

EXB-8205 & EXB-8505 8mm Tape Drives

for standard and eXtended-Length configurations

Owner's Manual



Copyright

Copyright 1994 by Exabyte Corporation. All rights reserved. This item and the information contained herein are the property of Exabyte Corporation. No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without the express written permission of Exabyte Corporation, 1685 38th Street, Boulder, Colorado 80301.

Disclaimer

Exabyte Corporation makes no representation or warranties with respect to the contents of this document and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, Exabyte Corporation reserves the right to revise this publication without obligation to notify any person or organization of such revisions or changes.

Trademark Notices

EXABYTE, EXAPAK, EXB, LANCourier, and NetSECURE are registered trademarks of Exabyte Corporation. EXA, EXATAPE, FileSECURE, Mammoth, and SCIMON are trademarks of Exabyte Corporation.

Revision History

Revision	Date	Description
000	May 1994	Initial release
001	Sept 1994	Updated to include XL tape drives

Exabyte Corporation
1685 38th Street
Boulder, CO 80301

308061-001

Safety and Emissions Standards

When installed in a manner consistent with Exabyte's product integration (that is, in a shielded cabinet, using shielded cables, proper grounding of the SCSI bus and input power), Exabyte 8mm tape drives can be expected to maintain their compliance to the standards listed in this section. It is the responsibility of the system integrator to certify and/or verify the final product to the relevant Product Safety, EMI and EMC standards.

- UL1950, 1st Edition, Information Technology Equipment Including Electrical Business Equipment
- CSA-C22.2 No. 950-M89, Safety of Information Technology Equipment including Electrical Business Equipment
- EN60950/IEC950/DIN VDE 0805/5.90, Safety of Information Technology Equipment including Electrical Business Equipment

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Use shielded cables.
- Consult the dealer or an experienced radio/TV technician for help.

According to FCC regulations, changes or modifications not expressly approved by Exabyte Corporation could void your authority to operate the equipment.

VDE Notice

Bescheinigung des Herstellers/Importeurs: Hiermit wird bescheinigt, daß das EXB-8205, EXB-8205XL, EXB-8505, und EXB-8505XL in Übereinstimmung mit den Bestimmungen der Vfg. 243/1991 und Nr 46/1992 funktentstört sind.

Der Deutschen Bundespost wurde daß Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

**Canadian
D.O.C.
Notice**

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère Des Communications du Canada.

Contents

Welcome	7
Identifying the tape drives	8
About this manual	9
Conventions used in this manual	9
For more information	10
1 Installation	11
Preparing for installation	12
Step 1 – Ensure ESD protection	12
Step 2 – Unpack the tape drive and save the materials	13
Step 3 – Check the tape drive accessories	13
Step 4 – Check the power cord	14
Step 5 – Check the <i>Compatibility Matrix</i>	14
Step 6 – Register your tape drive	15
Step 7 – Set up your system	16
Installing the tape drive	17
Step 1 – Set the SCSI ID	17
Step 2 – Terminate the SCSI bus	20
Step 3 – Install the internal tape drive	23
Step 4 – Install an external tape drive	31
Step 5 – Power on the tape drive	34
Step 6 – Install your software application	37
Step 7 – Test your installation	38

2 Operating the tape drive	41
Reading the LEDs	41
Selecting data cartridges	43
Write-protecting a data cartridge	45
Loading a data cartridge	46
Unloading a data cartridge	47
Resetting the tape drive	48
3 Preventive maintenance	49
Exabyte cleaning cartridges	49
Determining when to clean the tape drive	50
Using the cleaning cartridge	50
Caring for data cartridges	52
Replacing data cartridges	53
4 Troubleshooting	55
Problems with tape drive installation	56
Problems with tape drive operation	57
Problems reported by the application software	59
5 Getting help	61
Contacting Exabyte Sales Support	61
Ordering supplies from Exabyte	63
Returning the tape drive for repair	64
Moving the tape drive	66
Appendix A Installation requirements	67
Appendix B Tape drive specifications	71
Appendix C Glossary	72
Index	75

Welcome

Thank you for selecting the EXABYTE® EXB-8205, EXB-8205XL, EXB-8505, or EXB-8505XL 8mm Cartridge Tape Drive. These tape drives are high-capacity, high-performance, and highly reliable storage devices for PC, workstation, and local area network (LAN) applications. All of these tape drives incorporate a single-ended Small Computer System Interface (SCSI) and are ideally suited for back-up and restore tasks, data archiving, and data file interchange. The “eXtended-Length” (XL) versions of the EXB-8205 and EXB-8505 (EXB-8205XL and EXB-8505XL) provide additional capacity by supporting the extended-length EXATAPE™ 160m XL 8mm Data Cartridge.

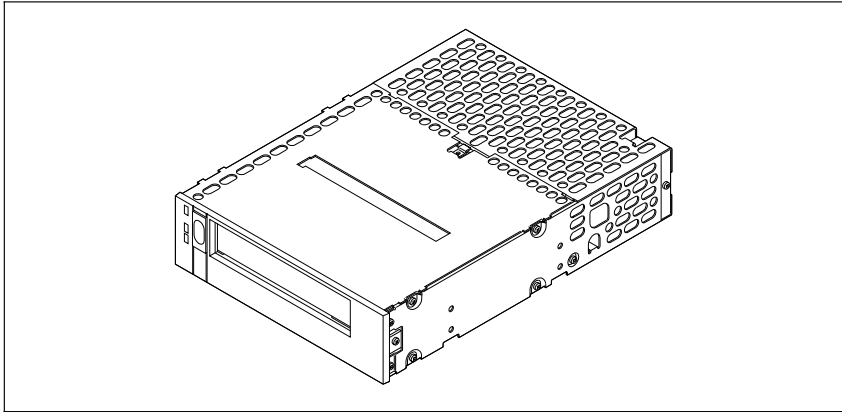
Operating as single-ended SCSI devices, these 5.25-inch half-high form-factor tape drives can either be installed inside your computer (an internal tape drive) or, when purchased in an enclosure (an external tape drive), used as an external peripheral. The external tape drives offer the following additional features:

- ❑ A fan to provide temperature control
- ❑ A universal self-switching power supply
- ❑ A SCSI ID switch
- ❑ Two SCSI connectors
- ❑ Full safety and agency certification

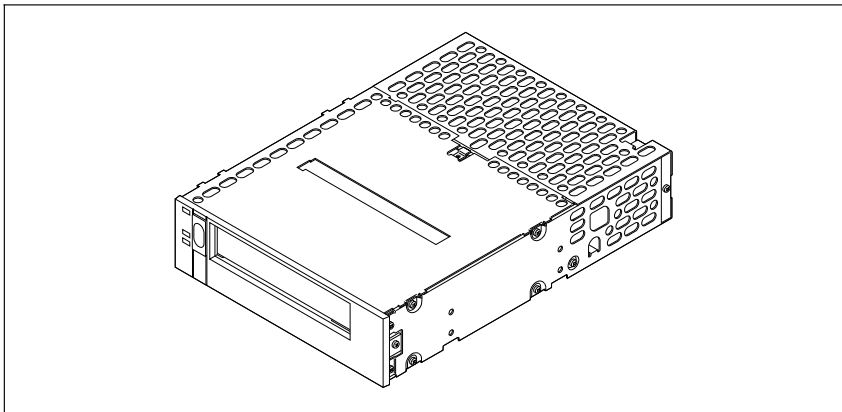
Identifying the tape drives

The orientation of the LEDs (light emitting diodes) distinguishes the EXB-8205 from the EXB-8505. The following illustrations show the EXB-8205 and EXB-8505, both without enclosures. The XL drives are identical in appearance to the non-XL drives except that they have a raised diamond pattern on the unload button.

EXB-8205 – vertical LEDs (EXB-8205XL – raised diamond pattern on the unload button)



EXB-8505 – horizontal LEDs (EXB-8505XL – raised diamond pattern on the unload button)



About this manual

Use this manual as you install and operate your tape drive. Unless specifically noted, instructions in this manual apply to all of the tape drives.

In addition to instructions for installation and operation, this manual provides information about selecting and maintaining data cartridges, cleaning the tape drive, obtaining technical assistance, purchasing supplies, and packing the tape drive for shipment.

This manual assumes that you are familiar with using your application software. If you are not, take time to familiarize yourself before beginning this installation.

Conventions used in this manual

This manual uses the following conventions to highlight special information:

Note: Text marked “Note” provides additional information or suggestions for the topic or procedure being discussed.

► **Important:** Text marked “Important” will help you successfully complete a procedure or avoid additional steps in a procedure.

CAUTION

Boxed text under the heading “Caution” provides information about how to avoid damaging the tape drive, the data cartridge, other equipment, or data recorded on tape.

WARNING !

Boxed text under the heading “WARNING !” provides information you must know to avoid personal injury.

For more information

- ❑ For detailed information about installing and configuring your SCSI adapter card, refer to the documentation provided with the card.
- ❑ For detailed information about installing adapter cards and peripheral devices inside your computer, refer to the documentation provided with your computer.
- ❑ For information about backing up and restoring data, refer to the documentation supplied with your application software.
- ❑ For information about the compatibility of Exabyte tape drives with many software packages, refer to the *Compatibility Matrix (308238)* included with your tape drive.
- ❑ For information about supplies and accessories available from Exabyte, contact Exabyte Direct Sales as described beginning on page 63.
- ❑ For information about Exabyte Sales Support, refer to Chapter 6 beginning on page 61.
- ❑ For detailed tape drive specifications, refer to the *EXB-8205 and EXB-8505 Product Specification for Standard and eXtended-Length Configurations (510504)*.
- ❑ For detailed specifications for the external tape drive, refer to the *Mini Tabletop Product Specification (520154)*.
- ❑ For information about integrating the tape drive into a host system, refer to *EXB-8205 and EXB-8505 Integration and Optimization for Standard and eXtended-Length Configurations (510505)*.

1

Installation

This chapter provides information for the following tasks:

- ❑ Preparing for installation
- ❑ Installing the tape drive
- ❑ Installing the application software
- ❑ Testing your installation

To install the tape drive properly, follow all of the instructions in this chapter. You can use the checklist at the beginning of each section to keep track of the steps you need to perform.

CAUTION

The tape drives described in this manual are single-ended SCSI devices. Do not install the tape drives on a differential SCSI bus.

Preparing for installation

To prepare for installation, follow the steps in this section.

✓	Step	Procedure
	1	Ensure ESD protection
	2	Unpack the tape drive and save the packing materials
	3	Check the tape drive accessories
	4	Check the power cord
	5	Check the <i>Compatibility Matrix</i>
	6	Register your tape drive
	7	Set up your system

Step 1 – Ensure ESD protection

If you are installing an internal tape drive, follow these procedures to protect the tape drive from electrostatic discharge (ESD):

- ❑ Turn off all devices attached to your computer, then turn off your computer.
- ❑ Disconnect all power cables from your computer and attached devices before starting the installation.
- ❑ If possible, use an antistatic mat and grounded static protection wristband. If a mat and wristband are unavailable, touch a known grounded surface (such as your computer's metal chassis) to discharge static electricity from your body before handling the tape drive.
- ❑ Limit your movement. Movement can cause static electricity to build up around you.

- ❑ Leave the tape drive in its antistatic bag until you are ready to install it. When possible, remove the internal tape drive from its bag and install it directly into the computer without setting it down. If you must lay the tape drive down, place it on top of the antistatic bag.
- ❑ Handle the tape drive carefully and by the edges.
- ❑ Do not place the tape drive on the computer cover or on a metal table.

Step 2 – Unpack the tape drive and save the materials

Carefully remove the tape drive from its box. Save all the original packaging materials in case you need to reship the tape drive. The tape drive's packaging helps protect the tape drive from shock, vibration, moisture, and electrostatic discharge (ESD).

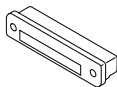
For information about repacking the tape drive for shipment, see page 64.

Step 3 – Check the tape drive accessories

Make sure the tape drive accessory box contains the following items.

External tape drive accessory kit

External SCSI bus terminator (305157)



SCSI cable for an external tape drive (305036)

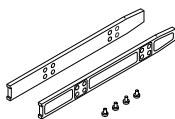


Power cord

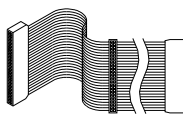


Internal tape drive accessory kit

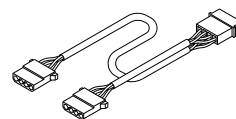
Mounting rail kit (305161)



SCSI ribbon cable (308195)



Power cable (305218)



Additional accessory kit items

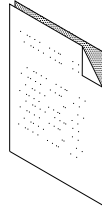
Both the internal and external accessory kits also include the following:

One EXATAPE™ 8mm
Data Cartridge*



* 112m for the EXB-8205 and
EXB-8505; 160m XL for the
EXB-8205XL and EXB-8505XL

Compatibility Matrix
Warranty Card
*Accessory Guide**



* U.S. and Canada only

Step 4 – Check the power cord

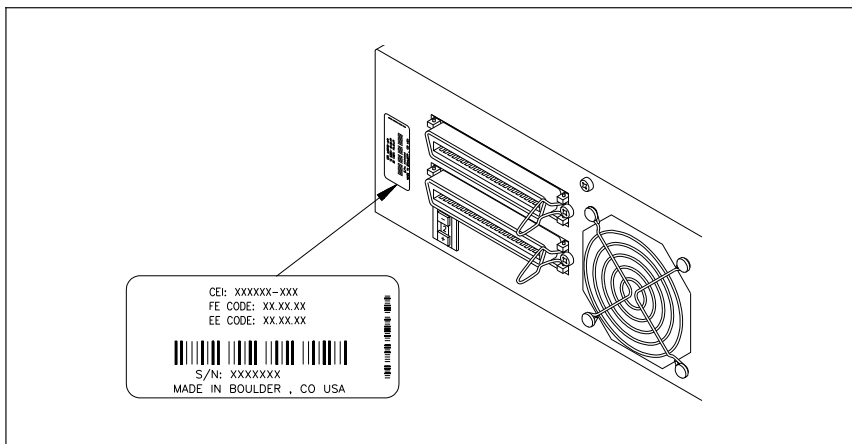
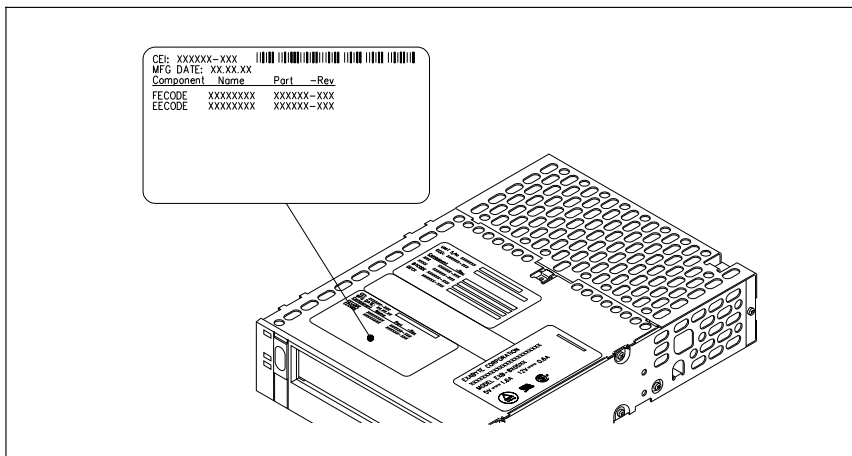
The accessory kit includes a three-conductor power cord for connecting the tape drive to a power source. If a power cord is not included or is inappropriate for your power connection requirements, contact your dealer or Exabyte Sales Support for assistance (see page 61).

Step 5 – Check the Compatibility Matrix

The tape drive must be compatible with your computer and the application software you plan to use.

To make sure that they are compatible, check the Compatibility Matrix included in your accessory box. If the Compatibility Matrix indicates that your tape drive is not compatible with your application software, contact your dealer for assistance. With your dealer's assistance you may be able to make the components compatible by changing the tape drive's internal instructions (firmware).

Note: If your dealer asks for the firmware version currently stored in the tape drive, check the configuration label. The numbers for the FECODE and EECODE indicate the firmware version. Refer to the following illustrations for the location of the label.



Step 6 – Register your tape drive

Read the warranty card included with your tape drive. Then fill out the registration card and mail it back to Exabyte.

Step 7 – Set up your system

Before installing your tape drive, do the following:

- ❑ Obtain the following tools:
 - Medium-size Phillips screwdriver
 - Small flat-nose pliers
- ❑ Install a SCSI adapter card in your computer (if one is not already installed). This may also include installing and configuring a device driver for the adapter card on your computer. Follow the instructions provided with the adapter card.
- ❑ Select a software application. Check the Compatibility Matrix included in the accessory kit to determine which application software is compatible with your tape drive. (See page 14 for more information.)
- ❑ Check the documentation provided with your application software to determine whether the application must be installed before or after the hardware. Most applications require the software to be installed after the hardware. See page 37 for software installation guidelines.
- ❑ Make sure you have the required mounting rails. If your computer uses custom or non-standard rails for mounting devices in a drive bay, make sure you have the required rails before beginning this installation.
- ❑ Have your computer's documentation available for reference. You may need specific instructions for installing a tape drive into a drive bay.

Installing the tape drive

Installing your tape drive requires the following general tasks:

✓	Step	Procedure
	1	Set the SCSI ID (pages 17 through 19)
	2	Terminate the SCSI bus (pages 20 through 22)
	3	For the internal tape drive, install the tape drive in an empty drive bay (pages 23 through 30)
	4	For the external tape drive, connect the tape drive to the SCSI bus and a power source (pages 31 through 34)
	5	Power on the tape drive (pages 34 through 37)
	6	Install your software application (page 37)
	7	Test your installation (pages 38 through 39)

Step 1 – Set the SCSI ID

Each device attached to a SCSI bus must have a unique address or *SCSI ID*. This SCSI ID, which can be a value from 0 through 7, allows the host computer communicate with the specific devices attached to the bus.

► **Important:** Before setting the tape drive's SCSI ID, determine the SCSI IDs of all other SCSI devices currently attached to your SCSI bus (for example, a hard drive or a CD-ROM reader). These devices may either be installed inside the computer or attached externally.

The tape drives are shipped with the SCSI ID set to 2. If you are installing the tape drive on an existing SCSI bus and another device (for example, a hard drive) is already assigned to that ID, you must change the tape drive's ID.

Note: Check your system to determine the settings in use. A SCSI adapter card typically uses a SCSI ID of 6 or 7. A SCSI hard drive typically uses a SCSI ID of 0 or 1.

Changing the internal tape drive's SCSI ID

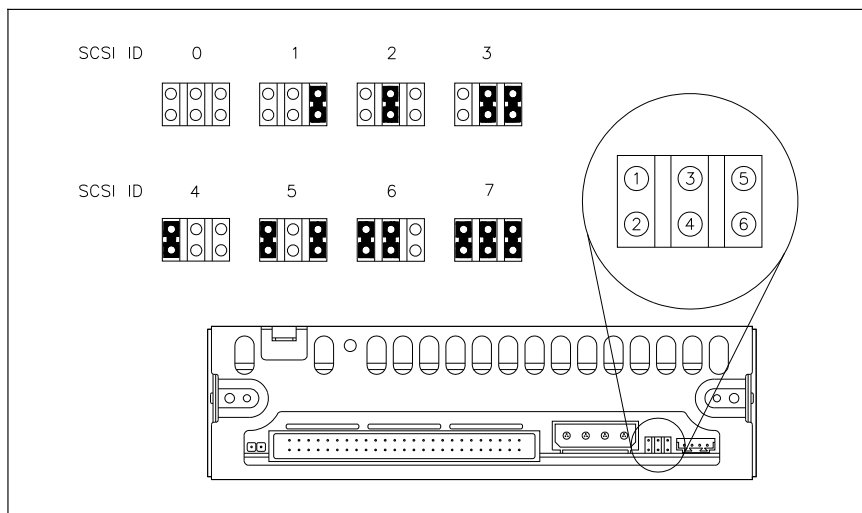
If you are installing an external tape drive, skip to page 19.

1. Locate the SCSI ID jumper block on the back of the tape drive.
2. Using a pair of flat-nose pliers, slide the small plastic jumpers over the pins on the jumper block to obtain the desired address. Extra jumpers are shipped in a separate bag. Save the unused jumpers in case you need to select a different SCSI ID later.

Note: If you want to install a remote switch to allow you to set the SCSI ID from outside your computer, refer to page 69.

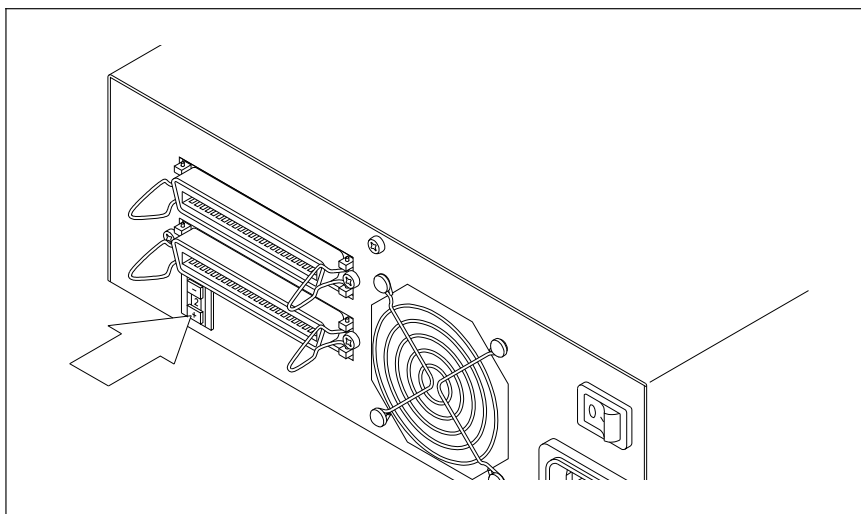
CAUTION

Do not allow loose jumpers to fall inside the tape drive.



Changing the external tape drive's SCSI ID

1. Locate the SCSI ID switch on the back of the enclosure.
2. Use a fine-tipped instrument to press the buttons on the SCSI ID switch until you reach the desired address for your tape drive.



Step 2 – Terminate the SCSI bus

The SCSI bus attached to the tape drive must be terminated correctly to ensure proper operation. To accomplish this, the devices located at the physical ends of the SCSI bus must have terminators installed. All other devices attached to the SCSI bus must have the terminators removed.

If your tape drive will be located at the physical end of the SCSI bus, you must be sure that it is properly terminated. The method you use depends on whether you are installing an internal or external tape drive.

► **Important:** If another SCSI device previously terminated your SCSI bus and will no longer be at the physical end of the bus, be sure to remove the terminators from that device.

Terminating an internal tape drive

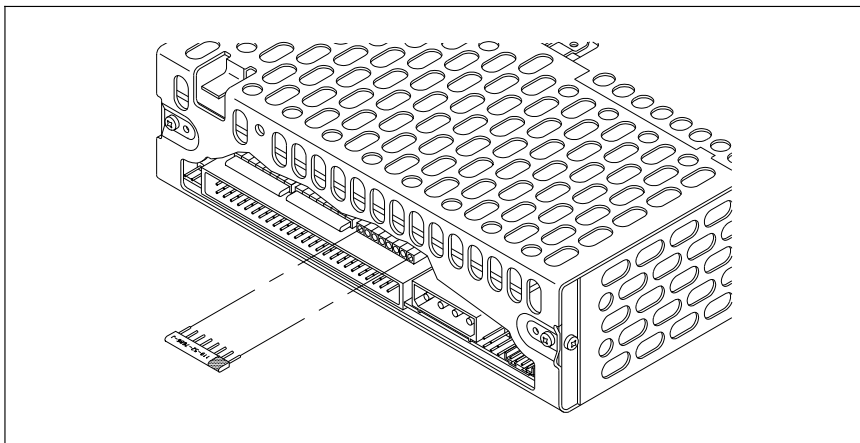
If you are installing an external tape drive, skip to page 22.

The internal tape drive is shipped with three resistor terminators installed. Leave these terminators in place if you plan to install the tape drive at the physical end of the SCSI bus.

If your computer already has another internal SCSI device attached to the adapter card (for example, a hard drive), you may want to leave that device at the end of the bus. In this case, you must remove the terminators from the tape drive.

To remove the terminators, follow these steps:

1. Locate the terminators on the back of the tape drive.



2. Using a pair of flat-nose pliers, carefully grasp each terminator at the center and pull it straight out. Be careful not to squeeze the pliers too tightly or you may break the terminator. Save the unused terminators in case you need to terminate the the bus at tape drive later.

Note: To replace a terminator, make sure that pin 1 of the terminator is aligned with pin 1 of the socket and that no pins are bent. The writing on the terminator should face upward. Pin 1 of the terminator is marked with a colored line or dot and should line up with the right side of the socket.

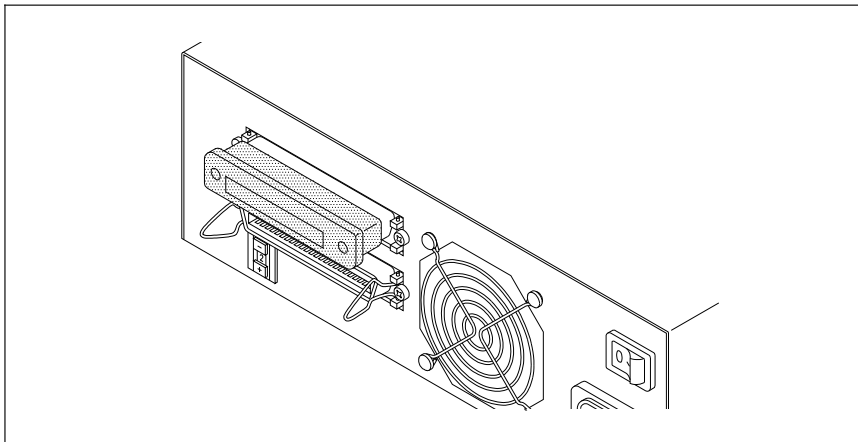
CAUTION

If you must replace a terminator, be sure to use the correct type to avoid damaging the tape drive. Replacement terminators are available from Exabyte.

Terminating an external tape drive

If your external tape drive will be at the physical end of the SCSI bus, push the external terminator provided onto either of the SCSI connectors on the back of the tape drive enclosure. If the tape drive does not terminate the bus, you will connect SCSI cables into both connectors.

After installing the terminator, skip to page 31.



► **Important:** If you have an internal SCSI device attached to your SCSI adapter card (for example a hard drive), you must remove the terminators from your adapter card. Refer to the adapter card manual for instructions.

Step 3 – Install the internal tape drive

Follow the guidelines in this section to install the internal tape drive in a computer drive bay. If you are installing the tape drive in another type of enclosure, refer to Appendix B for other internal installation requirements, then resume reading on page 34, “Power on the tape drive.”

Notes: This section provides general steps for installing the tape drive. Refer to your computer owner’s manual for specific instructions.

If you are installing the tape drive into a non-DOS/Novell environment (for example, a Sun workstation or IBM RS6000), you may require additional information. Refer your workstation documentation.

Installing the internal tape drive requires the following steps:

✓	Procedure
	Prepare the computer (below)
	Attach mounting rails to the tape drive (page 24)
	Connect the SCSI cable to the tape drive (page 26)
	Connect the computer power supply to the tape drive (page 29)
	Attach the tape drive to the drive bay (page 30)

Prepare the computer

Before beginning, prepare your computer as follows:

1. Turn off your monitor and any other attached peripheral devices, then turn off your computer.
2. Unplug your computer, monitor, and any other attached peripheral devices.
3. Remove your computer’s cover as described in your computer owner’s manual.

4. Remove the cover plate from the drive bay you intend to use. Refer to your computer owner's manual for instructions. If mounting clips and screws are present, keep them. They may be needed for securing the tape drive to the bay in a later step.

Note: If necessary, remove a floppy disk drive to provide an empty half-high drive bay for the tape drive. Do not replace your floppy drive A with the tape drive. Most computers require floppy drive A for booting in case of a hard disk failure.

► **Important:** If you remove a floppy disk drive to install the tape drive, be sure to change your system configuration to reflect the change. Refer to your computer owner's manual for details on running the computer's setup program to change the configuration.

5. Check for the presence of a load resistor in the computer. If it is present, disconnect the load resistor cable from the power supply. Refer to your computer owner's manual for more information.

Attach mounting rails to the tape drive

Determine whether your computer requires mounting rails for installation in the drive bay. You can install the tape drive in one of three configurations:

- ❑ Without rails
- ❑ With standard rails
- ❑ With non-standard rails unique to your computer

Refer to your computer owner's manual or look at one of the floppy drives in your computer to see how it is mounted. The tape drive will use the same type of rails.

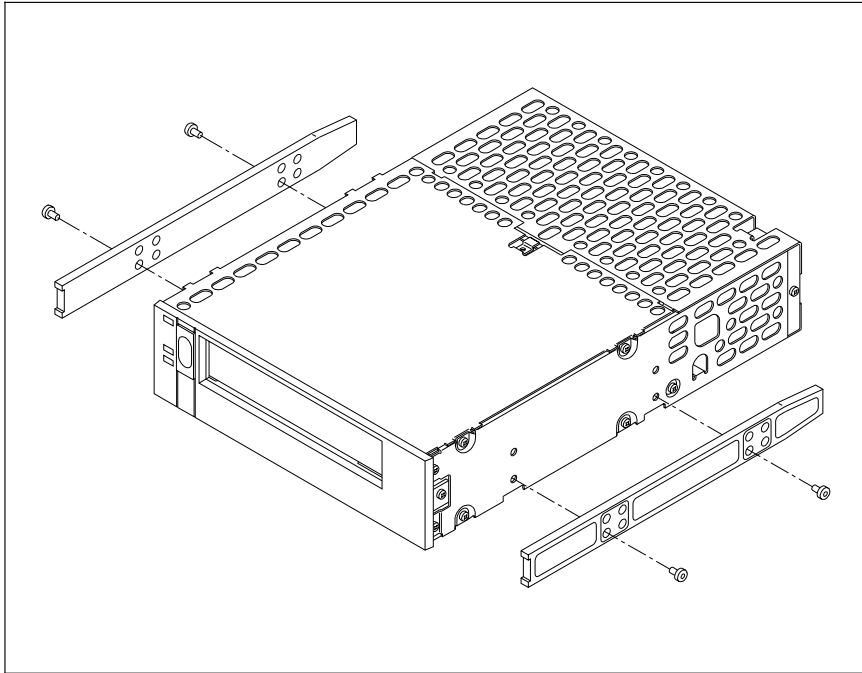
Depending on the type of mounting required, proceed as follows:

Without rails	Use the tape drive as it comes from the package. Skip to page 26.
With standard rails	Use the rails included in the tape drive accessory kit. Install the rails as described in the next section.
With non-standard rails unique to your computer	Use the rails that came with your computer. If necessary, purchase additional rails from your computer supplier. Install the rails as described in the next section or use the instructions provided with the rail kit.

Installing standard mounting rails

Using the screws provided, fasten a rail to each side of the tape drive as shown in the following illustration. The tapered end of each rail should point toward the rear of the tape drive. Use whichever set of mounting holes in the rails allows you to position the tape drive so that it is flush with the front of your floppy tape drive.

Note: If you removed the front panel from your computer to install the tape drive, the front of the tape drive may extend beyond the front edge of the drive bay. When you complete the installation, the front of the tape drive should be flush with the computer front panel.

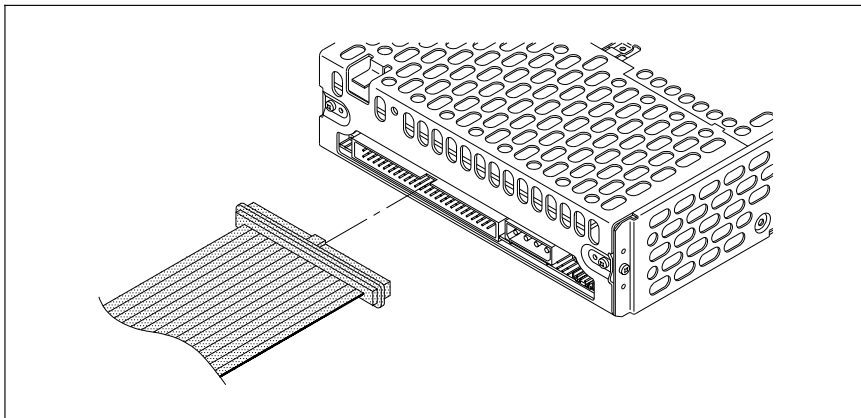


Connect the SCSI cable to the tape drive

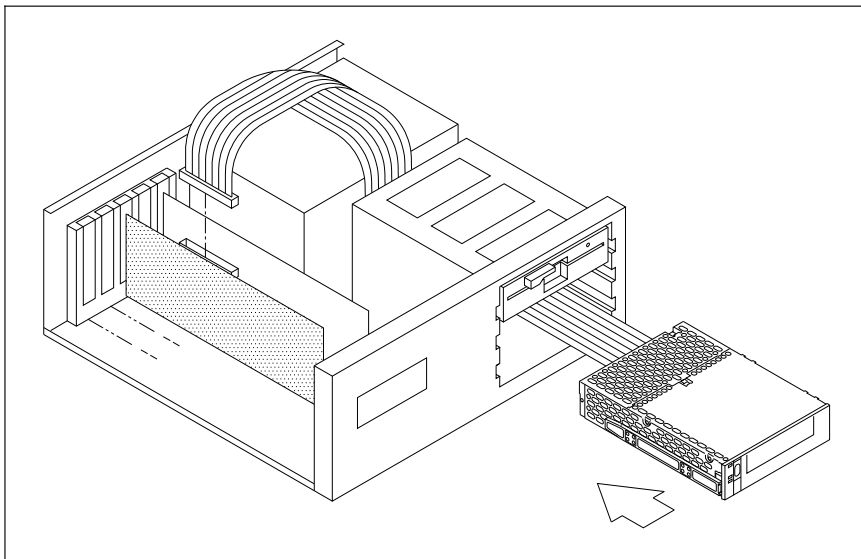
The SCSI ribbon cable provided in the accessory kit has three connectors, one on each end and a third one near the middle of the cable. The method you use to connect the cable to the tape drive depends on whether you already have a SCSI device attached to your SCSI adapter card.

If you already have an internal SCSI device installed, skip to page 28. If you have no other internal SCSI devices installed, follow these steps:

1. Push the keyed connector on one end of the 50-pin SCSI ribbon cable onto the SCSI connector on the back of the tape drive. The connector is keyed so that it only fits one way.



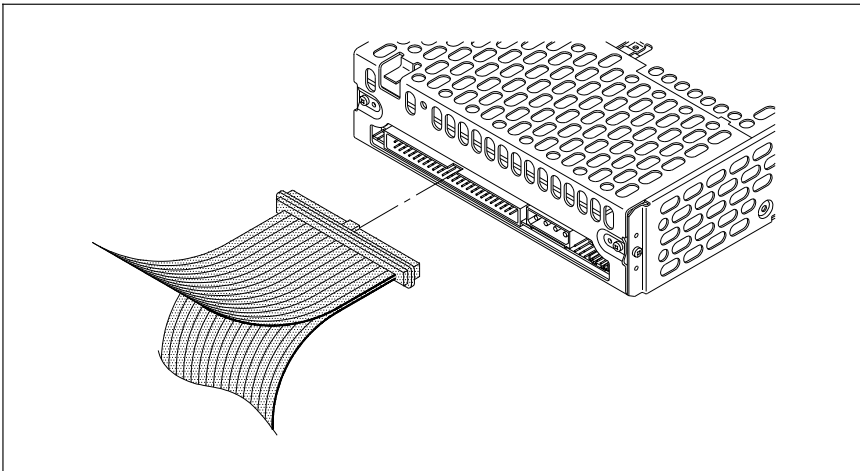
2. From the front of the computer, thread the SCSI ribbon cable into the computer through the open bay.
3. Connect the free end of the SCSI ribbon cable to the connector on your SCSI adapter card.
4. Slide the tape drive into the bay. Skip to page 29 to continue the installation.



If you already have another internal SCSI device installed:

Note: These instructions assume that the SCSI adapter card and the previously installed SCSI device terminate the SCSI bus.

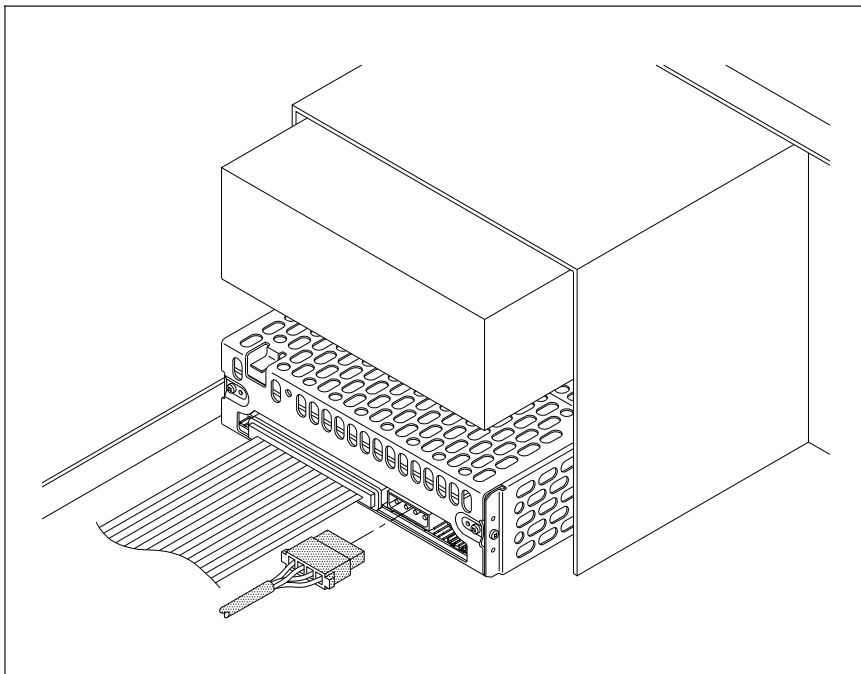
1. Locate the existing ribbon cable connecting your SCSI adapter card to the SCSI device already installed in your computer (for example, the hard drive).
2. Make a note of the orientation of the colored stripe on the existing cable where it connects to the adapter card and the other SCSI device. Remove the cable and replace it with the new SCSI ribbon cable provided in the accessory kit. Connect one end to the SCSI adapter card and the other end to the existing SCSI device. Orient the colored stripe so that it is on the same side as it was on the original cable.
3. Slide the tape drive into the drive bay.
4. Plug the middle connector on the new SCSI ribbon cable onto the SCSI connector on the back of the tape drive. Make sure that the colored stripe is to the right as you look at the back of the tape drive.



Connect the power cable

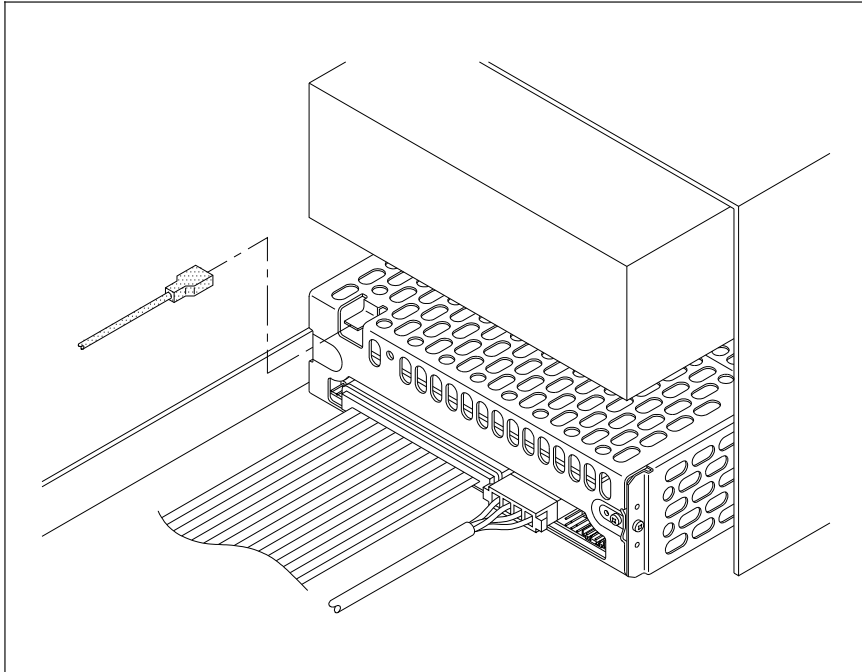
1. Locate a free power cable coming from your computer's power supply. Push the connector into the power connector on the back of the tape drive.

If your computer does not have a spare power cable or if the cable is not long enough to reach the back of the tape drive, you will need to use the power cable (305218) provided in the accessory box.



► **Important:** The power connector is keyed and fits onto the tape drive power connector in only one way. Do not force the plug into the connector. Press firmly until the connector is secure.

2. If your computer uses a grounding wire to provide additional grounding to internal devices, locate the wire. Use a ¼-inch female spade connector to attach the wire to the grounding tab on the back of the tape drive.



Attach the tape drive to the drive bay

1. Secure the tape drive to the drive bay as instructed in your computer owner's manual. Make sure that the front of the tape drive is even with the front of the floppy drive.
2. Put the cover back on your computer.
3. Skip to page 34 to complete your installation.

Step 4 – Install an external tape drive

Installing the external tape drive requires the following steps:

✓	Procedure
	Locate a level surface
	Install the feet
	Connect the SCSI cable (page 33)
	Connect the power cord (page 34)

Locate a level surface

Locate a level surface close to your computer and near a readily accessible outlet. You must allow adequate clearance at the rear and sides to allow air flow.

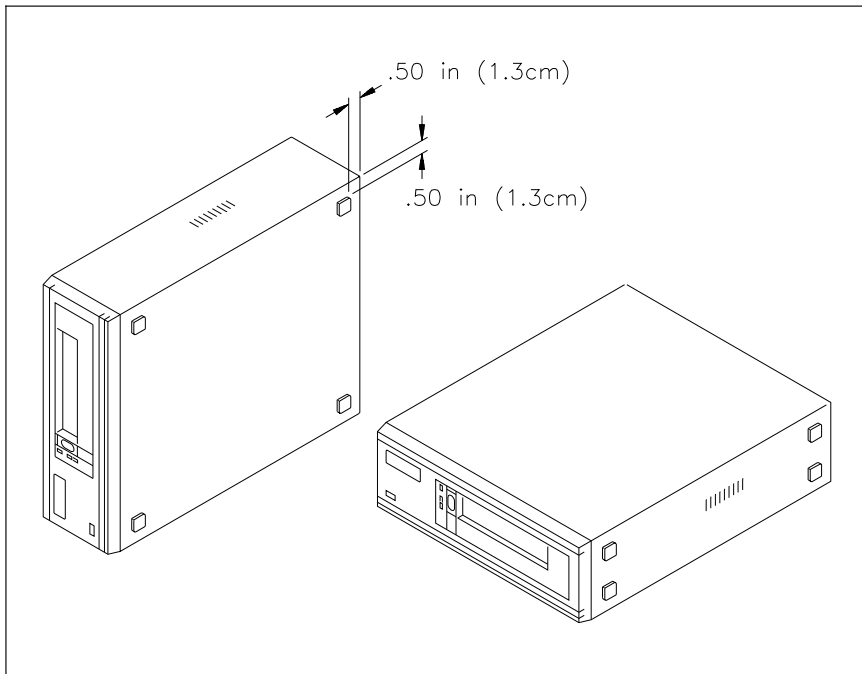
► **Important:** Do not place the tape drive on the floor. Dust and dirt can contaminate the tape drive and data cartridges.

Install the feet

The external tape drive can be placed with the tape drive door either horizontal or vertical. The accessory kit includes four self-adhesive feet (plus one spare). These feet protect the surface of the enclosure and allow air to flow through the vents when the tape drive is placed vertically.

- ❑ If you plan to place the tape drive vertically, place the pads on the right side of the enclosure (the side with the external vents).
- ❑ If you plan to place the tape drive horizontally, place the pads on the bottom of the enclosure.

Remove the backing from the feet and place them within 0.5 inch (1.3 cm) from the sides of each corner of the enclosure.

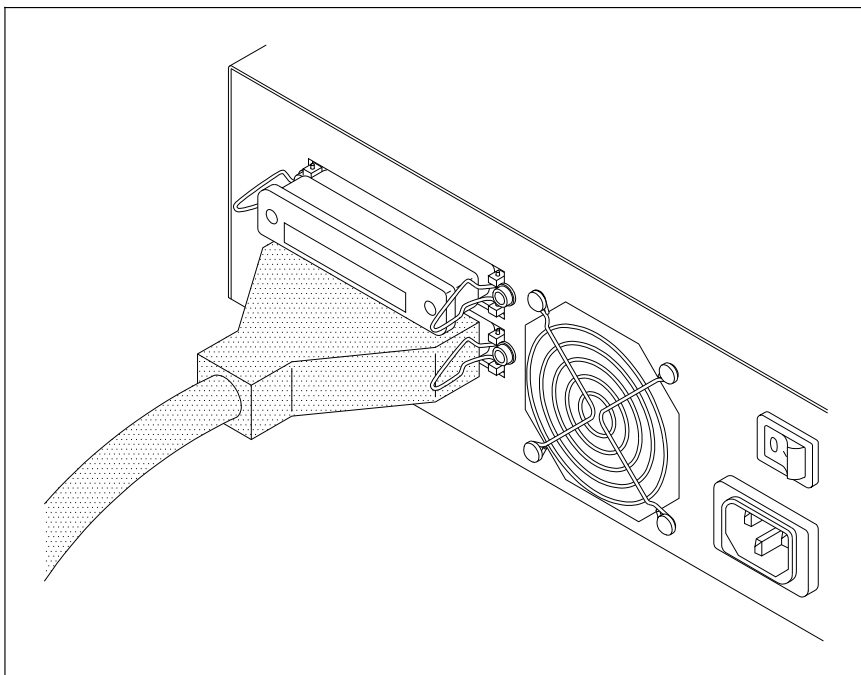


CAUTION

When using the tape drive in a vertical position, failure to install the feet on the enclosure can block the air flow through the vents and cause overheating of the enclosed tape drive.

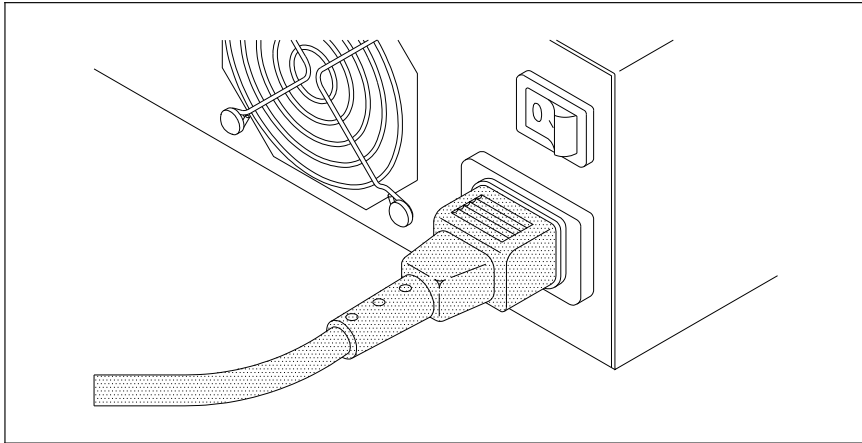
Connect the SCSI cable

1. Make sure that the power switches on the computer and the tape drive enclosure are in the off position.
2. Plug one end of the SCSI cable provided in the accessory kit into the SCSI connector on the back of the enclosure.
3. Plug the other end of the SCSI cable into the adapter card connector on the back of your computer.
4. If the tape drive does not terminate the SCSI bus, connect the next device on the SCSI bus to the other SCSI connector.



Connect the power cord

1. Make sure that the power switches on the computer and the tape drive enclosure are in the off position.
2. Plug the appropriate power cord, described on page 14, into the power connector on the back of the tape drive enclosure.
3. Plug the other end of the power cord into a convenient power outlet.



Step 5 – Power on the tape drive

1. If you have an external tape drive, set the power switch on the back of the tape drive enclosure to the on position.

► **Important:** Turn on the external tape drive before you power on the computer. If you power on the computer while the tape drive is off, the SCSI adapter card will not detect the presence of the tape drive.

2. Turn on the computer.

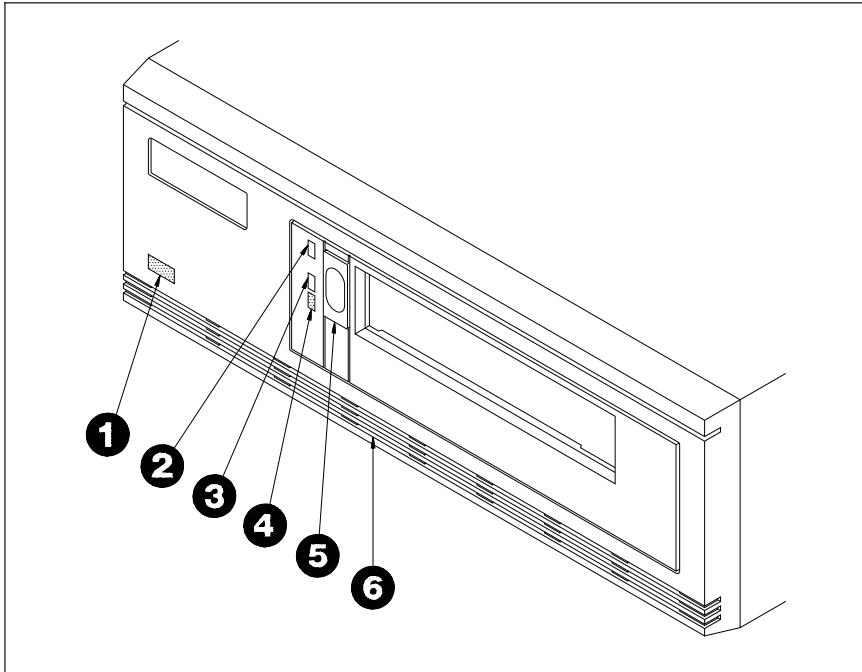
3. Wait while the tape drive performs its power-on self-test. During this time, the following occurs:
 - ❑ All three of the tape drive's LEDs light.
 - ❑ The tape drive's 30-second power-on self-test begins.
 - ❑ If you have an external tape drive, the power-on LED on the front of the enclosure lights and the fan mounted at the back of the enclosure begins to rotate.
 - ❑ When the self-test is complete, the top and bottom LEDs turn off; the middle LED will be off or flashing irregularly.
-

► **Important:**

- ❑ Do not insert a data cartridge into the tape drive during the self-test. The tape drive will eject it.
 - ❑ If the top LED does not go out after the self-test, an error has occurred. Contact your dealer for assistance.
-

The following illustration shows the placement of the external tape drive's power-on indicator and the LEDs. The table on page 42 shows the LED combinations you may observe during the self-test.

Note: The internal tape drive LEDs are the same as those on the external model.



- ❶ Power-on indicator (green)
- ❷ Top LED (orange) – indicates an error
- ❸ Middle LED (green or orange) – indicates SCSI bus activity
- ❹ Bottom LED (green) – indicates tape motion
- ❺ Unload button (raised diamond pattern on the EXB-8205XL and EXB-8505XL)
- ❻ Air flow vents

If problems occur . . .

Problem	Corrective action
If the tape drive does not power on as described:	Check the following: <ul style="list-style-type: none"> ✓ Is the power cord inserted correctly? ✓ Is the SCSI bus terminated? ✓ Is the tape drive power switch in the on position? ✓ Is your computer turned on? Refer to Chapter 4 for additional troubleshooting steps.
If the tape drive's LEDs are on or flashing:	See the table on page 42 for the LED combinations you may observe during the self-test.
If you are unable to resolve the problem yourself:	See Chapter 5 for information about contacting your dealer, service representative, or Exabyte Sales Support.

Step 6 – Install your software application

After installing the tape drive, install your application software. If the application is already installed, you may need to reconfigure it for use with your tape drive. The software installation procedure may also include installing and configuring a device driver for your SCSI adapter card.

Your application will need the SCSI ID of your tape drive. Some applications require you to enter the ID; others can determine the ID by automatically scanning the SCSI bus.

For detailed information about installing and using your software, be sure to read the documentation provided with the software.

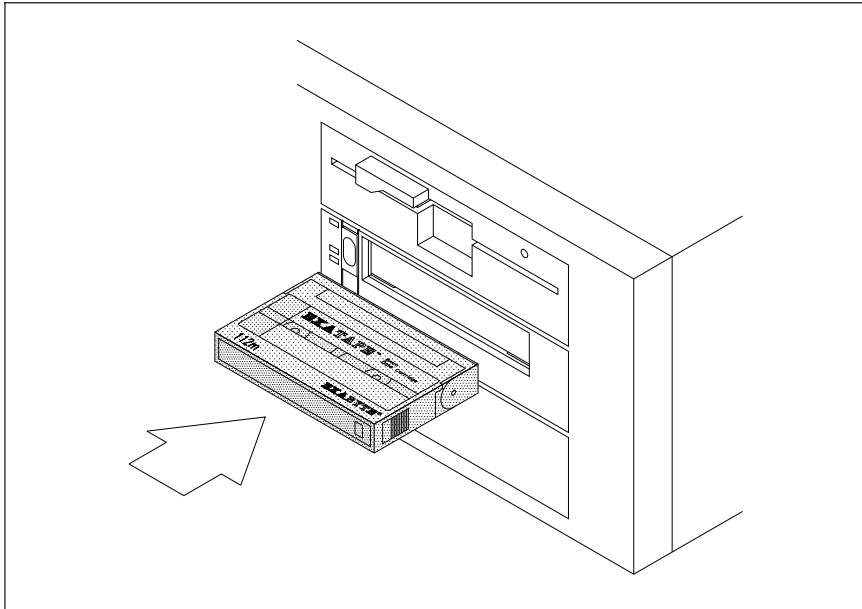
Step 7 – Test your installation

After installing your tape drive and application software, check the installation by performing a simple backup and restore operation to verify that your software and tape drive are communicating properly before you begin operation.

Note: If this is the first time you have used the tape drive or if the tape drive has been stored for six months or more, repeat steps 4 and 5 of the following procedure at least two times or for two hours (whichever is greater).

To check the installation, do the following:

1. Locate a data cartridge that does not contain any valuable information and make sure that its write-protect switch is set to write-enable (see page 45).
2. Gently push the data cartridge into the tape drive, as shown, until the load mechanism pulls the cartridge into the drive.



3. Wait while the tape drive loads the tape, determines the tape format, and positions it to the logical beginning of tape (LBOT). This takes about 45 seconds. When the green LED is on solid, the tape drive is ready.
4. Perform a backup operation to write a small amount of data to the tape.
5. Rewind the tape and read the data written in step 4 and compare it to the original. This determines whether the software and tape drive are functioning properly.

Note: Your application software may have a “backup with compare” option that automatically performs the operations described in steps 4 and 5.

If problems occur . . .

Problem	Corrective action
If the tape drive does not successfully read and write data:	Check the following: <ul style="list-style-type: none"> ✓ Are you using the correct type of data cartridge? See “Selecting data cartridges,” beginning on page 43, for more information about data cartridges. ✓ Is the data cartridge write enabled? ✓ Is your software correctly installed and configured? ✓ Press the unload button and remove the data cartridge. Repeat steps 2 through 5 using a different data cartridge. If the error occurs again, refer to Chapter 4 for additional troubleshooting steps.
If the tape drive’s LEDs are on or flashing:	See the table on page 42 for information about reading the LEDs.
If you are unable to resolve the problem yourself:	See Chapter 5 for information about contacting your dealer, service representative, or Exabyte Sales Support.

Notes

2

Operating the tape drive

This section includes information about the following:

- ❑ Reading the tape drive's LEDs
- ❑ Selecting data cartridges
- ❑ Setting the write-protect switch on the data cartridge
- ❑ Loading and unloading a data cartridge

Reading the LEDs

The tape drive uses three LEDs to indicate its operating states. The LEDs indicate the following general conditions:

- ❑ When the top (orange) LED is flashing, the tape drive has an error or needs cleaning.
- ❑ When the middle LED is on or flashing, SCSI bus activity is occurring. The middle LED can be green or orange, as follows:

Orange: The tape loaded in the tape drive is in one of the compression formats (8500c or 8200c). Note that when the tape is in 8500c format, the LED is always orange even though compression can be turned off.

Green: The tape loaded in the tape drive is in one of the non-compression formats (8500 or 8200).

- When the bottom (green) LED is on, a data cartridge is loaded in the tape drive. When this LED is flashing, the tape is moving or the tape drive needs cleaning.

The following table shows specific combinations of LEDs that may occur during tape drive operation.

Note: You may occasionally observe LED combinations and sequences not described in the table. These other combinations represent special or unusual conditions that are beyond the scope of this table. This table may no longer be valid if you load new firmware.

Tape Drive State										
	self-test start	self-test end	self-test fail	ready (no tape)	ready (tape)	normal tape motion	high speed tape motion	SCSI bus reset	error	time to clean
top LED (errors)	●	●	* fast	○	○	○	○	●	* slow	* fast
middle LED (SCSI)^b	● green	* irreg	* irreg	* irreg	* irreg	* irreg	* irreg	* irreg	* irreg	* irreg
bottom LED (motion)	●	○ ^c	○	○	●	* slow	* fast	●	○	* fast

^a Green – uncompressed format tape.
 Orange – compressed format tape.

^b If a data cartridge is loaded, the bottom LED first flashes slow, then fast during the second part of the power-on self-test.

Key for table



The LED is on.

The LED is off.

The LED is flashing:

* slow = 1 flash/second

* fast = 4 flashes/second

* irregular = Rate of flash varies with SCSI bus activity. If the device is not connected to the bus, the LED is off.

Selecting data cartridges

Unlike media available from other manufacturers, EXATAPE™ 8mm Data Cartridges are formulated specifically for use in a data storage environment and offer reliability, extended durability, and long-term archivability. In addition, exclusive use of EXATAPE media with Exabyte 8mm tape drives has been shown to prolong head and tape life.

► **Important:** Exabyte strongly recommends that you use EXATAPE data-grade media with all Exabyte products, including the EXB-8205, EXB-8205XL, EXB-8505, and EXB-8505XL. EXATAPE media meets specifications that are the most stringent in the industry.

CAUTION

Never use video-grade tape for data storage. Video-grade tape can be less accurate than data-grade tape when recording high-density data and more abrasive to tape drive recording heads.

The EXB-8205 and EXB-8505 support the 15m, 54m, and 112m tapes, but do not support the 160m XL tape. If you attempt to load any 160m data cartridge into an EXB-8205 or EXB-8505, the tape drive automatically ejects the cartridge.

The following table summarizes the types and capacities of the EXATAPE 8mm data cartridges compatible with the EXB-8205, EXB-8205XL, EXB-8505, and EXB-8505XL. EXATAPE data cartridges require no formatting or other media conditioning before use. See page 63 for information about ordering data cartridges from Exabyte Direct Sales.

Data Cartridge	EXB-8205 Capacity^a	EXB-8205XL Capacity^a	EXB-8505 Capacity^a	EXB-8505XL Capacity^a
15m	600 MB	600 MB	1.2 GB	1.2 GB
54m	2.4 GB	2.4 GB	4.8 GB	4.8 GB
112m	5.0 GB	5.0 GB	10.0 GB	10.0 GB
160m XL	Do not use ^b	7.0 GB	Do not use ^b	14.0 GB

^a Assuming a compression ratio of 2:1.

^b The 160m XL data cartridge is automatically ejected by the EXB-8205 and EXB-8505.

EXATAPE 160m XL 8mm data cartridges

All EXATAPE 160m XL data cartridges contain a Recognition System stripe located on the tape leader for media identification. The EXB-8205XL and EXB-8505XL use this stripe to distinguish data-quality metal-particle media, such as EXATAPE, from other 160m media.

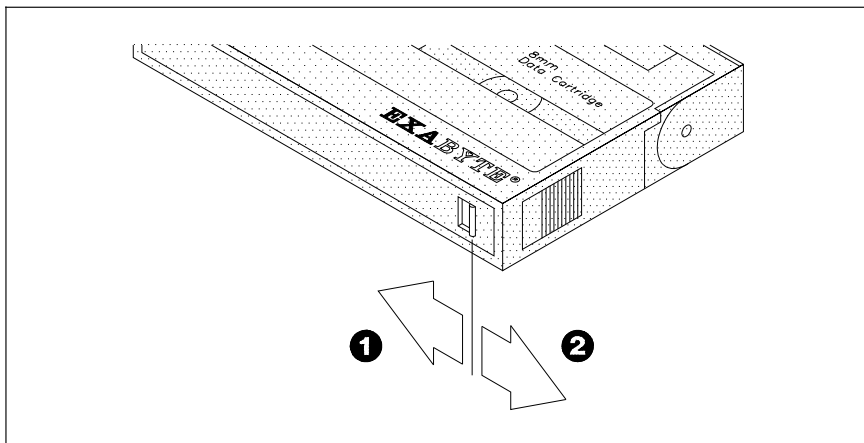
To maintain data integrity, the EXB-8205XL and EXB-8505XL automatically eject 160m data cartridges or equivalent length video cartridges that are not equipped with the Recognition System stripe. By rejecting potentially inferior media, the extended-length tape drives ensure greater data reliability and protect the read and write heads from unnecessary wear.

CAUTION

Do not attempt to use the EXATAPE 160m XL media in full-high 8mm Exabyte tape drives. Although these tape drives will accept the 160m XL data cartridge, these cartridges are not supported by the tape drives and should not be used.

Write-protecting a data cartridge

Before loading a data cartridge in the tape drive, make sure that the write-protect switch on the cartridge is set correctly for the desired operation. You can use a ball-point pen or similar instrument to set the write-protect switch as shown:

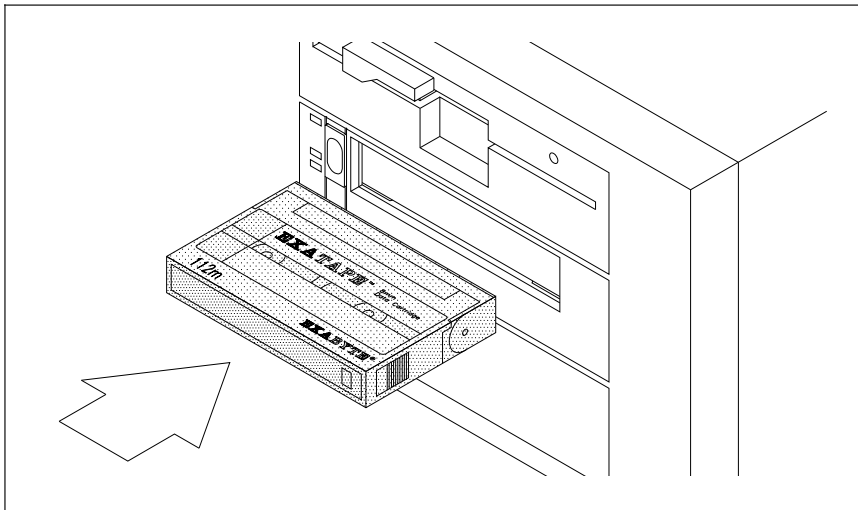


- ❶ Write protect (colored tab fully visible)
- ❷ Write enable (colored tab not visible)

Loading a data cartridge

To load a data cartridge into the tape drive, follow these steps:

1. Make sure that the write-protect switch has been set correctly for the desired operation, as explained on page 45.
2. If you have just powered on the tape drive, be sure that the bottom and top LEDs are off, indicating that the tape drive has passed its power-on self-test and is ready to load the data cartridge.
3. Gently push the data cartridge into the tape drive, as shown, until the load mechanism pulls the data cartridge into the tape drive.



4. The tape drive automatically loads the data cartridge and positions the tape to the logical beginning of tape (LBOT) within approximately 45 seconds (assuming that the data cartridge has already been rewound).

During the load operation, the tape drive determines the tape format and the length of the tape. When the bottom LED is on solid, the tape drive is ready.

Note: Most tape drives load the data cartridge automatically. However, your application software may disable the automatic load function. If the tape drive does not go to the ready state after you insert the data cartridge, consult your software documentation for information.

Unloading a data cartridge

The unload button is the only operator control on the tape drive. It is used to unload the data cartridge from the tape drive.

The unload button can also be used to clear some hardware errors. If a hardware error occurs, press the unload button to reset the tape drive.

To unload a data cartridge, press the unload button. The tape drive completes the current operation, writes any buffered data to tape, rewinds the tape, unloads the tape from the tape path, and ejects the cartridge.

Note: Most tape drives unload the data cartridge automatically when you press the unload button. However, your application software may disable the unload button. If the tape drive does not unload the data cartridge when you press the unload button, consult your software documentation for information.

Error during unload procedure

If an error exists before or during the unload procedure, the unload sequence will be suspended and the orange LED will flash. To clear the error, press the unload button again. The unload sequence will be reattempted; however, unwritten data in the buffer will not be written to tape. The buffer and errors will be cleared.

CAUTION

The first time you load a data cartridge after clearing an error, use a data cartridge with no valuable information on it. Make sure that the tape drive can successfully unload the data cartridge before resuming operation.

If the error recurs, contact your dealer for assistance.

Resetting the tape drive

Occasionally, the tape drive may experience an error that cannot be cleared by pressing the unload button. If this happens, reset the tape drive by turning the power off, then on again.

CAUTION

Powering off the tape drive may reset the SCSI bus. To prevent possible loss of data, make sure that any other devices on the SCSI bus are inactive and have completed all requested operations before powering off the tape drive.

3

Preventive maintenance

The only routine maintenance required by the tape drive is regular cleaning of the tape drive heads and tape path. Proper storage and maintenance of your data cartridges will maximize the shelf life of your tapes and assure data integrity.

Exabyte cleaning cartridges

Use an Exabyte 8mm Cleaning Cartridge or an Exabyte-approved cleaning cartridge to clean the tape drive. The Exabyte 8mm Cleaning Cartridge contains a shed-free fabric tape that traps and removes debris from tape drive heads and tape paths. By using this cleaning cartridge on a regular basis, you maintain data integrity and improve reliability of the tape drive. For information about ordering cleaning cartridges, see page 63.

CAUTION

Using a cleaning method other than the Exabyte 8mm Cleaning Cartridge or an Exabyte-approved cleaning cartridge will void the tape warranty and can lead to premature wear of the recording head.

Determining when to clean the tape drive

You should clean the tape drive's heads and tape path either **once a month or after every 30 tape motion hours** (or more frequently if you are operating in a particularly dirty environment).

The tape drive keeps track of its tape motion hours internally. When 30 tape motion hours have elapsed, the top and bottom LEDs will flash rapidly and the middle LED will flash irregularly, depending on SCSI bus activity. For best results, clean the tape drive as soon as possible after the LEDs begin flashing. The table on page 42 illustrates the LED pattern indicating that the tape drive needs cleaning.

Note: Some backup software programs notify you when the tape drive needs cleaning. Refer to your software documentation for more information.

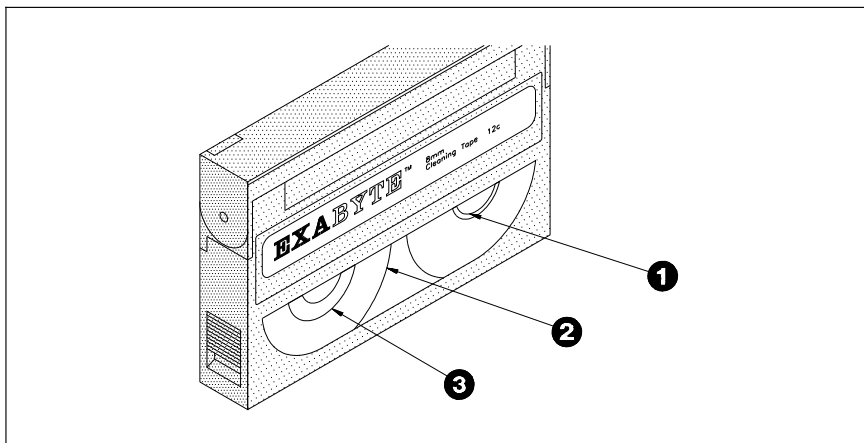
Using the cleaning cartridge

To use the cleaning cartridge, follow these steps:

1. Apply power to the tape drive. When the power-on self-test is complete, press the unload button and remove any data cartridge from the tape drive.
2. Check the cleaning cartridge to see if there is sufficient cleaning material remaining on the supply reel. If there is no cleaning material remaining, discard the cleaning cartridge and use a new one.

CAUTION

Do not rewind and reuse the cleaning cartridge. Reusing a cleaning cartridge will redistribute contaminants previously removed from the tape path.



- ❶ Take-up reel
- ❷ Supply reel
- ❸ Cleaning material

3. Insert the cleaning cartridge in the tape drive. The cleaning cycle is performed automatically by the tape drive and takes from 2 to 3 minutes. When the cleaning cycle is complete, the cleaning cartridge is automatically unloaded and ejected from the tape drive.

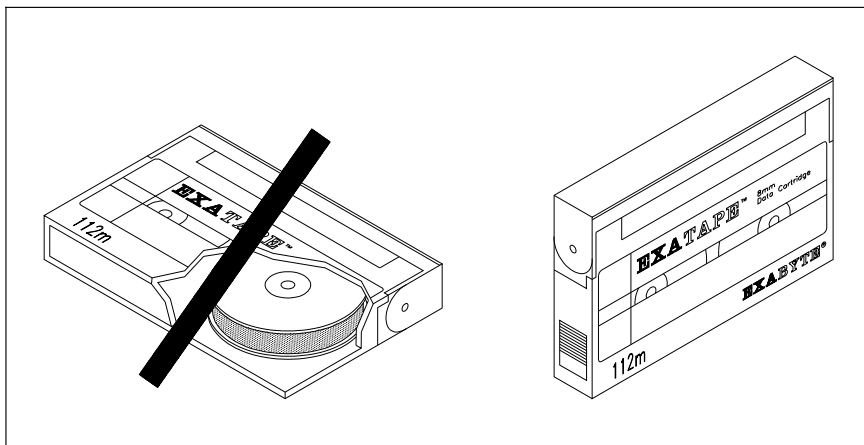
Note: If there are no more cleaning cycles remaining for the cleaning cartridge, the tape drive ejects it without completing the cleaning cycle.

4. Confirm that a cleaning was done. Look at the LEDs on the front of the tape drive. If the cleaning cycle was successful, the top and bottom LEDs will be off. If the cleaning cycle was not performed, the LEDs will continue to flash.
5. Store the cleaning cartridge for future use if it still has cycles remaining. Or, discard it if no more cleaning cycles remain. You may want to maintain a record of how many times the cleaning cartridge has been used.

Caring for data cartridges

To maximize the shelf life of your tapes and assure data integrity, follow these guidelines when storing data cartridges:

- ❑ Place a label or other reference information on the cartridge adjacent to the write-protect switch. On the label, you may want to include the cartridge number (log number), date of backup, and the format of the tape.
- ❑ Keep cartridges in their protective boxes when not in use.
- ❑ Do not open the cartridge's access door or touch the tape.
- ❑ Store cartridges in a cool, non-magnetic environment. Follow the cartridge manufacturer's specifications for storage temperature and other environmental requirements. Do not allow the temperature and humidity in the storage environment to fluctuate.
- ❑ Keep the storage location as free of airborne particulates as possible. To eliminate obvious sources of particulates, do not permit anyone to smoke, eat, or drink near the storage area, and do not store cartridges near a copier or printer that may emit toner and paper dust.
- ❑ Store data cartridges as soon as possible after you have written data to them. Immediate storage helps avoid many of the conditions that can damage tapes, such as temperature and humidity fluctuation, particulate contamination, and excessive handling.
- ❑ Store data cartridges with the write-protect switch in the protected position. See page 45.
- ❑ Store each cartridge on one of its long edges, not flat on its side. When a data cartridge is stored on its side, the tape inside the cartridge is actually on its edge. In this position, stress is placed on the tape edges and can lead to tape damage. For the same reason, never stack cartridges on top of each other or lean them at an angle for extended periods of time.



Replacing data cartridges

Approximately once each year, you may want to read all of the information on a tape and check the read error statistics. If errors have increased significantly since the previous test or if they exceed a certain predetermined threshold, you should rearchive the data to a new tape and discard the old tape.

Notes

4

Troubleshooting

This chapter provides suggestions for solving problems that may occur when you are installing and operating your tape drive. These suggestions are divided into the following sections:

- ❑ Problems with the tape drive installation
- ❑ Problems with the tape drive operation
- ❑ Problems reported by the application software

Often you can solve a problem you experience with your tape drive by trying the steps recommended here. If your problem persists, contact your dealer or Exabyte Sale Support for assistance (see Chapter 5).

Problems with tape drive installation

Most problems during installation occur because the SCSI bus is not correctly configured or the backup software is not correctly configured. If your tape drive and backup software are not communicating after installation or your software reports a hardware error, check the following:

- ✓ **Compatibility.** Make sure that your tape drive is compatible with the application software you plan to use. Refer to page 14 and the *Compatibility Matrix* included in the accessory box.
- ✓ **Single-ended devices.** Make sure all devices on the SCSI bus are single-ended.
- ✓ **SCSI adapter installation.** Make sure that you installed your SCSI adapter card correctly. Refer to the documentation that came with your card for installation and troubleshooting instructions. Pay special attention to steps describing setting various jumpers and switches on the card. Make sure that the card is properly seated.
- ✓ **Termination.** Make sure that your SCSI bus is correctly terminated. The devices on physical ends of the SCSI bus must be terminated. All other devices on the SCSI bus must have the terminators removed. Refer to pages 20 through 22 for information about terminating the tape drive.
- ✓ **SCSI cabling.** Make sure that the SCSI cable is securely connected at both ends. Also check the length and integrity of your SCSI cabling. The total length of all your SCSI data cables (both internal and external) must not exceed 19.7 feet (6.0 meters). Try replacing suspect cables with ones you know are good.
- ✓ **SCSI IDs.** Make sure that the SCSI ID you selected for the tape drive is not the same as the ID used by any other SCSI device, including the SCSI adapter card. Refer to pages 17 through 19 for information about setting the SCSI ID.

- ✓ **Power-on sequence.** For the external tape drive, make sure that you power on the tape drive before you power on the computer.

When you start your computer, the SCSI adapter card searches for SCSI devices attached to the computer. If your tape drive is not powered on at this point, the SCSI adapter card cannot detect it.

- ✓ **Software installation.** Make sure that your backup software is installed correctly. Refer to the documentation that came with your software for installation and troubleshooting instructions. Pay special attention to steps describing configuring the software for use with the tape drive.

After checking all the items listed, reset the SCSI bus by turning off the tape drive and the computer. Then, power on the tape drive first, followed by the computer.

CAUTION

To prevent possible loss of data, make sure that any other devices on the SCSI bus are inactive and have completed all requested operations before powering off the tape drive or resetting the bus.

Problems with tape drive operation

Most problems with tape drive operation occur with improper cartridge use. If you have been successfully operating your backup software and tape drive in the past, but are now experiencing problems reading and writing data, check the following:

- ✓ **Write-protect switch.** If you are writing data, make sure that the data cartridge is write enabled.
- ✓ **Data cartridge brand.** Check the brand of data cartridge you are using. For best results, use EXATAPE™ data cartridges. See page 43 for more information.

- ✓ **Data cartridge compatibility.** Make sure that the data cartridge is compatible with your tape drive. Non-XL tape drives are not compatible with XL 8mm data cartridges and will automatically eject them.

When selecting extended-length tapes for the XL tape drives, only use EXATAPE 160m XL 8mm data cartridges. Any other type of extended-length tape is automatically ejected. See page 43 for more information.

- ✓ **Data cartridge insertion.** Make sure that you are inserting the data cartridge correctly. Refer to page 46 for instructions.
- ✓ **Data cartridge age.** If the data cartridge has been in use for a long time or if it has been used frequently, try using a new data cartridge.
- ✓ **Cleaning.** Determine whether the tape drive needs cleaning. Refer to page 50 for instructions.

If you are experiencing operating problems loading or unloading a data cartridge, check the following:

- ✓ **Power.** Make sure that your computer is powered on. If the computer is off, the tape drive may not eject the data cartridge.
- ✓ **Software.** Determine whether your application software disables the tape drive automatic load function. If it does, you must use the software to load the data cartridge.
- ✓ **Tape drive.** The tape drive may have experienced a hardware error. Press the unload button to clear the error, then try loading the data cartridge again.

CAUTION

The first time you load a data cartridge after clearing an error, use a data cartridge with no valuable information on it. Make sure that the tape drive can successfully unload the data cartridge before resuming operation.

- ✓ **SCSI bus.** If the data cartridge still will not unload, reset the tape drive by powering the tape drive off, then on again. If the problem persists, power your computer off, then on again to reset the SCSI bus.

CAUTION

Powering off the tape drive may reset the SCSI bus. To prevent possible loss of data, make sure that any other devices on the SCSI bus are inactive and have completed all requested operations before powering off the tape drive or resetting the bus.

Problems reported by the application software

If you have been successfully operating your application software and tape drive in the past, but the software now reports a media error, check the following:

- ✓ **Data cartridge present.** Make sure that you have a data cartridge in the tape drive.
- ✓ **Data cartridge brand.** Make sure that you are using EXATAPE data-grade media. See page 43 for more information.
- ✓ **Data cartridge age.** If the data cartridge has been in use for a long time or if it has been used frequently, try using a new data cartridge.
- ✓ **Cleaning.** Clean the tape drive using an Exabyte or Exabyte-approved 8mm Cleaning Cartridge. Refer to page 50 for instructions.

If you have been successfully operating your application software and tape drive in the past, but the software now reports a hardware error, check the following:

- ✓ **Data cartridge.** Try using a new data cartridge.
- ✓ **Tape drive.** The tape drive may have experienced a hardware error. Press the unload button to clear the error, then try loading the data cartridge again.

CAUTION

The first time you load a data cartridge after clearing an error, use a data cartridge with no valuable information on it. Make sure that the tape drive can successfully unload the data cartridge before resuming operation.

- ✓ **SCSI bus.** If your software still reports an error, reset the tape drive by powering the tape drive off, then on again. If the problem persists, power your computer off, then on again to reset the SCSI bus.

CAUTION

Powering off the tape drive may reset the SCSI bus. To prevent possible loss of data, make sure that any other devices on the SCSI bus are inactive and have completed all requested operations before powering off the tape drive or resetting the bus.

5

Getting help

To resolve any problems with the tape drive, follow these steps:

1. Read Chapter 4, “Troubleshooting,” and refer to the section of this manual or of your software documentation that discusses the area where you are experiencing difficulty.
2. Call your dealer or service representative.
3. If you are still unable to resolve the problem, call Exabyte Sales Support.

Contacting Exabyte Sales Support

If you have questions about the operation of the tape drive that you cannot answer by consulting this manual or your dealer or service representative, call or fax Exabyte Sales Support.

Before contacting Exabyte Sales Support, gather the following information to help isolate the problem:

- ❑ The tape drive serial number (found on the top of the tape drive housing or on the back of the tape drive enclosure)
- ❑ The tape drive FECODE and EECODE numbers (found on the configuration label, see page 14)

- ❑ Application software name and version number
- ❑ Operating system (DOS, UNIX, OS/2, and so on) version number
- ❑ Computer brand name and model (name or number)
- ❑ SCSI adapter card brand name and model (name or number)
- ❑ An exact description of the problem, including what you were doing before the problem occurred, what happened, and what you expected to happen

You may also need to know:

- ❑ Amount of RAM available
- ❑ The exact contents of your AUTOEXEC.BAT and CONFIG.SYS files
- ❑ Any special add-on equipment not part of a standard integrated system
- ❑ Other software you were using at the time the problem occurred

Exabyte Sales Support phone numbers

Exabyte Sales Support is available in the United States from 8:00 a.m. to 6:30 p.m. Central Standard Time.

Phone: 1-800-825-4727 or 1-913-492-6002

Fax: 1-913-492-2465

BBS: 1-913-492-8751 or 1-303-447-7100 – Available 24 hours a day, 7 days a week. Connect at up to 9600 baud with 8 data bits, 1 stop bit, and no parity. All files are password protected. Call either of the phone numbers above to obtain a password.

Note: If it is more convenient to your location, contact Exabyte Technical Support in Holland at the following numbers:

Phone: (31) 3403-51347

Fax: (31) 3403-51230

BBS: (31) 3403-51258

Ordering supplies from Exabyte

You can order data cartridges, cleaning cartridges, and manuals directly from Exabyte. To place an order, call:

Phone: 1-800-EXATAPE (1-800-392-8273) or
1-303-442-4333 and ask for Exabyte Direct

Fax: 1-303-447-7689

Returning the tape drive for repair

If it is determined that your tape drive requires repair and you need to return it to the factory for service, follow these instructions to ensure rapid, accurate turnaround:

1. Contact Exabyte Direct Service to obtain a Return Materials Authorization (RMA) number and the shipping address. Call:

Phone: 1-800-EXATAPE (1-800-392-8273) or
1-303-442-4333 and ask for Exabyte Direct

Fax: 1-303-447-7689

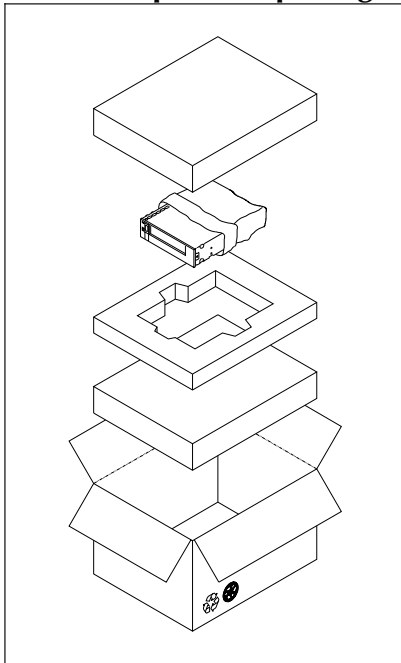
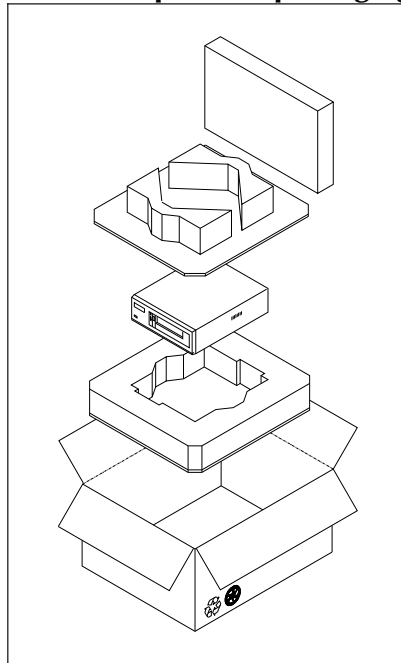
Note: If it is more convenient to your location, contact Exabyte Service in Scotland at the following numbers:

Phone: (44) 0324-564564

Fax: (44) 0324-564500

2. Pack the tape drive in its original shipping container and packing materials. If you do not have the original container, you can obtain one from your dealer or Exabyte Direct Service.

► **Important:** Only original equipment manufactured by Exabyte will be accepted for service. Enclosures, brackets, or cables not originally manufactured by Exabyte will be returned unrepared, freight collect.

Internal tape drive packaging**External tape drive packaging**

3. Include a description of the problem with the tape drive in the shipping container.
4. Write the RMA number on the outside of the shipping container. Otherwise, Exabyte will not accept the package.

► **Important:** You must obtain an RMA number before returning a tape drive to Exabyte. Packages received without an RMA number clearly marked on the box will be returned unrepared, freight collect.

5. Write your return address on the outside of the shipping container.

Moving the tape drive

To ship your tape drive or move it a long distance, repack it using the original packing materials. If you do not have the original shipping container, contact your dealer or service representative for shipping instructions. If the tape drive is not properly protected for shipping, your warranty may be voided.

CAUTION

- ❑ To avoid damaging the tape drive and voiding your warranty, use the original shipping materials (or replacement materials from your dealer).
- ❑ To ensure that the packaging meets the required specifications, do not modify it in any way.
- ❑ Do not use the shipping carton and packing materials to ship items other than or in addition to the tape drive.

Appendix A Installation requirements —

Note: This appendix does not apply to the external tape drive.

This appendix provides guidelines for installing the internal tape drive when it is not installed in a drive bay. This includes the following tasks:

- ❑ Attaching the tape drive to a frame (below)
- ❑ Installing a remote SCSI ID switch (page 69)
- ❑ Providing chassis grounding (page 69)
- ❑ Connecting the tape drive to the power supply (page 70)

Refer to the *EXB-8205 and EXB-8505 Product Specification for Standard and eXtended-Length Configurations* for detailed installation specifications for the tape drives.

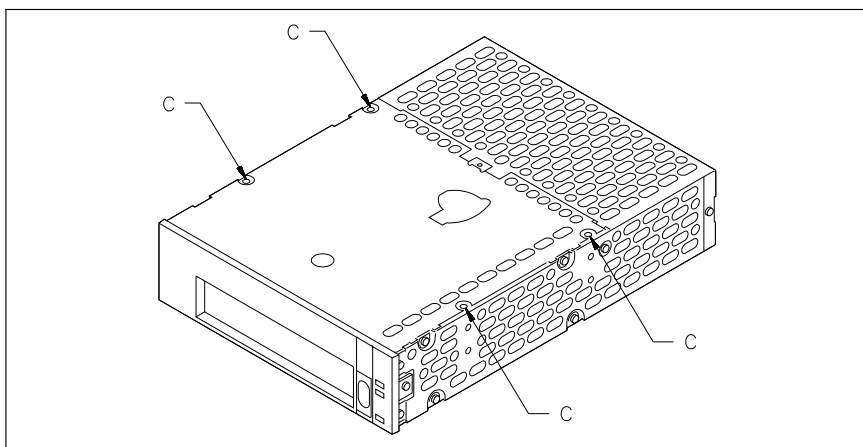
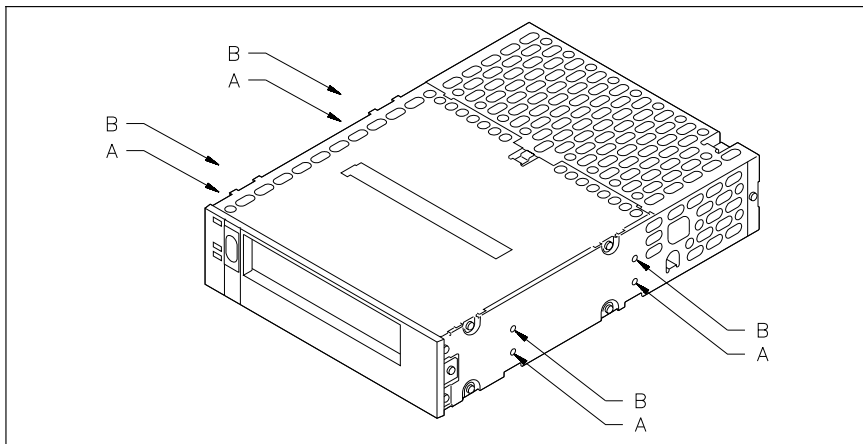
Attaching the tape drive to a frame —

The main housing of the tape drive includes two sets of mounting holes (one set on the sides and one set on the bottom, as shown in the following figures) to allow for a number of mounting positions. These mounting holes accommodate M3–0.5 × 6 mm screws.

When mounting the tape drive, follow these guidelines:

- ❑ The mounting location must meet the specified limits for operating temperature, humidity, airflow, particulate contamination, shock, and vibration.
- ❑ The tape drive must be mounted solidly and securely. To ensure reliability, there must be no distortion of the tape drive's metal housing. Do not install the tape drive in such a way that its frame is unsupported. For example, do not hang the tape drive by an edge.

- ❑ Use at least four mounting holes to secure the tape drive. Use the four holes from only one set (“A,” “B,” or “C,” as shown in the following figures). Using combinations of mounting holes from different sets may distort the frame.
- ❑ Objects such as screw heads, cables, or adjacent devices must not press against the frame of the tape drive.



- ❑ The ventilation slots at the sides and top of the tape drive must be free of obstruction so that adequate airflow is provided.
- ❑ There must be sufficient space to access and operate the front panel controls.

Installing a remote SCSI ID switch

If you want to set the SCSI ID remotely, you can attach a remote switch assembly (not provided with the tape drive) to the tape drive's SCSI ID jumper block. To set the SCSI ID with a remote switch, follow these steps:

1. Locate the SCSI ID jumper block on the back of the tape drive, as shown on page 19.
2. If necessary, remove the jumpers from the pins.
3. Connect a remote switch to the jumper block. Ensure that the remote switch is no more than 12 inches (30.5 cm) from the jumper block.
4. Change the settings on the remote switch to the correct SCSI ID for your configuration. The switch settings should emulate the jumper positions shown on page 19.

Providing chassis grounding (optional)

If additional chassis grounding is desired, connect a 1/4-inch female spade connector to the grounding tab on the back of the tape drive. The grounding tab is shown on page 30.

Note: The power supply returns are connected to the chassis, so you cannot isolate logic common ground from chassis ground.

Connecting a power cable

The tape drive operates from standard +5 VDC and +12 VDC supply voltages; it cannot use external AC power. Safety agency certification requires that the supplied voltage be from a Safety Extra-Low Voltage source (per IEC 950). Refer to Appendix B for tape drive power specifications.

CAUTION

The tape drive does not provide any overvoltage or over current protection. For this reason, be certain that the power is off before connecting the tape drive to a power supply.

The power connector used in the tape drive is compatible with power connectors used for standard 5.25-inch devices. To connect the tape drive to a power cable, use an AMP 1-480424-0 series or equivalent female connector.

Appendix B Tape drive specifications

General	
Capacity^a – EXB-8205	Up to 5.0 GB on one 112m data cartridge ^b
EXB-8205XL	Up to 7.0 GB on one 160m XL data cartridge ^b
EXB-8505	Up to 10.0 GB on one 112m data cartridge ^c
EXB-8505XL	Up to 14.0 GB on one 160m XL data cartridge ^c
Interface	SCSI-1 and SCSI-2, single-ended
Maximum Sustained Data Transfer Rate	
8200 format	262 KB/sec
8200c format^a	500 KB/sec
8500 format (EXB-8505 only)	500 KB/sec
8500c format (EXB-8505 only)^a	1.0 MB/sec
Physical Characteristics	
Size – Internal	4.1 cm high × 14.6 cm wide × 20.3 cm deep (1.62 × 5.75 × 8.00 inches)
External	7.6 cm high × 22.9 cm wide × 27.9 cm deep (3.0 × 9.0 × 11.0 inches)
Weight – Internal	1.2 kilograms (2.6 pounds)
External	3.6 kilograms (8.0 pounds)
Environmental	
Ambient temperature	+5°C to +40°C (+41°F to +104°F)
Relative humidity – Operating	20% to 80%, non-condensing
Wet bulb	25°C (79°F) maximum
Power and Reliability	
Input voltages – Internal	Standard +5 VDC and +12 VDC ±5%
External	Accepts 120 or 240 VAC at 50 to 60 Hz. Automatic input voltage selection.
Power consumption – Internal	14.5 watts
External	30 watts
Mean time between failure	160,000 hours @ 10% duty cycle

^a Assuming a 2:1 compression ratio

^b 8200c (compressed) format

^c 8500c (compressed) format

Appendix C Glossary

- address** See *SCSI ID*.
- bus** A signal line or a set of signal lines used by an interface system (for example, SCSI) to connect a number of devices in order to transfer information to and from those devices. For example, the SCSI cable used to connect the tape drive to the SCSI adapter card serves as a bus.
- byte** A unit of data or storage capacity equal to 1 character or 8 bits. If a file contains 1,567 bytes of data, it contains exactly that number of characters.
- backup** Copying files from disk to tape for security against data loss or corruption of files.
- Canadian DOC** Canadian Department of Communications
- capacity** The amount of data that a data cartridge can hold. Refer to page 44 for information about the capacity of data cartridges. Data compression increases the storage capacity of a data cartridge.
- CTS** Cartridge Tape Subsystem. Formal name for a tape drive.
- data compression** The process used to increase the capacity of a data cartridge by an average of two times. Compression allows the tape drive to write more data to a segment of tape.
- EECODE** The name and revision level of the firmware stored on tape drive's EEPROM. The EECODE contains a number of software switches that turn different options (for example the recording format) on or off within the firmware. The EECODE version loaded in the tape drive must be compatible with the SCSI adapter card and backup software.
- EEPROM** Electronically erasable programmable read only memory.

- eXtended-Length tape** A specially manufactured, 160m extended length data cartridge. The 160m XL tapes are equipped with a Recognition System stripe, located on the tape leader. This leader allows an XL tape drive to recognize the tape as data-quality metal-particle media. XL tapes are not compatible with and are automatically ejected by non-XL half-high tape drives. Full-high, non-XL tape drives will accept XL tapes but are not compatible with them.
- FCC** Federal Communications Commission.
- FECODE** The name and revision level of firmware stored on the tape drive's FEPRM. The FECODE contains configuration parameters used for internal control of the tape drive functions. The FECODE version loaded in the tape drive must be compatible with the SCSI adapter card and backup software.
- FEPRM** Flash erasable programmable read only memory.
- GB** Gigabyte. A gigabyte is equal to approximately one billion bytes.
- ID** Identification.
- KB** Kilobyte. A kilobyte is equal to 1,024 bytes.
- LBOT** Logical beginning of tape.
- LED** Light emitting diode.
- MB** Megabyte. A megabyte is equal to approximately one million bytes.
- mm** Millimeter (0.03937 inches).
- SCSI** Small Computer Systems Interface.
- SCSI bus** See *bus*.

- SCSI ID** A unique address (0 to 7) assigned to a SCSI device attached to a SCSI bus.
- single-ended device** A SCSI configuration that uses one signal line to transmit a bus signal between devices. The tape drives described in this manual are single-ended devices, which means that all other devices on the bus must be single-ended devices also (not differential, which use two signal lines.)
- terminator** The terminating plug required at both physical ends of a SCSI bus.
- XL** eXtended Length. Tape drives capable of using EXATAPE 160m eXtended-Length data cartridges. Do not use XL data cartridges with non-XL tape drives.
- VDC** Volts DC.

Index

A

- accessory kit, contents 13
- adapter card
 - installing and configuring 16
 - terminators 22

B

- bus
 - See SCSI bus

C

- cable requirements
 - internal power 70
 - remote SCSI ID switch 69
- cartridges
 - See data cartridges
- chassis grounding 30, 69
- cleaning the tape drive
 - frequency 50
 - instructions 50
- compatibility, determining 14
- computer, preparing 16, 23 – 24
- customer support 61

D

- data cartridges
 - available from Exabyte 44
 - care of 52 – 53
 - caution after clearing an error 48
 - extended-length 44
 - in accessory kit 14
 - loading 46
 - replacing 53
 - requirements 43 – 44
 - storing 52 – 53
 - unloading 47 – 48
 - write-protecting 45
- differential SCSI bus, caution 11

drive

See tape drive

E

- electrostatic discharge
 - See ESD
- ESD, protecting against 12
- Exabyte Sales Support 61 – 62
- EXB-8205 and EXB-8205XL
 - identifying 8
- EXB-8505 and EXB-8505XL
 - identifying 8
- extended-length data cartridges 44
- external tape drive
 - initial power-on 38 – 39
 - installing 31 – 34
 - post-installation test 38 – 39
 - power-on procedure 34 – 37
 - SCSI termination 22
 - setting the SCSI ID 19

F

- firmware, determining compatibility 14

G

- grounding, chassis 30, 69

I

- initial power-on 38 – 39
- installation
 - attaching to a frame 67 – 69
 - connecting a remote SCSI ID switch 69
 - connecting the power supply 29, 34
 - connecting to the SCSI bus 17, 33
 - grounding 30, 69
 - in non-DOS/Novell environments 23
 - initial power-on 38 – 39
 - post-installation test 38 – 39
 - power cable requirements 70

installation (*continued*)
 preparing for 12 – 14, 16
 setting the SCSI ID 17 – 19
 software 37
internal tape drive
 initial power-on 38 – 39
 installing 23 – 29
 post-installation test 38 – 39
 power-on procedure 34 – 37
 SCSI bus termination 20
 setting the SCSI ID 18

L

LEDs
 states indicated by 41 – 42
 using to identify 8
load procedure 46 – 47

M

maintenance
 See preventive maintenance
mounting rails
 in accessory kit 13
 installing 24 – 26
 non-standard or custom 16
mounting requirements 67 – 69

O

operating the tape drive 41 – 48

P

packing the tape drive 64 – 65
power cable
 connecting external 34
 connecting internal 29
 for external tape drive 13
 for internal tape drive 13
 requirements for external 14
 requirements for internal 70
power off, caution 48
power supply
 connecting the tape drive 29, 34, 70

power switch, location on external tape
drive 36
power-on procedure 34 – 37
power-on self-test
 description 35
 LEDs during 36
preventive maintenance 49 – 54

R

R-packs
 See terminators
registering your tape drive 15
remote switch for setting SCSI ID 69
required tools 16
resetting the tape drive 48
resistor terminators
 See terminators

S

safety and emissions standards 3
SCSI adapter card
 See adapter card
SCSI bus
 connecting the tape drive to 17, 26 – 28, 33
 defined 72
 differential bus caution 11
 external terminator 13
 reset with caution 59
 resetting 59 – 60
 single-ended 11
 terminating 20 – 22
SCSI cable
 connecting the external 33
 connecting the internal 26 – 28
 in accessory kit 13
SCSI ID 17 – 19
 jumper location on internal tape drive 18
 setting with remote switch 69
 switch location on external tape drive 19
service 64
shipping the tape drive 64 – 65

- software
 - determining compatibility 14
 - determining when to install 16
 - guidelines for installing 37
- supplies, ordering 63
- support 61
- T**
- tape
 - See data cartridges
- tape drive
 - cleaning 49 – 51
 - clearing an error condition 58
 - compatibility with software 14
 - connecting a remote SCSI ID switch 69
 - connecting to power 29, 34, 70
 - controls and indicators 41 – 42
 - differences between models 7 – 8
 - initial power-on 38
 - installing 17 – 26, 28 – 34, 67 – 70
 - loading a data cartridge 46
 - moving 66
 - packing and shipping 64 – 65
 - post-installation test 38 – 39
 - power-on procedure 34 – 37
 - providing chassis grounding 30, 69
 - requirements for returning for service 65
 - reset with caution 48
 - resetting 48
 - returning 64
 - specifications 71
 - troubleshooting 39, 55 – 60
 - unloading a data cartridge 47 – 48
 - unpacking 13
 - using extended-length data cartridges 43 – 44
- termination
 - defined 20
 - for the SCSI bus 20 – 22

- terminators
 - for external tape drive 13, 22
 - for internal tape drive 20 – 21
 - for SCSI bus 20
 - requirements for internal 21
- troubleshooting
 - hardware errors reported by software 60
 - installation problems 39, 56
 - media errors reported by software 59
 - power-on problems 37
 - tape drive operation problems 57

- U**
- unload button 47
- unload procedure 47 – 48
- unpacking instructions 13

- W**
- warranty card 14 – 15
- write-protecting a data cartridge 45

- X**
- XL tape drives
 - data cartridges 44
 - identifying 8

Notes
