

Owner's Manual

SmartRack[®] Rack Enclosure with IP54 (NEMA 12) Rating

Model: SR42UBEIS

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Important Safety Instructions



SAVE THESE INSTRUCTIONS

All sections of this manual contain instructions and warnings that should be followed during the installation and use of the SmartRack Enclosures described in this manual. Read all instructions and warnings thoroughly before attempting to move, install or use the SmartRack Enclosures described in this manual. Failure to comply will create a risk of personal injury and property damage and may affect the warranty.

- Keep the enclosure in a controlled indoor environment, away from temperature extremes, flammable liquids and gasses, conductive contaminants and direct sunlight.
- Leave adequate space at the front and rear of the enclosure for proper ventilation. Do not block, cover or insert objects into the external ventilation openings of the enclosure.
- The enclosure is extremely heavy. Use caution when handling the enclosure. Do not attempt to unpack, move or install it unassisted. Use a mechanical device such as a forklift or pallet jack to move the enclosure in the shipping container.
- Do not place any object on the enclosure, especially containers of liquid, and do not attempt to stack the enclosures.
- Inspect the shipping container and the enclosure for shipping damage. Do not use the enclosure if it is damaged.
- Leave the enclosure in the shipping container until it has been moved as close to the final installation location as possible. The casters are designed for minor position adjustments within the final installation area only. The casters are not designed for moving the enclosure over longer distances.
- Install the enclosure in a structurally sound area with a level floor that is able to bear the weight of the enclosure, all equipment that will be installed in the enclosure and any other enclosures and/or equipment that will be installed nearby.
- Do not push the enclosure from the side panels to move it. Pushing from the side panels will cause a tipping hazard.
- When rolling the enclosure on its casters, always push it from behind, never pull it toward you.
- A rolling enclosure can cause personal injury and property damage if not properly supervised. If rolling the enclosure down a ramp is required, use extreme caution. Do not attempt to use ramps that have a slope steeper than 1:12.
- Use caution when cutting packing materials. The enclosure could be scratched, causing damage not covered by the warranty.
- Save all packing materials for later use. Repacking and shipping the enclosure without the original packing materials may cause product damage that will void the warranty.
- Do not re-ship the enclosure with additional equipment unless the enclosure was shipped with a special shock pallet ("SP1" and "SP2" models only). The combined weight of the enclosure and installed equipment must not exceed the load capacity of the pallet. Tripp Lite is not responsible for any damage that occurs during re-shipment.
- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

Overview

SmartRack Enclosures accommodate all standard 19-inch rackmount equipment, regardless of vendor, and ship fully assembled for quick and easy deployment. They feature adaptable heavy duty cabinets with variable mounting depths, making them ideal for servers. Integrated baying hardware enables cost-effective, orderly and efficient expansion. The cabinets include quick release doors and side panels for convenient maintenance. Front and rear doors and side panels are lockable.

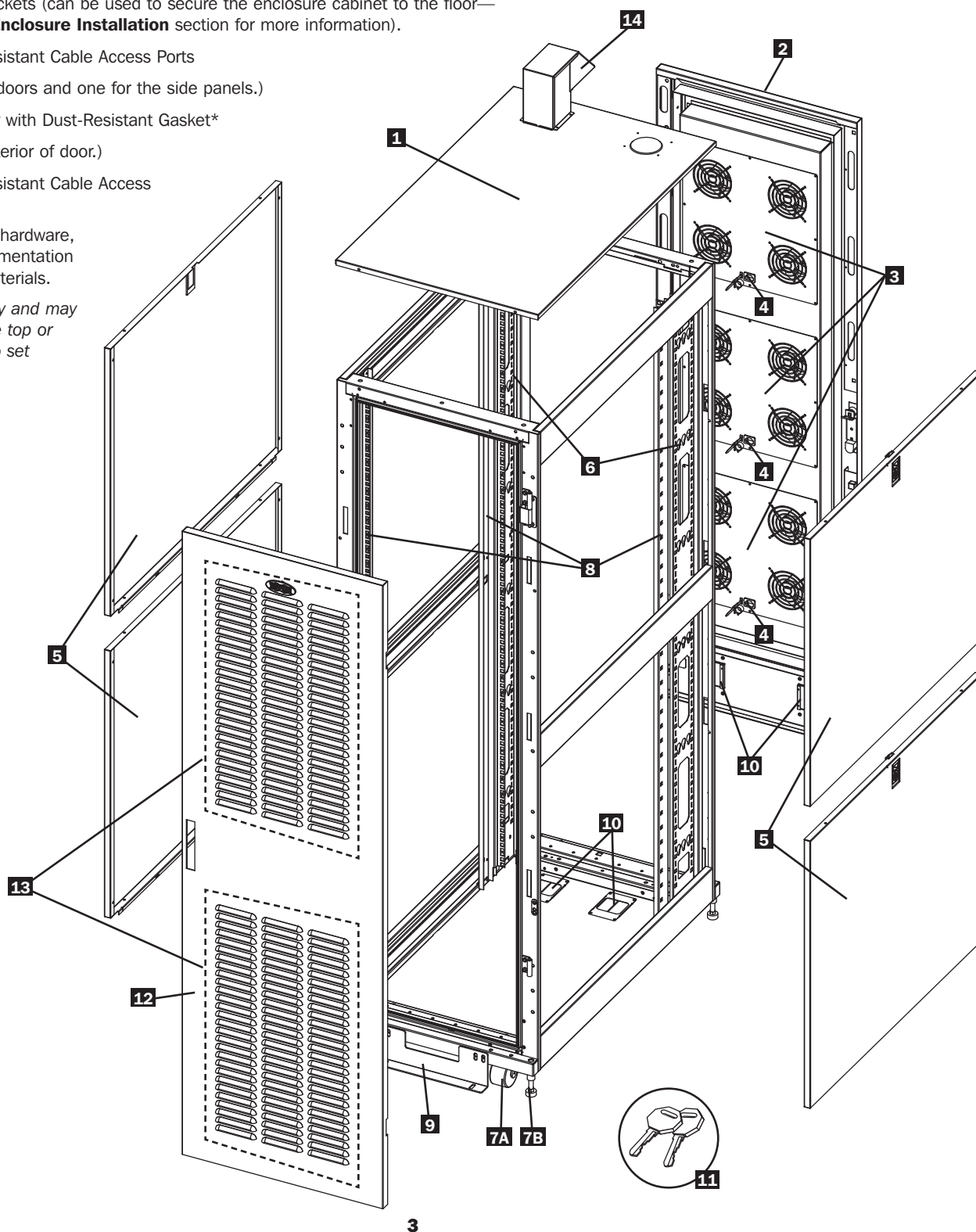
The SR42UBEIS has a IP54 (NEMA 12) rating, and is designed to be dust-protected and drip and splash resistant. It features louvered front and rear doors with sealing gaskets and dust filters. The doors seal tightly and may require pushing on the top or bottom of the doors to set them properly. The rear door is equipped with 12 ventilation fans in 3 individually powered fan panels, ensuring constant airflow. An optional dust- and drip-resistant cable access housing can be mounted on the top of the enclosure for protected rooftop cable access. The enclosure also features 4 dust- and drip-resistant access ports located on the floor and rear door of the enclosure. Heavy-duty industrial casters allow long-term support and a 3000 lb. stationary/rolling load rating.

Feature Identification

- 1** Roof Panel with Drip-Resistant Cap
- 2** Locking Rear Door with Dust-Resistant Gasket*
- 3** Ventilation Fan Panels
- 4** AC Inputs
- 5** Locking Side Panels
- 6** Cable Management Rails
- 7** Heavy-Duty Industrial Casters **A** and Levelers **B**.
- 8** Mounting Rails (Provide horizontal and vertical mounting points for equipment.)
- 9** Shipping/Floor Brackets (can be used to secure the enclosure cabinet to the floor—see “Leveling” in **Enclosure Installation** section for more information).
- 10** Dust- and Drip-Resistant Cable Access Ports
- 11** Keys (One for the doors and one for the side panels.)
- 12** Locking Front Door with Dust-Resistant Gasket*
- 13** Dust Filters (On interior of door.)
- 14** Dust- and Drip-Resistant Cable Access Housing (Optional)

Not Shown: Mounting hardware, power cords (3), documentation and other shipping materials.

* The doors seal tightly and may require pushing on the top or bottom of the doors to set them properly.



Enclosure Installation



Caution! Read All Instructions and Warnings Before Installation!



WARNING: The rack enclosure is extremely heavy. Do not attempt to unpack, move or install the enclosure without assistance. Until it has been properly installed and stabilized, the enclosure is prone to tipping and could cause property damage and/or personal injury. Use extreme caution when handling the enclosure and be sure to follow all handling and installation instructions. Do not attempt to install equipment without first stabilizing the enclosure.

Preparation

The enclosure must be installed in a structurally sound area with a level floor that is able to bear the weight of the enclosure, all the equipment that will be installed in the enclosure and any other enclosures and/or equipment that will be installed nearby. Before unpacking the enclosure, you should transport the shipping container closer to the final installation location to minimize the distance you will need to move the unit after the protective packaging has been removed. If you plan to store the enclosure for an extended period before installation, follow the instructions in the **Storage and Service** section.

You need several tools (user-supplied):

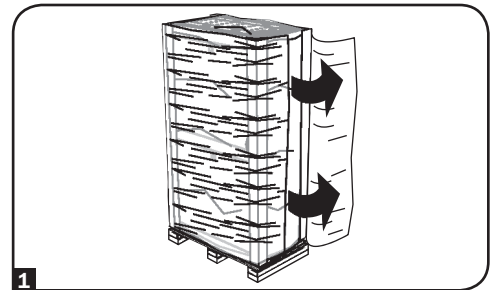
- 13 mm Open-end Wrench
- 14 mm Open-end Wrench
- Utility Blade
- Carpenter's Level
- Phillips-head Screwdriver

You also need the following hardware (included):

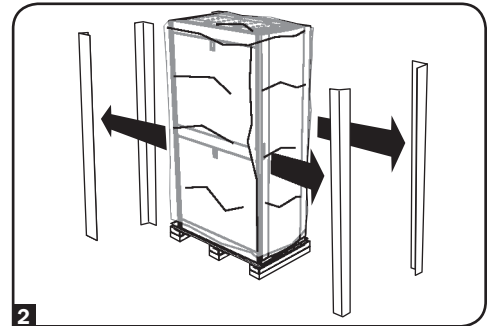
- (50) Phillips-head Mounting Screws (M6 x 5/8")
- (50) Cage Nuts (M6)
- (50) Nylon Cup Washers

Unpacking

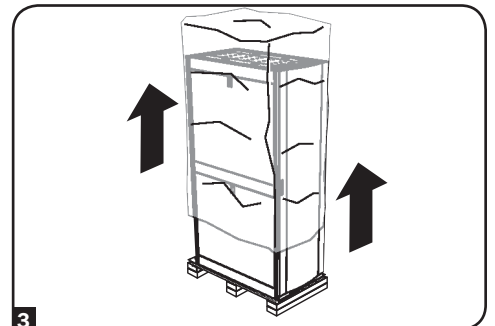
- 1** Confirm that the shipping container is upright and stable, then use a utility blade to cut the shrink-wrap securing the corner protectors. Apply the utility blade directly over the corner protectors to prevent the utility blade from scratching the enclosure or cutting the heavy protective plastic bag beneath the shrink-wrap. **WARNING: Do not scratch the enclosure or cut the heavy plastic bag beneath the shrink-wrap. Do not push or pull the enclosure while unpacking.**



- 2** Remove the corner protectors. Save all packing materials (including the pallet) for later use unless you are certain they will not be required. The packing materials are recyclable.

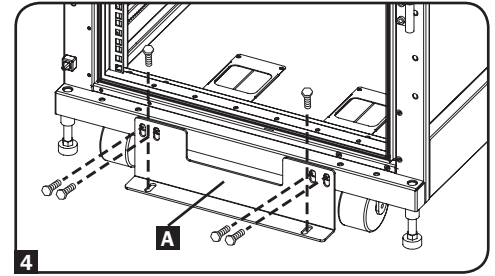


- 3** Remove the heavy plastic bag surrounding the enclosure. Examine the enclosure for any damage or loose parts. Confirm that all parts are present. If anything is missing or damaged, contact Tripp Lite for assistance. Do not attempt to use the enclosure if it has been damaged.

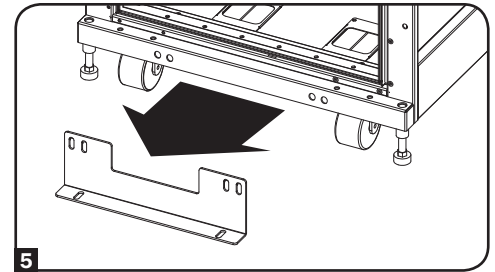


Enclosure Installation

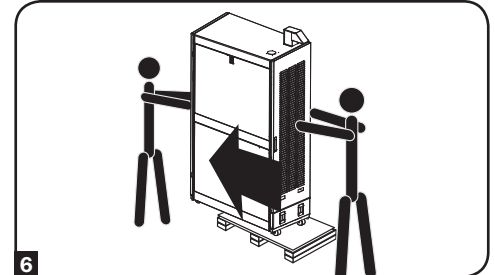
- 4** Locate the 2 shipping brackets **A** that attach the enclosure to the shipping pallet.



- 5** Use a 13 mm open-end wrench to remove the shipping brackets. Be extremely careful, as the enclosure could shift unexpectedly after bracket removal. Save the brackets and bracket hardware for later use.

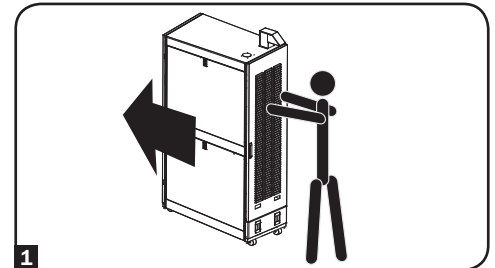


- 6** Position at least one person at the front of the enclosure and one person at the rear of the enclosure. Slowly push the enclosure toward the back of the shipping pallet until all four casters go over the edge of the pallet and touch the floor. **WARNING: Use at least one assistant when removing the enclosure from the pallet. Be extremely careful when moving the enclosure.**



Placement

- 1** Use the casters to move the enclosure for a short distance over a level, smooth, stable surface by pushing it from the front or rear (not the side panels). Do not attempt to roll the enclosure over long distances. The enclosure should be moved close to its installation location inside its shipping container before it is unpacked. (Use a forklift or pallet jack to move the shipping container.) **WARNING: Do not push or pull the enclosure at the side panels or pull the enclosure toward you.**

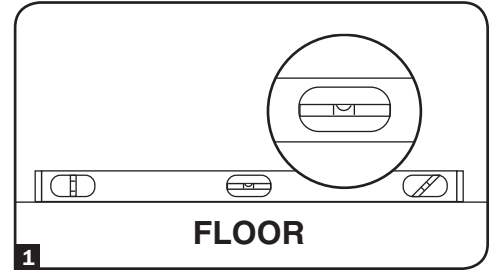


Enclosure Installation

Leveling

WARNING: Level the enclosure before attempting to install equipment. Use the levelers to provide long-term support. Install the enclosure in a structurally sound area with a level floor that is able to bear the weight of the enclosure, all equipment that will be installed in the enclosure and any other enclosures and/or equipment that will be installed nearby.

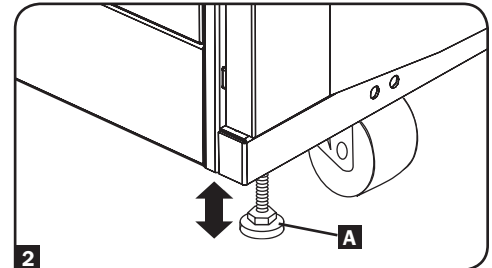
- 1 After the enclosure has been moved to the installation location, use a carpenter's level to check the slope of the floor. If the floor slopes more than 1%, choose an alternate installation site.



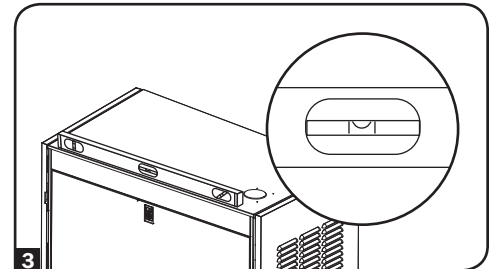
- 2 Use a 14 mm open-end wrench to lower each leveler **A** until it reaches the floor. (There are 4 levelers, 2 at the front and 2 at the rear.) Make sure each leveler contacts the floor solidly.

Note:

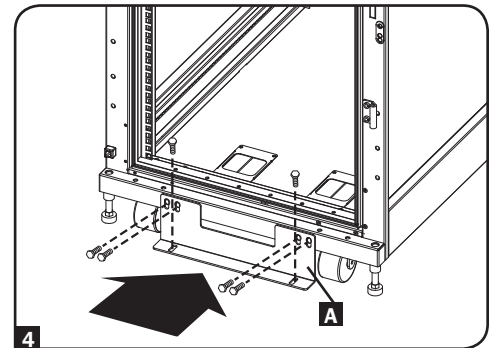
1. Lower a leveler by turning it clockwise; raise a leveler by turning it counter-clockwise.
2. Damage to the doors may occur if the levelers are retracted too far.



- 3 After lowering each leveler, use the carpenter's level to confirm that the enclosure is level in all directions. Adjust the levelers as required until the enclosure is level.

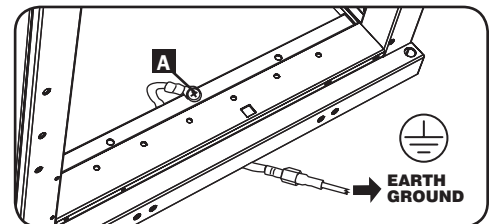


- 4 (Optional) To provide an additional measure of stability, you can attach the shipping brackets removed in the "Unpacking" section using the hardware that attached the enclosure to the shipping pallet. Use a 13 mm open-end wrench to connect the brackets to the outer **A** bracket mounting points of the enclosure. Attach the brackets to secure mounting points in the floor using user-supplied hardware or Tripp Lite's SmartRack Bolt-Down Kit (Part # SRBOLTDOWN).



Ground Connection

All the parts of the enclosure are grounded to the frame of the enclosure. Use the enclosure's front or rear threaded grounding point **A** and an M6 screw (included) to connect the frame of the enclosure directly to your facility's earth ground connection with an 8 AWG (3.264 mm) wire. Route the ground wire under the enclosure's frame to ensure unhindered door operation. **WARNING: Attach each enclosure to earth ground separately. Do not use the enclosure without an earth ground connection.**



AC Power Connection

To power the ventilation fans, you will need to connect each fan panel to an AC power source. Each fan panel has a C14 inlet at its center. Use the included C13-to-NEMA 5-15P power cords (3) to connect each fan panel to a 120V AC power source.

Enclosure Configuration

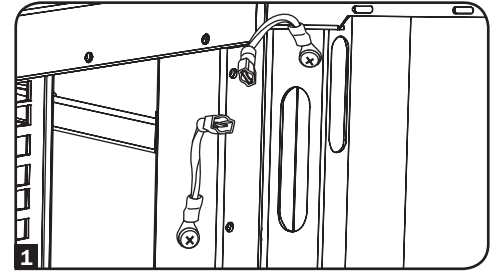
Adding or Removing Front and Rear Doors

WARNING: Do not attempt to add or remove doors without assistance.

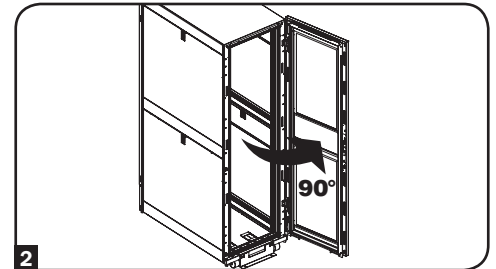
Note: The doors are designed to seal tightly and may require pushing on the top or bottom of the doors to set them properly.

Removing Door

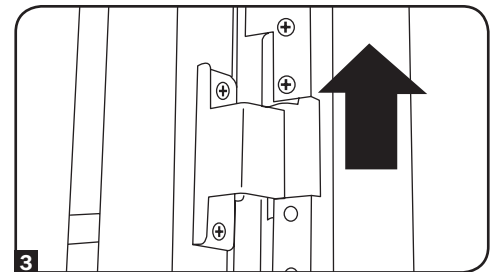
1 Disconnect the door's ground wire.



2 Open the door until it is perpendicular (90 degrees) to the front of the enclosure.



3 Lift the door from the hinges and remove it from the enclosure.



To Reinstall Door, Reverse Steps 1-3

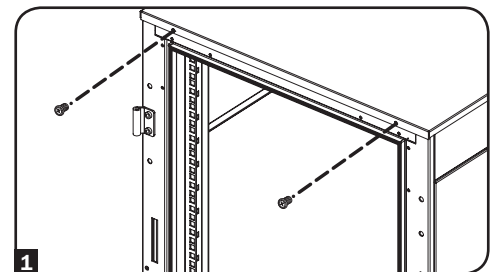
(Optional) If the enclosure is joined to another enclosure, turn the door back toward the enclosure as you lift it from the hinges.

Adding or Removing Roof Panel

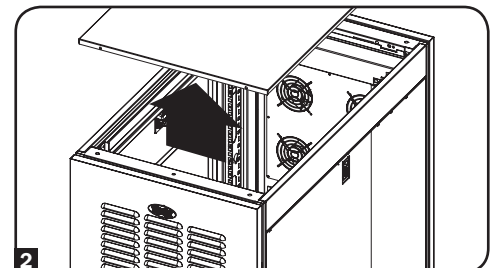
WARNING: Do not attempt to use the roof panel for weight-bearing purposes other than those explicitly described and approved by Tripp Lite. Do not attempt to add or remove the roof panel without assistance.

Removing Roof Panel

1 Remove the 4 screws (2 on front, 2 on back) that attach the roof panel to the unit.



2 Lift the roof panel from the enclosure.



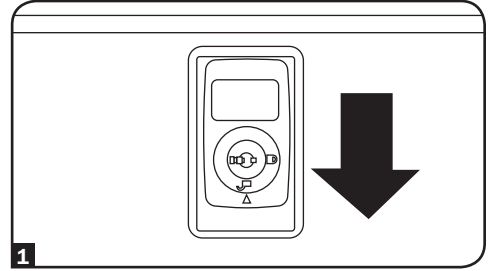
To reinstall roof panel, reverse these steps

Enclosure Configuration

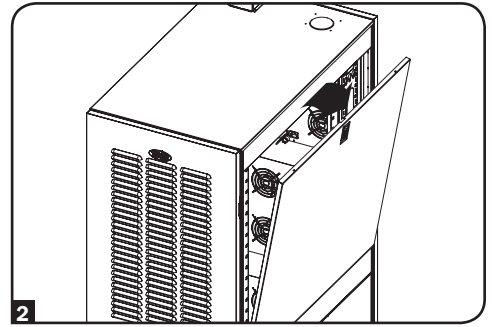
Adding or Removing Side Panels

Removing Side Panel

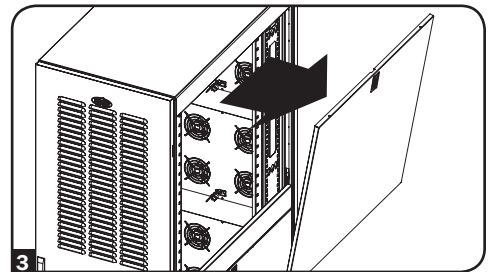
1 Open the latch by sliding it downward.



2 Tilt the top of the panel away from the enclosure.



3 Lift the panel away from the brace that supports it.



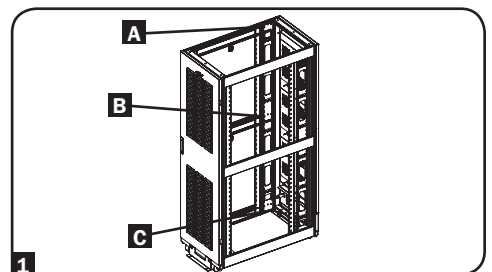
To Reinstall Side Panel, Reverse Steps 1-3

Adjusting Mounting Rails and Cable Management Rails

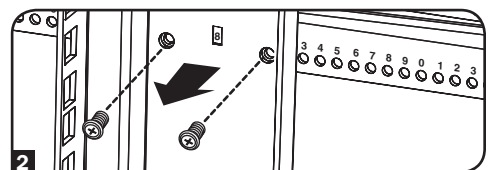
WARNING: Do not attempt to adjust rails without assistance. Do not attempt to adjust rails while equipment is installed in the enclosure. Do not attempt to use rails without screws installed (6 per rail).

The 4 mounting rails are pre-installed to accommodate equipment with a mounting depth of 30 inches (762 mm). Do not adjust the mounting rails unless your equipment requires a different mounting depth. The front and rear sets of rails can be adjusted independently in 1/4-inch (6 mm) increments for mounting depths between 4 inches (101.6 mm) and 42 inches (1066.8 mm).

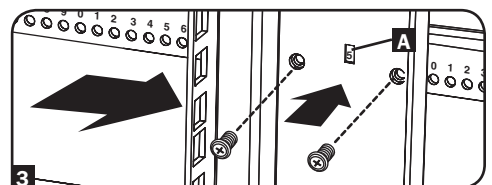
1 Each rail is connected to the enclosure with 6 screws - 1 pair at the upper beam **A**, 1 pair at the middle beam **B** and 1 pair at the lower beam **C**.



2 Remove the screws fastening each of the rear mounting rails to the enclosure. (If adjustment of the front rails is required, you can also remove the screws from the front rails.)



3 Slide the mounting rails to the desired depth and reattach them using the screws you removed in Step 2. The rail attachment points are numbered **A** to help you align each pair of rails at the same depth.



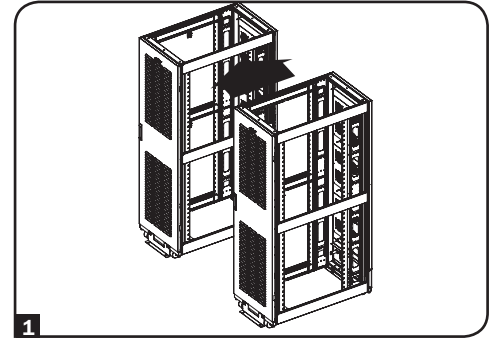
The depth of the 2 cable management rails can be adjusted using the same method.

Enclosure Configuration

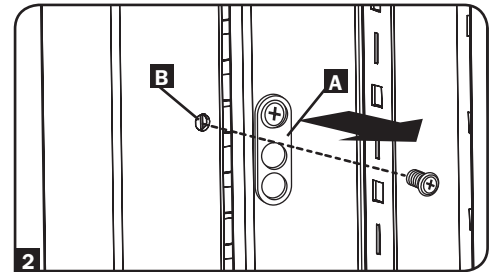
Combining (Baying) Enclosures

WARNING: Combining enclosures is not a substitute for stabilizing the enclosures. Each enclosure in a bay of combined enclosures requires the same stabilizing measures as a standalone enclosure.

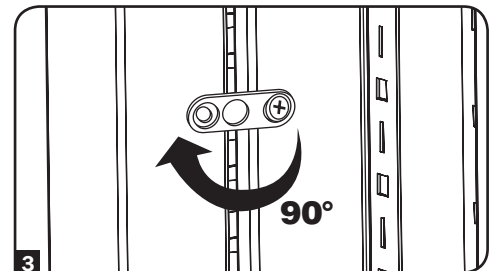
- 1 Arrange the enclosures in the correct position for baying.



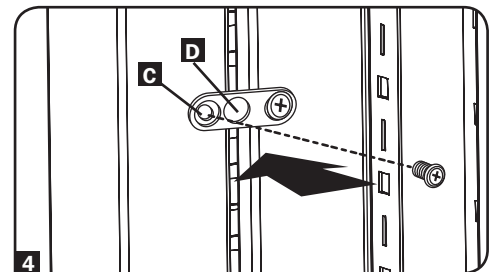
- 2 Each enclosure includes 4 baying brackets **A** that correspond to baying connection points **B** on the adjoining enclosure. The baying connection points already contain screws. Remove the screw from each baying connection point in the adjoining enclosure.



- 3 Loosen the screw in each baying bracket and turn each bracket 90 degrees toward the adjoining enclosure, aligning each bracket with the corresponding baying connection point on the adjoining enclosure.



- 4 Connect each bracket to the adjoining enclosure using the screws you removed in step 2, but do not tighten the screws completely. Adjust the position of the enclosures as needed. If you want the centers of the enclosures to be 24 inches (61 cm) apart, use the outside hole of the bracket **C**. If you want the centers to be 60 cm (23.6 inches) apart, use the middle hole of the bracket **D**. After connecting all brackets and confirming that the enclosures do not need further adjustment, tighten all screws.



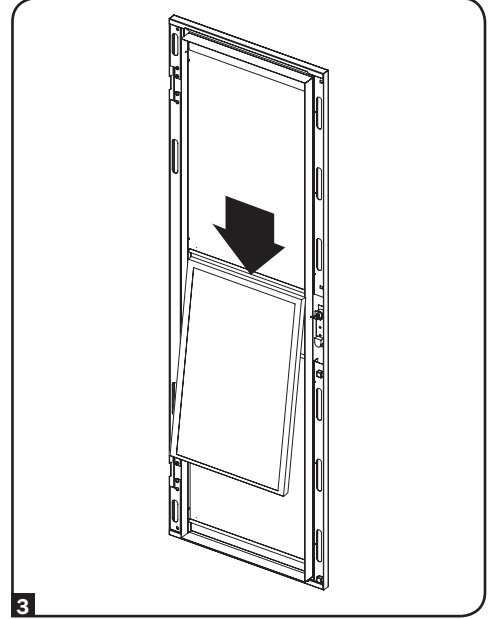
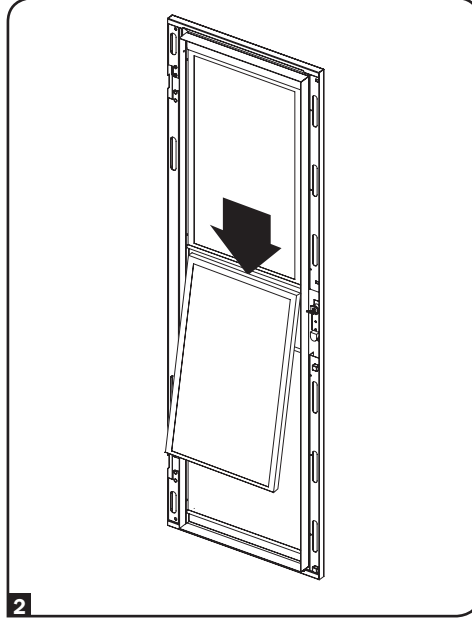
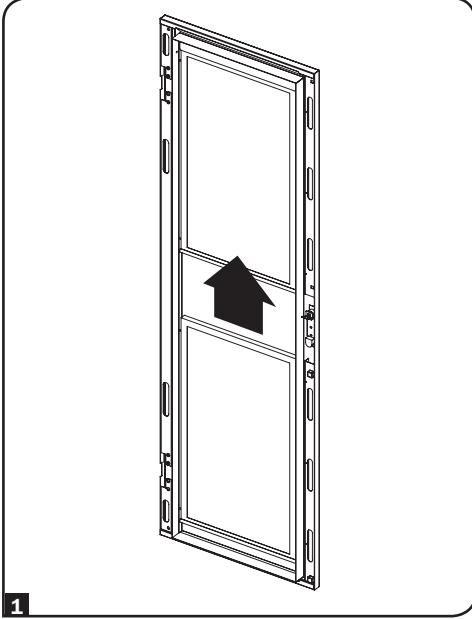
Note: You may wish to remove the doors from the enclosures before combining them. Reinstalling the doors afterward is optional. Remove the interior side panels before baying enclosures if you wish to enable access between enclosures.

Enclosure Configuration

Cleaning/Replacing Filters

The SR42UBEIS comes with pre-installed dust filters in the front door. It uses standard 18" x 30" filters that can be found at most home improvement stores. To remove the filters for cleaning or replacement:

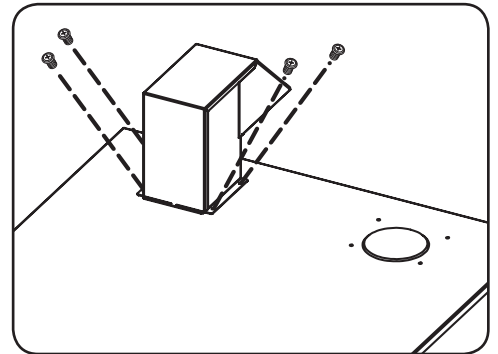
- 1** Slide the filter up into the top filter slot so that the bottom of the filter is above the bottom filter slot.
- 2** Pull the filter away from the door until it is past the bottom filter slot.
- 3** Pull the filter down out of the top filter slot.



Installing the Drip-Resistant Cable Access Housing (Optional)

The SR42UBEIS comes with an optional cable access port housing for drip-resistant cable access at the top of the unit. To install this feature, please follow these instructions:

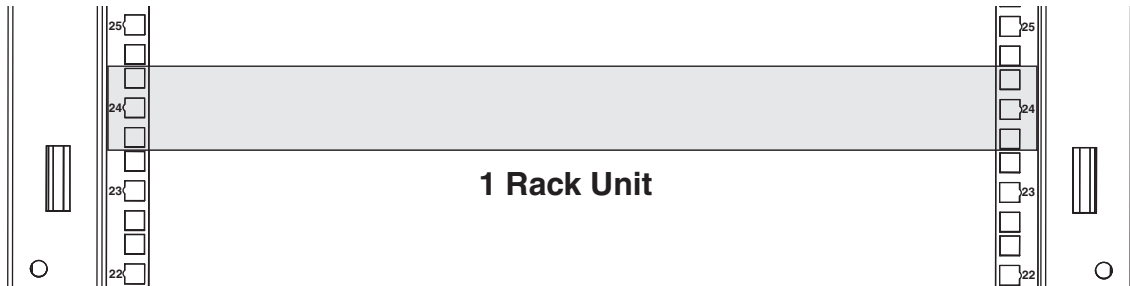
- 1** Remove one of the rubber sealing plugs from the top rear of the enclosure by pushing it out from inside of the unit
- 2** Mount the cable access housing using the included M4 x 8mm pan head machine screws and toothed washers (4 of each). Fasten the screws into each of the threaded holes.



Equipment Installation

WARNING: Do not install equipment until you have stabilized the enclosure. Install heavier equipment first and install it toward the bottom of the enclosure. Install equipment starting from the bottom of the enclosure and proceeding toward the top of the enclosure - never the reverse. If using sliding equipment rails, be careful when extending the rails. Do not extend more than one set of sliding equipment rails at one time. Avoid extending sliding equipment rails near the top of the enclosure.

Note: The square holes at the middle of each rack unit are numbered and also include a small notch to aid identification. A single rack unit includes the space occupied by the numbered hole and the holes directly above and below.



Installing or Removing Cage Nuts

WARNING: The flanges of the cage nuts should engage the sides of the square opening in the rail, not the top and bottom. Follow the instructions in your equipment documentation to ensure proper installation of your equipment.

Installing Cage Nuts

- 1 Locate the numbered square openings in the mounting rails where you plan to install your equipment. You will install cage nuts (included) into the square openings in order to provide an attachment point for the mounting screws (included).

Note: Consult your equipment documentation to determine how many cage nuts will be required and where they will need to be installed.

- 2 From the inside of the mounting rail, insert one of the flanges of the cage nut through the square opening. Press it against the side of the square opening. Each flange should engage one side of the square opening, not the top or bottom.

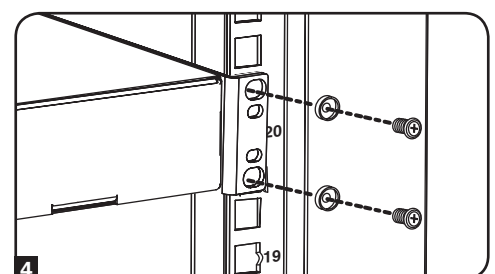
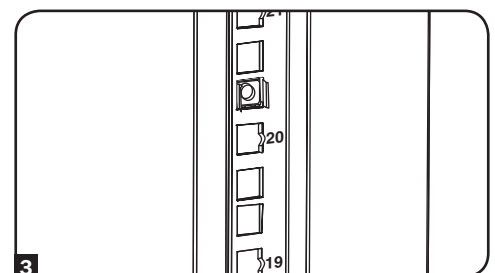
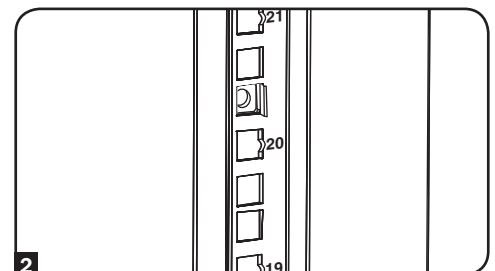
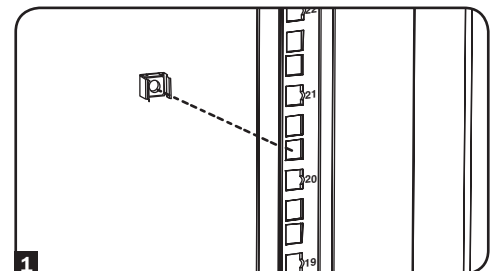
- 3 Compress the cage nut at the sides slightly to allow the remaining flange to fit through the square opening. When the cage nut is properly installed, both flanges will protrude through the square opening and will be visible on the outer surface of the mounting rail. Repeat steps 1-3 until all required cage nuts are installed.

- 4 After installing the required cage nuts, use the included mounting screws and cup washers to secure your equipment to the rack rail. Place the cup washers between the screws and the equipment mounting brackets.

Note: Your equipment may also include mounting hardware. Read the mounting instructions that came with your equipment before installing your equipment.

To Remove Cage Nuts, Reverse Steps 1-3

Note: You may wish to use a cage nut tool (user-supplied) to aid cage nut installation and removal.



Specifications

Model	Load Rating		Unit Dimensions				Shipping Dimensions			
	Static	Rolling	Height	Width	Depth	Weight	Height	Width	Depth	Weight
SR42UBEIS	3000 lb. (1361 kg)	3000 lb. (1361 kg)	79.8 in. (2063 mm)	23.63 in. (600 mm)	43 in. (1092 mm)	310 lb. (141 kg)	86.5 in. (2197 mm)	26 in. (660 mm)	45 in. (1143 mm)	352 lb. (160 kg)

Storage and Service

Storage

The enclosure should be stored in a controlled indoor environment, away from moisture, temperature extremes, flammable liquids and gasses, conductive contaminants, dust and direct sunlight. Store the enclosure in its original shipping container if possible.

Service

Your Tripp Lite product is covered by the warranty described in this manual. A variety of Extended Warranty and On-Site Service Programs are also available from Tripp Lite. For more information on service, visit www.tripplite.com/support. Before returning your product for service, follow these steps:

1. Review the installation and operation procedures in this manual to insure that the service problem does not originate from a misreading of the instructions.
2. If the problem continues, do not contact or return the product to the dealer. Instead, visit www.tripplite.com/support.
3. If the problem requires service, visit www.tripplite.com/support and click the Product Returns link. From here you can request a Returned Material Authorization (RMA) number, which is required for service. This simple on-line form will ask for your unit's model and serial numbers, along with other general purchaser information. The RMA number, along with shipping instructions will be emailed to you. Any damages (direct, indirect, special or consequential) to the product incurred during shipment to Tripp Lite or an authorized Tripp Lite service center is not covered under warranty. Products shipped to Tripp Lite or an authorized Tripp Lite service center must have transportation charges prepaid. Mark the RMA number on the outside of the package. If the product is within its warranty period, enclose a copy of your sales receipt. Return the product for service using an insured carrier to the address given to you when you request the RMA.

Warranty and Product Registration

2-Year Limited Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship for a period of 2 years from the date of initial purchase. If the product should prove defective in material or workmanship within that period, Seller will repair or replace the product, in its sole discretion.

THIS WARRANTY DOES NOT APPLY TO NORMAL WEAR OR TO DAMAGE RESULTING FROM ACCIDENT, MISUSE, ABUSE OR NEGLIGENCE. SELLER MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY EXPRESSLY SET FORTH HEREIN. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ALL IMPLIED WARRANTIES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY OR FITNESS, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE; AND THIS WARRANTY EXPRESSLY EXCLUDES ALL INCIDENTAL AND CONSEQUENTIAL DAMAGES. (Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from jurisdiction to jurisdiction).

WARNING: The individual user should take care to determine prior to use whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, the manufacturer makes no representation or warranty as to the suitability or fitness of these devices for any specific application.


Product Registration

Visit www.tripplite.com/warranty today to register your new Tripp Lite product. You'll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!*

* No purchase necessary. Void where prohibited. Some restrictions apply. See Web site for details.

Tripp Lite follows a policy of continuous improvement. Product specifications are subject to change without notice.

Note on Labeling

This symbol is used on the product:  Ground Connection



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**WARRANTY
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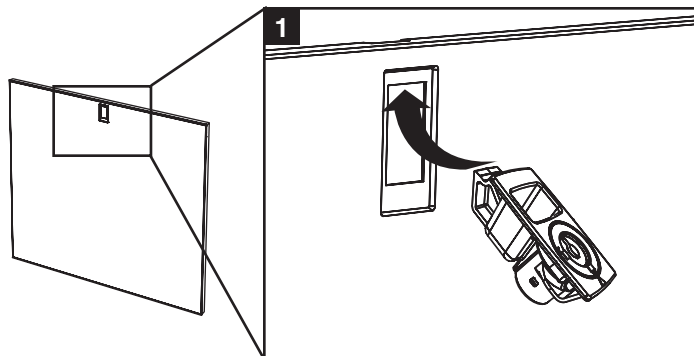
Owner's Manual Addendum

SmartRack™ Side Panel Latch Installation

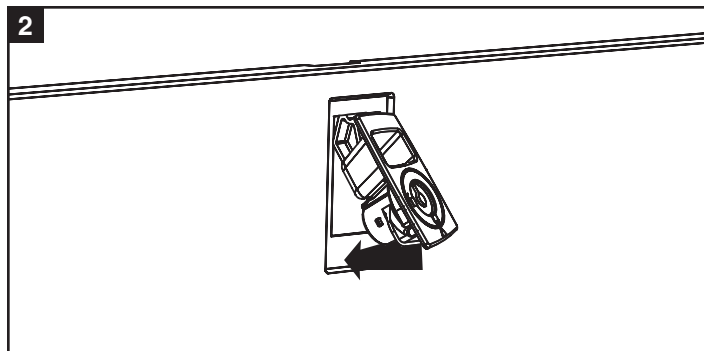


Important: Before installing the side panels, you must install a latch (included) in each side panel.

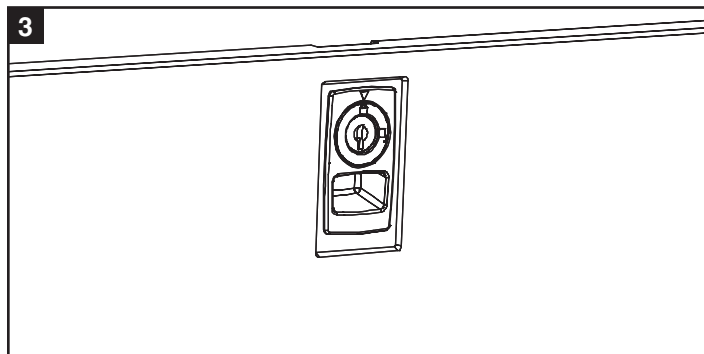
1 Working from the outer surface of the side panel, insert the upper portion of the latch into the side panel cutout as shown.



2 Push the lower portion of the latch into the side panel cutout as shown.



3 Snap the latch into place. The latch should be flush with the outer surface of the side panel. Repeat the process for each side panel.



Note: To install the side panels, follow the instructions in the rack enclosure owner's manual.



1111 W. 35th Street, Chicago, IL 60609 USA
773.869.1234 (USA) • 773.869.1212 (International)
www.tripplite.com

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