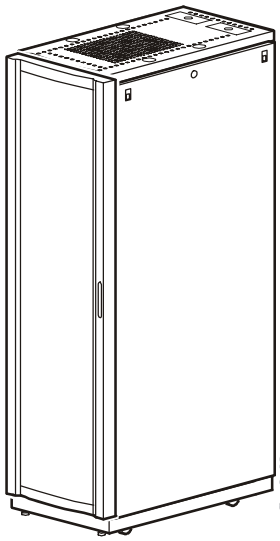
www.apc.com

Unpacking, Installation, and Customization

NetShelter® VX Enclosure



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.

Instrukcja Obsługi w jezyku polskim jest dostepna na CD.

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

Bu kullanım kılavuzunun Türkçe'si, ilişikte gönderilen CD içerisinde mevcuttur.

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。

Contents

Product Overview 1

Description 1

NetShelter VX Enclosures 1

Product Inventory 3

Components of the enclosure 3

Before Installation 4

Tools 4

Tools (provided) 4

Other tools required (not provided) 4

Grommets 5

Hardware 5

Hardware (provided) 5

Unpacking 6

How to unpack the enclosure 6

Please recycle 7

Disclaimer 7

Verify the inventory 7

Configuration 8

Installation 9

How to Install the Enclosure 9

Leveling the enclosure 9

Removing the casters and leveling feet (optional) 9

Rack stabilization options 10

Removing and Installing the Side Panels 11

Removing the side panels 11

Reinstalling the side panels *11*

Removing and Installing the Roof 12
Removing the roof 12
Installing the roof 12
Removing and Installing the Doors 13
Removing the doors 13
Installing the doors 13
Reversing the front door 14
Vertical Mounting Rails 18
How to adjust the mounting rails on the frame posts 18
How to reposition the vertical rails using the horizontal braces . . 19
How to Mount 23-inch Equipment 20
How to configure a NetShelter VX Wide
Enclosure for 23-inch equipment 20
How to mount 19-inch equipment in a 23-inch configuration 21
How to Move a Horizontal Brace 22
Moving a brace 22
Installing Equipment 23
How to identify one U-space on the mounting rail 23
Installing cage nuts 23
Removing cage nuts 23
Grounding studs 24
Cable Management 25
Location of cable access openings 25
How to remove the skirts 26
Cable management options 26
Joining Enclosures 28
Before joining enclosures 28
How to Move Joining Hardware 29
Baying trim 29
When the enclosure with sides is on the left 29
When the enclosure with sides is on the right 31
How to Join Enclosures 32
Make the front connections 32
Make the rear connections 32

Specifications 33

42-U Enclosure for 19-inch Equipment 33

42-U Enclosure for 19-inch or 23-inch Equipment 34

47-U Enclosure for 19-inch or 23-inch Equipment 35

APC Limited Factory Warranty 36

Terms of Warranty 36
Non-transferable Warranty 36
Exclusions 36
Warranty Claims 37

Product Overview

Description

The American Power Conversion (APC®) NetShelter® VX is an enclosure for storage of industry-standard (EIA-310), 19-inch or 23-inch rack-mount hardware, which includes servers, voice, data, networking, internetworking, and APC power protection equipment.

NetShelter VX Enclosures

Model	Rack Mounting Height	Rack Mounting Width	Nominal Enclosure Width	Description
AR2100BLK	42 U†	19 in	600 mm	Enclosure with sides
AR2101BLK	42 U	19 in	600 mm	Enclosure without sides
AR2102BLK	42 U	19 in	600 mm	Enclosure without sides or doors
AR2103BLK	47 U	19 in	600 mm	Enclosure with sides
AR2104BLK	47 U	19 in	600 mm	Enclosure without sides
AR2310BLK	42 U	19 in or 23 in	750 mm	Wide enclosure with sides
AR2311BLK	42 U	19 in or 23 in	750 mm	Wide enclosure without sides
AR2316BLK	47 U	19 in or 23 in	750 mm	Wide enclosure with sides
AR2317BLK	47 U	19 in or 23 in	750 mm	Wide enclosure without sides

†One U=1.75 in (4.44 cm)

APC offers side panels for enclosures without sides. Each kit includes the panels and the hardware to mount them.

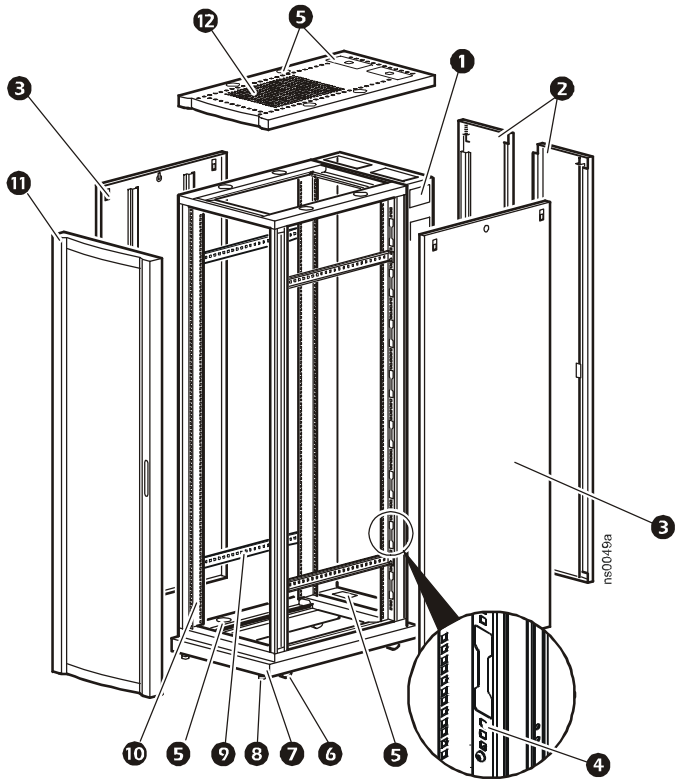
SKU	Description
AR8364BLK	42-U black side panels
AR8367BLK	47-U black side panels

APC also offers doors for enclosures without doors. Each kit includes one front door or two rear doors and the hardware to mount them.

SKU	Description
AR8361BLK	42-U front door (600-mm enclosure)
AR8362BLK	42-U split rear doors (600-mm enclosure)
AR8365BLK	47-U front door (600-mm enclosure)
AR8366BLK	47-U split rear doors (600-mm enclosure)
AR8369BLK	42-U front door (750-mm enclosure)
AR8370BLK	42-U split rear doors (750-mm enclosure)
AR8454BLK	47-U front door (750-mm enclosure)
AR8455BLK	47-U split rear doors (750-mm enclosure)

Product Inventory

Components of the enclosure



❶ Rear cabling channel

❷ Split rear doors (only on enclosures with doors)

❸ Side panels with locks (only on enclosures with sides)

❹ Frame posts

❺ Cable access

❻ Casters

❼ Front and rear skirts

❽ Adjustable leveling feet

❾ Adjustable horizontal braces

❿ Vertical rails

⓫ Reversible front door (only on enclosures with doors)

⓬ Ventilated roof

Before Installation

Tools

The keys are inside the enclosure, fastened to the front left, vertical, side-facing mounting rail. The bag containing the mounting hardware is fastened to the floor of the enclosure.

Tools (provided)

For enclosures without sides.

3-mm hex wrench (1)

For all enclosures.

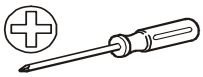
Cage nut tool (1)

Leveling and unpacking wrench (1)

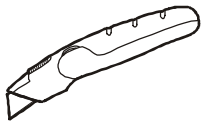
5-mm hex wrench (1)

Other tools required (not provided)

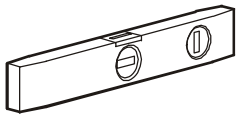
For all enclosures.



Phillips screwdriver (1)



Utility knife (1)



Level (1)

Grommets

Grommets (included in bag) provided for enclosures with sides.

Grommets 4 x 4 in (2)

Grommets 4 x 8 in (3)

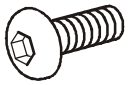
Grommet covers (included in bag) provided for all enclosures.

Grommet covers 4 x 4 in (4)

Hardware

Hardware (provided)

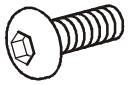
For enclosures without sides.



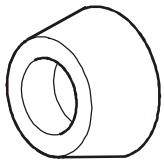
M6 x 12 mm socket-head screws (3)

For all enclosures.

#12-24 screws (30)



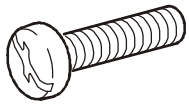
M6 x 22 mm socket-head screws (4)



Rubber feet (4)

M6 cage nuts (60)

Plastic cup washers (60)



M6 x 16 pan-head, Phillips/slotted screws (60)

Unpacking

How to unpack the enclosure

Use at least two people to unpack the enclosure.

Read all instructions thoroughly. Warning symbols indicate important instructions that must be followed to prevent injury or damage.

- **To prevent the enclosure from tipping over, stabilize the enclosure before installing the components.**
- **Do not extend more than one component from the enclosure at one time.**
- **Load the heaviest components first, and place them toward the bottom of the enclosure to prevent the enclosure from becoming top-heavy.**

1. Move the shipping pallet to a firm, level surface in an open area. Inspect the enclosure for visible signs of shipping damage. If you detect shipping damage, contact APC Customer Support at the number listed on the yellow sticker on the front of the enclosure.
2. Remove the open-ended wrench from the pouch on the front of the packaging.
3. Refer to the label on the packaging to determine where to cut the wrapping. Using heavy-duty shears or a utility knife, carefully remove the plastic stretch wrap surrounding the enclosure.
4. Remove the cardboard cover and the four cardboard corner protectors.
5. Remove the four brackets that are anchoring the enclosure to the shipping pallet. Use the 13-mm end of the open-ended wrench to remove the 13-mm bolts that secure the brackets to the pallet.
6. 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 rearward until the rear casters make contact with the floor.
7. While one person carefully tips the enclosure slightly away from the pallet, have the other person pull the pallet away from the enclosure.

Save the pallet if you plan to reship the enclosure.

Please recycle

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

Disclaimer

APC is not responsible for damage sustained during reshipment of this product.

Verify the inventory

After unpacking the enclosure, verify that all required components and hardware have been shipped with the enclosure. See the product inventory section beginning on page 3 for a list of components.

If any items are missing contact APC Customer Support at a number on the back cover of this manual, or at the APC Web site, **www.apc.com**.

Configuration

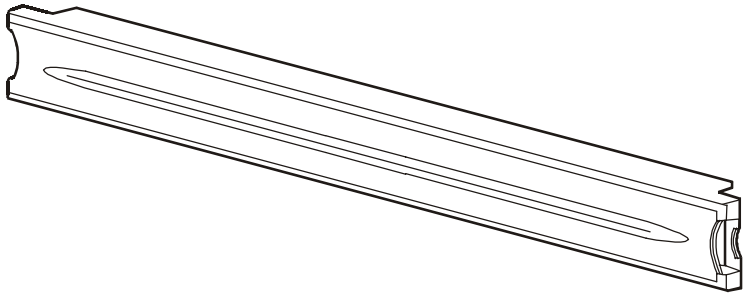
Before installing your enclosure, plan the location of the equipment to be installed. Consider the space needed by the equipment and the ergonomics of keyboards and video monitors.

The Rack Configurator, available on the APC Web site, **www.apc.com**, helps you plan your configuration to maximize the available U-space of your enclosures.

Caution

Improper airflow could damage installed components.

To maintain proper airflow, cover any empty vertical enclosure space with blanking panels (not included). Use AR8101 and AR8101BLK for 19-inch equipment mounting and AR8107BLK for 23-inch equipment mounting. To avoid damage or injury, level or stabilize the enclosure in its permanent location before loading equipment.



Installation

How to Install the Enclosure

Warning

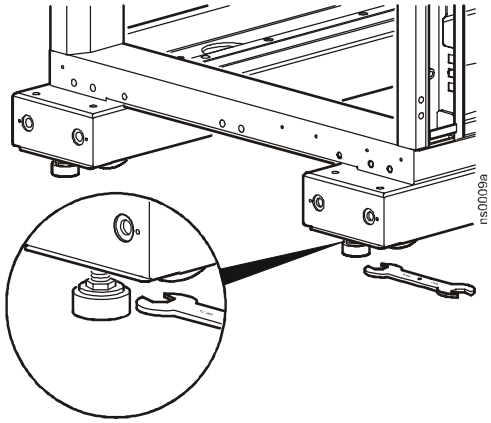
For extra stability, load 350 lbs (158 kg) of equipment into the bottom of the enclosure before moving it on its casters.

Leveling the enclosure

Level the enclosure before installing equipment.

The leveling feet are attached under the enclosure at each corner. The leveling feet help provide a stable base if the selected floor space is uneven, but they cannot compensate for a badly sloped surface. You can remove the casters and leveling feet to allow the base of the enclosure to rest directly on the floor.

1. Move the enclosure to a level location.
2. For each leveling foot, fit the 14-millimeter end of the open-ended wrench (included) to the hex head just above the round pad on the bottom of the foot. Turn the wrench clockwise to extend the leveling foot until it makes firm contact with the floor.
3. Use a level to determine which feet need further adjustment to level the enclosure. Adjust them as necessary.



Removing the casters and leveling feet (optional)

Warning

To avoid personal injury or damage to the enclosure, two people should support the enclosure.

1. Lay the enclosure on its side.
2. Using a 10-mm socket wrench (not provided), remove the four hex nuts from each of the casters and remove the casters.
3. For each leveling foot, fit the 14-millimeter end of the open-ended wrench (included) to the hex head just above the round pad on the bottom of the leveling foot. Turn the wrench clockwise to extend and remove the leveling foot.

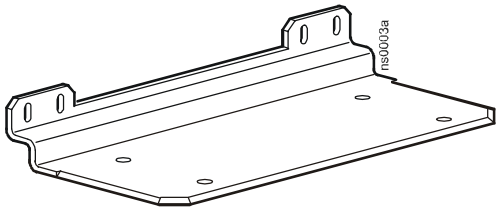
Rack stabilization options

Warning

The enclosure cannot be stabilized using the bolt-down bracket or stabilization plate if the casters or leveling feet are removed.

APC offers products (not included) for stabilizing the enclosure:

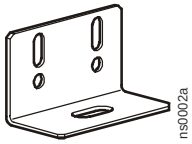
- Stabilizer Plate Kit (AR8115ABLK for 600 mm-wide enclosures and AR8120BLK for 750 mm-wide enclosures)—includes one plate and mounting hardware for attaching to the enclosure. Use up to three plate kits to provide stability to the front and sides of the enclosure. You can also bolt stabilizer plates to the floor for additional stability.



Note

To use the Stabilizer Plate Kit, remove the front skirt of the enclosure. See “How to remove the skirts” on page 26.

- Bolt-Down Bracket Kit (AR8112BLK)—includes four brackets and mounting hardware for attaching to the interior or the exterior of the base of the enclosure. These brackets must be bolted to the floor to stabilize the enclosure.



Removing and Installing the Side Panels

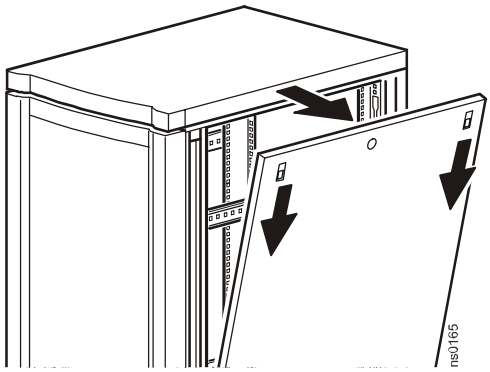
Remove the side panels to access the interior or when joining two enclosures together.

Warning

To avoid personal injury or damage to the enclosure, one person should support the side panel while another releases the side panel from its frame.

Removing the side panels

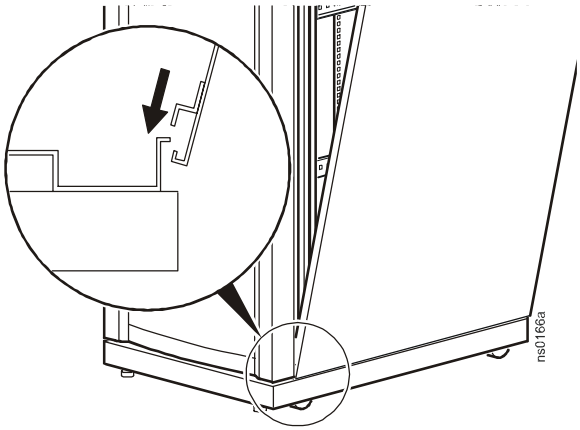
1. Use the key to unlock the panel, if necessary.
2. Slide both panel latches down at the same time and pull the top of the panel away from the enclosure.
3. Release the latches and lift the panel up and off the narrow horizontal lip at the bottom of the enclosure frame.



Reinstalling the side panels

1. Engage the bottom of the panel securely with the lip before pushing the top of the panel forward into place
2. Slide the panel latches up at the same time.

When installing the side panels on an enclosure without sides, be sure to remove the plastic grommets from the rear, side-facing, cable-access openings on the rear cabling channel. Also, remove all the joining hardware from the sides on which the side panels are being installed.



See “How to Move Joining Hardware” on page 29.

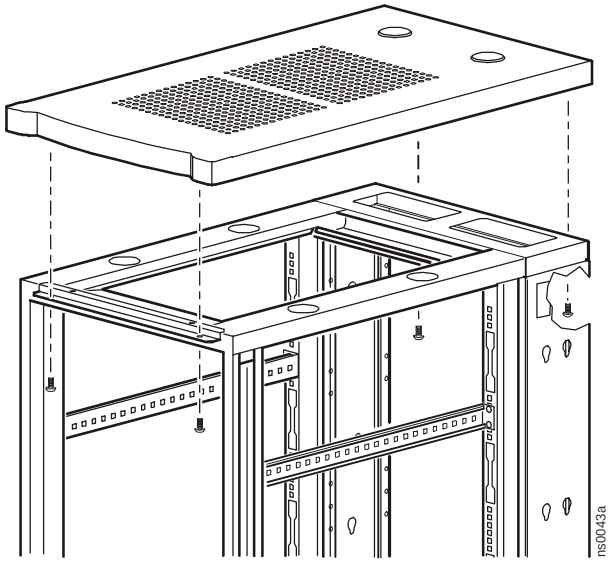
Removing and Installing the Roof

Removing the roof

1. Use the 5-mm hex wrench (provided) to remove the four hex-head screws from the inside corners.
2. Push the roof up from the enclosure.
3. Lift the roof off the enclosure

Installing the roof

1. Lower the roof onto the enclosure.
2. Align the the four hex-head screw holes on the roof with the screw holes on the enclosure.
3. Use the 5-mm hex wrench (provided) to install the four hex-head screws into the inside corners and secure the roof onto the enclosure.



Warning

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

Removing and Installing the Doors

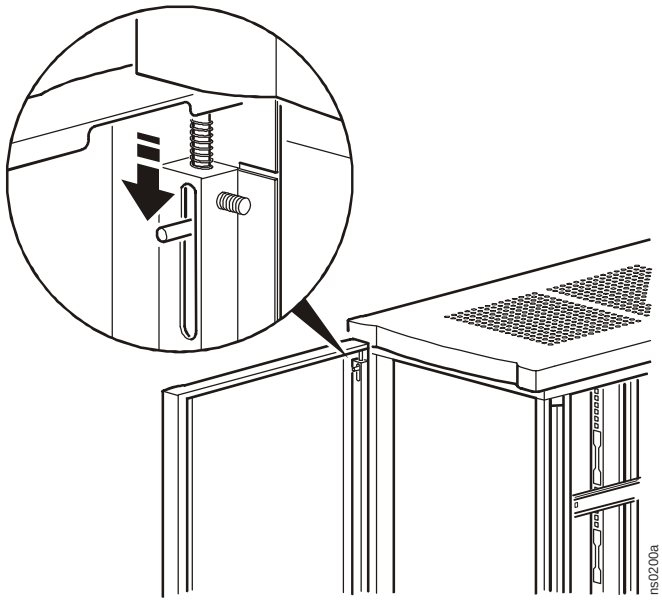
Warning

To avoid personal injury or damage to the enclosure, one person should support the door while another person removes the door from its frame.

Removing the doors

You can remove the front and rear doors of the enclosure to gain better access to equipment.

1. Open the door.
2. Pull down on the spring-loaded hinge pin attached to the top of the door.
3. Lift the door from its frame and safely set it aside.



Installing the doors

1. Loosely tighten the hinge pin brackets.
2. Align the lower door hinge pin with the hole in the bottom of the hinge pin bracket and slide the hinge pin into the hole.
3. Pull down the upper hinge pin.
4. Align the upper hinge pin with the hole in the upper hinge pin bracket and release the hinge pin into the hole.
5. Make sure that the door opens and closes properly.
6. Firmly tighten the flat-head screws to secure the hinge pin brackets to the enclosure frame.

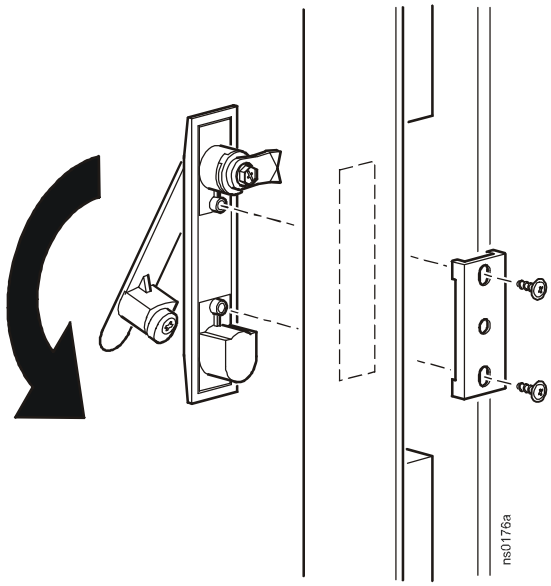
Reversing the front door

Remove the side panels:

See “Removing and Installing the Side Panels” on page 11.

Reverse the door handle:

1. Remove the two Phillips screws from the rear of the door handle assembly and remove the handle assembly from the door.
2. Rotate the door handle assembly 180 degrees and reinstall it, using the hardware removed in step 1.

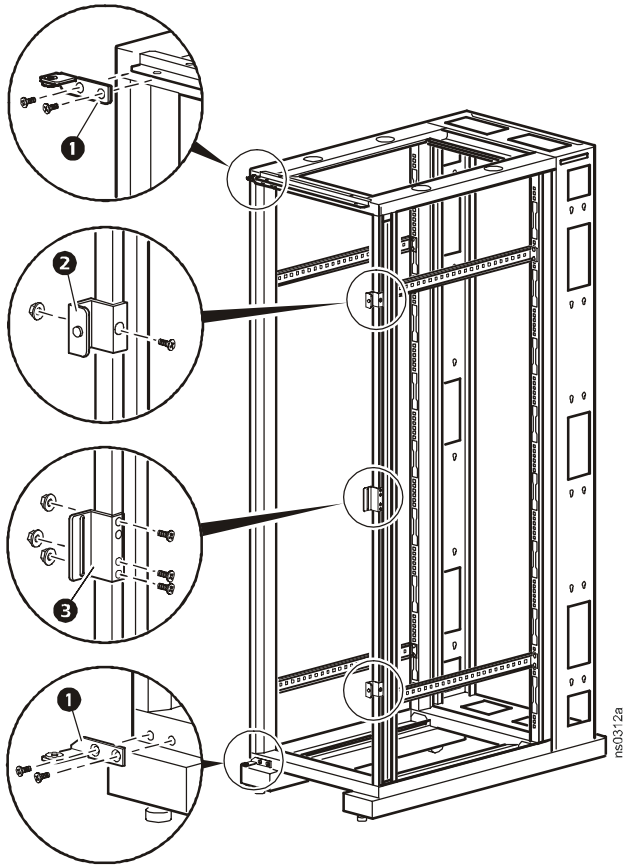


Remove the hinge pin, bumper, and latch brackets:

Note

Remember the location of all items being removed, and the distance between the items. You will need to duplicate this position when reinstalling the items.

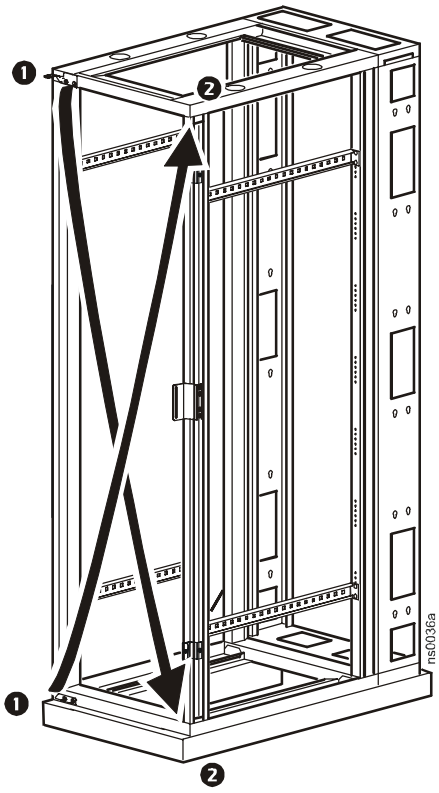
Use a Phillips-head screwdriver (not included) to remove the hinge pin brackets ❶, bumper brackets ❷, and latch bracket ❸ from the enclosure frame.



Reinstall the hinge pin brackets:

Reinstall the hinge pin brackets on the opposite side of the enclosure.

1. Remove the small plastic plugs covering the insertion holes in the base and the top of the enclosure frame. Reinstall them in the holes on the opposite side of the enclosure.
2. Relocate the two hinge pin brackets from their original position ❶ to their new position ❷. Secure the hinge pin brackets by tightening the screws.

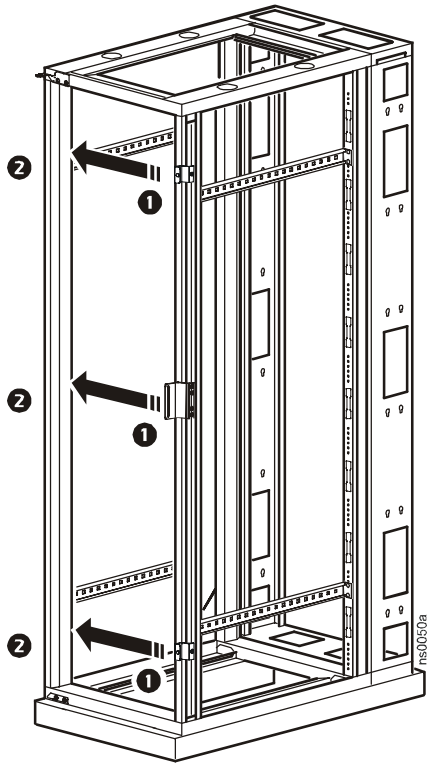


Reinstall the latch plate and bumpers:

Relocate the latch bracket and the two door bumper brackets from their original position ❶ to their new position ❷.

Note

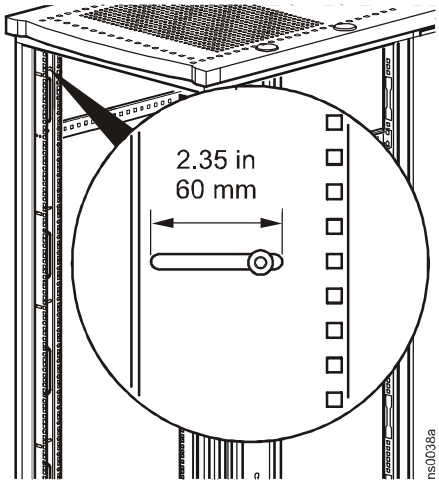
Be sure to maintain the original spacing between the latch plate and the bumpers, as well as their vertical relationship with the enclosure frame.



Vertical Mounting Rails

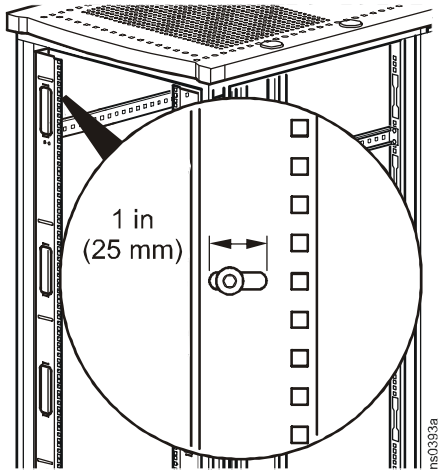
The vertical mounting rails are factory-installed in the proper position for use with rack-mountable equipment that has a depth of 29.13 in (740 mm).

On a 600-mm wide enclosure or a 750-mm wide enclosure configured for 23-in equipment, you can adjust each rail to the front or rear over a total range of 2.35 in (60 mm) to accommodate different rails or equipment with various depths.



On a 750-mm wide enclosure configured for 19-in equipment, you can adjust each rail over a total range of 1 in (25 mm).

You can also move the rails further by attaching them to the horizontal braces. The following sections describe the procedures for adjusting the position of the mounting rails and for moving them within the enclosure.



How to adjust the mounting rails on the frame posts

To avoid personal injury or damage to the enclosure, perform this procedure with no equipment installed on the vertical mounting rails.

1. Use the 5-mm hex wrench (included) to loosen—but not remove—the four pan-head screws in the slots of each vertical mounting rail.
2. Move the rails to the desired location. Use a level to make sure each mounting rail is vertical. Tighten each screw.

How to reposition the vertical rails using the horizontal braces

You can reposition the two front, the two rear, or all four of the vertical rails along the horizontal braces to accommodate your equipment. You can reposition the vertical rails whether they are configured for 19-inch or 23-inch equipment. The illustration shows the repositioning of the two front vertical rails, but the procedure is the same for all of the vertical rails.

Warning

When the vertical rails are mounted to the side braces, no more than 1000 lb (453.6 kg) of equipment should be mounted in the enclosure.

1. Remove the side panels from the enclosure.

   See “Removing and Installing the Side Panels” on page 11.

2. Use the 5-mm hex wrench (included) to remove the hex-head screws in the slots of the vertical rails.
3. Locate the new position for the vertical rails.

   Note

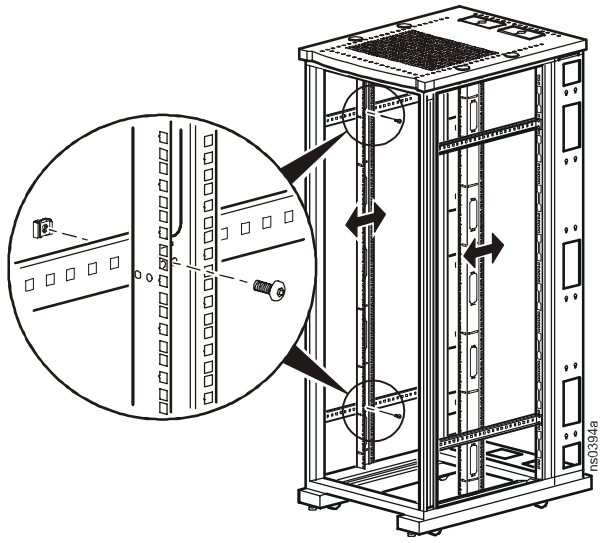
   You may have to move the horizontal braces up or down to align them with the vertical rails.

   See “Moving a brace” on page 22.

4. Insert a cage nut into the appropriate holes at the new position on the upper and lower horizontal braces.

   See “Removing cage nuts” on page 23.

5. Place the mounting rail at the new position. Insert a hex-head screw through the rail into the cage nuts in the upper and lower horizontal braces. Tighten the screws to secure the vertical mounting rail to the horizontal braces.
6. Repeat steps 2–5 for the opposite side of the enclosure.



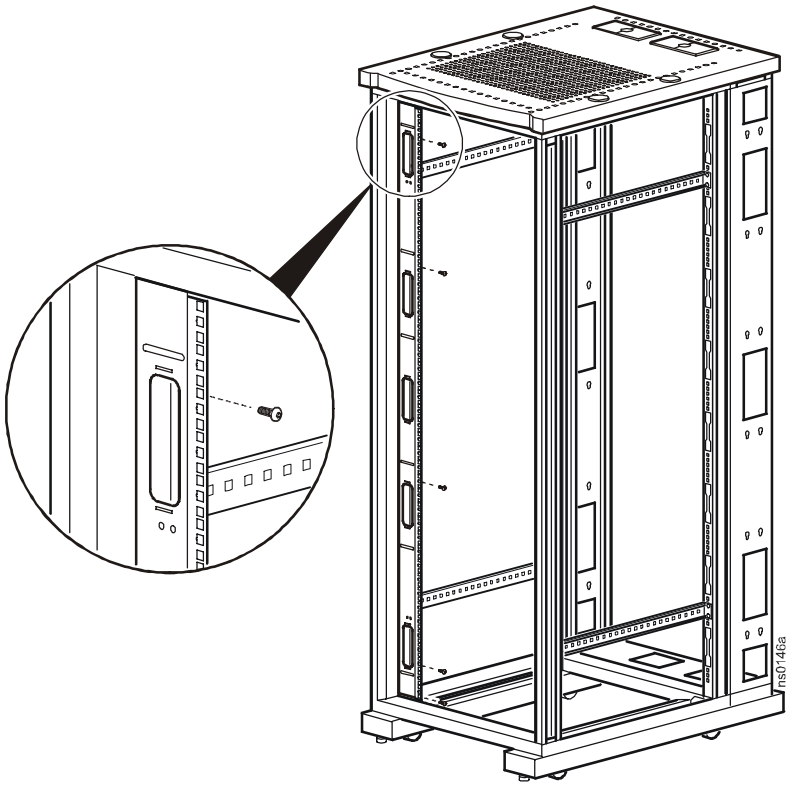
How to Mount 23-inch Equipment

The NetShelter VX Wide Enclosure comes from the factory with the mounting rails set for use with 19-inch equipment.

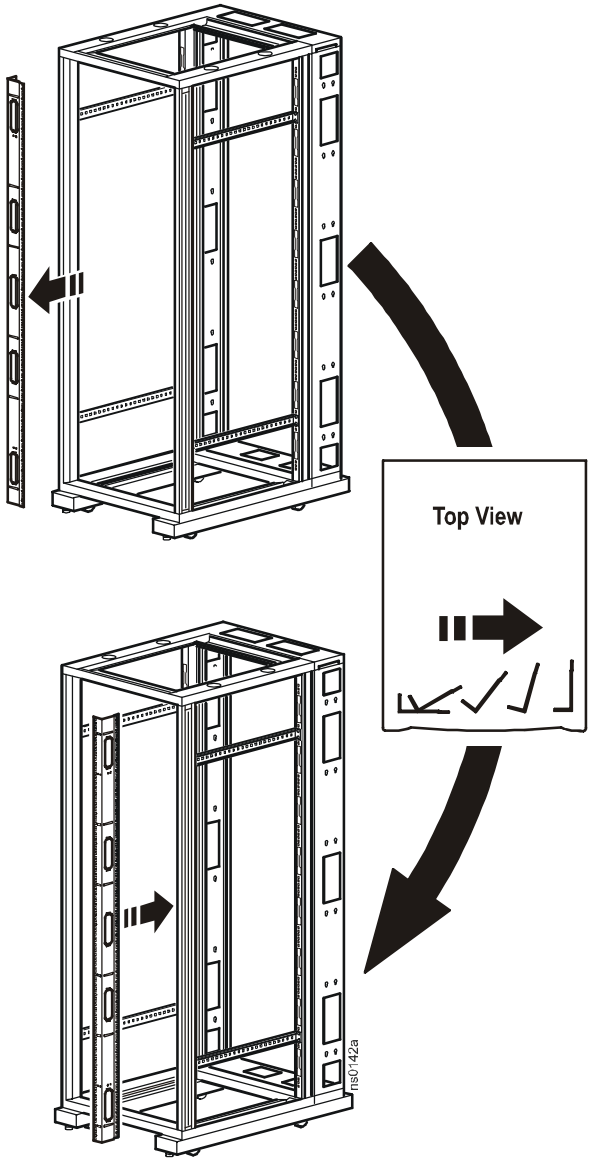
How to configure a NetShelter VX Wide Enclosure for 23-inch equipment

To use the NetShelter VX Wide Enclosure for 23-inch equipment:

1. Remove the four screws holding each mounting rail in place.



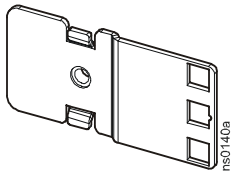
2. Remove the front rails. Rotate each rail 90 degrees and reinstall the rails on the opposite sides of the enclosure, as shown below.



3. Repeat steps 1 and 2 for the remaining rails.

How to mount 19-inch equipment in a 23-inch configuration

To mount individual pieces of 19-inch equipment in an enclosure with the mounting rails set for 23-inch equipment, use a 1U adapter kit (AR8150BLK). This kit includes four brackets and mounting hardware.



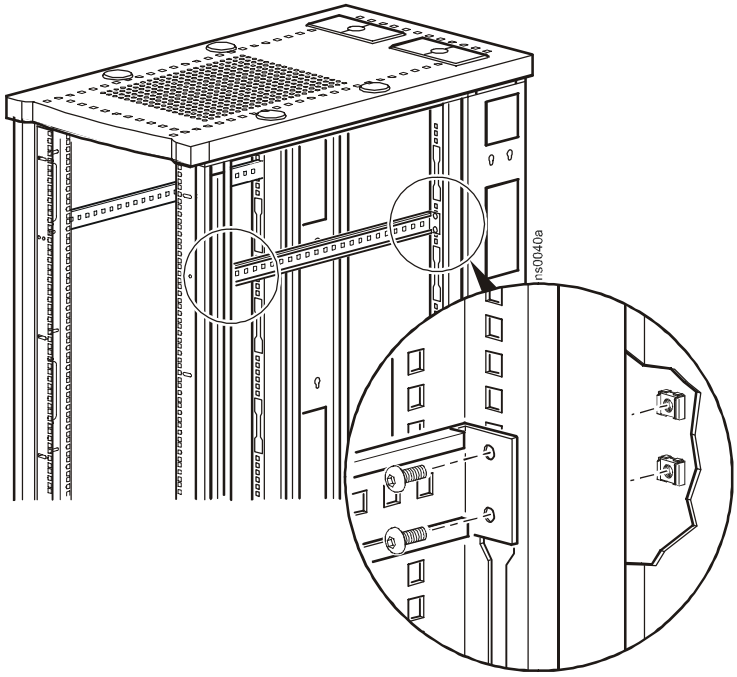
See the installation instructions included with the “23-inch to 19-inch EIA Adapter Kit”.

How to Move a Horizontal Brace

Each side of the enclosure has adjustable horizontal braces between the vertical frame posts to support the vertical mounting rails and manage cables.

Moving a brace

1. Use the 5-mm hex wrench (included) to remove the four hex-head screws that are holding the brace to the frame posts.



2. Remove the cage nuts from the frame post.

See “Removing cage nuts” on page 23.

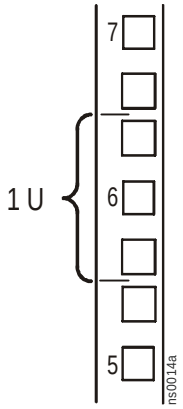
3. Locate the new position for the brace and secure the brace to the frame posts:
   a. Insert a cage nut into the appropriate holes at the new position on the frame posts.
   b. Place the brace at the new position and insert a hex-head screw through the brace, frame post, and cage nut. Tighten the screw.

Installing Equipment

This section provides general information on installing rack-mount equipment in the enclosure. Read the instructions provided with the equipment you are installing for more specific instructions.

How to identify one U-space on the mounting rail

When installing equipment, locate the top and bottom of a U-space on the mounting rails. Every third hole on the mounting rails of a NetShelter enclosure 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.



Installing cage nuts

APC offers a cage nut hardware kit (AR8100) for use with square holes.

Warning

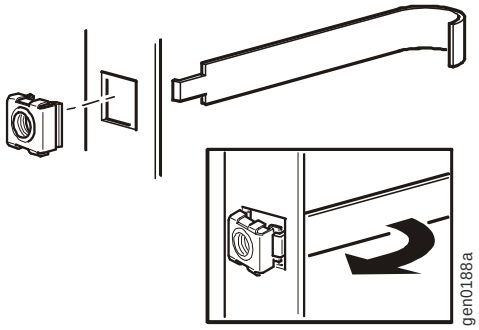
Install cage nuts horizontally, with the ears engaging the sides of the square hole. Do NOT install cage nuts vertically with the ears engaging the top and bottom of the square hole.

1. Insert the cage nut into the square hole by hooking one ear of the cage nut assembly through the far side of the hole.

   Note

   Install the cage nuts on the interior of the mounting rails.

2. Place the cage nut tool (provided) on the other ear of the cage nut and pull to snap it into position.



Removing cage nuts

1. Remove any attached screw.
2. Grasp the cage nut and squeeze the sides to release it from the square hole.

Grounding studs

There are fourteen grounding studs on the enclosure, located on the doors, the roof, the side panels, and the frame.

Number of studs	Location
4	Base
1	Rear cabling channel
1	Roof
2	Front door
4	Rear doors
2	Side panels (only on enclosure with sides)

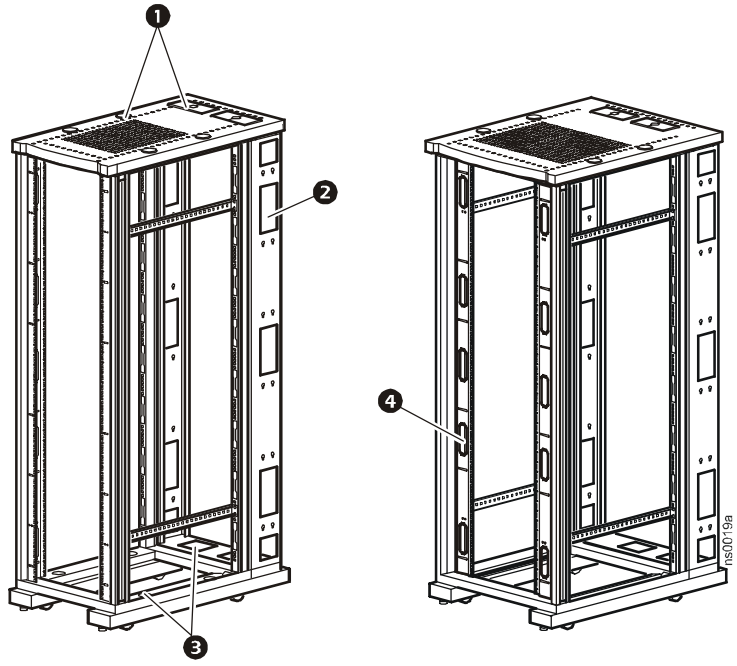
APC offers an optional grounding kit (AR8390) for grounding the enclosure.

Cable Management

Location of cable access openings

There are cable access openings in the roof ❶, sides ❷, and base ❸ of the enclosure. When the NetShelter VX Wide Enclosure is configured for 19-inch EIA equipment, there is also cable access on the mounting rails ❹. The rear cabling channel on the back of the enclosure provides clearance for wiring between the doors and the mounting rails. You can use the clearance between the rear mounting rails and rear door for routing data and power cables—data on one side, and power on the other side.

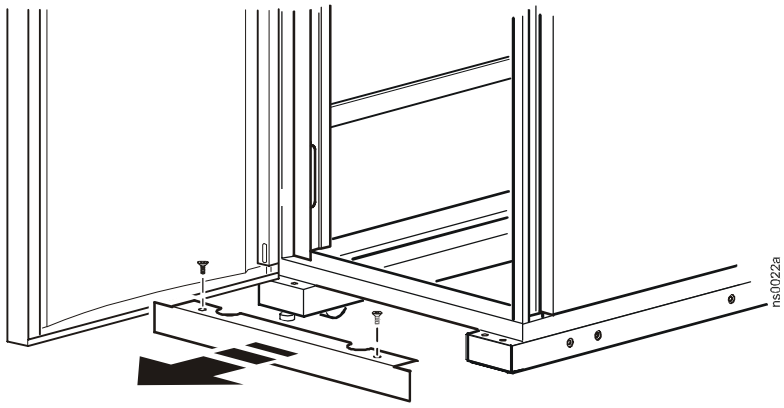
Before routing wires through the side access holes on the enclosure with sides, ensure the protective grommets (included) are installed in the cable access openings.



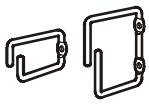
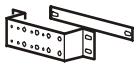
NetShelter VX **NetShelter VX Wide**

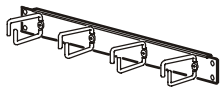
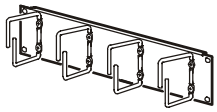
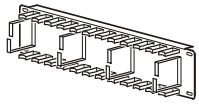
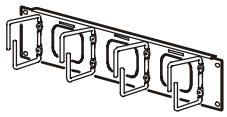
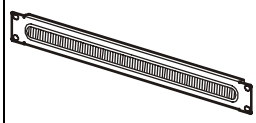
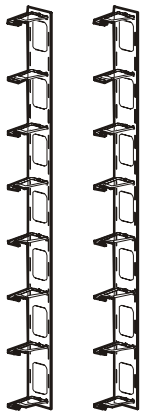
How to remove the skirts

For additional cable access or to install the stabilizer plate, remove the skirts at the front and rear of the enclosure by removing the two flat-head screws in each skirt.



Cable management options

Product	SKU	Description	Figure
Cable management rings	AR8113A	Fasten cables to posts, mounting rails, or braces.	
Cable containment kit	AR8116BLK	Fasten cables within the rear cabling channel.	
Side cable management tray	AR8114BLK	Route cables vertically between side braces.	
Rear cable management tray (42-U enclosure)	AR8118BLK	Route cables vertically in the center of the rear cabling channel.	
Rear cable management tray (47-U enclosure)	AR8119BLK		
Side channel cable trough	AR8008BLK	Route cables from the front to the rear of the enclosure. For use in a 750-mm wide enclosure when the rails are set to 19 inches or in a 600-mm wide enclosure using two AR8428 organizers.	

Product	SKU	Description	Figure
19-inch 1-U horizontal cable organizer	AR8425A	Route cables horizontally on the front or back of the 19-inch EIA rack.	
19-inch 2-U horizontal cable organizer	AR8426A	Route cables horizontally on the front or back of the 19-inch EIA rack.	
19-inch 2-U patch cord organizer	AR8427A	Route cables horizontally on the front or back of the 19-inch EIA rack.	
19-inch 2-U horizontal cable organizer pass-through	AR8428	Route cables horizontally or front to rear.	
19-inch 1-U cable pass-thru with brush strip	AR8429	Assists with containing air in the enclosure.	
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.	

Joining Enclosures

You can expand your installation by joining two enclosures together. Enclosures without sides include pre-installed joining hardware. Enclosures with sides do not include joining hardware.

To join together two NetShelter VX enclosures with sides or to join together a NetShelter VX enclosure and a NetShelter VS enclosure, one of the following kits available from APC is required.

SKU	Description
AR8376BLK	Black 42U enclosures
AR8377BLK	Black 47U enclosures

Before joining enclosures

To join an enclosure with sides to an enclosure without sides, you will first need to move some of the joining hardware from the enclosure without sides to the enclosure with sides.

1. Remove the side panel from the enclosure with sides, if necessary.

See “Removing and Installing the Side Panels” on page 11.

2. Move the joining hardware from one enclosure to the other, if necessary.

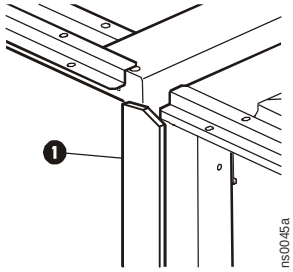
See “How to Move Joining Hardware” on page 29.

To join together two enclosures without sides, see “How to Join Enclosures” on page 32.

How to Move Joining Hardware

Baying trim

The joining hardware is pre-installed on both sides of the enclosure without sides. The baying trim ❶ is pre-installed on the front, right post of the enclosure without sides, using the baying brackets. When joining an enclosure with sides to an enclosure without sides, you will need to move some of the joining hardware.



The procedures for moving joining hardware vary according to whether the enclosure with sides is to the right or left of the enclosure without sides. If the enclosure with sides is on the right, you do not move the trim.

Note

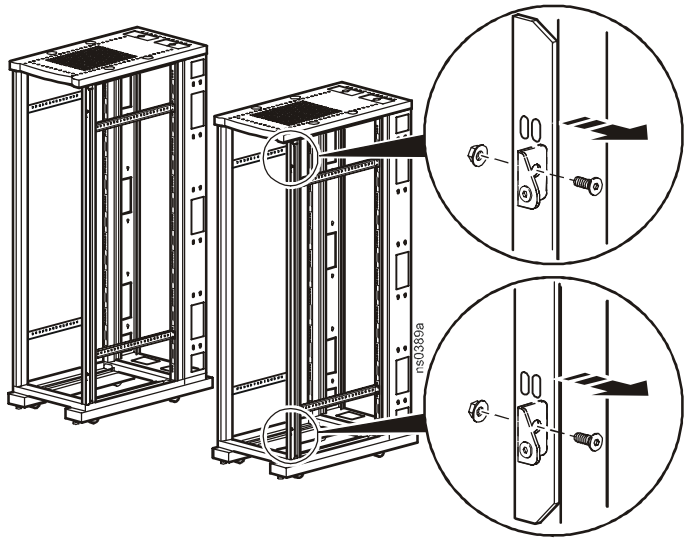
When a procedure refers to an enclosure on the right or an enclosure on the left, the point of orientation is always from the front.

When the enclosure with sides is on the left

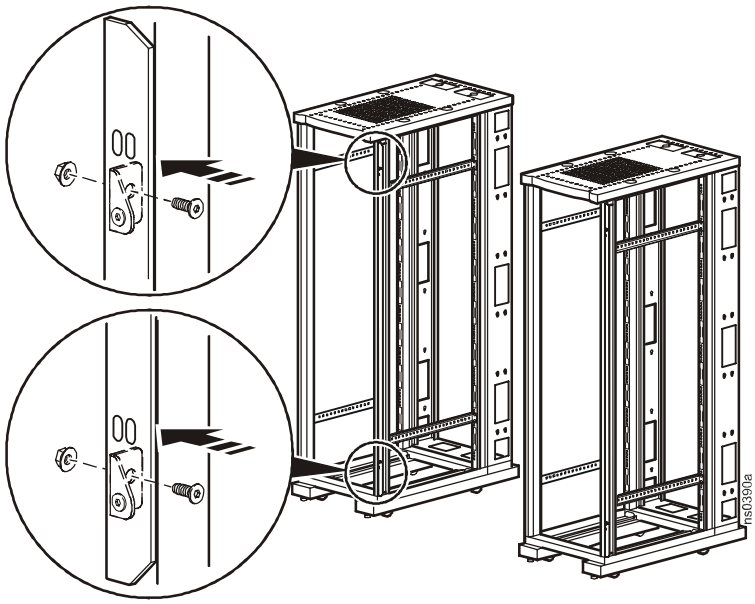
1. Carefully slide the enclosures apart.
2. Remove the right side panel from the enclosure on the left.

See “Removing and Installing the Side Panels” on page 11.

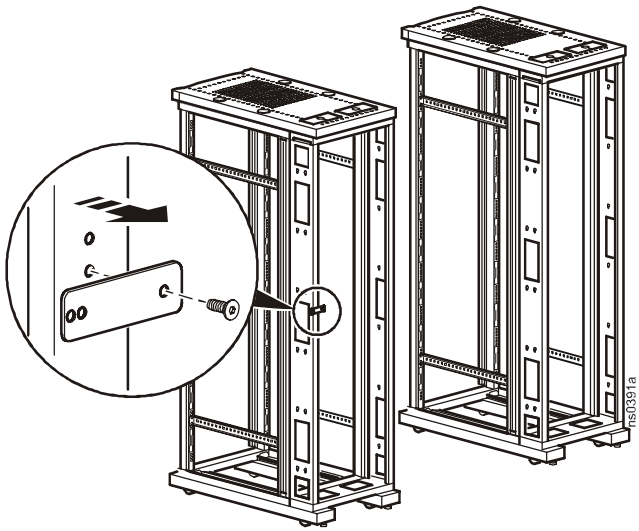
3. Remove the pan-head socket screws and nuts that hold the baying brackets to the front right vertical frame of the enclosure on the right. Leave the baying trim attached to the brackets. Save the two pan-head socket screws and nuts for use in the next step.



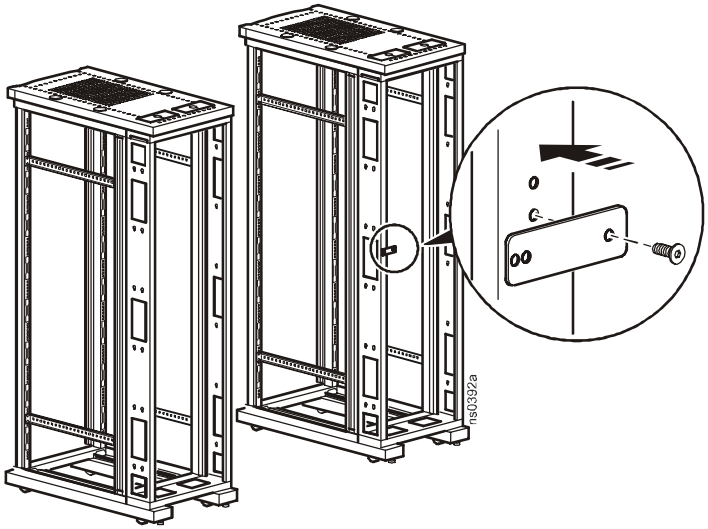
4. Using the two pan-head socket screws and nuts, fasten the baying brackets with baying trim removed in step 3 to the front right vertical frame of the enclosure on the left.



5. Remove the low-profile socket screw from the baying plate on the right rear side of the enclosure without sides. Save the screw and baying plate for use in the next step.



6. Using the low-profile socket screw, secure the baying plate removed in step 5 to the right rear side of the enclosure with sides.

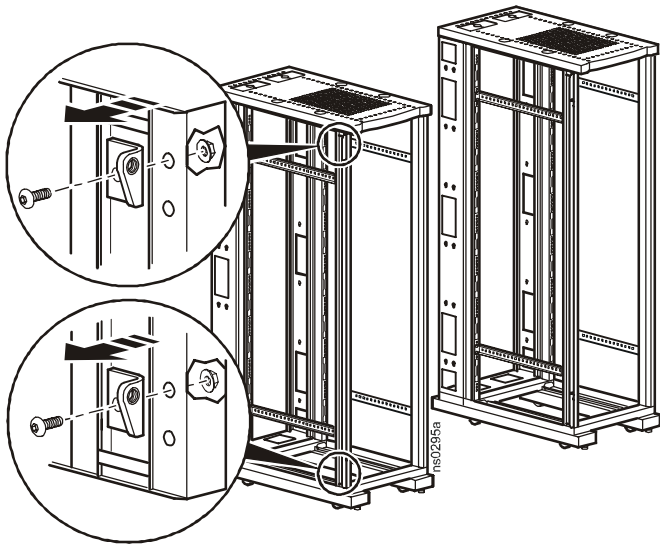


When the enclosure with sides is on the right

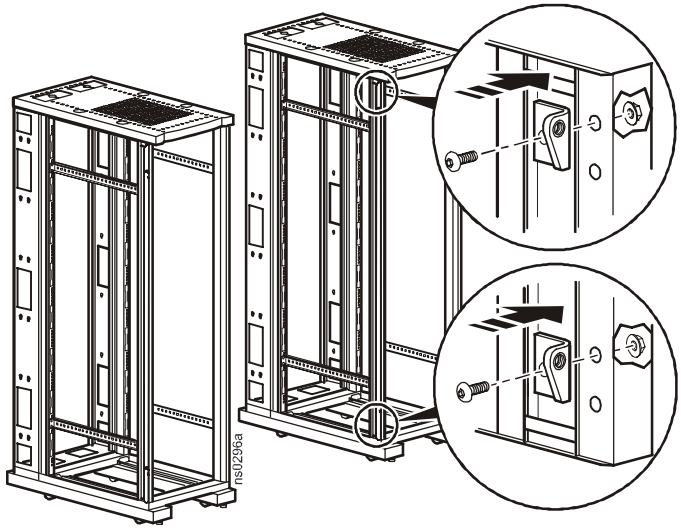
1. Carefully slide the enclosures apart.
2. Remove the left side panel of the enclosure with sides.

See “Removing and Installing the Side Panels” on page 11.

3. Remove the pan-head screw and nut securing each of the baying brackets from the front left vertical frame of the enclosure on the left without sides. Save the pan-head screws, nuts, and baying brackets for use in the next step.



4. Using the pan-head screws and nuts, secure the baying brackets to the front left vertical frame of the enclosure on the right.



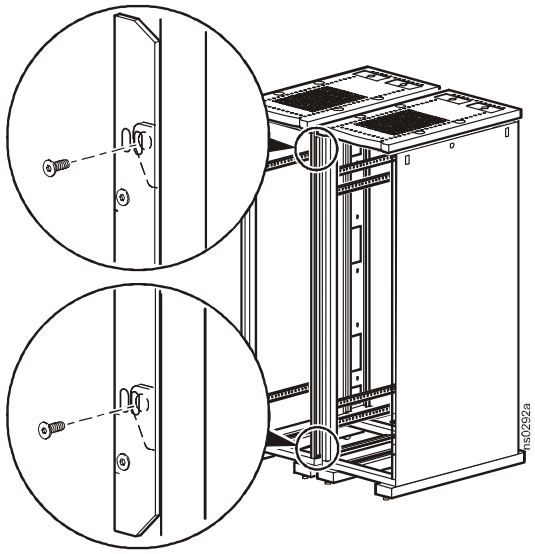
5. Install the side panel removed in step 2 on the left side of the enclosure without sides (optional).

See “Removing and Installing the Side Panels” on page 11.

How to Join Enclosures

Make the front connections

1. Slide the enclosures together and align them. Make sure that the holes in the baying brackets are aligned with the holes in the baying trim. The connection procedure varies according to your row configuration: 24-in or 600-mm centers. When you are joining enclosures configured on 24-in centers, align using hole Ⓑ. When joining enclosures configured on 600-mm centers, align using hole Ⓐ.
2. Make sure that the enclosures are level with each other.

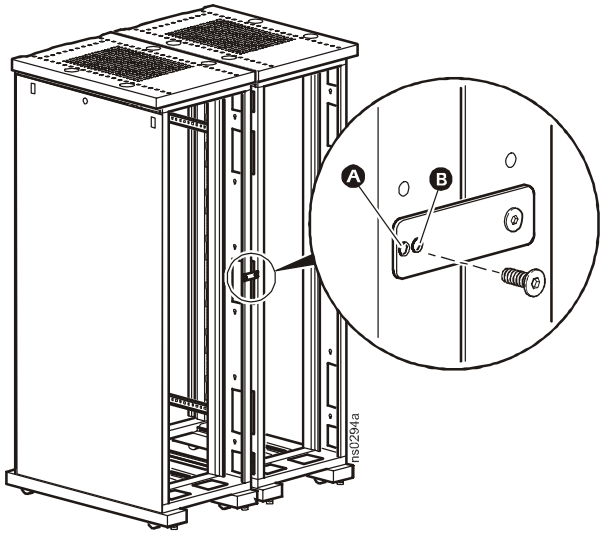


See “Leveling the enclosure” on page 9.

3. Insert a low-profile socket screw through the baying trim into each of the two brackets and tighten using the 3-mm hex wrench.

Make the rear connections

Insert a low-profile socket screw through the baying plate and into the threaded hole in the frame. Tighten using the 3-mm hex wrench.



Specifications

42-U Enclosure for 19-inch Equipment

	Measurement	
Item	**AR2100BLK**	**AR2101BLK**
Height	81.50 in (2 070.10 mm)	81.50 in (2 070.10 mm)
Width	23.50 in (596.90 mm)	23.00 in (584.20 mm)
Depth	42.20 in (1 071.90 mm)	42.20 in (1 071.90 mm)
Net weight	359 lb (162.80 kg)	282 lb (127.9 kg)
Total open area (front door)	844.19 in^2 (544 637.60 mm^2)	844.19 in^2 (544 637.60 mm^2)
Total open area (rear door)	812.76 in^2 (524 360.20 mm^2)	812.76 in^2 (524 360.20 mm^2)
Open area per U (front door)	20.10 in^2 (12 967.72 mm^2)	20.10 in^2 (12 967.72 mm^2)
Open area per U (rear door)	19.35 in^2 (12 483.85 mm^2)	19.35 in^2 (12 483.85 mm^2)
Clearance (for wiring between front door and vertical rail)	3.30 in (83.82 mm)	3.30 in (83.82 mm)
Weight rating: static load	2,000 lb (907 kg)	2,000 lb (907 kg)
Weight rating: dynamic load	2,000 lb (907 kg)	2,000 lb (907 kg)

42-U Enclosure for 19-inch or 23-inch Equipment

	Measurement	
Item	**AR2310BLK**	**AR2311BLK**
Height	81.50 in (2 070.10 mm)	81.50 in (2 070.10 mm)
Width	29.50 in (749.30 mm)	29.00 in (736.60 mm)
Depth	42.20 in (1 071.90 mm)	42.20 in (1 071.90 mm)
Net weight	372 lb (169.09 kg)	294 lb (133.64 kg)
Total open area (front door)	1,123.00 in^2 (724 514.70 mm^2)	1,123.00 in^2 (724 514.70 mm^2)
Total open area (rear door)	1,092.99 in^2 (705 153.40 mm^2)	1,092.99 in^2 (705 153.40 mm^2)
Open area per U (front door)	26.74 in^2 (17 251.58 mm^2)	26.74 in^2 (17 251.58 mm^2)
Open area per U (rear door)	26.02 in^2 (16 787.06 mm^2)	26.02 in^2 (16 787.06 mm^2)
Clearance (for wiring between front door and vertical rail)	3.30 in (83.82 mm)	3.30 in (83.82 mm)
Weight rating: static load	2,000 lb (907 kg)	2,000 lb (907 kg)
Weight rating: dynamic load	2,000 lb (907 kg)	2,000 lb (907 kg)

47-U Enclosure for 19-inch or 23-inch Equipment

Item	Measurement	
	AR2103BLK	**AR2104BLK**
Height	90.25 in (2 292.35 mm)	90.25 in (2 292.35 mm)
Width	23.50 in (596.90 mm)	23.00 in (584.20 mm)
Depth	42.20 in (1 071.90 mm)	42.20 in (1 071.90 mm)
Net weight	386 lb (175.45 kg)	291 lb (132.27 kg)
Total open area (front door)	943.56 in^2 (608 747.20 mm^2)	943.56 in^2 (608 747.20 mm^2)
Total open area (rear door)	910.95 in^2 (587 708.50 mm^2)	910.95 in^2 (587 708.50 mm^2)
Open area per U (front door)	20.08 in^2 (12 954.81 mm^2)	20.08 in^2 (12 954.81 mm^2)
Open area per U (rear door)	19.38 in^2 (12 503.20 mm^2)	19.38 in^2 (12 503.20 mm^2)
Clearance (for wiring between front door and vertical rail)	3.30 in (83.82 mm)	3.30 in (83.82 mm)
Weight rating: static load	2000 lb (907 kg)	2000 lb (907 kg)
Weight rating: dynamic load	2000 lb (907 kg)	2000 lb (907 kg)

Item	Measurement	
	AR2316BLK	**AR2317BLK**
Height	90.25 in (2 292.35 mm)	90.25 in (2 292.35 mm)
Width	29.50 in (749.30 mm)	29.00 in (736.60 mm)
Depth	42.20 in (1 071.88 mm)	42.20 in (1 071.88 mm)
Net weight	412 lb (186.88 kg)	378 lb (171.50 kg)
Total open area (front door)	1,855.69 in^2 (1 197 217.00 mm^2)	1,855.69 in^2 (1 197 217.00 mm^2)
Total open area (rear door)	1,759.59 in^2 (1 135 217.00 mm^2)	1,759.59 in^2 (1 135 217.00 mm^2)
Open area per U (front door)	20.08 in^2 (12 954.81 mm^2)	20.08 in^2 (12 954.81 mm^2)
Open area per U (rear door)	19.38 in^2 (12 503.20 mm^2)	19.38 in^2 (12 503.20 mm^2)
Clearance (for wiring between front door and vertical rail)	8.82 in (224.03 mm)	8.82 in (224.03 mm)
Weight rating: static load	2,000 lb (907 kg)	2,000 lb (907 kg)
Weight rating: dynamic load	2,000 lb (907 kg)	2,000 lb (907 kg)

APC Limited Factory Warranty

The limited warranty provided by American Power Conversion (APC®) in this Statement of Limited Factory Warranty applies only to Products you purchase for your commercial or industrial use in the ordinary course of your business.

Terms of Warranty

American Power Conversion warrants its products to be free from defects in materials and workmanship for a period of five years (two years in Japan) from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its sole discretion, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory- remanufactured.

Non-transferable Warranty

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