



# Scalar i500 Library

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## Repackaging Instructions

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### Preparing to Repackage a Library or Module

Moving a Scalar i500 library can stress the library components. To ensure safe and proper transport of the library, and to prevent voiding the warranty, follow the steps provided in this document carefully.

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**Note:** This procedure, [Preparing to Repackage a Library or Module](#), must be performed by an authorized library administrator. The procedure [Repackaging the Library for Moving or Shipping](#) does not require an authorized library administrator.

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**Note:** 23U library shipping assemblies are comprised of a 9U shipping assembly and a 14U shipping assembly. These two palletized assemblies will be strapped to a larger 23U pallet. If you are repackaging a 23U library, follow all steps to repackage 9U modules, and 14U and 23U libraries.

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## Packing Materials

Verify that you have the appropriate packing materials for your library.

Size	Item	Part Number	Quantity	Contains
5U	5U Repackaging Ship Pack	3-06673-01	1	<ul style="list-style-type: none"> <li>• Outer packaging of library</li> <li>• Polypropylene strapping</li> <li>• Poly bag</li> <li>• 2 x 36-inch Edge protectors</li> <li>• 2 x Shipping disclaimer labels</li> <li>• 6 x 21-inch Edge protectors</li> <li>• 1 x Packing list</li> </ul>
	Rack Mount Kit Ship Pack	3-06677-01	1	<ul style="list-style-type: none"> <li>• Outer roll-up packaging (box)</li> <li>• 2 x Long, narrow foam blocks</li> <li>• 2 x Short, wide foam blocks</li> </ul>
	Self-sealing Bubble Bag	1-02592-01	2	<ul style="list-style-type: none"> <li>• 1 x Self-sealing bubble bag (for rack mount kit hardware)</li> </ul>
	Robot Restraint Kit	3-06680-01	1	Model 1 Robot Restraint Assembly: <ul style="list-style-type: none"> <li>• Robot shipping restraint support</li> <li>• Robot shipping restraint foam</li> <li>• Velcro shipping restraint</li> <li>• Upper robot restraint</li> </ul> Model 2 Robot Restraint Assembly
	Magazine Restraint	3-03568-01	1	<ul style="list-style-type: none"> <li>• Magazine restraint</li> </ul>
	Cardboard Sleeve	3-04425-01	1	<ul style="list-style-type: none"> <li>• Cardboard sleeve for shipping library</li> </ul>
	Strapping Kit	3-06682-01	1	<ul style="list-style-type: none"> <li>• Polypropylene strapping</li> <li>• 3 x Strapping buckles</li> <li>• Stretch wrap</li> </ul>
	Self-sealing Bubble Bag	1-02592-01	1	<ul style="list-style-type: none"> <li>• Self-sealing bubble bag (for terminators and short cables)</li> </ul>

Size	Item	Part Number	Quantity	Contains
9U	9U Repackaging Ship Pack	3-06674-01	1	<ul style="list-style-type: none"> <li>• Outer packaging of module</li> <li>• Polypropylene strapping</li> <li>• Poly bag</li> <li>• 2 x 36-inch Edge protectors</li> <li>• 2 x 21-inch Edge protectors</li> <li>• 4 x 30-inch Edge protectors</li> <li>• 2 x Shipping disclaimer labels</li> <li>• 1 x Packing list</li> </ul>
	Magazine Restraint	3-03568-01	2	<ul style="list-style-type: none"> <li>• Magazine restraint</li> </ul>
	Cardboard Sleeve	3-04426-01	1	<ul style="list-style-type: none"> <li>• Cardboard sleeve for shipping library</li> </ul>
	Strapping Kit	3-06682-01	1	<ul style="list-style-type: none"> <li>• Polypropylene strapping</li> <li>• 3 x Strapping buckles</li> <li>• Stretch wrap</li> </ul>
14U	14U Repackaging Ship Pack	3-06675-01	1	<ul style="list-style-type: none"> <li>• Outer packaging of library</li> <li>• Polypropylene strapping</li> <li>• Poly bag</li> <li>• 6 x 36-inch Edge protectors</li> <li>• 2 x 21-inch Edge protectors</li> <li>• 2 x Shipping disclaimer labels</li> <li>• 1 x Packing list</li> </ul>
	Rack Mount Kit Ship Pack	3-06677-01	1	<ul style="list-style-type: none"> <li>• Outer roll-up packaging (box)</li> <li>• 2 x Long, narrow foam blocks</li> <li>• 2 x Short, wide foam blocks</li> </ul>
	Self-sealing Bubble Bag	1-02592-01	2	<ul style="list-style-type: none"> <li>• 1 x Self-sealing bubble bag (for rack mount kit hardware)</li> </ul>
	Robot Restraint Kit	3-06680-01	1	<p>Model 1 Robot Restraint Assembly:</p> <ul style="list-style-type: none"> <li>• Robot shipping restraint support</li> <li>• Robot shipping restraint foam</li> <li>• Velcro shipping restraint</li> <li>• Upper robot restraint</li> </ul> <p>Model 2 Robot Restraint Assembly</p>
	Magazine Restraint	3-03568-01	3	<ul style="list-style-type: none"> <li>• Magazine restraint</li> </ul>
	Cardboard Sleeve	3-04427-01	1	<ul style="list-style-type: none"> <li>• Cardboard sleeve for shipping library</li> </ul>
	Strapping Kit	3-06682-01	1	<ul style="list-style-type: none"> <li>• Polypropylene strapping</li> <li>• 3 x Strapping buckles</li> <li>• Stretch wrap</li> </ul>
	Self-sealing Bubble Bag	1-02592-01	1	<ul style="list-style-type: none"> <li>• Self-sealing bubble bag (for terminators and short cables)</li> </ul>

Size	Item	Part Number	Quantity	Contains
23U	14U Repackaging Kit	9-03137-01	1	<ul style="list-style-type: none"><li>• Contains all items for <a href="#">14U</a> on page 3 (above)</li></ul>
	9U Repackaging Kit	9-03138-01	1	<ul style="list-style-type: none"><li>• Contains all items for <a href="#">9U</a> on page 3</li></ul>
	23U Pallet	3-04060-01	1	<ul style="list-style-type: none"><li>• Large pallet for library</li></ul>
	23U Strapping Kit	3-06683-01	1	<ul style="list-style-type: none"><li>• Polypropylene strapping</li><li>• 8 x Strapping buckles</li></ul>

## Instructions

**WARNING:** The steps in this procedure must be performed by an authorized library administrator. These steps must be performed before the library is repackaged for shipping or moving.

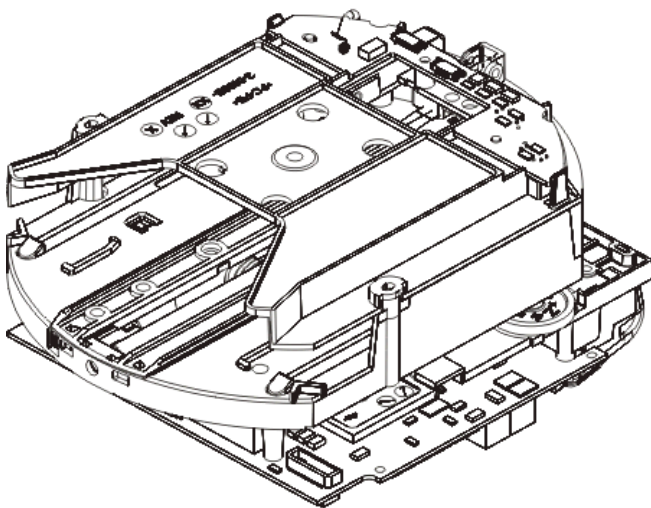
Before you repackage your library for relocation, an authorized library administrator must follow these steps:

**WARNING:** When moving the library, you must install the appropriate robot restraint assembly to protect the robot against damage.

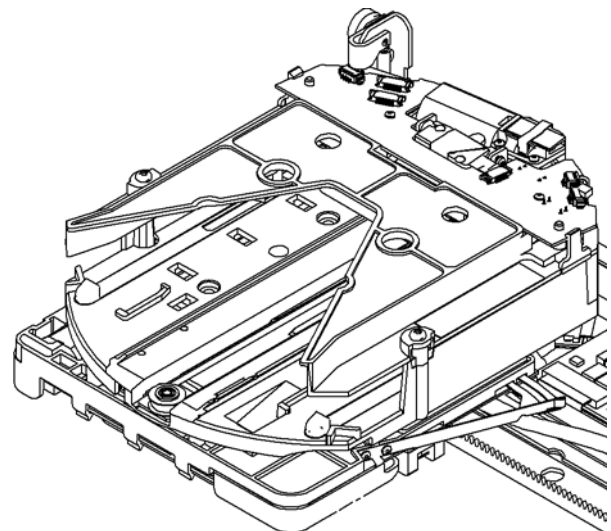
**Note:** When shipping the library, use the shipping carton, packaging materials, and restraints provided. This will help protect your library against damage.

1 Determine the model of the robot in your library, which will determine the manner in which you park and restrain the robot. Two types of robot models are used in i500 libraries - Model 1 and Model 2. Use these guidelines to identify the robot in your library, and follow the appropriate instructions to restrain the robot.

- Model 2 robot label: Model 2 robots have an "M2" label located on the front of the Y-carriage assembly (Y-climber), visible from outside the library.
- Physical appearance: The Model 2 robot has a large PCB (called the robot controller board) on the Y-carriage assembly (Y-climber). The Model 2 robot also appears different from the Model 1 robot, with a larger cutout at the top of the robot:



Model 1 robot



Model 2 robot

2 Ensure that backup jobs to the library have all been stopped and all the tape drives are unloaded.

- 3 Save the library configuration. The Save/Restore Configuration operation is available only on the Web client. To open the appropriate screen from the Web client, select **Tools > Save/Restore Configuration**.
- 4 Remove all tape cartridges from the library. Follow the storage and shipping procedures provided by the tape cartridge manufacturer.
- 5 Shut down the library. The Shutdown command shuts down the library's operating system and firmware. When performing a shutdown, the library finishes the current command and lowers the robot to the floor of the library.

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**Caution:** Always perform a shutdown before powering off the library or completely removing power from the library.

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Before performing a shutdown, make sure the connected host applications are not sending commands to the library.

- From the Web client, select **Operations > System Shutdown**.
  - From the operator panel, select **Operations > Shutdown**.
- 6 Turn off library power by pressing the white power button on the front panel.
  - 7 Turn off the power to each power supply on the back of the library.
  - 8 Disconnect all power cords, network data cables, module terminators, and module-to-module cables from the module(s). Place the module terminators and module-to-module cables in the Accessory Kit self-sealing bubble bag provided, and place the self-sealing bubble bag and any remaining cables in the Accessory Kit box provided.

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**Note:** If you are repackaging the library to move it to a new location, ensure the proper network data cables are available at the new location.

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# Repackaging the Library for Moving or Shipping

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## Required Tools

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- Phillips #2 screwdriver, for removing and replacing the top cover plate
- T10 TORX screwdriver, for removing and replacing the bottom cover plate

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## Instructions

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**Note:** Ensure all of the steps in the procedure [Preparing to Repackage a Library or Module](#) on page 1 were performed by an authorized library administrator before continuing.

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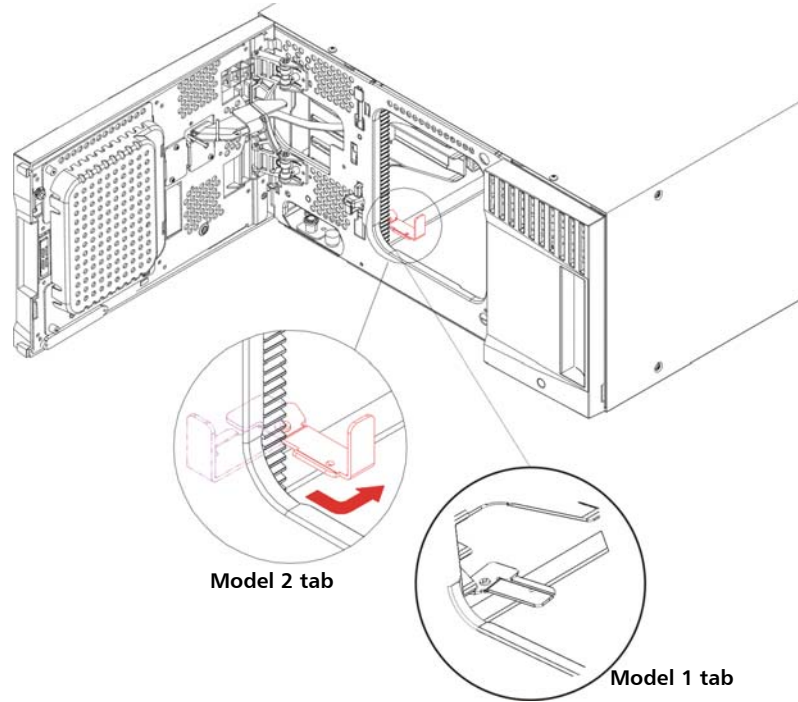
- 1 Park the robot assembly in the control module. If the library consists of a single control module, skip this step.
  - a Open the I/E station and access doors of each module.
  - b Using your hands, gently lift the robot assembly into the 5U Library Control Module. The robot assembly should glide slowly and with some resistance.

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**Caution:** Support the robot assembly by holding onto the broad metal X-axis base plate. Lifting the robot by the thin metal rod will bend the rod. Lifting the robot by the black plastic picker body can damage the robot.

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- c After raising the robot assembly to the approximate middle of the 5U Library Control Module, hold it in place with one hand and, using your other hand, move the parking tab to the "parked" position (Model 1 parking tab: swivel toward you; Model 2 parking tab: counter-clockwise direction). The metal parking tab is located at the bottom of column 1.
- d Gently release the robot assembly to rest on the parking tab.



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**WARNING:** Without tape drives, tape cartridges, or power supplies, a control module weighs approximately 60 lbs (27.2 kg). An expansion module, without tape drives, tape cartridges, or power supplies, exceeds 65 lbs (29.5 kg).

To avoid serious injury, at least two people are required to safely lift the modules.

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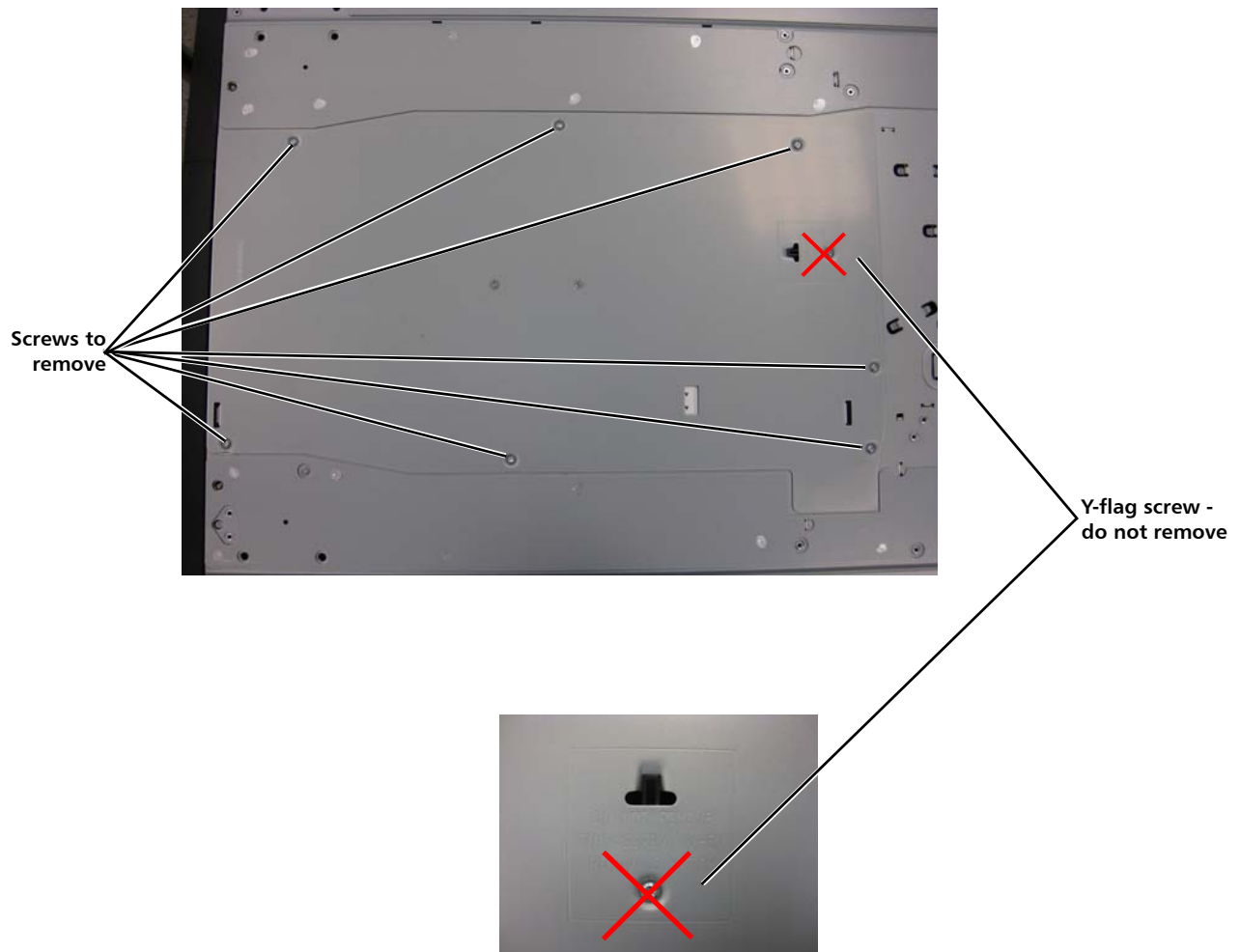
- 2 If the library is 9U or larger, remove the tape drives from the library to decrease the weight when lifting the modules. You will not be able to remove the library from the rack without removing the tape drives.
- 3 If the library is rack-mounted, remove one module at a time from the rack:
  - a Remove the cover plates, if appropriate. When removing the cover plate, ensure that you do not remove the y-home flag screw, as shown

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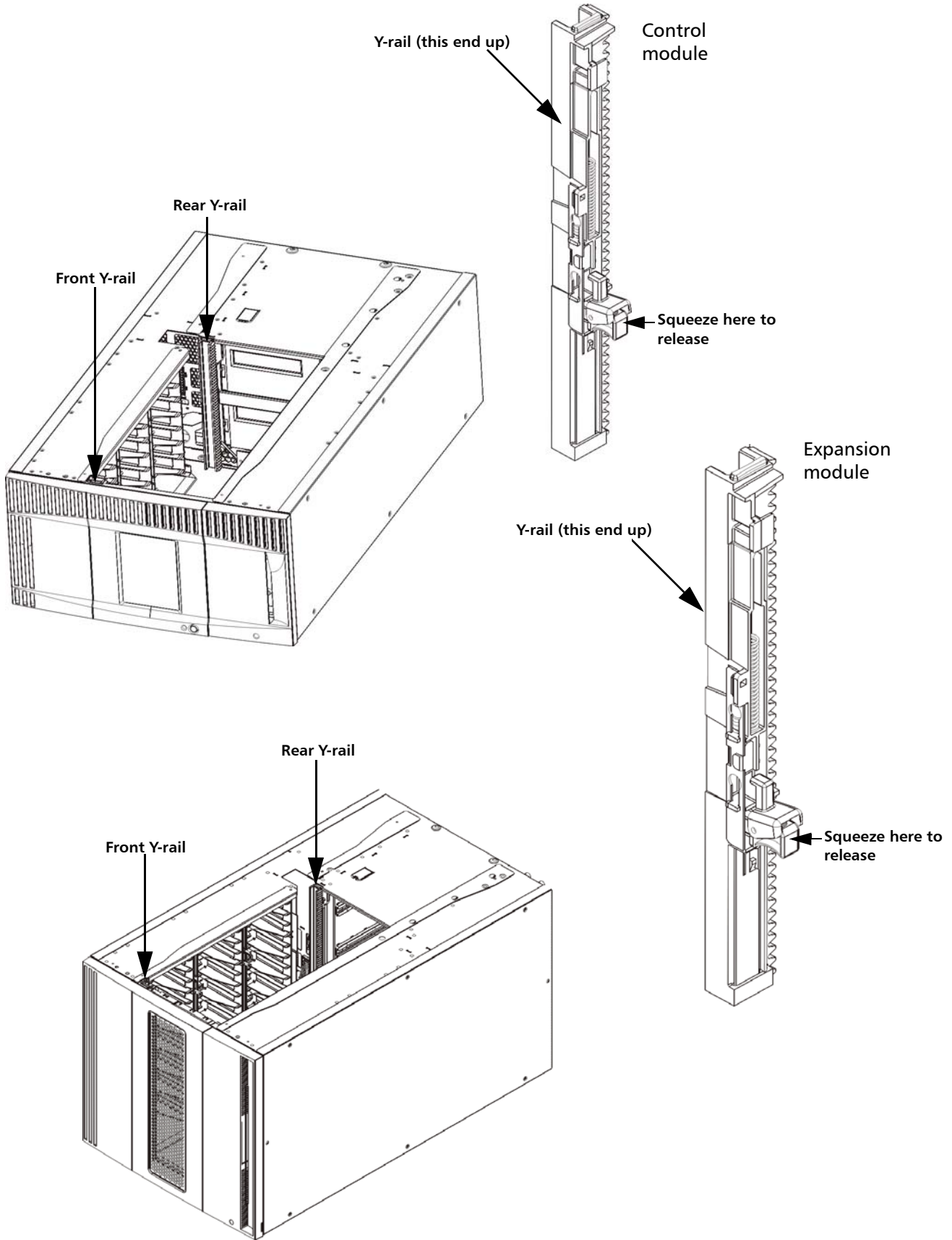
**Caution:** Before removing the control module's bottom cover plate, the robot assembly must be parked as described in [Step 1](#) on page 7.

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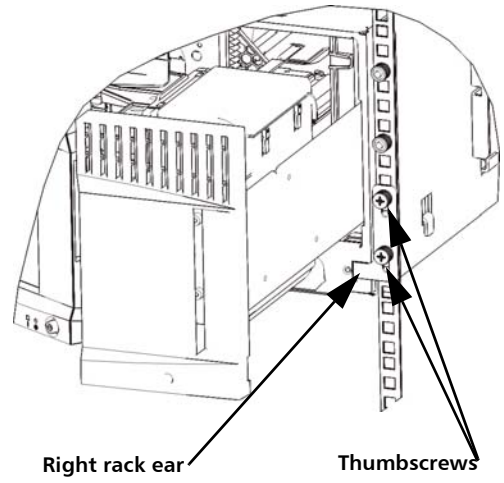
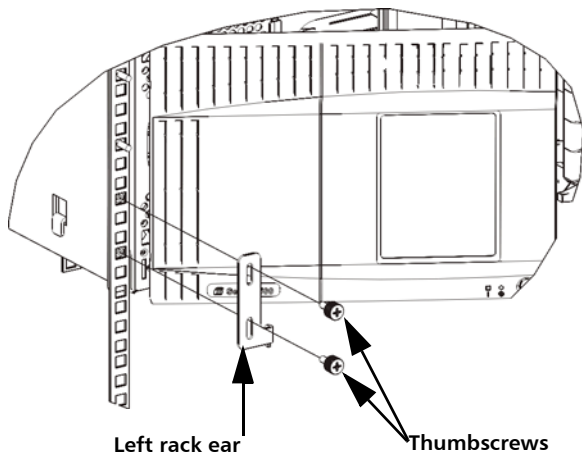




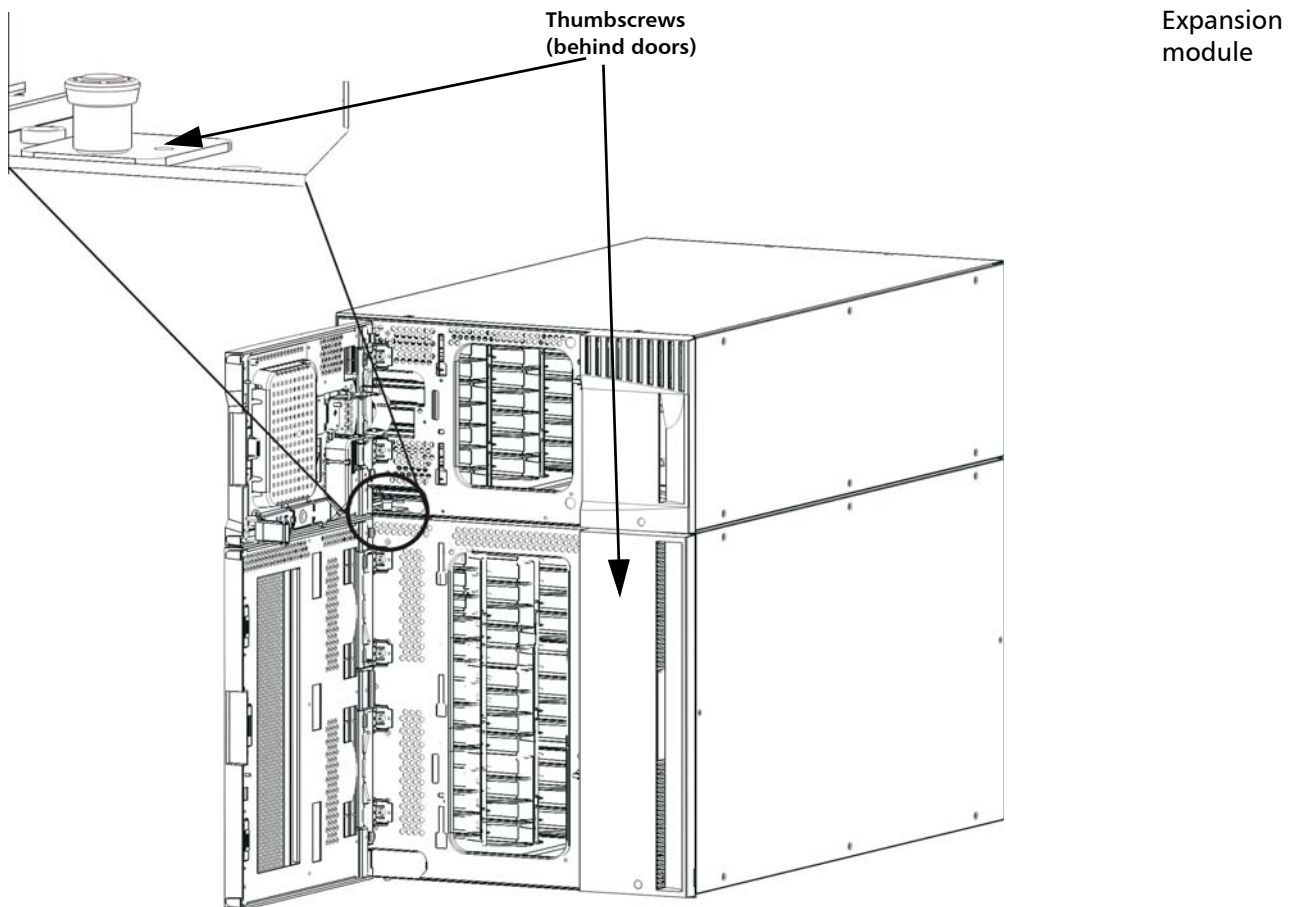
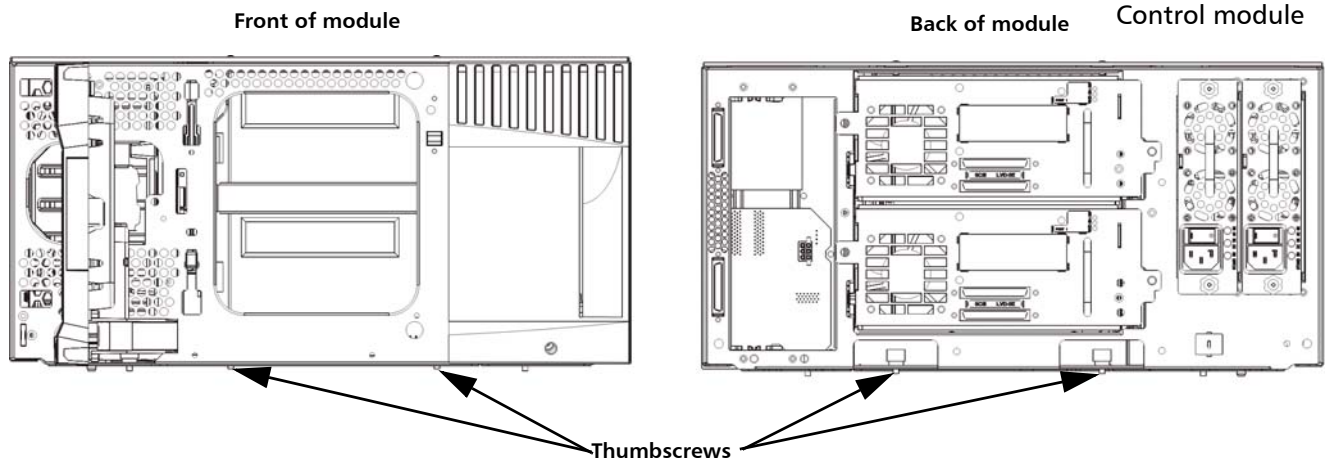
- b** For each module that you plan to remove, open the I/O station and access doors of each module.
- c** Disengage the Y-rails so the modules can be unstacked safely.
  - 1** From the front of the library, find the Y-rail release mechanism, which is located on the left side of the module. Squeeze the handle of the Y-rail release mechanism, lift it, and release it so that it locks into place.
  - 2** From the rear of the library, find the rear Y-rail release mechanism located in the interior of the right side of the module. Squeeze the handle of the Y-rail release mechanism, lift it, and release it so that it locks into place.



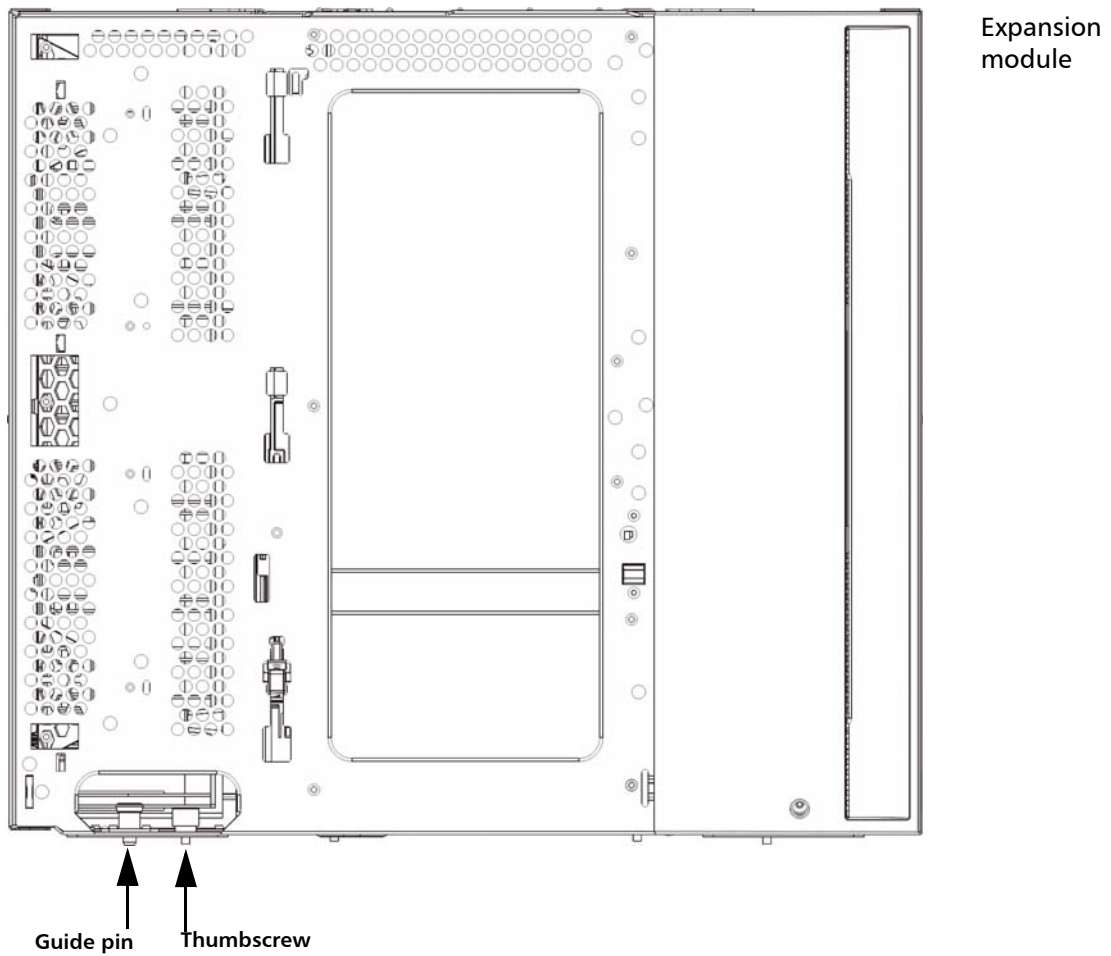
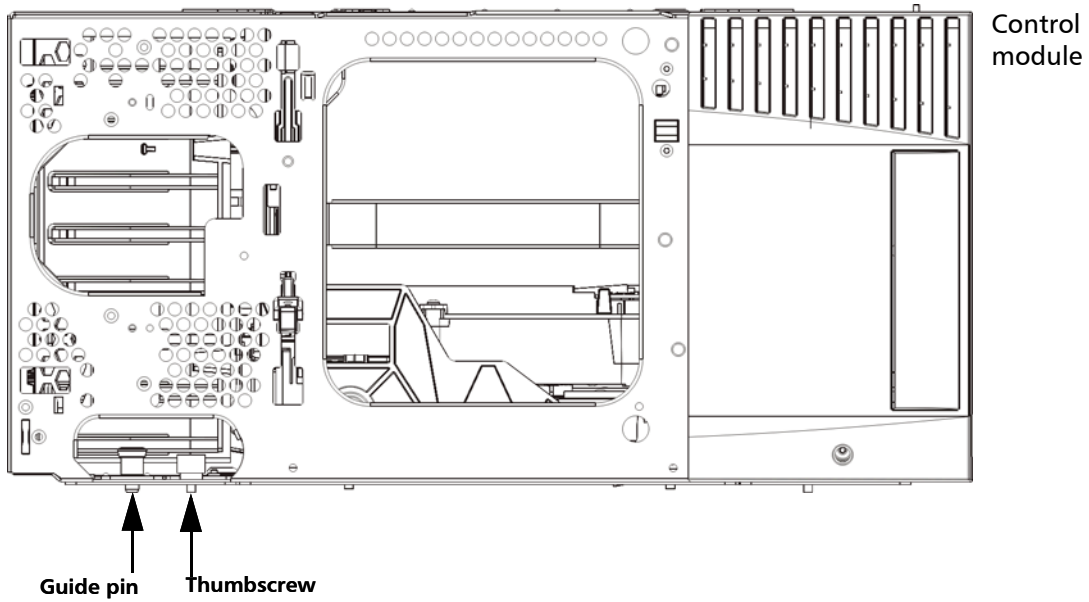
d Remove the rack ears that fasten the module to the rack.



- e Loosen the thumbscrews located at the base of the front and rear of the module.



- f Loosen the two thumbscrews located at the base of the back of the module.
- g Open the module's access door and raise the guide pin by pulling it up and turning it slightly as if it were a screw. Otherwise, the guide pin may scratch the front doors of the module beneath it.



- h From the front of the library, slide the entire module toward you and lift it off of the module below it.

- i Repeat these procedures for each module that you intend to remove.
- 3 Reassemble each module as follows:
  - For 5U libraries (control module only), ensure the bottom cover plate is installed securely. Retain the top cover.
  - For 14U libraries (control module and expansion module), ensure the 5U and 9U modules are secured to each other, and ensure the bottom cover plate is installed securely. Retain the top cover.
  - For 23U libraries (control module and two expansion modules), ensure the 5U and 9U modules are secured to each other as a 14U library, with the bottom cover plate installed securely, and ensure the 9U module is separated appropriately. (The 9U module will not have a top or bottom plate.) Retain the top cover.
- 4 Restrain the robot in the library. To determine which model of robot you have, see [Step 1](#) on page 5.

## Model 1 Robot

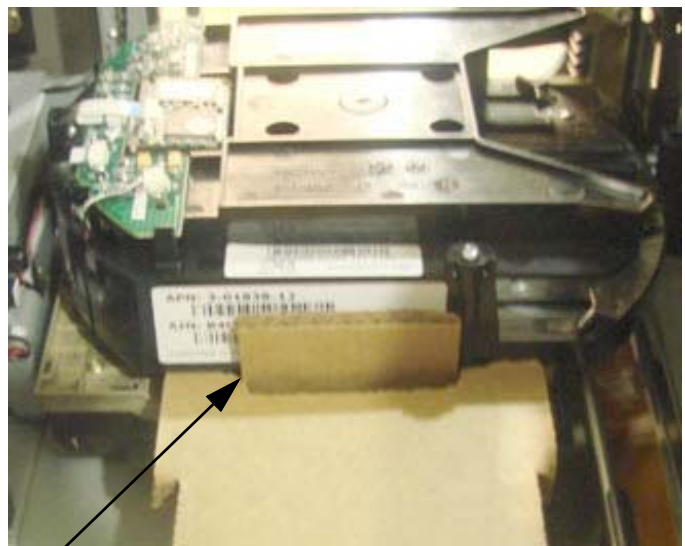
- a Release the robot parking tab that was set in [Step 1](#) on page 7.
- b Slide the picker towards the back of the library (about 3 inches).
- c Carefully rotate the picker 180 degrees until the PCB board is oriented on the right side of the chassis as shown.



- d Orient and install the base restraint as shown. Fold the cardboard flap that rests against the robot before installing the restraint.



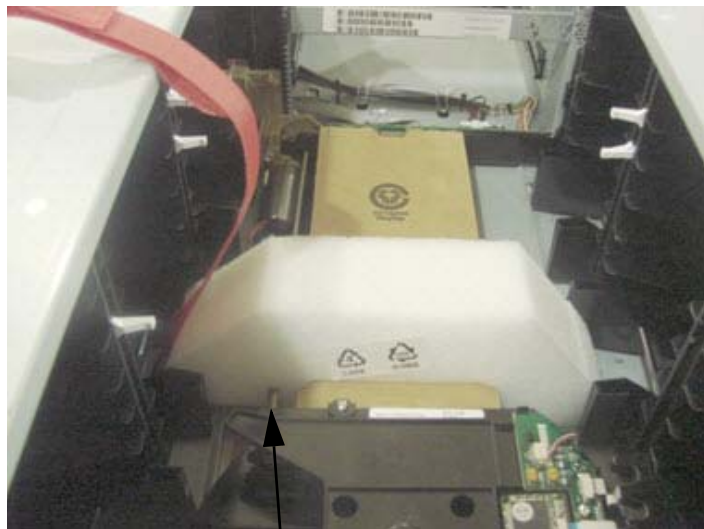
View looking toward rear of library



Fold  
restraint  
here

View looking toward front of library

- e Install the foam saddle with the groove in the bottom of the saddle over the drive shaft.



Drive shaft

- f Install the upper restraint in the chassis with the short rear tab engaged into the y-rack channel as shown.



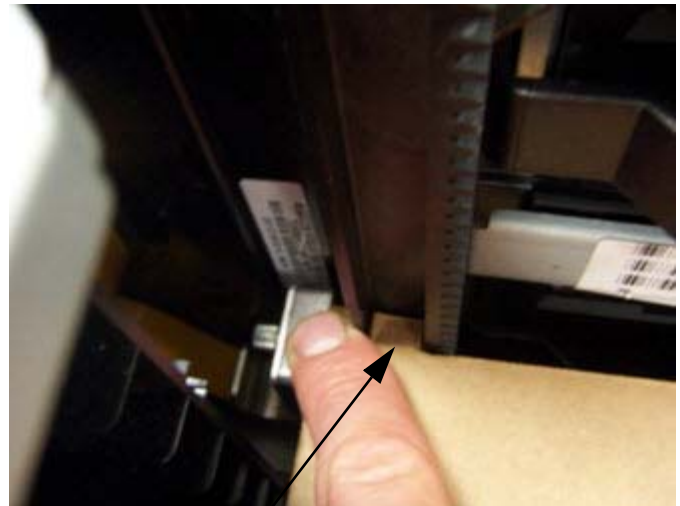
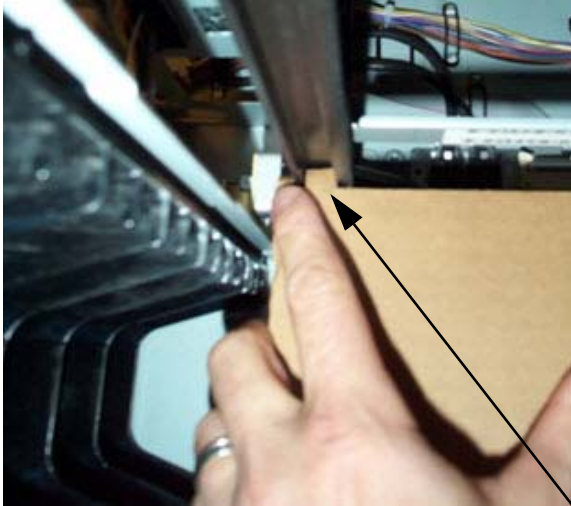


- g Using your finger, push the long rear tab downwards (by folding the cardboard), filling the gap between the back of the plastic Y-rack and the metal rear robot shelf.

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**Caution:** Ensure the tab is positioned correctly to keep the robot from shifting during transit.

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Short tab between Y-rack and rear robot shelf

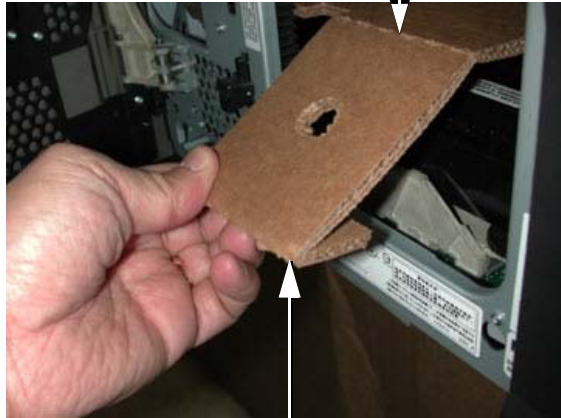
- h Grasp the front of the upper restraint. Fold the leg with the finger hole downwards along the perforation, and fold the short end of the restraint upwards as shown.

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**Caution:** Fold the short end flap behind the adjacent panel, away from the front of the library.

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Leg of upper restraint with finger hole (first fold)



Short of upper restraint (second fold)

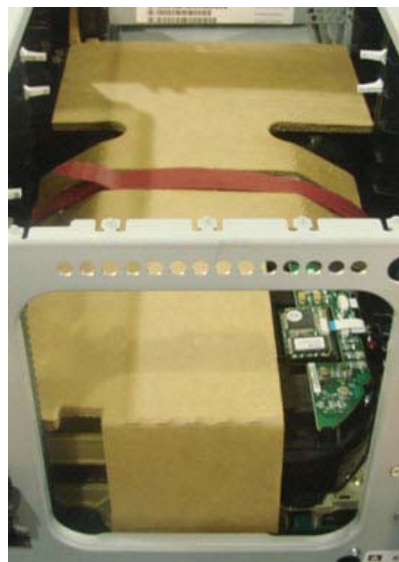
- i Push the flap between the front of the chassis and the robot shelf. Secure the flap by gently pushing downward until the flap is snug, as shown.



- j Drape the Velcro strap over the upper restraint and over the foam saddle. Attach the hook through the outboard side of the sheet metal tang in the chassis floor, as shown.



- k Attach the second hook on the Velcro strap to the outboard side of the sheet metal tang on the chassis floor opposite the first hook. Tighten the Velcro strap. The library interior should resemble the photos shown.



## Model 2 Robot

- a Release the robot parking tab that was set in [Step 1](#) on page 7.
- b Align the rotary head holes with the standoffs.
- c Insert the shipping restraint in the rotary head holes and screw them into the standoffs until it is snug (completely seated in the standoffs).

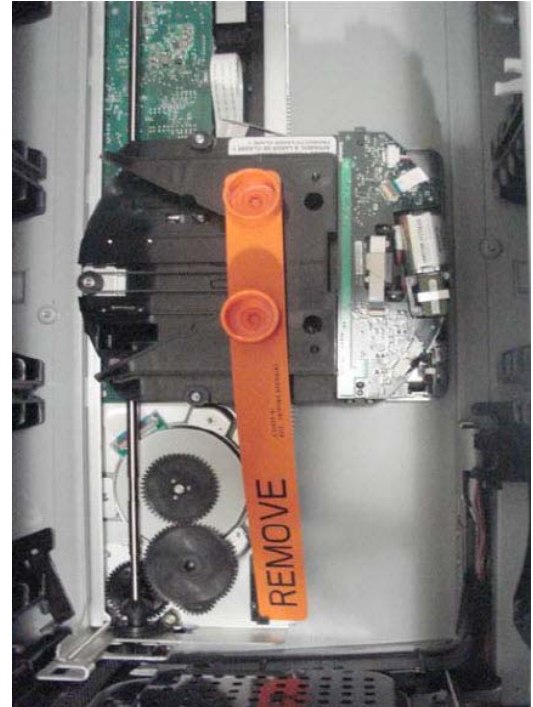
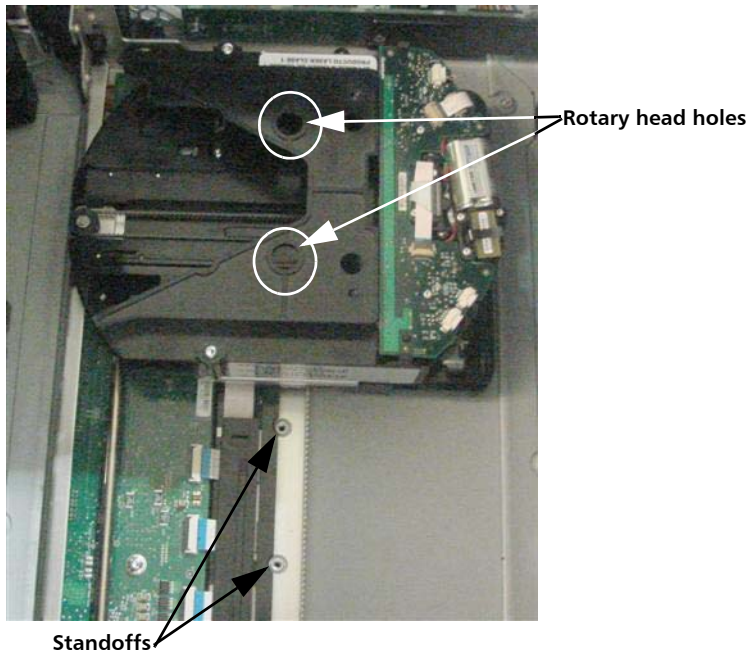
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**Caution:** Do not over-tighten the shipping restraint screws; tighten them just until they are secure.

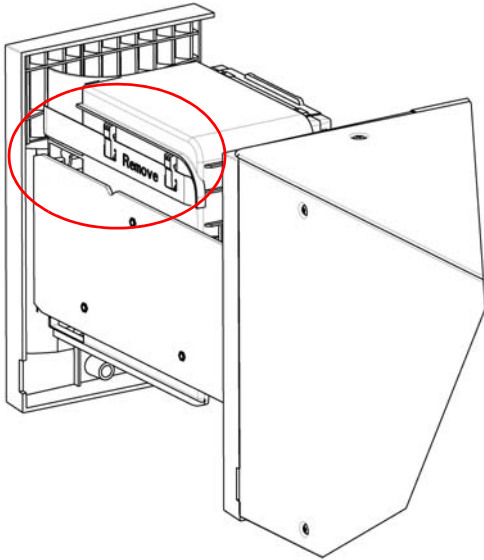
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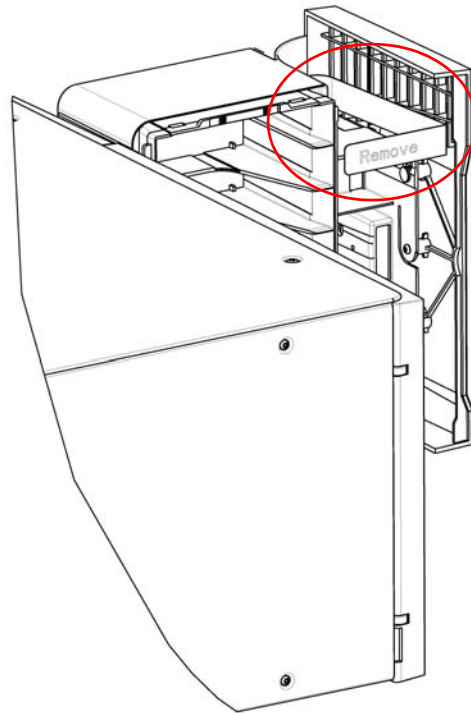


## All Libraries

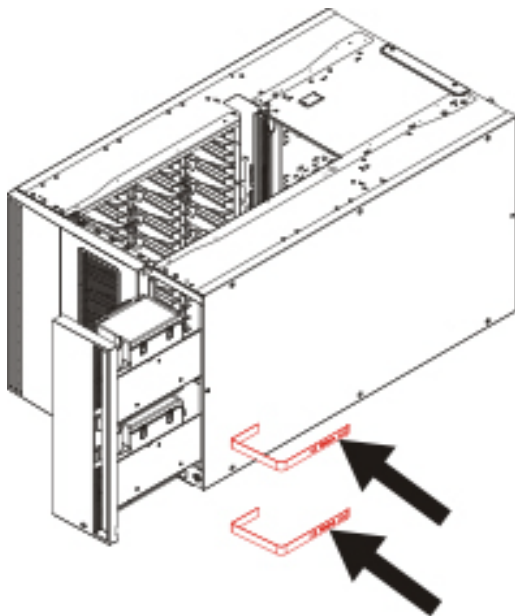
- 5 Ensure all tape drives have been removed from the library.
- 6 Install the magazine restraint in each I/E station (1 in the 5U control module, 2 in each 9U expansion module) as shown. Ensure the restraint is fully seated so that the I/E station door closes properly:



5U viewed from right of library



5U viewed from left of library



9U viewed from front of module

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**Note:** Follow this procedure for each library. 23U libraries have two palletized ship pack assemblies - one for the 14U library and one for the 9U module.

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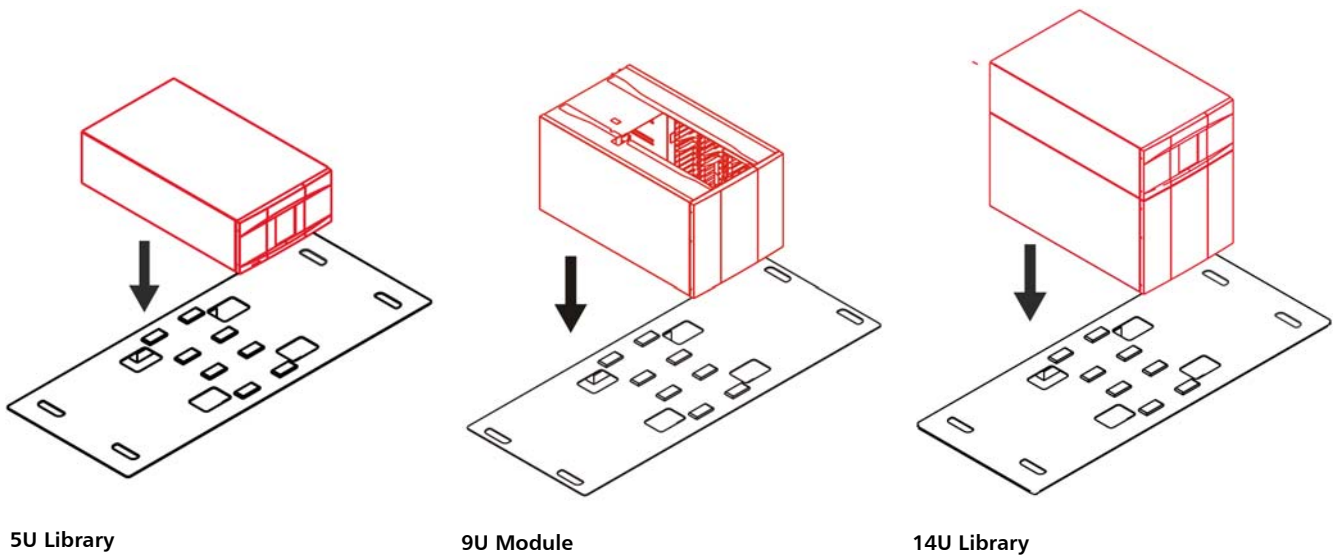
- 7 For each library, place the palletized ship pack on the floor with the lower lid on top of the pallet. Note the orientation of the foam cutouts in the lower lid - the short end with the fewest cutouts mates with the front of the library, and the short end with the most cutouts mates with the back of the library.
- 8 If the library is a 9U module or 14U library, re-install the bottom-most drive in the module.

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**Note:** If the library is a 5U library, and the drives were removed, re-install the bottom-most drive in the module.

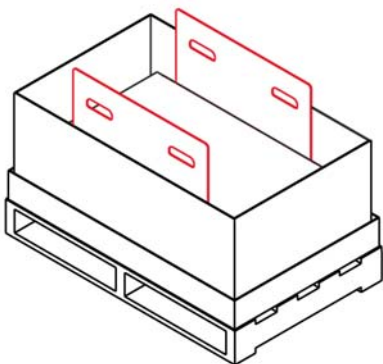
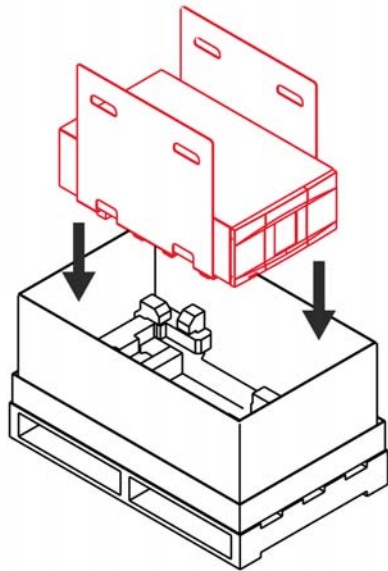
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- 9 Place the library or module on the shipping sling, properly orienting the library bezel doors with the mating foam cutout, as shown.

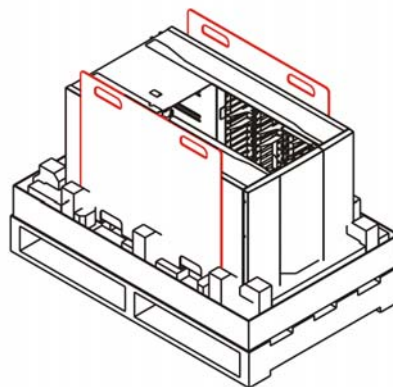
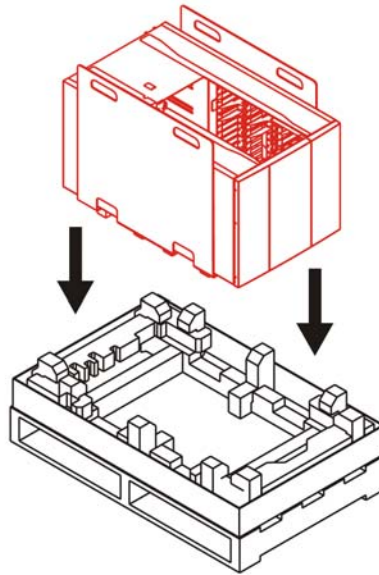


**10** Using two people to lift the module via the sling, place the module and its sling in the bottom of the palletized ship pack.

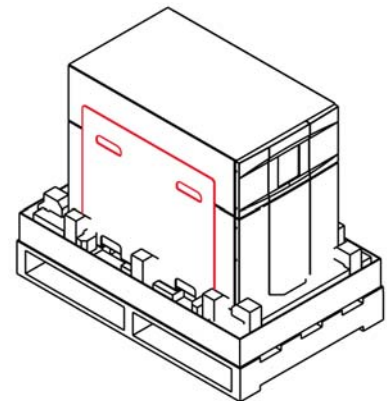
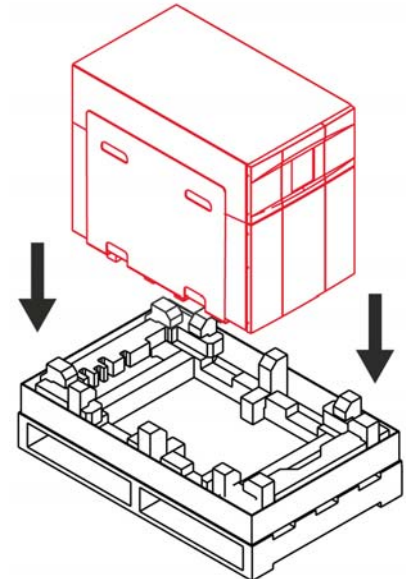
**5U Library**



**9U Module**



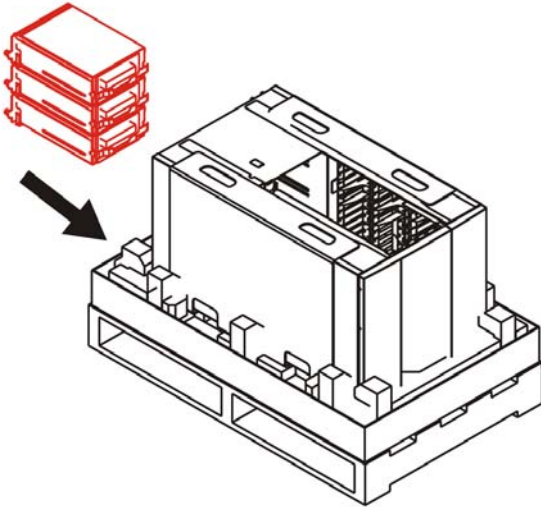
**14U Library**



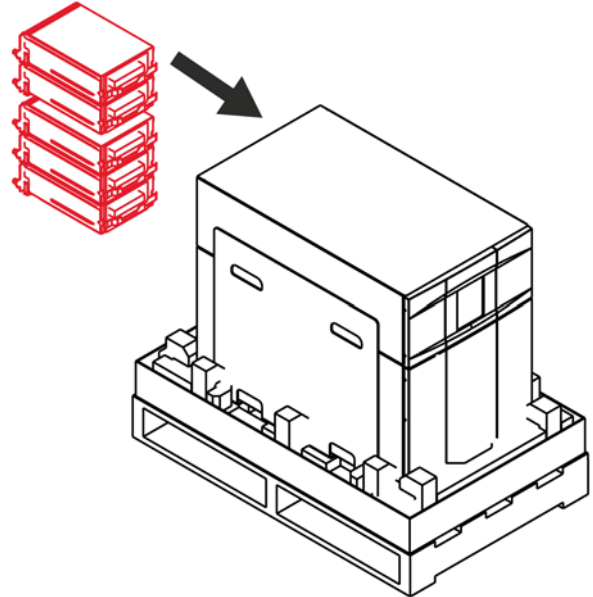
**11** If the library is a 5U library or 9U module, fold the sling flaps over the library.

**12** For 9U modules, and 14U and 23U libraries, reinstall the tape drives in the module. (The bottom-most drive should already be reinstalled.)

9U Module



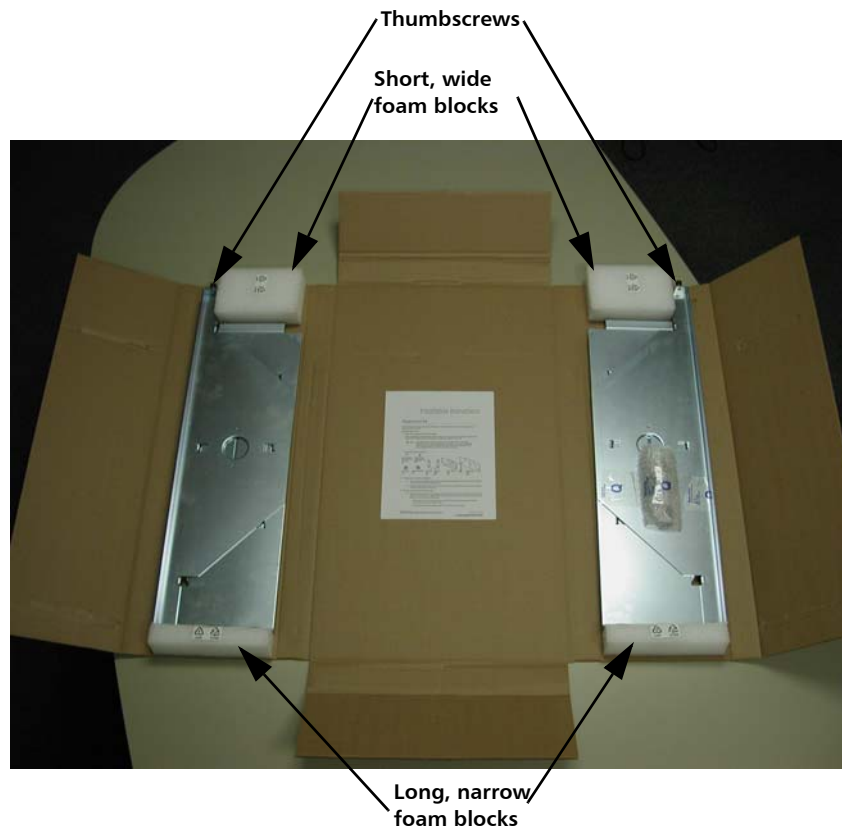
14U Library



- 13** Slide the large poly sleeve over the entire library, tucking the loose ends into the lower lid foam.
- 14** Slide the cardboard sleeve down over the library and seat it into the lower palletized ship pack.
- 15** If you are repackaging a rack mount kit, follow the procedure [Disassembling the Rack Mount Kit](#) on page 31 before proceeding.
- a Place the small components in the self-sealing bubble bag provided.
  - b Open the rack mount kit box flat. Place the rack rails on the cardboard with the thumb screw tabs on the outside. If necessary, adjust the rack rail length so that they fit in the box.



- c Place the foam spacers in the flat box, with the short, wide foam blocks at the thumb screw tab end of the box and the long, narrow foam blocks on the long sides of the box, as shown.



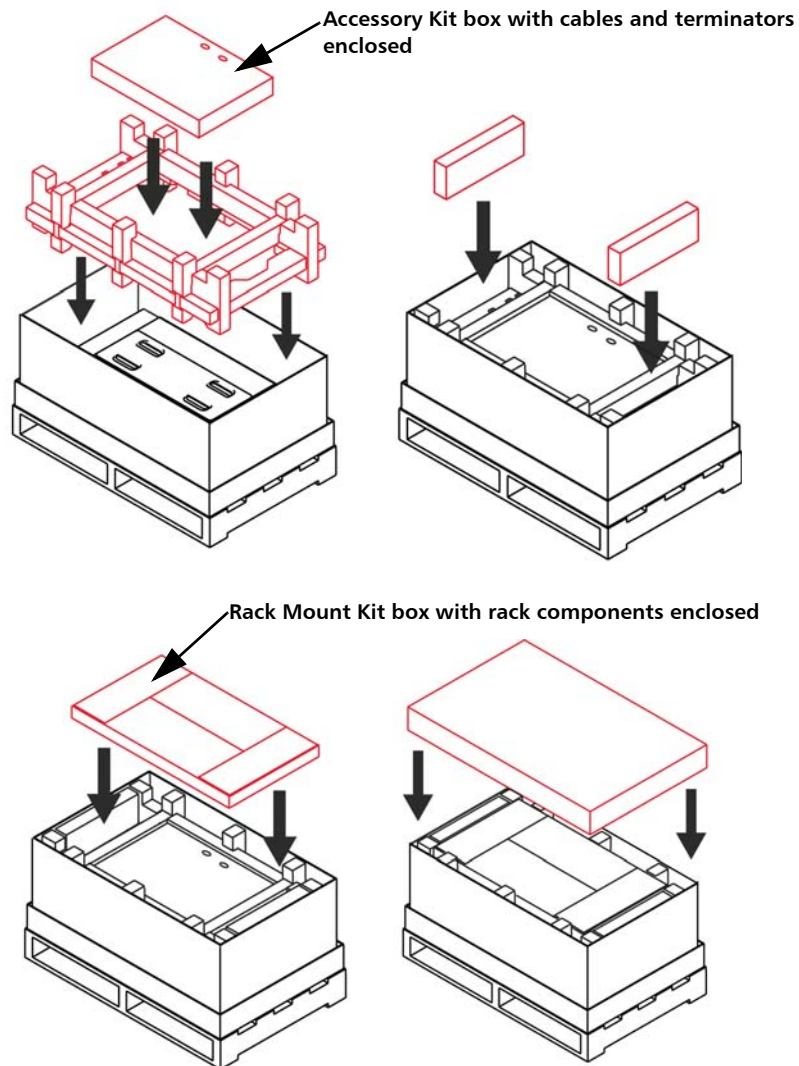
- d Secure the self-sealing bubble bag containing the mounting hardware to the box as shown.



- e Fold the flaps of the box over the rack rails, and then fold them inward again, as shown. Secure the box with tape.



- 16** Place the packing materials inside the box and the top cap on top of the box as shown.

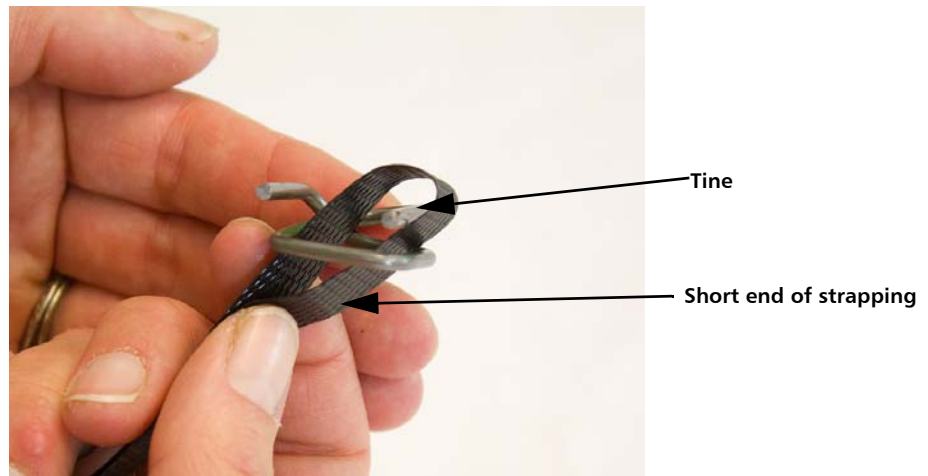


- 17** Place the long edge protectors along both lengths of the top cap.
- 18** Secure each ship pack to the pallet using the enclosed strapping and buckles. Note that the 23U library has two ship packs which must be secured to the same pallet.

- a Holding the strapping near one end, create a loop. Pass the loop through the center of the buckle as shown.

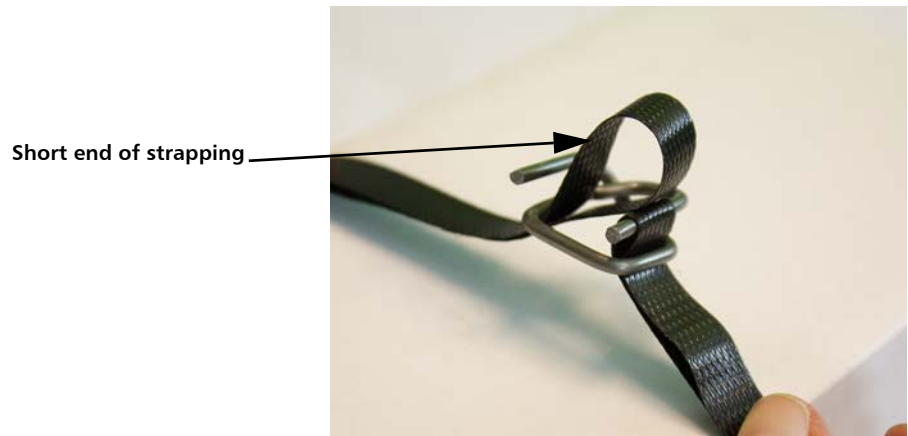


- b Hook the loop of the strapping through one tine of the buckle, ensuring the short end of the strapping is facing the outside of the buckle.

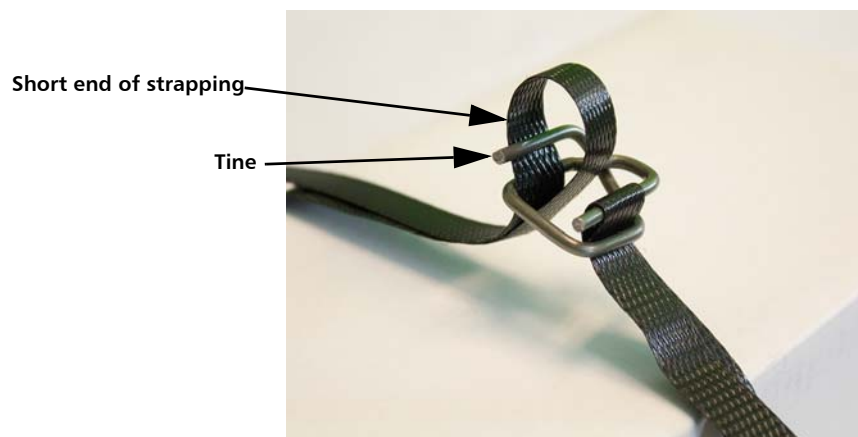


- c Wrap the strapping vertically around the box and pallet. Create a loop in the other end of the strapping, and pass it through the buckle, as

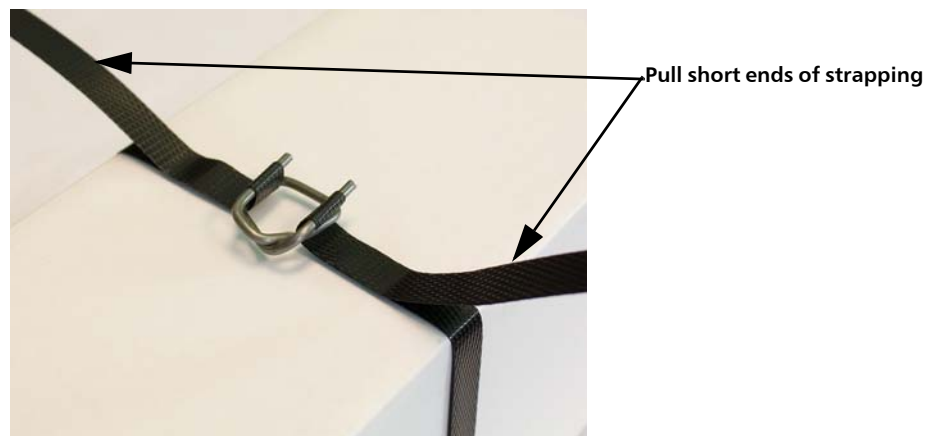
shown, ensuring the short end of the strapping is facing the outside of the buckle.



- d Hook the loop of the strapping through the other tine of the buckle, ensuring the short end of the strapping is facing the outside of the buckle.



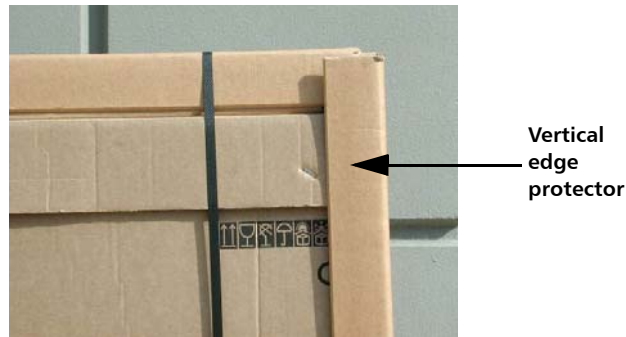
- e Pull the short ends of the strapping to secure the strapping assembly around the box.



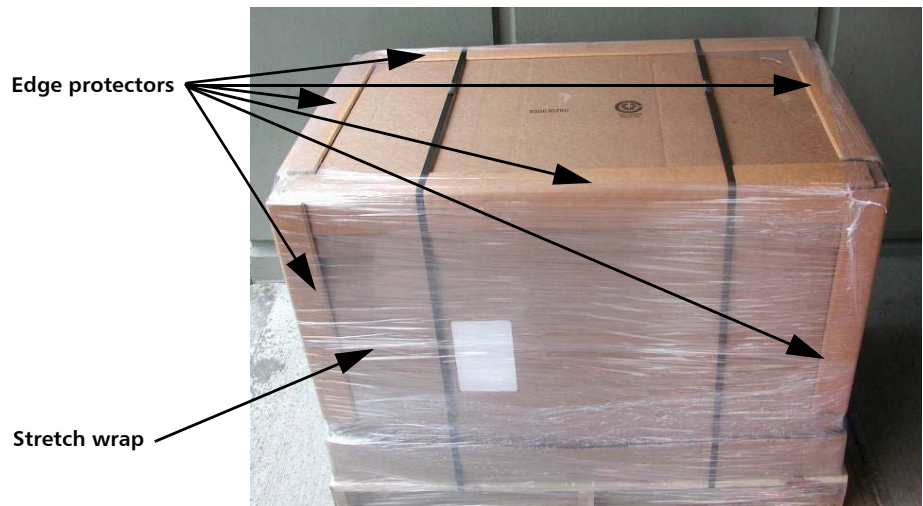
When complete, the shipping assembly should appear similar to the picture shown.



- 19 Install the medium-length vertical edge protectors on each vertical edge of the box, tucking the bottom end of the edge protectors into the bottom of the palletized ship pack.



- 20 While an assistant holds the vertical edge protectors in place, wrap the box with stretch wrap from the top downward.



- 21 Place the two short edge protectors on top of the box, and secure them with stretch wrap, as shown above.
- 22 If the library is 23U, use two strapping assemblies to secure the boxes to the pallet, and one strapping assembly to secure the boxes to each other as shown.



- 23 Affix the shipping disclaimer labels on two diagonally opposite corners of the outside of the shipping package.
- 24 Affix the appropriate shipping label to the package. Contact your shipping provider for more information.

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## Disassembling the Rack Mount Kit

If the library is in a rack, and you are shipping the Rack Mount Kit with the library, follow this procedure.

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**Note:** Racks with threaded (tapped M6) holes will not have cage nuts, nut clips, or ferrules.

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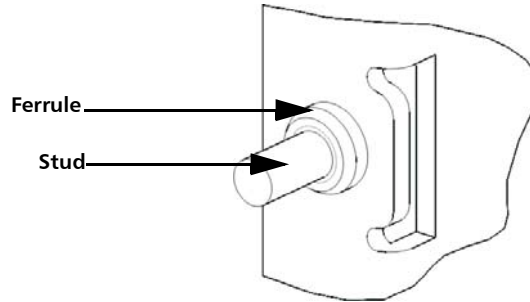
- 1 Remove all rack ears from the rack:
  - a Unscrew the thumbscrews from the cage nuts or nut clips.
  - b Remove and retain all rack ears and cage nuts or nut clips.
- 2 Remove the rackmount shelves from the rack:
  - a Remove the thumbnuts from the rear of one of the shelves. Retain all thumbnuts.
  - b Collapse the shelf to make it easier to maneuver.

---

**Note:** Shortening the shelves can be difficult, but they are designed to be resized by hand. Do not use tools to resize the shelves, and never take them apart.

---

- c Remove the thumbnuts from the front of the shelf and remove the shelf from the rack. Retain all thumbnuts.
  - d Repeat [Step a](#) through [Step c](#) for the other shelf.
- 3 Remove and retain the ferrules from the studs on the shelves.



- 4 Package the Rack Mount Kit components by following [Step 15](#) on page 24.

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