

CDU948S

CD-R Drive Unit

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User's Guide

Mode d'emploi

Bedienungsanleitung

Manual de instrucciones

Manuale d'istruzione

User's Guide

Mode d'emploi

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Manual de instrucciones

Manuale d'istruzione

Owner's Record

The model and serial numbers are located on the bottom of the drive. Record these numbers in the spaces provided below. Refer to them whenever you call upon your sales representative regarding this product.

Model No. _____ Serial No. _____

Safety Regulations

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Caution:

As the laser beam in this CDU948S is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

The use of optical instruments with this product will increase eye hazard.

The use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation.

DANGER
INVISIBLE LASER RADIATION WHEN OPEN.
AVIOD DIRECT EXPOSURE TO BEAM.
VORSICHT
UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG
GEÖFFNET
NICHT DEM STRAHL AUSSETZEN.

This label is located on the drive unit's internal chassis.

DANGER INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.
DANGER RADIATIONS INVISIBLES DU LASER EN CAS D'OUVERTURE.
EVITER TOUTE EXPOSITION DIRECTE AU FAISCEAU.
VORSICHT UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET.
NICHT DEM STRAHL AUSSETZEN.
ADVARSEL USYNLIG LASERSTRÅLING VED ÅBNING.
UNDGÅ UDS/ETTELSE FOR STRÅLING.
ADVARSEL USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES.
UNNGÅ EKSPONERING FOR STRÅLEN.
WARNING OSYNLIG LASERSTRÅLING NÅR DENNA DEL AR ÖPPNAD.
STRÅLEN ÅR FARLIG.
VAROI NÄKYMÄTÖN AVATTAESSA OLET ALLTINA LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEN.

This label is located on the bottom of the drive unit enclosure.

This unit uses CD-R discs with the following mark.



This unit uses CD-ROM discs with the following mark.



When you use this unit as a CD player, use compact discs with the following mark.



You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

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.

CLASS 1
LASER PRODUCT
LASER KLASSE 1
PRODUKT

This CD-R drive unit is classified as a CLASS 1 LASER PRODUCT.

The CLASS 1 LASER PRODUCT label is located at the bottom of the enclosure.

Trademarks

Windows and Windows 95/NT are registered trademarks of Microsoft Corporation. IBM-PC/AT is a registered trademarks of International Business Machines.

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Introduction

This manual assists you with the 4x write / 8x read CDU948S drive which uses CD-R media storing up to 650 Mbytes of data.

Features

The drive unit has the following features:

General

- 5 1/4 inch half-height drive form factor.
- Fast SCSI bus interface embedded (Based on SCSI-2).
- 2 Mbytes of buffer memory.
- Power loading and power eject.
- Emergency eject function allows manual caddy ejection.

Supported disc formats

- Reads and writes data in both CD-ROM, CD-ROM XA (additional hard- and software) standard formats.
- Reads and writes CD-BRIDGE format, includes PHOTO-CD.
- Reads standard CD-DA (“Red Book”) encoded discs, reads and writes CD-R discs conforming to “Orange Book Part II”.

Performance

- Supports read and write operation at standard, double, and quadruple speeds along with read-only at 8x speed.
- Fast access time assures high-speed reading and writing.

Audio

- Outputs 16-bit digital audio data over SCSI interface.
- Audio CD playback via Audio Out and headphones jack.

Note:

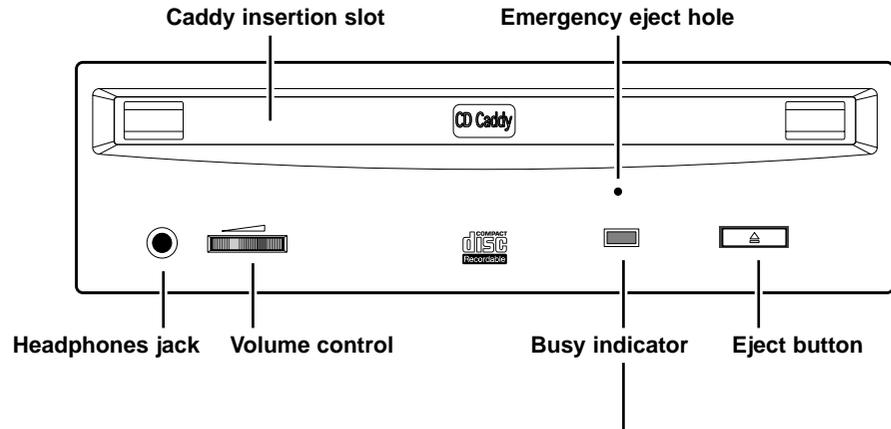
Please read this manual thoroughly before attempting installation.

System Requirements for WINDOWS 95/NT

- System requirements of format software
- SCSI host adapter card
- 20 MB or more free Hard Disc space
- 3.5" floppy disk drive
- Mouse (Microsoft-compatible)
- 16 MB of RAM or more

Location and Function of Parts and Controls

Front Panel

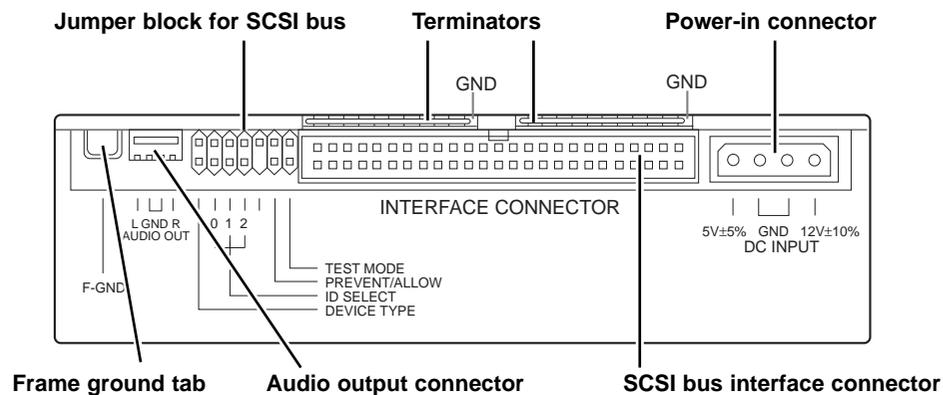


This indicator shows the unit's status in various phases of operation.

- Seek, read and write: Flashes amber
- Error: Lights up amber and stays lit

When the power is turned on, the indicator lights up green.

Rear Panel



Precautions

■ Installation

- Avoid placing the drive in a location subject to:
 - high humidity
 - high temperature
 - excessive dust
 - mechanical vibration
 - direct sunlight.

Only horizontal drive operation recommended, not tilted.

■ Operation

- Do not move drive during operation, it may cause an error.
- Avoid exposing the drive to sudden temperature changes as condensation may form on a lens inside the drive. Should the surrounding temperature suddenly rise during operation, wait at least 1 hour before turning off power. Operation immediately after a temperature rise may cause a malfunction as well.

■ Transportation

- Keep the original packing materials for future transport of the drive.
- Remove caddy before moving or repackaging drive.

Hardware Installation

Installing the Drive Unit into the Computer

Before starting this section, you may wish to consult your computer's manual for a more detailed description of installing new hardware.

Our example assumes an IBM-PC/AT compatible computer, a SCSI adapter card and a SCSI interface cable (50 pin flat) are supplied.

Getting Started

Assure a SCSI adapter is installed before installing the CD-R drive.

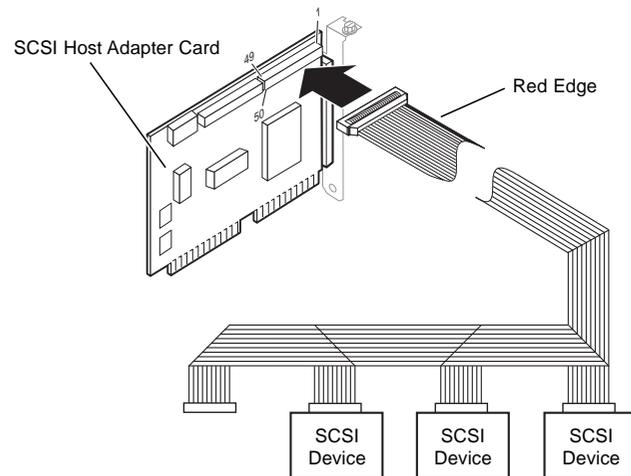
- Prepare the necessary parts and tools not supplied:
 - a screwdriver
 - Two mounting rails if computer has mounting tracks.
- **Unplug and disconnect any attached computer cables for your own safety. Restore power only after completing installation.**

Step 1: Opening the Computer

Remove the computer's cover as directed in the Owner's Manual.

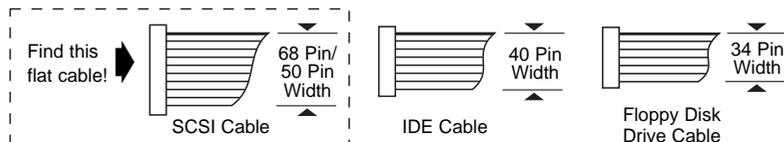
Step 2: SCSI Configuration

Locate the 50 pin SCSI cable in your computer. One end of the cable is connected to the SCSI host adapter card as shown below.



Note:

The following types of cables may be installed in your computer:

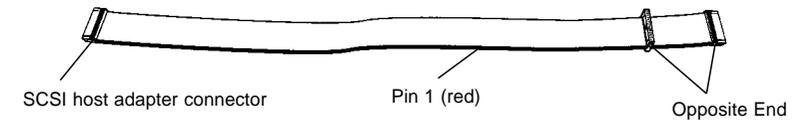


Note:

There may already be internal or external SCSI devices (HDD, Scanner, CD-ROM) connected to the SCSI cable. If so, you must determine the SCSI ID# of each SCSI device. This information will be required for Step 5 "Setting the Jumpers". Refer to SCSI device(s) for ID data. In some cases a SCSI chip set may be implemented in the motherboard.

Step 3: Finding the Connector

The SCSI cable should have 1 or more unused connectors on the end opposite the adapter, as shown, find a connector not in use. We recommend a connector at the very end of the 50 pin SCSI cable.



Note:

If no free 50 pin SCSI connector exists, see "Troubleshooting", page 19.

Step 4: Choosing the Configuration

■ SCSI ID selection

- If no other SCSI devices are in the system, we recommend the default jumper settings. In this case, go on to Step 6: "Connecting the Drive".
- If one or more SCSI ID's are assigned, you must determine if the default ID# 6 is free. If SCSI ID# 6 is assigned, you must change the CD-R drive to a free ID# via jumpers at rear of drive.

■ Termination

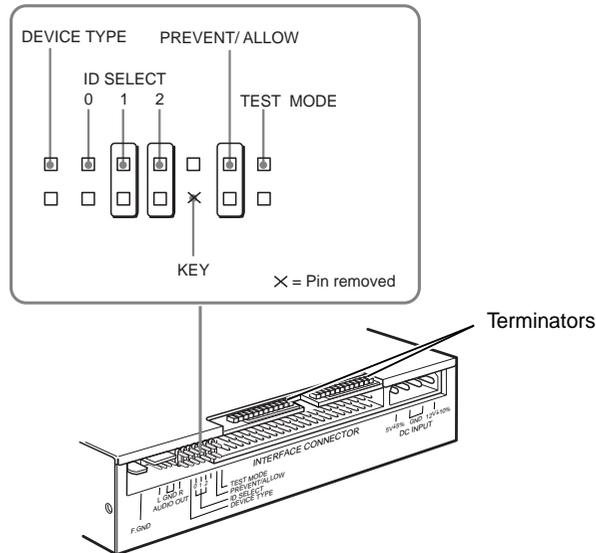
- If CD-R drive is on end of SCSI cable, leave terminators in place.
- If CD-R drive is not on end of SCSI cable or last physical device, carefully remove the drive termination (resistors) and assure the last physical SCSI device is properly terminated or activated.

Note:

Only the last physical SCSI device needs to be terminated.

Step 5: Setting the Jumpers

Set jumpers on rear of drive unit according to your computer configuration. Jumpers are factory preset as shown below.



The following table shows the function of each jumper.

Jumper	Function																																								
DEVICE TYPE	The setting of this jumper determines whether the SCSI device type code in the inquiry data is WO or CD-ROM. ON: WORM OFF: CD-ROM																																								
ID SELECT	Assign the drive unit's ID number by setting these jumpers to ON or OFF. Do not assign the same number as one used for other SCSI device. <table border="1" data-bbox="1556 518 2004 837"> <thead> <tr> <th>ID number</th> <th colspan="3">Jumper settings</th> </tr> <tr> <th></th> <th>0</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>1</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>2</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>3</td> <td>ON</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>4</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>5</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> <tr style="background-color: #cccccc;"> <td>6</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> <tr> <td>7</td> <td>ON</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	ID number	Jumper settings				0	1	2	0	OFF	OFF	OFF	1	ON	OFF	OFF	2	OFF	ON	OFF	3	ON	ON	OFF	4	OFF	OFF	ON	5	ON	OFF	ON	6	OFF	ON	ON	7	ON	ON	ON
ID number	Jumper settings																																								
	0	1	2																																						
0	OFF	OFF	OFF																																						
1	ON	OFF	OFF																																						
2	OFF	ON	OFF																																						
3	ON	ON	OFF																																						
4	OFF	OFF	ON																																						
5	ON	OFF	ON																																						
6	OFF	ON	ON																																						
7	ON	ON	ON																																						
KEY	Used to prevent the SCSI bus interface connector from being plugged in upside down.																																								
PREVENT/ALLOW	ON: Allows insert and removal of a CD caddy with the eject button and the eject command. OFF: Prevents insert and removal of a CD caddy with the eject button or an eject command.																																								
TEST MODE	ON: Enables test mode. OFF: Enables normal operation.																																								

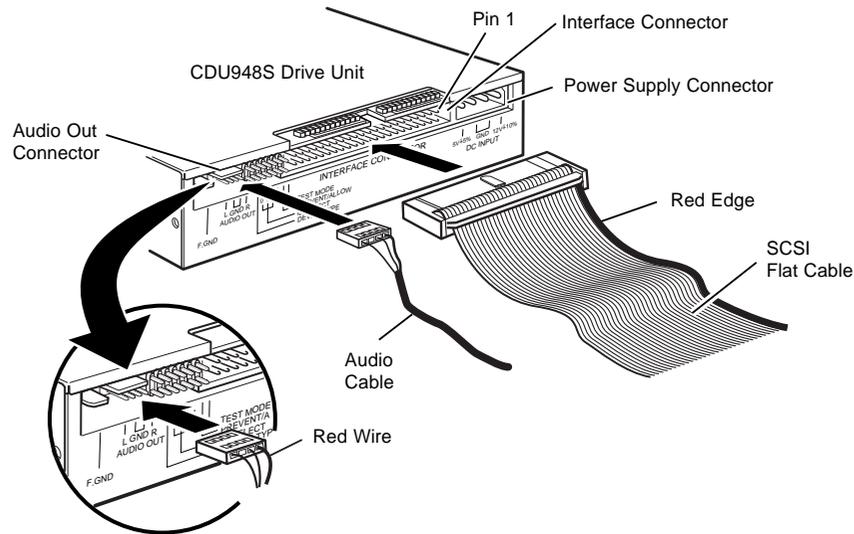
 Factory settings

Notes:

- The upper row of pins is (without position KEY) is ground.
- Remove jumper to set OFF, install jumper to set ON.
- ID SELECT, PREVENT/ALLOW, and TEST MODE are recognized when the power supply is turned on or the SCSI bus is reset.
- TEST MODE is used exclusively for factory testing. Do not set TEST MODE to ON. Doing so may cause unexpected results.

Step 6: Connecting the Drive

Attach flat SCSI cable to connector at rear of CD-R drive.



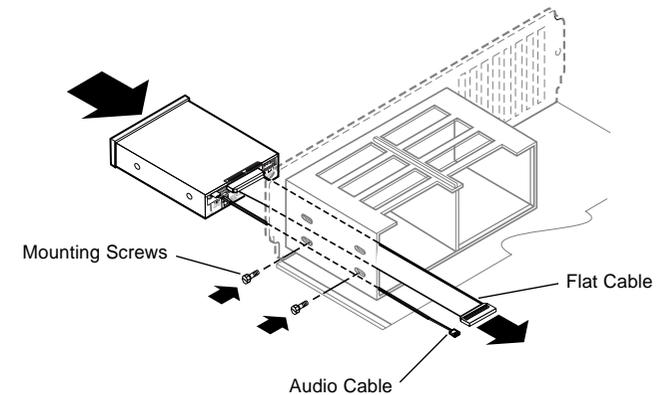
Notes:

The 50 pin flat SCSI cable must be firmly attached with its red edge (Pin 1) positioned next to the power supply connector.

If your computer has a Sound Card, an Audio Cable may be connected to the rear of the CD-R drive. Contact a local dealer if cable is required.

Step 7: Mounting the Drive

Insert the CD-R drive into computer front as shown, routing cables accordingly. Secure drive to frame with appropriate screws.

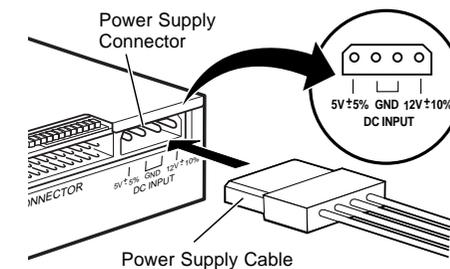


Note:

Slide rails (not included) may be necessary if CD-R drive cannot be secured. Refer to computer's User's Guide for more information.

Step 8: Connecting the Power Cable

Locate an available power supply cable, within computer, and connect it to the rear of CD-R drive as shown.



Note:

The power supply cable connector is designed to fit one way, do not force it upside down, this could damage drive and void the warranty.

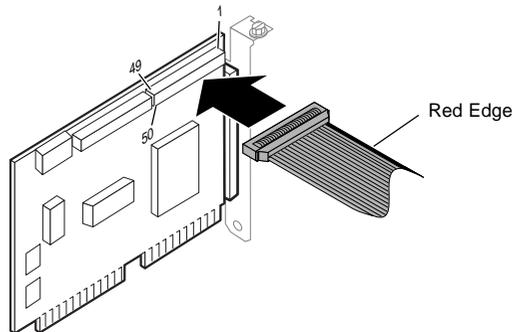
Software Installation

Please refer to CD-R formatting software manual for instruction on software installation. CD-R formatting software must first be properly installed in order to write CD's with the CDU948S drive.

Step 9: Installation Review

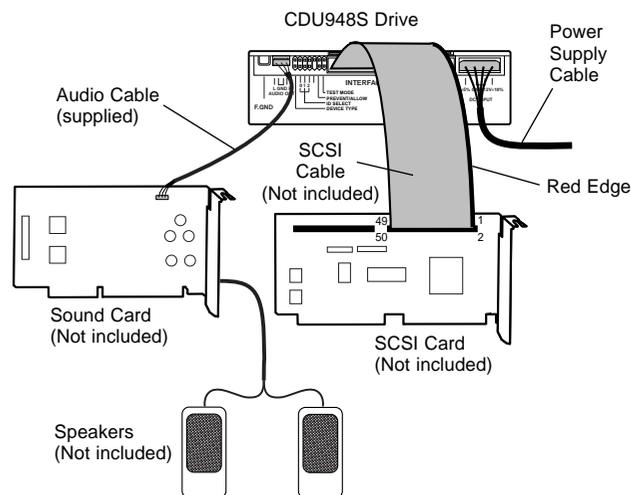
Now review the hardware installation process, assuring that:

- All connectors are properly connected.
- Each SCSI device has its own unique SCSI ID number.
- The last physical SCSI device on the bus is properly terminated.



Notes

- Red edge of 50 pin flat SCSI cable must be on pin 1 of host adapter.
- The following is a sample configuration of CDU948S installation.



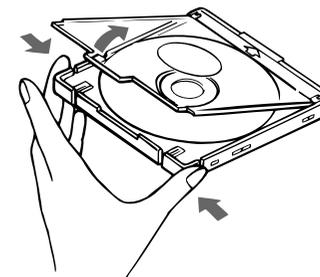
Step 10: Closing the Computer

Carefully replace computer cover and reinstall screws, per Owner's Manual. Now hardware installation is complete.

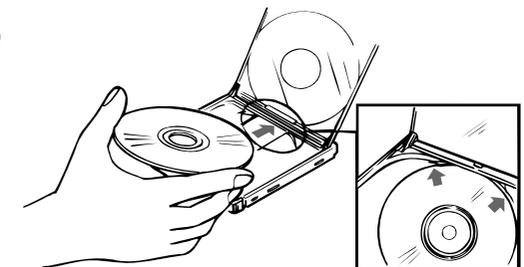
Using Discs and Caddies

Loading a Disc into a Standard Caddy

1 Press both tabs at opposite end to shutter to open caddy lid.



2 Place a disc, label up, into the caddy.



Note:

CD-R disc's recording surface must be clean, please do not touch it. Data cannot be recorded if CD's recording surface is contaminated.

Operating the Drive

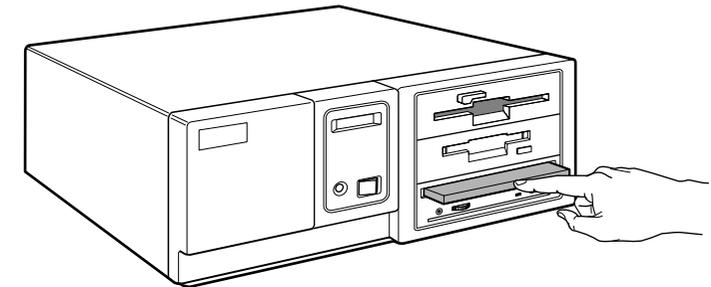
Assure application software is installed before using the CD-R drive.

Starting Up

- 1 Turn on the power supply.
- 2 Insert caddy into drive slot with disc label facing up. Push gently until auto-load mechanism pulls caddy into drive.

Important:

When loading a caddy, do not attempt to overpower the auto-load.



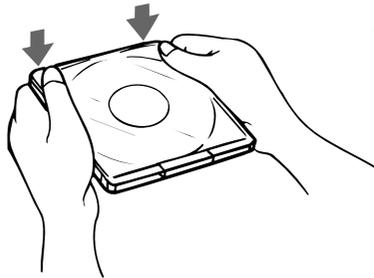
As the drive begins reading the Table of Contents (TOC) data, the busy indicator lights amber and remains illuminated until read is completed. When the busy indicator changes to green the drive is ready to receive commands, data may be retrieved from the disc. After loading a disc, it takes a moment for the drive to become ready while Program Memory Area is read. From this point, follow instructions provided with the application software.

Notes:

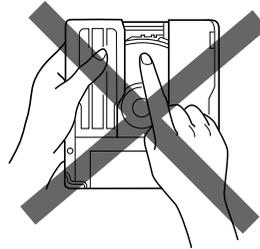
- Drive will not permit caddy insertion if:
 - PREVENT/ALLOW option in jumper block is set to OFF.
 - Host computer is set to PREVENT mode via software.
- Busy indicator on drive continues to light amber if:
 - Disc is not properly inserted or a malfunction occurs.

In such a case, eject the caddy and reinsert it properly. Should the light remain amber, consult dealer or qualified service point. During audio play the busy indicator remains amber, this is normal.

- 3 Close the lid firmly.



- 4 Do not manually open slide.



Storing Discs and Caddies

- Remove the caddy from the drive before moving drive.
- Do not store the disc or caddy in a location subject to:
 - high humidity
 - high temperature
 - excessive dust
 - direct sunlight

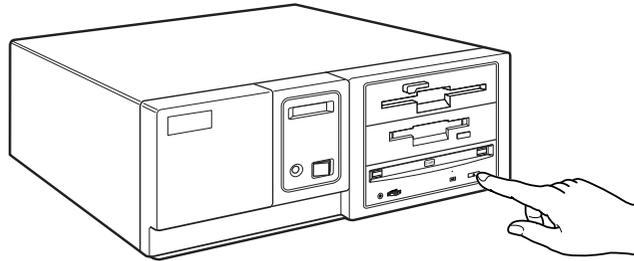
Care of Discs

- Only hold disc by its edge. Do not touch the record surface.
- Wipe CD-ROM disc with optional CD cleaner to clean it.
- Do not wipe CD-R discs before recording data. To avoid scratching the recording surface, blow away dust using an air blower.

Troubleshooting

Ejecting a Caddy

- 1 Turn on the computer's power supply.
- 2 Press eject button on the drive unit



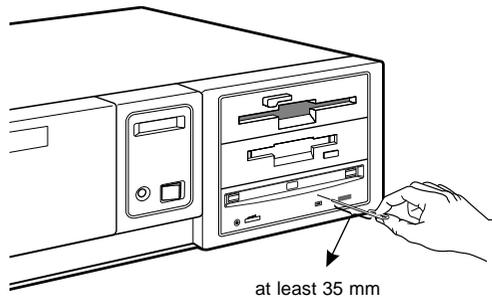
Notes:

- Eject button does not function if software disabled.
- To eject a caddy when physical eject is software disabled:
 - Assure jumper block's PREVENT/ALLOW is set to ON.
 - Switch computer off, then on or software reset SCSI bus.

■ Ejecting a caddy manually in an emergency

In the event of electrical or mechanical drive failure, a manual emergency eject is provided to allow manual caddy removal.

- 1 Turn off the computer.
- 2 Insert a pointed object, perhaps a paper clip, into the emergency eject hole and push (typical force required is 46 N [4.7 kg]).



After thus removing caddy, consult dealer or qualified service point.

Should problems arise installing or operating the drive:

- Please verify the steps of this manual were carefully followed.
- If problem still exists, please confirm the items in "Checklist" below.

Checklist

Please verify the following:

- Power cable properly attached to drive, Step 8 on page 13.
When properly connected, the LED lights green.
- Both ends of SCSI cable are properly attached, check pin 1 position.
- SCSI ID# of CD-R is unique to SCSI bus. Compare all other SCSI devices (internal and external) and see Step 2 – Step 5, pages 8-10.
- Check all other jumpers on rear of drive. We recommend factory defaults on pages 10 and 11 with a SCSI ID# 6 (if possible).
- Assure SCSI bus is properly terminated or activated at both ends.
For details, please see Step 4, Termination, on page 9.

Should you still have problems operating or installing your CD-R drive, please contact Hotline or local computer dealer.

Additional Installation Cases

■ No free SCSI connector present

If other SCSI devices occupy every bus connector, either remove a device before installing CD-R drive or use a SCSI cable with more connectors. Please contact local computer dealer for details.

■ 68 Pin SCSI Cable

If only a wide SCSI cable (68 pin) exists in the computer, a 50 pin adapter is necessary.

Specifications

■ General

Host interface	SCSI-2, single ended, 50 pin
Supported Read / Write formats:	CD-ROM Mode-1 & -2 CD-ROM XA (Mode-2, Form 1 & 2) CD-Audio Audio-combined CD-ROMs (includes CD-EXTRA) CD-I (Mode-2, Form 1 & 2), CD-I Ready CD-Bridge CD-R conforming to “Orange Book Part II”
Read only:	
Write Methods:	Incremental Write Session at Once Track at Once Variable & Fixed Packet Track Reservation Disk at Once
Write/Read Speed:	
Write:	1X, 2X, 4X (2X only for packet write)
Read:	1X, 2X, 4X, 8X (1X=150 kbytes/sec)

■ Audio

Line out:	0.7 V at 47 k Ω
Headphone:	0.55 V at 32 Ω

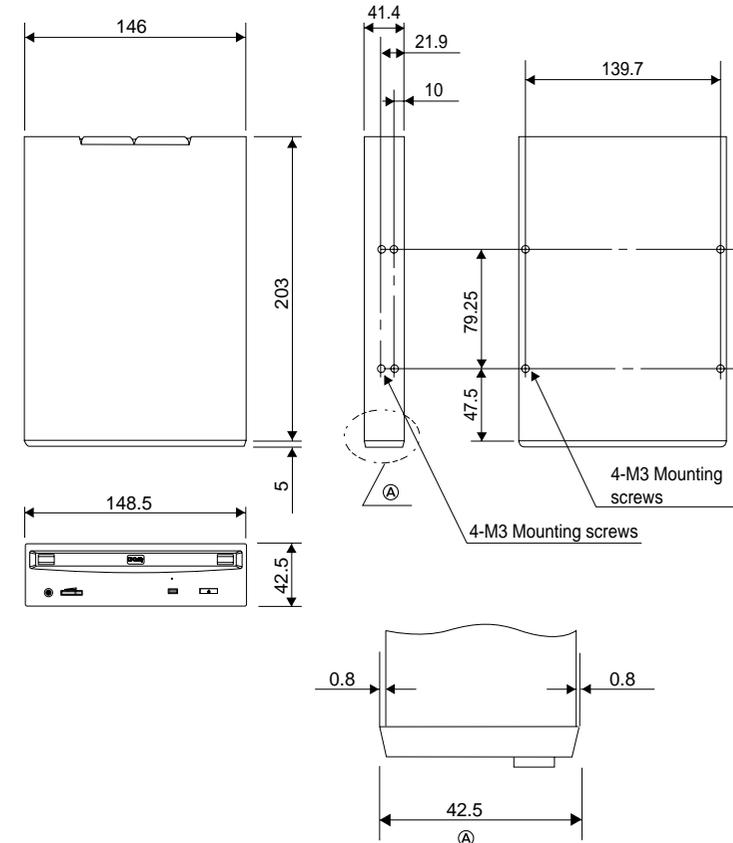
■ Environmental conditions

Relative humidity	10% to 90% (no condensation)
Climate gradient	10°C/hour, 10% humidity/hour
Temperatures	
Operating	5°C to 40°C (41°F to 104°F)
Transport	-40°C to 60°C (-40°F to 140°F)
(72 hours max.)	
Storage	-30°C to 50°C (-22°F to 122°F)
(6 month max.)	

■ Drive Mass

1.04 kg

■ Dimension diagram



Unit: mm

Important

Screws must not extend more than 4.0 mm into the side panels or the bottom plate.

Design and specifications subject to change without notice.