PV-ezRack SolarTerraceIII-F

Installation Guide V 1.0

CONTENTS

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1. Introduction

Clenergy PV-ezRack® SolarTerrace III-F™ is a pre-assembled ground mount system suitable for large scale commercial and utility scale installations. PV-ezRack SolarTerrace III-F has been developed to fit any PV module. The innovative and patented SolarTerrace III-F™ T-Rails not only suitable for flat land, also for east-west tilt and snow-laden areas.

Please review this manual thoroughly before installing your SolarTerrace III-F™system. This manual provides (1) simple introduction of installation relating to PV-ezRack SolarTerrace III-F Mounting system, and (2) planning and installation instructions for SolarTerrace III-F.

SolarTerrace III-F™parts, when installed in accordance with this guide, will be structurally adequate and will meet the AS/NZS 1170 standards. During the installation and especially when working on the roof inform yourself about the appropriate safety regulations, and please also pay attention to the relevant regulations of your local region. Please check that you are using the current version of the installation manual by contacting Clenergy Australia by email on sales@clenergy.com.au, or your local representative.

The installer is solely responsible for:

- Complying with all applicable local or national building codes, including any that may supersede this manual;
- Ensuring that PV-ezRack and other products are appropriate for the particular installation and the installation environment;
- Using only PV-ezRack parts and installer-supplied parts as specified by PV-ezRack (substitution of parts may void the warranty and invalidate the letter of certification);
- How to recycle: according to the local relative statute.
- How to disassemble: Reverse installation process.
- Ensure that there are no less than two professionals working on panel installation.
- Ensure the installation of relative electrical equipment is performed by professional electrician.
- Ensuring safe installation of all electrical aspects of the PV array.

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2. Tools and Components

2.1 Tools

			
Allen Key 6mm (M8 Hexagon Socket Screw)	Electric Drill (ST6.3x22 self tapping screw & M8 Hexagon Socket Screw)	Tape	Mark Pen
			
Torque Wrench	String	Wrench	Hydraulic pile driver
			
Total Station or Equivalent	Socket Wrench M8/M12/M10		

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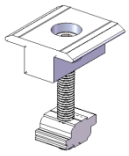
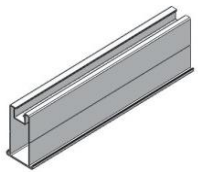
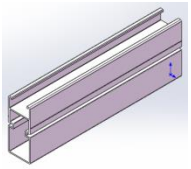
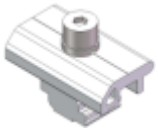
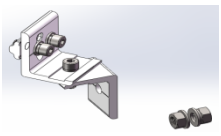
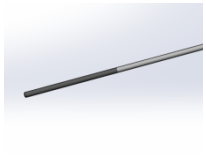
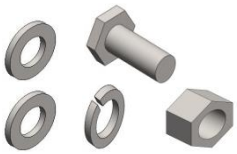
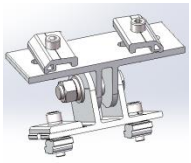
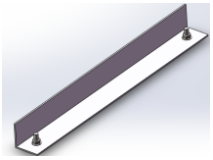
2.2 Components

Component List			
			
ER-EC-ST End Clamp	ER-IC-ST Inter Clamp	ER-R-TR100 TR-Rail 100	ER-RC-T Rail Clamp for T Rail
			
ER-S-STIII-F Support(Pre-assembled)	ER-SP-TR100 Splice for TR- Rail 100	ER-GS-76 Ground Screw	ER-RC-T Rail Clamp for T Rail(Pre-assembled)
			
CO-STIIF/TR Tie Rod Connector	TR-10 Rod Tie	Hexagonal Bolt Assembly M16*50	BR-R110/EW/A East/West Adjustable Bracket II
			
ER-AA-50 Angle AL			

Note: 1.Ground Screw, Rail Clamp for T Rail(Pre-assembled), Tie Rod Connector, Rod Tie, Hexagonal Bolt Assembly M16*50 is the optional accessory;

2. East/West Adjustable Bracket II, Angle AL, according to specific engineering needs.

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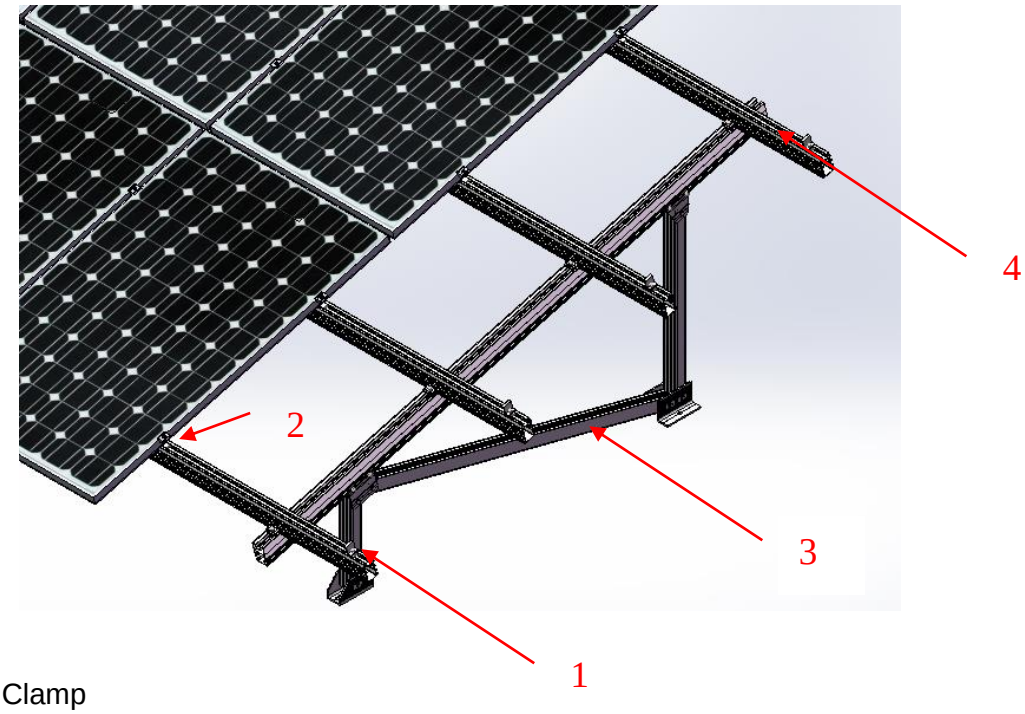
3. System Overview

3.1 Overview of PV-ezRack Solar Terrace III-F



1) End Clamp
2) Inter Clamp
3) Support(Pre-assembled)
4) TR-Rail 100

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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

3.2.1. 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;

3.2.2. General installation instructions:

（1）Apply force to fasteners in the direction of thread;

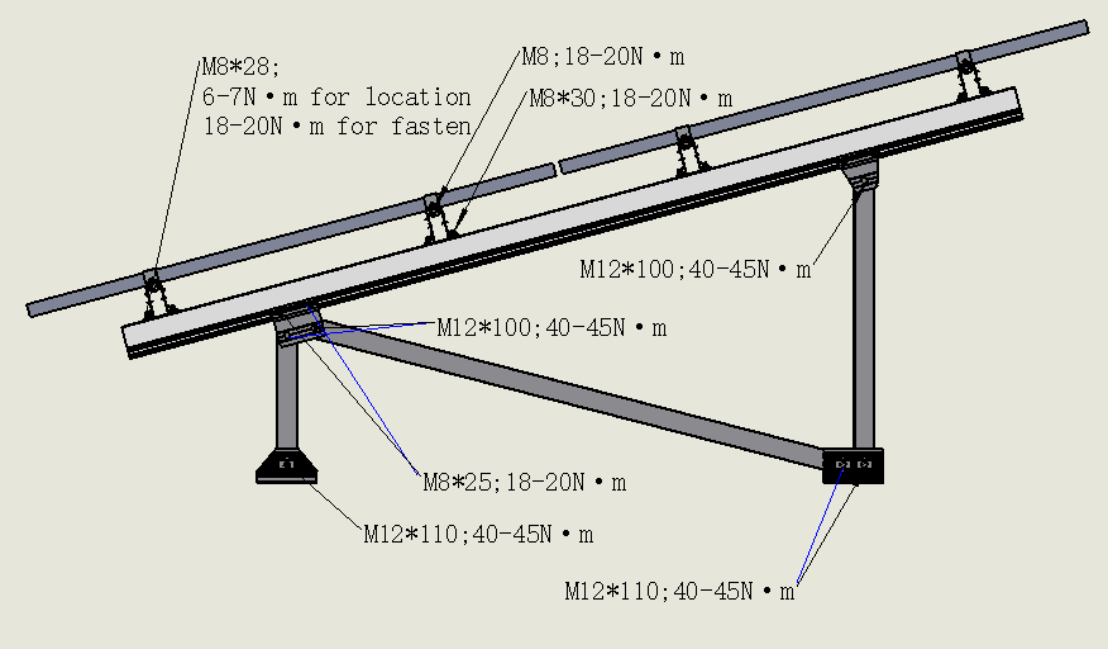
（2）Apply force uniformly, to maintain required torque;

（3）Professional tools and tool belts are recommended;

（4）Avoid working at high temperatures; Do not rotate quickly and avoid using electric tools for final tightening.

3.2.3. Safe Torques

As shown below finger.



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4. Installation Instruction

4.1 Install Pre-assembled Support

4.1.1 There are two installation solutions according to the length of the support legs.

Solution 1

Unfold the pre-assembled support as shown in Figure 2, Unfold the Slotted Al-Tube as shown in Fig.3, unlock the M12*100 bolts from H Joint first and fasten the Al-Tube and H Joint lightly with M12*100 again as shown in Fig.4, then rotate L-anchor plate and U-anchor Plate to make them aligned as shown as Fig. 5.

Note: The bolt heads have to be kept in same direction.

Fig. 1

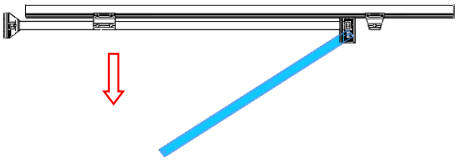

Fig. 2

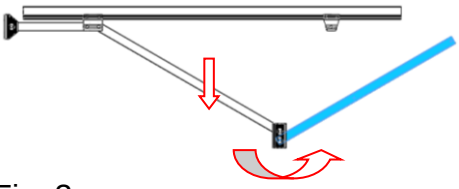

Fig. 3

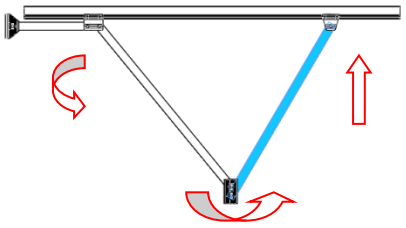

Fig. 4

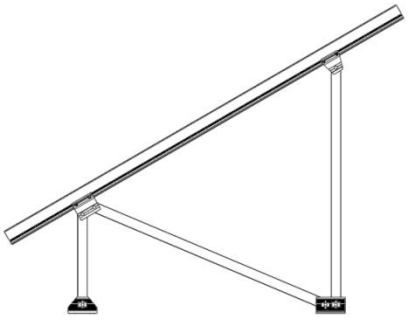

Fig. 5

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Solution 2

Unfold the pre-assembled support as shown in Figure 7 and 8. Unlock the M12*100 bolts from H Joint first and fasten the Al-Tube and H Joint lightly with M12*100 again as shown in Fig.9, then rotate L-anchor plate and U-anchor plate in order to keep them in a same line, as shown as Fig. 10.

Note: The bolt heads have to be kept in same direction

Fig. 6

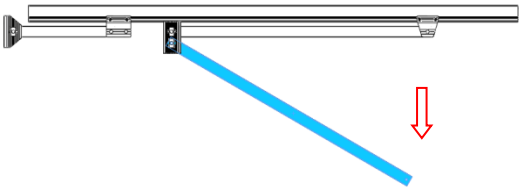

Fig. 7

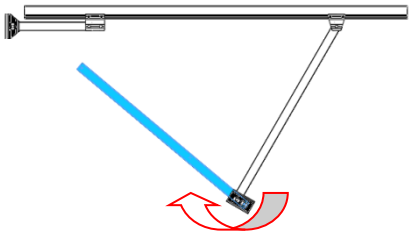

Fig. 8

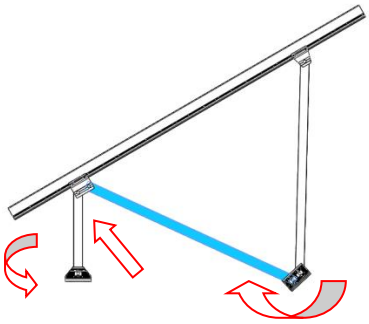

Fig. 9

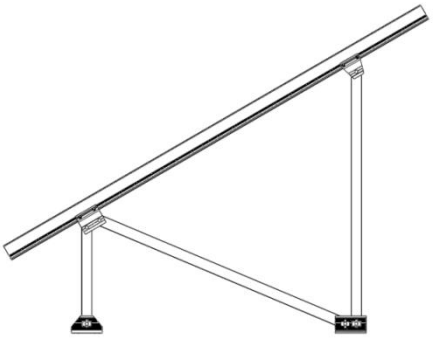

Fig. 10

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4.2 Install the Foundation

Connect the Pre-assembled Support and Concrete Base by using embedded M16 bolts, as shown in Fig.11.

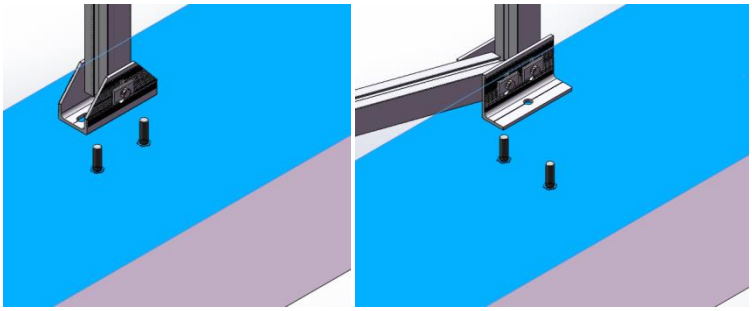

Fig. 11

If it is Ground Screw, fix the M16 bolt assembly on flange plate of the Ground Screw, as shown in Fig.12.

Recommended Torque:
M16: 135~150N•m

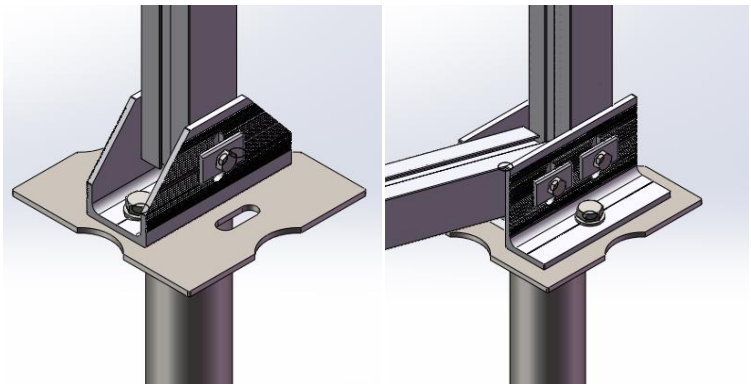

Fig. 12

Check the system and fasten all bolts with recommended torque, as shown in Fig.13.

Recommended Torque:
M8: 18~20N•m
M12: 40~45N•m

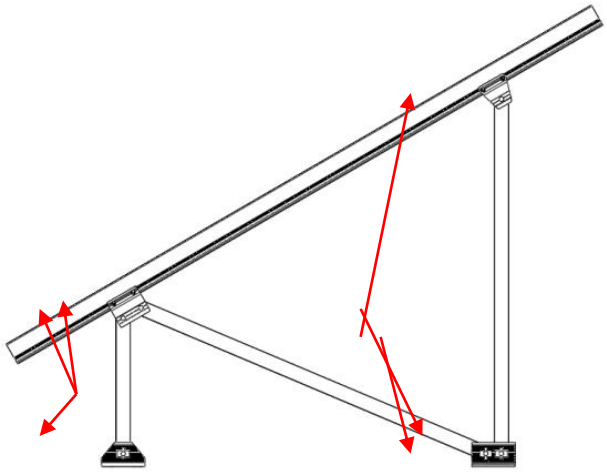

Fig. 13

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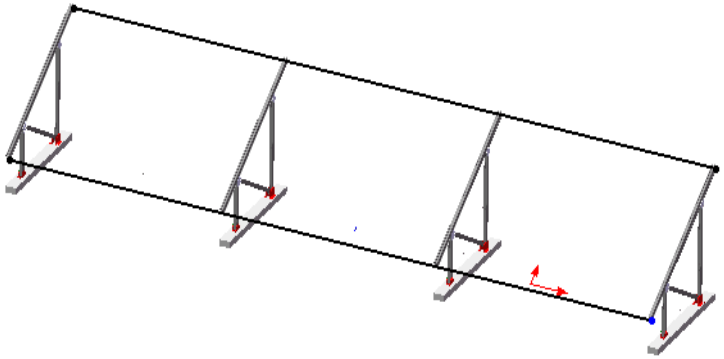
According to engineering drawing, repeat the above operations to install other Pre-assembled Support. Ensure all the Tri-Groove Beams of Pre-assembled Support are aligned and all Pre-assembled Support are parallel to each other. Now fasten all bolts tightly.	 Fig. 14

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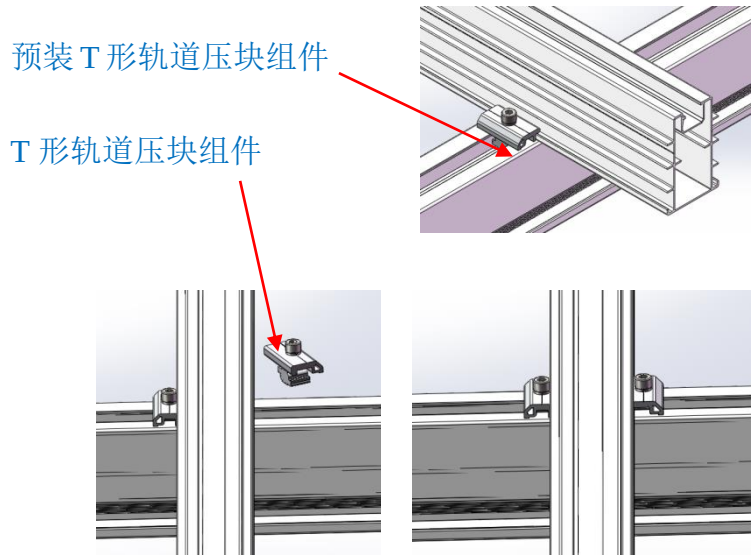
4.3 Install TR-Rail 100

4.3.1 Direct Installation:
Slide the TR- Rail on the Tri-Groove Beam, apply one Rail Clamp for T Rail in each side of TR- Rail, and fasten tightly with Allen Key 6mm as shown in right Figures.

Recommended torque:
M8: 18~20N•m

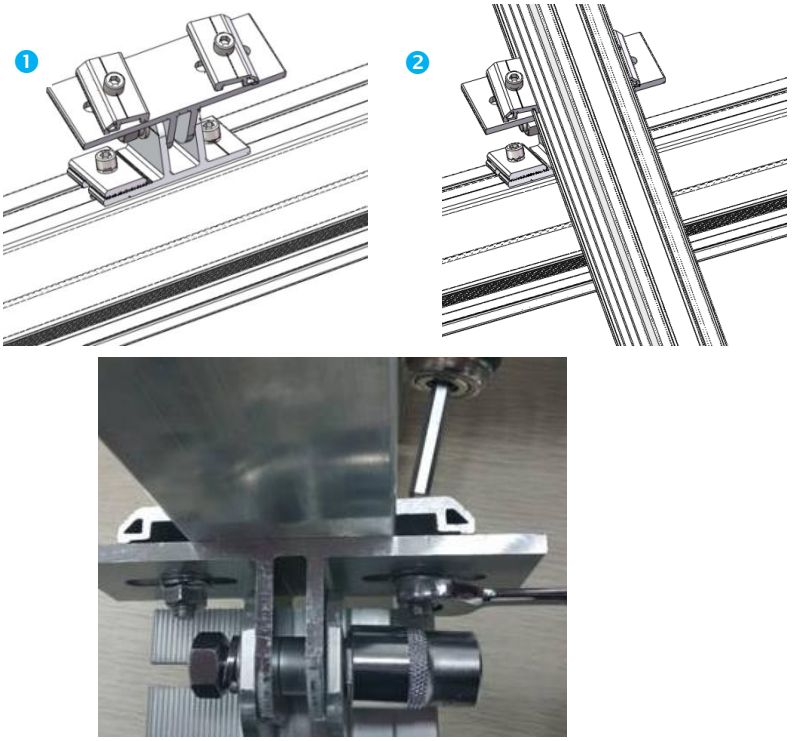
Note: if the Pre-assembled Support has positioned Rail Clamp for T Rail, apply one Rail Clamp for T Rail in other side of T Rail.



4.3.2 Install East/West Adjustable Bracket II

Fasten East/West Adjustable Bracket II on Tri-Groove Beam with bolt. Apply Rail Clamp for T Rail in TR- Rail and fasten in East/West Adjustable Bracket II tightly.

Recommended torque:
M8: 18~20N•m



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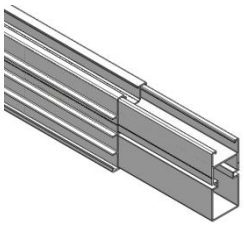
If the TR- Rail is not long enough, please apply Splice for TR-100 Rail to connect two T Rails together. Insert half of Splice into T Rail and fasten with two sets of Self-tapping screws in each side of T Rail, and then insert the other Splice into T Rail and fasten with Self-tapping screws.

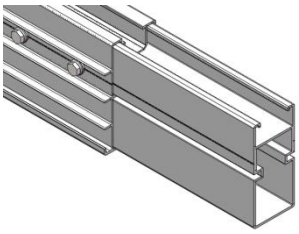
Screw ST6.3*22 symmetrical on both sides with 8 pieces. Please fasten the Self-tapping screw until its rubber washer attach the T Rail tightly.

1



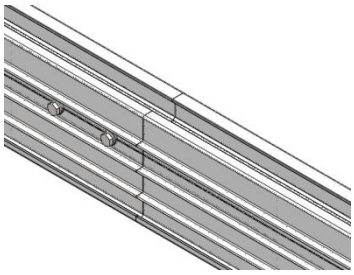
Insert half of the Splice into TR Rail

2



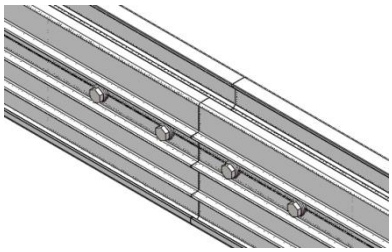
Then use two sets of Self-tapping screws in each side of the TR Rail

3



Insert half of the Splice into the TR Rail

4



Two sets of Self-tapping screws each side of the T

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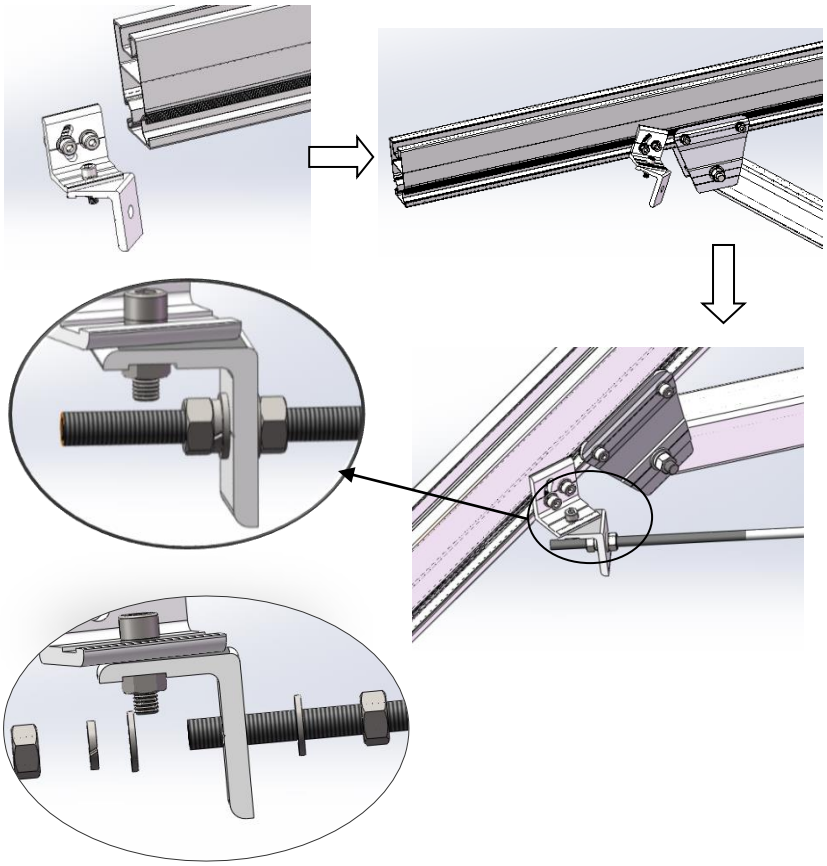
4.4 Install East/West Adjustable Bracket II and Tie Rod(Optional Parts)

Slide Tie Rod Connector on the Tri-Groove Beam. Use Hexagonal bolt assembly M10 fasten Rod Tie on Tie Rod Connector, the same of other end. Fasten the bolts slightly after the installation angle is determined. The nut on the Tie Rod is locked until in a tight state.

Recommended torque:
M8: 18~20N•m



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4.5 Install Angle Al (Optional Parts)

4.5.1 Apply T-head bolt M8 * 25 for Angle AL installation. Slide the bolt head into the U-slot of Slotted Al-Tube and rotate the bolt slightly as shown in Fig.15.

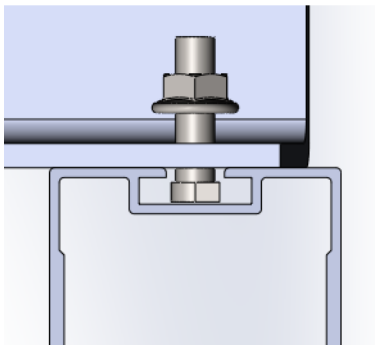

Fig. 15

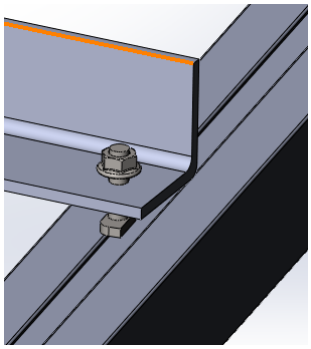

Fig. 16

4.5.2 Fasten the bolts slightly after the installation position is determined as shown in Fig.16.

4.5.3 Fasten T-head bolt slightly, as shown in Fig.17.

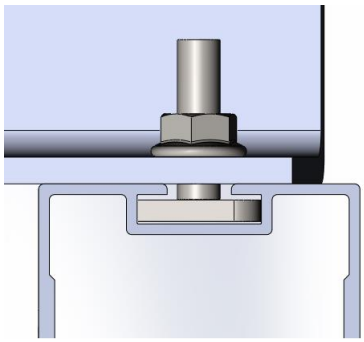

Fig. 17

4.5.4 Fasten repeat the above operations to install all Angle AL.

Recommend torque for M8 bolt is 18~20N•m

4.6 Support installation completed

Repeat above operations, install other T Rails. Ensure the end faces of Rails are aligned and all Rails are at same height. Now fasten all bolts tightly.

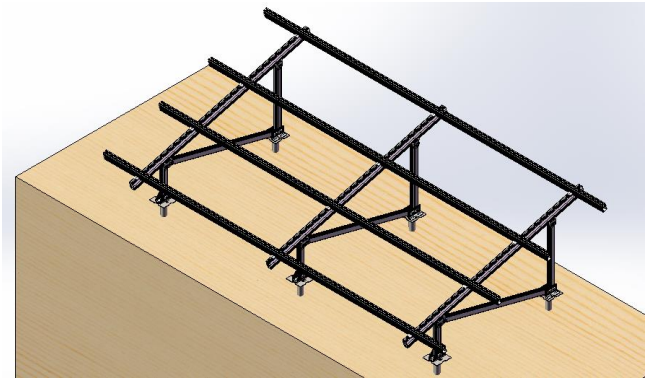

Fig. 18

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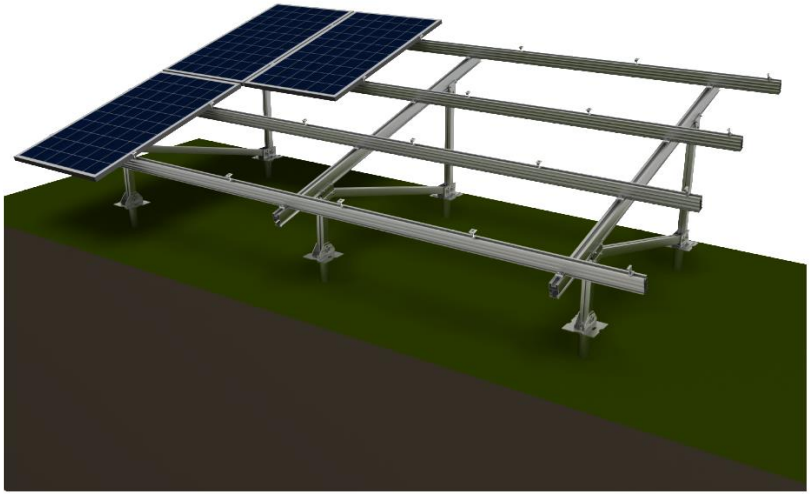
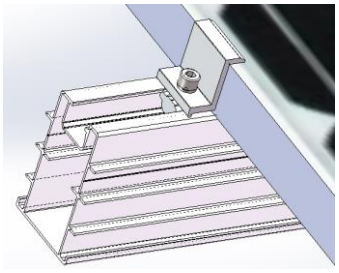
4.7 Install PV Module

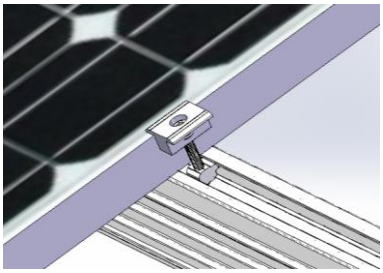
Centralize PV Modules in TR-Rail, install and fasten them with Inter Clamps or End Clamps, and lock with Socket Wrench.

Note: Maintain gap between the two adjacent rows of PV modules, you can use two Inter Clamps as separation between two PV Modules, and remove them after installation finished.

The recommended torque for M8 bolt is 18-20 N•m







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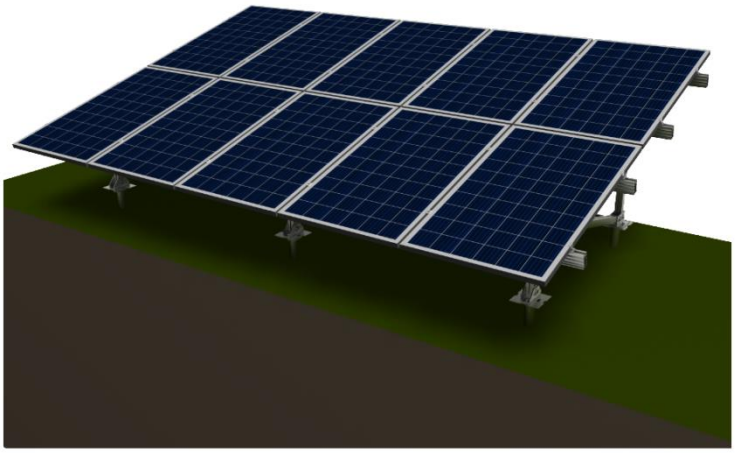
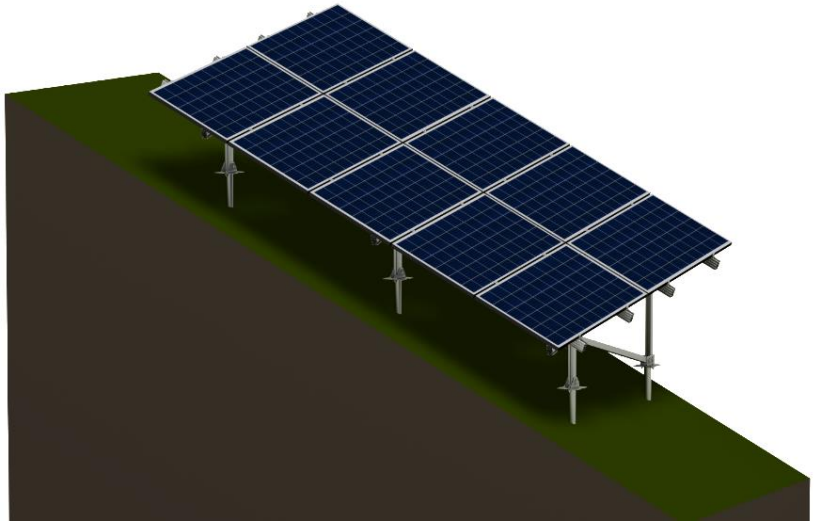
Now the installation is completed as shown in right Figure. Please recheck the Angle AL, and fasten them tightly if necessary.	 

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5. Warranty

10 year limited Product Warranty, 5 year limited Finish Warranty
Clenergy (Xiamen) Technology 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 Aluminium" (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, at 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.

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