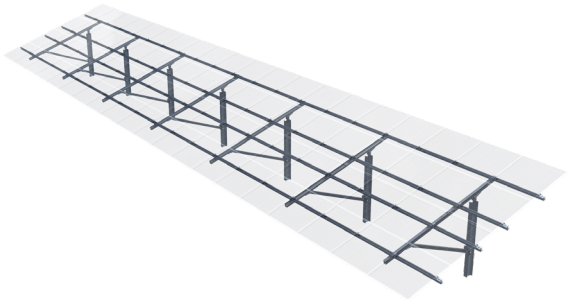
# POWER PEAK™ AL

## INSTALLATION INSTRUCTIONS



### ⚠ IMPORTANT SAFETY INFORMATION

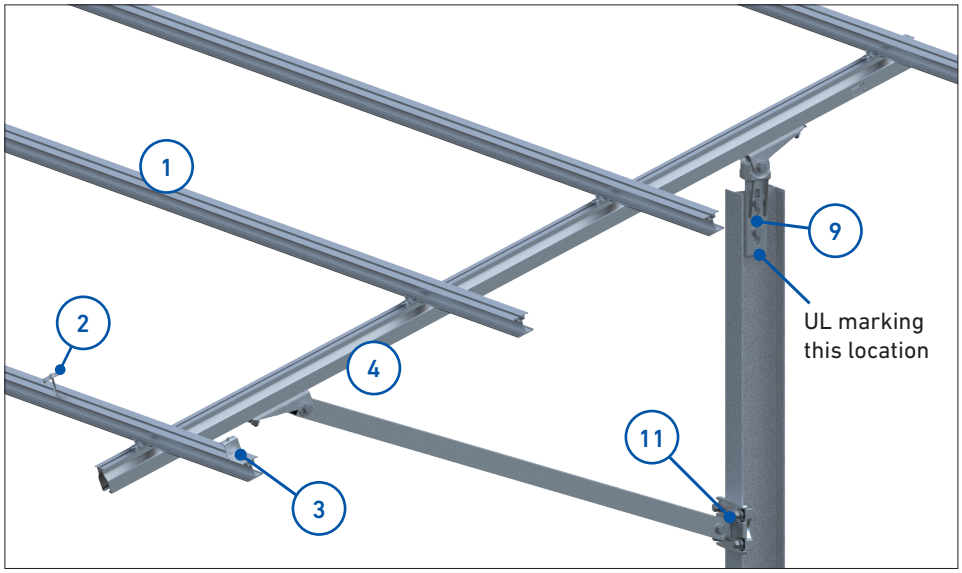
**READ AND COMPLETELY UNDERSTAND ALL INSTRUCTIONS BEFORE INSTALLING PRODUCT. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR DEATH.**

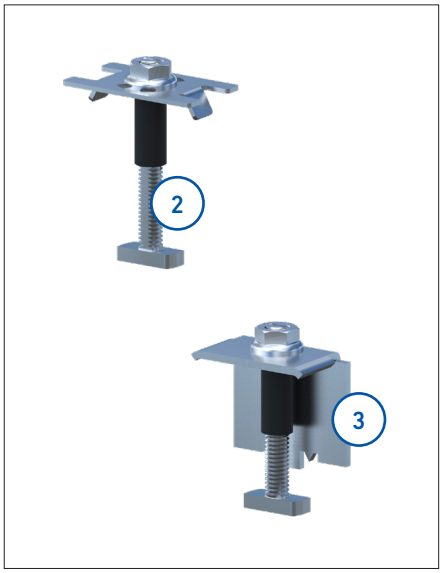
This product is intended for use by trained technicians only. This product should not be used by anyone who is not familiar with and not trained to use it. When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact. Be sure to wear proper safety equipment per your company protocol. These instructions are not intended to supersede any company construction or safety standards. These instructions are offered only to illustrate safe installation for the individual. PLP products are intended for the specified application only. Do not modify this product under any circumstances. Do not reuse or reinstall any PLP product unless that capability is expressly indicated in the product's Installation Instructions. For proper performance and personal safety, be sure to select the proper PLP product before installation. PLP products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

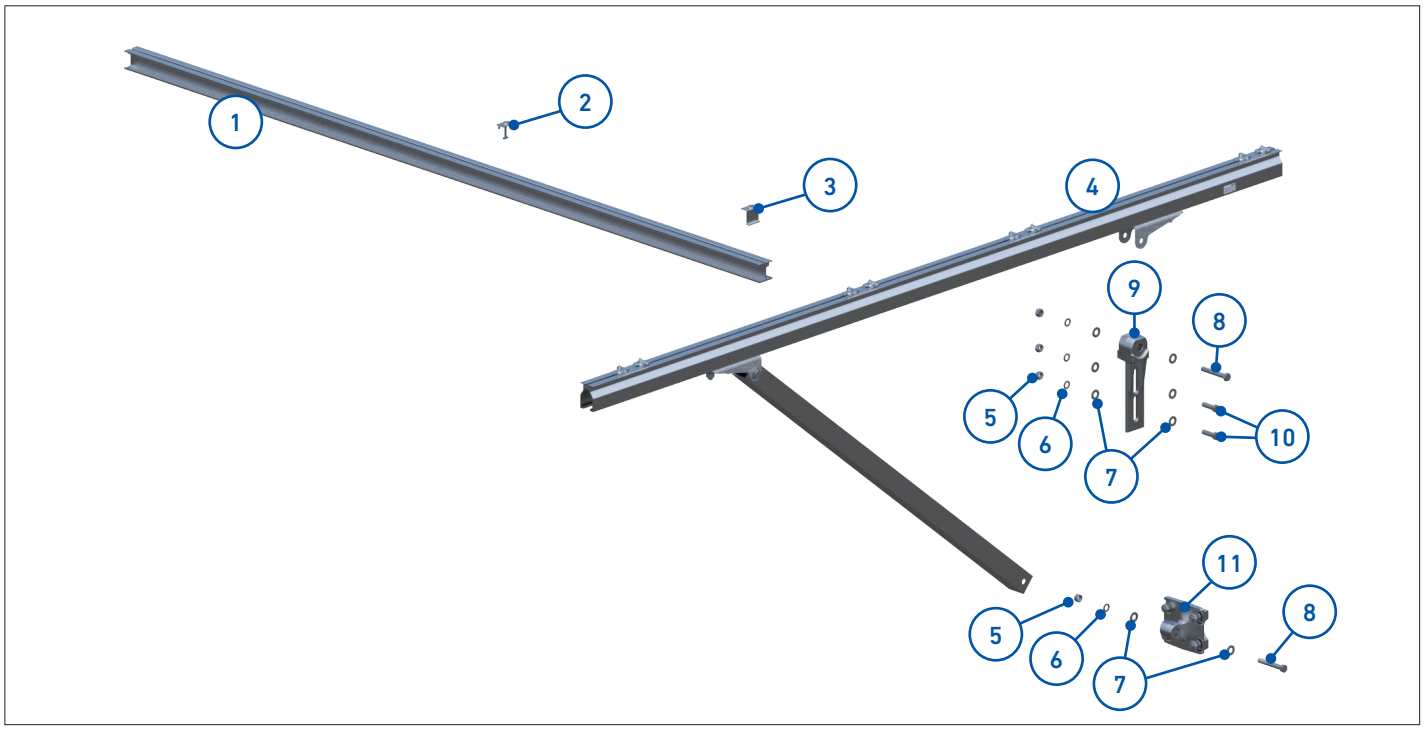
### ⚠ WARNING

Stainless steel hardware can gall when tightened too quickly. Installer should use a silver grade anti-seize compound prior to assembling any stainless steel hardware. Do not use an impact driver. All other driver types should be set to low speed settings.

## PACKAGE COMPONENTS




1. UD Rail
2. AMP™ Clamp Assembly
3. RAD™ End Clamp Assembly
4. Strongback Assembly
5. 5/8"-11 Hex Nut, Galvanized
6. 5/8" Lock Washer, Galvanized
7. 5/8" Flat Washer, Galvanized
8. 5/8"-11 x 4" Hex Bolt, Galvanized
9. Strongback Attachment
10. 5/8"-11 x 2" Hex Bolt, Galvanized
11. Strut Attachment Assembly

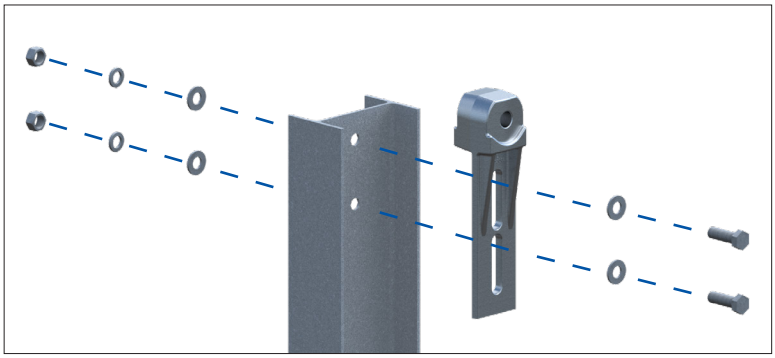
### Tools Required:

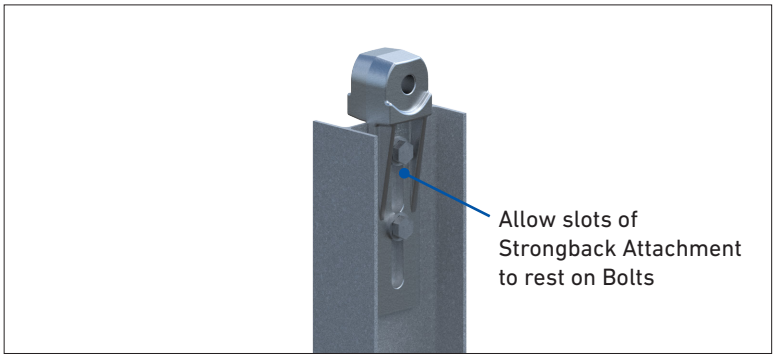
- 1/2" wrench or socket for 5/16" module clamp hardware
- 15/16" wrench or socket for 5/8" hardware
- Torque wrench
- Ratchet wrench
- Ratchet extension bar
- String
- Framing Square
- Tape Measure
- Inclinometer

**1** Using a preferred method, drive/set the I-beams per the project specifications while keeping the relative height tolerance to each other at ±1/4".

**2** Install he Strongback Attachments with 5/8"-11 x 2" Hex Bolt, Flat Washers, Lock Washer, and Hex Nut. Allow the slots of the Strongback Attachment to come to rest on the Bolts. Hand-tighten for now.

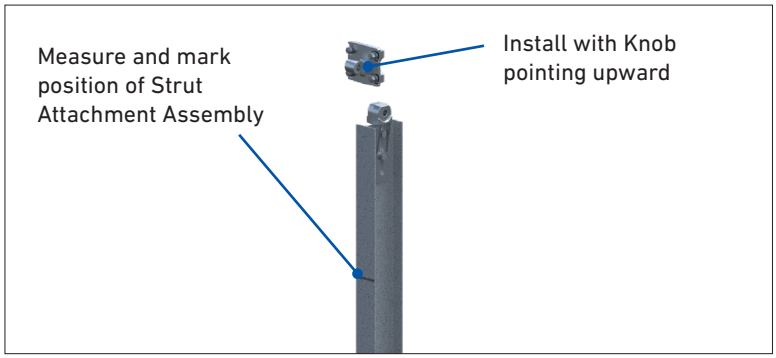
**NOTE:** Strongback attachments must be consistently installed on the same side of the I-Beam (all on the east side or all on the west side of the I-Beam).

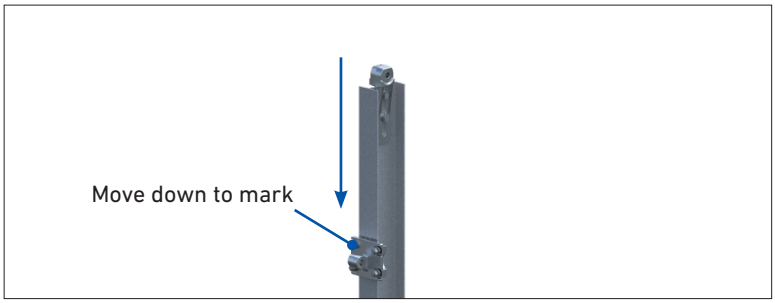





**3** Mount Strut Attachment on south flange of I-Beam. Straddle the clamps of the Strut Attachment on flange of I-Beam and slide the Strut Attachment downward aligning it to the previously made mark on I-Beam. Hand-tighten for now.

**NOTE:** The vertical position of the Strut Attachment on the I-Beam determines the tile angle of the array and therefore its position must be measured and marked on each of the vertical I-Beams. Reference the site-specific drawings for placement.

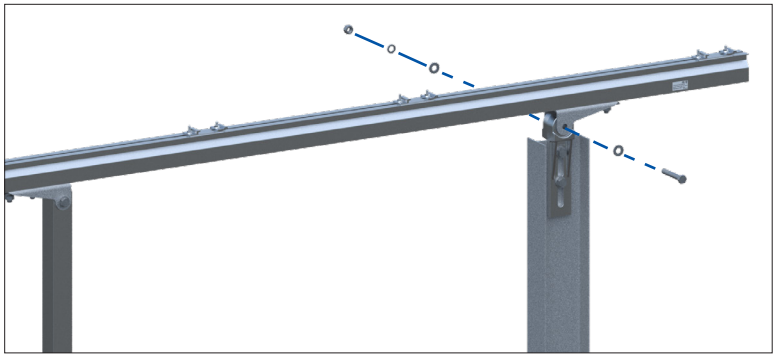


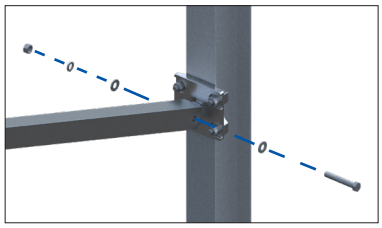



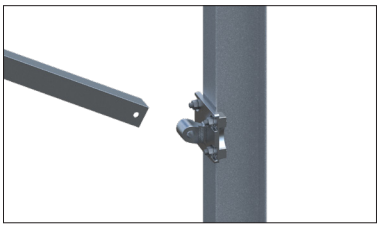
**4**

Install the Strongback onto the Strongback Attachment with 5/8"-11 x 4" Hex Bolt, Flat Washers, Lock Washer, and Hex Nut. Hand-tighten for now.

Install the Strut to the Strut Attachment with 5/8"-11 x 4" Hex Bolt, Flat Washers, Lock Washer, and Hex Nut. Hand tighten for now.







**5**

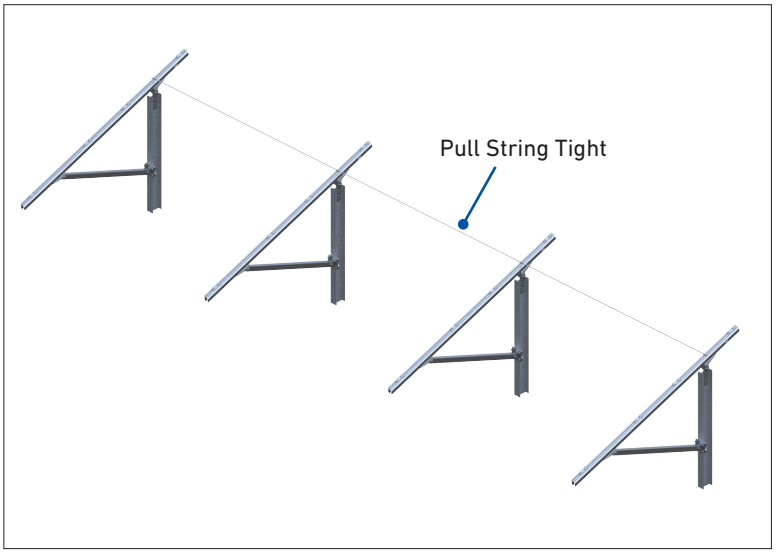
A. Pull a string on top of and between the east and west most Strongbacks. Align the string with the center of the I-Beam.

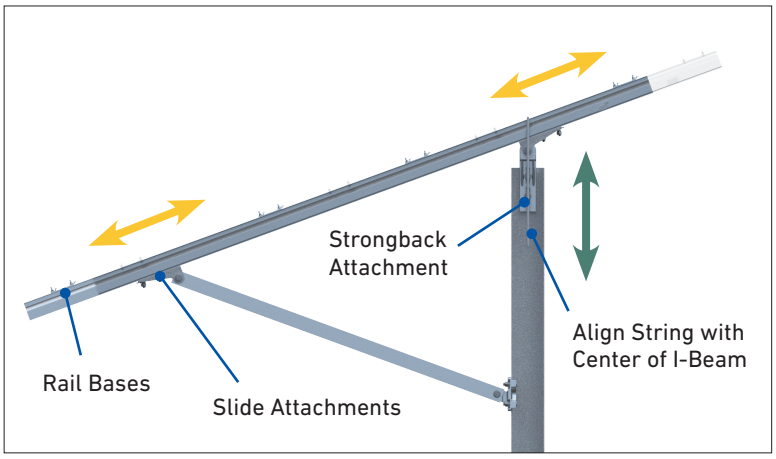
B. On those Strongbacks that need adjustment, loosen and slide the Strongback Attachment up or down the I-Beam to bring the Strongback within 1/8" of the string.

C. To adjust the N-S alignment of the Rail Bases, loosen the Strongback Slide Attachment and slide the Strongback in the appropriate direction to align the Rail Bases. Torque to 85 ft-lb.

D. Tighten the Strongback Attachments securely to the I-Beam. Torque to 85 - 90 ft-lb.

**NOTE:** It's very important to align the Rail Base surfaces to within 1/8" of each other before installing the Rails.




Loosen Strongback Slide Attachment(s) to make N-S adjustments and align Rail Bases to one another

Loosen Strongback Attachment(s) to level Strongbacks to one another

**6**

A. Place the inclinometer on the Strongback.

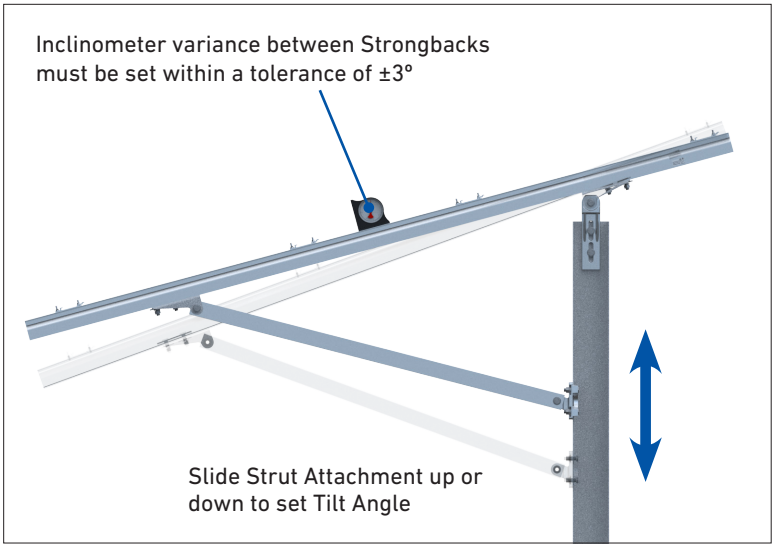
B. Loosen the hardware securing the Strut Attachment to the I-Beam.

C. Slide the Strut Attachment up or down the I-Beam to bring the tilt to the desired angle.

D. Re-tighten the hardware securing the Strut Attachment to the I-Beam. Torque to 85 - 90 ft-lb.

**⚠ WARNING**

This a two person activity. During the tilt adjustment, one person must hold the southern end of the Strongback while a second loosens the hardware and then re-tightens the hardware after the desired tilt has been achieved.




**7**

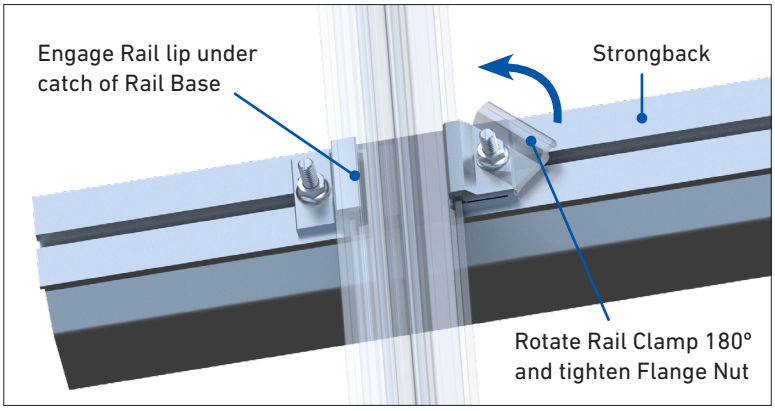
The Rails are secured via the pre-assembled clamping system (Rail Base & Rail Clamp) which are attached to the Strongbacks. Cantilever distance between the outermost Strongback and the Rail end must be set per specifications.

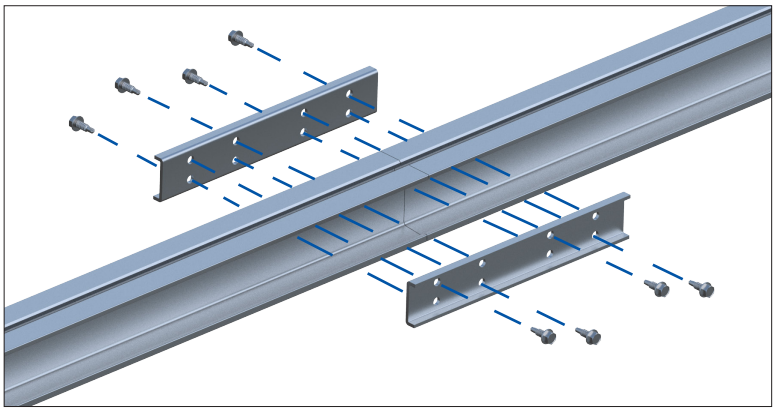
If necessary, Rails are spliced using a Splice Plate and self-tapping hardware. Splicing can be done either before or after the Rails are installed on the Strongbacks. Install the Splice Plates with 1/4" x 3/4" self-drilling screws. Torque to 8 ft-lb.

**NOTES:** The location of the Rail Bases are preset at the factory. If alignment with the Rails is a problem, simply slide the Rail Bases along the Strongback's to align with the Rails.

**⚠ WARNING**

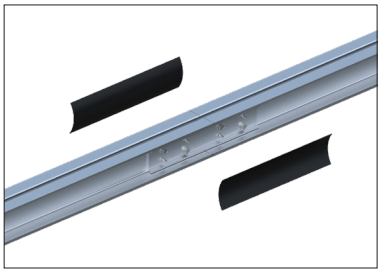
This is a two person activity. Each person must hold an end of the Rail while placing it onto each Rail Base of the Strongback. One person should continue to hold the Rail in place while the second person secures it with the Rail Clamp.

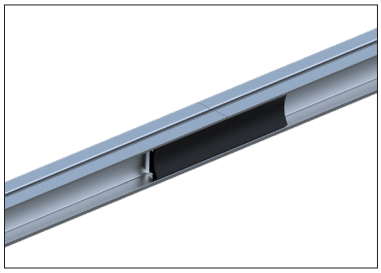


**8**

Slide the black plastic covers into the UD Rail. This is to cover the screw heads and points to prevent damage to PV wiring.



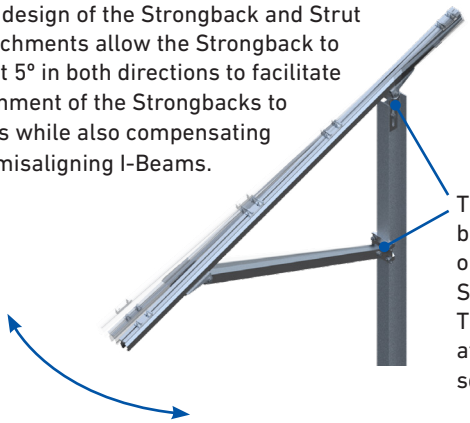


**9**

Adjustments can be easily made to compensate for misaligned I-Beams or other issues. Adjustments also provide squaring of the Rails to the Strongbacks.

During the squaring and alignment process, the main adjustment feature is the east/west articulation of the Strongback via the Strongback and Strut Attachments. Originating from the Strongback Attachment, the Strongback will pivot up to 5° to the east or west. This movement is used to square the Strongbacks to the Rails.

The design of the Strongback and Strut Attachments allow the Strongback to pivot 5° in both directions to facilitate alignment of the Strongbacks to Rails while also compensating for misaligning I-Beams.

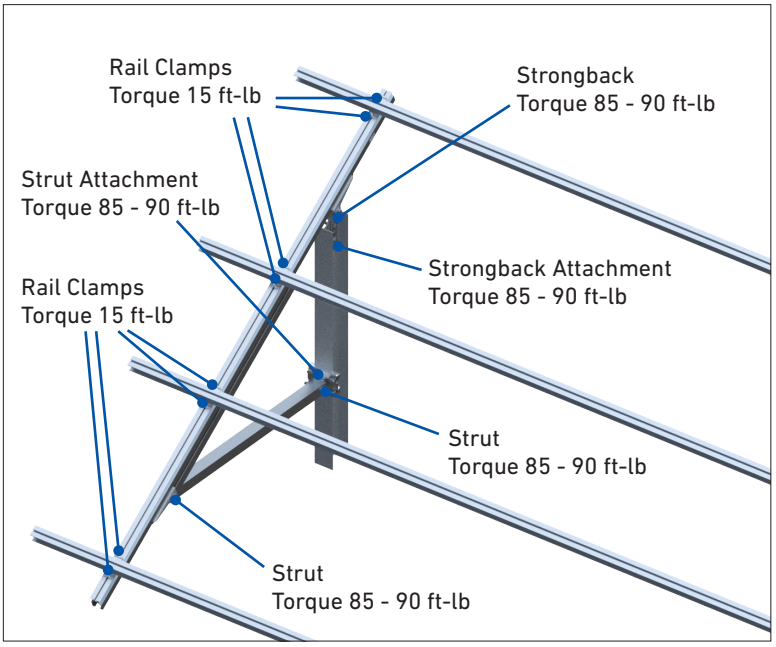



**10**

It is extremely important to tighten and torque all hardware as specified above.

**CAUTION**

Exceeding torque values can result in damage to components and/or Hardware.



**11** AMP™ Clamp bonding Mid Clamps must be installed as shown at above left and not as shown to the right. There cannot be any visible gaps between the bonding Mid Clamps and Module Frames.

Install End Clamps by pushing the End Clamp assembly tightly against the module frame. There should not be a visible gap between he Neoprene Washer and the Module Frame.

Prepare to install the Modules by first marking the Rails 1-1/2" from their ends as indicated above. The End Clamps will align to these marks.

AMP Clamp bonding Mid Clamps are inserted into the Rail and positioned between adjacent Modules. Insert the 5/16" RAD™ Bolt into Rail and rotate 90° clockwise to lock the RAD Bolt within the Rail. Push Modules against AMP Clamp. Tighten 5/16" Flange Nut. Torque to 15 ft-lb.

RAD End Clamps are used on the outer Modules. Insert the 5/16" RAD Bolt into Rail and rotate 90° clockwise to lock the RAD Bolt within the Rail. Secure with 5/16" Flange Nut. Torque to 15 ft-lb.

**NOTE:** The RAD Bolts used in the AMP Clamps and End Clamps must be locked into the channel by rotating clockwise 90°. Use the indicator slot on the threaded end to identify whether or not the bolt has been locked.

**⚠ WARNING**

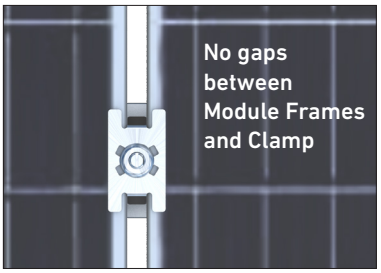
This is a two person activity. In addition to the difficulties associated with working on a sloped rack, PV Modules are heavy. One person should hold and align the modules while a second person secures modules with clamping hardware. Failure to do so could lead to serious personal injury and/or damaged components.

Module Clamps must be correctly installed. Failure to follow the correct method could lead to personal injury structural failure, and/or damaged components.

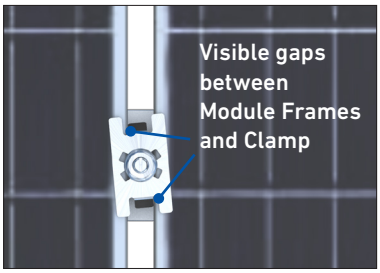
**CAUTION**

If the Flange Nut has been removed from the assembly, add Pentrox-A on threads of RAD Bolt before re-installing Flange Nut.

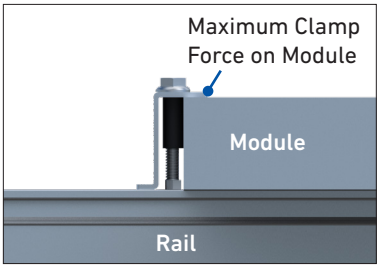
Exceeding torque values can result in damage to Rail and/or hardware.



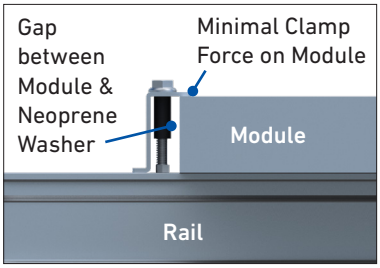

AMP Clamp Correctly Installed



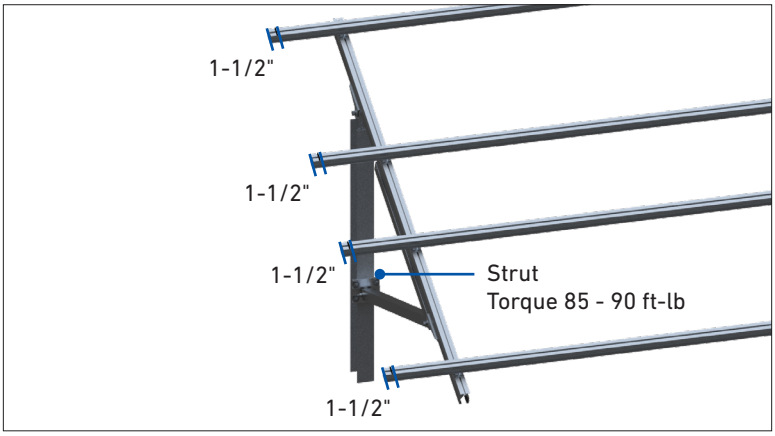

AMP Clamp Incorrectly Installed

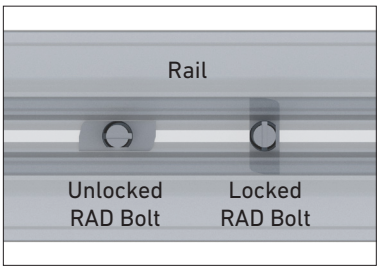


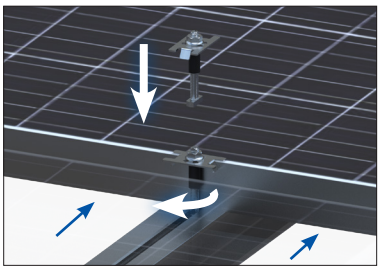

End Clamp Correctly Installed

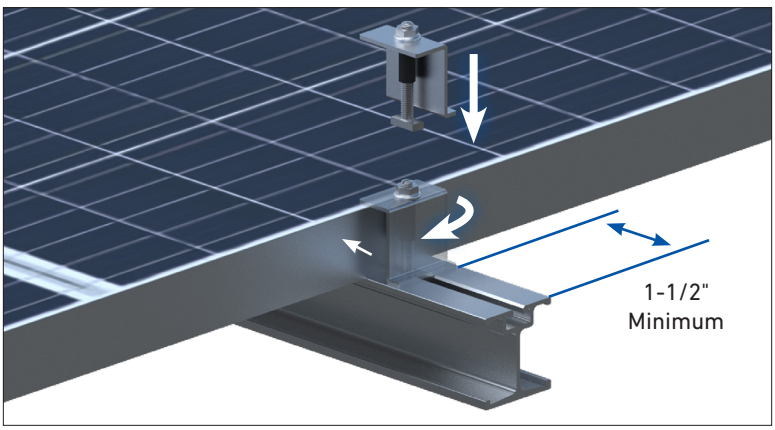



End Clamp Incorrectly Installed

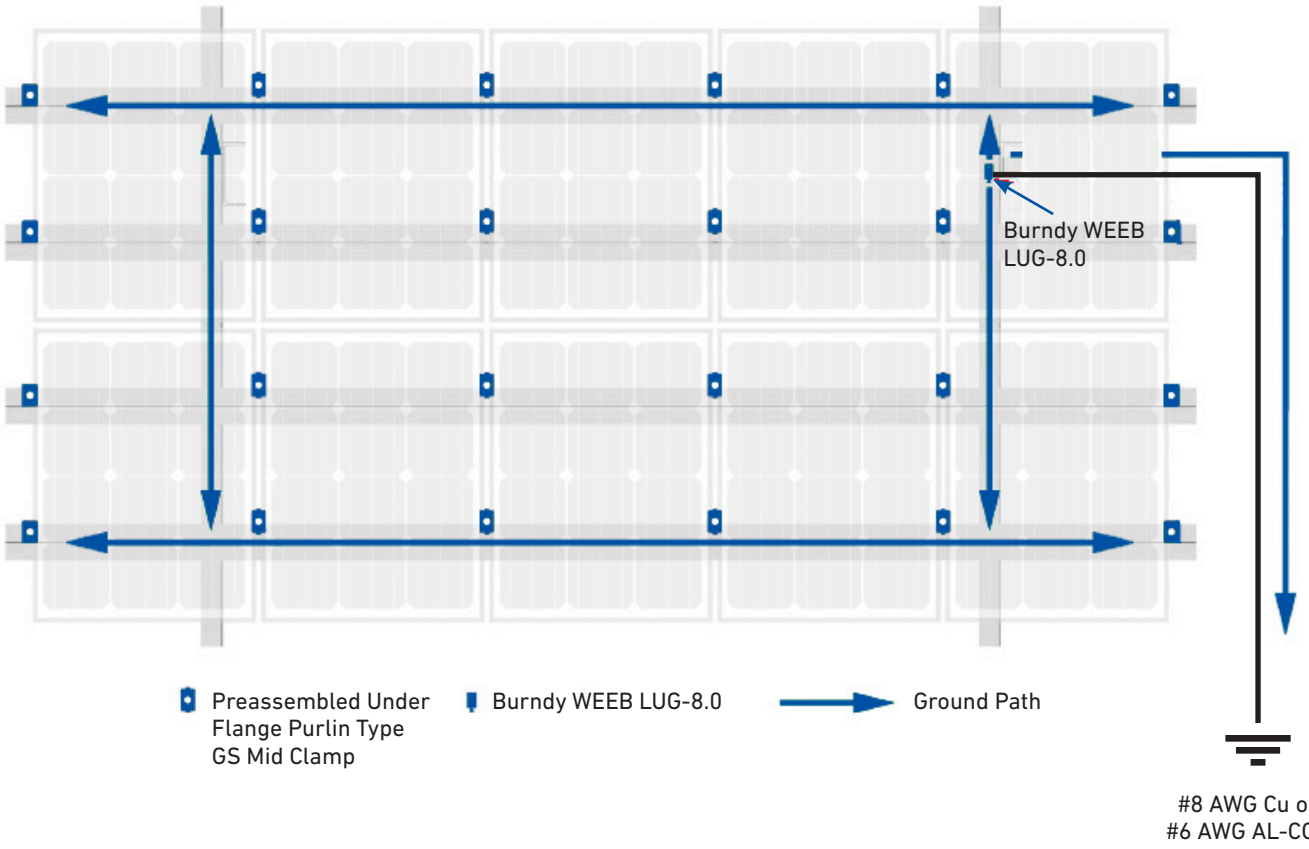




## GROUNDING/BONDING PATH

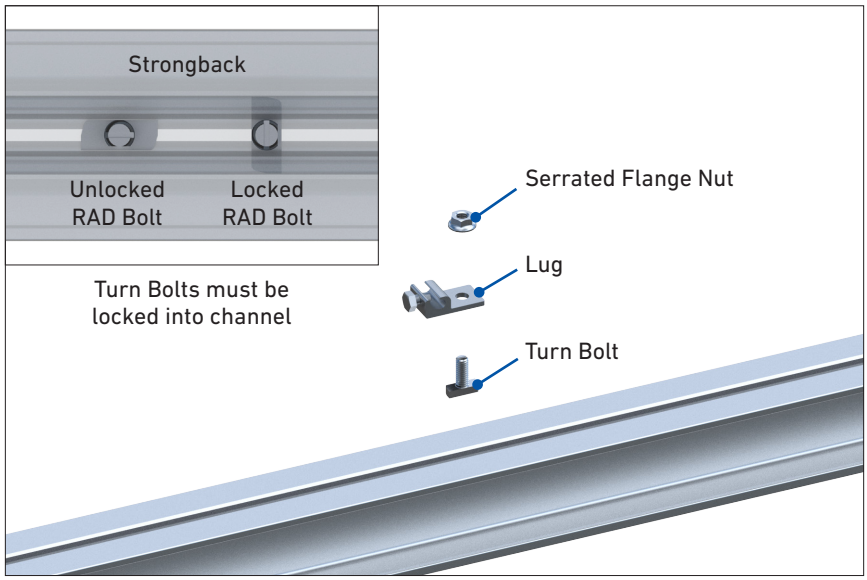


## INSTALLING A WEEB-LUG 8.0

**Before installing, verify with the lug manufacturer for any updates or revisions to these lug installation instructions.**

Lug is suitable for use with 14-6 AWG solid or standard copper conductor when tightened to 5 ft-lb.

**NOTE:** The Turn Bolts used must be locked into the channel by rotating clockwise 90°. Use the indicator slot on the threaded end to identify whether or not the bolt has been locked.




| Catalog Number | Maximum OCPD (A) | Mounting Surface | | | | | Mounting Screw | | Mounting Hole Range | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Minimum Profile | Minimum Thick | Maximum Thick | Mtl | Surface Prep | Size | Tightening Torque | Minimum | Maximum |
| | | w x l | in | in | | | | lb - in | mm | mm |
| WEEB-LUG-8.0 | 200 | 22 mm x 20 mm | 0.06 | 0.25 | AL | Anodized | 5/16" M8 | 120 | 7.85 | 10 |
| | | | 0.06 | 0.25 | Steel | Galvanized | | | | |

### ⚠ IMPORTANT INFORMATION

1. Before installing, verify with the lug manufacturer for any updates or revisions to these lug installation instructions. The instructions on this page only address the WEEB-LUG-8.0 as found within the manufacturers (Burndy) document number 50016572 Rev E.

2. The NEC section 690.43 states, "Exposed non-current carrying metal parts of module frames, equipment, and conductor enclosures shall be grounded in accordance with 250.134 or 250.136 (A) regardless of voltage."

3. For Proper Equipment Grounding Conductor (EGC) and Overcurrent Protection Device (OCPD) sizing, refer to NEC sections 250.66, 250.122, and 250.166.

**GLOBAL HEADQUARTERS**
660 BETA DRIVE
CLEVELAND, OH 44143

+1 440 461 5200
SOLAR@PLP.COM
PLP.COM