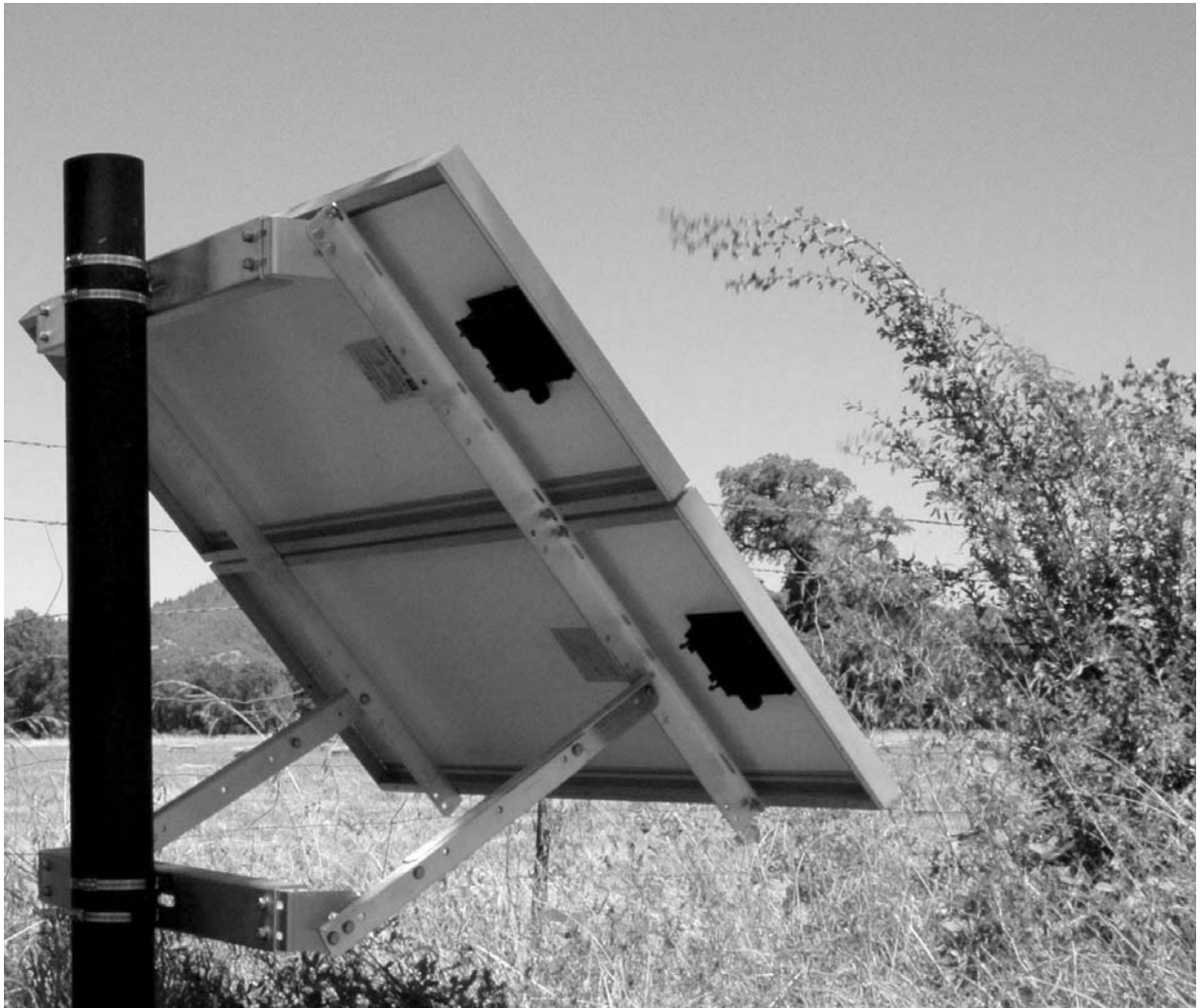


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Installation Manual
Universal Side-of-Pole Mount
UNI-SP/02X



Solar Mounting Solutions

Introduction

The Universal Side-of-Pole Mount UNI-SP/02X is a very sturdy and straightforward pole mounting solution for small area solar photo voltaic (PV) needs. With its user-adjustable angle settings, it can support installations in a wide range of locations.

In addition, the UNI-SP/02X supports:

- ◆ Up to two PV panels with a combined width of up to 55 inches.
- ◆ Pole diameters from 3.0 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 the selected mount can support the array under live load conditions
- ◆ Using only IronRidge parts and installer-supplied parts as specified by IronRidge. Substitution parts may void the warranty
- ◆ Ensuring safe installation of all electrical aspects of the PV array.

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

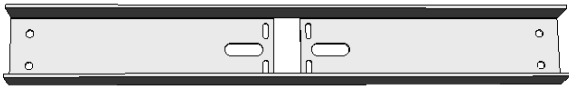

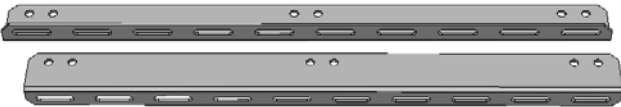
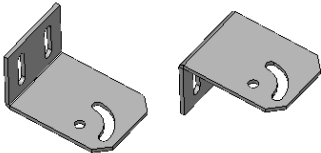

3. Tools Required For Assembly

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: <ul style="list-style-type: none"> ◆ 5/16" ◆ 1/4" 	<ul style="list-style-type: none"> ◆ 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"	<ul style="list-style-type: none"> ◆ Cap-end screws on hose clamps

4. Component List

The Universal Side-of-Pole Mount UNI-SP/02X kit contains the following parts:

<p>Bucket (51-3517-242) x2</p> <p>Attaches to the pole with the hose clamps, providing the link between the pole and the module/rail support assembly</p> 	<p>Hose Clamps (27-5000-010) x4</p> <p>Attach to the pole, holding the Bucket. These hose clamps are compatible with poles ranging from 3.0 inches to 4.5 inches</p> 
<p>Rails (51-0555-001) x2</p> <p>Attach directly to the back of the module</p> 	<p>Clips left (51-3517-243) x2 and right (51-3517-244) x2</p> <p>Hold the panel rails, allowing adjustment of the panel angle</p> 
<p>Support Rails inner (51-0519-000) x2 and outer (51-0519-001) x2</p> <p>Attach to the lower bucket, supporting the lower edge of the panel</p> 	

Part	Qty	Part Number
1/4 x 3/4" Kit	2	29-5001-000
1/4-20 x 3/4" SS hex-cap bolt	8	23-2520-050
1/4 flat washer, SS	8	25-2502-000
1/4 split lock washer, SS	8	24-2501-000
1/4-20 fin hex nut, SS	8	24-2520-440
5/16 x 3/4" Kit	1	29-5004-010
5/16-18 x 3/4" SS hex-cap bolt	16	23-3118-021
5/16 flat washer, SS	32	25-3102-000
5/16 split lock washer, SS	16	25-3101-000
5/16 hex nut, SS	16	25-3118-440
5/16 x 3/4" Kit	1	29-5006-001
5/16-18 x 3/4" SS hex-cap bolt	6	23-3118-021
5/16 flat washer, SS	12	25-3102-000
5/16 split lock washer, SS	6	25-3101-000
5/16 hex nut, SS	6	25-3118-440
5/16 and 1/4 x 3/4" spare hardware kit	1	29-5002-000

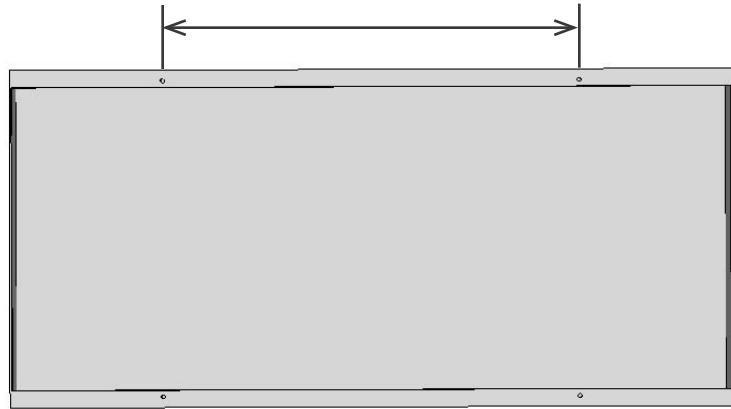
5. Assembly

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

Parts Required	Qty	Part Number
PV Module	1 or 2	User-supplied

1. Lay the modules face down on a protected surface in the appropriate orientation. Leave an inch or two between the panels.

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



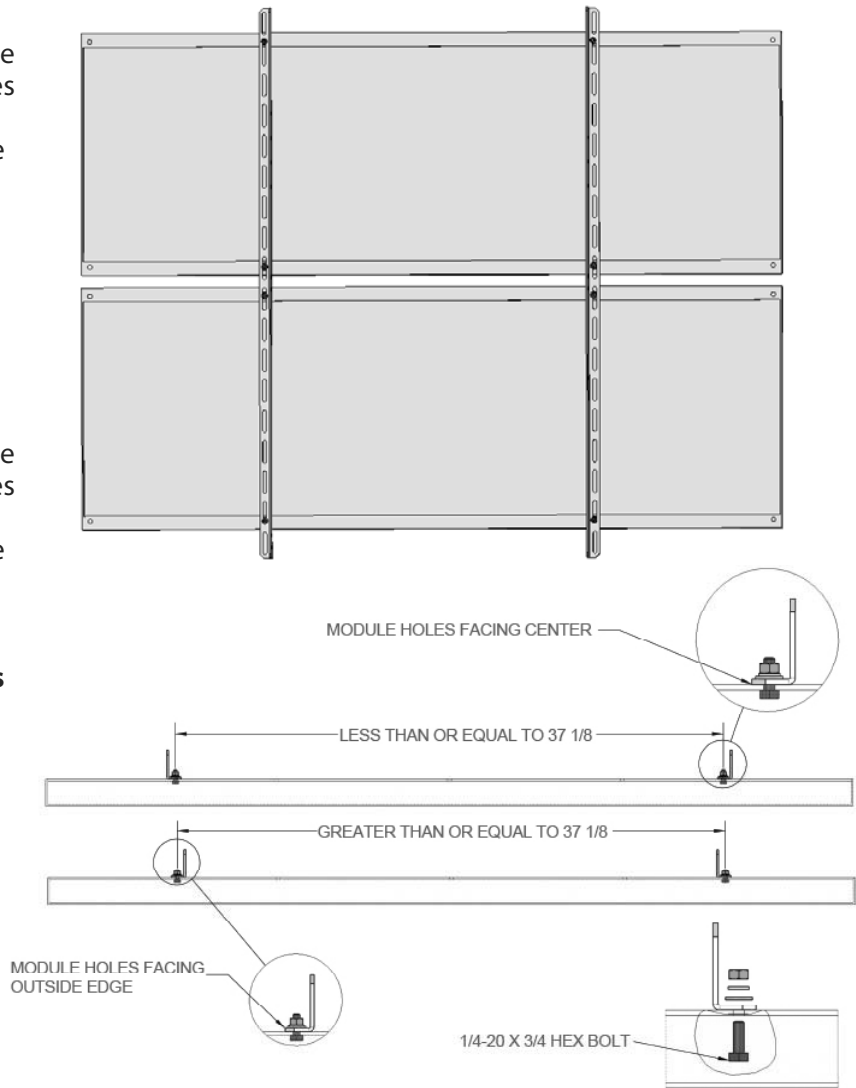
Step 2 - mounting the rail supports on the PV module

Parts Required	Qty	Part Number
Rails	2	51-0545-002
1/4-20 x 3/4" SS hex-cap bolt	8	23-2520-050
1/4 flat washer, SS	8	25-2502-000
1/4 split lock washer, SS	8	24-2501-000
1/4 hex nut, SS	8	24-2520-440

1. Do one of the following:

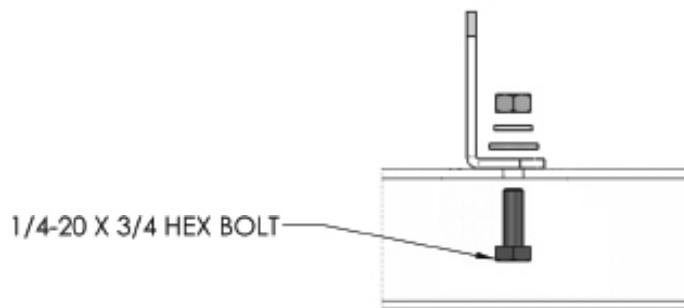
- ◆ If the distance between the PV module mounting holes is less than 37 1/8", place the rails on the back of the panel so the lip of the rail containing the module mounting holes is facing towards the **center** of the module.

- ◆ If the distance between the PV module mounting holes is 37 1/8" 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 1/4 - 20 x 3/4" bolt, lock washer and hex nut in each of the PV mounting holes (4 on each panel).

Tighten the bolts to 7 ft-lbs.

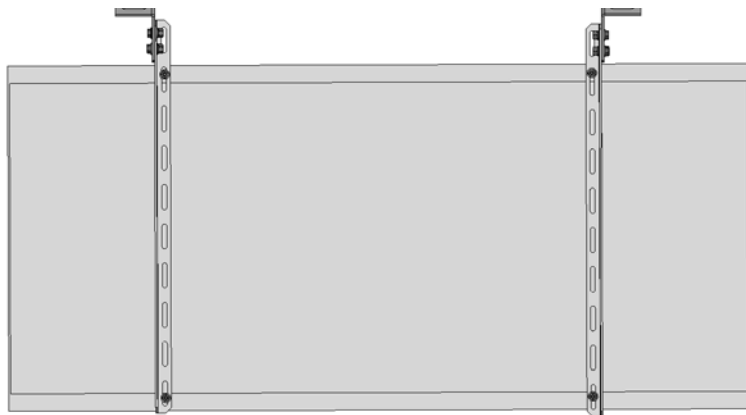


Step 3 - attaching the clips to the rails

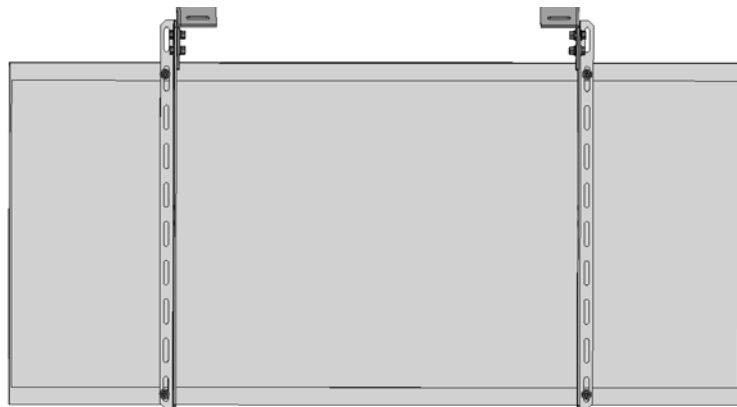
Parts Required	Qty	Part Number
Clip, left end	1	51-3517-243
Clip, right end	1	51-3517-244
5/16-18 x 3/4" SS hex-cap bolt	4	23-3118-021
5/16 flat washer, SS	8	25-3102-000
5/16 split lock washer, SS	4	25-3101-000
5/16 hex nut, SS	4	25-3118-440

1. Do one of the following:

- ◆ If the distance between the PV module mounting holes is less than 37 1/8", attach the clips to the rails so the protruding end of the clips are facing the outside **edges** of the module.

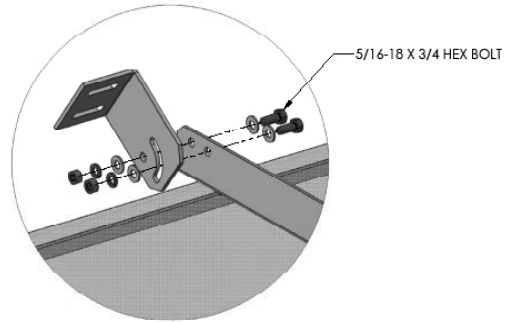


- ◆ If the distance between the PV module mounting holes is 37 1/8" or more, attach the clips to the rails so the protruding end of the clips are facing the **center** of the module.



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 hold in place securely.



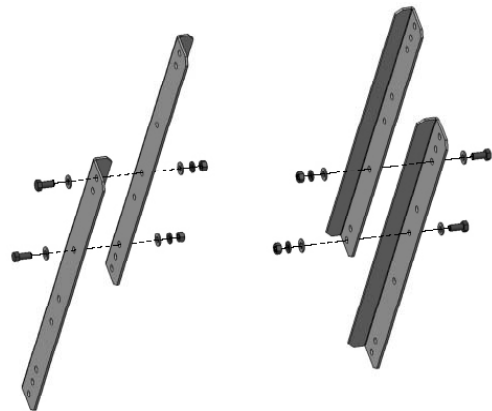
Step 4 - assembling the support rails

Parts Required	Qty	Part Number
Support Rail, inner	2	51-0519-000
Support Rail, outer	2	51-0519-001
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. Line up an inner and outer support rail as shown so that two of the holes in the rails line up.
2. Bolt the rails together using a 5/16 - 18 x 3/4" hex cap screw and flat washer on both sides, with a lock washer under the nut.

Tighten the bolts to 8.3 ft-lbs.

3. Repeat with the second set of support rails.

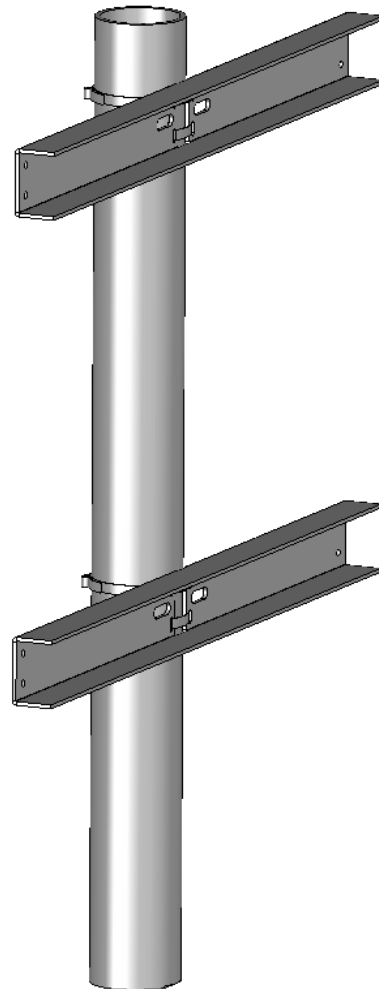


Step 5 - attaching the buckets to the pole

Parts Required	Qty	Part Number
Hose Clamp	4	27-5000-010
Bucket	2	51-3517-242

1. Thread a hose clamp through each of the sets of narrow center holes in the buckets.
2. Place the bucket assemblies at the desired location on the pole. Start with the buckets about 36 inches apart. The spacing can be adjusted later.

⌋ This kit is only compatible with poles ranging from 3.0" to 4.5" in diameter.



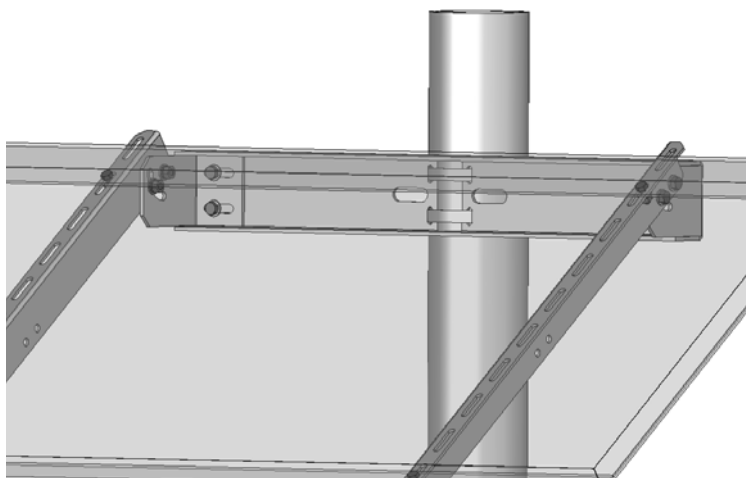
3. Once the hose clamps are in the desired position, tighten the hose clamp screws to 70 inch-lbs.

Step 6 - mounting the PV assembly on the pole

Parts Required	Qty	Part Number
5/16 - 18 3/4" SS hex-cap bolt	4	23-3118-021
5/16 - 18 flat washer, SS	8	25-3102-000
5/16 - 18 split lock washer, SS	4	24-3101-000
5/16 - 18 hex nut, SS	4	24-3118-440

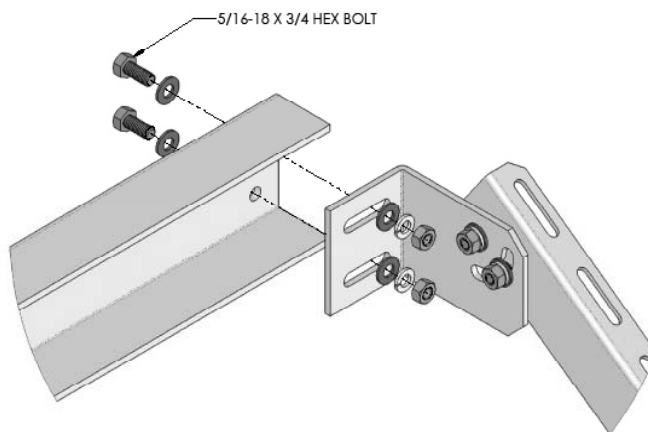
1. Place the PV module assembly so the holes on the clips line up with holes in the inside of the bucket.

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



2. Bolt the clips to the bucket using flat washers with a 5/16 - 18 x 3/4" lock washer under the nut.

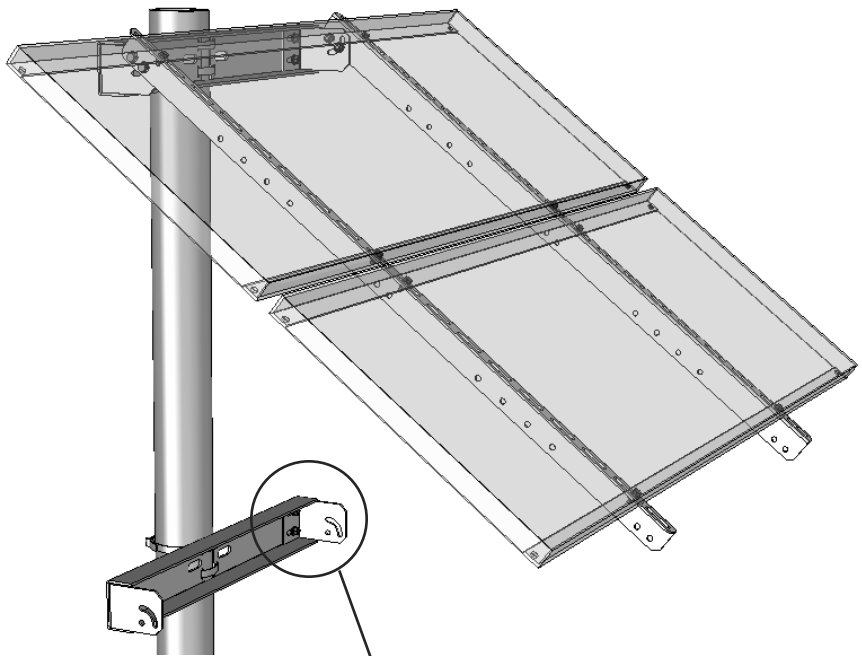
Tighten the bolts to 8.3 ft-lbs.



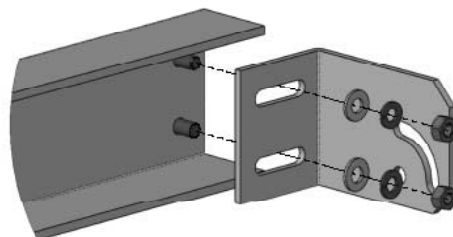
Step 7 - attaching the support rails

Parts Required	Qty	Part Number
Clip, left end	1	51-3517-243
Clip, right end	1	51-3517-244
5/16 - 18 x 3/4" SS hex-cap bolt	8	23-3118-021
5/16 - 18 flat washer, SS	16	25-3102-000
5/16 - 18 split lock washer, SS	8	25-3101-000
5/16 - 18 hex nut, SS	8	24-3118-440

1. Bolt the remaining two clips to the lower bucket using flat washers with a lock washer under the nut.



2. Tighten the bolts to 8.3 ft-lbs.



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3. For each of the two support rails, bolt one end of the rail to the corresponding bucket, using 5/16 - 18 x 3/4" flat washers with a 5/16 - 18 x 3/4" lock washer under the nut.
 4. Bolt the other end of each support rail to the end of the corresponding panel mounting rail, using flat washers with a lock washer under the nut.

Note: Mount support rails so that edges of both rails face out OR edges of both support rails face in.



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5. Adjust the panel angle as desired, by:
 - ◆ Moving the lower bucket up or down
 - ◆ Lengthening or shortening the panel support rails by lining up two alternate holes
 - ◆ Changing the hole where the support rail connects to the panel rail
 6. Once the adjustments are complete, tighten all 5/16" hardware to 8.3 ft-lbs.
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