



Quad-Speed CD-ROM Disk Drive 600 MB, 5.25-Inch (SWXOR-Dx)

User's Guide

EK-SM1RE-UG. A01

**Digital Equipment Corporation
Maynard, Massachusetts**

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Revision Record

This Revision Record provides a concise publication history of this guide. It lists the manual revision levels, release dates, and reasons for the revisions. It also describes how the changes to affected pages are marked in the guide.

The following revision history lists all revisions of this publication and their effective dates. The publication part number is included in the *Revision Level* column, with the last entry denoting the latest revision. This publication supports the StorageWorks SWXOR-Dx 600 MB, Quad-Speed, CD-ROM Drive.

Revision Level	Date	Summary of Changes
EK-SM1RE-UG. A01	May 1994	Original release

About This Guide

This section identifies the users of this guide and describes the contents and structure. In addition, it includes a list of conventions used in this guide.

StorageWorks SWXOR Series 600 MB, 5.25-Inch, Quad-Speed CD-ROM Disk Drive User's Guide

This guide provides installation, operation, and maintenance information for the StorageWorks SWXOR Series 600 MB, 5.25-Inch, Quad-Speed CD-ROM Disk Drives.

Intended Audience

This guide is intended for people who will install, operate, and maintain the CD-ROM drives.

Document Structure

This guide contains the following chapters:

Chapter 1: Introduction

Introduction gives a brief product description of the drive and its four storage subsystem configurations.

Chapter 2: Installation

Installation describes unpacking, setting the SCSI ID address, and how to install the drive into a desktop expansion storage pedestal and a desktop expansion unit. The chapter also describes how to upgrade a half-populated CD-ROM SBB from one to two drives.

Chapter 3 Operation and Maintenance

Operation and Maintenance discusses the function of the drive front panel controls and the busy LED indicator, loading a CD into the drive, ejecting the SBB drawer, and preventive maintenance.

Appendix A: Specifications

Specifications list the physical, electrical, and environmental specifications for the drive.

Appendix B: Product Notes for Sun™

Product Notes for SUN provides SunOS 4.1.x and Solaris 2.x operating system information for the system administrator.

Appendix C: Product Notes for Novell™ and MS-DOS™

Product Notes for Novell and MS-DOS provides Novell, MS-DOS, and MS-DOS/Windows operating system information for the system administrator.

Conventions

This guide uses the following conventions:

Style	Meaning
boldface type	For emphasis
<i>italic type</i>	<i>For emphasis and manual titles</i>

1

Introduction

This chapter provides a product description of the StorageWorks SWXOR–Dx Series 600 MB, quad-speed, CD-ROM drive. It also identifies the various models and their storage subsystem configurations.

NOTE

The quad-speed CD-ROM drive has been qualified to work on 16-bit storage enclosures with the exception that when the CD-ROM drive is used with the HP-800 series computers, it can only be used in the 8-bit storage enclosure.

1.1 Product Description

The quad-speed, SWXOR–Dx series CD-ROM (Figure 1–1) is a low-profile, 600 MB, compact, storage device compatible with StorageWorks storage subsystems. The drive is capable of audio playback, has audio line outputs, and a headphone jack. It uses the SCSI-2 (small computer system interface) bus, and is designed to operate with all StorageWorks storage subsystems. The drive normally serves as the primary load device for operating systems, applications, documents, and integrated video/audio products.

NOTE

The audio capability of the CD-ROM disk drive is included in the hardware and is controlled by the host.

The SWXOR–Dx drive series is packaged in an industry standard 5.25-inch form factor referred to as a StorageWorks Building Block (SBB). The quad speed CD-ROM is available in four base configurations as described in Table 1–1.

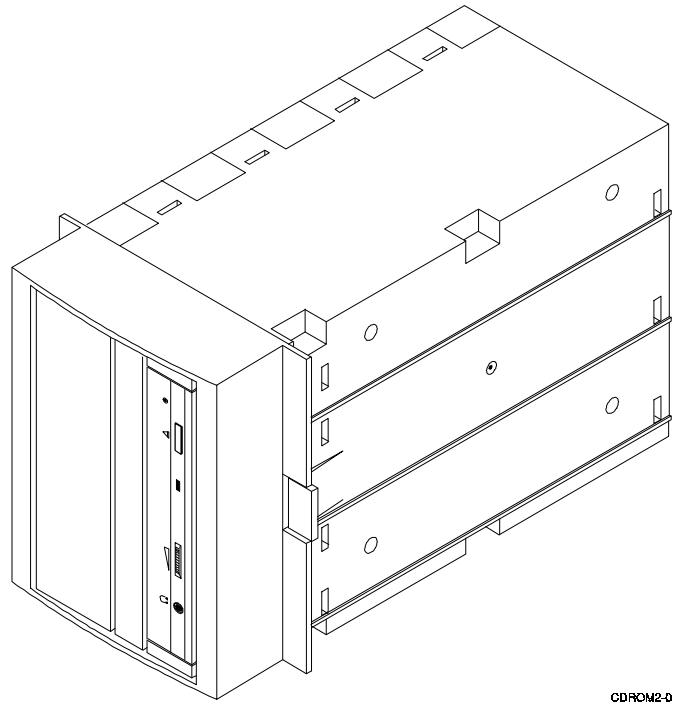
Table 1–1. SWXOR Series Quad Speed CD-ROM Configurations

Model	Description
SWXOR-DA	Single drive CD-ROM SBB.
SWXOR-DB	CD-ROM upgrade kit for the SWXOR-DA.
SWXOR-DC	CD-ROM upgrade kit for Desktop Expansion Unit (SWXSE-03).
SWXOR-DD	CD-ROM upgrade kit for SCSI Desktop Expansion Enclosures (SwXSE-25/27).

1.1.1 Model SWXOR-DA

The SWXOR-DA CD-ROM drive configuration is packaged in an industry standard 5.25-inch SBB and is capable of housing two identical quad-speed, low-profile, CD-

ROM drives. The SWXOR-DA model of the SBB contains a single drive as shown in Figure 1-1.

Figure 1–1 Model SWXOR-DA Drive SBB

CDROM2-01

1.1.2 Model SWXOR-DB

The SWXOR-DB model consists of a CD-ROM upgrade kit for the half-populated 5.25-inch SBB. The kit contains all of the components necessary to convert the SWXOR-DA single drive SBB to a two-drive device (not shown).

1.1.3 Model SWXOR-DC

The SWXOR-DC configuration consists of a drive upgrade kit for the StorageWorks Desktop Expansion Unit (SWXSE-03). This kit is used to upgrade the right slot of the desktop expansion unit from a 3.5-inch SBB to a 5.25-inch, low-profile CD-ROM. Figure 1-2 shows the desktop expansion unit with the SWXOR-DC installed.

1.1.4 Model SWXOR-DD

The SWXOR-DD configuration consists of a drive upgrade kit for the four-slot StorageWorks Desktop Expansion Enclosure (SWXSE-25 and -27). This kit is used to mount the CD-ROM unit into the top location of the enclosure.

Figure 1-2 Model SWXOR-DC Drive Installed in Desktop Expansion Unit

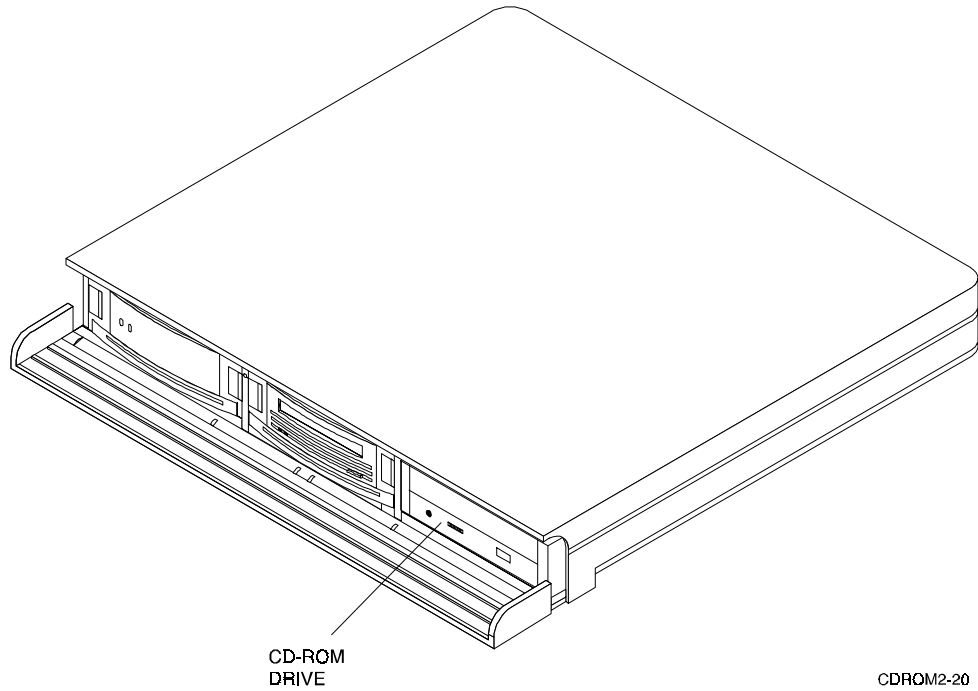
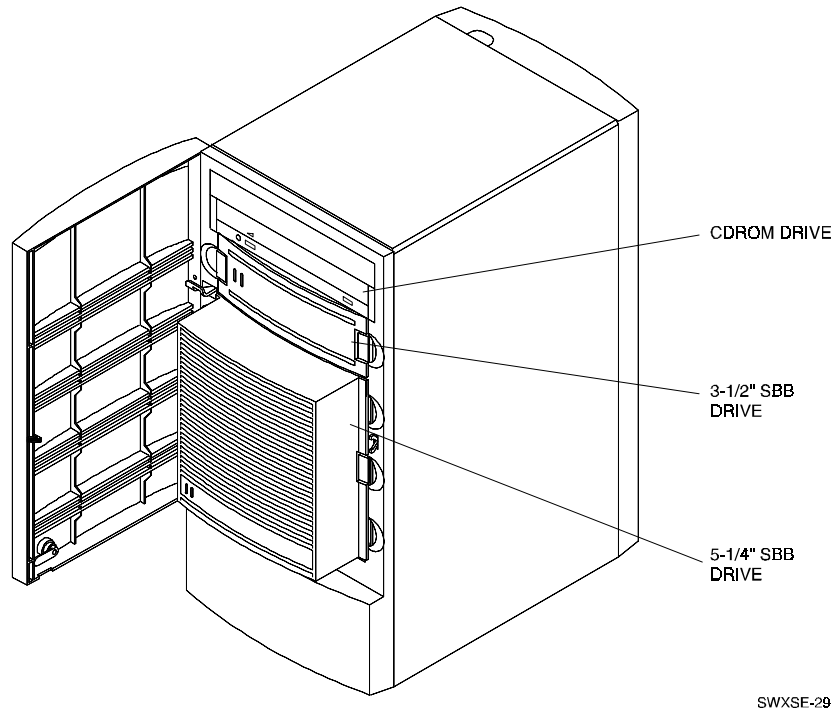


Figure 1-3 Model SWXOR-DD CD-ROM Drive Installed in a Desktop Expansion Enclosure



Installation

This chapter describes how to set the SCSI ID address of the drive(s), install an SBB into a storage subsystem, and how to upgrade a half-populated (single drive) SBB from one to two drives.

2.1 Unpacking

Unpack the contents of your shipment and ensure the SBB is not damaged. Retain the box and packing material for reshipment.

2.2 Setting the SCSI ID Address of the CD-ROM

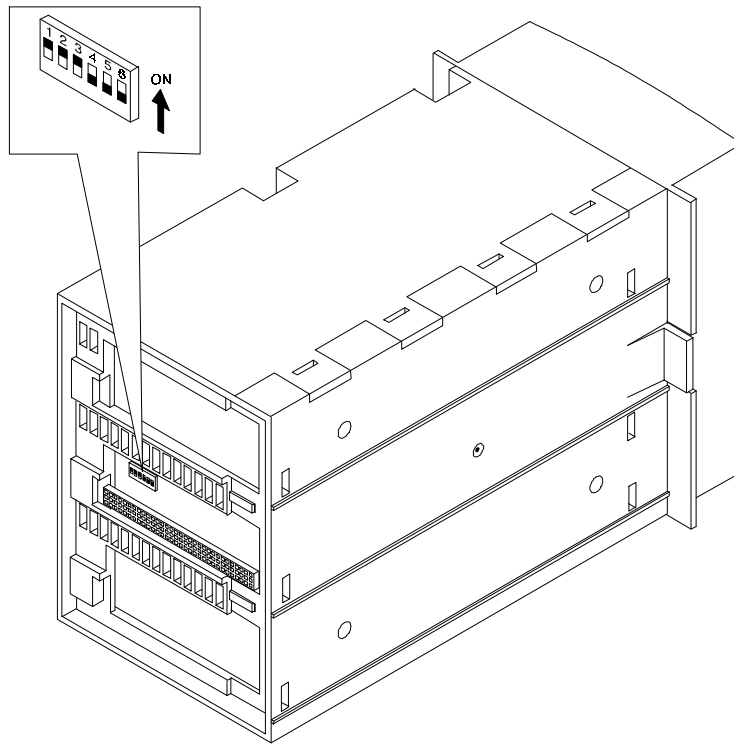
The six-switch switchpack on the rear of the CD-ROM SBB is used to override the SBB default device address set by the pedestal.

NOTE

The switchpack must be in automatic mode when mounted in the SWXSE-25/27 Desktop Storage Expansion Enclosure.

Setting these switches to automatic sets the device address to the storage subsystem's slot number. The switches are preset at the factory to automatic, but can be set manually to a different address at your option. Figure 2-1 shows the switches in detail for model SWXOR-DA and Table 2-1 provides the switch settings. Figure 2-2 shows how to insert the SWXOR-DD into a SWXSE-25/27 and Figure 2-3 shows the jumpers on the Mode Select Header.

Figure 2–1. SWXOR-DA SBB SCSI ID Switches



CDROM-09

Table 2–1 CD-ROM SCSI ID Switch Settings (SWXOR-DA)

Address	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6
0	Off	Off	Off	Off	Off	Off
1	On	Off	Off	Off	Off	Off
2	Off	On	Off	Off	Off	Off
3	On	On	Off	Off	Off	Off
4	Off	Off	On	Off	Off	Off
5	On	Off	On	Off	Off	Off
6	Off	On	On	Off	Off	Off
7*	On	On	On	Off	Off	Off
Automatic†	Off	Off	Off	On	On	On

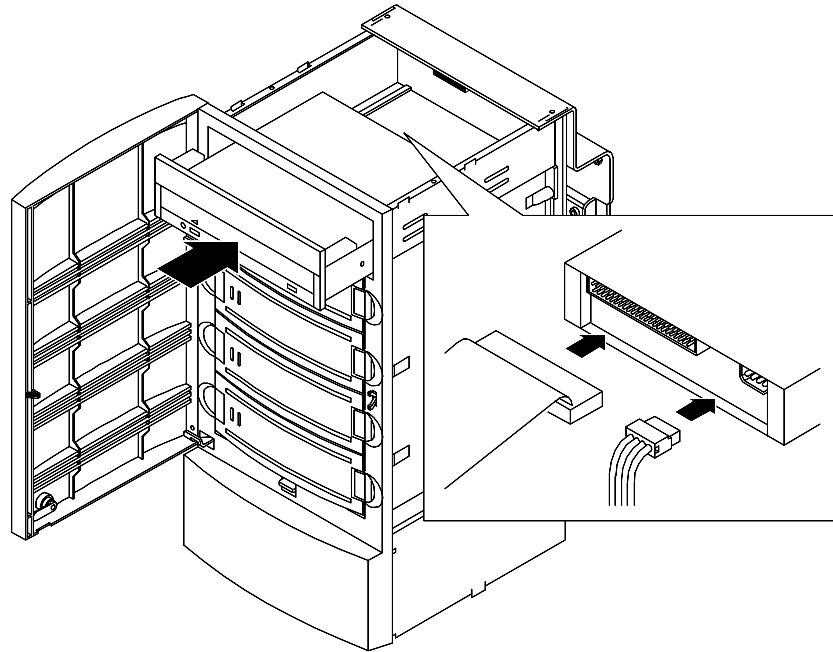
* Normally reserved for host.

† Sets device address to storage subsystem slot number.

NOTE

Some production units may have an additional two switches, SW-7 and SW-8. These switches are not active and can be in any position.

Figure 2–2 SWXOR-DD SBB Drive Insertion and Mode Select Header

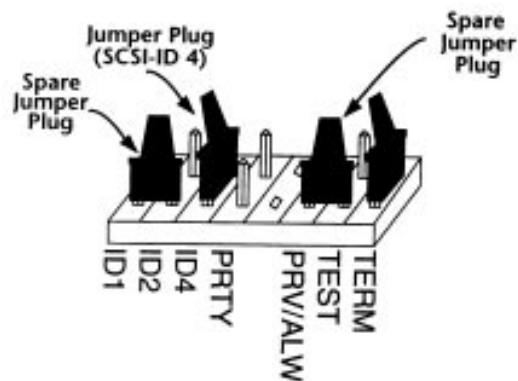


SWXSE-14

2.2.1 Mode Select Header

The mode select header (Figure 2-3) is located on the rear of the CD-ROM drive and is used to set SCSI-ID, Parity, Terminator Power, Eject Button Inhibit function, and Test Switches.

Figure 2–3 SWXOR-DD Mode Select Header



SCSI-ID – A three-bit binary switch sets the SCSI -ID number

SCSI-ID	Header		
	ID1	ID2	ID3
0	○	○	○
1	●	○	○
2	○	●	○
3	●	●	○
4	○	○	●
5	●	○	●
6	○	●	●
7	●	●	●

○ = remove jumper ● = insert jumper

Parity Option – Activates/deactivates the parity bit check function on the SCSI data bus. This enhances data bus reliability.

Header	Function
○	Drive does not execute parity check, but, develops output data parity.
●	Drive executes parity check.

○ = remove jumper ● = insert jumper

PRV/ALW – Activates/deactivates the eject function of the CD tray.

Header	Function
○	Allows the CD tray to be ejected
●	Prevents the CD tray from opening. Eject button is disabled

○ = remove jumper ● = insert jumper

Test – Selects mode of operation. When jumper is present, audio disc reproduction is possible (Note: SCSI-ID must be set to 0). When in audio disc reproduction mode, commands from the host computer are ignored. (Audio disc reproduction mode allows the repeated reproduction in the audio mode from beginning of the program area up to the last. The output is muted on the data track area. Pushing the eject button for less than a second allows jumping to the beginning of the next track. Pushing the button for more than one second opens the CD tray.

Header	Function
○	Normal operation mode
●	Audio disc reproduction mode

○ = remove jumper ● = insert jumper

Termination – Select/deselects termination power shared mode (jumper is present when shipped).

Header	Function
○	Shared Terminator Power is not in use
●	Shared Terminator Power is in use
○ = remove jumper ● = insert jumper	

2.3 Installation into the Expansion Storage Pedestal

The 5.25-inch SBB occupies three standard 3.5-inch SBB slots in the Expansion Storage Pedestal and is installed by inserting the SBB into any three adjacent available SCSI device storage slots. Figure 2–4 shows a typical installation of a single drive SBB into the pedestal.

NOTE

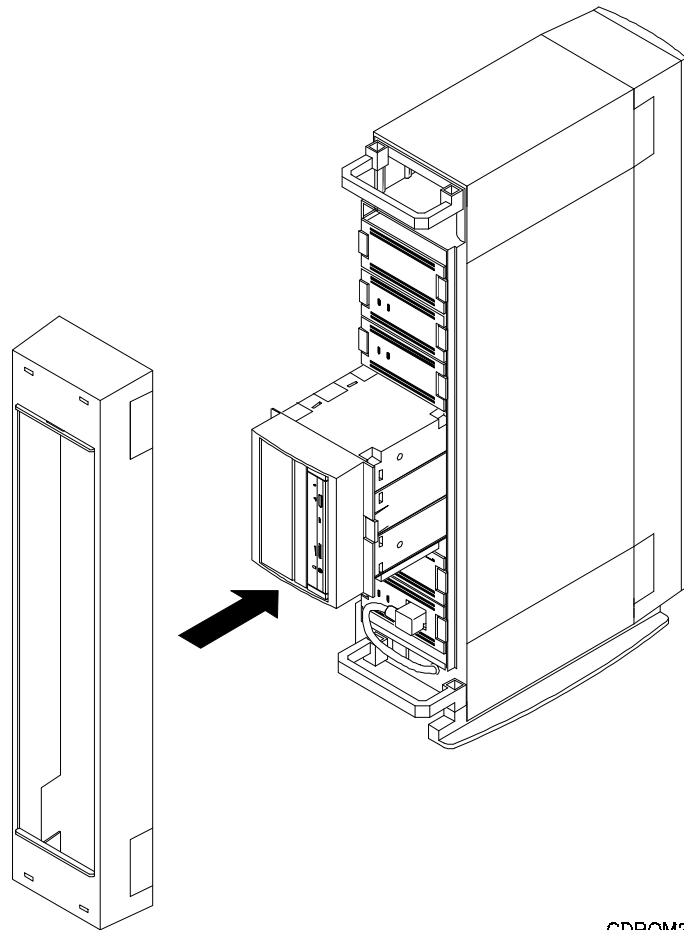
Refer to Appendix B or C for instructions on your specific operating system before installing the CD-ROM into your subsystem.

The CD-ROM SBB is installed in the Expansion Storage Pedestal by inserting the SBB into any three adjacent SBB device slots in the subsystem. The SBB can be installed using the *hot-swap* method where the drive is installed with the host system powered on and operating, if the operating system in use allows this, or with the host system powered off. Consult your system administrator before using the *hot-swap* method to ensure that your operating system supports this type of installation.

To install the CD-ROM SBB:

1. Remove the filler panels (or SBBs) from three adjacent device slots in the pedestal by squeezing the locking handles at the ends of the panels (or SBBs) and pulling forward until the panels or SBB is free of the subsystem.
2. Install the SBB into the open slots and slide it in firmly until the locking handles snap into place.
3. Proceed to the POST test below to verify the proper operation of the drive(s).

Figure 2–4 Installing a Single Drive CD-ROM SBB into the Pedestal



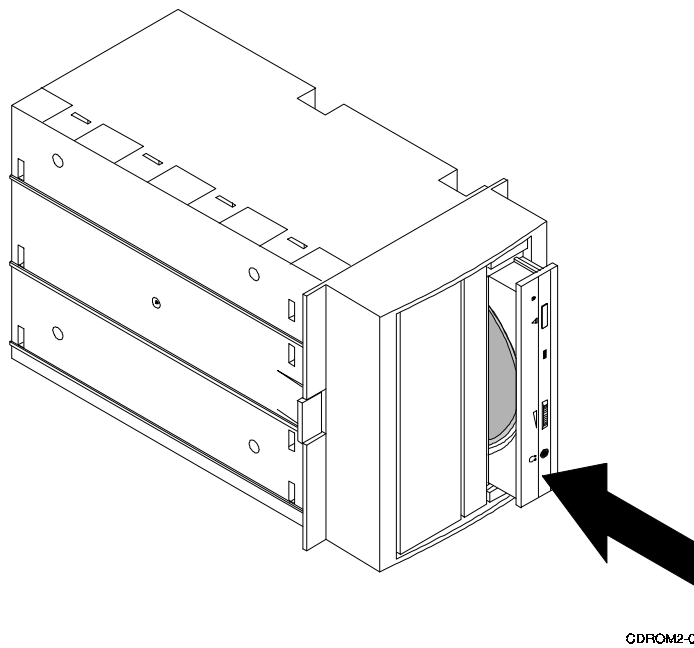
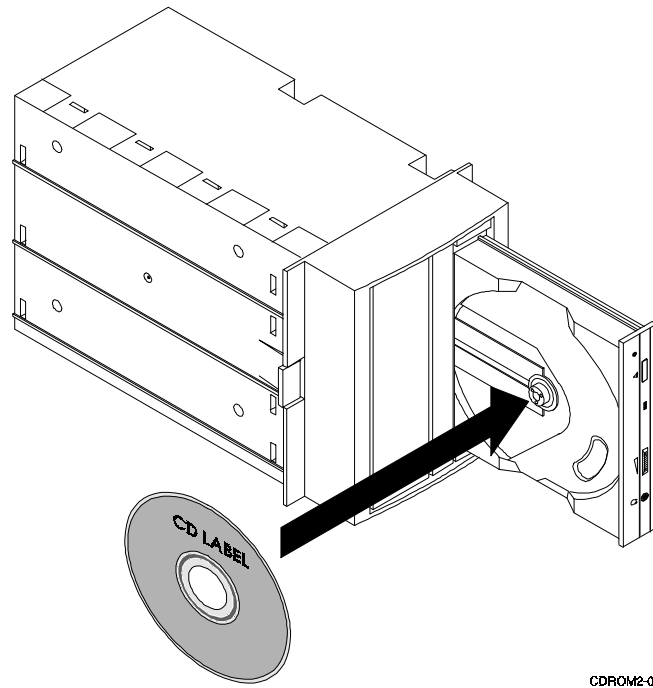
CDFROM2-02

2.3.1 Power On Self Test (POST)

The POST test verifies the successful installation of the CD-ROM drive. To execute POST, perform the following :

1. Set the expansion storage pedestal power switch to on.
2. Load a compact disk into the drive (Figure 2–5).
3. The CD-ROM *busy* LED flashes for about five seconds and goes out.
4. If the SBB has more than one drive, repeat steps 2 and 3 for each device.
5. Power on the remaining devices in the pedestal and power on the host system(s).

Figure 2-5 Loading a Disk into the Drive



2.4 Installing Model SWXOR-DC into the Desktop Expansion Unit

The right slot in the expansion unit is pre-configured at the factory to accept a 3.5-inch SBB. To reconfigure the right slot of the expansion unit to accept the SWXOR-DC CD-ROM, proceed as follows:

CAUTION

Do not attempt the following procedure unless you have taken proper precautions against electrostatic discharge (ESD). Ensure you wear an ESD grounded wrist strap before removing the cover from any enclosure or device.

1. Set power switch on the rear panel to off and disconnect the SCSI and power cables.
2. *If installed*, remove the two right slot security screws from the bottom of the expansion unit (Figure 2-6).
3. Open the front panel dust cover and remove the drive (or filler panel) from the right slot of the expansion unit.
4. To remove the cover, reposition the expansion unit right side up and use a flat-tip screwdriver to press the three cover tabs on the left side of the unit (Figure 2-7) and remove cover.
5. Place the expansion unit on a flat surface with the bottom side up and release the cover latch by inserting a flat-blade screwdriver into the hole behind the fan and pushing gently on the screwdriver until the latch releases (Figure 2-7).
6. Squeeze the side rail locking tabs on the backside of the backplane to separate the rails from the backplane (Figure 2-8).

Figure 2-6 Security Screws

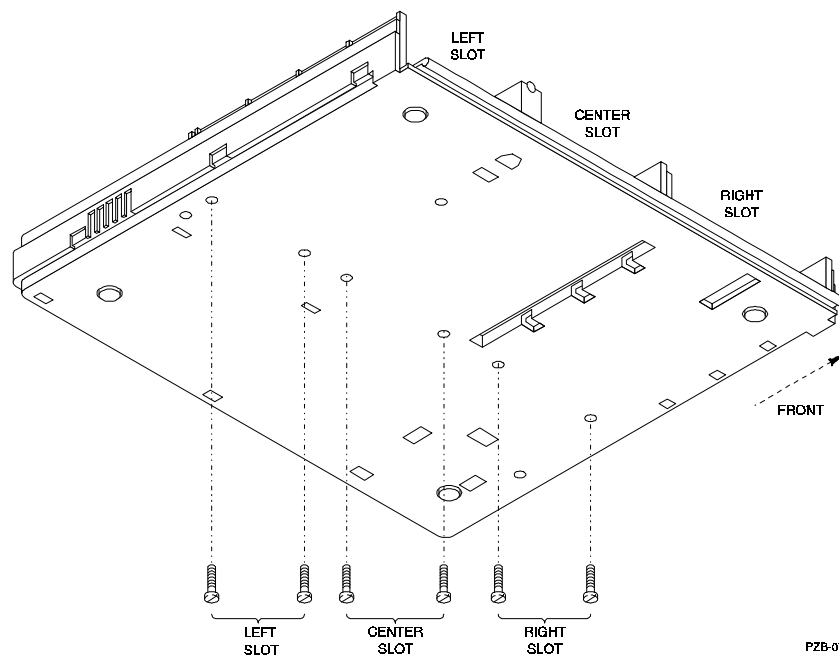
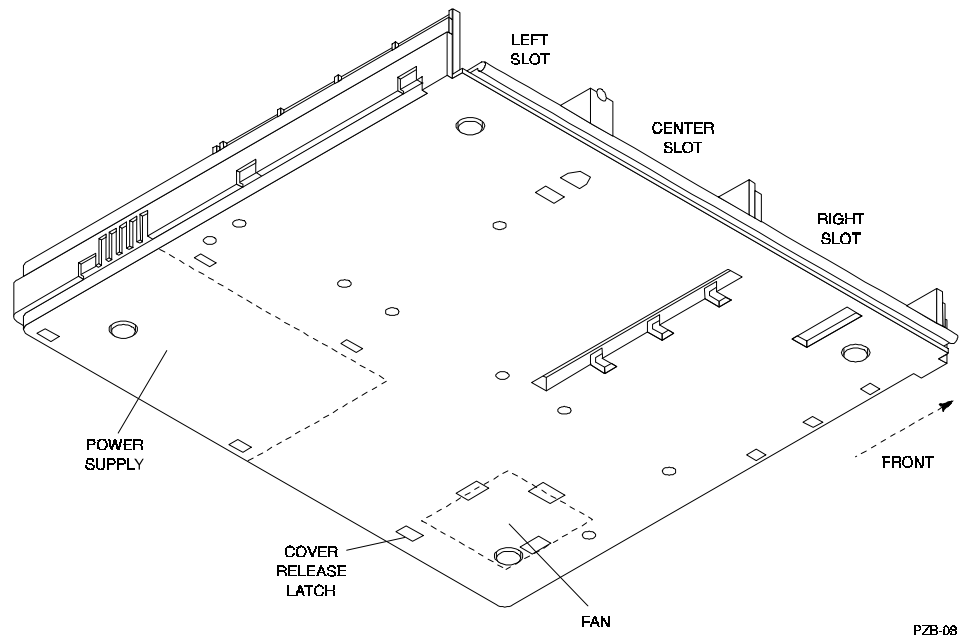
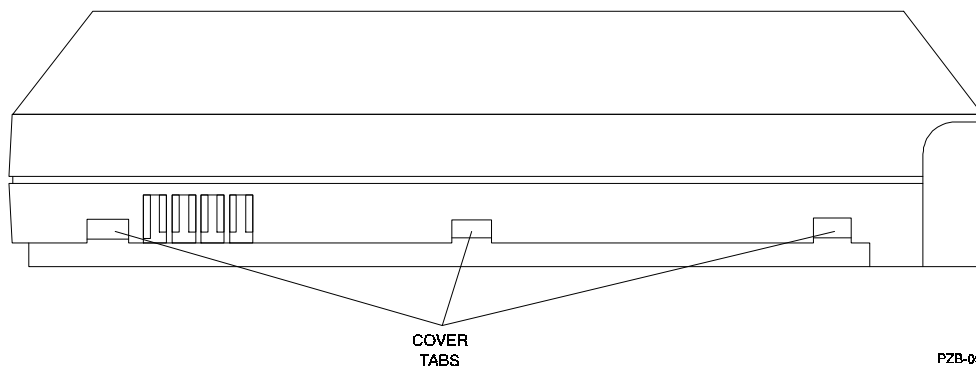


Figure 2-7 Cover Latch Release



PZB-08

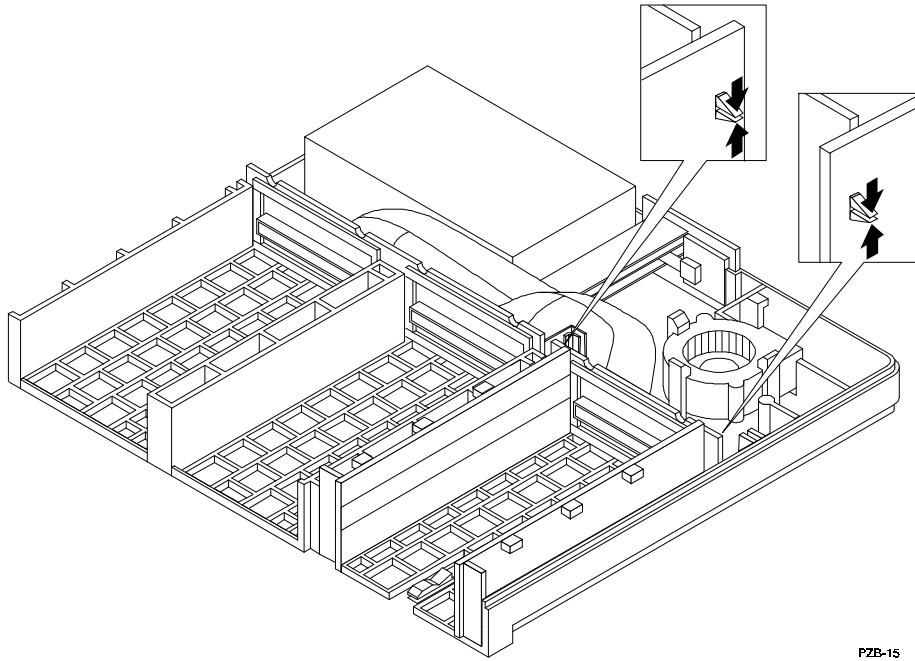
Figure 2-8 Expansion Unit Cover Tabs



PZB-09

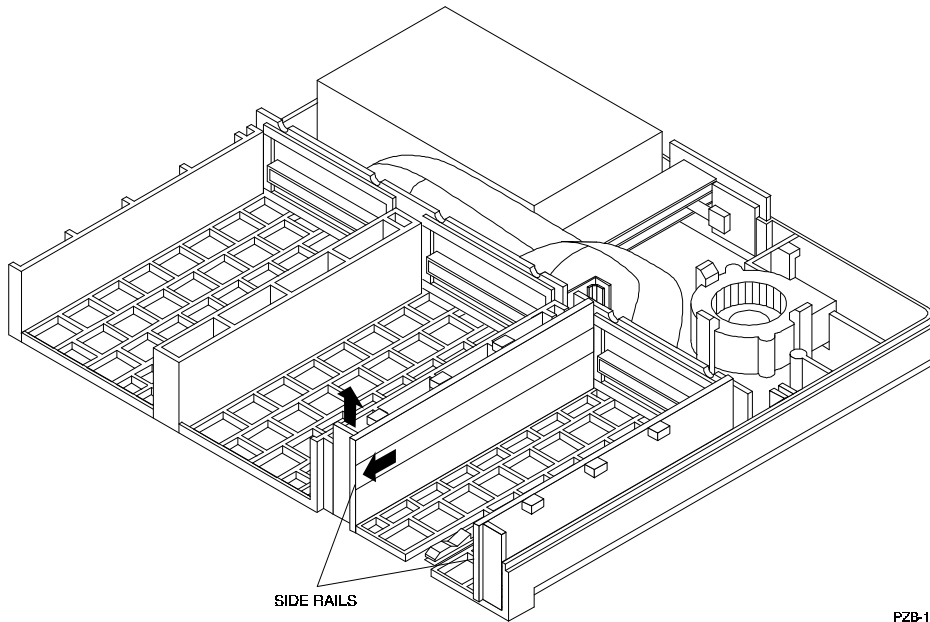
7. Pull the two side rails forward in the right slot to disengage the rail locking tabs (Figure 2-9) and remove both rails (Figure 2-10).
8. Lift the backplane up and reinsert it into the rear holders at the rear of the slot (Figure 2-11).

Figure 2-9 Separating Rails from Backplane



PZB-15

Figure 2-10 Removing SBB Rails



PZB-16

Figure 2–11 Repositioning Backplane in Right Slot.

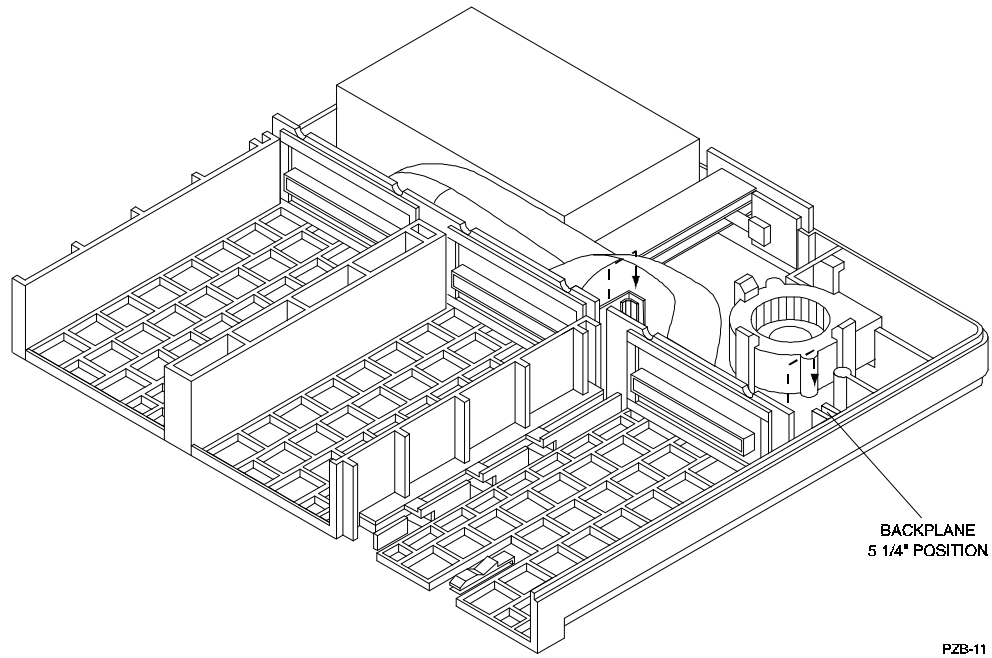
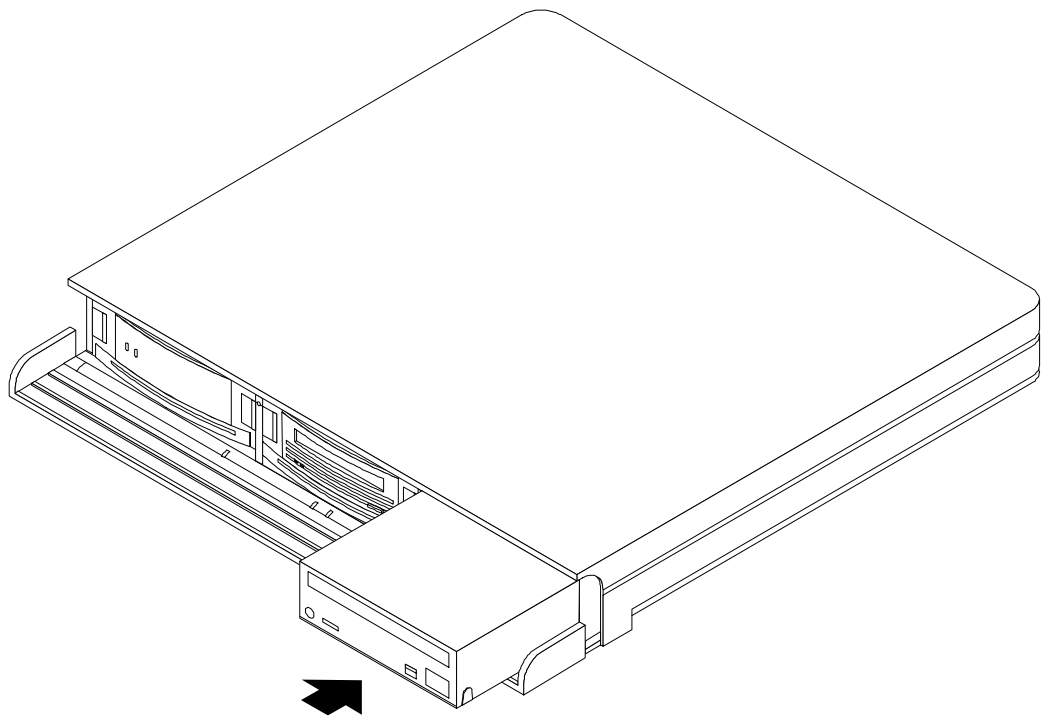


Figure 2–12 Installing 5.25-inch Device



NOTE

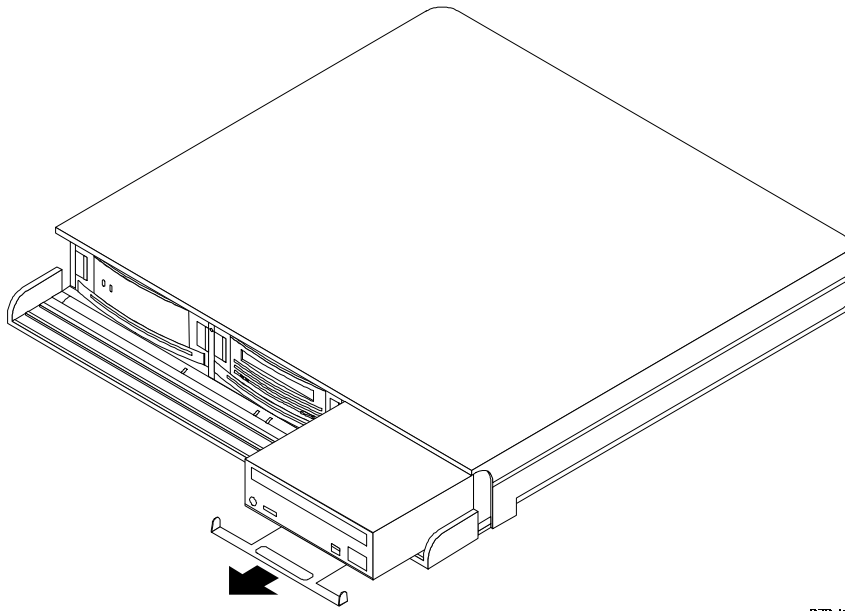
It may be necessary to align the backplanes with the interfacing channels in the cover to properly install and secure the cover in the following step. If you have difficulty installing the cover, insert your hand into the storage slot (ensure power is off) and wiggle the backplane until it aligns with the channels in the cover.

9. Replace the top cover on the expansion unit by aligning the three female tabs on the right side of the cover with the tabs in the base, and then aligning the tabs on the right side of the cover and gently pushing down on the cover until the tabs lock into place.
10. Install the 5.25-inch device into the right slot by aligning the device into the rails and pushing it back until the SCSI connection is firmly seated (Figure 2–12).
11. If removed in step 2, replace the security screws in the right slot of the expansion unit.
12. Reconnect the SCSI and power cables, set the power switch to on, and ensure the status indicator lights and remains on.

2.4.1 Removing Drive from Expansion Unit

The 5.25-inch low-profile drive is equipped with a retractable handle at the bottom to remove the device if desired. To remove the drive, extend the handle until it stops. Grasp the opening in the handle and continue to pull until the backplane connection is disconnected and remove the drive (Figure 2–13).

Figure 2–13 Removing Drive



P2B-17

2.5 Installing a Second Drive into a 5.25-Inch SBB

This section presents the procedures for installing a second drive when a second device is required. When two drives are installed in one 5.25-inch SBB, the second device is installed in the left device location. Refer to the *StorageWorks Family User's Guide* or the *StorageWorks Family Configuration Guide* for information on configuring and installing 5.25-inch full-height devices.

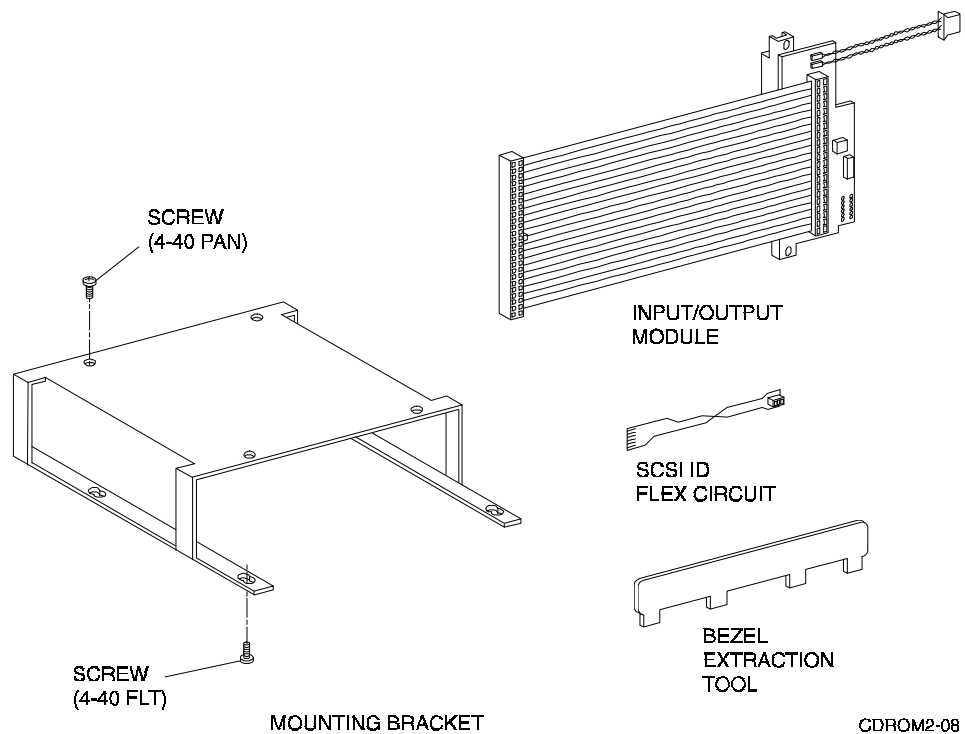
Use the following procedure to install a second drive into a 5.25-inch SBB.

CAUTION

Do not attempt the following procedure unless you have taken proper precautions against electrostatic discharge (ESD). When you remove the cover from any enclosure or device, wear an ESD grounding wrist strap to avoid damaging the equipment.

1. Place the contents of the second 5.25-inch low-profile option kit (Figure 2–14) and the second CD-ROM on a flat surface and within easy reach.

Figure 2–14 Second Drive Option Kit Components



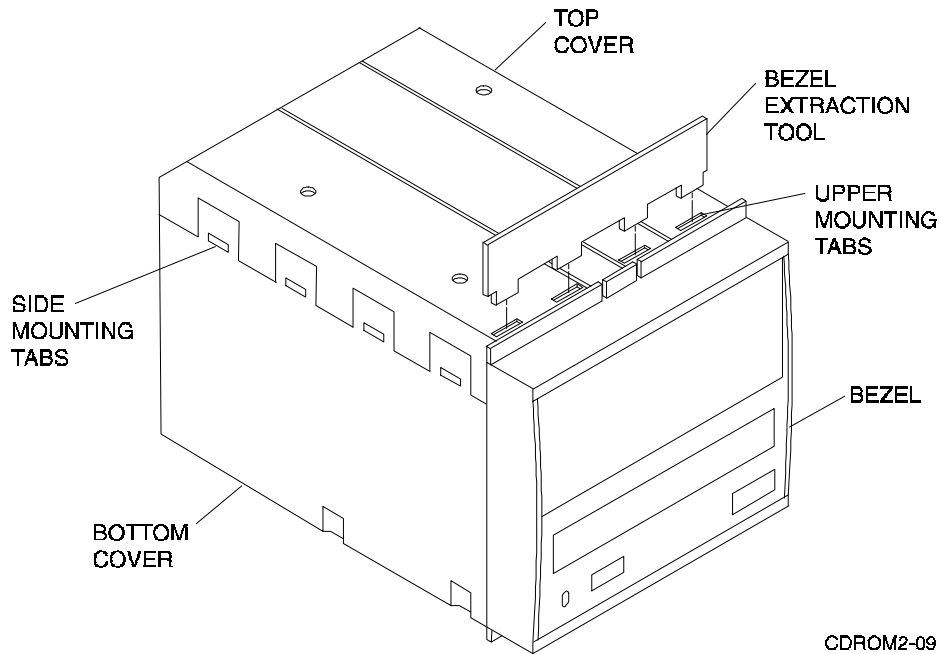
2. Inspect the contents of the second low-profile option kit and ensure that all of the components are included (Table 2–2).

Table 2–2. Option Kit Contents

Component	Part Number	Quantity
Mounting Bracket	74-45316-01	1
Input/Output Module	54-22219-01	1
SCSI ID Flex Circuit	17-03608-06	1
Bezel Extraction Tool	74-47025-01	1
Screw, Machine 4-40 Pan	90-06011-01	4
Screw, Machine 4-40 Fit	90-09414-02	4

3. Place the SBB (Figure 2–15) in front of you and remove the bezel as follows:
 - a. Push down on the four upper mounting tabs with the bezel extraction tool while pulling the top of the bezel away from the SBB.
 - b. When the upper mounting tabs are free, pull the bezel forward slightly to release the bottom mounting tabs, then remove the bezel.

Figure 2–15 5.25-Inch SBB



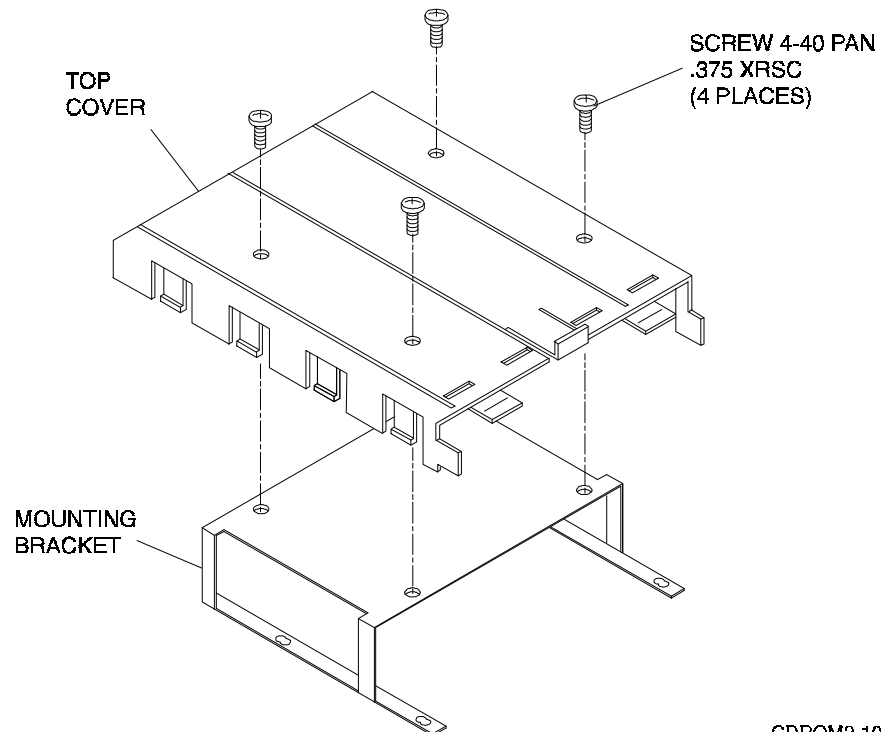
4. Remove the top cover as follows:

CAUTION

To prevent damage to the SBB or the device, use a screwdriver and *minimal pressure* to release each mounting tab.

- a. On the left side, push in each of the four top cover side mounting tabs until they are released from the bottom cover (Figure 2–15).
 - b. On the right side, push in each of the four top cover side mounting tabs until this side is released, then remove the top cover.
5. Attach the top cover to the mounting bracket as follows:
 - a. Position the top cover over the mounting bracket and align the mounting holes with the screw holes in the top of the mounting bracket (Figure 2–16).
 - b. Insert and tighten the four 4-40 pan machine screws (recommended torque is even inch-pounds).

Figure 2–16 Top Cover to the Mounting Bracket



CDROM2-10

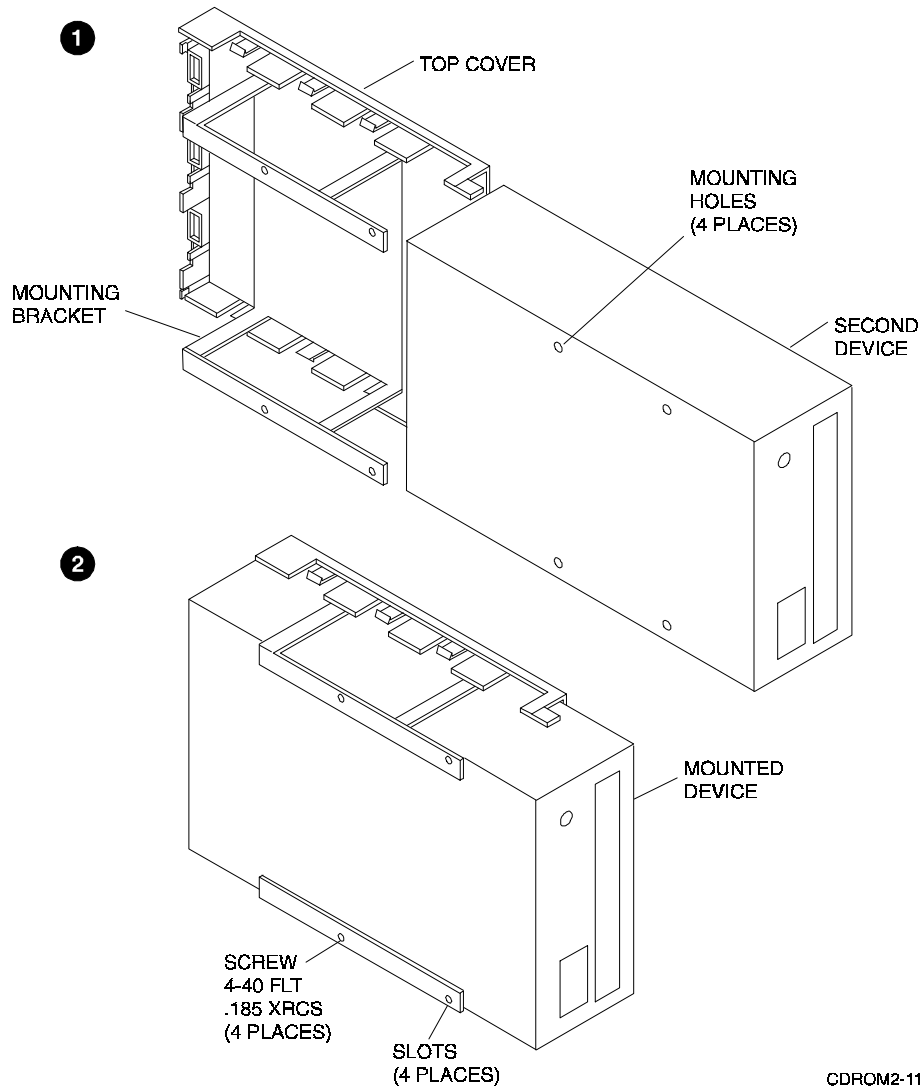
6. Attach the CD-ROM device to the mounting bracket as follows (Figure 2–17):

CAUTION

Use care when sliding the device into the mounting bracket.
Excess force may damage the device.

- a. Slide the device into the mounting bracket as shown in Figure 2–17.
- b. Align the four device mounting holes with slots in the mounting bracket.
- c. Insert four 4-40 flat machine screws through the mounting bracket slots and into the device. Do not tighten the machine screws.

Figure 2–17 Securing Device to the Mounting Bracket

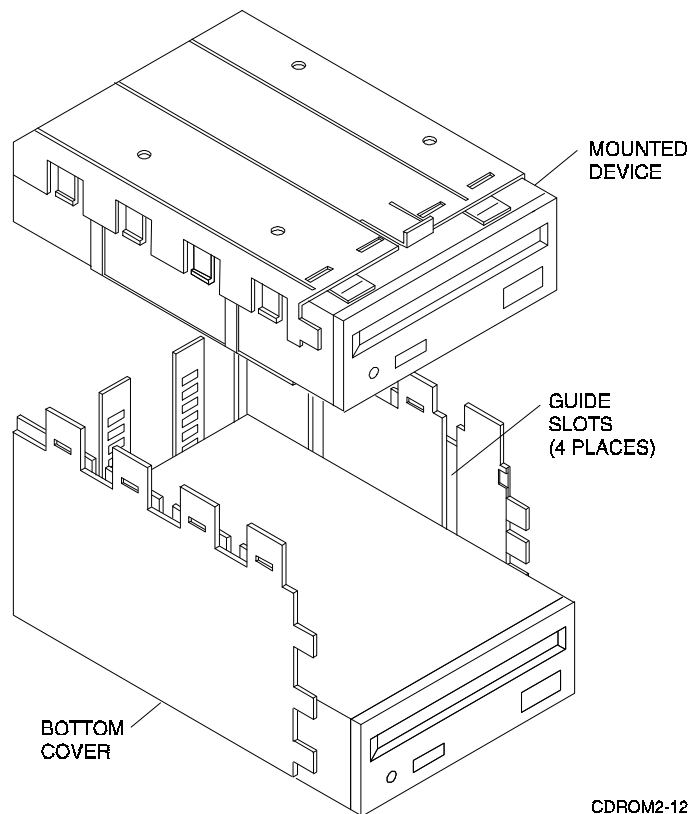


7. Align the two devices in the SBB as follows:
 - a. Slide the mounted device into the bottom cover guide slots (Figure 2–18), but do not engage the top and bottom covers.
 - b. Align the front of the top device with the front of the bottom device.

NOTE

To avoid losing alignment, hold the device to prevent it from moving in the mounting bracket.

- c. Lift the device from the bottom cover and tighten the four 4-40 flat machine screws (recommended torque is seven inch-pounds).
- d. Slide the mounted device into the bottom cover guide slots to ensure the alignment has not changed. If the alignment changed, repeat steps a. through d.
- e. If the alignment has not changed, lift the device from the bottom cover and proceed to the next step.

Figure 2–18 Two Devices in the SBB

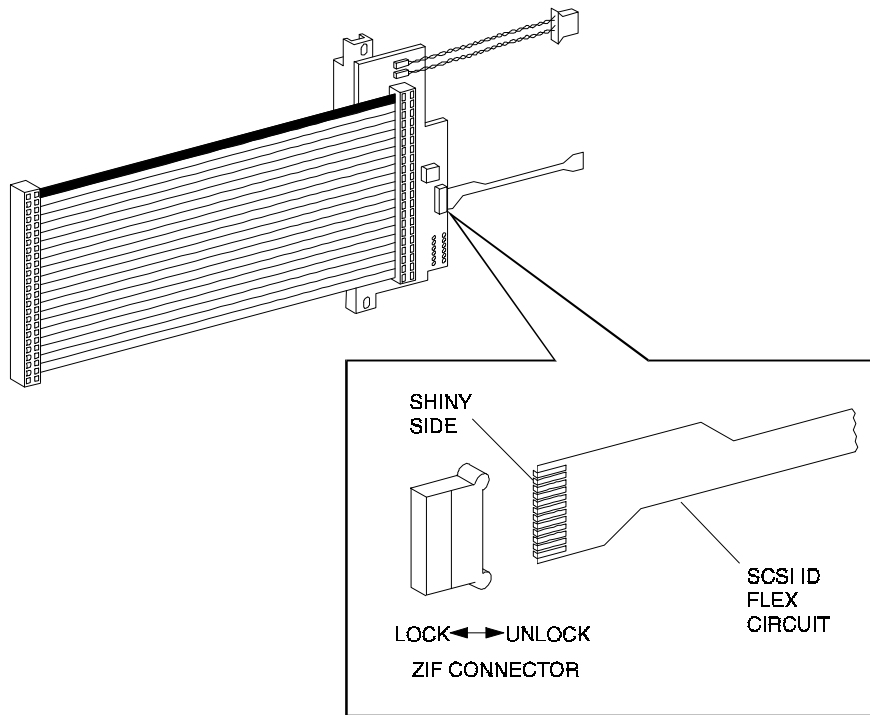
8. Attach the SCSI ID flex circuit to the I/O module ZIF connector as follows:

CAUTION

The SCSI ID connector must fit straight into the ZIF connector
or a possible short circuit condition could occur.

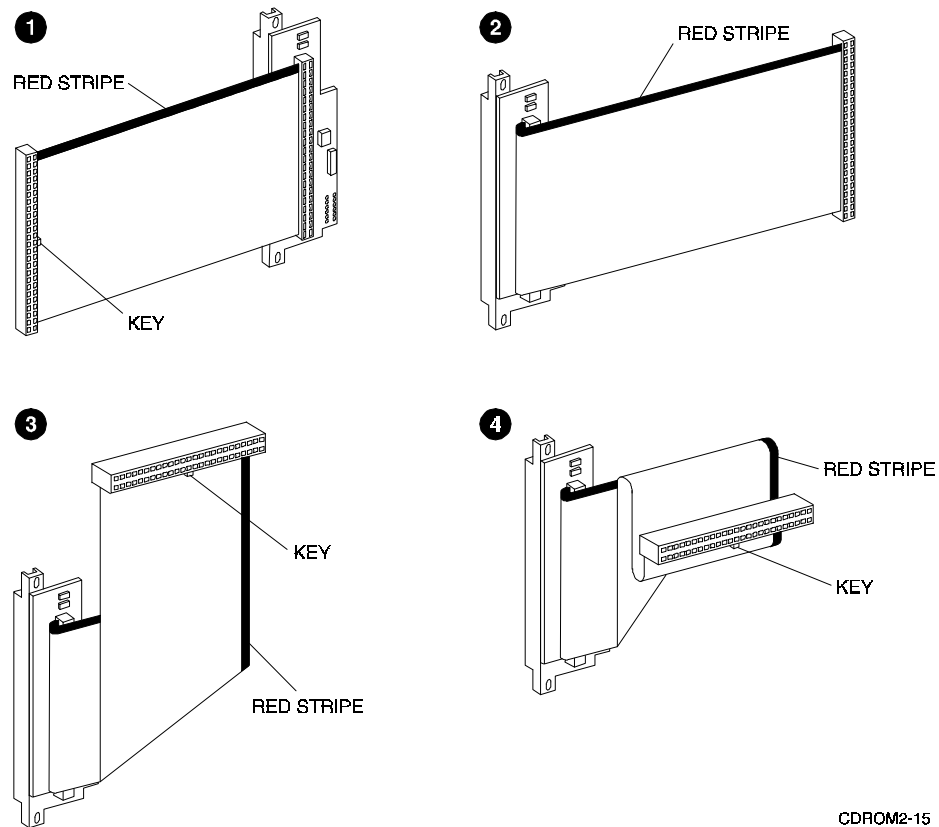
- a. Locate and unlock (pull) the edge of the ZIF connector (Figure 2–19).
 - b. Insert the flat end of the SCSI ID flex circuit into the ZIF connector. Ensure that the contacts (shiny side) are face down.
 - c. Lock (push) the edge of the ZIF connector to secure the SCSI ID flex circuit.
9. Fold the I/O cable as shown in Figure 2–20.

Figure 2–19 SCSI ID Flex Circuit to the ZIF Connector



CDROM2-13

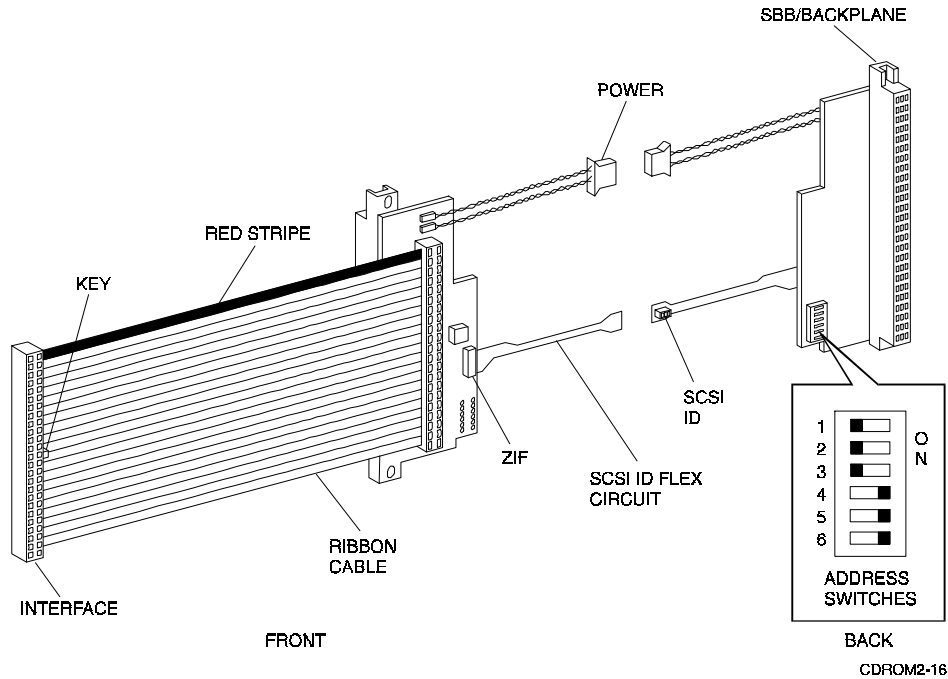
Figure 2–20 Folding the CD-ROM I/O Cable



CDROM2-15

10. Attach the I/O module connectors (Figure 2–21) to the second 5.25-inch device as follows:
 - a. Keep the ribbon cable folded while you plug in the connectors.
 - b. Plug in the interface connector.
 - c. Plug in the power connector.
 - d. Plug in the SCSI connector.
 - e. Remove and discard the protective cover over the address switches.
 - f. Set the address switches as shown in Figure 2–21.

Figure 2–21 I/O Module Connectors and SCSI Address Switches



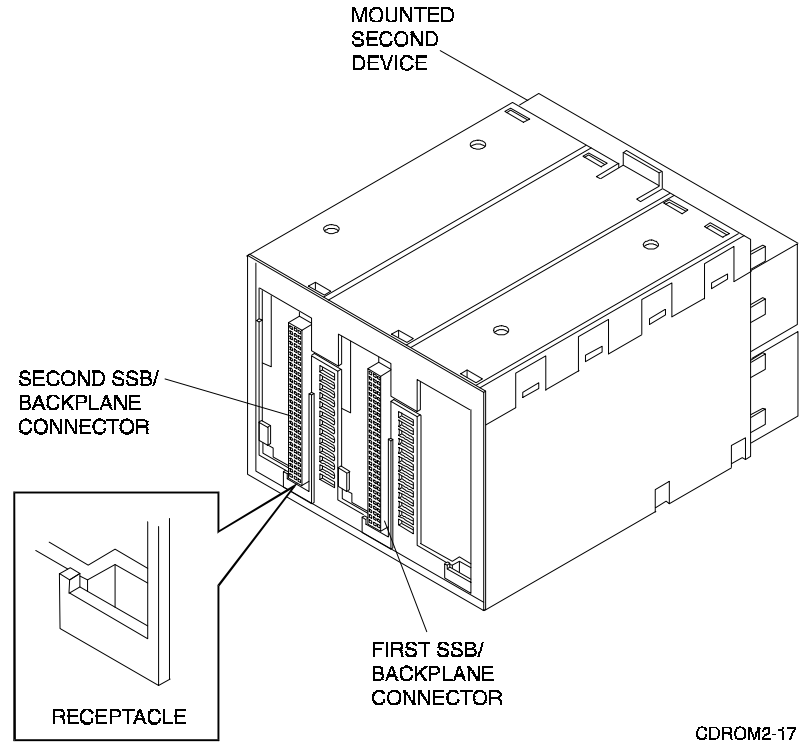
1. Insert the mounted second device into the bottom cover guide slots (Figure 2–18).

NOTE

The second connector is positioned in the slot to the left of the first connector.

12. Position the bottom of the SBB/backplane connector into the receptacle in the bottom cover as shown in Figure 2–22. The top cover has a similar receptacle for the top of the SBB/backplane connector.
13. As you align the top and bottom covers, make sure that both SBB/backplane connectors move freely up, down, and sideways.
14. Push the top cover into the bottom cover until the eight tabs on the sides of the covers engage and snap into place.

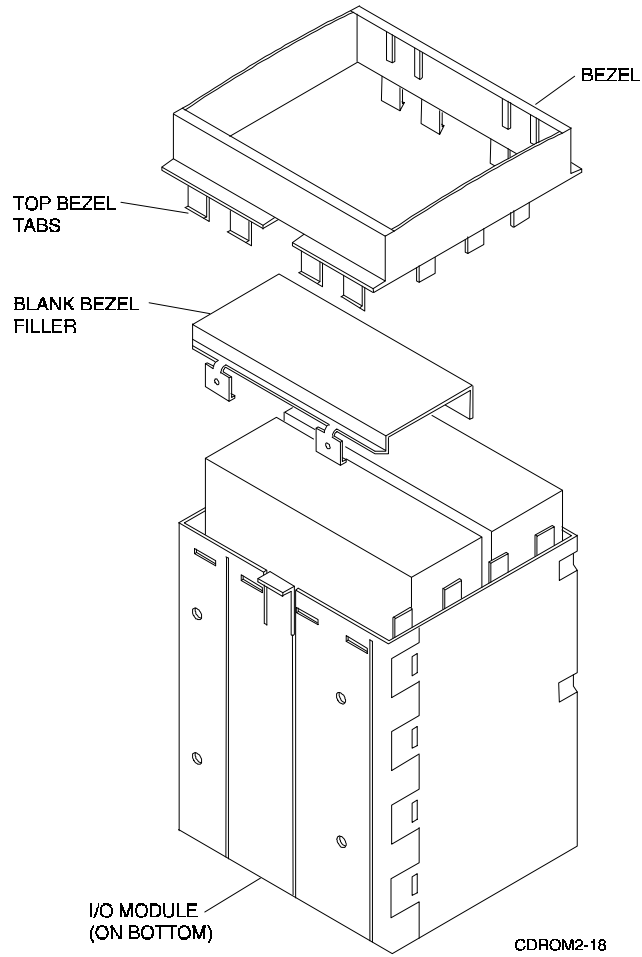
Figure 2–22 Mounted Second Device



15. Attach the bezel as follows:

- a. Stand the SBB on the I/O module end as shown in Figure 2–23.
- b. Pick up the bezel and remove the blank filler bezel.
- c. Fit the top bezel tabs into the SBB. Make sure the tabs are aligned as shown, then gently push until the four top bezel tabs and four bottom bezel tabs are secure.
- d. The second 5.25-inch device is installed and the SBB is ready to install into your storage subsystem.

Figure 2-23 Bezel Attachment



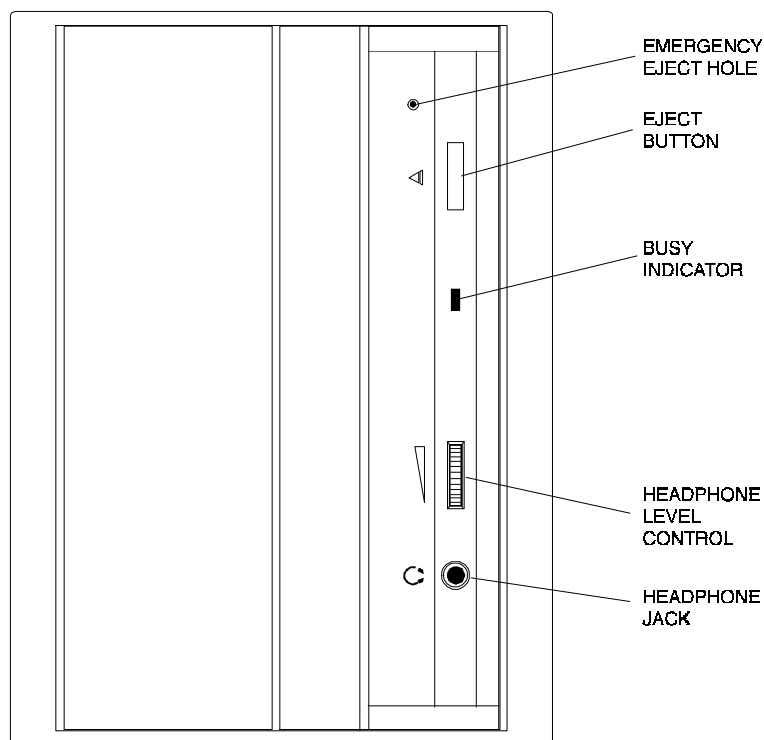
Operation and Maintenance

This chapter discusses the operation of the controls and the LED indicator on the front panel of the CD-ROM. It also describes how to load a CD, manually eject a CD drawer, and preventive maintenance.

3.1 Controls and Indicator

The front panel of the CD-ROM (Figure 3–1) contains controls and an indicator which allow the operator to access, control, and monitor the operation of the drive. Table 3–1 lists the front panel items and describes their functions.

Figure 3–1. SWXOR-DA CD-ROM SBB Front Panel Controls and Indicator



CDROM2-05

Table 3–1. CD-ROM Front Panel Controls and Indicator

Front Panel Item	Function
Emergency eject hole	Used to manually eject a CD (See Section 3.4).
Eject button	Ejects the CD from the drive when power is on (See Section 3.3).
Busy indicator	Shows status of CD-ROM. When CD drawer is opened, the indicator will turn off. When the CD drawer is closed, the indicator blinks for 10 seconds and shows one of the following disk conditions: Busy LED off - drive ready for read operation Busy LED on - drive is inoperative Busy LED blinks slowly - CD is probably dirty (clean CD).
Headphone level control	Adjusts the volume.
Headphone jack	Accepts headphone connector.

3.2 Loading a CD

NOTE

Ensure the supporting software is installed in the host system before operating the drive.

Perform the following steps to load a disk into the drive:

1. Set the *power* switch on the storage subsystem to on.
2. Press the *eject* button on the front panel to eject the drawer.
3. Insert the CD into the tray as shown in Figure 2–5, Chapter 2. Use the tabs to hold it in place.
4. Gently push the drawer. It automatically retract into the housing.
5. The *busy* LED should flash as the drive reads the Table of Contents (TOC) on the disk.
6. When the *busy* LED goes out, the drive is ready to receive commands from the host computer.
7. Follow the instructions provided by the host system's software manual.

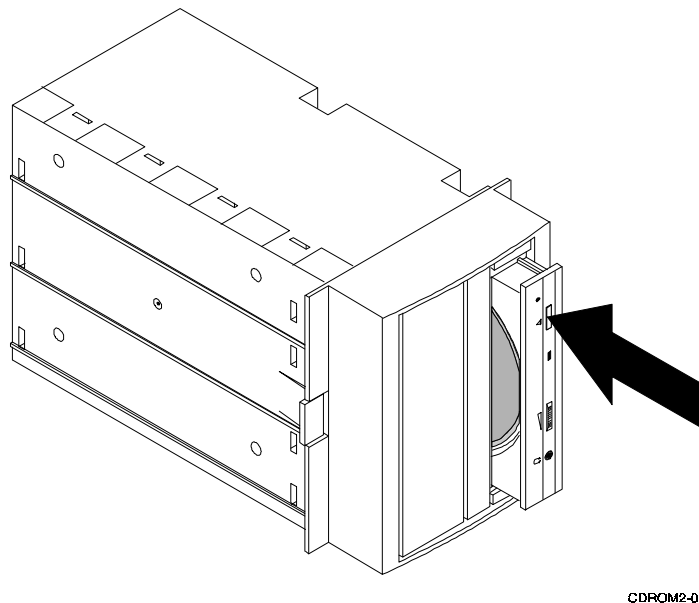
3.3 Ejecting the CD Drawer

When the drive is powered on and operating, the *eject* push-button on the drive is used to eject the CD drawer (Figure 3–2). If the *eject* push-button function is disabled by software or the drive does not eject the drawer after you press the *eject* push-button, refer to Section 3.4 below for manual-ejection instructions.

CAUTION

Never press the *eject* push-button while the drive is in operation. In particular, media should never be changed when the drive is executing a data transfer operation (green LED on front panel on or flashing). Pressing the *eject* push-button during a data transfer may cause the device to enter an indeterminate state.

Figure 3–2. Ejecting the CD Drawer

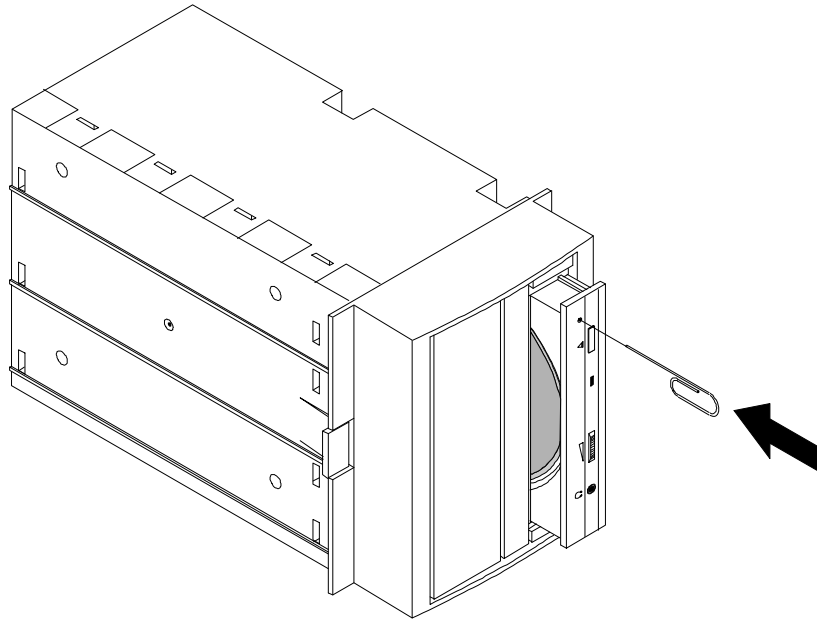


3.4 Ejecting a CD Drawer Manually

The *eject* push button on the CD-ROM drive does not function when the switch is disabled by software or if power to the drive is turned off. Use the following procedure to manually eject the CD drawer from the drive (see Figure 3–3):

1. Set the power switch on the subsystem to off to remove power from the drive.
2. Straighten one end of a large paper clip and insert the clip into the *emergency eject hole* as shown in Figure 3–3.
3. Push the clip to eject the CD drawer from the drive.

Figure 3-3. Ejecting the CD Drawer Manually



CDROM2-07

3.5 Preventive Maintenance

The CD-ROM drive does not require any form of periodic cleaning. To maintain optimum performance, ensure the environment where the drive is installed is free of contamination. If the errors are recurrent, clean the disk as described below.

3.5.1 Disk Care

Observe the following to maintain maximum performance and trouble-free operation of the CD-ROM drive:

- Do not drop the disk
- When transporting the drive, remove the CD from the drive
- When a disk is dirty, clean it with a clean, lint-free cloth. Wipe the disk from the center out
- Do not use solvents such as benzene, thinner, commercial cleaners, or anti-static sprays
- Do not place the CD in a location subject to:
 - -Dust
 - -Direct sunlight
 - -High temperature
 - -High humidity



Specifications

This appendix describes the physical, electrical, and environmental specifications for the drive.

NOTE

The physical specifications in the following table apply to the characteristics of the drive (brick, or RRD45-AA) with no front filler bezel attached.

Table A-1. Drive Specifications

Characteristic	Specification(s)
Dimensions	149.5 mm wide x 43 mm high x 200 mm deep
Weight	0.9 kg
Drive interface	SCSI-2 (8-bit, single ended)
Formatted data capacity	Approximately 600 Mbytes
Average data transfer rate	150 Kbytes/sec (single speed) 300 Kbytes/sec (dual speed) 600 Kbytes/sec (quad speed) Maximum burst rate: 1.5 Mbytes/s (async); 4.2 Mbytes/s (sync)
Average access time	600 msec (quad speed)
Spin-up time	2.3 seconds (single speed) 2.6 seconds (dual speed)
Data buffer	256 Kbytes
Audio output level [†]	Line output: 0.9 V @ 47 K Ω Headphone: 0.925 V @ 100 Ω (at maximum volume)
Power	+5 Vdc \pm 5% @ 490 ma (average)
Operating temperature	5° to 50° C (41° to 122° F)
Operating humidity	8 to 90% relative humidity, maximum, non-condensing
Operating altitude	0 to 3.6 km

[†] Support of the audio function is operating system dependent.

This appendix provides information for the system administrator. It should be read before installing and using the drive with a host operating under the SunOS 4.1.x and Solaris 2.x operating systems.

B.1 SunOS 4.1.x

B.1.1 Load Device

Any CD-ROM used as a load device to install SunOS 4.1.x must be configured for a SCSI target ID of 6. After the operating system has been installed, the drive can be set to any other valid SCSI ID if you edit your config file and rebuild the kernel. For more information, consult the SunOS documentation.

B.1.2 Boot Message

During system boot, a message similar to the following is normally generated by the host:

```
sr0: Unrecognized Vendor 'DEC ', product 'RRD45(C)DEC 'sr0 at esp0
target 6 lun 0
```

This message indicates that the CD-ROM has been installed and configured correctly by the operating system and is ready for use.

B.1.3 Adding a Second CD-ROM

A second or multiple CD-ROM drives can be added by re-building the kernel. You will need to know the target ID and which SCSI bus the existing drives are connected to. For additional information concerning "adding devices", consult the SunOS documentation.

B.2 Solaris 2.x

B.2.1 Load Device

If you are installing Solaris 2.x using the CD-ROM and your drive is not configured for a SCSI target ID of 6, instead of typing "boot cdrom" you must type the following at the console prompt:

```
boot /sbus/esp@0,80000/sd@X,0:c
```

where, **X** is the target ID of your CD-ROM drive.

Once Solaris is installed, the default CD-ROM driver target ID is set to 6. If your drive is at some other ID, you must make a symbolic link to it.

For example, the default is: `sr0 -> dsk/c0t6d0s2`

If your drive is at SCSI ID 5, then type the following at the shell as root:

```
# cd /dev
# rm sr0
# umask 0
# ln -s dsk/c0t5d0s2 sr0
```

B.2.2 Adding a Second CD-ROM

A second or multiple CD-ROM drives can be added by re-configuring the kernel. Under Solaris, this is done using the "-r" switch at boot time. After installing your drive, type:

```
"boot -r" at the boot prompt.
```

After the kernel re-configures and the system has booted, you must create a symbolic link for any drive that does not have a target ID of 6. For example, if you have CD-ROM drives at target ID 5 and 6, you must create a symbolic link for the drive at ID 5. The drive at ID 6 has a symbolic link by default. Refer to the example in section B.2.1 above for information describing how to add a symbolic link.



Product Notes for Windows NT,[™] Novell Netware,[™] and MS-DOS[™]

This appendix provides information for the system administrator. It should be read before installing and using the CD-ROM drive in a host system operating under the Novell, MS-DOS, or Windows NT operating systems.

C.1 Host SCSI Interface

CAUTION

Novell's CDROM.NLM module does not support the "hot swapping" of the CD-ROM SBB. Therefore, when using the CDROM.NLM module, **do not remove** the SBB from a Storage-Works enclosure while running the NetWare[™] server. Always unload the module before removing the SBB from the storage subsystem.

The CD-ROM drive utilizes the standard SCSI-2 command set to interface to the PC-based host system. Therefore, the host system must be equipped with a SCSI adapter to properly interface the CD-ROM with the host. For example, the host SCSI adapter might interface the computer's EISA bus to the SCSI-2 port of the SBB.

A host PC SCSI adapter is normally supplied with a compatible software driver for use with its operating system. When operating under Windows NT, Novell and MS-DOS, the software driver must be pre-loaded in accordance with the SCSI adapter manufacturer's installation procedure to ensure a proper interface between the SBB and the host. In addition, third party software may be required to access the drive.

Before purchasing a user-level software product, ensure that the drive is supported by that product (see note below). Third party product vendors usually publish a supported hardware list, or have telephone technical support personnel who will answer questions regarding compatibility of a particular drive. When choosing a software product suitable for your application, follow the software vendor's installation procedure to implement support for your CD-ROM drive. Finally, if your host is operating under Netware, Novell Inc. provides a NetWare Loadable Module (NLM) called "CDROM.NLM" with some of its operating systems. This module is compatible with the SWXOR series of CD-ROM drives.

NOTE

The SWXOR drive SBB is functionally equivalent to the RRD45 (DEC part no.) CD-ROM drive. Commercial software products that support the RRD45 will also support the SWXOR-series units.

Reader's Comments

Manual Order Number:

EK-SMIRE-UG. A01

SWXOR Series 600 MB, 5.25-Inch, Quad-Speed CD-ROM Drive

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