



User Manual

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UL 2416 Approved

Part No. TBA

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IMPORTANT SAFETY INFORMATION

Before you begin to unpack your ARION 19" enclosure, please read the following safety information. Attention to these warnings will help prevent personal injuries and damage to the products.



Caution: Indicates a potentially hazardous situation which, if not avoided, may result in property damage or personal injury.



Information: Indicates necessary information which is important.

Any type of internal component that has the ability to extend out of the 19" enclosure can, if incorrectly installed, cause the 19" enclosure to become unstable and tip over. In addition to the instability caused by an extended component, non-extended internal components can also present a side to side tipping hazard when improperly installed into the 19" enclosure.

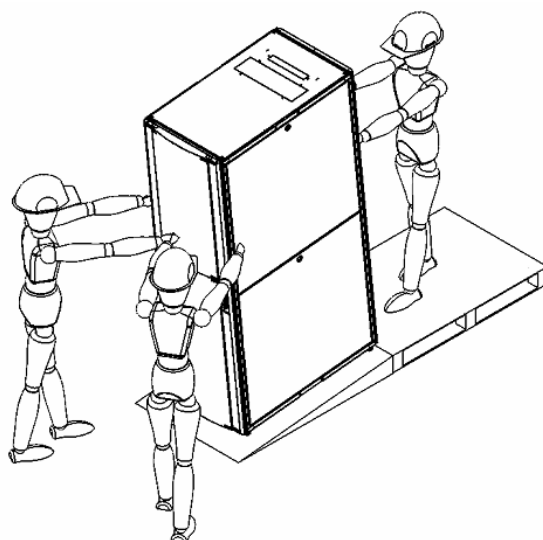
Before any internal component or product is installed into the 19" enclosure, read and follow the safety guidelines outlined in 19" enclosure stability on page 14 and 15.

Unpack:

Before unpacking, read and follow the safety guideline outline on page 12.

ARION: 19" EIA-310E Standard Enclosure

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Information: Use at least 2 - 3 people to unpack and/or set up the 19" enclosure. The shipping weight of the ARION 19" enclosure varies depending on the size and configuration. A typical ARION 19" enclosure can weigh from 108 kg to 125 kg. Ramp is not included.



Caution: If the enclosure tips over it can cause personal injuries

ARION: 19" EIA-310E Standard Enclosure



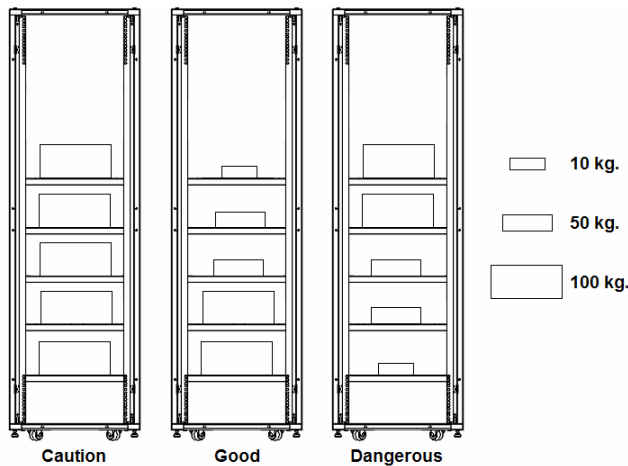
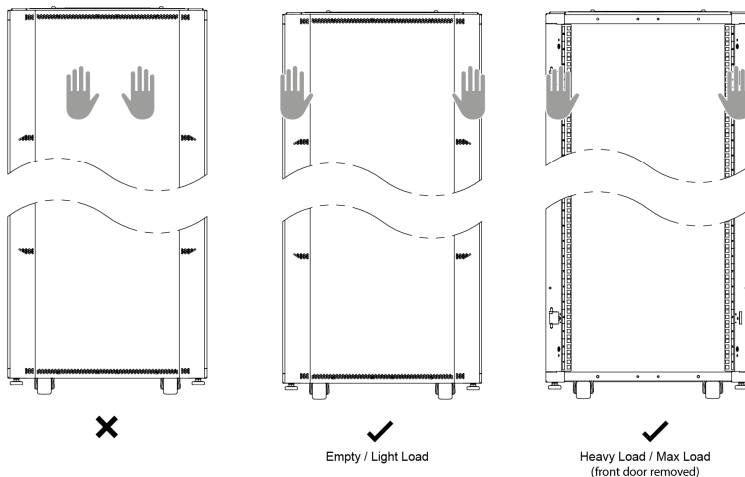
Moving on casters:

The 19" enclosure with casters should be moved with care. A sudden stop, excessive force, and uneven surfaces may cause the product to overturn. It is both recommended and easier to move the 19" enclosure with the rear of the enclosure as the leading edge. When rolling the 19" enclosure and there's no load, push firmly on the front door frame and not the door mesh. If the 19" enclosure is fully loaded, it is recommended to remove front door and push on the vertical frame to desired location.

Information: It is recommended when moving the enclosure the components that are installed into the enclosure are loaded accordingly as shown in the diagrams below. If the enclosure is loaded incorrectly, it could cause the enclosure to become unstable and tip over.

Never push on doors or side panels, as they may deform

The casters are designed only as an aid in moving the 19" enclosure into the desired position. They are not designed to support the weight of the 19" enclosure. After it is in final position, the 4 leveling feet are to be used to support the enclosure in it's final location.

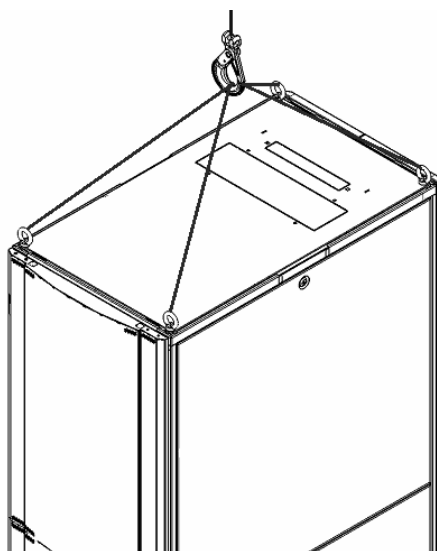


ARION: 19" EIA-310E Standard Enclosure

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Lifting 19" Enclosure with Eye Bolts:

The 19" enclosure can be lifted using M10 eye bolts. The eye bolts should have load rate for 180 kg/piece. We have provided four M10 eye bolts threaded inserts in the top of the 19" enclosure. When lifting the 19" enclosure, make sure to firmly tighten eye bolts and use balance cables.



Information: To reduced the risk of personal injury or damage to the equipment, do not attempt to move large equipment alone. Obtain adequate equipment riggers.

19" Enclosure Stability:

Any type of internal component that has the ability to extend out of the 19" enclosure, if incorrectly installed, can cause the 19" enclosure to become unstable and to tip over. In addition to the instability caused by an extended component, non-extended internal components can also present a side tipping hazard when improperly installed into the 19" enclosure.



Do not, under any circumstance, install an extendable roll-out component or extendable electronic product in to 19" enclosure that is supported by casters only.



Do not under any circumstance, extend more than one roll-out component at a time.



Maximum load with eye bolts is 720 kg.

ARION: 19" EIA-310E Standard Enclosure



OVERVIEW

Arion 19" Enclosure Series:

The 19" enclosure can be considered a basic foundation of the IT world and data centers in particular. With the current high density installations and data center requirements, selecting the right enclosure is more important than ever. It allows proper utilization of space and impacts cooling system as well as a data center's life. A well built and properly designed enclosure like our ARION 19" enclosure helps provide operational efficiency and cost effectiveness in data centers.

FEATURES

Thermal Management: Proper cooling continues to be one of the major challenges in data centers. 19" enclosure design plays an important role in proper airflow system. Cold air from the air conditioning system of a data center should freely pass through the 19" enclosure, the same way that hot air should be easily exhausted from it. The ARION 19" enclosure features contoured high density perforated doors that provides over 80% total open area to allow maximum airflow. This exceeds the airflow requirements specified by many major server manufacturers.

Light Weight and Strong: The ARION 19" enclosure provides a rare combination of strength and light weight. It is one of the lightest enclosures in the market but has UL listed 1400 kg (3080 lbs) load capacity.

Security: Doors and side panels equipped with locks. Security panels for bayed enclosures are also available.

Fast and Easy Assembly: The ARION 19" enclosure takes approximately 15 minutes to assemble and with its light weight, it offers quick and convenient assembly and installation. The light weight components make handling very easy.

Shipping and Storing Efficiency: A major consideration with most 19" enclosures is the cost of shipping. With its clever product and packaging design, the ARION 19" enclosure offers the advantage of reduced shipping cost and less room needed for storage. It provides around 30% space reduction and allows to ship up to 128 flat packed enclosures per standard 40' container.

Environment: The ARION 19" enclosures uses around 20% less material than the standard enclosures in the market. This helps reduce environmental degradation.

Product Line: The ARION 19" enclosure is available in widths of 600 mm, 750 mm and 800 mm and standard heights of 24U, 42U and 48U. The depths are 800 mm, 1000 mm and 1200 mm. Basic 19" enclosure includes 2 sets of adjustable 19" PMA's with U marking for easy location. Top panel comes with cable cut outs. Doors and side panels are lockable for security. UL listed at 1400 kg load capacity and electrical grounding.

Flexibility / Expandability: ARION 19" enclosures can be bayed together at time of installation, or sometime in future, providing the user with expansion capability to match their needs.

Compliance:

EIA - 310E

IEC – 60297 – 1, 2

UL 2416: issue No 2. , CSA 22.2 No. 60950 – 1 – 07

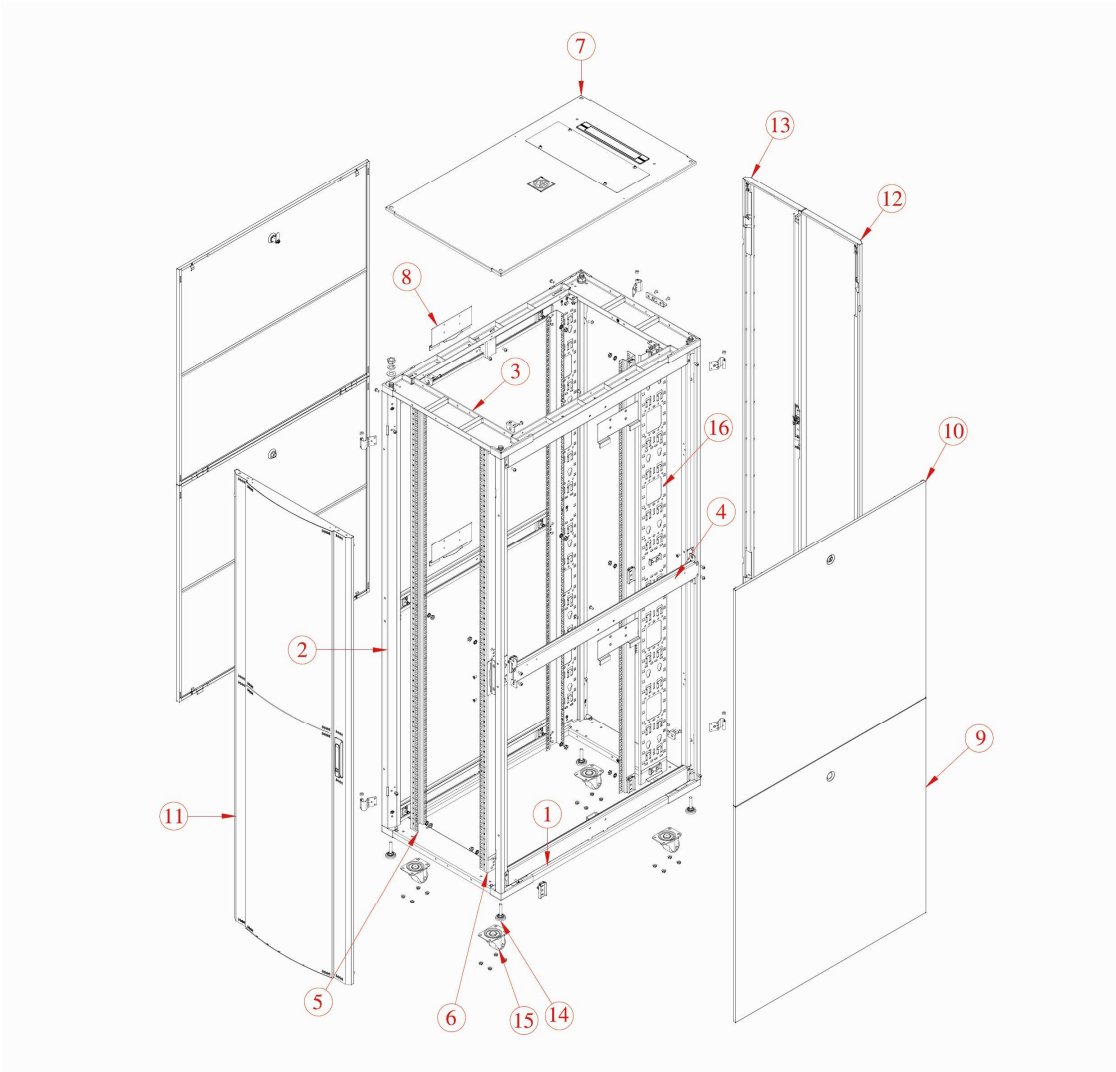
All materials are RoHS Compliant

ARION: 19" EIA-310E Standard Enclosure



ARION 19" enclosure Exploded View (Bill of Material List)

ARION 600 Series Enclosure



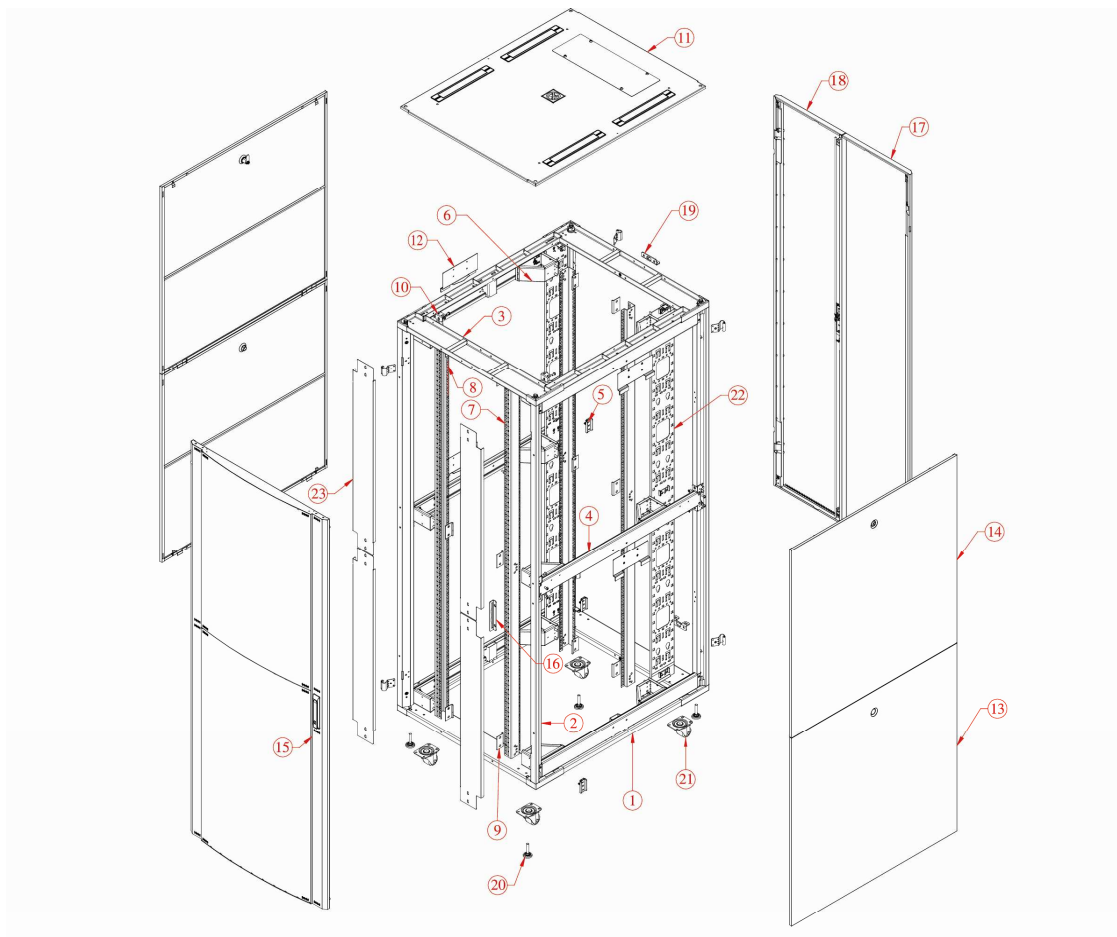
Item	Part Name	QTY.
1	Frame (Bottom) 600W/1000D-1200D	1
2	Vertical Post 33U-48U	4
3	Frame (Top) 600W/1000D-1200D	1
4	Side Brace (Mid) 1000D-1200D	2
5	PMA Assy. (LH) 33U-48U	2
6	PMA Assy. (RH) 33U-48U	2
7	Top Panel Assy. 600W/1000D-1200D	1
8	Side Panel Latch Brkt.	4

Item	Part Name	QTY.
9	Side Panel Assy. 1000D-1200D/33U-48U-T05	2
10	Side Panel Assy. 1000D-1200D/33U-48U-T05	2
11	Front Door (Curve) Perforate Assy. 600W/33U-48U	1
12	Rear Door (Split) Perforate Assy. (LH) 600W/33U-48U	1
13	Rear Door (Split) Perforate Assy. (RH) 600W/33U-48U	1
14	Leveling Feet M10x1.5x62	4
15	Caster 2 Inch (optional)	4
16	PDU / Vertical Cable Rail Assy. (optional)	2

ARION: 19” EIA-310E Standard Enclosure



ARION 800 Series Enclosure

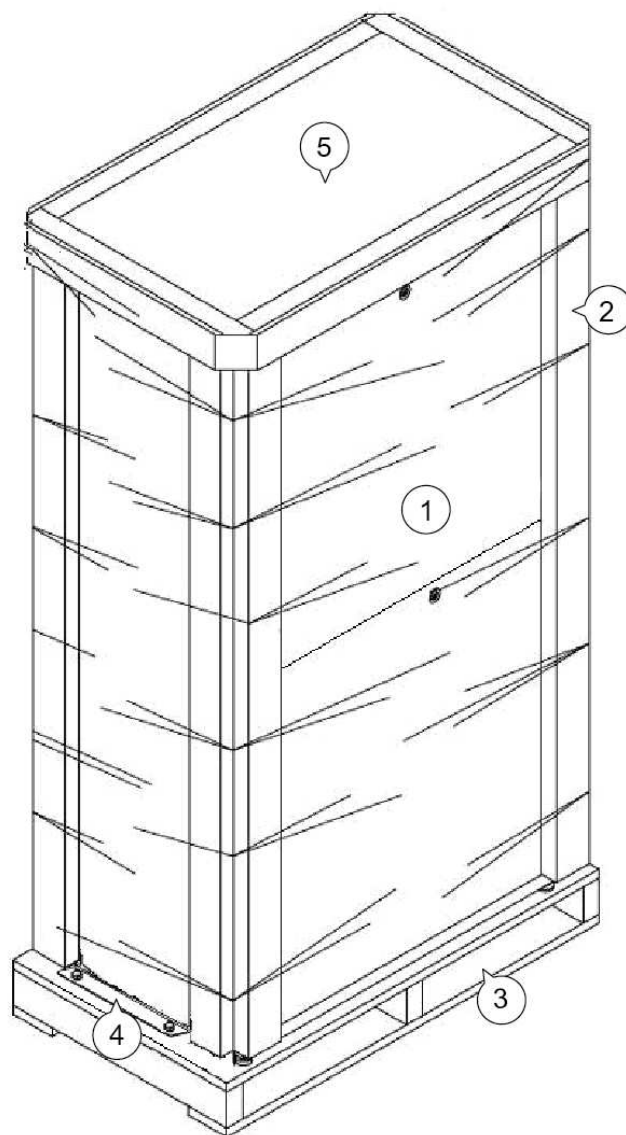


Item	Part Name	QTY.
1	Frame (Bottom) 800W/1000D-1200D	1
2	Vertical Post 33U-48U	4
3	Frame (Top) 800W/1000D-1200D	1
4	Side Brace (Mid) 1000D	2
5	PMA Mounting Brkt.	12
6	PMA Adapter Welded 800W	12
7	PMA Assy. (LH) 33U-48U	2
8	PMA Assy. (RH) 33U-48U	2
9	PMA Reinf. Plate 800W	12
10	Top Panel Fixing Brkt.	4
11	Top Panel Assy. 800W/1000D-1200D	1
12	Side Panel Latch Brkt.	4

Item	Part Name	QTY.
13	Side Panel Assy. 1000D-1200D/33U-48U-T05	2
14	Side Panel Assy. 1000D-1200D/33U-48U-T05	2
15	Front Door (Curve) Perforate Assy. 800W/33U-48U	1
16	Door Latch Brkt. (0352-01)	1
17	Rear Door (Split) Perforate Assy. (LH) 800W/33U-48U	1
18	Rear Door (Split) Perforate Assy. (RH) 800W/33U-48U	1
19	Door Split Latch Brkt.	2
20	Leveling Feet M10x1.50x62	4
21	Caster 2 Inch (optional)	4
22	PDU / Vertical Cable Rail Assy. (optional)	2
23	Side Channel Cover 800W/33U-48U (optional)	4

ARION: 19" EIA-310E Standard Enclosure

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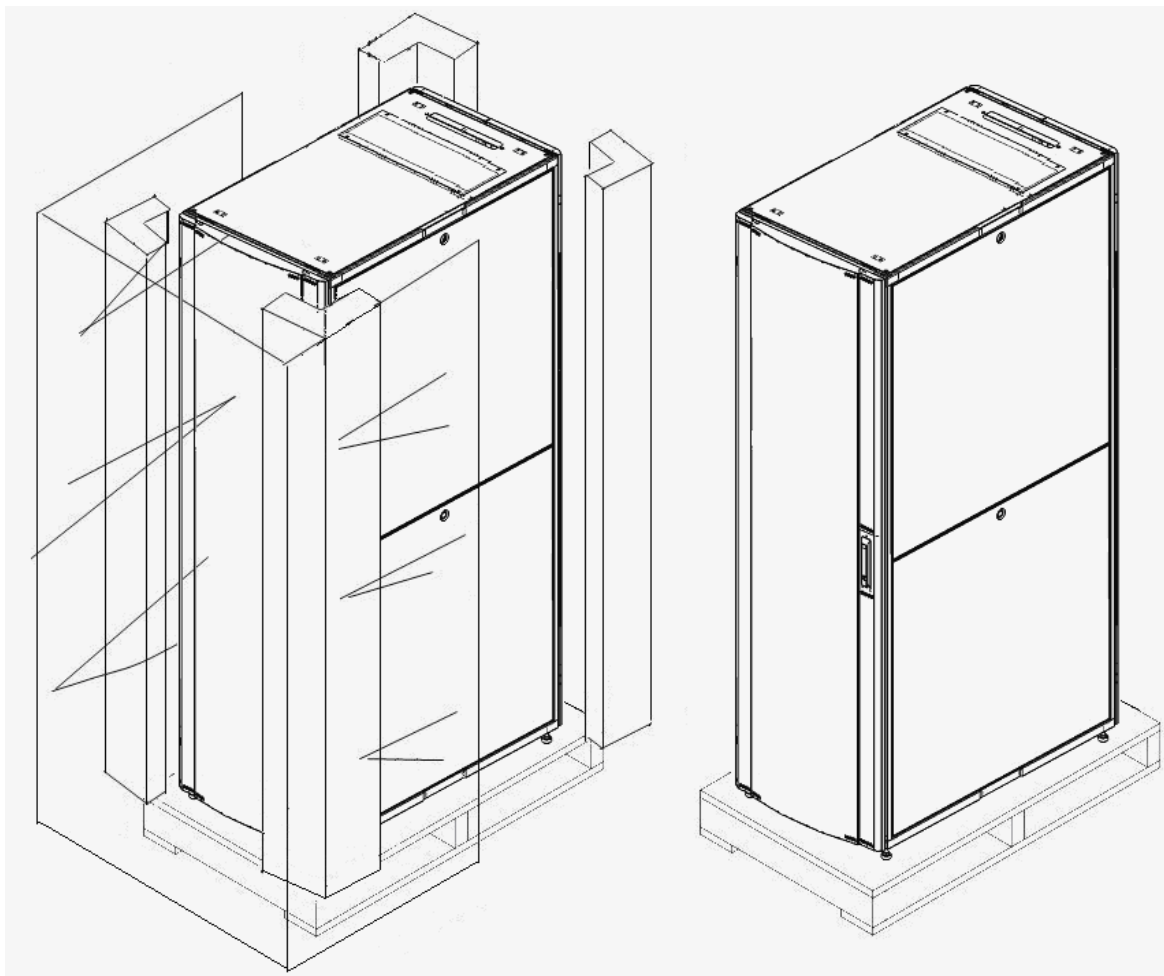


Assembled enclosure fully packaged 1 set includes:

1. Plastic stretch wrap.
2. Cardboard corner protectors.
3. Shipping pallet.
4. Pallet bolt down bracket.
5. Cover.

Unpacking

- Cut plastic film around the ARION 19" enclosure near pallet.
- Remove all four card board corner protectors.
- Remove bolt down bracket two pieces from front and rear of frame. See page 15.
- Place the ramp onto the open end of the pallet. Make sure that straight edge of ramp is toward the pallet and the beveled edge is resting on the floor.
- Requires 2-3 persons to lift the enclosure from pallet to the floor. Do not lift or push on the side panels, or door surfaces.
- Adjusting the four leveling feet. See page 14 for details.
- Rolling ARION 19" enclosure to required location.



Site Preparation

It is important to have a installation plan to ensure a successful installation. Here is a list of some issues to consider for the installation plan.

- How the 19” enclosure and other equipment will be moved to the location where they will be installed.
- How power will be routed to equipment area.
- Locations of electrical power lines.
- Have stable and level flooring.
- Be free of dust and smoke
- Have controlled temperature and airflow.

The location for 19” enclosure that will provide adequate room for opening doors and side panels, and operating and servicing extended roll-out components and electronic products. The 19” enclosure must be positioned so that there is un-restricted air for all ventilated surface



Floor Loading: All building and raised computer room floors are engineered to provide a specific floor loading



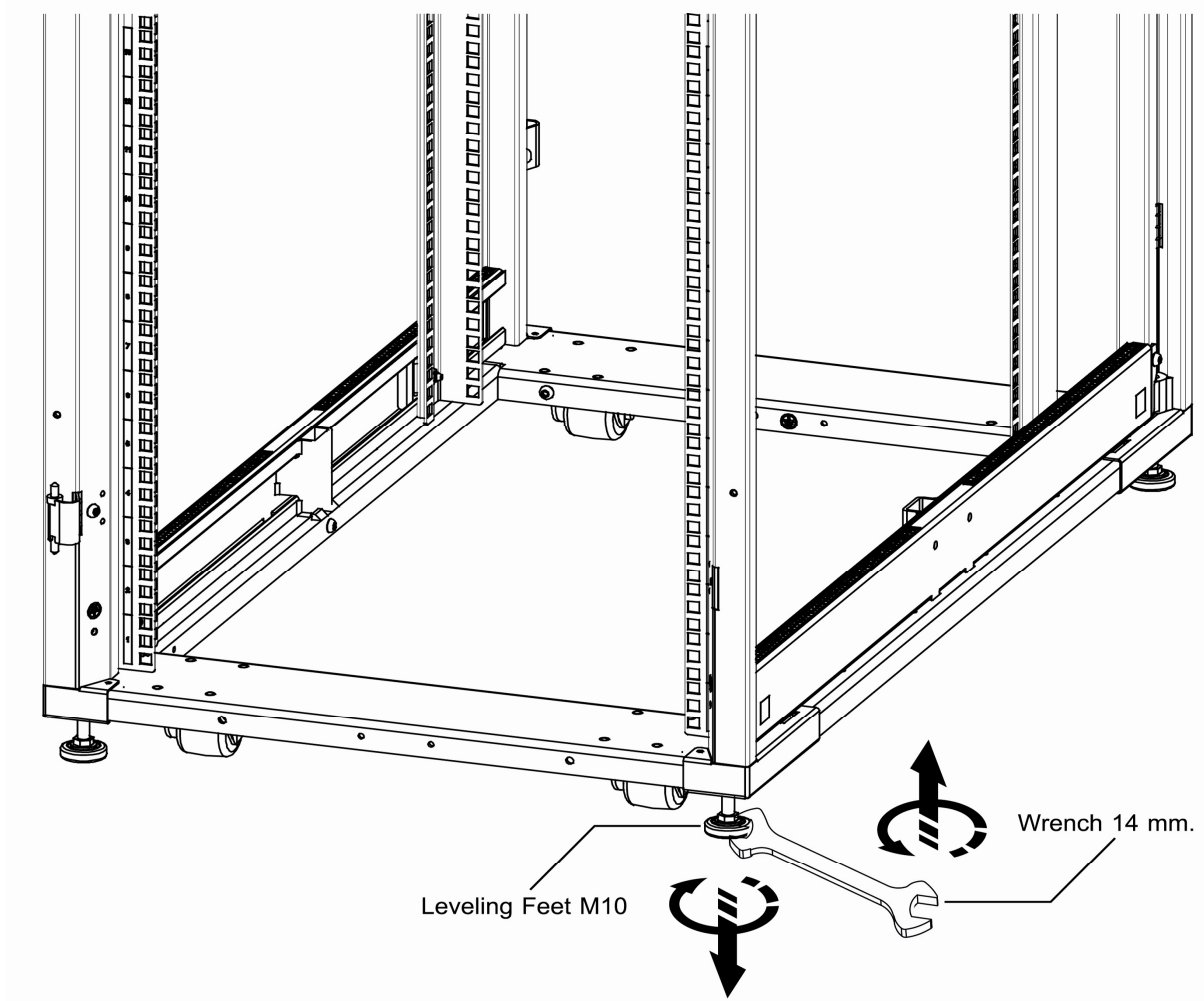
Caution: It is the customer's responsibility to ensure that the floor has a structural load capacity that will safely bear the weight of the enclosures system.

If moving the 19” enclosure with load requires rolling it over 100 meters, stop every 100 meters for 5 minutes then continue to desired location, this will prevent the casters from over heating and possibly deforming.

Installation and Set Up

Adjusting Leveling Feet

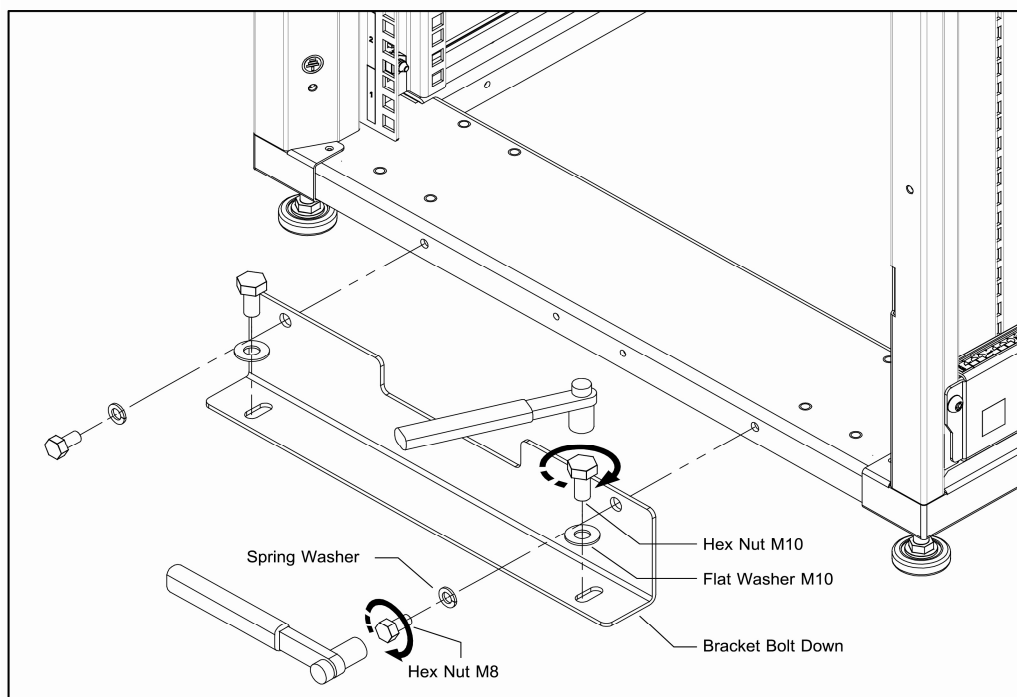
- Level the 19" enclosure before installing equipment.
- The leveling feet at the corners provide a stable base if the floor is uneven.
- Use the open ended 14 mm wrench and turn clockwise to extend the leveling feet until it makes firm contact with the floor.



Information: Move the 19" enclosure to the working area first.
Do not install 19" enclosure on a sloped surface.
Level 19" enclosure before installing equipment.

Enclosure Bolt Down / Stabilization

- Move 19" enclosure to installation area.
- Attach bolt down bracket in front and rear of 19" enclosure at mounting location.
- Make four holes on floor surface.
- Move 19" enclosure outside drilling area to prevent dust spreading inside 19" enclosure.
- Drill the four holes corresponding to size of anchoring devices.
- Move 19" enclosure back to installation area.
- Fix bolt down bracket to front /rear frame with two M8 hex head screws and washers at each corner.
- Adjust four leveling feet to match height with bolt down bracket.
- Fix bolt down bracket to floor with M10 hex head screws and washers.

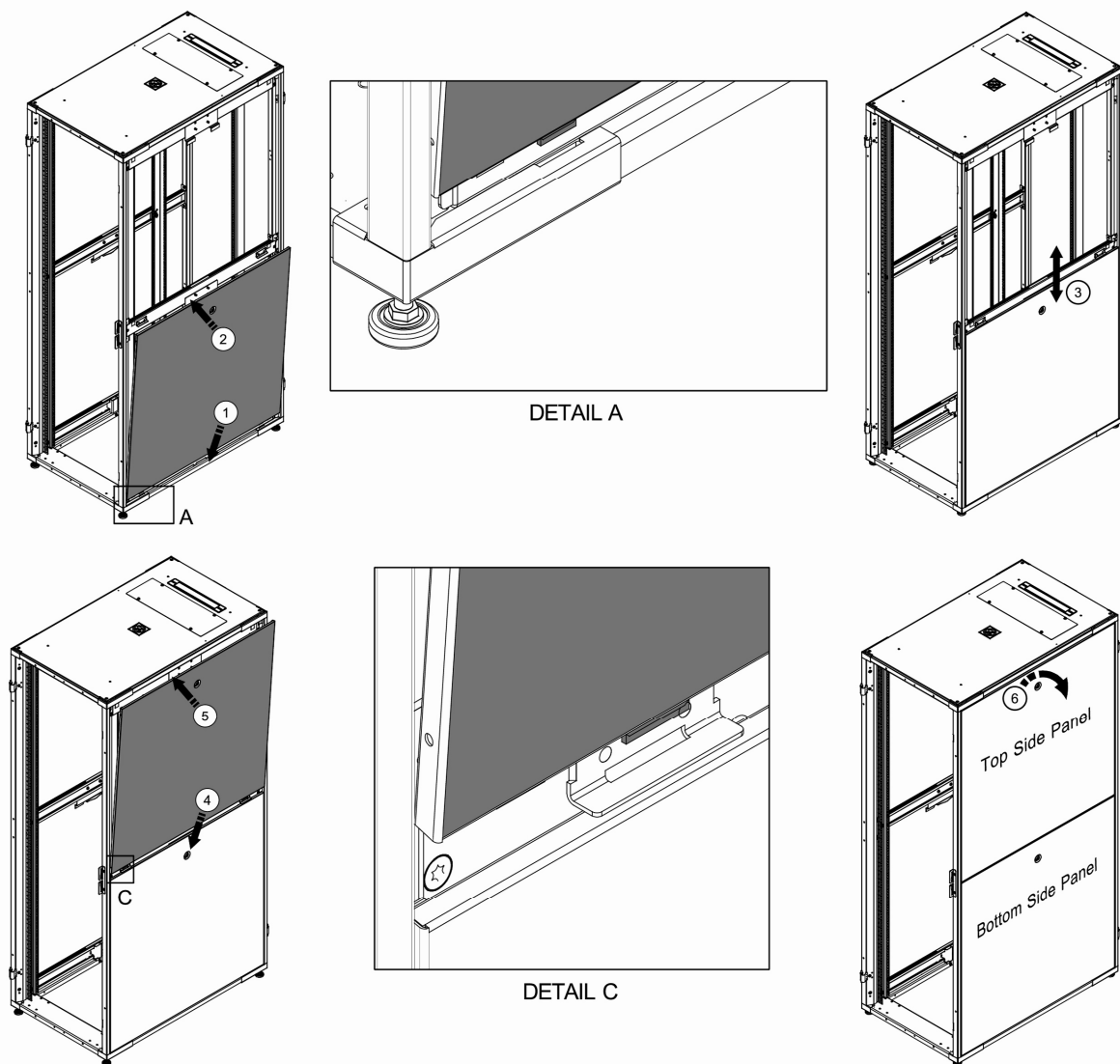


Information: Apply 100 in.lbs for M8 hex screw.
Apply 150-180 in.lbs for M10 hex screw.

Secure the 19" enclosure to the floor before installing equipment.

Side Panel Installation and Removal

Side Panel Installation



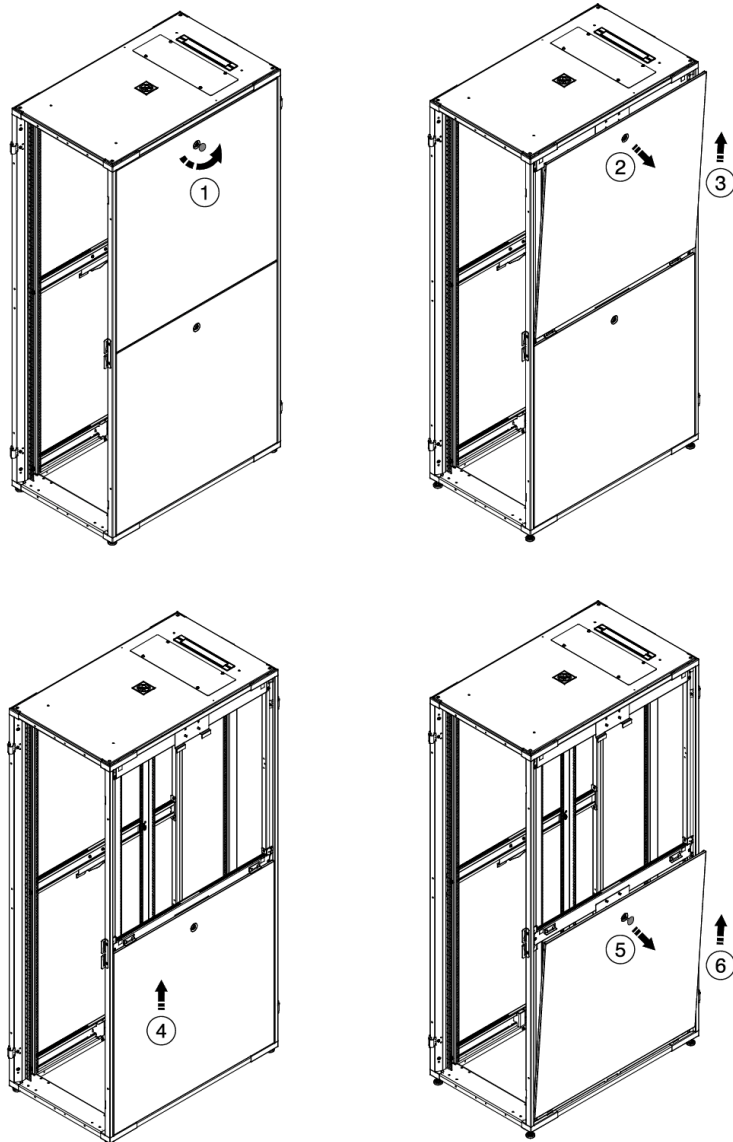
Follow steps 1-6 below for side panel installation:




Information: Side panel installation should be assembled with bottom side panels first. Please be careful when installing bottom side panel by inserting the holes at bottom frame, if installed incorrectly, it can cause the part to become deformed.

Side Panel Removal

Follow steps 1-6 below for removing the side panels:

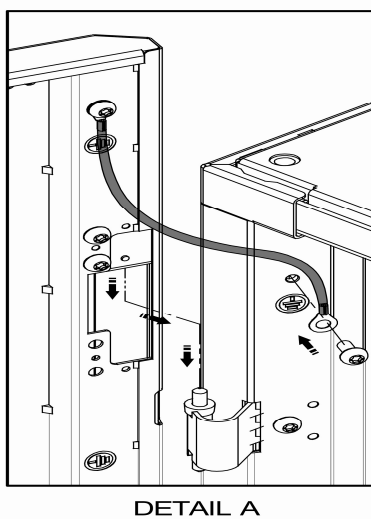


 **Caution:** To prevent the side panel from falling down and for security purposes, after you finish the installation, lock side panel by turning key clockwise then remove key from lock

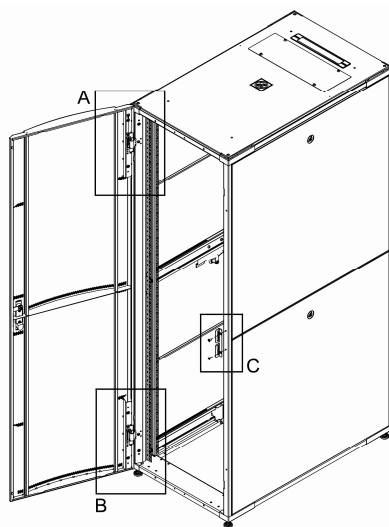
Installation and Removal of Front Door

Follow the instruction in figures below

Installation

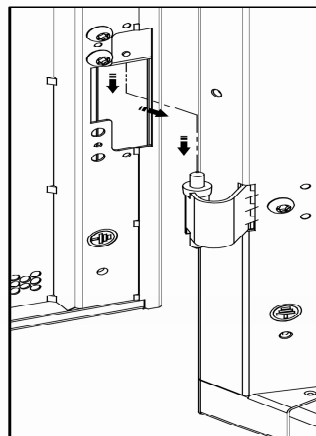


DETAIL A

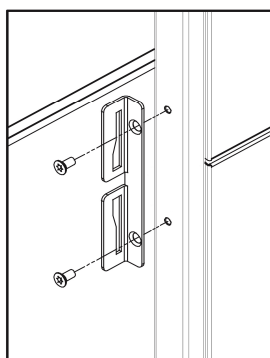


B

C

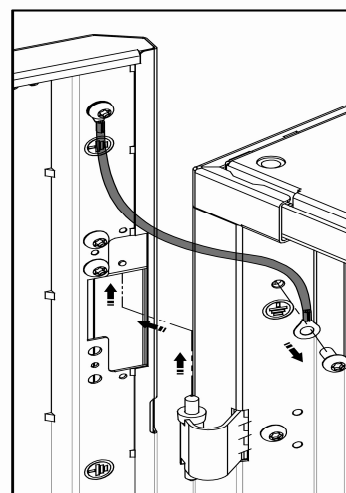


DETAIL B

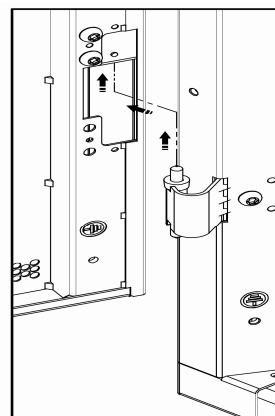


DETAIL C

Removal



DETAIL A



DETAIL B



Information: All of the available ARION door styles can be assembled both the front and rear of the ARION frame. All doors require the same basic method of installation, however some steps are unique to either single door or double door set. Apply 60 lbs. inch torques for M6 hex screw.

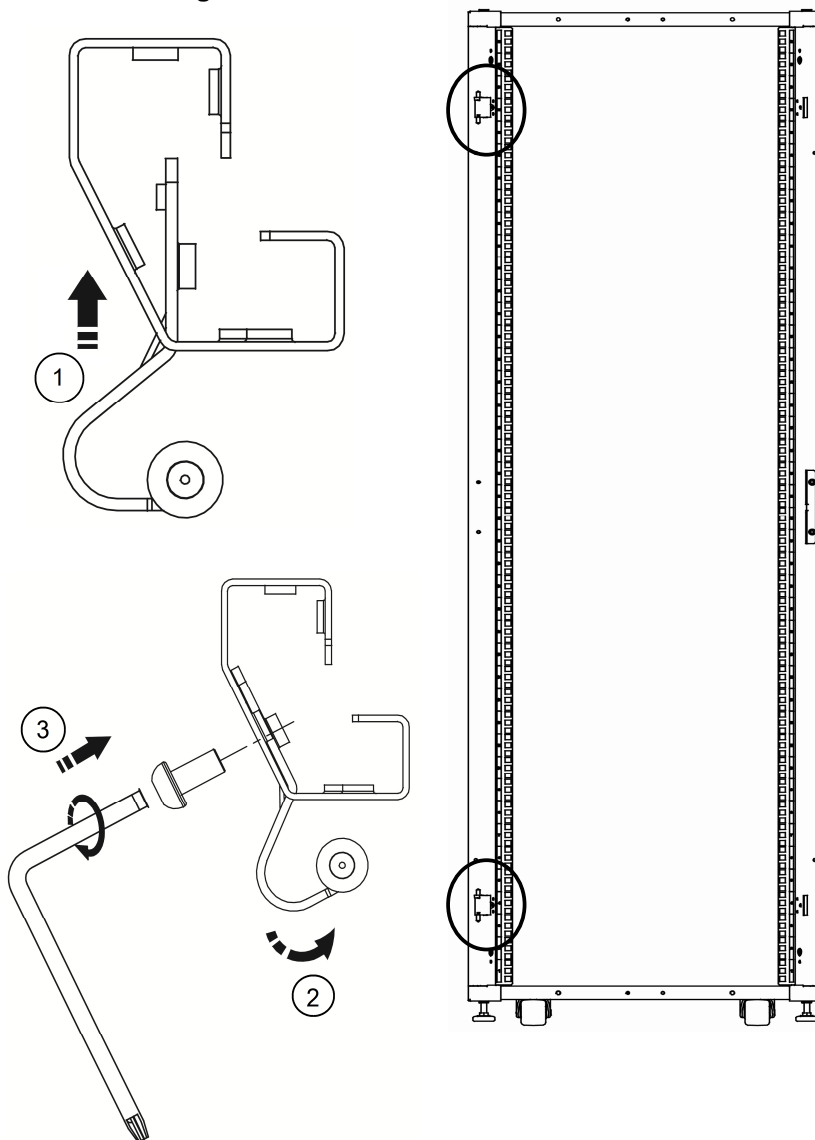


Caution: Please make sure grounding cable ring is in contact with vertical frame when installed.

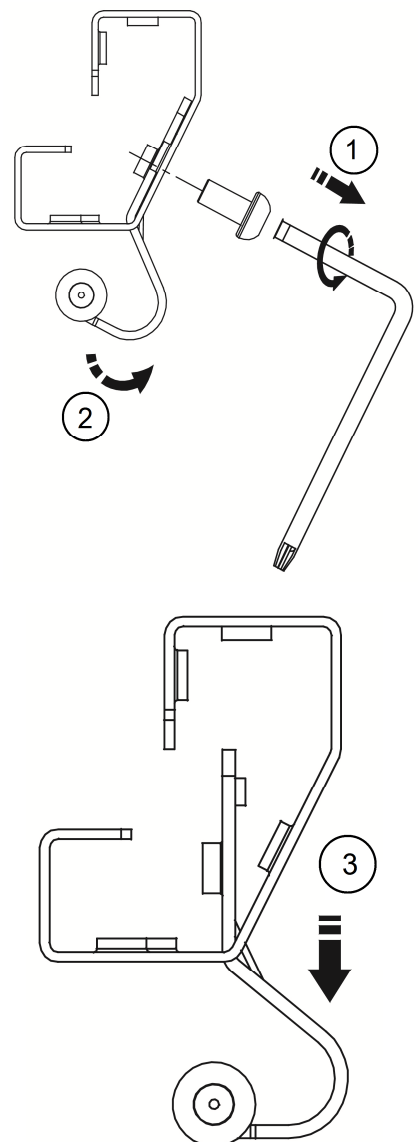
Installation and Removal of Door Hinges

- Install door hinges into vertical frame from figures below.
- Tighten screw M6 with 60-70 in.lbs.
- See "Installing Single Door" on page 18 to install front door to right frame.

Installing



Removal



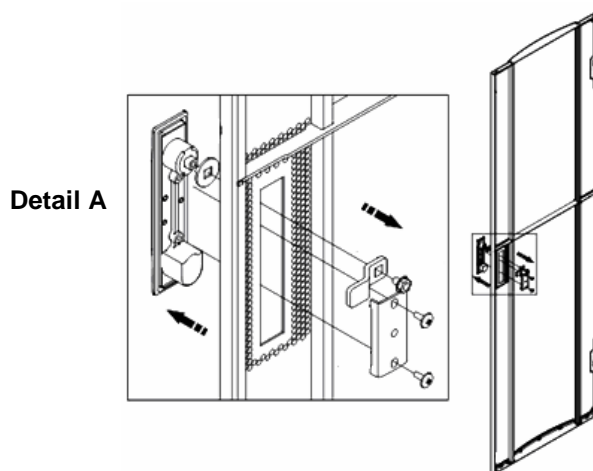
Reverse Front Door



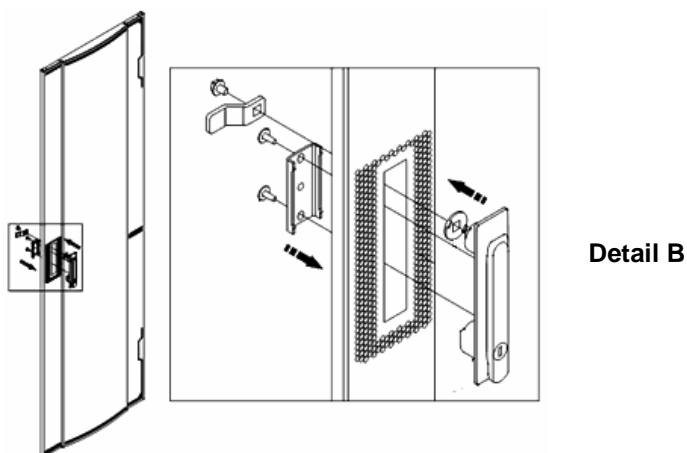
Information: The front door can be reversed so the door can be opened in the other direction by following instructions below.

Remove Front Door and Reverse Swing Handle Lock

- Follow the instruction on page 18 to remove front door.
- Remove swing handle lock from single door as shown below in detail A.



- Re-install swing handle lock into single door for door opening from left to right.

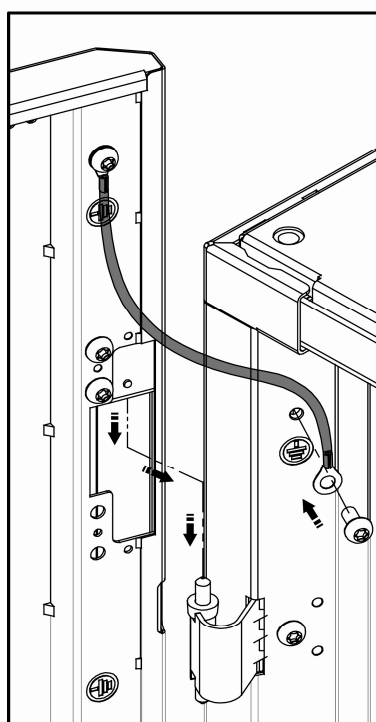


Information: Tighten screws with 7 in.lbs.

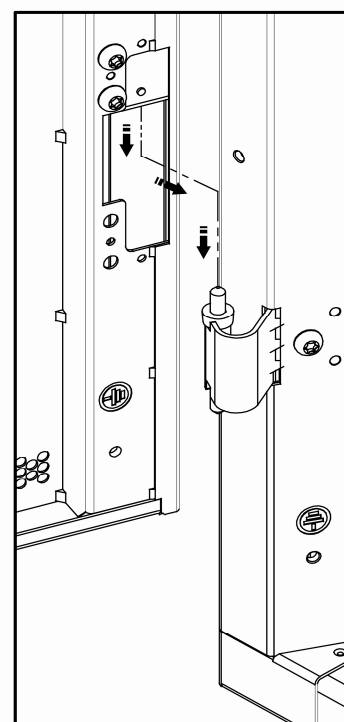
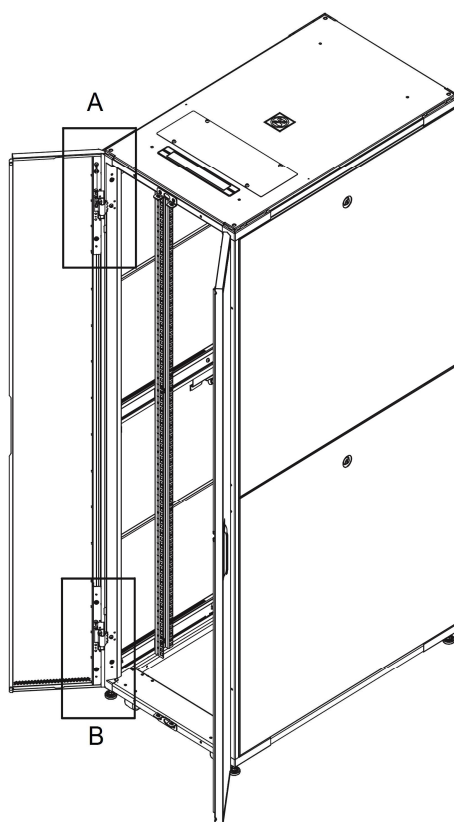
Rear Door Installation and Removal

Rear Door Installation

- Follow the instruction in figures below.
- Left and Right doors have the same process.



DETAIL A



DETAIL B

Rear Door Removal

See "Remove Single Door" instructions on page 18.



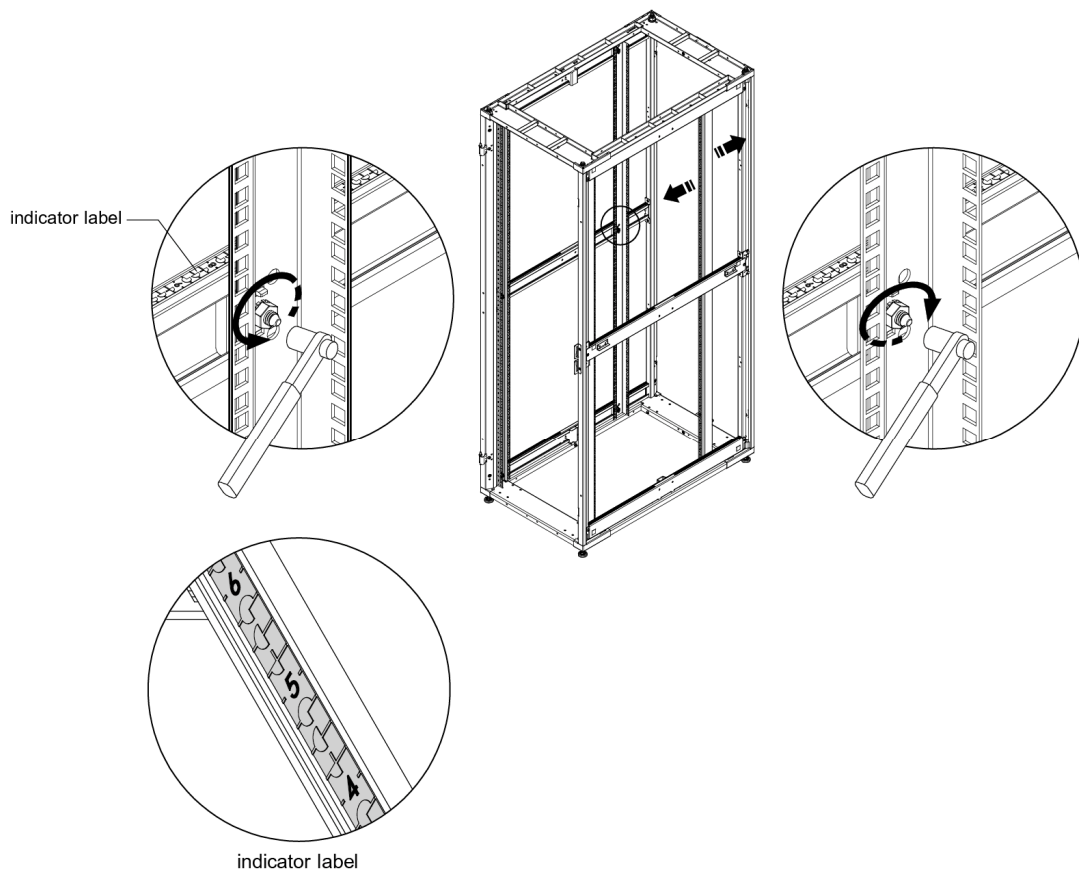
Information: Left and right door has the same installation process.
Single door and double doors also have the same installation process.

Adjusting PMA Assembly



Information: To accommodate different depths of equipment, the PMA's are adjustable at the front or rear of 19" enclosure

- Loosen Nut M6 on PMA.
- Slide PMA and select position of rails by using indicator label.
- Tighten Nut M6 by using the torque wrench.



Information: Apply 75 - 80 in.lbs to PMA.

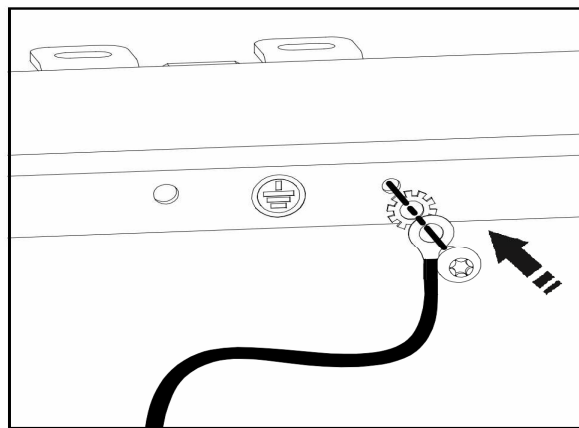
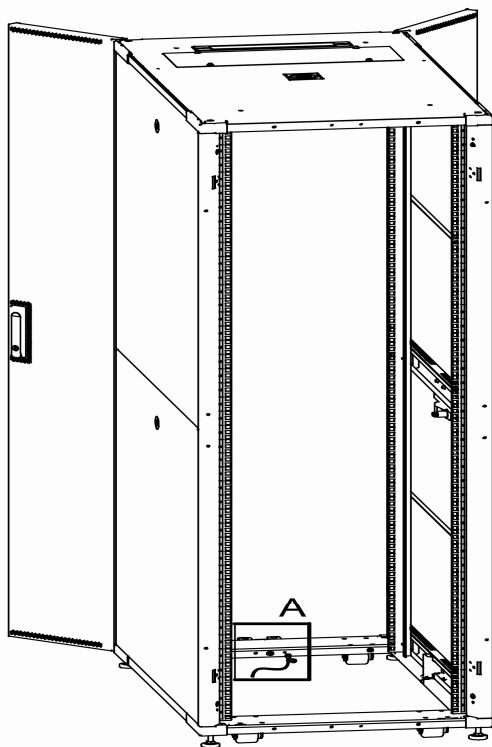
Grounding the 19" Enclosure

A grounding system that complies with TIA-942 requires each 19" enclosure to bond directly to the Common Bonding Network (CBN). The grounding system should direct damaging currents away from the 19" enclosure equipment.



Caution: Connection of the 19" enclosure to building Common Bonding Network is required. Failure to follow these instructions could result in serious injury.

- Bond 19" enclosure using the grounding cable ring connector onto the bottom frame weld shown below
- Use paint piercing washers between the ground terminal and 19" enclosure frame.
- Tighten with T-30 screw M6.



DETAIL A

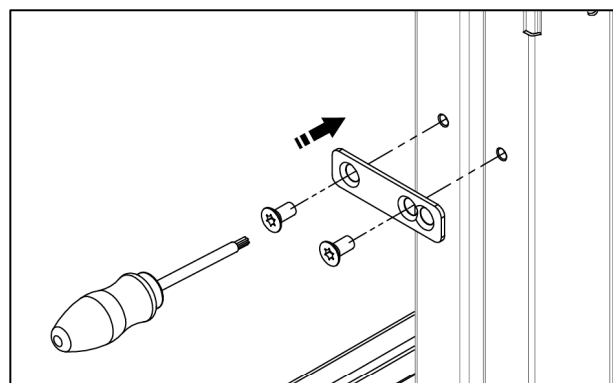
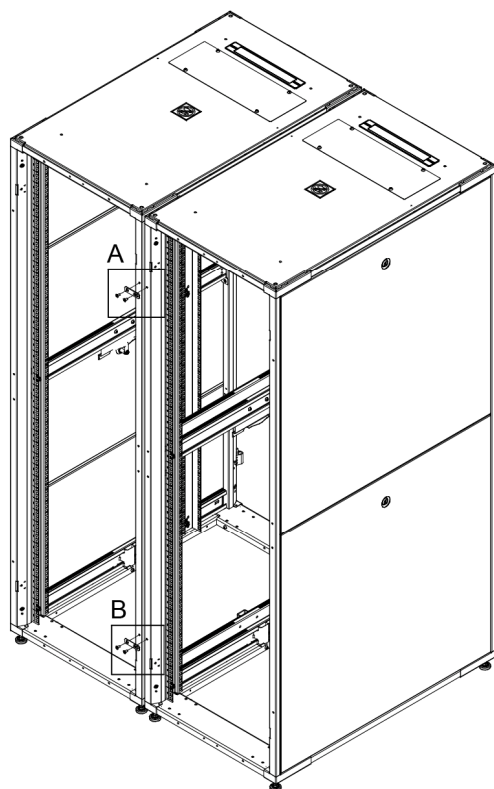


Information: Apply 60 in.lbs to ground cable to door.

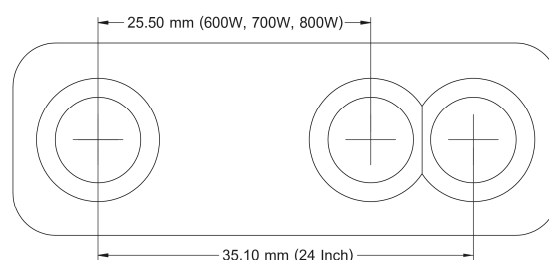
Baying Enclosures

You can expand your system of 19" enclosures by joining them together.

- Remove front and rear door, see page 18 and 21.
- Fix four baying plates in front and rear frame at upper and lower location as shown in picture below. Use screw torx T30 taper head M6 x 12 four pieces.
- Please be sure to install the four PMA's first.



DETAIL A AND B



DETAIL C

- Make sure the 19" enclosure is level. See page 14.
- Baying 19" enclosure before installing equipment.
- 19" enclosure can be joined with or without side panels installed.
- Install the doors.



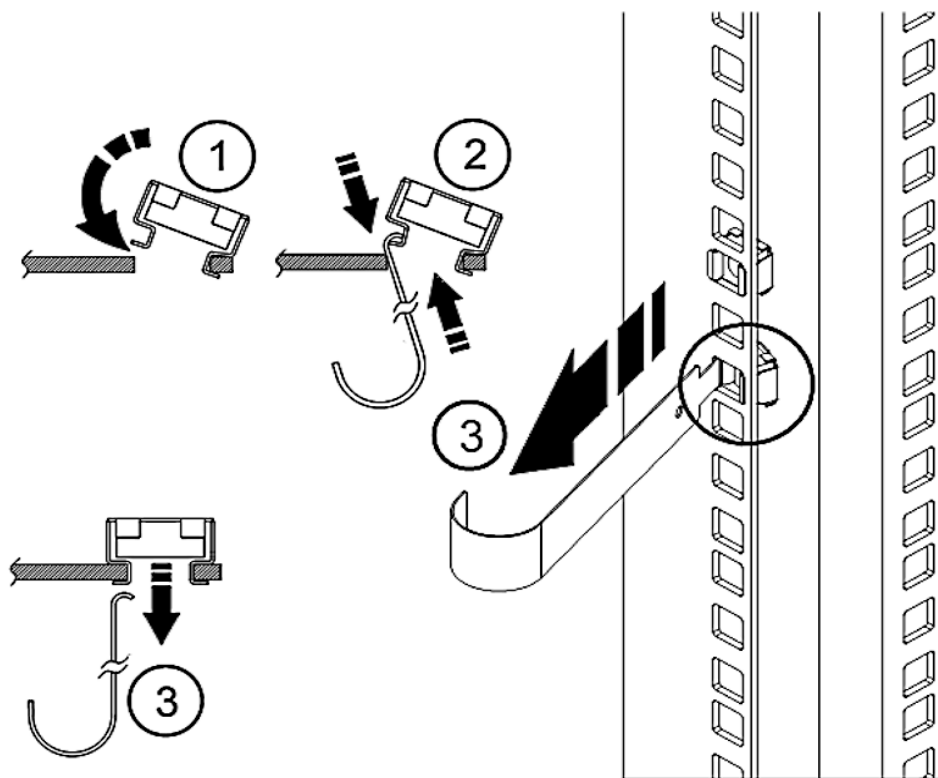
Information: Joining 19" enclosures together does not provide additional stability to the 19" enclosure.

Baying plate has 2 holes for baying spacing options shown in detail C.

Cage Nut Installation and Removal

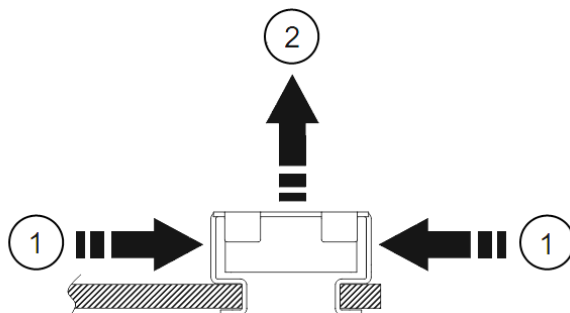
Install cage nut on front side of the PMA

- Insert cage nut from rear side of PMA into the square hole by hooking one ear of the cage nut assembly through the far side of the hole.
- Insert small end of cage nut tool through square hole then put on another ear of the cage nut and pull to snap it into position.



Removing Cage Nut from PMA

Grasp the cage nut and squeeze the sides to release it from the square hole.



ARION: 19” EIA-310E Standard Enclosure



Specifications

General specifications for the Arion 19” enclosures.

For detailed dimensions and weights refer to the Arion Assembly Guides.

Door perforation pattern: 80% open area

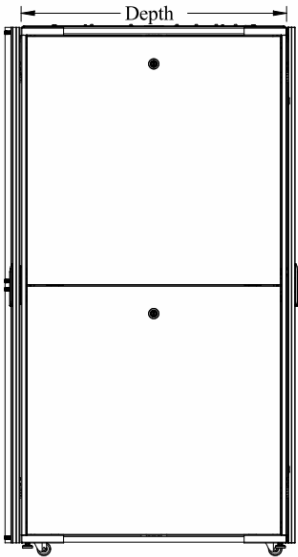
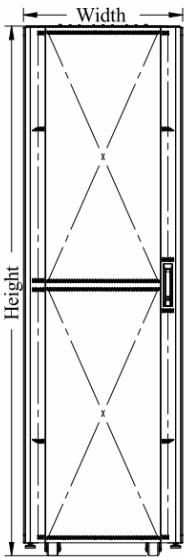
Weight rating (static load): 1400 kg

Weight rating (dynamic): 1000 kg

Height U	Height (mm)
42	1994
45	2127
47	2216

Width (mm)
600
750
800

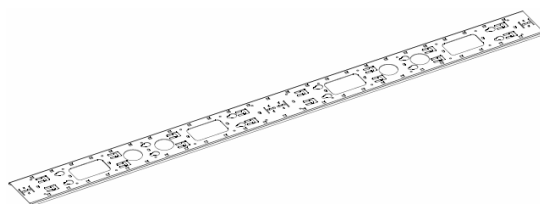
Depth (mm)
1000
1200



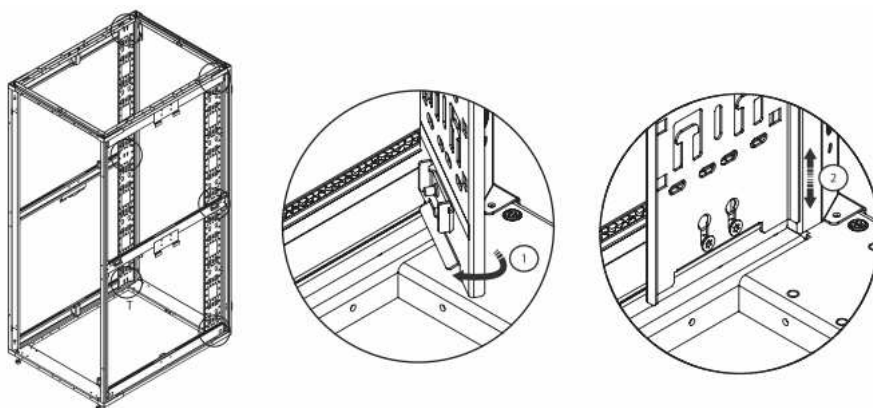
Available Accessories

PDU/ Vertical Cable Rail

The Arion 19" enclosure has multiple cable access openings to manage cabling. To support the cabling requirements, we offer accessory PDU/Vertical Cable Rail that normally installs at the rear of the 19" enclosure. The PDU/Vertical Cable Rail can be moved anywhere along the side braces similar to the PMA's.

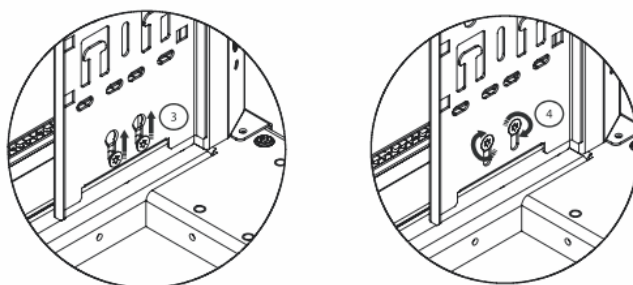


- Install Vertical Cable Rail with Post Mounting Bracket and Middle Side Brace at the rear of the 19" cabinet. See steps 1 and 2 in detail T below:



DETAIL T

- Lift up screws to lock the position and set torque at 50-60 in. lbs.



DETAIL T

Set Torque 55-60 lbs.in

ARION: 19" EIA-310E Standard Enclosure



Available Accessories

Cable Management:

	Cable Management Panel Pass Through
	Available in 1U and 2U
	19" enclosure mount cable pass through [flat hoops]

	Cable Management Panel Pass Through
	Available in 1U and 2U
	19" enclosure mount cable pass through [rod hoops]

	Cable Hoops
	Available in 1U and 2U
	Individual cable hoop for general purpose, Install on vertical PDU Rail and other locations with Arion 19" enclosure

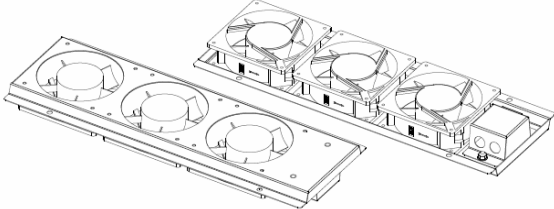
	Cable Entry Brush Strip
	Install at top panel or side channel covers (800 wide)
	to prevent dust and air leakage

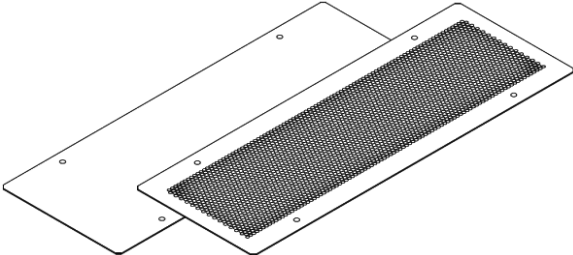
ARION: 19” EIA-310E Standard Enclosure

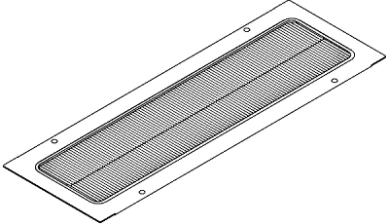


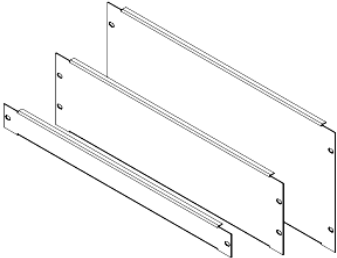
Available Accessories

Thermal Management:

	Fan Tray
	Fan tray with 3 fans
	Install on top panel

	Top Panel Plate
	Available in solid or vented

	Top Panel Brush Strip
	Used to prevent dust and air leakage

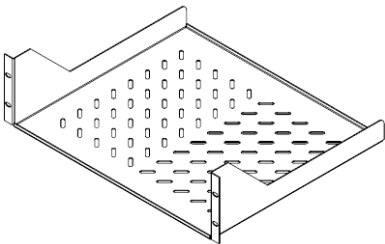
	Blank Panel Steel
	Blank Panel 1U, 2U, 3U, 4U and 5U
	Complies with IEC-60297, EIA-310D type A

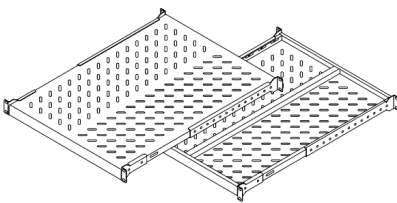
ARION: 19" EIA-310E Standard Enclosure



Select Accessories

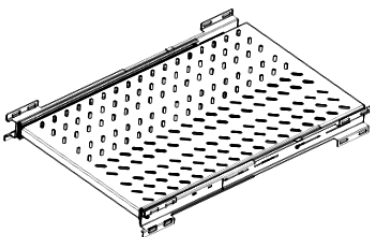
Shelves:

	Shelf Light Equipment			
	Compatible with all 19" enclosures			
	Available in 1U, 2U height			
	Depths of 230, 330, 390, 430 and 460 (MM)			

	19" Mounted Fixed Shelves			
	Compatible with ARION 19" enclosures Depth (MM)			
	PMA to PMA	800	1000	1200
19" Shelf Vented Fixed 650 Deep	655-685	√	o	o
19" Shelf Vented Fixed 700 Deep	705-735	□	√	o

*** PMA TO PMA : Recommended space between front and rear PMA (vertical mounting channel) ***
If you want to install vertical cable rail too you need to subtract the PMA to PMA distant more 150 mm.

√ : **Good** , o : **Medium (Not recommended)**, □ : **Bad**

	Telescopic Shelves Kit 450 to 700mm (complete set)			
	50 kg Load Rated			
	Compatible with ARION 19" enclosures Depth (MM)			
	PMA to PMA	800	1000	1200
Shelves Vented Telescopic 700 Deep	755-785	□	√	o

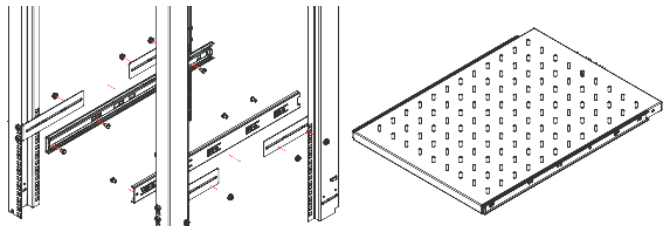
*** PMA TO PMA : Recommended space between front and rear PMA (vertical mounting channel) ***
If you want to install vertical cable rail too you need to subtract the PMA to PMA distant more 150 mm.

√ : **Good** , o : **Medium (Not recommended)**, □ : **Bad**

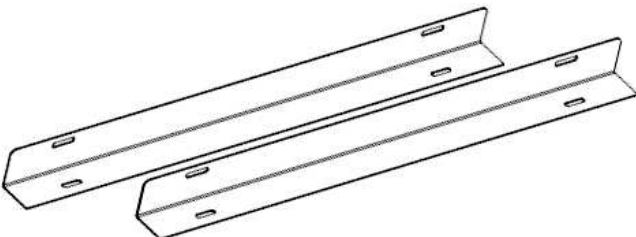
ARION: 19" EIA-310E Standard Enclosure

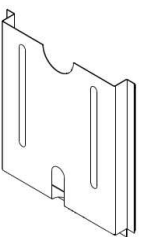
Cheval

Select Accessories

	Heavy Duty Telescopic Ventilated Shelves Kit (complete set)			
	75 kg Load Rated			
	Compatible with ARION 19" enclosures			
	Depth (MM)			
	PMA to PMA	800	1000	1200
Shelves Vented Telescopic Heavy Duty 700 Deep	755-785	□	√	o

*** PMA to PMA : Recommended space between front and rear PMA (vertical mounting channel) ***
 If you want to install vertical cable rail too you need to subtract the PMA to PMA distant more 150 mm.
 √ : **Good** , o : **Medium (Not recommended)**, □ : **Bad**

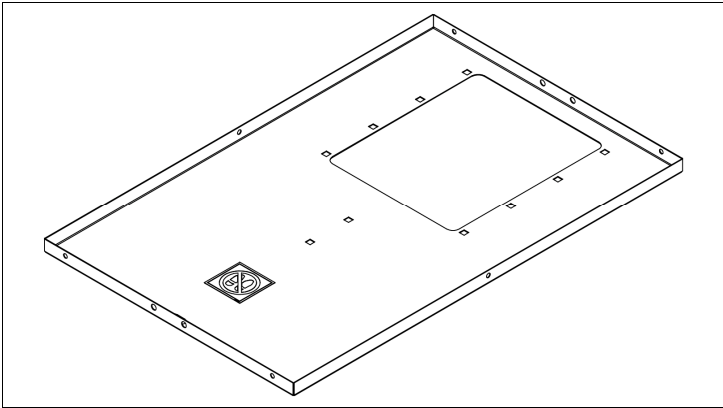
	Support Rails (Chassis Runner)		
	650 to 700 mm		
	For additional support of equipment.		
	Load rate 50 kg.		

	Document Wallet		
	Usually is installed at the rear door		
	To keep important information		

ARION: 19” EIA-310E Standard Enclosure

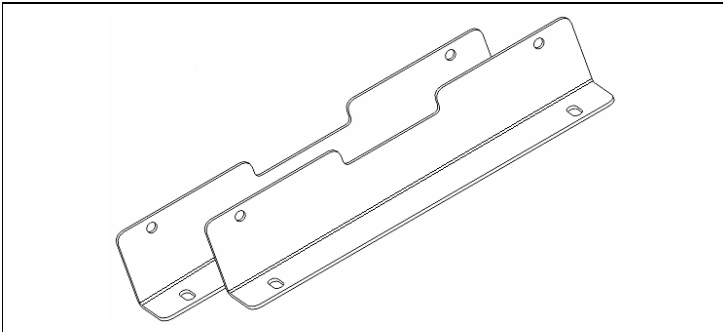


Select Accessories



Base Filler Panel

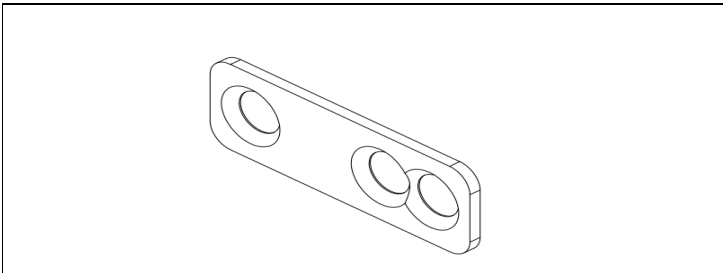
Prevent air leakage and vermin intrusion from base.



Bolt down Kit

Bolt down bracket with hardware

Use bolt down kit to prevent 19” enclosure from tipping over, and for transportation on a pallet.



Baying Plate

Baying plate with hardware

Use baying plates to join the 19” enclosures.

Limited Warranty Terms and Conditions

Limited Warranty: Cheval warrants the Arion series 19” enclosures to be free from defects in materials and workmanship for a period of five (5) years from date of purchase. This warranty applies to the original purchaser only. Cheval's obligation is limited to repairing, replacing or issuing a credit for the original purchase price, at our sole discretion. This warranty does not apply to goods which have been damaged by incorrect assembly, use, modified or altered from their original form, improper storage or handling, incorrect installation, repair or service by non-authorized personnel or improper installation of third-party equipment. The Arion 19” enclosure is designed for indoor use only and should be stored and installed in an indoor environment only. This warranty is not transferable.

Limitation of Liability: Except as provided herein, Cheval makes no warranties, express or implied, including warranties of merchantability, fitness for a specific purpose and non infringement of third party rights are expressly excluded. Except as listed here, in no event shall Cheval be liable for direct, indirect, special, incidental, or consequential damages arising from the use of this product. Cheval is not liable for loss of profits, loss of revenue, loss of software or data, loss of equipment or use of equipment, cost of replacement goods or claims by third parties.

Claim Procedures: In the event you need to make a claim, please contact the dealer from whom you purchased the product and request a Return Material Authorization (RMA) number. Proof of purchase is required from the original purchaser. If a product return is authorized, the product must be packed in the original packaging or packaging at least as good as the original. Shipping damage is not covered by this warranty. Ship the defective product using reliable carrier by prepaid and insured to the address provided by the dealer.

Thank you for choosing another quality product by

Cheval