Quantum Scalar 50 Tape Drive Removal and Replacement Instructions

Preparing for the Procedure

This document explains how to remove and replace a tape drive in an Quantum Scalar 50 library. Before you begin the removal and replacement procedure:

- Verify you have the required tools
- Unpack the tape drive and save the materials

> **Note:** The firmware revision on the new tape drive(s) must match the firmware revision on the currently installed tape drives (of the same tape drive type). If the new tape drive has a different revision, you must download the appropriate tape drive firmware from Quantum and update the drive. All tape drives in the library must contain the same firmware revision. You can view the tape drive firmware revision on the OCP under **Drive Operations**.

The tape drive removal and replacement procedure consists of the following steps:

- Turning Off Drive Power
- Removing the Faulty Tape Drive Canister
- Installing the New Tape Drive Canister
- Repackaging the Faulty Tape Drive Canister
- Troubleshooting

Required Tools

The following tools are required for the procedure:

- Large flat blade screwdriver
- Antistatic wrist strap

> **Caution:** Use appropriate electrostatic discharge (ESD) precautions when unpacking or installing the tape drive.

Unpacking the Tape Drive

To unpack the tape drive:

1. Open the shipping carton.

   > **Note:** Save the packing materials. You will use these materials to package the faulty tape drive at the end of this procedure.

2. Remove the tape drive from the carton.

   The tape drive is protected by two pieces of foam and an antistatic bag.

3 Remove the foam from the wrapped tape drive.

4 Remove the tape drive from the antistatic bag.

Turning Off Drive Power

There are two ways to turn of the tape drive power, using the operator control panel (OCP) or using the remote management GUI. Refer to the following sections:

Note: For dual half-height tape drive canisters, both tape drives must be powered down before removing the tape drive canister.

Caution: Ensure that all tape cartridges are removed from the tape drives prior to powering down the tape drive. For dual half-height drive canisters, ensure that tape cartridges have been removed from BOTH tape drives before powering down the tape drive.

- Turning Off Drive Power Using the OCP
- Turning Off Drive Power Using the GUI

Turning Off Drive Power Using the OCP

To turn off tape drive power using the OCP:

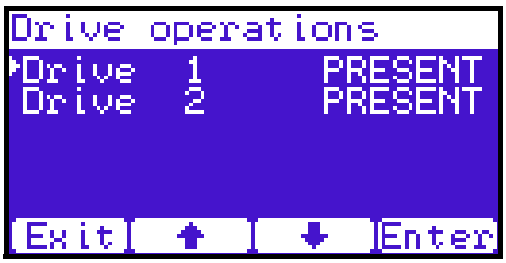
1 Press **Ops** from the OCP **Home** screen. The OCP displays the **Operations** screen (see figure 1):

Figure 1 Operations Screen

2 From the **Ops** screen, use the up and down arrows to highlight **Drive Operations** and press **Enter**.

The **Drive Operations** screen displays (see figure 2):

Figure 2 Drive Operations Screen



3 Use the up and down arrows to select the tape drive to be replaced and press **Enter**.

4 User the up and down arrows to select **pwr off** and press **Enter**.

The tape drive powers down.

> **Note:** For dual half-height tape drive canisters, repeat the tape drive power off process for both tape drives in the canister. If you do not power down both drives before removing the tape drive canister, operations in progress can be interrupted causing a backup job to fail and/or leave a tape cartridge in one of the tape drives.

Turning Off Drive Power Using the GUI

To turn off drive power using the remote management GUI:

1 On the host computer, open the internet browser software.

2 In the **Address** field, type http://IPaddress/where IP address is the IP address for the Quantum Scalar 50 library.

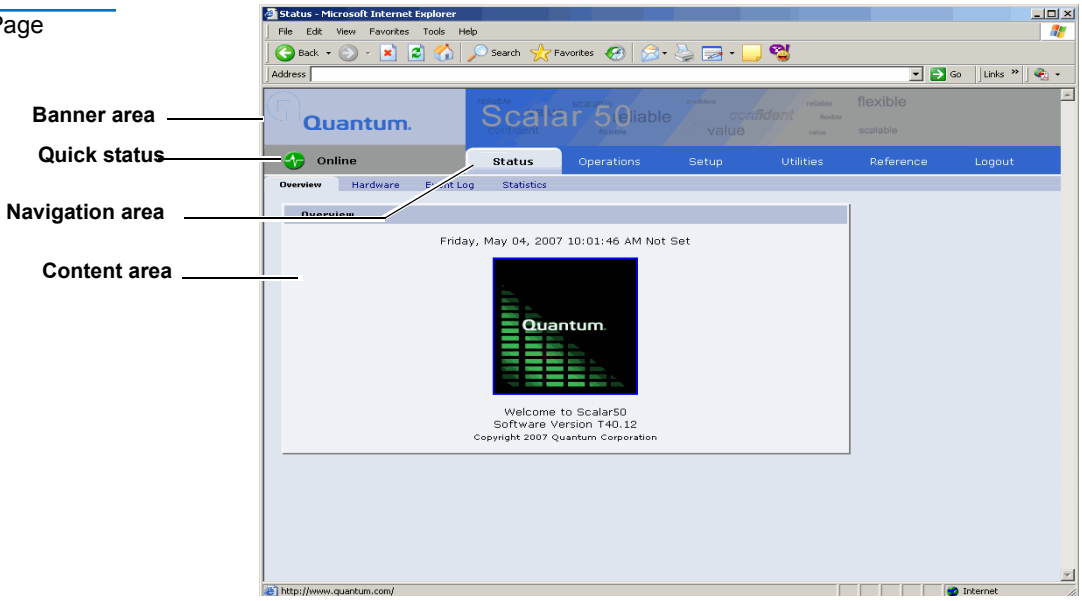
> **Note:** Refer to OCP **Home** screen for the library IP address.

3 Enter the username and password and click **OK**.

> **Note:** The default username and password is **admin**. If the username and password have been changed, check with the network administrator for the library username and password.

The **Overview** page displays (see figure 3):

Figure 3 Overview Page



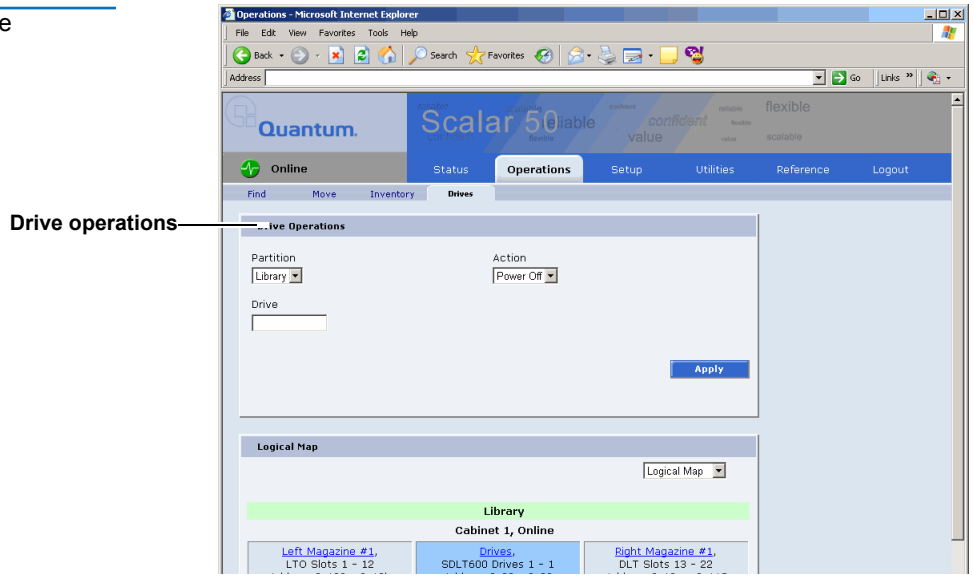
4 Click the **Operations** tab from the top of the **Overview** page.

The **Operations** page displays.

5 To access the **Drives** page, from the **Operations** page, click on the **Drives** tab at the top of the page.

The **Drives** page displays (see figure 4):

Figure 4 Drives Page



6 Enter the drive number of the failed tape drive in the **Drive** edit box and select **Power Off** from the **Action** drop down list.

7 Click **Apply**.

The tape drive power is turns off.

Note: For dual half-height tape drive canisters, repeat the tape drive power off process for both drives in the canister. If you do not power down both tape drives before removing the tape drive canister, operations in progress can be interrupted causing a backup job to fail and/or leave a tape cartridge in one of the tape drives.

Removing the Faulty Tape Drive Canister

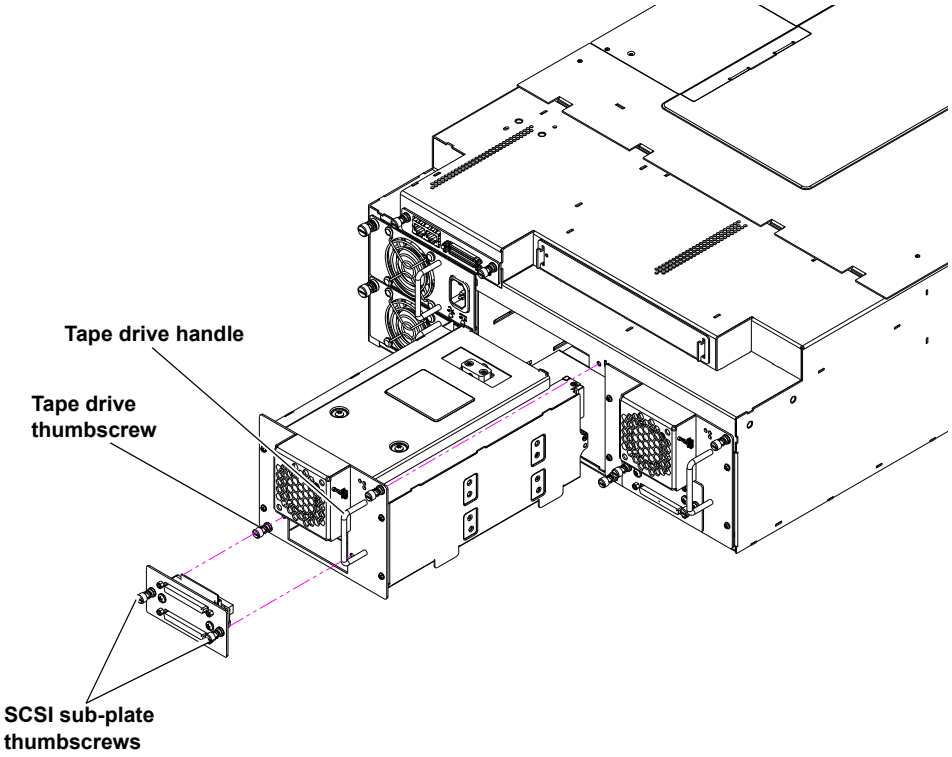
To remove the faulty tape drive canister:

1 Use a flat blade screwdriver to loosen the two thumbscrews on the SCSI sub-plate (see figure 7).

Caution: Make sure the thumbscrews are loosened fully before trying to remove the sub-plate.

Note: Native Fibre Channel drives and dual half-height drives do not have a SCSI sub-plate. Continue with step 3.

Figure 5 Tape Drive Removal



2 Pull the SCSI sub-plate from the drive (see figure 7).

> **Note:** This disconnects the SCSI bus from the tape drive, but allows the SCSI connectors on the sub-plate to remain connected. Do not disconnect these cables.

3 Use a flat blade screwdriver to loosen the tape drive thumbscrew (see figure 5).

> **Caution:** Make sure the thumbscrew is loosened fully before trying to remove the tape drive.

4 Pull the tape drive out of the library using care to move the SCSI cables out of the way when the drive is removed.

> **Note:** If this is a native Fibre Channel tape drive, disconnect the Fibre Channel cable prior to removing the tape drive.

Installing the New Tape Drive Canister

To install the new tape drive canister:

> **Note:** Each tape drive ships from Quantum with a version of library firmware as well as drive firmware on the tape drive interface PWA. When you install the tape drive, the library will check the version of library firmware on the tape drive and verify if the firmware is newer than the version currently running. If the library firmware on the tape drive is newer than the version currently running on the library, the OCP will prompt you with the option to upgrade the library firmware.

1 Remove the SCSI sub-plate from the new tape drive:

> **Note:** Native Fibre Channel drives do not have a SCSI sub-plate. Continue with step 2.

a Use a flat-blade screwdriver to loosen the two thumbscrews on the SCSI sub-plate (see figure 5).

> **Caution:** Make sure the thumbscrews are loosened fully before trying to remove the sub-plate.

b Pull the SCSI sub-plate from the drive.

c Save the SCSI sub-plate.

2 Slowly insert the new tape drive into the library until the connectors are seated.

3 Tighten the tape drive thumbscrew using a flat-blade screwdriver.

4 For SCSI tape drives, install the old SCSI sub-plate (still connected to the SCSI bus) on the new tape drive. For native Fibre Channel tape drives, reconnect the Fibre Channel cable to the tape drive.

> **Note:** Installing a new Fibre Channel tape drive will require the Fibre Channel host or SAN to remap the tape drive.

5 Tighten the two sub-plate thumbscrews using a flat-blade screwdriver.

6 Return power to the drive by setting the **Drive Power** option to `ON` (refer to the Drive Operations Screen on page 5 for OCP instructions and Drives Page on page 6 for GUI instructions).

The host detects the presence of the tape drive automatically.

7 If the host does not detect the presence of the tape drive, check the drive SCSI ID (from the OCP, select **Setup**, **Cabinet**, and **Host bus** to view the SCSI IDs for the tape drives). If the drive SCSI ID is:

- Valid, the tape drive may be defective. Contact Customer Support.
- Invalid, the SCSI sub-plate has failed and needs to be replaced (see Replacing the SCSI Sub-Plate).

The new tape drive is installed.

Replacing the SCSI Sub-Plate

To replace the SCSI sub-plate:

> **Caution:** This procedure is necessary only if you performed the procedure in Installing the New Tape Drive Canister, the tape drive SCSI ID is invalid, and the host does not detect the presence of the tape drive.

1 Suspend all host activity on the SCSI bus.

2 Power off the drive by setting the **Drive Power** option to `OFF` (refer to Turning Off Drive Power on page 4).

3 Disconnect the cables from the old SCSI sub-plate.

4 Remove the old SCSI sub-plate from the drive:

a Use a flat-blade screwdriver to loosen the two thumbscrews on the SCSI sub-plate (see figure 5).

> **Caution:** Make sure the thumbscrews are loosened fully before trying to remove the sub-plate.

b Pull the SCSI sub-plate from the drive.

5. Install the new SCSI sub-plate on the tape drive.
6. Tighten the two sub-plate thumbscrews using a flat-blade screwdriver.
7. Replace the SCSI cables you removed in step 3.
8. Return power to the drive by setting the **Drive Power** option to **ON** (refer to Turning Off Drive Power on page 4).
9. Ensure that the drive LED on the back of the drive canister turns on.
10. If the host does not detect the presence of the tape drive, contact Customer Support.

Repackaging the Faulty Tape Drive Canister

To repackage the faulty tape drive:

1. Attach the unused SCSI sub-plate to the faulty tape drive and tighten the two thumbscrews using a flat-blade screwdriver (see figure 5).
2. Insert the faulty tape drive into the antistatic bag.
3. Place the tape drive in one of the foam covers (see figure 6).

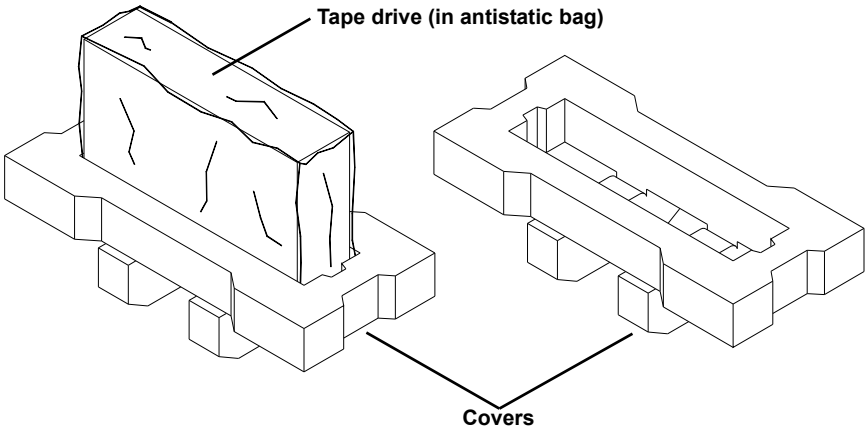
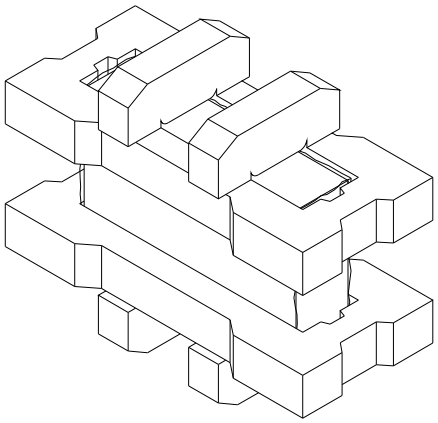


Figure 6 Placing the Tape Drive in the Foam Covers

4. Put the remaining foam cover on top of the tape drive (see figure 7).

Figure 7 Wrapped Tape Drive



5 Place the wrapped tape drive in the shipping carton.

6 Secure the carton for shipment.

The tape drive is ready to be returned to the vendor.

Troubleshooting

This section describes problems you may encounter during the tape drive replacement procedure. Corrective information is provided to help you resolve the problems.

Problem	Corrective Action
The library or tape drives do not respond on the SCSI bus.	• Make sure each SCSI device on the same SCSI bus has a unique address by checking the SCSI IDs on the OCP and also ensure that the last device is properly terminated. • If possible, swap an operational drive with the failed drive to see if this corrects the communication problem (see Swapping a Tape Drive). If the problem is corrected, contact Quantum Customer Support to obtaining a replacement tape drive.
One or more tape drives fail to spin up during start-up.	Check all SCSI cabling and termination at the back of the library. If necessary, contact your Quantum Customer Support about replacing the tape drive.

Problem	Corrective Action
Internal Communication Error	Communication error between the robot controller and system controller board has been lost. Reboot the library. If the problem continues, contact an authorized Quantum Customer Support.
The host computer cannot communicate with the library.	This may be a SCSI bus time-out or a premature disconnect problem. • Check cable connections, SCSI addresses, and termination. • Restart the host and the library. • If the host and library still are not communicating, contact Quantum Customer Support.

Swapping a Tape Drive

In the event that you have lost SCSI or Fibre Channel communication with a tape drive, it is recommended that you swap the failed tape drive canister with an operational tape drive canister. This will allow you to determine if a failure has occurred in the library or tape drive. If the tape drive is operational in the position of the failed tape drive, a failure has occurred in the tape drive. If the tape drive is still inoperative in the new position, a failure has occurred in the library. Contact Quantum Customer support for replacement tape drives or library support.