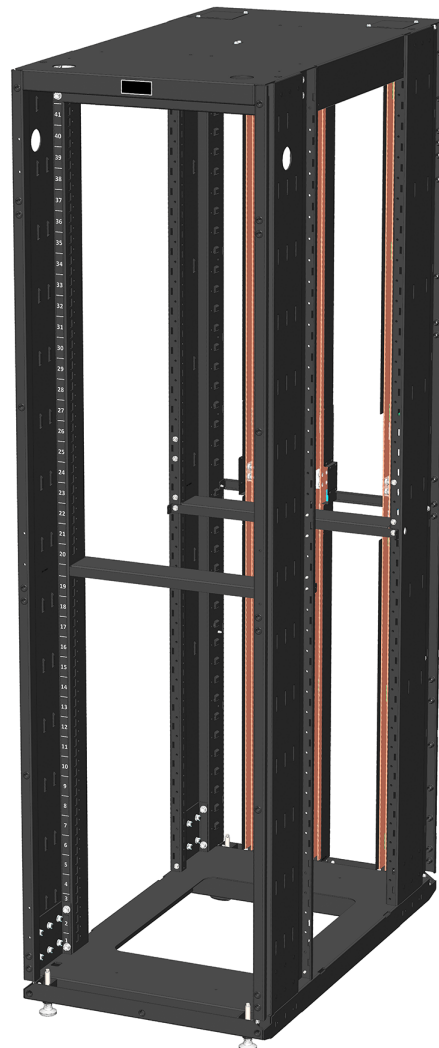




21-inch Open Compute Project Compliant Rack

USER GUIDE



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Introduction

Inspired by the Open Compute Project, the KT-2141-121U OCP equipment rack meets the latest Open Rack Standard V1.2. For ease of use, all equipment installation and service operations are accessible from the front of the rack.

This guide describes how to unpack, assemble, install, adjust, and maintain the KT-2141-121U OCP equipment rack and optional accessories.

General Safety

This guide uses the safety conventions described below. Ensure that you follow the safety instructions in this guide and observe its directives to protect you and your equipment from harm.

WARNING

Indicates highly dangerous consequences such as fire, serious injury, or death when failing to comply with the instructions.

Caution

Indicates dangerous consequences such as moderate injury or equipment damage when failing to comply with the instructions.

Required Tools

The following tools are required for installing, adjusting, and maintaining the KT-2141-121U rack.

- Cable tie tool for installing cable ties, if required
- Power drill (pneumatic, wired, or cordless) with 8mm, 10mm, 13mm, 17mm sockets (10mm magnetic socket is recommended)
- 17mm open-ended wrench for optional adjustment of Leveling Feet or Extender Kit
- #2 Phillips driver
- Torque driver for tightening screws and nuts

Unpacking an Assembled Rack

If the rack is shipped already assembled, it is packed in a crate to protect it from damage during shipping. The rack is shipped and unpacked in the vertical position.

Caution

When moving the rack up or down an incline, such as when crating or uncrating, use a ramp with angle less than 8 degree incline.

WARNING

A least two people are required to remove the rack from its shipping container to prevent the rack from falling over.

To unpack the rack from its shipping crate:

1. Remove the front panel from the shipping crate exposing the rack.
2. Remove any shipping screws from the rack that hold the rack to the crate or pallet.

3. If necessary, remove any shipping blocks or straps from around the rack.
4. Ensure that the leveling feet are raised to their highest position.
5. Secure a ramp (8 degree incline or less) to the front of the crate.
6. Using two or more people, carefully roll the rack out of the crate and down the ramp.
7. Inspect the rack to ensure that it was not damaged during shipping.

Rack Assembly

The rack may be shipped in an unassembled state to reduce shipping size. Follow all the instructions in this section to assemble a KT-2141-121U rack. At least two people are required to assemble the rack, to lift components into place, and to lift the rack into an upright position.

WARNING

An assembled rack weighs over 300 lbs (136 kg). Use caution when moving rack components and assemblies.

WARNING

Use proper safety clothing and equipment, such as gloves, safety glasses, and safety shoes when assembling a KT-2141-121U rack.

Unpacking the Rack

Carefully unpack the rack components from its shipping crates and inspect the condition and quantity according to the parts list (shown below).

Parts List

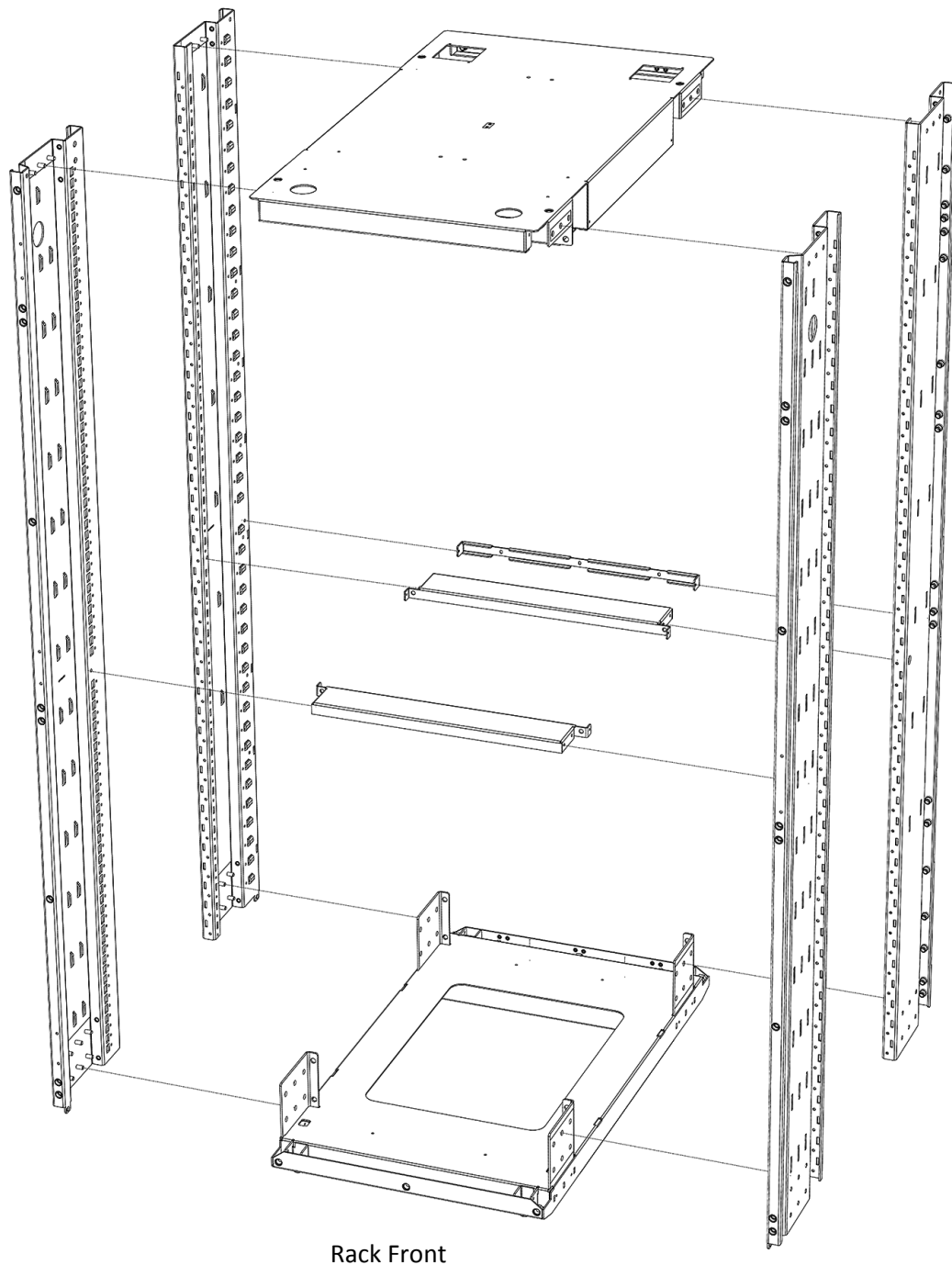
The table below shows the parts needed to assemble a KT-2141-121U rack. Ensure that you have all these parts before beginning rack assembly.

Note: Extra washers, screws, or nuts are included with the rack for assembly of optional equipment or spares. Ship all extra hardware with the rack so it will be available if needed.

Description	Part Number	Quantity
ID Label	605220	1
Rear Center Brace	819737	2
Right Rear Vertical Support	819842	1
Bus Bar Support Bracket	819843	1
Left Front Vertical Support	819845	1
Right Front Vertical Support	819846	1
Left Rear Vertical Support	819847	1
Base Assembly	819861	1
Top Cover Assembly	819862	1
M8 Flat Washer	820890	40 (4 extra included for spare)
M8 Keps Nut	820992	56 (4 extra included for spare)
M8 x 20mm length SEMS Screw	821058	22 (2 extra included for spare)
Cable Access Cover	823384	2
Leveling Foot	824262	4
M5 x 14mm length SEMS Screw	824317	7 (1 extra included for spare)
Swivel Caster	824629	4
Lite-On Logo Label	825387	1
OU Slot Label	825444	2
M6 x 12mm length thread-forming Screw	821480	78 (60 extra included for equipment brackets)

Exploded View

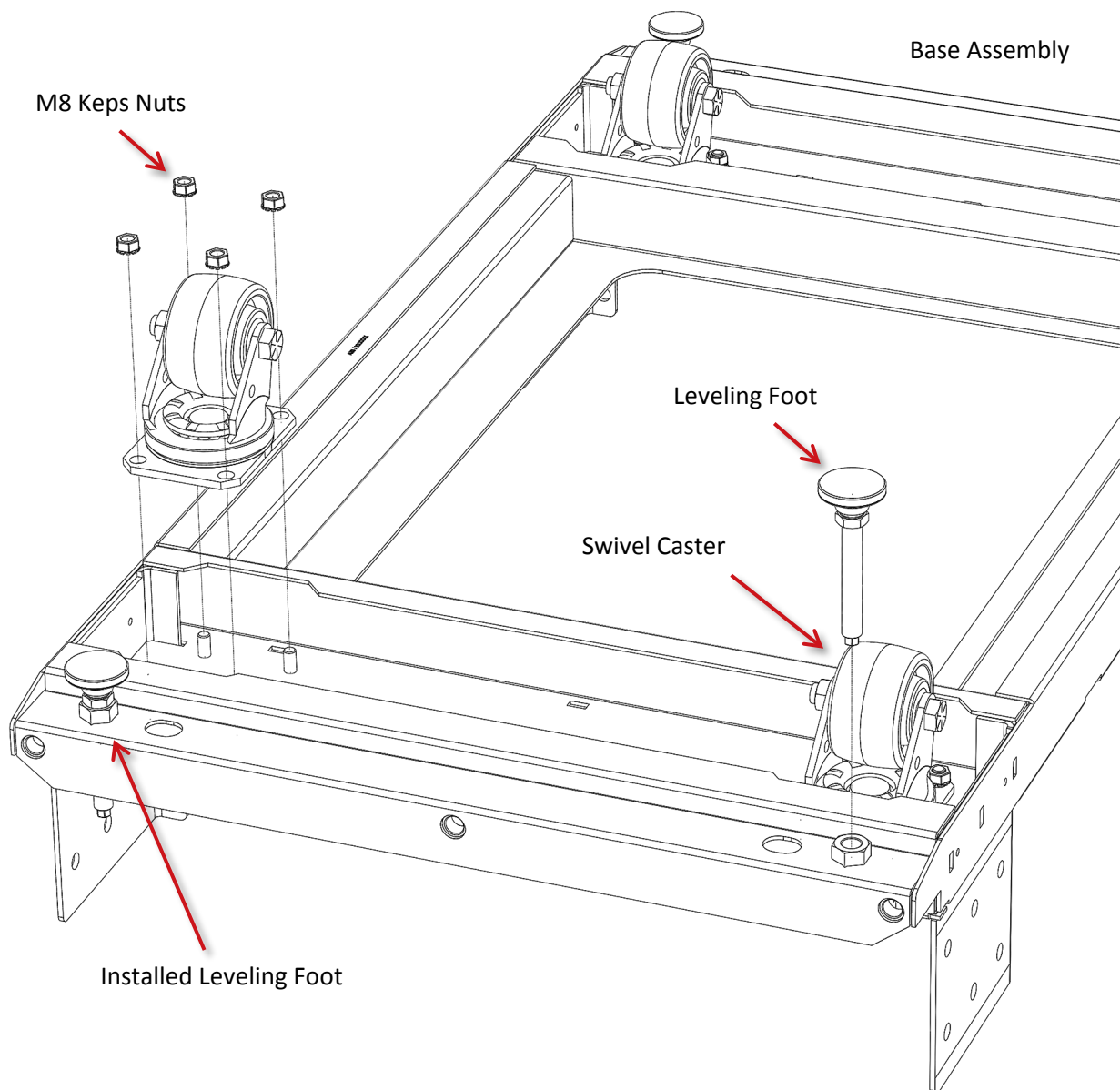
As an aid in assembly, the image below shows the major components of the KT-2141-121U rack (without connecting hardware) as viewed from the front of the rack.



Base Assembly

Follow the instructions below to assemble the Base Assembly.

1. Locate the Base Assembly (819861), (4) Swivel Casters (824629), (4) Leveling Feet (824262), and (16) M8 Keps nuts.
2. Turn the Base Assembly upside down and install (4) Swivel Casters with (16) M8 Keps nuts according to the image below.
3. Screw (4) Leveling Feet (824262) into the corners of the Base Assembly as shown below.



4. Torque all M8 Keps nuts to 15 N-m (11.1 ft-lb).



Torque Swivel Caster M8 Nuts

5. Hand tighten Leveling Feet fully into the base.
6. Proceed to the next section below.

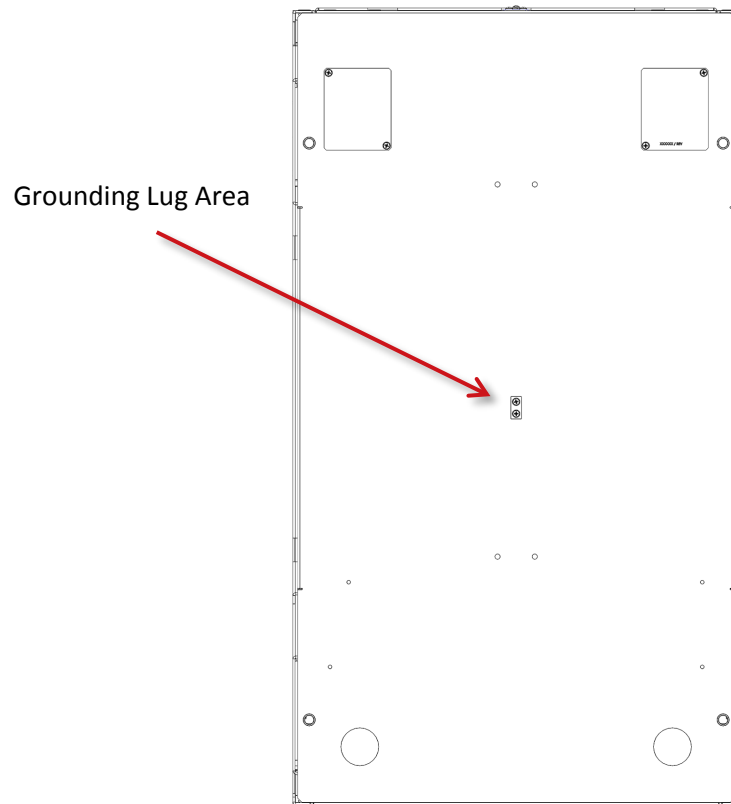
Top Cover Assembly

This section describes how to install the Top Cover Assembly.

At this point, the Base Assembly should be attached to the Left Vertical supports.

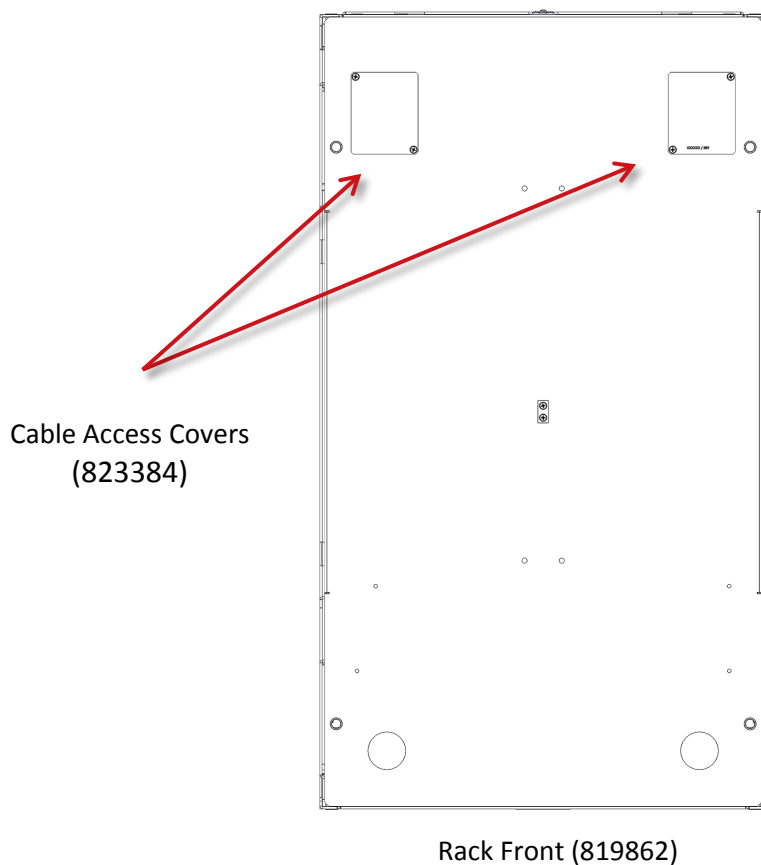
1. Locate the Rack Top Cover Assembly (819862).

2. Install (2) M5 SEMS screws in the grounding lug area of the Top Cover Assembly. Refer to the image below for the location of the grounding lug area.



Rack Front (819862)

- As shown below, install (2) Cable Access Covers (823384) with (2) M5 SEMS screws each.



- Torque Cable Access Cover M5 SEMS screws and grounding screws to 3.6 N-m (2.7 ft-lb).

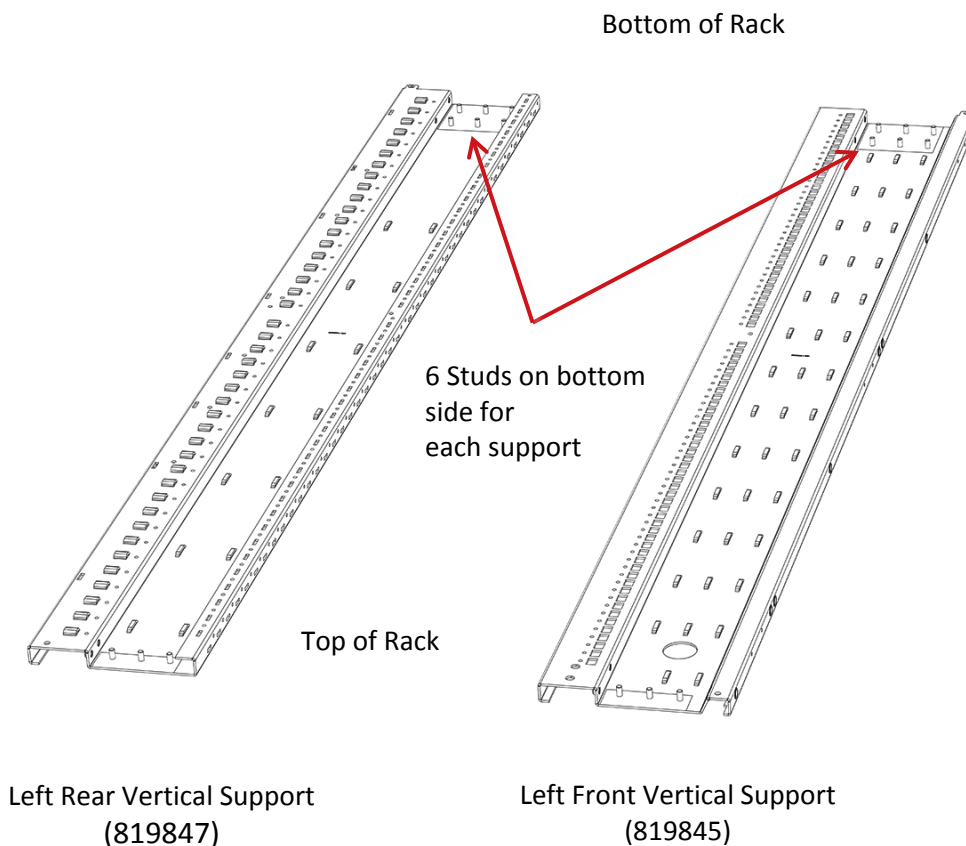
Rack Assembly, Left Side

This section describes how to install the Base Assembly to the Left Vertical Supports (left side as viewed from the front of the rack).

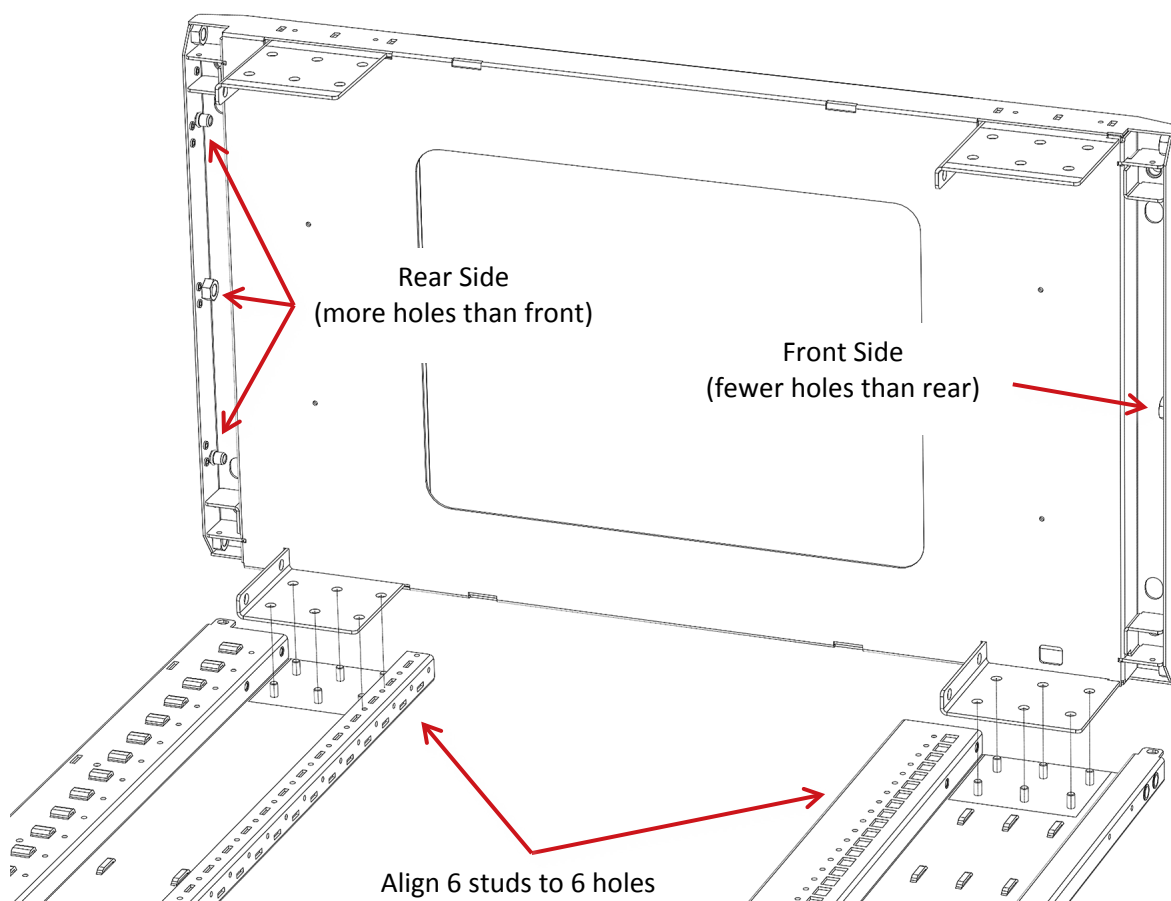
At this point, the Base Assembly is assembled with castors and leveling feet. Follow the instructions below to connect the left side of the rack to the Base Assembly.

- Locate the Left Front Vertical Support (819845) and the Left Rear Vertical Support (819847).

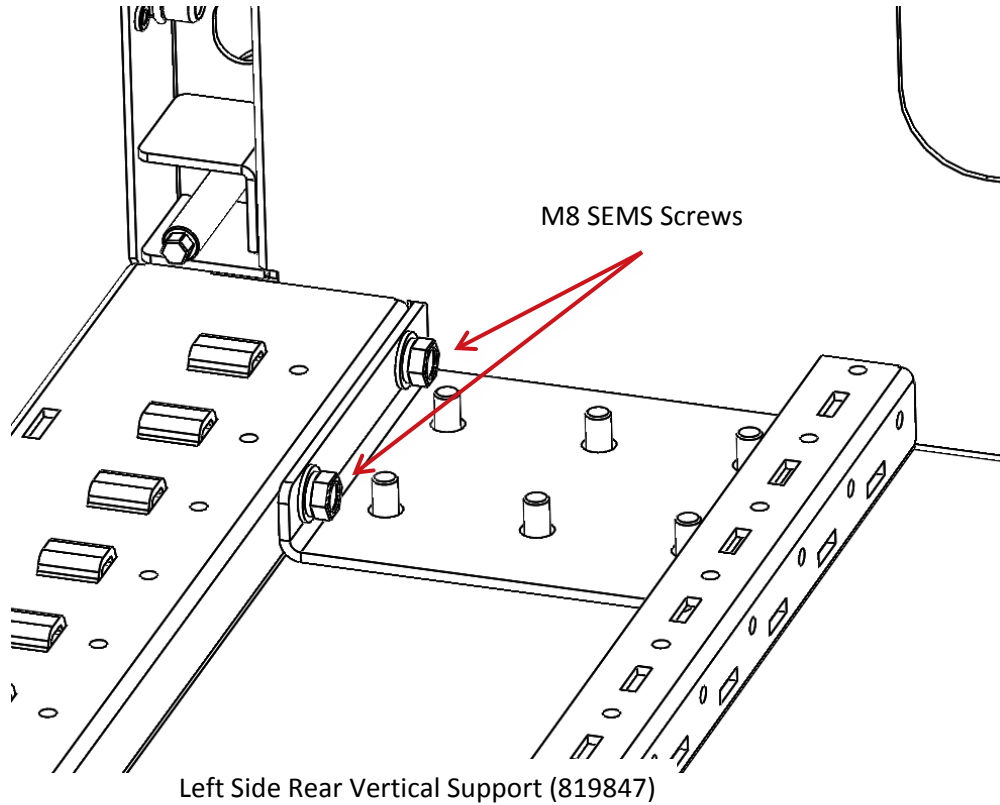
2. Lay out the Left Front Vertical Support (819845) and Left Rear Vertical Support (819847) as shown below. Use a drop cloth, or equivalent, under the supports to keep them from being scratched.

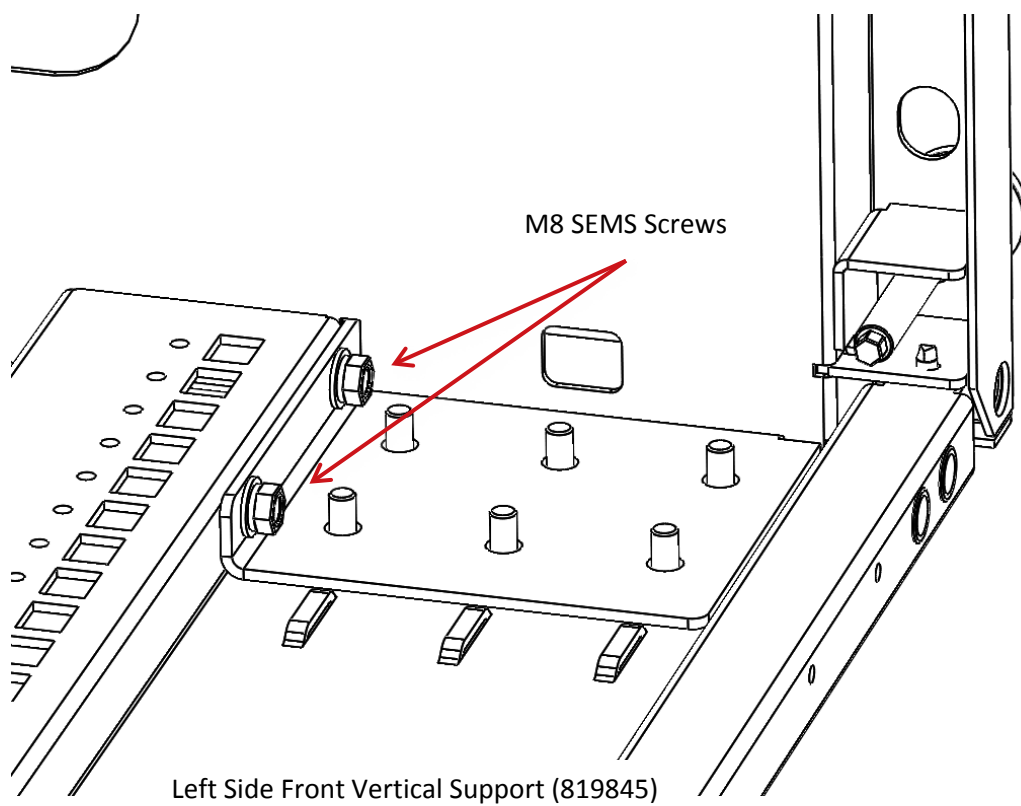


3. Using at least two people, move the Base Assembly (assembled in the previous section) over each vertical support so their 6 studs align with the 6 holes in the Base Assembly. Refer to the image below. **Note:** To distinguish the rear of the Base Assembly from its front, notice that the rear side of the Base Assembly has more holes in it. The studs will not align correctly if the Base Assembly is not properly oriented.

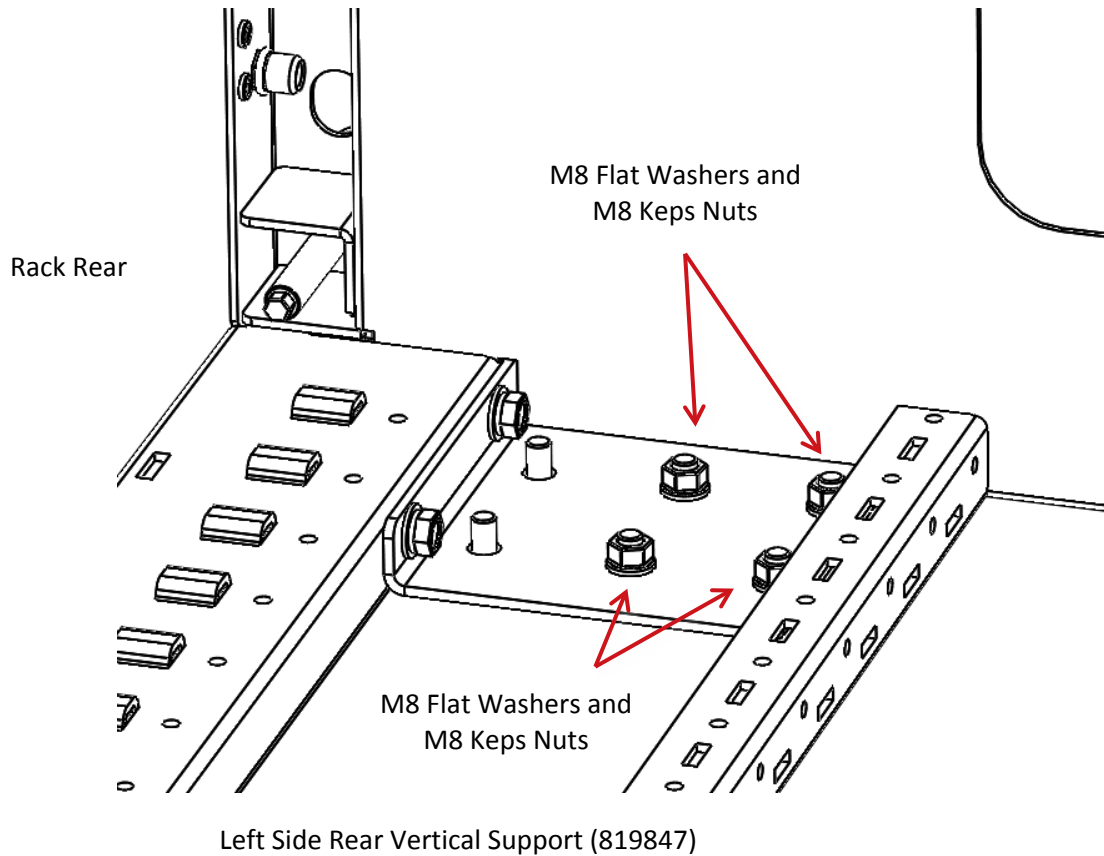


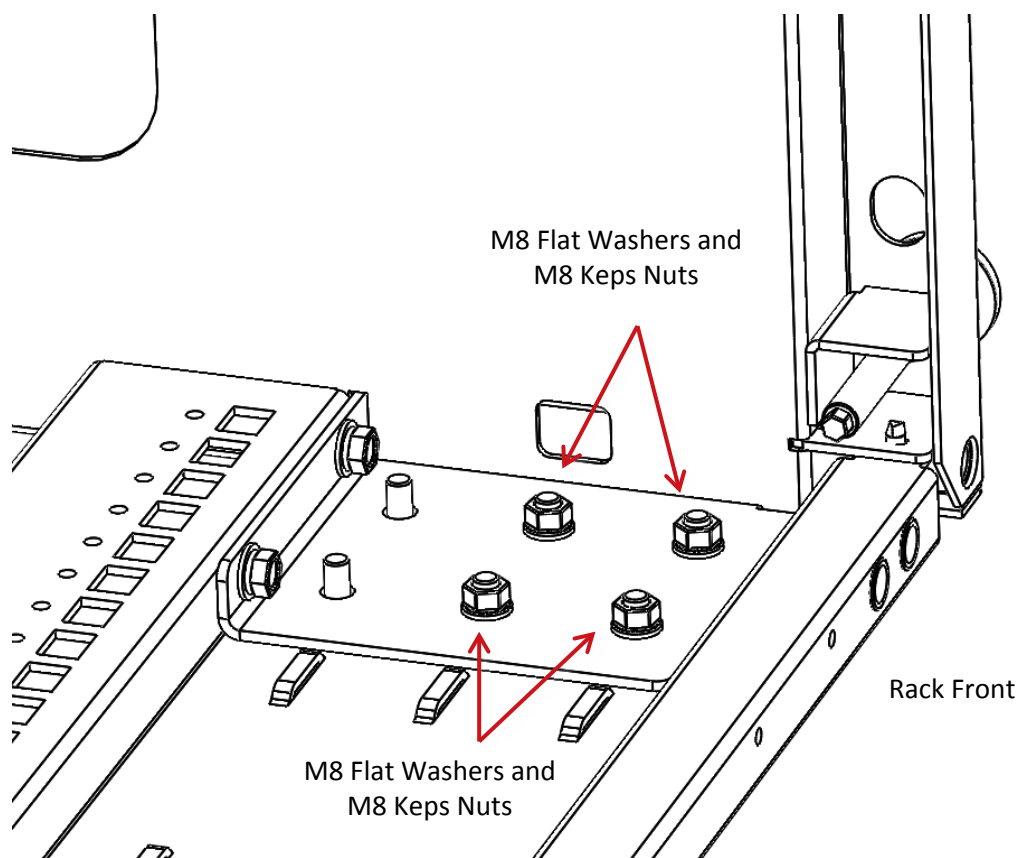
4. Install (2) M8 SEMS screws into the Left Rear Vertical Support (819847) and (2) M8 SEMS screws into the Left Front Vertical Support (819845) as shown below. Finger tighten the M8 SEMS screws, they will be torqued in later instructions.





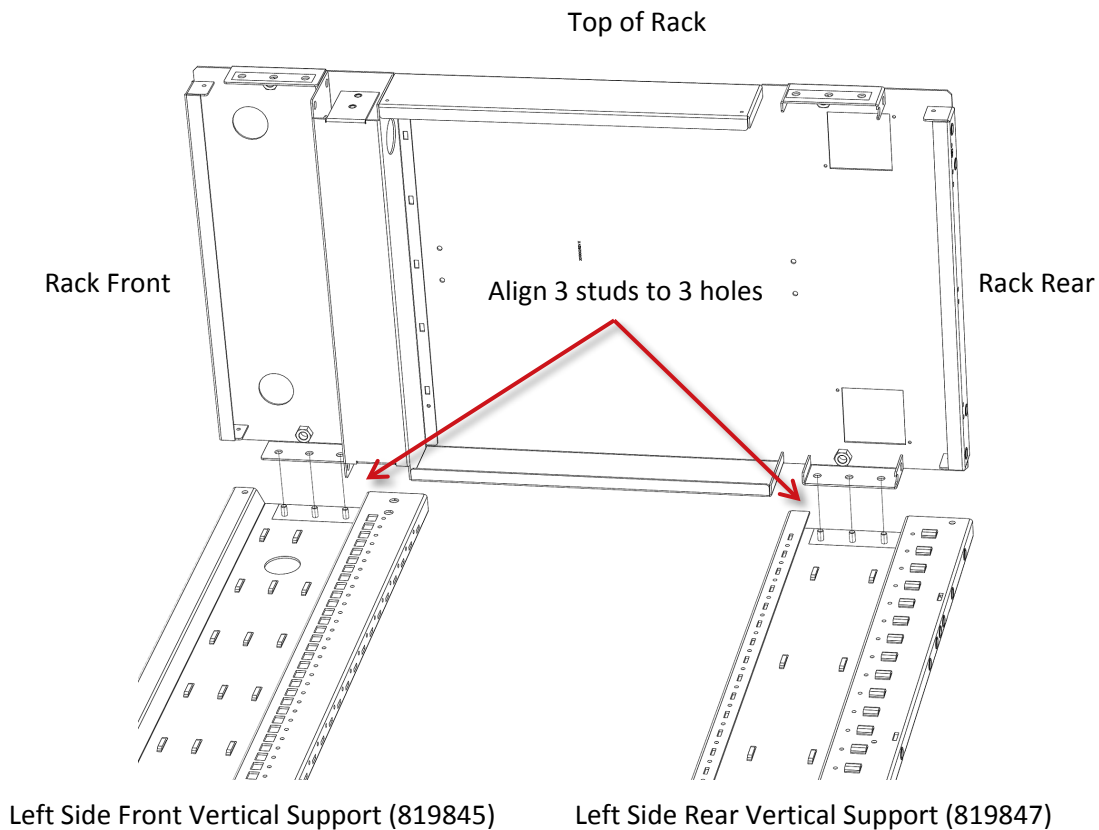
5. Install (4) M8 flat washers and (4) M8 Keps nuts to the studs for each vertical support as shown below. Finger tighten the (4) M8 Keps nuts, they will be torqued in later instructions. **Note:** The other M8 Keps nuts and washers will be installed in later steps.



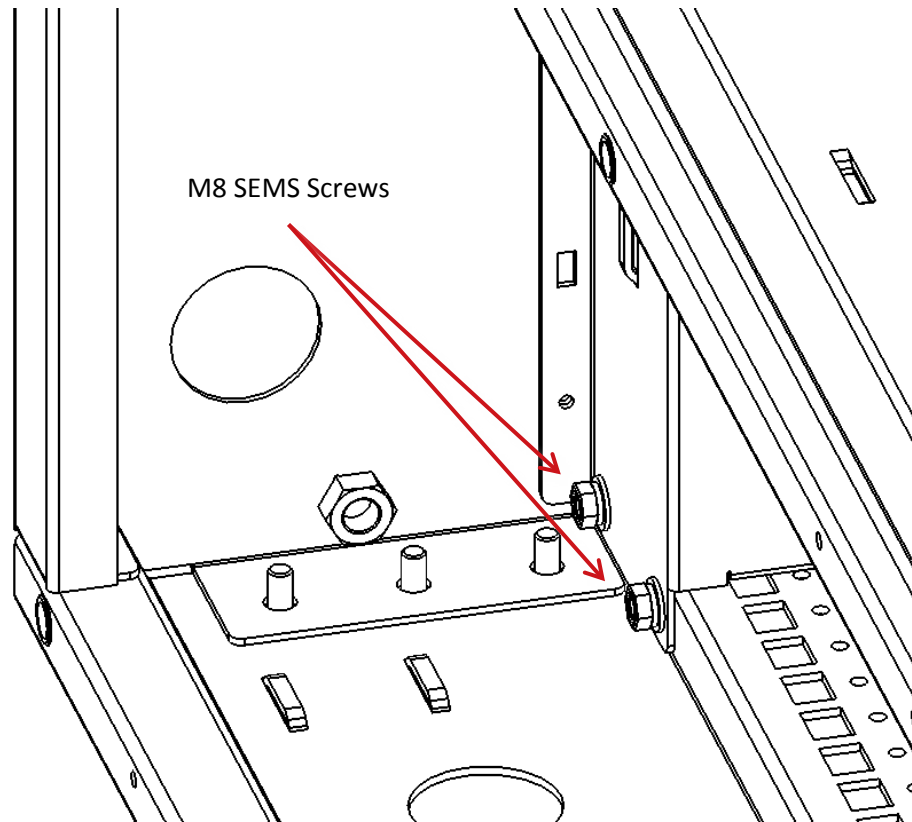


Left Side Front Vertical Support (819845)

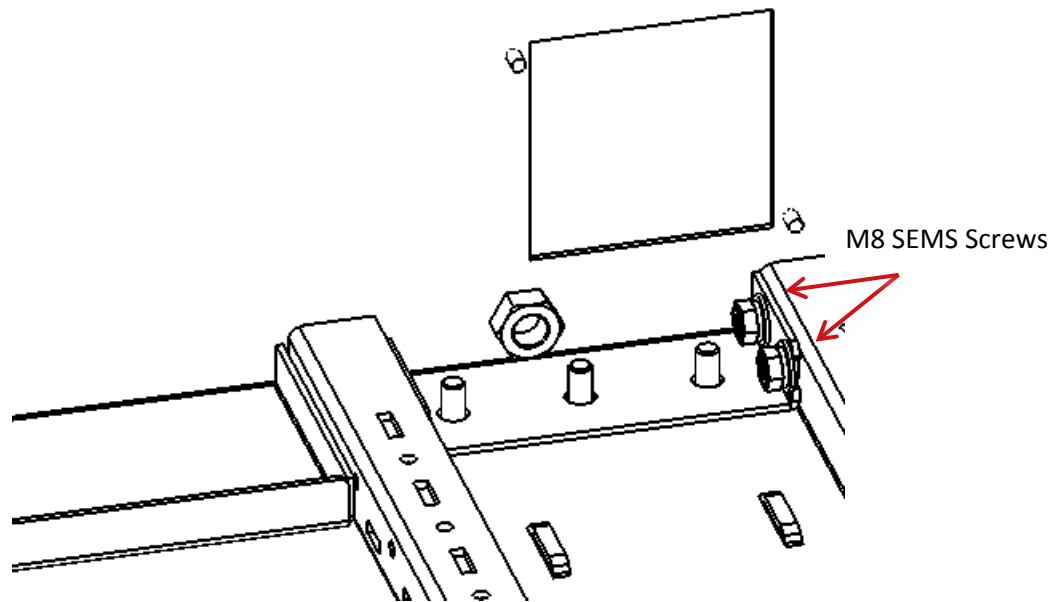
- Using at least two people, move the Top Cover Assembly over each vertical support so their 3 studs align with the 3 holes in the Base Assembly. Refer to the image below.



6. On the top of the vertical supports, install (2) M8 SEMS screws into the Front Vertical Support and (2) M8 SEMS screws into the Rear Vertical Supports as shown in the images below.

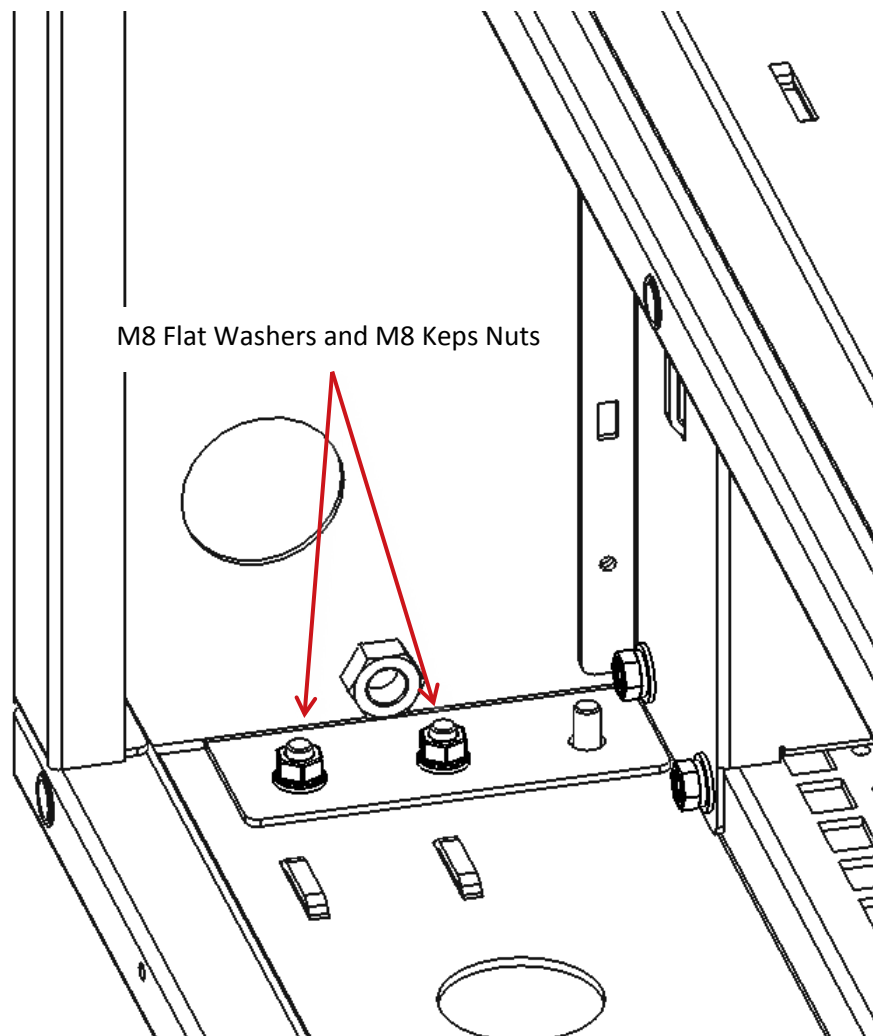


Left Front Vertical Support (819845)

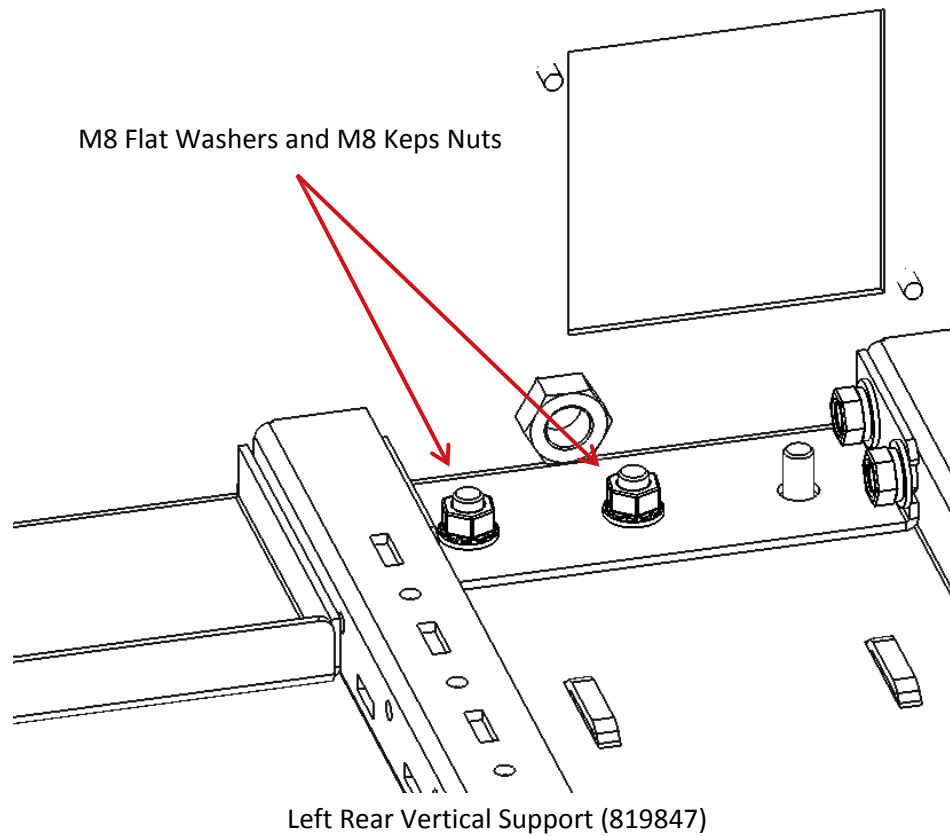


Left Rear Vertical Support (819847)

7. Attach (2) M8 flat washers and (2) M8 Keps nuts to the studs for each left vertical support. Finger tighten the M8 Keps nuts for each vertical support. They will be torqued in later instructions. Refer to the images below for details. **Note:** the other M8 Keps nut will be install in later steps. Finger tighten the M8 SEMS screws, they will be torqued in later instructions.



Left Front Vertical Support (819845)



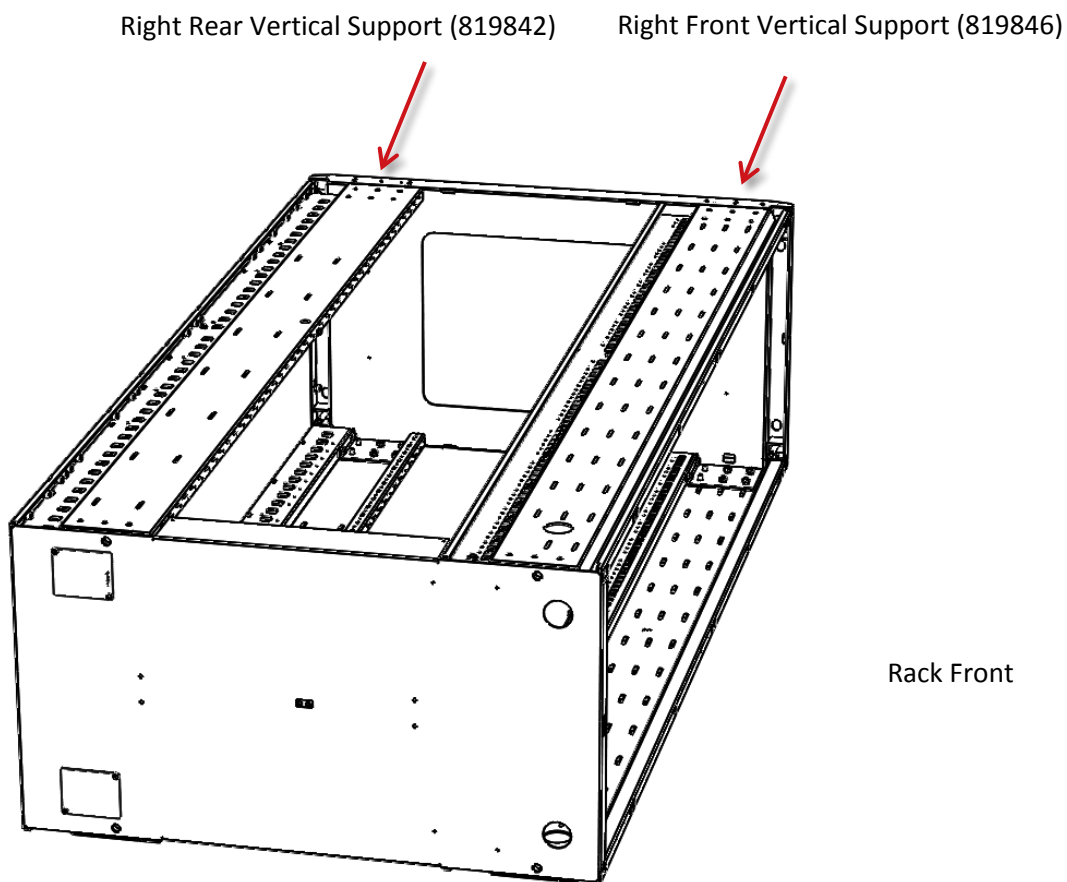
8. Proceed to the next section below.

Rack Right Side and Center Braces Assembly

This section describes how to install the right vertical supports and center braces.

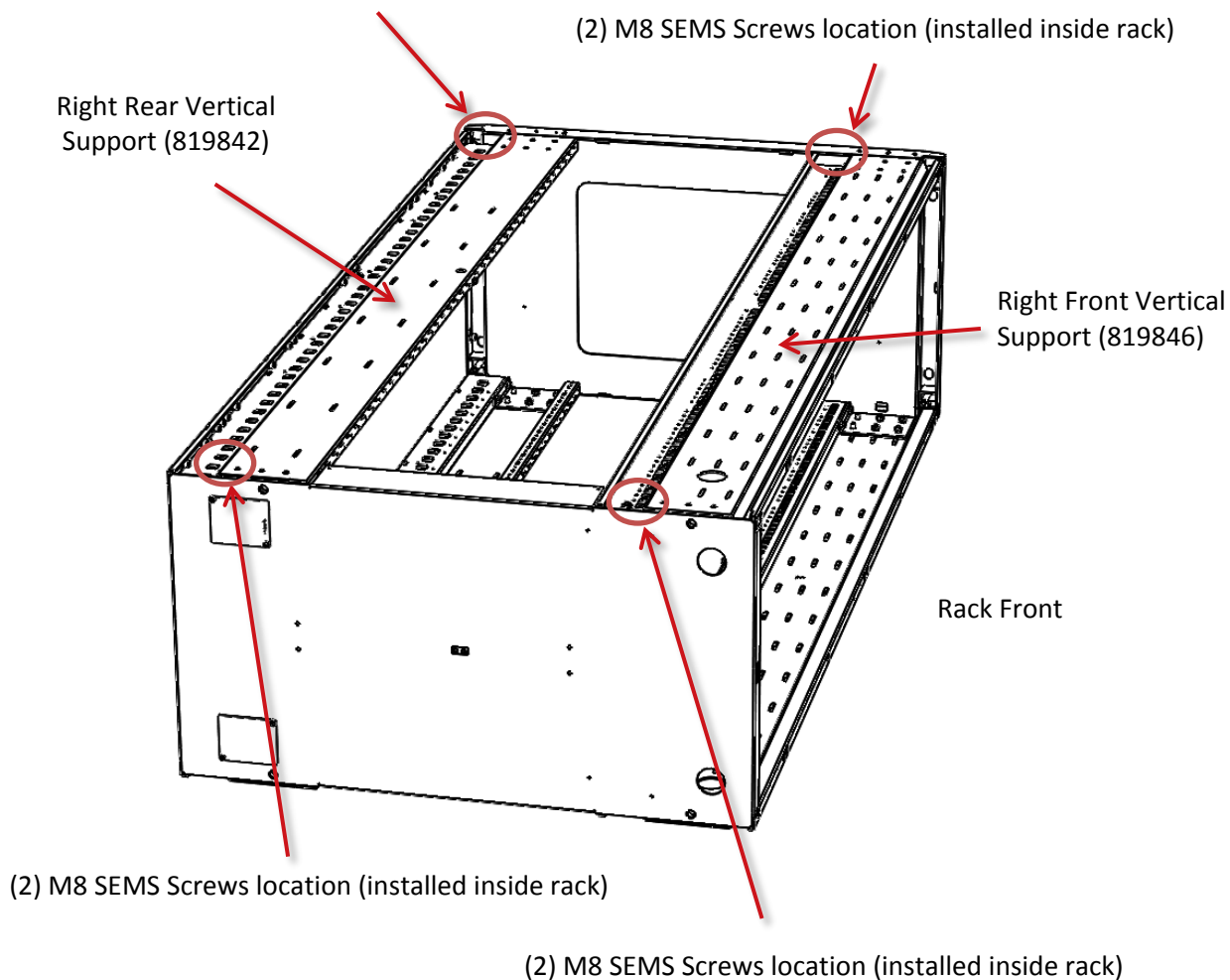
1. Locate the Right Rear Vertical Support (819842) and the Right Front Vertical Support (819846).

2. In like manner to the Left Rear Vertical Support, install the Right Rear Vertical Support (819842) and Right Front Vertical Support (819846) into place as shown below. Ensure that the vertical support is fully seated to the Top Cover Assembly and the Base Assembly and that the studs fully protrude through their matching holes.



3. In like manner to the left side of the rack, install and finger tighten (8) M8 SEMS screws.

(2) M8 SEMS Screws location (installed inside rack)

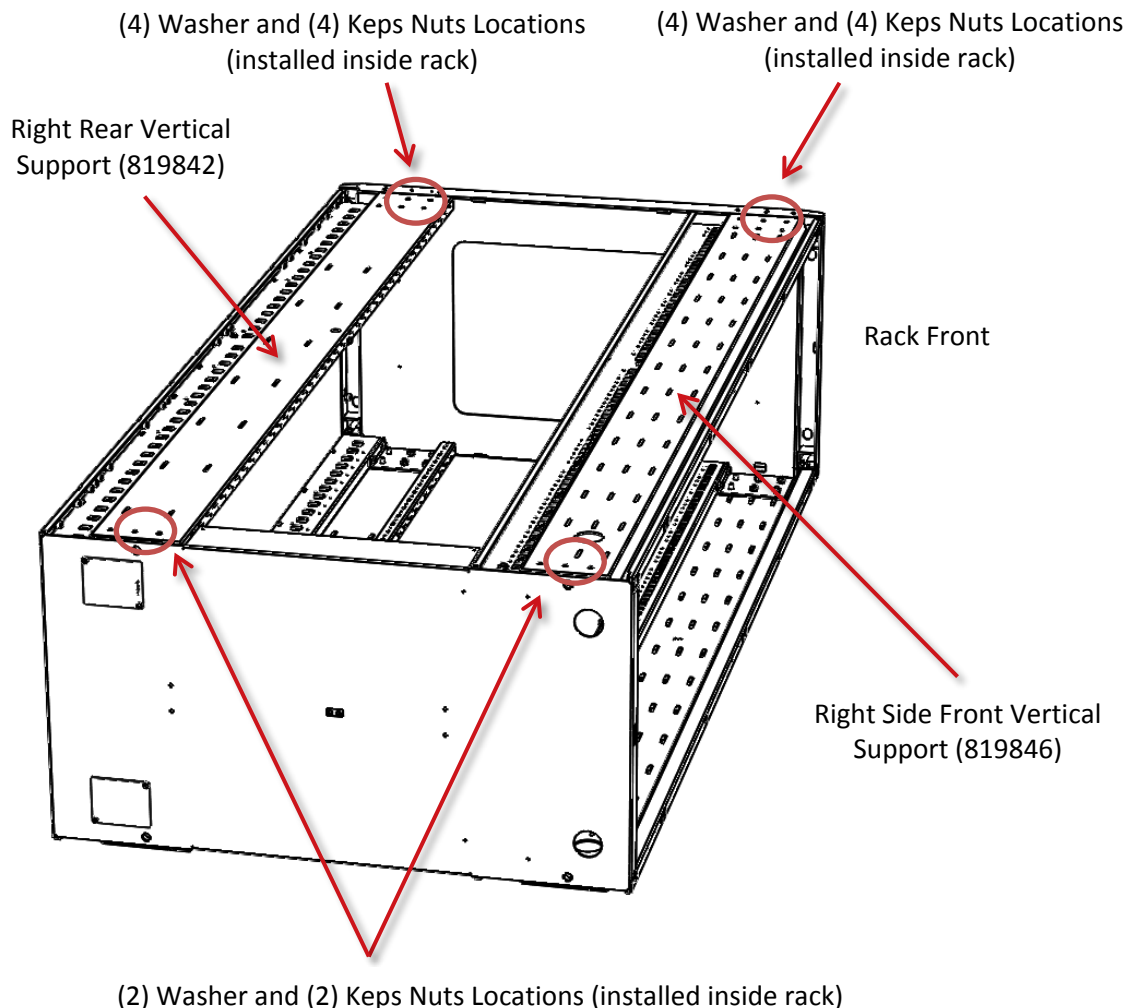


4. Finger tighten (2) M8 flat washers and (2) M8 Keps nuts into the top of the Right Rear Vertical Support and (4) M8 flat washers and (4) M8 Keps nuts into the bottom of the Right Rear Vertical Support.

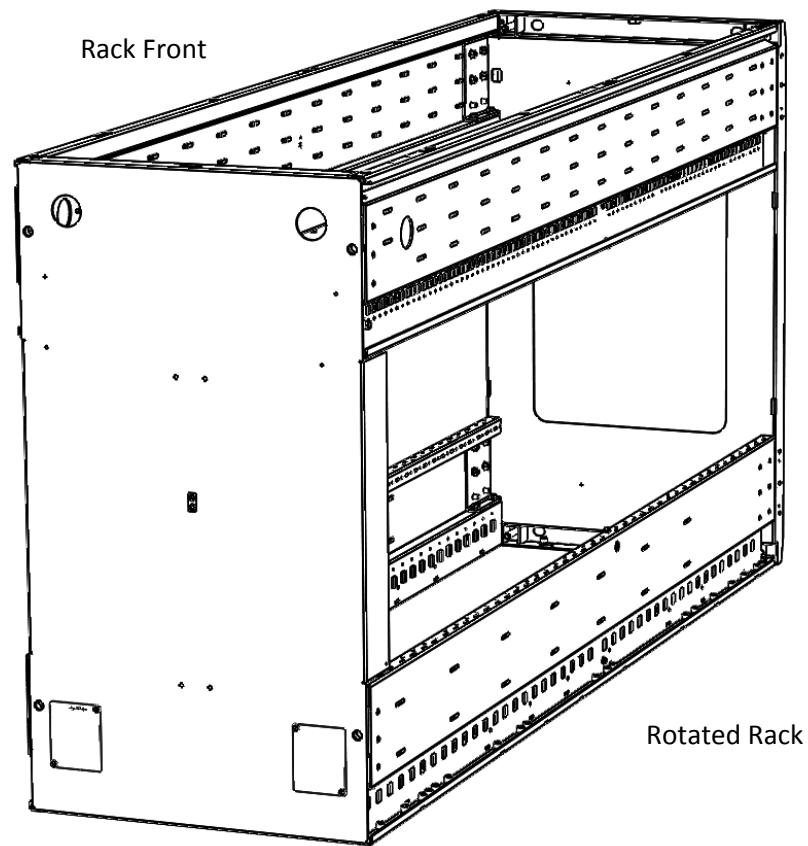
Note: In like manner to the Left Rear Vertical Support, do not install the Keps Nuts that are closest to the M8 SEMS screws, they will be installed in later steps.

5. Finger tighten (2) M8 flat washers and (2) M8 Keps nuts into the top of the Right Front Vertical Support and (4) M8 flat washers and (4) M8 Keps nuts into the bottom of the Right Front Vertical Support.

Note: In like manner to the Left Front Vertical Support, do not install the Keps Nuts that are closest to the M8 SEMS screws, they will be installed in later steps.



6. Using at least two people, rotate the rack assembly 90 degrees so the front of the rack points upward.



WARNING

A least two people, or more, are required to move the rack to its vertical position. Use extreme care when lifting the rack so it does not fall on anyone.

WARNING

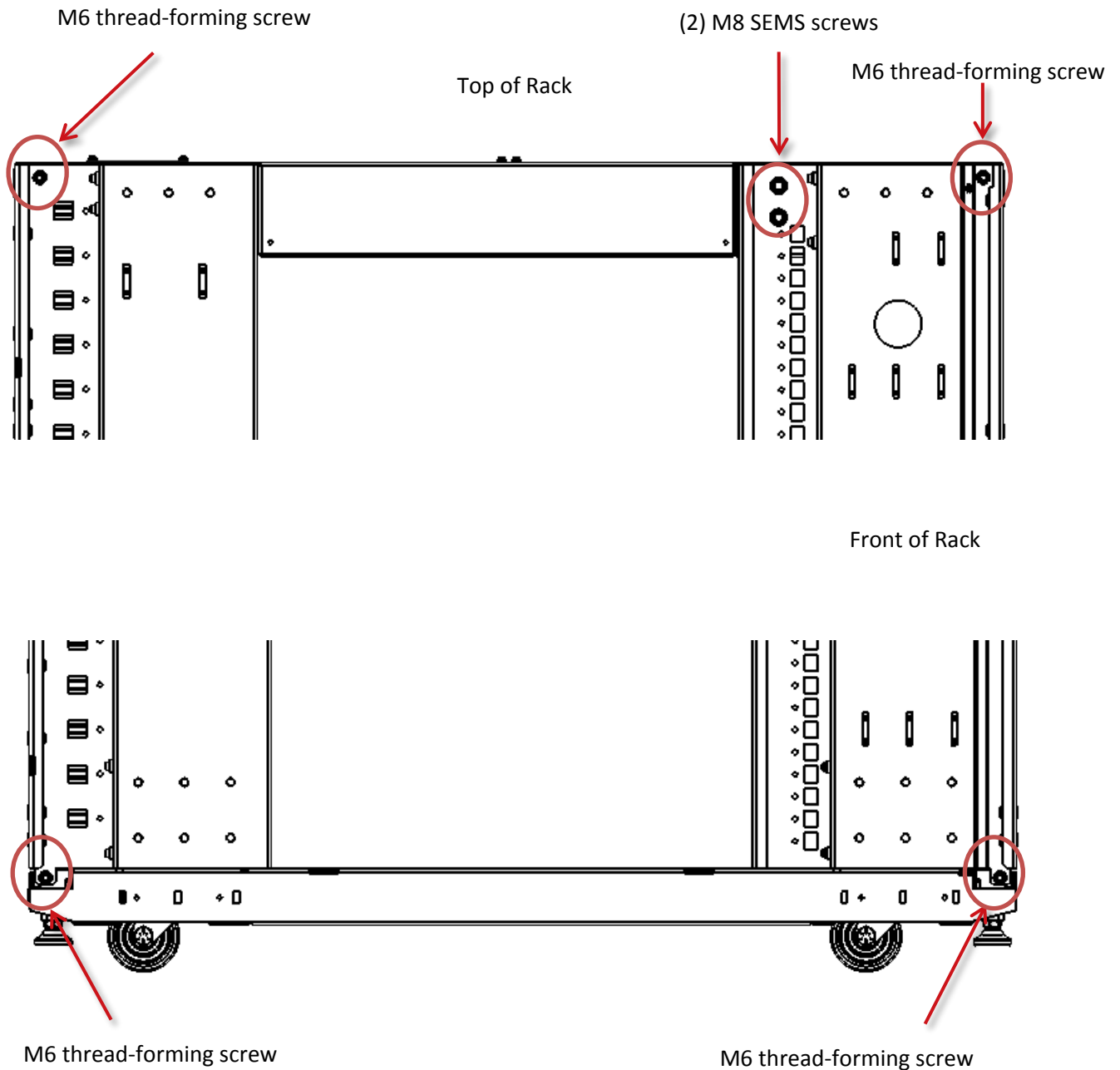
When moving the rack to the vertical position, be aware that the casters may allow the rack to slide outwards and could allow the rack fall. Firmly grasp the rack so it will not slide.

7. Using at least two people, or more, lift the rack to its vertical position on its casters.



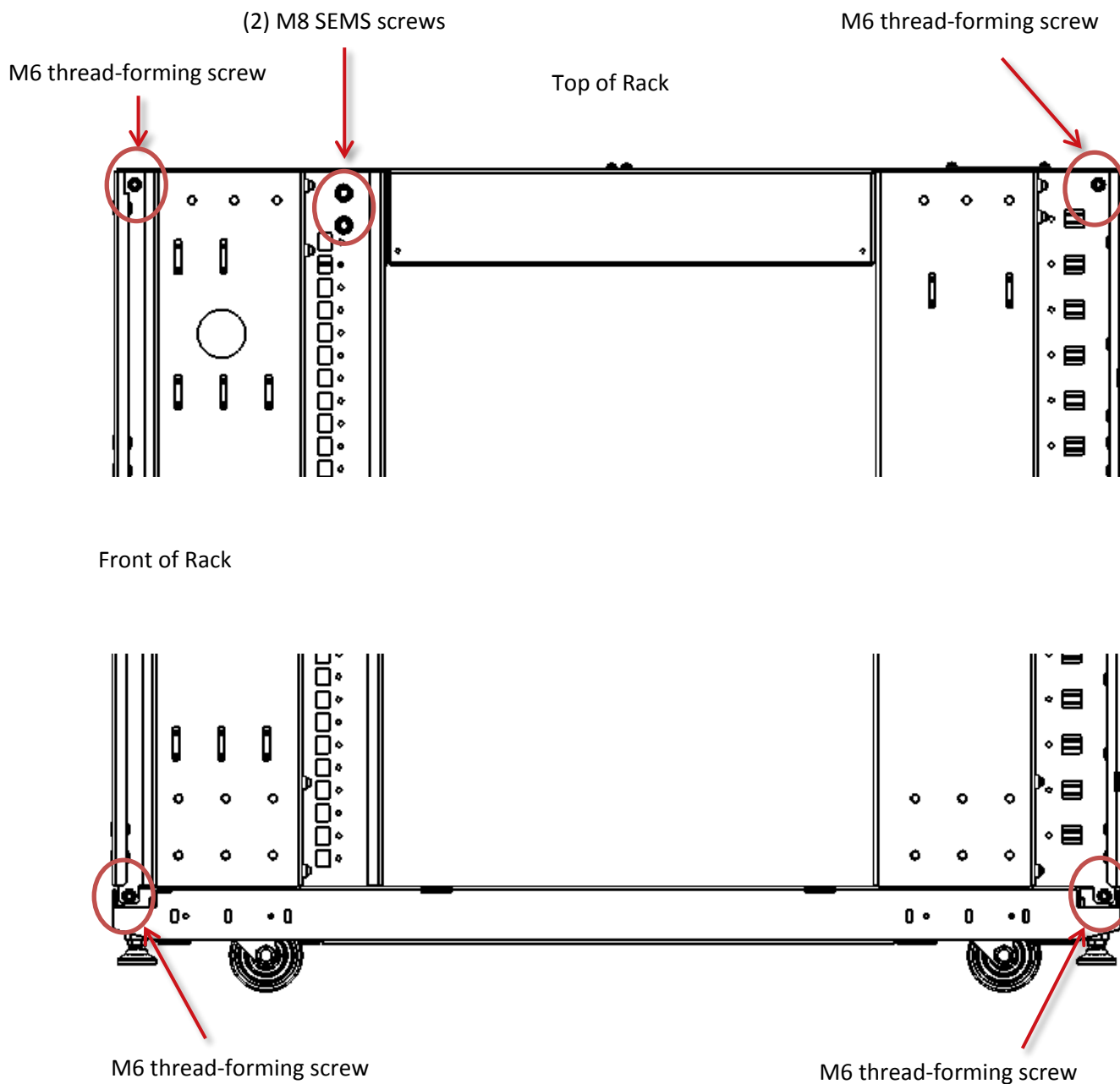
8. For the left side of the rack, loosely install (2) M8 SEMS screws to the top of the rack and (4) M6 thread-forming screws for each corner as shown below. All screws will be torqued in a later step.

Note: You may need to use a drill or ratchet driver to start a thread-forming screw.



9. For the right side of the rack, loosely install (2) M8 SEMS screws to the top of the rack and (4) M6 thread-forming screws for each corner as shown below. All screws will be torqued in a later step.

Note: You may need to use a drill or ratchet driver to start a thread-forming screw.

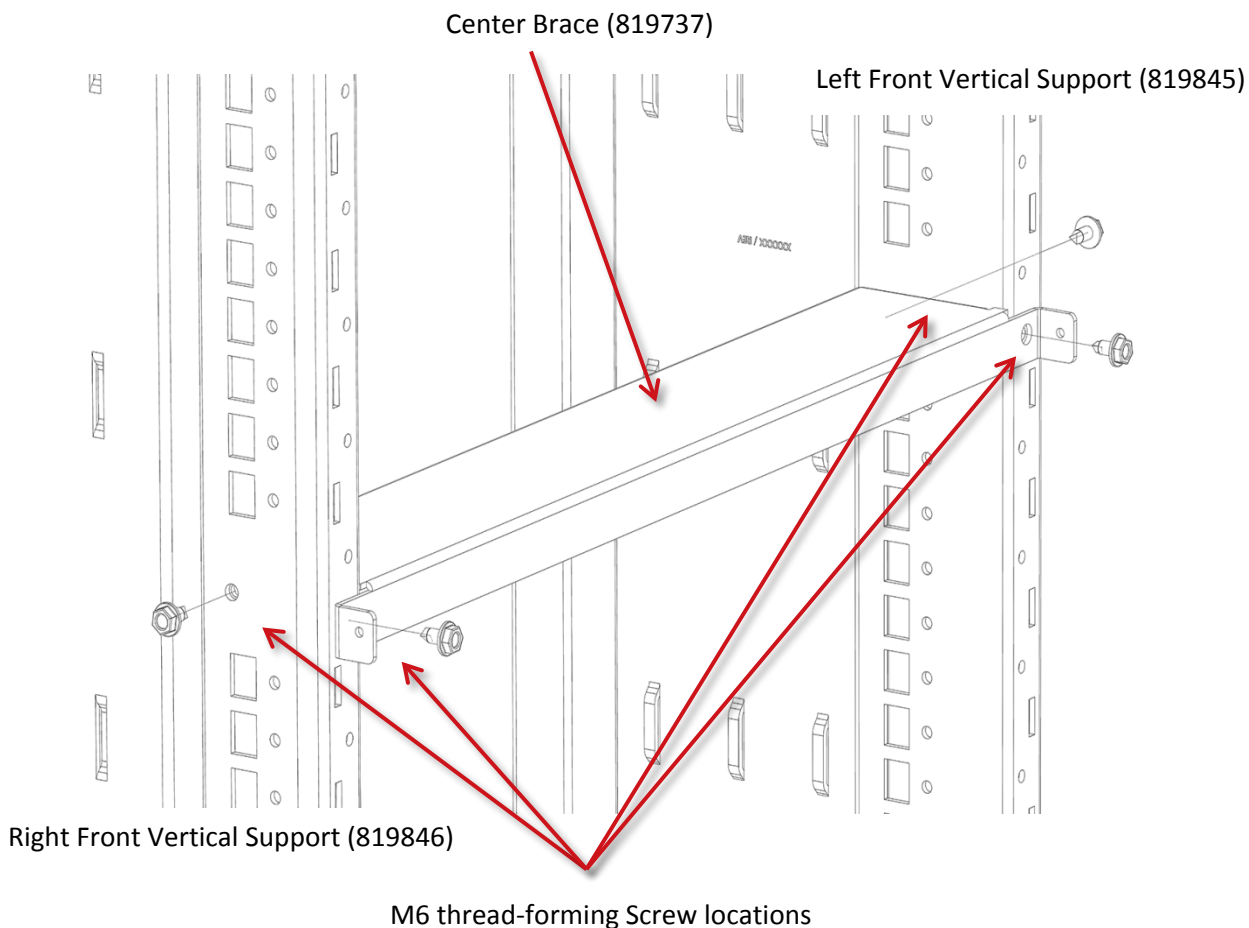


10. Locate a Center Brace (819737).

Note: the front center brace and rear center brace are identical.

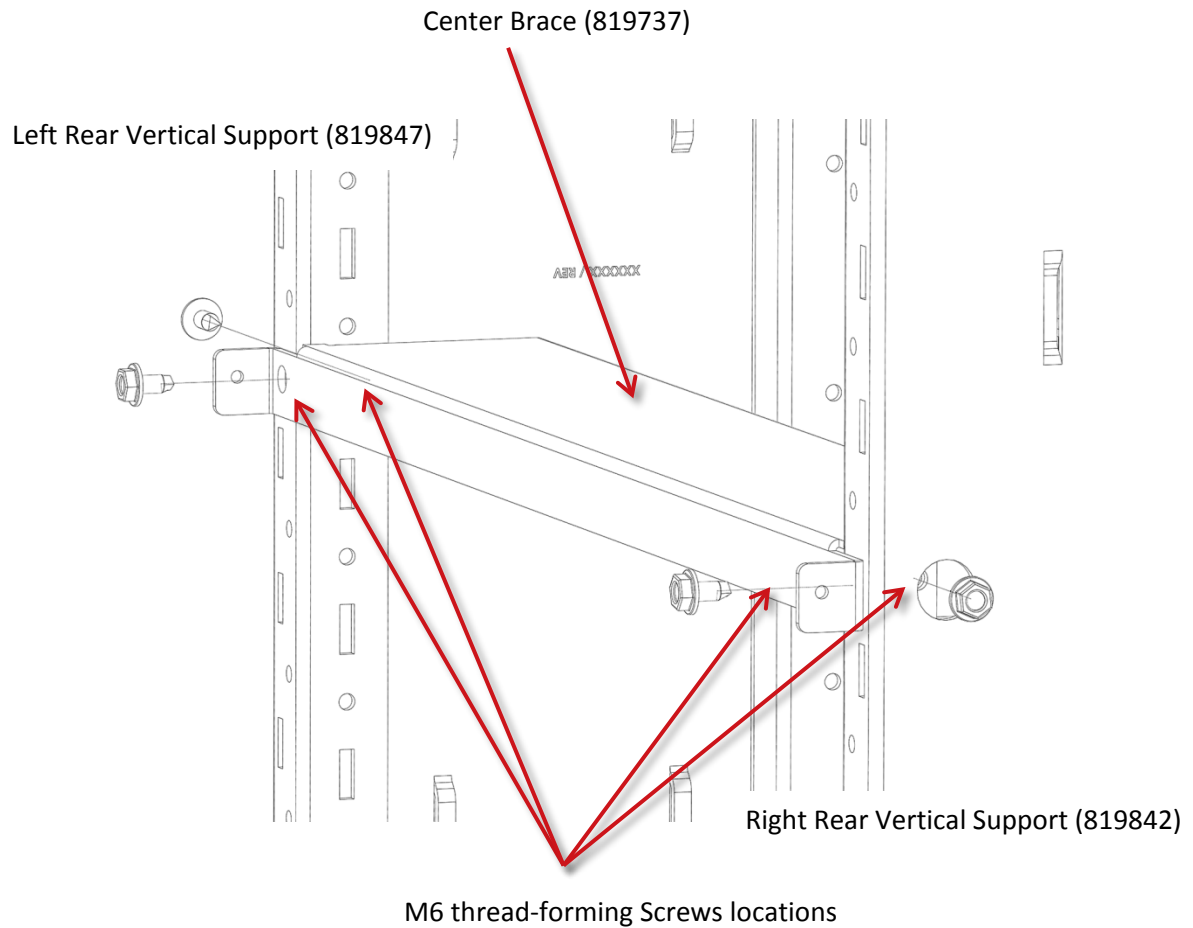
11. Install the Center Brace into place as shown below and loosely install (4) M6 thread-forming screws.

Note: You may need to use a drill or ratchet driver to start a thread-forming screw.



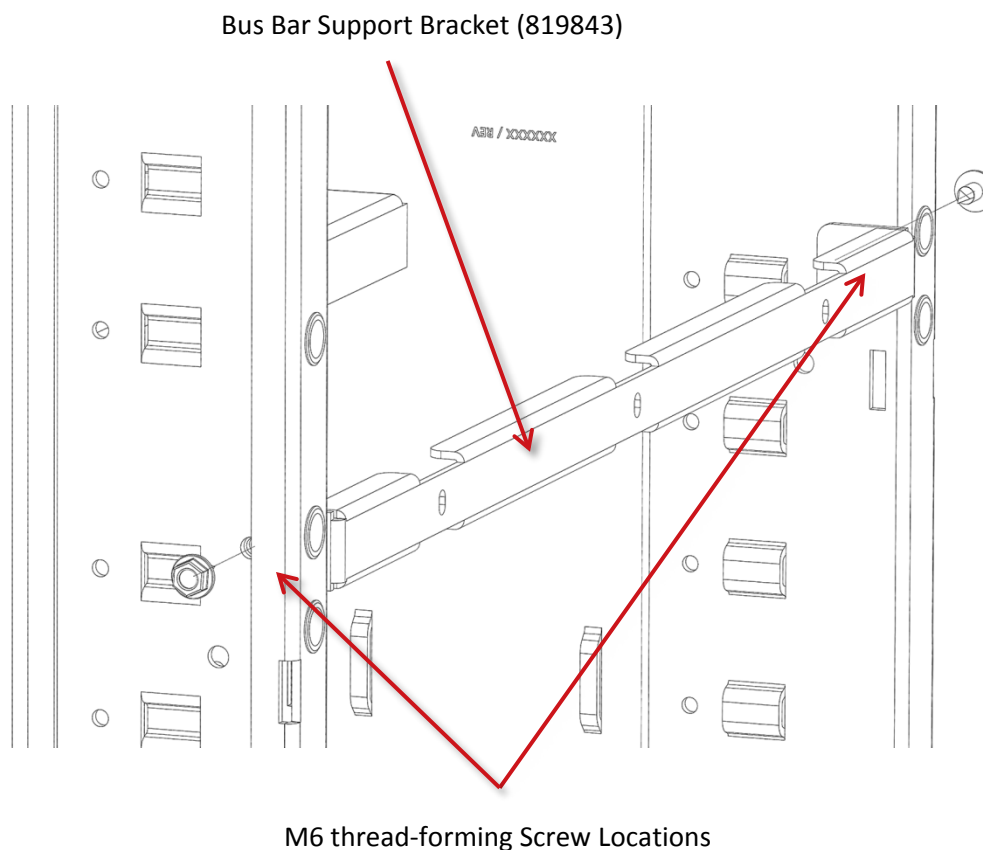
12. Locate a Center Brace (819737).
13. Install the Center Brace into place as shown below and loosely install (4) M6 screws.

Note: You may need to use a drill or ratchet driver to start a thread-forming screw.



14. Locate the Bus Bar Support Bracket (819843).
15. Place the Bus Bar Support Bracket into the rear center of the rack and loosely install (2) M6 screws on each end as shown below.

Note: If bus bars are going to be installed next, do not install this Bus Bar Support Bracket until after the bus bars are installed.



Note: To ensure proper rack tolerances, follow the torque sequence of the steps below.

16. For the (16) M8 SEMS screws that are interior to the rack, torque screws to 15 N-m (11.1 ft-lb).
17. Install and finger tighten the remainder of the (12) M8 washers and (12) M8 Keps nuts to the rack, (**Note:** for each vertical support use (3) M8 washers and (3) M8 Keps nuts).
18. For the (36) M8 Keps nuts that are interior to the rack, torque nuts to 15 N-m (11.1 ft-lb).
19. For the (4) M8 SEMS screws that are exterior to the rack (upper and front), torque to 15 N-m (11.1 ft-lb).
20. For the (8) M6 thread-forming screws on each corner of the rack, torque screws to 6.1 N-m (4.5 ft-lb).
21. For the (4) M6 thread-forming screws on each Center Brace, torque screws to 6.1 N-m (4.5 ft-lb).
22. If the Bus Bar Support Bracket is being installed, torque the (2) M6 Bus Bar Support Bracket screws to 6.1 N-m (4.5 ft-lb).
23. Using compressed air, blow out any loose shavings or particles from the inside of the rack.

Labeling Installation

Labels are installed on the rack: Lite-On logo, ID label, and OU Slot labels. The table below describes these labels.

Description	Part Number	Quantity
Lite-On Logo Label	825387	1
ID Label	605220	1
OU Slot Label	825444	2

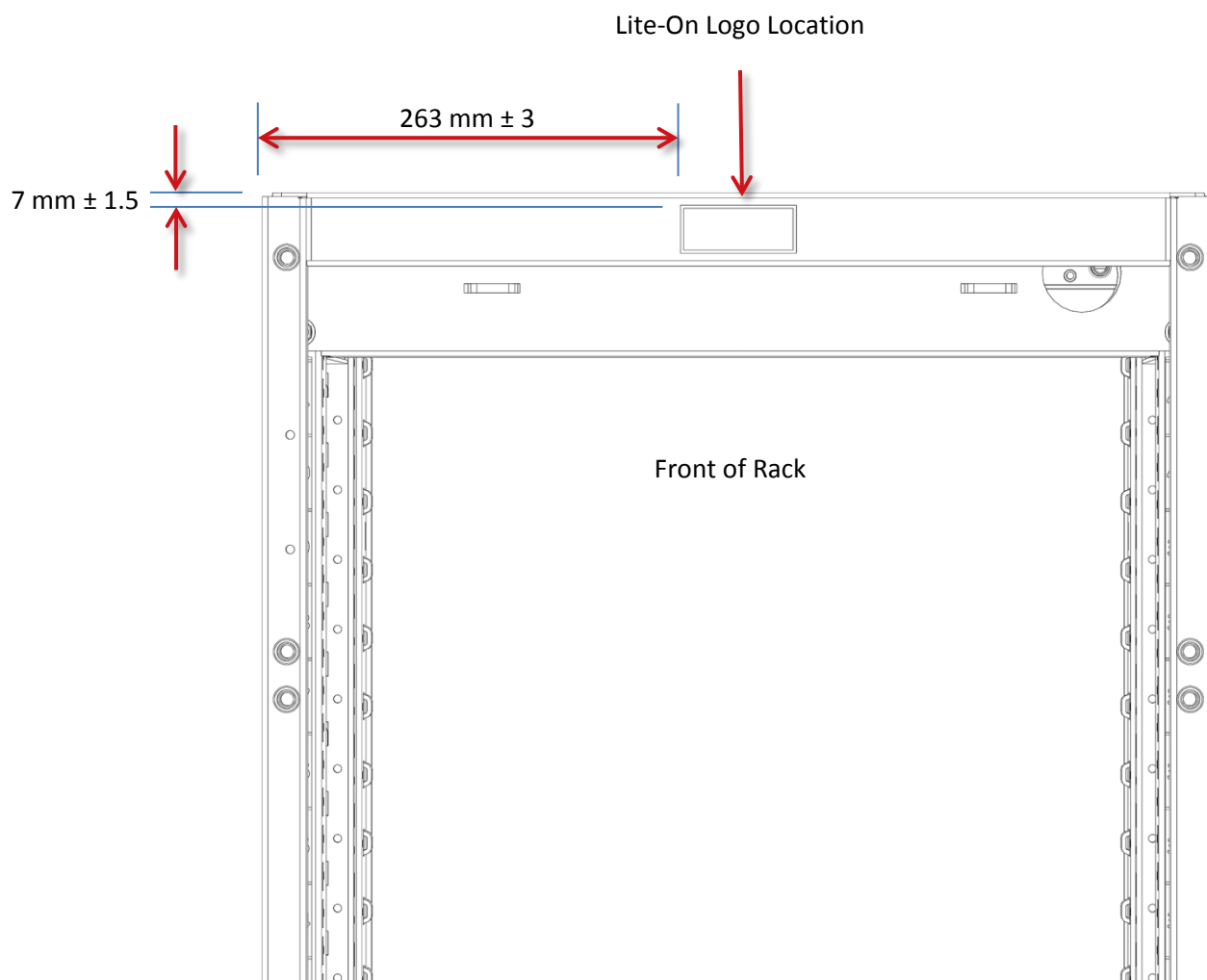
Lite-On Logo Label Installation

The Lite-On logo label is adhered to the top center of the rack.

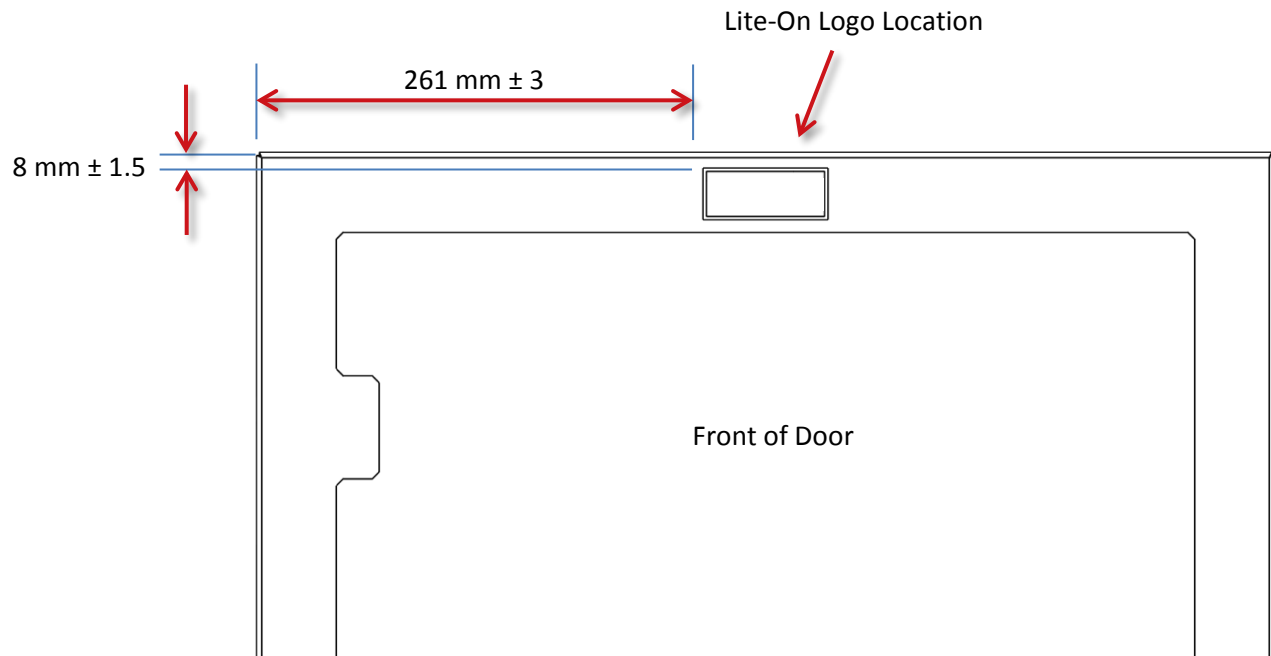
Follow the instructions below to install a Lite-On Logo label to a KT-2141-121U OCP rack.

Note: If a front door is attached to the rack, the Lite-On Logo label is installed to the front of the door and not the rack.

1. Clean the logo area on the rack with isopropyl alcohol and allow to dry.
2. Locate the Lite-On Logo label and remove the release liner from the back of the label.
3. If a door is installed on the rack, skip this step and go to the next step. Otherwise, press the Lite-On Logo label in the center of the rack as shown in the dimensions below.



4. If a door is installed on the rack, clean the logo area on the door with isopropyl alcohol and allow to dry.
5. Press the Lite-On Logo label in the top-center of the door as shown below.

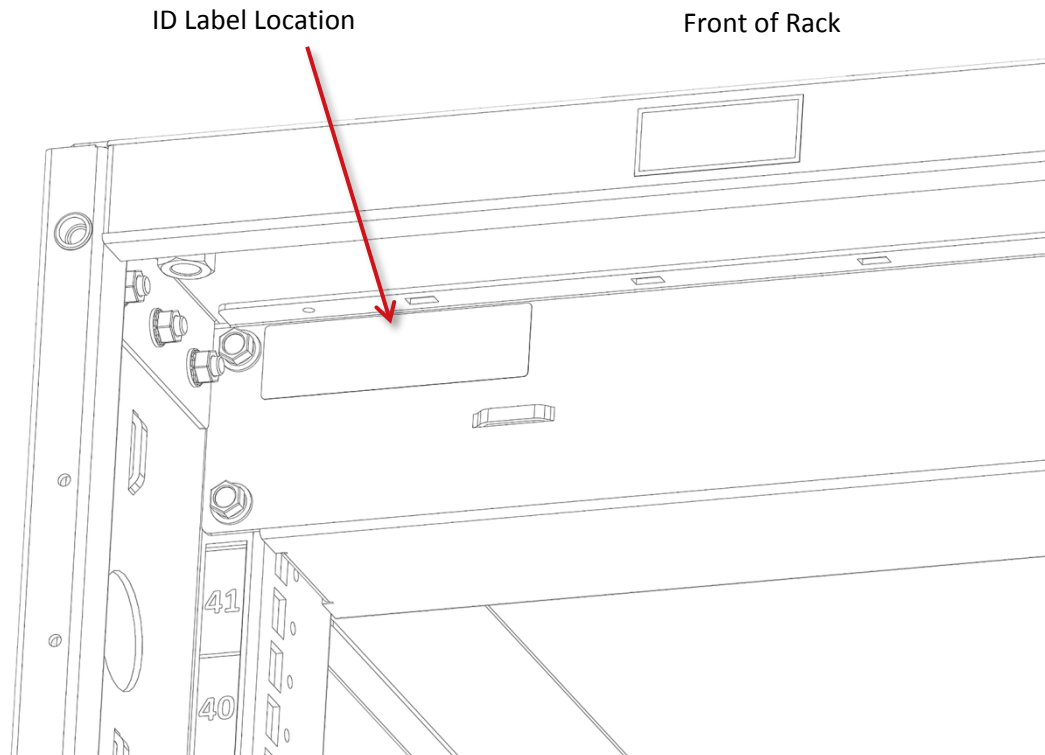


ID Label Installation

The ID label is installed to the top of the rack.

Follow the instructions below to install an ID label to a KT-2141-121U OCP rack.

1. Clean the label area on the rack with isopropyl alcohol.
2. Locate the ID label and remove the release liner from the back of the label.
3. Press the Lite-On ID label in the location as shown below.



OU Slot Label Installation

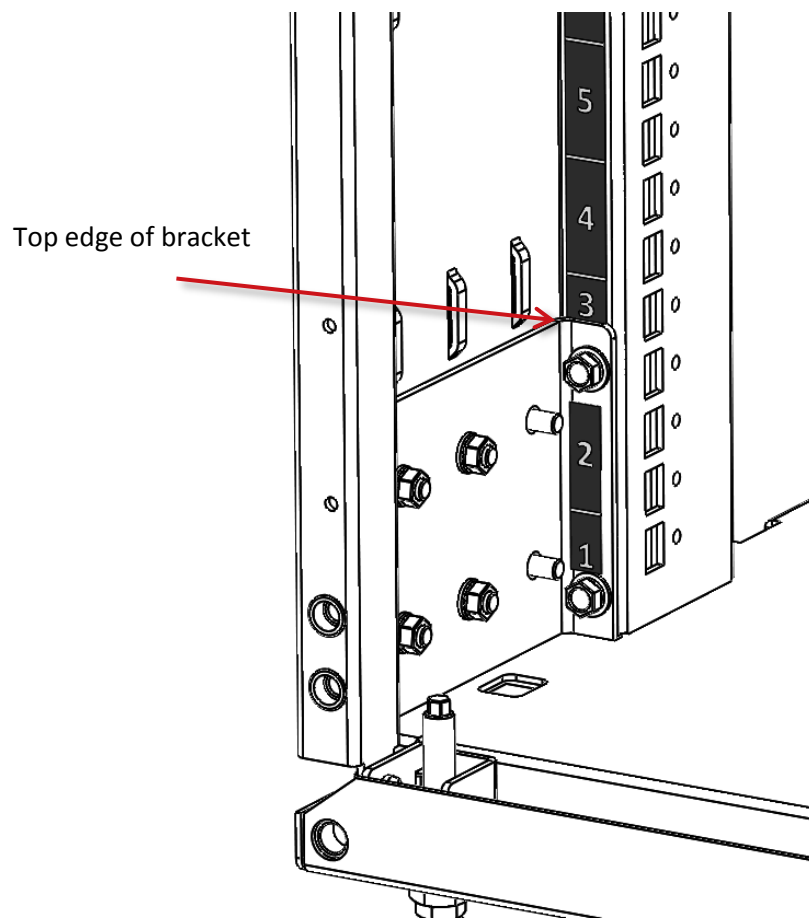
Two OU Slot labels are used to identify the vertical equipment locations in the rack.

Note: Each label is divided into 5 strips and has to be installed individually.

Follow the instructions below install the OU Slot to a KT-2141-121U OCP rack.

1. Clean the OU Slot area on the rack with isopropyl alcohol and allow to dry.
2. Locate an OU Slot labels and remove the release liner from the back of the label with 1 and 2 nomenclature.
3. For the left side, align the label vertically between the mounting hardware and press the label to the rack as shown below.
4. Locate the OU Slot label with 3—13 nomenclature and remove the release liner from the back of the label.
5. Align the label bottom edge to the base bracket top edge as shown below and center label horizontally on the rack surface. Press the label to the rack.
6. Continue aligning the labels with 14—22, 23—32, and 33—41 nomenclature vertically and sequentially with the previous edges.
7. Locate the other OU Slot label and remove the release liner from the back of one of the label.

8. For the right side, press the OU Slot label in the rack in like manner as the left side.



Completed OU Slot Labels (left side shown)

9. Firmly press all labels in place to ensure label adherence.
10. This completes the assembly of the rack.

Bus Bar Installation

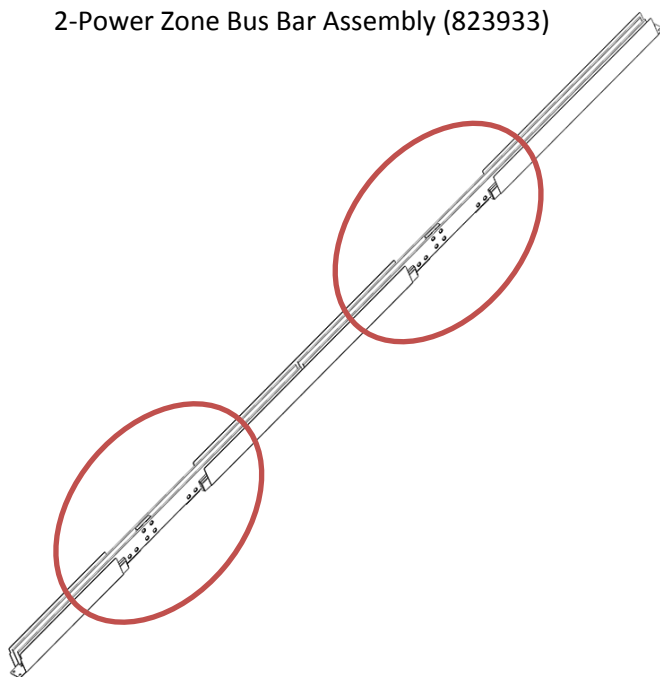
The table below shows the parts needed to add Bus Bars to a KT-2141-121U OCP rack. Ensure that you have all the required parts for your specific bus bar before adding bus bars.

A typical Lite-On 21-inch rack standard configuration is 1 bus bar (installed in the middle) or 3 bus bars.

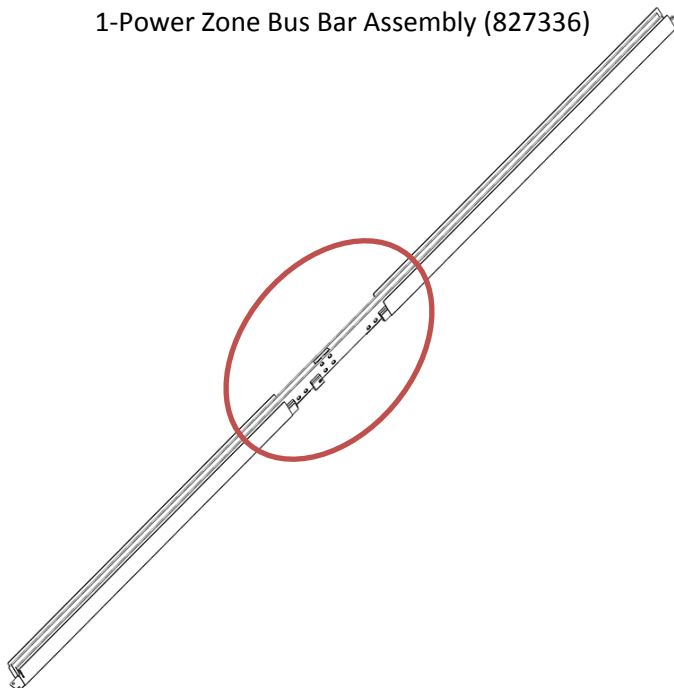
Description	Part Number	Required Quantity
2-Power Zone Bus Bar Assembly	823933	Configuration dependent
1-Power Zone Bus Bar Assembly	827336	Configuration dependent
M5 x 14mm length SEMS Screw	824317	5 per bus bar
M8 x 15mm length Screw	824866	8 for 1 power zone; 16 for 2 power zones

Note: The M8 x 15 SEMS screws provided with the bus bar kit are needed to install the power shelf bus bars and should be kept with the rack assembly.

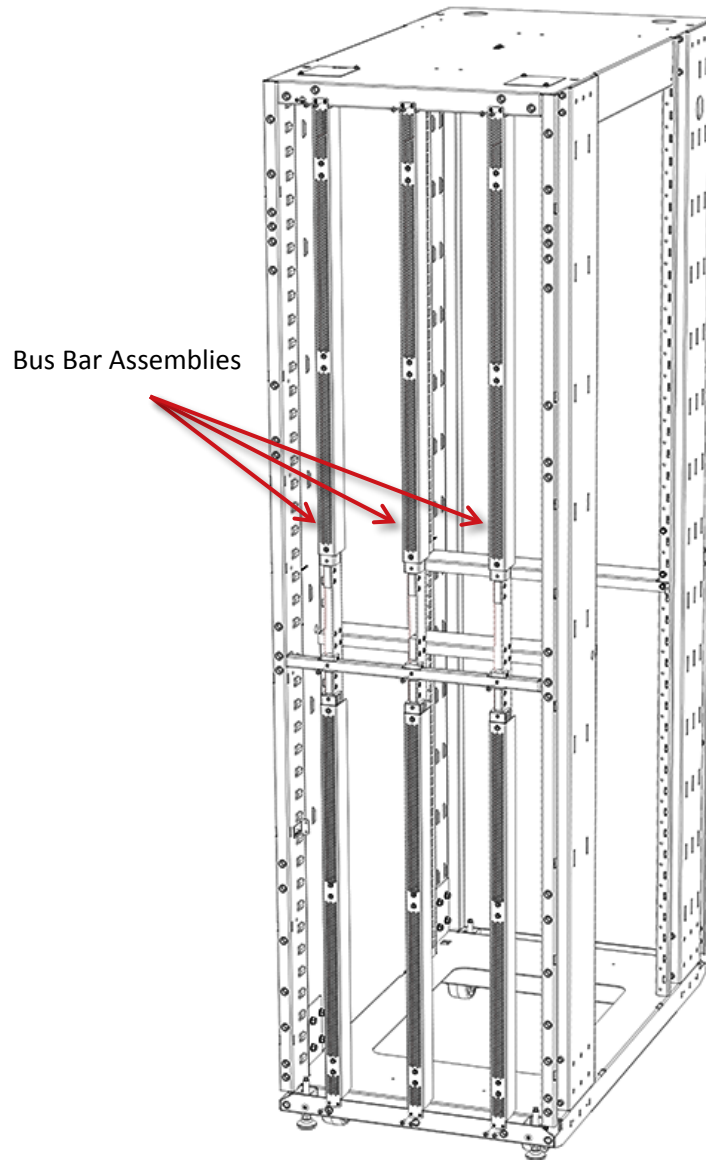
2-Power Zone Bus Bar Assembly (823933)



1-Power Zone Bus Bar Assembly (827336)



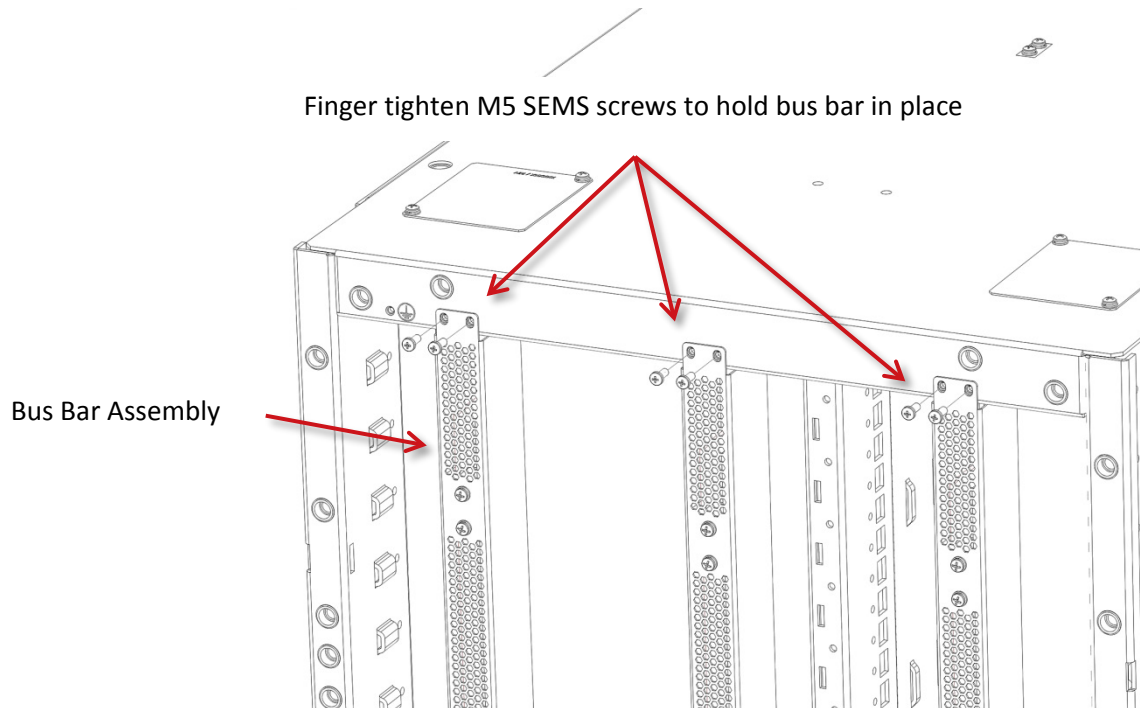
The image below shows a typical single-zone 3 bus bar assemblies installed in a Lite-On KT-2141-121U OCP rack.



Follow the instructions below to add bus bars to a KT-2141-121U OCP rack.

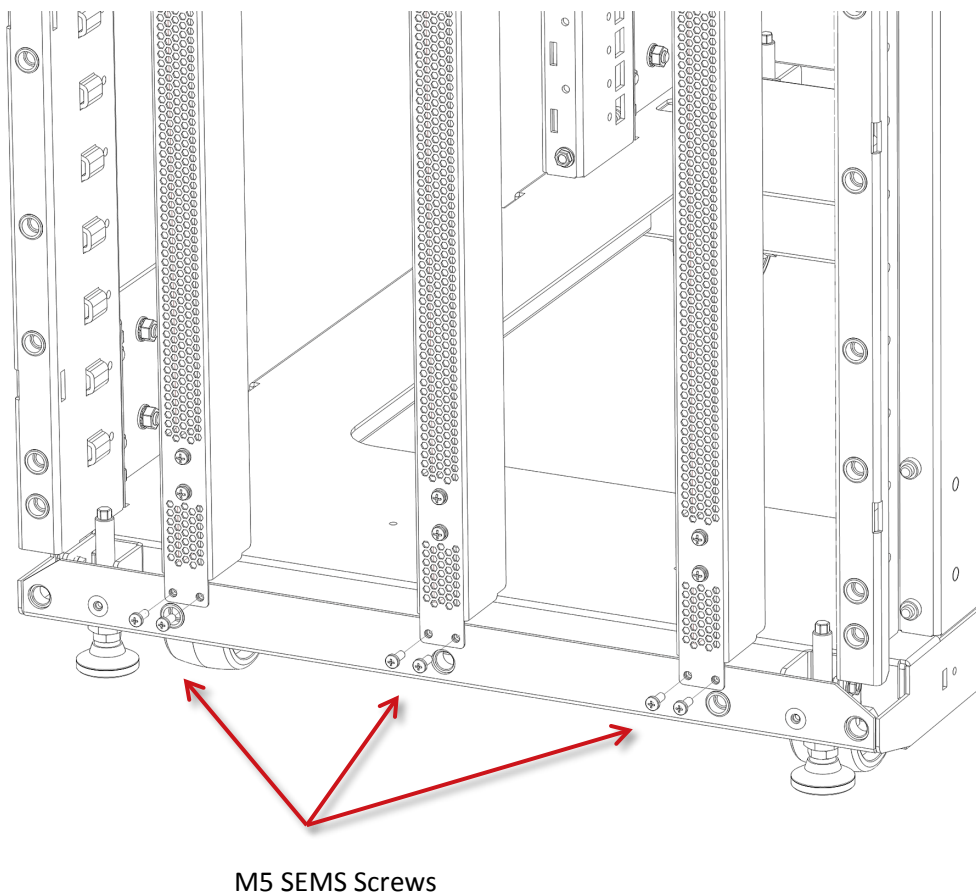
1. Locate an appropriate Bus Bar Assembly as indicated by the table above and M5 SEMS screws.

2. Insert a Bus Bar Assembly into the rack in the appropriate location in accordance with the IT equipment bus bar connector layout, align the top flanges of the bus bar to the top of the rack, and finger tighten the bus bar assembly into place with (2) M5 SEMS screws as shown below.



3. In like manner as above, install the other bus bars into the rack if they exist and finger tighten them with (2) M5 SEMS screws to hold the bus bars into place.
4. Finger tighten M5 SEMS screws into the bottom of the bus bar as shown below.

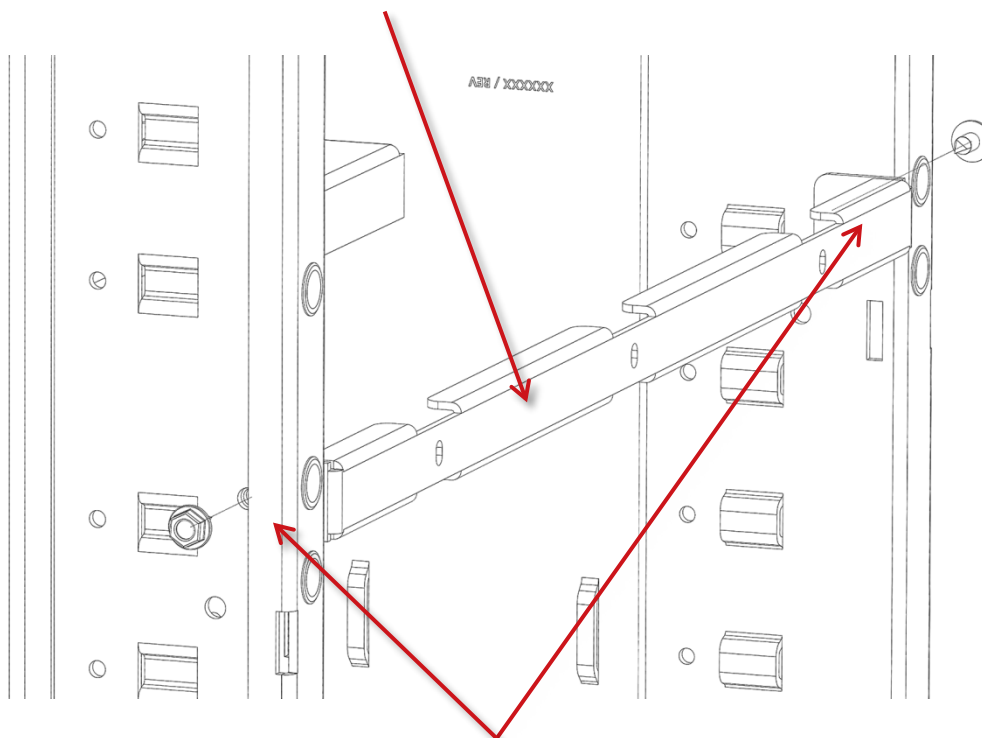
Note: you may need to lift up the bus bars to align the screw holes.



5. If not already installed, install the Bus Bar Support Bracket and hold in place with (2) M6 screws on each end.



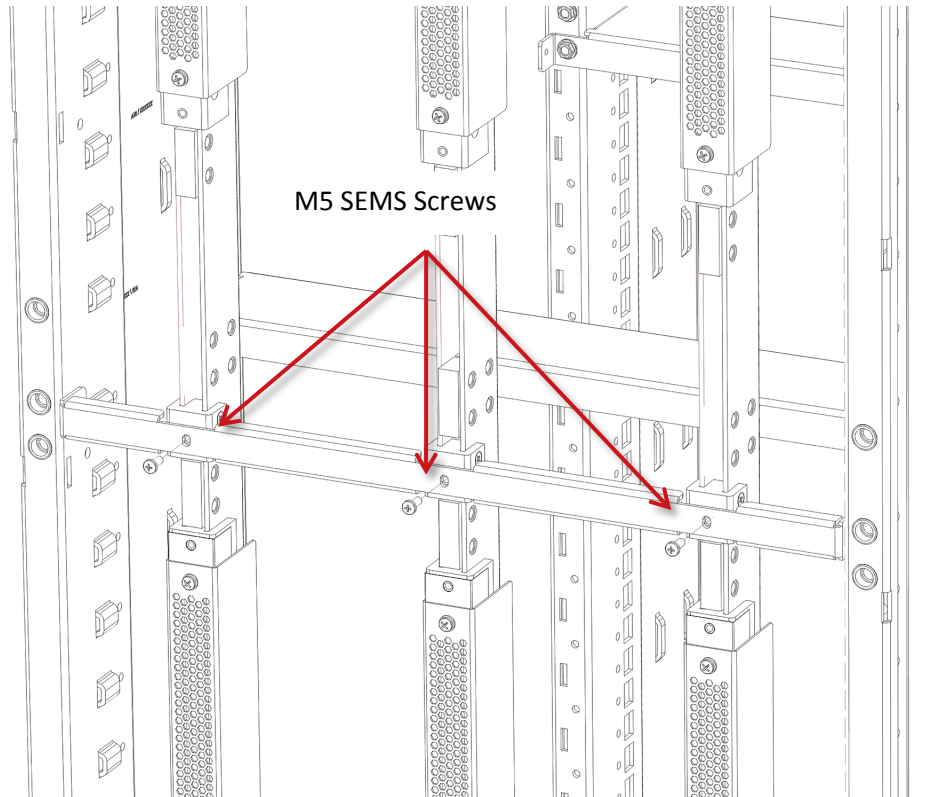
Bus Bar Support Bracket



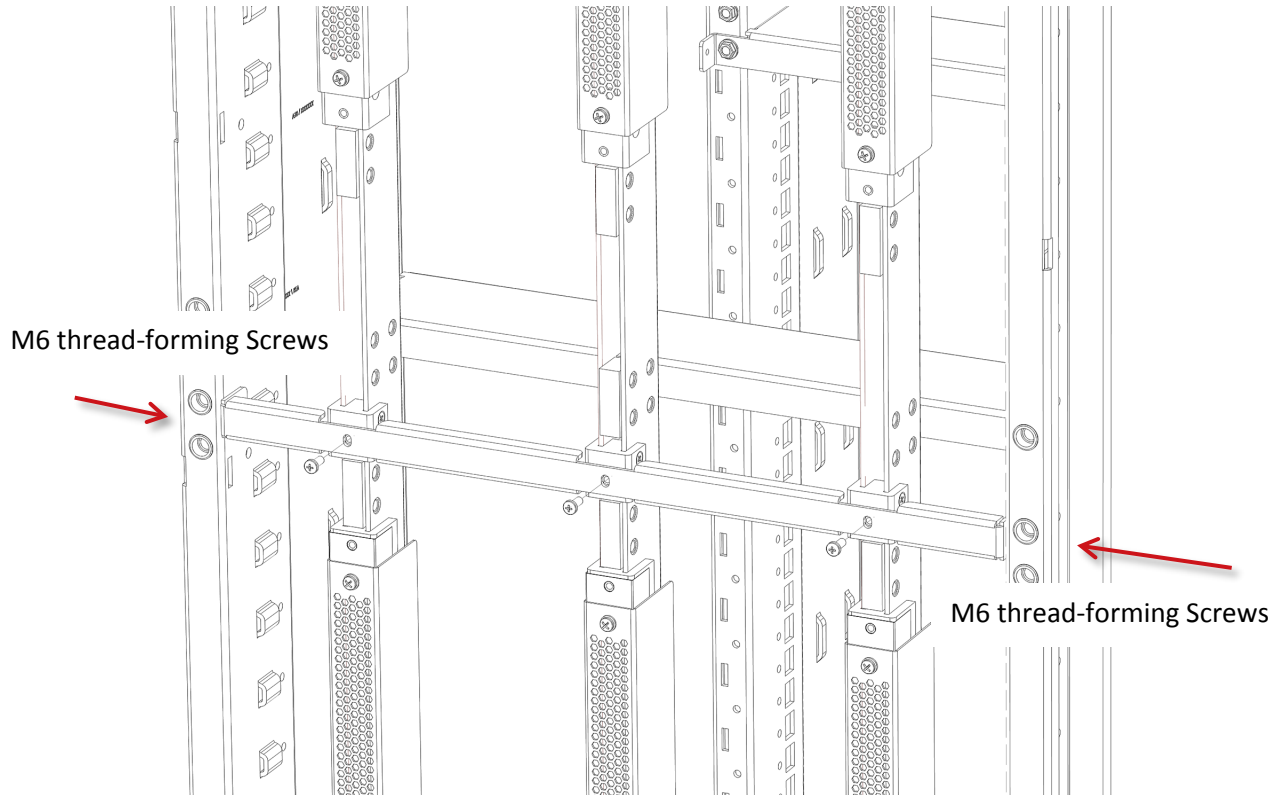
M6 thread-forming Screw Locations

6. Finger tighten M5 SEMS screws into the center of the bus bar as shown below.

Note: You may need to lift up the bus bars to align the screw holes.



7. Torque all bus bar M5 SEMS screws to 3.6 N-m (2.66 ft-lbs).

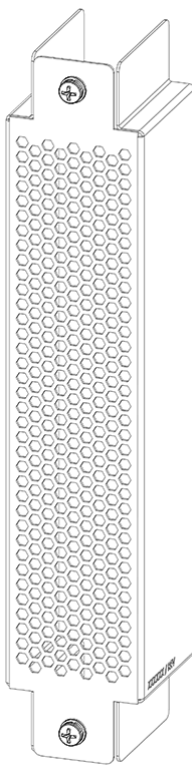


8. Torque M6 thread-forming screws on the sides of the rack to 6.1 N-m (4.5 ft-lbs)

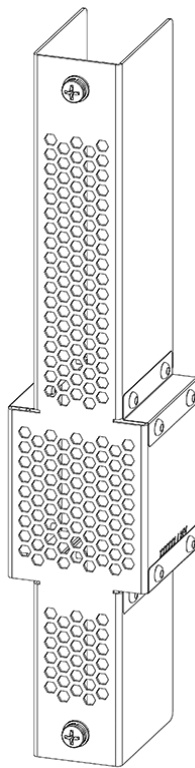
Bus Bar Access Cover Installation

The table below shows the parts needed to add Bus Bars Access Covers. Ensure that you have all the required parts for your specific bus bar before adding bus bars access covers.

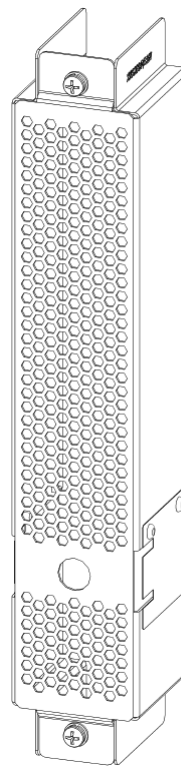
Description	Part Number
2-Power Zone Bus Bar Access Cover with BBS	823380
2-Power Zone Bus Bar Access Cover	823381
1-Power Zone Bus Bar Access Cover with BBS	823382
1-Power Zone Bus Bar Access Cover	823383



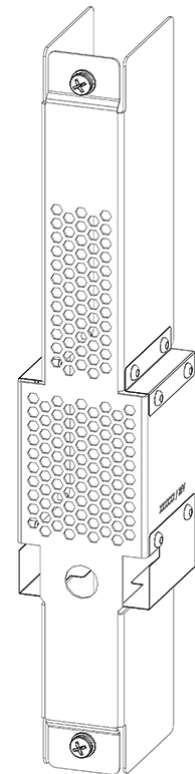
823380



823381



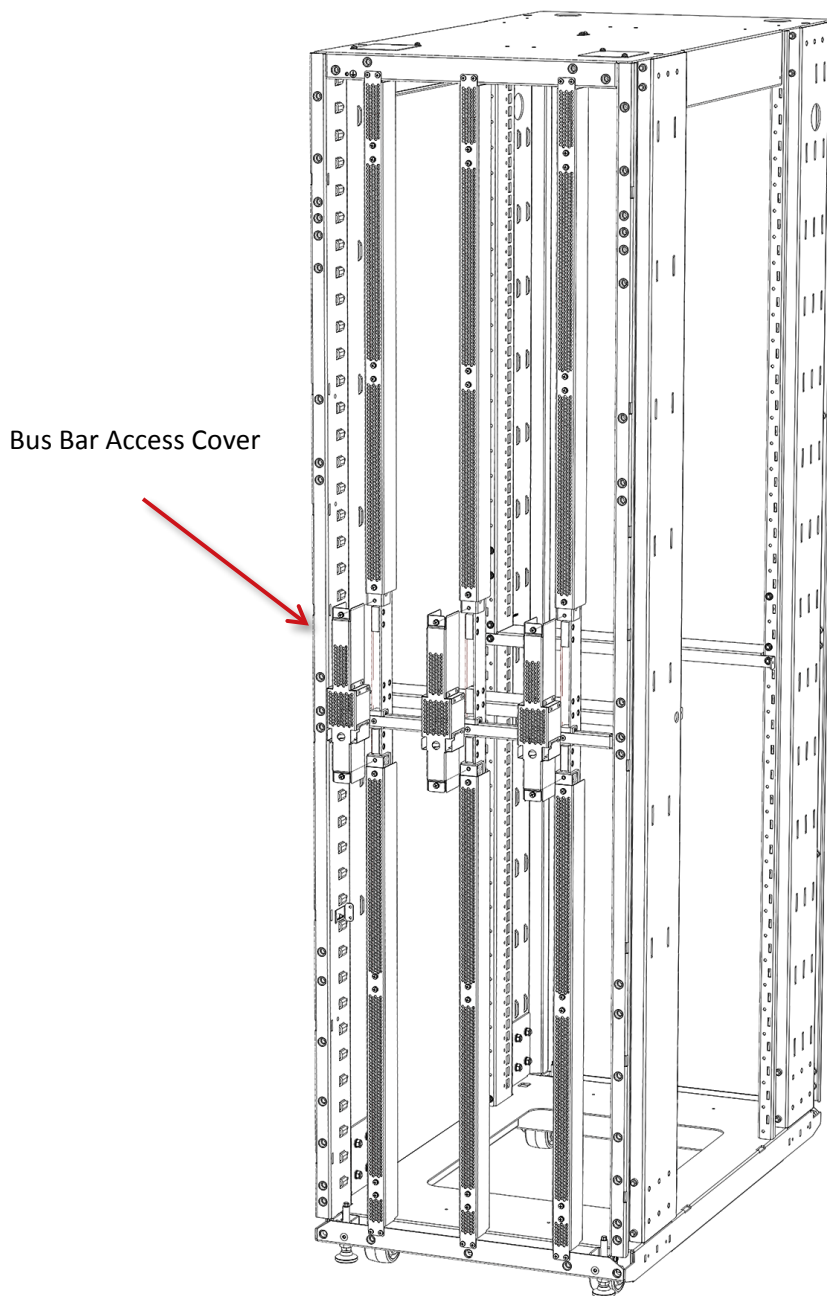
823382



823383

Follow the instructions below to add bus bar access covers.

The image below shows a 1-Power Zone Bus Bar Assembly and 1-Power Zone Bus Bar Access Covers without BBS installed in a KT-2141-121U OCP rack.



1. Locate an appropriate Bus Bar Access Covers as indicated by the table above.
2. Place a Bus Bar Access Cover over a bus bar as shown above and finger tighten cover into place.
3. In like manner, install the remaining Bus Bar Access Covers to the bus bars, if installed.
4. Torque the Bus Bar Access Covers to 3.6 N-m (2.66 ft-lbs).

Optional Equipment Installation

This section provides instructions how to install optional accessories for the 21-inch Open Compute Rack.

1OU IT Equipment Support Bracket Installation (Optional)

Optionally, 1OU IT Equipment Support Brackets can be added to a KT-2141-121U OCP rack.



The weight of IT equipment is supported in the rack by two Shelf Support Brackets. Each bracket is held in place by one M6 x 12mm thread-forming screw.

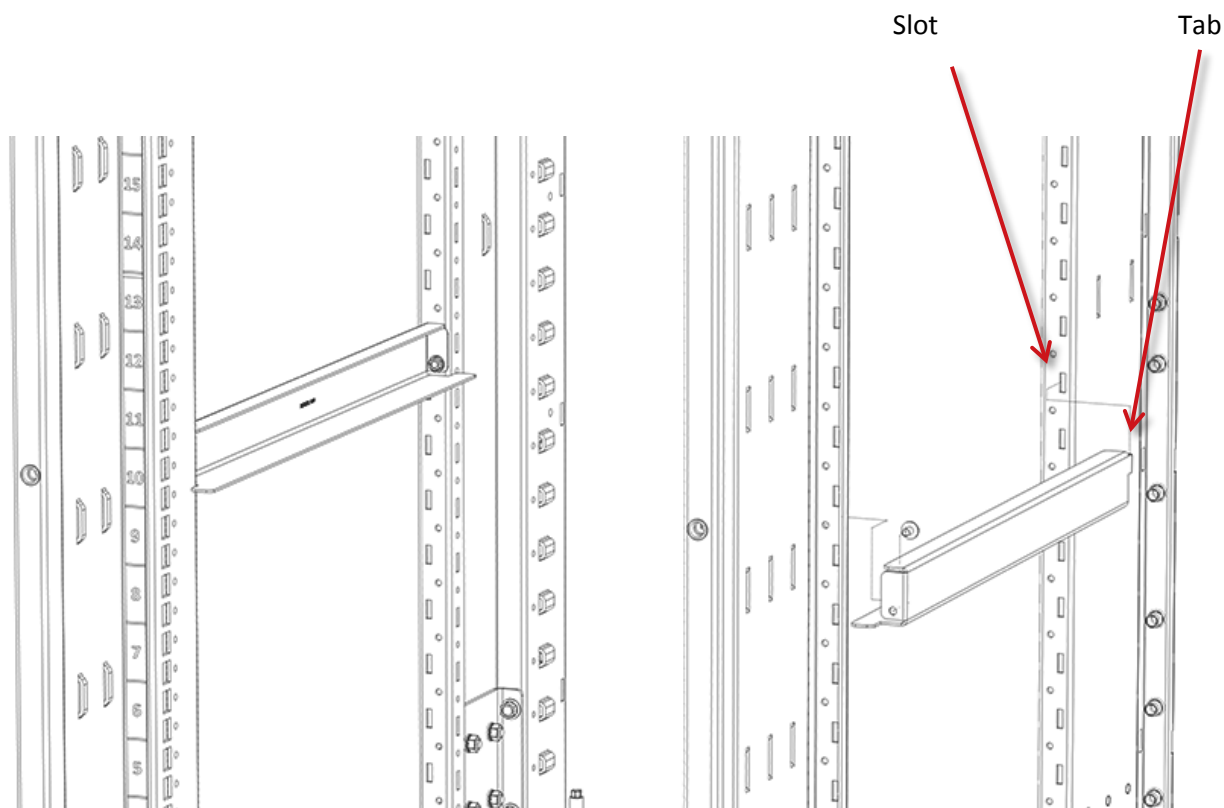
Description	Part Number	Quantity
1 OU IT Equipment Support Bracket	820261	2 for each shelf
M6 x 12mm length thread-forming Screw	821480	2* per pair

* These screws are included as part of the rack kit.

To install a 10U IT Equipment Support Bracket to the rack:

1. Place a Shelf Support Bracket in the correct position by inserting tab into in a rack slot as shown below and attach it to the shelf with one M6 thread-forming screw.





2. In like manner, place the other Shelf Support Bracket in the correct position in the rack on the opposite side and attach it to the shelf with one M6 screw.
3. Torque all Shelf Support Bracket screws to 6.1 N-m (4.5 ft-lbs).

Power Shelf Support Bracket Installation (Optional)

Optionally, Power Shelf Support Brackets can be added to a KT-2141-121U OCP rack.

The weight of a power shelf is supported in the rack by two Shelf Support Brackets. Each bracket is held in place by four M6 x 12mm thread-forming screws. **Note:** Either part number 820179 or 820180 is typically installed into a rack depending on the power shelf type used.

Description	Part Number	Quantity
Power Shelf Support Bracket (130mm height shelf)	820179	2 for each shelf
Power Shelf Support Bracket (139mm height shelf)	820180	2 for each shelf
M6 x 12mm length thread-forming Screw	821480	8* for each pair

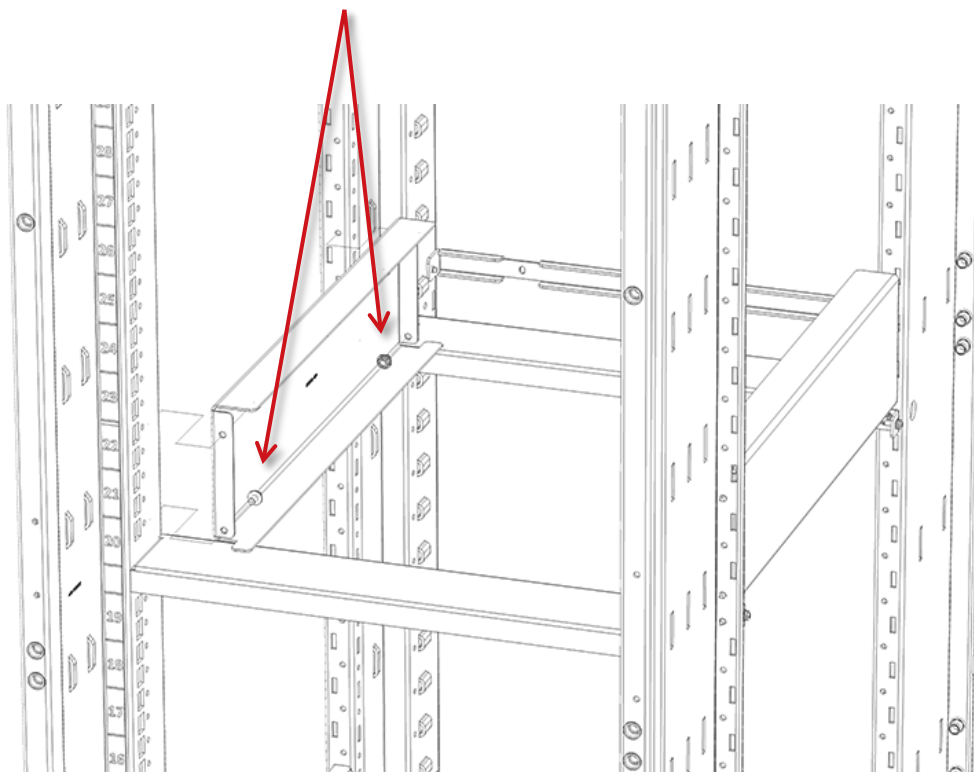
* These screws are included as part of the rack kit.



To install a Power Shelf Support Bracket to the rack:

1. Place a Shelf Support Bracket in the correct position in the rack as shown below and attach it to the shelf with four M6 thread-forming screws.

M6 thread-forming Screws



2. In like manner, place the other Shelf Support Bracket in the correct position in the rack on the opposite side and attach it to the shelf with four M6 thread-forming screws.
3. Torque all Shelf Support Bracket screws to 6.1 N-m (4.5 ft-lbs).

Switch Tray Installation (Optional)

Optionally, a 10U and/or a 20U Switch Tray can be added to a KT-2141-121U OCP rack.

The weight of equipment in the rack is supported in the rack by a Switch Tray.

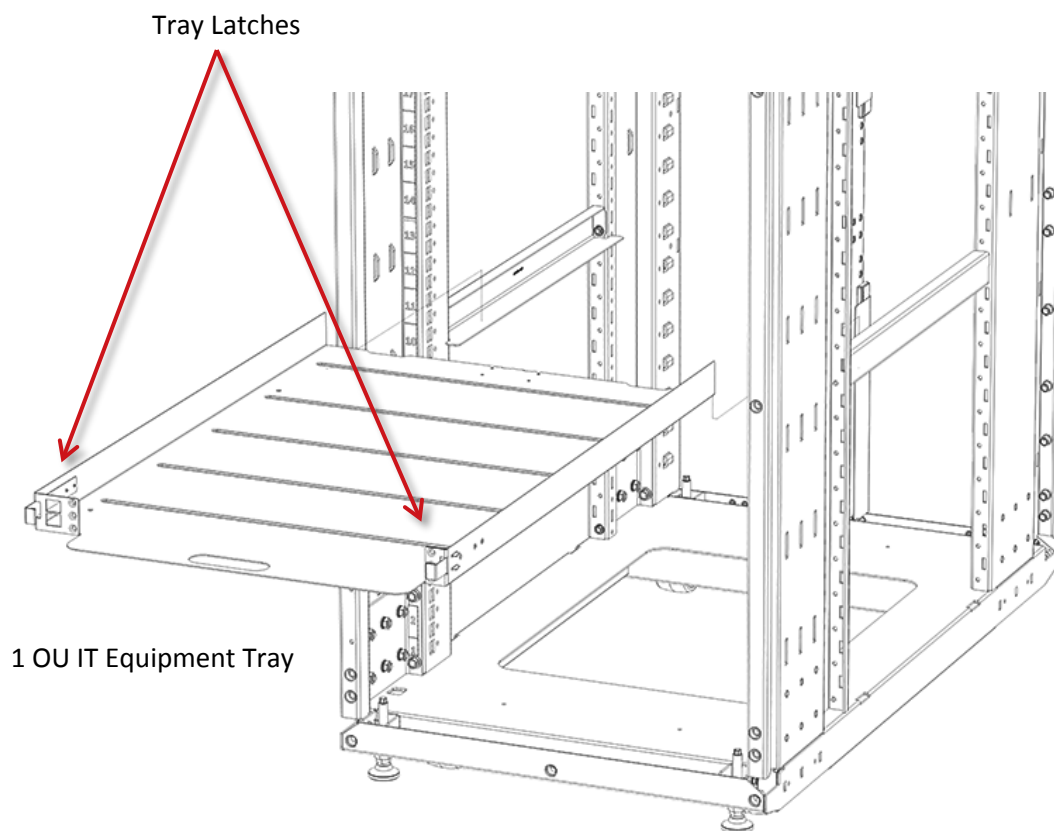
Description	Part Number	Quantity
2 OU Switch Tray	822074	1
1 OU Switch Tray	824880	1

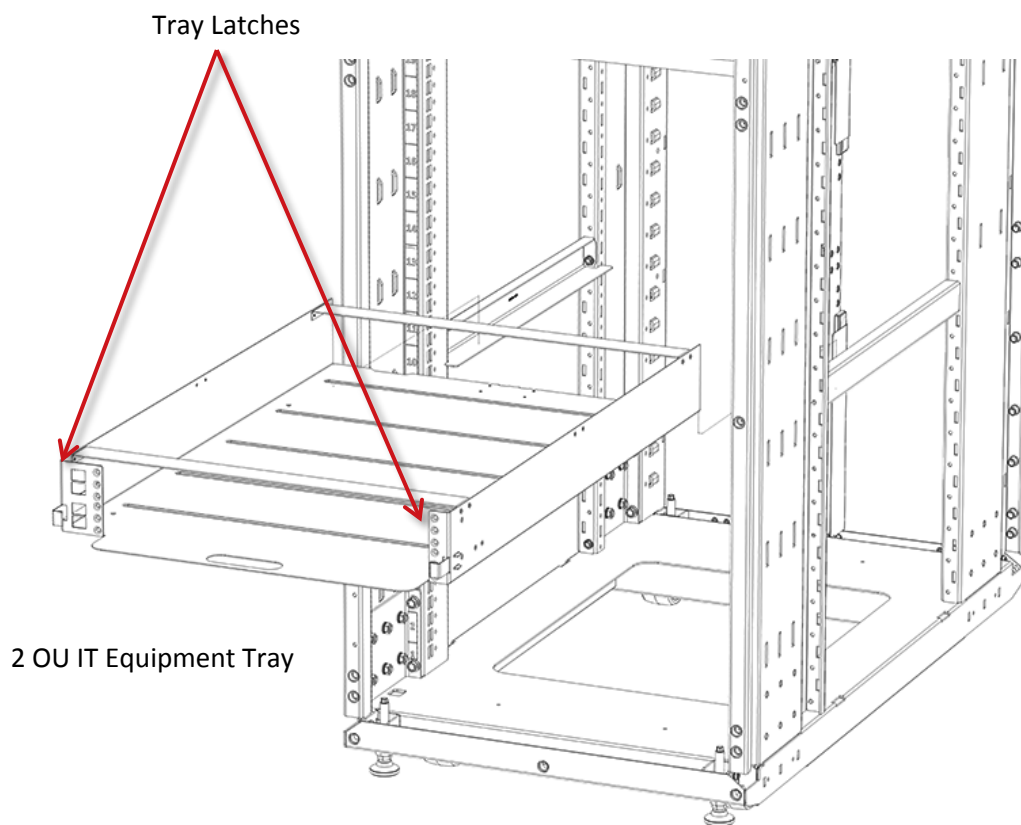


To install a 10U or 20U Switch Tray to the rack:

1. Install IT Equipment Support Brackets as described in section “10U IT Equipment Support Bracket Installation (Optional)” on page 47.
2. Align the Switch Tray in the correct orientation in the rack as shown below and slide in on the support brackets until the latches on both sides of the tray snap into the rectangular cutouts on the rack.







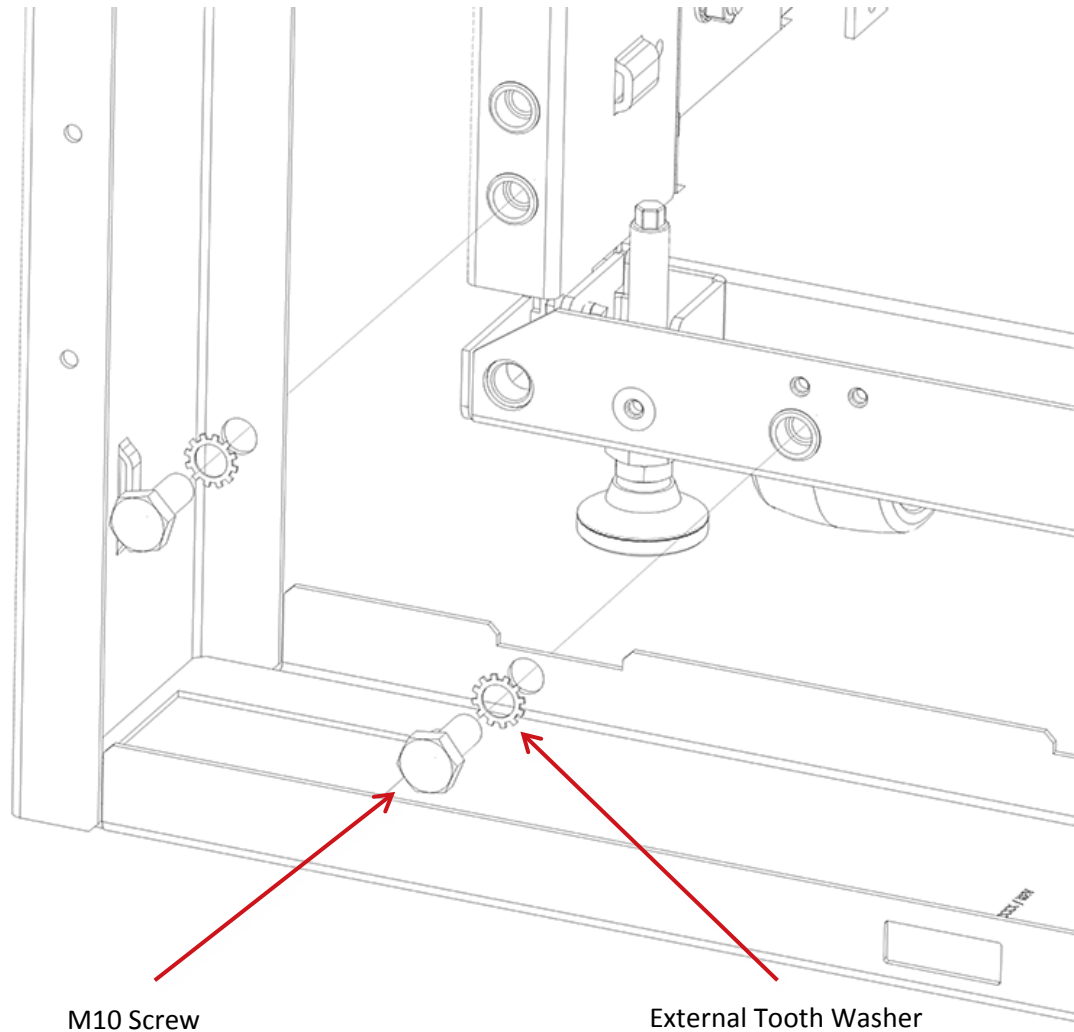
Rack Extender Kit (Optional)

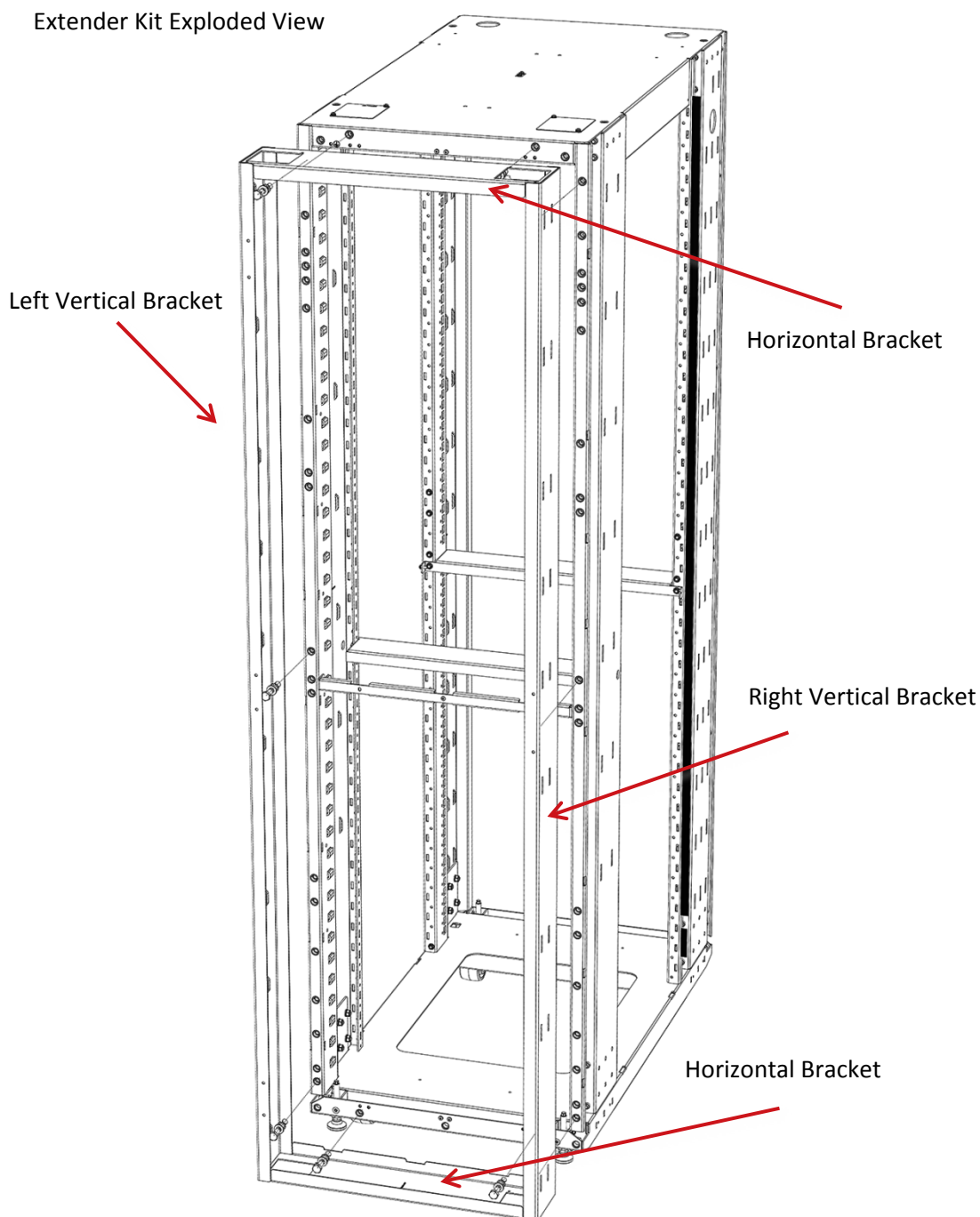
The optional OCP Rack Extender Kit provides a way to extend the depth of the rack to accommodate longer equipment.

The table below shows the parts needed to add a Rack Extender Kit to a KT-2141-121U OCP rack. Ensure that you have all the required parts for your specific bus bar before adding the extender kit.

Description	Part Number	Required Quantity
Bracket, Extender, Left Vertical	826029	1
Bracket, Extender, Right Vertical	826030	1
Bracket, Extender, Horizontal	826031	2
Screw, Hex Head, M10 x 25mm length	820889	10
Washer, External tooth, M10	826896	10

The Extender Brackets are held in place by an M10 Screw and External Tooth Washer as shown in the detail below.





Follow the instructions below to add Rack Extender Kit to a KT-2141-121U OCP rack.

1. Using the above drawings as a reference, loosely install the Horizontal Bracket and Horizontal Brackets at top and bottom with (2) each M10 Screw, and External Tooth Washers.
2. Using the above drawings as a reference, loosely install the Left Vertical Bracket and Right Vertical Brackets with (3) each M10 Screws, and External Tooth Washers.
3. Torque all (10) M10 screws to 29.1 N-m (21.46 ft-lbs).

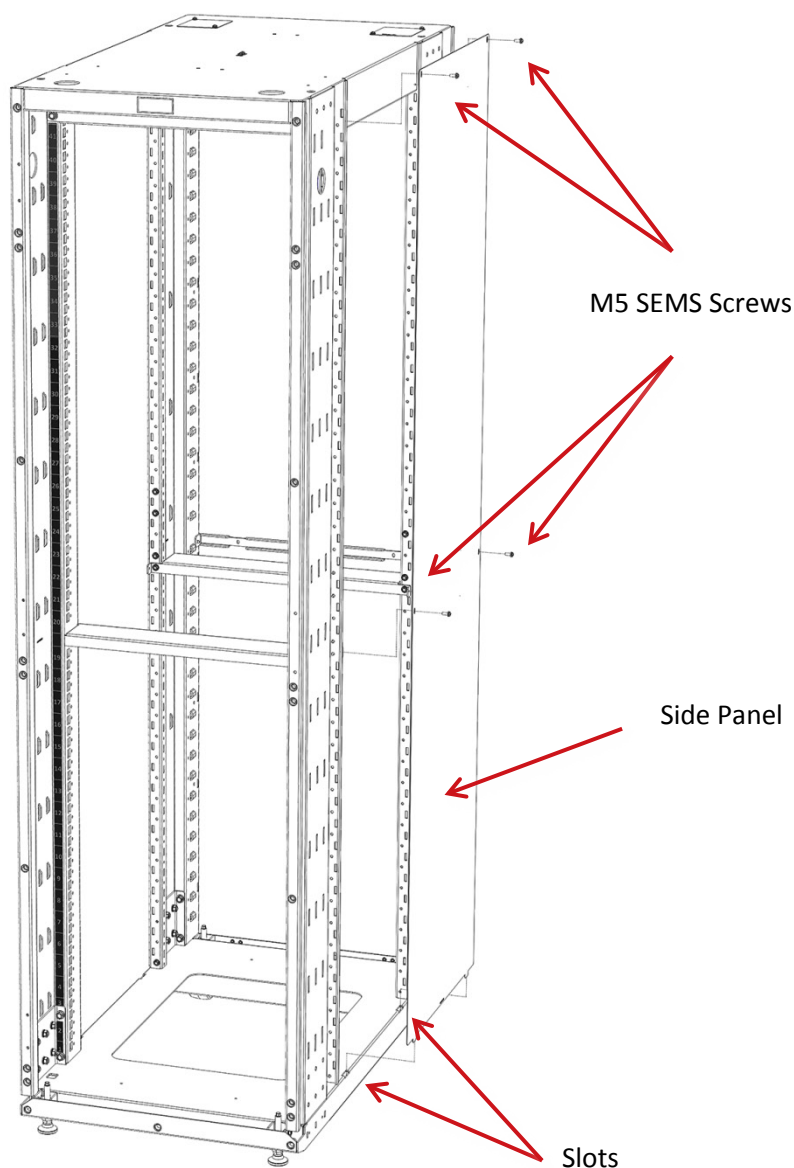
Side Panel Installation (Optional)

Optionally, side panels can be added to a KT-2141-121U OCP rack. Side panels are held in place by M5 SEMS screws.

Description	Part Number	Required Quantity
Side Panel	824872	1
SEMS M5 x 14mm length Screw	824317	4

To install a side panel to the rack:

1. Locate a Side Panel.
2. As shown below, insert a side panel into slots located at the bottom of the rack.





Slots

3. Finger tighten (4) M5 SEMS screws.



4. Torque all (4) M5 SEMS screws to 3.6 N-m (2.66 ft-lbs).

Door Installation (Optional)

Optionally, doors can be added to a KT-2141-121U OCP rack.

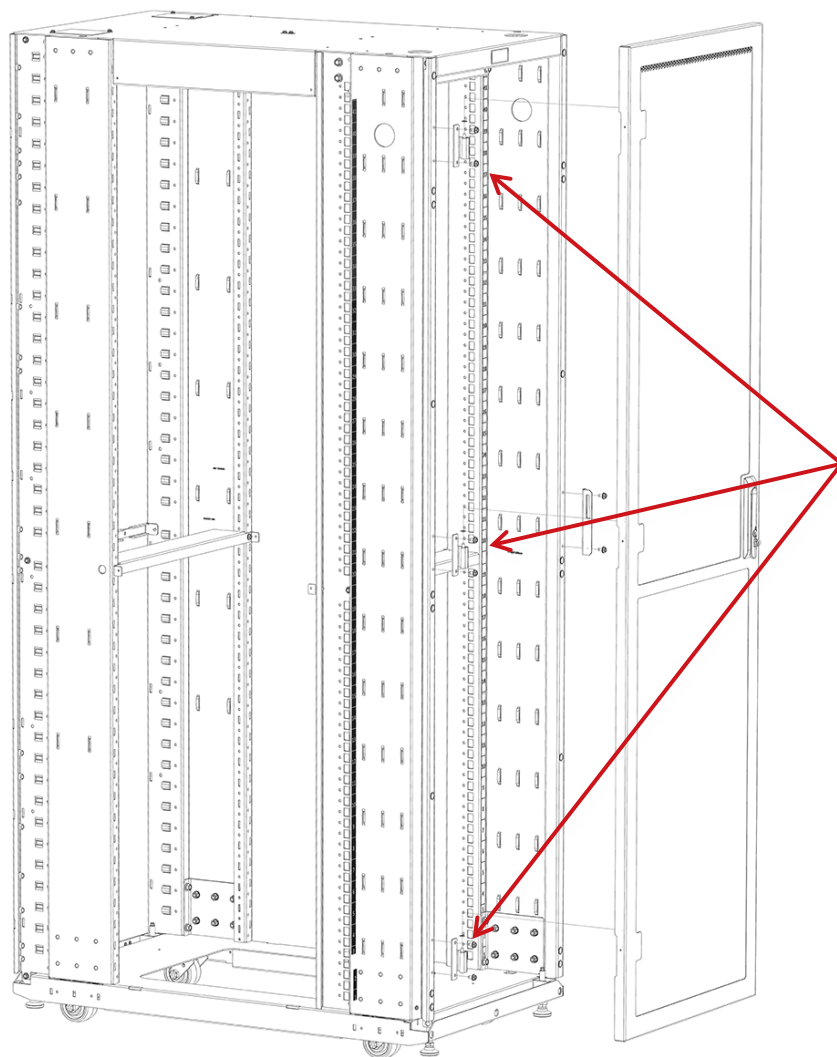
Description	Part Number	Required Quantity
M6 x 12mm length thread-forming Screw	821480	8
Door Latch Bracket	826006	1
Door Assembly	826007	1
Door Hinges	826008	3
Fiber Washer	826184	3

Note: to install a door to the rear of the rack, an extender kit must first be installed.

To install doors onto the front of the rack or rear extender kit:

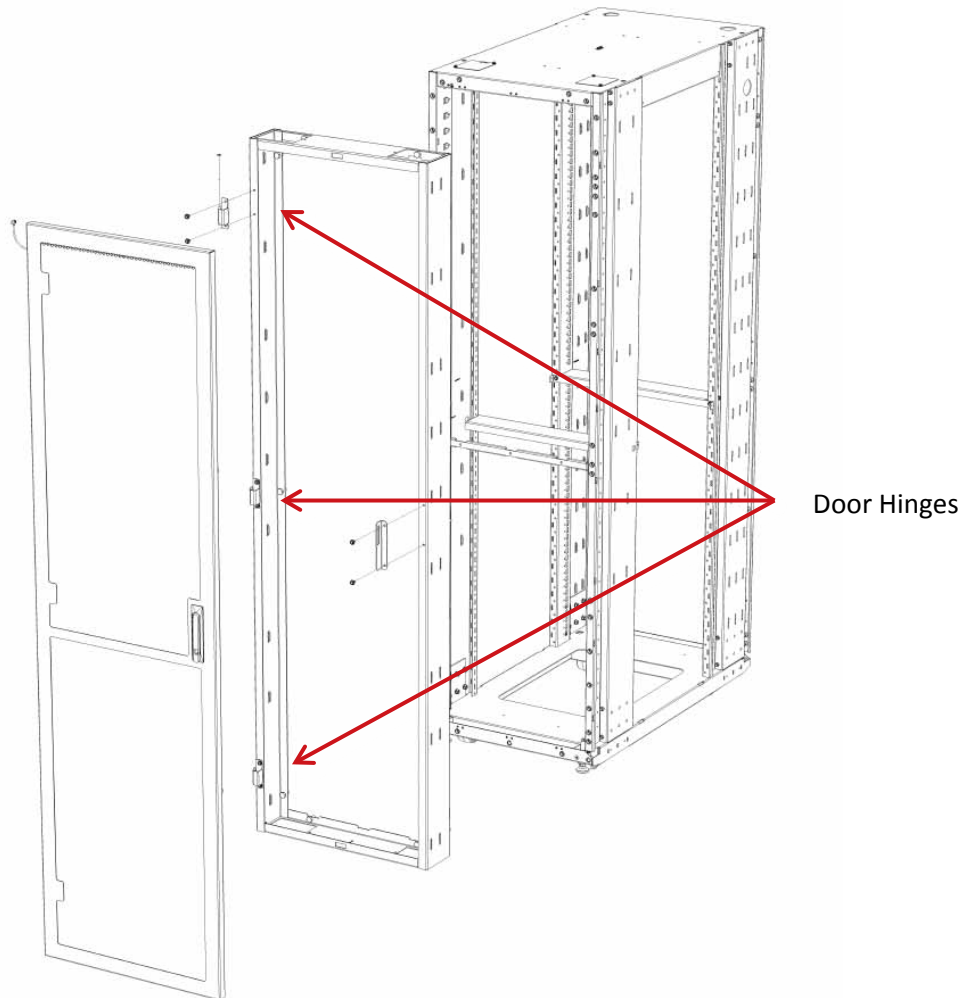
1. Locate door assembly (826007).
2. Install door hinges (826008) into place as shown below and torque (6) M6 thread-forming screws to 6.1 N-m (4.5 ft-lbs).

Door Attached to front of Rack

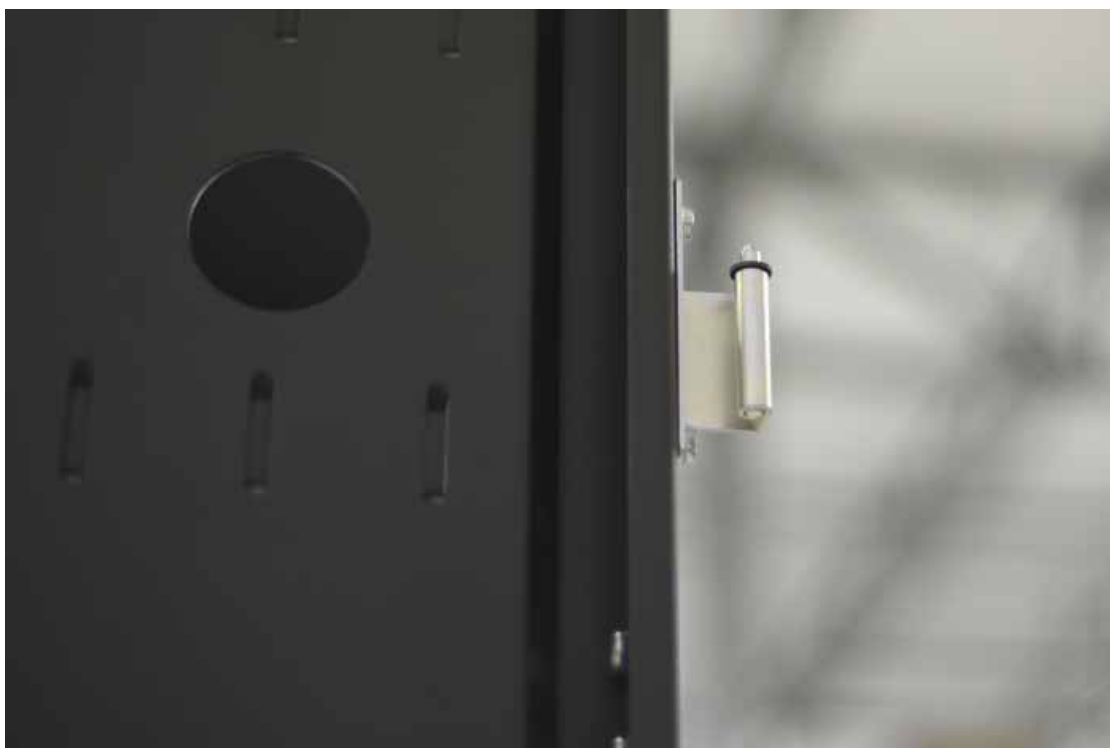
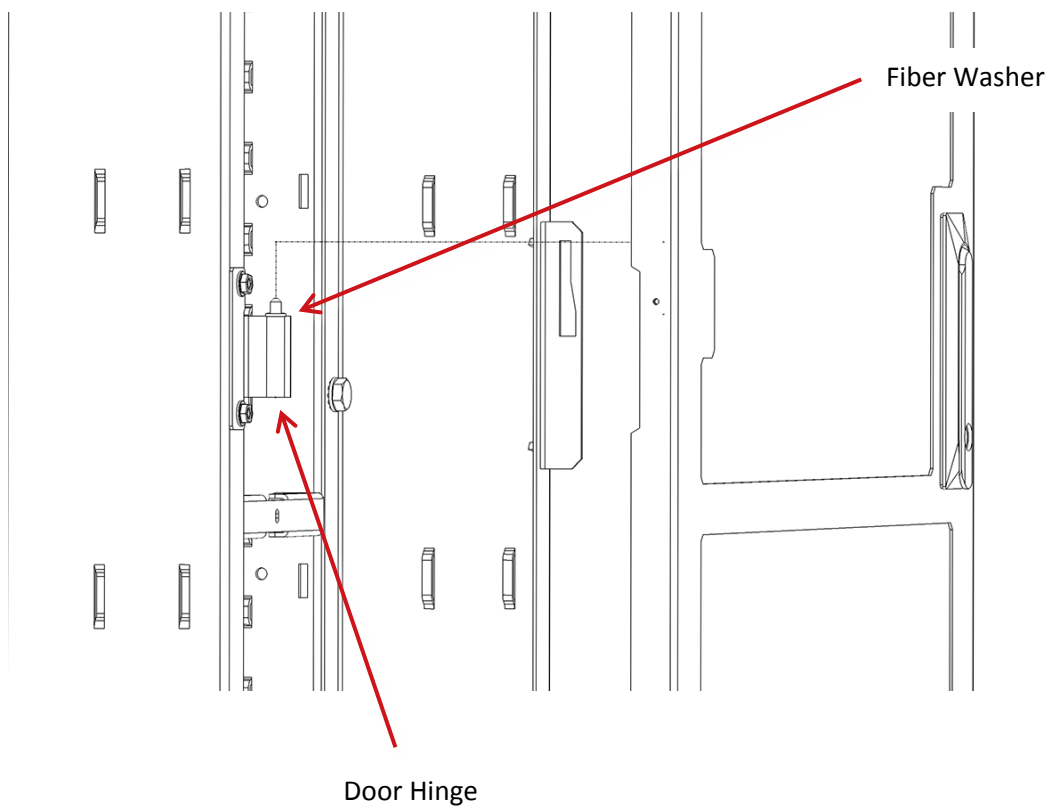


Door Hinges

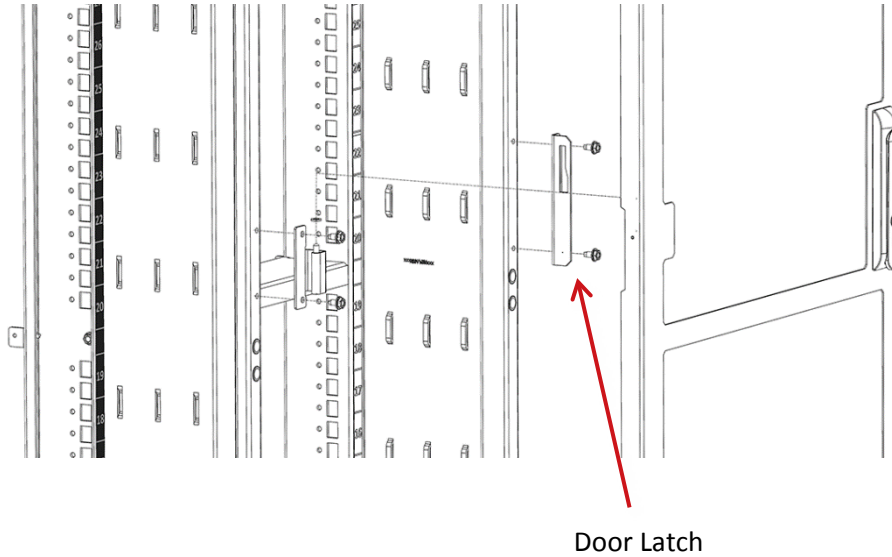
Door Attached to Optional Extender Kit mounted to rear of rack



3. Install fiber washers (826184) on each hinge pin installed in the previous step as shown below.



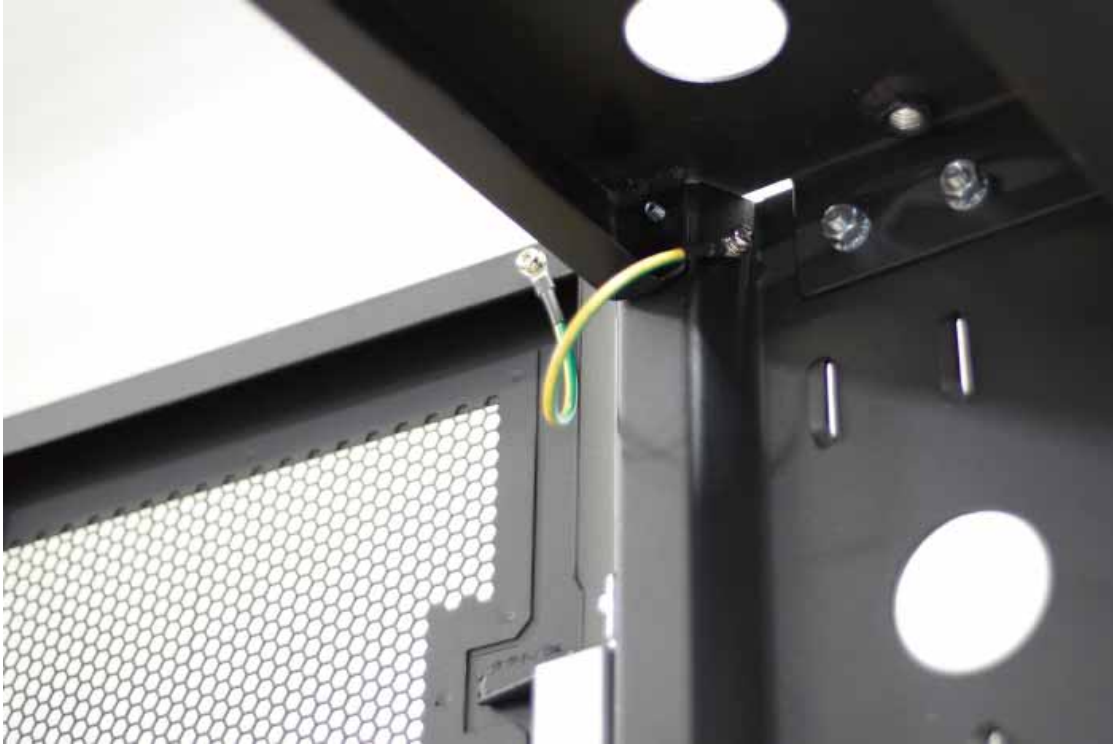
4. Install the door latch bracket (826006) into place as shown below and tighten (2) M6 thread-forming screws to 6.1 N-m (4.5 ft-lbs).



5. Install door (826007) into place by aligning the (3) hinge pins with the door hinge brackets and slide the door on until it rests on the fiber washers.



6. If not already installed, install ground cable to inside top right corner of door using screw (824317) and to inside top left rack support using screw (824317). Torque screws to 3.6 N-m (2.7 ft-lbs).
Note: Ground cable should be routed so that it does not interfere with the door opening or closing. Ground wire should not protrude outside the door.



Front-mounted door with grounding cable installed



Rear-mounted door (mounted to Extender Kit) with grounding cable installed

7. Close door by latching with door handle.



Door and latching handle

Zone 4 Kit (Optional)

The Zone 4 Kit is a bolt-on kit for GR63 Zone 4 installations and consists of two (2) “X” braces plus necessary hardware. The following caveats apply for Zone 4 installations:

- The Zone 4 Kit must be used in conjunction with Rack Baying Kits (described in the next section) to bolt together at least three (3) racks.
- Equipment cannot protrude beyond the rack.
- Air flow may be blocked for some equipment.
- Doors, Extender Kit, and Side panels cannot be used with the Zone 4 Kit.

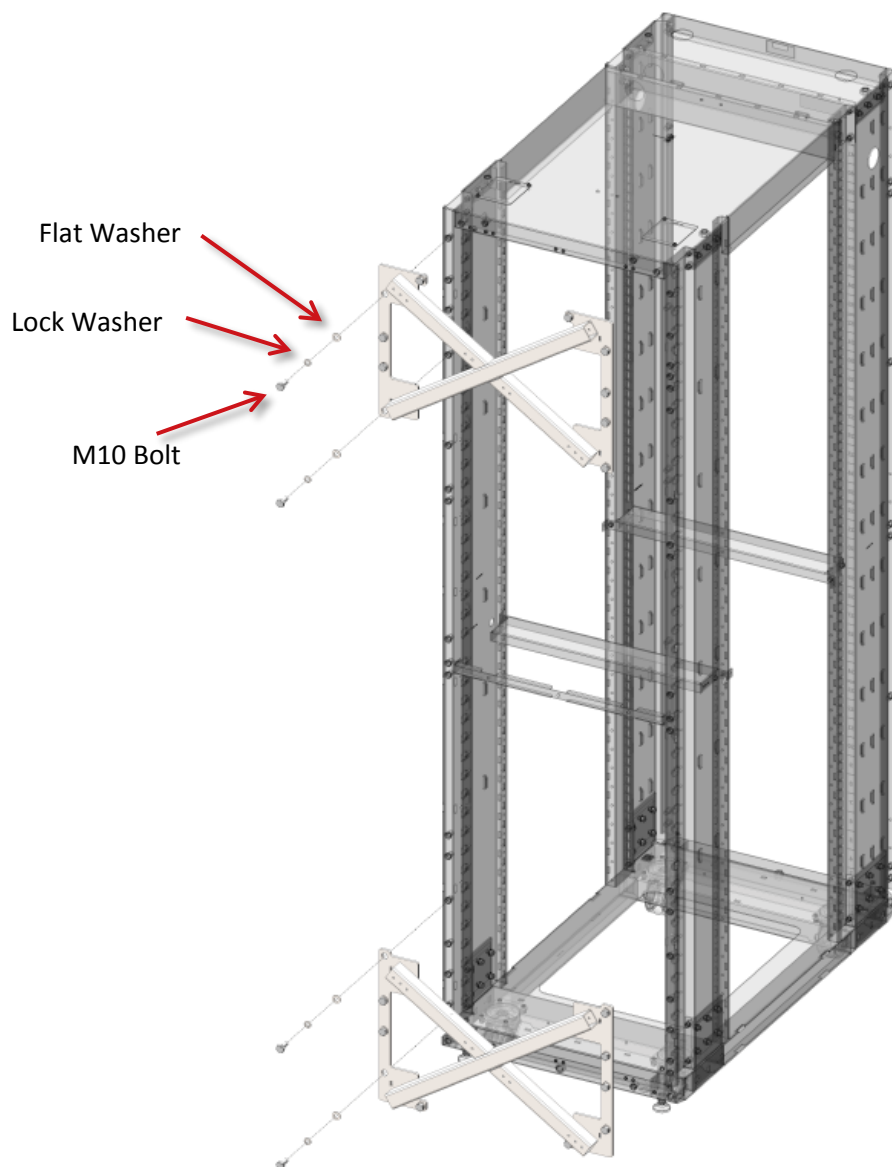
Description	Part Number	Required Quantity
X Brace	822059	2
M10 Bolt	820889	20
M10 Lock Washer	820709	20
M10 Flat Washer	820710	20

To Install X Braces:

1. For each M10 bolt, insert a lock washer and flat washer to make a bolt/lock washer/flat washer assembly.
2. As shown in the graphic below, move an X Brace into place and finger tighten with ten (10) bolt/lock washer/flat washer assemblies.

3. Move the other X Brace into place and finger tighten with ten (10) bolt/lock washer/flat washer assemblies.

Note: Not all installation hardware is shown in the graphic below; each X Brace is held in place by ten (10) bolt/lock washer/flat washer assemblies.



4. Torque all twenty (20) M10 bolts to 29.1 N-m (21.5 ft-lb).

Rack Baying Kit (Optional)

The Rack Baying Kit allows multiple racks to be bolted together for stability and GR63 Zone 3 installations. The kit consists of one front bar, one rear bar, and necessary hardware. The following caveats apply for Zone 3 installations:

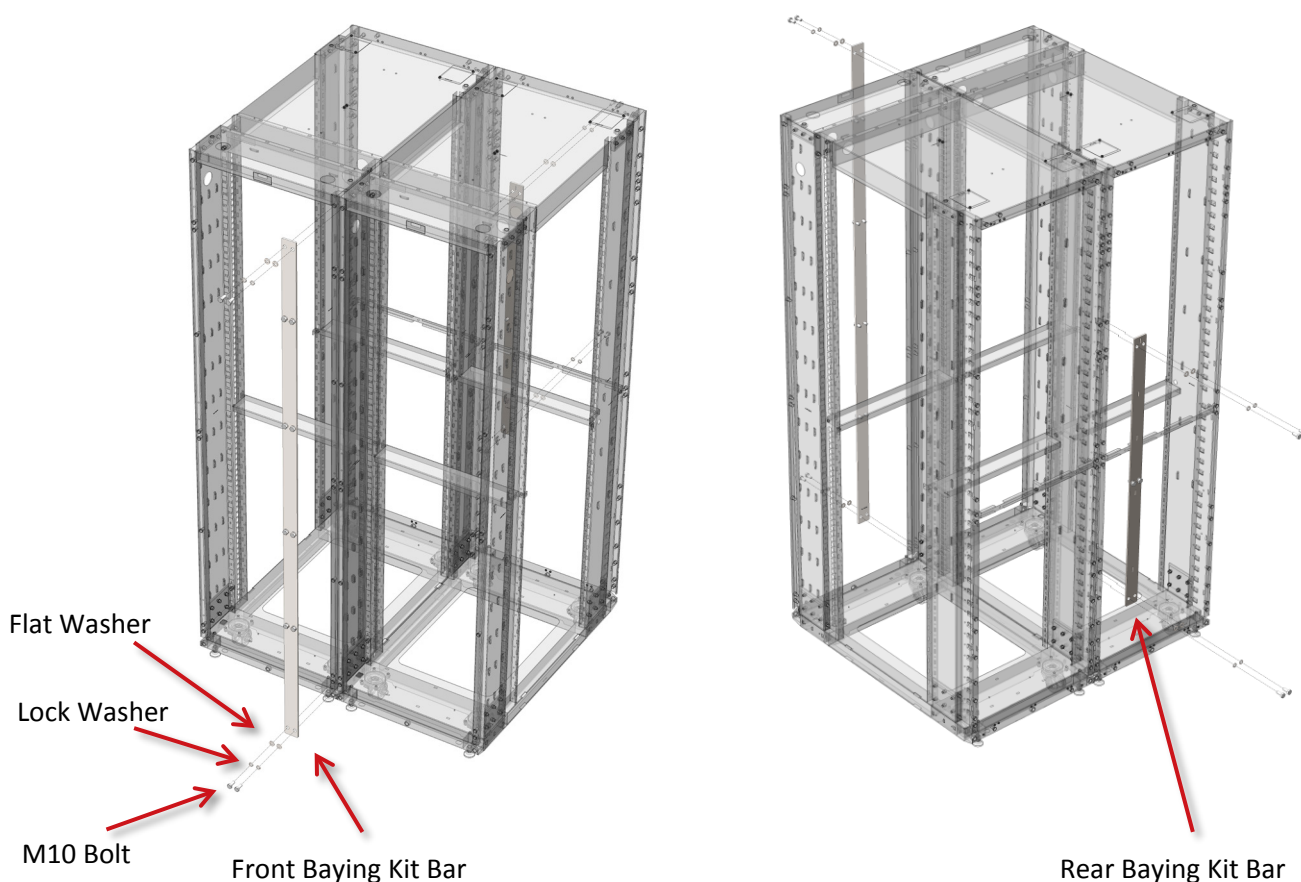
- At least three (3) racks must be bolted together with Rack Baying Kits.
- Doors, Extender Kit, and Side panels cannot be used with the Rack Baying Kit.

Description	Part Number	Required Quantity
Front Baying Kit Bar	819873	1
Rear Bay Kit Bar	822060	1
M10 Bolt	820889	18 per pair of Front and Rear Baying Kit Bars
M10 Lock Washer	820709	18 per pair of Front and Rear Baying Kit Bars
M10 Flat Washer	820710	18 per pair of Front and Rear Baying Kit Bars

To Install Baying Kit:

1. For each bolt, insert a lock washer and flat washer to make a bolt/lock washer/flat washer assembly.
2. Move racks next to each other so Bay Kit Bars can be installed.

Note: Not all installation hardware is shown in the graphic below.



3. As shown in the graphic above, move the Front Baying Kit Bar into place and finger tighten with twelve (12) bolt/lock washer/flat washer assemblies.
4. As shown in the graphic above, move the Rear Baying Kit Bar into place and finger tighten with six (6) bolt/lock washer/flat washer assemblies.
5. Torque all M10 bolts to 29.1 N-m (21.46.1 ft-lb).

Leveling Feet Adjustments

Four leveling feet are built-in to the bottom of KT-2141-121U rack which can be adjusted up or down with a ratchet driver or drill.

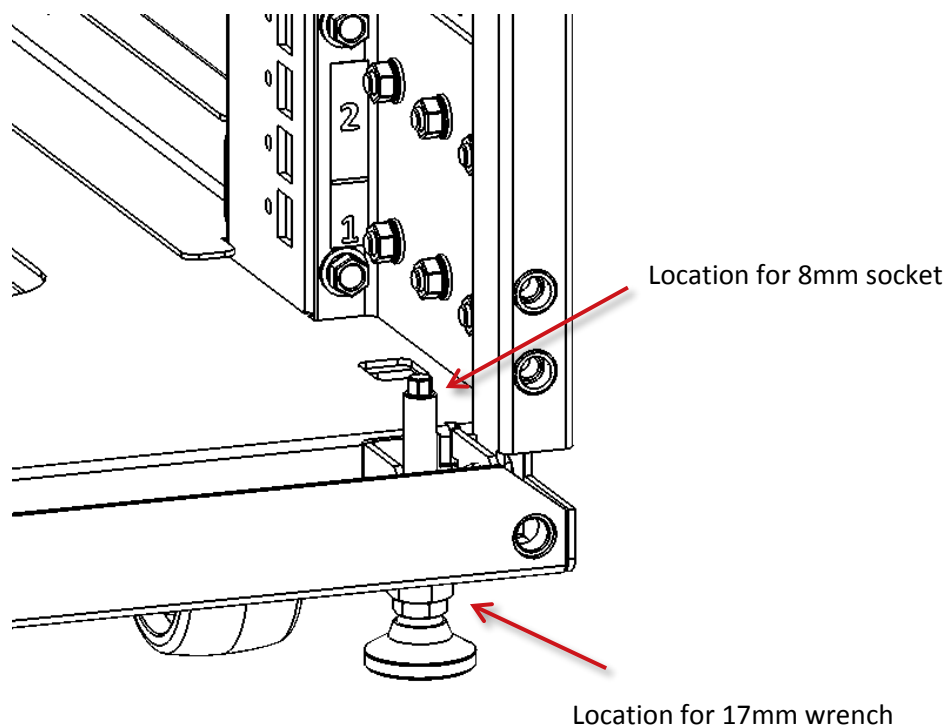
WARNING

Do not attempt to move the rack with the leveling feet lowered. Whenever the rack is moved, the leveling feet must be raised to their highest level so they do not snag or catch on anything which could cause the rack to tip or fall.

To adjust rack leveling feet:

5. Using an 8mm socket, turn the leveling screw on each leveling foot either clockwise (to lower) or counter-clockwise (to raise) the leveling foot.

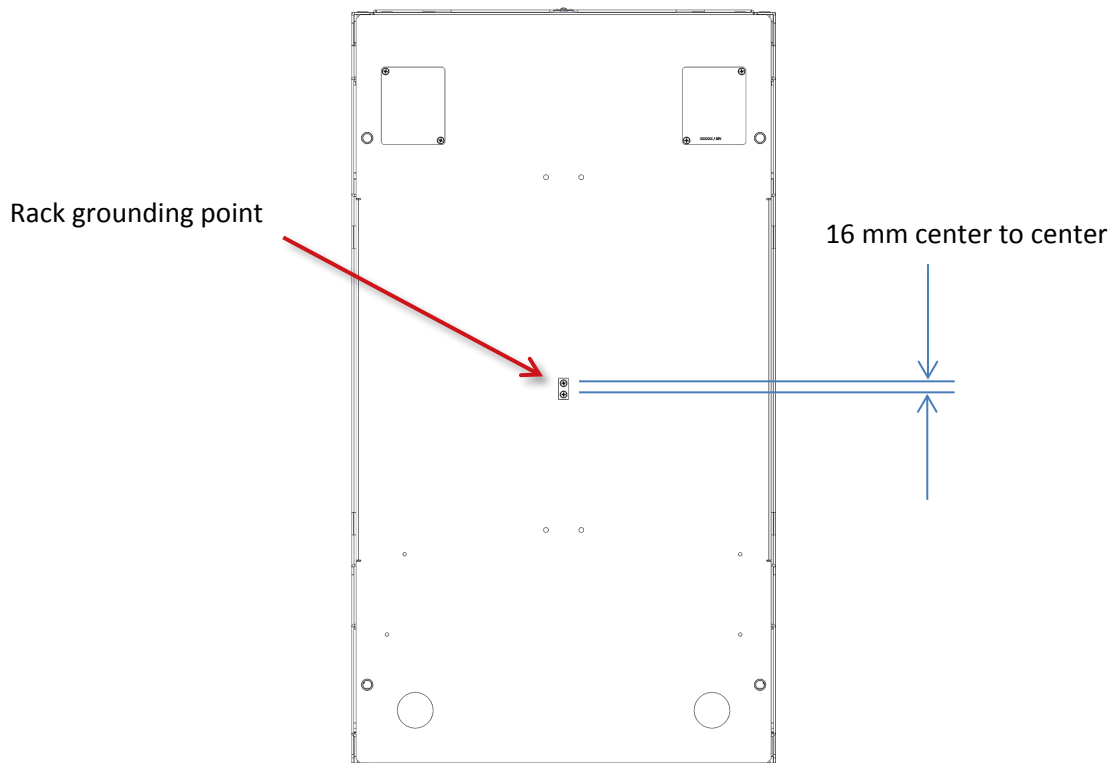
Note: Optionally, you can use a 17mm wrench to raise or lower each leveling foot.



Rack Power and Grounding

For proper operation, it is recommended that the rack be grounded to earth ground. The rack grounding point is located on the top of the rack as shown below.

Note: Ensure that any paint or masking material is removed from the rack grounding point area before installing a ground cable.



To ground the rack:

1. Remove the M5 grounding screws from the top of the rack with a #2 Phillips screwdriver.
Note: the M5 screws are supplied with the rack.
2. Install a Thomas & Betts 54204, or equivalent, two-hole lug to the rack with the M5 grounding screws.
3. Tighten the grounding screws to 3.6 N-m (2.66 ft-lbs).

Equipment Installation

As a benefit of being Open Compute Project compliant, most equipment can be installed into this rack without the need for special tools or mounting brackets. Equipment is installed rear-first into the rack from the front side of the rack.

To install OCP compliant IT equipment into the rack:

1. If necessary, install shelf brackets into the rack.
2. Slide the equipment into the front of the rack until the spring latch brackets fit into the slots in the rack front.
3. If necessary, install power and data cables to the equipment.

To install Non-OCP compliant equipment into the rack:

1. Install mounting brackets to the equipment as described by the equipment manufacturer.
2. If necessary, install shelf brackets into the rack.
3. Install the equipment to the shelf brackets.
4. If necessary, install power and data cables to the equipment.

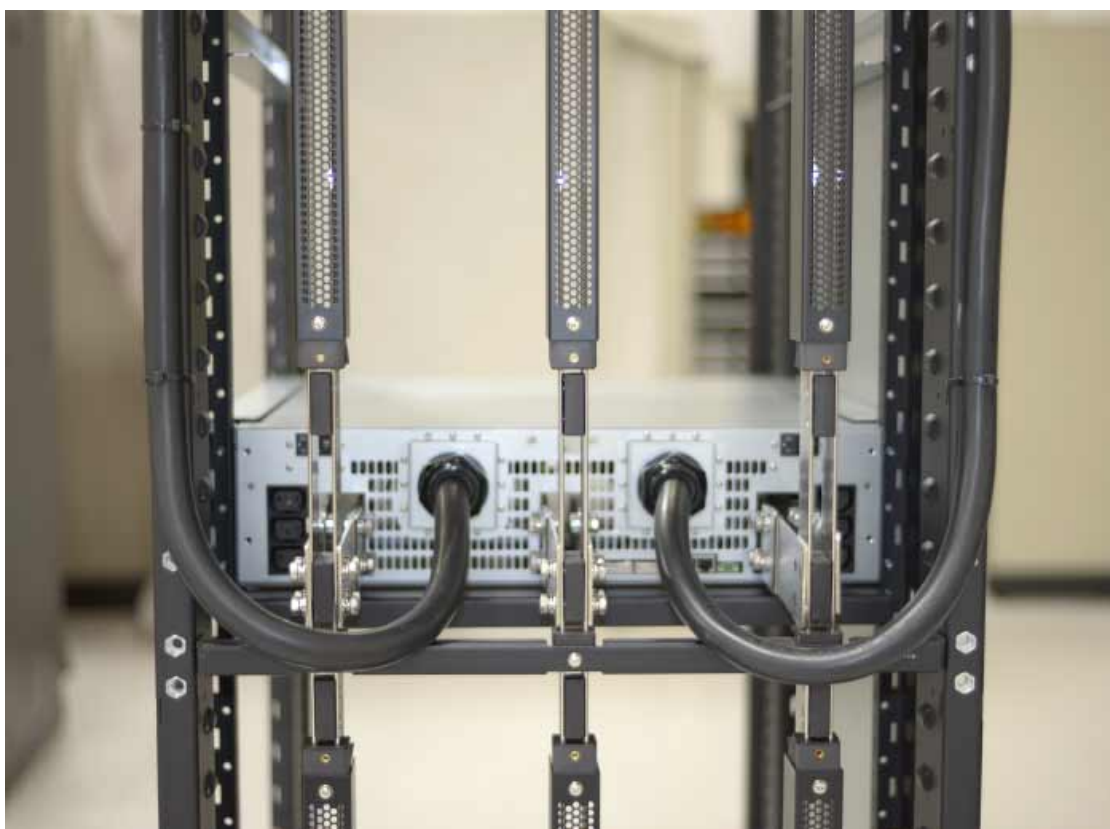
Cable Installation

Cable management is built into the front and rear vertical uprights of the KT-2141-121U rack for signal cables. Inter-Rack cable access openings are available on the front sides and top of the rack. Route cables in racks according to local cable-management policies.

Typically power cables are routed in the rear section of the rack and signal cables are routed in the front section of the rack.

There are many ways that cables can be routed in the rack. A few examples are shown below.

Overhead Power Cable Routing without Extender Kit



Power Cables routed to the top of the Rack along the Rear Vertical Support



Power Cables routed to the top of the Rack



Optional routing method: 10 Gauge or smaller Power Cable can be routed to the top of the Rack inside the rack cable channel (as viewed from the front of the rack)



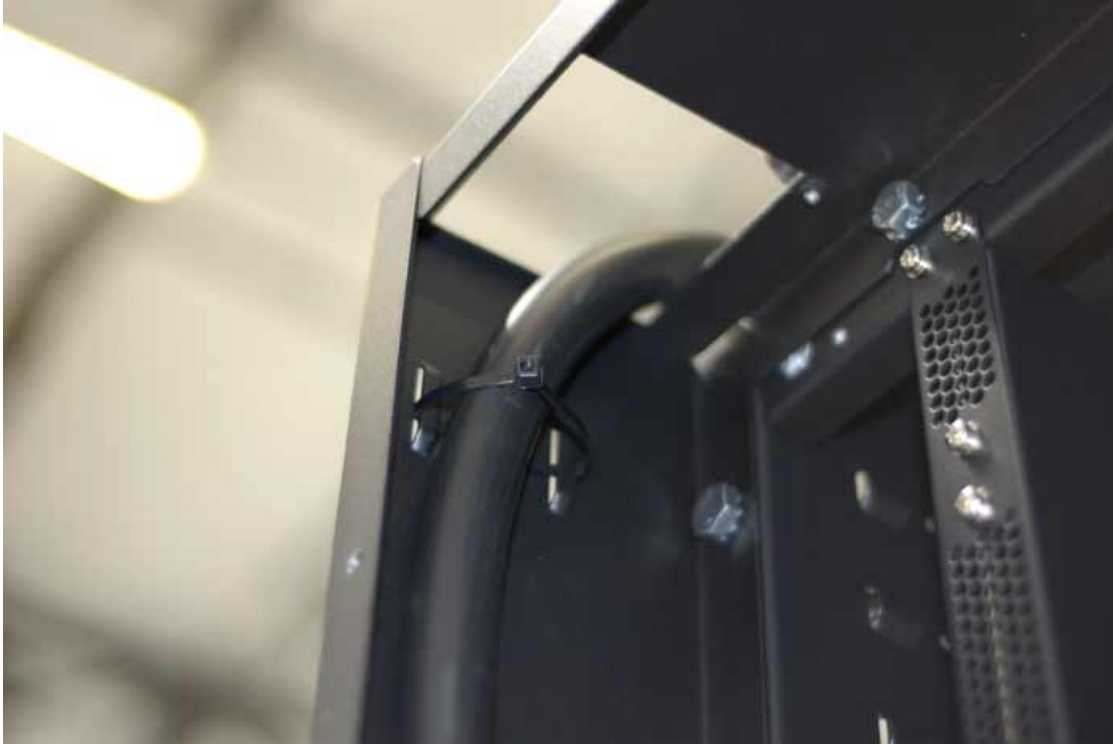
Power Cable secured to the Rack with Cable Tie

Overhead Power Cable Routing with Extender Kit

Power Cables routed along the Rear Vertical Support to the top of the rack inside Rack Extender Kit



Power Cable secured to the Rack Extender Kit with Cable Tie



Power Cable routed through the top of the Rack Extender Kit

Under Floor Power Cable Routing without Extender Kit

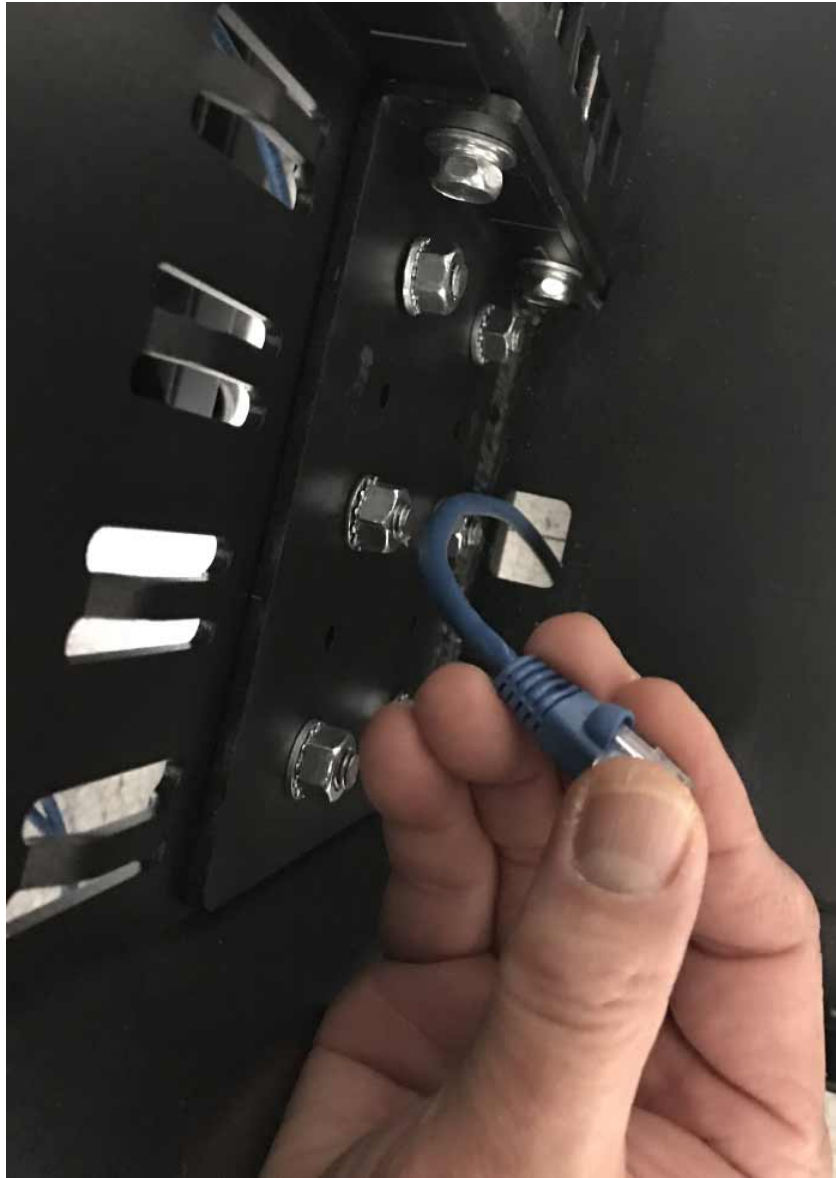
Power Cables routed to the bottom of the Rack

Under Floor Power Cable Routing with Extender Kit

Power Cables routed through the bottom of the Rack Extender Kit

Overhead Signal Cable Routing

Signal cable routed through the top front opening of the Rack

Under Floor Signal Cable Routing

Signal cable routed through a bottom opening in the Rack

Intra-Rack Signal Cabling

Front-to-Back Cable access opening

Vertical Cable Routing along Vertical Support

Signal Cables routed internally

Inter-Rack Signal Cabling



Signal cable routed through the side of the Rack

To secure cables in the rack:

1. Route cables along the front or rear vertical uprights as necessary.
2. Place a cable-tie device (such as a nylon cable tie or Velcro strap) through a slot in the rack then enclose the cable tie device around the cables.
3. Tighten the cable tie device and cut the end of the cable tie device if necessary.

Inspection and Maintenance

After the rack is properly installed and adjusted, it does not require inspection or maintenance throughout its lifetime.

Warranty

The KT-2141-121U rack has a limited warranty of 3 years. If you experience any problems with your Lite-On equipment, contact Lite-On Power Systems Solutions at 1-469-331-9838.

Related Documentation

For more information related to the KT-2141-121U rack, visit the Lite-On Power Systems Solutions web site at: <http://www.liteon-pss.com>.

For more information about the Open Compute Project, visit their web site at: <http://www.opencompute.org>.



Innovative Power Management Solutions for Critical Infrastructure