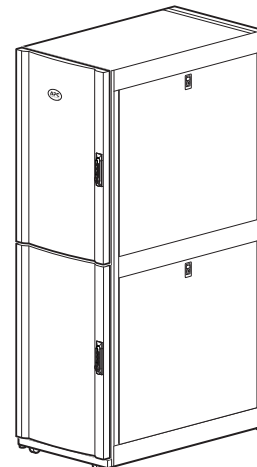


Unpacking, Installation, and Customization Manual

NetShelter[®] SX Colocation Enclosure

AR3200





This manual is available in English on the enclosed CD.

Dieses Handbuch ist in Deutsch auf der beiliegenden CD-ROM verfügbar.

Este manual está disponible en español en el CD-ROM adjunto.

Ce manuel est disponible en français sur le CD-ROM ci-inclus.

Questo manuale è disponibile in italiano nel CD-ROM allegato.

本マニュアルの日本語版は同梱の CD-ROM からご覧になれます。

Instrukcja Obsługi w języku polskim jest dostępna na CD.

O manual em Português está disponível no CD-ROM em anexo.

Данное руководство на русском языке имеется на прилагаемом компакт-диске.

Bu kullanım kılavuzunun Türkçe'si, âlâhâkte gönderilen CD âçerâsânde mevcuttur.

您可以从包含的 CD 上获得本手册的中文版本。

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Introduction

The American Power Conversion (APC®) NetShelter® SX Colocation Enclosure is a high-quality split-level multi-tenant enclosure for storage of industry-standard (EIA-310) 19-inch rack-mount hardware, which includes servers, voice, data, networking, security, and APC power protection equipment.

Various accessories are mentioned in this manual. For complete details on any accessory, see the APC Web site, www.apc.com. To quickly find a part on the APC Web site, enter the part number in the Search field.

For additional information about this product, see the product page on the APC Web site, www.apc.com

Safety Warnings and Cautions

Observe all Warnings and Cautions in this manual, plus the following.



Tip Hazard: This equipment is easily tipped. Use extreme caution when unpacking or moving.



Heavy: Use at least two people to unpack the enclosure.



Warning: To avoid damage or injury, do not use the roof as a walkway.

Unpacking the Enclosure

Disclaimer

American Power Conversion is not responsible for damage sustained during reshipment of this product.

Receiving inspection

Inspect the package and contents for shipping damage, and make sure that all parts were sent. Report any damage immediately to the shipping agent. Report missing contents, damage, or other problems immediately to APC or your APC reseller.

Please Recycle



The shipping materials are recyclable. Save them for later use, or dispose of them appropriately.

Procedure

1. Move the shipping pallet to a firm, level surface in an open area. Inspect for visible signs of shipping damage. If you detect shipping damage, contact APC Customer Support using the contact information on the back cover of this manual.
2. See the label on the packaging to determine where to cut the wrapping. Using sturdy shears or a utility knife, carefully remove the plastic stretch wrap surrounding the enclosure.
3. Remove the four cardboard corner protectors.
4. Remove and retain the two pallet-mounting brackets with mounting hardware that anchor the enclosure to the shipping pallet. Use a 13-mm wrench (not provided).



Note: Save the pallet-mounting brackets if you plan to bolt the enclosure to the floor.

5. With one person on each side of the enclosure, carefully roll it toward the rear of the pallet until the rear casters clear the back edge of the pallet. Continue to slide the enclosure until the rear casters touch the floor.
6. While one person carefully tips the enclosure slightly away from the pallet, have the other person pull the pallet away from the enclosure. Set the enclosure gently on its casters.

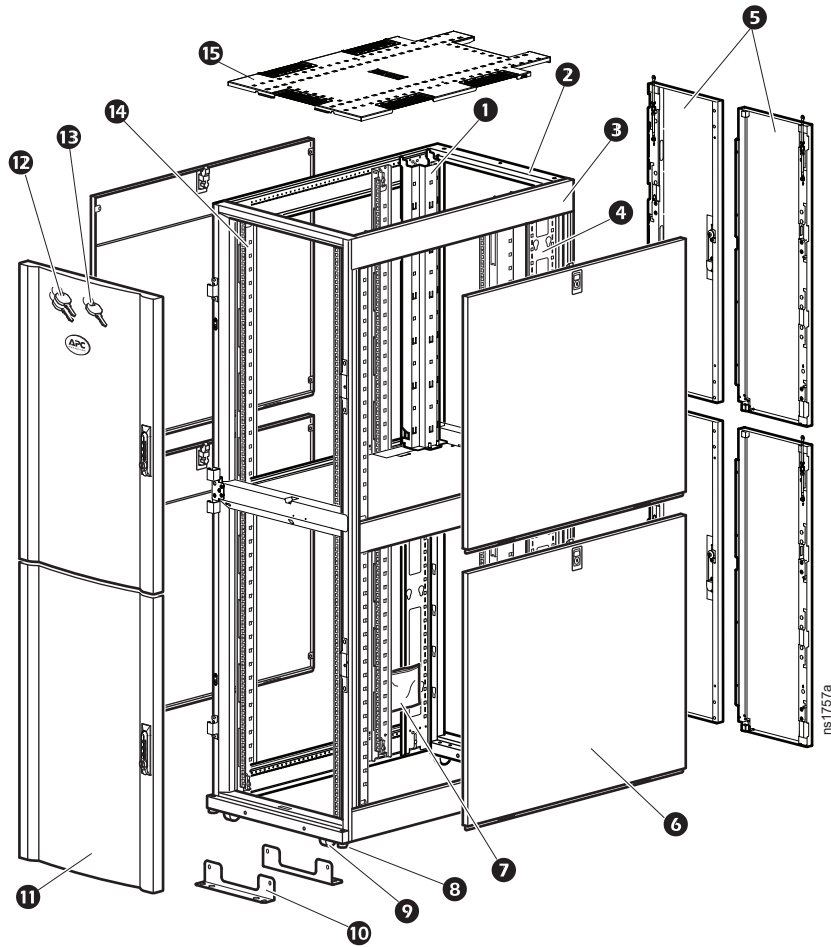


Warning: Use caution when moving an empty enclosure on its casters; the enclosure may be unstable when pushed or pulled from the side. Push the enclosure from the front or back when moving it on its casters. For extra stability, load 158 kg (350 lbs) of equipment into the bottom of the enclosure before moving it on its casters.

Component Identification

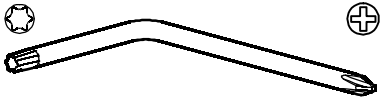
Enclosure

For applicable components, replacement part numbers are shown in parenthesis.



- | | | | |
|---|---|---|--|
| ❶ | Accessory channel security cover | ❾ | Casters |
| ❷ | Enclosure frame | ❿ | Pallet/bolt-down bracket |
| ❸ | Side brace | ❾ | Removable and reversible front door with combination lock (AR7003) |
| ❹ | Adjustable vertical 0 U accessory channel | ❿ | Keys for front and rear doors |
| ❺ | Removable rear split doors (AR7103) | ❿ | Key for side panel |
| ❻ | Removable side panels with locks (AR7301) | ❿ | Adjustable vertical mounting rails |
| ❼ | Hardware bag (see page 4) | ❿ | Roof with cable access (AR7201) |
| ❽ | Adjustable leveling feet | | |

Hardware bag contents



TORX[®] T30/#2 Phillips
wrench (1)



M5 x 12
screw (4)



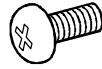
7-mm hole
plug (4)



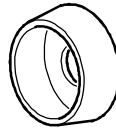
Cage nut installation tool



M6 14/16
cage nut (60)



M6 x 16
Phillips/slot
screw (60)



M6 black
plastic cup
washer (60)

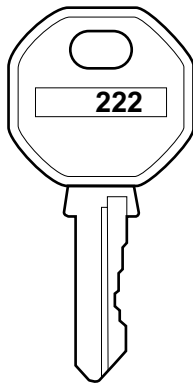
Security

Security for the Colocation Enclosure includes keyed entry for doors and side panels as well as a combination lock for the front and rear doors.

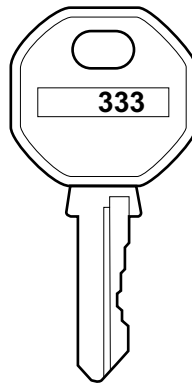
Door and Side-Panel Keys

The Colocation Enclosure is shipped with a different key for side panels and doors. Door keys are marked with “222” and side panel keys are marked with “333.”

Front and Rear Door Key



Side Panel Key



You can obtain replacement keys or unique locks with keys and a master key override by contacting EMKA Inc.: <http://www.emka.com>.

Operating the Combination Lock



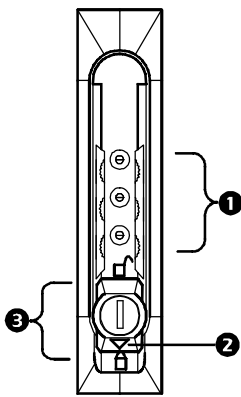
Caution: When the door is unlocked using the combination, the dials cannot be turned. So, the combination will be visible until the door is re-locked and the combination is cleared.



Notes:

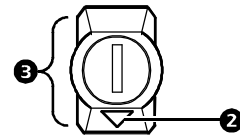
- When you lock the door with the “222” key make sure the wing knob cannot rotate to the unlocked position. If it can, it means the dials are set to the combination. Turn the dials to clear the combination.
- When the door has been unlocked with the “222” key, the only way to re-lock the door is with the key. Until the door is locked with the key, the combination dials cannot be used.

Parts identification

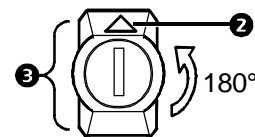


- ❶ Combination dials
- ❷ Indicator arrow
- ❸ Wing knob

Locked Position:



Unlocked position:



To unlock the door using the dials:

1. Dial the combination ❶ (factory default = “000”)
2. Turn the wing knob ❸ until the arrow ❷ points up (unlocked position).
3. Open door.

To lock the door using the dials:

1. Turn the wing knob ❸ until the arrow ❷ points down (locked position).
2. Turn the dials ❶ to clear the combination.

To change the combination:

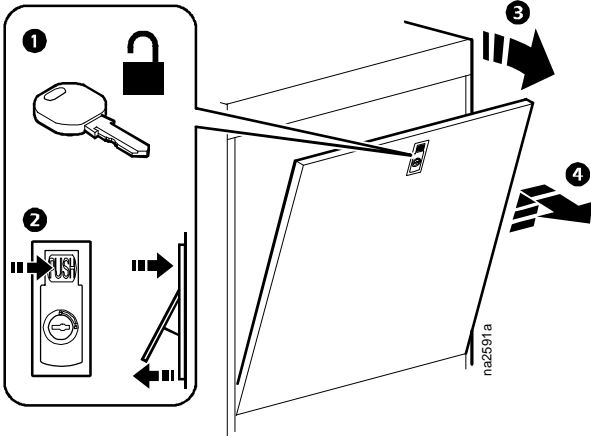


Note: To change the combination, you must know the existing one.

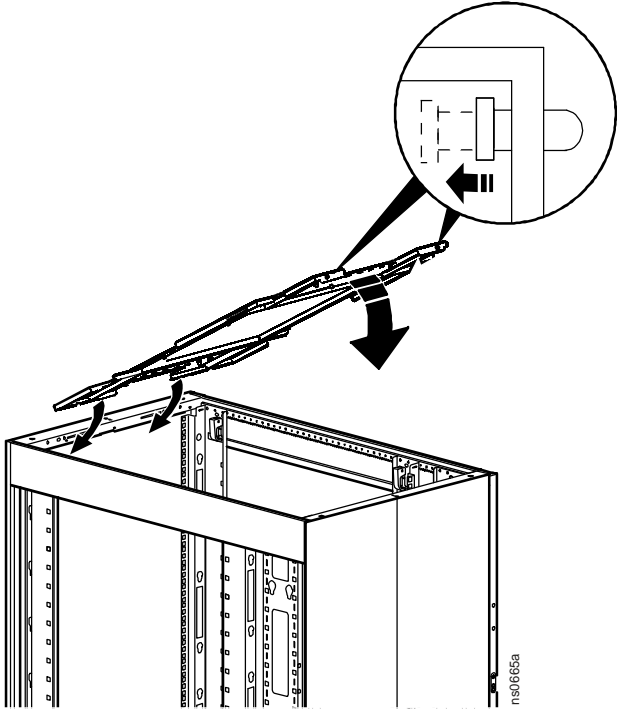
1. Dial the combination ❶ (factory default = “000”)
2. Turn the wing knob ❸ until the arrow ❷ points up (unlocked position). Turn it counterclockwise an additional 15 degrees, and enter your new combination.
3. Turn the wing knob clockwise 15 degrees back to the unlocked position. The new combination is set.

Removing and Reinstalling Side Panels, Roof, and Doors

Side Panels

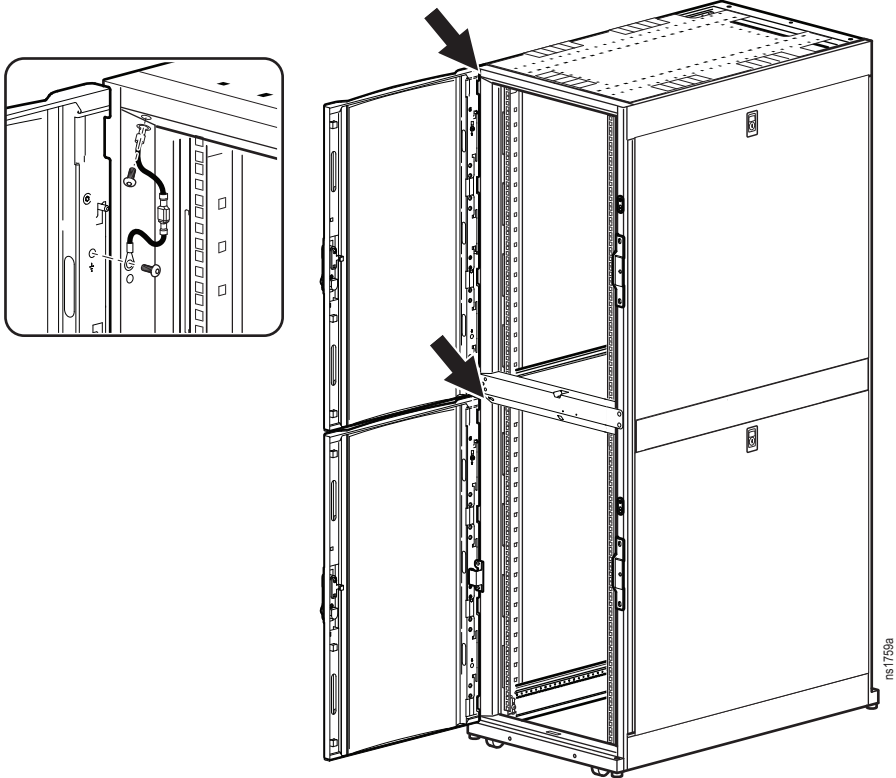


Roof

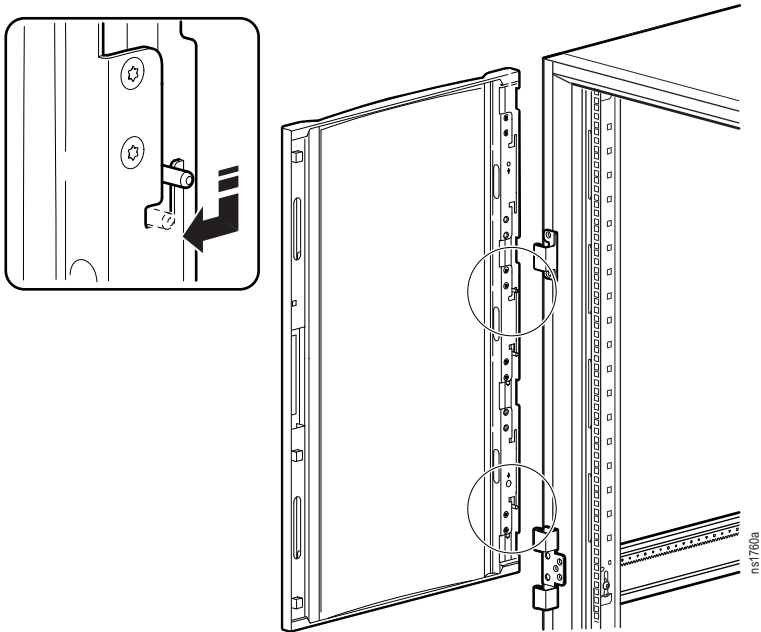


Doors

1



2



Enclosure Installation

Moving the Enclosure



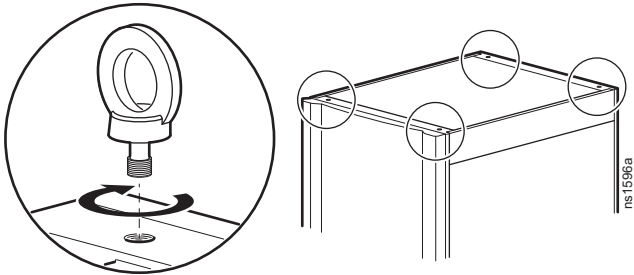
Caution: To avoid damaging the enclosure and causing a tip hazard, make sure the leveling feet are up before moving the enclosure.

Casters. The enclosure can be moved on its casters with up to 1021 kg (2,250 lbs) of equipment installed.



Tip Hazard: Use caution when moving an empty enclosure on its casters. Push the enclosure from the front or back only; the enclosure may be unstable if pushed or pulled from the side. For extra stability, load 158 kg (350 lbs) of equipment into the bottom of the enclosure before moving it on its casters.

Eye bolts. The enclosure can be lifted using eye bolts with up to 557 kg (1,228 lbs) of equipment installed. Use M10 eye bolts with a shoulder rated for 181 kg (400 lbs).

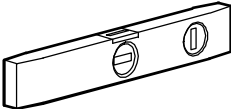


Leveling the Enclosure

Required tools:



Phillips screwdriver



Level

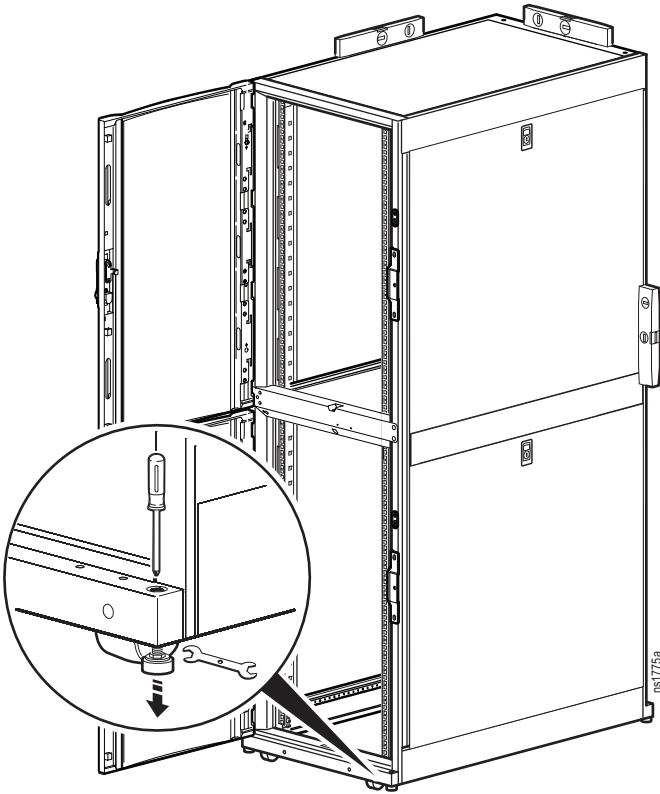


13-mm open-ended wrench



Warning: The leveling feet at the corners provide a stable base if the floor is uneven, but they cannot compensate for a badly sloped surface.

To adjust the leveling feet after equipment has been installed, use a 13-mm open-ended wrench (not provided).



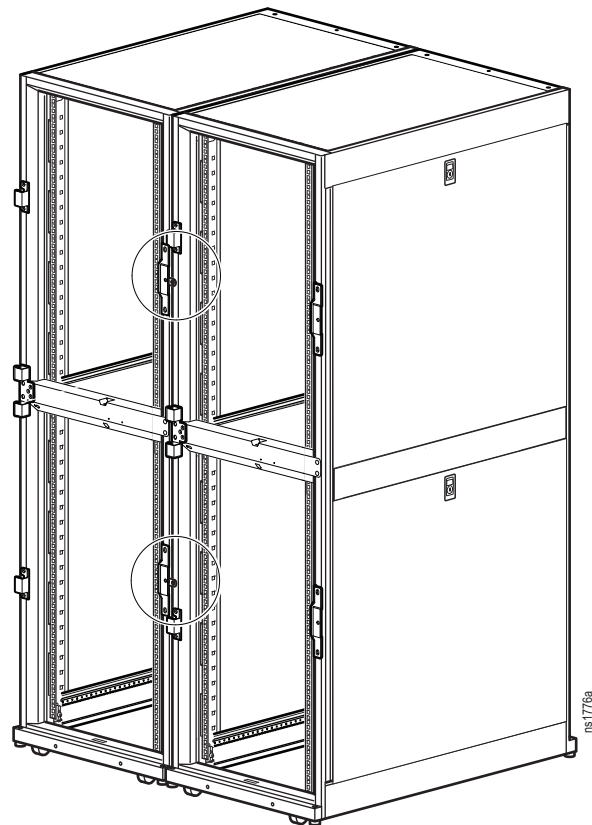
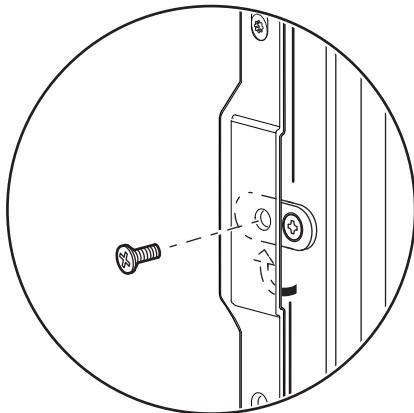
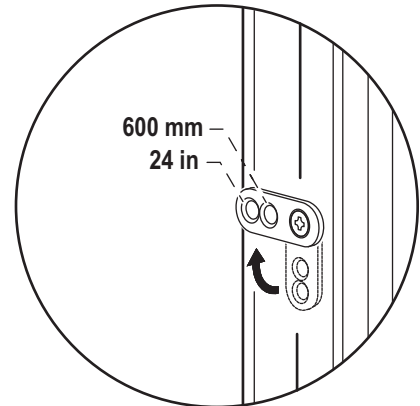
Joining Enclosures

Enclosures can be joined with or without side panels installed to provide for alignment and some stability.



Caution: Joining enclosures provides limited stability to the enclosures.

1. Make sure the leveling feet are down.
2. Remove the front and rear doors.
3. Choose between 24-in centers or 600-mm centers. If enclosures are joined on 24-in centers, APC offers baying trim (AR7600) to cover the gap between the enclosures. The trim can be installed after the units are joined together.
4. Align the enclosures and join them using two brackets for the front and two brackets for the rear:
 - For the front (shown below), remove the screw, rotate the bracket, then reinstall the screw.
 - For the rear, rotate bracket, then install one M5 x 12 flat-head screw (provided in the hardware bag).
5. Reinstall the doors.

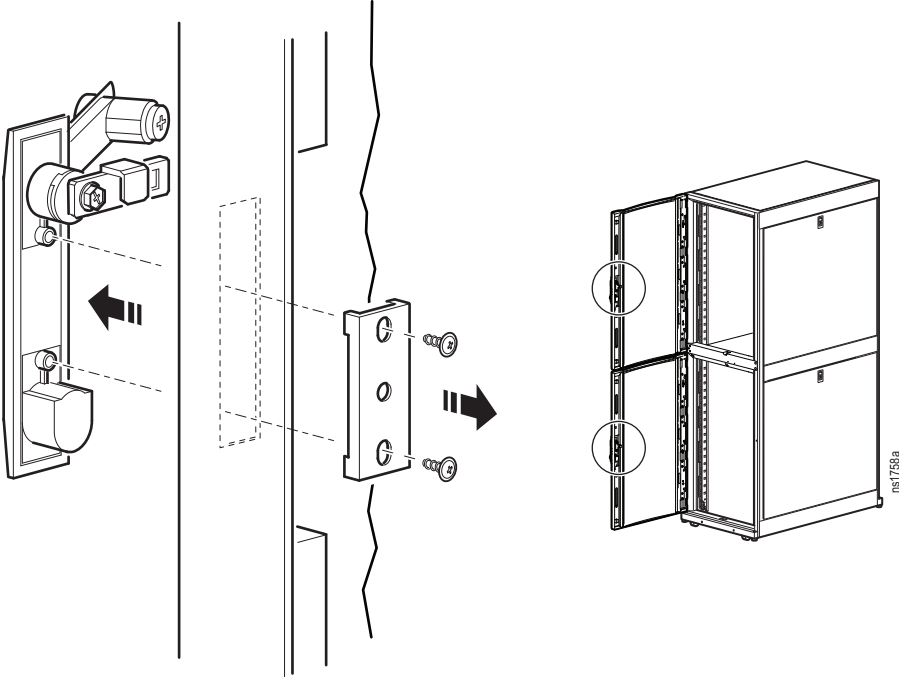


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Reversing the Front Door

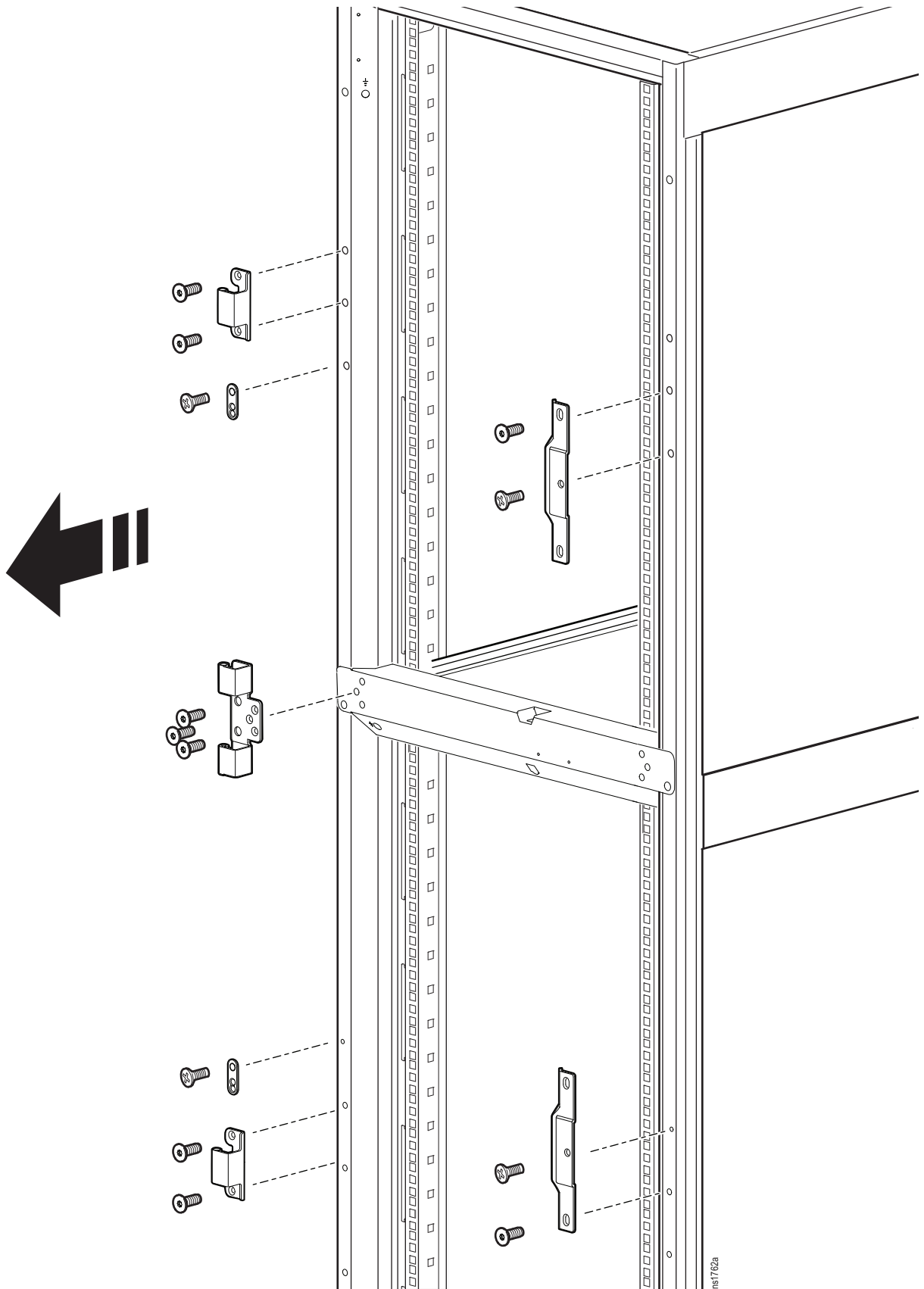
You can reverse the front door so the door is hinged on the opposite side.

- 1. Remove handle from both doors.

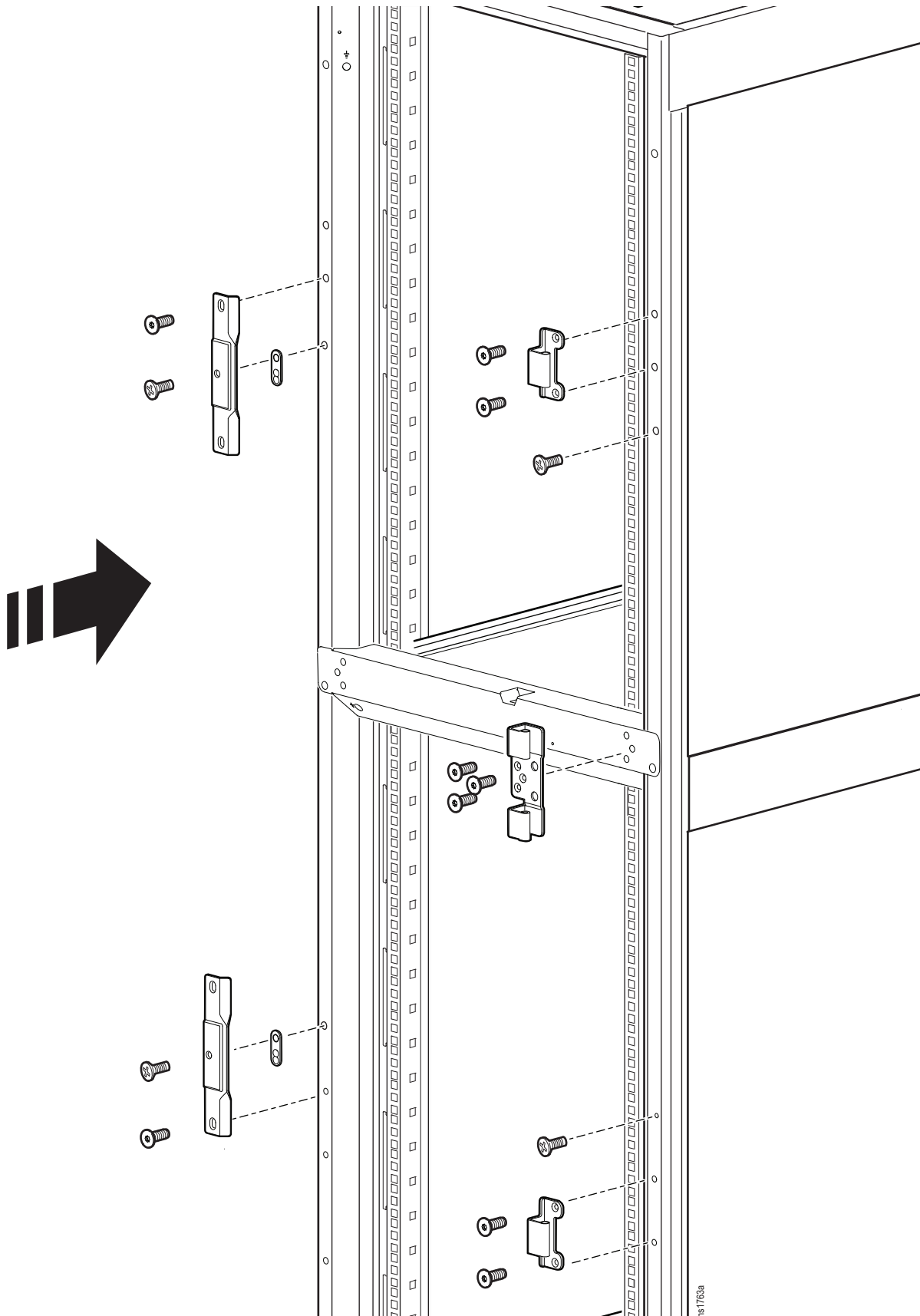


- 2. Remove doors (see “Doors” on page 8).

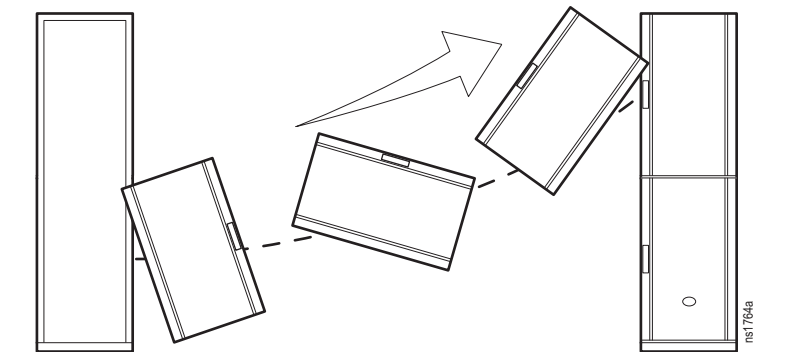
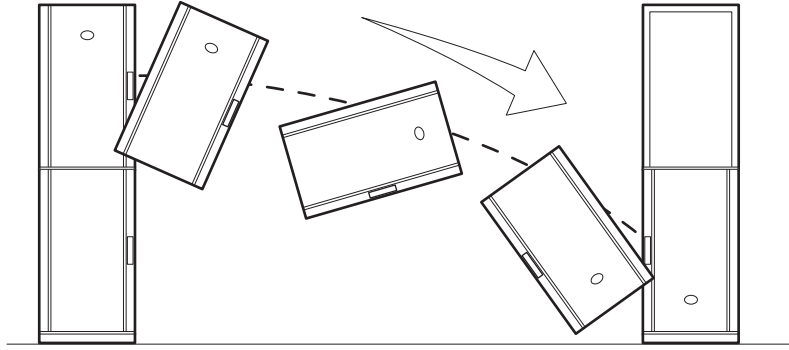
3. Remove and retain parts shown.



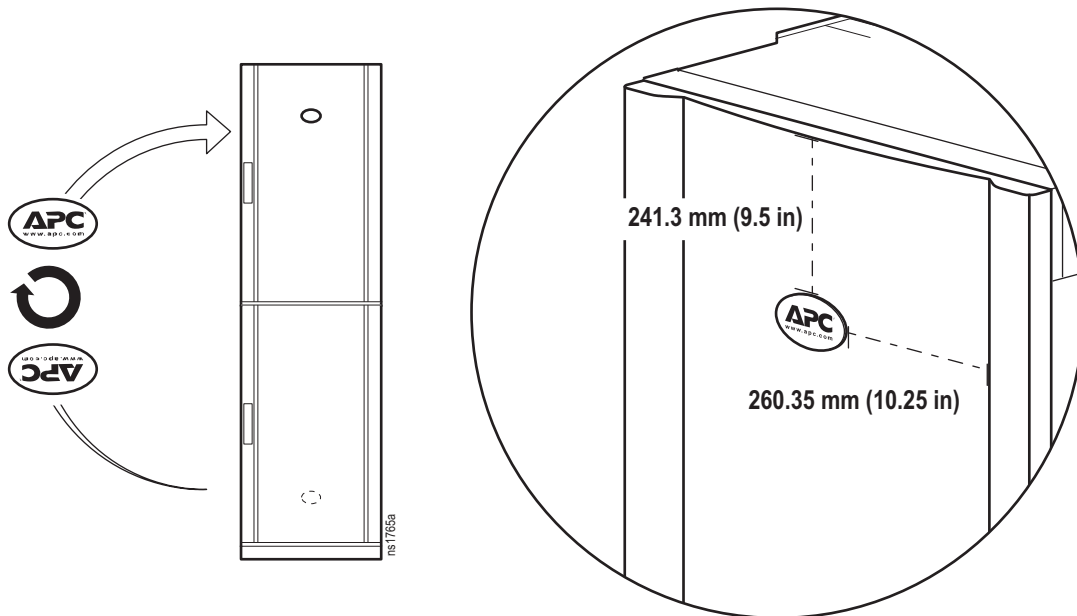
4. Reinstall parts as shown.



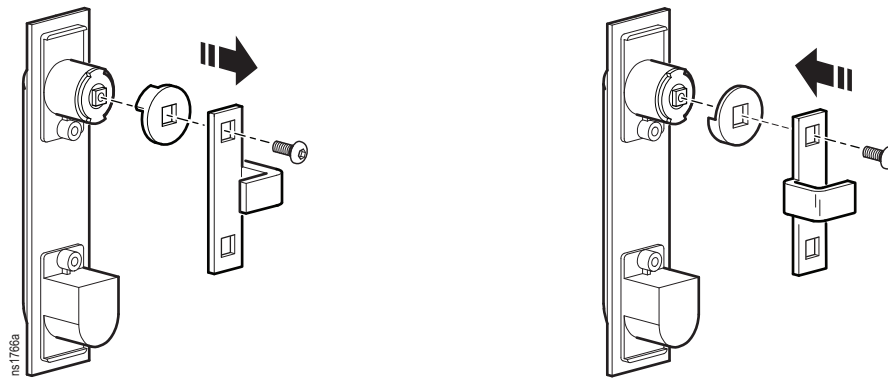
5. Reinstall doors.



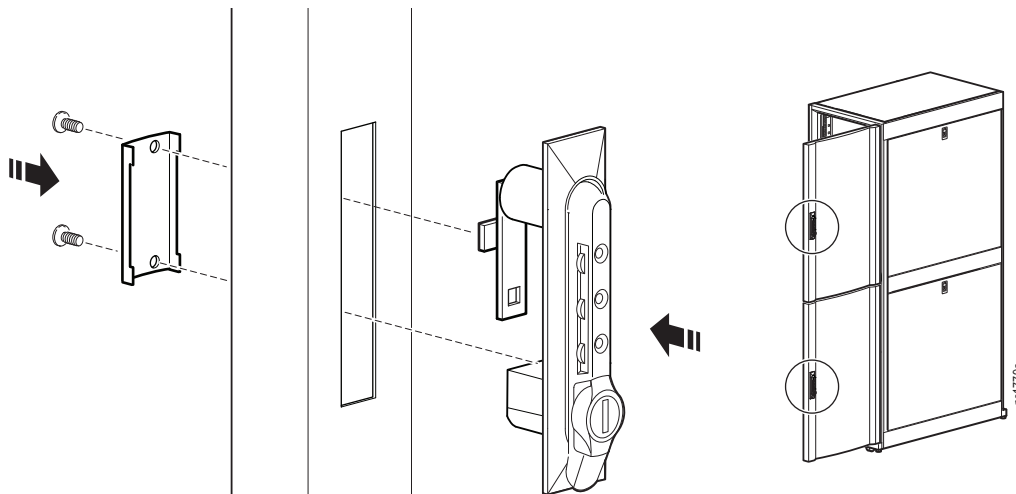
6. Move APC nameplate from bottom door to top door.



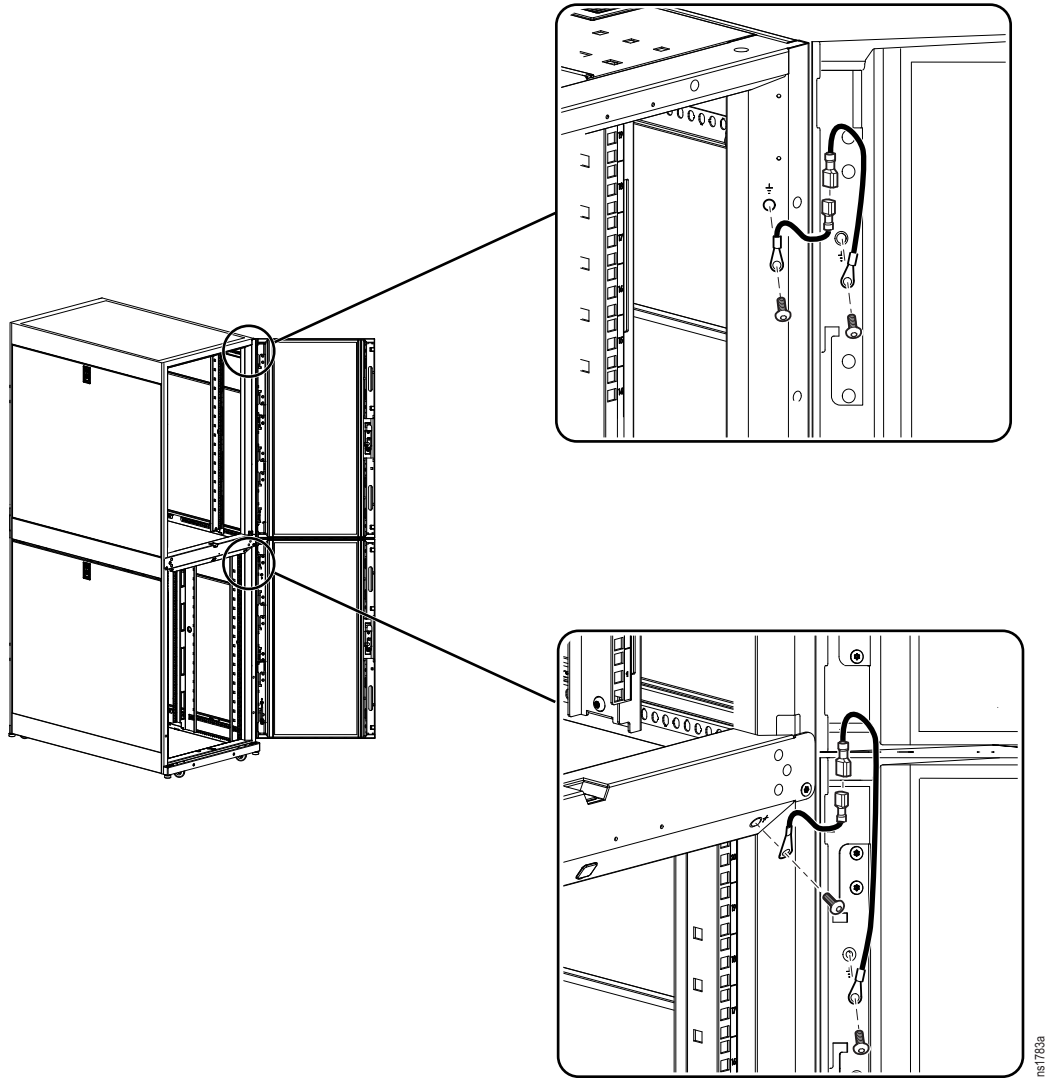
7. For each door handle, remove and reinstall latch and washer oriented as shown. The washer is rotated 90 degrees from its original orientation.



8. Reinstall handles on both doors.



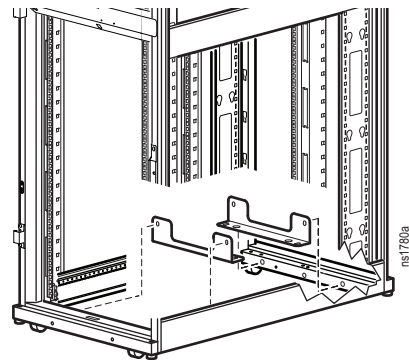
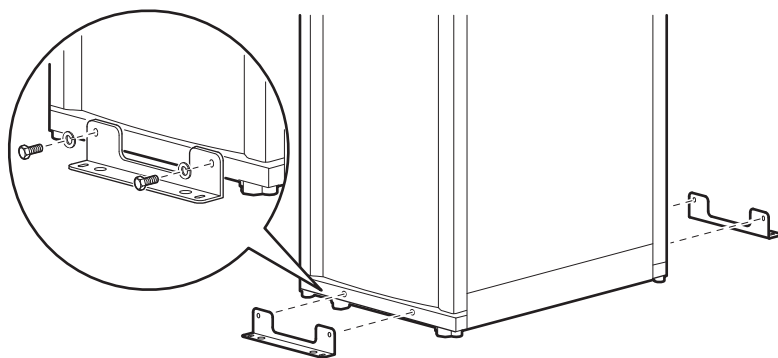
9. Remove ground wires from door and frame and reinstall as shown. Torque hardware to 8.7 to 9.4 N-m (77 to 83 in-lb).



Securing the Enclosure

For additional stabilization, secure the enclosure to the floor. Use fastener locations on the outside or inside of the enclosure, and choose from the accessories shown below.

Accessory	SKU	Description
Pallet/bolt-down brackets	(provided with the enclosure; not available as a purchased part)	Attaches to rack and floor internally or externally to provide additional stability without blocking cable access.
NetShelter SX stabilizer plate	AR7700	Attaches externally to the rack and floor to provide additional stability.
Bolt-down kit	AR7701	Attaches to rack and floor internally or externally to provide additional stability without blocking cable access. With the appropriate mounting hardware, meets UBC Zone-4 seismic requirements.

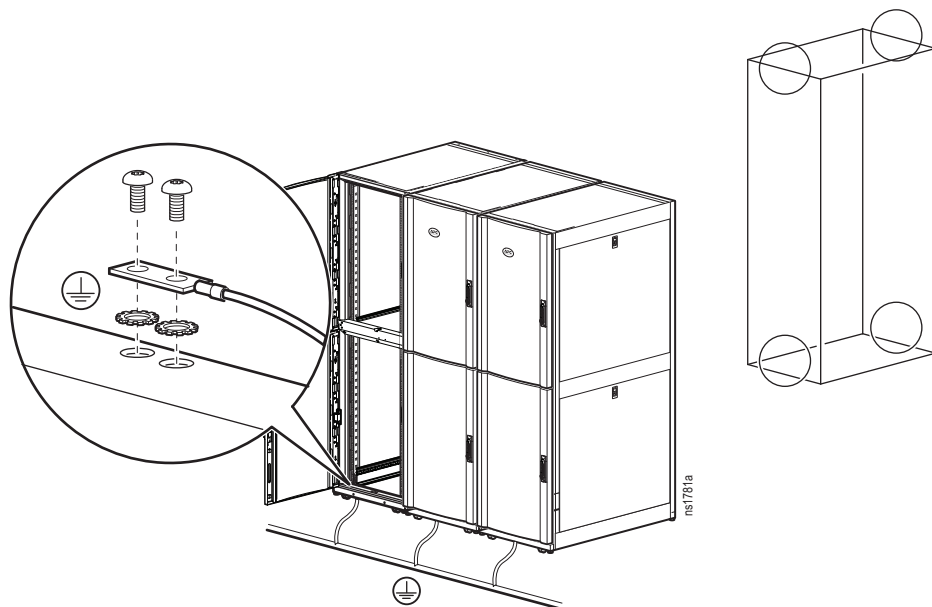


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Grounding the Enclosure

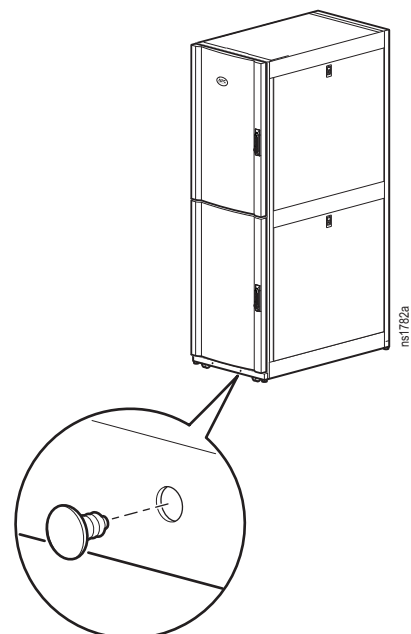
Each enclosure should be grounded directly to the building ground using one of the designated grounding locations (two M6 threaded inserts) at the top or bottom of the enclosure.

- Use a Common Bonding Network Jumper kit (for example, Listed [KDER] Panduit® RGCBNJ660PY or equivalent).
- Use paint-piercing washers between ground terminal and enclosure frame or remove paint on frame under ground terminals per NEC NFPA 70 Article 250.12.
- Torque screws to 6.9 N-m (60 in-lb).
- Do not ground one enclosure to another enclosure in a cascading style.



Completing the Installation

Install plugs included in the hardware bag as needed.



Equipment Installation

Installing equipment in a NetShelter SX Colocation Enclosure may require adjusting the vertical mounting rails to the correct depth for your equipment before installing equipment.

Adjusting the Vertical Mounting Rails

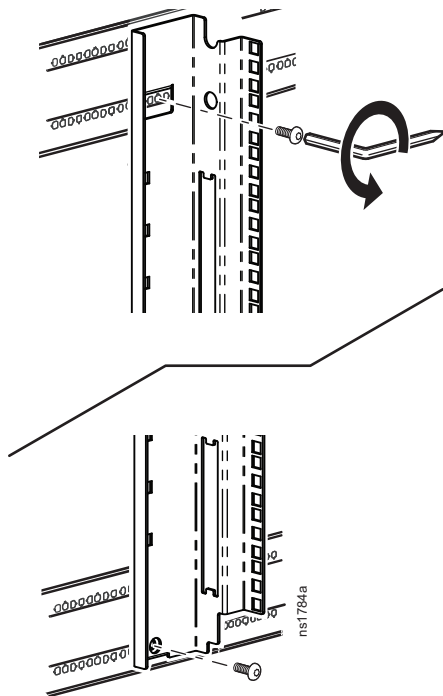
Equipment is secured to the vertical mounting rails in the Colocation Enclosure. The vertical mounting rails are adjustable to accommodate the depth of the equipment. The vertical mounting rails come factory-installed for use with equipment that has a depth up to 737 mm (29 in). The vertical mounting rails can be adjusted to be as close together as 191 mm (7.5 in) or as far apart as 935 mm (36.8 in), when the vertical 0 U accessory channels have been removed.

Perform the following steps to adjust a vertical mounting rail.



Warning: To avoid personal injury or damage to the enclosure, perform this procedure without any equipment installed on the vertical mounting rails.

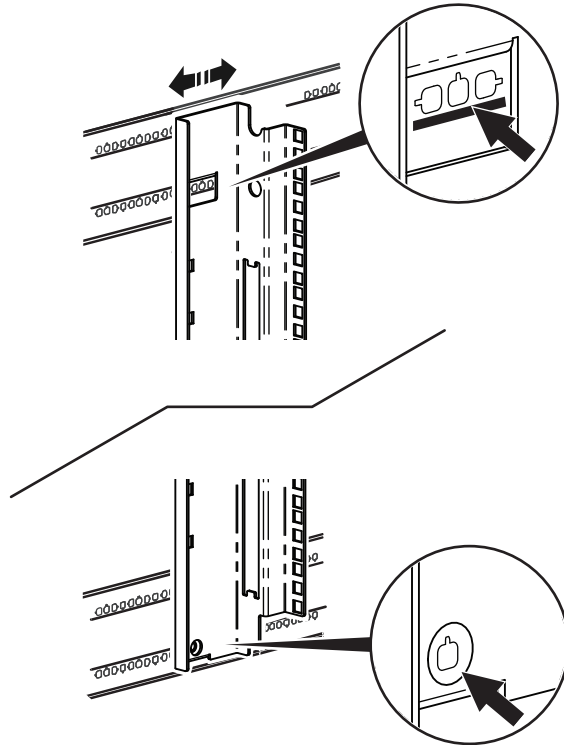
1



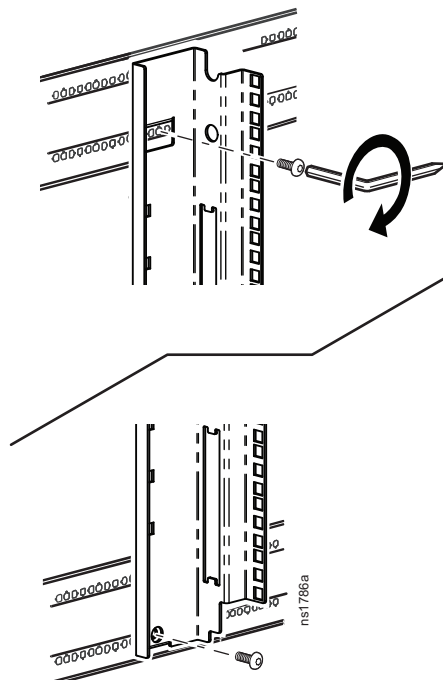
2

Vertically align the vertical mounting rail by making sure the middle symbol at the top of the vertical mounting rail matches the symbol at the bottom.

- Vertical mounting rails adjust in 12.7-mm (1/2-in) increments.
- Make sure the vertical mounting rails on both sides of the enclosure are adjusted to the same depth. Symbols on each side should match.



3



Installing Equipment

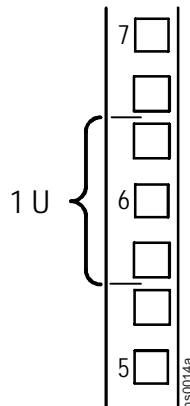


Warning: To prevent the enclosure from tipping over after equipment installation:

- Make sure you have secured the enclosure before installing equipment.
- Load the heaviest equipment first toward the bottom of the enclosure to prevent the enclosure from becoming top-heavy.
- Do not extend equipment on sliding rails until you have installed three or more pieces of similar-sized equipment or until you have installed the stabilizer plate or bolt-down brackets.
- Do not extend more than one piece of equipment on sliding rails at a time.

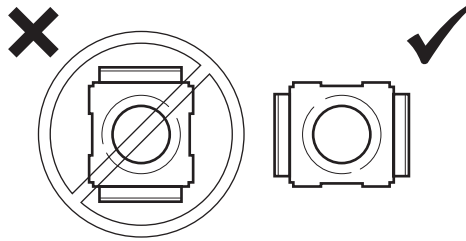
To install rack-mount equipment in the Colocation Enclosure:

1. Review the equipment manufacturer's installation instructions.
2. Locate the top and bottom U-space on the vertical mounting rails. Every third hole on the mounting rails is numbered to indicate the middle of a U-space. A U-space consists of one of these numbered holes and one hole directly above and below it, as shown.



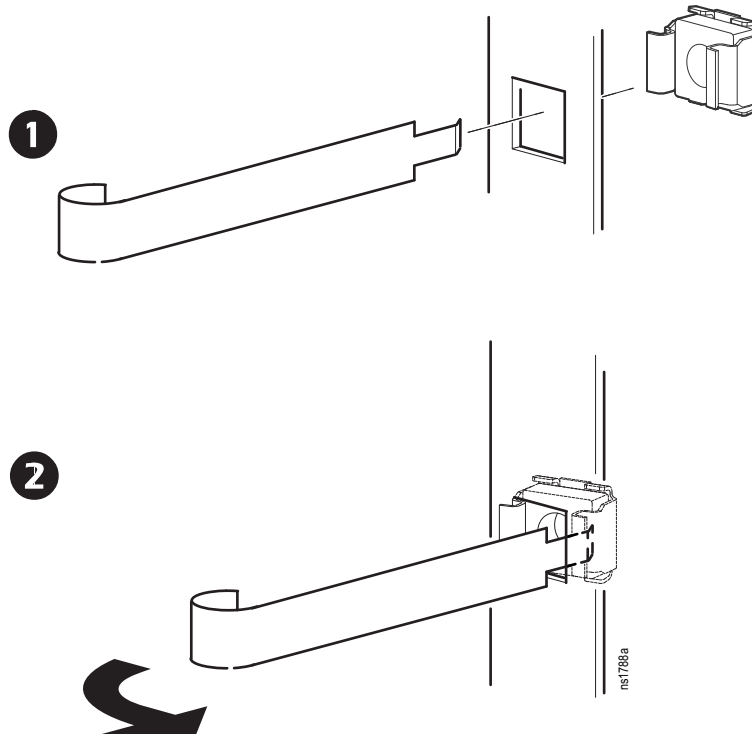


Warning: To ensure equipment installs securely, install cage nuts with tabs engaging the left and right sides of the square hole. Do NOT install cage nuts with tabs engaging the top and bottom of the square hole.



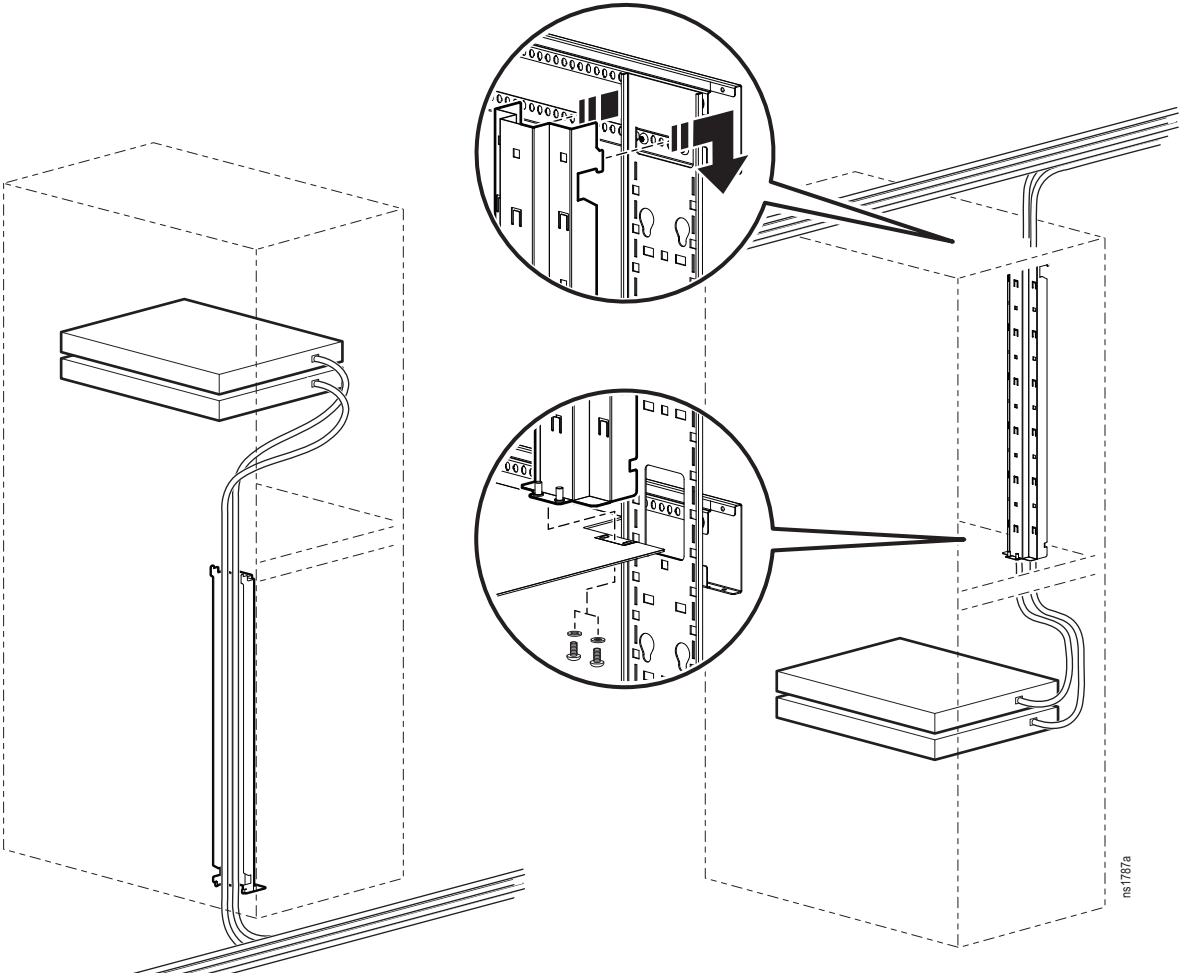
Note: Install the cage nuts on the interior of the vertical mounting rail.

Note: To remove a cage nut, squeeze the sides to release it from the square hole.

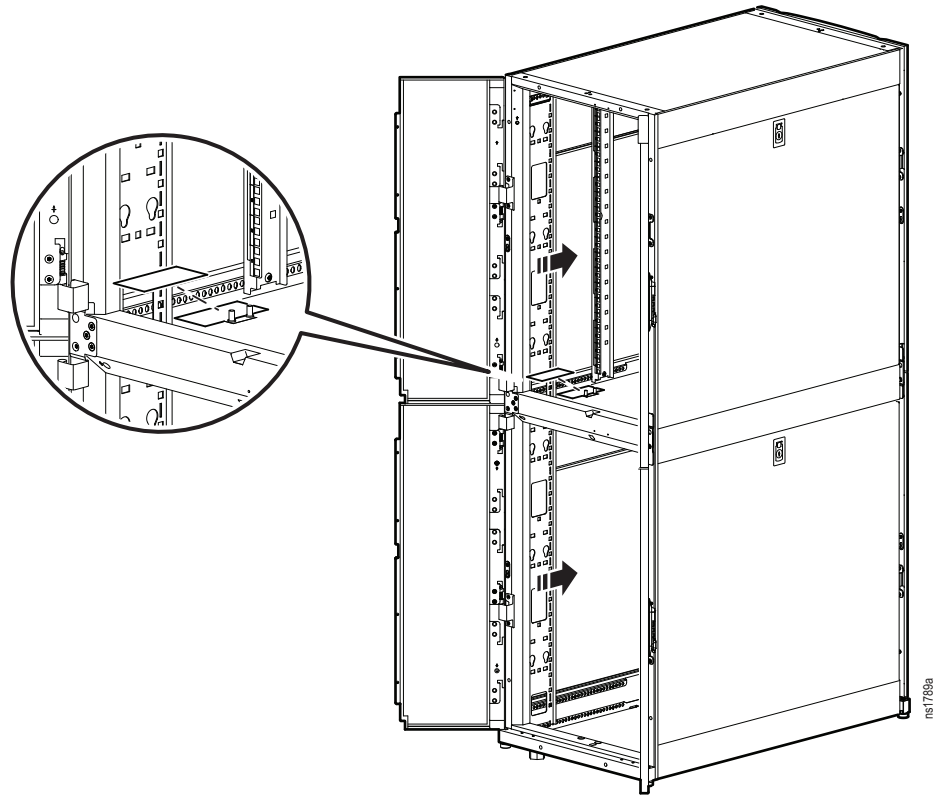


Cable Routing and Cable Management

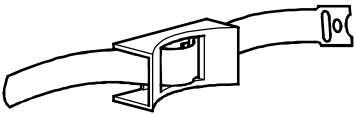
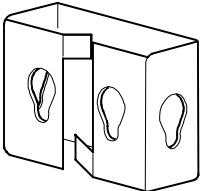
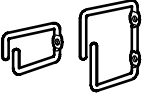
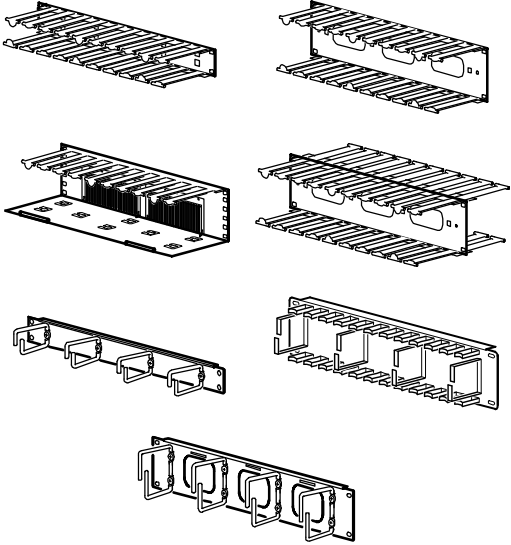
Remove security covers to route cables, especially cables with large connectors.

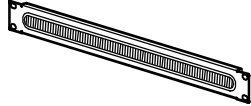
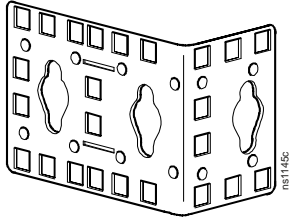



You can remove two knock-out panels on the divider to provide for additional cable routing or to change the position of the vertical 0 U accessory channels on each side of the enclosure.



Accessories

Product	SKU	Description
Toolless hook and loop cable manager (Qty. 10)	AR8621	Includes ten 457-mm (18-in) hook and loop black cable straps that install in the square holes in the vertical 0 U accessory channel, accessory channel security cover, or the vertical mounting rail. 
Cable containment brackets (Qty. 6)	AR7710	Contains cables along the vertical 0 U accessory channel. Installs without tools. 
Cable management rings (Qty. 5 large and 5 small)	AR8113A	Fastens cables to posts, mounting rails, or braces. 
19-inch horizontal cable organizers	AR8602 (1 U) AR8600 (2 U) AR8601 (2 U double sided) AR8603 (2 U high density) AR8425A (1 U) AR8426A (2 U) AR8427A (2 U) AR8428 (2 U)	Routes cables horizontally on the front or back of the 19-inch EIA enclosure. 

Product	SKU	Description
19-inch 1-U cable pass-through with brush strip	AR8429	Assists with containing air in the enclosure and providing an aesthetic solution for cable routing. 
Zero-U accessory mounting bracket (Qty. 2)	AR7711	Zero U multi-purpose accessory mounting bracket for 1 U and 2 U equipment, including Rack PDUs. 
Vertical Cable Organizer for NetShelter 0-U Channel	AR8442	Eliminates cable stress by organizing cable layout within the rear channels of the enclosure. Takes up zero U of space within the enclosure. Consists of two pieces of equal size. When stacked both pieces span the entire height of the enclosure. Two pieces can be installed side by side in the vertical 0 U accessory channel. Can be used in any APC enclosure. 

Specifications

Height	1991 mm (78.3 in)
Width	600 mm (23.6 in)
Depth	1070 mm (42.1 in)
Net weight	140.7 kg (309.5 lb)
Total open area (front door)	579 651 mm ² (898.5 in ²)
Total open area (rear door)	653 582 mm ² (1,013.1 in ²)
Open area per U (front door)	14 129 mm ² (21.9 in ²)
Open area per U (rear door)	15 658 mm ² (24.7 in ²)
Perforation pattern percentage	69%
Percent of perforated area (front)	66%
Percent of perforated area (rear)	74%
Clearance (for wiring) between front door and vertical rail	61.0 mm (2.4 in)
Weight rating: static load [†]	1361 kg (3,000 lb)
Weight rating: rolling	1021 kg (2,250 lb)
Weight rating: shipping	557 kg (1,228 lb)

[†] Lower the leveling feet if the static weight is over 1020.58 kg (2,250 lb).

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