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Installation Manual

Universal Side-of-Pole Mount

UNI-SP/01



 **IRONRIDGE**
Solar Mounting Solutions

Introduction

The Universal Side-of-Pole Mount UNI-SP/01 is a simple and straightforward pole mounting solution for small area solar photovoltaic (PV) needs. With its user settable angle adjustment, it can support installations in a wide range of locations.

In addition, the UNI-SP/01 supports:

- ◆ A single PV panel up to 25 inches in width.
- ◆ Pole diameters from 2.0 inches to 4.5-inches.

1. Installer Responsibility

The installer is solely responsible for:

- ◆ Complying with all applicable local or national building codes, including any that may supersede this manual;
- ◆ Ensuring that IronRidge and other products are appropriate for the particular installation and the installation environment;
- ◆ Ensuring that all structural support members, including the roof, its rafters, and connections, can support the array under all code level loading conditions;
- ◆ Using only IronRidge parts and installer-supplied parts as specified by IronRidge. Substitution parts may void the warranty;
- ◆ Ensuring that anchoring devices including lag screws have adequate pullout strength and shear capacities as installed;
- ◆ Maintaining the waterproof integrity of the structural support or roof, including selection of appropriate flashing;
- ◆ Ensuring safe installation of all electrical aspects of the PV array; and
- ◆ Ensuring correct and appropriate design parameters are used in determining the design loading used for the specific installation. Parameters, such as snow loading, wind speed, exposure and topographic factor should be confirmed with the local building official or a licensed professional engineer.

2. Customer Support

IronRidge makes every effort to ensure your mounting kit is easy to install. If you need assistance at any point with your installation or have suggestions on how we can improve your experience, call IronRidge customer support: (800) 227-9523

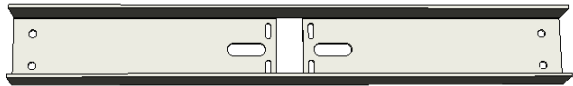
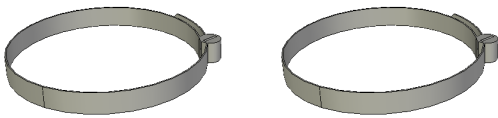
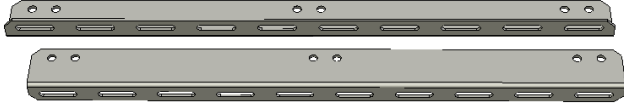
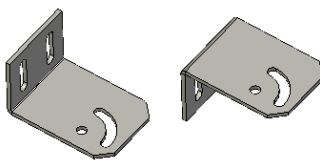
3. Tools Required For Assembly

The following tools are required to assemble the Universal Side-of-Pole Mount:

Tool	Use for
Wrenches Open-end wrench, Box-end wrench, or 3/8" or greater socket drive with sockets to support the following size hex heads: ◆ 5/16" ◆ 1/4"	◆ 5/16-18 cap-end screws ◆ 5/16-18 bolts ◆ 1/4-20 cap-end screws ◆ 1/4-20 bolts ◆ Cap-end screws on hose clamps
Screwdriver Slotted, 1/4"	◆ Cap-end screws on hose clamps

4. Component List

The Universal Side-of-Pole Mount UNI-SP/01 kit contains the following parts:

Bucket (51-3517-200) Attaches to the pole with the hose clamps, providing the link between the pole and the module/rail assembly 	Hose Clamps (27-5000-010) x2 Attach to the pole, holding the Bucket. These hose clamps are compatible with poles ranging from 2.0 inches to 4.5 inches 
Rails (51-0525-001) x2 Attach directly to the back of the module 	Clips (51-3517-243 / 51-3517-244) Hold the panel rails, allowing adjustment of the panel angle 

Part	Qty	Part Number
1/4-20 Kit	1	29-5001-000
1/4-20 x 3/4" SS hex-cap bolt	8	23-2520-050
1/4 flat washer, SS	16	25-2502-000
1/4 split lock washer, SS	8	24-2501-000
1/4 hex nut, SS	8	24-2520-440
5/16-18 Kit	1	29-5005-000
5/16-18 x 3/4" SS hex-cap bolt	4	23-3118-021
5/16 flat washer, SS	8	25-3102-000
5/16 split lock washer, SS	4	25-3101-000
5/16 hex nut, SS	4	25-3118-440
5/16 and 1/4 x 3/4" spare hardware kit	1	29-5002-000

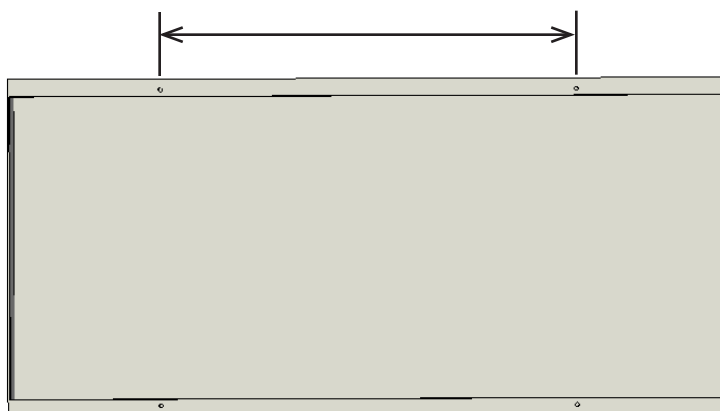
5. Assembly

Step 1 - measuring the distance between mounting holes on the PV module

Parts Required	Qty	Part Number
PV Module	1	User-supplied

1. Lay the PV Module face down on a protected flat surface.

2. Measure the distance between the inside mounting holes on the back of the PV module as shown and make a note of it.

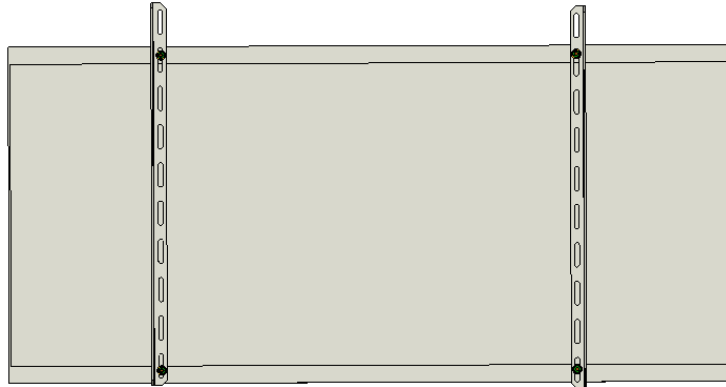


Step 2 - mounting the rail supports on the PV module

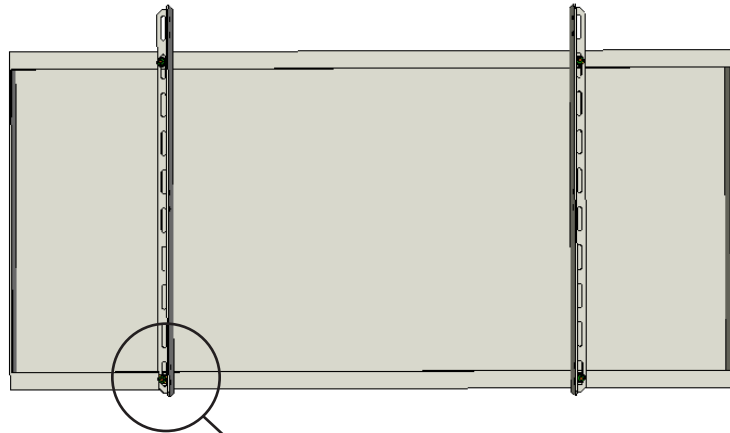
Parts Required	Qty	Part Number
PV Module	1	User-supplied
Rails	2	51-0525-001
1/4-20 x 3/4" SS hex-cap bolt	4	23-2520-050
1/4 flat washer, SS	4	25-2502-000
1/4 split lock washer, SS	4	24-2501-000
1/4 hex nut, SS	4	24-2520-440

1. Do one of the following:

- ◆ If the distance between the PV module mounting holes is less than 26.9", place the rails on the back of the panel so the lip of the rail containing the module mounting holes is facing towards the **center** of the module.

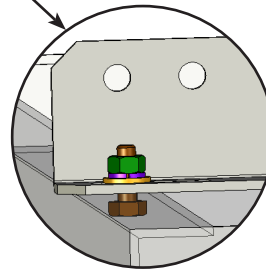


- ◆ If the distance between the PV module mounting holes is 26.9" or more, place the rails on the back of the panel so the lip of the rail containing the module mounting holes is facing toward the **outside edges** of the module.



2. Secure the rails with a bolt, lock washer and hex nut in each of the 4 mounting holes.

Tighten the bolts to 7 ft-lbs.

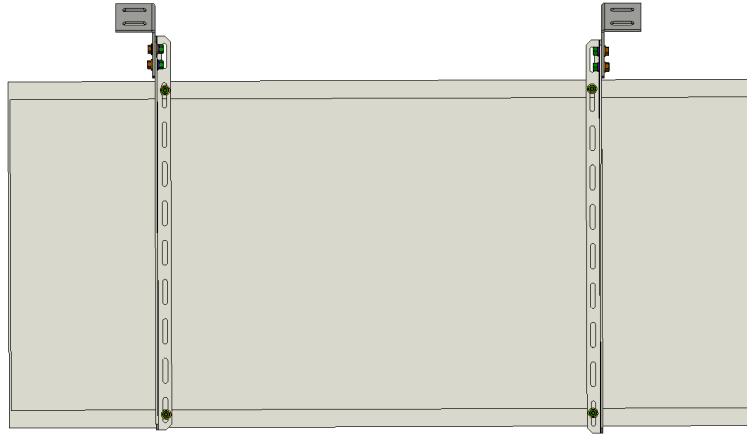


Step 3 - attaching the clips to the rails

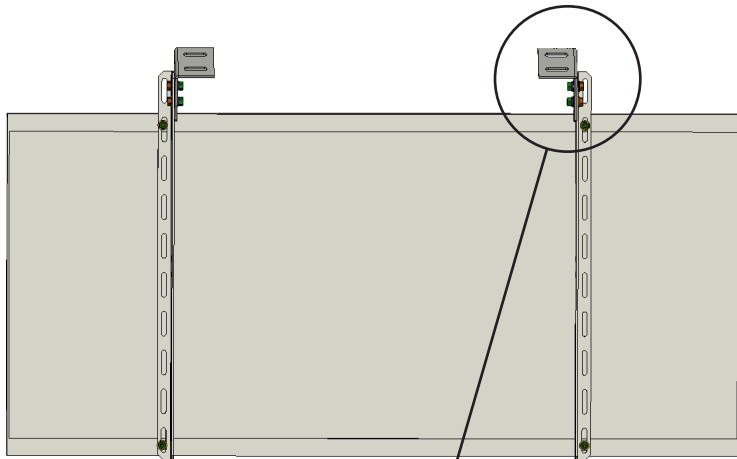
Parts Required	Qty	Part Number
Left Clip	1	51-3517-243
Right Clip	1	51-3517-244
5/16-18 x 3/4" SS hex-cap bolt	4	23-3118-021
5/16 flat washer, SS	8	25-3102-000
5/16 split lock washer, SS	4	25-3101-000
5/16 hex nut, SS	4	25-3118-440

1. Do one of the following:

- ◆ If the distance between the PV module mounting holes is less than 26.9" attach the clips to the rails so the protruding end of the clips are facing the outside **edges** of the module.

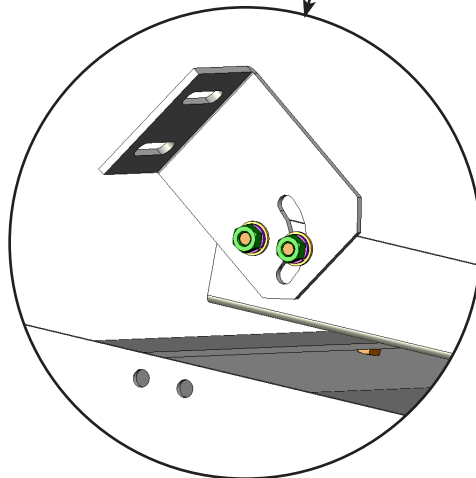


- ◆ If the distance between the PV module mounting holes is 26.9" or more, attach the clips to the rails so the protruding end of the clips are facing the **center** of the module.



2. Attach the clips to the rails. In each of the mounting holes, use a bolt and flat washer on one side, and a flat washer, lock washer and nut on the other.

Tighten the bolts to 8.3 ft-lbs.

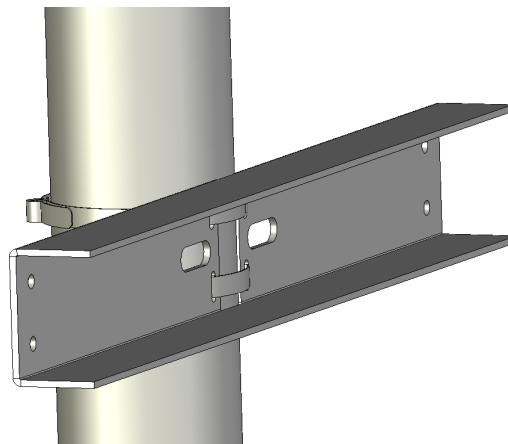


Step 4 - attaching the bucket to the pole

Parts Required	Qty	Part Number
Hose Clamp	2	27-5000-010
Bucket	1	51-3517-200

1. Thread each hose clamp through one of the sets of narrow center holes in the bucket as shown and place at the desired location on the pole.

I This hose clamp is only compatible with poles ranging from 2.0" to 4.5"



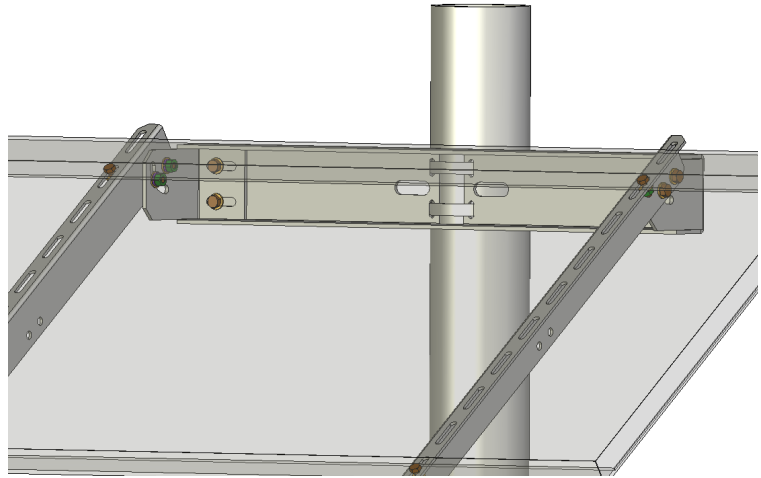
2. Tighten the hose clamp screws to 70 inch-lbs.

Step 5 - mounting the PV assembly on the pole

Parts Required	Qty	Part Number
1/4-20 x 3/4" SS hex-cap bolt	4	23-2520-050
1/4 flat washer, SS	8	25-2502-000
1/4 split lock washer, SS	4	24-2501-000
1/4 hex nut, SS	4	24-2520-440

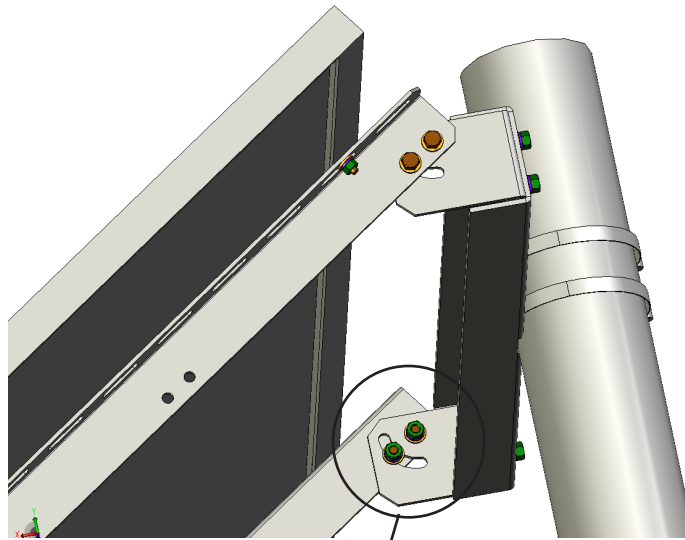
1. Place the PV module assembly so the holes on the clips line up with holes in the inside of the bucket.

Note: depending on the size of the panel you started with, your assembly may look different than this picture, with the clips and rails facing in the opposite direction.



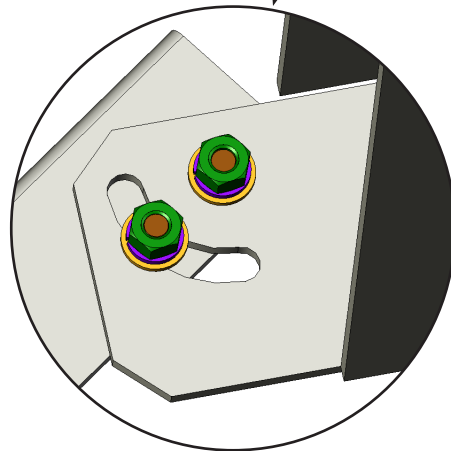
2. Attach the clips to the bucket. In each of the 4 mounting holes, use a bolt and flat washer on one side, and a washer, lock washer and nut on the other.

Tighten the bolts to 8.3 ft-lbs.



3. If desired, loosen the bolts holding the rails to the clips, and adjust the tilt of the panel as required

Tighten the bolts to 8.3 ft-lbs.



IronRidge 10-Year Warranty

Terms and Conditions

IronRidge warrants each Mounting Structure to be free from defects in materials and workmanship for ten (10) years from the date of first purchase ("Warranty Period"), when installed properly and used for the purpose for which it is designed, except for the finish, which shall be free from visible peeling, or cracking or chalking under normal atmospheric conditions for a period of three (3) years, from the earlier of 1) the date the installation of the Product is completed, or 2) 30 days after the purchase of the Product by the original Purchaser ("Finish Warranty"). The Finish Warranty does not apply to any foreign residue deposited on the finish. All installations in corrosive atmospheric conditions are excluded. The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – "Cleaning and Maintenance for Architecturally Finished Aluminum" (www.aamanet.org) are not followed by Purchaser for IronRidge's aluminum based products.

The warranty covers the replacement cost of parts to repair the product to proper working condition. Transportation and incidental costs associated with warranty items are not reimbursable. The warranty does not cover normal wear, or damage resulting from misuse, abuse, improper installation, negligence, or accident. The warranty does not cover any defect that has not been reported in writing to IronRidge within ten (10) days after discovery of such defect. Furthermore, it does not cover units that have been altered, modified or repaired without written authorization from the manufacturer or its authorized representative, or units used in a manner or for a purpose other than that specified by the manufacturer. IronRidge's entire liability and Purchaser exclusive remedy, whether in contract, tort or otherwise, for any claim related to or arising out of breach of the warranty covering the Mounting Structures shall be correction of defects by repair, replacement, or credit, at IronRidge's discretion. Refurbished Mounting Structures may be used to repair or replace the Mounting Structures.

IronRidge shall have no liability for any injuries or damages to persons or property resulting from any cause, whatsoever, or any claims or demands brought against IronRidge by Purchaser, any employee of Purchaser, client of Purchaser, end-user of the Product or other party, even if IronRidge has been advised of the possibility of such claims or demands (collectively, "Third Party Claims"). This limitation applies to all materials provided by IronRidge during and after the Warranty Period.

Daniel W. Stiles, PE

26270 Omar Drive
Fort Bragg, CA 95437
Tel: 707-472-7519

September 8, 2008

IronRidge
Attn: Craig Carni
President
900 Cherry Ave. #400
San Bruno, CA 94066

Subject: Engineering Certification for IronRidge Side of Pole Mounts

Dear Mr. Chang:

I certify that the following IronRidge Pole Mounting Structures, when constructed of materials specified and supplied by IronRidge, meet or exceed the minimum design parameters specified by the 2007 California Building Code(CBC), the 1997 Uniform Building Code, ASCE Standard 7-05, and the Steel Construction Manual, AISC, 13th Edition:

Conditions and location:

Wind: 90 mph, Exposure C
Maximum height above grade-30'

UNI-SA/14	UNI-SA/21.5	UNI-SP/01	UNI-SP/01A
UNI-SP/01X	UNI-SP/01XX	UNI-SP/02	UNI-SP/02A
UNI-SP/02X	UNI-SP/02X	UNI-SP/03	

I further certify by this letter that IronRidge Side of Pole Mounts as listed above will be structurally adequate when installed in accordance with IronRidge Installation Manuals provided with, "Universal Side of Pole Mounts", copyrighted by IronRidge, 2008. The structure or other surface to which IronRidge Mounting Systems are connected should be evaluated on a case by case basis, per Part 1 of the installation manuals to ensure the adequacy of the supporting structure to accept attachments and its ability to support all applied loadings per the CBC.

Please contact me if you have any questions or concerns.

Sincerely,



Daniel W. Stiles, PE

cc: DWS



