

USB 2.0 EXTERNAL CD-RW DRIVE

USER'S MANUAL

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed or used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures: (1) Reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and the receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Acknowledgment & Trademark

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Safety Notice

1. Do not install or operate the product in high temperature, humidity or dusty environment.
2. Do not attempt to open the cover to repair the product yourself.
3. Never spill liquid of any kind on the product.
4. Always follow instructions on this manual under operating the product.
5. To prevent exposure to laser emanations(harmful to human eyes), do not attempt to disassemble this unit.
6. Hold CD discs by their edges. Do not touch the surface of the discs.
7. The drive is designed to be incorporated into a computer-based system or unit which has an enclosing cover. Using the drive alone or in any other configuration is prohibited.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Please keep this User's Manual for your reference.
3. Please disconnect the equipment from your AC outlet before cleaning.
Do not use liquid or sprayed detergent for cleaning.
Use moisture sheet or cloth for cleaning.
4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
5. Please keep this equipment from humid areas.
6. Install this equipment on a reliable surface. If the equipment is not on a reliable surface, it may drop and cause injury.
7. The openings on the enclosure are for air convection. Please protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source when connect the equipment to the power outlet.
9. Place the power cord where people will not step or trap on it. Do not place objects over the power cord.
10. All Cautions and Warnings on the equipment should be noted.
11. If the equipment is not in use for several days, disconnect the equipment from the power outlets to avoid damaged by transient power surges.
12. Never pour any liquids into the openings, this could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should only be opened by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by a service personnel:
 - (a) The power cord or plug is damaged.
 - (b) Liquid has penetrated into the equipment.
 - (c) The equipment has been exposed to moisture.
 - (d) The equipment has not worked well or you can not get it to work according to the user's manual.
 - (e) The equipment was dropped and damaged.
 - (f) If the equipment has obvious sign of damage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED; STORAGE TEMPERATURE ABOVE 60°C(140°F),IT MAY DAMAGE THE EQUIPMENT.** The sound pressure level at the operators position according to IEC704-1:1982 is equal or less than 70dB(A)
16. **DANGER:** Invisible laser radiation when opened. Avoid direct exposure to beam. Complies with FDA radiation performance standards,21 CFR, subchapter J.
Laser power: Wave Length:783±3nm
Emission power:0.7mW
Laser diode: class 3b

PRECAUTIONS

!! Do not attempt to open the drive and service it. Removing the cover may cause exposure to harmful laser beam and electrical voltage. User is recommended to get service by returning the defective drive back to the original vendor where the drive was purchased.

- Use the original packing for transporting the drive or sending back for service. The original packing was designed and tested to protect your drive under rough condition.
- Do not put this CD-RW drive in direct sunlight, on heating units, or near electrical appliances which draw large amounts of current.
- Use a soft, dust-free cloth for cleaning your drive. Keep your drive away from moisture or liquids including water, cleaning-fluids, or solvents.
- Keep your CD-R/RW disc clean. Using soft, dust-free cloth to clear the surface of the CD-R/RW disc before recording will improve the burning data integrity.
- Do not drop or jolt the drive.
- Installation and operation of the drive must be performed at a horizontal level.
- Keep the area around the CD-RW drive clean from dust, smoke, and other contaminants.
- The copyright law of each country governs the reproduction of copyrighted works. The person using the CD-RW drives may be liable for its use to make unauthorized copies of copyrighted works.
- It will increase the success rate for copying the data from HDD, instead of copying the data by "copy on the fly mode". Therefore we recommend user reserving sufficient buffer space (at least 800 MB).

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Specification	
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USB 2.0 USERS

USB 2.0 is a very new technology. Therefore, most computers do not have native support for USB 2.0. You must install a USB 2.0 adapter card for your External CD-RW drive to run at USB2.0 speeds. If you do not have a USB 2.0 card installed, this CD-RW drive will still work connected to a standard USB 1.1 connection, but the speed will be limited to USB 1.1 speed. After installing a USB 2.0 adapter card, follow the steps below for your operating system to verify the USB 2.0 card is installed properly.

Windows® 98/ME users:

Right click My Computer and select Properties.

Select the Device Manager tab.

If there is a yellow exclamation point next to Universal Serial Bus Controllers, contact the card's manufacturer for help.

Windows® 2000/XP users:

Right click My Computer and select Properties.

Select the hardware tab.

Click the Device Manager button.

If there is a yellow exclamation point next to Universal Serial Bus Controllers, contact the card's manufacturer for help.

Instructions of Installing USB Drivers for Windows 98:

This USB CD Writer is a Plug&Play USB storage device. If you are using any of the following Operating Systems, such as Windows ME, Windows 2000, and Windows XP, all you need to do is plug it to your computer properly. Then the CD Writer is ready to use.

Whereas, the Windows 98 OS will not recognize this USB CD Writer if this is the first time you are installing this drive to it. Therefore, you will need to install a driver for this USB CD Writer at the first time you connect it to your computer.

You can find the USB driver for Windows 98 OS either in the included Floppy Disc or in the USB driver for Windows 98 OS directory of the CD kit. Please follow your OS instructions to install the driver for this USB CD Writer.

CAUTION:

Please limit your recording speed to 4X or 8X if your PC is only equipped with a slower speed USB1.1 interface or if your PCMCIA port does NOT support Card Bus interface. Attempting high speed writing with a slow interface can cause frequent buffer overloading and writing pauses (when Red and Green LED is lit at the same time) that could adversely affect recording quality.

INTRODUCTION

Thanks you for your purchasing this CD Rewriter drive.

Please read this manual before using the drive. It will give you step-by-step instructions on setting up and installing the CD rewriter drive.

Format Compatibility

This CD-RW drive is compatible with the different formats: CD-ROM, CD-ROM XA, CD-DA, Photo CD, CD-I, Karaoke CD, CD-Extra, Video CD, CD plus, UDF, and CD-TEXT.

Recording Modes

Track at Once

Data can be recorded to disc one track at a time. New track can be added later. Music CD can not be played in CD player or CD-ROM until close disc.

Disc at Once

Data can be recorded to an entire disc in one pass. In this mode, new data added later is not allowed.

Session at Once

Data can be recorded to disc one session at a time. New sessions can be written later in this mode. More disc space can be used because no gap between track and track.

Multi session

Data can be recorded to disc one session. New sessions can be written later in this mode. Less disc space can be used because gap is created between session and session.

Packet Writing

This is useful for data back up. Data can be added directly to tracks on CD-R/RW media or can be deleted directly from tracks only on CD-RW media. To use this mode, your software must support Packet writing function.

SYSTEM CONFIGURATION

System Requirements for USB 1.1

To ensure stable write/rewrite performance, an IBM compatible PC system with the following features is recommended.

CPU	Pentium 166 MHz or higher with built-in USB 1.1 controller (some USB controllers or motherboards may not support all types of USB devices.)
OS	Microsoft Windows 98/98SE/ME/2000/XP
Memory	Must meet recommended RAM requirements for your operating system. (minimum 128MB is recommended)
CD-ROM Drive	For software installation
Hard Drive	Average seek time 20ms or less Transmission rate 2MB/sec or more Minimum 100MB available capacity (Do not enable HDD thermal calibration during operation)
Interface	USB interface connector

NOTE:

- (1) Some high-speed hard drives are equipped with an "Auto Thermal Re-calibration" function. Please disable it in the BIOS setup to avoid writing errors (Buffer Under-run).
- (2) You need a CD-ROM drive or 800MB hard drive space to copy CDs.
- (3) Speed limited to 4x4x6 with USB 1.1 interface.

Additional Requirements for USB 2.0

CPU	Pentium 200 MHz or higher
OS	Windows 98SE/ME/2000/XP
Interface	High Speed USB 2.0 adapter card

NOTE:

- (1) High Speed USB 2.0 adapter card is sold separately and will not be bundled in this package.
- (2) High Speed USB 2.0 required to achieve maximum 40x12x40x speeds
- (3) To achieve maximum 40X record/write speed your system may require data to be copied first to the computer's hard drive rather than directly from another source disc or drive.

RECORDING SOFTWARE & DISCS

Software & Quick Start Instructions

The CD-RW software packed is to give you the best result with the ease of use. Please refer to the directory \Nero\Nero55\Quickstart in Nero software tool CD for the detailed operation procedures of the writing software.

Discs

You may use conventional Read-only discs or CD-R/RW discs with your rewriter.

Recommended CD-R/RW Media

Some CD-R/RW media may not be possible to write on, due to differences in the manufacturing quality. We recommend you use CD-R/RW media from the following manufacturers that have been proven satisfactory with our drive.

CD-R Media:	ACER MEDIA, CMC, CURSOR, FUJI FILM, HITACHI, MAXELL, KODAK, LEAD DATA, MITSUI CHEMICAL, MULTIMEDIA, PIONEER VIDEO, PRINCO, PRODISC, RICOH, RITEK, TDK, TAIYOYUDEN (X-Type)
CD-RW Media:	ACER MEDIA, ASKA, CMC, CURSOR, DMG, FUJI FILM, HITACHI, MAXELL, LEAD DATA, MITSUBISHI CHEMICAL, MrPlatinum, PHILIPS, PRINCO, PRODISC, POWER, RICOH, RITEK
High Speed CD-RW Media:	ACER MEDIA, CMC, FUJI FILM, HITACHI, MAXELL, MITSUBISHI CHEMICAL, PLEXTOR, PRINCO, PRODISC, RITEK

NOTE: *Subject to change without further notice.*

INSTALLATION GUIDE

Installing CD Rewriter Drive

1. **Start your computer. Wait for the operating system to load, then insert the CD kit. Follow the instructions on the screen to install the Recording Software from CD kit.**
(The CD kit contains the system software necessary to use your CD-RW drive.)

2. **Connect the power supply and cable to the drive.**
(To prevent damage to the power plug, connect straight on with the arrow side up. Do not twist!! Examine the connection carefully to avoid bending pins. The green power light on the drive will come on and flash momentarily when you plug in the power supply.)

3. **Attach the Hi-Speed USB cable B type plug to the drive.**
(Examine the connection carefully for the correct orientation.)

4. **Connect the A type plug end of the Hi-Speed USB cable to the USB 2.0 adapter card connection on your computer. The CD-RW drive is ready to use.**
(NOTE: If you cannot identify the USB 2.0 connection, refer to the documentation of your USB 2.0 card. If you do not have a USB 2.0 adapter card installed, you can still connect the drive to a standard USB connection.)

(If this is the first time you are installing this USB CD-RW drive to your Windows 98 Operating System, you will have to install the USB driver for Win98. Follow the instructions on the screen to install the USB driver properly.)
(For more details, please refer to the USB 2.0 Users page.)

Optional Audio CD Playback

(This Drive supports stand alone Audio CD playback function. Ensure the power supply is connected properly before you play.)

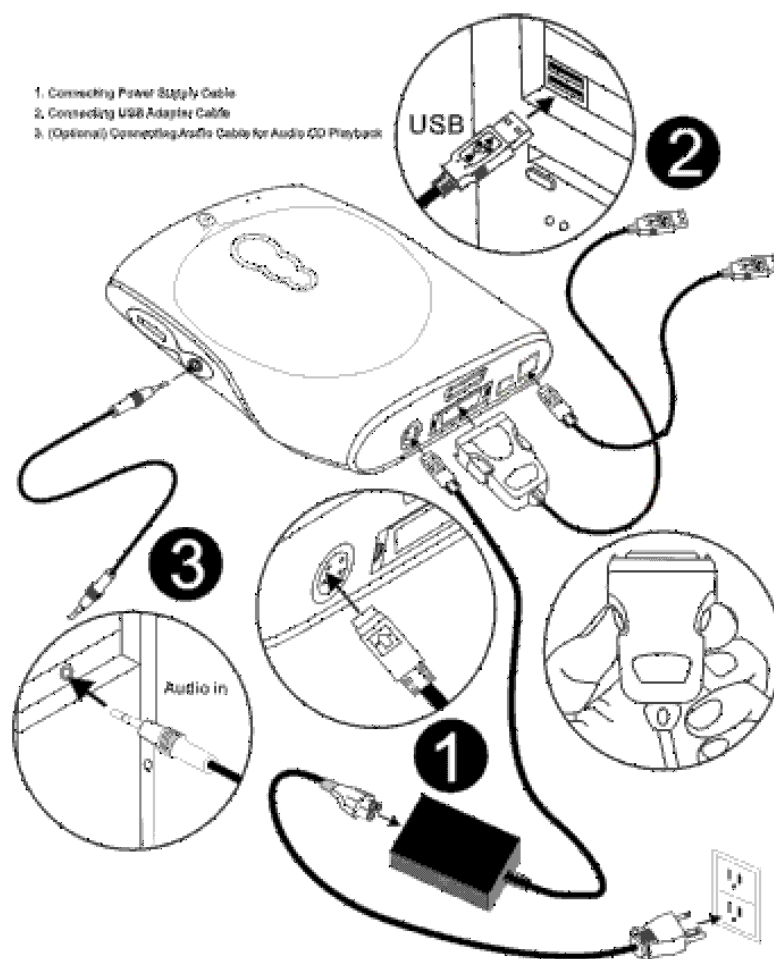
1. **Connect the included audio cable to the side of the drive.** (NOTE: You may select using your stereo mini-plug earphones as an option.)

2. **Connect the other end of the audio cable to the "Audio In" line on the back of your computer.** (NOTE: When playing audio CDs adjust the volume with the volume wheel located on the side of the drive.)

3. **Insert a CD with the label facing up into your CD-RW drive and push down firmly on the lid.** You may use the Play/Forward control knob  on the drive or use the CD Player software in your PC to play your Audio CDs.

4. The Stop/Eject knob  is to stop CD playback and to open the lid for changing CDs.

CONNECTION



FUNCTION

Top & Side View

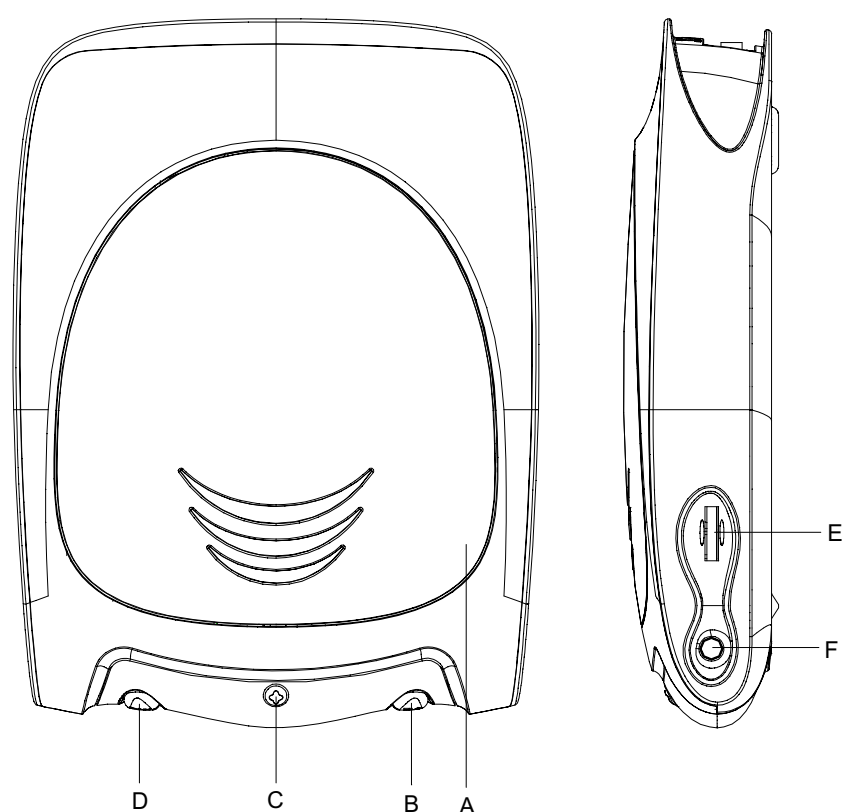


Figure: Top & Side view of CD-RW drive

A	Lid Cover	Open to place or change Disc.
B	Stop/Open Button	Push to stop CD playback or to open the lid cover.
C	Busy LED (Green) / Write LED (Red)	Indication of drive's operation status. Green light stands for Busy; Red light stands for Write/Rewrite.
D	Play/Forward Button	Push to start CD playback or to skip track.
E	Volume Control	Control volume of earphone jack.
F	Earphone	Stereo mini-jack for headphones and powered speakers.

Bottom View

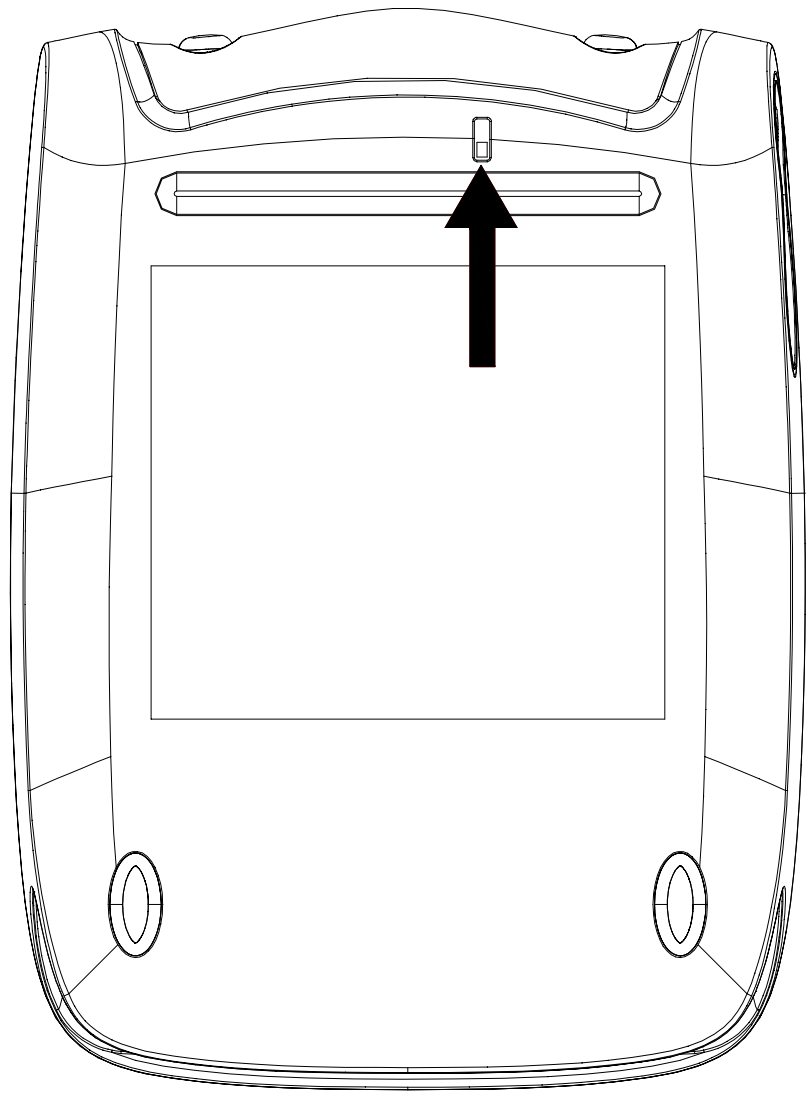


Figure: Bottom view of CD-RW drive

Emergency Eject Lever	In case of the Eject button isn't working, pull the Lever forward to open the lid cover. <i>Note: Turn off the power before doing this manual ejection.</i>
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Rear View

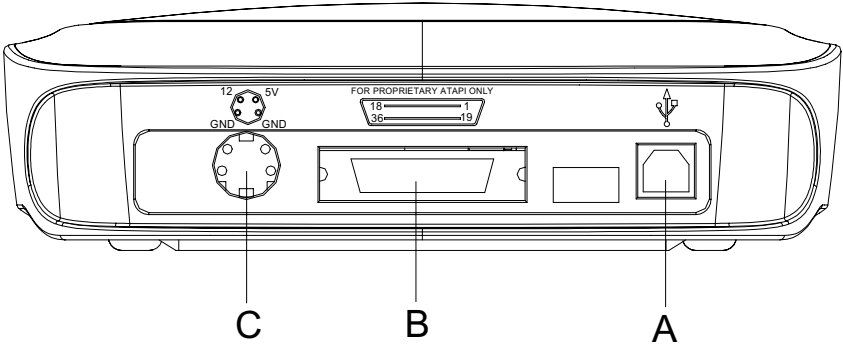


Figure: Rear view of CD-RW drive

A	USB Connector	Standard USB B type jack.
B	Host IDE Interface Connector	36-pin connector for proprietary ATAPI only.
C	Power Connector	4-pin connector for DC power input.

Note: Due to the power adapter and power cable are very unique design for this CD Rewriter drive, please connect ONLY with the power accessories bundled in this package. Accessories other than these might cause fatal damage to this CD Rewriter drive.

TROUBLESHOOTING

If you meet any trouble during installation or normal use of your CD-RW drive, please refer to the following information.

Read Problems

Symptom	Possible Causes	Solutions
No operation.	No power.	Check if the power cord is connected securely to the connector.
	USB cable isn't connected properly.	Ensure that the USB cable and connectors are not damaged, bent or dented. Check especially the pins.
No CD-RW drive recognition.	Power is not switched on.	Check if LED of your CD-RW drive is lit. If not, there is no power.
	USB cable is not connected properly between the computer USB port and CD-RW drive.	Ensure that both connectors of the USB cable is properly connected to the USB ports on the computer and the CD-RW drive.
	USB CD-RW drive is not recognized by the Windows Operating System.	Please refer to the USB 2.0 Users chapter and check if the USB driver is installed properly.
No sound from external speaker when you're playing a music CD.	The sound board isn't working properly.	- Connect speakers to the headphone jack of your CD-RW drive while playing a music CD. If you hear sound from the speakers, the drive is working fine. - Ensure that your CD-RW drive is correctly linked to the computer. - Check if the (MCI) CD-Audio driver is installed.
Low sound level from CD-RW drive	Improper level setting in Windows audio mixer	Check if the Masters, CD and Line levels in every audio mixer are correct.
Excessive noise when reading.	Eccentric disc loaded.	Replace it by another one.
	Seal attached on the surface	Detach the seal very carefully. Don't make any scratches.
- Cannot view photo CD discs. - Can read only first session of a multi-session disc. - Receive error messages while reading photo CD images.	Bad photo CD disc.	Try to play another photo CD disc and see if it reads fine. If it works, you should replace the defective disc.
Can read only the first session of a multi-session disc.	"Close Disc" was not selected at the previous writing.	Additional session cannot read because the session of former data writing closed. Rewrite on other CD-R/RW media.

Symptom	Possible Causes	Solutions
Cannot open the lid (Eject).	Eject locked by software.	Stop the applying software and try the eject button to open the lid.
	CD set incorrectly.	pull the Lever on the bottom of the drive forward to open the lid cover.
- Cannot read the former session of the CD-RW disc which has been written at least twice. - Read error occurs.	"Load Contents" or "Import Session" was NOT clicked on the Software.	If recorded without checked "Load Contents" or "Import Session", it is impossible to read. But when using utility software such as "Session Selection" from Adaptec, the former session can be read.
	Defective CD-ROM disc.	Deep scratches, fingerprints or other contaminants on the discs surface can disable the drive from reading data. Always keep it clean.
- Cannot read the former session of the CD-RW disc which has been written at least twice. - Read error occurs.	Music CD inserted.	Because audio compact discs do not have computer data, typing computer commands while an audio CD is in your drive will result in an error message.
	Disc inserted upside down.	Remove the disc from tray and reinsert it with the label side up.
Can not initialize CD-RW disc written by Packet Write with other CD-ROM drive.	The CD-RW disc is in the drive formatted with "Random Write".	A CD-ROM drive cannot initialize/read any CD-R/RW disc formatted by "Random Write". If you want to read the disc, please use a CD-RW drive, or download from Adaptec WEB site and install UDF Reader on your PC, which enable CD-ROM drives to read "Random Write".

Write Problems

Symptom	Possible Causes	Solutions
Cannot write.	Using other authoring software which not supports your CD-RW drive.	Use the authoring software provided with the CD-RW drive. When using other software, ensure your CD-RW drive is supported by contacting the software supplier.
	Disc inserted upside down.	Reinsert the disc with label side up.
	Short of Hard Disk capacity.	Generally 1.2 to 2 times the size of the write data is required. This may vary according to the write method.
	No power.	Check if the power cord is securely connected to the connector.
	USB cable isn't connected properly.	Ensure that the USB cable and connectors are not damaged, bent or dented. Check especially the pins.
Writing errors occur (Buffer under-runs).	- Network used. - Mouse moved or window screen saver activated while writing. - Other application running.	- When running mouse, screen saver moving or other applications or writing in a network environment, errors may occur due to lack of CPU resources in PC. - Rewrite after log-off from the network. - Deactivate the screen saver or power saving mode. - Quit other applications other than the authoring software.
	Short of PC memory.	- Due to short of main memory in PC, swapping of hard disc space may have occurred. If swapped, data from the hard disc may cut off causing buffer under-runs. - Increase main memory capacity.
	"Auto thermal re-calibration" triggered.	- Disable "Auto thermal re-calibration" in the BIOS setup. - Use another Hard Disk if can not disable it.
	Defective CD-R/RW media.	CD-R/RW media may be dirty, scratched or damaged. Rewrite on another CD-R/RW media.
	Short of Hard Disk capacity.	Generally 1.2 to 2 times the size of the write data is required. This may vary according to the write method.
No drive recognition.	USB cable is not connected properly between the computer USB port and CD-RW drive.	Ensure that both connectors of the USB cable is properly connected to the USB ports on the computer and the CD-RW drive.

Symptom	Possible Causes	Solutions
	USB CD-RW drive is not recognized by the Windows Operating System.	Please refer to the USB 2.0 Users chapter and check if the USB driver is installed properly.
	Using other authoring software which not supports your CD-RW drive.	Use the authoring software provided with your CD-RW drive. When using other software, ensure your CD-RW drive is supported by contacting the software supplier.
Cannot add writing on CD-RW.	Wrote with other authoring software.	If different authoring software is used comparing to the previous writing, errors may occur. Use always the same authoring software.
	Short of CD-R/RW capacity.	Capacity of CD-R/RW media is limited to 650MB (74 min-type) including lead-in, lead-out and TOC data. Use a new CD-R/RW media if the capacity is insufficient for the additional data.
Can not write at highest speed.	CD-R/RW media not compatible with highest speed.	Use the highest speed compatible discs or write with lower speed.
	Buffer under-run occurs.	Refer to the "Buffer under-run" item.
	Defective CD-R/RW media.	CD-R/RW media may be dirty, scratched or damaged. Rewrite on another CD-R/RW media.
	Using other authoring software not bundled with your CD-RW.	Use the authoring software provided with your CD-RW drive. When using other software, ensure your CD-RW drive is supported by contacting the software supplier.

APPENDIX A SPECIFICATION

Interface	USB 2.0
Disc diameter	8cm/12cm
Data transfer rate	
Read (CD-ROM)	Max. 40X (6000KB/sec, CAV)
Write (CD-R)	40/24X (6000KB/sec, 3600KB/sec, CLV)
Rewrite (CD-RW)	12/10X (1800KB/sec, 1500KB/sec, CLV)
Data buffer	2MB
Applicable formats	D-DA, CD-ROM, CD-Extra, CD-ROM XA, Photo CD, CD-I, CD-R, CD-RW
Front panel/ Side	Busy/write/rewrite LED, Lid button, Rotary volume
Panel	Control, Earphone jack, Play audio key (for ID B only)
CD load	Lid opening
Installation condition	Horizontally
Random access time	80ms (typical)
Error rate	
Hard Error	10^{-12} bits or less
Soft Error	10^{-9} bits or less
Sound level	
Sound output level	0.5V±0.2Vrms
S/N:	70dB
Environmental	
Temperature	Operating: 5°C to 40°C Storage: -20°C to 55°C
Humidity	Operating: 10-80% R.H. (Non-condensation)
Dimensions	
W x H x D	152 x 44.3 x 198 mm
Weight	580g (typical)
Power specification	DC +12V ±5%, DC +5 ±5%
M.T.B.F.	70000 POH, at room temperature 25% duty cycle condition