

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 defected drive back to the original vendor where the drive is purchased.
- Use the original packing for transporting the drive or sending back for service. The original packing were designed and tested to protect your drive under rough condition.
- Do not put this CD-RW drive in direct sunlight, on heat 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.
- Do not mount the drive at vertical position. The drives was design function under horizontal position.
- 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 copy the data by "copy on the fly mode". Therefore we recommend user reserving sufficient buffer space (at least 800 MB).

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INTRODUCTION

Thanks you for your purchasing this CD Rewriter drive.

Please read this manual before using the drive in order to takes you step-by-step through the process of 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, CD-G, Karaoke CD, CD-Extra, Video CD, CD plus and UDF.

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

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

CPU	: Pentium 166 MHz or higher
OS	: Windows 95/98/2000/NT 4.0
Memory	: 32MB minimum, 64MB recommended
Hard Drive	: Average seek time 20ms or less Transmission rate 2MB/sec or more Minimum 100MB available capacity <i>(Do not enable the HDD thermal calibration during operation)</i>
Interface	: Vacant IDE interface connector

NOTE: *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).*

Software

The CD-RW software packed is to give you the best result with the ease of use.

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:	TAIYOYUDEN, TDK, MITSUI CHEMICAL, MITSUBISHI CHEMICAL, RICOH (74R-SG, 74RSW), HITACHI MAXELL, FUJI FILM, PIONEER VIDEO, KODAK, PRINCO, CMC, RITEK, LEADDATA
CD-RW Media:	MITSUBISHI CHEMICAL, RICOH(74R-AZ, 74R-AZAM, 74R-AZ2,74R-AZ2M2, 74R-AZ2AM3) *2

INSTALLATION GUIDE

Installing CD Rewriter Drive

1. Turn off PC and disconnect all power cords.
2. Remove the PC cover from computer.
3. Set the Master/Slave jumper on CD-RW rear panel according to the following section.
4. Find an empty bay, slide the CD-RW into the bay horizontally and mount the drive with 4 screws.
5. Connect the power supply cable to CD-RW drive.
Ensure the pin definition of power connector is the same as shown in figure 1.
6. Connect the 40-pin E-IDE cable to CD-RW according to the description in the following section.
7. Connect the sound cable from the Analog Audio on the rear panel of CD-RW to sound card if you have a sound card in your system.
8. Put the PC cover back and connect the power cords.
9. Connect the power cord to an AC outlet and turn on computer.
Make sure that the LED located on the front panel of CD rewriter is lit.
10. Start up operating system.
11. Install recording software from CD kit.
Authoring software comes with the CD-RW drive. Your CD-RW drive can write data only after the authoring software is installed. For the installing procedures of the authoring software, please refer to the installation guide that delivered with the software. If you want to use the other authoring software, please refer to its user manual for installation and operation.

Rear Panel

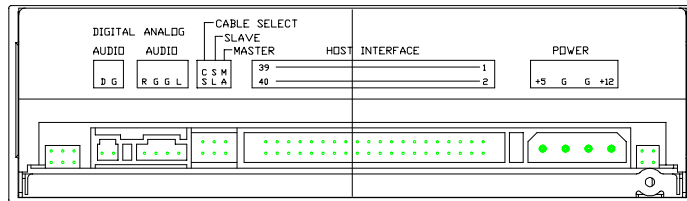


Figure 1. Rear panel of CD-RW drive

Set Master or Slave Jumper

There are three pairs of jumpers, MA(Master), SL(Slave) and CS(CSEL) on the rear panel of your CD-RW drive. Figure 1 shows the location of the jumper.

The *Master/Slave* jumper can be used to set the CD-RW drive to *Master* or *Slave* device. Figure 2 is the illustration of jumper setting.

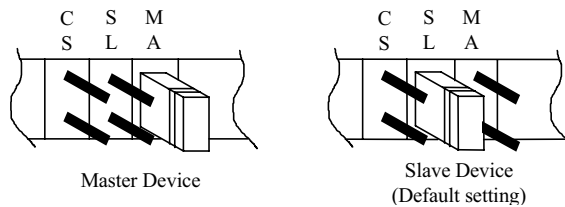


Figure 2: The setting of Master or Slave device.

NOTE: Do not use two jumpers to set MA and SL simultaneously.

CS (CSEL)

If you choose the CS setting, the Master/Slave setting will be made automatically depending on your hardware configuration.

Connect to Primary/Secondary IDE Port

In most PC systems, the *Master* device of *Primary* IDE port is an IDE hard drive to boot the operating system. Besides this hard drive, you may have other IDE devices such as second hard drive, CD-ROM drive, or DVD-ROM drive. Usually, you may connect the CD-RW drive to whichever IDE port is not in use and set the *Master/Slave* jumper as follows.

- Set the jumper to *Slave* device if your CD-RW will be connected to *Primary* IDE port.
- Set the jumper to *Master* device if your CD-RW is the only device which connect to *Secondary* IDE port.
- Set the jumper to *Slave* device if your CD-RW will be connected to *Secondary* IDE port with a *Master* device existed.

Table 1 shows the configuration of jumper setting while connecting to *Primary* and *Secondary* IDE ports.

IDE Port \ Device	One Device	Two Devices
Primary	N/A	Slave
Secondary	Master	Slave

Table 1. The configuration of Master/Slave jumper setting

While if there is another IDE CD-ROM drive or DVD-ROM drive in your PC, you can set the CD-ROM/DVD-ROM to the *Slave* device of *Secondary* IDE port and set the CD-RW to *Master* device of *Secondary* IDE port. Shown as Figure 3.

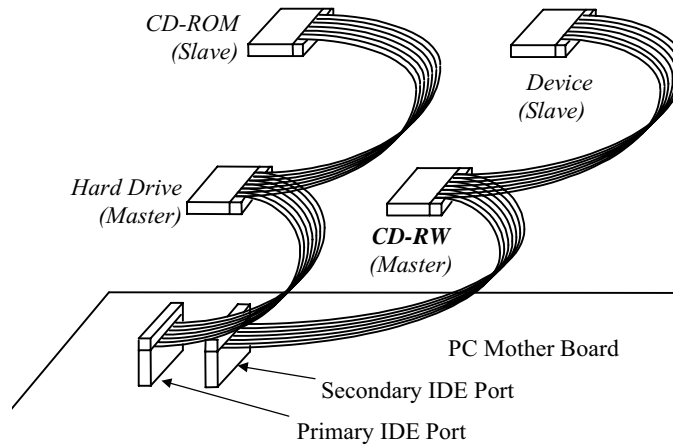
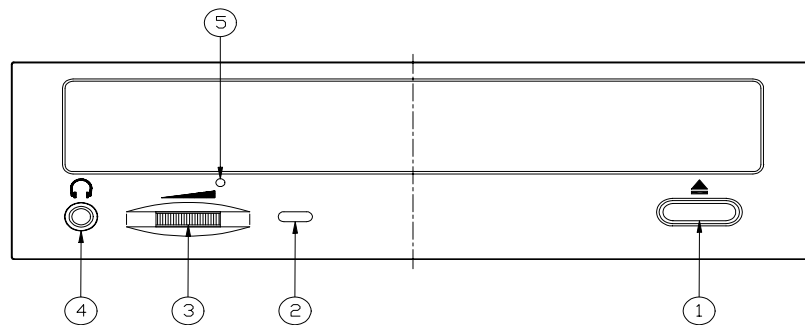


Figure 3: Normal PC connection

Note: Connect CD Rewriter to the secondary IDE port first and enable DMA mode for getting best system performance.

CD-RW DRIVE FRONT PANEL



- ① **Eject/Close Button** Press this button to eject the disc tray when it is closed. When disc tray is open, press this button to close it.
- ② **Busy/Write Indicator** GREEN light indicates CD-RW is busy when turning power on, detecting disc activity or doing reading.
RED light indicates data is writing.
- ③ **Volume Control** Control volume of earphone jack. This control has no effect on rear panel audio output.
- ④ **Earphone Jack** Stereo mini-jack for headphones and powered speakers.
- ⑤ **Emergency Eject** In case of the Eject button isn't working, insert a small stick or paper clip into this hole to eject the tray.
Note: Turn off the power before doing this manual ejection.

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 CD-RW drive recognition.	IDE cable and the CD-RW drive are not connected properly.	<ul style="list-style-type: none"> Ensure that both connectors of IDE cable is properly connected to the IDE ports on the main board and CD-RW.
	Conflicts with other IDE devices.	<ul style="list-style-type: none"> Ensure the Master/Slave device setting of CD-RW if not conflict with the other IDE device connected to the same IDE port.
	Power is not switched on.	<ul style="list-style-type: none"> Check if LED of your CD-RW drive is lit. If not, there is no power.
No sound from external speaker when you're playing a music CD.	The sound board isn't working properly.	<ul style="list-style-type: none"> 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 sound board. Check if the (MCI) CD-Audio driver is installed.
Low sound level from CD-RW drive	Improper level setting in Windows audio mixer	<ul style="list-style-type: none"> Check if the Masters, CD and Line levels in every audio mixer are correct.
	Improper audio cable connection between CD-RW drive and sound board.	<ul style="list-style-type: none"> Ensure the audio cable is properly connected to the CD or Line input of your sound board.
<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Try to play another photo CD disc and see if it reads fine. If it works, you should replace the defective disc.
<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Deep scratches, fingerprints or other contaminants on the discs surface can disable the drive from reading data. Always keep it clean.

Symptom	Possible Causes	Solutions
<ul style="list-style-type: none"> Cannot read the former session of the CD-RW disc which has been written at least twice. Read error occurs. 	Music CD inserted.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Remove the disc from tray and reinsert it with the label side up.
Excessive noise when reading.	Eccentric disc loaded.	<ul style="list-style-type: none"> Replace it by another one.
	Seal attached on the surface	<ul style="list-style-type: none"> Detach the seal very carefully. Don't make any scratches.
No operation.	No power.	<ul style="list-style-type: none"> Check if the power cord is connected securely to the connector.
	IDE cable isn't connected properly.	<ul style="list-style-type: none"> Ensure that the IDE cable and connectors are not damaged, bent or dented. Check especially the pins.
Cannot eject tray.	Eject locked by software.	<ul style="list-style-type: none"> When you're working under Windows95/98/NT 4.0, check if locked on the CD-RW properly.
	CD set incorrectly into tray.	<ul style="list-style-type: none"> Insert emergency eject stick into the emergency eject hole and eject the tray. Use a pair of tweezers or pliers if it won't eject with emergency eject stick.
Can read only the first session of a multi-session disc.	"Close Disc" was not selected at the previous writing.	<ul style="list-style-type: none"> Additional session cannot read because the session of former data writing closed. Rewrite on other CD-R/RW media.
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".	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Reinsert the disc with label side up.
	Short of Hard Disk capacity.	<ul style="list-style-type: none"> Generally 1.2 to 2 times the size of the write data is required. This may vary according to the write method.
	No power.	<ul style="list-style-type: none"> Check if the power cord is securely connected to the connector.
	IDE cable isn't connected properly.	<ul style="list-style-type: none"> Ensure that the cable or IDE connectors are not damaged, bent or dented. Check especially the pins.
Writing errors occur (Buffer under-runs).	<ul style="list-style-type: none"> Network used. Mouse moved or window screen saver activated while writing. Other application running. 	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Disable "Auto thermal re-calibration" in the BIOS setup. Use another Hard Disk if can not disable it.
	Defective CD-R/RW media.	<ul style="list-style-type: none"> CD-R/RW media may be dirty, scratched or damaged. Rewrite on another CD-R/RW media.
	Short of Hard Disk capacity.	<ul style="list-style-type: none"> 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.	Bad connection between IDE cable and your CD-RW drive.
Conflicts with other IDE devices.		<ul style="list-style-type: none"> Ensure the Master/Slave device setting of CD-RW if not conflict with the other IDE device connected to the same IDE port.

Symptom	Possible Causes	Solutions
	Using other authoring software which not supports your CD-RW drive.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.
File name error, mismatch Windows95/98 and Windows NT 3.51.	Long file name used in writing.	<ul style="list-style-type: none"> Unlike Windows95/98/NT 4.0, long file names cannot be used in Windows NT 3.51. Writing in the authoring software with a "Romeo" or "Juliet" designation results in character error. When working in Windows NT 3.51, write the file names with DOS type (8+3 format).
Can not write at highest speed.	CD-R/RW media not compatible with highest speed.	<ul style="list-style-type: none"> Use the highest speed compatible discs or write with lower speed.
	Buffer under-run occurs.	<ul style="list-style-type: none"> Refer to the "Buffer under-run" item.
	Defective CD-R/RW media.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.

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.

Appendix A Specification

Interface	ATAPI / E-IDE
Disc diameter	8cm/12cm
Data transfer rate	
Read (CD-ROM)	Maxx. 48X (7200KB/sec, CAV)
Write (CD-R)	48X (7200KB/sec, CLV)
Rewrite (CD-RW)	16X (2400KB/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 panel	Busy/write/rewrite LED, Lid button, Rotary volume control, Earphone jack, Eject key
CD load	Motorized loading system
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 50°C storage: -40°C to 60°C
Humidity	operating: 15-80% R.H. (Non-condensation)
Dimensions	
W x H x D	145.8 x 41.3 x 190 mm
Weight	1Kg (typical)
Power specification	DC +12V ±5%, DC +5 ±5%
M.T.B.F.	70000 POH, at room temperature 25% duty cycle condition