FCC ID: B94C5687

C5687A User Guide

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External Drives—Installation Overview

	Refer to:
Before you start Check the packing list inside this guide. Check system prerequisites.	page 1-2
Step 1: Check the Drive's SCSI ID Check the tape drive's SCSI ID on the SCSI ID switch on the rear panel. If necessary change it from the default of 3 by pressing the indented + or - buttons above and below the SCSI ID number. Use a ball-point pen or similar pointed object. To prevent particle contamination, do not use a pencil. (If you are installing an HP SureStore DAT40 drive onto a UNIX system, check the UNIX configuration switches on the bottom of the drive.)	page 1-5
Step 2: Connect the SCSI Cable Attach the SCSI cable to the SCSI connector on the rear of the tape drive. If you have an HP SureStore DAT40 drive, connect the multi-mode terminator to the drive's other SCSI connector. and tighten the screws to secure it. For all other tape drives, make sure that the supplied terminator is firmly attached to the drive's other SCSI connector.	page 1-8
Step 3: Connect the Power Cable Plug the power cable securely into the socket on the rear panel of the drive. Plug the other end of the power cable into the power outlet.	page 1-10
On Completion Power on the system and check the tape drive is operational. Insert the *HP SureStore Tape* CD-ROM. It contains drivers, backup software and many useful utilities. Register your tape drive.	page 1-11

Installation Overview—External (UNIX) Drives

	For further details, see:
Before you start: Check the packing list inside this guide. Check system prerequisites. (DAT40 installation is identical on both Windows and UNIX systems. See the front of this guide for summary details and Chapter 1 for detailed instructions.)	page 2-2
Step 1: Check the Drive's SCSI ID Check the tape drive's SCSI ID on the SCSI ID switch on the rear panel of the drive. If necessary, change it from the default of 3 by pressing the indented + or – buttons above and below the SCSI ID number. Use a ball-point pen or similar pointed object. To prevent particle contamination, do not use a pencil.	page 2-4
Step 2: Set the Configuration Switches Check the UNIX configuration switches on the bottom of the drive. Change the switch settings, if necessary.	page 2-5
Step 3: Connect the SCSI Cable Attach the SCSI cable to the SCSI connector on the rear of the tape drive. Make sure that the supplied terminator is firmly attached to the drive's other SCSI connector.	page 2-6
Step 4: Connect the Power Cable Push the DIN plug on the power supply's cable securely into the socket on the rear panel of the drive. Plug the power cable securely into the power supply. Power up the drive by plugging the other end of the power cable into the power outlet.	page 2-8
On Completion Power on the system and check the tape drive is operational. Insert the *HP SureStore Tape* CD-ROM. It contains drivers, backup software and many useful utilities. Register your tape drive.	page 2-9

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November 1999

Part Number: C1555-90921

Printed in the UK

Windows is a U.S. registered trademark of Microsoft Corp.

UNIX is a registered trademark of X/Open Company in the U.S. and other countries.

Product Details

Write your tape drive details here so you can find them easily if you need them.

Model (type of drive):	
Model (number):	
Serial (number):	
Date purchased/installed:	
SCSI ID:	

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Regulatory Information

1

Installing an "e" Model Drive (external)

HP SureStore models covered:

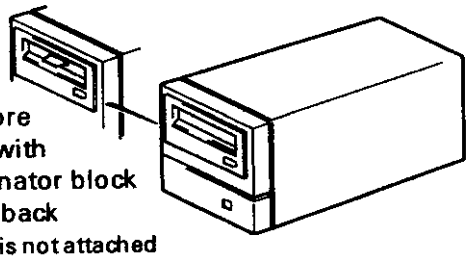
- Tape 5000e
- DAT8e
- DAT24e
- DAT40e

"e" model drives are normally connected to computers running under Windows® or NetWare. However, some models can also be connected to computers running a UNIX® operating system. Refer to the "HP SureStore Tape Software Compatibility" topic on our World Wide Web site (`http://www.hp.com/go/connect`) for more information.

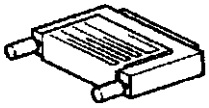
Before You Start: Check the Contents of the Box

The following equipment is supplied with your HP SureStore DAT drive.

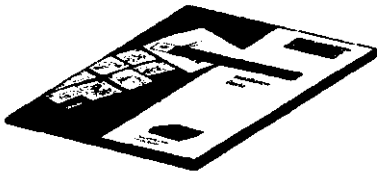
- ❑ HP SureStore DAT drive with SCSI terminator block attachedto back (Terminator is not attached with HP SureStore DAT40 drives.)



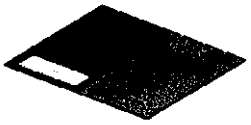
- ❑ Multi-mode SCSI terminator block (HP SureStore DAT40 drives only.)



- ❑ *Installation Guide* (Please discard unneeded languages in recycling bin.)



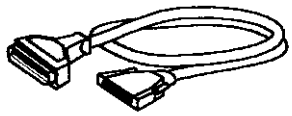
- ❑ Warranty Registration card and label



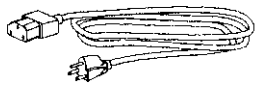
- ❑ One DDS-format data cartridge

- ❑ Cleaning cartridge

- ❑ SCSI cable*



- ❑ Power cable*



- ❑ *HP SureStore Tape* CD-ROM containing:
  - HP TapeAssure software
  - TapeAlert utility
  - Drivers
  - Backup software
  - HP Tape Tools
  - Electronic *User's Guides*
  - Media and accessories information

If anything is damaged or missing, contact the delivery company or your supplier.

* Hewlett-Packard supplies the correct SCSI cable for your tape drive and the correct power cable for each country. Your cables may differ from these illustrations.

Before You Start: Check System Prerequisites

To install and use your new tape drive, you will need the following:

- SCSI host adapter
- SCSI cable
- Backup software that supports the tape drive

SCSI Host Adapter

You need a properly installed and configured SCSI host adapter or a built-in SCSI controller on your computer's motherboard (SCSI-2 or SCSI-3 compliant). Consult your supplier for details.

If you are installing on a Windows 95, Windows 98, Windows NT or Novell NetWare system, you can use HP TapeAssure to check your computer's SCSI configuration, as directed on page 1-5.

HP SureStore DAT Drives and SCSI

All HP SureStore DAT drives, apart from the HP SureStore DAT40 are fast narrow SCSI devices and should be connected to a single-ended (SE) host bus adapter.

The HP SureStore DAT40 drive is an ultra wide SCSI device. For optimum performance it should be connected to a low voltage differential (LVD) SCSI host adapter. HP SureStore DAT40 drives may also be connected to SE (single-ended) SCSI host adapters, but cable length will be restricted to the SE rather than the LVD specification.

If you would like more information on SCSI specifications and configuring your SCSI bus, read the "SCSI Background" topic in the "Before You Start" section of the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM.

SCSI Cable

You need a SCSI cable that connects to your computer's external connector. For optimum performance, always use the supplied cable.

- The cable provided with DAT8e, DAT24e and DAT40e drives will attach to a computer with a wide SCSI connector (68 pins). The cable has been specified for use with LVD systems up to Ultra2 speeds.
- The cable provided with Tape 5000e drives will attach to a high-density narrow SCSI connector (50 pins).

If the SCSI cable supplied with your drive is not appropriate for your computer's external SCSI connector, you will need to order a new cable. (For HP part numbers and descriptions, see the electronic *DAT Media and Orderable Accessories Guide* on the *HP SureStore Tape* CD-ROM.)

Backup Software

You need backup software that supports the drive.

Applications usually recognize tape drives by their manufacturers' internal identifiers rather than their model numbers, so check the table below for the appropriate reference for your model.

Drive Model	Internal Identifier
HP SureStore Tape 5000	HP 35480A
HP SureStore DAT8	HP C1533A
HP SureStore DAT24	HP C1537A
HP SureStore DAT40	HP C5683A

The *HP SureStore Tape* CD-ROM contains backup software, as well as drivers, useful utilities and information about using your tape drive. See page 1-13 for more information about using the *HP SureStore Tape* CD-ROM.

Step 1: Check the Drive's SCSI ID

Note Your HP SureStore DAT drive is shipped with a default SCSI ID of 3, but it can be assigned any *unused* ID between 1 and 6. Do not use SCSI ID 7, which is reserved for the SCSI controller, or SCSI ID 0, which is typically assigned to the boot disk.

HP SureStore DAT40 drives can be assigned any *unused* ID between 1 and 15.

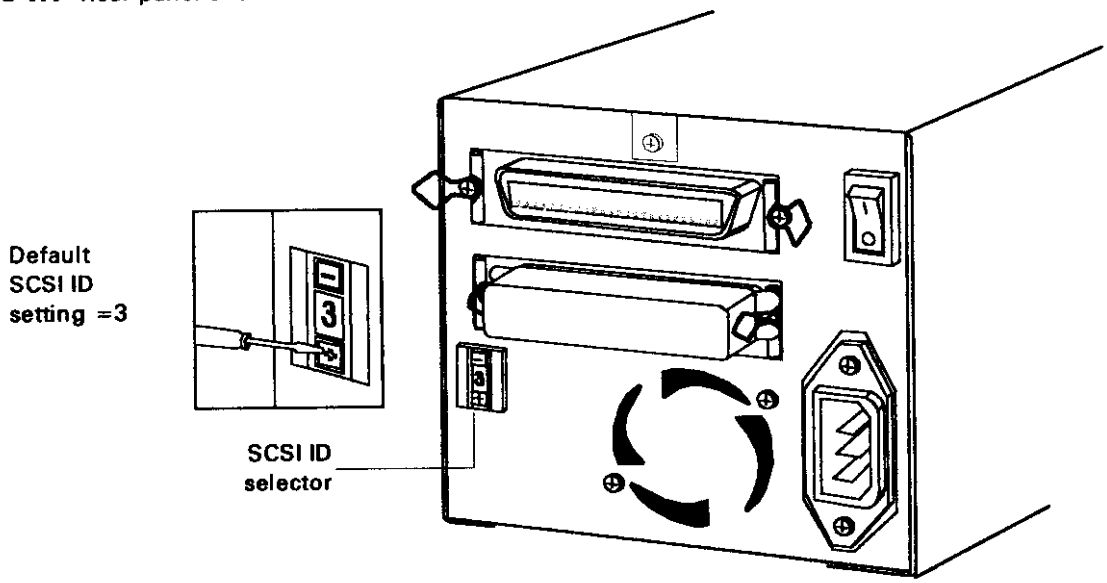
1 Determine whether you need to change the SCSI ID from the default of 3.

If you are installing on a Windows 95/98, Windows NT or NetWare system, install HP TapeAssure from the Software page on the *HP SureStore Tape* CD-ROM and run it to check your computer's current SCSI configuration.

See "Installing and Using HP TapeAssure" on page 1-6 for more information about installing and running HP TapeAssure.

If you do not need to change the SCSI ID, check the drive's SCSI ID setting on the rear of the drive to be sure that it has not been inadvertently changed, then *go to step 2 on page 1-8.*

Figure 1.1 Rear panel of an external HP SureStore DAT drive



2 Change the tape drive's SCSI ID. Use a small screwdriver or a ball-point pen to press the indented SCSI ID selector buttons on the rear panel (see figure 1.1) until the required value is displayed. Do not use a pencil because small bits of lead could contaminate the drive.

Note Both the computer and the tape drive check SCSI IDs only at power-on. To change the SCSI ID after installation, power down both the tape drive and the computer, change the drive's SCSI ID, power up the tape drive, and then power up the computer.

Installing and Using HP TapeAssure

HP TapeAssure allows you to check your computer's current SCSI configuration on a Windows or NetWare system. You cannot install HP TapeAssure on Unix systems.

Installing HP TapeAssure

1 Select `home.htm` on the *HP SureStore Tape* CD-ROM and the required language.

2 Select the "HP TapeAssure" topic and follow the instructions on the screen to install HP TapeAssure.

In Windows 95/98 or Windows NT, you can install TapeAssure directly on the system to which the tape drive is connected. In NetWare, you will need to install HP TapeAssure on the server from a client workstation running Windows 95/98 or Windows NT, and then run HP TapeAssure from the NetWare server console.

Using HP TapeAssure

Note If the program does not work correctly or hangs during processing, there may be a compatibility problem with the SCSI card. The current version of HP TapeAssure may not support Adaptec 1510 cards (6360 chip set) and Symbios cards.

---

1 Once it is installed, run TapeAssure from the Programs menu in the Windows Start menu. HP TapeAssure will check for the presence of a SCSI controller and its driver software and identify the SCSI IDs of existing SCSI devices.

2 View the current configuration and determine whether you need to change

the SCSI ID from the default of 3.

3 Exit TapeAssure after you view the SCSI configuration information.

Unix Configuration Switches (DAT40e)

If you are installing a DAT40e on a UNIX system, you may also need to change the configuration switches located on the underside of the drive. (This step applies to any "e" model that is connected to a UNIX system, but please note that not all UNIX operating systems support "e" model drives.)

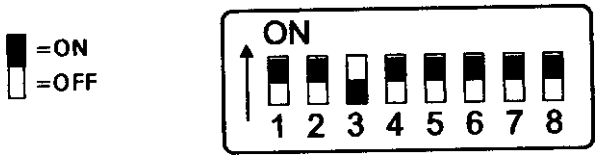
1 Check the "UNIX Configuration Instructions" in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM for specific advice for your operating system. See page 1-13 for more information about using the *HP SureStore Tape* CD-ROM.

The following table summarizes the *typical* switch settings for different types of computer, but further details are provided in the electronic *User's Guide*.

	Switch Number							
System Type	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Default and most PC systems	On	On	Off	On	On	On	On	On
DEC systems	On	On	Off	On	On	On	On	Off
HP systems (Series 700)	On	On	Off	On	On	On	On	On
IBM RS/6000 systems	On	On	Off	On	On	Off	Off	On
SCO/PC UNIX systems	On	On	Off	On	On	On	On	On
Silicon Graphics systems	On	On	Off	On	On	Off	Off	On
Sun systems	On	On	On	On	On	Off	Off	On

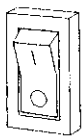
2 If your UNIX configuration requires it, change the configuration switches located on the underside of the drive from the default settings shown in figure 1.2.

Figure 1.2 Configuration switches (shown in default positions)



Step 2: Connect the SCSI Cable

Caution To avoid damaging the computer or tape drive, ensure that both are powered off while you attach the SCSI cable.



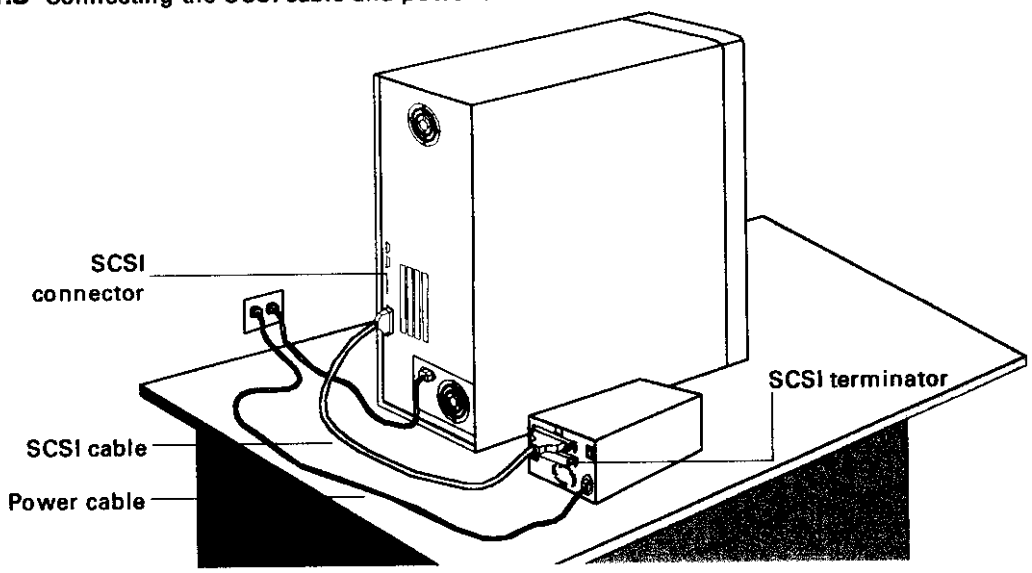
1 Perform a normal system shutdown and turn off the computer and any connected peripherals.

You may need a different cable if your computer's SCSI connector does not match the cable supplied with your drive.

- If you have an HP SureStore Tape 5000e model, a 50-pin narrow SCSI cable is provided.
- If you have a DAT8e, DAT24e or DAT40e model, a 68-pin wide SCSI cable is provided. This cable has been specified for use with LVD systems up to Ultra2 speeds.
- If you do not have the appropriate cable for your computer, you will have to order one from your supplier. (For HP part numbers and descriptions, see the electronic *DAT Media and Orderable Accessories Guide* on the *HP SureStore Tape* CD-ROM.)

2 Attach one end of the SCSI cable to the computer's external SCSI connector. See figure 1.3. Push firmly and secure the cable in place with its retainers (or screws).

Figure 1.3 Connecting the SCSI cable and power cable



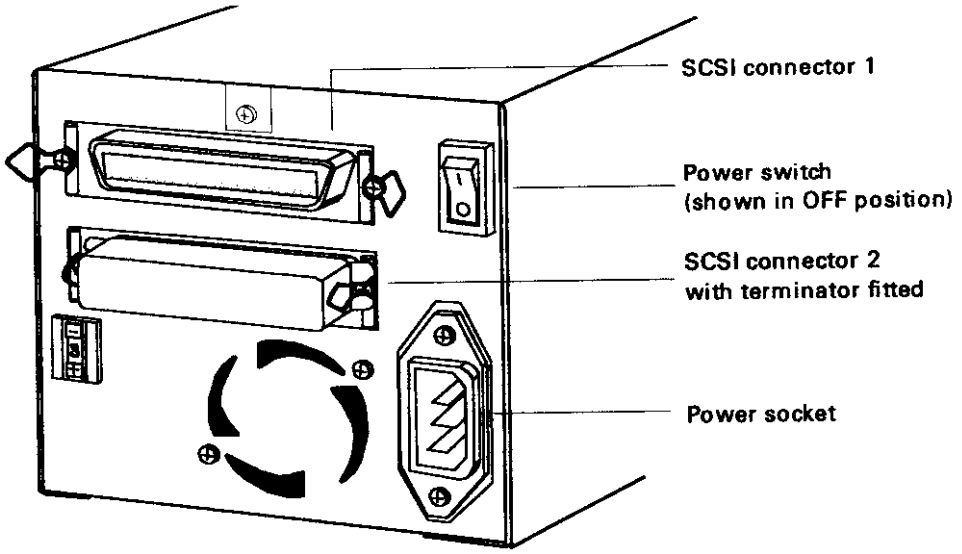
3 Attach the other end of the SCSI cable to one of the SCSI connectors on the rear panel of the tape drive. (See figure 1.4.) Snap both of the retaining clips over the connector to secure it firmly in place.

Note HP SureStore DAT40 drives use screw-in connectors. Tighten the screws to secure the connector.

4 If you have an HP SureStore DAT40 drive, connect the multi-mode terminator to the drive's other SCSI connector and tighten the screws to secure it. The multi-mode terminator detects whether the host bus adapter is SE or LVD and automatically provides the appropriate termination.

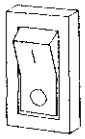
For all other tape drives, make sure that the supplied terminator is firmly attached to the drive's other SCSI connector.

Figure 1.4 Rear panel of an external HP SureStore DAT drive



Note If you want to attach additional devices to the SCSI bus after the tape drive, you will need to remove the SCSI terminator and attach the next device to this SCSI connector. Make sure that you attach the terminator to the last device in the chain.

Step 3: Connect the Power Cable



An external HP SureStore DAT drive will operate using any voltage in the range 100–240 volts (50-60 Hz). No adjustment is needed. To connect your drive to the power supply, proceed as follows:

1. Make sure that the drive is switched OFF (O side down). The power switch is on the rear panel (see figure 1.3).
2. Plug the power cable securely into the socket on the rear panel of the drive.
3. Plug the other end of the power cable into the power outlet.

Note Write the model name, product number, serial number, and SCSI ID of your drive in the front of this guide for future reference. The model name is on the front of the drive and the product and serial numbers are on a label on the bottom of the drive.

On Completion

Once you have completed the installation:

- Make sure you have the correct media.
- Power on and check that your new drive is operational.
- Insert the *HP SureStore Tape* CD-ROM. It contains everything you will need to use your tape drive—drivers, backup software, utilities and user information.
- Register your tape drive to ensure that you benefit from the full 3-year warranty period.

Use The Correct Media

For optimum performance and storage capacity, use tape cartridges that match your drive's format, and normally use only one cartridge per day.

- HP SureStore DAT40 drives work best with DDS-4 cartridges.
- HP SureStore DAT24 drives work best with DDS-3 cartridges.
- HP SureStore DAT8 drives work best with DDS-2 cartridges.
- HP SureStore Tape 5000 drives use **only DDS-1 cartridges (60-meter or 90-meter)**.

However, most HP SureStore DAT drives are fully backward compatible (apart from the HP SureStore DAT40). The compatibility between drive models and cartridges is summarized in the following table. Shaded boxes show the recommended media for each tape drive.

	DDS-1 60 meter	DDS-1 90 meter	DDS-2 120 meter	DDS-3 125 meter	DDS-4 150 meter
HP SureStore Tape 5000	**2.6 GB***	**4 GB***			
HP SureStore DAT8	read/write	read/write	**8 GB***		
HP SureStore DAT24	read/write	read/write	read/write	**24 GB***	
HP SureStore DAT40		read only	read/write	read/write	**40 GB***

** Capacity assumes 2:1 compression.*

Check Drive Operation

1 Switch on the drive and the computer. The tape drive will run its hardware self-test, which takes about 5 seconds. At the end of the hardware self-test, both front panel lights should be off. Read more about the self-test and front panel lights in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM.

Note Always power up the drive before powering up the computer, otherwise the computer may not recognize the drive.

2 Verify that the tape drive installation was successful.

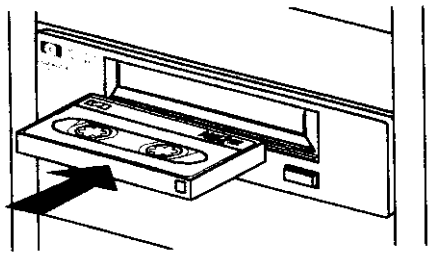
For Windows and NetWare systems, select HP TapeAssure from the Windows Start menu. (If you did not install HP TapeAssure at the start of the installation process, or if it does not run correctly, refer to page 1-6.) No other backup software should be running at the same time.

For UNIX systems, the configuration instructions in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM include a verification procedure.

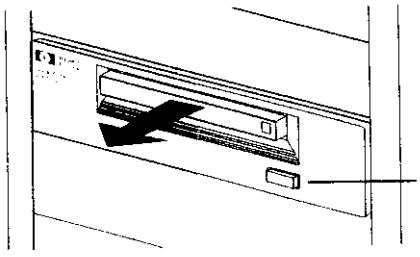
Note If you encounter a problem during this verification procedure, turn to "Save Yourself a Call" on page 3-2 for help in diagnosing and fixing the problem.

3 Install backup software, as required (see page 1-13). Use a blank cartridge to carry out the backup and restore test, which you should perform to check that the drive can write data to tape.

To load a cartridge:
Open the door flap, if fitted. Insert the cartridge into the slot in front of the drive with the label uppermost and apply gentle pressure until the drive takes the cartridge and loads it. The Tape light flashes green while the drive performs its load sequence. When the cartridge is loaded, the Tape light shows steady green.



To unload a cartridge:
Press the Unload button on the front panel. The drive completes any task it is currently performing, winds the tape to the beginning, and ejects the cartridge. The sequence will take about 25 seconds for a write-enabled cartridge and 10 seconds for a write-protected cartridge.



Insert the *HP SureStore Tape* CD-ROM

The *HP SureStore Tape* CD-ROM contains backup software, as well as drivers, useful utilities and information about using your tape drive.

1 Load the CD-ROM and select `home.htm`.

Note If you do not have a web browser, see the `Readme.txt` file.

2 Select the required language to display the Welcome page. You may like to add this page to your Bookmarks/Favorites for easy, subsequent access to items on the *HP SureStore Tape* CD-ROM.

3 Select the appropriate link from the Welcome page. You will find backup software and drivers under the "Software" topic, and electronic *User's Guides*, frequently asked questions and ordering information under the "User Documentation" topic.

Note for UNIX Users

With some UNIX systems you may have problems reading the HTML files. When you mount the CD-ROM, if the file names have a version number and are all in capitals (for example, README.TXT;1), use the `cdcopy.sh` utility that you can find in the UNIX directory on the CD-ROM. This utility ensures that all file names and links work correctly in the HTML pages.

Run the command as follows: `cdcopy.sh /mnt /toplevel`

where `/mnt` is the CD mount point and `/toplevel` is a new directory in which the files will be created.

Drivers

For detailed information about drivers, refer to the appropriate README file in the `DRIVERS` directory on the *HP SureStore Tape* CD-ROM. There is a separate sub-directory for each operating system. The tape drive must be installed before installing the driver.

Backup Software

To use the tape drive, you will need a backup application or utility that supports your tape drive model. The *HP SureStore Tape* CD-ROM contains free backup software for use with Windows 95/98, Windows NT and Novell

NetWare. This software also provides full support for HP One-Button Disaster Recovery, which allows complete system recovery at the touch of a button using only the latest backup cartridge.

Note Not all system configurations and backup software are capable of supporting HP One-Button Disaster Recovery.

- If you are installing the drive on a standalone PC or a client PC that runs Windows 95/98, you can use the HP Colorado Backup II software.
- If you are installing the drive on a PC that runs Windows NT Server or Novell Netware, you can use Replica Single Server for HP SureStore Tape. If using Replica with NetWare, please see the README file on the *HP SureStore Tape* CD-ROM. Replica is not supported on NetWare 5.0.
- The tape drive must be installed before installing the software.

For the latest list of backup packages that support HP SureStore DAT drives and advanced features such as HP One-Button Disaster Recovery and TapeAlert, refer to our World Wide Web site (`http://www.hp.com/go/connect`). The Selection section of this web site lists backup software solutions suitable for your tape drive model and operating system (including Microsoft Windows, Novell NetWare, IBM OS/2, various UNIX systems, and Apple Macintosh).

Note Once you have installed your backup software, remember to carry out a trial backup and restore.

User Documentation

For more information about using your DAT drive, refer to the "User Documentation" topic on the *HP SureStore Tape* CD-ROM. This provides links to frequently asked questions about drivers and operating systems, and, from the "DAT Drive Documentation" link, to three electronic *User's Guides*:

- HP SureStore DAT User's Guide
- HP One-Button Disaster Recovery Guide
- Media and Orderable Accessories Guide

Refer to your backup application's documentation for instructions on how to back up and restore data.

Viewing the Electronic User's Guides

You can view the electronic *User's Guides* with most current web browsers on any platform.

To view all the features of the electronic *User's Guide*, including color and animation, your system will need:

- A CD-ROM drive
- A super-VGA monitor configured to display at least 256 colors

HP SureStore DAT User's Guide

This guide contains:

- Features and specifications of HP SureStore DAT drive models
- Operating instructions and how to interpret the front panel lights
- Which tape cartridges to use and how to store them safely
- Tape drive maintenance instructions
- Customer support information, such as warranty details, how to get service, and how to contact technical support
- How to order parts and accessories
- UNIX configuration instructions
- Advice on backup strategies and SCSI bus configuration

HP One-Button Disaster Recovery User's Guide

This guide contains:

- Instructions on using HP One-Button Disaster Recovery
- Compatibility and troubleshooting advice

Media and Orderable Accessories Guide

This guide contains:

- Recommended media for your tape drive
- Details about orderable accessories

Register Your Tape Drive

You must register with HP to ensure that you benefit from the full 3-year Express Exchange[1] warranty period. The second and third years of warranty are subject to registration within 30 days.

Please register via the web (`http://www.hp.com/go/tapereg`) or by using the reply card in the box. The first year of warranty is provided automatically.

In order to ensure your registration is complete, there are a number of questions on the registration card and electronic form that are mandatory. Other questions are optional. However, the more you feel able to complete, the better HP can meet your needs. (If you wish, you may register your drive and choose NOT to receive any further information from HP.)

If you have internet access, register electronically as described below.

1. Select the "Warranty Registration" topic on the *HP SureStore Tape* CD-ROM.
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Limited Warranty Statement for USA, Canada, Australia and New Zealand

1. HP warrants to you, the end-user customer, that HP hardware, accessories and supplies will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or like-new.
2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.
4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
6. HP MAKES NO OTHER EXPRESS WARRANTY OR CONDITION WHETHER WRITTEN OR ORAL. TO THE EXTENT ALLOWED BY LOCAL LAW, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH ABOVE. Some countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country to country, state to state, or province to province.
7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF

DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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Consumer Warranty Sept 16/97

2

Installing an "eU" Model Drive (external for Unix)

HP SureStore models covered:

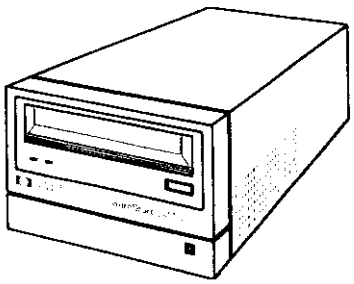
- Tape 5000eU
- DAT8eU
- DAT24eU

The DAT40e does not have a separate Unix model; the same drive is used for both non-Unix and Unix systems. Refer to Chapter 1 for installation instructions.

Before You Start: Check the Contents of the Box

The following equipment is supplied with your HP SureStore DAT drive. (See Chapter 1 for the contents supplied with the HP SureStore DAT40 drive.)

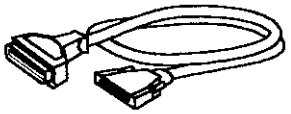
- ❑ HP SureStore DAT drive with SCSI terminator block attached to back



- ❑ DDS-format data cartridge

- ❑ Cleaning cartridge

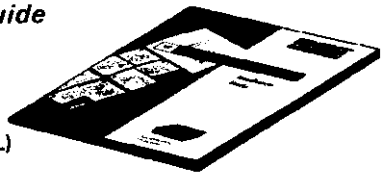
- ❑ SCSI cable*



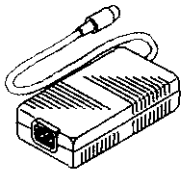
- ❑ *HP SureStore Tape* CD-ROM containing:
  - TapeAlert utility
  - Driver software
  - Electronic *User's Guide*

- ❑ Power cable*

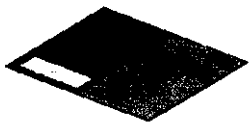
- ❑ *Installation Guide* (Please discard unneeded languages in recycling bin.)



- ❑ Power supply



- ❑ Warranty Registration card and label



If anything is damaged or missing, contact the delivery company or your supplier.

* Hewlett-Packard supplies the correct SCSI cable for your tape drive and the correct power cable for each country. Your cables may differ from these illustrations.

Before You Start: Check System Prerequisites

To install and use your new tape drive, you will need the following:

- SCSI host adapter
- SCSI cable
- Backup software that supports the tape drive

SCSI Host Adapter

You need a properly installed and configured SCSI host adapter or a built-in SCSI controller on your computer's motherboard (SCSI-2 or SCSI-3 compliant). Consult your supplier for details.

If you would like more information on configuring your SCSI bus, read the "SCSI Background" topic in the "Before You Start" section of the electronic *User's Guide* on the CD-ROM.

SCSI Cable

If the SCSI cable supplied with your drive is not appropriate for your computer's external SCSI connector, you will need to order a new cable. (For HP part numbers and descriptions, see the electronic *DAT Media and Orderable Accessories Guide* on the *HP SureStore Tape* CD-ROM.)

- The cable provided with DAT8eU and DAT24eU drives will attach to a computer with a wide SCSI connector (68 pins).
- The cable provided with Tape 5000eU drives will attach to a high-density narrow SCSI connector (50 pins).

Backup Software

You need backup software that supports the drive.

Applications usually recognize tape drives by their manufacturers' internal identifiers rather than their model numbers, so check the table below for the appropriate reference for your model.

Drive Model	Internal Identifier
HP SureStore Tape 5000	HP 35480A
HP SureStore DAT8	HP C1533A
HP SureStore DAT24	HP C1537A

Step 1: Check the Drive's SCSI ID

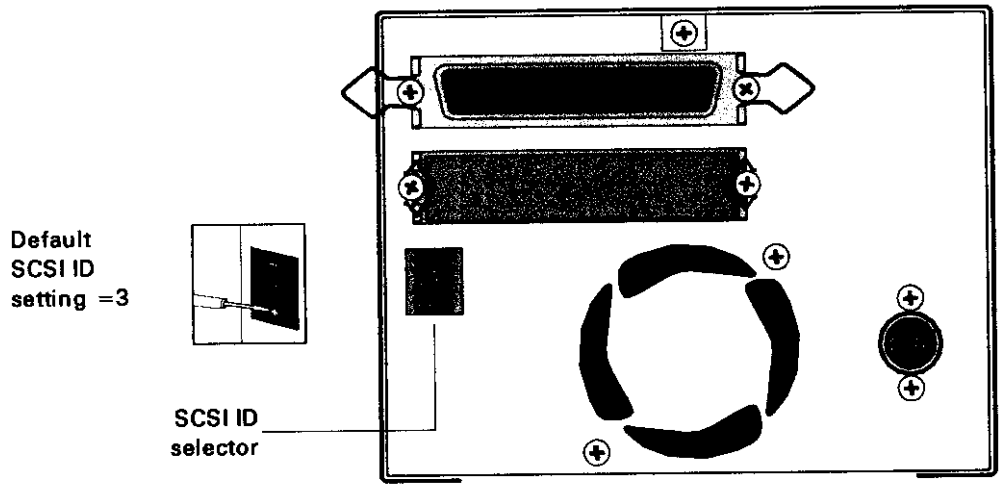
Note Your HP SureStore DAT drive is shipped with a default SCSI ID of 3, but it can be assigned any *unused* ID between 1 and 6.

1 Check your current SCSI configuration and determine if you need to change the SCSI ID from the default of 3. On a UNIX system, examine your device files to check the SCSI IDs of existing devices.

   If you do not need to change the SCSI ID, check the drive's SCSI ID setting on the rear of the drive to be sure that it has not been inadvertently changed from the default of 3, then *go to step 2 on* page 2-5.

2 Change the tape drive's SCSI ID. Use a small screwdriver or a ball-point pen to press the indented SCSI ID selector buttons on the rear panel (see figure 2.1) until the required value is displayed. Do not use a pencil because small bits of lead could contaminate the drive.

Figure 2.1 Rear panel of an external HP SureStore DAT drive



Note Both the computer and the tape drive check SCSI IDs only at power-on. To change the SCSI ID after installation, power down both the tape drive and the computer, change the drive's SCSI ID, power up the tape drive, and then power up the computer.

Step 2: Set the Configuration Switches

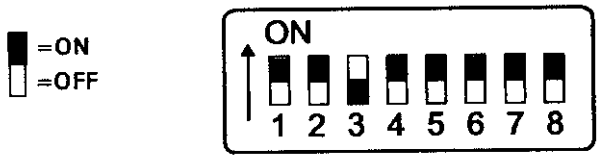
1 Check the "UNIX Configuration Instructions" in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM for specific advice for your operating system. See page 2-10 for more information about using the *HP SureStore Tape* CD-ROM.

The following table summarizes the *typical* switch settings for different types of computer, but further details are provided in the electronic *User's Guide*.

	Switch Number							
System Type	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Default and most PC systems	On	On	Off	On	On	On	On	On
DEC systems	On	On	Off	On	On	On	On	Off
HP systems (Series 700)	On	On	Off	On	On	On	On	On
IBM RS/6000 systems	On	On	Off	On	On	Off	Off	On
SCO/PC UNIX systems	On	On	Off	On	On	On	On	On
Silicon Graphics systems	On	On	Off	On	On	Off	Off	On
Sun systems	On	On	On	On	On	Off	Off	On

2 If your UNIX configuration requires it, change the configuration switches located on the underside of the drive from the default settings shown in figure 2.2.

Figure 2.2 Configuration switches (shown in default positions)



Step 3: Connect the SCSI Cable

Caution To avoid damaging the computer or tape drive, ensure that both are powered off while you attach the SCSI cable.

1 Perform a normal system shutdown and turn off the computer and any connected peripherals. Disconnect power cables from the outlet.

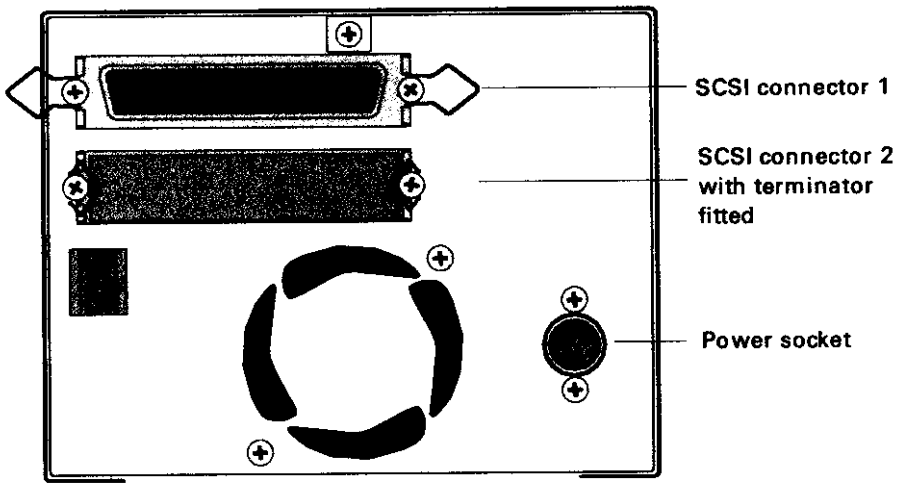
You may need a different cable if your computer's SCSI connector does not match the cable supplied with your drive.

- If you have an HP SureStore Tape 5000eU model, a 50-pin narrow SCSI cable is provided.
- If you have a DAT8eU or DAT24eU model, a 68-pin wide SCSI cable is provided.
- If you do not have the appropriate cable for your computer, you will have to order one from your supplier. (For HP part numbers and descriptions, see the electronic *DAT Media and Orderable Accessories Guide* on the *HP SureStore Tape* CD-ROM.)

2 Attach one end of the SCSI cable to the computer's external SCSI connector. Push firmly and secure the cable in place with its retainers.

3 Attach the other end of the SCSI cable to one of the SCSI connectors on the rear panel of the tape drive. (See figure 2.3.) Snap both of the retaining clips over the connector to secure it firmly in place.

Figure 2.3 Rear panel of an external HP SureStore DAT drive



4 Make sure that the terminator is firmly attached to the drive's other SCSI connector.

If you want to attach additional devices to the SCSI bus after the tape drive, you will need to remove the SCSI terminator and attach the next device to this SCSI connector. Make sure that you attach the terminator to the last device in the chain.

Note Write the model name, product number, serial number, and SCSI ID of your drive in the front of this guide for future reference. The model name is on the front of the drive and the product and serial numbers are on a label on the bottom of the drive.

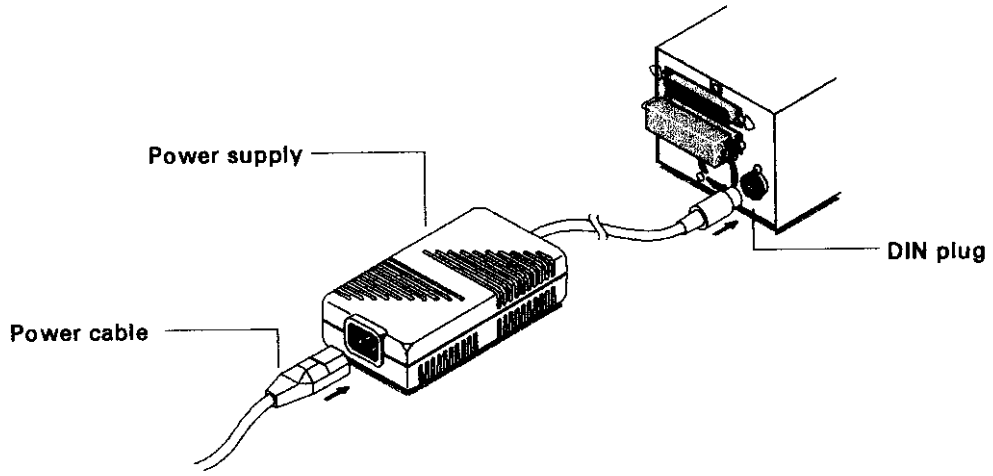
Step 4: Connect the Power Cable

An external HP SureStore DAT drive will operate using any voltage in the range 100–240 volts (50-60 Hz). No adjustment is needed. To connect your drive to the power supply, proceed as follows:

1. Push the DIN plug on the power supply's cable securely into the socket on the rear panel of the drive, as shown in figure 2.4.
2. Plug the power cable securely into the power supply.
3. Power up the drive by plugging the other end of the power cable into the power outlet.

   The tape drive will run its self-test, which takes about 5 seconds. At the end of the self-test, both front panel lights should be off. Read more about the self-test and front panel lights in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM.
4. Switch on the computer.

Figure 2.4 Connecting the power supply



Note Always power up the drive before powering up the computer, otherwise the computer may not recognize the drive.

On Completion

Once you have completed the installation:

- Make sure you have the correct media.
- Power on and check that your new drive is operational.
- Insert the *HP SureStore Tape* CD-ROM. It contains drivers, backup software, utilities and user information.
- Register your tape drive to ensure that you benefit from the full 3-year warranty period.

Use The Correct Media

For optimum performance and storage capacity, use tape cartridges that match your drive's format, and normally use only one cartridge per day.

- HP SureStore DAT24 drives work best with DDS-3 cartridges.
- HP SureStore DAT8 drives work best with DDS-2 cartridges.
- HP SureStore Tape 5000 drives use **only DDS-1 cartridges (60-meter or 90-meter).**

However, most HP SureStore DAT drives are fully backward compatible. The compatibility between drive models and cartridges is summarized in the following table. Shaded boxes show the recommended media for each tape drive.

	DDS-1 60 meter	DDS-1 90 meter	DDS-2 120 meter	DDS-3 125 meter	DDS-4 150 meter
HP SureStore Tape 5000	**2.6 GB***	**4 GB***			
HP SureStore DAT8	read/write	read/write	**8 GB***		
HP SureStore DAT24	read/write	read/write	read/write	**24 GB***	
HP SureStore DAT40		read only	read/write	read/write	**40 GB***

** Capacity assumes 2:1 compression.*

Check Drive Operation

1 Switch on the drive and the computer. The tape drive will run its hardware self-test, which takes about 5 seconds. At the end of the hardware self-test, both front panel lights should be off. Read more about the self-test and front panel lights in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM.

2 Verify that the tape drive installation was successful.

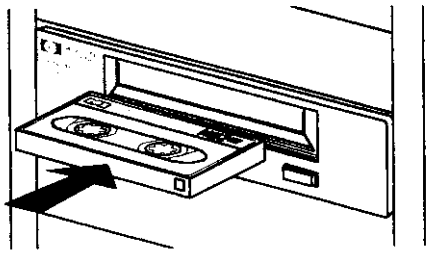
For UNIX systems, the configuration instructions in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM include a verification procedure.

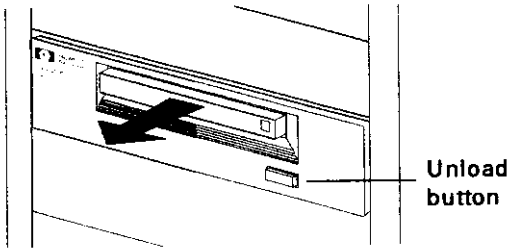
Note If you encounter a problem during this verification procedure, turn to "Save Yourself a Call" on page 3-2 for help in diagnosing and fixing the problem.

3 Use a blank cartridge to carry out the backup and restore test, which you should perform to check that the drive can write data to tape.

To load a cartridge:
Insert the cartridge into the slot in front of the drive with the label uppermost and apply gentle pressure until the drive takes the cartridge and loads it. The Tape light flashes green while the drive performs its load sequence. When the cartridge is loaded, the Tape light shows steady green.

To unload a cartridge:
Press the Unload button on the front panel. The drive completes any task it is currently performing, winds the tape to the beginning, and ejects the cartridge. The sequence will take about 25 seconds for a write-enabled cartridge and 10 seconds for a write-protected cartridge.





Insert the *HP SureStore Tape* CD-ROM

The *HP SureStore Tape* CD-ROM contains drivers, useful utilities and information about using your tape drive.

1 Load the CD-ROM and select `home.htm`.

Note If you do not have a web browser, see the `Readme.txt` file.

2 Select the required language to display the Welcome page. You may like to add this page to your Bookmarks/Favorites for easy, subsequent access to items on the *HP SureStore Tape* CD-ROM.

3 Select the appropriate link from the Welcome page. You will find backup software and drivers under the "Software" topic, and electronic *User's Guides*, frequently asked questions and ordering information under the "User Documentation" topic.

Note for UNIX Users

With some UNIX systems you may have problems reading the HTML files. When you mount the CD-ROM, if the file names have a version number and are all in capitals (for example, README.TXT;1), use the `cdcopy.sh` utility that you can find in the UNIX directory on the CD-ROM. This utility ensures that all file names and links work correctly in the HTML pages.

Run the command as follows: `cdcopy.sh /mnt /toplevel`

where `/mnt` is the CD mount point and `/toplevel` is a new directory in which the files will be created.

Drivers

For detailed information about drivers, refer to the appropriate README file in the `DRIVERS` directory on the *HP SureStore Tape* CD-ROM. There is a separate sub-directory for each operating system. The tape drive must be installed before installing the driver.

Configuring UNIX Systems

The UNIX instructions in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM provide details on how to configure your system to support the tape drive.

Backup Software

To use the tape drive, you will need a backup application or utility that supports your tape drive model. For the latest list of backup packages that support HP SureStore DAT drives and advanced features such as TapeAlert, refer to our World Wide Web site (`http://www.hp.com/go/tape`). The Selection section of this web site lists backup software solutions suitable for your tape drive model and operating system (including Microsoft Windows, Novell NetWare, IBM OS/2, various UNIX systems, and Apple Macintosh).

Instructions for installing and using your backup application (and drivers, if needed) should be supplied by the software manufacturer.

User Documentation

For more information about using your DAT drive, refer to the "User Documentation" topic on the *HP SureStore Tape* CD-ROM. This provides links to frequently asked questions about drivers and operating systems, and, from the "DAT Drive Documentation" link, to three electronic *User's Guides:*

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2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.
4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
6. HP MAKES NO OTHER EXPRESS WARRANTY OR CONDITION WHETHER WRITTEN OR ORAL. TO THE EXTENT ALLOWED BY LOCAL LAW, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH ABOVE. Some countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country to country, state to state, or province to province.
7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries, states or provinces do not allow the exclusion or

limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.
Consumer Warranty Sept 16/97

3

Installation Troubleshooting

Save Yourself a Call

The first step in problem-solving is establishing whether the problem lies with the cartridge, the drive, the host computer and its connections, or with the way the system is being operated. If none of the following advice helps you to solve the problem, call for service. The HP technical support numbers are listed in the "Customer Support" topic in the electronic *User's Guide* on the *HP SureStore Tape* CD-ROM.

Problems with Your Computer

Problem	Possible Cause	Potential Solution
The computer does not boot up.	If you have just installed a SCSI host adapter card in your computer and the computer did not boot up when you switched it on, the new adapter is the likely cause of the problem.	Refer to your host adapter documentation to check that the adapter is configured correctly.
The computer boots but then hangs.	This might be caused by conflicts in your hardware or software configuration, such as two devices with the same SCSI ID or improper termination of the SCSI bus.	Make sure that each device connected to the SCSI controller has a unique SCSI ID. Check that the SCSI bus is actively terminated. (The electronic User's Guide on the *HP SureStore Tape* CD-ROM provides information on configuring your SCSI bus. Also refer to the documentation for your SCSI controller and any other SCSI devices you may have.)
The computer does not recognize the tape drive.	The tape drive may have been switched on *after* the computer was booted up. The computer checks for SCSI devices only at power-on.	Switch on the tape drive, then switch the computer off and then on again.
	The power cable or SCSI cable may not be connected properly.	Make sure that the power cable and SCSI cable are firmly connected.

Problems with Your Tape Drive

Problem	Possible Cause	Potential Solution
The tape drive does not power up.	The power cable may not be connected to the tape drive properly.	Make sure that the power cable is firmly connected. If it is, the device has probably failed. Call for service. For an external drive, also check that the power switch is on.
TapeAssure does not recognize the tape drive.	The power cable or SCSI cable may not be connected properly.	Make sure that the power cable and SCSI cables are firmly connected.
You cannot back up or restore.	The SCSI connection may be loose.	Check that all expansion boards are fully seated and the SCSI cable is connected properly. Run TapeAssure (MS-Windows only) to determine whether the SCSI controller is functioning properly.
	The SCSI bus may not be properly terminated.	Check that the SCSI terminator is installed and secure. The SCSI bus must be terminated at both ends. Most internal cables will have a terminator plug on the end of the cable farthest from the SCSI controller. If there are no external devices, the SCSI bus must be terminated on the SCSI host adapter or motherboard. If there are external devices, the last device in the external chain must be terminated properly.
	The tape drive's SCSI ID may conflict with another device.	Make sure that the tape drive SCSI ID is not the same as that of any other device attached to the same SCSI controller. You can run TapeAssure (MS-Windows only) to check the SCSI IDs of attached devices.
The Media Caution (Clean) light shows steady amber.	This is the error condition signal. There may be a hard error on the tape drive.	Try powering the tape drive off and then on again. If the error condition signal still shows, call for service.

Other Sources of Information

If you experience problems using your tape drive after installation, use HP Tape Tools to help you diagnose the problem. You will also find troubleshooting information on the *HP SureStore Tape* CD-ROM and the HP web site.

HP Tape Tools

HP Tape Tools software provides the following functionality:

- **Drive Information Utilities** that provide you with information about your tape drive and system configuration.
- **Troubleshooting Diagnostics** that allow you to run different tests on your tape drive to identify problems with your tape drive or media.
- **A Firmware Upgrade Utility** that helps you find upgrade files for your tape drive and allows you to perform the upgrade.
- **HP Customer Support** that gives you all the information you will require should you need to contact us.

HP Tape Tools does not work on all operating systems. Refer to the *HP SureStore Tape* CD-ROM for the latest compatibility information.

HP SureStore Tape CD-ROM

The *HP SureStore Tape* CD-ROM contains:

- Troubleshooting information in the electronic *User's Guide* (this is operational rather than installation troubleshooting)
- Frequently asked questions when using tape drives on Windows NT, NetWare or UNIX operating systems

❑ Select the "User Documentation" topic on the Index page and follow the appropriate links. See page 1-13 for more information about using the *HP SureStore Tape* CD-ROM.

HP Web Site

The HP support web site contains two useful links:

- `http:/www.hp.com/support/dat` takes you to HP's Customer Care web site for a wide range of up-to-date information about your product
- `http://www.hp.com/support/dds_troubleshooting` takes you directly to the Customer Care troubleshooting pages

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Japan

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Korea

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U.S.A.

Radio Frequency Interference Statement (Federal Communications Commission)

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

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 instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are 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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician for help.

Note that if you change or modify the equipment in a way that is not expressly approved by Hewlett-Packard, any assurances of safety or performance can no longer be held to apply, and could result in violation of Part 15 of the FCC Rules.

Interference

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, (2) this device must accept any interference received including interference that may cause undesired operations.

WARNING: Only the double-shielded data cable supplied by the manufacturer should be used with external tape drives. Other types of cables could void the manufacturer's warranty and violate FCC rules and regulations.