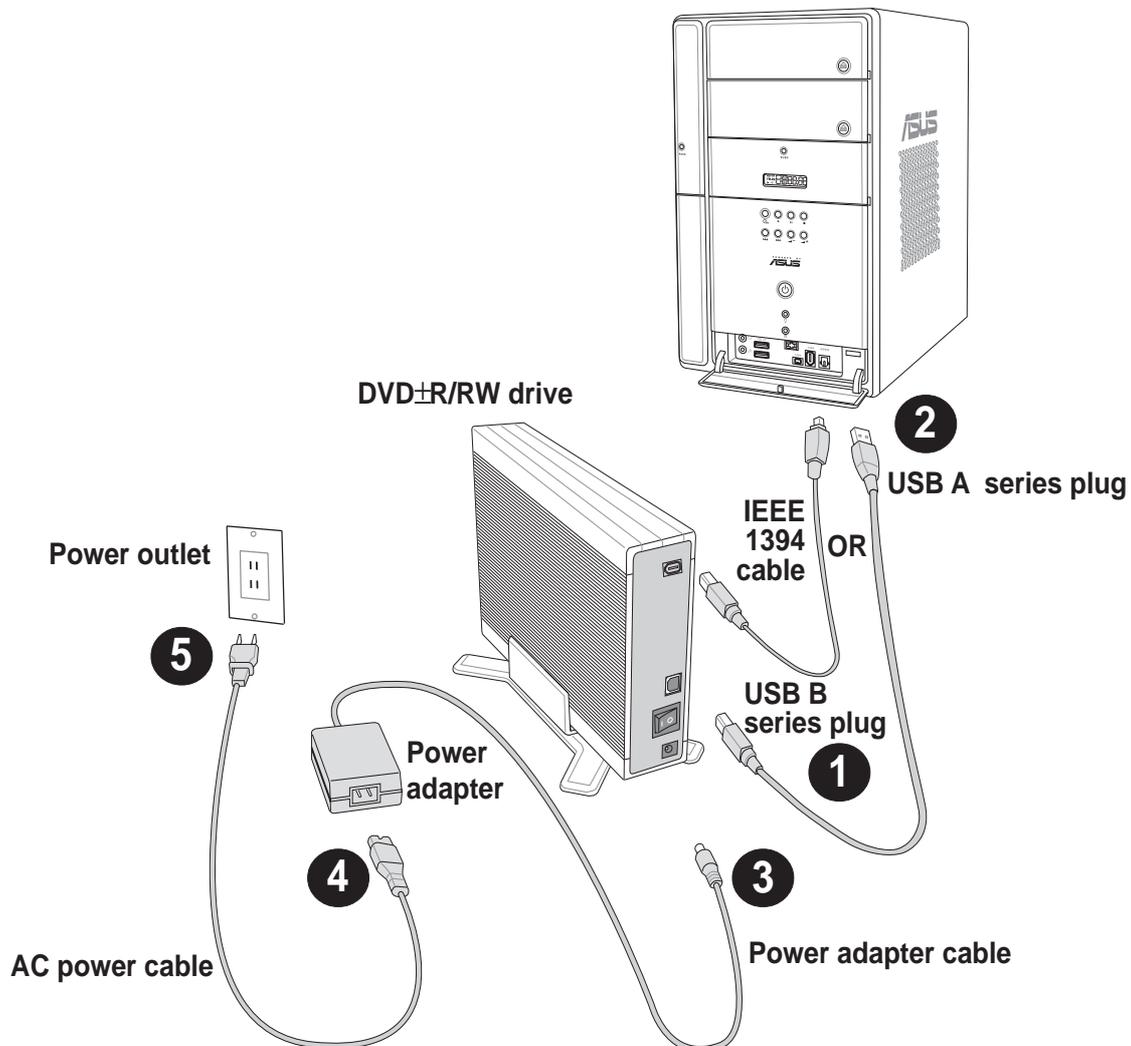


## Connecting the drive cables

1. Connect the USB cord B series plug to the USB 2.0 port on the drive OR, connect the IEEE 1394 plug to the IEEE1394 port on the drive.
2. Connect the USB cord A series plug to the USB 2.0 port on your PC OR, connect the IEEE 1394 plug to the IEEE1394 port on your PC.
3. Connect the power adapter cable to the DC IN power connector.
4. Connect the AC power cable to the power adapter.
5. Connect the AC power cable to a power source.



All the cable plugs are slotted so that they fit in only one orientation. If a plug does not fit in completely, try reversing it. DO NOT use too much force when fitting the cable plugs!



Power plug types may vary in different countries or regions around the world.

# Installing the device driver

(for Windows® 98SE/ME users)

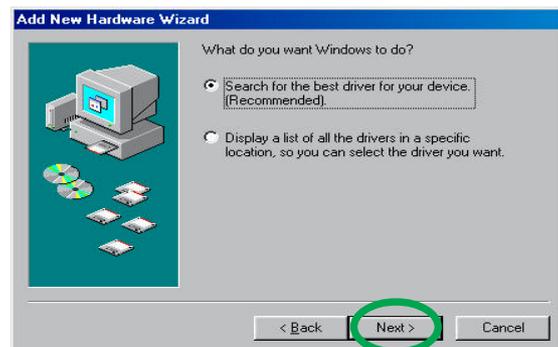
Windows® 98SE/ME users need to install the device driver for the PC to recognize the new hardware installed. A device driver is the program that makes a device work within the operating system (OS).

Follow these steps to install the driver:

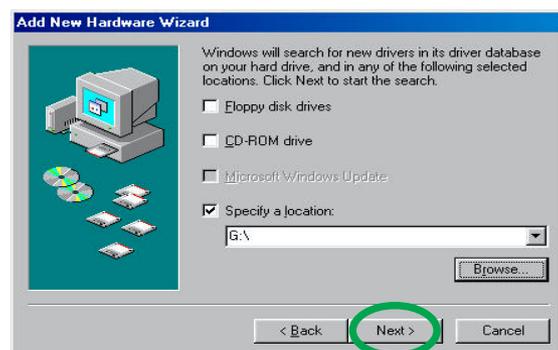
1. Make sure all cable connections to the drive and the PC are properly connected.
2. Boot the PC.
3. Insert the bundled software CD in the drive.
4. Turn on the drive.
5. After booting, the OS detects the new hardware. Follow the wizard to copy the driver files to your system. Click **Next**.



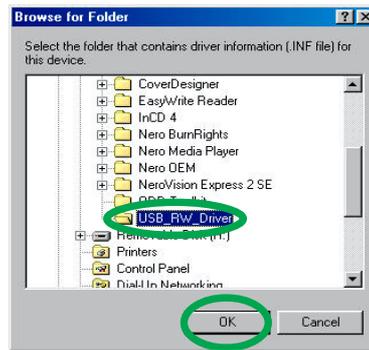
6. Windows® 98SE/ME automatically searches the best driver for the device. Select the (Recommended) option. Click **Next**.



7. Specify the location of the driver .INF file then click **Browse**.



8. Locate the folder  
“**USB\_RW\_DRIVER**” in the CD.  
Click **OK**.



9. The specific location of the drive  
appears on the combo list box.  
Click **Next**.



10. After searching, the location of  
the driver appears.  
Click **Next**.



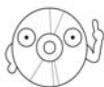
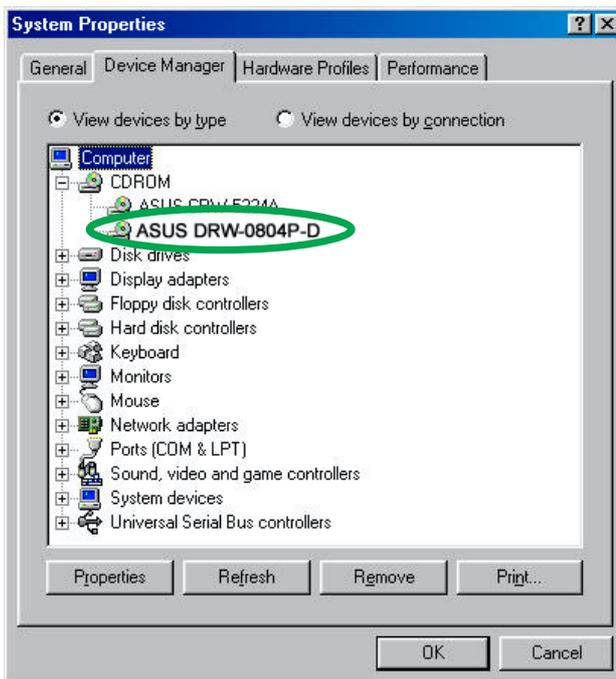
11. Click **Finish** to start using your  
external drive!



## Checking the drive in the System Properties

To make sure that the drive is recognized by the computer, follow these steps to check the system properties.

1. Right-click **My Computer** icon on your desktop.
2. On the pop-up menu, click **Properties**.
3. Click the **Device Manager** tab on the system properties dialog box.
4. Click the name of the optical drive from the list to display the device that you installed.



Screen display might vary depending on the operating system (OS) version.

## Unplugging the device properly

Make sure that you properly unplug or disconnect the device from the computer to avoid computer crash or possible data loss.

Follow these steps to safely unplug the drive.

1. Locate the **Unplug or Eject Hardware** icon found in the taskbar.  
Left-click the icon.



2. Click the name of the hardware device to unplug.



3. Click **Safely Remove** to stop the device.



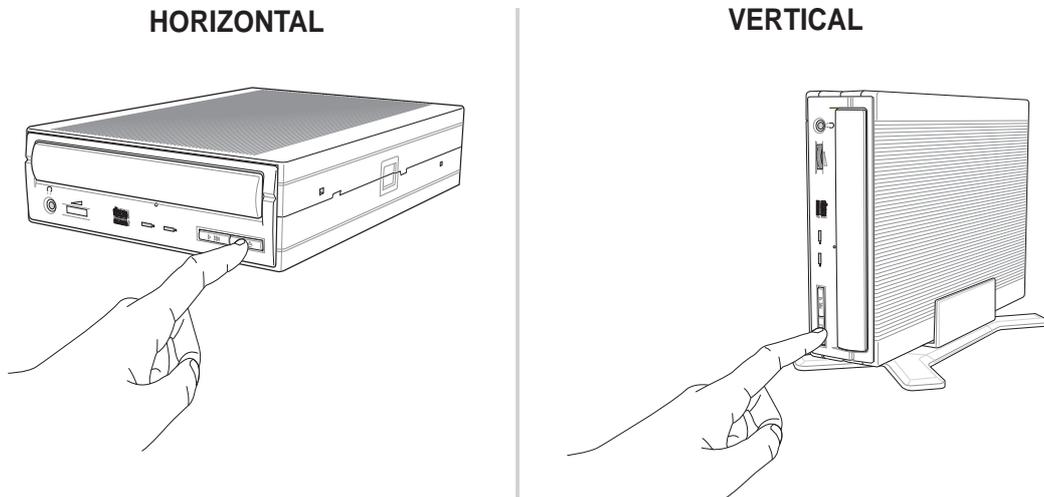
4. You can now safely unplug the device from the system.  
Click **OK**.



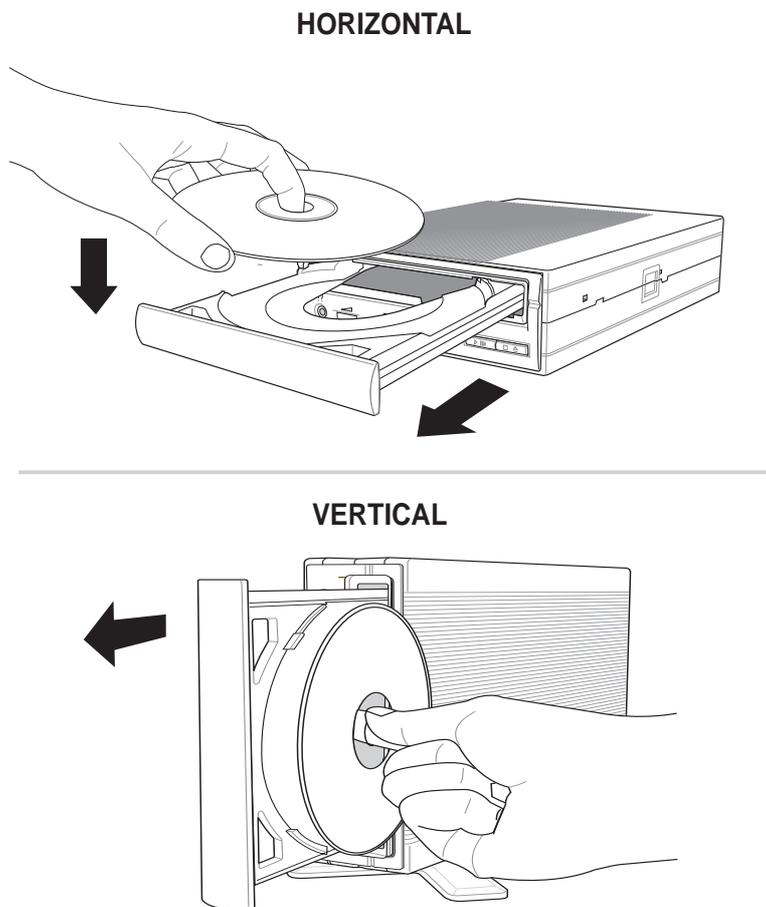
# External optical drive basics

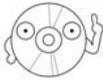
## Placing a disc into the drive

1. Press the eject button on the front of the drive to eject the tray.

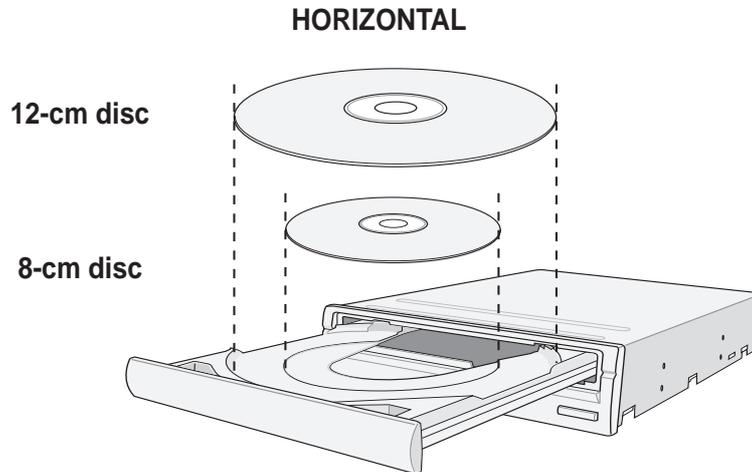


2. When the drive tray ejects out of the drive, place the disc on the tray with the label side facing up.

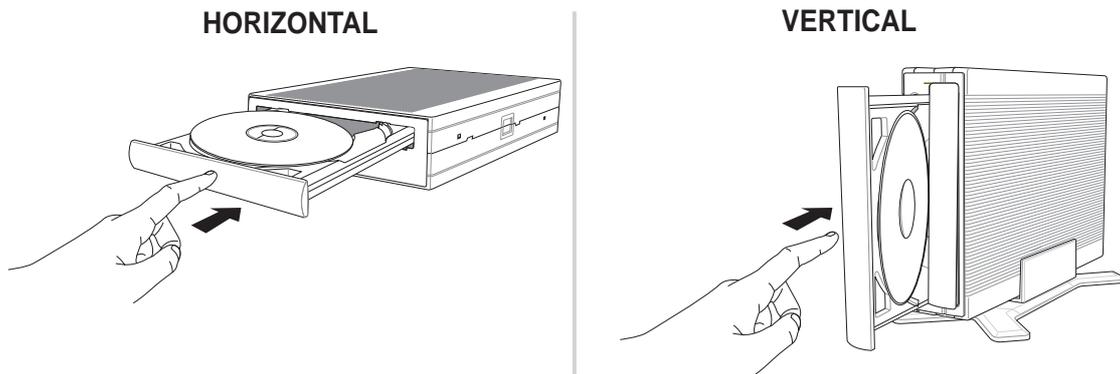




If you are using a 12-cm disc, place it on the tray making sure that it fits the outer circular border. This border helps hold the disc in place. If you are using an 8-cm disc, place it on the inner circular border on the tray. However, you may use 8-cm discs only when your drive is in a horizontal position.



3. Press the drive eject button or lightly push the center of the drive tray to load the tray back into the drive.



## Ejecting a disc from the drive

1. Press the eject button on the front of the drive to eject the tray.
2. Carefully remove the disc from the tray.
3. Press the drive eject button or lightly push the center of the drive tray to load the tray back into the drive.

## Using the emergency eject pinhole

The emergency eject pinhole on the front of the drive allows you to manually eject the drive tray and remove a disc from the drive in the following instances:

- supply of power to the computer is cut due to electrical power outage
- the drive malfunctions

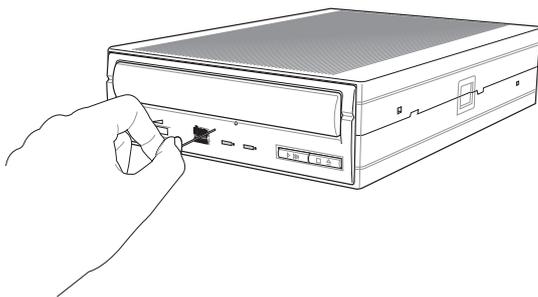


Use the manual method only as a last resort when the eject button does not work. Make sure that you have turned off your optical drive before ejecting the drive tray. Locate the power switch button on the rear panel to turn off the drive.

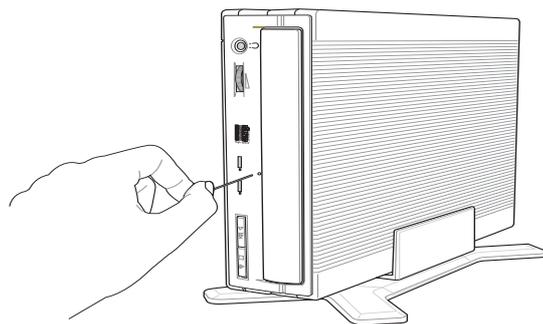
Follow these steps to eject the drive tray using the emergency pinhole.

1. Insert the eject pin that came with the drive package. You can also use a paper clip or any pointed rod small enough to fit into the emergency pinhole.

**HORIZONTAL**

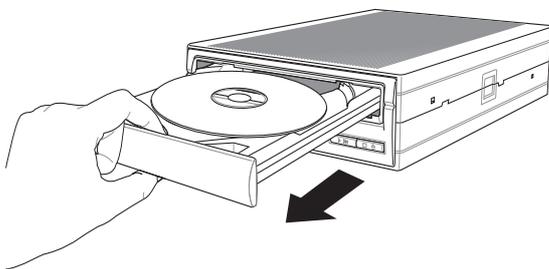


**VERTICAL**

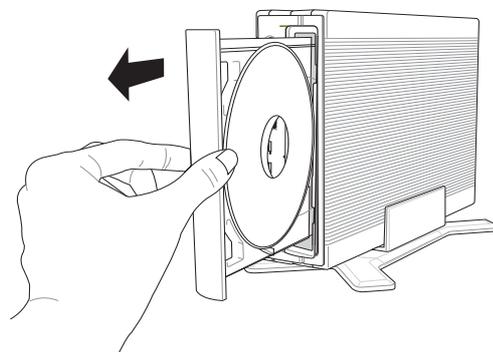


2. Carefully pull the tray out and remove the disc.

**HORIZONTAL**



**VERTICAL**



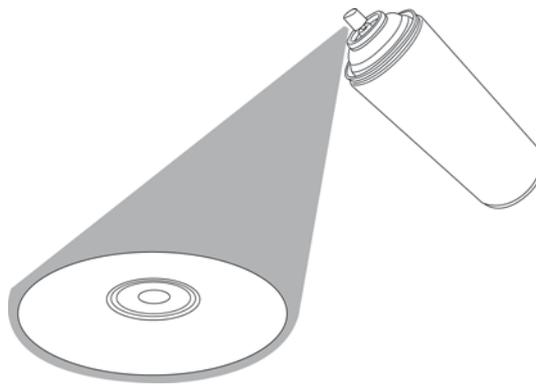
Do not force the tray open; wait until the eject pin has dislodged the tray to avoid breaking the tray panel.

# Using compact discs

Take note of the instructions in this section when using compact discs. These instructions will help you avoid damaging discs and your optical drive.

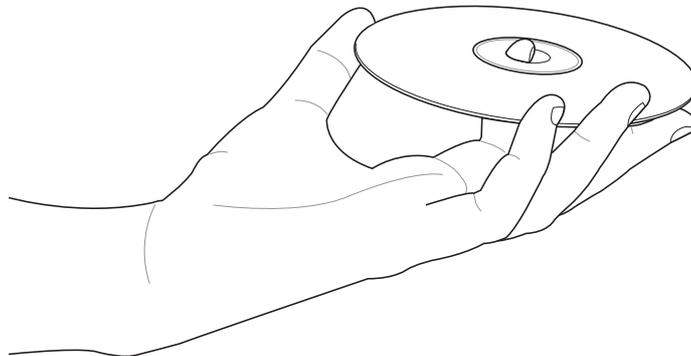
## Cleaning a disc

Spray the disc with compressed air for about five seconds to get rid of the dust on a disc.



## Handling a disc

Hold a disc by the edges. Do not touch the disc surface.



# Technical information

## Environmental specifications

<b>Temperature</b>	Operation	+5°C to +45°C
	Storage	- 20°C to +60°C
<b>Humidity</b>	Operation	5% to 85% non-condensing
	Storage	5% to 90% non-condensing
<b>Vibration</b>	Operation	0.2G peak at 10 ~ 300 Hz
	Storage	1.5G peak at 10 ~ 300 Hz
<b>Impact</b>	Non-operation	Less than 50G – no damage (at 11ms/half sine wave, 3 shock/each side)
	Packaged	60 cm high – no damage (1 corner, 3 edges, 6 surfaces)
<b>Acoustic</b>	Sound power	Less than 52 dB(A)
<b>Reliability</b>	MTBF	60,000 power on hours
	ODC (Read)	20% of power on time
	ODC (Write)	2% of power on time
<b>Mean Time To Repair (MTTR)</b>		30 minutes

\* ODC - Operating Duty Cycle

## Electrical specifications

<b>Power source</b>	Input linear voltage	100/240 V AC
	Input linear frequency	50/60 Hz
	Input linear current	1.2 A
<b>I/O terminal</b>	USB terminal	USB B type (high speed)
	IEEE 1394	