Compaq StorageWorks™

ESL9198 Series Tape Library

Tape Drive Upgrade Guide

First Edition (September 2000)
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Compaq Computer Corporation

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Compaq StorageWorks ESL9198 Series Tape Library Tape Drive Upgrade Guide
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About This Guide

This guide is designed to be used as step-by-step instructions for upgrading tape drives in a Compaq *StorageWorks ESL9198 SeriesTape Library*™.

Document Structure

This guide contains the following information:

Chapter 1: Overview

- Tape Drive Numbering
- RequiredTools and Accessory Kit

Chapter 2: Installing theTape Drive

- Installing Tape Drive into Drive Bay
- SCSI Cabling Configuration

Chapter 3: Library Configuration

- Configuring the Library

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Related Documents

Document Title	Part Number
Compaq StorageWorks™ ESL9198 Series Tape Library Reference Guide	201416-001
Compaq StorageWorks™ ESL9198 Series Tape Library Diagnostic Software Guide	201419-001
Compaq StorageWorks™ ESL9198 Series Tape Library Pre-Installation Site Survey	216162-001
Compaq StorageWorks™ ESL9198 Series Tape Library Unpacking Guide	201418-001

Text Conventions

This document uses the following conventions to distinguish elements of text:

Keys	Keys appear in boldface. A plus sign (+) between two keys indicates that they should be pressed simultaneously
USER INPUT	User input appears in a different typeface and in uppercase.
FILENAMES	File names appear in uppercase italics.
Menu Options, Command Names, Dialog Box Names	These elements appear in initial capital letters.
COMMANDS, DIRECTORY NAMES, and DRIVE NAMES	These elements appear in uppercase.
Type	When you are instructed to *type* information, type the information **without** pressing the **Enter** key.
Enter	When you are instructed to *enter* information, type the information and then press the **Enter** key.

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings:

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Symbols on Equipment

These icons may be located on equipment in areas where hazardous conditions may exist.

	Any surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts. **WARNING:** To reduce the risk of injury from electrical shock hazards, do not open this enclosure.
	Any RJ-45 receptacle marked with these symbols indicates a Network Interface Connection. **WARNING:** To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.
	Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists. **WARNING:** To reduce the risk of injury from a hot component, allow the surface to cool before touching.
	Power supplies or systems marked with these symbols indicate the equipment is supplied by multiple sources of power. **WARNING:** To reduce the risk of injury from electrical shock, remove all power cords to completely disconnect power from the system.
	Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely. **WARNING:** To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Cabinet Stability

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the cabinet rests on the leveling jacks.
- The stabilizing feet are attached to the cabinet if it is a single cabinet installation.
- The cabinets are coupled together in multiple cabinet installations.
- Only one component is extended at a time. A cabinet may become unstable if more than one component is extended for any reason.

Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Compaq Technical Support

In North America, call the Compaq Technical Phone Support Center at 1-800-OKCOMPAQ. For continuous quality improvement, calls may be recorded or monitored. This service is available 24 hours a day, 7 days a week.

Outside North America, call the nearest Compaq Technical Support Phone Center. Telephone numbers for world wide Technical Support Centers are listed on the Compaq website. Visit the Compaq website at www.compaq.com.

Be sure to have the following information available before you call Compaq:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware

- Third-party hardware or software
- Operating system type and revision level

Compaq Website

The Compaq website has information on this product as well as the latest drivers and Flash ROM images. You can visit the Compaq website at www.compaq.com.

Compaq Authorized Reseller

For the name of your nearest Compaq authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, you can visit the Compaq website for locations and telephone numbers.

Chapter 1

Overview

This document provides instructions for adding a Compaq tape drive to a Compaq StorageWorks ESL9198 Series TapeLibrary. Note that the DLT drives used in this library are Low Voltage Differential (LVD). The tape drive upgrade procedure consists of the following steps:

- Installing a tape drive assembly
- Changing the ESL9198 Series tape library configuration

Tape Drive Numbering

The library contains up to 10 tape drives and 198 tape cartridges at the following locations (see Figure 1–1 and Figure 1-2):

- 100 or 106 storage bins on the back wall, depending on whether the configuration calls for 8 tape drives or 10 tape drives
- Up to 92 storage bins on the inside of the front door

NOTE: An additional installation kit is required to install drives into bays 8 and 9. Contact your Compaq sales representative for more information.

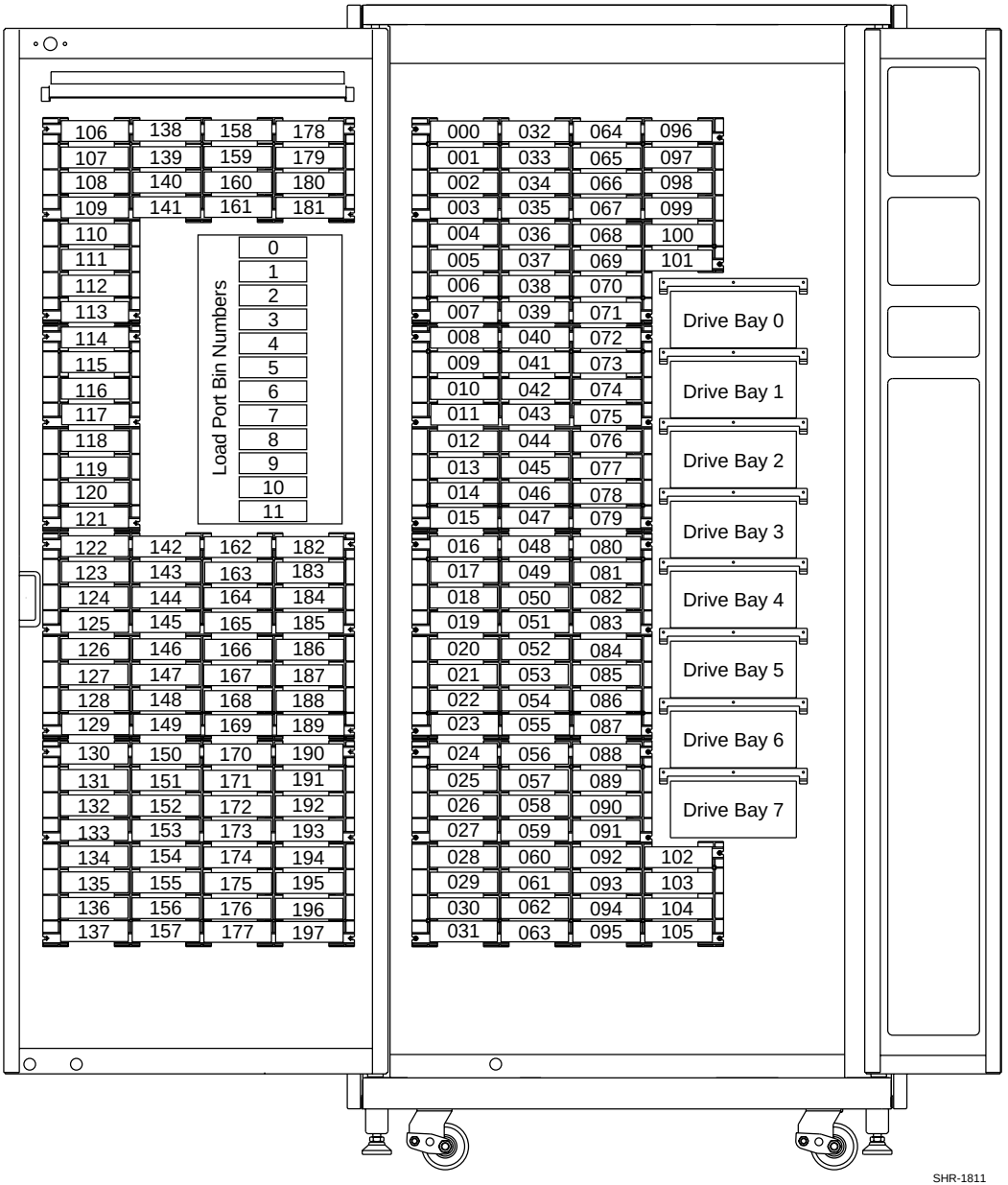

Figure 1–1. Tape drive numbering (8 tape drives)

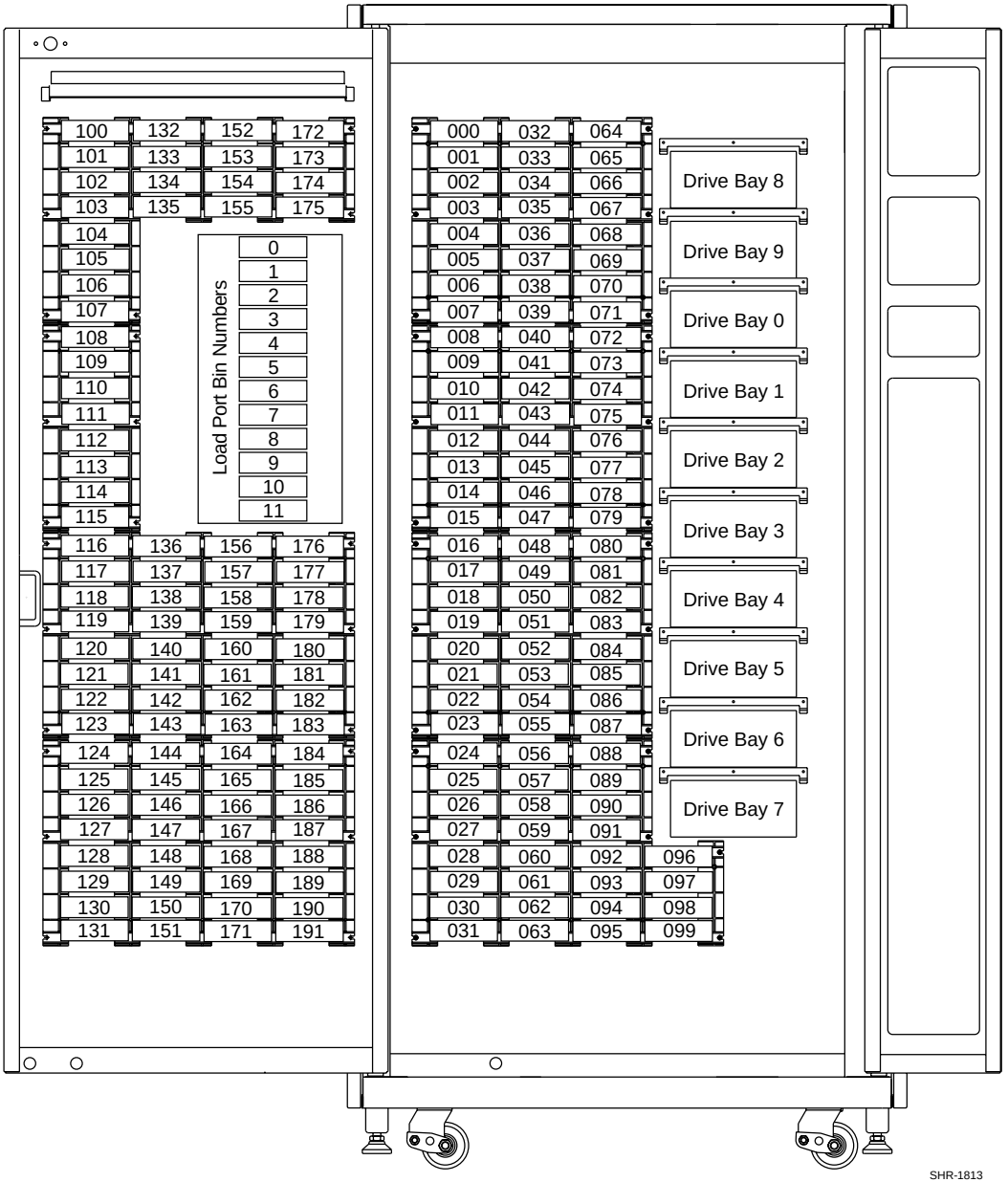

Figure 1–2. Tape drive numbering (10 tape drives)

Required Tools

The following tools are required:

- Flat-blade screwdriver
- Hex key (5/32-inch) to open door

Accessories

The following accessories are required for non-default SCSI bus configuration:

- Terminator (1)
- SCSI jumper cable (1)

Chapter 2

Installing the Tape Drive

This chapter explains how to install a Compaq tape drive in a drive bay. You need the Compaq ESL9198 Series Tape Library tape drive upgrade kit to complete the installation. Contact your Compaq sales representative for more information.

NOTE: The library is in the powered-on state during installation, however, the library robotics is unavailable for host-initiated operations during portions of this upgrade procedure.

Tape drives must be installed in sequential order from the lowest number to the highest (no gaps are allowed).

Tape Drive Installation

To install a tape drive: (see Figure 2-1)

1. Open the library front door.
2. Insert the tape drive ❸ into the drive bay ❺.
3. Secure the tape drive in the drive bay by tightening the two captive screws ❶. These quick-release screws are located at the lower left and lower right corners of the tape drive.
4. Lower the hot-plug sensor lever ❷.

NOTE: The drive position is automatically calibrated once the lever is lowered and the drive has been configured. During this time, the library robotics is unavailable to perform normal operation. If a library time-out or error message is returned as a result of issuing a robotic command from the library, re-issue the command after the tape drive Calibration completes. See Chapter 3 "Library Configuration" for more information.

The tape drive remains in the powered-off state until Configure completes.

The library comes pre-cabled from the factory for a two-drive-per-SCSI-bus configuration.

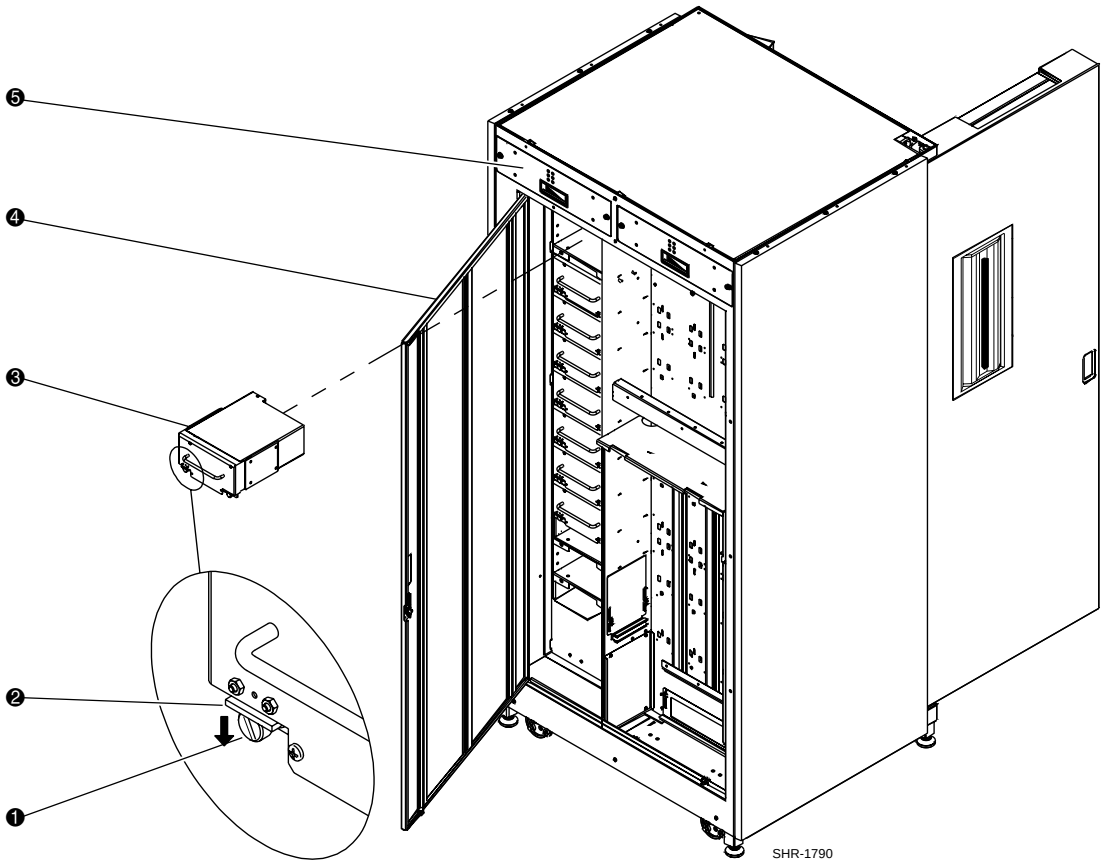

Figure 2–1. Installing a Compaq tape drive

❶ Quick-release thumbscrew on each bottom corner

❷ Hot-plug sensor lever

❸ Tape drive

❹ Easy-access rear panel

❺ Drive bay

SCSI Cabling Configuration

Figure 2-2 shows a typical SCSI cable configuration for 10 tape drives.

NOTE: All ESL9198 Series Tape Libraries are equipped with internal SCSI cables and terminators in place for a two-drive-per-SCSI bus configuration. Additional SCSI jumper cables and terminators are supplied in the library Accessory Kit to enable up to four drives per SCSI bus.

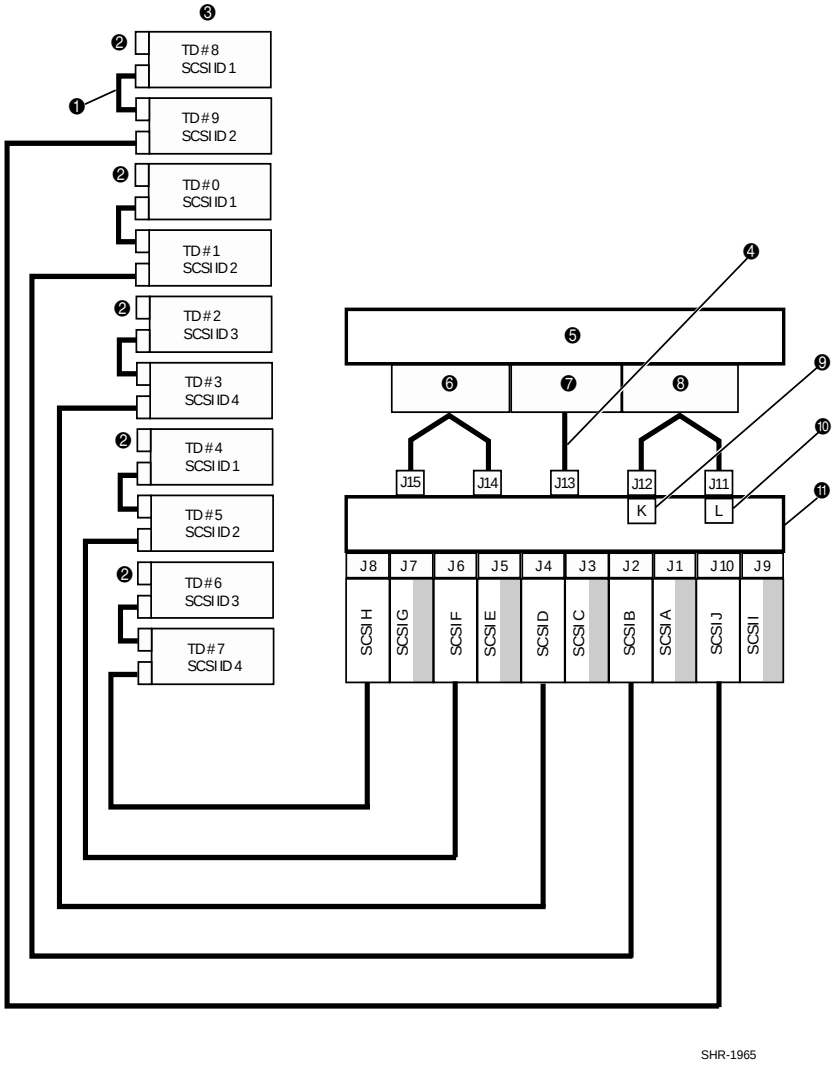

Figure 2–2. Cabling configuration

❶ Jumper (5 places)
❷ Terminator (5 places)
❸ Drive column 1
❹ RS-232 diagnostic port
❺ Robotics backplane
❻ Pass through COMM port
❼ Robotics controller
❽ SCSI adapter LVD differential
❾ SCSI K (jumpered to SCSI B)
❿ SCSI L (connects to an extended SCSI bus)
⓫ SCSI distribution assembly

NOTE: SCSI H, F, D, and J are external SCSI inputs

Chapter 3

Library Configuration

This chapter explains how to change the Compaq StorageWorks ESL9198 Series Tape Library configuration using the control panel.

Configuring the Library

To change the library configuration:

1. Press the **Standby** button to place the library in the off-line state.
2. At the Operator screen of the control panel, press **Configure Library** (see Figure 3-1).

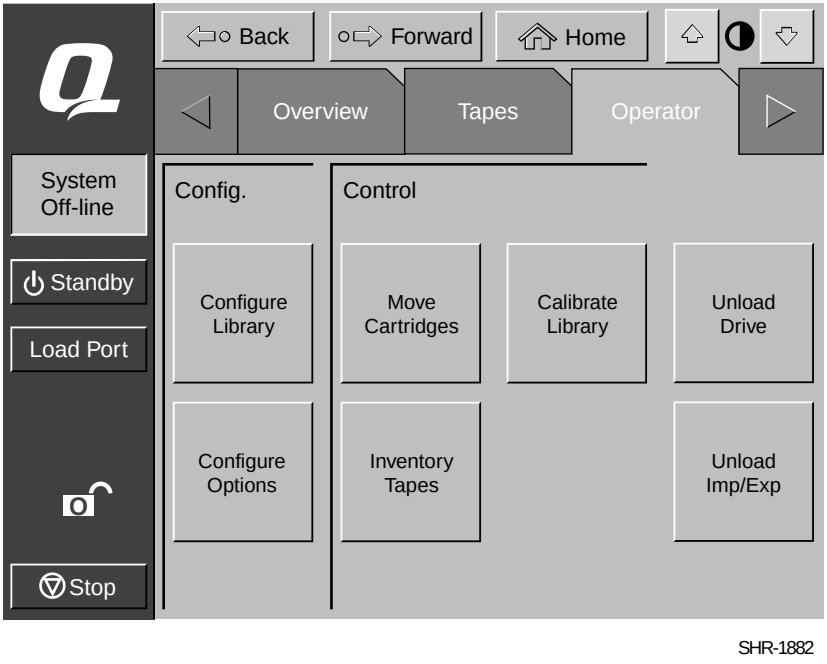

Figure 3–1. Operator screen

The control panel displays the Configure: Library screen (see Figure 3-2).

3. Press the **Configure** button (see Figure 3-2).

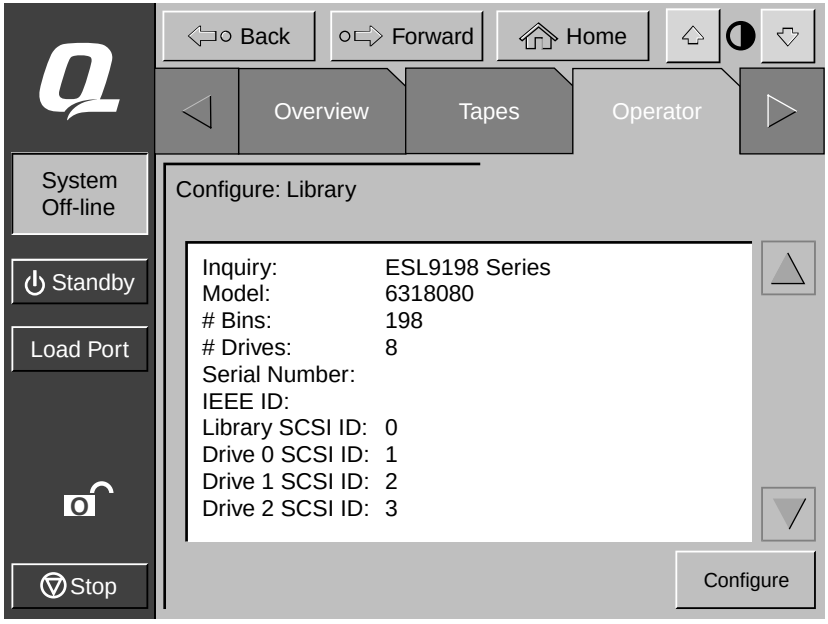

Figure 3–2. Configure: Library screen

The control panel displays the Configure: Library Settings screen (see Figure 3-3).

Figure 3–3. Configure: Library Settings screen

4. Set the number of tape drives:
   a. Press the **Select** button until the #Drives box is highlighted.
   b. Using the **Left/Right** arrow buttons, select the correct number of drives for the library.
   c. Press the **Change** button to accept the new setting.

The tape drive powers on at this point and drive calibration is automatically performed.

> **NOTE:** The SCSI ID of a newly added tape drive is always the default value (see Table 3–1). If the default value is acceptable, go to step 7. To set SCSI IDs other than the default value, go to step 5.

Table 3–1 Default SCSI IDs

Drive #	Default SCSI ID
0	1
1	2
2	3
3	4
4	1
5	2
6	3
7	4
8	1
9	2

5. Set the SCSI ID for the new tape drive:
   a. Press the **Select** button until the Device box is highlighted.
   b. Using the **Left/Right** arrow buttons, select the new tape drive.
   c. Press the **Select** button to highlight the SCSI ID field.
   d. Using the **Left/Right** arrow buttons, select the SCSI ID for the new tape drive.
   e. Press the **Change** button to accept the new setting.

   NOTE: The new SCSI ID setting will not take effect until you cycle power on the library.
6. Cycle the library power.
7. Press the **Standby** button to place the library in the on-line state.

The tape drive upgrade is now complete.

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