Spare Spooling Mechanism Instructions

This document describes how to remove and replace an existing Spooling Mechanism in a NEOxl 40 (3U) tape library Base Module from Overland Storage.

⚠ **WARNING:** To reduce the risk of electric shock or damage to equipment, always remove any power cords while working with the library.

WARNUNG: Um das Risiko eines elektrischen Schlags oder Schäden am Gerät zu vermeiden, ziehen Sie stets den Netzstecker, bevor Sie an der Einheit arbeiten.

AVERTISSEMENT: Pour réduire le risque de choc électrique ou endommagement de l'équipement, retirez toujours les cordons électriques en travaillant avec l'appareil.

⚠ **CAUTION:** While working with the library, observe standard Electrostatic Discharge (ESD) precautions to prevent damage to micro-circuitry or static-sensitive devices.
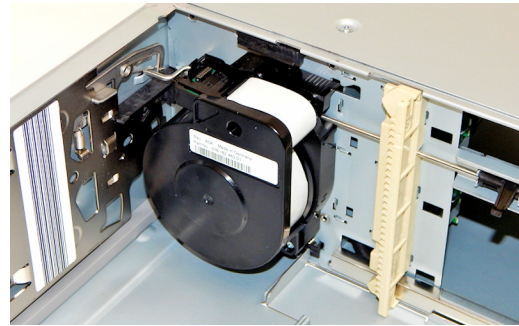

Special Handling Notice

Each NEOxl 40 Base Module weighs more than 44 lbs (20 kg) without drives or tapes and more than 77 lbs (35 kg) with three tape drives and 40 tapes.

Before moving or lifting the Base Module, remove the tape magazines and drives to reduce the weight.

Overview of Procedure

To replace an existing Spooling Mechanism:

1. Prepare the library:
   a. Remove tape magazines (with cartridges) and power off the library.
   b. Disconnect the power cords and cables.
   c. Remove the tape drives.
   d. Remove the module from the rack.
   e. Unpack the new Spooling Mechanism.
2. Remove the old Spooling Mechanism:
   a. If present, remove the Base Module top cover.
   b. Unlock the Robotic Assembly and extract it.
   c. Remove the old Spooling Mechanism.
3. Install the new Spooling Mechanism:
   a. Install the new Spooling Mechanism to rear wall.
   b. Connect spooling cable to Robotic Assembly.
   c. Reinsert the Robotic Assembly into the module and relock it.
   d. If present, reinstall the top cover.
4. Return the module to service:
   a. Insert the module to the rack and align it.
   b. Reinstall the tape drives.
   c. Reattach the power cords and cables.
   d. Reinsert the tape magazines (with cartridges).
5. Complete the procedure:
   a. Power on the library and verify the operation.
   b. Return the old Spooling Mechanism.
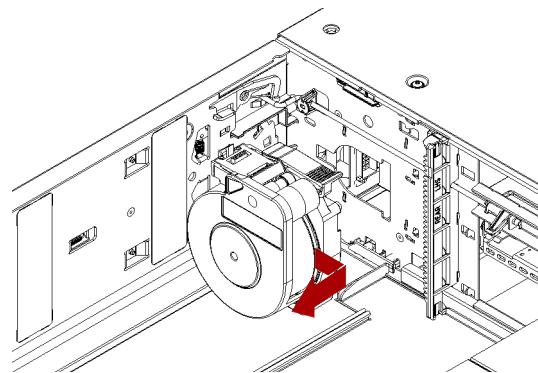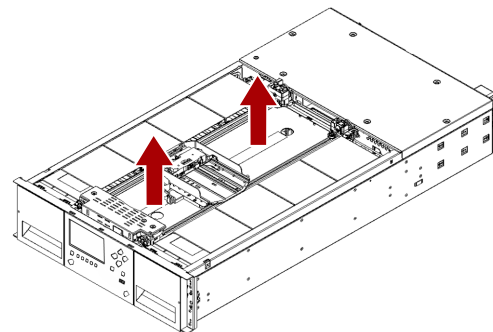
Tools Needed:
- #2 Phillips screwdriver
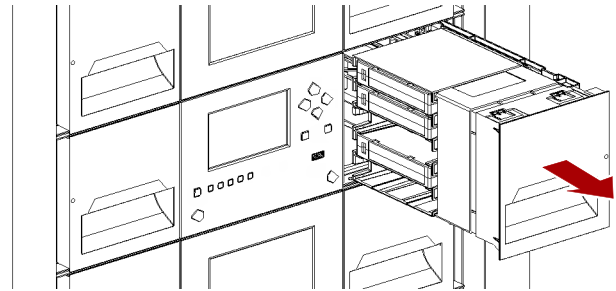- Small flat-head or Torx screwdriver

Prepare the Library

Remove Tape Magazines

First, make sure all activities are completed and all backup software services are stopped. Remove both of the tape magazines from the Base Module.

NOTE: If a magazine needs to be removed when the power to the device is off, you can release the magazine manually. Refer to the Manual Release Process below.

1. From the OCP or RMI, first select the right magazine and then select **Open Magazine**.

2. Using the right magazine **access handle** and supporting it underneath, pull the magazine out of the library.

3. Place the **magazine** on a secure surface.

4. Repeat Steps 1–3 for the **left magazine**.

Manual Release Process

If power is not available on the Base Module, the magazines can be released using the manual release holes on the side of the magazines. Insert a small flat-head screwdriver or Torx driver into the release hole and gently push the tab in.

> IMPORTANT: Do not continue to exert force once you encounter resistance. Doing so can damage the device.
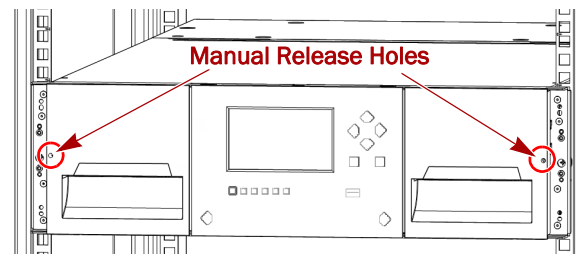
Power Off Library

If still running, power off the library from the Base Module front panel. Press and hold the power button for three (3) seconds.

> *NOTE: If the library does not perform a soft shutdown, press and hold the power button for 10 seconds.*

Verify that the Robotic Assembly is in its parked position and that all host processes are idle.

Remove Cords and Cables

Disconnect all cords and cables, noting where they connected.

1. Unplug any **AC power cords** (1).

2. Remove the **expansion interconnect cables** (2) from the Base Module and any Expansion Modules to which it is connected.

   NOTE: Completely removing the expansion interconnect cables from the modules prevents damaging the cables during module removal and replacement.

3. Remove and label any **Ethernet management cables** (3).

4. Remove and label **SAS/FC cables** (4) from the drives.

5. If present, remove the optional **USB device** (5).
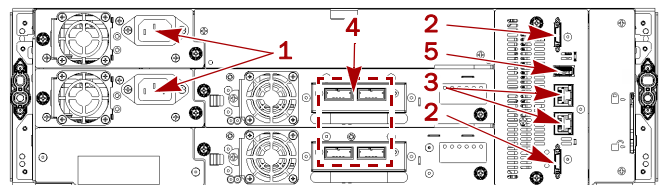
Remove Tape Drives

NOTE: *Because the library tracks the drive locations and issues events if the drives aren't in the expected locations, label the drives so they can be reinstalled in the same drive bays.*

1. Use your fingers to loosen the **blue thumbscrews** on the tape drive.

2. While supporting the bottom of the drive, pull straight back on the tape **drive handle** to remove it from the module.
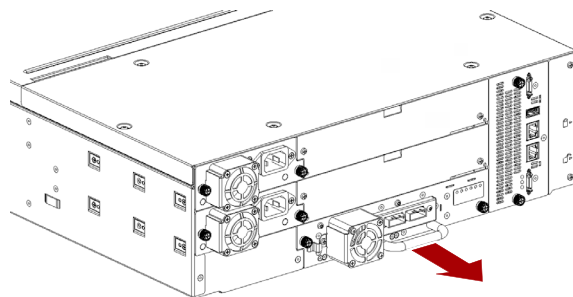
   ⚠ **CAUTION:** Support the bottom of the tape drive when removing it to avoid damaging any internal connections.

3. Place the drive on a secure **ESD surface**.

4. Repeat Steps 1–3 for any **additional drives**.

Remove Base Module from Rack

⚠ **WARNING:** To avoid injury, we recommend the use of a mechanical lifting aid (or at least two persons) for rack installation or removal. Use caution during rack installation or removal to avoid accidentally tilting or tipping the rack and injuring yourself.

WARNUNG: Um Verletzungen zu vermeiden, empfehlen wir zur Rack-Installation oder -Deinstallation die Nutzung einer mechanischen Hebehilfe (oder mindestens zwei Personen). Seien Sie vorsichtig bei der Rack-Installation oder -Entnahme, um ein versehentliches Kippen des Racks zu vermeiden und das Rack nicht zu beschädigen bzw. sich selbst zu verletzen.

AVERTISSEMENT: Afin d'éviter des blessures pendant l'installation, il est recommande d'utiliser un monte-charge (ou au moins deux personnes) pour élever ou aligner l'module. Faites attention lorsque vous insérez ou retirez l'module d'un support, pour empêcher le déversement accidentel de la crémaillère causant des dommages et des blessures.
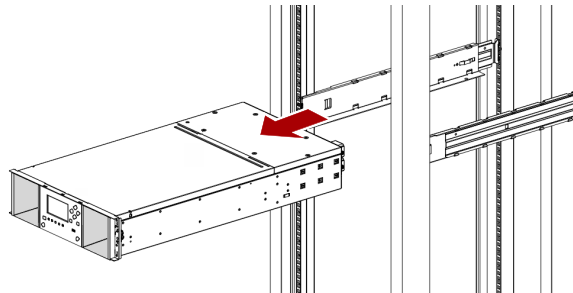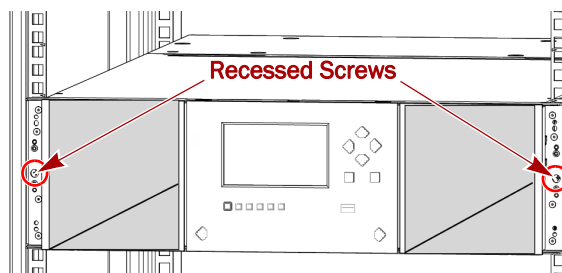
1. From the front, use a #2 Phillips screwdriver to loosen the rack **recessed screws** two full turns on both the Base Module and any adjacent Expansion Modules.

2. From the back of the library, unlock the **alignment mechanisms** connecting the Base Module with any adjacent Expansion Modules.

3. Carefully slide the **Base Module** out onto a mechanical lifter.

4. Place the **Base Module** on a secure ESD surface.

5. Unpack the **new Spooling Mechanism** and place it on the surface next to the module.

Recessed Screws

Remove Old Spooling Mechanism

Remove the Top Cover

If the Base Module has a top cover, it must be removed:

1. Insert a small flat-head or Torx **screwdriver** into the release holes and slide them about 1/4 inch (6mm) sidewards to unlock the spring-loaded locks.

   To prevent a side from relocking, it may be necessary to hold its edge up while unlocking the other side.

2. Lift the top cover **front edge** by about 4 inches (10cm) and pull the cover gently forward to disengage from the pivot point at the module center.

3. Place the **cover** on a secure surface for reinstallation after the replacement is done.
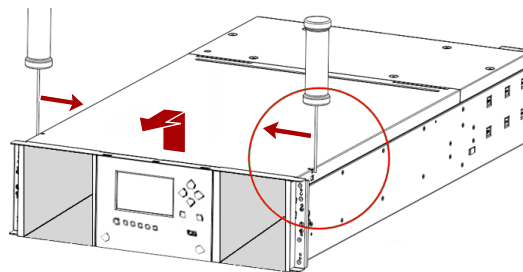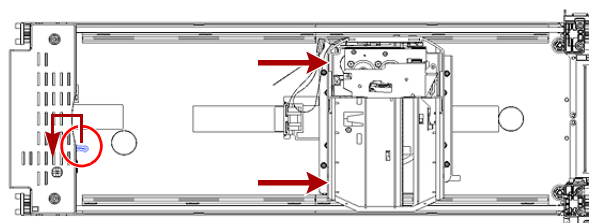
Unlock the Robotic Assembly

NOTE: If necessary, slide the robotics' cartridge carrier manually toward the center of the Robotic Assembly to access the blue locking lever.

Standing at the front of the module, unlock the robot by moving the **blue lever** to the left, then toward you, then to the right.

If a tape cartridge is still in the Robotic Assembly cartridge carrier, remove the cartridge by lifting it straight up. You may need to move the cartridge slightly from side to side.

Extract the Robotic Assembly

Gently lift and remove the Robotic Assembly from the module:

1. Place your fingers into the **large holes** on the Robotic Assembly and slowly pull it up (about 1/2 inch [13mm] per second) until clear.

2. Place the **assembly** on top of the module on the right side (opposite the Spooling Mechanism) and slightly to the front.
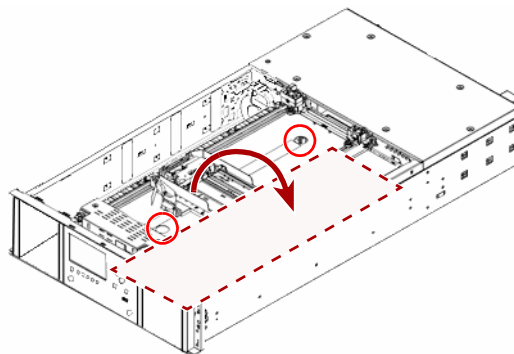
Remove Old Spooling Mechanism

1. Detach the **spooling cable connector** from the Robotic Assembly:
   a. Use a small flat-head or Torx screwdriver to press down and out the **small latch** to unlock the **spooling cable connector** on the rear left.
   b. Pivot the **connector** out from the Robotic Assembly, loop the cable over the top of the Spooling Mechanism, and slip the end of the connector into the docking slot at the top.

      The spooling cable should lay flat across the top.

   NOTE: Note the hooks on the Robotic Assembly where the end of the spooling cable pivots. This is important to know when you attach the new spooling cable to the new Robotic Assembly.

2. Move the Robotic Assembly to a secure **ESD surface**.

3. Remove the **Spooling Mechanism** by pressing the latch at the top rear of the Spooling Mechanism and pushing the entire Spooling Mechanism gently to the right until the rear connector releases.

   It may help to push the left side with your other hand.

4. Pull the **Spooling Mechanism** to the front, releasing it from the rear metal wall, and set it aside.

Spooling Cable
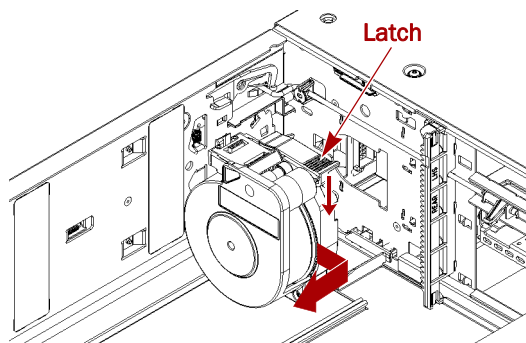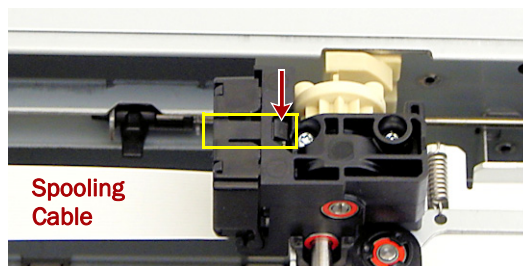
Latch

Install New Spooling Mechanism

Install the New Spooling Mechanism

1. Hold the new **Spooling Mechanism** in front of the rear metal wall attachment point with the docked spooling connector to the top left.

2. Align the **latch** at the top rear of the Spooling Mechanism with the **keyhole** in the rear metal wall.

3. Push the **Spooling Mechanism** in and then to left until the plug is connected and the mechanism snaps into place.

   It may help to push the right side with your other hand.

Spooling connector docked   Latch   Keyhole
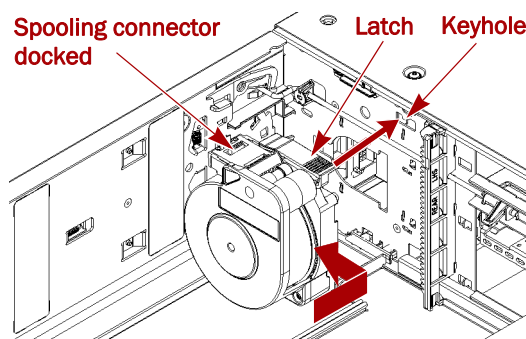
Reinstall the Robotic Assembly

1. Position the **Robotic Assembly** resting on the right side of the module.

2. Attach the Spooling Mechanism **connector**:

    a. Undock the **connector** from the Spooling Mechanism top and hold it with the latch end up.

    b. Place the **cable end** into the Robotic Assembly hooks.

    c. Pivot the **top** into position so that latch connects.

3. Rotate **one of the corner gears** on the Robotic Assembly so that the two pins are **aligned horizontally**.

    All the gears are synchronized and will also be aligned.

4. Gently place the Robotic Assembly gears onto the top of the **grooves** of the four vertical gear rails.

    Confirm that all of the pins are touching the outside of the grooves.

5. Gently push the Robotic Assembly down until the **base** of the Robotic Assembly is on the bottom of the module.

    > ⚠ CAUTION: You can manually assist in lowering the Robotic Assembly but go no faster than 1/2 inch (13mm) per second. If the Robotic Assembly is not aligned properly or you push too hard or too quickly, damage to the Robotic Assembly and the Base Module may occur.

    NOTE: The Robotic Assembly should drop smoothly by itself. If it does not, check the alignment of the gears.

6. Lock the Robotic Assembly by moving the **blue lever** to the left, then toward the rear, and then to the right.
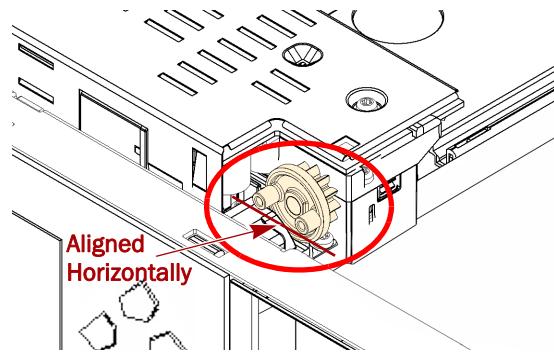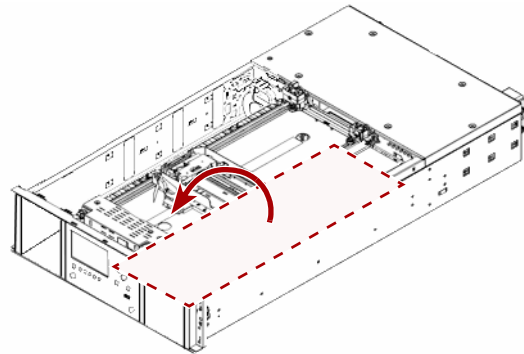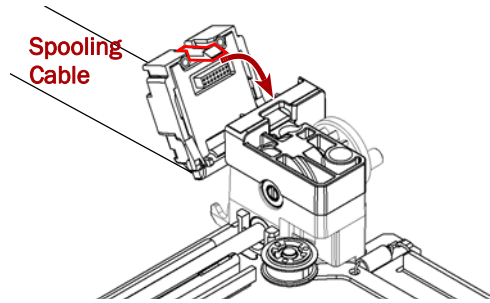
Reinstall the Cover

1. With the cover at the same angle as when it was removed, reengage the **rear of the cover** at the pivot point.

2. Lower the front of the cover until the **latches** engage on both sides.
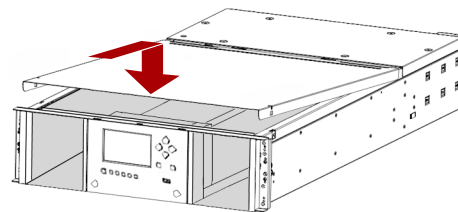
Return the Module to Service

Reinsert the Module in Rack

1. Using the mechanical lifter, position the **Base Module** in front of the rack from where it was removed and aligned it with the rack rails.

2. Slide the module onto the **rack rail flanges** and into the rack.

3. Tighten the **recessed screws** only one turn to hold it.
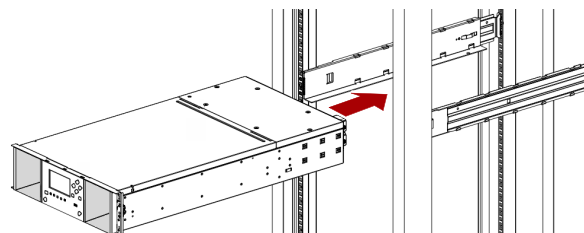
Aligning and Connecting the Module

Aligning the Base Module with the other library Expansion Modules ensures that the Robotic Assembly can move freely between the modules.

> *NOTE: The library will not operate unless all the alignment mechanisms (except the one on the bottom module) are in the locked position.*

1. At the back of the library, using the **alignment lock lever**, align and lock the Base Module to any Expansion Modules to which it connects.

   If you encounter resistance, adjust the upper module so that the alignment mechanism pin moves into the mating hole in the lower module.

2. If necessary, verify that the **lowest** module in the library has its alignment mechanism in the **unlocked position**.

3. At the front of the library, tighten the **recessed screws** on both the Base Module and any adjacent Expansion Modules to secure them all to the rack.
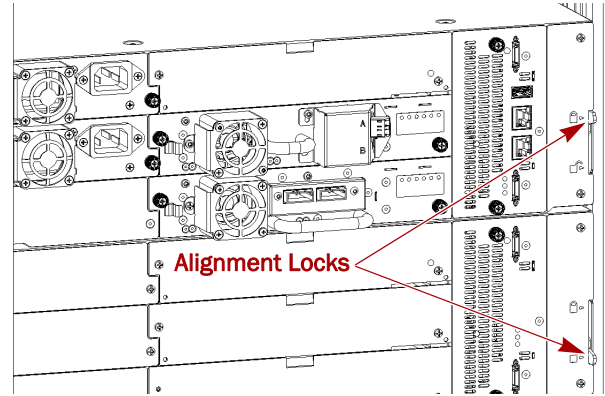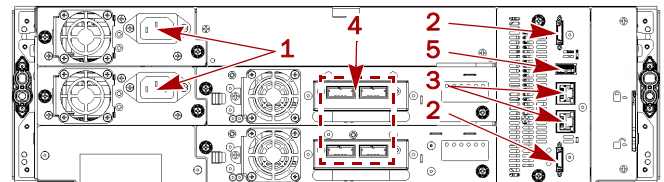
Reinstall Tape Drives

Start with the lowest tape drive bay and install upwards. Ensure that the same drive is going into its appropriate bay.

1. Holding a **tape drive** by the handle and supporting it from the bottom, position it on the alignment rails.

2. Slowly slide the tape drive into the **drive bay** until it is flush with the back of the library.

3. Finger-tighten the **blue captive thumbscrews** to secure.

4. Moving upwards, repeat Steps 1–3 for any **additional tape drives**.
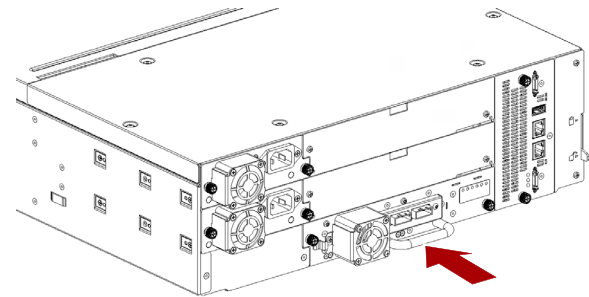
Reattach Cables and Cords

1. Reconnect the **expansion interconnect cables** (2) from the Base Module to any adjacent Expansion Modules.

2. Reconnect any **Ethernet management cables** (3).

3. Reconnect any **SAS/FC cables** (4) to the tape drives.

4. Reinsert the **USB device** (5) if you removed one earlier.

5. Reconnect the **AC power cords** (1) to the power supplies.

Reinstall Tape Magazines

Reinstall the previously removed tape magazines (and tapes) into the Base Module.

1. Using the magazine **access handle** and supporting it underneath, position the magazine on the alignment rails of the appropriate bay.

2. Slide the **magazine** into the module.

3. Repeat Steps 1–2 for the **other magazine**.
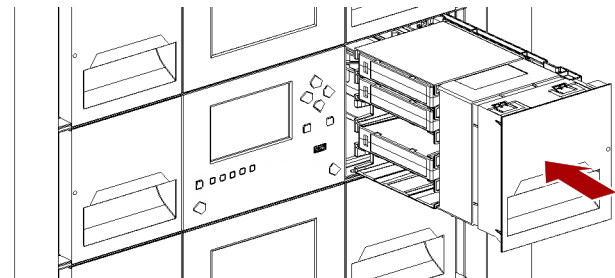
Complete the Procedure

Verifying the Installation and Configuration

Power ON the library and check the following:

- Verify that the library powers ON and initializes correctly, and that the status is Ready.
- Check the library configuration settings related to the additional storage slots, mailslots, and tape drives. Update the settings if necessary.
- If the UID LEDs are still illuminated, deactivate them using the RMI.

It is recommended that you always update the library to the latest firmware version. You can update firmware from the RMI or the OCP **Maintenance > Library Firmware Upgrade** screen.
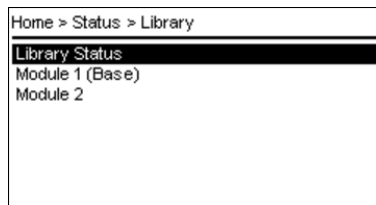
Return Replaced Part to Overland

For warranty replacements:

1. Place the **old Spooling Mechanism** in the box that the new replacement Spooling Mechanism came in.
2. Use the existing **packing material** to secure it in the box.
3. Use an RMA to return the part to **Overland Storage**.

   For return shipping details and RMA number, go to: http://docs.overlandstorage.com/return-instructions.