



Internal CD-ROM Reader

CDR-3001

User's Manual





Laser Safety Information

This drive employs a laser. Do not remove the cover or attempt to service this device when connected due to the possibility of eye damage.

CAUTION

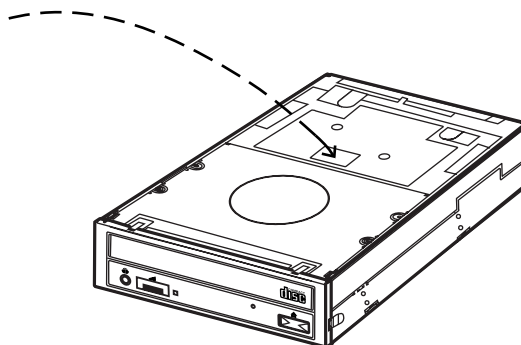
Use of control of adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This label is located on upper enclosure of this drive.



Laser Specification

Type : Semiconductor laser GaAlAs
Wave length : 760 - 810 nm (at 25°C)
Output : 5 mW





NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

LE PRÉSENT APPAREIL NUMÉRIQUE N'ÉMET PAS DE BRUITS RADIOÉLECTRIQUES DÉPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMÉRIQUES DE CLASSE B PRESCRITES DANS LE RÈGLEMENT SUR LE BROUILLAGE RADIOÉLECTRIQUE ÉDICTÉ PAR LE MINISTÈRE DES COMMUNICATIONS DU CANADA.

CAUTION

The user who makes changes or modifications to the unit without the express approval by the manufacturer will void user authority to operate the equipment.

ACHTUNG

Der arbeitsplatzbezogene Geräuschemissionswert dieses Gerätes beträgt $\leq 70\text{dB (A)}$ nach EN 27779/1991.

Notice

Only CD-ROM discs carrying the label below can be used with this CD-ROM reader.





HEED THE FOLLOWING

Read the operating instructions carefully before using the unit and be sure to use it properly. After reading the instructions, store them in an easily accessible place so they can be consulted whenever necessary.

WARNING



- Continued use should there be an irregularity (smoke, abnormal smell or sound, etc.) will lead to fires or electric shocks. If there should be an irregularity, immediately turn off the power of the computer on which the unit is installed and request servicing.



- Do not disassemble or modify the unit in any way. Doing so will lead to fires or electric shocks.



- Make sure that no foreign objects get in the unit, as this will lead to fires or electric shocks. If a foreign object should get in the unit, immediately turn off the power of the computer on which the unit is installed and request servicing.



- Do not let fluids get in the unit or let the unit get wet, as this will lead to fires or electric shocks. If fluid should get in the unit, immediately turn off the power of the computer on which the unit is installed and request servicing.

- Do not use with any power voltage other than the indicated voltage. Doing so will lead to fires or electric shocks.

- Do not store or use the unit in places where it may be subject to shocks or strong vibrations. Doing so will lead to fires or electric shocks.

- Do not store or use the unit in places where it may be exposed to chemicals or chemical vapors. Doing so will lead to fires or electric shocks.

**⚠ CAUTION**

- When connecting computer equipment, audio equipment, speakers, etc., be sure to read the respective manuals carefully, turn off the power, and follow the connection instructions. Using cords other than the specified cords or extending cords could generate heat and result in burns, etc.



- Set the volume to the minimum before turning on the power. Sudden bursts of loud sound could result in hearing impairment.
- Do not store or use the unit in extremely hot places or places where the humidity fluctuates greatly. Doing so could lead to fires or electric shocks.
- Do not store or use the unit in places exposed to direct sunlight or near equipment that generates heat. Doing so could lead to fires.
- Do not place the unit on unsteady tables, slanted surfaces or other unstable surfaces. The unit could fall or tip over, resulting in injury.
- Do not store or use the unit in humid or dusty places. Doing so could lead to fires or electric shocks.
- Do not store or use the unit with heavy objects or objects that stick out past the frame on top of it. The object or unit may lose its balance and tip over or fall, resulting in injury.
- Do not let stick your hands into the disc insertion slot, as this could cause injury.
- Do not use cracked or misshapen discs or discs that have been repaired with adhesives, etc. Discs rotate at high speeds inside the unit. If such discs are used, they may break and fly out, resulting in injury.
- Do not look directly at the laser source. Exposing the eyes to the laser beam could result in vision impairment.
- When used near a radio or TV, the unit may generate noise in the radio or TV. Also, if there is equipment generating strong magnetic forces nearby, this may generate noise in the unit.



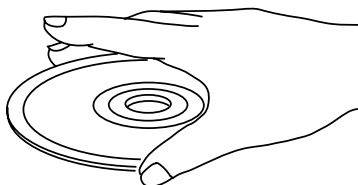
Cautions

Cleaning

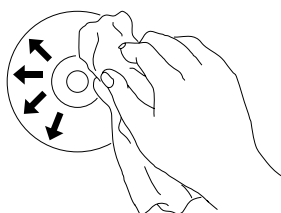
To clean the CD-ROM reader, wipe it with a soft, damp cloth, using mild detergent if necessary. Please avoid using solvents such as benzine or paint thinner. This can cause color changes or deformation of the CD-ROM reader.

Handling the Disc

- Do not touch the data side of the disc (the side of the disc with no label or printing).



- Do not apply paper labels or write on any part of the disc, data side or label side. Do not use the disc leaved a mark strip paper labels.
- If dust or fingerprints get on the disc, wipe it with a soft cloth from the center to the edge.



- Do not use benzine, paint thinner, record cleaner, or static repellent. This can damage the disc.
- Do not place the disc in any place where it will be subjected to direct sunlight or high temperatures.



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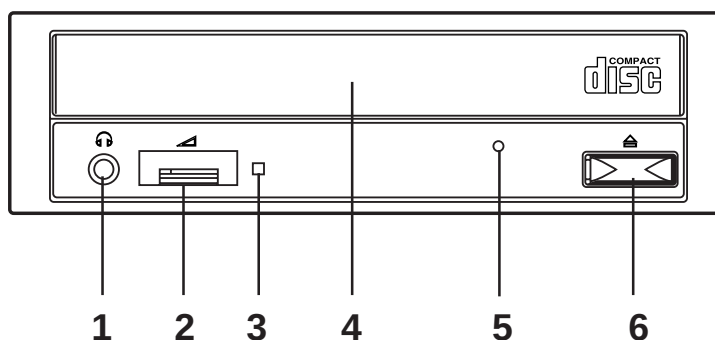
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Part Names and Functions

Front View



1 Phones Jack

This jack is used to connect a set of headphones. Please use headphones with a stereo mini-jack plug.

2 Volume Control

This control is used to adjust the headphone volume.

NOTE: This control has no effect on the audio output from the LINE OUT connector on the back of the CD-ROM reader.

3 BUSY Indicator

This indicator lights amber while data is being read.

4 Tray Panel

This panel prevents dust from entering the CD-ROM reader.

The CD tray will be ejected when the Load/Eject button is pushed.

5 Emergency Eject Hole

Use to remove the disc from the CD-ROM reader if the electrical eject is disabled by software or if power failure occurs. (See page 14 "Emergency Eject" for details.)

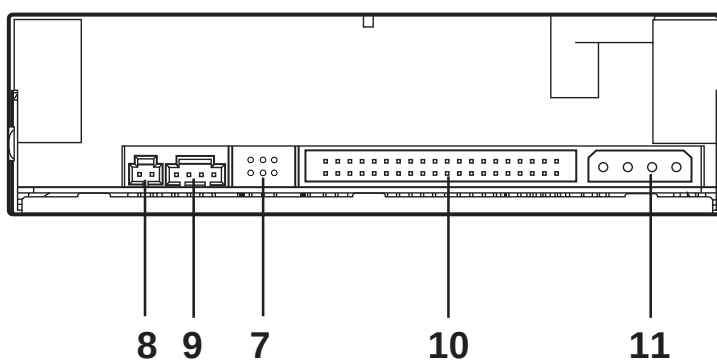
6 Load/Eject

This button is pressed to eject or retract the CD tray when the power is on.



8

Rear View



7 Jumper Blocks

These blocks of jumper locations set the configuration for the CD-ROM reader. (See page 9, "Jumper Setting" for details.)

8 DIGITAL OUT Connector

This connector is used to connect Digital Audio to an audio board.

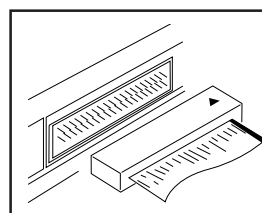
9 Line Out Connector

This connector is used to connect CD-Audio to an audio board.

10 I/O BUS Connector

This BUS connector is used to control the CD-ROM reader and sent data. Use a flat ribbon cable to connect your computer to the CD-ROM reader.

Connect the colored side of the ribbon cable to the side marked with the arrow (▽). (See page 12 for details of this connection.)



11 Power Connector

Use this to provide operating power from the host computer. (See Page 11 for details of this connection.)

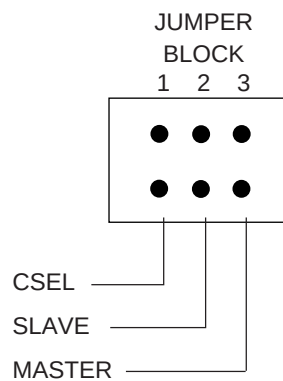




Installation

Jumper Setting

A jumper consists of a pair of pins and a connector which fits over the pins. When the connector is in place it establishes an electronic link between the pins, which enables the function being controlled by the jumper. If the connector is removed, the electronic link is broken and the function is disabled.



Jumpers are used to set the CD-ROM reader mode on the IDE interface.

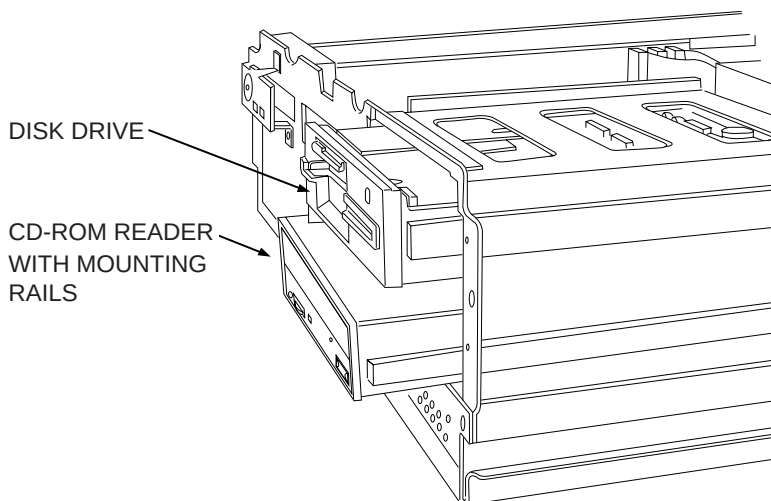


Installing the CD-ROM reader in a host PC

Note

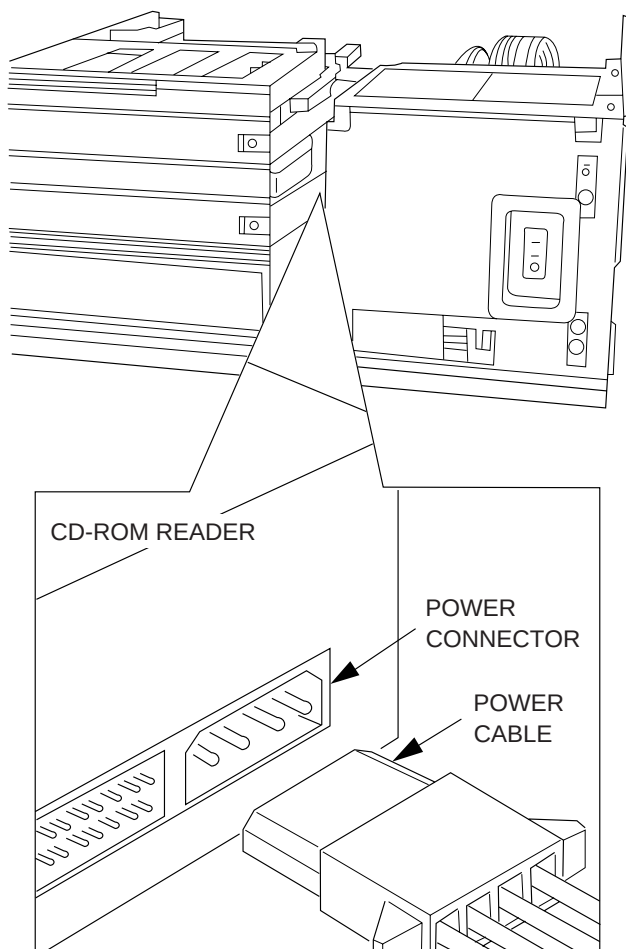
Refer to the guidebook included with your personal computer for instructions on installing the CD-ROM reader. This chapter gives one example of installation.

1. Attach the mounting rails to both the left and right sides of the CD-ROM reader.
2. Turn off the computer, other peripherals and unplug all the cords and cables. Then remove the computer cover, face plate, mounting clips, and keeper bracket. Refer to the Guide to Operations that came with your computer for help with this step.
3. Slide the disk drive out approximately 50 ~ 70mm (2 ~ 3 in.), but do not disconnect the cables.
4. Slide the CD-ROM reader into the computer until it is even with the disk drive.



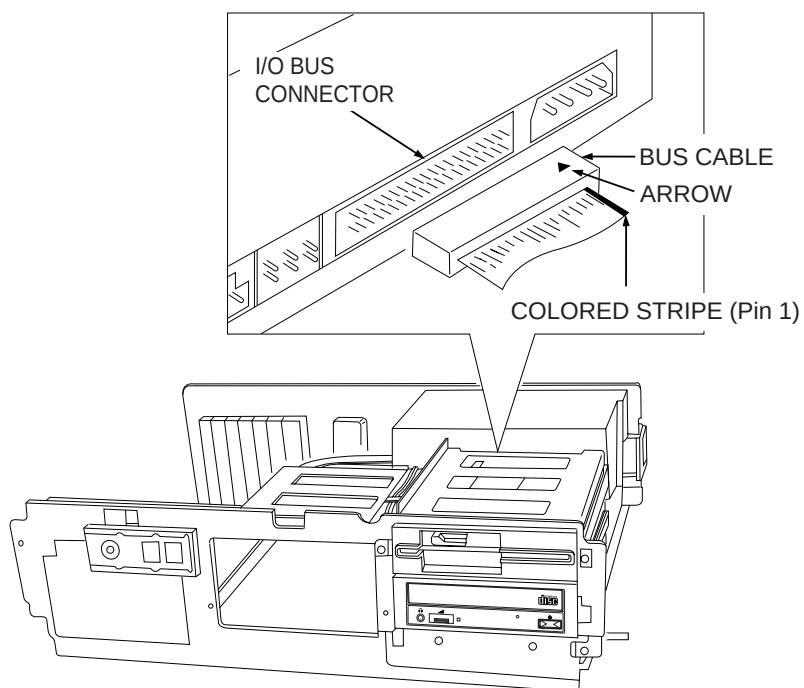


5. Locate a spare power cable in your computer.
6. Connect that power cable to the power connector on the back of the CD-ROM reader.





7. Connect the I/O BUS connector on the CD-ROM reader and the IDE connector.
Connect the colored stripe side of the cable to the side marked with the arrow (▽).



8. Slide the disk drive and CD-ROM reader into the computer.
9. Replace the mounting clips, keeper bracket, and computer cover.

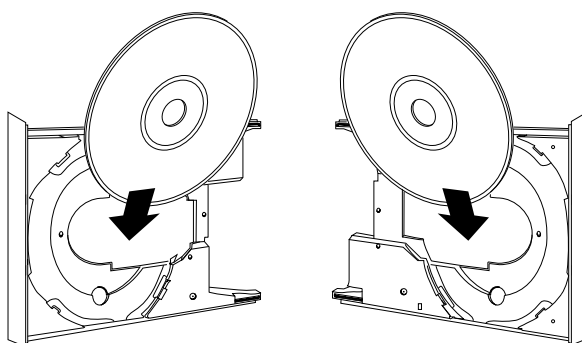




Inserting/Removing a CD

Using the CD-ROM Reader Installed Vertically

When using the CD-ROM reader, in the vertical position, load and unload discs as shown on the diagram below.



CD-ROM reader installed vertically
(right side)

CD-ROM reader installed vertically
(left side)

Caution

Only 12cm discs can be used when the CD-ROM reader is installed vertically. Do not place 8cm discs in the tray when using the CD-ROM reader installed in this way.

Inserting a CD

1. Press the Load/Eject button. The CD tray will be ejected.
2. Place the disc in the center of the tray with the label side facing up.
3. Press the Load/Eject button. The CD tray will be retracted.

Removing a CD

1. Press the Load/Eject button. The CD tray will be ejected.
2. Remove the disc.
3. Press the Load/Eject button. The CD tray will be retracted.

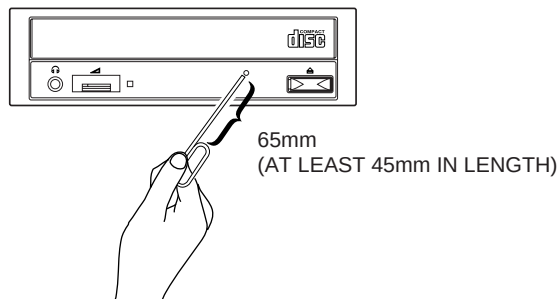
Note:

If an eject prohibit command has been received from the computer, the CD tray will not be ejected even if the Load/Eject button is pressed.

Emergency Eject

The procedure described below can be used to remove a disc from the CD-ROM reader if the Load/Eject button is disabled by software or a power failure occurs.

1. Turn off the power to the computer installed the CD-ROM reader.
 2. Insert a steel rod (about 1.3 mm in diameter) into the emergency eject hole and push hard repeatedly 5 or 6 times. The CD tray is ejected about 10 mm. Pull it all the way out by hand.
- A stiff paper clip may be used as the steel rod.





Specifications

CD-ROM Section

User Data Capacity	656M bytes/disc (Mode 1) 748M bytes/disc (Mode 2)
Total Number of Blocks	336K blocks/disc (Maximum)
User Data Blocks	2048 bytes/block (Mode 1 and Mode 2, Form 1) 2336 bytes/block (Mode 2) 2328 bytes/block (Mode 2 Form 2)
Data Transfer Rate	2550K bytes/sec (Inner side of the disc) 6000K bytes/sec (Outer side of the disc)
Burst Transfer Rate	PIO mode 4 DMA Single word mode 2 DMA Multi word mode 2 Ultra DMA 33 mode 2
Access Time	85msec (1/3 Stroke read, average)
Hard Error Rate	Below 10^{-12} (After error correction)
Memory Buffer	128K bytes
Photo CD™ Compatibility	Multisession Photo CD™ Single session Photo CD™

Audio Section

Sampling Frequency	44.1kHz
Quantifying Bit Number	16-bit linear
Number of Channels	2
Frequency Response	20Hz ~ 20kHz $^{+1}_{-5}$ dB
S/N Ratio	80dB (1kHz)
Total Harmonic Distortion	0.09% (1kHz)
Wow & Flutter	Below measurable limits
Output	0.75 Volt

Environment

Ambient conditions for use	
Temperature	5 to 45°C
Humidity	30 to 70% (no condensation)
Ambient conditions for storage	
Temperature	-20 to 60°C
Humidity	30 to 90% (no condensation)

General

Power Supply	5V 1.1A, 12V 1.0A
Dimensions(W x H x D)	14.8 x 4.2 x 20.8cm (5 $\frac{13}{16}$ x 1 $\frac{5}{8}$ x 8 $\frac{1}{4}$ in.)
Weight.....	0.97kg (2.14 lbs)

Note: Above specifications are subject to change.

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