



Pole Mount Installation Manual

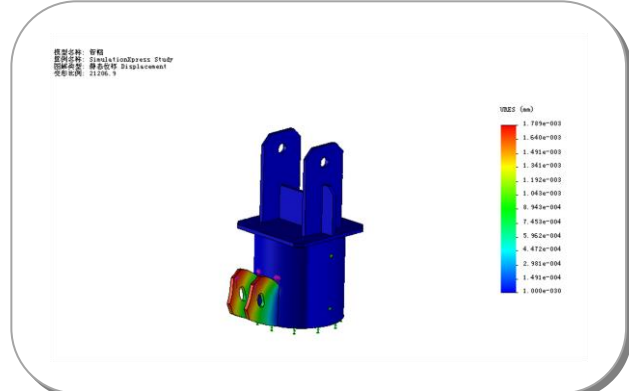
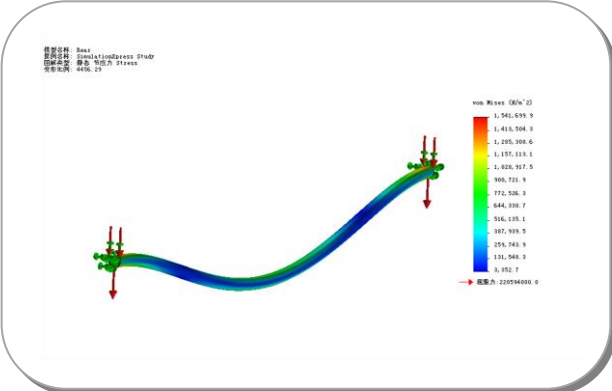
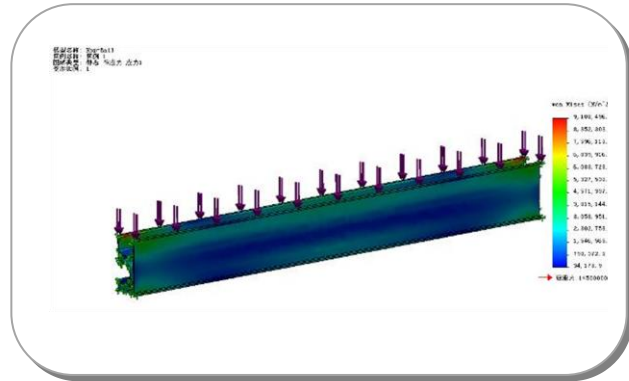
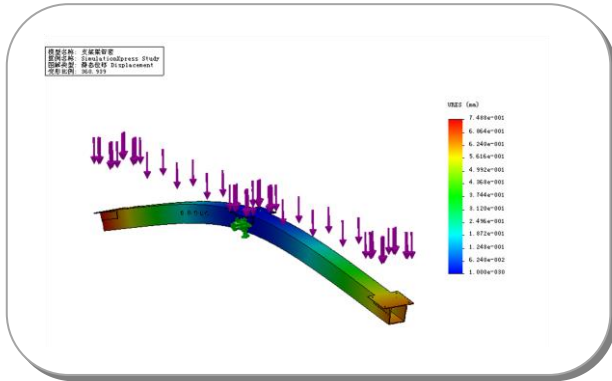


TPSM-350x4-AdapterKit

Thank You for Choosing Tycon®!

Why Tycon®?

1. Tycon Systems® manufactures systems with experienced engineers and strong production and processing capacity. By ensuring our products are manufactured to stringent standards, we guarantee that you receive the highest quality products at the most cost effective rates.



2. Innovative assembly method is fast, convenient and secure. Attach clamps, and brackets to rails in one motion with ease.



Aluminum Fixture Block Assembly Illustration

3. Using the special splice kits to connect aluminum rail makes installation easier, more flexible and convenient. Rails can be extended indefinitely improving efficiency, minimizing waste and reducing the overall cost of installation. Splice kits may be fixed to the top or side of the rails.



Splice Kit Assembly Illustration



Aluminium Rails

4. Excellent Material Selection, We choose to use Aluminum 6005-T5 on all our aluminum products and stainless steel SUS304 on all our hardware.

5. Designs are compliant with the following standards:

GB50009-2001

GB50011-2001

GB/T 13912-92

GBT 14846-2008

GB-T 6892-2006

GB50429-2007

GB50017-2003

AS NZS 1170

ASCE/SEI 7-05

ASCE/SEI 7-010

2007 California Administrative Code

IBC 2006

Euro Code 8

DIN1055

EN 1991-1-3 - Snow Load

EN 1991-1-4 - Wind Actions

Cautions

Do not attempt to install system during inclement weather or near power lines. The structure is 100% metal and lightning strikes or accidental contact with high voltage lines can cause serious injury or death.

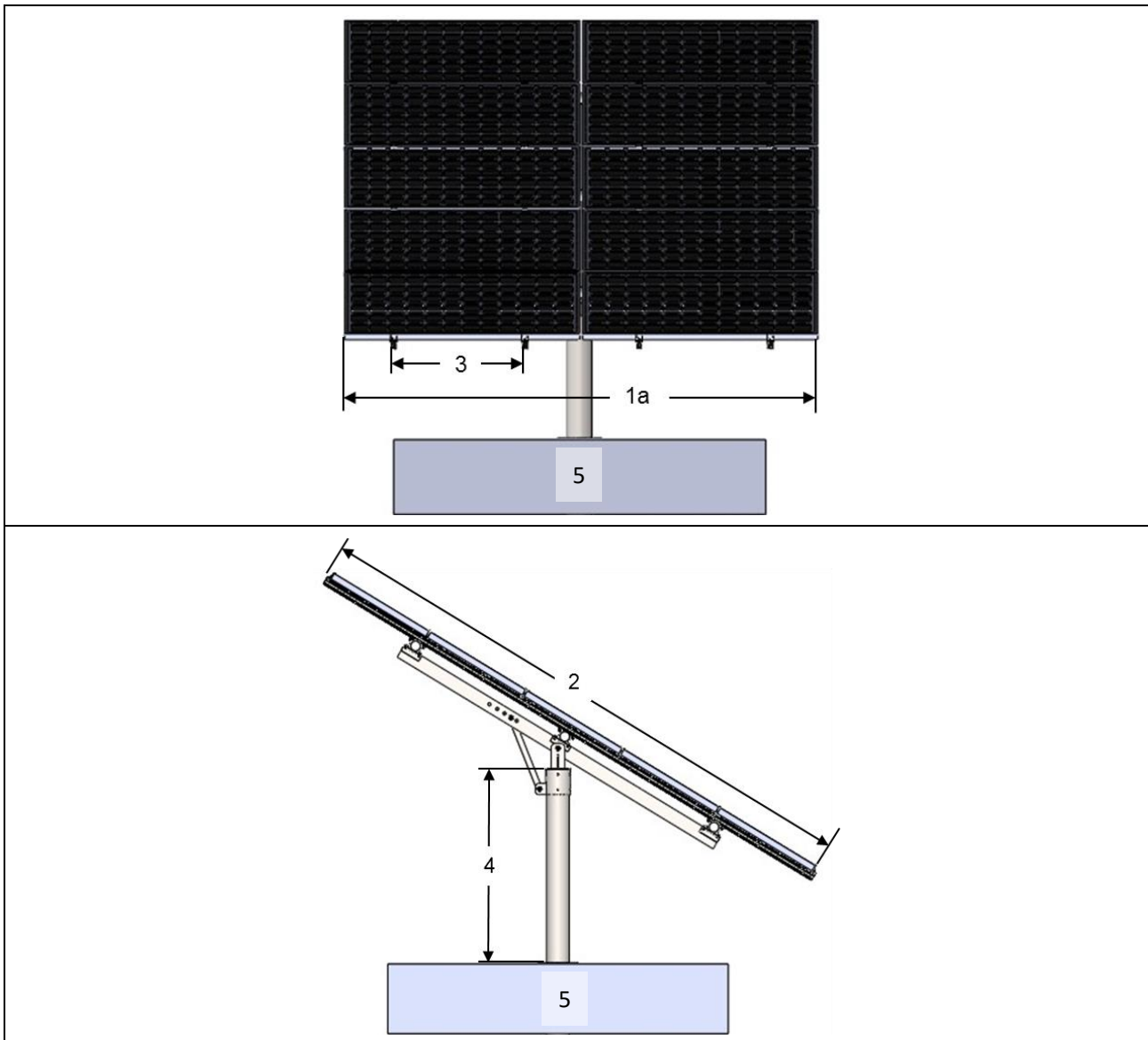
It is recommended to have a minimum of 2 persons on hand during array installation for safety and installation ease.

Tools

Most hardware is metric, you may want to have both metric and standard tools available.

Hardware	Metric	Torque values	Standard "equivalent"
Socket Head 8mm Bolts (Pole Cap and Module Clamps)	6mm hex key	10Nm (7.4 ft-lbf)	None
U-Brackets 8mm Bolts	13mm wrench	13.5Nm (10 ft-lbf)	1/2"
Tube Flange 12mm Bolts	19mm wrench	35Nm (25.8 ft-lbf)	3/4"
Pivot 18mm Bolts (Angle Adjustment tube and Pole Cap)	27mm wrench	122Nm (90 ft-lbf)	1 - 1/16"



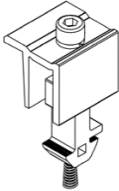



Suggested array layout



Suggested Array Layout

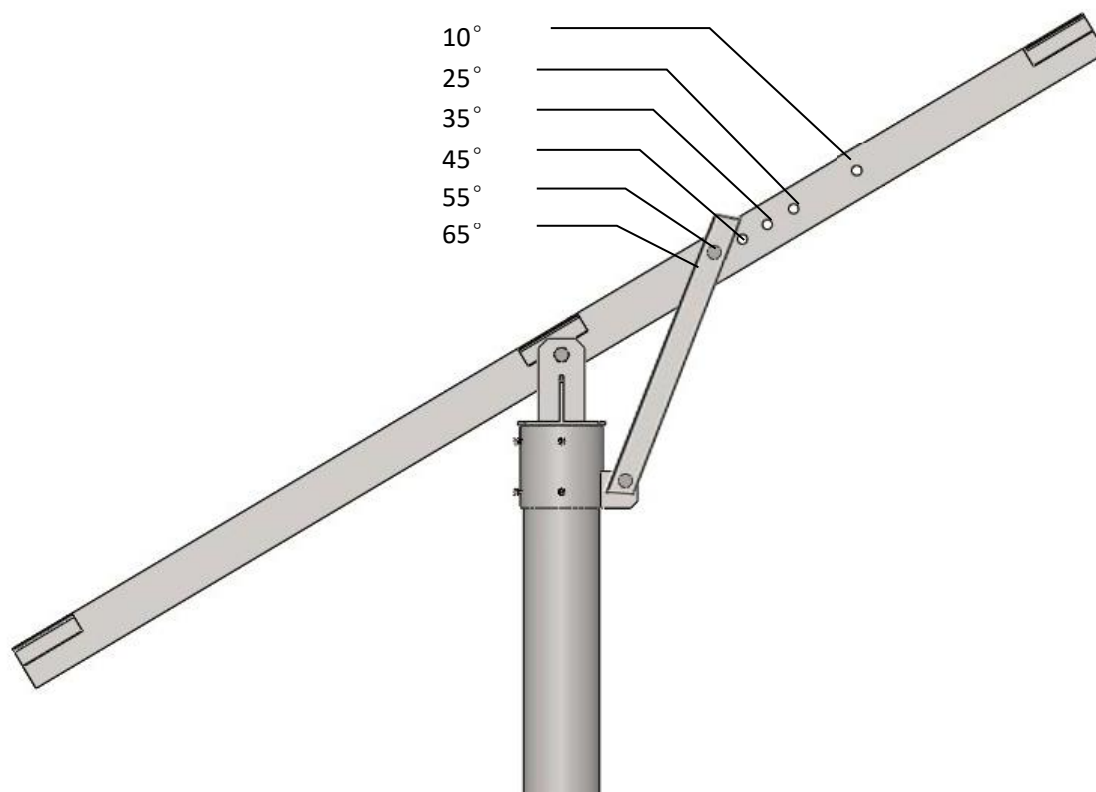
1. Array width:
 - a. 4 modules = 3918 mm (79")
2. Array height = 2000 mm (78.75")
3. Rail spacing = 955mm +/- 15 mm (37.5" +/- .625)
4. Pole height = 1830mm (72")
5. Concrete footing under pole:
 - a. Min 1200mmD*600mm SQ (48" D x 24" SQ)

Components List

S.NO.	Product Name	Picture	Material	Remark	Quantity
1	Rail		AL 6005-T5	1829mm (72") L 337mm(13.25") L	2 2
1.1	Rail Splice		AL 6005-T5		4
2	End Clamp		AL 6005-T5	Includes: a. one piece of A2-70 M8 Hexagon screw b. one piece of aluminum fixing nut	4
3	Center Clamp		AL 6005-T5	Includes: a. one piece of A2-70 M8 Hexagon screw b. one piece of aluminum fixing nut	2
6	U - Bracket		Q235	Includes: a. Two pieces of M8*30 stainless steel hex bolts, flat washers, spring washers, and nuts	2 with bonding plate 2 without bonding plate
8	Large Tube		Q235	Structural tube with flange. Includes 8x M12 stainless steel bolts with washer, lock washer and nut	2x 1301mm (51.25")

Installation Steps

1. Adjust the angle of elevation on your 2 panel array to the 10 degree setting to make it easier for installation.



2. For a two module mount, only two 1702mm (67") tubes are required. For a four module mount, two 1702mm (67") and two 1301mm (51.25") tubes are connected at the flange using the supplied bolts as below.
3. Remove the existing Solar Panels by loosening the end clamps and center clamps
4. Loosen the U-clamp bolts holding the Large tube to the square girder.



5. Remove the aluminum rails nearest the flanges on the large tubes, slide the large tubes so that each flanged end is approximately 5" from the square girder. You may have to loosen the U-clamp bolts on the remaining aluminum rail to make this happen.

6. Connect the small tube flanged end to the large tube flanged end using the supplied bolts as shown below.



7. Center the combined tubes across the flanges on the Square Girder at the welded mounting plates and fasten with two U-brackets. Care should be taken to ensure that the tube is centered and level on the square girder. Large tubes should be parallel.
8. The mounting Rails come in two pieces for easier shipping. Utilize the splices provided to combine the 13" rails to the 72" rails. Although not required, it is recommended to utilize a splice in both the side channel and the top channel of the rail for greater strength.
9. Slide the U-bracket bolts into the slot on the underside of the rail. Guide the ends of the tube struts through the U-brackets and position. Each rail requires two U-brackets, one of the two brackets should utilize the bonding plate to form the equipment bond between the anodized aluminum rail and the steel structure so all metal parts are electrically bonded to Earth Ground (EG, ⊕).



10. Reattach the rail that was removed to the large tube and two additional aluminum rails to the small tube with similar spacing to those on the large tube. Once the whole assembly is

square, tighten all the bolts.



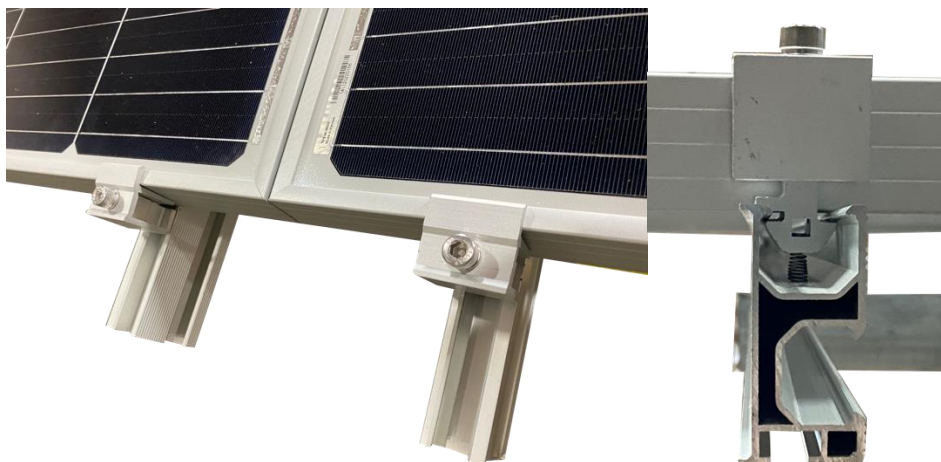
11. Care should be taken to make sure that the ends of the rails line up by using a long straight edge or snap line. Arrows found on the rails should line up with one of the tube struts. The farthest outside rails should line up right on the tube edge. The inner rails should be no less than 1003mm (39.5") on center from the outer rails.

Be sure that the grid is square prior to tightening the U-brackets.

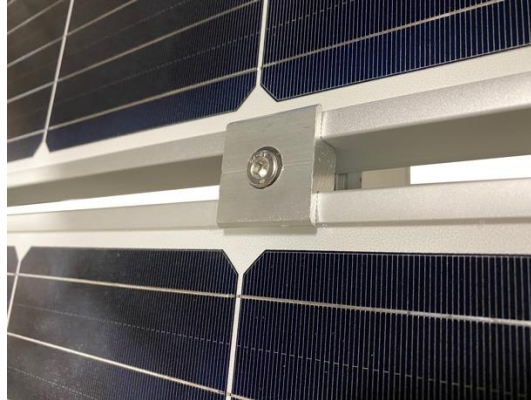




12. Attach the solar panels to the new assembly using the end clamps and center clamps
13. Use end clamps with M8x35mm Hexagon screw and fixing nuts (preassembled) to attach solar panels to the rails. Be sure the first row of modules are aligned and square with the rail grid before tightening. A minimum of 6mm (0.25") is required between modules. For aesthetics, you may want to use a center clamp as a temporary spacer between the modules in a row for a consistent module gap in the array.



14. **Adjacent solar panels in columns are attached by using center clamps with M8 socket head bolts clamping both module frames. Be sure that the stainless steel bonding plate included with the center clamp is situated between the module (panel) frame and the mounting rail. The bonding plates are required to break the protective anodizing of the aluminum and ensure a continuous equipment bond of all metallic components to Earth Ground (EG, ⊕)**



15. **Repeat steps until installation is complete, top row will utilize end clamps as the first row did.**
16. **Adjust the tilt and direction as required for the site and tighten all bolts to final torque upon completion.**

Find the solar panel tilt calculator at calculators.tyconsystems.com



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