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# Installation Manual

## Universal Top-of-Pole Mount

### UNI-TP/02



Solar Mounting Solutions

## Introduction

The Universal Top-of-Pole Mount UNI-TP/02 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-TP/02 supports:

- ◆ Up to two PV panels with a combined width of up to 45 inches.
- ◆ A pole diameter of 4.0 inches (requires a properly anchored schedule 40 pipe).

## 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 Top-of-Pole Mount:

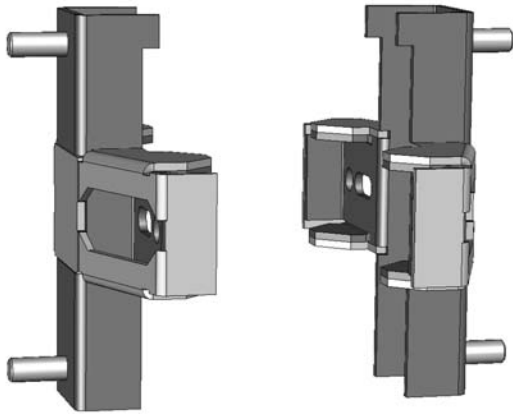
Tool	Use for
Wrenches  Open-end wrench, Box-end wrench, or 3/8" or greater socket drive with sockets to support the following size hex heads: <ul style="list-style-type: none"> <li>◆ 3/8"</li> <li>◆ 5/16"</li> <li>◆ 1/4"</li> </ul>	<ul style="list-style-type: none"> <li>◆ 3/8 cap-end screws, 3/8 bolts</li> <li>◆ 5/16 cap-end screws, 5/16 bolts</li> <li>◆ 1/4 cap-end screws, 1/4 bolts</li> </ul>

## 4. Component List

The Universal Top-of-Pole Mount UNI-TP/02 kit contains the following parts:

### Brace Assembly (51-0626-300) x2

Attaches to the top of the 4-inch pole, providing the foundation for the mount



### Tilt Plate, left (51-0627-018) and right (51-0627-018A)

Attaches to the brace, providing tilt adjustment for the panel assembly



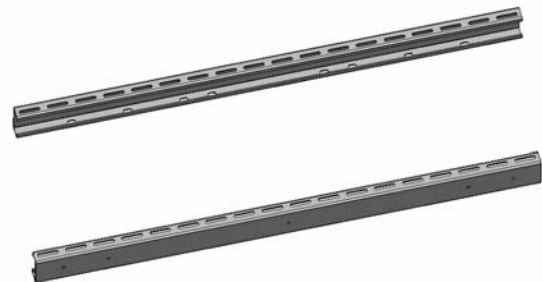
### Cross Rail (51-0627-016) x2

Attaches to the tilt plates and support the channel rails



### Channel rail (51-0545-000) x2

Attaches directly to the back of the PV modules



**Component List continued...**

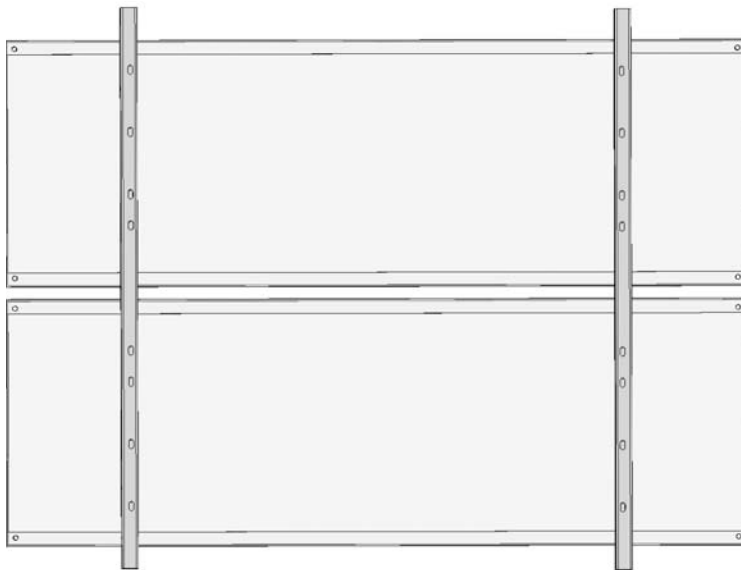
<b>Part</b>	<b>Qty</b>	<b>Part Number</b>
5/16 x 1" Kit	1	29-5006-005
5/16-18 x 1" SS hex-cap bolt	4	23-3118-021
5/16 flat washer, SS	8	25-3102-000
5/16 split lock washer, SS	4	25-3101-000
5/16 hex nut, SS	4	25-3118-440
Small Pole Bracket Kit	1	29-5008-001
Stud, 3/8-16 x 6" SS	2	27-1037-016
3/8 flat washer, Zinc	4	27-3702-001
3/8 split lock washer, Zinc	4	27-3701-001
3/8 hex nut, Zinc	4	24-3716-441
Small Tilt Plate Kit	1	29-5007-000
3/8 flat washer, Zinc	4	27-3702-001
3/8 split lock washer, Zinc	4	27-3701-001
3/8 hex nut, Zinc	4	24-3716-441
Cross Rail Kit	1	29-5010-000
5/16-18 x 2.50" hex-cap bolt, Zinc	4	23-3118-901
5/16 flat washer, Zinc	4	25-3102-001
5/16 med split lock washer, Zinc	4	25-3101-001
5/16-18 fin hex nut, Zinc	4	24-3118-441
Spare Pole Kit	1	29-5002-100
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
1/4-20 fin hex nut, SS	4	24-2520-440
1/4 x 3/4" Kit	2	29-5000-000
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. Assembly

### Step 1 -attaching the channel rails to the PV modules

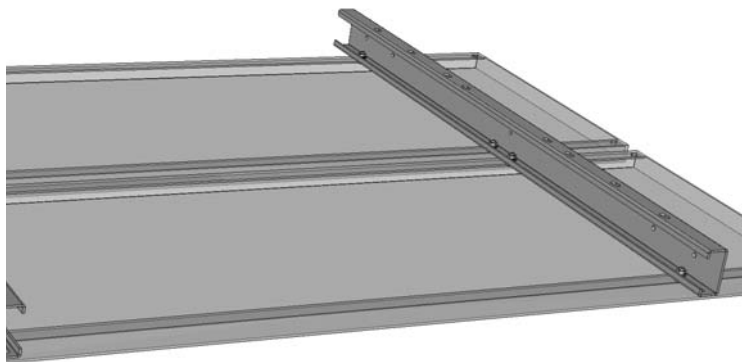
Parts Required	Qty	Part Number
PV Module	1-2	User-supplied
Rails	2	51-0545-000
1/4-20 x 3/4" SS hex-cap bolt	8	23-2520-050
1/4 flat washer, SS	8	25-2502-000
1/4 split lock washer, SS	8	24-2501-000
1/4-20 fin hex nut, SS	8	24-2520-440

1. Lay the modules face down on a protected surface in the appropriate orientation. Leave an inch or two between the panels.
2. Lay the channel rails on the back of the modules with the evenly-spaced holes down, so the flat side of the rails are facing towards the outside edges of the panels.



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

Tighten the bolts to 7 ft-lbs.



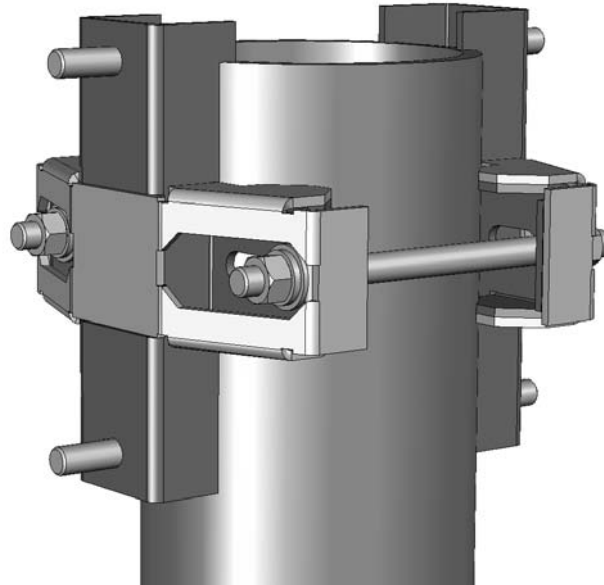
## Step 2 - attaching the brace assembly to the pole

Parts Required	Qty	Part Number
Brace Assembly	2	51-0626-300
Stud, 3/8-16 x 6" SS	2	27-1037-016
3/8 flat washer, Zinc	4	27-3702-001
3/8 split lock washer, Zinc	4	27-3701-001
3/8 hex nut, Zinc	4	24-3716-441

1. Place the brace assembly onto the pole so the "lip" catches the top of the pole.
2. Install the studs and hardware as shown, using a washer and lock washer under each nut.
3. Tighten the stud nuts evenly, making sure that both studs are tightened the same amount so the distance between braces is the same on the front and the back.

Also, make sure that the nuts are approximately an equal number of threads in on the studs, so that the protruding part of the stud doesn't stick out too far.

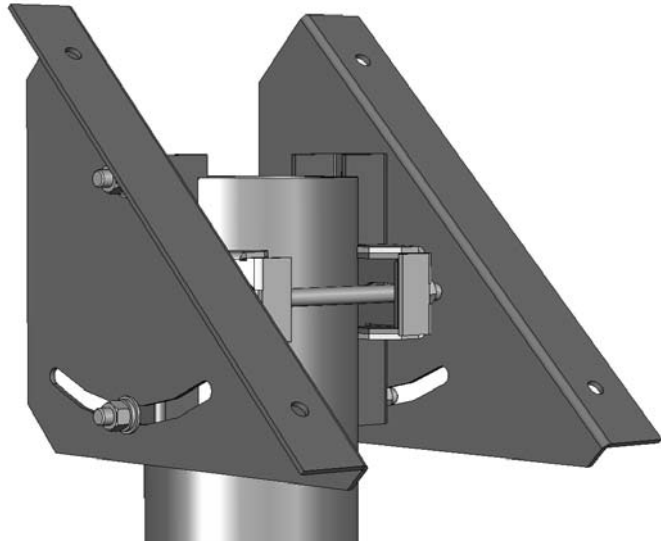
4. Tighten the studs to 12 ft-lbs.



### Step 3 - attaching the tilt plates to the brace

Parts Required	Qty	Part Number
Tilt Plate, left	1	51-3517-243
Tilt Plate, right	1	51-3517-244
3/8 flat washer, Zinc	4	27-3702-001
3/8 split lock washer, Zinc	4	27-3701-001
3/8 hex nut, Zinc	4	24-3716-441

1. Place the tilt plates on the brace assembly as shown.
2. Use a washer, lock washer and nut on each screw, and finger-tighten.

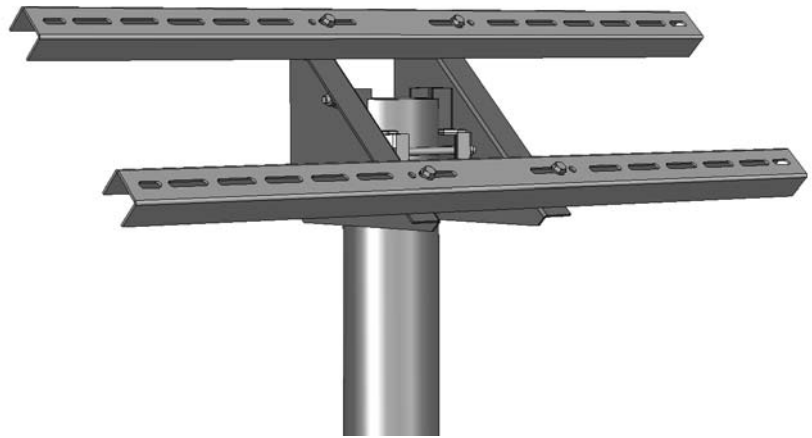




## Step 4 - attaching the cross rails to the tilt plates

Parts Required	Qty	Part Number
Cross Rail	2	27-0627-016
5/16-18 x 2.50" hex-cap bolt, Zinc	4	23-3118-901
5/16 flat washer, Zinc	8	25-3102-001
5/16 med split lock washer, Zinc	4	25-3101-001
5/16-18 fin hex nut, Zinc	4	24-3118-441

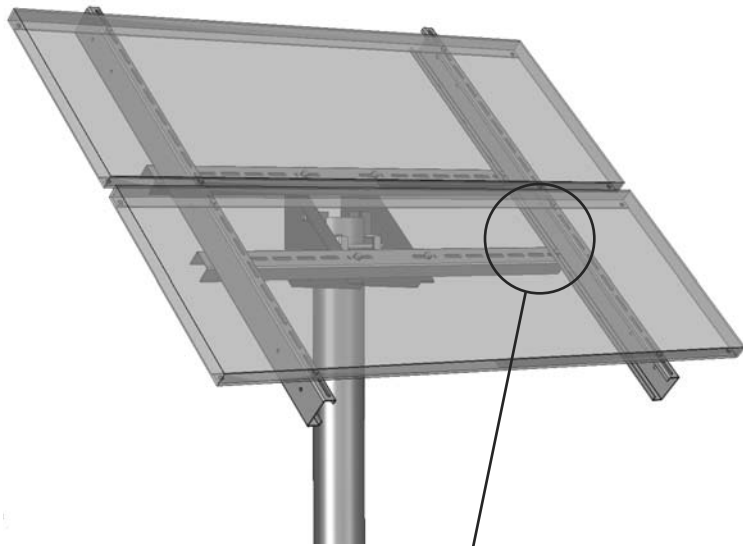
1. Place the cross rails on the tilt plates with the open side facing down and attach using the specified hardware.
2. Tighten the bolts to 12 ft-lbs.



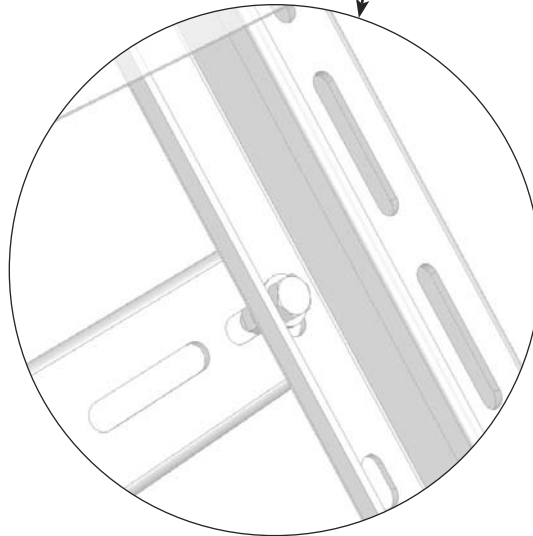
## Step 5 - mounting the PV assembly

Parts Required	Qty	Part Number
5/16-18 x 1" 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. Lift the PV array assembly onto the cross rails and attach using the supplied hardware.



2. Tighten the bolts to 12 ft-lbs.



3. Adjust the tilt of the panel, then tighten the tilt plate nuts to 12 ft-lbs.