

CHALLENGE™ Vault L
Owner's Guide

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About This Guide

This guide provides information for operating the CHALLENGE™ Vault L storage box (model no. CMN A014). This product provides additional disk storage for the Onyx™ and CHALLENGE L (deskside) and XL (rackmount) systems. The Vault L houses SCSI (small computer system interface) drives. Each Vault L holds up to eight half-height drives or four full-height drives.

Structure of this Guide

This guide includes the following chapters and appendices:

- Chapter 1 “Touring the Chassis” introduces the components visible from the front and back of the Vault L storage box.
- Chapter 2 “Operating the Vault L Storage Box” explains how to install and remove drives, how to update the system software to recognize new drives, and how to operate the Vault L storage box.
- Appendix A “Specifications” summarizes technical specifications for the Vault L storage box.

Conventions

In command syntax descriptions and examples, square brackets ([]) surrounding an argument indicate an optional argument. Variable parameters are in italics. Replace these variables with the appropriate string or value.

In text descriptions, IRIX™ filenames are in italics. The names of IRIS® keyboard keys are printed in boldface typewriter font and enclosed in angle brackets, such as <Enter> or <Esc>.

Messages and prompts that appear on-screen are shown in typewriter font. Entries that are to be typed exactly as shown are in boldface typewriter font.

Compliance Information

FCC WARNING

This equipment has been tested and found compliant with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

This product requires the use of external shielded cables in order to maintain compliance with Part 15 of the FCC rules.

International Special Committee on Radio Interference (CISPR)

This equipment has been tested to and is in compliance with the Class A limits per CISPR publication 22, Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment; and Japan's VCCI Class 1 limits.

Canadian Department of Communications Statement

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

Attention

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de Classe A prescrites dans le Reglement sur le Brouillage Radioelectrique etabli par le Ministere des Communications du Canada.

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従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Figure In-1 VCCI Information



Figure In-2 CE insignia

Manufacturer's Regulatory Declarations

This workstation conforms to several national and international specifications and European directives as listed on the "Manufacturer's Declaration of Conformity," which is included with each computer system and peripheral. The CE insignia displayed on each device is an indication of conformity to the European requirements.

Caution: Your workstation has several governmental and third-party approvals, licenses, and permits. Do not modify this product in any way that is not expressly approved by Silicon Graphics, Inc. If you do, you may lose these approvals and your governmental agency authority to operate this device.

Touring the Chassis

This chapter discusses the product configurations, and the controls and connectors visible from the front and rear of the Vault L storage box.

Configurations

The Vault L is available in two configurations:

- differential (which supports differential SCSI drives)
- mixed-channel (which supports both single-ended and differential SCSI drives)

Note: The “Rear View Components” section tells you how to distinguish between a differential and mixed-channel Vault L storage box.

The Vault L operates with 8- and 16-bit differential drives and also 8-bit single-ended drives on the mixed-channel version. However, the Vault L does not support RAID (random array of inexpensive drive) devices and also does not currently support 16-bit, single-ended drives.



Warning: This equipment is extremely sensitive and is susceptible to damage caused by electrostatic discharge (ESD). ESD is an electrical discharge (spark) caused by the buildup of electrostatic potential on clothing and other materials.

Front View Components

Figure 1-1 shows major components visible at the front of the Vault L storage box.

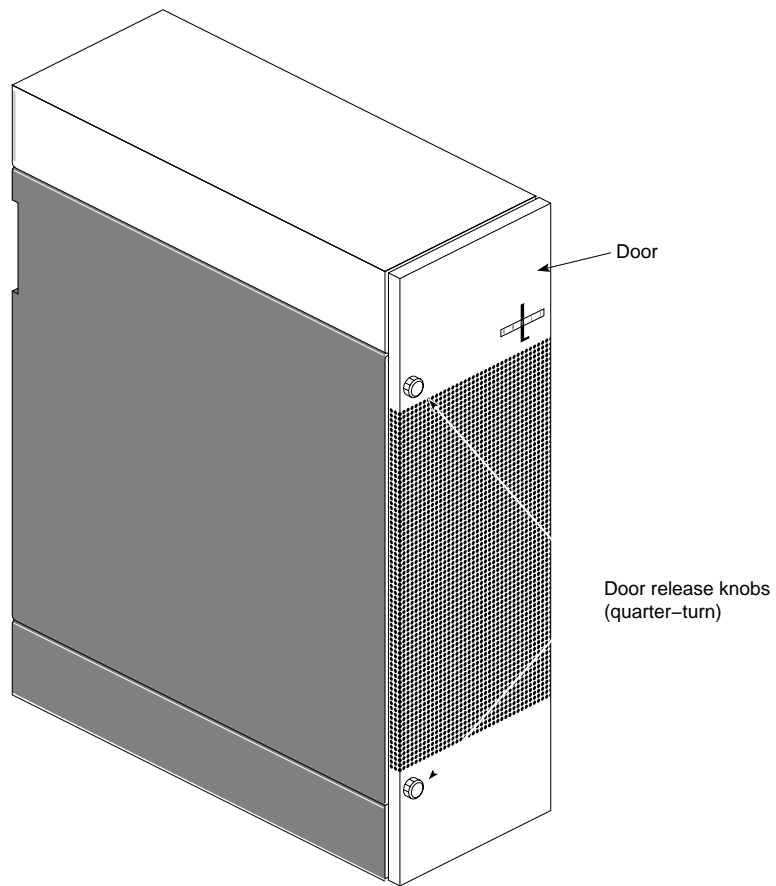


Figure 1-1 CHALLENGE Vault L (Front View)

To open the door, push the knob in and turn it counter-clockwise. To close the door, push the knob in and turn it clockwise. Figure 1-2 shows the Vault L storage box with the drive door open.

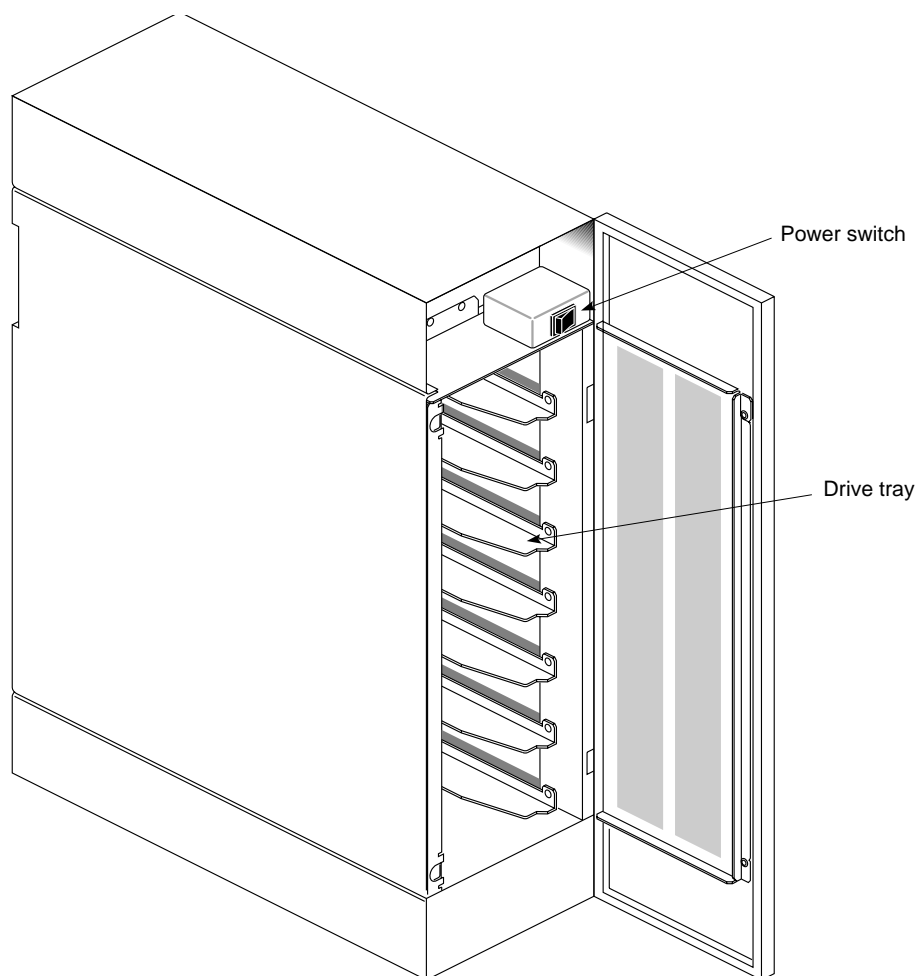


Figure 1-2 CHALLENGE Vault L (Drive Door Open)

The following components are located on the front of the Vault L storage box:

Drive door opens and closes using two quarter turns. Open the drive door by pushing the knob in and turning it counter-clockwise to open. Close the door by pushing the knob in and turning it clockwise.

Caution: The door must be in place during operation to comply with FCC regulations and for proper air flow.

On/Off switch controls power to all the drives (see Figure 1-2).

Drive shelves house the SCSI drives and drive sleds. The shelves are removable to accommodate full-height drives.

Note: Each full-height drive occupies two half-height slots.

Rear View Components

Figure 1-3 shows major components visible at the back of the Vault L differential storage box and Figure 1-4 shows the rear view of the mixed-channel configuration.

Note: The mixed-channel version has a connector called SE TERM: A. This connector is not present on the differential Vault L storage box.

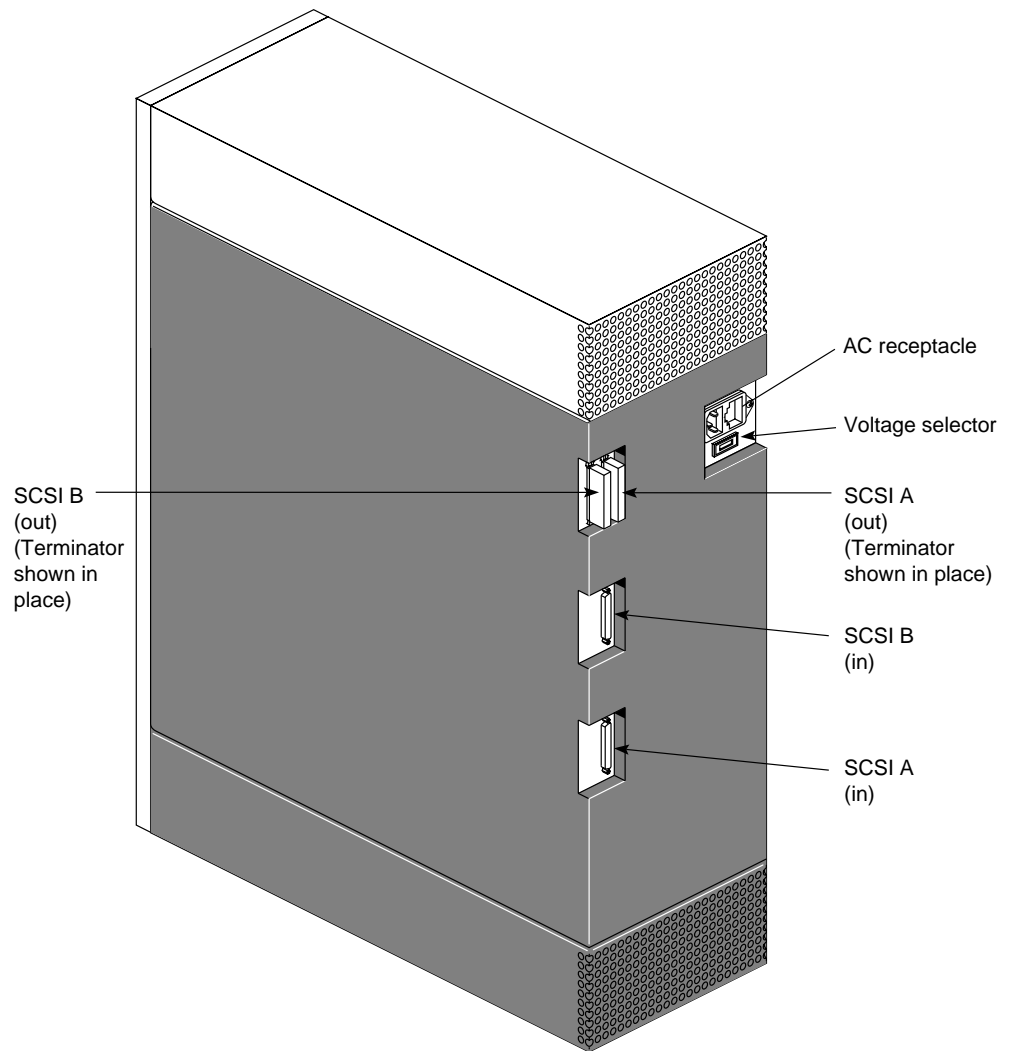


Figure 1-3 CHALLENGE Vault L (Rear View)

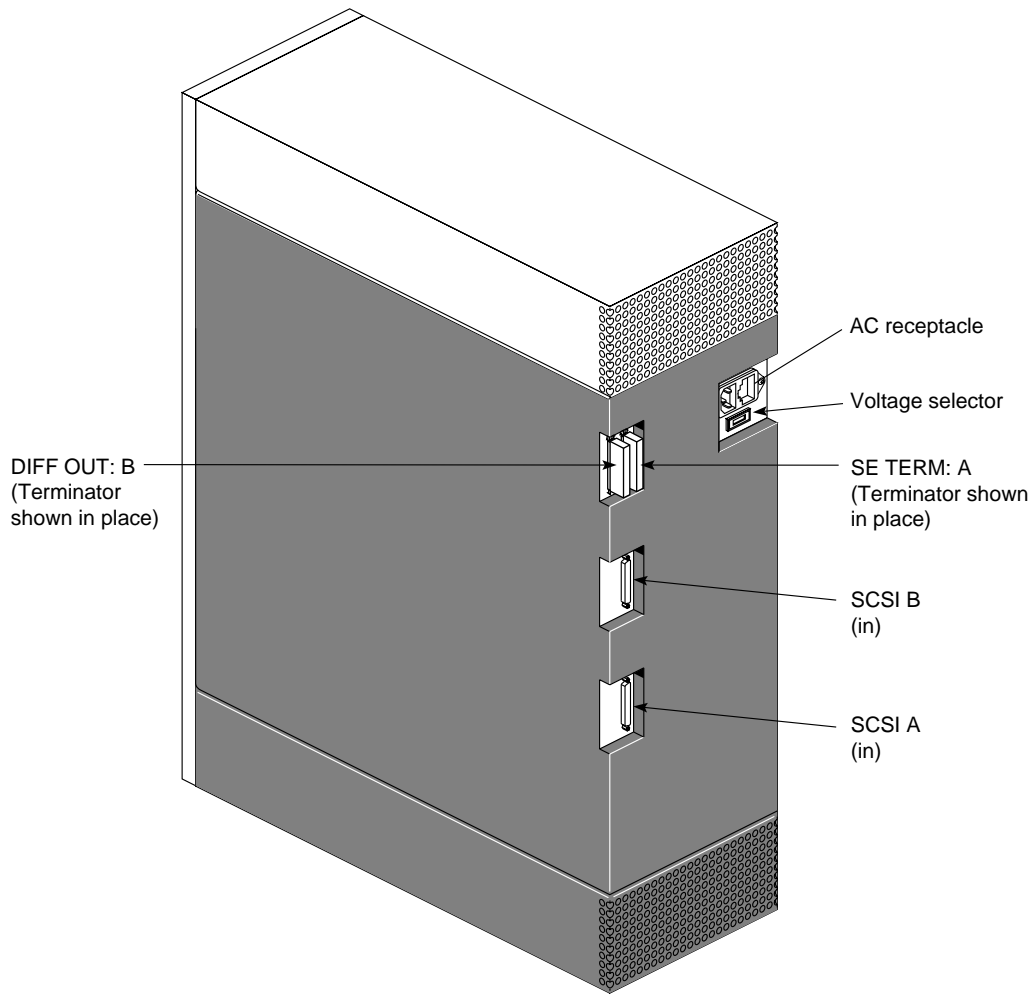


Figure 1-4 Mixed-Channel Vault L Storage Box

Note: This version supports both single-ended and differential drives. The mixed-channel Vault L also has a connector called SE TERM A. This connector is not present on the differential Vault L.

The following major components are located on the back of the Vault L storage box:

SCSI In (A/B) provides a 68-pin SCSI-2 differential connector.

Note: Each SCSI box provides two SCSI In connectors for disk striping and increased I/O throughput.

SCSI Out (A/B) provides connection for SCSI termination or a daisy-chain connection to a second Vault L or another SCSI device.

Note: You must install a SCSI terminator as shown in Figure 1-3 and Figure 1-4 to properly terminate the SCSI bus line. If you are daisy-chaining to a second Vault L or another SCSI device, install the terminator on the SCSI Out connector of the second Vault L or the last SCSI device in the chain, as applicable.

Voltage Selector Switch
selects between 115 and 230 volts.

Caution: To prevent possible damage to the Vault L, always ensure that the voltage selection matches the power source input.

Warning: Do not attempt to connect the Vault L to the host system. Installation should be performed only by Silicon Graphics-certified personnel.



Installation of these upgrades requires specific training and technical knowledge. This equipment utilizes electrical power internally that is hazardous if the equipment is improperly disassembled.

This equipment is also extremely sensitive and is susceptible to damage caused by electrostatic discharge (ESD). ESD is an electrical discharge (spark) caused by the buildup of electrostatic potential on clothing and other materials.

Operating the Vault L Storage Box

After a Silicon Graphics[®]-certified system support engineer (SSE) has installed the Vault L storage box to the host system, you can add compatible drives to the drive boxes as explained in this chapter:

- installing a drive
- removing a drive shelf
- removing a SCSI drive from the chassis
- updating the software to recognize the new drives
- operating the Vault L storage box

Installing a Drive

Before you install a drive, you must:

- select the SCSI ID for the drives
- select the correct channel (A or B) on the drive sled
- set the drive sled board jumpers

Caution: There are two types of drives, single-ended and differential. If you do not know which type of drive type you have, do not install the drives into the Vault L. Contact your field support or sales office, as required to help determine your drive type.

The drive and drive sled assembly are one modular unit. To install the drive and drive sled assembly in the drive box, follow these steps:

1. Jumper the SCSI ID for each drive to avoid addressing conflicts.
2. Determine which channel (A or B) you want the drive to occupy, then plug the SCSI cable from the drive into the proper channel connector. See Figure 2-1 and Figure 2-2.

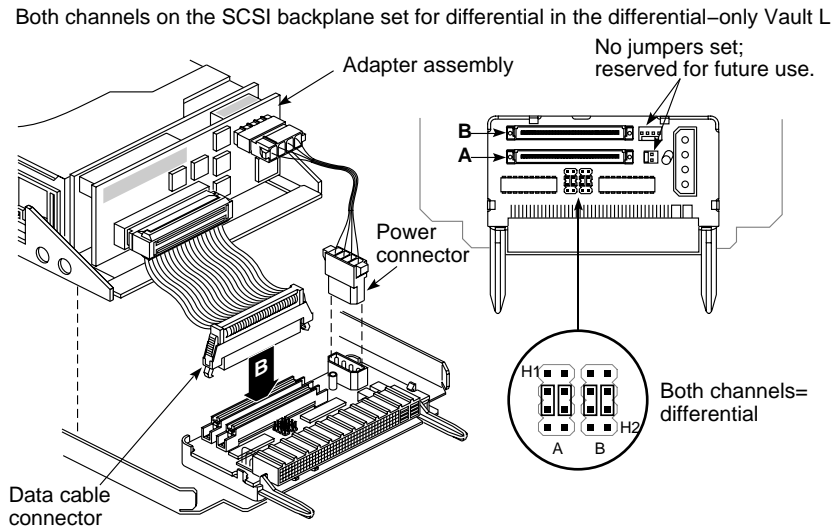


Figure 2-1 SCSI Drive Sled Jumper Setup for Differential Vault L

Mixed channel setup on the SCSI backplane for single-ended or differential operation on SE/DIFF Vault L

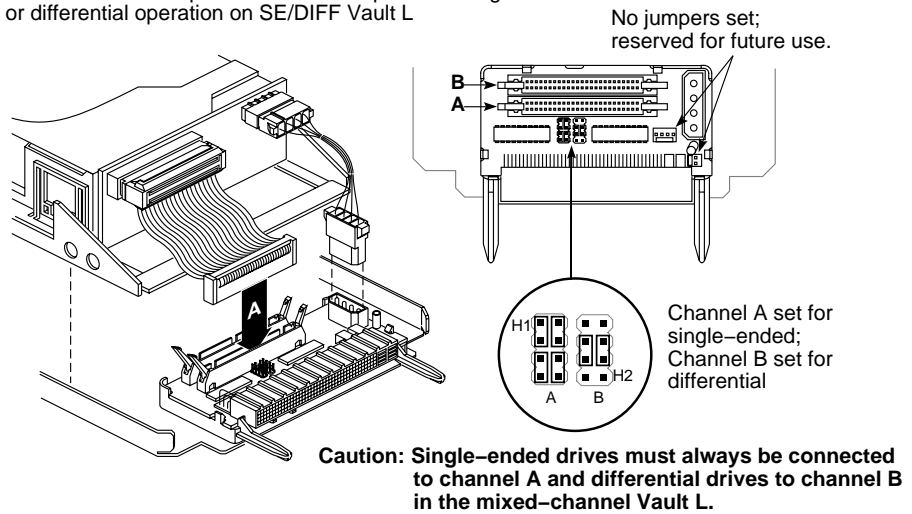


Figure 2-2 SCSI Drive Sled Jumper Setup for Mixed-Channel Vault L

Caution: Channel A on the mixed-channel Vault A is reserved for single-ended SCSI drives only. The drive sled board jumpers should be set for either differential or single-ended operation as shown in Figure 2-1 and Figure 2-2.

3. To install a drive, orient the front-loading drive relative to the Vault L so that the drive is facing up. See Figure 2-3.

Caution: Always install drives beginning from the bottom to prevent the Vault L storage box from tipping over.

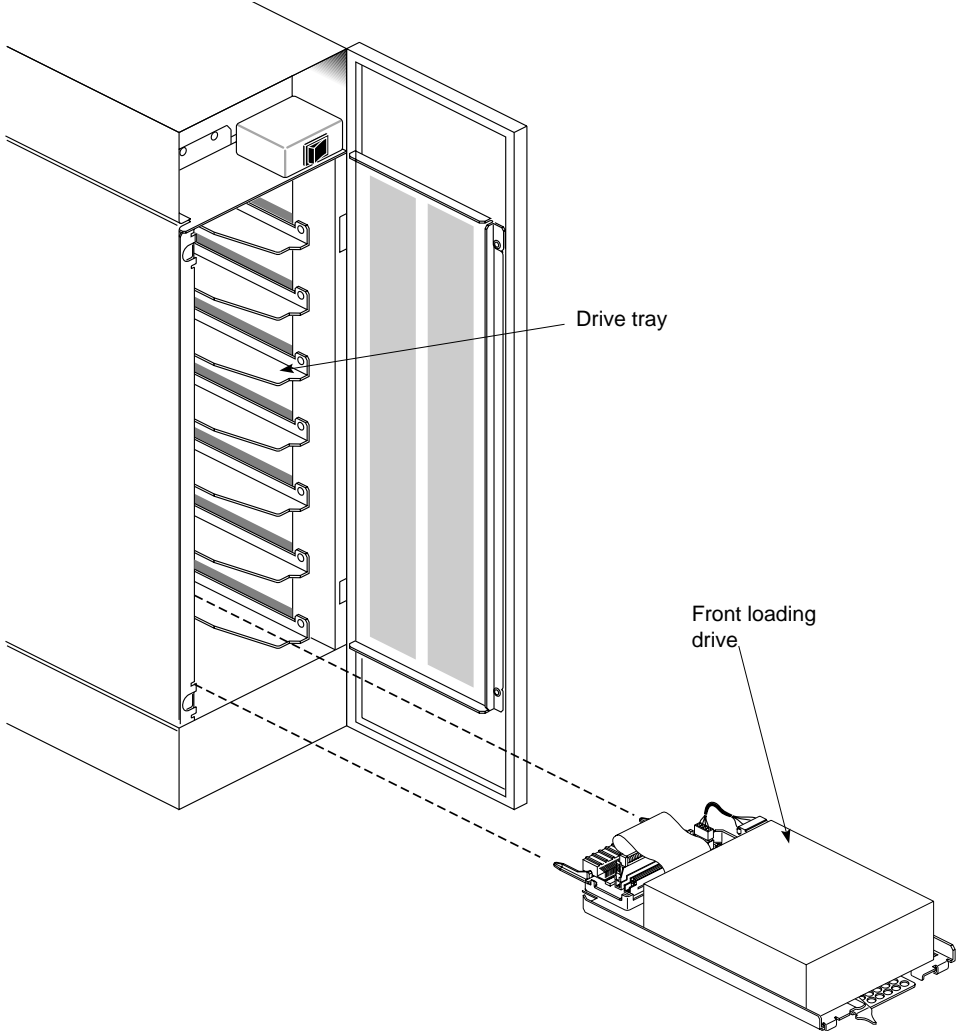


Figure 2-3 Installing (or Removing) a Drive in the Vault L Storage Box

4. Carefully insert the device into the drive bay until it seats firmly into the lever catch and move the locking lever all the way to the right.
5. After you have installed all of the drives, you can power on the drive box and rack. See Figure 1-2 in Chapter 1, "Touring the Chassis," earlier in this guide for the location of the power switch.

Caution: Recheck the SCSI ID of the drives to make sure you do not duplicate numbers.

Removing a Drive Shelf

Full-height drives require two half-height drive slots. To install a full-height drive, you must first remove a drive shelf from the Vault L using these instructions:

1. Open the front door of the Vault L.
2. Select a drive shelf for removal, then remove the two screws that secure the drive shelf to the sides of the Vault L chassis (see Figure 2-4).

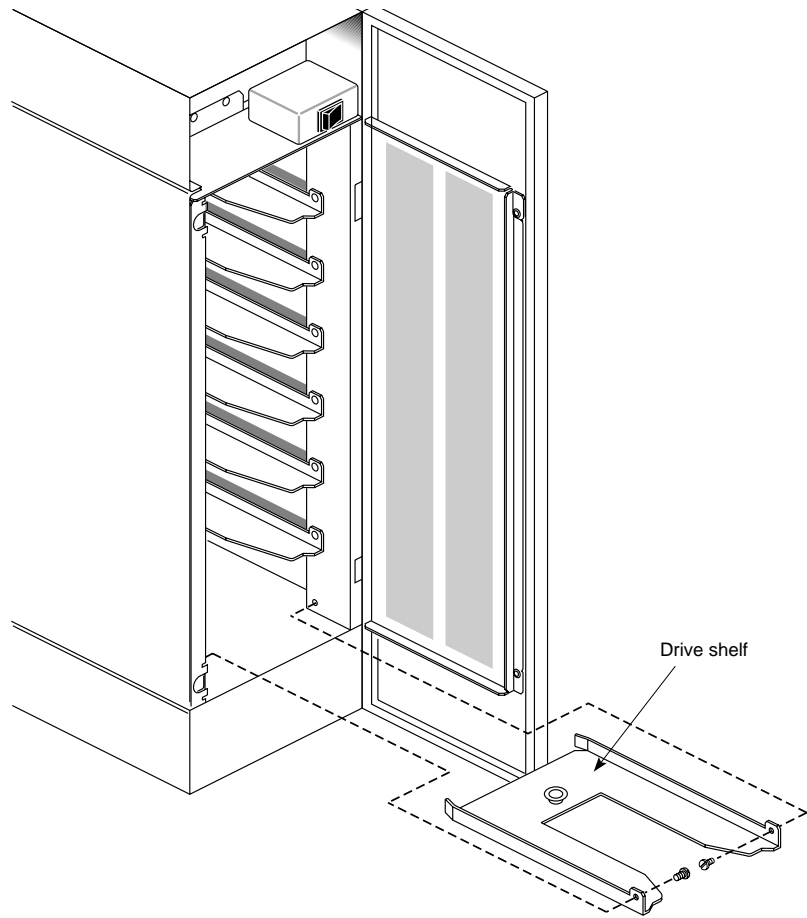


Figure 2-4 Removing a Drive Shelf From the Vault L

Pull the drive shelf out of the chassis and store it for later possible use.

3. Follow the instructions in the previous section, "Installing a Drive," to insert a full-height drive in the Vault L.

Removing a Drive From the Chassis

To remove a SCSI drive:

1. Push the drive lever to the left to disengage the drive assembly from the shelf.
2. Carefully slide the drive and sled assembly out of the slot.

Updating the Software to Recognize the New Drives

To notify the operating system of the new drives, run the *MAKEDEV* command, which creates the required device files for the software. If you do not know how to run *MAKEDEV*, refer to your system administrator's documents.

Caution: Only a qualified system administrator or someone familiar with IRIX™ commands should execute *MAKEDEV*.

Operating the Vault L

The power switch for the Vault L storage box is located in the front, as shown in Figure 1-2 in Chapter 1, "Touring the Chassis," earlier in this guide. It is recommended that you always power up the Vault L first before powering up the host system. If you need to bring down the entire system, turn off the Vault L first before shutting down the host system.

Caution: The Vault L has a switchable 115/230 power supply. See Figure 2-5. To prevent damage to the Vault L storage box, always ensure that the voltage setting matches the power source voltage.

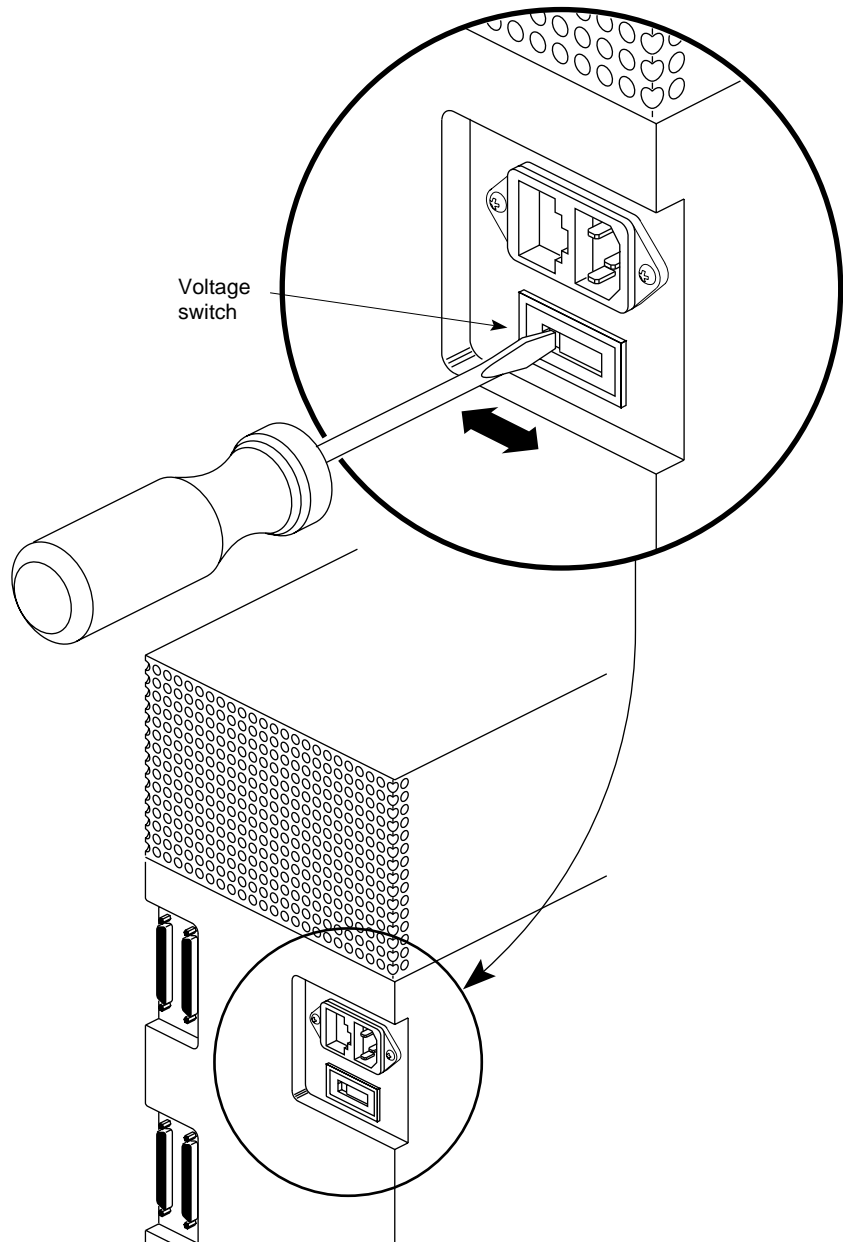


Figure 2-5 Voltage Selection Switch

Specifications

Table A-1 summarizes physical, electrical, safety, and environmental specifications for the Vault L storage box.

Note: The Vault L storage box supports 8-bit and 16-bit differential SCSI drives and 8-bit single-ended SCSI drives.

Table A-1 Vault L Storage Box Specifications

Specification Type	Parameter	Characteristics
Physical dimensions	Height x width x depth, in inches	25.75 (65.4 cm) x 7.5 (19 cm) x 20.5 (52 cm); with feet, width is 13.45 (34.2 cm)
	Weight	63 lb (29 kg)
	Device weight	4.5 to 7.6 lb (2.04 to 3.45 kg)
Electrical	Power supplies	5 VDC at 16 A 12 VDC at 20 A
	Voltage	208 to 230 VAC single phase 110 VAC single phase
	Frequency	50 Hz (minimum) to 60 Hz (maximum), single phase
	Line current	1.5 A/3.0 A (maximum)
Safety	UL	UL 1950
	CSA	CSA C22.2 No. 154-M1983 or CAN/CSA-C22.2 No. 950-M89
	TUV	Licensed under CENELEC European Norm EN 60 950/ 09.87

Table A-1 Vault L Storage Box Specifications

Specification Type	Parameter	Characteristics
	EMI	FCC, Part 15, Class A VDE 0871/6.78, Level A V.C.C.I., Class 1 Limits
Environmental	Temperature operating nonoperating	5 to 35 degrees C at sea level -15 to +65 degrees C at sea level
	Relative humidity operating nonoperating	20 to 80%, noncondensing 10 to 90%, noncondensing
Vibration	Sustained vibration, operating (sinusoidal)	5 to 22 Hz at 0.01 inch; 22 to 500 Hz at 0.25 g
	Nonoperating vibration	5 to 10 Hz at 0.1 inch; 10 to 500 Hz at 0.5 g
SCSI Limitations	Number of Devices	Up to 15 devices per channel (A or B)
	SCSI cable length	Not to exceed 81 feet (25 meters)
	Daisy-chaining	Differential SCSI devices only. Single-ended devices cannot be daisy-chained. In addition, up to two Vault L storage devices can be daisy-chained.