

PV-ezRack PostMount 4-A with ECO Rail Installation Guide V2.0



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1. Introduction




Cleenergy PV-ezRack PostMount 4-A is a ground mounting system suitable for residential and commercial scale installation. PV-ezRack PostMount 4-A has good compatibility for the different region via the angle adjustment (10° ~ 60°). Using high quality engineered components PostMount 4-A saves developers and installers, time and cost when delivering large scale projects.

Please review this manual thoroughly prior to installing PV-ezRack PostMount 4-A. Before system installation, please read the installation instruction manual carefully. The manual provides the following content : (1) simple introduction of installation ; (2) product installation specification ;

The PV-ezRack PostMount 4-A parts, when installed in accordance with this guide, will be structurally adequate and will meet the AS/NZS1170.2:2011 Amdt 3-2012 standard. During installation and especially when working on the ground please comply with the appropriate occupational health and safety regulations. Please also pay attention to other relevant regulations of your local region. Please check that you are using the latest version of the installation manual, which you can do by contacting Cleenergy via email on sales@cleenergy.com.au, or contacting your local distributor.

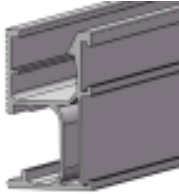
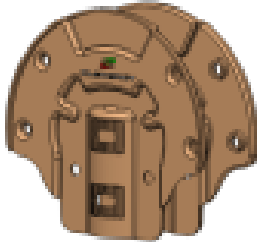
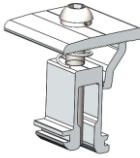
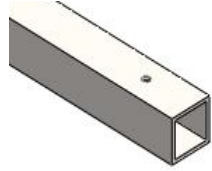
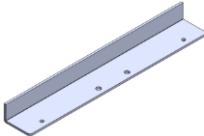


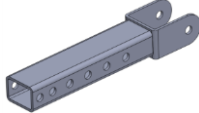
2. Tools and Components

2.1 Tools

List of tools			
			
Allen key 6mm	Spanner (14 - 22mm) adjustable	Torque Wrench (with socket and also 14, 17 and 22mm Hex key attachment)	Tape Measure (5m)

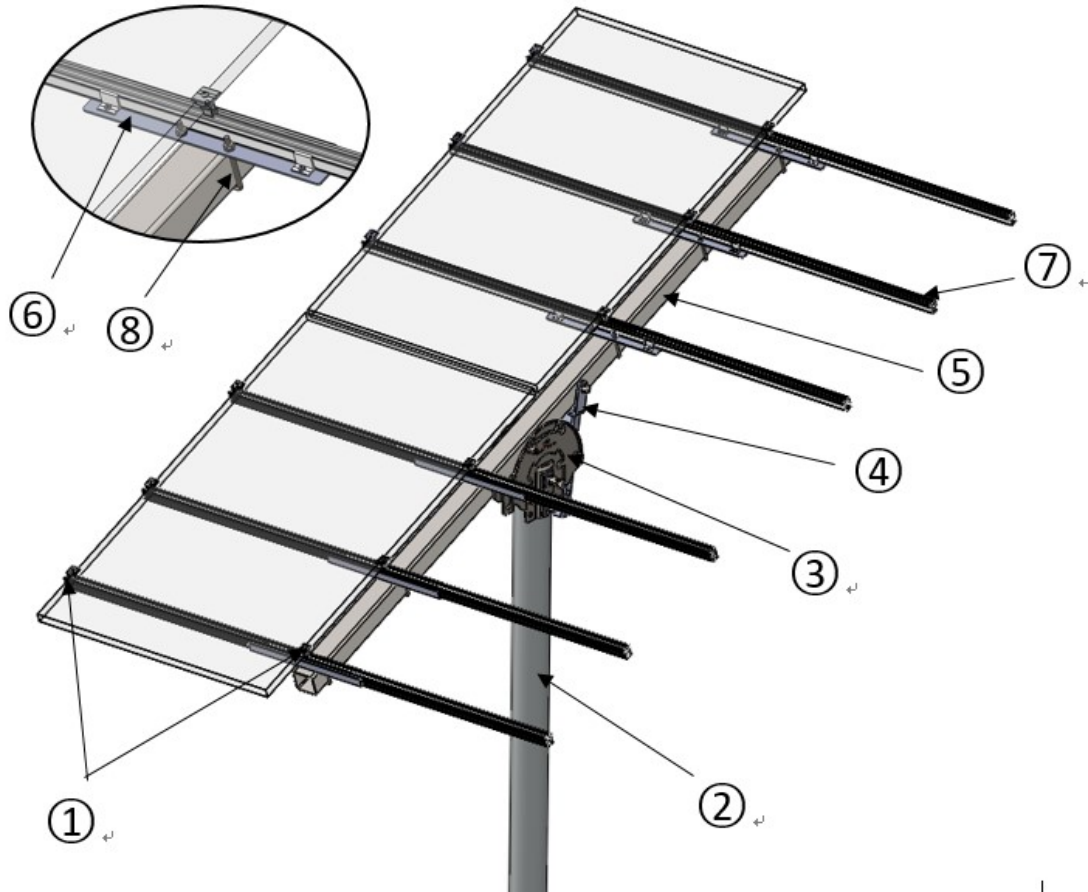
Note: tools in the figure are only used for rack system (not included in supply scope) ; Consult system installation personnel about electronic part installation tools.

2.2 Components

Components			
			
ER-R-ECO ECO Rail	ER-SC-PM6/PM8 Steel Cap Assembly	ER-IC-ST Universal Clamp	ER-RT-100 Rectangular Tube-Master
			
AB-75/45/550-LP Angle Bracket	ER-P-152/**** Pipe Diameter	ER-P-152/****-F Pipe Diameter	ER-RT-100/576 Adjustable Tube

3. System Overview

3.1 Overview of PV-ezRack PostMount 4-A



- 1. Universal Clamp
- 2. PM4-A Pole
- 3. Steel Cap Assembly
- 4. Adjustable Tube

- 5. Rectangular Tube-Master
- 6. Angle Bracket
- 7. ECO Rail
- 8. U bolt for Tube140

3.2 Precautions during Stainless Steel Fastener Installation:

Improper operation may lead to deadlock of Bolts and Nuts. Follow the steps below to reduce this risk

1. Reduce the friction coefficient:

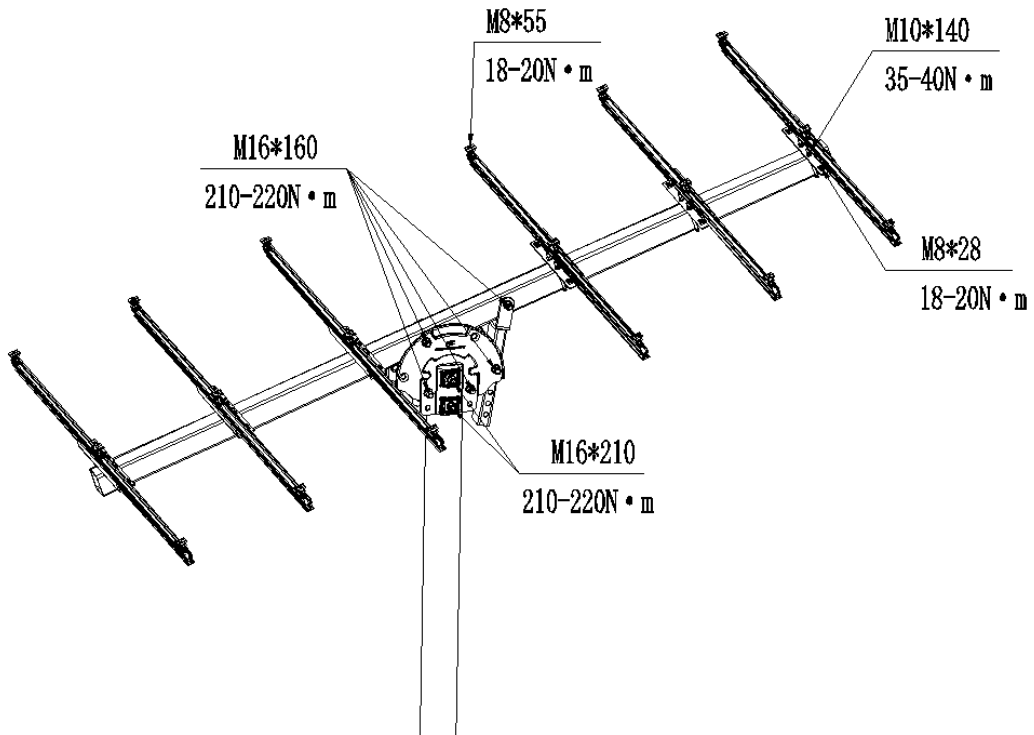
- (1) Ensure that the thread surface is clean (no dirt or contaminant)
- (2) Apply lubricant (grease or 40# engine oil) to fasteners prior tightening to avoid galling or seizing in the threads;

2. General installation instructions:

- (1) Apply force to fasteners in the direction of thread;
- (2) Apply force uniformly, to maintain required torque;
- (3) Professional tools and tool belts are recommended;
- (4) Avoid using electric tools for final tightening;
- (5) Avoid working at high temperatures,

3. Safe Torques

Please refer to safe torques defined in this guide. In case power tools are required, Clenergy recommends the use of low speed only. High speed and impact drivers increase the risk of bolt galling (deadlock) If deadlock occurs and you need to cut fasteners please make sure that there is no load on the fastener before you cut it. Avoid damaging the anodized or galvanized surfaces.



4. These steps should be applied for every stainless steel nut and bolt assembly.

3.3 Installation Dimensions

All drawings and dimensions in this installation guide are for a generic reference. The Cleenergy PostMount 4-A is to be optimized to site specific conditions for each project and documented in a construction drawing. As a result, major components of the Cleenergy PostMount 4-A may be provided in section sizes and lengths that vary from those shown in this guide. The installation process detailed in this instruction guide remains the same regardless of the component size. In case you need to do any on-site modifications or alteration of the system in a way that would be different from the construction drawing please provide marked up drawings/sketches for Cleenergy's review prior modification for comment and approval.

4. Installation Instructions

4.1 Pole Installation

Solution 1: Pole pre-buried

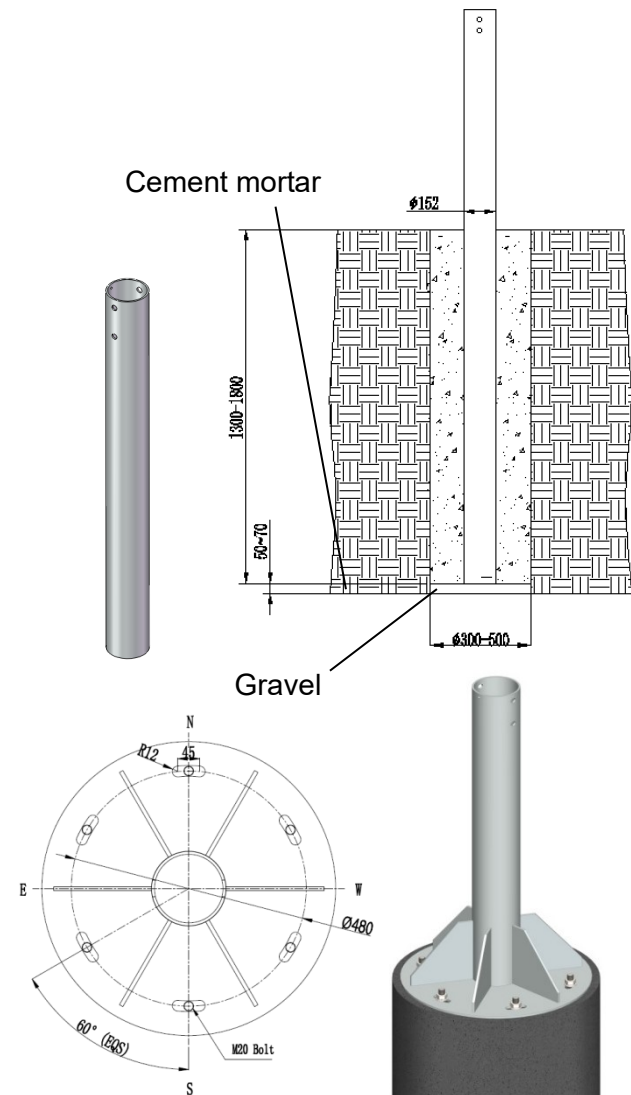
Dig a hole with the diameter 300~500mm, depth 1300~1800mm. Cover the bottom of the hole with 50-70mm gravel.

Place the pole into the middle of the hole and fill it with concrete. Maintain the position of the post to an allowed vertical tolerance of $\pm 2^\circ$. Axis of 2- $\varnothing 22$ hole is parallel to west, angle tolerance is within $\pm 5^\circ$, and 2- $\varnothing 22$ holes direction of all poles is consistent.

Solution 2 : Flange based pole

Secure the Flange based Pole to the concrete foundation with M20 foundation bolts. Axis of 2- $\varnothing 22$ hole is parallel to west, angle tolerance is within $\pm 5^\circ$, and 2- $\varnothing 22$ holes direction of all poles is consistent.

Recommended Torque:
M20: 215~220Nm



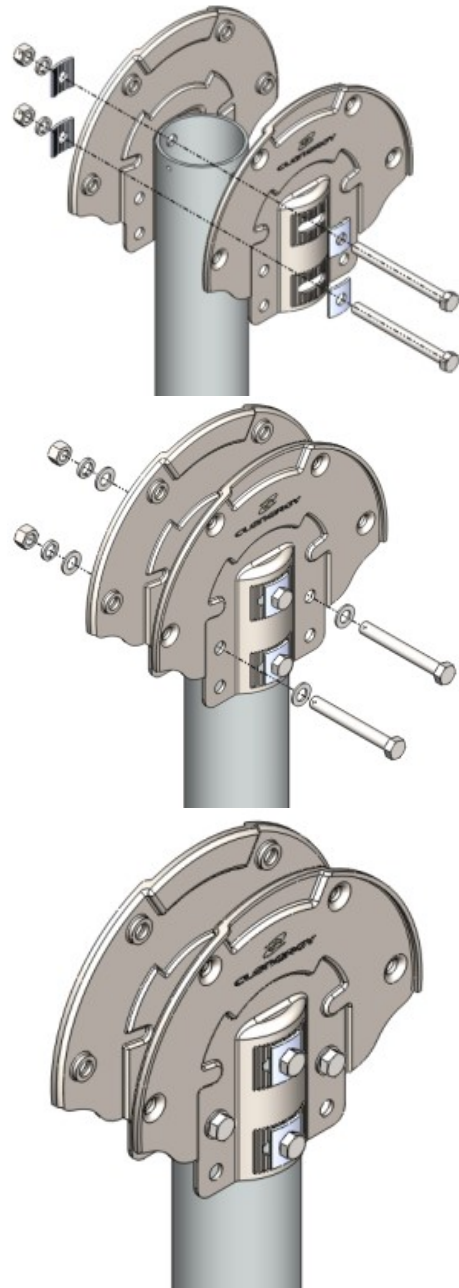
4.2. Steel Cap Assembly Installation

Connect the pole and Steel Cap Assembly with the M20x210 Hex Bolts, square ribbed washers (both sides), round washers, spring washers and nuts as shown.

Connect the 2 pieces of Steel Cap sheet with M20x160 hex bolts, washers, spring washers, and nuts.

Note:

- Do not tighten these M20 bolts prior to completing the assembly of Rectangular Tube-Master.
- All the head of bolts should be at the same side.



4.3. Rectangular Tube-Master & Adjustable Tube Installation

4.3.1 Attach the Rectangular Tube-Master to the Steel Cap Assembly with the M20*160 hex head bolt, washers, spring washer and nut. Refer to ①.

4.3.2 Attach the Adjustable Tube to the Rectangular Tube-Master with the M20*160 hex head bolt, washers, spring washer and nut. Refer to ②..

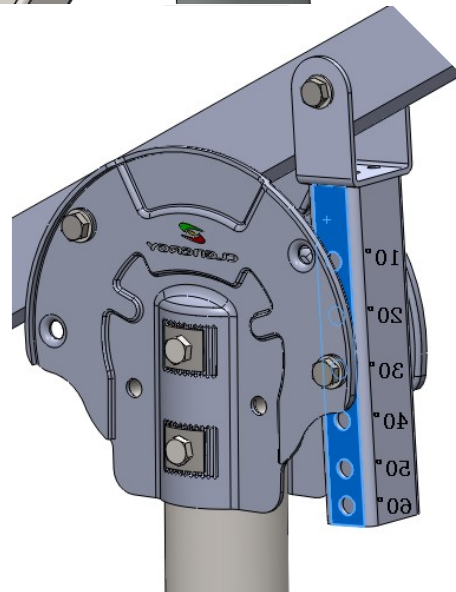
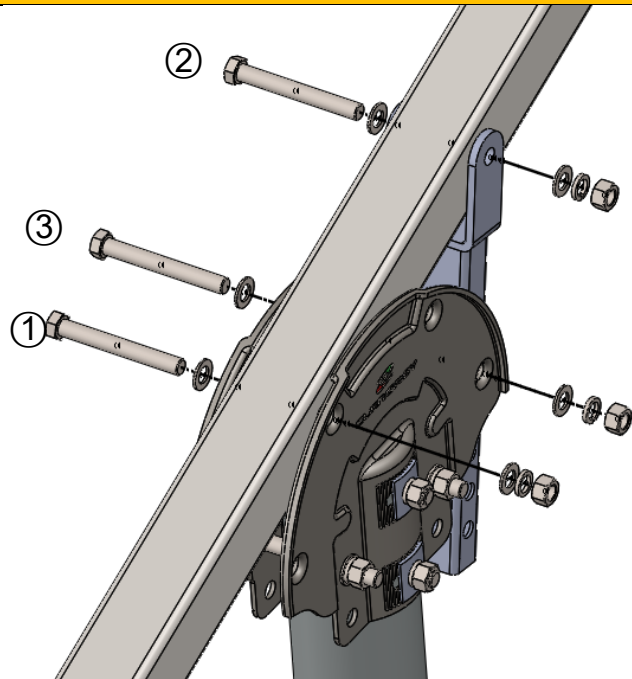
4.3.3 Connect the Adjustable Tube to the Steel Cap with the M20x160 hex head bolt, washer, spring washer, and nut.
You can set the required tilt angle (10-60°) through the different holes on the Adjustable Tube. Refer to ③ and to the next image.

4.3.4 Adjust the Steel Cap along the circumference, make the Rectangular Tube-Master parallel to N-S direction. Fasten all bolts, after check the fitness between the corrugated surface washer and the waves on the Steel Cap.

Recommended Torque:
M20: 210~220Nm

Note:

- Recommend to set the Rectangular Tube-Master in the tilt angle 10° to make the follow up assembly process easier. When the assembly is complete, then the angle can be set to the designed position.
- At the place refer to ②, if there exist any clearance between the

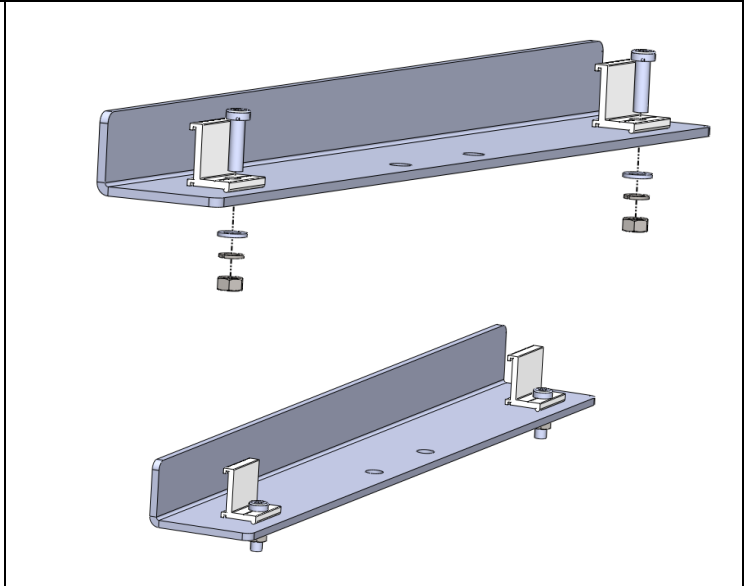


Rectangular Tube-Master and U shape post head on the Adjustable Tube, please add adjusting shim to firm the connection and avoid sway.

4.4 Angle Bracket & Rectangular Tube Master Installation

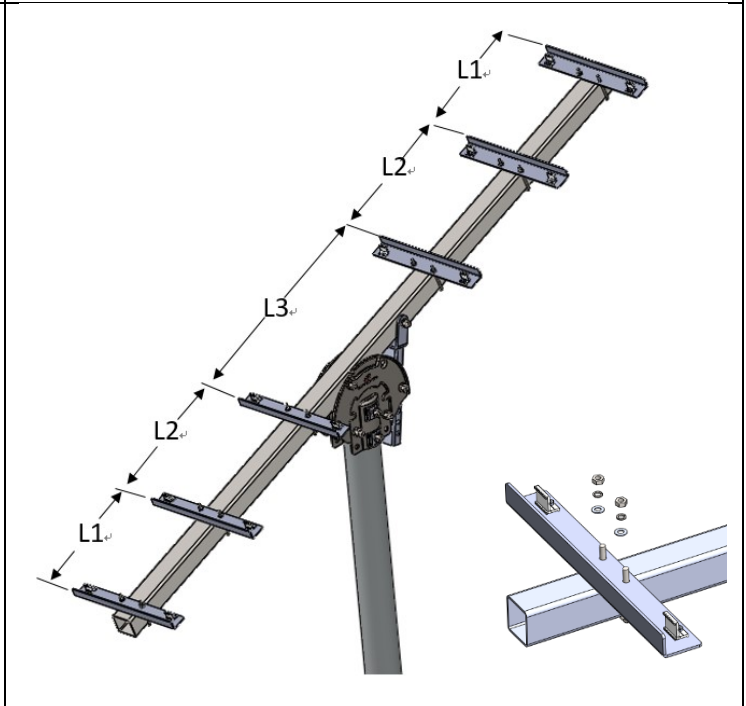
4.4.1 Preassemble the Cross Connector Clamp at the Angle Bracket with M8*28 socket head cap bolts, washers, spring washers and nuts. (See the figure right).

Note: Do not tighten the M8*28 socket head cap bolts prior to the installation of the rail. This will facilitate easier rail installation.



4.4.2 Preassemble the Angle Bracket to the Rectangular Tube-Master with the U-bolts, M10 bolts, 8 washers, spring washers and nuts.

Note: Do not tighten the nuts temporarily, to make the following installation easier.



4.5 Install Standard Rail

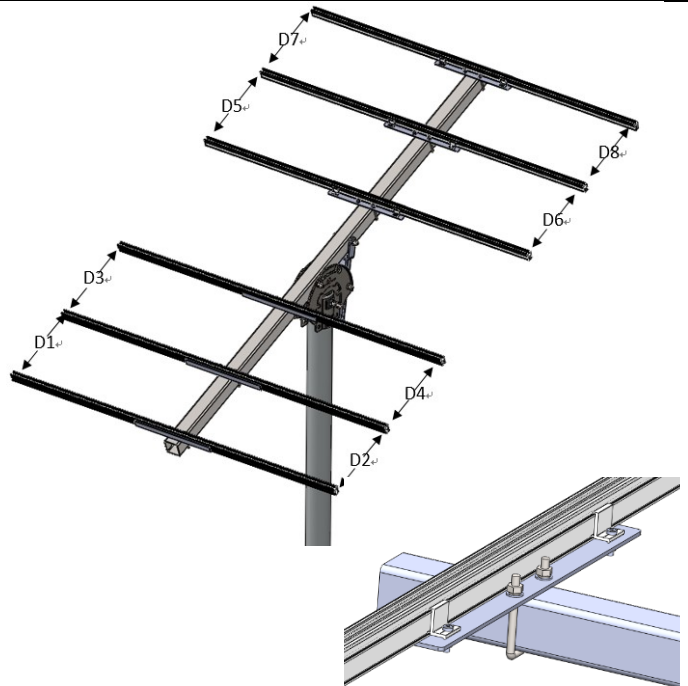
Tilt up the Cross Connector Clamp slightly and click the clamp into the back of the ECO Rail. Repeat this for all eight fixing points and then tighten the M8x28 socket head bolts.

Recommended Torque:
M8: 18~20Nm

Finally, adjust the rails until dimensions D1=D2 and D3=D4 and D5=D6 and D7=D8, then tighten the U bolts.

Recommended Torque:
M10: 35~40Nm

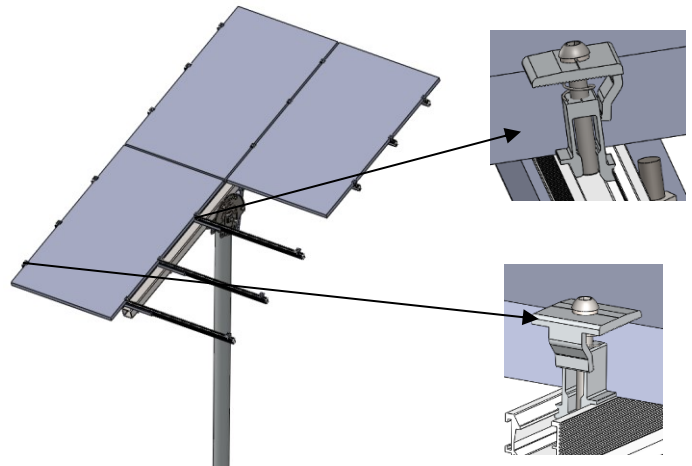
Note: If the angle of the rectangular tube-master has been set to 10° to facilitate easier installation, it is at this point that the designed angle can now be set.



4.6 Install PV Panels

Fix the PV-module to Rail, via Inter Clamps and End Clamps step by step until all modules complete.

Recommended Torque:
M8: 18~20Nm



5. Warranty

10 year limited Product Warranty, 5 year limited Finish Warranty

Clenergy co. Ltd warrants to the original purchaser (“Purchaser”) of product(s) that it manufactures (“Product”) at the original installation site that the Product shall be free from defects in material and workmanship for a period of ten (10) years, except for the anodised finish, which finish shall be free from visible peeling, or cracking or chalking under normal atmospheric conditions for a period of five (5) 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. This Warranty does not cover damage to the Product that occurs during its shipment, storage, or installation.

This Warranty shall be VOID if installation of the Product is not performed in accordance with Clenergy’s written installation instructions, or if the Product has been modified, repaired, or reworked in a manner not previously authorized by Clenergy IN WRITING, or if the Product is installed in an environment for which it was not designed. Clenergy shall not be liable for consequential, contingent or incidental damages arising out of the use of the Product by Purchaser under any circumstances.

If within the specified Warranty periods the Product shall be reasonably proven to be defective, then Clenergy shall repair or replace the defective Product, or any part thereof, in Clenergy’s sole discretion. Such repair or replacement shall completely satisfy and discharge all of Clenergy’s liability with respect to this limited Warranty. Under no circumstances shall Clenergy be liable for special, indirect or consequential damages arising out of or related to use by Purchaser of the Product.

Manufacturers of related items, such as PV modules and flashings, may provide written warranties of their own. Clenergy’s limited Warranty covers only its Product, and not any related items.