



Overland
Storage

NEO[®] 8000e Tape Library

Scalability Upgrade



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Overland Storage, Inc.
9112 Spectrum Center Blvd.
San Diego, CA 92123
U.S.A.

Tel: 1.877.654.3429 (toll-free U.S.)
Tel: +1.858.571.5555 Option 5 (International)
Fax: +1.858.571.0982 (general)
Fax: +1.858.571.3664 (sales)
www.overlandstorage.com

Preface

This user guide explains how to install and setup a Scalability Upgrade for an Overland Storage NEO 8000e library.

This guide assumes that you are familiar with computer hardware, data storage, and network administration terminology and tasks. It also assumes you have basic knowledge of Fibre Channel, Internet SCSI (iSCSI), Serial-attached SCSI (SAS), Serial ATA (SATA), and Storage Area Network (SAN) technology.

Product Documentation and Firmware Updates

Overland Storage NEO product documentation and additional literature are available online, along with the latest release of the NEO 8000e software.

Point your browser to:

<http://support.overlandstorage.com/support/neo-series.htm>

Follow the appropriate link to download the **latest** software file or document. For additional assistance, search at <http://support.overlandstorage.com>.

Overland Technical Support

For help configuring and using your NEO 8000e, search for help at:

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You can email our technical support staff at techsupport@overlandstorage.com or get additional technical support information on the [Contact Us](#) web page:

<http://docs.overlandstorage.com/support>




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Conventions

This document exercises several alerts and typographical conventions.

Alerts

Convention	Description & Usage
 IMPORTANT	An <i>Important</i> note is a type of note that provides information essential to the completion of a task or that can impact the product and its function.
 CAUTION	A <i>Caution</i> contains information that the user needs to know to avoid damaging or permanently deleting data or causing physical damage to the hardware or system.
 WARNING	A <i>Warning</i> contains information concerning personal safety. Failure to follow directions in the warning could result in bodily harm or death.
AVERTISSEMENT	Un Canadien avertissement comme celui-ci contient des informations relatives à la sécurité personnelle. Ignorer les instructions dans l'avertissement peut entraîner des lésions corporelles ou la mort.

Typographical Conventions

Convention	Description & Usage
Button_name	Words in this special boldface font indicate command buttons found in the Web Management Interface.
Ctrl-Alt-r	This type of format details the keys you press simultaneously. In this example, hold down the Ctrl and Alt keys and press the r key.
NOTE	A Note indicates neutral or positive information that emphasizes or supplements important points of the main text. A note supplies information that may apply only in special cases, for example, memory limitations or details that apply to specific program versions.
Menu Flow Indicator (>)	Words with a greater than sign between them indicate the flow of actions to accomplish a task. For example, Setup > Passwords > User indicates that you should press the Setup button, then the Passwords button, and finally the User button to accomplish a task.
<i>Courier Italic</i>	A variable for which you must substitute a value
Courier Bold	Commands you enter in a command-line interface (CLI)

Information contained in this guide has been reviewed for accuracy, but not for product warranty because of the various environments, operating systems, or settings involved. Information and specifications may change without notice.



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The NEO 8000e architecture can be expanded by adding second library unit. A Horizontal Robotics Assembly (HRA) is installed inside the two connected NEO 8000e libraries to enable the robotics in each of the individual libraries to exchange cartridges by means of a pass-through system. This results in a system that integrates the robotics of the individual units into a single high-performance library robotics system.

 **IMPORTANT:** Overland Storage recommends that the Horizontal Robotics Assembly be installed by an Overland Storage authorized service provider. Improper installation may result in damage to this part or the library components which would void all existing warranties.

Installation Process Overview

Described below are the major steps required to install the HRA in your NEO 8000e system. Unless otherwise noted, all hardware is included in the HRA kit.

NOTE: Always retain any screws removed during this procedure. They will be reused to reinstall the appropriate components.

Step 1: Pre-Installation Processes

- Conduct the Site Survey to verify space and distance requirements.
- Verify that the minimum firmware level is installed.
- Remove various panels and drawers to enable easy access inside the libraries.

Step 2: Prepare the Libraries

- Confirm the intermediate cable channels are cut to allow room for the HRA.
- Install the Mounting Bracket assemblies for the HRA.
- If needed, install new Mail Slot Printed Wiring Assembly (PWA) board.
- Add motor wiring harnesses and signal cables to both libraries for the HRA.

Step 3: Connect the Libraries

- Attach and level the two library units.
- Complete the routing of the wiring.

Step 4: Install the HRA

- Install the HRA in the combined library units and connect the wiring.
- Run cables from the VIA router to the Master and Slave Library Controller cards.
- Replace all components removed for internal access.

Step 5: [Configure the System](#)

- Power On both units.
- Configure the Master and Slave units using the Graphical User Interface (GUI).
- Test the HRA operational ability.

Required Tools

These tools are required for the proper removal and replacement of the HRA.

- #1 and #2 Phillips Screwdrivers
- #2 Stubby Phillips Screwdriver
- 6" or 10" Spirit Level (15cm or 25cm)
- 36" Level with Straight Edge (90cm)
- Diagonal Cutting Pliers
- 2 each M13 Combination Wrenches
- M3 Hex Key
- 10" Adjustable Wrench (260mm)
- Tape Measure

Suggested Items

Some additional items that might be helpful are listed below.

- Masking Tape
- Bold Marker
- Pry Bar
- Wrench Tethers
- Extra D-type cable clamps and tie-downs

HRA Parts Locations

[Figure 1-1](#) shows the layout of the HRA major components.

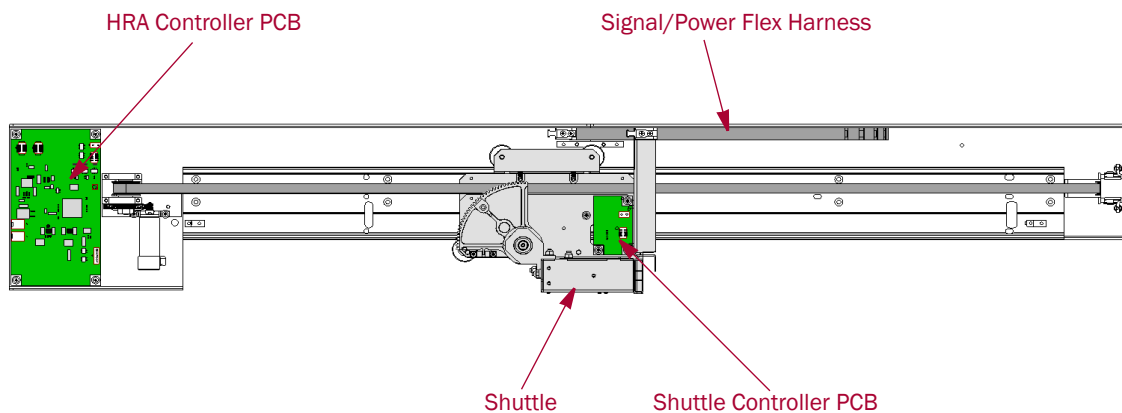


Figure 1-1: HRA Major Components

Electrostatic Discharge Information


A discharge of static electricity can damage static-sensitive devices. Proper packaging and grounding techniques are necessary precautions to prevent damage. To prevent electrostatic damage, observe the following precautions.

- Transport products in static-safe containers such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Cover the library with approved static-dissipating material.
- Use a wrist strap connected to the work surface and properly-grounded tools and equipment.
- Keep the work area free of non-conductive materials such as foam packing materials.
- Make sure you are always properly grounded when touching a static-sensitive component or assembly.
- Avoid touching pins, leads, or circuitry.

Pre-Installation Processes

The HRA is intended to be physically mounted between two NEO 8000e libraries. An HRA kit may include the following:

- Site Survey
- Factory-assembled HRA
- Mounting Bracket assembly components
- Replacement Mail Slot PWA with an additional connector for the HRA sensor
- Signal Cable and Power Wiring Harness for each library

 **IMPORTANT:** It is recommended that all NEO 8000e libraries in a multi-unit library system use the same drive types. If you want to mix drive types in the multi-unit library system, check with your application software vendor to manage partitioning by tape technology.

Conduct the Site Survey

Using the Site Survey packed with the HRA unit, verify that there is at least 3.5 feet (1.1m) of clear space beside the library (see [Figure 2-1](#)) to allow enough room to insert the HRA after the libraries are positioned and leveled. The space can be on either side but it is recommended to insert the HRA on the Master unit side. Also, be sure there is enough space on all the other sides to allow access to the units through the panel openings.

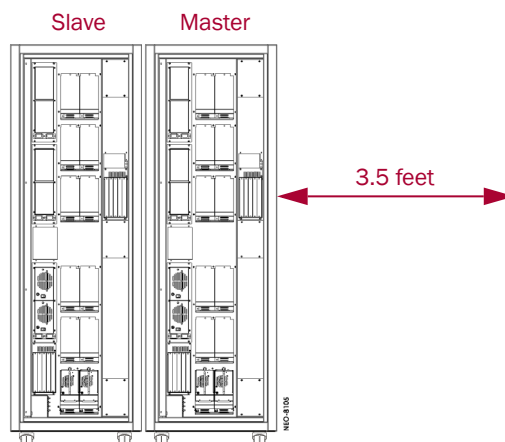


Figure 2-1: Clearance Needed for HRA Installation

Verify Minimum Firmware Level

The first models of the NEO 8000e produced did not incorporate the functionality required for the SmartScale Storage™ architecture operation. The minimum firmware level needed to operate a multi-module configuration is **Firmware Version 6.29**. To verify the firmware level of the Master module, do the following:

1. If the library is powered off, turn it ON.
 - a. Set both circuit breakers to the ON position (see [Figure 2-2](#)).

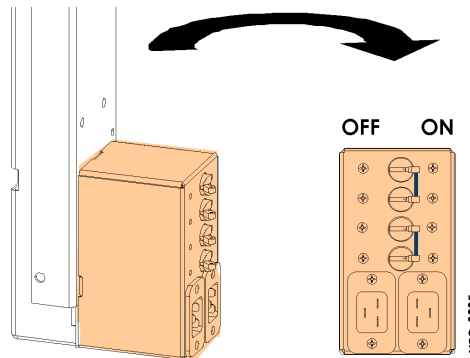


Figure 2-2: Power Strip Circuit Breakers

- b. Set each power supply's ON/OFF switch to the ON position ("I") (see [Figure 2-3](#)).

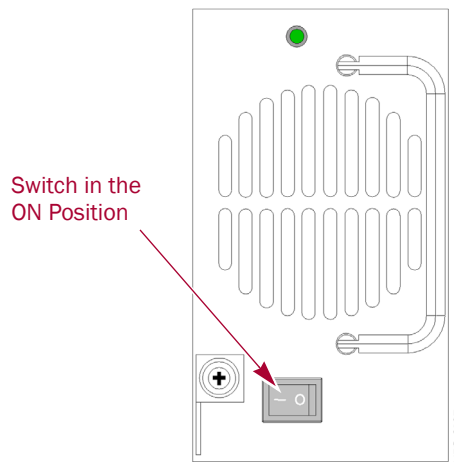


Figure 2-3: Power Supply Power ON/OFF Switch ON Position

- c. At the front of the library, press anywhere on the GUI touch screen to apply power to the library.



Figure 2-4: NEO 8000e Front Panel

- After the **POST** completes, press **Menu > Library Info**.

The firmware revision appears in the Miscellaneous Library Info window (see [Figure 2-5](#)).

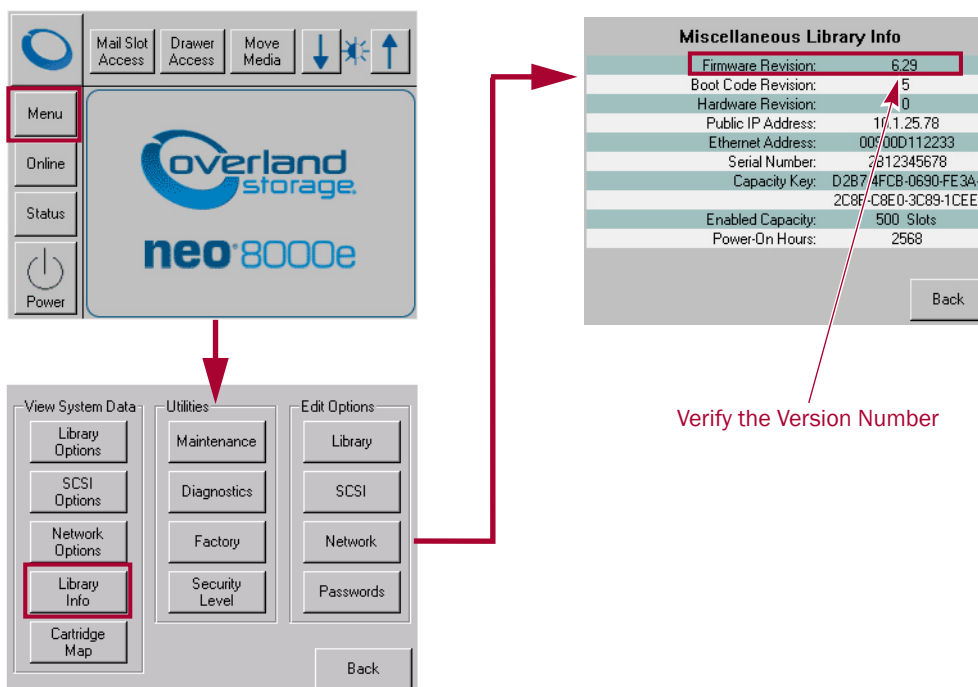


Figure 2-5: Verify Minimum Firmware Level

If the firmware in the Master library is less than Version 4.05, it should be upgraded before continuing with the installation of the HRA. (In [Figure 2-5](#), the firmware needs to be upgraded from 2.01 to 4.05.)

Obtaining the Current Firmware File

The latest release of the firmware can be obtained from the Overland Storage ftp site.

- Point your browser to:
ftp://ftp.overlandstorage.com/Firmware/Neo_Series/NeoE/NEO8000E/
- Download the latest firmware **BIN file** at the root level.
- Use the Web Management Interface or Neo8000eCenter to **upgrade** the firmware. Refer to the *Overland NEO 8000e Library User Guide* for details.

Removing Components for Access

To simplify the installation of the HRA and related cabling, you need to remove various doors, panels, and drawers to allow access to all key areas inside the library unit.

Remove Media Drawers

Release and remove media drawers and Master Mail Slot magazine to provide internal access. Label the drawers so that they can be returned to the same library and location.

 **WARNING:** Exercise care when removing the media drawers from the library units. Fully-loaded drawers weigh approximately 58 pounds (26.3 kg).

1. On the **Master** unit, release and remove the following items.
 - **Top-right** media drawer
 - **Middle-right** media drawer
 - **Mail Slot** magazine
2. On the **Slave** unit, release and remove the following items.
 - **Top-left** media drawer
 - **Middle-left** media drawer
 - **Mail Slot** magazine

Store the drawers in a safe place until ready to reinsert them.

Power Down the Libraries

 **WARNING:** Working with a powered NEO 8000e library may cause physical harm and severe damage to unit's circuitry. Always power down a library before removing any panels.

1. **Power down** both units at the front panel.
2. Set each of the library circuit breakers to the **OFF** ("O") position.
3. **Remove** and retain the power cords.

Remove Side Panels

Remove both side panels from both libraries.

1. At the Master unit, remove the **screws** (six hex or eight phillips) that secure the **right** panel and carefully remove the panel (see [Figure 2-6](#)).

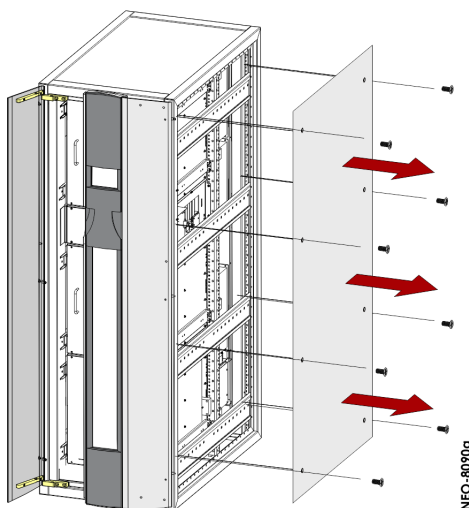


Figure 2-6: Library Panel Cover Removal Example

2. Remove the **screws** that secure the **left panel** and carefully remove it (see [Figure 2-6](#)).
3. Repeat [Steps 1–2](#) for the **Slave** unit.

Remove Library Doors

Remove both the front and rear doors on both units.

1. Remove the left front door ([Figure 2-7](#)) by unscrewing the three Phillips screws holding the hinges to the frame.

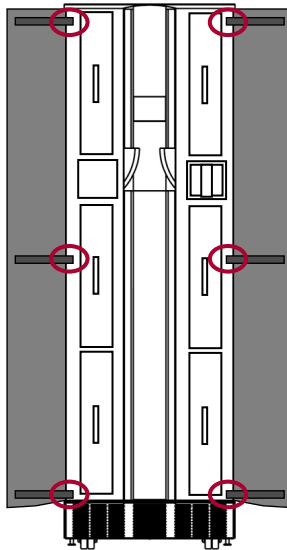


Figure 2-7: Detaching the Doors

2. Repeat [Step 1](#) for the right door.
3. Repeat [Steps 1–2](#) to remove the front doors on the **Slave** unit.
4. Remove the **rear** doors from **both** units by lifting them off their hinges.

Remove Components for Rear Access

Remove various access plates and tape drives from both libraries to allow easier access.

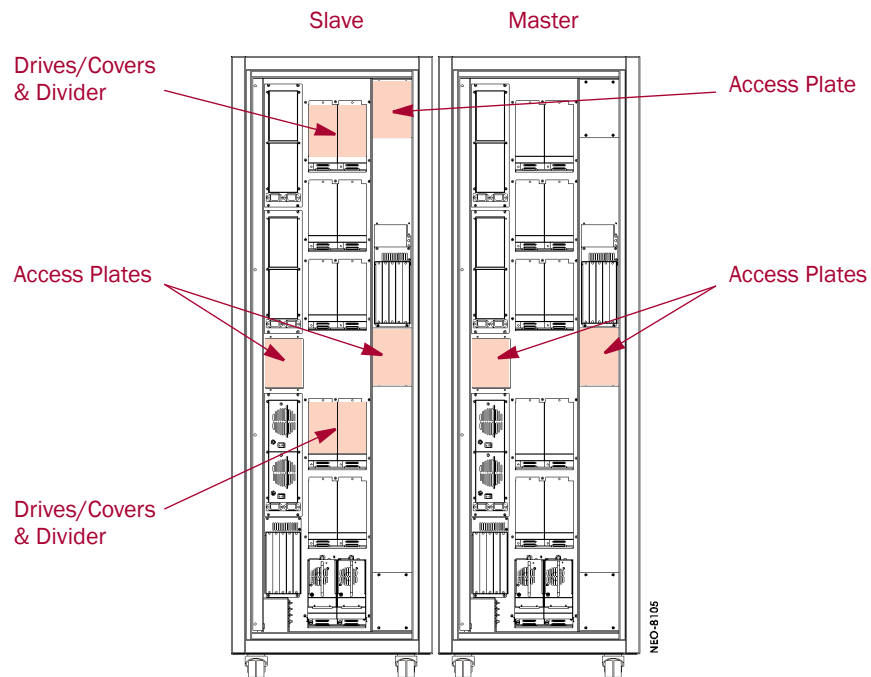


Figure 2-8: Access Plates and Drives That Need To Be Removed

1. From the rear of the **Master** unit, remove these items.
 - **left-center** access plate
 - **right-center** access plate
2. From the rear of the **Slave** unit, remove these items.
 - **left-center** access plate
 - **right-center** access plate
 - **right-upper** access plate
 - **Drives 5, 6, 11, and 12** (or their blank covers) and their center dividers.

This section prepares the two libraries for the installation of the HRA by installing the additional wiring and mounting brackets.

Verify Cable Channel Status

On earlier production units, the plastic cable channel at the right-rear of the Master unit was one piece. It must be modified to accommodate the HRA (see [Figure 3-1](#)).

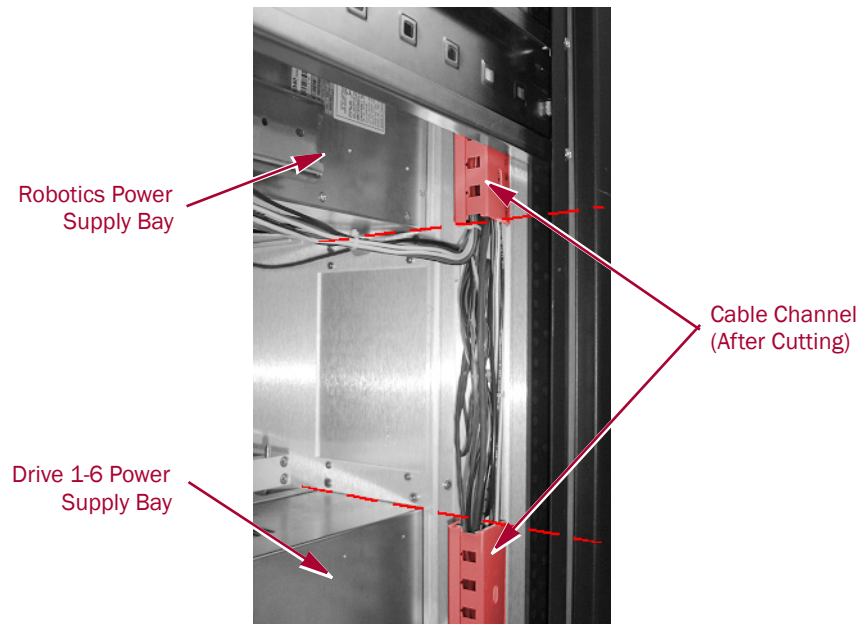


Figure 3-1: Cable Channel After Modification

1. On the Master library, inspect the **right-rear cable channel**.
 - If the channel is **one single piece**, continue with [Step 2](#).
 - Otherwise, skip to section titled **“Install the HRA Mounting Brackets.”**
2. Carefully remove the section of cable channel between these points.
 - Bottom of the Robotics Power Supply bay
 - Top of Power Supply bay for Drives 1–6.



CAUTION: Use care to avoid damaging the wires in the channel.

3. Add cable ties if needed to keep the wires from interfering with the HRA.

Install the HRA Mounting Brackets

The Mounting Bracket assemblies come partially assembled as two pieces for shipping purposes. They need to be assembled and then mounted in the rear of the libraries.

1. Use **four M4x8mm** screws from the Mounting Bracket kit to attach the upright bracket to the base assembly (see [Figure 3-2](#)).

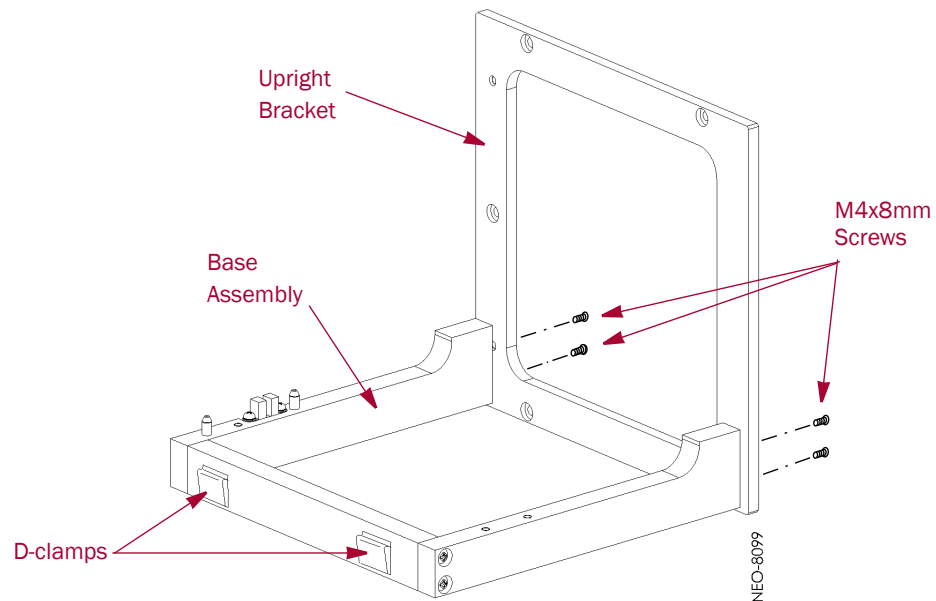


Figure 3-2: Mounting Bracket Assembly for HRA (D-clamps Attached)

2. Mount two 0.50" (1.27cm) **D-type cable clamps** with the **open side up** on the rear of a Mounting Bracket assembly.

NOTE: Be sure the clamps do not extend above the top edge of the assembly.

3. Repeat [Steps 1–2](#) for the other assembly.
4. Position a Mounting Bracket assembly against the **Master front bulkhead** with the assembly alignment pins in the bulkhead holes (see [Figure 3-3](#)).

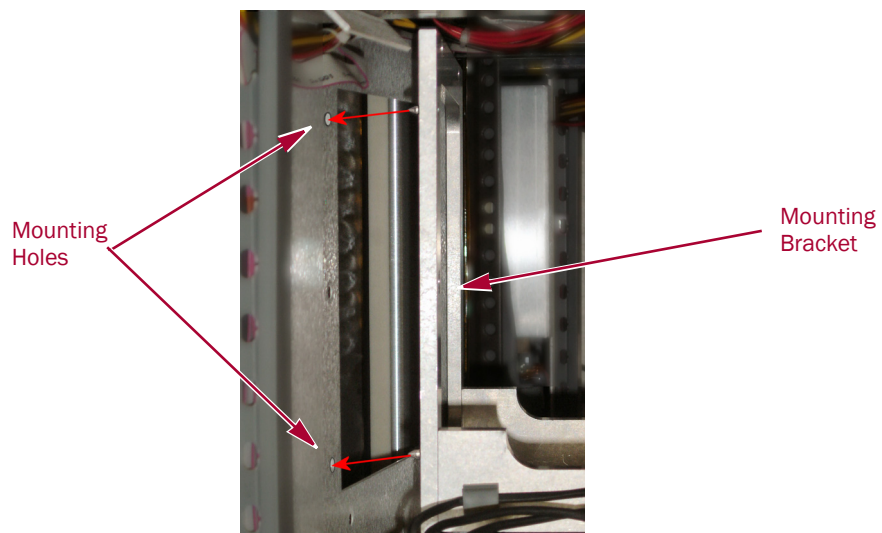


Figure 3-3: Positioning the Mounting Bracket Assembly

NOTE: Reroute/realign any wires that could interfere with the operation of the HRA.

5. Use **five M4x10mm** screws to attach the assembly to the bulkhead.

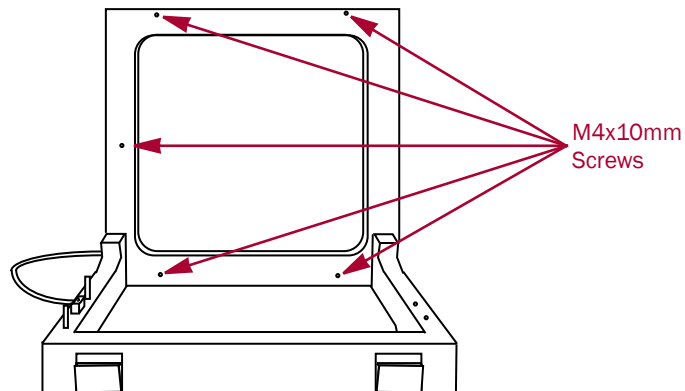


Figure 3-4: Location of Mounting Bracket Screw Holes

6. Run the Mounting Bracket assembly **sensor cable** to the Magazine Latch assembly. Route it in the small cable channel or behind the vertical angle support securing it in the cable clip.
7. Repeat [Steps 4–6](#) for the **Slave** unit.

Verify the Mail Slot PWA

For all units built prior to January 2006 (with a serial number before 1R601nnnnn), you need to replace the Mail Slot PWA with a newer PWA to support an additional connector for the HRA optical sensor. The Mail Slot PWA is mounted on the Magazine Latch assembly mounted on the library support rack on the right (see [Figure 3-5](#)).

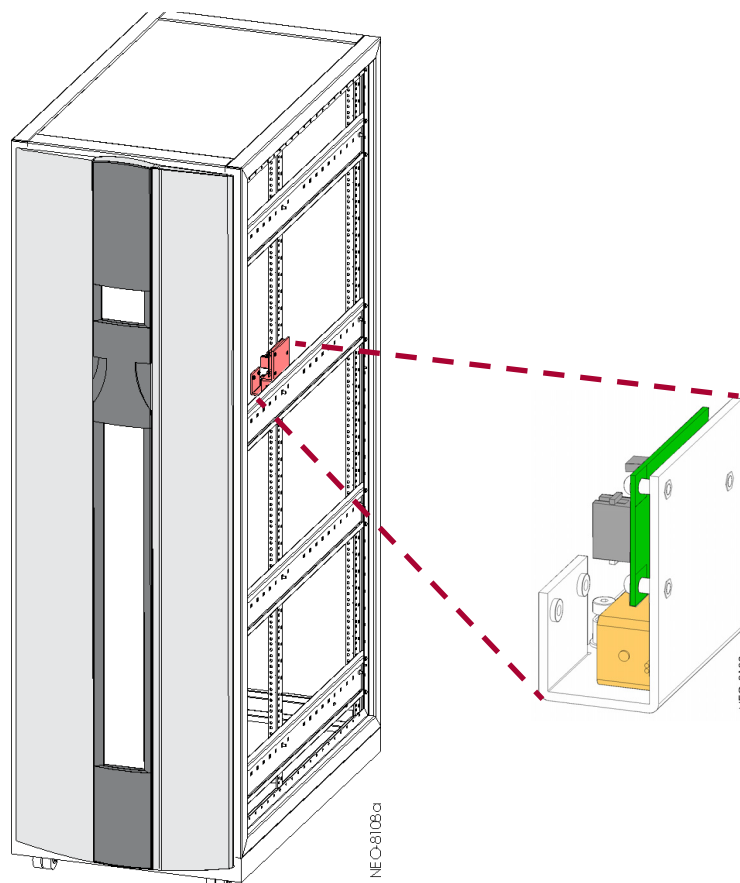


Figure 3-5: Magazine Latch Assembly Location



IMPORTANT: Be sure to follow electrostatic discharge (ESD) protocols when handling the card.

- On the Master unit, **examine** the Mail Slot PWA (see [Figure 3-6](#)) on the Magazine Latch assembly to determine if it needs to be replaced.
 - If the **J5 connector** is located under the J4 connector, it is a new board. Skip to [Step 9](#).
 - Otherwise, continue with “[Install the Master Signal Cable](#)” on page 5.

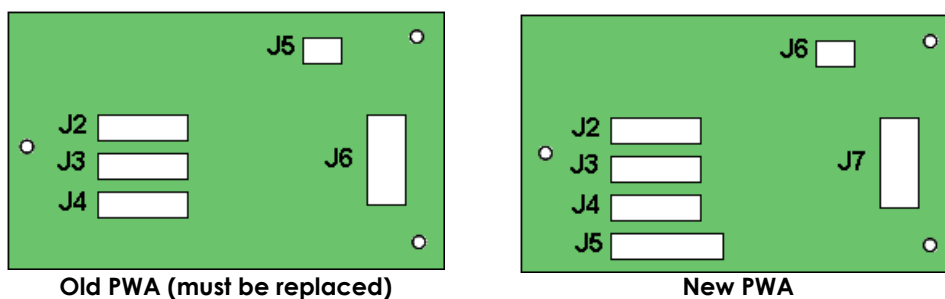


Figure 3-6: Old and New Mail Slot PWA

- The Magazine Latch assembly is mounted in a long slot. **Mark the exact position** so the assembly can be reinstalled accurately.
- From the Magazine Latch assembly, remove the two **mounting screws** (M3x6mm).

- Carefully **label and remove** each of the five wiring harnesses connected to the old PWA.

Table 3-1: Wiring Harness Labels

Wiring / Cable	Old PWA Location	Label
Door Optical Sensor	J2 socket	J2
Track Optical Sensor I	J3 socket	J3
Track Optical Sensor II	J4 socket	J4
HRA Mounting Plate Sensor	--	J5
Solenoid Latch Sensor	J5 socket	J6
Ribbon Cable	J6 socket	J7

- Remove the **three screws** (M3x6mm) that hold the Mail Slot PWA to the Magazine Latch assembly (see [Figure 3-7](#)).

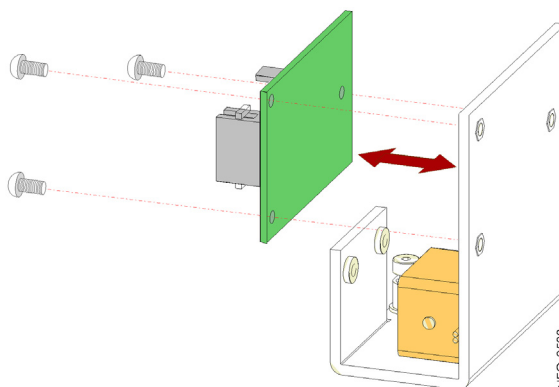


Figure 3-7: Mail Slot PWA Replacement

- Attach the **new PWA** to the Magazine Latch assembly with the retained screws.
- Connect all **six cables**, including J5 from the Mounting Bracket assembly, to the appropriate connections on the new PWA.
- Reinstall** the Magazine Latch assembly with the two retained screws, using the **reference mark** to align the assembly before tightening the screws.
- Repeat [Steps 1–8](#) for the **Slave** unit.

Install the Master Signal Cable

Install and route the HRA **Master Signal Cable** from the Primary Card Cage assembly.

- Locate the 48" long (122cm) **Master Signal Cable** (P/N 969446-101) in the HRA kit.
- At the Master module, remove the screws holding the Primary Card Cage assembly (see [Figure 3-8](#)).
 - Three **M3x10mm** screws on the fan assembly (do not remove the fan assembly)
 - Three **M3x8mm** screws on the card cage assembly

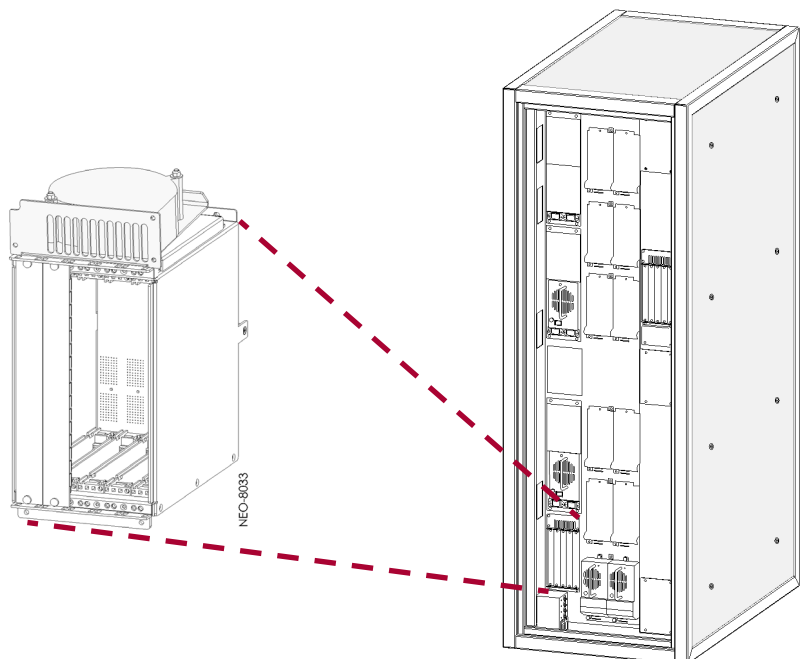


Figure 3-8: Location of Fan/Card Cage Assembly

3. Pull the fan/card cage out far enough to **access the connectors** located on the back of the cage.
4. Connect the HRA Master Signal Cable to **J8** (see [Figure 3-9](#)).

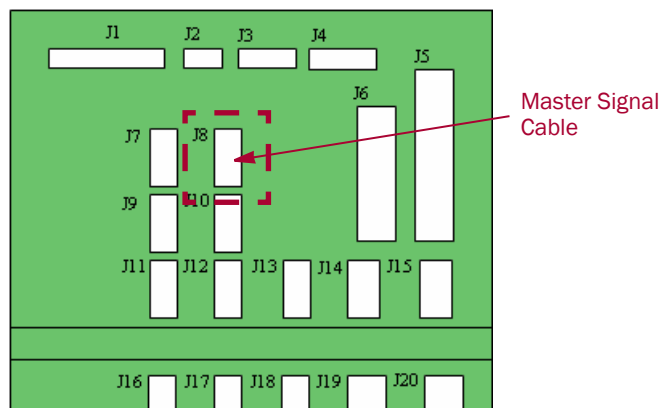


Figure 3-9: Master Signal Cable Connection

5. Push the fan/card cage back in place and **refasten** it with the retained screws.



CAUTION: Be sure to use the 10mm screws for the fan assembly. Using the shorter 8mm card cage screws may strip the threads and prevent proper assembly.

6. Mount two 0.25" (0.64cm) **D-type cable clamps** (included in the HRA kit) with the **open side up** to the inside of the back sheet metal just above the Drive 1–6 Power Supply.
7. **Route** the Master Signal Cable to the left side of the unit.
 - a. Route it up **beside the fan/card cage** to the back, exiting at the level of the Mounting Plate assembly.

- b. Route it through the two **D-type cable clamps** just installed on the back sheet metal to the left side of the Master library.
- c. Adjust the wiring harness so that the connector is **3" (8cm) past the outside edge** of the library.
- d. **Pull** any excess cable back to the card cage.
- e. **Label** the cable **J4** (see [Table 3-1 on page 3-5](#)) to ensure the proper connection later to the HRA PWA.

Install the Master Power Wiring Harness

Install and route the HRA **Master Power Wiring Harness** from the Robotics Power Supply bay.

1. Locate the 49" long (125cm) HRA **Master Power Wiring Harness** (P/N 607124-001) in the HRA kit.



CAUTION: For the HRA to function properly, the Power Wiring Harness must be attached to the Robotics Power Supply bay, located at the left-center of the rear of the library. Do NOT attach it to one of the Drive Power Supply bays.

2. At the Master unit, **unplug** the 2 short power cords from the Robotics Power Supply bay (middle left; see [Figure 3-10](#)).

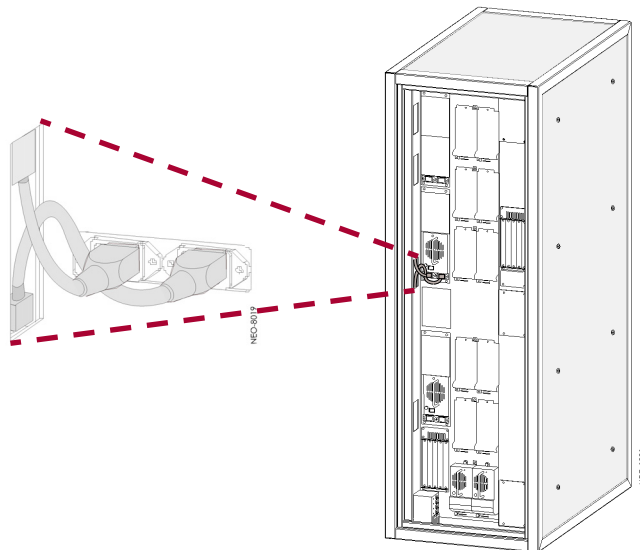


Figure 3-10: Location of Robotics Power Supply Bay Power Cords

3. **Remove** the four M4x6mm FH screws on the Robotics Power Supply bay (see [Figure 3-11](#)).

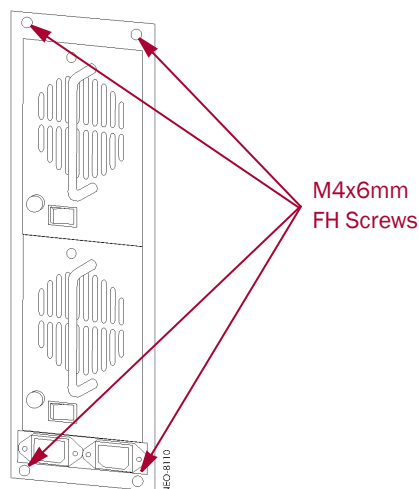


Figure 3-11: Robotics Power Supply Bay Screws

4. **Pull** the bay out far enough to **access the connectors** on the back of the bay. (It is not necessary to remove the Power Supply Modules.)
5. **Connect** the Master Power Wiring Harness to any one of the available connectors (CN9–CN15; see [Figure 3-12](#)).

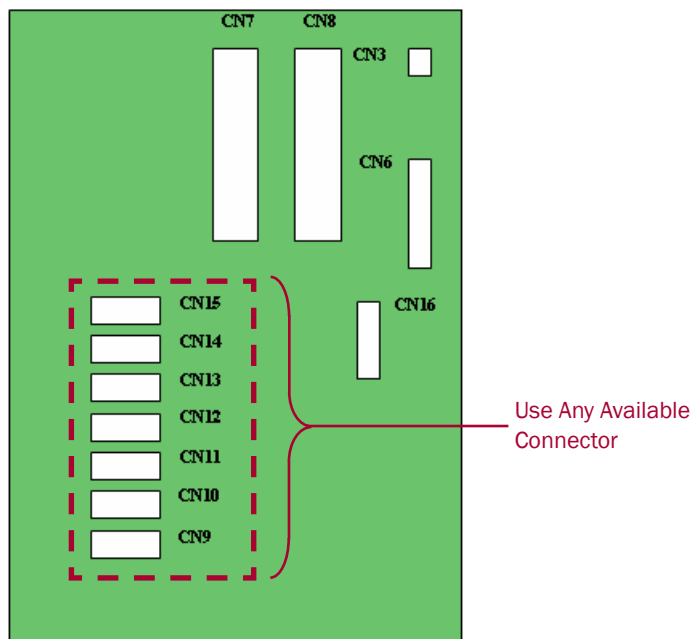


Figure 3-12: Power Supply Bay Assembly Connectors

6. **Push** the power supply bay back in place, **refasten** it with the retained screws, and **reattach** the power cords.
7. **Route** the Master Power Wiring Harness to the left side of the Master library.
 - a. Route it down **inside the cable channel**, exiting at the level of the Mounting Plate assembly.

- b. Route it through the two **D-type cable clamps** on the rear of the Mounting Bracket assembly to the left side of the Master library.
- c. Adjust the wiring harness so that the connector is **3" (8cm) past the outside edge** of the library.
- d. **Pull** any excess wiring back to the card cage.
- e. **Label** the wiring harness **J2** (see [Table 3-1 on page 3-5](#)) to ensure the proper connection later to the HRA PWA.

Once all the wiring is installed and positioned, you are ready to bolt the Master and Slave units together.

Install the Connector Bolts

Install the hex bolts on the Master unit. Use the third hole from the front and the third hole from the back on the two braces located at the first and third braces (see [Figure 4-1](#)).

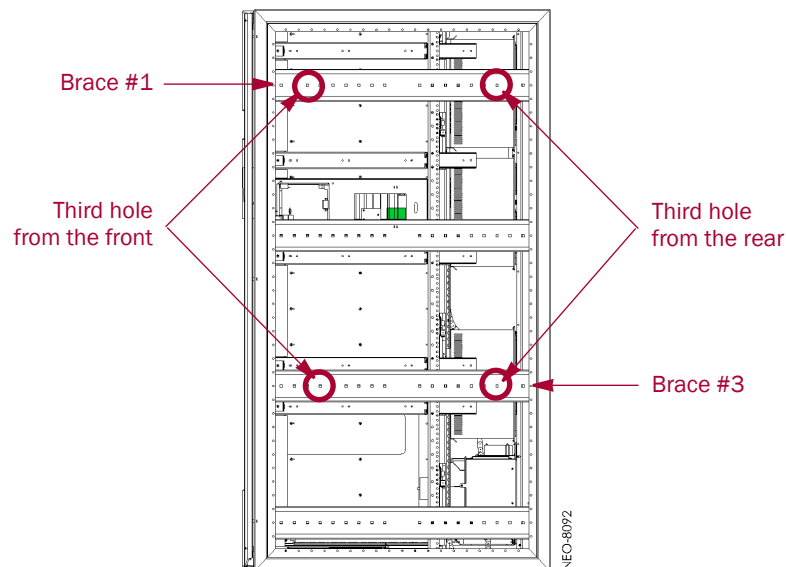


Figure 4-1: M8x100mm Bolt Locations on Master Unit Braces

1. From inside the library on the front right side, insert a **M8x100mm hex cap bolt** through the **third** hole from the front on both the first and third braces.
2. Loosen the **Drive Power Supply bays** for easier access.
 - a. At the back of the Master unit, **unplug** the 2 short power cords on both the Drive 1–6 (lower left) and Drive 7–12 (top left) Power Supply bays.
 - b. **Remove** the four M4x6mm FH screws from **both** of the Drive Power Supply bays.
 - c. **Pull** the bays out far enough to access the third hole from the back on the braces. (It is not necessary to remove the Power Supply Modules.)
3. Insert a **M8x100mm hex cap bolt** through the third hole from the back on both the first and third braces (see [Figure 4-1](#)).
4. **Push** the power supply bays back in place, **refasten** them with the retained screws, and **reattach** the power cords.

5. Loosely attach **two M8 coupling nuts** to each of the **four bolts**.

- a. Run the first coupling nut halfway onto a bolt.
- b. Run the second coupling nut close to the first nut.

NOTE: Be sure at least 0.5" (1.27cm) of the tip of the bolt extends beyond the nuts so it can be positioned through the hole on the Slave unit.

- c. **Push** the bolt back through the brace so only the coupling nuts are outside the edge of the library (see [Figure 4-2](#)).

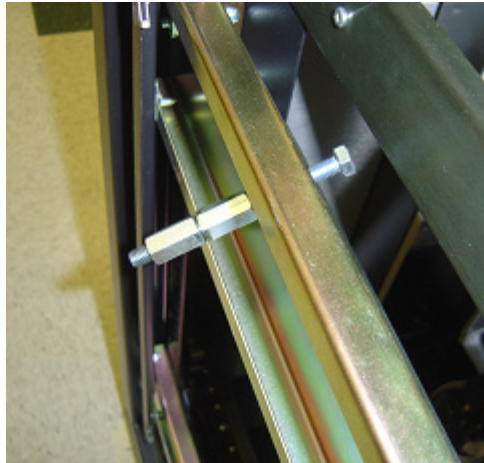


Figure 4-2: Bolt Pushed Back Through Brace

- d. Repeat [Steps a–c](#) for the remaining three bolts.

Position and Level the Master Unit

Move the Master unit into its final position and level it.

1. Position the Master unit in its operating position.
2. Run down all four leveler feet by hand until they contact the floor.
3. On one of the front leveler feet, make a reference mark.
4. Place a short length of tape along the front and side of the marked foot. Make reference marks on the tape relative to the center of the foot (see [Figure 4-3](#)).



Figure 4-3: Marking Reference Points for a Front Leveler

NOTE: These marks enable you to move the library back in position if it moves.

5. Repeat [Step 3](#) for one of the rear leveler feet.
6. Using a wrench, **turn** each foot 1/6th increment, one after the other, until you have turned each foot one full turn.

NOTE: Be sure the library has been raised high enough so none of the casters touch the floor.

7. Place a 6" to 10" (15–25cm) level, front to rear, on the middle-right drawer slide housing.

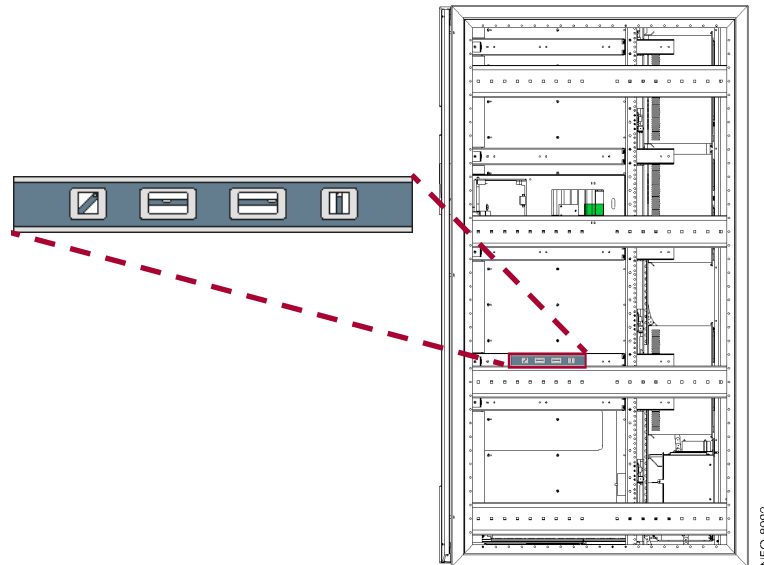


Figure 4-4: Placement of Small Level on Slide Housing

8. Note the position of the bubble. Raise both of the front feet or both of the rear feet the same amount to achieve a level front-to-rear reading.
9. Place a 36" (90cm) level across the two horizontal arms of the Mounting Bracket assembly attached earlier. Position the level so it can be viewed through the left or the right back access opening.
10. Note the position of the bubble. Raise both of the left feet or both of the right feet the same amount to achieve a level side-to-side reading.
11. Recheck the level from front-to-rear and from side-to-side. Adjust as needed to level the library.

Position and Level the Slave Unit

Move the Slave unit into its final position next to the Master unit and level it.

1. Position the Slave unit next to the Master unit leaving about 1/4" (0.64cm) between them. Be sure the front and rear of the frames line up with each other.
2. Then, using identical points on the Master and Slave Mounting Bracket assemblies, adjust the Slave unit so that the distance between it and the Master unit is exactly 24.3" (24-5/16" or 61.72cm).

- Repeat [Steps 3–11](#) of “[Position and Level the Master Unit](#)” on [page 4-2](#) to level the Slave unit. Be sure to maintain the 24.3" (61.72cm) spacing between the Mounting Bracket assemblies.

Confirm Mounting Bracket Assembly Alignment

Confirm Mounting Bracket assemblies are **level and parallel** with each other.

- Using a straight edge, check that the Master and Slave Mounting Bracket assemblies are **aligned in the horizontal plane** within 1/64" (0.015" or 0.038cm). Adjust either unit as needed to align them.
- Using the straight edge, check that the Master and Slave Mounting Bracket assemblies are **aligned vertically**, both front and rear, within 1/64" (0.015" or 0.038cm). Adjust either unit as needed to align them.

Tighten Connecting Hardware

- Working inside the libraries from the front, tighten the **front connecting hardware** (see [Figure 4-5](#)).

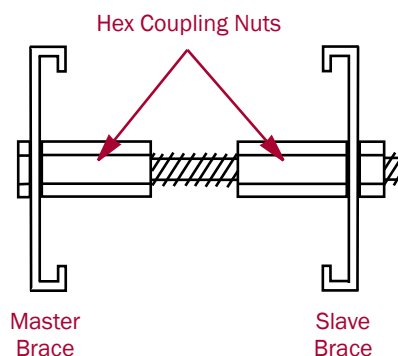


Figure 4-5: Hex Bolt and Nuts After Tightening

- On the Master side, push the bolt back up **against the top brace** so that the end also passes through the respective third hole on the Slave brace.
- Tighten the **first hex coupling nut** against the other side of the Master brace.
- Run the **second hex coupling nut** firmly up against the brace on the Slave side.
- From inside the Slave, put a **M8 hex nut** on the end of the bolt and tighten it to lock the Hex Coupling Nut against the Slave brace.



CAUTION: Do not let the tightening of the nuts push or pull the libraries. Recheck library levels if necessary.

- Repeat [Steps a–d](#) for the lower bolt.
- Working through the drive and access openings at the rear of the libraries, repeat [Steps a–d](#) to tighten the **rear connecting hardware**, both top and bottom.

You are now ready to install the HRA into the connected library system.

Attach the HRA

Attach the HRA to the Mounting Bracket assemblies.

1. Feed the HRA through the libraries above the Mounting Bracket assemblies.



CAUTION: Be careful not to damage the sensors mounted on the brackets.

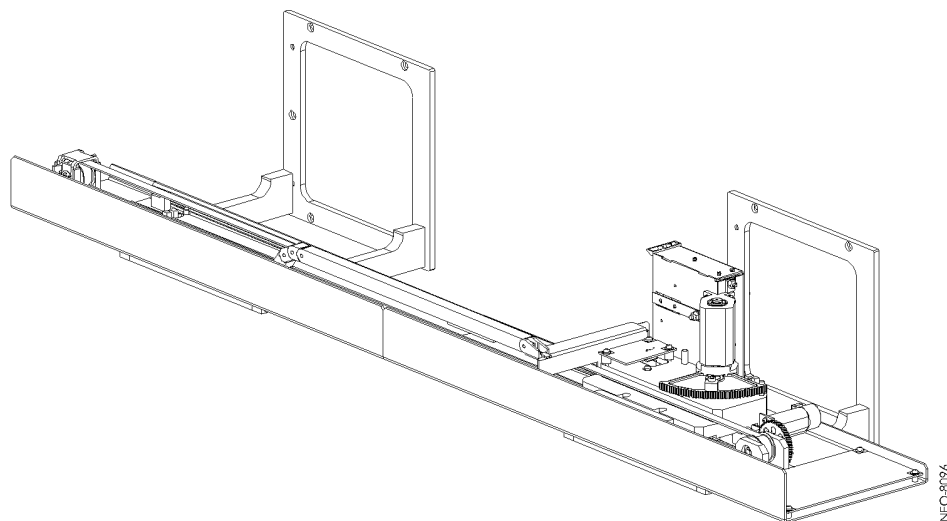


Figure 5-1: HRA Positioned Above the Mounting Bracket Assemblies

2. Guide the HRA onto the alignment pins on the Mounting Bracket assemblies.

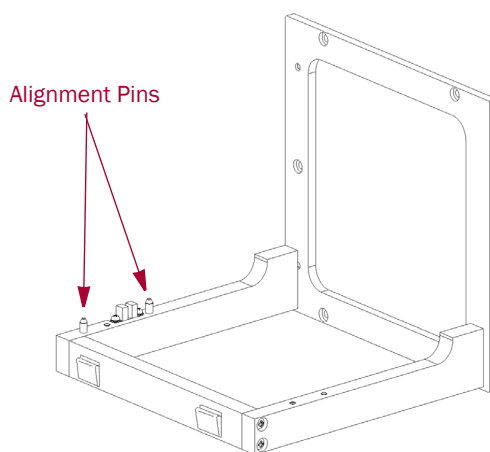


Figure 5-2: Mounting Bracket Alignment Pins

3. Loosely secure the HRA with one M4x10mm PH screw to each Mounting Bracket assembly.

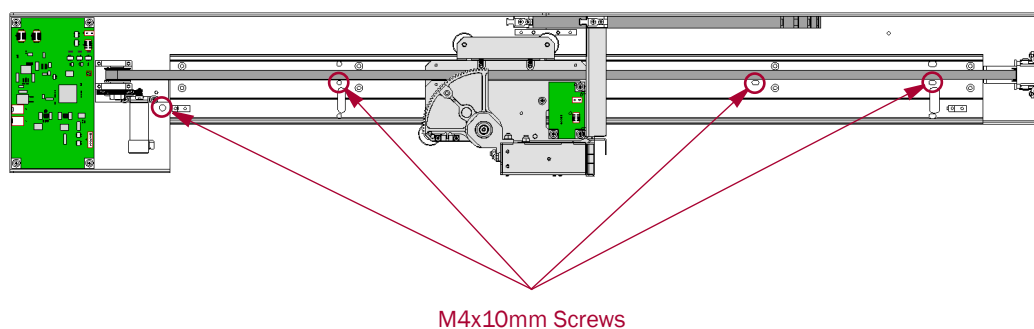


Figure 5-3: Screw Locations to Attach the HRA to the Brackets

4. Using the drive belt, operate the shuttle by hand the full length of the HRA to ensure that there are no obstructions that interfere with its travel.
5. With the shuttle positioned in the middle of the HRA, **tighten** the installed screws and **screw the remaining two screws** into the brackets.
6. Connect the cables and wiring to the HRA.

Cable/Wiring	Part Number	Connector
Slave Power Wiring Harness	607124-002	J1
Master Power Wiring Harness	607124-001	J2
Slave Signal Cable	969446-102	J3
Master Signal Cable	969446-101	J4



IMPORTANT: Be sure to follow electrostatic discharge (ESD) protocols when attaching the cables to the card.

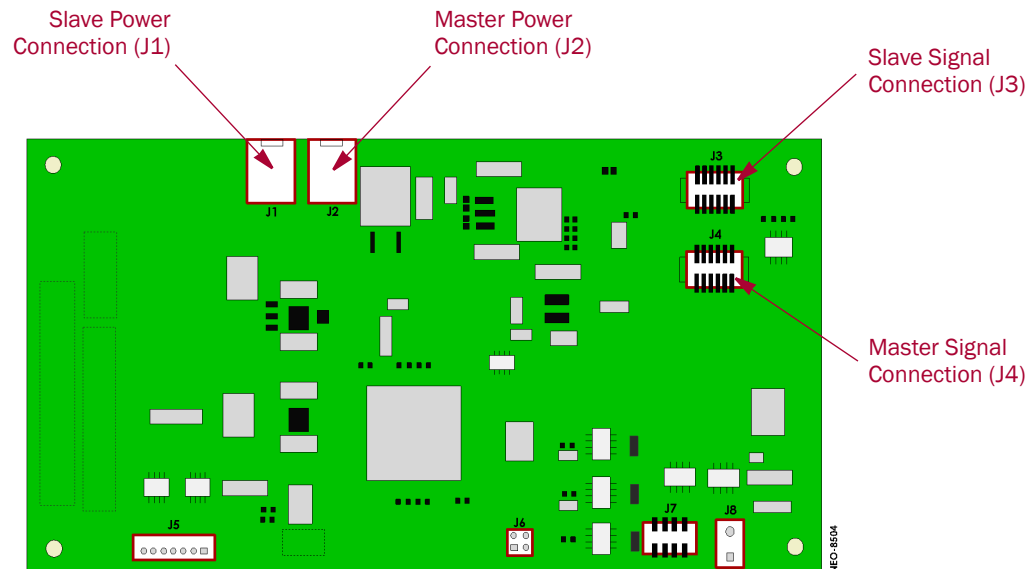


Figure 5-4: HRA PWA Connectors

7. Use extra clamps to secure any excess wiring or cables against the back sheet metal.

Install the VIA Router Card

Install the VIA 8-port Router card in the Master unit to allow control of the Slave units.

1. Insert the VIA card into the **Master** Primary Card Cage.

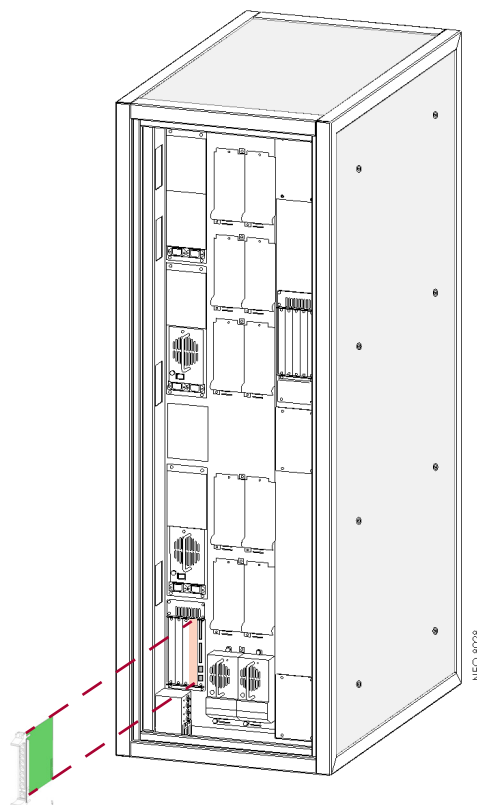


Figure 5-5: Inserting the VIA Router Card into the Master Library

2. Connect one of the RJ-45 patch cables (P/N 973174-105) from the ethernet port on the **Master** Library Controller to **Port 1** (see [Figure 5-6](#)) on the VIA card.

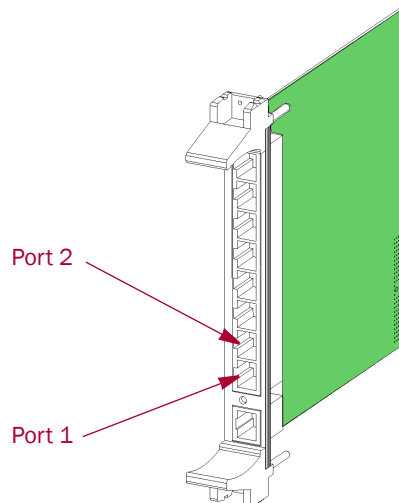



Figure 5-6: VIA 8-port Router Card

3. Connect the other RJ-45 patch cable from the ethernet port on the **Slave** Library Controller to **Port 2** (see [Figure 5-6](#)) on the VIA card.

Prepare the Library System for Use

Replace and reattach all removed or loosened library functional components.

 **WARNING:** Exercise care when reinserting the media drawers into the library units. Fully-loaded drawers weigh approximately 58 pounds (26.3 kg).

1. Reinstall any removed brackets, drives, and drive covers using the retained screws.
2. Reinstall media drawers into their proper libraries and locations.
3. Reinstall the Mail Slot magazines back into the appropriate libraries.

Configure the System

You are now ready to power on the library system and check the functionality of the HRA.



WARNING: Exercise caution when working around a powered NEO 8000e library system when panels and access covers are removed. Contact with internal components may cause physical harm and severe damage to unit's circuitry.

Power Up the Library System

1. **Reconnect** all the power cords.
2. Set each of the library circuit breakers to the **ON** (“|”) position.
3. **Power up** both units at the front panel.
4. Allow **POST** to complete on both units.

Configure the Library System

Use the front GUI panels to designate each unit's function and test the configuration.

1. On the Slave unit, select **Menu > Edit Options Library > ▼ > ▼ > Module Configuration > Slave** (see [Figure 6-1](#)).

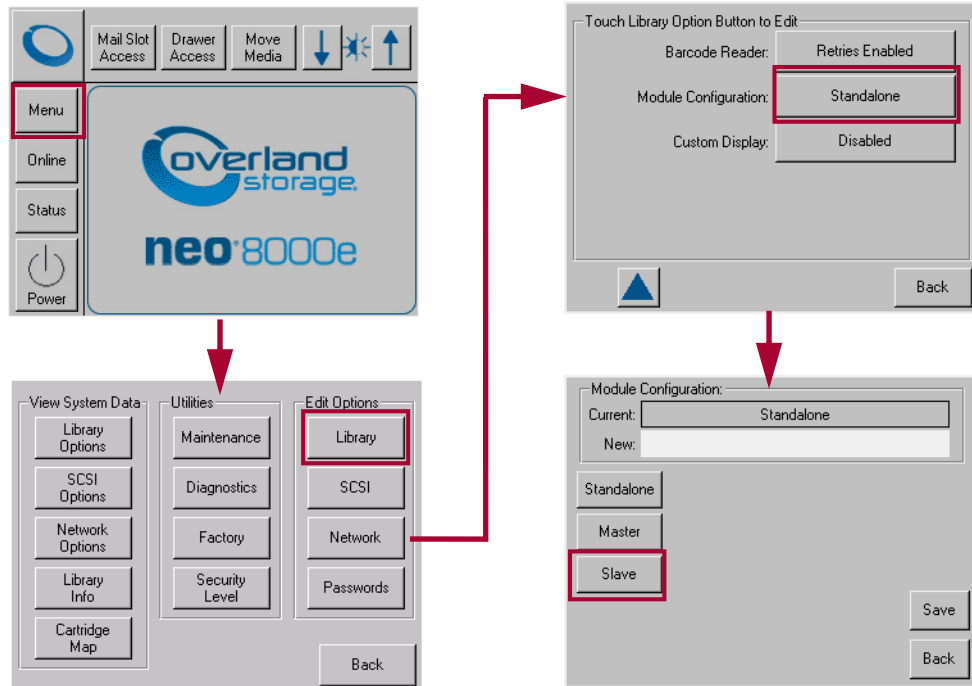


Figure 6-1: Configure Slave Unit

2. Allow the Slave unit to reboot.
3. On the Master unit, select: **Menu > Edit Options Library > ▼ > ▼ > Module Configuration > Master** (see [Figure 6-2](#)).

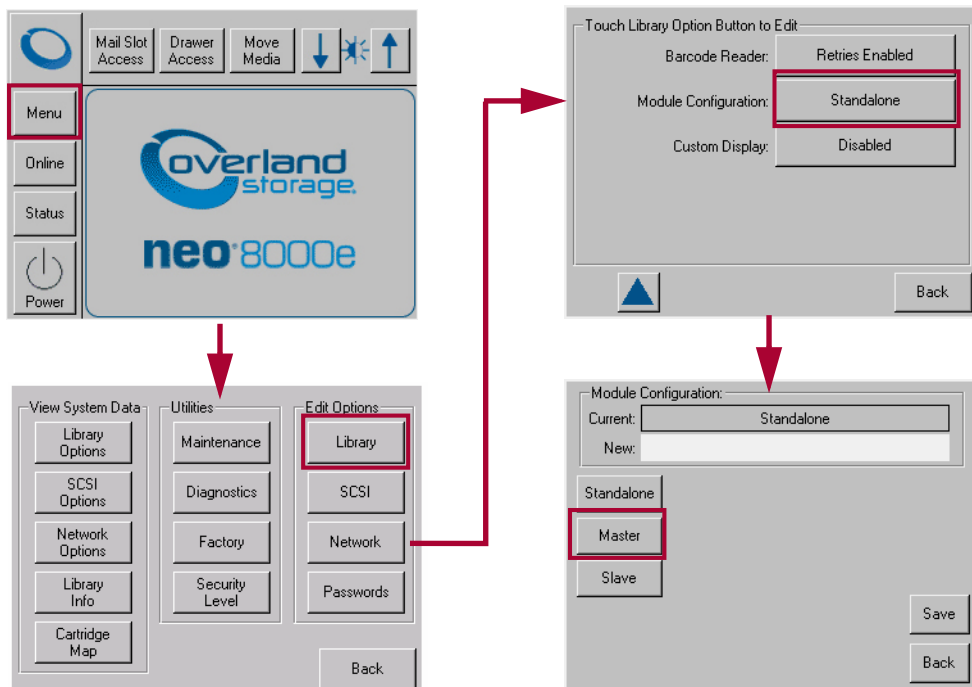



Figure 6-2: Configure Master Unit

During the Master unit reboot, the HRA will initialize by moving to the end of the channel and back. As the Slave unit is detected through the mounting plate sensor, the Slave number 0 will be assigned on its display.

- Verify that 5 or more cartridges are in the Master's enabled drawers or Mail Slot.

 **IMPORTANT:** For the HRA to function correctly, all six (6) drawers of the Master unit must be enabled before enabling any drawers in the Slave unit.

- Select **Menu > Diagnostics > Cartridge Cycle > Start** (see [Figure 6-3](#)).

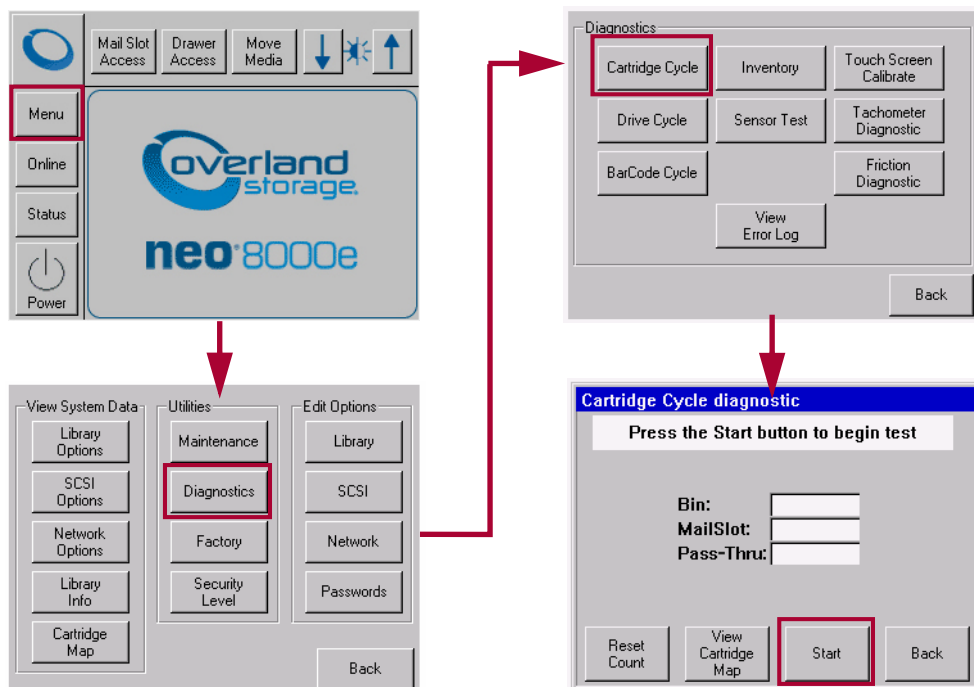


Figure 6-3: Starting the Cartridge Cycle Test

NOTE: The GUI refers to the HRA as “Pass-Thru” on the diagnostic status screen.

- Allow the Cartridge Cycle test to run for 30 minutes or 20-25 HRA iterations.

Reinstall Library Components

Complete the installation by reinstalling previously removed panels and doors.

- Reinstall all the **doors** using the retained pins.
Be sure to put the correct number of nylon washers on the appropriate pins. Refer to [Chapter 2, “Remove Library Doors.”](#)
- Reinstall the **back panel**.
- Reinstall the **left-side Master** panel using the retained screws.
- Reinstall the **right-side Slave** panel using the retained screws.

NOTE: Store the two unused panels and their screws in a protected place.

This appendix provides some solutions to possible problems that might be encountered using a NEO 8000e library system with an HRA installed. If necessary, contact Overland Storage Technical Support (see the [“Preface”](#)).

Robotics Hangs

While moving cartridges between library units, the library robotics hang.

Possible Cause	Suggested Resolution
The library system is not level.	Re-level the entire library system both front-to-back and side-to-side. Refer to Chapter 4, “Connect the Libraries” for details.
Defective robotics.	Contact Overland Storage Technical Support to order a new part.

Lost Contact with Slave Unit

During system operations, the Master unit loses contact with the Slave unit. This can result in tape cartridges being “orphaned” in the Slave unit.

Possible Cause	Suggested Resolution
Firmware not updated to version 4.05 or higher.	Download and update the firmware.

Library Unit Fails to Get Cartridge from HRA

Either the Master or Slave unit’s shuttle fails to take the tape cartridge from the HRA shuttle.

Possible Cause	Suggested Resolution
The HRA is not properly fastened to the Mounting Brackets causing it to be tilted.	<ul style="list-style-type: none"> • Verify that the screws securing the Mounting Brackets to the libraries are properly tightened. Also verify that the screws securing the HRA to the Mounting Brackets are tight. • Verify that the library system is level.

Slave Unit Not Recognized

During POST, the Master unit fails to recognize the Slave unit.

Possible Cause	Suggested Resolution
The HRA power cables are connected to the Drives 1-6 Power Supply.	Move the HRA power cables to the Robotics Power Supply in the middle of the units.



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