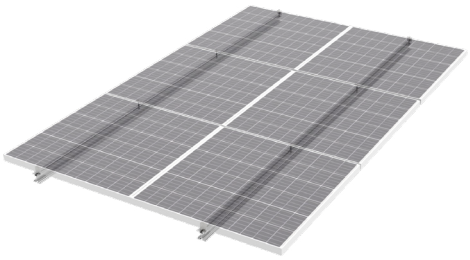
POWER RAIL™ PX RAIL
COMMERCIAL MOUNTING SYSTEM
INSTALLATION INSTRUCTIONS

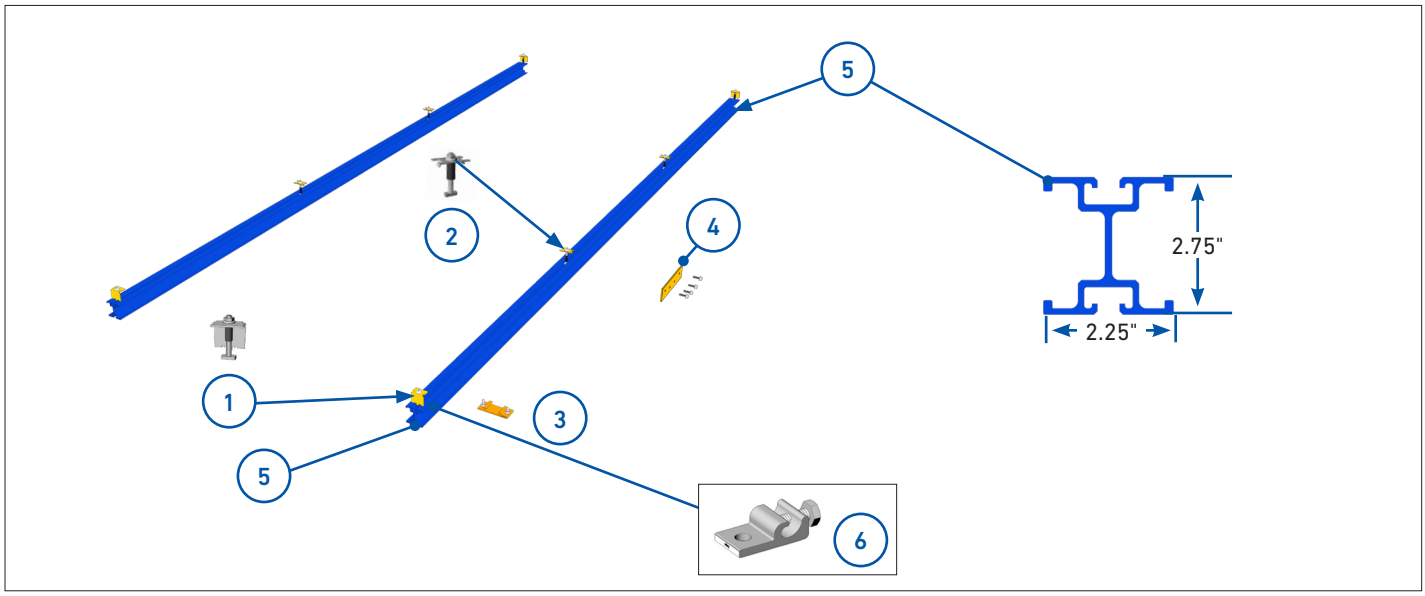


⚠ IMPORTANT SAFETY INFORMATION

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.

PACKAGE COMPONENTS



1. Module End Clamp, pre-assembled
2. AMP™ Clamp, Module Mid Clamp, pre-assembled
3. Mounting Base Bracket (MBB)
4. Splice Plate
5. Rail Profile - PX
6. Grounding/Bonding Device

Tools Required:

- 1/2" Wrench or Socket for 5/16" hardware
- Torque Wrench
- Ratchet Wrench
- Ratchet Extension Bar

ADDITIONAL INFORMATION

The POWER RAIL PX Rail conforms to ANSI/UL UL 2703 (2015) Standard for Safety First Edition: Mounting Systems, Mounting Devices, Clamping/Retention devices, and Ground Lugs for Use with Flat Plate Photovoltaic Modules and Panels.

ELECTRICAL

NOTE: Electrical installations must be made in accordance with the National Electric Code ANSI/NFPA 70. Contact your local Authority Having Jurisdiction (AHJ) for additional details.

Max Overcurrent Protective Device (OCPD)
Rating: 25A

Equipment Grounding Conductor Sizing

Module Fuse Rating	**Copper Wire Size**
<15 AMPS	#14 AWG 90° C
<20 AMPS	#12 AWG 90° C
20 - 60 AMPS	#10 AWG 90° C

FIRE CLASS RESISTANCE RATING

The system fire class rating is only valid when the installation is conducted strictly in accordance with these Installation Instructions.

The assembly is to be mounted over a fire-resistant roof covering rated for the application.

Meets the requirements of Class A Steep Slope Flush-Mounting Applications when using Type 1 listed photovoltaic modules.

Testing conducted with a 5" gap (distance between roof covering and PV Module Frame) per UL 2703 allows the system to be installed with any gap per manufacturer's instructions.

Steep Slope refers to roofs with slopes greater than or equal to 2:12.

STRUCTURAL CERTIFICATION

Mechanical Load Rating: Exceeds the minimum design load rating of UL 2703 Section 21.4. Certification for 30 psf downward, 15 psf upward, and 5 psf downslope. Actual system capacity defined in span/cantilever charts and/or PE review.

MARKING

Product markings identified per UL 2703 are to be visible and readily accessible for inspection.

PERIODIC INSPECTION

Periodic re-inspection is a recommended system maintenance procedure to check for any loose components or corrosion. If any loose components or any corrosion is found, the affected components are required to be replaced immediately with the original mounting system manufacturer's component parts.

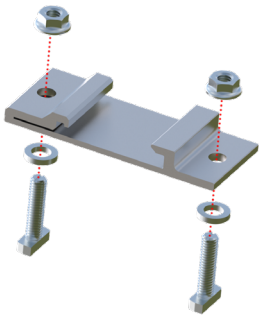
ABOUT THE PRODUCT - OR REQUIREMENTS

- These instructions do NOT include any information on the selection or installation of attachment hardware to be mounted to the roof substrate.
- Begin after all roof-mounted attaching hardware has been installed and secured to the roof substrate.

COMPONENT INFORMATION

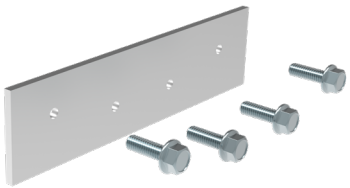
Mounting Base Brackets (MBBs)

Hardware must be Grade 5 or equivalent. Hardware type (Hex Bolt, Carriage Bolt, and RAD™ Bolt) is application-dependent.



Rail Splice Plate

Rail Splice Plates have been tested per UL 2703 Bonding & Grounding requirements without the use of bonding jumpers. The PX structural splice is flexible and can be installed on either side of the PX rail. Please refer to Step 1 in the assembly instructions.



Module Clamps - Factory Assembled

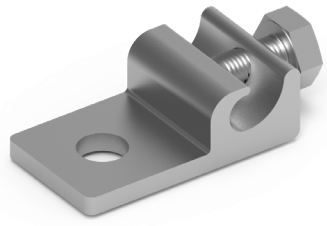
Module Clamps have integrated grounding and have been tested to UL 2703. See Module Compatibility List for list of approved modules. Module orientation is compatible with Portrait orientation (clamping to the long edge of the module frame) or Landscape orientation (clamping to the short edge of the module frame). Please refer to your solar panel's installation manual for compatibility.

Module End Clamp, pre-assembled

Module Mid Clamp, pre-assembled

Grounding/Bonding Device

A suitable grounding/bonding device comparable to the Burndy WEEB Lug-8.0 must be used as part of the system ground path. Must install per manufacturer's guidelines (see Page 6).

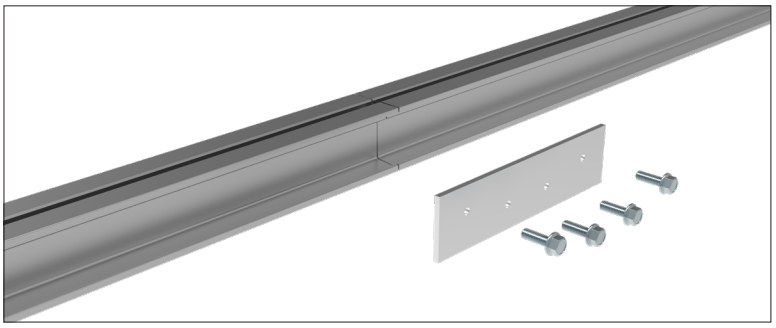


1

If necessary, Rails are spliced using a Splice Plate. Splicing can be done either before or after the Rail is installed. Choose which side to install the splice. Only 1 splice is needed per rail intersection. Install the Splice Plates with the provided 5/16" Hex Head bolts and **torque to 15 ft-lb.**

NOTE: Each splice kit includes 1 splice plate and 4 hex head bolts. The position of the splice at the rail intersection can be on either side channel of the rail and is not required on both sides.

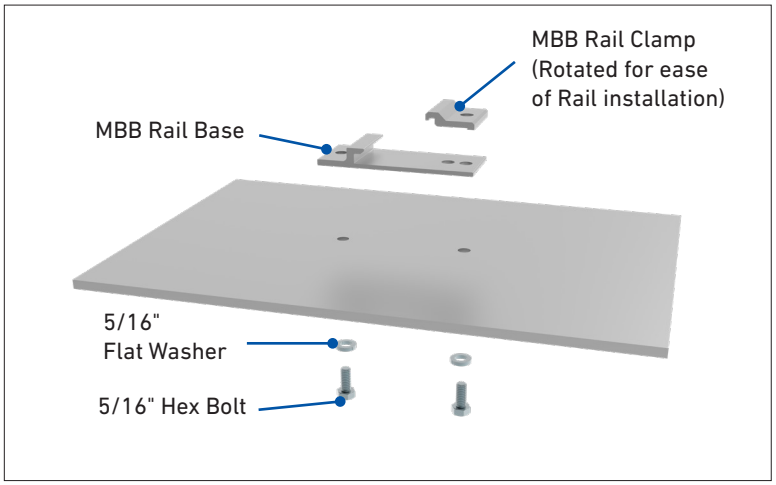
NOTE: If Splice Plates are installed prior to Rail installation, the installation must be a three person activity, taking care not to damage the Splice Plates during Rail installation. Do not place Splice Plates directly over supporting structures such as Mounting Brackets, Strongbacks, and Purlins.



2

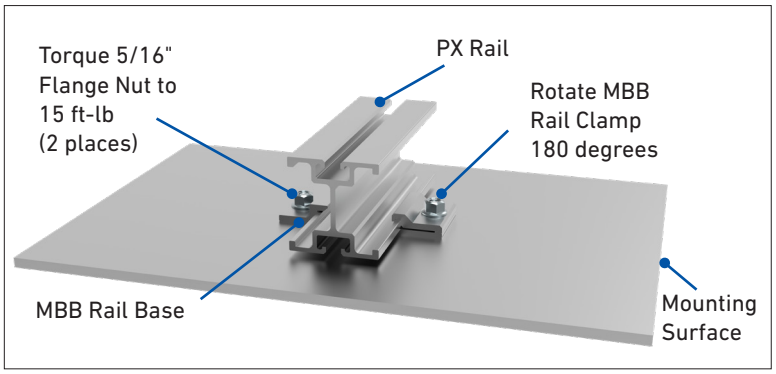
When attaching the MBB to the mounting surface, install the Rail Base and Rail Clamp as shown. Prior to Rail installation, hand-tighen the hardware. After the Rail is installed, tool-tighten and **torque to 15 ft-lb.**

NOTE: Hardware must be Grade 5 or equivalent. Hardware type (Hex Bolt, Carriage Bolt, RAD™ Bolt, etc.) is application-dependent.



3

Install the Rail ensuring that it nests into the MBB Rail Base as shown. Rotate the MBB Rail Clamp 180 degrees, nesting it onto the opposite side of the Module Rail. **Torque the two 5/16" Flange Nuts to 15 ft-lb.**



4

Refer to the green checked boxes for correct installation of the AMP™ Clamp bonding Mid Clamps must be installed as shown 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 RAD™ Bolt tightly against the Module Frame. There should not be a visible gap between the RAD™ Bolt and the Module Frame.

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

Bonded End Clamps are used on the outer Modules. Insert the 5/16" RAD™ Bolt into Rail and rotate 90-degrees 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-degrees. Use the indicator slot on the threaded end to identify whether or not the bolt has been locked.

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

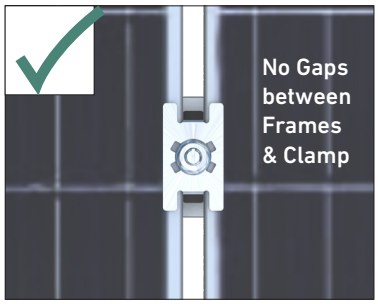
⚠ WARNING

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 injury and/or damaged components.

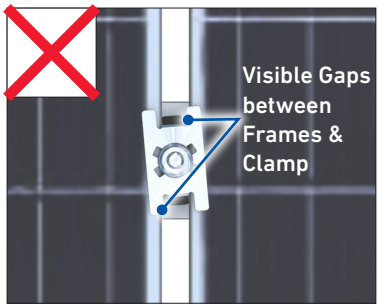
Module clamps must be correctly installed. Failure to follow the correct method could lead to personal injury, structural failure, and/or damaged components.

CAUTION

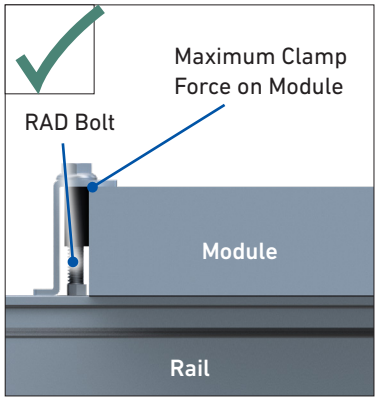
Exceeding torque values can result in damage to Rail and/or Hardware.



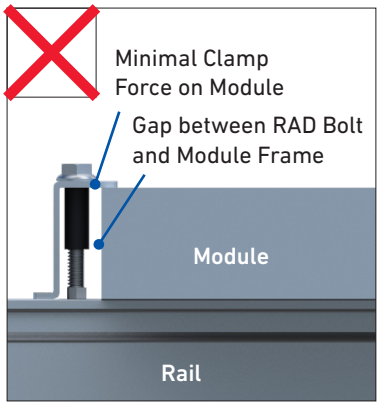
Correctly Installed Mid Clamp



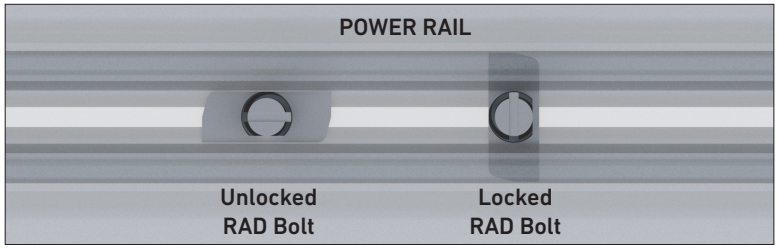
Incorrectly Installed Mid Clamp

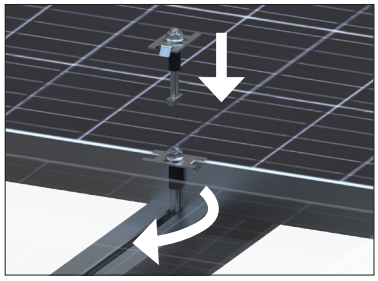


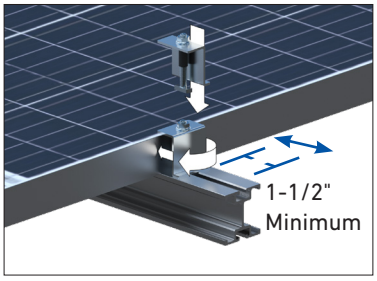
Correctly Installed End Clamp



Incorrectly Installed End Clamp







INSTALLING A WEEB-LUG 8.0

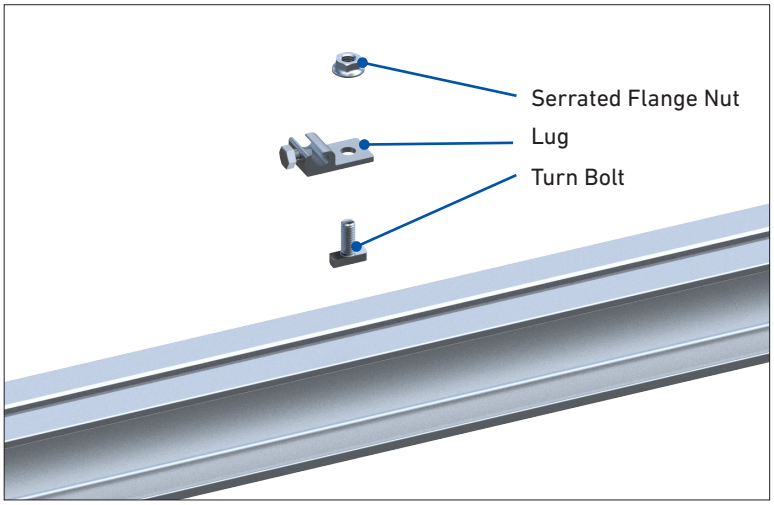
This racking system may be used to ground and/or mount a PV Module complying with UL 1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with these Installation Instructions.

CAUTION

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

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.

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



One of two mounting methods may be used (see method A in adjacent image).

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

The instructions on this page only address the WEEB-LUG-8.0 as found within the manufacturer's (Burndy) document number 50016572 Rev E.

NOTE: To maintain a bonding path during maintenance within a module row, install a ground wire at this end.

Mounting Surface Requirements for Non-PLP Supplies Grounding Equipment

Catalog Number	Max OCPD (A)	Mounting Surface					Mounting Screw		Mounting Hole Range	
		Min. Profile (W x L)	Minimum Thickness	Maximum Thickness	Material	Surface Prep	Size	Tightening Torque	Minimum	Maximum
		mm	in	in				lb-in	mm	mm
WEEB-LUG-8.0	200	22 x 20	.06	.25	AL	Anodized	5/16" M8	120	7.85	10
			.06	.25	Steel	Galvanized				

⚠ IMPORTANT SAFETY 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.

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