



***Viper 200<sup>®</sup>***  
***LTO Ultrium Tape Drive***  
***Installation Manual***

***VIPER***

**ULTRIUM**  
**LTO** **1**

© 2000 Seagate Removable Storage Solutions, LLC. All rights reserved

Manufacturing Part Number: 100125716

Seagate and the Seagate logo are trademarks of Seagate Technology, LLC. Viper is a trademark of Seagate Removable Storage Systems, LLC. Other product names are trademarks or registered trademarks of their owners.

Seagate reserves the right to change, without notice, product offerings or specifications. No part of this publication may be reproduced in any form without written permission from Seagate Removable Storage Solutions, LLC.

Publication T003, Rev. B, November 13, 2000

***Viper 200***  
***LTO Ultrium Tape Drive***  
**Installation Manual**

---

## Contents

---

<b>Contents</b>	<b>3</b>
<b>FCC notice</b>	<b>4</b>
<b>Introduction</b>	<b>5</b>
Unpacking and Inspection	6
<b>Installing the internal Viper 200</b>	<b>7</b>
Before you begin	7
Installation Overview	8
Configuring an internal Viper 200	8
Mounting an internal Viper 200	10
Cables and connectors	11
<b>Setting up the external Viper 200</b>	<b>14</b>
Configuring an external drive	14
Connecting the SCSI interface cable	15
Connecting the power cord	15
<b>Operating and maintaining the Viper 200</b>	<b>16</b>
Front Panel Display	16
Using Ultrium Cartridges	18
Drive maintenance	21
<b>Unix configuration settings</b>	<b>23</b>
DEC/Compaq environments	23
Sun environments	24
IBM AIX environments	25
SCO Environments	27
Linux environments	28
<b>Technical support</b>	<b>30</b>
World-wide services:	30
Regional services	30

## ***FCC notice***

---

This equipment generates and uses radio frequency energy and, if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception, which could void the user's authority to operate the equipment. It has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If interference does occur, try to correct it by taking one or more of the following measures:

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

You may find the following booklet prepared by the Federal Communications Commission helpful: **How to Identify and Resolve Radio-TV Interference Problems**. This booklet (Stock No. 004-000-00345-4) is available from the U.S. Government Printing Office, Washington, DC 20402. Further, this equipment complies with the limits for Class B digital apparatus in accordance with Canadian Radio Interference Regulations.

Cet appareil numérique de la classe B est conforme au Règlement sur brouillage radioélectrique, C. R. C., ch. 1374.

---

## Introduction

---

This installation manual summarizes the installation and operation of the Seagate® Viper 200® Ultrium tape drive. The Viper 200 is a high-performance eight-channel Ultrium tape drive that uses ½-inch Ultrium tape cartridges with a native capacity of up to 100 Gbytes (200 Gbytes assuming 2:1 data compression). It supports Read While Write (RWW) and provides intelligent hardware data compression as well as cartridge soft load. It comes with an ULTRA SCSI-2 LVD or HVD interface and a serial library interface.

The Viper 200 design is well suited for mid-range to high-end servers, mainframe systems, and tape library automation systems.

The internal Viper 200 is designed to fit in a 5¼-inch full-height drive bay. The external drive is a standalone unit with built-in power supply. The following Viper 200 models are covered in this manual:

<b>Model number</b>	<b>Form factor</b>	<b>Interface</b>
STU42001LW	5.25-inch Internal drive	LVD
STU42001WD	5.25-inch Internal drive	HVD
STU62001LW	External drive	LVD
STU62001WD	External drive	HVD

**Note:** LVD drives should be installed only in an LVD environment and HVD drives should be only be used in an HVD environment.

## **Unpacking and Inspection**

Although drives are inspected and carefully packaged at the factory, damage may occur during shipping. Follow these steps for unpacking the drive.

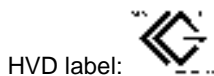
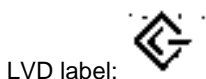
1. Visually inspect the shipping containers and notify your carrier immediately of any damage.
2. Place shipping containers on a flat, clean, stable surface; then carefully remove and verify the contents against the packing list. If parts are missing or the equipment is damaged, notify your Seagate representative.
3. Save the containers and packing materials in case you ever have to reship the drive.

## Installing the internal Viper 200

### Before you begin

The following guidelines and cautions apply to handling and installing internal tape drives. Keep them in mind as you install the drive.

- Determine if the drive is an HVD or an LVD model. Install an HVD drive only in an HVD environment and an LVD model only in an LVD environment. Do not mix HVD and LVD devices. Look at the label above the drive's SCSI connector to determine if the drive is an HVD or an LVD model:



**Caution.** Plugging an HVD drive into an LVD bus or vice versa will make the entire bus non-functional and may permanently damage the drive or other SCSI devices on the bus.

- Due to the speed of the Viper 200 drive, it is recommended that a maximum of two Vipers be connected to one host SCSI adapter.
- Handle the drive by the sides rather than by the top cover to reduce the risk of dropping the drive or damaging it during installation.
- Internal drives contain some exposed components that are sensitive to static electricity. To reduce the possibility of damage from static discharge, the drives are shipped in a protective antistatic bag. Do not remove the drive from the antistatic bag until you are ready to install it.
- Before you remove the drive from the antistatic bag, touch a metal or grounded surface to discharge any static electricity buildup from your body.



- Always lay the drive either on top of the antistatic bag or place it inside of the bag to reduce the chance of damage from static discharge.

## Installation Overview

Internal drive installation involves three main steps: configuring the drive, mounting the drive, and connecting the power and interface cables

## Configuring an internal Viper 200

Before you install the tape drive in your computer, you may need to configure the drive's SCSI ID and other drive features. Jumpers located on the back of the drive (near the left edge of the drive) are used to configure the SCSI ID and to enable termination power.

### Default settings

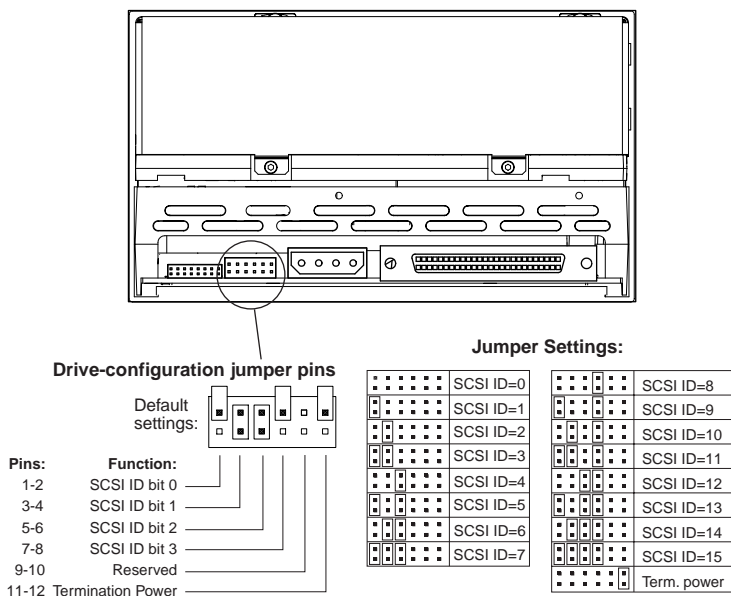
The default drive settings for the Viper 200 are listed below:

- **SCSI ID:** 6
- **Termination Power:** disabled.

If these default settings are appropriate for your needs, skip ahead to "Mounting an internal Viper 200" on page A-10.

### Jumper settings

Configuration jumpers on the back of the drive control the drive's SCSI ID and SCSI terminator power. The jumpers can also be used for remote SCSI address selection. Figure 1 on the following page shows the locations of the jumper blocks for the internal Viper 200.



**Figure 1. Jumper settings for the internal Viper 200**

## SCSI Address Selection (pins 1 through 8)

You can select the SCSI address used by the drive by placing the appropriate jumpers on pins pairs 1-2 through 7-8, as shown in Figure 1.

**Note:** Each SCSI device on a bus must have a unique SCSI ID. The SCSI controller or host adapter generally uses ID 7. In some systems, the boot drive uses ID 0 or ID 1.

## Terminator power (pins 11 and 12)

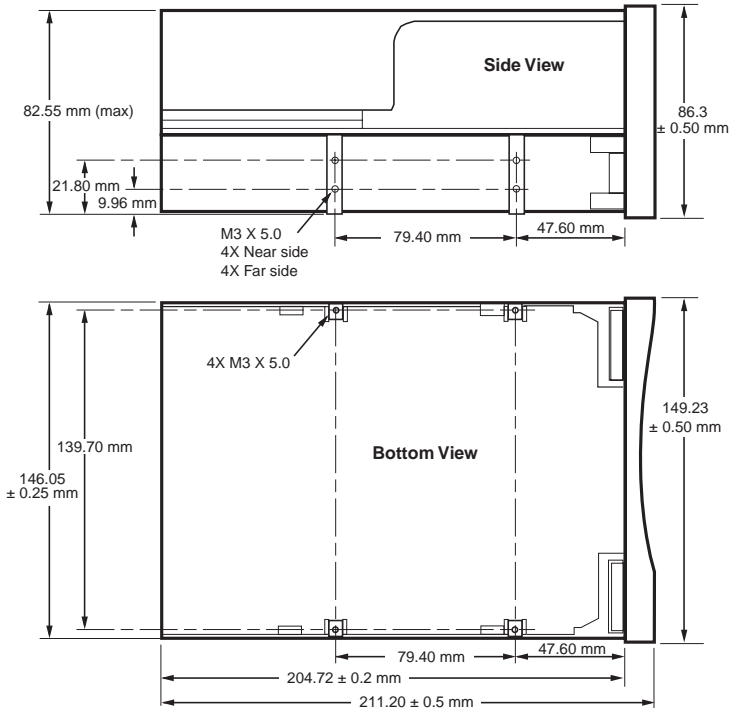
Internal Viper 200 drives are shipped with terminator power disabled, as shown in Figure 1. You can enable terminator power, if necessary, by placing a jumper across pins 11 and 12.

**Note:** The internal Viper 200 does *not* provide SCSI termination, and therefore should not be installed as the last device in a SCSI chain. See "SCSI termination" on page A-12 for more information.

## Mounting an internal Viper 200

You can mount internal Viper drive either vertically (left-side up or right-side up) or horizontally. If the drive is mounted vertically, the side of the drive should be within 5 degrees of horizontal. If the drive is mounted horizontally, the base of the drive should be within 15 degrees of horizontal and the PCB side of the drive must face down.

Mount the drive in a 5.25-inch, full-height drive bay and secure it using two M3.0 metric screws on each side of the drive (the locations of screw holes are shown in Figure 2). Do not use screws longer than 4 mm or you may damage the drive.

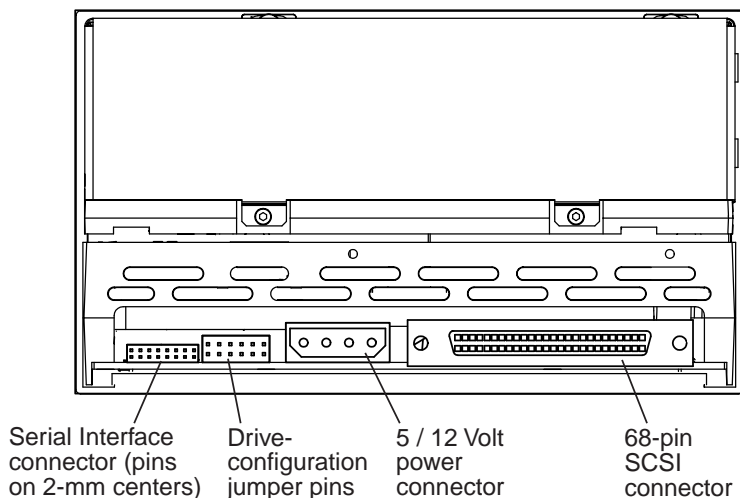


**Figure 2. Viper 200 mounting dimensions**

## Cables and connectors

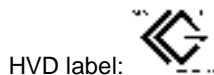
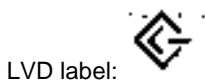
### Connecting the SCSI interface cable

Viper 200 drives are designed to be used with an Ultra2 SCSI interface with a 68-pin HVD or LVD SCSI connector. Before attaching or detaching cables, turn off all power to the drive and computer. Attach the interface cable to the 68-pin SCSI interface connector on the back of the drive (see Figure 3).



**Figure 3. Rear view of the Viper 200 internal drive**

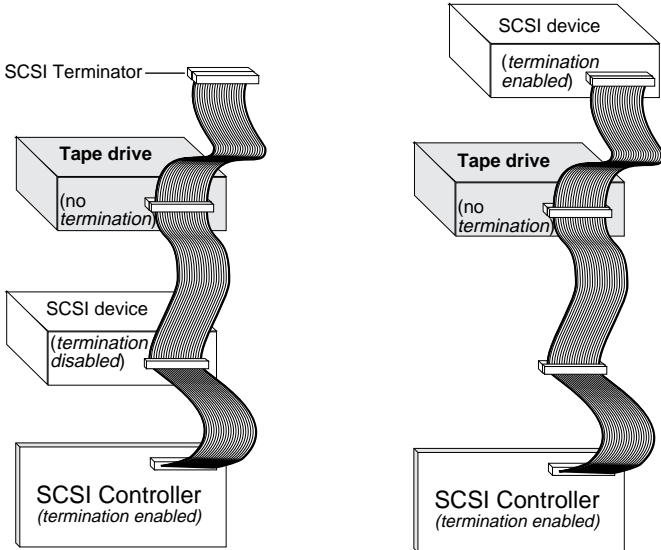
Install an HVD drive only in an HVD environment and an LVD drive only in an LVD environment. Do not mix HVD and LVD devices. Look at the label above the drive's SCSI connector to determine if the drive is an HVD or an LVD model:



**Caution.** Plugging an HVD drive into an LVD bus or vice versa will make the entire bus non-functional and may permanently damage the drive or other SCSI devices on the bus.

## SCSI Termination

The Viper 200 internal drive does *not* provide SCSI termination. You must place a SCSI bus terminator or a SCSI device with termination enabled at the end of a SCSI chain. Two examples of SCSI termination are shown in Figure 4. The Viper 200 does provide terminator power if a jumper is placed on the termination power jumper, as shown in Figure 3 on the previous page.



**Figure 4. Two possible SCSI termination examples for internal Viper 200.**

## Connecting a Serial Interface Cable (for tape libraries)

The Viper 200 drive includes an RS-422 serial interface for tape libraries. The RS-422 serial interface connector is on the lower left side of the back of the drive, as shown in Figure 3 on the previous page.

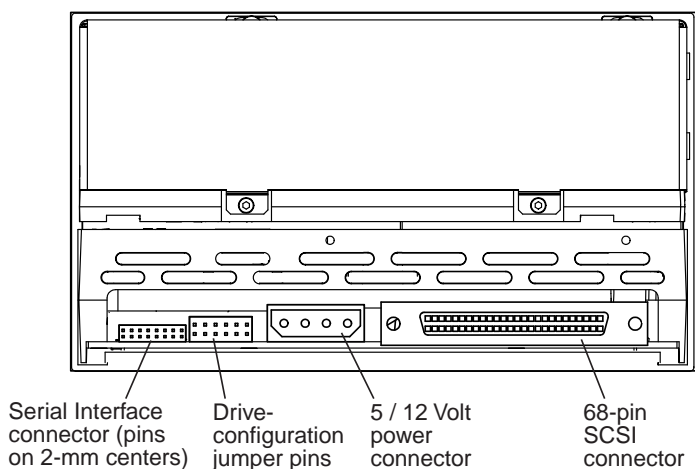
The pin descriptions for the Serial Interface connector are shown in the table on the following page. The pins on this connector are set on 2-mm centers.

Pin numbers	Description
1 through 8	Reserved
9	Lib RXD-P (input)
10	GND
11	Lib RXD-N (input)
12	GND
13	Lib TXD-P (output)
14	GND
15	Lib TXD-N (output)
16	GND

### Connecting a Power Cable

Attach a four-pin 5-volt / 12-volt power cable to the power connector on the back of the drive. Figure 5 shows the location of the power connector.

The recommended 4-pin power connector for the internal Viper 200 is an AMP 1-48024-0 housing with AMP 60617-1 pins or equivalent.



**Figure 5. Rear view of the Viper 200 internal drive, showing 4-pin power connector**

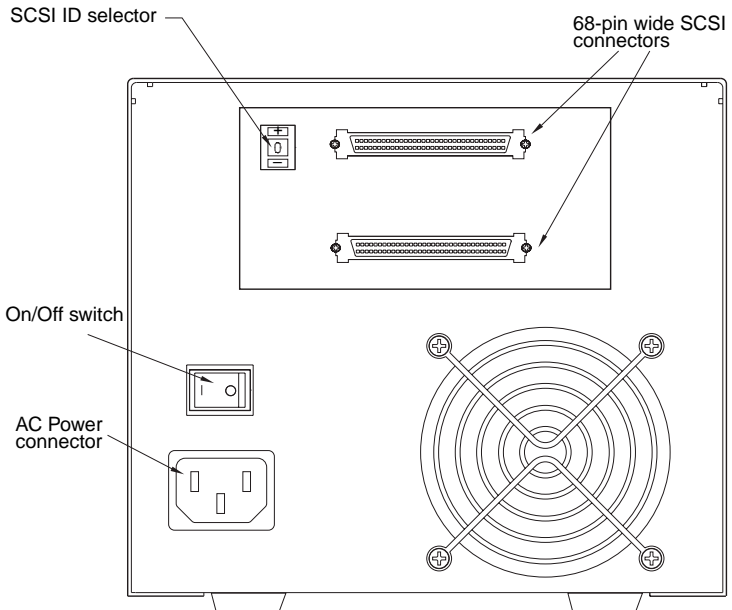
## Setting up the external Viper 200

The external Viper 200 drives (STU62001LW and ST62001WD) are compact external units that connect to the host computer through an external SCSI port. Installing the external drive involves the three simple steps: configuring the drive, attaching the SCSI cable(s), and attaching the power cord.

### Configuring an external drive

#### Setting the SCSI ID

Make sure that the drive is turned off. Then set the SCSI ID for the drive using the push-button switch on the back of the external drive, as shown in Figure 6. The change will take effect when you turn the drive back on.



**Figure 6. Back of external Viper 200 showing switches and connectors**

## Connecting the SCSI interface cable

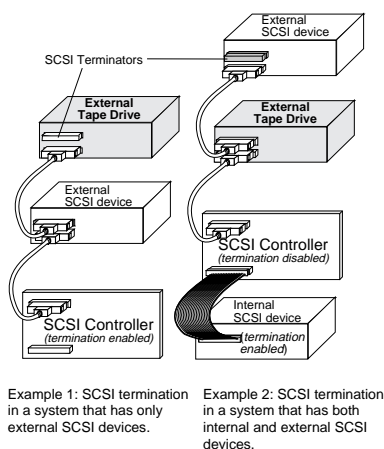
The external Viper 200 provides two 68-pin, shielded connectors on the rear panel of the enclosure (as shown in Figure 6). Either connector can be used as a SCSI IN or SCSI OUT connection, so you can use either connector to attach the drive to a host computer or to another SCSI device.

**Note:** Turn off all power before connecting or disconnecting SCSI cables.

### SCSI termination

If the Viper drive is the last device or the only device in a SCSI chain, you must install a terminating plug on the unused SCSI connector. See Figure 7 below for two SCSI termination examples. You can purchase terminating plugs on the web at <http://buytape.seagate.com>.

**Note.** Termination power is enabled as a default for the external Viper 200 drive.



Example 1: SCSI termination in a system that has only external SCSI devices.

Example 2: SCSI termination in a system that has both internal and external SCSI devices.

**Figure 7. SCSI termination examples (external drive)**

## Connecting the power cord

Attach the power cord securely to the power connector on the back of the drive (see Figure 6 on the previous page).

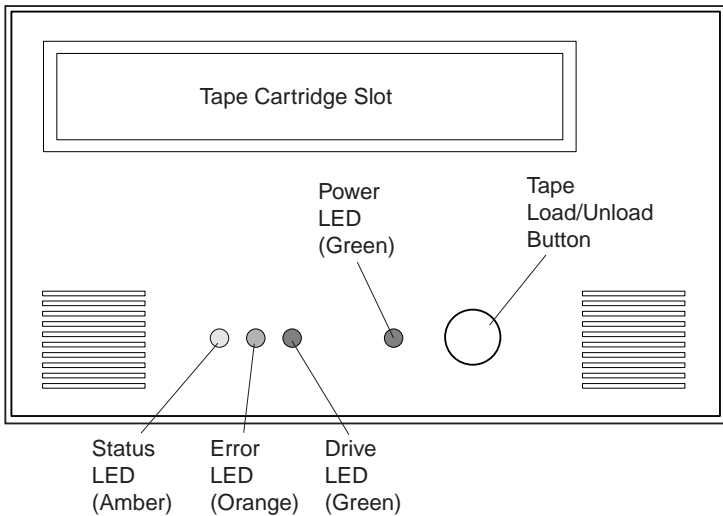


## Operating and maintaining the Viper 200

This chapter describes how to use your Viper 200. It explains the meaning of the LEDs on the front of the drive and describes how to use and care for the Ultrium tape drive and Ultrium cartridges.

### Front Panel Display

There are several front panels available for the Viper 200. Different panels may be used, depending on whether the drive will be used in an automation environment, such as a tape library, or as a stand-alone drive. A generalized view of the front-panel display is shown in Figure 8.



**Figure 8. Generic front panel display for Viper 200**

All drives have a Load/Unload button on the front panel. All drives also have four LEDs on the front panel. The functions, colors and status of the lights are:

- **Status LED** (amber) – If the Status LED stays on continuously, the drive needs to be cleaned. Other

changes in drive or cartridge status are indicated by various blinking patterns, which are described in the table below.

- **Error LED** (orange) – The Error LED blinks if the drive has experienced a non-recoverable error.
- **Drive LED** (green) – The Drive LED is lit whenever a tape is loaded and ready for use. The Drive LED blinks whenever a tape is loaded and moving.
- **Power LED** (green) – The Power LED blinks during drive power-up and Power-on Self Test (POST). If there is an error during the POST, the Power LED remains on (not blinking), along with the Error LED. During normal operation, the Power LED is remains on (not blinking).

The following table summarizes all the “blink codes” used by the Viper 200.

<b>Drive Condition</b>	<b>Status LED (Amber)</b>	<b>Error LED (Orange)</b>	<b>Drive LED (Green)</b>
Cleaning Request	ON		
Write Protected	1/4 sec ON 1/4 sec OFF		
Prevent Media Removal Mode Active	1/2 sec ON 1/8 sec OFF		
Hardware or Firmware Error		1/8 sec ON 1/8 sec OFF	
Positioning – Loading, Unloading, Rewinding, Spacing or Locating			ON continuously
Tape Active – Writing, Reading or Verifying			1/2 sec ON 1/8 sec OFF
SCSI Active			1/4 sec ON 1/8 sec OFF
Manual Intervention Required	1/8 sec ON 1/8 sec OFF	1/8 sec ON 1/8 sec OFF	
Power On Self Test (POST) Failure	ON	1/2 sec ON 1/2 sec OFF	
Excessive Rewrites or Read C2 errors		1/4 sec ON 1/4 sec OFF	1/8 sec ON 1/8 sec OFF
Cleaning Cartridge Present	ON		ON
Cleaning Cartridge at EOT	1/8 sec ON 1/8 sec OFF		ON
SCSI bus reset	1/4 sec ON 1/8 sec OFF		1/4 sec ON 1/8 sec OFF

<b>Drive Condition</b>	<b>Status LED (Amber)</b>	<b>Error LED (Orange)</b>	<b>Drive LED (Green)</b>
Servo Initialization	1/2 sec ON 1/2 sec OFF		1/2 sec ON 1/2 sec OFF
Power On Self Test (POST) In Progress	1/4 sec ON 1/4 sec OFF	1/4 sec ON 1/4 sec OFF	1/4 sec ON 1/4 sec OFF
Cleaning Failure	1/8 sec ON 1/8 sec OFF	1/8 sec ON 1/8 sec OFF	ON
Microcode Download	1/8 sec ON 1/8 sec OFF	1/4 sec ON 1/4 sec OFF	1/8 sec ON 1/8 sec OFF
Microcode Download Error	1/8 sec ON 1/8 sec OFF	1/8 sec ON 1/8 sec OFF	1/8 sec ON 1/8 sec OFF

## Using Ultrium Cartridges

### Loading a cartridge

To load an Ultrium cartridge into the Viper 200, place the cartridge in the slot and then push it to the detent. Then:

- Continue to push the cartridge the rest of the way into the drive; or
- Press the load/unload button on the front of the drive to seat the cartridge; or
- Use a library or host command to finish loading the tape.

After you insert the cartridge, there will be a brief delay while the drive identifies the cartridge type and state and moves the tape to the data area.

### Unloading a cartridge

To unload an Ultrium cartridge from the Viper 200, either:

- Push the load/unload button on the front of the drive; or
- Use a library or host command to unload the tape.

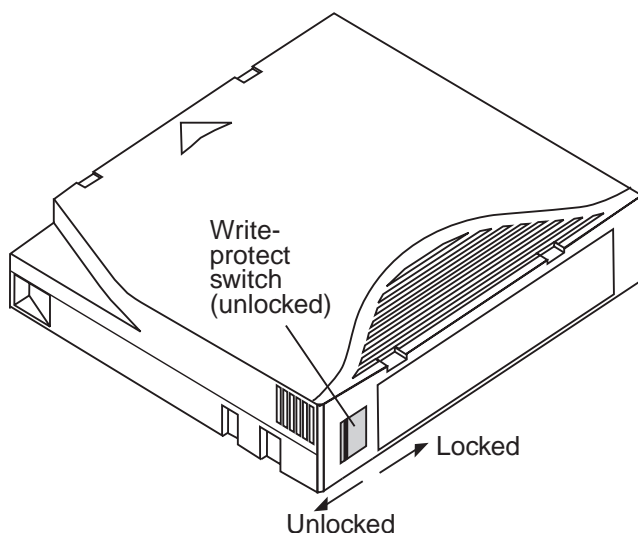
Several seconds may elapse between the time you press the eject button and the time the cartridge is ejected. Do not power down the tape drive or the host computer during this time.

## Using a Blank Cartridge

A blank cartridge has prewritten servo patterns and cannot be bulk erased. However, new, blank cartridges should be retensioned before use.

## Write-protecting a cartridge

Ultrium cartridges have a sliding write-protect switch near the back left corner of the cartridge, as shown in Figure 9. If the switch is pushed to one side, data can be read from the drive but not written to it. If the switch is pushed to the other side, data can be both read from and written to the drive.



**Figure 9. Ultrium cartridge showing write-protect switch**

## Cartridge handling and maintenance

To protect the data on your Ultrium data cartridges, observe the following precautions:

- Always remove the cartridge from the drive when not in use and store it in its protective case.
- Do not expose cartridges to dirt, dust or moisture.
- Do not touch the tape media within a cartridge.

- Do not use data cartridges outside the specified operating conditions: 10° C to 45° C, 10% to 80% relative humidity.

If a data cartridge has been exposed to temperature or humidity changes within the limits listed above, allow the tape cartridge to acclimate to its surroundings for at least one hour before use. Then re-tension the tape after exposure to allow the tape pack to become stable, for better performance.

If during storage and/or transportation a data cartridge has been exposed to conditions outside the above range, it must be conditioned before use in the operating environment. The conditioning process requires exposure to the operating environment for a time equal to, or greater than, the time away from the operating environment, up to a maximum of 24 hours. The data cartridge should then be re-tensioned.

- Keep the cartridge away from direct sunlight and heat sources, such as radiators, heaters or warm air ducts.
- Keep the cartridge away from sources of electromagnetic fields, such as telephones, computer monitors, dictation equipment, mechanical or printing calculators, motors, magnetic tools, and bulk erasers.
- Avoid dropping the cartridges. This can damage components inside the cartridge, possibly rendering the tape unusable. If a tape is dropped it is advisable to open the cartridge door and make sure that the leader pin is in the correct position. A dropped cartridge should be re-tensioned before use.
- Do not bulk erase Ultrium cartridges. Bulk-erased cartridges cannot be reformatted by the tape drive and will be rendered unusable.

### **Tape Retensioning**

Ultrium data cartridges require periodic retensioning to operate properly. Retensioning reduces pack shift and stabilizes the tape pack. See your backup software manual for instructions on how to retensioning a tape cartridge. You

should retension a tape cartridge under the following circumstances:

- If the cartridge is being used for the first time.
- If the tape cartridge has not been used for over a month.
- If the tape cartridge has been exposed to changes in temperature (first allow the media to acclimate to its surroundings).
- If the tape is “shoe shining” back and forth and backups are proceeding slowly.

## Drive maintenance

### Cleaning the tape drive

Excessive tape debris or other material may accumulate on the tape heads if the drive is used with nonapproved media or operated in a hot, dusty environment. In this case, the drive may experience excessive errors while reading or writing, and the amber Status LED will remain on during operation. This means that the drive heads need to be cleaned.

The LTO cleaning cartridge has the same dimensions as the data cartridge and contains an LTO-CM (Cartridge Memory), but is loaded with cleaning media instead of recording media. Always keep the cleaning cartridge in its protective case when not in use.

To clean the drive, insert a Seagate-approved cleaning cartridge. During the cleaning process, both the Status and Drive LEDs will remain lit. After the cleaning process is completed, the cartridge may be ejected automatically, or you may need to press the Eject button to remove the cartridge. Each time you use the cleaning cartridge, write the date on the label for future reference.

**Note:** If the Status LED comes on (continuously) within 24 hours after a cleaning cycle, run the cleaning cycle again. If, after three cleaning cycles in a 72-hour period, the Status LED lights up again, contact Seagate technical support.

Each time the drive is cleaned, the tape advances to a new, unused section of media. After approximately 50 cleanings, all of the media will be used up and you must purchase a new cleaning cartridge. When a cleaning cartridge is used up, the amber Status LED flashes while the green Drive LED remains on. Do not attempt to reuse a spent cleaning cartridge.

**Note:** The cleaning procedure will not run and the cleaning cartridge will be ejected in the following circumstances:

- The drive does not recognize the cartridge as an LTO cleaning cartridge.
- The cleaning cartridge has been used too recently. (The drive tries to prevent excessive cleaning, which can cause wear on the heads.)
- All of the tape on the cleaning cartridge has been used up. (In this case, the Status LED will flash rapidly while the Drive LED remains on.)

---

## Unix configuration settings

---

This section describes how to configure various UNIX operating systems to recognize the Viper 200. In some cases, this involves editing system files. Make a backup copy of any system files before doing this.

### DEC/Compaq environments

For Digital UNIX version 4.0 and later, as well as Compaq Tru64 Unix version 5.x, use the File Manager to open the file */ect/ddr.dbase* and add the following text:

```
SCSIDEVICE
#
Type = tape
Name = "SEAGATE" "ULTRIUM"
#
PARAMETERS:
    TypeSubClass      = tk
    TagQueueDepth     = 0
    MaxTransferSize   = 0x0fffffff # (16MB - 1)
    ReadyTimeSeconds  = 180        # seconds
        CMD_PreventAllow = supported
        CMD_ExtReserveRelease = supported
    BlockSize         = 0
    PwrMgmt_capable   = 0

DENSITY:
#
DensityNumber = 0,2,3,4,5,6,7
DensityCode = default
CompressionCode = 0x0
Buffered = 0x1

DENSITY:
#
DensityNumber = 1
DensityCode = default
CompressionCode = 0x1
Buffered = 0x1
```



Save your changes, then run the following command:

```
ddr_config -c
```

The `dd4_config` command takes the default input file, `ddr.dbase`, and builds a new device database. This new database takes effect immediately; there is no need to rebuild the kernel.

### DEC/Compaq Notes:

- `ddr.dbase` is a UNIX shell script and is not written in C. This means `#` is used to signify a comment, instead of `/*` and `*/` or `//`, as used in C. Make sure any comments included in this file are preceded with the `#` character.
- The `'c'` option in the command above enables the tape driver to turn on data compression when writing data to tape.
- For commands that use density and tape size settings, the tape density is 124,000 bpi and the tape length is 1800 feet. For commands that use a blocking factor, we recommend a blocking factor of 64 as a minimum, preferably 128.

## Sun environments

For Solaris 2.6 and above (also known as Solaris 7), add the following lines to the file `/kernel/drv/st.conf`:

```
tape-config-list=  
"SEAGATE ULTRIUM06242-XXX", "Seagate LTO", "SEAGATE_LTO";  
SEAGATE_LTO = 1, 0x36, 0, 0x1d639, 4, 0x00, 0x00, 0x00, 0x00, 1;
```

**Note:** The inquiry string above contains one space between SEAGATE and ULTRIUM.

After modifying the file `st.conf`, you must reconfigure the kernel by booting the system using the `boot -r` command.

### Sun Notes:

- For commands that use density and tape size settings, the tape density is 124,000 bpi and the tape length is 1800 feet. For commands that use a blocking factor, we recommend a blocking factor of 64 as a minimum, preferably 128.
- We suggest using the `ufsdump/ufsrestore` commands. These commands automatically detect end of tape without the need of the density and tape length settings.
- To enable the `st` driver to turn on data compression when writing data to tape, use the 'c' option. For example, the command `tar cf /dev/rmt/0c` would cause the Seagate Ultrium drive to compress the data before writing the data to tape.

### IBM AIX environments

**Note:** Before installing the Viper 200 in an AIX environment, enter the command `lsdev -Cs scsi`. This shows all of the SCSI IDs known to the system. Choose a SCSI ID for the Viper 200 that does not duplicate any of the SCSI IDs used by the other devices. Write down the SCSI ID of the Viper 200.

For AIX version 4.1.x and later, use the SMIT option, "OtherSCSI Tape Drive," as described below:

1. Enter SMIT at the Tape Drive menu by typing "smit tape"
2. Select "Add a tape Drive"
3. Select the type of tape drive you will be adding. Use the "Other SCSI Tape Drive" option.
4. Select the Parent SCSI Adapter from the available list
5. The "Add a tape Drive" "Entry Fields" now appear. Some of the standard options need to be changed to maximize drive performance and functionality:
  - Set the Connection Address with the Target and Logical Unit Number (Lun) of the Viper 200. Always use Lun 0. (In the list, the Target is the first number

and the Lun is the second. For example, if the drive is ID 5, choose 5,0.)

- Set the “BLOCK size” to 0.
  - Set “Use DEVICE BUFFERS during writes” to yes.
  - Set “RETURN error on ape change or reset” to no.
  - Set “Use EXTENDED file marks” to yes.
  - Set “RESERVE/RELEASE support” to yes.
  - Set “BLOCK SIZE for variable length support(Num.)” to 0.
  - Set “Density 1” to 0.
  - Leave the “Set delay. . .” and “Set timeout. . .” lines at the default value.
6. Click on OK and the drive will be installed in the system database, and devices created. There is no need to reboot the system.

7. Exit SMIT

**IBM AIX Notes:**

- We suggest using the AIX commands ‘backup’ and ‘restore’ when transferring data to and from the Viper 200. These commands transfer data more quickly than other commands such as tar and cpio.
- For cpio we suggest a blocking factor of 128. For tar we suggest using the –N option and a factor of 128.
- For commands that use density and tape size settings the tape density is 124,000 bpi and the tape length is 1800 feet.
- Some older systems with poor video controllers may experience a reduction in performance when using the –v option which prints the path names on the standard console during the backup. Unless there is a real need to see the filenames as they are backed up we suggest not using the –v option.

## SCO Environments

For SCO Open Server 5.0.x, after installing the Viper 200, use the following procedure to allow the system to recognize the drive:

1. Run the command *mkdev tape*
2. From the menu choose "Configure a SCSI or Enhanced IDE tape drive".
3. From the next menu choose "Install a SCSI tape drive".
4. When prompted, enter the SCSI adapter string.
5. Enter the number of the SCSI host adapter to which the drive is attached. If only one SCSI adapter exists, then enter the number zero (0).
6. Enter the number of the SCSI bus the drive is attached to on the adapter. Refer to the SCSI adapter documentation (for many adapters this will be zero(0)).
7. Enter the SCSI ID of the drive (as set using the jumpers on the rear of the drive).
8. Enter the number zero (0) for the LUN of the device.
9. When prompted to "Update the SCSI configuration? (y/n)" enter 'y'.
10. Enter "SEAGATE" when prompted for Vendor Identification string (no quote marks)
11. Enter the number three (3) when prompted to enter the SCSI version that the tape drive conforms to.
12. Enter the number two (2) when prompted to enter the Response Data Format the tape drive uses.
13. When prompted, choose the Generic SCSI-1/SCSI-2 tape drive option.
14. When the process takes you back to the two Main Menu screens press 'q'.
15. When asked to create a new kernel enter yes.

16. When asked if you want the new kernel to boot by default press 'y'.
17. When asked if you want the kernel environment to be rebuilt press 'y'.
18. When finished reboot the system.

**SCO Notes:**

- Not all of the SCO 'tape' commands will operate or be applicable to the Seagate Viper 200 drive (execute the command 'man tape' for the specifics on how the tape command works). The following tape commands are not available for use with the Viper 200: getcomp, setcomp (the Viper 200 will always compress the data before writing the data to tape under SCO Open Server 5.0.x), partition, setpart, getspeed, setspeed, rsm, wsm. The following tape commands are available for use with the Viper 200: status, load, reset, rewind, retention, getblk, setblk, unload, eod.
- When using the GUI Backup Manager utility set the block size to 32768 minimum, 65536 preferred. When using commands such as tar we suggest using the tape command to set the block size to 16384 and then using a blocking factor of 20 for the tar command.
- For commands that use density and tape size settings the tape density is 124,000 bpi and the tape length is 1800 feet.

**Linux environments**

For Linux kernel 2.2.x, after installing the drive, configure the system by changing to the /dev directory and executing the following command:

```
./MAKEDEV -v stx
```

where *x* is a device number to assign to the Viper 200. If this is a fresh installation, then *x* can most likely be zero. If this is an upgrade or you have had other tape devices installed on

the system, you may need to look through the /dev directory for other nst and st files.

The Viper 200 can be configured via the mt command options. A default configuration can be setup using the 'stsetoptions' command from within the mt command. Refer to the mt man page for details.

For commands that use density and tape size settings the tape density is 124,000 bpi and the tape length is 1800 feet. For commands which use a blocking factor we suggest a factor of 128.

## ***Technical support***

---

If you experience problems installing or using your tape drive, contact one of the technical support services listed below.

### **World-wide services:**

**World-wide web:** A wide variety of technical support services are available on Seagate's World Wide Web site, located at <http://www.seagate.com>

**Seagate E-mail Technical Support:** You can e-mail questions or comments to: [tapesupport@seagate.com](mailto:tapesupport@seagate.com)

### **Regional services**

Seagate provides technical support through several regional centers worldwide. These services may include:

- **Seagate phone technical support:** For one-on-one help, you can talk to a technical support specialist during local business hours. Before calling, note your system configuration and drive model number.
- **Seagate Technical Support FAX:** You can FAX questions or comments to technical support specialists. Responses are sent during local business hours.
- **SeaFAX:** You can use a touch-tone telephone to access Seagate's automated FAX system to receive technical support information by return FAX. This service is available 24 hours daily.
- **SeaBOARD:** SeaBOARD is Seagate's automated computer bulletin board system, available 24 hours daily. Set your communication software to eight data bits, no parity and one stop bit (8-N-1).

## Support services in the Americas

### Telephone support

(you will be directed to a product-specific phone or SEAFAX number)

**US customers:** 1-800-SEAGATE

**International customers:** 1-405-936-1234

**Seagate Technical Support FAX** (US and international):

1-405-936-1683

**SeaTDD** (Telephone support for the deaf; US and

international): 1-405-936-1687

**SeaBOARD** (US and international): 1-405-936-1630

## Support services in Europe

For European customer support and SeaFAX, dial the toll-free number for your specific country from the table below. The

**Seagate Technical Support FAX** number for all European countries is 31-20-653-3513. **SeaBOARD** is available in Germany at 49-89-1409331.

Country	Phone / SeaFAX
Austria	0 800-20 12 90
Belgium	0 800-74 876
Denmark	80 88 12 66
France	0 800-90 90 52
Germany	0 800-182 6831
Ireland	1 800-55 21 22
Italy	800-790695
Netherlands	0 800-732 4283
Norway	800-113 91
Poland	00 800-311 12 38
Spain	900-98 31 24
Sweden	0 207 90 073
Switzerland	0 800-83 8411
Turkey	00 800-31 92 91 40
United Kingdom	0 800-783 5177



If your country is not listed in the table on the previous page, dial our European call center in Amsterdam at 31-20-316-7222 between 8:30 A.M. to 5:00 P.M. (European central time) Monday through Friday or send a FAX to 31-20-653-3513.

### Support services for Africa and the Middle East

For presales, technical support, warranty repair and FAX services in Africa and the Middle East, dial our European call center in Amsterdam at 31-20-316-7222 between 8:30 A.M. to 5:00 P.M. (European central time) Monday through Friday, or send a FAX to 31-20-653-3513.

### Support services in Asia and the Western Pacific

For presales and technical support in Asia and the Western Pacific, dial the toll-free number for your specific country. These toll-free numbers are available Monday through Friday from 6:00 A.M. to 10:45 A.M. and 12:00 P.M. to 6:00 P.M. (Australian Eastern Time). If your country is not listed here, please use one of the direct-dial numbers.

Country	Toll-free number	Direct dial number	FAX number
Australia	1800-14-7201	+61-2-9725-3366	+61-2-9725-4052
Hong Kong	800-90-0474	—	+852-2368 7173
Indonesia	001-803-1-003-2165	—	—
Japan	—	—	+81-3-5462-2979
Malaysia	1-800-80-2335	—	—
New Zealand	0800-443988	—	—
Singapore	800-1101-150	+65-488-7584	+65-488-7528
Taiwan	—	+886-2-2514-2237	+886-2-2715-2923
Thailand	001-800-11-0032165	—	—