Sun StorEdge™ T3 Disk Tray Cabinet Installation Guide

Sun Microsystems, Inc.
901 San Antonio Road
Palo Alto, CA 94303-4900 U.S.A.
650-960-1300

Part No. 806-7979-10
January 2001, Revision A

Send comments about this document to: docfeedback@sun.com

Copyright 2001 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94303-4900 U.S.A. All rights reserved.

This product or document is distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any. Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X / Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Sun StorEdge, SunDocs, SunService, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Federal Acquisitions: Commercial Software—Government Users Subject to Standard License Terms and Conditions.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2001 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, CA 94303-4900 Etats-Unis. Tous droits réservés.

Ce produit ou document est distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a. Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X / Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, AnswerBook2, docs.sun.com, Sun StorEdge, SunDocs, SunService, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ETAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

Please
Recycle

Adobe PostScript

Contents

1. Preparing for Installation 1-1

1.1 Rackmount Kit Contents 1-2

1.2 Related Documentation 1-3

1.3 Accessing Sun Documentation Online 1-3

1.4 Installation Guidelines 1-4

1.5 Attaching the Support Plate to the Disk Tray 1-5

1.6 Preparing the Cabinet 1-6

2. Installing a Sun StorEdge T3 Disk Tray in a Sun Cabinet 2-1

2.1 Attaching the Side Rails 2-2

2.2 Installing the Disk Tray in the Cabinet 2-4

3. Installing a Sun StorEdge T3 Disk Tray in a Standard 19-inch EIA/RETMA Cabinet 3-1

3.1 Attaching the Side Rails 3-2

3.2 Installing the Disk Tray in the Cabinet 3-4

A. Cabinet and Rack Requirements A-1

A.1 Cabinet and Rack Hardware A-2

A.1.1 Physical Dimensions A-2

A.1.2 Vertical Mounting Space A-4

A.2 Specifications A-6

A.3 Product Servicing A-7

A.4 SunService Policy on Third-Party Products A-8

CHAPTER 1

Preparing for Installation

The *Sun StorEdge T3 Disk Tray Cabinet Installation Guide* describes how to install a Sun StorEdge™ T3 disk tray in a Sun™ cabinet or a standard 19-inch EIA/RETMA cabinet using a rackmount kit. There are two types of rackmount kits available:

- 4 rack units (*RU*) high (fits one disk tray).
- 7 RUs high (fits two disk trays).

Note – In this document, the term *standard 19-inch EIA/RETMA cabinet* is defined as a cabinet supplied by a manufacturer other than Sun.

This document includes information only on mounting a disk tray in a cabinet; it does not include instructions on how to perform a complete disk tray installation. For instructions on cabling the disk tray, configuring the drive volumes, and other installation information, refer to Chapter 2 of the *Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual*.

Note – Before beginning the installation, refer to the requirements for operating a Sun StorEdge T3 disk tray in a standard 19-inch EIA/RETMA cabinet as described in Appendix A of this document. Make sure that the cabinet you are using meets the specified requirements.

This chapter contains the following sections:

- Section 1.1, “Rackmount Kit Contents” on page 1-2
- Section 1.2, “Related Documentation” on page 1-3
- Section 1.3, “Accessing Sun Documentation Online” on page 1-3
- Section 1.4, “Installation Guidelines” on page 1-4
- Section 1.5, “Attaching the Support Plate to the Disk Tray” on page 1-5
- Section 1.6, “Preparing the Cabinet” on page 1-6

1.1 Rackmount Kit Contents

The following tables list the items that are supplied with the 4-RU and 7-RU rackmount kits. These kits contain the hardware items required to install a Sun StorEdge T3 disk tray in a Sun cabinet or a standard 19-inch EIA/RETMA cabinet using a rackmount kit.

TABLE 1-1 4-RU Rackmount Kit (One Disk Tray)

Part Number	Item Description	Quantity
340-6032-01	Side rail, left	1
340-6033-01	Side rail, right	1
340-6035-01	Adapter plate	2
340-6031-01	Support plate	1
240-1953-01	Screw, 10-32x1/2 in.	18
240-3768-01	Screw, 10-32x5/16 in.	4

TABLE 1-2 7-RU Rackmount Kit (Two Disk Trays)

Part Number	Item Description	Quantity
340-6139-01	Side rail, left	1
340-6140-01	Side rail, right	1
340-6035-01	Adapter plate	4
340-6031-01	Support plate	2
240-1953-01	Screw, 10-32x1/2 in.	32
240-3768-01	Screw, 10-32x5/16 in.	8

1.2 Related Documentation

The following table lists other related documents that can help you with the installation process.

TABLE 1-3 Related Documentation

Application	Title	PartNumber
Preparing for the installation	*Sun StorEdge T3 Disk Tray Site Preparation and Planning Guide*	806-4212
Installation overview	*Sun StorEdge T3 Disk Tray Installation Task Map*	806-1061
Installing, operating, and servicing	*Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual*	806-1062
Administration	*Sun StorEdge T3 Disk Tray Administrator's Guide*	806-1063
Release notes	*Sun StorEdge T3 Disk Tray Release Notes*	806-1497
Installation	*Rackmount Placement Matrix*	805-4748

1.3 Accessing Sun Documentation Online

The SunDocs^{SM} product documentation web site enables you to access a select group of Sun technical documentation on the Web. You can browse the SunDocs archive or search for a specific book title or subject at:

```
http://www.sun.com/products-n-solutions/hardware/docs
```

1.4 Installation Guidelines

Follow the guidelines when installing the disk tray:

- Prepare the location following the instructions in the *Sun StorEdge T3 Disk Tray Site Preparation and Planning Guide*.
- Install the disk tray in the first empty slot at the bottom of the cabinet. If you are installing more than one disk tray, continue installing disk trays from the bottom up.
- If you are installing a disk tray partner group, install the master unit in the lowest empty slot available, and install the alternate master unit in the next slot up. Install all disk tray partner groups in this order.
- Use two people to lift and install the disk tray.

Caution – This procedure requires two people to lift and move the disk tray. Use care to avoid injury. A disk tray can weigh up to 67 pounds (30 kg)

1.5 Attaching the Support Plate to the Disk Tray

1. **With the aid of an assistant, invert the disk tray so that the bottom faces up and the front faces you.**
2. **Using a Phillips screwdriver, remove the four screws that secure the feet to the disk tray (**FIGURE 1-1**).**

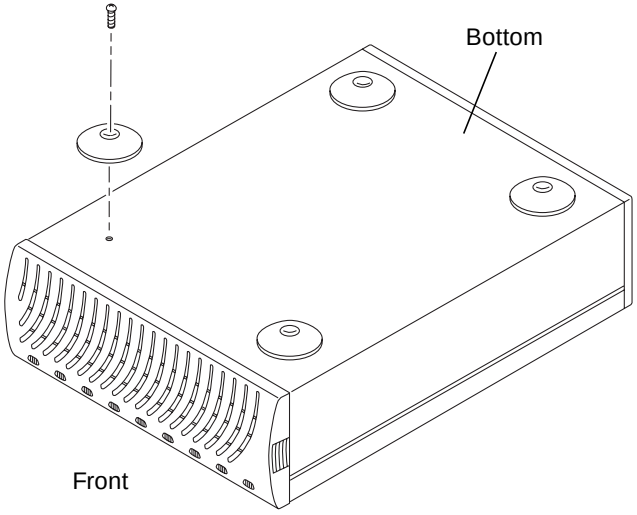

FIGURE 1-1 Removing the Feet

3. **Secure the support plate to the disk tray, using screws (part number 240-3768-01) provided in the rackmount kit (see** TABLE 1-1 **for a listing of the 4-RU kit or** TABLE 1-2 **for the 7-RU kit).**

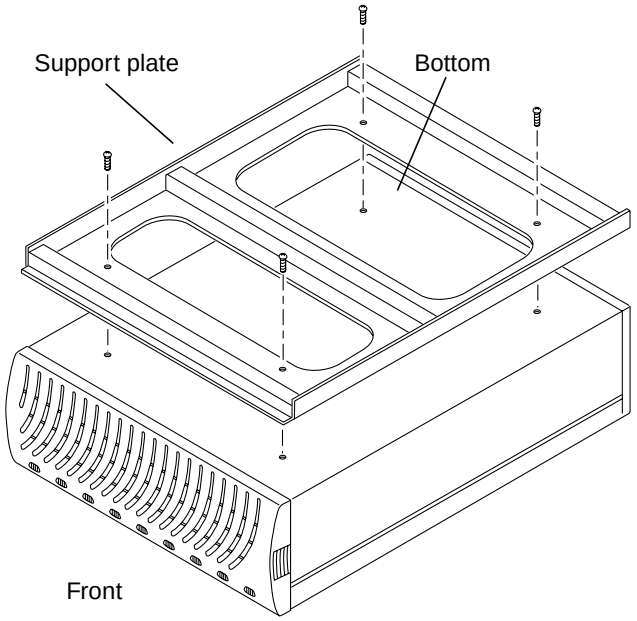

FIGURE 1-2 Attaching the Support Plate to the Disk Tray

4. **With the aid of an assistant, restore the disk tray to the upright position.**

1.6 Preparing the Cabinet

Follow the instructions on preparing for service in your Sun cabinet or standard 19-inch EIA/RETMA cabinet documentation. Be sure to:

- Extend the stabilizer legs
- Stabilize the cabinet as described in the cabinet documentation
- Remove or open the top front panel
- Remove or open the vented rear panel

CHAPTER 2

Installing a Sun StorEdge T3 Disk Tray in a Sun Cabinet

This chapter provides information on installing a Sun StorEdge T3 disk tray in a Sun cabinet.

This chapter contains the following sections:

- Section 2.1, “Attaching the Side Rails” on page 2-2
- Section 2.2, “Installing the Disk Tray in the Cabinet” on page 2-4

2.1 Attaching the Side Rails

1. **Loosely thread two screws (part number 240-1953-01) into the top two holes as specified in the** *Rackmount Placement Matrix***.**

   The side rails could be easily misaligned if you select the wrong holes.

2. **Place the left side rail in the cabinet. Align the open-slotted holes at the top of the rail with the screws you installed in Step 1.**

   See FIGURE 2-1 for a 4-RU side rail installation. See FIGURE 2-2 for a 7-RU side rail installation.

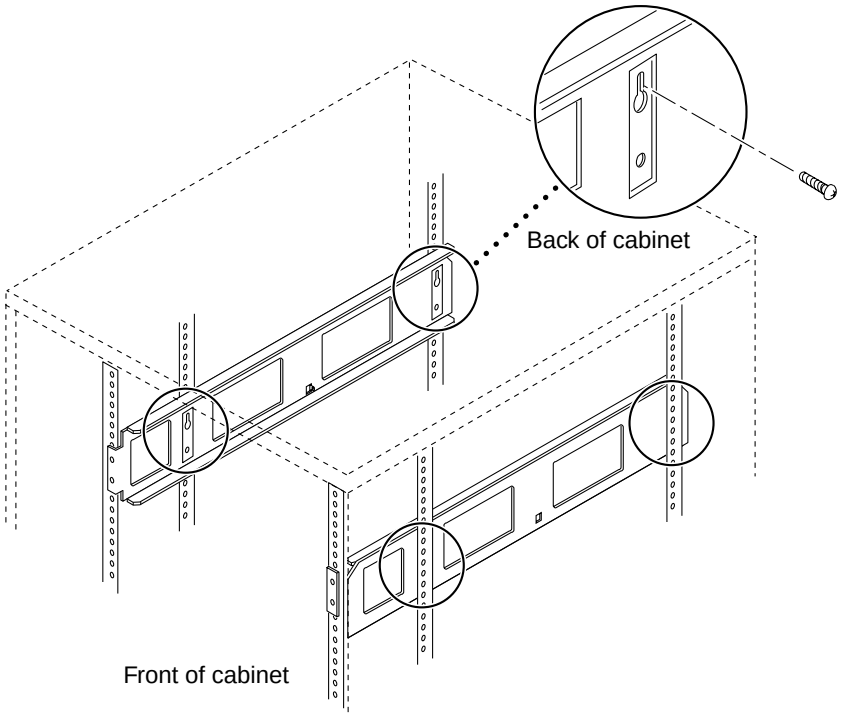

FIGURE 2-1 Attaching a 4-RU Side Rail and Threading the Screws

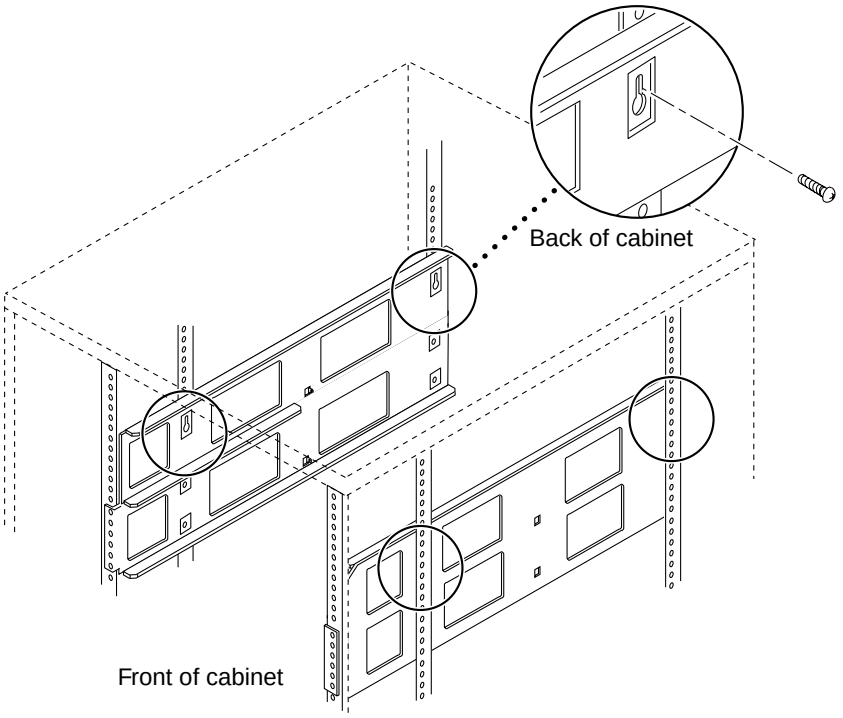

FIGURE 2-2 Attaching a 7-RU Side Rail and Threading the Screws

3. **Install the screws (part number 240-1953-01) in the bottom rail holes.**
   - If you are installing a 4-RU rackmount kit, install two screws in the bottom rail holes.
   - If you are installing a 7-RU rackmount kit, install four screws in the bottom rail holes.
4. **Tighten all screws.**
5. **Repeat Step 1 through Step 4 for the right side rail.**

2.2 Installing the Disk Tray in the Cabinet

Caution – The cabinet can become front-heavy while a disk tray is being installed. Unless your cabinet is bolted to the floor, ensure that the stabilizer legs are extended before proceeding. Failure to extend the legs can result in the cabinet tipping forward and injuring personnel.

Caution – This installation requires two people to lift and move the disk tray. Use care to avoid injury. A disk tray with a support plate attached can weigh up to 87 pounds (39 kg).

1. **With the aid of an assistant, lift the disk tray (one person on each side) and approach the cabinet with the back of the disk tray entering the front of the cabinet.**
2. **Align the disk tray with the side rails, and slide the disk tray in the cabinet (**FIGURE 2-3**).**

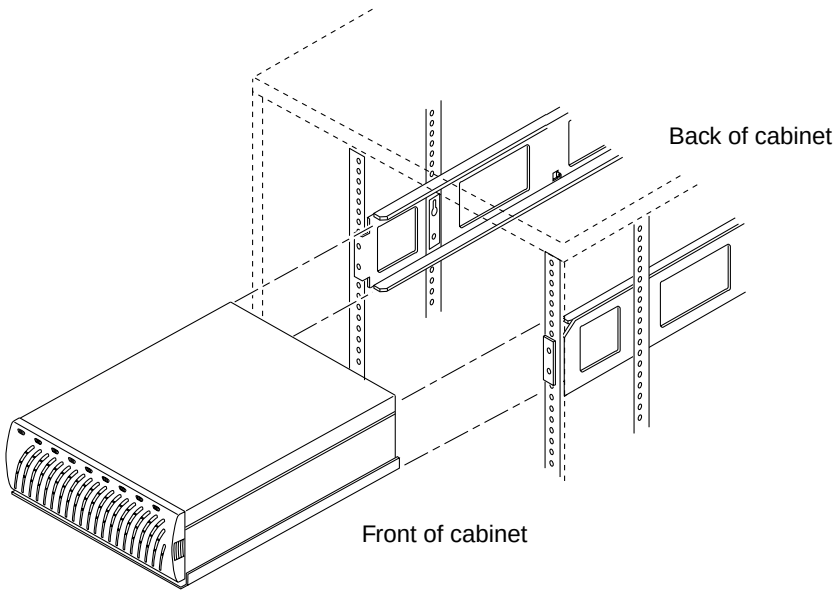

FIGURE 2-3 Aligning the Disk Tray Chassis and Support Plate With the Side Rails

3. **Secure the disk tray to the side rails by threading two screws (part number 240-1953-01) into the support plate at the back of the disk tray chassis (**FIGURE 2-4**).**

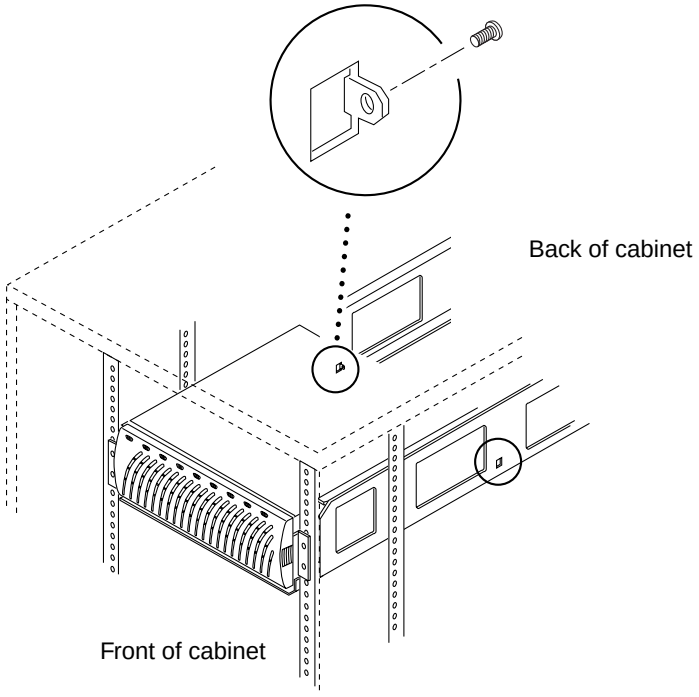

FIGURE 2-4 Securing the Disk Tray Chassis

4. **If you are installing a second disk tray into a 7-RU side rail, repeat Step 1 through Step 3 (**FIGURE 2-5**).**

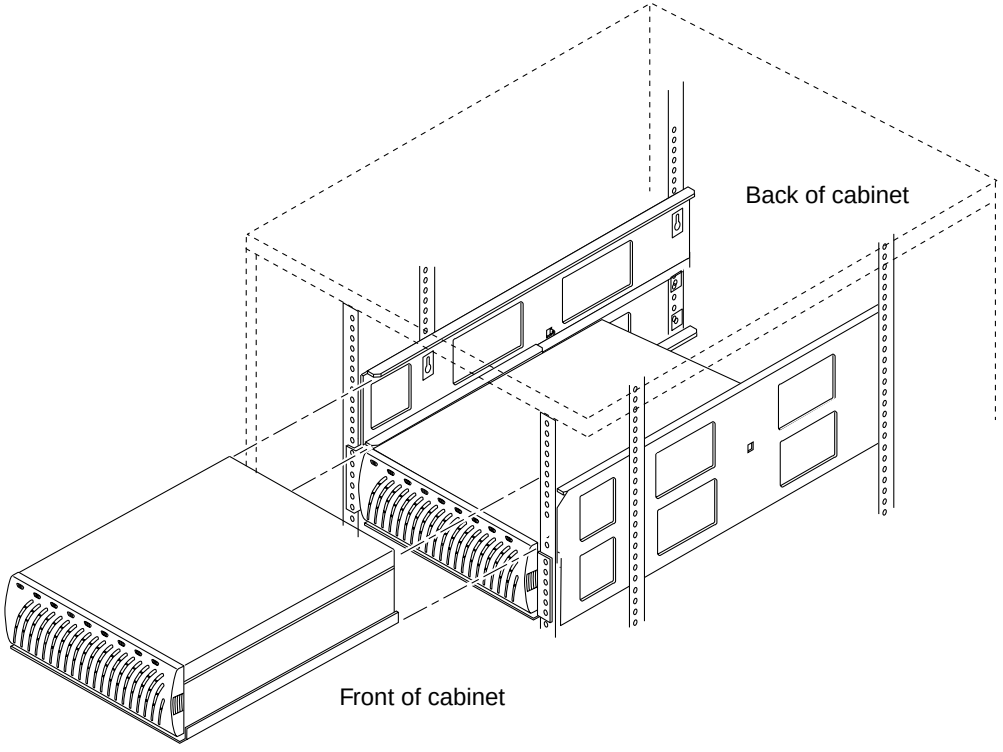

FIGURE 2-5 Installing a Second Disk Tray Into a 7-RU Side Rail

After you have installed the disk tray in the cabinet, refer to Chapter 2 of the *Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual* for instructions about how to cable the disk trays.

Caution – If you need to remove the disk tray, make sure you have someone to assist you; one of you should be positioned at the front of the cabinet and the other one should be at the back. The person at the back of the rack can push it forward slightly after removing the mounting screws. The person at the front of the cabinet should be ready to take hold and stabilize the tray once it starts to move forward. Use two people to pull it out of the rails completely.

CHAPTER 3

Installing a Sun StorEdge T3 Disk Tray in a Standard 19-inch EIA / RETMA Cabinet

This chapter provides information on installing a Sun StorEdge T3 disk tray in a standard 19-inch EIA / RETMA cabinet.

Note – Before beginning the installation, refer to the requirements for operating a Sun StorEdge T3 disk tray in a standard 19-inch EIA / RETMA cabinet as described in Appendix A of this document. Make sure that the cabinet you are using meets the specified requirements.

This chapter contains the following sections:

- Section 3.1, “Attaching the Side Rails” on page 3-2
- Section 3.2, “Installing the Disk Tray in the Cabinet” on page 3-4

3.1 Attaching the Side Rails

1. **Prepare the side rails by loosely attaching the adapter plates to the back of the rails using four screws (part number 240-1953-01), per adapter plate, provided in the rackmount kit.**

   See FIGURE 3-1 for a 4-RU side rail installation. See FIGURE 3-2 for a 7-RU side rail installation.

2. **Position the left side rail in the cabinet, aligning the rails at the front and back.**

   Depending on the type of cabinet you are using, the rail holes may or may not be individually numbered. The side rails could be easily misaligned if you select the wrong holes. When installing the side rails, ensure that they are positioned evenly from the front of the cabinet to the back.

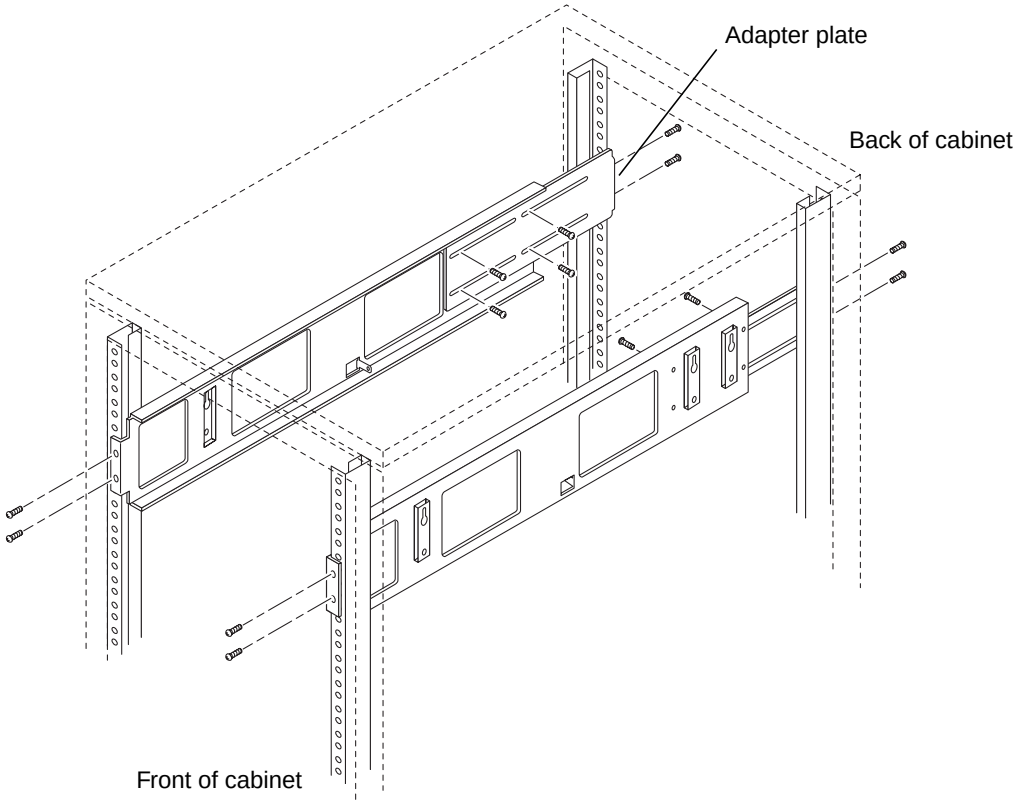

FIGURE 3-1 Attaching a 4-RU Side Rail and Threading the Screws

3. **Install the screws (part number 240-1953-01) at the front and back rail holes.**

Note – The screws supplied with the rackmount kit are designed for mounting holes that support a 10-32 screw size and thread pattern. Depending on the type of cabinet you are using, these screws may not work

---

- If you are installing a 4-RU rackmount kit, install four screws at the front and four screws at the back of the cabinet (FIGURE 3-1).
- If you are installing a 7-RU rackmount kit, install four screws at the front and eight screws at the back of the cabinet (FIGURE 3-2).

4. **Tighten all screws, including the adapter plate screws.**

5. **Repeat Step 1 through Step 4 for the right side rail. Ensure that the right side rail is positioned evenly with the left side rail.**

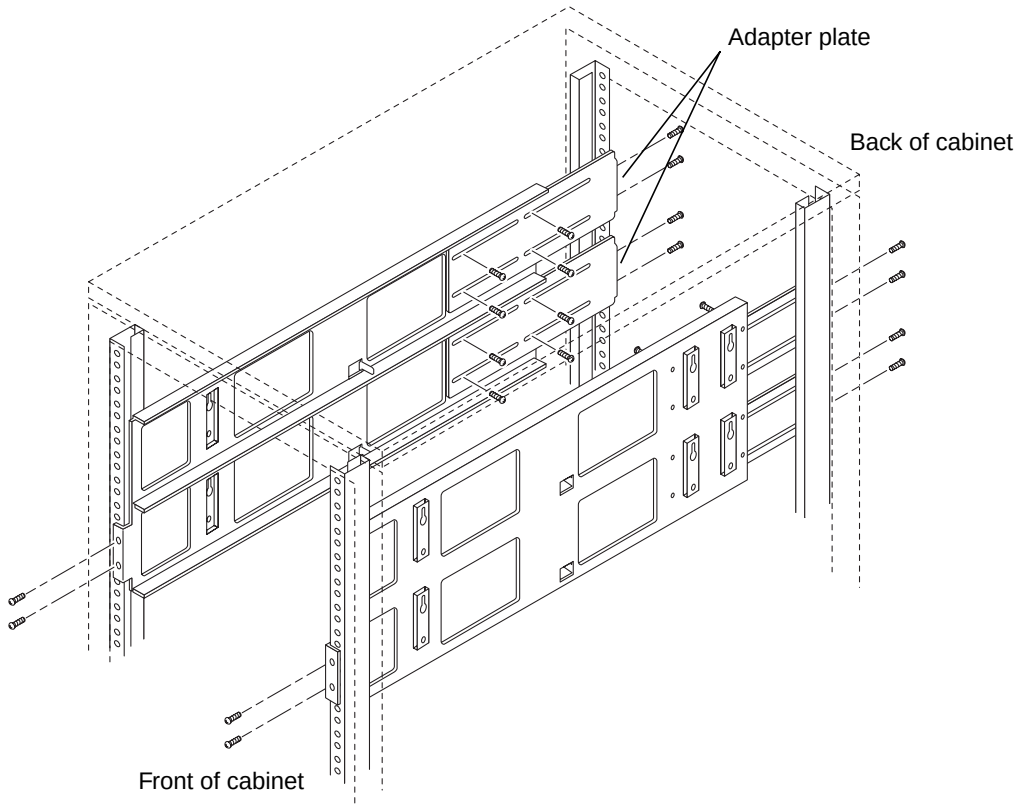

FIGURE 3-2 Attaching a 7-RU Side Rail and Threading the Screws

3.2 Installing the Disk Tray in the Cabinet

Caution – The cabinet can become front-heavy while a disk tray is being installed. Unless your cabinet is bolted to the floor, ensure that the stabilizer legs are extended before proceeding. Failure to extend the legs can result in the cabinet tipping forward and injuring personnel.

Caution – This installation requires two people to lift and move the disk tray. Use care to avoid injury. A disk tray with a support plate attached can weigh up to 87 pounds (39 kg).

1. **With the aid of an assistant, lift the disk tray (one person on each side) and approach the cabinet with the back of the disk tray entering the front of the cabinet.**
2. **Align the disk tray with the side rails, and slide the disk tray in the cabinet (**FIGURE 3-3**).**

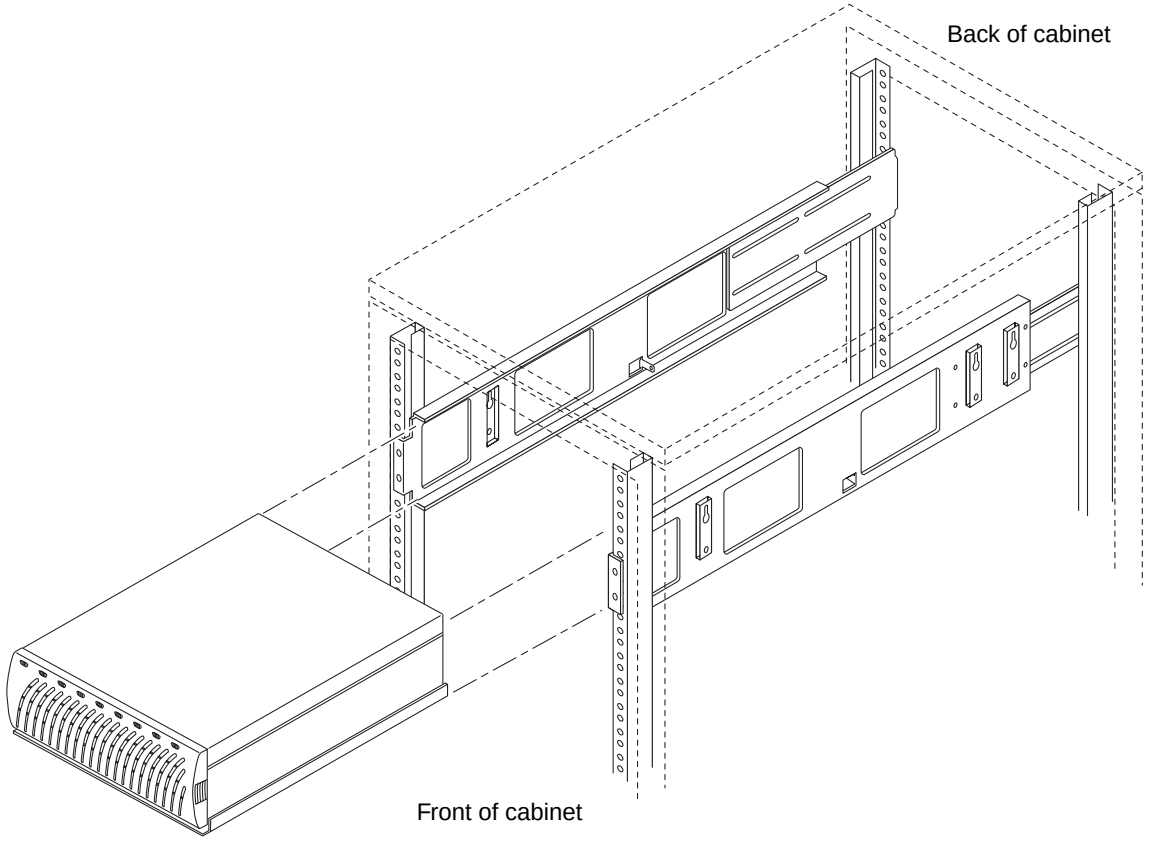

FIGURE 3-3 Aligning the Disk Tray Chassis and Support Plate With the Side Rails

3. **Secure the disk tray to the side rails by threading two screws (part number 240-1953-01) into the support plate at the back of the disk tray chassis (**FIGURE 3-4**).**

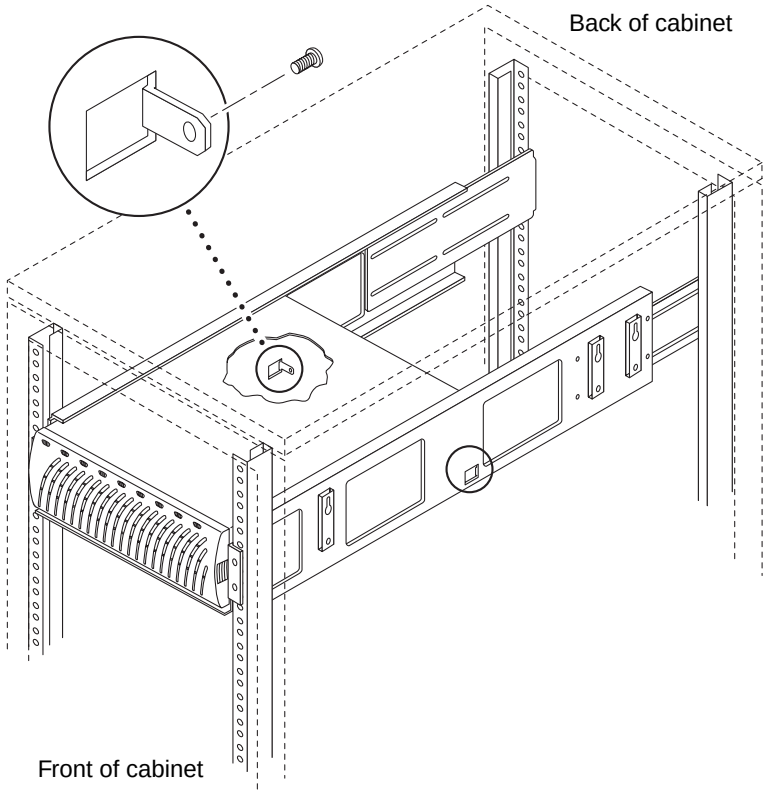

FIGURE 3-4 Securing the Disk Tray Chassis

4. **If you are installing a second disk tray into a 7-RU side rail, repeat Step 1 through Step 3 (**FIGURE 3-5**).**

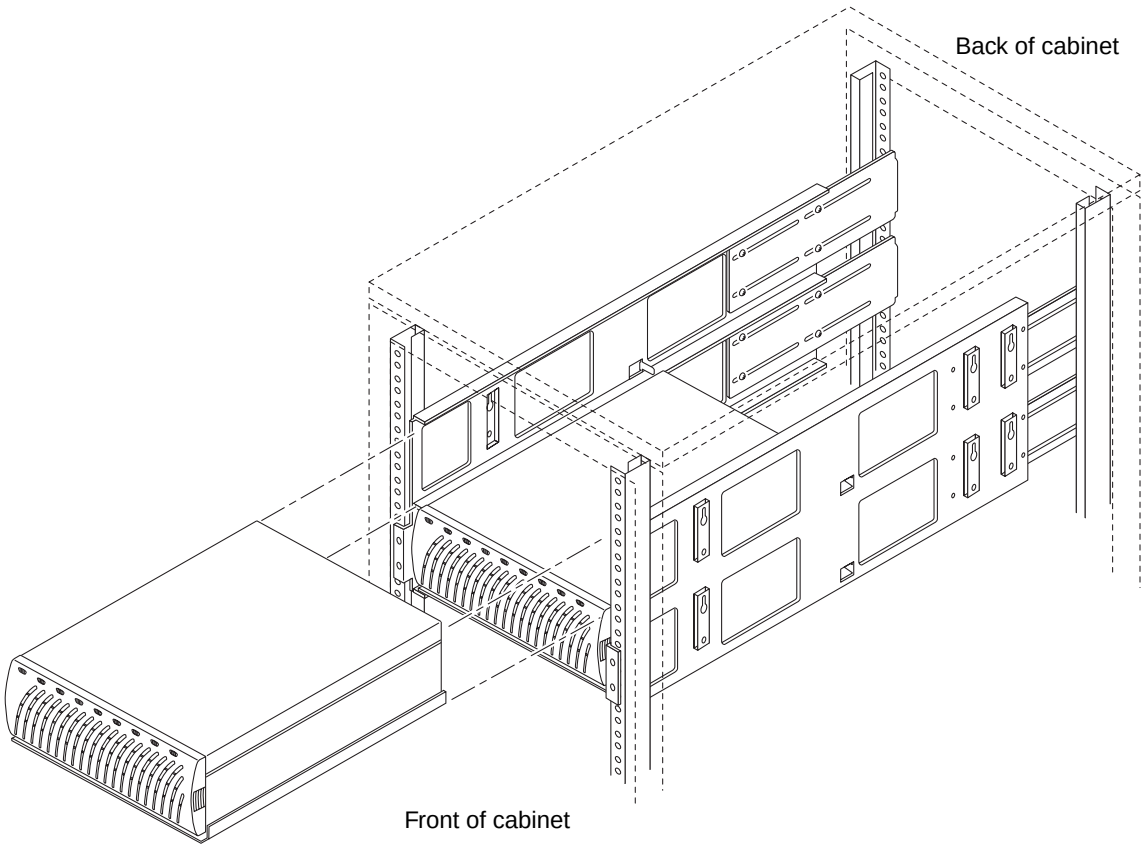

FIGURE 3-5 Installing a Second Disk Tray Into a 7-RU Side Rail

After you have installed the disk tray in the cabinet, refer to Chapter 2 of the *Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual* for instructions about how to cable the disk trays.

Caution – If you need to remove the disk tray, make sure you have someone to assist you; one of you should be positioned at the front of the cabinet and the other one should be at the back. The person at the back of the rack can push it forward slightly after removing the mounting screws. The person at the front of the cabinet should be ready to take hold and stabilize the tray once it starts to move forward. Use two people to pull it out of the rails completely.

APPENDIX **A**

Cabinet and Rack Requirements

This appendix contains requirements for installing a Sun StorEdge T3 disk tray in standard 19-inch Electronics Industries Association/Radio Electronics Television Manufacturers Association (EIA/RETMA) cabinets or racks. The Sun StorEdge T3 disk tray is designed to be compatible with Sun and other standard 19-inch EIA/RETMA cabinets or racks. However, you must make sure the cabinet or rack you are using meets the requirements in this chapter before installing and operating the disk tray.

The information in this appendix includes:

- Section A.1, “Cabinet and Rack Hardware” on page A-2
- Section A.2, “Specifications” on page A-6
- Section A.3, “Product Servicing” on page A-7
- Section A.4, “SunService Policy on Third-Party Products” on page A-8

A.1 Cabinet and Rack Hardware

A *cabinet* is a freestanding and self-supporting enclosure for housing electrical and electronic equipment. It is usually fitted with doors and side panels, which may or may not be removable. A *rack* is an open structure for mounting electrical and electronic equipment. This section describes features of cabinets and racks that can be used to hold a Sun StorEdge T3 disk tray.

A.1.1 Physical Dimensions

There are two mounting kits available for the Sun StorEdge T3 disk tray:

- Rackmount hardware that can be adapted to install the disk tray in standard 19-inch EIA / RETMA cabinets.
- Rackmount hardware for mounting disk trays in standard 19-inch EIA / RETMA racks.

To use one of these kits, the rack or cabinet must meet the criteria listed in TABLE A-1.

TABLE A-1 Cabinet and Rack Dimensions

Measurement	Cabinet	Rack
Depth (the distance between the front and back flanges)	30 to 34 in. 76.2 cm to 86.4 cm	3 in. or 6 in. 7.6 cm to 15.2 cm
Mounting hole pitch (the width between the mounting holes)	18.3 in.[1] 46.5 cm	18.3 in.[1] 46.5 cm

1. This is an industry standard dimension and confirms that the structure is a 19-inch cabinet or rack.

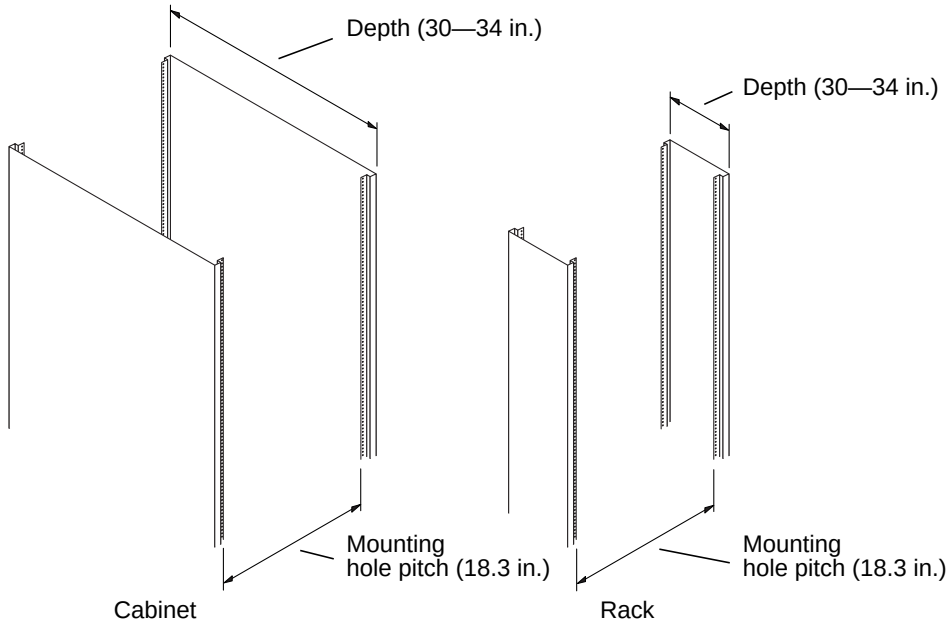

FIGURE A-1 Cabinet and Rack Physical Measurements

Also, the mounting flanges must contain the industry standard repeating hole pattern shown:

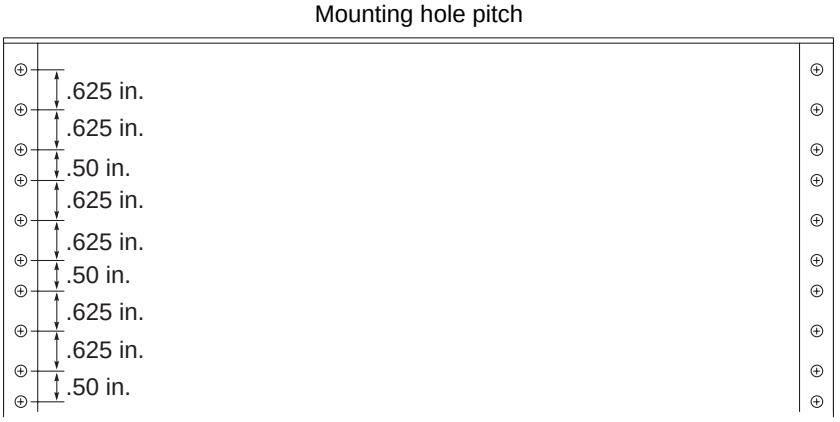

FIGURE A-2 Industry Standard Repeating Hole Pattern

A.1.2 Vertical Mounting Space

Vertical mounting space is defined in rack units (RUs). One rack unit is equivalent to 1.75 inches (4.4 cm) of vertical mounting space, or three mounting holes. Subsystems such as the Sun StorEdge T3 disk tray are usually specified as requiring some number or RUs of mounting space.

To install the Sun StorEdge T3 disk tray in a cabinet or rack, the cabinet or rack must support the RU measurements listed in TABLE A-2.

TABLE A-2 Mounting Kit RU Measurement

Number of disk trays	Cabinet	Rack
One	4-RUs	Not available
Two	7-RUs	7-RUs

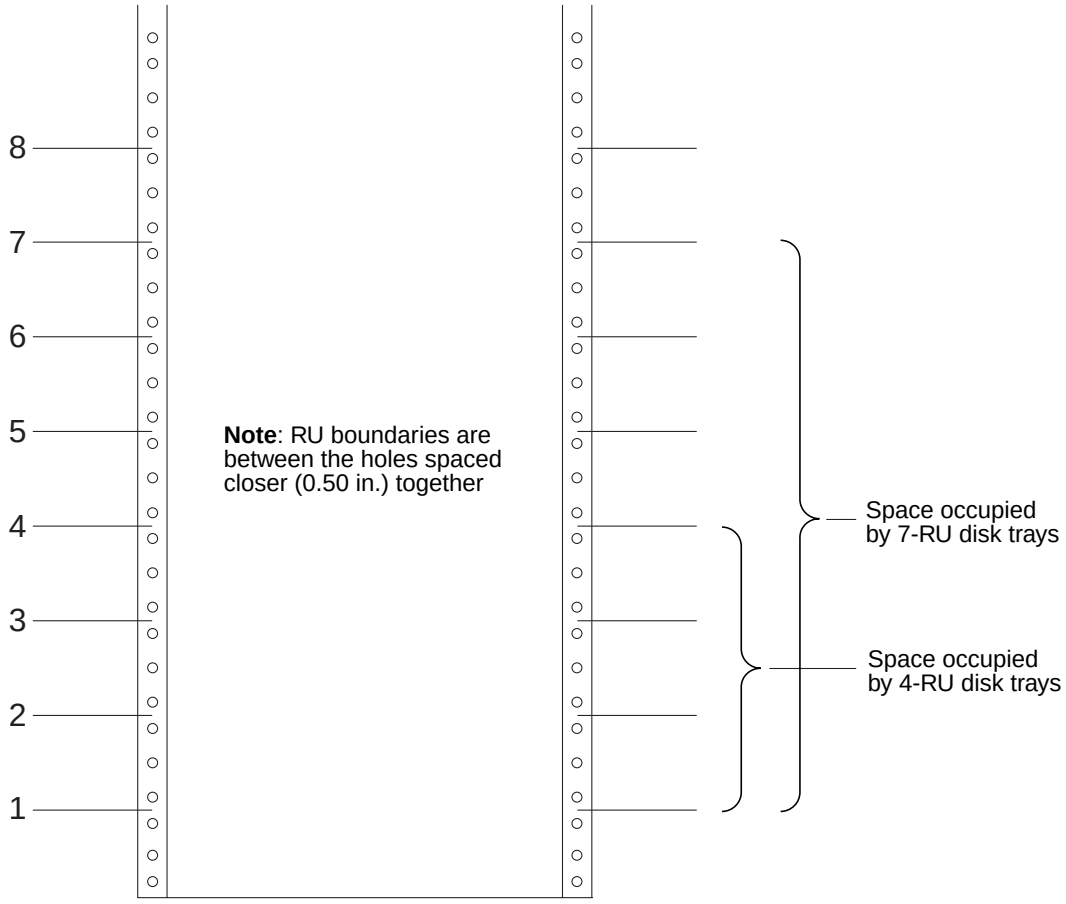

FIGURE A-3 Rack Unit Spacing

A.2 Specifications

To use the Sun StorEdge T3 disk tray in a standard 19-inch EIA/RETMA cabinet or rack, the environment must meet the specifications outlined in this section, along with those listed in the *Sun StorEdge T3 Disk Tray Installation, Operation, and Service Manual*.

Note – For power system redundancy, you must use two separate connectors supplied by two different power sources (the power requirements listed are for each connector.

TABLE A-3 Power Specifications

Specifications	Rating
Voltage and frequency	100 to 240 VAC, 47 to 63 Hz
Input current	5A max
Input power	450W
Heat load	1,540 BTUs/hr max

TABLE A-4 Environmental Specifications

Specifications	Operating	Nonoperating	Notes
Temperature	5˚ to 35˚C with maximum gradient 20˚C per hour	-40˚ to 70˚C with maximum gradient 20˚C per hour	This measurement is for air entering the unit through the front panel.
Ventilation	25 in.^{2} (63.5 cm$^{2)}$ in front open area 25 in.^{2} (63.5 cm$^{2)}$ in back open area		Unrestricted airflow through front and back cabinet doors (if present) is required for each disk tray. Maintain proper exhaust ventilation by ensuring that there are no physical restrictions to airflow at the back of the cabinet.
Relative humidity	20 to 80% noncondensing with maximum gradient 10% per hour	5 to 95% noncondensing with maximum gradient 10% per hour	

TABLE A-4 Environmental Specifications *(Continued)*

Specifications	Operating	Nonoperating	Notes
Effective altitude (from drive specification)	–1,000 to +10,000 feet (-305 to +3,048 meters)	-1,000 to +40,000 feet (-305 to +12,192 meters	
Shock (from drive specification)	4.0G for maximum duration of 11 ms (half sinewave)	15G for maximum duration of 11 ms (half sinewave)	Shock can be applied from any axis X,Y, or Z.
Vibration (from drive specification)	5 to 500 Hz @ 0.25G (swept sinewave)	5 to 500 Hz @ 1.0G (swept sinewave)	Vibration can be applied from any axis X,Y, or Z. The cabinet or rack must not exert any excessive shock or vibration to the product that could interfere with proper operation.

A.3 Product Servicing

To allow room for service, the Sun StorEdge T3 disk tray must be installed in a rack or cabinet such that:

- The front and back LED status indicators are visible.
- Cables and connections are accessible and are not subject to stress from adjacent panels or closed doors.
- Field-replaceable units (FRUs) are accessible for servicing and replacement.

A.4 SunService Policy on Third-Party Products

Sun Microsystems, Inc. and its affiliates (Sun), provide product warranties only for products listed on Sun Network Storage Product Group's price list (Sun Products).

It is the policy of the SunService[SM] group to provide a warranty for all Sun Products pursuant to the terms set forth in the original purchase agreement. Sun does not provide any warranties, implied or express, on products purchased by customers from third-party vendors and installed on Sun Products.

Customers can install third-party products without voiding Sun's warranty accompanying the Sun Products. Installation of third-party products, however, may void certain regulatory certifications.

Service calls that originate as a result of the failure of a third-party product, or any damage to a Sun Product resulting from the installation or presence of a third-party product, will be billed to the Customer at Sun's then-current time and materials rates.