

HP 12x Speed
CD-ROM Disc Drive
User's Guide



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Contents

Preface

Audience	vii
Safety and Regulatory Statements	vii
Installation Notice	viii
Related Manuals	viii
Revision History	ix
Problems, Questions and Suggestions	ix
Documentation Conventions	x

Chapter 1 Preparing for Installation

General Description	1-2
Major Features of the CD-ROM Drive	1-3
CD-ROM Drive Environmental Requirements	1-4
CD-ROM Drive Physical Specifications	1-5
Preparing to Install the CD-ROM Drive	1-6
Tools Required	1-6
Verifying Kit Contents	1-6
Setting the SCSI-2 Address	1-7
Address Jumpers	1-8
Preparing the System	1-9
Single-Ended SCSI-2 Bus Configuration Constraints	1-12
SCSI-2 Bus Termination Guidelines	1-14
Power Off the Workstation and any Peripherals	1-15

Chapter 2 Using your CD-ROM Drive

Your CD-ROM Drive Configuration	2-2
SCSI ID and Device File Information for HP-UX 9.05	2-2
SCSI ID and Device File Information for HP-UX 10.0	2-2
Controls and Features of the CD-ROM Drive	2-3
Using the CD-ROM Drive	2-5
Media Description	2-5
Disc Tray Description	2-6
Loading a CD-ROM Disc in a Horizontally Mounted Drive	2-7
Unloading a CD-ROM Disc in a Horizontally Mounted Drive	2-8
Loading a CD-ROM Disc in a Vertically Mounted Drive	2-9
Unloading a CD-ROM Disc in a Vertically Mounted Drive	2-11
Mounting a CD-ROM Disc	2-13
Unmounting a CD-ROM Disc	2-15
Reading the Busy Light	2-17

Chapter 3 Maintenance and Troubleshooting

Caring for the CD-ROM Discs	3-2
Troubleshooting	3-3
Check the Address Settings for Single-Ended Drives	3-3
Check the Hardware Installation	3-6
Recheck the Address Settings	3-7
Verify the System Operation using SupportWave	3-8
Removal And Replacement Procedures	3-12
Field Replaceable Units	3-12
Power Off the System	3-12
Removing and Replacing the CD-ROM Drive	3-12

Appendix A Safety and Regulatory Statements

Emissions Regulations	A-2
Federal Communications Commission (FCC)	A-2
Canadian Department of Communications (CDC)	A-2
Emissions Regulations Compliance	A-3
Electrostatic Discharge (ESD) Precautions	A-4
LASERTURVALLISUUS	A-5
Laser Safety Statement (For U.S.A. Only)	A-5
IEC 825 Class 1 Laser Labels	A-6

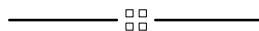
Appendix B SCSI Connector Pinout

Figures

1-1.	HP 12x Speed CD-ROM Drive	1-2
1-2.	HP 12x Speed CD-ROM Physical Specifications	1-5
1-3.	SCSI-2 Address Settings	1-9
2-1.	CD-ROM Drive Controls and Features	2-3
2-2.	CD-ROM Disc Tray	2-6
2-3.	Placing the CD-ROM Disc in the Disc Tray (Horizontal Mount)	2-7
2-4.	Removing the CD-ROM Disc from the Disc Tray (Horizontal Mount)	2-8
2-5.	Positioning the Bottom Disc Holders (Vertical Mount)	2-9
2-6.	Inserting a CD-ROM Disc (Vertical Mount)	2-10
2-7.	Removing a CD-ROM Disc from the Disc Tray (Vertical Mount)	2-11

Table

1-1.	Single-Ended SCSI-2 Bus Configuration Constraints (per bus)	1-13
2-1.	CD-ROM Drive Operating Controls and Features	2-4
B-1.	SCSI Connector Pinouts	B-1



Preface

The *HP 12x Speed CD-ROM Disc Drive User's Guide* describes how to install, configure, and use the HP 12x Speed CD-ROM Disc Drive with an HP 9000 Series 700 binary-compatible workstation.

We've organized this guide as follows:

- Chapter 1** Describes the preparation procedures for installing the CD-ROM Disc Drive into the system.
- Chapter 2** Describes the installation procedures for the CD-ROM Disc Drive and how to verify the CD-ROM Disc Drive installation.
- Chapter 3** Describes what to do if you experience problems when attempting to use the CD-ROM Disc Drive. It also explains how to check the installation of the new CD-ROM Disc Drive.

Audience

This guide is intended for use by anyone familiar with the *HP 9000 Series 700 Owner's Guide* who wants to install and configure the CD-ROM Drive.

Safety and Regulatory Statements

See Appendix A for the safety and regulatory statements that apply to the HP 12x Speed CD-ROM Disc Drive.

Installation Notice

Products designated in the applicable Hewlett-Packard price list as customer-installable can be installed by computer-knowledgeable customers who carefully read and follow the instructions provided. Customers who elect to have the product installed by our field personnel are charged the applicable field installation charge, as covered under the standard terms and conditions. For more information, please contact your local sales representative.

Related Manuals

For more information, refer to the following documents:

- The Owner's Guide that came with your system
- *HP-UX Installing Peripherals: HP 9000 Series 700* (B2355-90006)
- *Using Your HP Workstation* (A2615-90003)
- *HP Visual User Environment User's Guide* (B1171-90061)
- *System Administration Tasks HP 9000 Series 700 Computers* (B2355-90040)
- *Using HP-UX* (B2910-90001)

Revision History

The revision history for each edition of the manual is listed below:

Edition	Revision History
E0297	First Printing.

Problems, Questions, and Suggestions

If you have any problems or questions with our hardware, software, or documentation, please contact either your HP Response Center or your local HP representative.

Documentation Conventions

Unless otherwise noted in the text, this guide uses the following symbolic conventions:

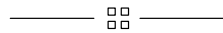
literal values Bold words or characters in formats and command descriptions represent commands that you must use literally. Pathnames are also in bold.

user-supplied values Italic words or characters in formats and command descriptions represent values that you must supply. Italics are also used in text for emphasis.

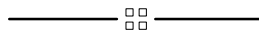
screen display Information that the system displays appears in this typeface.



A rectangle with rounded corners and a key label denotes a key on your keyboard. (In this manual we refer to the **Return** key. On your keyboard the key may be labeled either **Return** or **Enter**.)



This symbol indicates the end of a chapter or part of this guide.



Chapter 1

Preparing for Installation

This document describes the HP 12x Speed CD-ROM disc drive, and its installation, operation and maintenance.

This chapter introduces the CD-ROM disc drive and contains the following information:

- General description of the CD-ROM drive
- Major features of the CD-ROM drive
- Preparing to install the CD-ROM drive
- Powering off the workstation and any peripherals

General Description

The HP 12x Speed CD-ROM drive is a random access, read-only, mass storage device that uses removable CD-ROM discs. The drive contains a semiconductor laser for reading data optically, and includes an embedded controller with a SCSI interface.

The CD-ROM drive supports the ISO 9660 and High Sierra format standards. You can access information from the drive like any other disk drive, however, you may not write to the drive.

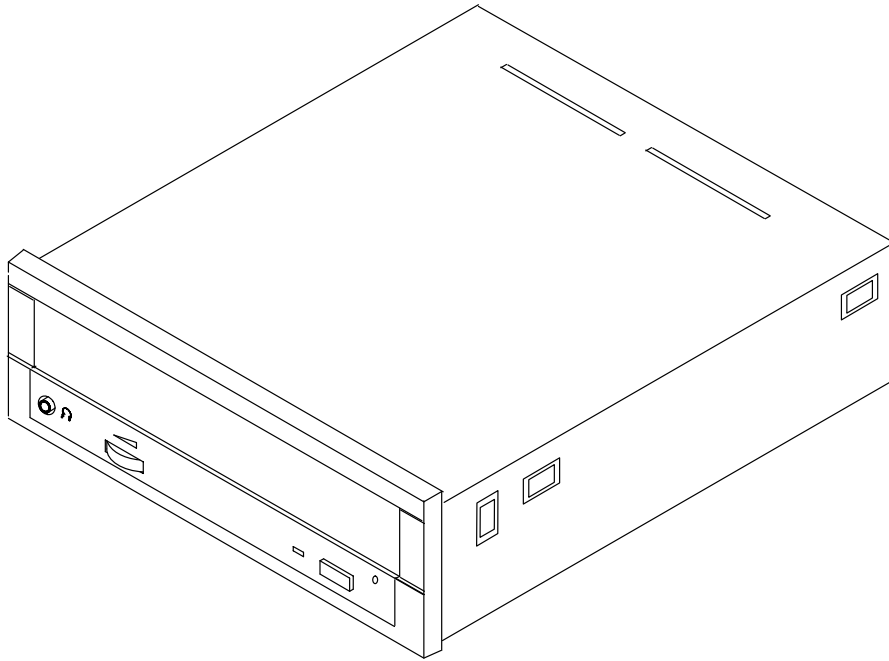


Figure 1-1. HP 12x Speed CD-ROM Disc Drive

Major Features of the CD-ROM Drive

The CD-ROM drive offers the following features:

- 12cm/8cm discs
- 1800 KB sustained transfer rate
- Supports 1X, 4X, or 12X rotational modes
- 125 ms random access time
- 115 ms random seek time
- Built-in SCSI controller
- Electric load/eject tray
- Emergency eject
- Remote SCSI ID jumper block
- Horizontal or vertical physical orientation
- Software volume control (L/R channel independent)
- Snap-on bezel
- Continuous rotary volume control for headphones
- Built-in SCSI terminator

CD-ROM Drive Environmental Requirements

The CD-ROM drive has the following environmental requirements:

- **Temperature**

Operating	5 deg. C to 40 deg. C (41 deg. F to 122 deg. F)
Non-Operating	-10 deg. C to 60 deg. C (14 deg. F to 140 deg. F)

- **Altitude**

Operating	3000 m (10,000 ft.)
Non-Operating	12000 m (40,000 ft.)

- **Humidity**

Operating @ 22 deg. C	8% to 80% RH (Non-Condensing)
Non-Operating @ 60 deg. C	5% to 95% RH (Non-Condensing)

CD-ROM Drive Physical Specifications

The following illustration describes the physical specifications of the CD-ROM drive.

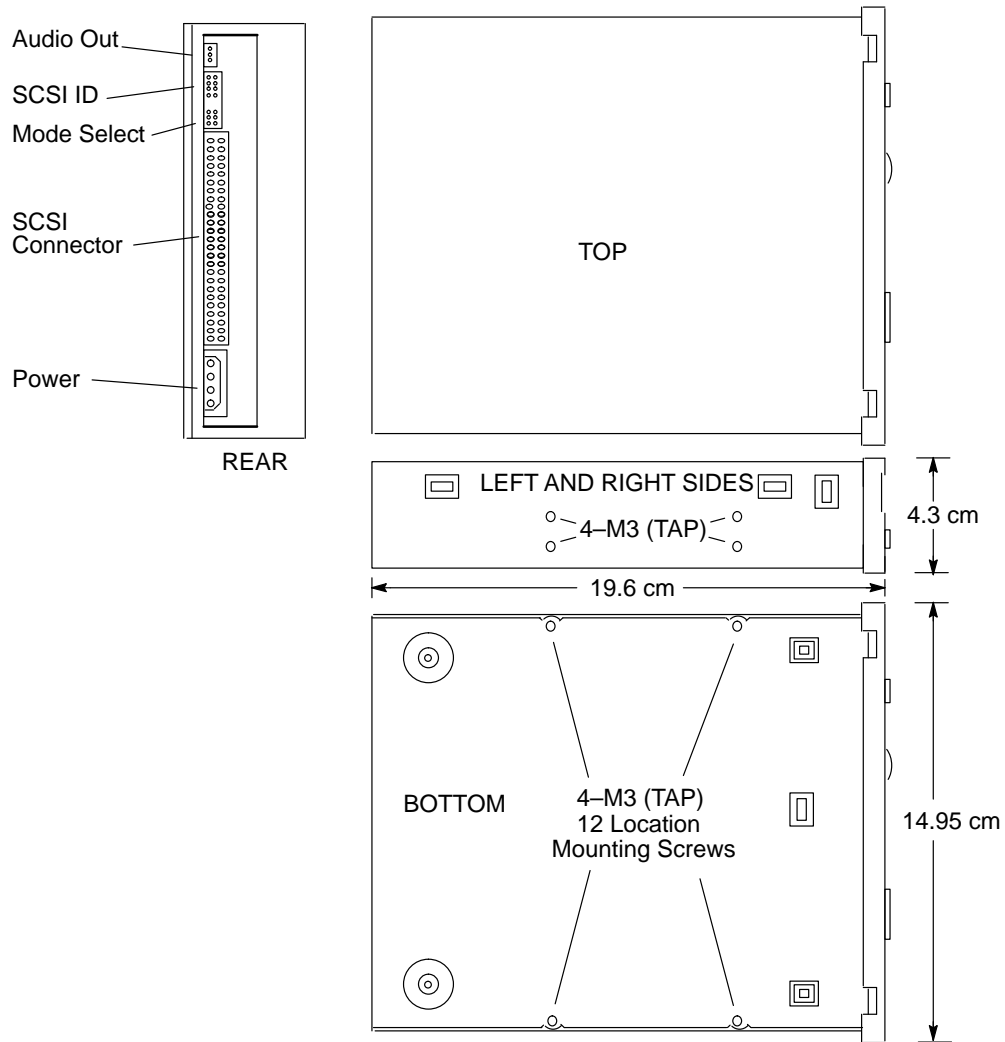


Figure 1-2. HP 12x Speed CD-ROM Disc Drive Physical Specifications

Set the SCSI Address

The CD-ROM drive must have a unique SCSI target address. The CD-ROM drive's jumpers are set at the factory to the SCSI default address of 2, as shown in Figure 1–3. You must also ensure that the operating mode jumpers are set for correct drive operation. We ship the drive with the operating mode jumpers set to operate correctly with your system. We recommend that you keep the default address if possible.

CAUTION: SCSI disk drives are susceptible to mechanical and electrostatic shock. When handling the disk drives, always wear the static-grounding wrist strap that came in the CD-ROM drive kit. Always handle the CD-ROM drive carefully.

Electrostatic charges can damage CD-ROM drives. To prevent such damage from occurring, observe the following precautions during unpacking and installation:

- Stand on a static-free mat.
- Wear a static strap to ensure that any accumulated electrostatic charge discharges from your body to ground.
- Connect all equipment together, including the static-free mat, static strap, routing nodes, and peripheral units.
- Keep uninstalled CD-ROM drives in their protective antistatic bags.

Address Jumpers

To set the drive's address, use the SCSI address jumpers. Perform the following steps to set the drive's address:

1. Attach the static-grounding wrist strap by following the instructions on the package that contains the strap. Attach one end of the strap to the system chassis.
2. Locate the address jumpers on the rear of the CD-ROM drive, as shown in Figure 1-3.
3. Set the drive's SCSI target address to an address that's not used by another SCSI device. Use jumpers, as shown in Figure 1-3.

NOTICE: Do not use SCSI address 7 because the system's SCSI controller uses address 7 by default. We advise that you do not use SCSI address 6 because the root disk drive uses it.

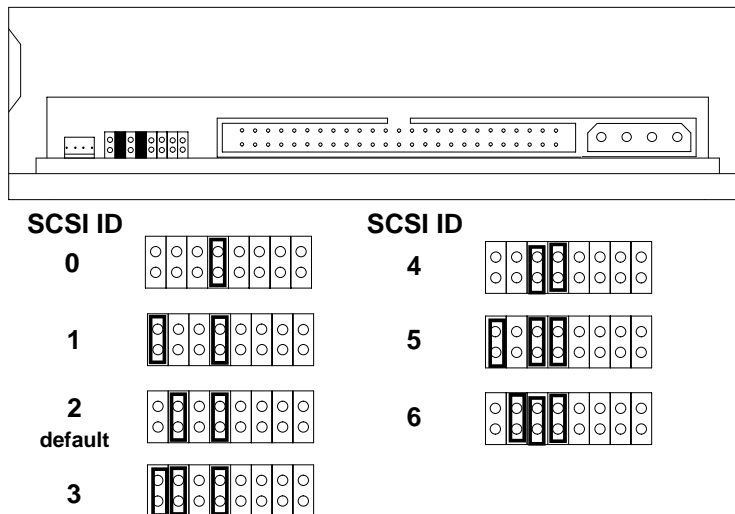


Figure 1-3. SCSI Address Settings

Preparing the System

Perform the following steps to prepare the system for the CD-ROM drive installation:

1. Determine the existing SCSI address settings currently in use on your system.

Before installing the drive, determine which SCSI ID address settings are already being used on your system by completing the following steps:

2. If you are using HP-UX 9.x, enter the following at the prompt:

```
/etc/ioscan -d scsi 
```

If you are using HP-UX 10.x, enter the following at the prompt:

```
/usr/sbin/ioscan -d sdisk 
```

After a few moments the **ioscan** utility lists all of the SCSI I/O devices it could find.

The list appears similar to the following:

H/W Path	Class	Description
=====		
	bc	
8	bc	I/O Adapter
8/0	ext_bus	GSC built-in Fast/Wide SCSI Interface
8/0.0	target	
8/0.0.0	disk	QUANTUM LPS1080WD
8/0.5	target	
8/0.5.0	disk	DEC DSP3210SW
8/0.6	target	
8/0.6.0	disk	DEC DSP3210SW
8/12	ba	Core I/O Adapter
8/12/5	ext_bus	Built-in SCSI
8/12/5.2	target	
8/12/5.2.0	disk.	TOSHIBA CD-ROM XM-4101TA
8/12/5.4	target	
8/12/5.4.0	disk.	SEAGATE ST3600N
8/12/5.6	target	
8/12/5.6.0	disk	MICROP 2112
10	bc	I/O Adapter
10/12	ext_bus	GSC add-on Fast/Wide SCSI Interface
10/12.4	target	
10/12.4.0	disk	SEAGATE ST31200W

3. Shut down the system.

If you are running HP-UX under HP VUE, shut down your system by performing the shutdown procedure described in the system Owner's Guide which came with your workstation.

If you are running HP-UX without HP VUE, shut down your system by typing the following command:

```
# /etc/shutdown -h 
```

You must have superuser privileges to use the **/etc/shutdown** command. If you do not have superuser privileges, contact your system administrator.

If your workstation is part of a cluster, refer to the *Managing Clusters of HP 9000 Computers* manual for instructions on shutting down.

Single-Ended SCSI Bus Configuration Constraints

For the single-ended SCSI bus, HP-UX supports only **one** of each type of removable-media disk drive (i.e., floppy disk, CD-ROM, or magneto-optical drives) and **two** of the same type tape devices (i.e., 4-mm DDS tape drives or 9-track tape drives) per SCSI bus. You may connect no more than seven SCSI devices to each single-ended SCSI bus.

Table 1–1 shows the configuration constraints for each single-ended SCSI device type. You may connect no more than seven SCSI device IDs to each single-ended SCSI bus. Some SCSI devices use more than one SCSI drive address. Each address must be accounted for in the maximum number of SCSI devices allowed.

CAUTION: Do not connect single-ended SCSI devices to a differential SCSI bus or differential SCSI devices to a single-ended SCSI bus. Connecting a SCSI device to the wrong SCSI bus can cause system failure.

Table 1-1. Single-Ended SCSI Bus Configuration Constraints (per bus)

Single-Ended SCSI Devices	Maximum Number of Each Type of Device Allowed
Hard Disk Drives	7
Floppy Disk Drives	1
CD-ROM Drives	1
4-mm DDS Tape Drives	2
9-Track Tape Drives	2
650-MB Magneto-Optical Drives	1
Magneto-Optical Autochangers (see NOTICE below)	1
8-mm Cartridge Tape Subsystem	2
8 Serial Port Terminal Server	1
Maximum Number of SCSI Devices (per bus)	7
NOTICE: Magneto-Optical Autochangers use more than one SCSI drive address. Each address must be accounted for in the maximum number of SCSI devices allowed.	

SCSI Bus Termination Guidelines

There are certain guidelines to follow when terminating a SCSI bus.

CAUTION: Unless the SCSI bus is properly terminated, the bus will not operate. Terminators provide impedance matching on SCSI bus signal lines.

- The last device connected to the SCSI bus must be terminated with a SCSI terminator. Use a Hewlett-Packard K2291 50-pin low-density bail-lock active terminator or a Hewlett-Packard C2904A high-density thumbscrew active terminator to terminate the last SCSI option device.
- Any termination on other devices on the bus must be removed. This includes external termination plugged into a SCSI receptacle on the device, or internal resistor packs. (Refer to peripheral device or system configuration manuals for termination information.)

Powering Off the Workstation and any Peripherals

To power off the workstation and any peripherals, perform the following steps:

1. Power off the workstation, using the power switch on the front of the workstation.

CAUTION: Do not power off your workstation without first shutting down HP-UX. Powering off with HP-UX still running could damage the data on the disks associated with your workstation.

If you are already at the boot-administration level (the level used to check the SCSI IDs), you do not need to shut down before powering off.

If you accidentally rebooted HP-UX while determining the address settings, see “Preparing the System,” earlier in this chapter, for instructions on shutting down HP-UX.

2. Disconnect the power cord from the rear of the workstation and the wall outlet.
3. Power off any external peripherals attached to your workstation, and unplug their power cables from the wall outlet.

You are now ready to begin the hardware installation of your new CD-ROM drive. The step-by-step instructions for installing the drive are found in the System’s Owners Guide.



Chapter 2

Using Your CD-ROM Drive

This chapter provides the following information on using your CD-ROM drive:

- Your CD-ROM drive configuration
- Controls and features of the CD-ROM drive
- Using the CD-ROM drive

NOTICES: Be sure you read and understand the information on mounting and unmounting CD-ROM discs before you begin using your CD-ROM disc drive.

The CD-ROM drive is a read-only device. You may access files stored on a CD-ROM disc, but you cannot write to a CD-ROM disc.

Some procedures in this chapter require you to log in as **root**. If you cannot log in as **root**, contact your system administrator.

To verify HP-UX system operation, see the System Owner's Guide.

For more information on checking or reconfiguring the kernel for a device driver or file, see *System Administration Tasks Manual: HP 9000 Series 700 Computers*.

Your CD-ROM Drive Configuration

Your HP-UX operating system comes with preconfigured device files and drivers. If you use these preconfigured device files and drivers, you won't need to configure your CD-ROM drive with the operating system.

To create your own device files, you must reconfigure your drive with the operating system. You can use either the System Administration Manager (SAM) or HP-UX commands to set up the kernel and device files. With each, you must perform the following steps:

- 1.** Check the kernel for a device driver. If the device driver is not there, you must create one and then reconfigure the kernel.
- 2.** Create the appropriate device files.
- 3.** Add a CD-ROM file system (**cdfs**).

Controls and Features of the CD-ROM Drive

Figure 2-1 shows the operating controls and features of the CD-ROM drive. Table 2-1 describes each of these controls and features.

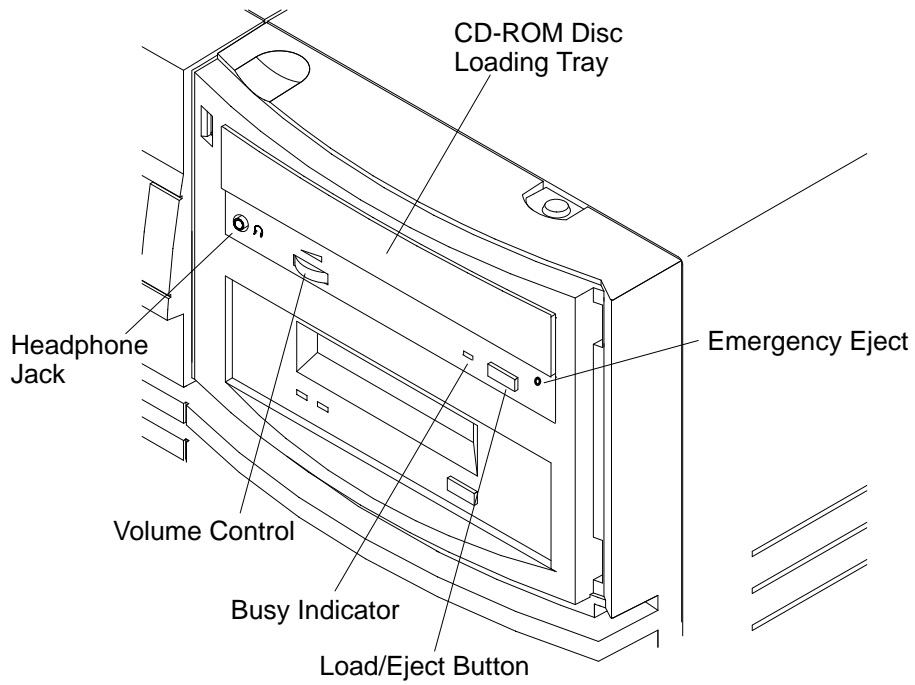


Figure 2-1. CD-ROM Drive Controls and Features

Table 2-1. CD-ROM Drive Operating Controls and Features

Control/Feature	Purpose
Load/Eject Button	Press the Eject Button to eject the disc tray. When the drive is in use, you must unmount the disc before ejecting it. Refer to “Unmounting a CD-ROM disc” later in this chapter for instructions on Unmounting a disc.
Busy Indicator	The Busy Indicator lights during a data access operation and blinks during a data transfer. The indicator stays out when there is one of the following: <ul style="list-style-type: none">• Defective disc• Disc insertion error (for example, an upside-down disc)• No disc present
Disc Loading Tray	Tray for loading the disc. Eject the disc tray to insert or remove a disc. The tray does not open if the drive power is off.
Emergency Eject	By inserting the end of a paper clip, you can eject the disc tray if the workstation does not have power.
Headphone Jack Volume Control	Provides for the use of headphones Adjusts headphone volume

Using the CD-ROM Drive

This section provides the following information about using the CD-ROM drive:

- Media description
- Disc tray description
- Loading and unloading the CD-ROM disc
- Mounting and unmounting a CD-ROM disc
- Reading the drive's busy light

Media Description

CD-ROM discs are identical to audio compact discs (CDs), except that they store computer data. CD-ROM discs are 120 mm (4.7 in.) in diameter, and use one data surface with a capacity of 600 megabytes.

Disc Tray Description

This CD-ROM drive is able to be mounted either horizontally or vertically. The disc tray has four disc holders which are used when the CD-ROM drive is mounted vertically. The CD-ROM drive may be mounted with the EJECT button positioned up or down. The disc holders slide to hold the disc in place. When the drive is mounted horizontally, the disc holders are not used and can be slid out of the way.

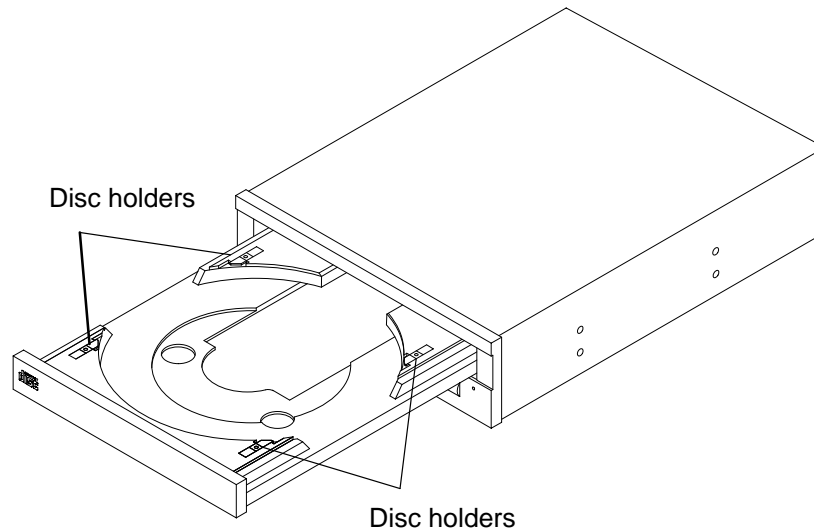


Figure 2-2. CD-ROM Disc Tray

Loading a CD-ROM Disc in a Horizontally Mounted Drive

This CD-ROM drive has an automatic loading/ejecting feature. To load a disc in the CD-ROM drive, follow these steps:

1. Check that the workstation is powered on.
2. To open the disc tray, press and release the load/eject button on the CD-ROM drive.
3. Ensure the disc holders are slid away from disc.
4. Hold the disc by the edges with the label side up and place it in the disc tray as shown in Figure 2-3.
5. To close the disc tray, push the front of the disc tray gently towards the drive until it closes by itself, or press the load/eject button.

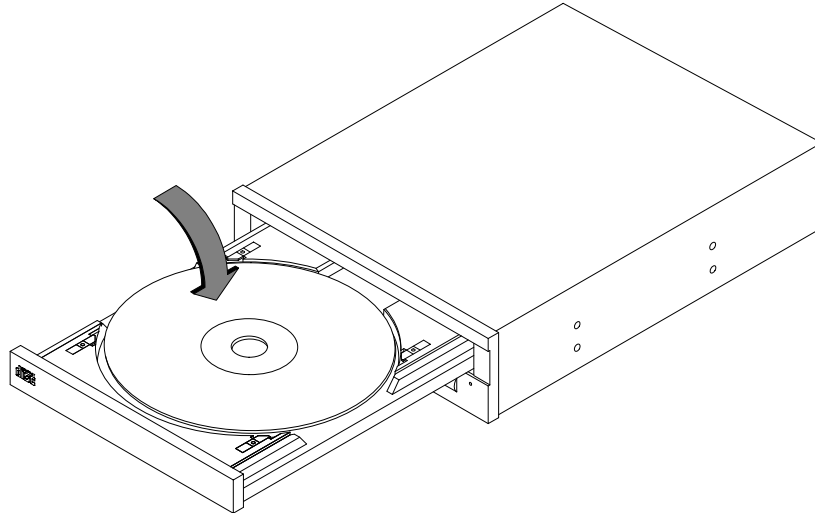


Figure 2-3. Placing the CD-ROM Disc in the Disc Tray (Horizontal Mount)

Unloading a CD-ROM Disc from a Horizontally Mounted Drive

Perform the following steps to unload a disc from the CD-ROM drive:

1. Press the eject button to eject the disc tray from the drive. If the drive is in use, you must unmount the disc to eject the disc tray. The emergency eject feature allows you to eject the disc tray if the normal procedure fails. See Table 2–1 earlier in this chapter.

NOTICE: You must unmount the disc before ejecting it from the drive. Refer to “Unmounting a CD-ROM Disc, later in this chapter.”

2. Wait until the drive has fully ejected the disc tray, then remove the disc from the tray as shown in Figure 2–4. Be careful to touch only the edges of the disc.

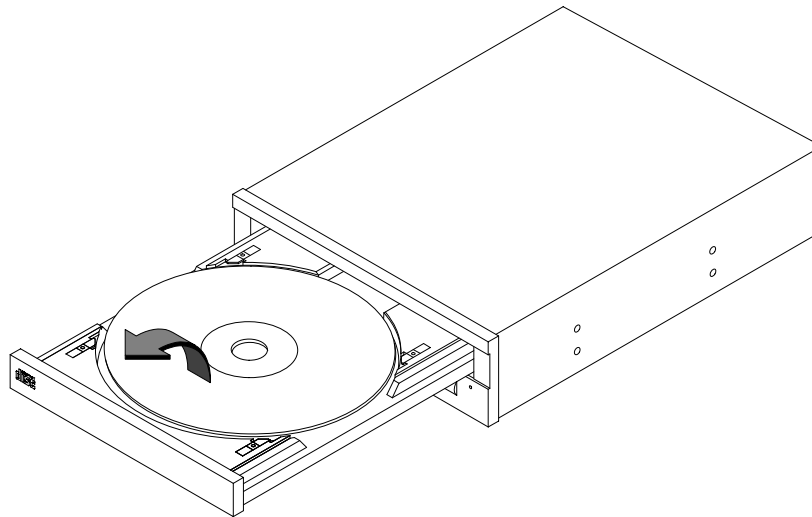


Figure 2–4. Removing the CD-ROM Disc From the Disc Tray (Horizontal Mount)

3. To close the disc tray, push the front of the disc tray gently towards the drive until it closes by itself.

Loading a CD-ROM Disc in a Vertically Mounted Drive

NOTICE: This procedure is the same for a CD-ROM drive mounted with the EJECT button positioned up or down.

1. Slide the two disc holders at the bottom of the tray towards each other until they snap into place, as shown in Figure 2-5.

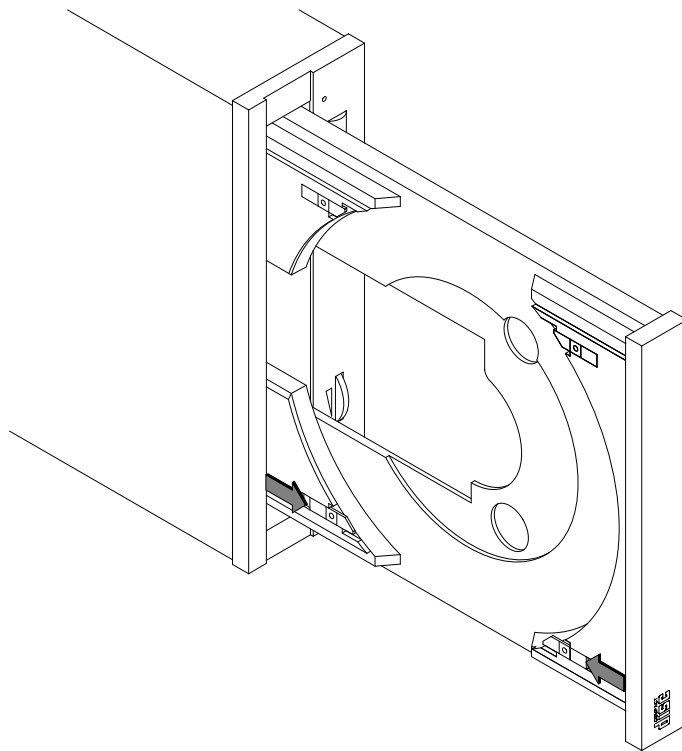


Figure 2-5. Positioning the Bottom Disc Holders (Vertical Mount)

2. Hold the disc with the label side to the left and place the edge of the disc into the tray and behind the disc holders at the bottom of the tray, as shown in Figure 2-6.

- 3.** Slide the disc holders at the top of the tray towards the disk until they snap into place so that they hold the disc in the tray.
- 4.** To close the disc tray, push the front of the disc tray gently towards the drive until it closes by itself.

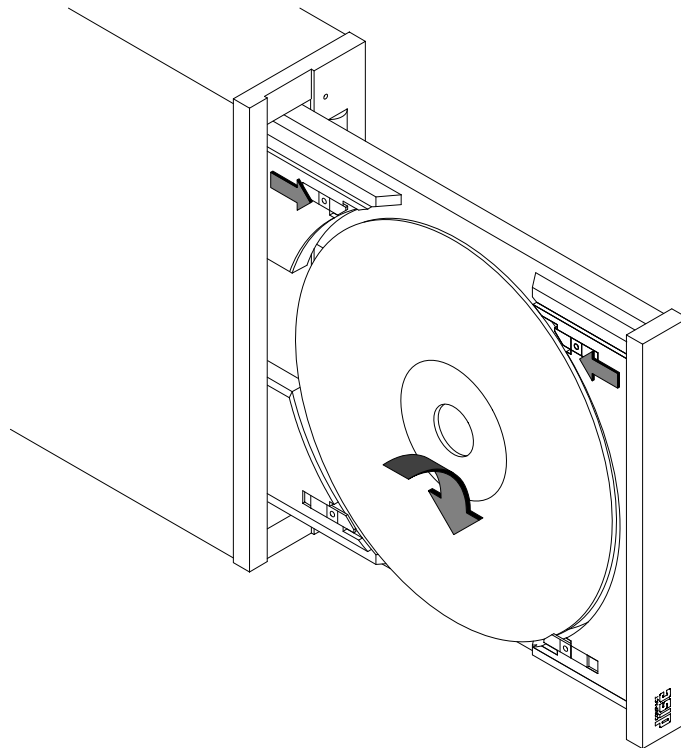


Figure 2–6. Inserting a CD-ROM Disc (Vertical Mount)

Unloading a CD-ROM Disc in a Vertically Mounted Drive

- 1.** Press the eject button to eject the disc tray from the drive. If the drive is in use, you must unmount the disc to eject the disc tray. The emergency eject feature allows you to eject the disc tray if the normal procedure fails. See Table 2-1.

NOTICE: You must unmount the disc before ejecting it from the drive. Refer to “Unmounting a CD-ROM Disc,” later in this chapter.

- 2.** Slide the two top disc holders away from each other and swing the top of the disc away from disc tray, as shown in Figure 2-7.
- 3.** Remove the disc from the disc holders at the bottom of the tray.
- 4.** To close the disc tray, push the front of the disc tray gently towards the drive until it closes by itself or press the load/eject button.

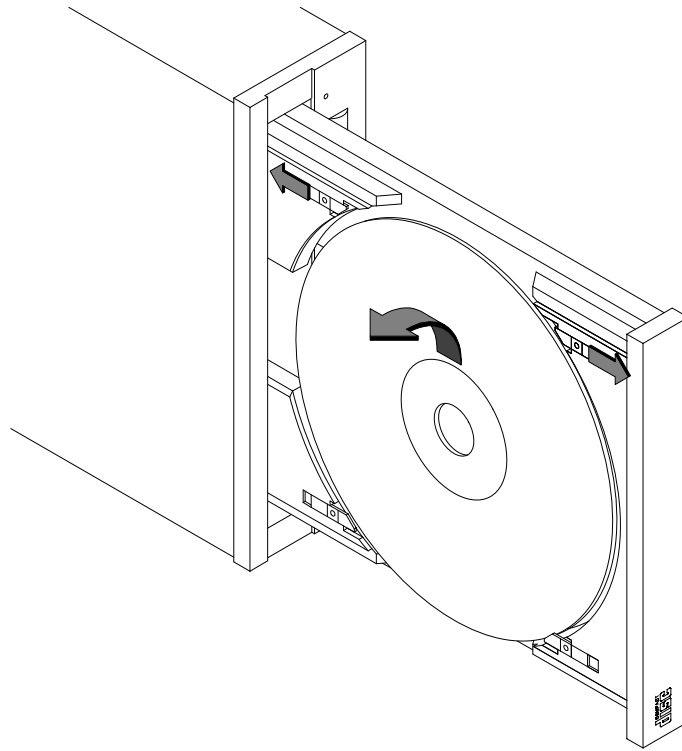


Figure 2-7. Removing a CD-ROM Disc from the Disc Tray (Vertical Mount)

Mounting a CD-ROM Disc

To access your CD-ROM drive, you must mount a CD-ROM disc every time you insert it into the drive. This applies to file system information only. If you wish to load a music CD, for example, you would not need to mount the disc. Mounting a disc with file system information on it gives the disc a pathname that allows your workstation to communicate electronically with it. You must unmount the CD-ROM disc before removing it from the drive.

CAUTION: To use a CD-ROM disc as a mounted file system, you must mount the CD-ROM disc **every** time you load it in the drive. You must also unmount the CD-ROM disc **every** time you unload it from the drive. Failure to mount or unmount the CD-ROM disc can cause a system error condition that can require rebooting the system.

The procedures in this chapter require you to log in as **root**. If you cannot log in as **root**, contact your system administrator.

Perform the following steps to mount a disc:

1. Log in as **root**.
2. Insert the CD-ROM disc into the disc tray and close the tray, as described earlier in this chapter.
3. Invoke the System Administration Manager (SAM) either through an HP-VUE toolbox or the the command line of a terminal window:

```
sam 
```

4. The **System Administration Manager** window opens. Choose the **Peripheral Devices** -> option.
5. The **Peripheral Devices** window opens. Choose the **Disks and File Systems** -> option.

6. The **Disks and File Systems** window opens. Choose the **CD-ROM, Floppy, and Hard Disks** option.

The following screen message appears:

```
Scanning the system's hardware...
```

The **CD-ROM, Floppy, and Hard Disks** window opens containing a list of drives currently configured on this system. Disks that are unmounted will have the word “unused” in the **Use** column.

7. From the **Actions** menu, choose **Add a Hard Disk Drive**.
8. The **Select a Disk to Add...** window opens with a list of unused disks. Choose the CD-ROM disc you want to mount.
9. Choose **OK**.
10. The **Set Disk Usage and Options...** window opens. Choose **File System** and then choose **OK**.

11. The following screen message appears:

```
Test started.  
Creating the device file...  
Mounting the file system...  
Modifying "/etc/checklist"...  
Task completed.
```

Choose **OK**.

12. Now you can access the CD-ROM disc as you would any other mounted file system.

Unmounting a CD-ROM Disc

You must unmount the CD-ROM disc before you eject it from the drive.

CAUTION: If you use the CD-ROM disc as a mounted file system, you must unmount the CD-ROM disc every time you unload it from the drive. Failure to unmount a disc can cause a system error condition and may also require rebooting the system.

NOTICE: Before you unmount a CD-ROM disc, make sure that your working directory is set to a directory other than the one under which the disc was mounted.

Use the following procedure to unmount a CD-ROM disc:

1. Log in as **root**.
2. Insert the CD-ROM disc into the disc tray and close the tray, as described earlier in this chapter.
3. Invoke the System Administration Manager (SAM) either through an HP-VUE toolbox or the the command line of a terminal window:

```
sam 
```

4. The **System Administration Manager** window opens. Choose the **Peripheral Devices** -> option.
5. The **Peripheral Devices** window opens. Choose the **Disks and File Systems** -> option.
6. The **Disks and File Systems** window opens. Choose the **CD-ROM, Floppy, and Hard Disks** option.

The following screen message appears:

Scanning the system's hardware...

The **CD-ROM, Floppy, and Hard Disks** window opens containing a list of drives currently configured on this system.

7. Choose the disc you want to unmount and then choose **Remove a Hard Disk Drive** from the **Actions** menu.

8. A window appears with the following message:

Do you want to remove the disk?

Choose **Yes**.

9. Press the eject button on the CD-ROM drive and remove the CD-ROM disc from the disc tray.

Reading the Busy Light

The CD-ROM busy light shows the status of the drive during self test and during activity with the host system.

The CD-ROM drive performs a self test when one of the following happens:

- You insert a disc into the drive.
- You turn on the drive with a disc already loaded.

For the self test, the busy light operates in the following sequence:

1. Light On – The busy light goes on when the disc loads into the drive.
2. Light Flashing – The light flashes 12 times while a read test is performed on the disc.
3. Light Off – The light goes off when the self test is complete.

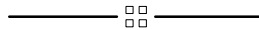
The busy light is continuously on when there is a media problem.

The busy light is continuously off when no media is mounted.

The busy light flashes at 3.2 second intervals when cleaning is required for either the disc or optics.

The busy light flashes at 1.6 second intervals when playing an audio track.

The busy light is on during data access and data transfer.



Chapter 3

Maintenance and Troubleshooting

This chapter provides the following information on maintenance and troubleshooting your CD-ROM drive:

- Caring for CD-ROM discs
- Troubleshooting
- Removal and replacement procedures

Caring for the CD-ROM Discs

Use the following guidelines to help care for your CD-ROM discs.

- Use CD-ROM discs in a clean environment to prevent dust particles from scratching disc surfaces.
- Store CD-ROM discs in a cool, dry place to prevent moisture and heat damage.
- If a CD-ROM disc is dirty, wipe it with a soft cloth. Don't try to clean the surface of a CD-ROM disc with cleaning solvents, as some cleaning solvents may damage the disc.

Troubleshooting

If you have trouble with any of these procedures for using your CD-ROM drive, see the System Owners Guide.

This chapter explains what to do if you experience problems during the configuration process. It also explains how to run the Support Tool Manager or the Extended Self Test to verify your system.

If you are experiencing difficulty booting the system, reconfiguring HP-UX, or using the CD-ROM drive, complete each of the following tasks, in the order in which they are presented, until you discover and correct the problem:

- Check the address settings of any single-ended SCSI devices.
- Check that you have installed the hardware correctly.
- Recheck the device list.
- Run verification tests.

Check the Address Settings for Single-Ended Drives

Check the address settings of each single-ended SCSI device on the bus. Make sure that no device has the same address setting of another. If you find two devices with the same address, change one of the devices to a different, unused address setting. To check the address settings for each single-ended SCSI device, type the following in a terminal window or HP-UX command line.

If you are using HP-UX 9.x, enter the following at the prompt:

```
/etc/ioscan 
```

A screen similar to the following appears:

H/W Path	Description	Status
1.0.0	graphics	ok(0x577)
2.0.1	scsi	ok(0x7071)
2.0.1.2.0	disk	ok(0x202)
2.0.2	lan	ok(0x7072)
2.0.3	hil	ok(0x7073)
2.0.4	serial	ok(0x7075)
2.0.5	serial	ok(0x7075)
2.0.6	parallel	ok(0x7074)
2.0.7	scsi	ok(0x707c)
2.0.7.6.0	disk	ok(0x101)

Look under the **H/W Path** heading for device paths beginning with the sequence **2.0.1**. The sequence **2.0.1** denotes single-ended scsi controller. The number following **2.0.1** is the address setting for a single-ended device on that controller. For example, the listing **2.0.1.2.0** in the sample device list tells us that there is a single-ended device currently using address 2.

If you are using HP-UX 10.x, enter the following at the prompt:

```
/usr/sbin/ioscan -d sdisk RETURN
```

After a few moments the **ioscan** utility lists all of the SCSI I/O devices it could find. The list similar to the following appears:

H/W Path	Class	Description
=====		
	bc	
8	bc	I/O Adapter
8/0	ext_bus	GSC built-in Fast/Wide SCSI Interface
8/0.0	target	
8/0.0.0	disk	QUANTUM LPS1080WD
8/0.5	target	
8/0.5.0	disk	DEC DSP3210SW
8/0.6	target	
8/0.6.0	disk	DEC DSP3210SW
8/12	ba	Core I/O Adapter
8/12/5	ext_bus	Built-in SCSI
8/12/5.2	target	
8/12/5.2.0	disk.	TOSHIBA CD-ROM XM-5701A
8/12/5.4	target	
8/12/5.4.0	disk.	SEAGATE ST3600N
8/12/5.6	target	
8/12/5.6.0	disk	MICROP 2112
10	bc	I/O Adapter
10/12	ext_bus	GSC add-on Fast/Wide SCSI Interface
10/12.4	target	
10/12.4.0	disk	SEAGATE ST31200W

Check the Hardware Installation

Perform the following steps to check the hardware installation:

CAUTION: The CD-ROM drive is susceptible to mechanical and electrostatic shock. When handling the drive, always wear the static strap that came in the CD-ROM drive kit. Always handle the drive carefully.

1. Check that the SCSI terminator is connected to the single-ended SCSI port on the rear I/O panel of the system unit (if there are no external SCSI devices), or that the last external single-ended SCSI device is terminated.
2. Attach the static-grounding wrist strap by following the instructions on the package that contains the strap.
3. Shut down HP-UX.

NOTICE: If you are already at the boot administration level, you do not need to shut down; skip this step and go on to Step 4.

If you are running HP-UX under HP VUE, shut down your system by performing the shutdown procedure described in the System Owner's Guide which came with your workstation.

If you are running HP-UX without HP VUE, shut down your system by typing the following command:

```
# /etc/shutdown -h 
```

You must have superuser privileges to use the **/etc/shutdown** command. If you do not have superuser privileges, contact your system administrator.

If your workstation is part of a cluster, refer to the manual, *Managing Clusters of HP 9000 Computers* for instructions on shutting down.

4. Power off the workstation, using the power switch on the front of the workstation.

CAUTION: Do not power off your workstation without first shutting down HP-UX. Powering off with HP-UX still running could damage the data on the disks associated with your workstation.

- 5.** Remove the drive and check the jumpers, as described in “Removal and Replacement Procedures” at the end of this chapter.
- 6.** Replace the drive.
- 7.** Check the cable connections of your CD-ROM drive. Make sure that the connectors are aligned and seated correctly.
- 8.** Recheck the device list (see the next section).

Recheck the Address Settings

Check the address settings again to see if the drive is now listed (see “Check the Address Settings for Single Ended Drives”, earlier in this chapter).

If the CD-ROM drive and all other SCSI devices available to you before you installed the CD-ROM drive are now listed, run the system verification test for your software version, as explained in the next sections.

If the CD-ROM drive is still not listed, or one of the SCSI devices available to you before you installed the CD-ROM drive is still not listed, contact your service representative.

Verify the System Operation using the Support Tools Manager

HP-UX uses a diagnostics product called the Support Tools Manager that allows you to verify your system operation.

You can access the Support Tools Manager while in a terminal window. If you are using HP VUE as your interface, you can also access the Support Tools Manager through the **sys_admin** directory.

NOTICE: You must use software patch PHSS_6620 under HP-UX 9.03, 9.05, and 9.07, and software patch PHSS_6607 under HP-UX 10.01 to run SupportWave successfully.

Three interfaces are available with the Support Tools Manager: a command line interface (accessed through the **cstm** command), a menu-driven interface (accessed through the **mstm** command), and the graphical user interface (accessed through the **xstm** command).

For more information on the Support Tools Manager user interfaces, see the online man pages by entering the following at a command line prompt:

```
# man cstm 
```

```
# man mstm 
```

```
# man xstm 
```

To run the Support Tools Manager from either HP VUE or the HP-UX command line shell, perform the following steps:

1. To invoke the command line interface in a terminal window or command line shell, type the following at the # prompt:

```
# ctm 
```

The following screen appears:

```
*****
*****
*****          SUPPORT TOOLS MANAGER          *****
*****
*****          Command Line Interface          *****
*****
*****          Version  A.00.12                *****
*****
*****          Part Number  B2478-10002        *****
*****
*****          (C) Copyright Hewlett Packard Co. 1991, 1992 *****
*****          All Rights Reserved              *****
*****
*****
*****
Please wait. System mapping in progress . . .
Please type HELP or ? to list available commands.
CSTM>
```

2. To verify the system operation, type the following at the CSTM> prompt:

```
CSTM> verify all 
```

Messages that are similar to the following appear:

```
Verification has started on device (CPU).  
Verification has started on device (FPU).  
Verification has started on device (0/0/0).  
Verification has started on device (2/0/1.5.0).  
Verification has started on device (2/0/1.6.0).  
Verification has started on device (2/0/2).
```

```
CSTM>Message from (0/0/0):
```

This graphics test displays a number of graphics images on the screen of the graphics device being tested. If an X server is not currently running on that display, X Windows will be started and run for the duration of the test. The Starbase shared library (/usr/lib/libsb.sl) should be present to run this test.

CAUTION: This test will fail if any portion of the test window is modified or overlaid in any way.

NOTICE: If a VUE login screen is currently displayed on the monitor, the test will wait until someone logs in the HP VUE on the graphics monitor to release the lock. The test stops if the Screen Saver times out; it runs again once the Screen is activated.

CAUTION: Do not run this exerciser with any other operation.

(Type 'R' for Ready, Type 'S' for Skip) [R] >>

3. When you see the >> prompt shown above, type the following:

R **RETURN**

The following messages and a graphics test window appear:

```
Verification of (2/0/1.5.0) has completed. Result status-(Success).  
Verification of (2/0/1.6.0) has completed. Result status-(Success)  
Verification of (CPU) has completed. Result status-(Success).  
Verification of (FPU) has completed. Result status-(Success).  
Verification of (2/0/2) has completed. Result status-(Success).  
Verification of (0/0/0) has completed. Result status-(Success).
```

4. To return the CSTM> prompt, press **RETURN**.

5. To exit the Support Tools Manager, enter the following:

CSTM> **exit** **RETURN**

If any tests failed, further diagnosis is necessary by qualified service personnel.

Removal and Replacement Procedures

The Removal and replacement procedures for the CD-ROM Drive follow.

CAUTION: Electrostatic charges can damage the integrated circuits on printed circuit boards. To prevent such damage from occurring, follow proper ESD precautions

Field Replaceable Units

The following component is authorized for field replacement.

Description	Part Number
CD-ROM Drive	A4xxx-60001

Power Off the System

Before performing the Removal and replacement procedures, observe the following precautions:

1. Please refer to the system Owner's Guide for the procedures to power off the system.
2. Unplug the system unit power cord and the power cords of any peripheral devices from the power source.
3. Unplug the system unit power cord from the back of the system unit.

WARNING: Failure to properly shut down and remove power from the system may create a personal hazard, or may result in hardware damage or data corruption.

Removing and Replacing the CD-ROM Drive

To open your system and remove and reinstall the CD-ROM drive, refer to the system Owner's Guide. Pre-installation information appears in Chapter 1 of this document.



Appendix A

Safety and Regulatory Statements

This appendix contains the following safety and regulatory statements:

- Emissions regulations
- Emissions regulations compliance
- Electrostatic discharge precautions
- Laser safety statement

Emissions Regulations

Federal Communications Commission (FCC)

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 and the Canadian Department of Communications. 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.

Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your computer. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

Operation of this device is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept interference received, including interference that may cause undesired operation.
- Cables used with this device must be properly shielded to comply with the requirements of the FCC.

Canadian Department of Communications (CDC)

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

Emissions Regulations Compliance

Any third-party I/O device installed in HP system(s) must be in accordance with the requirements set forth in the preceding Emissions Regulations statements. In the event that a third-party noncompliant I/O device is installed, the customer assumes all responsibility and liability arising therefrom.

Electrostatic Discharge (ESD) Precautions

Electrostatic charges can damage the integrated circuits on printed circuit boards. To prevent such damage from occurring, observe the following precautions during board unpacking and installation:

- Stand on a static-free mat.
- Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to ground.
- Connect all equipment together, including the static-free mat, static strap, routing nodes, and peripheral units.
- Keep uninstalled printed circuit boards in their protective antistatic bags.
- Handle printed circuit boards by their edges, once you have removed them from their protective antistatic bags.

LASERTURVALLISUUS LOUKAN 1 LASERLAITE KLUSS 1 LASER APPARAT

HP 12x Speed CD-ROM-lukulaite sisältää laitteensisäisen CD-ROM-yksikön, joka on laserlaite.

Kyseinen CD-ROM-yksikkö on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisssa käytössä yksikön suojakotelo estää lasersäteen pääsyn laitteen ulkopuolelle.

CD-ROM-yksikön on tyyppihyväksynyt Suomessa laserturvallisuuden osalta Työministeriön työsuojeluosasto. Laitteen turvallisuusluokka on määritetty valtioneuvoston päätöksen N:o 472/1985 ja standardin SFS-EN 60825-1 (1994) mukaisesti.

Tiedot CD-ROM-yksikössä käytettävän laserdiodin säteilyominaisuuksista:

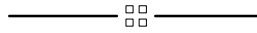
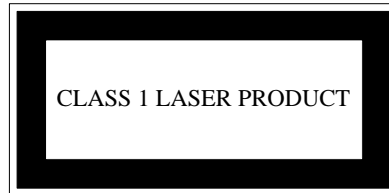
Aallonpituus	790 nm
Teho	1,1 μ W
Luokan 1 laser	

Laser Safety Statement (For U.S.A. Only)

The CD-ROM mass-storage system is certified as a Class-1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the *Radiation Control for Health and Safety Act* of 1968.

This means that the mass-storage system does not produce hazardous laser radiation. Because laser light emitted inside the mass-storage system is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

**IEC 825 Class 1
Laser Labels**



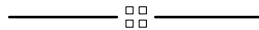
Appendix B

SCSI Connector Pinouts

This appendix provides a table listing the pinouts for the SCSI Connector on the CD-ROM drive.

Table B-1. SCSI Connector Pinouts

Pin	Signal	Pin	Signal
1	GND	26	TERMPWR
2	DB(0)	27	GND
3	GND	28	GND
4	DB(1)	29	GND
5	GND	30	GND
6	DB(2)	31	GND
7	GND	32	-ATN
8	DB(3)	33	GND
9	GND	34	GND
10	DB(4)	35	GND
11	GND	36	-BSY
12	DB(5)	37	GND
13	GND	38	-ACK
14	DB(6)	39	GND
15	GND	40	-RST
16	DB(7)	41	GND
17	GND	42	-MSG
18	DB(P)	43	GND
19	GND	44	-SEL
20	GND	45	GND
21	GND	46	-C/D
22	GND	47	GND
23	GND	48	-REQ
24	GND	49	GND
25	OPEN	50	-I/O



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