SPECTRA

Changing The World of Storage

Spectra T950 Library

VAX Linear Rail Replacement

Notices

Except as expressly stated herein, Spectra Logic Corporation makes its products and associated documentation on an "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, BOTH OF WHICH ARE EXPRESSLY DISCLAIMED. In no event shall Spectra Logic be liable for any loss of profits, loss of business, loss of use or data, interruption of business, or for indirect, special, incidental or consequential damages of any kind, even if Spectra Logic has been advised of the possibility of such damages arising from any defect or error.

Information furnished in this manual is believed to be accurate and reliable. However, no responsibility is assumed by Spectra Logic for its use. Due to continuing research and development, Spectra Logic may revise this publication from time to time without notice, and reserves the right to change any product specification at any time without notice.

Part Number

90940115 Revision A

Revision History

Revision	Date	Description
A	May 2012	Initial release

Contacting Spectra Logic

To Obtain General Information

Spectra Logic Web Site: www.spectralogic.com

United States Headquarters

Spectra Logic Corporation
Phone: 1.800.833.1132 or 1.303.449.6400
International: 1.303.449.6400
Fax: 1.303.939.8844

European Office

Spectra Logic Europe Ltd.
Phone: 44 (0) 870.112.2150
Fax: 44 (0) 870.112.2175

Spectra Logic Technical Support

Technical Support Portal: support.spectralogic.com

United States and Canada
Phone:
Toll free US and Canada: 1.800.227.4637
International: 1.303.449.0160
Email: support@spectralogic.com

Europe, Middle East, Africa
Phone: 44 (0) 870.112.2185
Email: support@spectralogic.com

Deutsch sprechende Kunden
Phone: 49 (0) 6028.9796.507
Email: spectralogic@stortrec.de

Mexico, Central and South America, Asia, Australia, and New Zealand
Phone: 1.303.449.0160
Email: support@spectralogic.com

To Obtain Documentation

Spectra Logic Web Site: www.spectralogic.com/documents

VAX Linear Rail Replacement

This guide describes the procedure for replacing the vertical axis (VAX) linear rail in a Spectra T950 library.

PREPARE FOR MAINTENANCE

This section describes the tasks required to prepare the library for maintenance.

Gather Required Tools

You must have the following to complete this procedure:

- A TeraPack magazine fully-loaded with cartridges (spare or exported from the library prior to powering off)
- 1/8-inch Allen wrench or hex driver
- 2.5 mm Allen wrench or hex driver (magnetic preferred)
- #2 Phillips screwdriver, 8- or 10-inch long
- 5/32-inch T-handle hex wrench
- 0.008-inch feeler gauge (preferred) or a piece of standard copier paper
- Large binder clip
- Lint-free cleaning wipes
- Isopropyl alcohol
- Foam applicator
- Zip ties
- VAX grease (PN 90948215 or 90949168, white in color)
- Replacement VAX linear rail (PN 90941519)

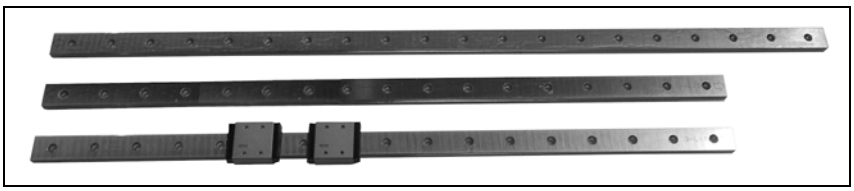

Figure 1 Replacement VAX linear rail from Spectra Logic.

Ensure ESD Protection

The repair environment for the library must be free of conditions that could cause electrostatic discharge (ESD). To protect the library from ESD, follow these procedures when repairing or testing the library:

- Place a static protection mat on the work surface used while removing and installing library components. Use a 1-megohm resistor to ground the static protection mat.
- Wear a static protection wrist band or grounding foot strap whenever you handle library components that have been removed from their anti-static bags. Connect the wrist band to the static protection mat or to other suitable ESD grounding.
- Keep all electonic components in anti-static bags when not in use.

Back Up the Library Configuration

Perform a manual backup of the library configuration, the MLM and DLM databases, and any encryption keys stored in the library. Refer to your library's *User Guide* for instructions.

Export a Magazine

You will need a fully-loaded TeraPack magazine to verify that the linear rail functions correctly. If you do not have a spare one available, export a fully-loaded magazine from the library. Refer to your library's *User Guide* for instructions.

Discontinue Operations Running on the Library

Backups cannot run during the linear rail replacement process because the library must be powered off.

1. Use your backup software to stop any backup or restore operations running to the library.
2. Use your backup software to move any cartridges that are currently in drives back to their storage locations.

   If you cannot use your backup software, then move the cartridges as described in your library's *User Guide*.
3. Pause PostScan, if it is running, as described in your library *User Guide*. Any tapes currently being scanned are returned to their storage locations.

Prepare the Library for Power Off

Before powering off the library, use the following instructions to prepare it for maintenance and to configure the initial power on after you replace the VAX linear rail.

Turn On Obstruction Scan at Startup

1. Log into the library with superuser or administrator privileges.
2. Select **Maintenance** ⋯⁝ **Tools** ⋯⁝ **Utilities**. The Utilities screen displays.
3. Click **Show Advanced**. The Advanced Utilities Confirmation screen displays.
4. Click **Next**. The Utilities screen refreshes to show the advanced utilities.
5. Scroll down and select **Set Scans at Startup Defaults**.

   The screen refreshes to show the details for the Set Scans at Startup Defaults utility.

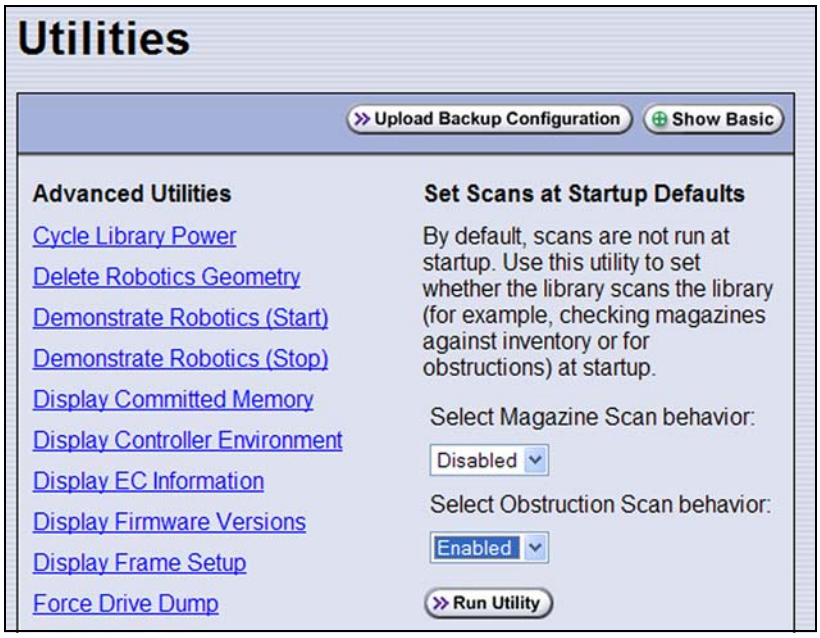

Figure 2 The Set Scans at Startup Defaults Utilities screen.

6. From the **Select Obstruction Scan behavior** drop-down list, select **Enabled**.

   Note: Do not change the setting for **Select Magazine Scan behavior**.

7. Click **Run Utility**.

   A progress screen displays. When the operation is complete, a Utility Results screen displays. The library will now run an obstruction scan when it is next powered on.

Move the VAX Column to the Right End of the Library

1. On the Utility Results page, click Previous to return to the Advanced Utilities screen.
2. Scroll down and select **Send Controller Command**.

   The screen refreshes to show the details for the Send Controller Command utility.

Figure 3 The Send Controller Command Utilities screen.

3. From the **Select a command to send** drop-down list, select **Prepare Robot for Service [M]**.
4. From the **Select a target controller** drop-down list, select **Motion Control**.
5. Click **Run Utility**.

   A progress screen displays. When the operation is complete, a Utility Results screen displays. The VAX column is now parked in an accessible position on the right-hand side of the library.

Power Off the Library

1. Press the front panel power button until the button's LED starts to flash. Wait for the power-off sequence to complete, which allows the applications to shut down gracefully.

   Note: If the library does not respond to pressing the front panel power button, it is likely that the BlueScale Soft Power option is enabled. Refer to your library's *User Guide* for instructions on powering off the library with the BlueScale Soft Power option enabled.

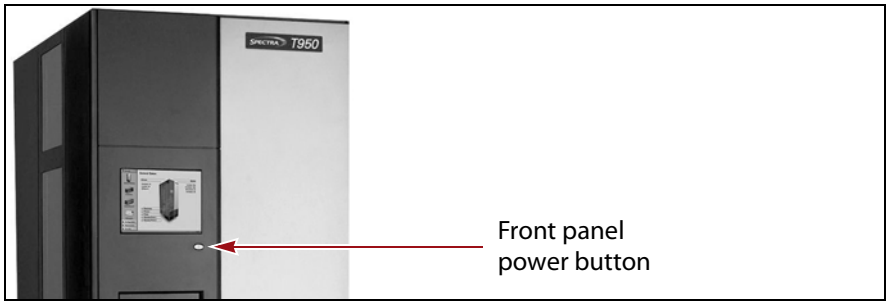

Figure 4 The front panel power button.

2. Open the rear access doors on the main frame and each drive frame by lifting and rotating the latch a quarter turn. Pull the doors open.

   Note: You may need to unlock the latch before you can open it.

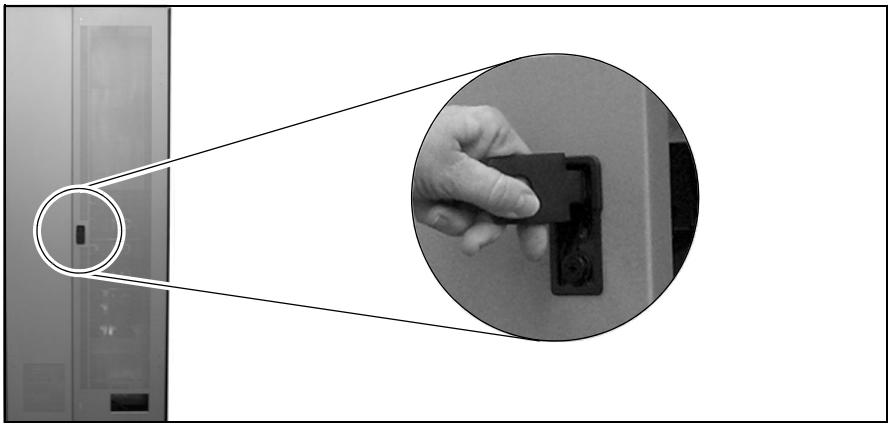

Figure 5 Open the access doors on the main frame and drive frames.

3. Set both AC breaker switches on the back of the main frame and each drive expansion frame to the off (down) position.

   Note: If you have redundant power supplies installed, make sure you turn off both AC breaker switches in each frame.

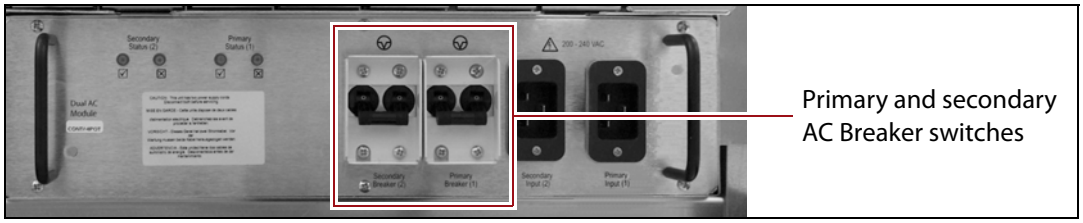

Figure 6 Set the AC breaker switches to the off position.

Remove the Right Side Access Panel

WARNING

Risk of electrical shock. Hazardous moving parts. Turn off the power to the library before accessing the inside of the library.

WARNUNG Gefahr eines elektrischen Schlags. Gefährliche bewegliche Teile. Schalten Sie das Gerät in die Bibliothek vor dem Zugriff auf das Innere der Bibliothek.

Use the following steps to remove the access panel from the library's right end as viewed from the front of the library.

1. Use a 1/8-inch Allen wrench or hex screwdriver to remove the screw at the bottom of the window panel.
2. While holding the panel steady, slide it up to disengage the panel from the hangers on both sides of the chassis' opening (three per side).
3. Lift the panel off of the hangers, out and away from the frame.
4. Set the panel aside.

Figure 7 Remove the screw at the bottom of the window panel.

Figure 8 Slide the panel up to disengage the hangers.

Figure 9 Lift the panel out and away from the frame.

Remove the Transporter

1. (Optional) While supporting the transporter from underneath, move it up the VAX column to a comfortable working height.

   Use a large binder clip to pinch the two sides of the VAX belt together, securing the elevated transporter in place.

   Note: The VAX belt is the long belt located on the left side of the VAX column, as viewed from the front of the transporter.

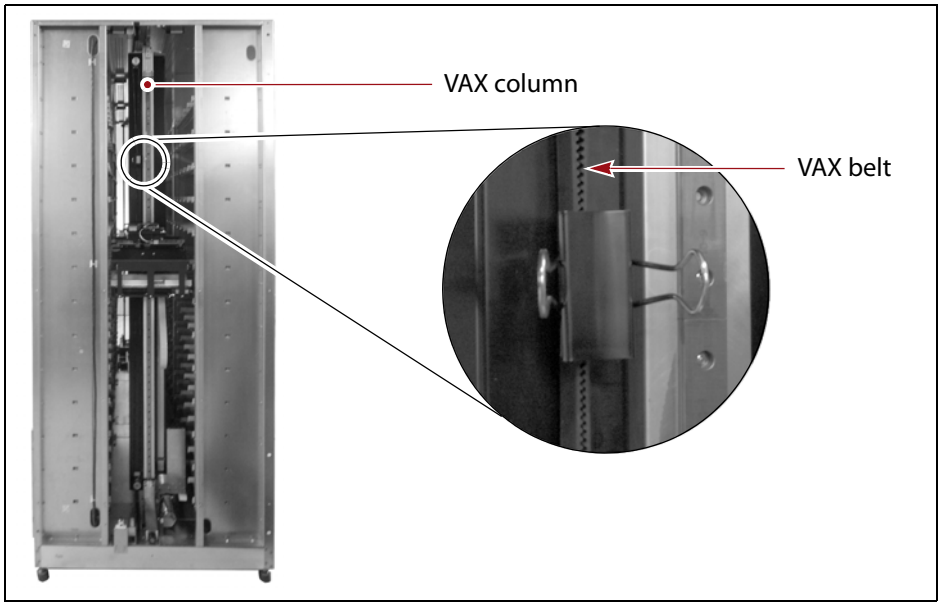

Figure 10 Clamp the VAX belt to secure the transporter.

2. To improve access to the ribbon cable connector on the transporter, grasp the front edge of the cartridge picker and gently rotate it clockwise 90° so that it is in a vertical position.

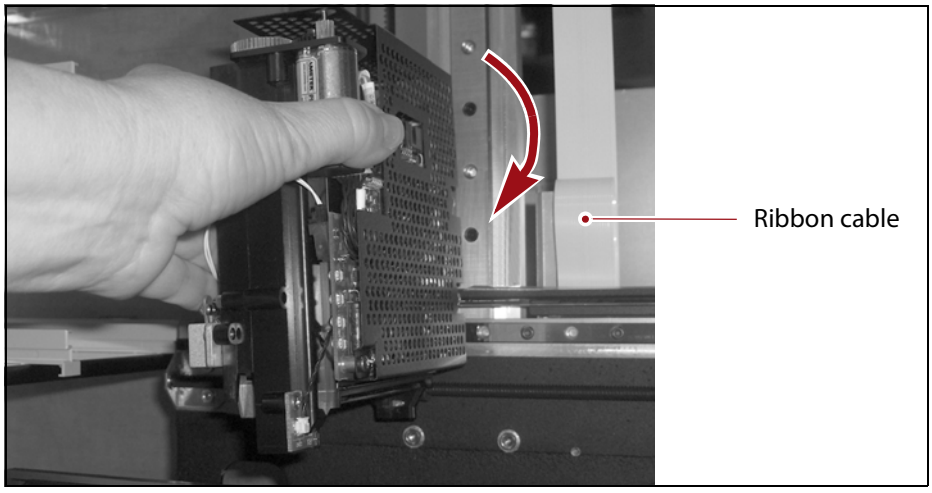

Figure 11 Rotate the cartridge picker to a vertical position.

3. Locate the ribbon cable connected to the transporter.

   Reach around the back of the cable and pinch inward on the ribbon cable release tab and pull **gently** upward to disconnect the cable from the PC board on the back side of the transporter.

Caution Do not pull the cable out of the connector without releasing the locking tab. You may damage the connector.

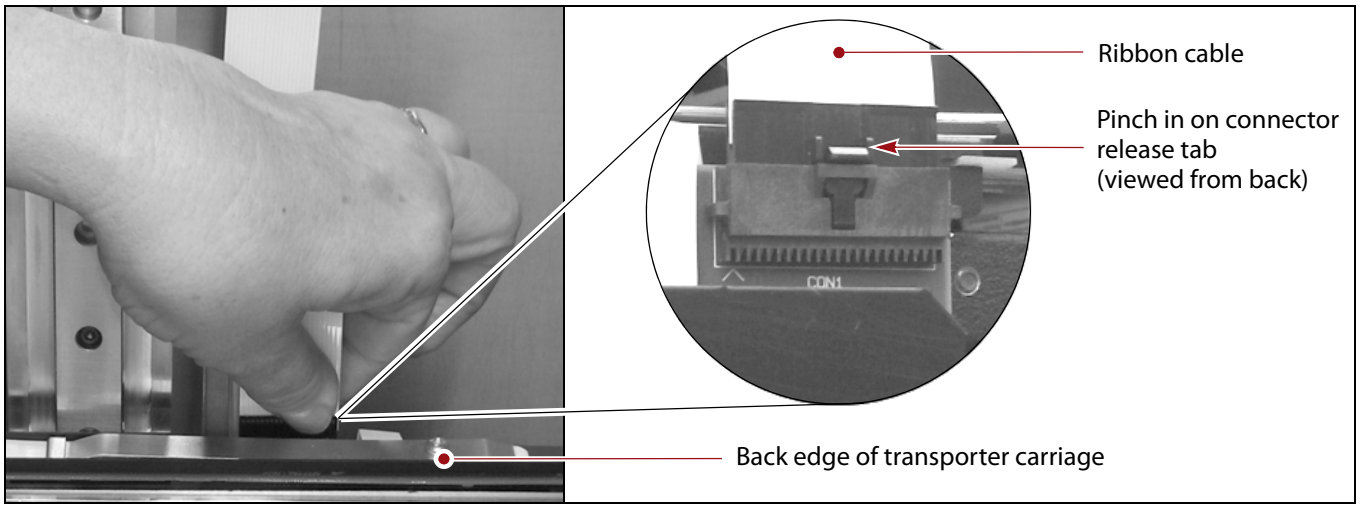

Figure 12 Disconnect the ribbon cable from the back of the transporter.

4. Gently rotate the cartridge picker back to horizontal.
5. Depending on the type of screw present, use either a #2 Phillips screwdriver or a 5/32-inch T-handle hex wrench to remove the four screws that secure the transporter to its mounting bracket.

Caution Be careful not to drop the screws into the transporter or onto any other library components.

Note: To reach the bottom two screws, insert the screwdriver through the openings in the side of the transporter.

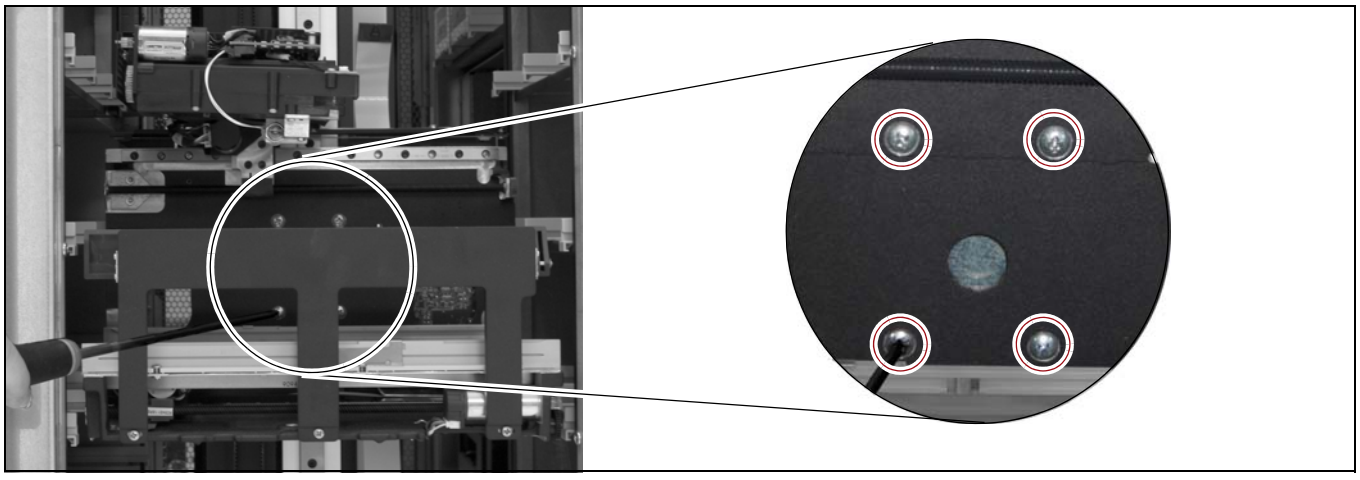

Figure 13 Remove the screws that secure the transporter to the mounting bracket.

6. With one hand supporting the weight of the transporter from underneath and the other hand grasping the front of the transporter to stabilize it, rotate the base of the transporter slightly outward and then lift the transporter upward to disengage it from the mounting bracket.

Caution Do not use the cartridge picker or the front of the transporter as a handle. They are not designed to support the weight of the transporter.

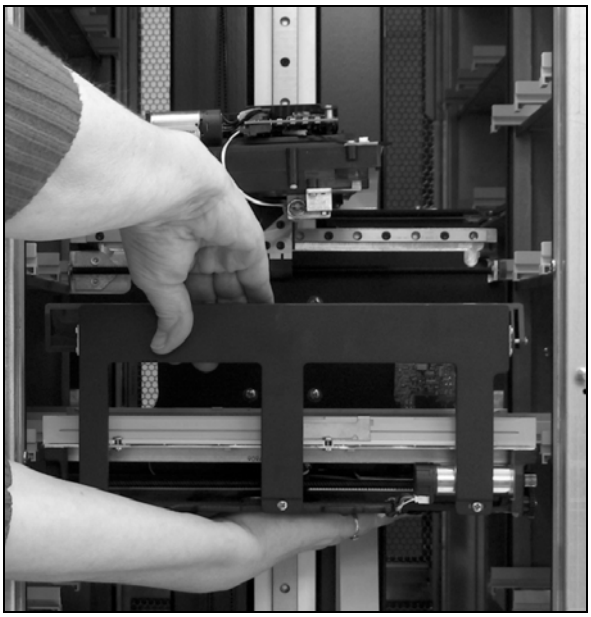

Figure 14 Lift the transporter off of its mounting bracket.

7. Lift the transporter out of the library and set it aside.

Caution Be careful not to bump the VAX column, VAX motor, or the components on the PC card mounted in the bottom front of the chassis.

8. If you used the large binder clip to pinch the two sides of the VAX belt together, remove it now.

Detach the Transporter Mounting Bracket

Using a #2 Phillips screwdriver, remove the eight screws that secure the transporter mounting bracket to the bearing mounts on the linear rail.

- Allow the bearing mounts to slide to the bottom of the linear rail.

Caution Be careful not to bend or damage the VAX flag on the side of the transporter mounting bracket.

- Leave the transporter mounting bracket attached to the VAX belt and the VAX flex cable mounting bracket.

  When it is necessary to move the bracket, gently pull up or down on the VAX belt to move the bracket out of the way.

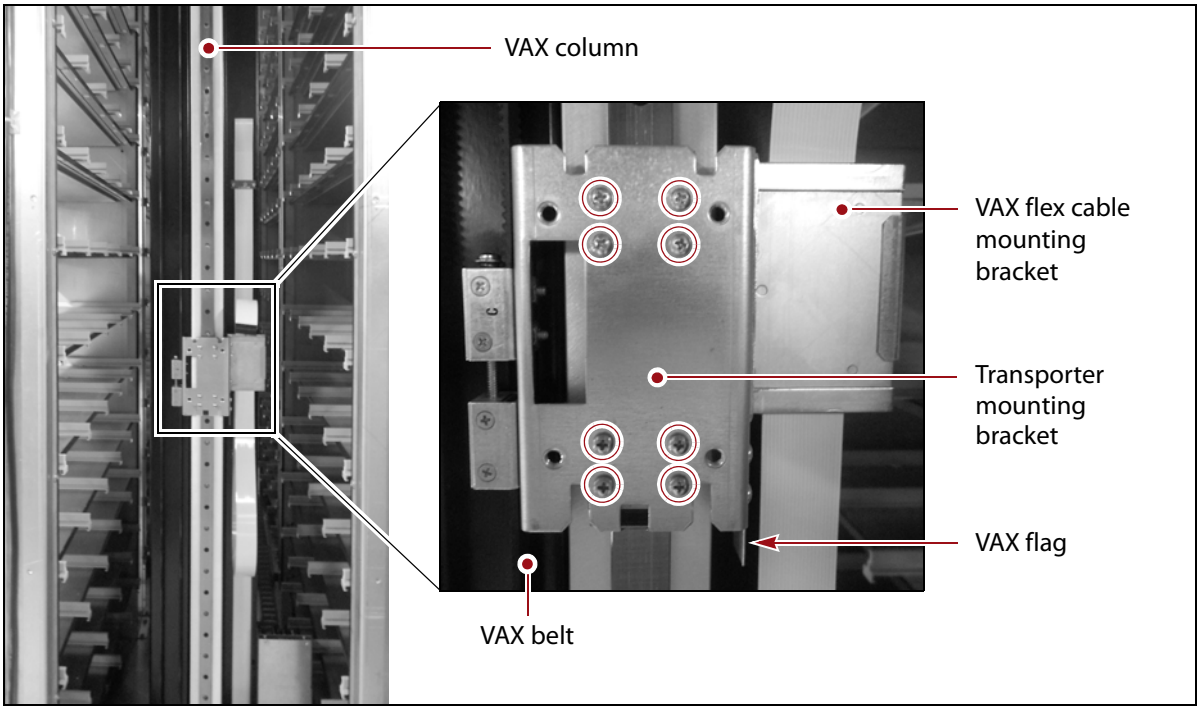

Figure 15 Detach the transporter mounting bracket.

Remove the VAX Linear Rail

1. To make handling the rail sections easier, use a lint-free cleaning wipe and isopropyl alcohol to wipe away the lubricating grease from the VAX linear rail.

2. Using a 2.5 mm Allen wrench or hex driver (magnetic preferred), remove the 29 screws that secure the upper, middle, and lower sections of the linear rail to the VAX column.

Upper Section

a. Starting from the top of the upper section, remove the nine screws that attach the rail to the VAX column.

Caution The rail sections are heavy and slippery. Hold each rail section as you remove the last screw to prevent it from falling and damaging other library components.

b. Grasp the bottom of the upper rail section and slide the top end out from under the top crash stop. Set the rail section aside.

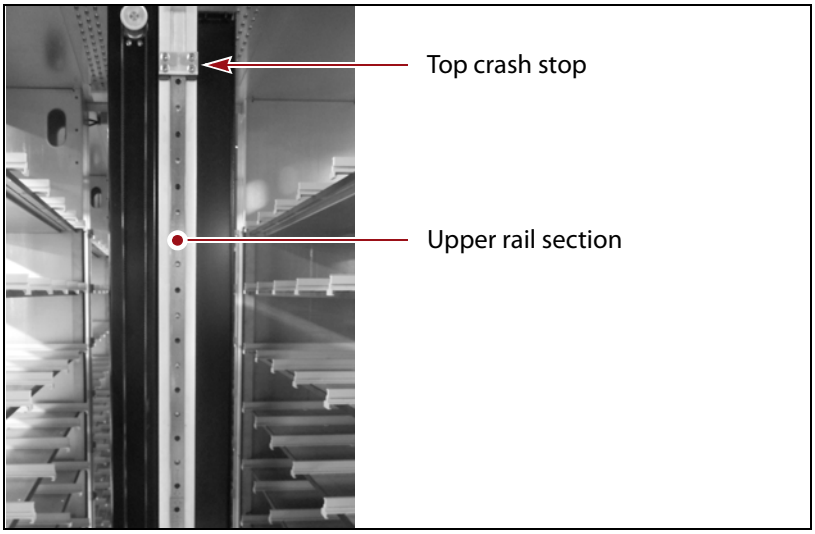

Figure 16 Remove the upper rail section.

Middle Section

a. Starting from the bottom of the section, remove the middle section's nine screws.

b. Set the rail section aside.

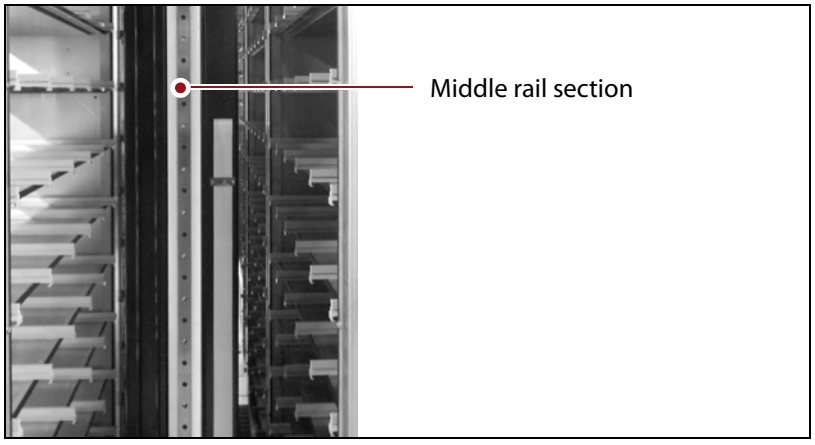

Figure 17 Remove the middle section.

Lower Section

a. Starting from the bottom of the lower section, remove the eleven screws from the lower section of rail.

b. Grasp the top of the lower rail section and both bearing mounts. Slide the bottom end of the rail out of the bottom crash stop. Set the rail section aside.

Caution Do not allow the bearing mounts to slide off of the rail. The bearings in the bearing mounts are easy to knock out and difficult to find in the library's interior.

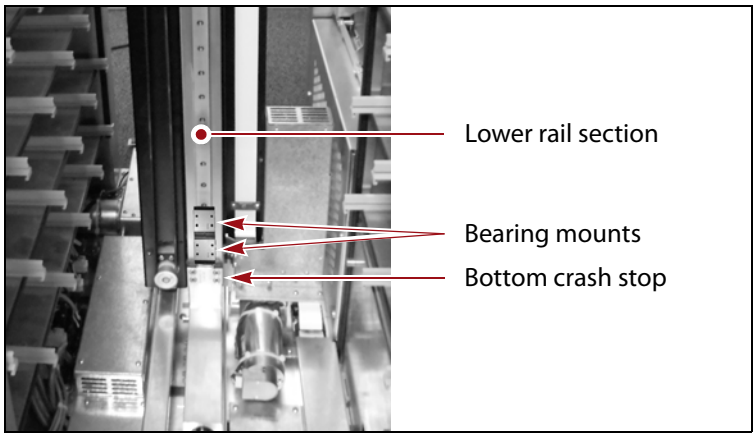

Figure 18 Remove the lower rail section.

3. After you remove the lower rail section, install a zip tie through the mounting hole in the rail on both sides of the pair of bearing mounts to prevent them from sliding off of the rail.

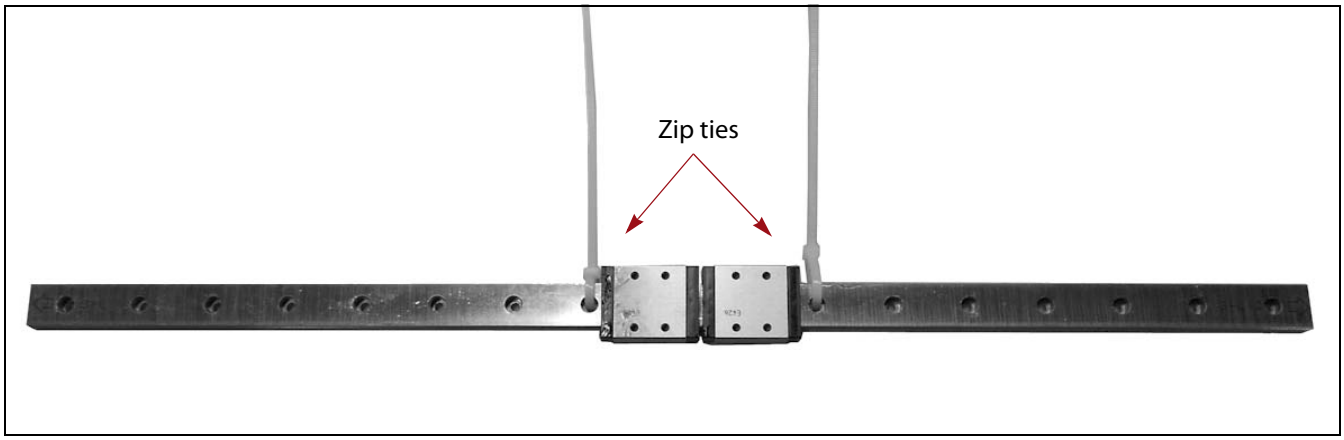

Figure 19 Remove the lower rail section.

REPLACE THE VAX LINEAR RAIL

Use the instructions in the following sections to install the replacement VAX linear rail.

Prepare the Replacement Rail

1. Remove the three sections of the replacement linear rail from their packaging.

Caution

There are two bearing mounts attached to the upper rail section. **Do not** allow the bearing mounts to slide off. They are difficult to slide back on without dislodging the bearings in the mounts.

If any bearings are dislodged, reinsert them using a flat-edge tool such as a flatblade screwdriver.

2. Using a lint-free cleaning wipe and isopropyl alcohol, wipe away the machining oil from the three rail sections.
3. Identify the rail sections.
   - Lower rail section: longest section, one end numbered.
   - Middle rail section: both ends numbered.
   - Upper rail section: one end numbered, two bearing mounts attached.

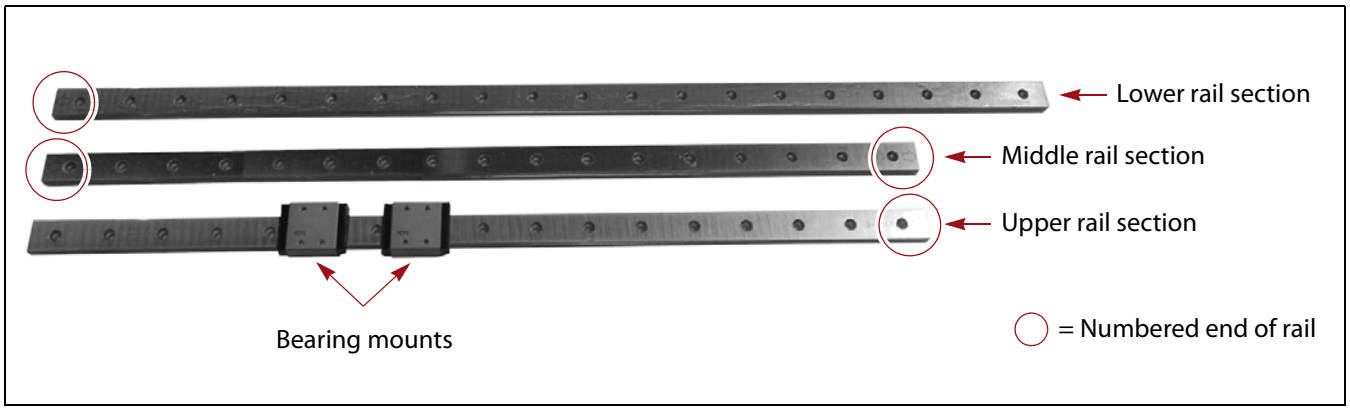

Figure 20 Identify the rail sections.

Install the Lower Rail Section

1. Orient the longest section of linear rail so that the end marked with an arrow and number is toward the top of the VAX column.

   Note: The number on the rail varies with each matched set of rails.

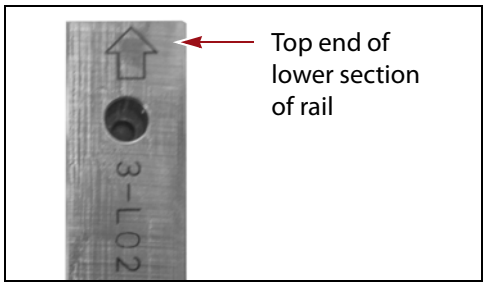

Figure 21 Correctly orient the lower (longest) section of rail.

2. Insert the bottom end of the rail section (the end without the arrow) into the bottom crash stop on the VAX column.

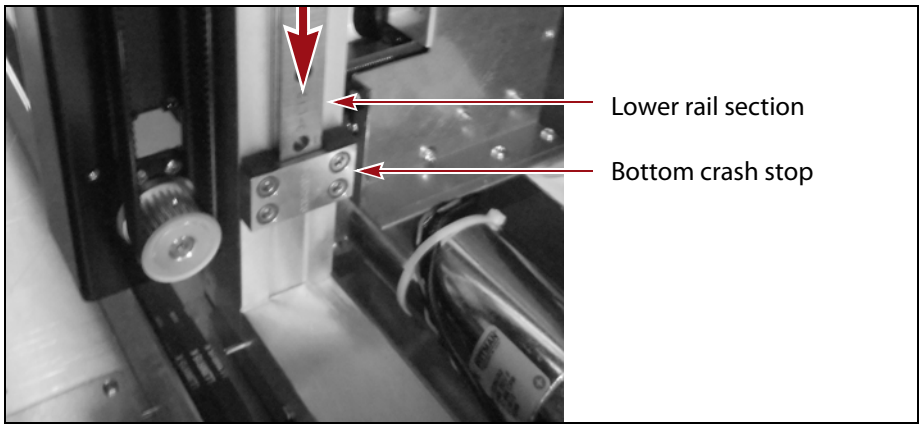

Figure 22 Insert the end of the rail section into the bottom crash stop on the VAX column.

3. Using a 2.5 mm Allen wrench or hex driver (magnetic preferred), loosely attach the lower linear rail section to the VAX column using eleven of the screws included in the replacement rail kit.

   a. Starting with the the top screw hole of the lower rail section, install a screw in every other hole. Install the eleventh screw in the bottom-most hole.

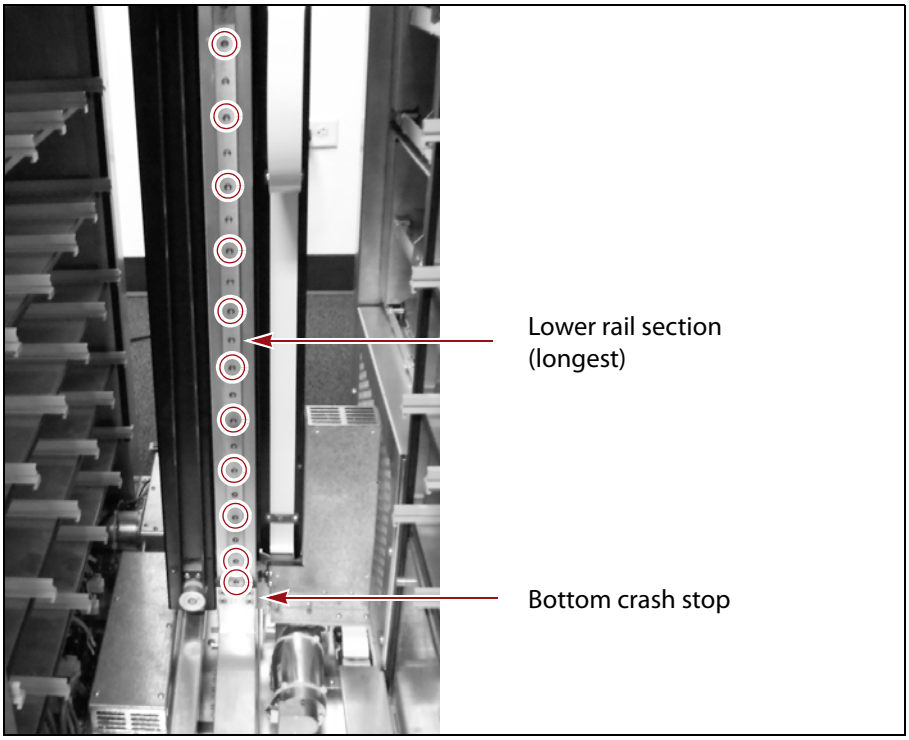

Figure 23 Attach the lower rail section with eleven screws.

   b. Adjust the position of the rail so that it is as far as possible toward the right-hand side of the VAX column, then hand tighten the screws to hold the rail section's position. Do not fully tighten the screws at this point; they will be fully tightened in Align the Middle and Lower Rail Sections on page 23.

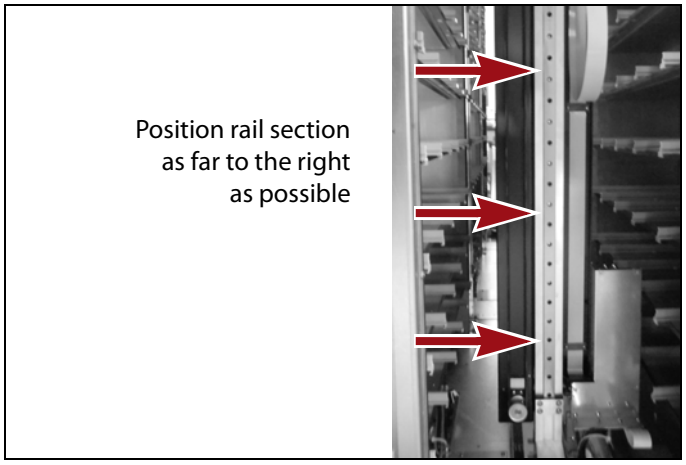

Figure 24 Position the bottom rail section as far to the right-hand side of the VAX column as possible.

Install the Middle Rail Section

1. Match the numbering on the bottom end of the middle rail section to the numbering on the top end of the lower rail section.

   For example, if the lower rail section is marked Z-HR2, the bottom end of the middle rail section must also be marked Z-HR2.

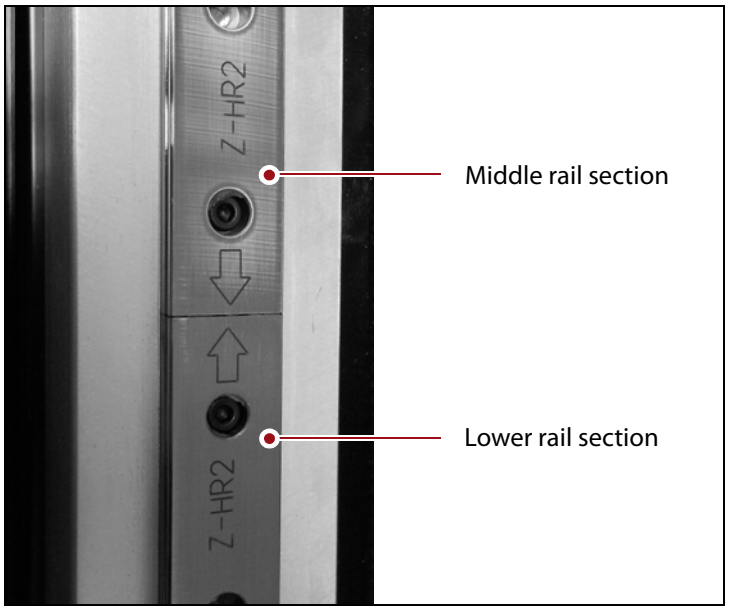

Figure 25 Match the numbers on the middle and lower rail sections.

2. Insert a 0.008-inch feeler gauge between the two linear rail sections to provide the correct gap between the sections.

   Leave the gauge in place until after the screws that attach the rail section to the VAX column are hand-tightened in Step 4 on page 19.

   Note: If you do not have a feeler gauge, you can use a piece of standard copier paper or a sticky note, folded in half.

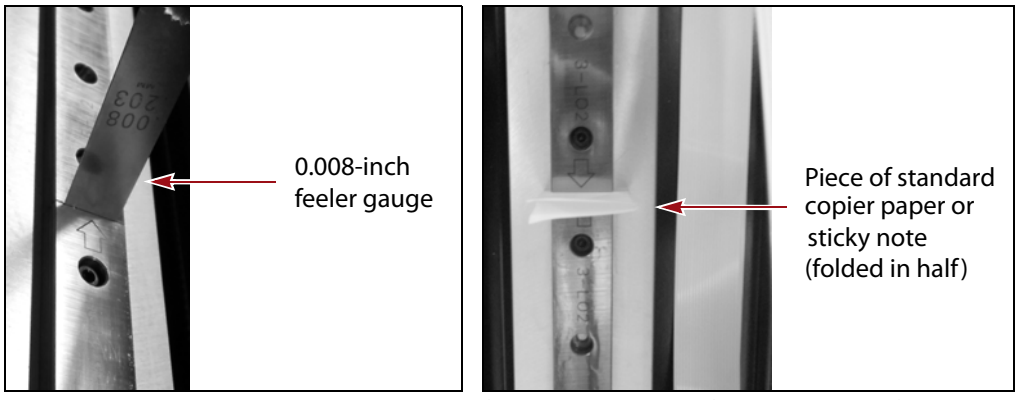

Figure 26 Insert either a 0.008-inch feeler gauge or a folded piece of paper between the rail sections.

3. Using a 2.5 mm Allen wrench or hex driver (magnetic preferred), loosely attach the middle linear rail section to the VAX column using nine of the screws included in the replacement rail kit.

   a. Starting with the the top screw hole of the middle rail section, install a screw in every other hole.

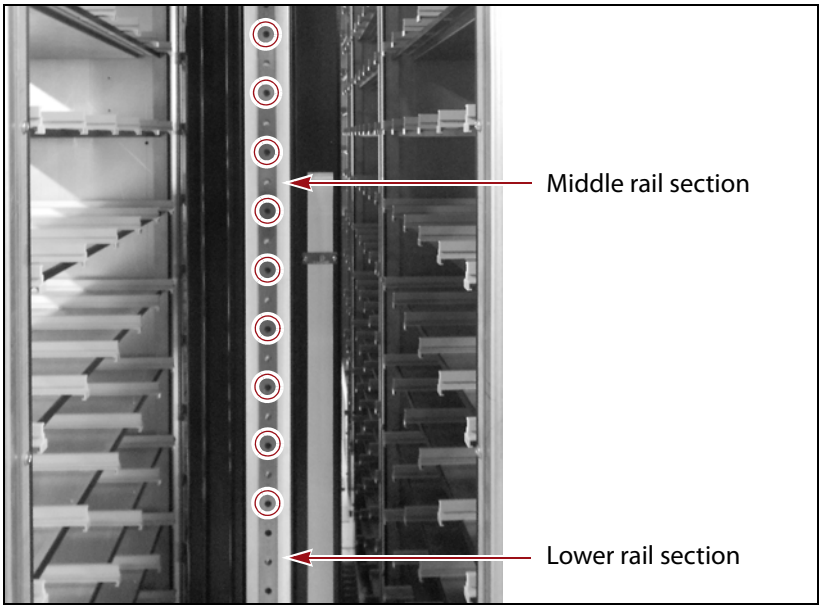

Figure 27 Attach the middle rail section with nine screws.

   b. Adjust the position of the rail so that it is as far as possible toward the right-hand side of the VAX column, then hand tighten the screws to hold the rail section's position. Do not fully tighten the screws at this point; they will be fully tightened in Align the Middle and Lower Rail Sections on page 23.

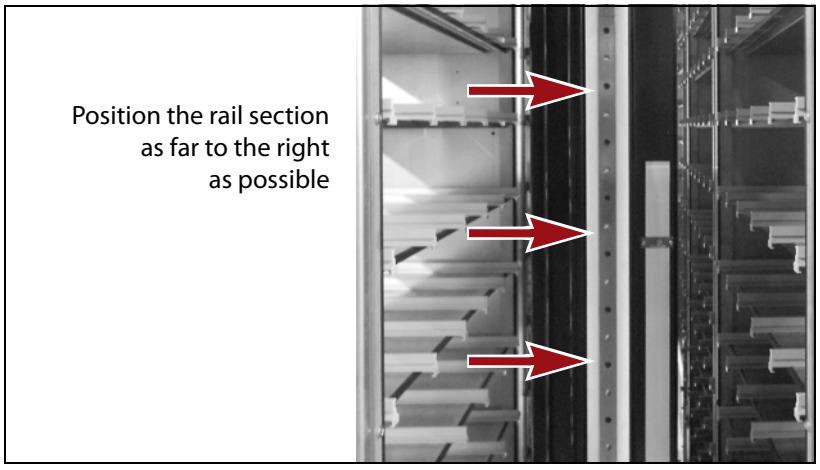

Figure 28 Position the middle rail section as far to the right-hand side of the VAX column as possible.

4. After the screws are tight, use the feeler gauge or folded piece of paper to verify that there is still a 0.008-inch gap between the lower and middle rail sections (see Step 27 on page 18).
5. Remove the feeler gauge or piece of paper from the linear rail joint.

Install the Upper Rail Section

1. Match the number on the bottom end of the upper rail section to the number on the top end of the middle rail section (see Figure 25 on page 18).
2. Hold the bearing mounts to prevent them from sliding off of the rail and insert the top end of the rail section (the end without an arrow) into the top crash stop on the VAX column.

Caution Do not let the bearing mounts to slide off of the rail. The bearings in the mounts are easy to knock out and difficult to find in the library's interior.

Note: If desired, clamp a large binder clip over the linear rail below the bearing mounts to prevent them from sliding as you install the linear rail section.

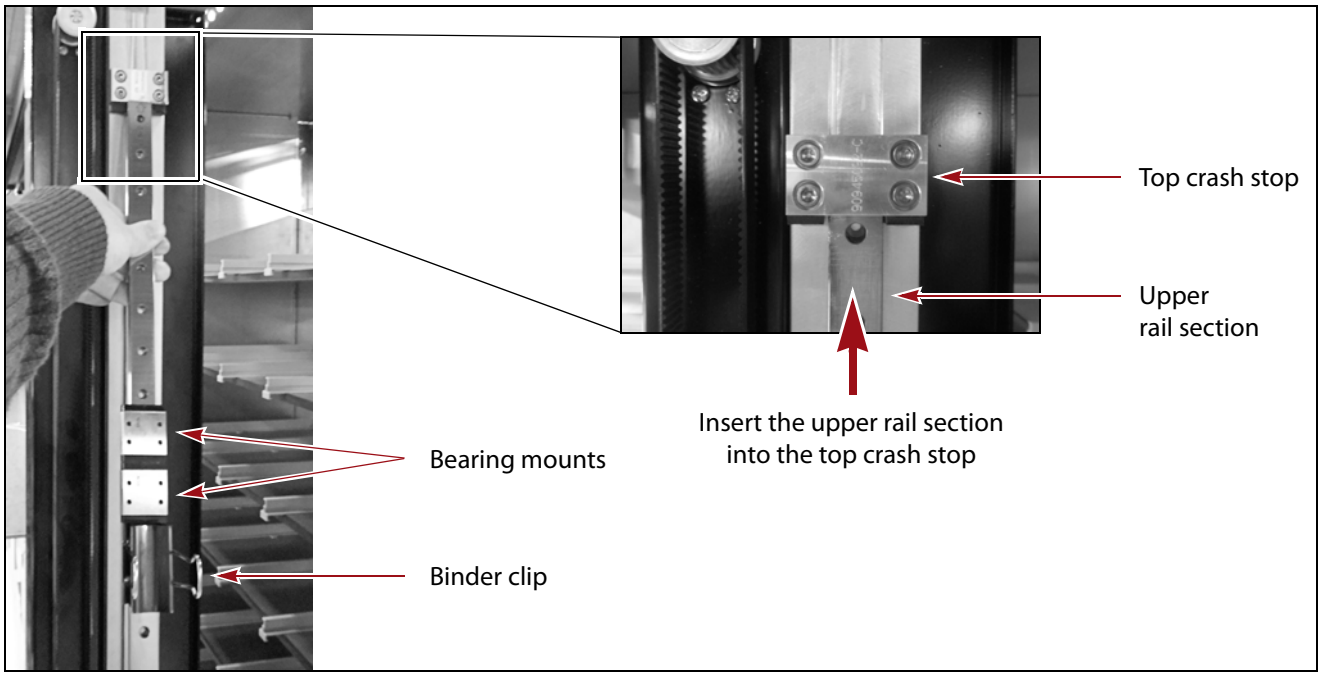

Figure 29 Insert the top end of the upper rail section into the top crash stop.

3. Insert a 0.008-inch feeler gauge between the two linear rail sections to provide the correct gap between the sections (see Figure 26 on page 18).

   Leave the gauge in place until after the screws that attach the rail section to the VAX column are hand-tightened in Step b on page 21.

4. Using a 2.5 mm Allen wrench or hex driver (magnetic preferred), loosely attach the upper linear rail section to the VAX column using nine of the screws included in the replacement rail kit.

   a. Starting with the the top screw hole of the upper rail section, install a screw in every other hole.

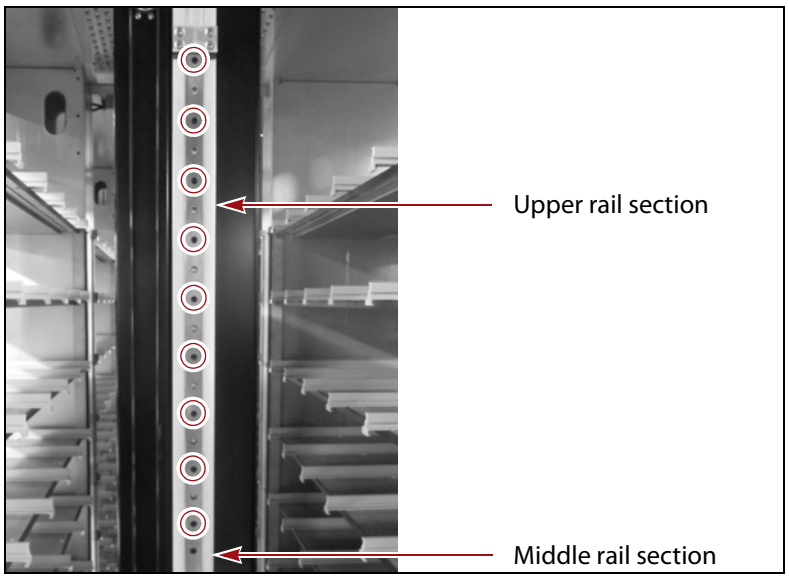

Figure 30 Attach the upper rail section with nine screws.

   b. Adjust the position of the rail so that it is as far as possible toward the right-hand side of the VAX column, then hand tighten the screws to hold the rail section's position. Do not fully tighten the screws at this point; they will be fully tightened in Align the Upper and Middle Rail Sections on page 22.

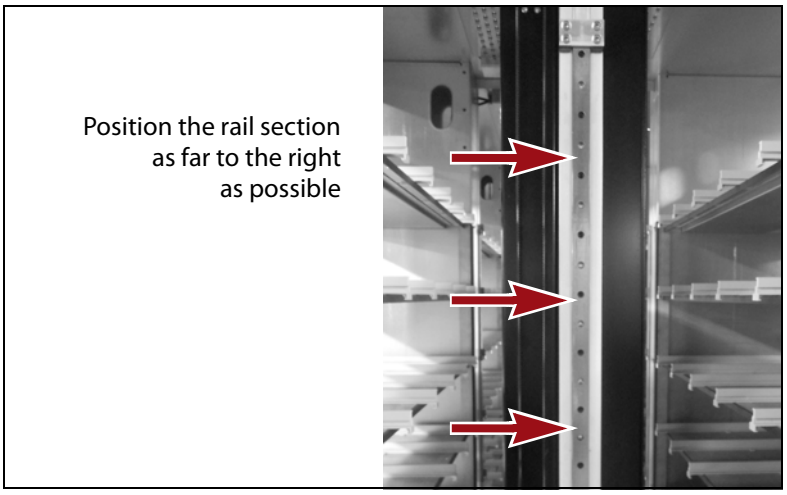

Figure 31 Position the upper rail section as far to the right-hand side of the VAX column as possible.

5. After the screws are tight, use the feeler gauge or folded piece of paper to verify that there is still a 0.008-inch gap between the upper and middle rail sections (see Step 27 on page 18).

6. Remove the feeler gauge or piece of paper from the linear rail joint.

ALIGN THE LINEAR RAIL SECTIONS

Use the instructions in the following sections to align the replacement VAX linear rail.

Align the Upper and Middle Rail Sections

1. Slide the two bearing mounts back and forth across the joint between the upper and middle linear rail sections. The bearing mounts should roll smoothly across the joint, with no catching, binding, or bumping.
2. If you experience catching, binding, or bumping as you move the bearing mount, adjust the position of the rail ends until the bearing mounts glide smoothly across the joint. This may include adjustments for the following:
   - **Vertical rail position**: The bearing mounts will catch on the corners of the rails if the rails are not aligned and the rail corners are not square. Loosen the screws at the ends of the rails that need to be repositioned and adjust the rail ends until they are parallel and the corners of the rails meet squarely.
   - **Relative rail elevation**: Any elevation difference between the rail ends will cause a bump when the bearing mount slides over the joint. The rails have a slight spring action when they are attached to the VAX column. The adjoining ends must be adjusted until they are completely flush. Tighten or loosen the end screws to elevate or compress the rail ends until they are the same height.

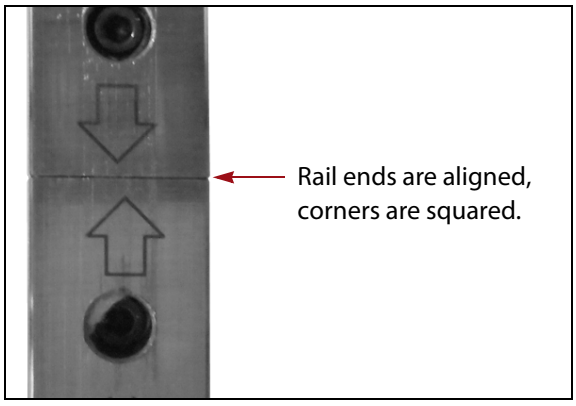

Figure 32 Adjust rail straightness.

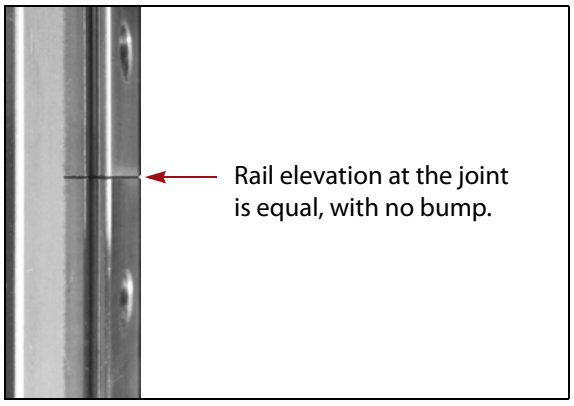

Figure 33 Adjust rail elevation (side view).

3. Verify that the joint between the upper and middle sections of the linear rail is correctly aligned.
   a. Position the two bearing mounts above the top rail joint.
   b. Release the bearing mounts, and let them fall freely past the rail joint. Watch the relative position of the bearing mounts as they move. If the bearing mounts:
      - **Remain together,** the joint is correctly aligned.
      - **Separate as they fall,** the joint is not properly aligned. Repeat Step 1 on page 22 until the bearing mounts remain together as they slide down the rail.

Figure 34 Position bearing mounts above rail joint and let them slide down the rail.

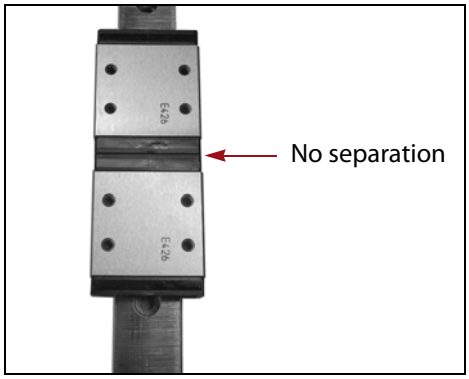

Figure 35 Correctly aligned-bearing mounts remain together as they slide down the rail.

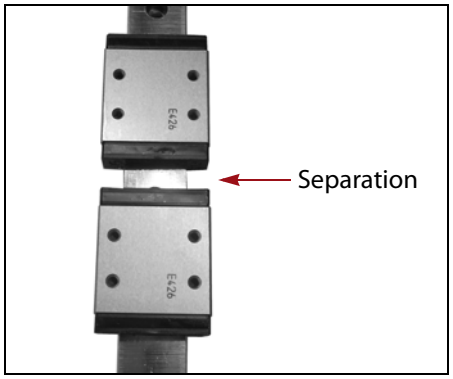

Figure 36 Incorrectly aligned-bearing mounts separate as they slide down the rail.

Align the Middle and Lower Rail Sections

Repeat Step 1 on page 22 through Step 3 to align the joint between the middle and lower section of linear rail.

Verify Rail Alignment

1. After aligning the rails, use the 0.008-inch feeler gauge or a folded piece of paper to confirm that there is still a 0.008-inch gap between the sections of the linear rail. Adjustments to the alignment of the lower joint may have affected the gap between the upper and and middle sections of rail.
2. Fully tighten all 29 screws.
3. After tightening the screws, confirm that the bearing mounts slide smoothly along the entire length of the linear rail.

REASSEMBLE THE LIBRARY

Use the following instructions to reassemble the library.

Reinstall the Transporter Mounting Bracket

1. Slide the bearing mounts up the linear rail until they align with the transporter mounting bracket that is attached to the VAX belt.
2. Using a #2 Phillips screwdriver, reinstall the eight screws you previously removed to secure the transporter mounting bracket to the two bearing mounts.

Caution Make sure that the transporter mounting bracket is not rotated in relation to the linear rail. Having the mounting bracket attached at an angle will cause excessive wear.

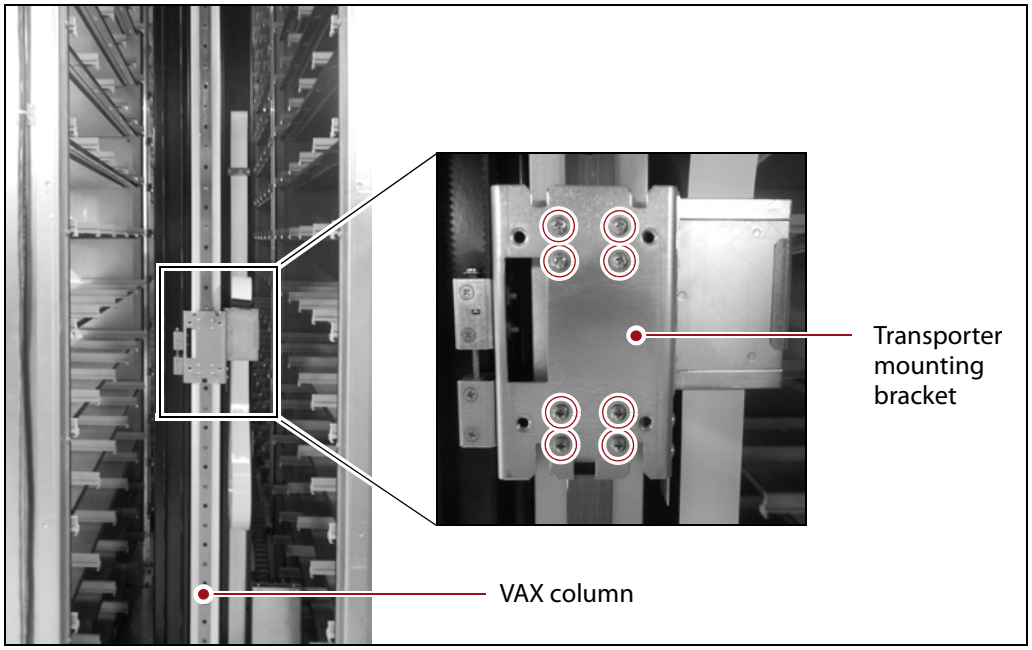

Figure 37 Reinstall the transporter mounting bracket.

3. Move the bracket up and down over the joints between the sections of rail. Make sure the bracket glides smoothly along the entire linear rail with no binding and without catching on the joints.

   If the bracket catches on the joints or there is binding at the joints adjust the position of the bracket where it attaches to the bearing mounts.

   a. Loosen the screws attaching the bracket to the bearing mount.

   b. Adjust the bracket position and tighten the screws.

   c. Confirm that the bracket slides smoothly over the joints.

   d. Repeat the adjustment if necessary.

4. When the rail sections are properly aligned, there should no noticeable changes when moving the bracket past any of the joints. The three rail sections should feel like one solid rail.

Reinstall the Transporter

1. (Optional) Secure the transporter mounting bracket at a comfortable working height (see Step 1 on page 9).
2. Identify the bracket hooks on the back of the transporter as well as the slots in the bracket on the VAX column where the hooks engage.

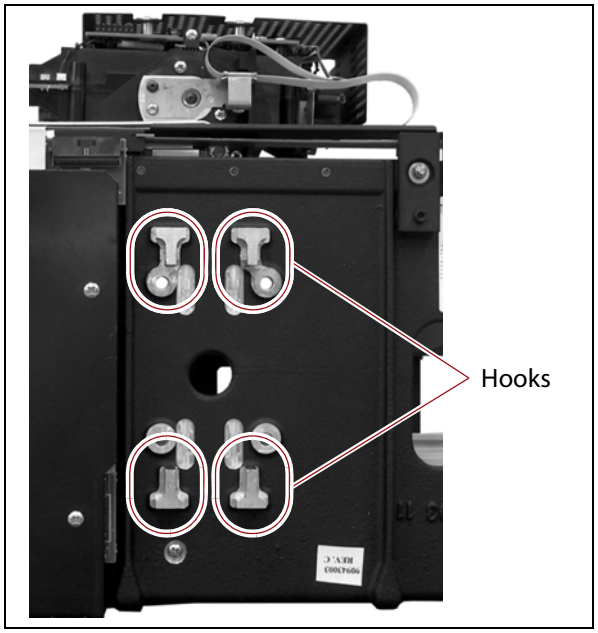

Figure 38 The transporter mounting hooks (viewed from the back of the transporter).

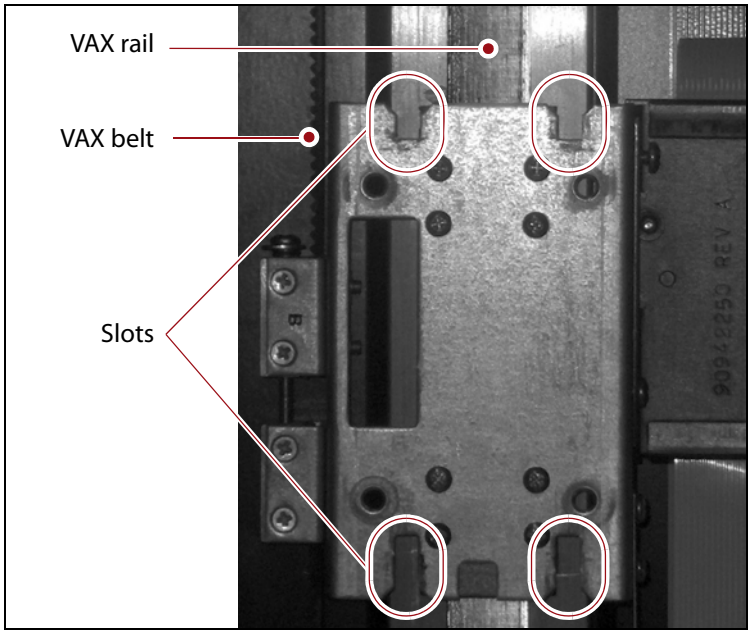

Figure 39 The mounting bracket slots on the VAX column.

3. Mount the transporter.

   a. With one hand supporting the weight of the transporter from underneath and your other hand stabilizing it, orient the transporter with the bracket hooks toward the mounting bracket on the VAX column (see Figure 38 and Figure 39 on page 25).

Caution Do not lift the transporter using the cartridge picker or the front of the transporter. They are not designed to support the weight of the transporter.

   b. Lift the transporter into the library and slide the mounting hooks on the back of the transporter into the slots on the mounting bracket on the VAX column.

Caution Be careful not to bump the VAX column, VAX motor, or the components on the PC card mounted in the bottom front of the frame.

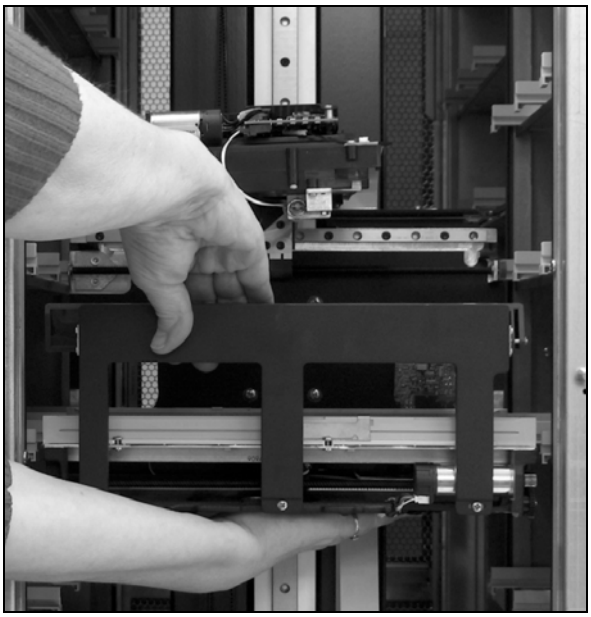

Figure 40 Lift the transporter into the library and onto the mounting bracket.

   c. While stabilizing the transporter with one hand, gently pull the bottom of the transporter away from the VAX column to confirm that the transporter mounting hooks are securely seated in the slots on the mounting bracket.

d. Use either a #2 Phillips screwdriver or a 5/32-inch T-handle hex wrench to install the four screws that secure the transporter to its mounting bracket.

Caution Be careful not to drop the screws into any of the internal components.

Notes:
- Tighten the screws in an "X" pattern. For example, tighten the top right screw, the bottom left screw, the bottom right screw and finally, the top left screw.
- To reach the bottom two screws, insert the screwdriver through the openings in the side of the transporter.

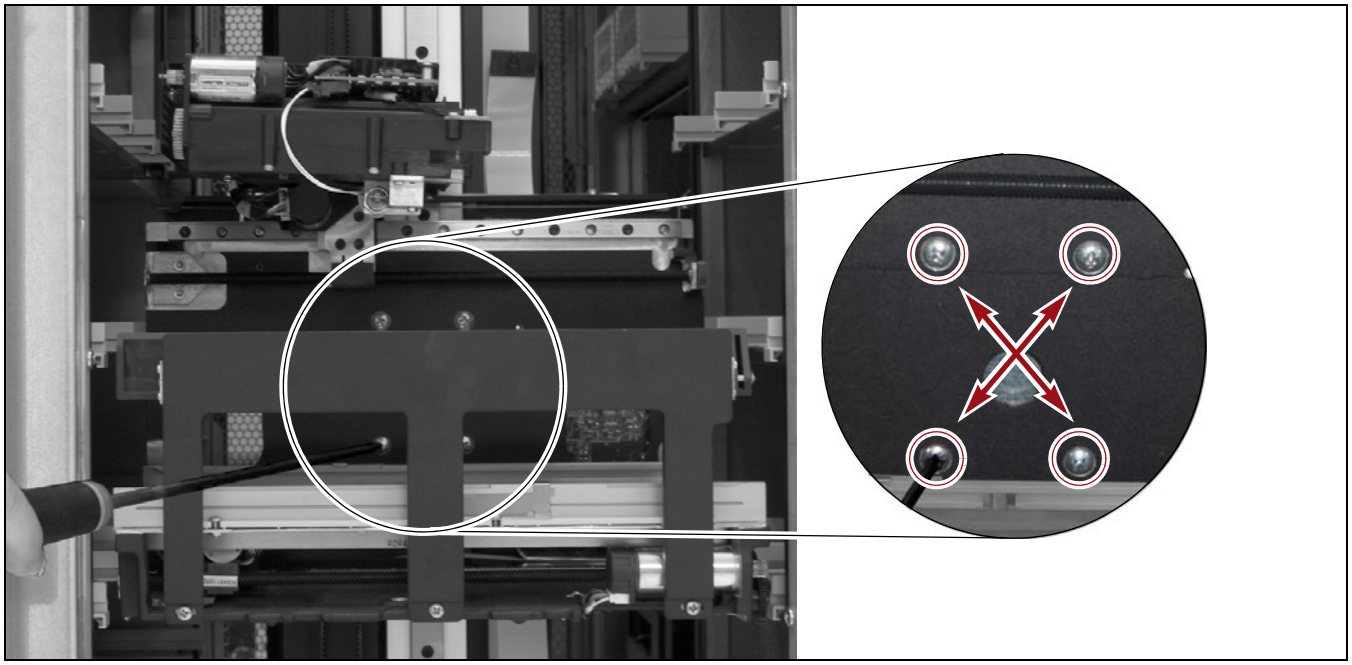

Figure 41 Install the screws securing the transporter to the mounting bracket on the VAX column.

4. To improve access to the ribbon cable connector on the transporter, grasp the front edge of the cartridge picker and gently rotate the cartridge picker clockwise 90° so that it is in a vertical position.

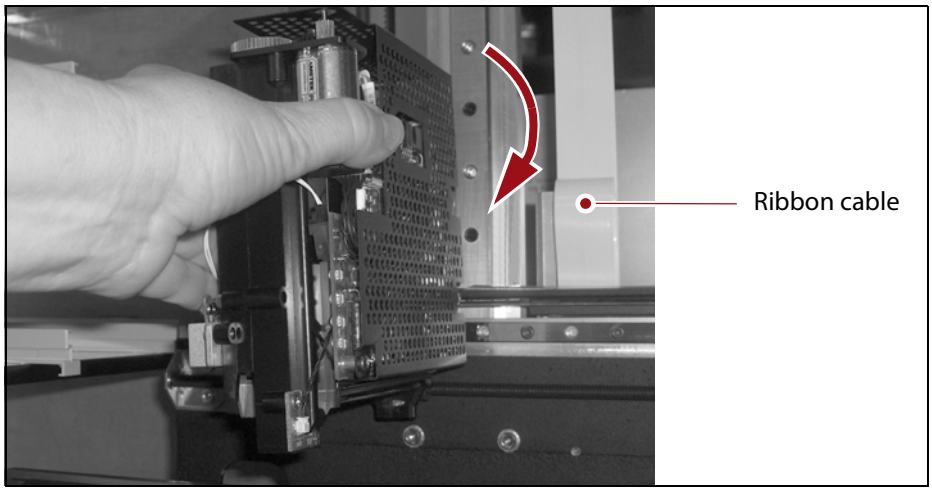

Figure 42 Rotate the cartridge picker to vertical.

5. Plug the ribbon cable into the edge connector on the printed circuit board mounted on the back of the transporter. You will hear an audible click as the connector release tab snaps into place.

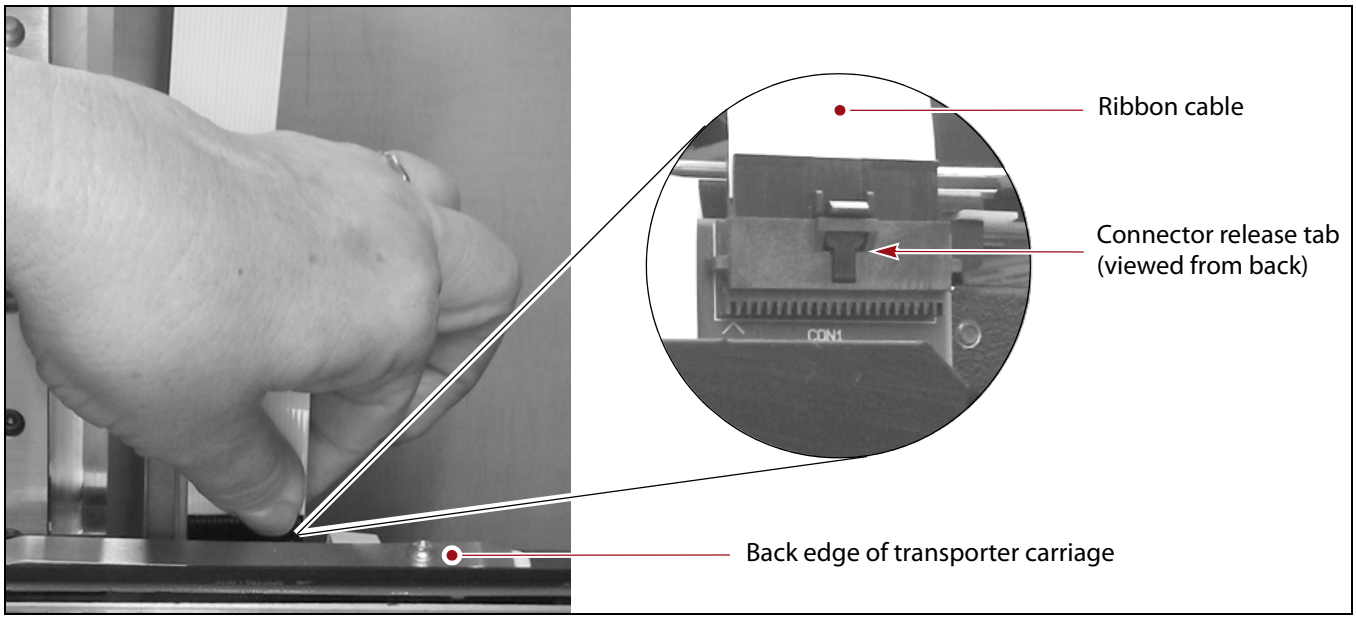

Figure 43 Plug the ribbon cable into the printed circuit board on the back of the transporter.

6. Gently rotate the cartridge picker back to its horizontal position if you previously rotated it to vertical.

Lubricate the Linear Rail

1. Use a foam applicator to apply four thin, evenly spaced, 1-inch long strips of VAX grease (white, PN 90948215) in the bearing groove along each side of the VAX linear rail.

   Notes:
   - You can use any non-shedding, non-scratching applicator to apply the grease.
   - Do not apply an excessive amount of grease.

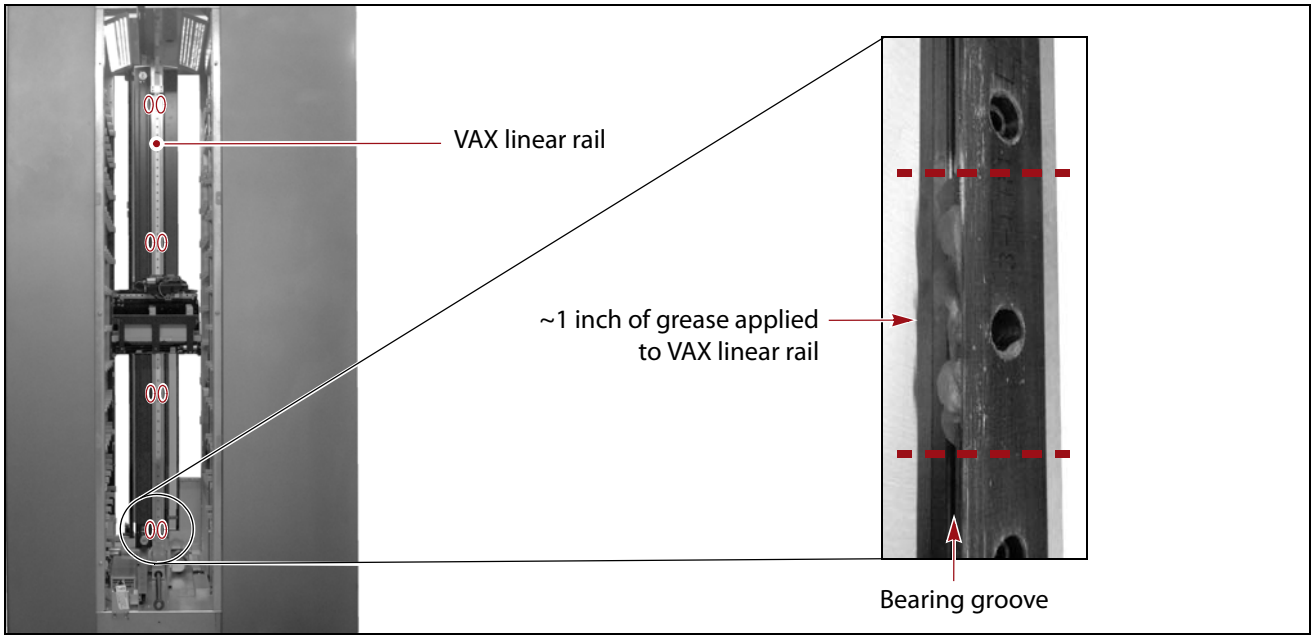

Figure 44 Apply four, 1-inch strips of VAX grease in the bearing groove along each side of the VAX linear rail.

2. Apply a thin layer of VAX grease to the flat surface of the linear rail to prevent potential oxidation.

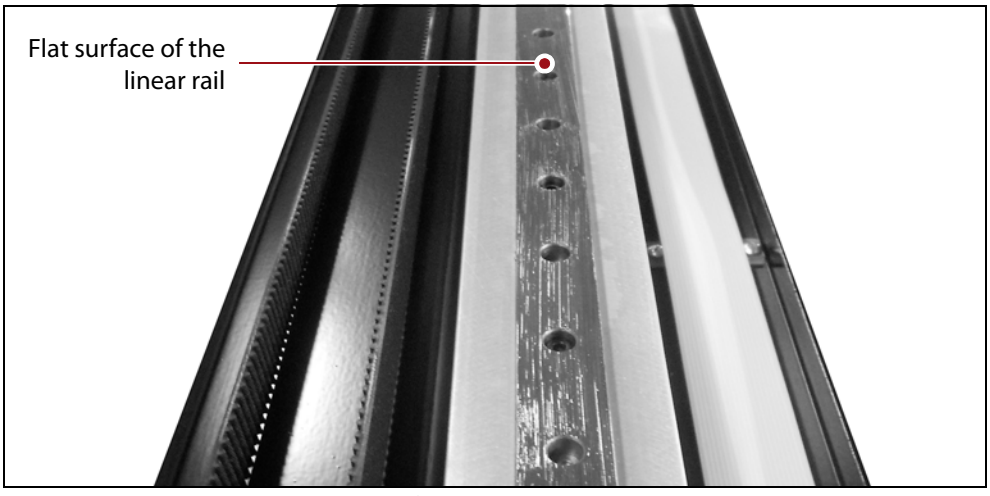

Figure 45 Apply a thin layer of VAX grease to the new linear rail.

3. While supporting the transporter from the bottom, remove the binder clip and slowly move the transporter from the middle to the top of the VAX linear rail and then allow the transporter to slide down to its resting position.

   As the transporter moves along the linear rail, the bearing mounts distribute the grease along the rail.

   Note: As you move the transporter, listen for any abnormal sounds (for example, metal-on-metal grinding or screeching). Contact Spectra Logic Technical Support if you hear any any abnormal sounds (see Spectra Logic Technical Support on page 2).

4. Use a lint-free cleaning cloth to wipe away any excess grease that collects at the top and bottom ends of the VAX linear rail.

   Note: Do not use alcohol on the wipe.

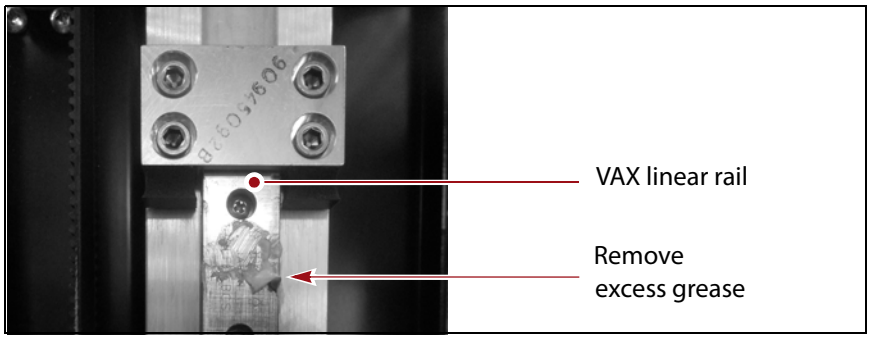

Figure 46 Excess grease pushed to the end of the VAX linear rail.

VERIFY THE LINEAR RAIL ALIGNMENT

1. Make sure the transporter moves smoothly down the linear rail while fully-weighted.
   a. Insert the fully-loaded magazine (spare or previously exported) into the transporter.
   b. Lift the transporter to the top of the linear rail and release it.
   c. Make sure the transporter moves smoothly over the two linear rail joints, without bumping or catching.
   d. Remove the magazine.

Caution Use the front panel to re-import the magazine. Inserting the magazine manually will cause backup failures.

2. Make sure the transporter moves smoothly down the linear rail while empty.
   a. Lift the empty transporter to the top of the linear rail and release it.
   b. Make sure the transporter moves smoothly over the two linear rail joints, without bumping or catching.
3. If the transporter does not move smoothly, remove the transporter and return to Align the Linear Rail Sections on page 22 to realign the rail.

Reinstall the Side Access Panel

1. Lift the panel and position the openings on the back of the panel on the hooks on the sides of the opening in the end of the frame.
2. While holding the panel steady with one hand, slide the panel down into place.
3. Use a 1/8-inch Allen wrench or hex screwdriver to install the screw at the bottom of the side panel.

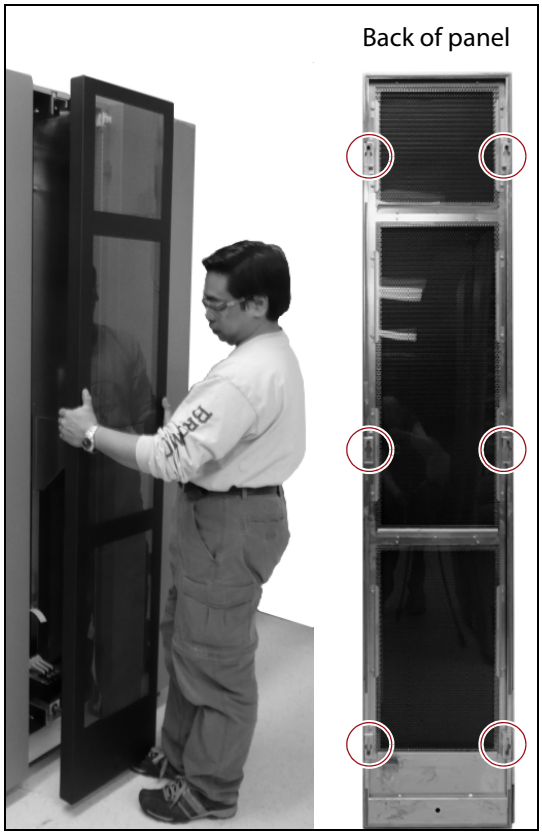

Figure 47 Lift the panel onto the hooks on the sides of the opening.

Figure 48 Slide the panel down into place.

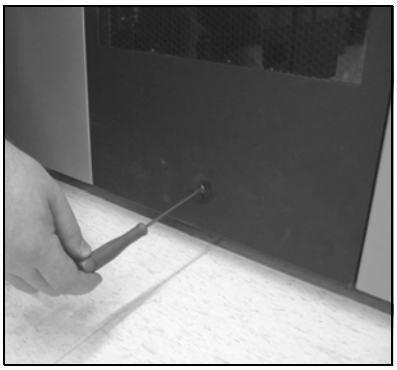

Figure 49 Install the screw to secure the panel.

TEST THE VAX LINEAR RAIL AND THE LIBRARY

This section describes using the library diagnostics to check the alignment of the VAX linear rail and test the operation of the library robotics. Watch and listen for anything that seems unusual and for any error messages as the library performs each test.

Important If you encounter problems that you are unable to resolve, contact Spectra Logic Technical Support for assistance (see Contacting Spectra Logic on page 5). You may be asked to provide the tracing logs to assist with troubleshooting.

Power On the Library

1. Set both AC breaker switches to the on (up) position.
2. Press and hold the front panel power button (Figure 4 on page 7) for two to three seconds or until the button's LED illuminates.

   The library will begin its power-on sequence, which includes an obstruction scan. If the library encounters an obstruction, power off the library, locate and remove the obstruction, and power on the library again.

Test the Robotics

After the library successfully completes the obstruction scan, perform the following test to confirm that the robotics are functioning properly.

Estimated Time = 10 minutes

1. Log into the library as a user with administrator or superuser privileges.
2. Select **Maintenance** ⋯⁘ **Tools** ⋯⁘ **Diagnostics**. The Diagnostics screen displays.

3. Select **All Motion Basic Tests**. The screen refreshes to show the details for the test.

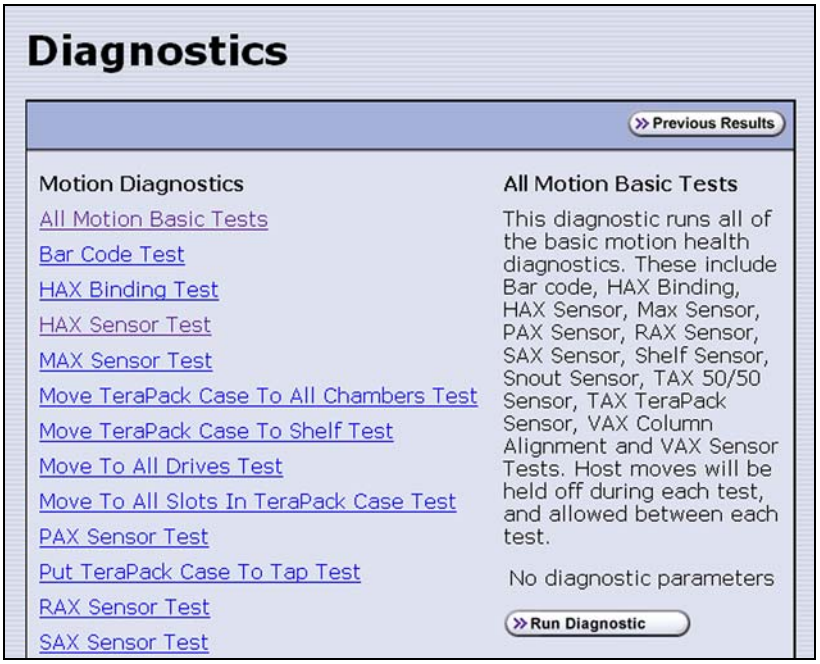

Figure 50 The All Motion Basic Tests Diagnostics screen.

4. Click **Run Diagnostic**. A progress screen displays while the test runs.
5. When all of the tests are complete, the Diagnostic Results screen displays. Each of the individual tests run by the diagnostic has a result of success, warning, or fail.
   - If all of the tests results are Success, skip to Turn Off Obstruction Scan (Optional) on page 34.
   - If a test result is either Warning or Fail, proceed to Step 6.

Figure 51 The Diagnostics Results detail screen for All Motion Basic Tests.

6. Click **Detail** on the Diagnostic Results screen to view detailed result information.

7. Follow any instructions provided on the results screen to resolve the issues encountered by the tests.
8. Repeat the **All Basic Motion Tests** described in this section.
9. If all of the tests still do not complete successfully, contact Spectra Logic Technical Support for assistance (see Spectra Logic Technical Support on page 2).

COMPLETE THE REPLACEMENT

After testing the robotics, use the instructions in the following sections to complete the replacement

Turn Off Obstruction Scan (Optional)

The obstruction scan enabled at the beginning of this replacement procedure was needed to ensure that there were no obstructions in the library after the VAX linear rail was replaced. To speed up the power-on initialization process, use the following steps to turn off the obstruction scan.

1. Select **Maintenance** ⋯⁘ **Tools** ⋯⁘ **Utilities**. The Utilities screen displays.
2. Click **Show Advanced**. The Advanced Utilities Confirmation screen displays.
3. Click **Next**. The Utilities screen refreshes to show the advanced utilities.
4. Scroll down and select **Set Scans at Startup Defaults**.

   The screen refreshes to show the details for the Set Scans at Startup Defaults utility. From the **Select Obstruction Scan behavior** drop-down list, select **Disabled**.
5. Click **Run Utility**.

   A progress screen displays. When the operation is complete, a Utility Results screen displays. The library will no longer run an obstruction scan as part of its power-on sequence.

Restart Backups

Use your backup software to restart any backup processes running on the library.

Reimport the Magazine

If you exported the TeraPack magazine that was used to test the linear rail from the library, reimport it. Refer to your library's *User Guide* for instructions.

RETURN THE COMPONENT

Return Guidelines

Unless Spectra Logic Technical Support informs you otherwise, return the defective component to Spectra Logic as described in the following section. If Spectra Logic Technical Support informs you that the component does not need to be returned, dispose of it following your company guidelines.

Return Procedures

After you complete the replacement procedure, return the defective component using ALL of the packaging material shipped with the replacement component.

Caution Severe damage can occur if the component is not packaged correctly, and you may be invoiced if it is received with damage due to improper or insufficient packaging.

Use the return label and instructions that were included with the replacement component when preparing to ship the replacement part. If you cannot locate these, contact Spectra Logic for another copy (see Spectra Logic Technical Support on page 2). The return label and RMA printed on it are used to associate the returned part with your account. To avoid being invoiced for failure to return the part, do not ship the part back without the RMA return label.