



Installation Manual

2016 Edition v3.24

For models:

UNI-SP/01
UNI-SP/01A
UNI-SP/01XH
UNI-SP/01XX
UNI-SP/02
UNI-SP/02A
UNI-SP/02X
UNI-SP/03
UNI-SP/03W



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Introduction

The Side of Pole Mount is a simple and universal pole mounting solution for small area solar photovoltaic (PV) needs. With its user-adjustable angle settings, the Side of Pole Mount can support installations in a wide range of locations. Panel and pole support varies by model.

Customer Support

Tamarack Solar 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 our customer support at 1-800-819-7236 or email us at info@tamaracksolar.com.



Tools Required

A wrench and screwdriver that support the following size heads:



5/16"

1/4"

1/4" or #2 Phillips drive

Components List

The following parts are used across various models of our Side of Pole mount and ship with necessary hardware:

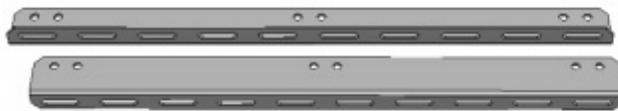
Large Bucket



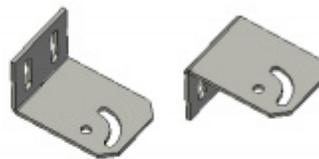
Banding



Rails



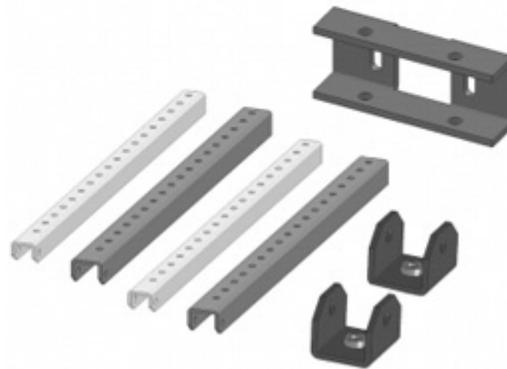
Clips



Support Rails*



Lower Channel Kit*



Optional Components

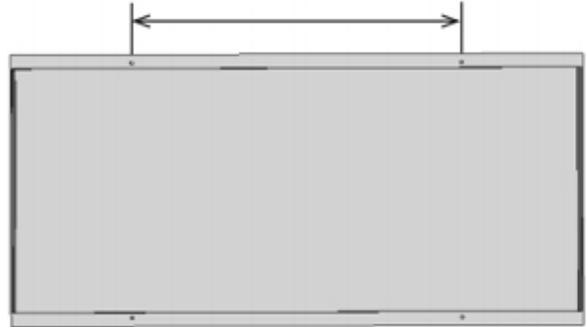


Depending on mounting surface:
 1 set: 1/2" - 13x2", 3", or 4" U-Bolts
 Flat Lock Washers
 Washers or Nuts
 -OR-
 2 sets: 1/2" lag bolts and washers

*Component only needed for specific models.

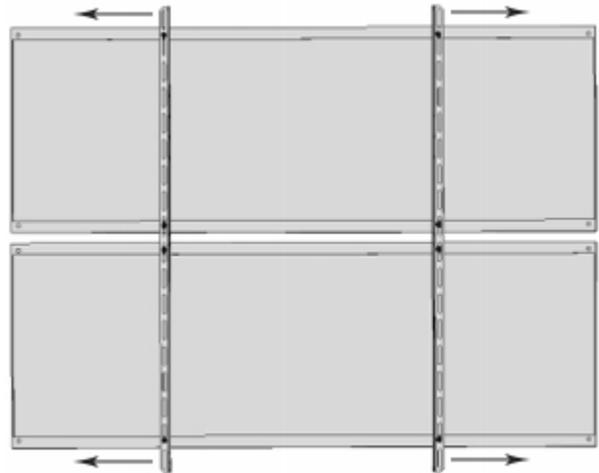
Step 1. Measuring PV Mounting Hole Distance

- Lay the module(s) face down on a protected surface in the suitable orientation. Leave 1/4" between panels.
- Measure the distance between the inside mounting holes on the back of the PV module as shown and make a note of it.

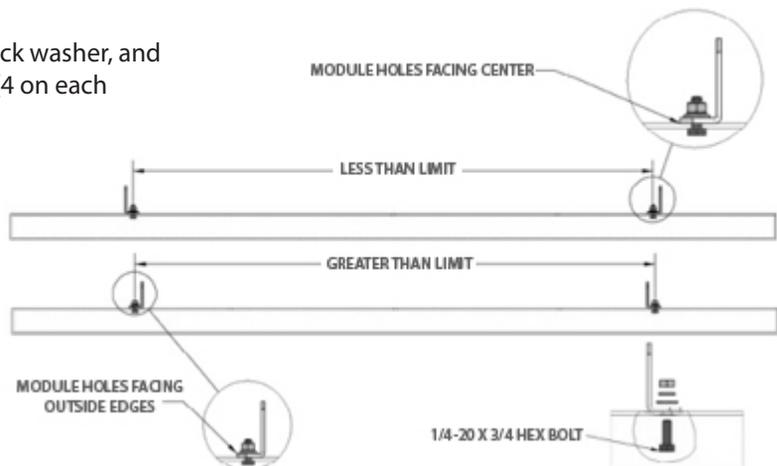


Step 2. Mounting Rail Supports on PV Module

- Use the provided table and images below as reference. This will help with determining the "distance limit", which changes the direction the rail supports face.
- If the mounting hole distance is equal to or more than the "distance limit" for your model, place the rails on the back of the panel(s) so that the lip of each rail containing the module mounting holes are facing towards the outer edges of the module (as shown in the image on the right).
- If the mounting hole distance is less than the "distance limit" for your model, place the rails on the back of the panel(s) so that the lip of each rail containing the module mounting holes are facing towards the center of the module.
- 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 84 in-lbs.

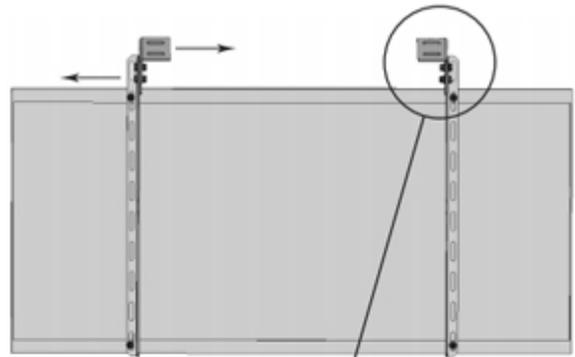


Model	Distance Limit
UNI-SP/01	26-9/10"
UNI-SP/01A	26-9/10"
UNI-SP/01XH	37-1/8"
UNI-SP/01XX	37-1/8"
UNI-SP/02	26-9/10"
UNI-SP/02A	26-7/8"
UNI-SP/02X	37-1/8"



Step 3. Attaching Clips to Rails

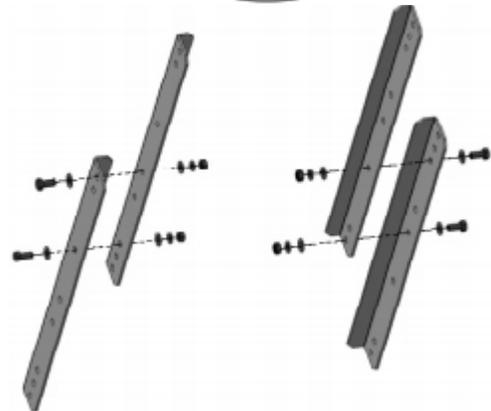
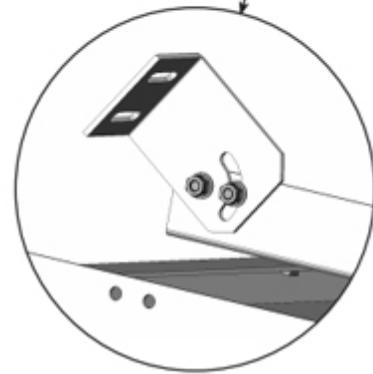
- A. Attach the clips to the rails so that the protruding end of the clips are facing the opposite way of the lip of the rail (shown in previous step).
- B. In each of the mounting holes, use a 5/16-18 x 3/4" bolt and flat washer on one side, and a flat washer, lock washer and nut on the other. Tighten these bolts to 144 in-lbs after assembly is finished and tilt is final. Until then, keep loose.



Step 4. Assembling Support Rails

Only for models: 01XX, 02, 02A, 02X, 03, 03W

- A. Line up an inner and outer support rail as shown so that two of the holes in the rails line up.
- B. Bolt the rails together using a 5/16-18 x 3/4" bolt and flat washer on one side, and a flat washer, lock washer and nut on the other.. Tighten the bolts to 144 in-lbs.
- C. Repeat with the second set of support rails.



Step 5. Attaching Bucket(s) to Pole

- A. Thread each banding through one of the sets of narrow center holes in the bucket(s) as shown and place at the desired location on the pole.
- B. Once the bandings are in the desired position, tighten the banding screws to 35 in-lbs.
- C. In high loading conditions, use the optional 1/2-13 U-Bolts as appropriate for the pipe size being used. Tighten securely but take care not to deform the bucket
- D. Use 1/2" lag bolts as appropriate to the wooden structure being mounted to (telephone pole or post). Tighten securely but take care not to deform the bucket.





Step 6. Mounting PV Assembly on Pole

(See page 6 for 01XH and page 8 for 03W)

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

Depending on the size of the panel you started with, your assembly may look different than what is shown in the provided pictures, with the clips and rails facing in the opposite direction.

- B. Attach the clips to the bucket. In each of the 4 mounting holes, use a 5/16-18 x 3/4" bolt and flat washer on one side, and a washer, lock washer and nut on the other. Tighten bolts to 144 in-lbs.

Step 7. Attaching Support Rails

Only for models: 01XX, 02, 02A, 03

- A. Bolt the remaining two clips to the lower bucket using flat washers with a lock washer under the nut (5/16-18 x 3/4" hardware). Tighten the bolts to 144 in-lbs.

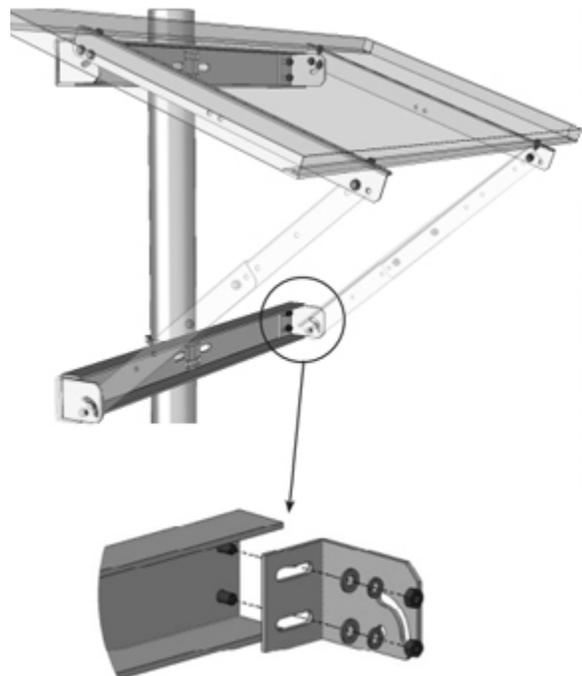
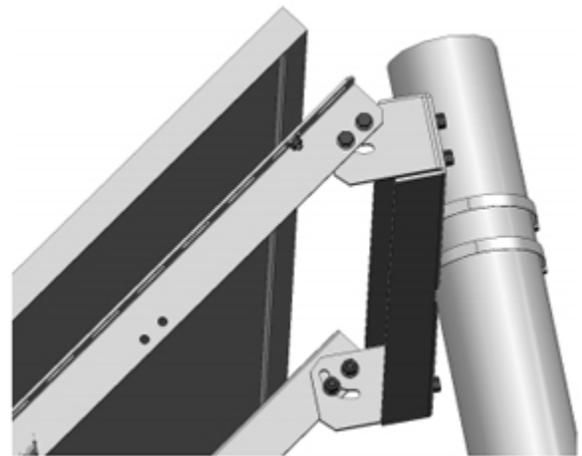
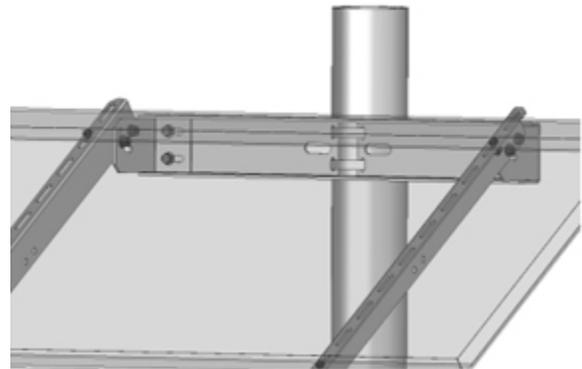
- B. For each of the two support rails, bolt one end of the rail to the corresponding clips, using 5/16-18 x 3/4" bolts and flat washers with a lock washer under nut. Torque to 144 in-lbs.

- C. Bolt the other end of each support rail to the end of the corresponding panel mounting rail, using 5/16-18 x 3/4" bolts and flat washers with a lock washer under the nut. Torque to 144 in-lbs.

Mount support rails so they are mirror image to each other (i.e. protruding edges of both rails face out OR protruding edges of both support rails face in).

- D. 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, and changing the hole where the support rail connects to the panel rail.

- E. Once the adjustments are complete, tighten all 5/16" hardware to 144 in-lbs.

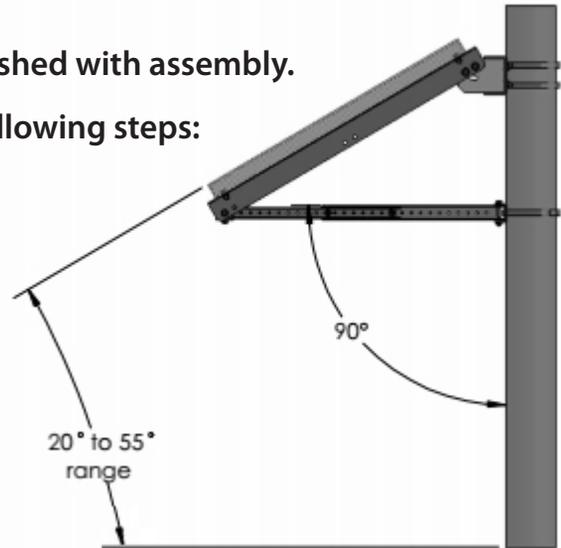


If your model is not UNI-SP/01XH, then you are finished with assembly.

If your model is UNI-SP/01XH, continue with the following steps:

Step 8. Attaching Lower Pole Bracket

- Thread the banding through the set of narrow holes in the bucket. The banding works with poles, 2.0" to 4.5".
- Place on the pole such that the knee braces will be level with the tips of the panel supports as shown.
- Tighten the banding screws to 35 in-lbs.



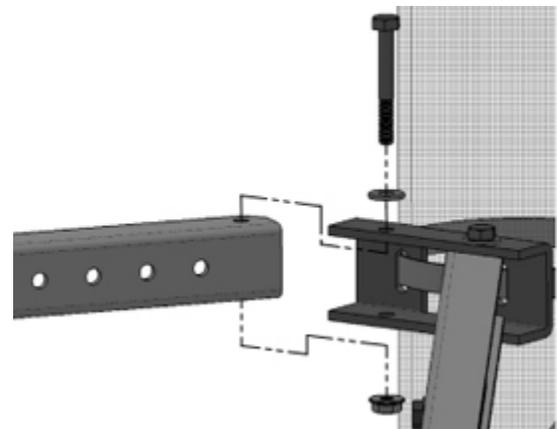
Step 9. Attaching Swivel Brack to Panel Support

- Using the 1/4-20 x 3/4" bolt, attach the bracket to the end of the panel support in one of the two holes as shown.
- Repeat for both panel supports/brackets.
- Leave brackets "finger tight" until final steps of mount assembly- when hardware will be fully tightened.



Step 10. Attaching Swivel Brack to Panel Support

- Attach the outer channel to the Lower SOP Knee Brace Bucket using the 1/4-20 x 2" bolt in the holes on the end of the channel and Lower SOP Knee Brace Bucket. The outer channel should be facing out from the pole, as shown.
- Repeat this process with other outer channel.
- Leave 1/4-20 x 2" bolts "finger tight" until final steps of mount assembly.



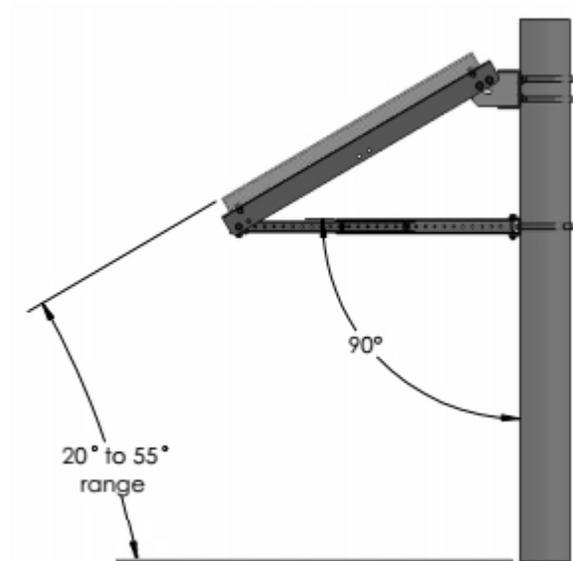
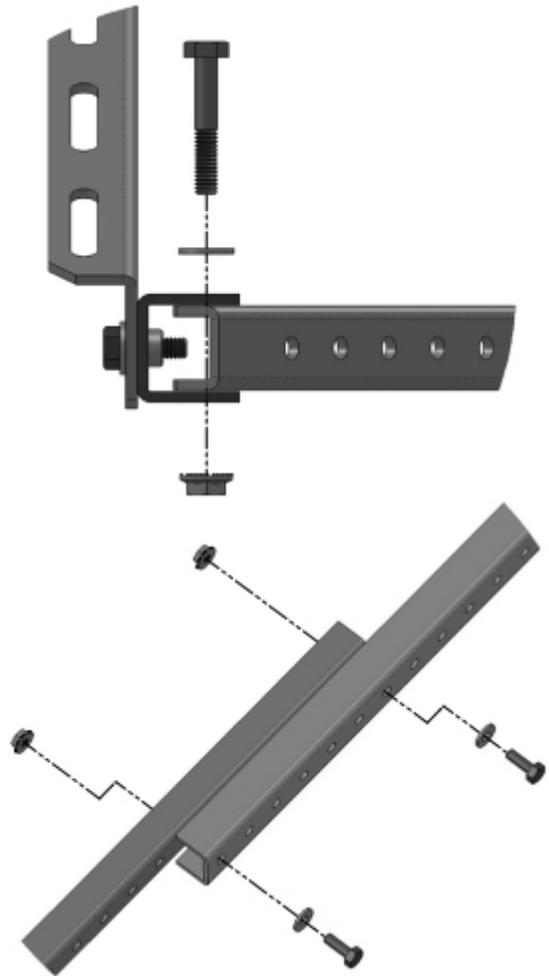
Step 11. Attaching Inner Channels to Brackets

- A. Attach the inner channel to the bracket using a 1/4-20 x 1-5/8" bolt and associated backing hardware, as shown in figure 1 below. All channels should be parallel and angled 90 degrees to the pole (see image below).
- B. Overlap the inner and outer channel and utilize the closest fitting set of two holes to attach the inner and outer channels together using a pair of 1/4-20 x 1-3/4" bolts and associated backing hardware. The bolt extends all the way through both channels as shown in the provided image.
- C. Repeat this process with other inner channel.
- D. Leave 1/4-20 x 1-5/8" bolts "finger tight" until final steps of mount assembly.

Step 12. Final Adjustment and Hardware Torque

- A. Confirm alignment of bucket and knee brace assembly, ensuring knee brace assembly is horizontal and perpendicular to pole.
- B. Tighten all hardware per specifications listed in the provided table:

Hardware Size	Torque Value
5/16"	144 in-lbs.
1/4"	84 in-lbs.



UNI-SP/03W is used to mount in Portrait a single 60 or 72 cell module

- A. Follow the same assembly instructions on pages 3-5, with the portrait configuration in mind.





Installer Responsibility

The installer is solely responsible for:

- i. Complying with all applicable local or national building codes, including any that may supersede this manual;
- ii. Ensuring that Tamarack Solar and other products are appropriate for the particular installation and the installation environment;
- iii. Using only Tamarack Solar parts and installer-supplied parts as specified by Tamarack Solar. Substitution parts may void the warranty;
- iv. Ensuring safe installation of all electrical aspects of the PV array; and
- v. Ensuring correct and appropriate design parameters are used in determining the design loading used for the specific

Warranty Information

Tamarack Solar 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 Tamarack Solar'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 Tamarack Solar 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. Tamarack Solar'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 Tamarack Solar's discretion. Refurbished Mounting Structures may be used to repair or replace the Mounting Structures.

Tamarack Solar 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 Tamarack Solar by Purchaser, any employee of Purchaser, client of Purchaser, end-user of the Product or other party, even if Tamarack Solar has been advised of the possibility of such claims or demands (collectively, "Third Party Claims"). This limitation applies to all materials provided by Tamarack Solar during and after the Warranty Period.