upgrade guide

# **hp** StorageWorks ESL9000 series tape library memory module

Third Edition (March 2003)

**Part Number:** 284397-003

This document provides procedures for upgrading the memory module on the HP StorageWorks ESL9000 series tape library robotics controller.


Printed in the U.S.A.

HP StorageWorks ESL9000 Series Tape Library Memory Module Upgrade Guide
Sixth Edition (March 2003)
Part Number: 284397-003

# contents



**Figures**

## Tables

# about this guide

This upgrade guide provides information to help you:

- Prepare the library for the upgrade.
- Remove the robotics controller.
- Remove and replace the memory module.

About this Guide topics include:

# Conventions

Conventions consist of the following:

- Document Conventions
- Text Symbols
- Equipment Symbols

## Document Conventions

The document conventions included in Table 1 apply in most cases.

**Table 1: Document Conventions**

| Element | Convention |
|---|---|
| Cross-reference links | Blue text: Figure 1 |
| Key and field names, menu items, buttons, and dialogue box titles | **Bold** |
| File names, application names, and text emphasis | *Italics* |
| User input, command and directory names, and system responses (output and messages) | `Monospace font`<br>`COMMAND NAMES` are uppercase monospace font unless they are case sensitive |
| Variables | *`<monospace, italic font>`* |
| Website addresses | Blue, underlined sans serif font text: http://www.hp.com |

## Text Symbols

The following 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 death.

**Caution:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

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

## Equipment Symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings.

Any enclosed 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 personal 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. Contact with this surface could result in injury.

**WARNING:** To reduce the risk of personal injury from a hot component, allow the surface to cool before touching.

Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

**WARNING:** To reduce the risk of personal injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.

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 manually handling material.

## Rack Stability

Rack stability protects personnel and equipment.

**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 rack rests on the leveling jacks.
- In single rack installations, the stabilizing feet are attached to the rack.
- In multiple rack installations, the racks are coupled.

## Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: http://www.hp.com.

## HP Technical Support

In North America, call technical support at 1-800-652-6672, available 24 hours a day, 7 days a week.

**Note:** For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the HP website under support: http://www.hp.com/support.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Name and revision of application software

## HP Storage Website

The HP website has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/products/tapestorage. From this website, select the appropriate product or solution.

## HP Authorized Reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP website for locations and telephone numbers: http://www.hp.com/support.

# Installing the Memory Module


This document provides instructions for upgrading the memory module on the library robotics controller. The memory module upgrade process consists of the following steps:

- Preparing the Library for the Upgrade
- Removing the Robotics Controller
- Removing and Replacing the Memory Module
- Completing the Procedure

To complete this upgrade you will need:

- Memory module
- Library firmware (on memory module)
- Tools
  - 5/32 inch Allen wrench
  - #2 Phillips screwdriver
  - #1 Phillips screwdriver
  - Electrostatic Discharge (ESD) wrist strap connected by a ground cord to a grounded workstation or chassis

# Preparing the Library for the Upgrade

**Caution:** To prevent electrostatic damage, observe proper ESD practices when handling the robotics controller and the memory module.

To prepare the library for the upgrade:

1. Place the library off-line by pressing the **Standby** button on the touch screen graphical user interface (GUI).
2. Verify that the GUI displays **System Off-line**.
3. On the **Overview** screen, verify that the gripper is empty. If there is a tape cartridge in the gripper, perform a **Move** command to place the cartridge in an available bin.

**Note:** For information about using the GUI, refer to the *HP StorageWorks ESL9000 Series Tape Library User Guide*.

4. Record the library configuration information in the following table:

| Library Element | Configuration Information |
|---|---|
| Model number: | |
| Number of bins: | |
| Number of drives: | |
| PTM: | |
| Library SCSI ID: | |
| Drive SCSI ID: | |

5. Turn off the power switch, located below the GUI.
6. Open the back library doors.
7. Turn off the main circuit breaker switch (CB1) on the AC distribution assembly. If two AC distribution assemblies are installed, turn off CB1 on each assembly.

**Note:** The AC power distribution assembly is located in the base of the cabinet, behind the left tape drive access panel.

# Removing the Robotics Controller

To remove the robotics controller:

1. Open the center access door on the rear of the library.
2. Remove the six Phillips screws that secure the cover over the electronics bay, and remove the cover (see Figure 1).

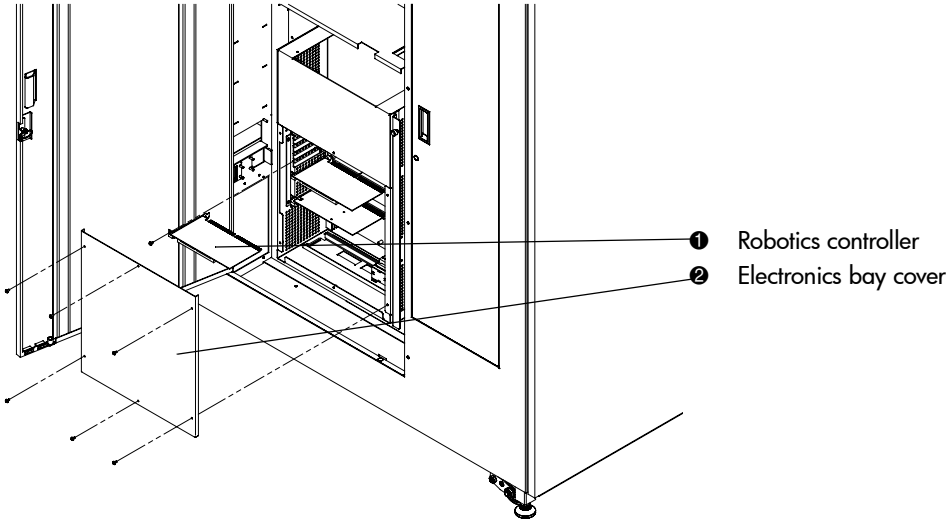


**Figure 1: Robotics controller and electronics bay cover**

3. Locate the robotics controller at J5/J6 of the backplane.
4. If present, disconnect the RS-232 cables at connectors J2 and J3 at the left edge of the robotics controller.
5. Remove the small Phillips screw that secures the robotics controller in the electronics bay.
6. Remove the robotics controller from the electronics bay.

# Removing and Replacing the Memory Module

To remove and replace the memory module:

1. Place the robotics controller on an anti-static mat and use ESD precautions.
2. Remove the memory module from the robotics controller as shown in Figure 2.

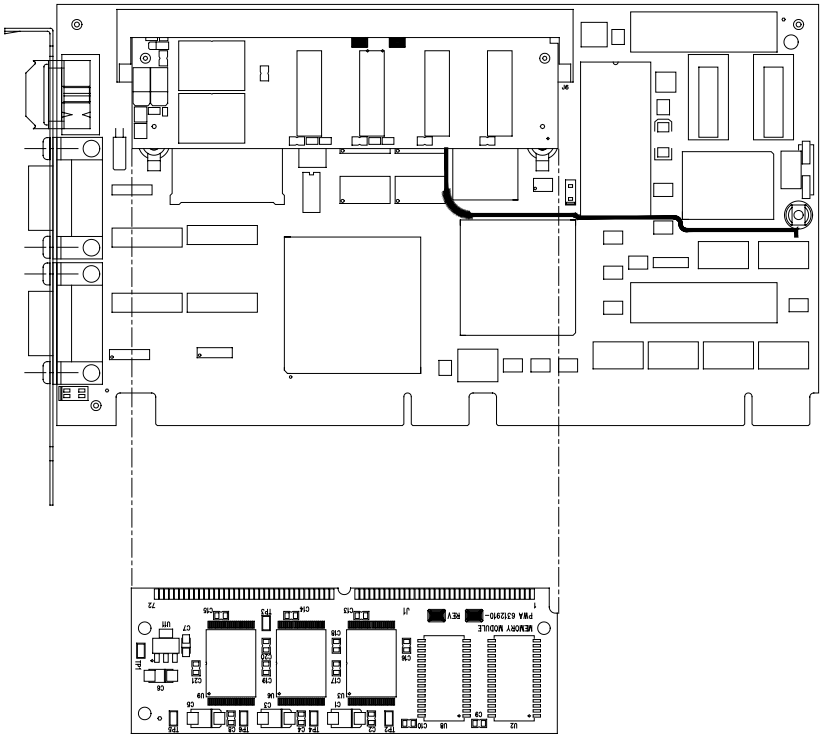

**Figure 2: Removing the memory module**

3. Install the new memory module in the robotics controller (see Figure 2).
4. Re-install the robotics controller by reversing the steps in “Removing the Robotics Controller” on page 13.
5. Reinstall the electronics bay cover.

# Completing the Procedure

Completing the memory module installation procedure consists of the following steps:

- Turning the Library On
- Initializing Non-Volatile RAM
- Setting the Library for HP Mode
- Changing the Library Settings
- Setting the Number of Tape Drives
- Calibrating the Library

## Turning the Library On

To turn on the library:

1. Turn on the main circuit breaker switch (CB1) on the AC distribution assembly. If two AC distribution assemblies are installed, turn on CB1 on each assembly.

---

**Note:** The AC power distribution assembly is located in the lower left part of the cabinet base, behind the rear access panel.

---

2. Close the library doors.
3. Turn on the power switch, located below the GUI.

   The GUI lights and displays **Power-Up**. After a few seconds, it displays either **Initializing for On-line** or **System Off-line**, depending upon the setting of the **Power-On State** option.
4. If the GUI displays **Initializing for On-line**, press the **Stop** button, the **Standby** button, and then the **Stop** button again to place the library off-line.

---

**Caution:** Do NOT let the robot initialize. Press the **Stop** and **Off-line** buttons immediately after power-on.

---

When the library finishes going off-line, the GUI displays **System Off-line**.

5. If the HP or Compaq screen *is* displayed, continue to "Initializing Non-Volatile RAM" on page 16. If the HP or Compaq screen *is not* displayed, proceed to "Setting the Library for HP Mode" on page 16.

## Initializing Non-Volatile RAM

To initialize non-volatile RAM:

1. Press the **Service** tab on the GUI.
2. If prompted, enter the Service password and press **Enter**. The GUI displays the **Service** screen.

---

**Note:** The default Service password is 5678.

---

3. Press the **Initialize Nonvol Config** button.
4. Press the **Continue** button when prompted.

   The library initializes non-volatile memory.
5. Proceed to "Changing the Library Settings" on page 18.

## Setting the Library for HP Mode

If the library does not display the HP or Compaq screen after completing the steps under "Turning the Library On" on page 15, use the following procedure to set the library for HP mode. The Libdiag utility is used in this procedure. For details on using this utility, refer to the *StorageWorks by Compaq ESL9000/TL800 Series Tape Library Diagnostic Software Guide*, available from http://www.hp.com/support.

### Starting Libdiag

To start Libdiag:

1. Connect a PC to the library diagnostic port using a RS-232 cable.
2. Make sure that the library is in the stand by mode.
3. Double-click the diagnostic icon.
4. Select 9600 baud.
5. Select the appropriate Com port (default is com1).

The main menu for libdiag should be displayed.

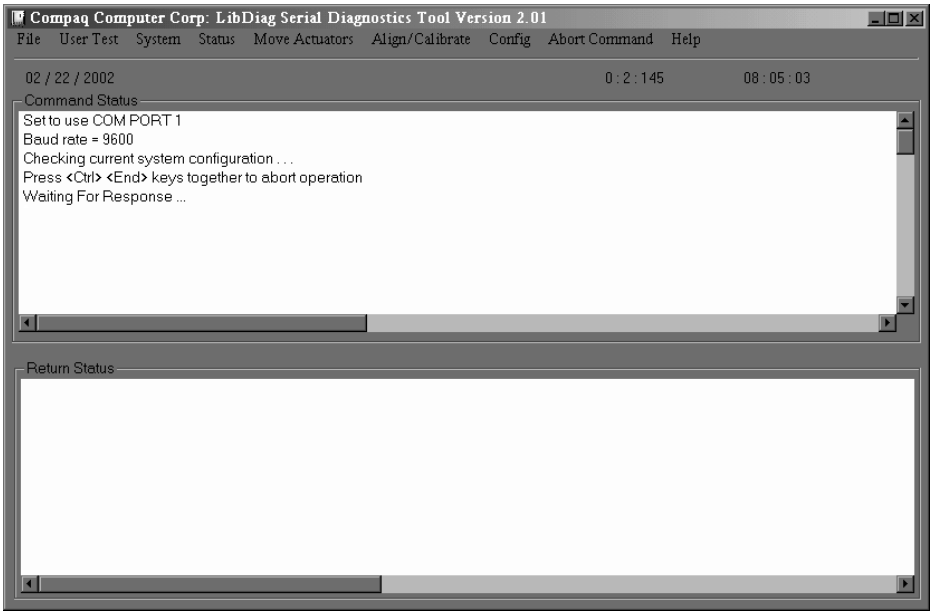


**Figure 3: Libdiag main menu**

## Changing the Library Mode

To set the library for HP mode:

1. Initialize Non-Volatile RAM:
   a. Click **Config**.
   b. Select **Initialization**, then select **Init Non-Vol RAM** (wait for response).
2. Set the model number, bins, and drives as shown in step 3 through step 6. See Table 2 on page 20 to find the correct model number and drive type for your library.
3. Click **Config**, then select **Configure System**. A screen appears that lists model numbers on the left and the current model number on the right.
4. Click the current model number and backspace to delete it. Type in the correct model number and press **Enter**.
5. At the next screen, select the number of bins and drives, and the SCSI ID of library.

**Note:** Click the appropriate box and edit as required for the correct number.

After these items have been modified, press **Enter**.

6. The **Command Status** window displays:

   ```
   waiting for response …
   ```

   After the configuration has been accepted, the **Command Status** window displays:

   ```
   Response = ok: <model no> <# bins> <# drives> <scsi id>. Ready
   for next command.
   ```

7. If step 6 does not complete after waiting 30 seconds, power cycle the library.
8. The library should now come up properly in HP mode with the configuration values that were previously entered. To verify:
   - Click **Config**, then select **Report System** and verify that the model number, and so on, are correct, or
   - Press the **Operator** tab on the GUI.
9. Proceed to "Calibrating the Library" on page 23.

## Changing the Library Settings

With the library Off-line, set the library configuration using the configuration values you recorded in step 4 of the "Preparing the Library for the Upgrade" section on page 12:

1. Press the **Operator** tab on the GUI.

   The GUI displays the **Configure: Library** screen (see Figure 4).

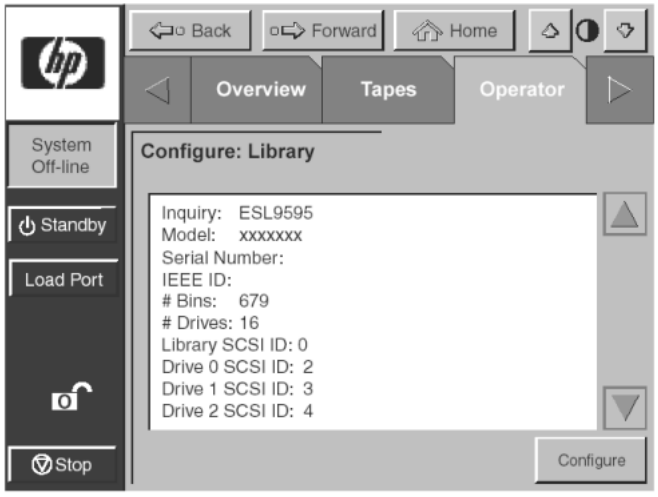


**Figure 4: Configure library screen**

2. Press **Configure**.

The GUI displays the **Configure: Library Settings** screen (see Figure 5).


**Figure 5: Configure library settings screen**

3. Change the library model number:
   a. Press **Select** until the **Model** field is highlighted.
   b. Use the arrow keys to scroll until the desired model number is displayed.
   c. Press **Change** to accept the new settings.

---

**Note:** If the appropriate model number is not available on the GUI, you must use the library diagnostics tool to set the model number, number of bins, and number of tape drives. See Table 2.

---

**Table 2: Library Model Numbers**

| Model No. | Name | Product ID | Max. Drives/Bins | Drive Types |
|---|---|---|---|---|
| 6318280* | ESL9198 | ESL9000 Series | 8/198 | DLT8000 |
| 6318281* | ESL9198 | P2000 6318281 | 8/198 | DLT8000 |
| 6318285 | ESL9198 | ESL9000 Series | 8/198 | SDLT110 |
| 6318286 | ESL9198 | P2000 6318286 | 8/198 | SDLT110 |
| 6310080* | ESL9326 | ESL9000 Series | 16/326 | DLT7000 |
| 6310081 | ESL9326 | ESL9000 Series | 16/170 | DLT7000 |
| 6310082 | ESL9326 | P3000 6310082 | 16/326 | DLT7000 |
| 6310085* | ESL9326 | ESL9000 Series | 16/326 | DLT8000 |
| 6313080* | ESL9326 | ESL9000 Series | 16/326 | SDLT110 |
| 6313081 | ESL9326 | ESL9000 Series | 16/170 | SDLT110 |
| 6313082 | ESL9326 | P3000 6313082 | 16/326 | SDLT110 |
| 6437080 | ESL9322 | ESL9000 Series | 8/322 | SDLT and Ultrium |
| 6437085 | ESL9322 | P4000 6437085 | 8/322 | SDLT and Ultrium |
| 6438280* | ESL9595 | ESL9000 Series | 16/595 | SDLT and Ultrium |

**Table 2: Library Model Numbers**

| Model No. | Name | Product ID | Max. Drives/Bins | Drive Types |
|---|---|---|---|---|
| 6438081 | ESL9595 | ESL9000 Series | 16/399 | SDLT and Ultrium |
| 6438285 | ESL9595 | P7000 6438285 | 16/595 | SDLT and Ultrium |
| 6438250 | ESL9595 | P7000 6438250 | 16/595 | SDLT110 |

*. Indicates a default model number.

4. Set the number of bins:
   a. Press **Select** until the **# Bins** box is highlighted.
   b. Using the arrow buttons, select the correct number of bins for the system.
   c. Press **Change** to accept the new setting.
5. Ensure the SCSI IDs are set correctly to the desired value.

**Note:** Refer to the *HP StorageWorks ESL9000 Series Tape LIbrary User Guide* for information on setting SCSI IDs.

## Setting the Number of Tape Drives

To set the number of tape drives in the library:

1. Press the **Operator** tab on the GUI.

   The GUI displays the **Configure: Library** screen (see Figure 6).

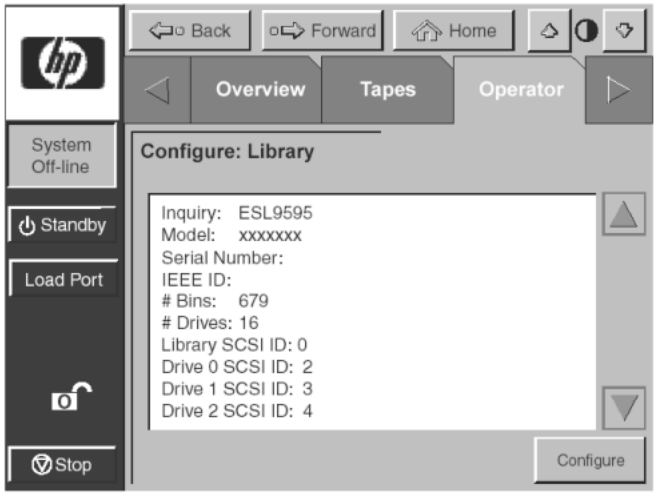


**Figure 6: Configure library screen**

2. Press Configure.

   The GUI displays the Configure: Library Settings screen (see Figure 7).


**Figure 7: Configure library settings screen**

3. Set the number of tape drives:
   a. Press **Select** until the **# Drives** box is highlighted.
   b. Using the arrow buttons, select the correct number of drives for the system.
   c. Press **Change** to accept the new setting.
4. Set the PTM:
   a. Press **Select** until the **PTM** box is highlighted.
   b. Using the arrow buttons, select the desired option (**None**, **Left**, **Right**, or **Both**).
   c. Press **Change** to accept the new setting.

## Calibrating the Library

1. On the **Operator** screen of the GUI, press **Calibrate Library**.

   The GUI displays the **Calibrate Library** screen (see Figure 8).

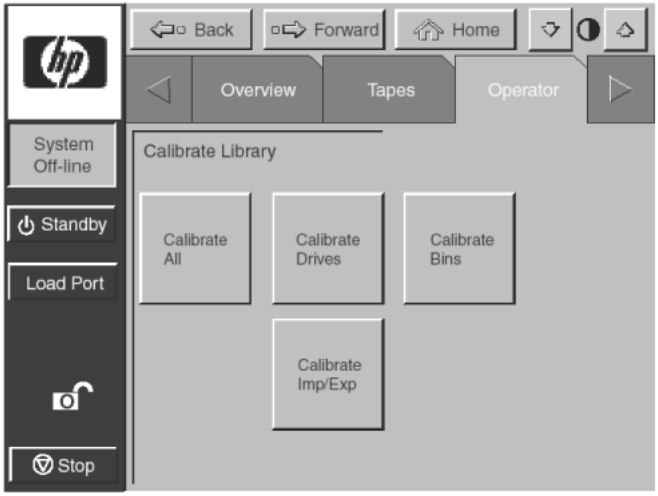


**Figure 8: Calibrate library screen**

2. Press **Calibrate All**.

   The GUI displays a **Command in Progress** screen and the library calibrates all elements. The calibration takes approximately twenty minutes.

3. Set the default configuration values:
   a. On the **Operator** screen, press the **Configure Options** button.
   b. Press the **Set StorageWorks Default** button. After several seconds all values are returned to the factory default.
4. Press the **Standby** button to bring the library to the on-line state.

The memory module upgrade procedure is complete.