COMPAQ

Compaq StorageWorks Installing a DS–BA370–Series Enclosure in an EIA Compliant Rack

This document describes the procedure for installing a DS–BA370 enclosure into either a H9A10 or H9A15 Electronics Industry Association (EIA) compliant rack (cabinet).

WARNING!

Never install an upper enclosure into a rack that does not have the lower enclosure installed. To do so will cause the rack to become top-heavy and unstable. Failure to comply with this warning might cause bodily injury or death.

Never attempt to lift an enclosure with all the elements installed. Enclosures with all elements installed weigh more than 102 kg (225 lb).

Installing enclosure elements, configuring power systems, and similar enclosure specific procedures are described in the *Compaq StorageWorks UltraSCSI RAID Enclosure (DS–BA370–Series) User's Guide.*

For information about configuring and operating the array controller, refer to the array controller documentation.

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EK–370RK–IG. A01
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Enclosure Mounting Kit Parts

Upon unpacking the mounting kit, use Table 1 to verify that all parts are available.

Table 1 Enclosure Mounting Kit Parts

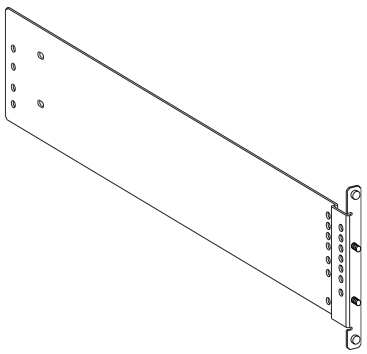
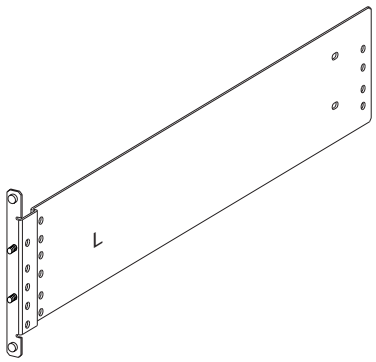
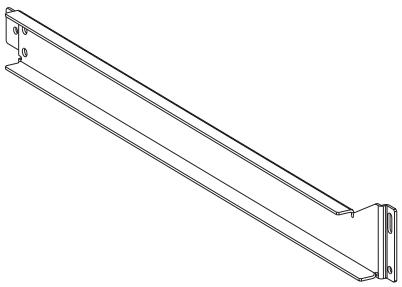
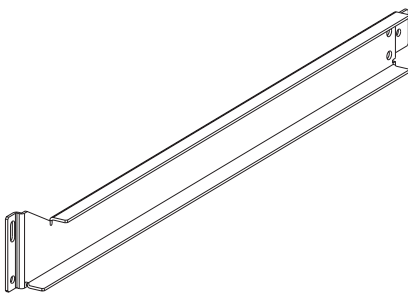
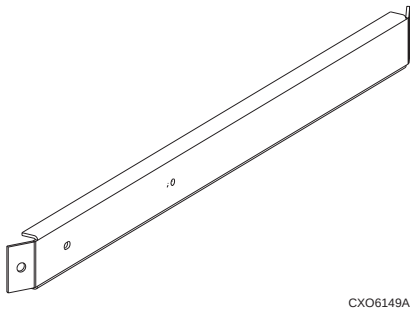
Description and Part Number	Quantity
Bracket, Mounting, Base—Right, 74–52105–01  CXO6146A	2
Bracket, Mounting, Base—Left, 74–52106–01  CXO6145A	2
Bracket, Slide Mount—Right, 74–52107–02  CXO6148A	2
Bracket, Slide Mount—Left, 74–52107–01  CXO6147A	2

Table 1 Enclosure Mounting Kit Parts (Continued)

Description and Part Number	Quantity
Bracket, Slide, 74–52108–01  CXO6149A	4
Clamp, Slide Bracket, 74–52118–01 CXO5150A	8
10-32 x 3/8 inch pan head SEMS screw, 90–09228–10	36
10-32 x 5/8 inch pan head SEMS screw, 12–21368–02	8
8-32 x ¼ inch pan head SEMS screw, 90–09545–00	8
U-Nut, 90–07886–00	8
Kep Nut, 90–06565–00	8
#10 Washer, Flat, 90–06664–00	8

Installation Procedure

The installation sequence is as follows:

1. DS–BA370 criteria
2. Determine rack configuration
3. Shutdown the subsystem
4. Remove enclosure elements
5. Install mounting base brackets
6. Install slide mount brackets
7. Install enclosure slide brackets
8. Install the enclosure

DS–BA370 Criteria

Prior to installing the BA370 enclosure, ensure the RETMA rack meets the following criteria:

- The rack must have a minimum vertical opening of 30.5 inches with either a 5.8 or 3.8 inch clearance from the top of the opening to the mounting base bracket bottom stud (see Section “Determining Rack Configuration”).
- Due to possible enclosure overheating, air recirculation must be minimized with appropriate filler panels between installed enclosures.

Determining Rack Configuration

The RETMA installation kit can be used to install an enclosure into the uppermost position, the lower most position, or in any intermediate position of a RETMA rack provided there is adequate clearance between adjoining enclosures.

- To install the BA370 in the uppermost position of a rack, use configuration A and Figure 1.
- To install the BA370 in the lowermost position of a rack, use configuration B and Figure 2.
- To install the BA370 in an intermediate position of a rack, you must first determine which bracket assembly configuration best suits your clearance needs.

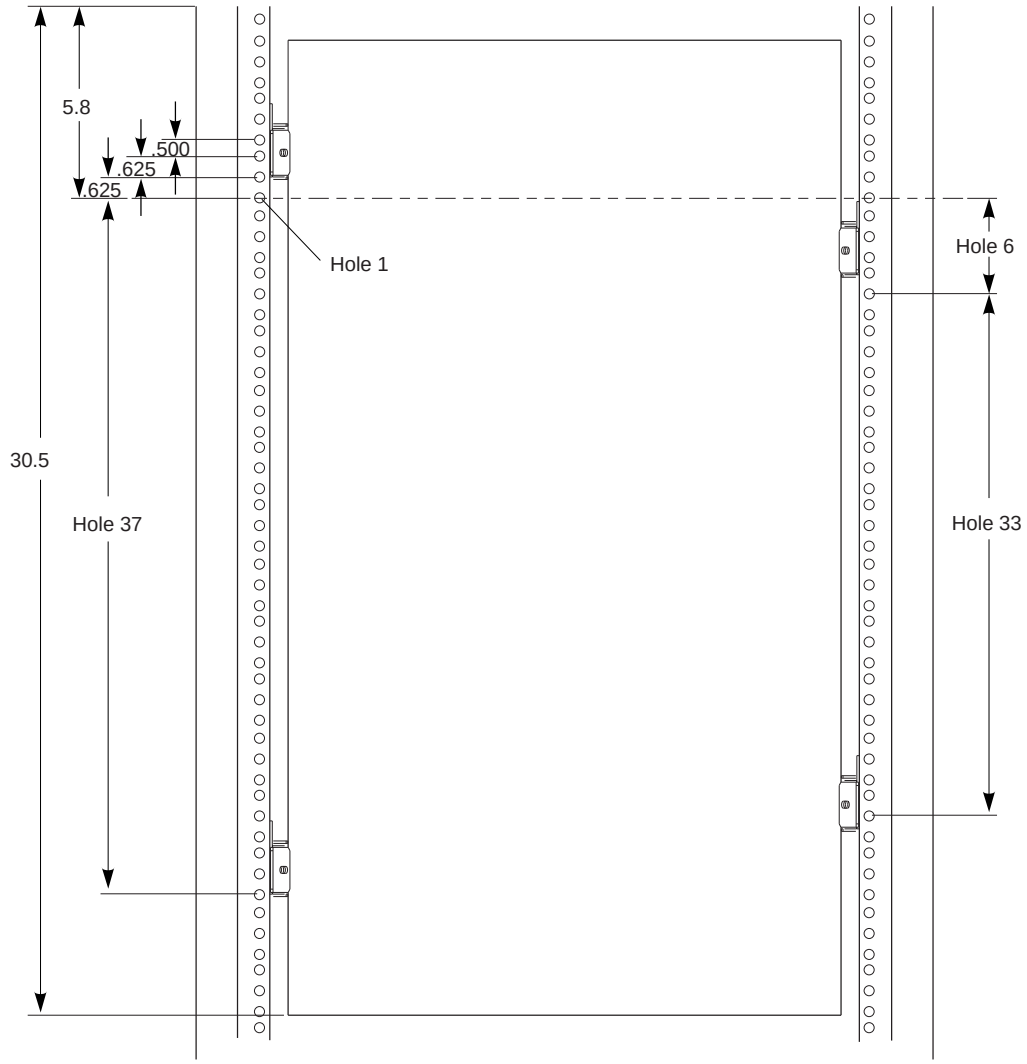
Configuration A: requires a minimal clearance of 30.5 inches (see "Configuration A Formula") between enclosures or between the rack and an enclosure. In addition, the bottom stud of the upper left bracket (named Hole 1) must have a minimum of 5.8 inches clearance from the bottom of any enclosure installed above the intended position of the BA370.

Configuration A Formula

D = Distance of mounting hole from bottom of upper enclosure (5.8 inches minimum)

Clearance = D + 24.7 inches

Figure 1 Configuration A, Rack Front Rail Hole location for Installing the Mounting Base Brackets



Configuration B: also requires a minimal clearance of 30.5 inches (see "Configuration B Formula") between enclosures or between the rack and an enclosure. In addition, the bottom stud of the upper left bracket (named hole 1B) must have a minimum of 3.8 inches clearance from the bottom of any enclosure installed above the intended position of the BA370.

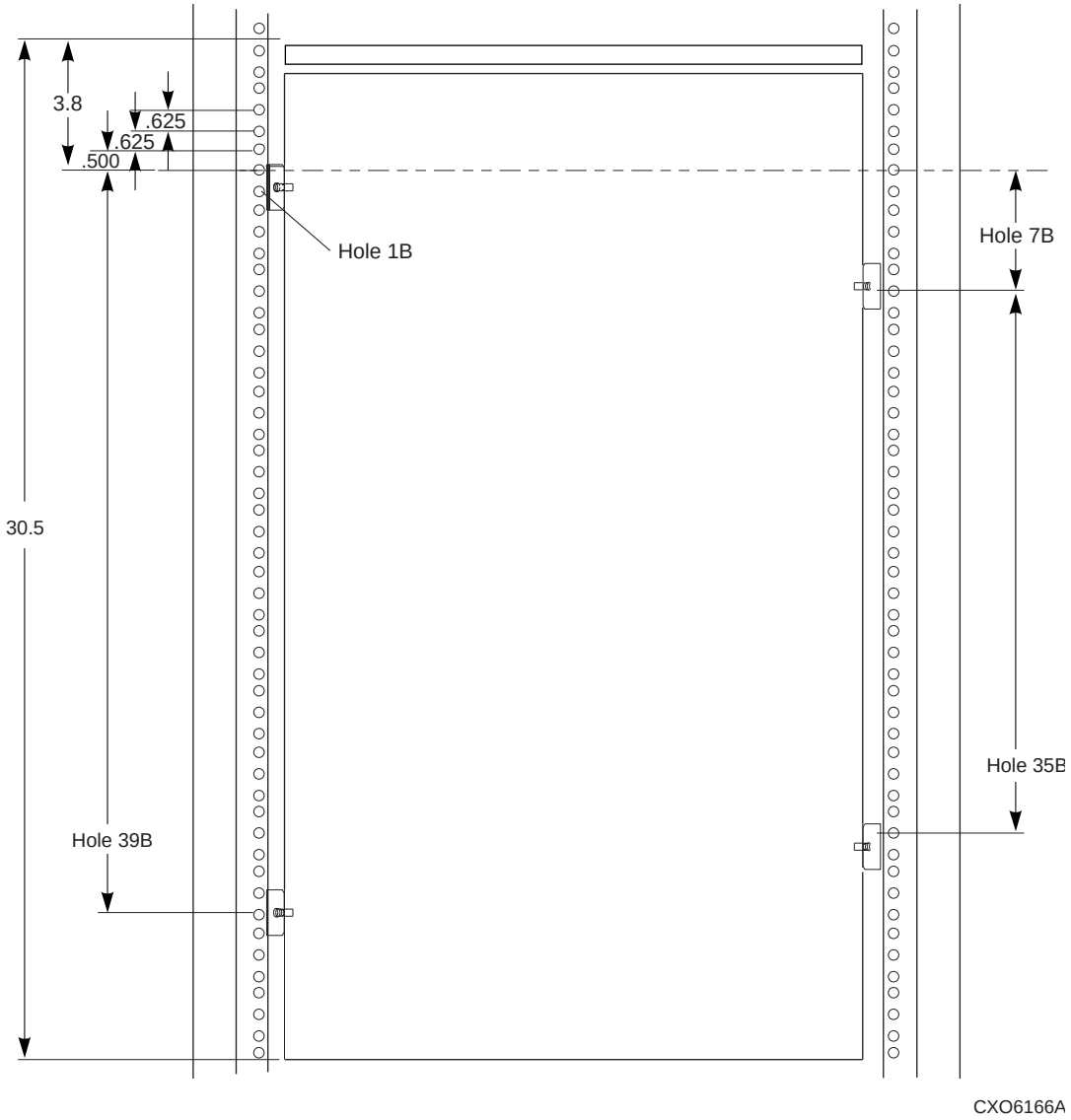
Use the following to calculate the needed enclosure clearance for mounting configuration A or B in hole positions which are **NOT** at the minimal distance from the bottom of any enclosure installed above the intended position of the BA370.

Configuration B Formula

D = Distance of mounting hole from bottom of upper enclosure (3.8 inches minimum)

Clearance = D + 26.7 inches

Figure 2 Configuration B, Rack Front Rail Hole location for Installing the Mounting Base Brackets



Shutdown the Subsystem

Remove all power from the rack.

WARNING!

The possibility of injury exists due to the high voltages present within the rack when power is applied. Therefore, all elements must be turned OFF. Compaq recommends that you disconnect the ac power cord from the wall receptacle.

Removing Enclosure Elements

Before installing an enclosure, remove all installed elements. The *Compaq StorageWorks UltraSCSI RAID Enclosure (DS–BA370–Series) User's Guide* describes the procedures for accomplishing this task.

WARNING!

An enclosure with all the elements installed weighs more than 102 kg (225 lb).

To reduce the possibility of injury you must use the following procedures:

- **Remove all the elements before lifting the enclosure.**
- **Use a minimum of two people to move or install the enclosure.**
- **Use a hand-cart or dolly to move the enclosure.**

Installing Mounting Base Brackets

After determining the mounting base bracket configuration, complete the installation procedure in Table 2.

Table 2 Mounting Base Brackets Installation Procedure

1. Mark both rack rails (the rack rail holes are counted from the top to the bottom) for the holes that will be used to insert each mounting base bracket bottom stud into.
2. Insert the upper-left mounting base bracket studs (CALLOUT 1) into the rack rail holes marked in step 1.

Figure CALLOUTS Legend:

1. Studs and half-shear
2. Front slide bracket clamp mounting holes
3. Front slide mount bracket mounting holes
4. Rear mounting base bracket holes
5. Rear slide mount bracket mounting holes

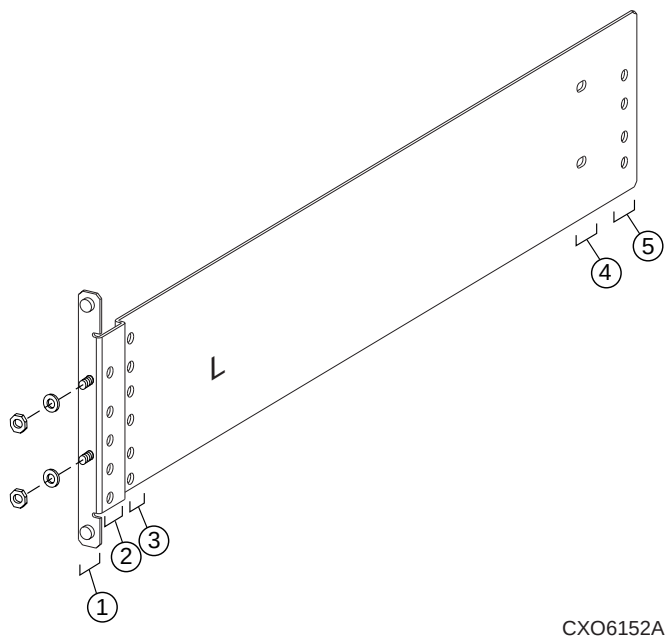


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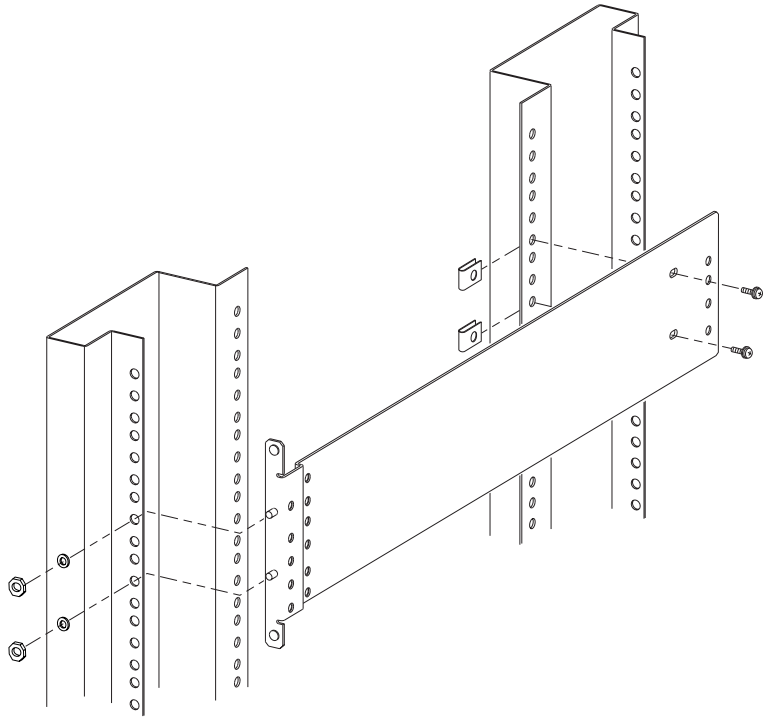
Table 2 Mounting Base Brackets Installation Procedure (Continued)



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3. Install a Kep nut and washer onto each mounting base bracket stud. Do **NOT** tighten.
4. At the rear of the rack, note the rail holes that are in-line with each mounting base bracket rear mounting hole and insert two U-nuts (CALLOUT 5) onto the rail. Insert two 10-32 x 5/8 SEMS screws through the bracket and into the U-nuts (CALLOUT 5). Do **NOT** tighten.
5. Repeat steps 2, 3, and 4 for the three remaining mounting base brackets.
6. Ensure the mounting base bracket half-shears are seated, then fully tighten the Kep nuts.
7. Fully tighten all screws that were installed during step 4.

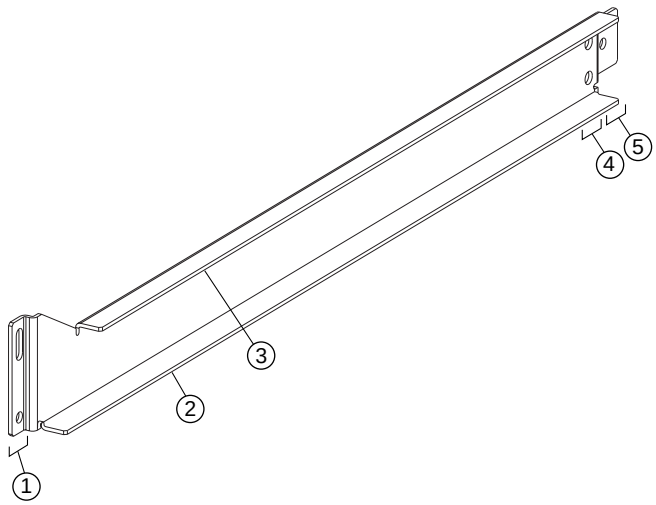
Installing the Slide Mount Brackets

Use Figure 3 to determine the slide mount bracket hole layout.

Figure 3 Slide Mount Bracket

Figure CALLOUTS Legend

1. Front mounting bracket
2. Bottom rail
3. Top rail
4. Mounting holes for Installing rear slide bracket clamp
5. Rear mounting bracket



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Refer to Table 3 for installing the slide mount brackets.

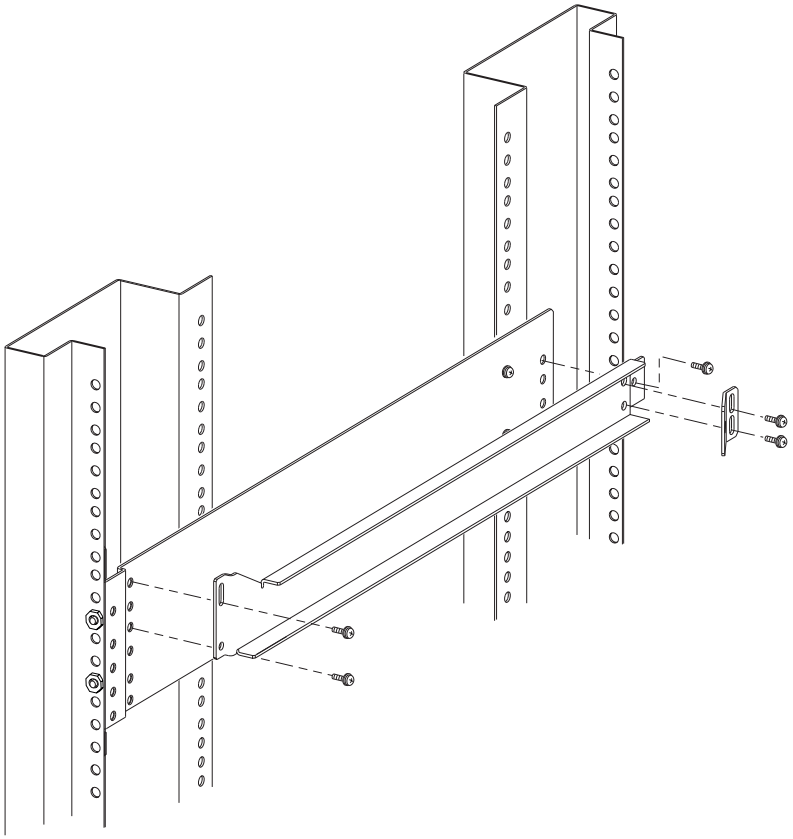
Table 3 Mounting Base Bracket Hole Location used for Installing the Slide Mount Bracket

Configuration A	Configuration B
1. Upper-left bracket assembly, 4 holes from the bottom	1. Upper-left bracket assembly, 1 hole from the bottom
2. Bottom-left bracket assembly, 3 holes from the bottom	2. Bottom-left bracket assembly, 2 holes from the bottom
3. Upper-right bracket assembly, 5 holes from the bottom	3. Upper-right bracket assembly, 2 holes from the bottom
4. Bottom-right bracket assembly, 3 holes from the bottom	4. Bottom-right bracket assembly, 1 hole from the bottom

After determining which mounting base bracket holes to use, complete the installation procedure in Table 4.

Table 4 Slide Mount Bracket Installation Procedure

1. Use two 10-32 SEMS x 3/8 inch screws to attach a slide bracket clamp to the rear of the slide mount bracket (CALLOUT 4 in Figure 3 identifies holes to use). Finger tighten.



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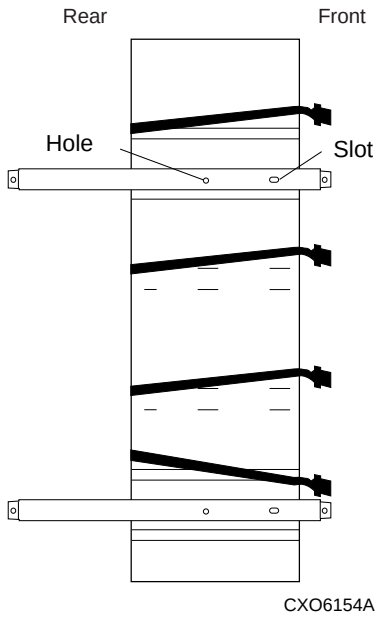
2. Attach the slide mount brackets to the mounting base brackets (per Table 3) as follows:
   a. Position the slide mount bracket so that the front-**bottom** hole (see CALLOUT 1 in Figure 3) is aligned to the mounting base bracket hole.
   b. Insert a 10-32 SEMS x 3/8 inch screw through the slide mount bracket front-bottom hole and into the mounting base bracket (see CALLOUT 1 in Figure 3). Finger tighten.
   c. Insert a 10-32 SEMS x 3/8 inch screw through the slide mount bracket front-slotted (top) hole and into the mounting base bracket. Finger tighten.
   d. Adjust the rear of the slide mount bracket so that it is parallel with the mounting base bracket and the hole is lined-up.
   e. Insert a 10-32 SEMS x 3/8 screw through the rear hole of the slide mount bracket and into the mounting base bracket hole. Fully tighten.
   f. Fully tighten all front screws.
3. Repeat steps 1 and 2 for the other three slide mount brackets.

Install the Enclosure Slide Bracket

Complete the following procedure to attach the four slide brackets to the BA370 enclosure.

Table 5 Enclosure Slide Bracket Installation Procedure

1. Position the slide bracket with the slot towards the enclosure front.



2. Insert an 8–32 x ¼ inch screw through the slot and into the enclosure. Finger tighten.
3. Align the screw hole at the rear of the slide bracket with the mounting hole in the enclosure.
4. Insert an 8–32 x ¼ inch screw through the hole into the enclosure and fully tighten.
5. Fully tighten the front screws.
6. Repeat steps 1 through 5 for each bracket.

Install the Enclosure

Complete the following procedure to install a BA370 enclosure into the rack.

WARNING!

Never install an upper enclosure into the rack without the lower enclosure first being installed. To do so will cause the rack to become top-heavy and unstable. Failure to comply with this warning might cause bodily injury or death.

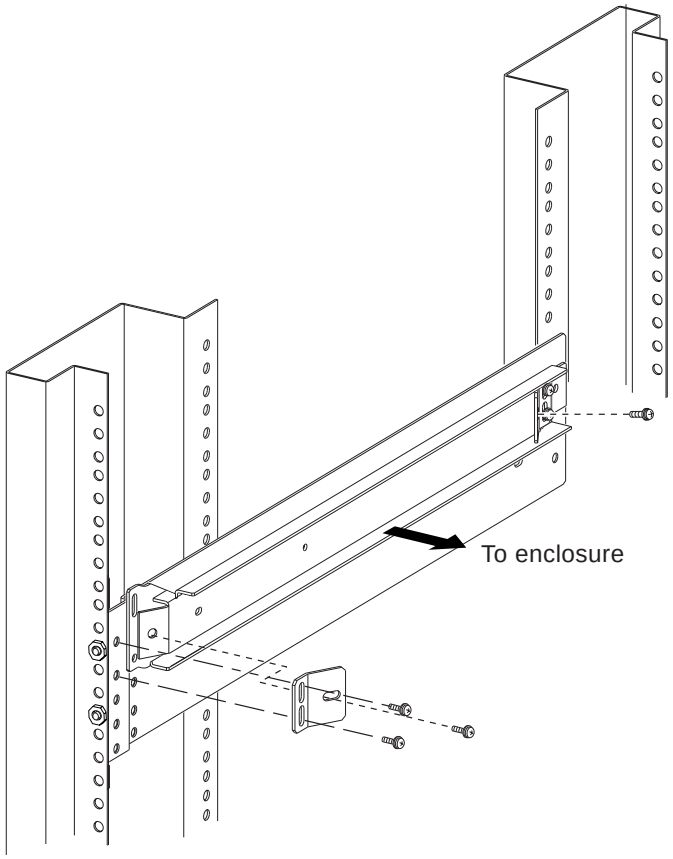
An empty enclosure weighs more than 37 kg (81 lb) and an enclosure with all the elements installed weighs more than 102 kg (225 lb).

Always accomplish the following when installing an enclosure:

- **Always use a minimum of two people to move or install the enclosure.**
- **Compaq recommends using a hand-cart or dolly to move the enclosure.**
- **Remove all the elements before lifting the enclosure.**

Table 6 Enclosure Installation Procedure

1. Position the empty enclosure on the floor in front of the rack.
2. Using two people, lift the empty enclosure and align the four slide mount brackets with the four rack mounting base brackets.
3. Insert the rear of the slide mount brackets into the notched portion of the mounting base brackets.
4. Carefully slide the enclosure half way into the rack or until the fans enter the rack.
5. If a status LED is present, connect it to the front door status LED.
6. Ensure that the enclosure is clear of all power cords and data cables.
7. Slide the enclosure fully into the rack until the rear mounting flange is fully seated against the four rear slide bracket clamps.
8. Install a 10-32 x 3/8 inch screw through the front slide bracket clamps and into the slide bracket front mounting flange. Finger tighten.



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9. Align the front slide bracket clamp to the mounting base bracket and secure with two 10-32 x 3/8 inch SEMS screws. Finger tighten.
10. Repeat steps 8 and 9 to install the other three front slide bracket clamps.
11. At the rear of the rack, install a 10-32 x 3/8 inch screw through each (4) rear slide bracket clamp and into the slide bracket rear mounting flange. Finger tighten.
12. Adjust the enclosure into position. Fully tighten all front and rear clamp screws.