

INSTALLATION INSTRUCTION

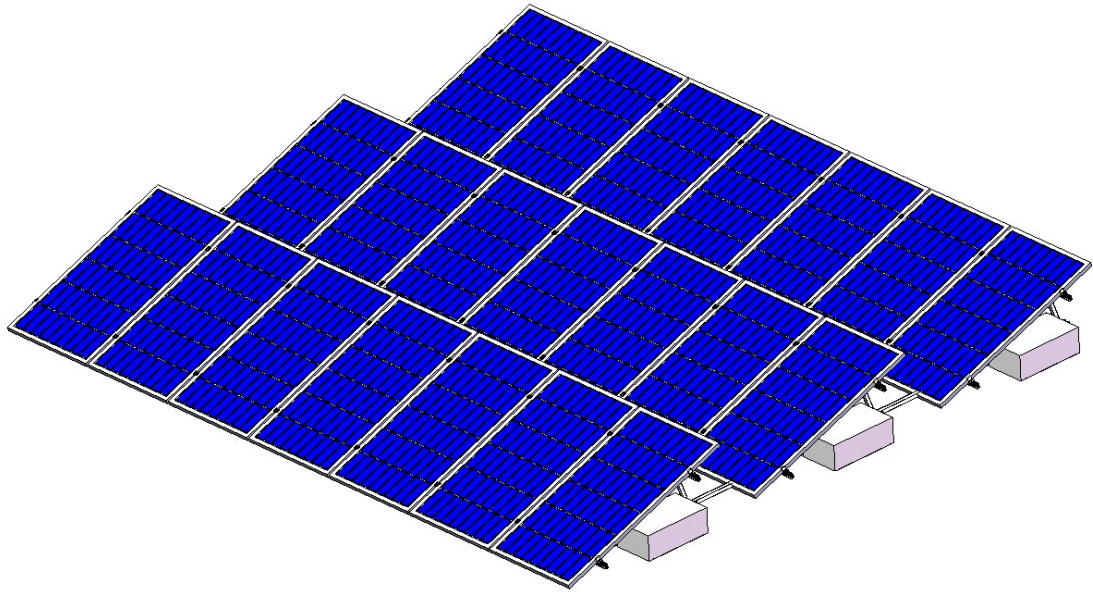


Installation Introduction

Aluminium ballasted flat mounting system without Wind Deflector
(Portrait)



ANTAI
Aluminum & AI Tech for Solar



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I. Safety Precautions

Thank you for purchasing Antai solar mounting system products. Please refer to this installation instruction before installation, operation, maintenance, and inspection.

● General considerations

The installation is limited to those who have professional experience and can carry out construction according to the specified items.

Please abide by the local national or local building regulations and environmental protection regulations. Please comply with the regulations on the prevention of industrial accidents and the relevant regulations of the insurance union.

There must be at least 2 operators during installation to prevent accidents.

Please wear safety clothes. (Especially protective helmets, work boots and gloves). Please always prepare at least one installation work instruction when installing.

■ When working at heights, please set up scaffolds and carry out construction after eliminating the danger of falling. Please use gloves and seat belts.

■ In order to prevent accidents and failures, please do not arbitrarily change the product style.

■ Please pay attention to the profile section and sharp parts, and avoid collision and injury during construction.

■ Please pay attention to tightening the bolts, nuts, self-tapping screws, etc. of each part, and pay great attention to whether they are locked.

■ When working on electrical wiring works, please pay attention not to touch the profile section, which may damage the wiring.

Requirement

- Please use the accessories designated by our company for construction parts, and do not arbitrarily transform and change the products.
- Please avoid hitting strongly on the profile as aluminum profile is easy to deform and scratch.

This information is related to the installation of the system. Please consider the characteristics of the stand during the construction of the foundation, components, inverter, and electrical wiring.

II. Instruction

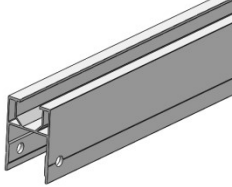
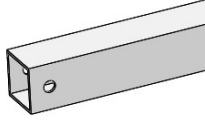
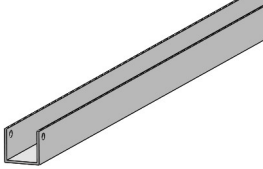
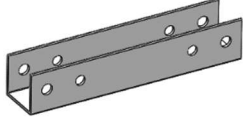
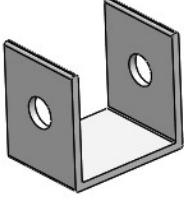
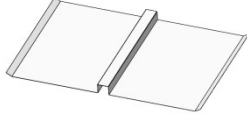
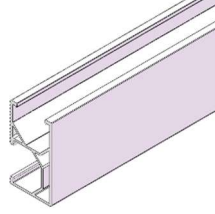
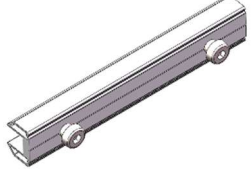
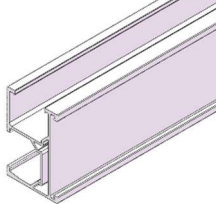
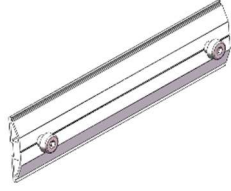
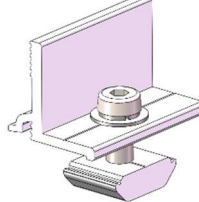
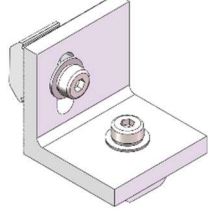
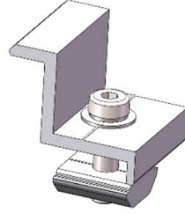
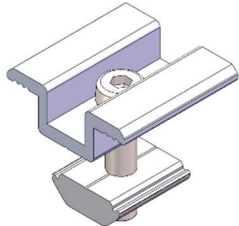
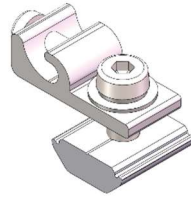
Antai Cement Flat Roof Ballast System is a PV support system for cement flat roofs. It has a lightweight profile design and a stable triangular structure, which can be widely used with various types of cement flat roofs. The cement ballast design can provide a stable and reliable foundation for the support without damaging the roof itself. The whole system has a stable and simple structure, which saves the user's installation time and cost. It is an efficient solution for cement flat roof projects.

Before installation, please read the entire manual carefully!

III. Tools

| | | | |
|---|---|--|---|
|  |  |  |  |
| 6mm Inner Hexagon Spanner | Electric Drill | Tape Measure | Thin Marker |
|  |  |  |  |
| Torque Spanner | String | Adjustable Wrench | Socket wrench (M8) |

IV. Components

| | | | |
|---|---|--|---|
|  |  |  |  |
| Beam | Pile | Bottom Beam | Bottom Beam Splice |
|  |  |  |  |
| Bottom Beam block | Ballast Tray | Rail 1 (lock inside) | Rail Splice1 |
|  |  |  |  |
| Rail 2 (lock outside) | Rail Splice 2 | Clamp | L Feet |
|  |  |  | |
| End Clamp | Mid Clamp | Grounding Lug | |

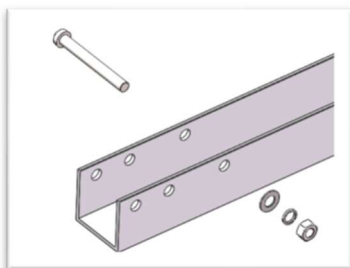
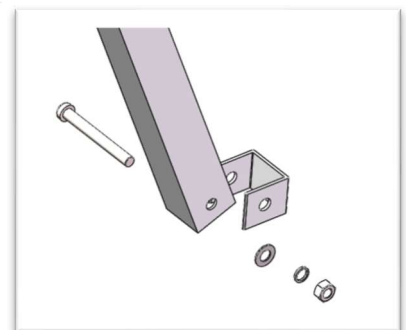
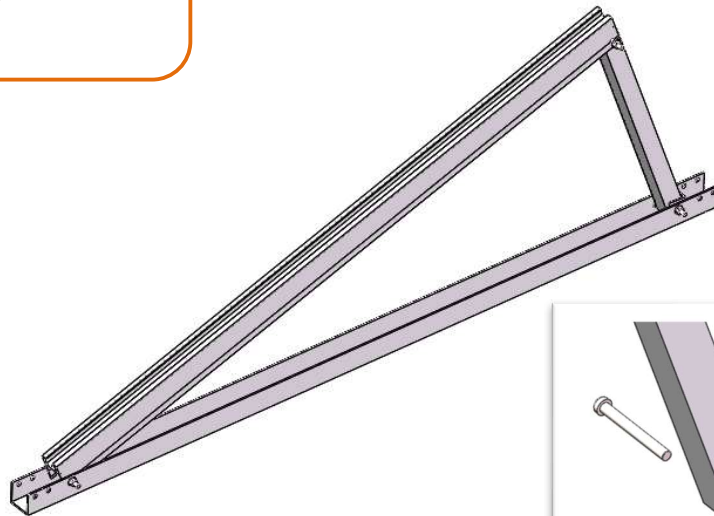
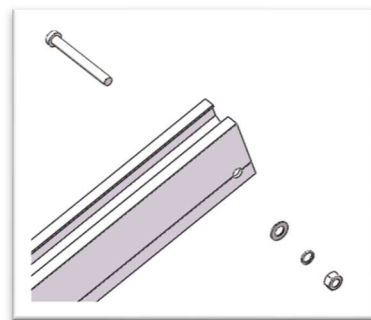
V. Installation Instruction

5.1 Installation of Aluminum Ballast Supporting

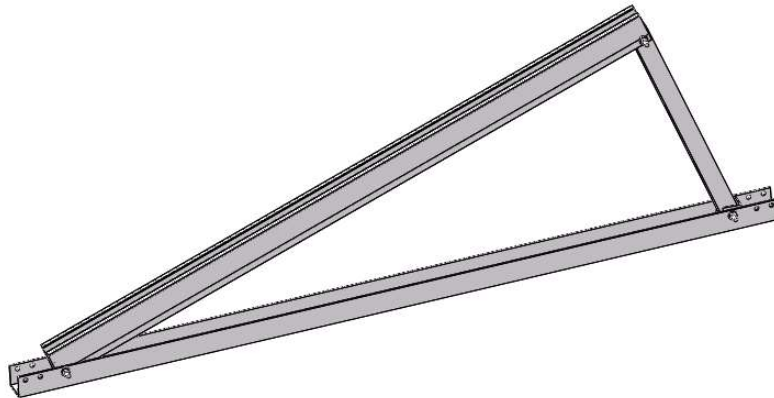
Pick out the corresponding inclined beams, bottom beams, and columns, and pre-install and tighten the bolts corresponding to the pre-opening positions. After measuring and adjusting the final angle, lock the fastening bolts. The installation is shown in the figure below:

5.1.1 Pre-assembled ballast tripod

M8×65 hex socket bolt
M8 flat washer
M8 spring washer
M8 nut



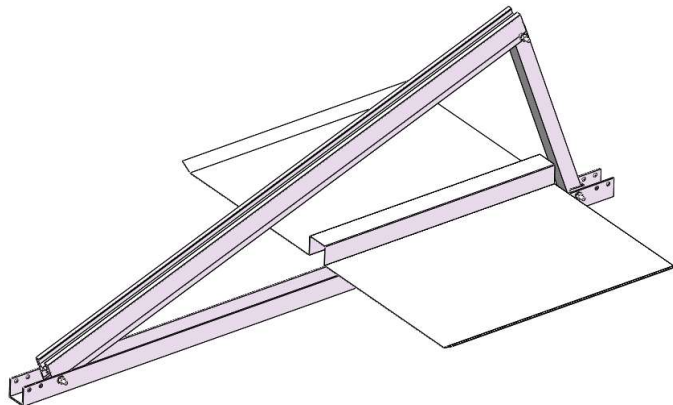
5.1.2 Complete the pre-installation, as shown in the figure below:



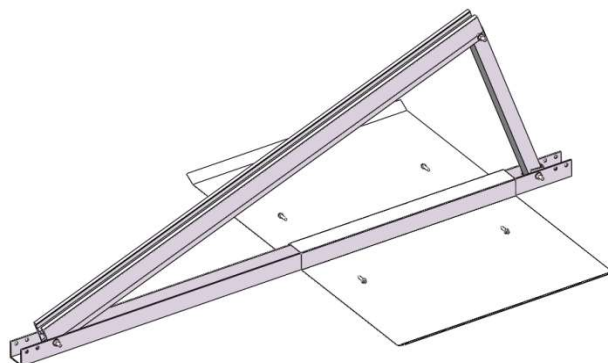
5.2 Installation of Aluminum Ballast Tray

Place the ballast tray on the bottom beam of the pre-installed aluminum ballast tripod, adjust the position and fix it with a pair of self-tapping screws, then place the pre-installed tripod at the planned designated position, and adjust the front and back arrangement spacing.

5.2.1 Put the ballast tray on Ballast tripod.

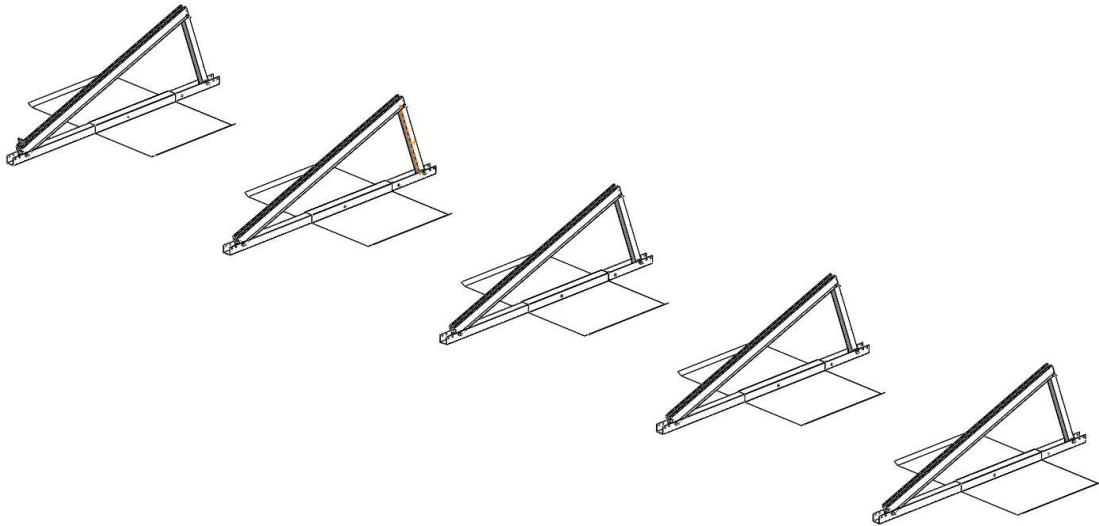


5.2.2 Adjust the ballast tray and fixed with two screws each side.



ST6.3×25 self tapping screw

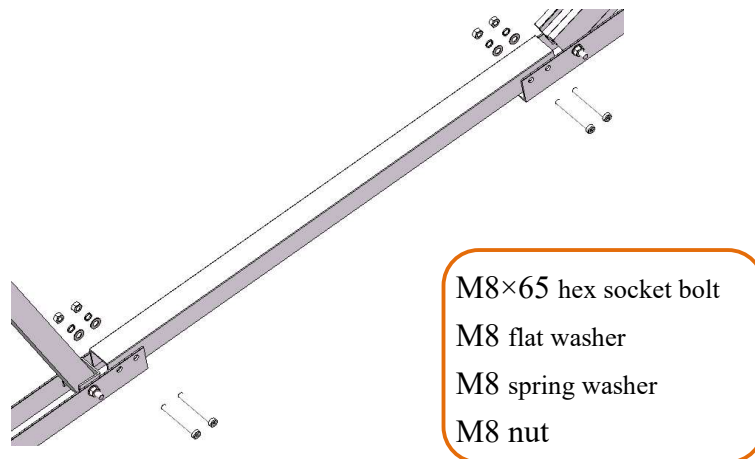
5.2.3 Place the aluminum ballast tripod with the ballast tray installed in the planned designated position, and adjust the distance between the front and rear rows according to the drawings.



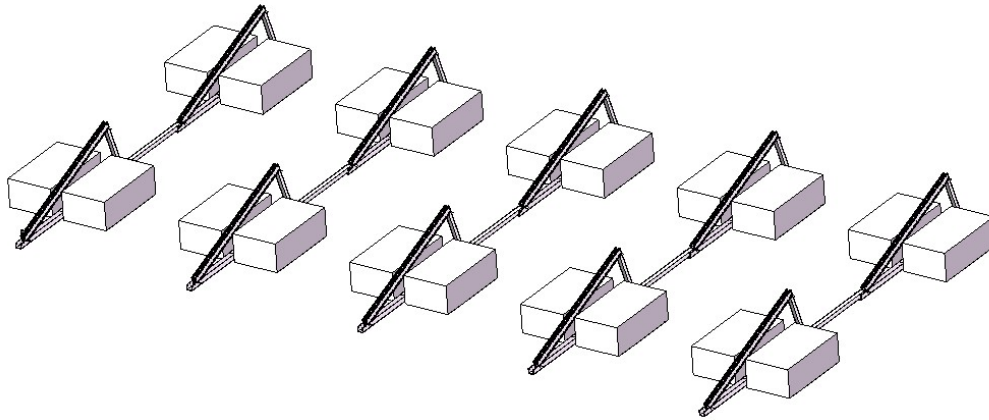
5.3 Aluminum Ballast Array Connection

Place the aluminum ballast tripod with the ballast tray installed in the designated position, adjust the spacing between the front and rear, and connect it with the bottom beam splice. After all the bolts are tightened, place the corresponding cement block on the ballast tray to fix the entire array bracket.

5.3.1 Adjust and place the aluminum ballast tripod, use the bottom beam splice to connect the front and rear aluminum ballast tripods into an array, and lock and fix the corresponding bolts.



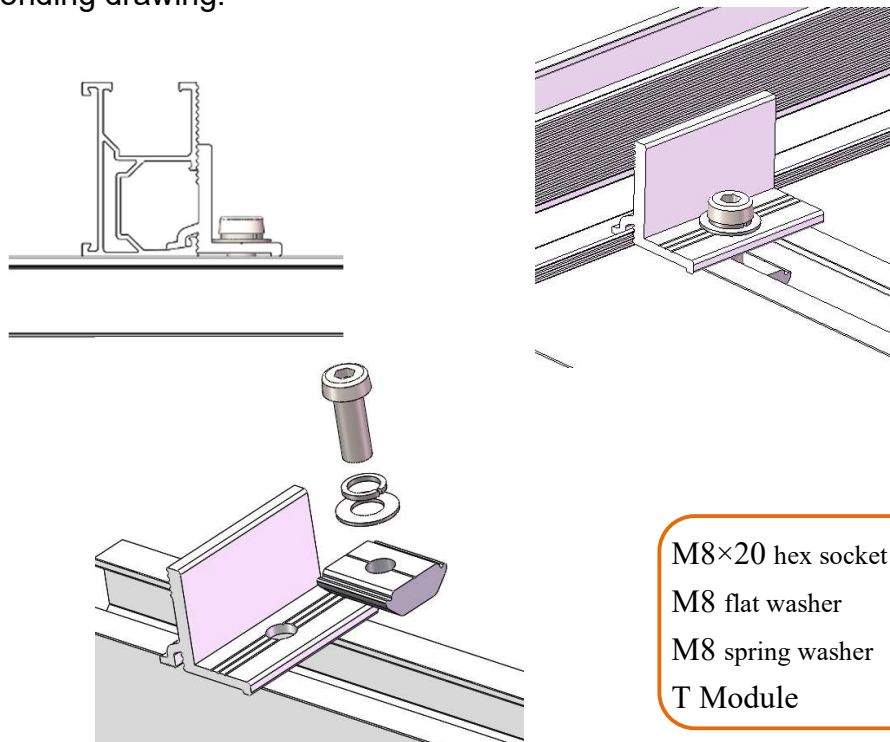
5.3.2 Place cement compacts of designated weight on the ballast tray of the aluminum ballast tripod placed at the designated position. The entire cement block should be pressed on the ballast tray and adjusted neatly.



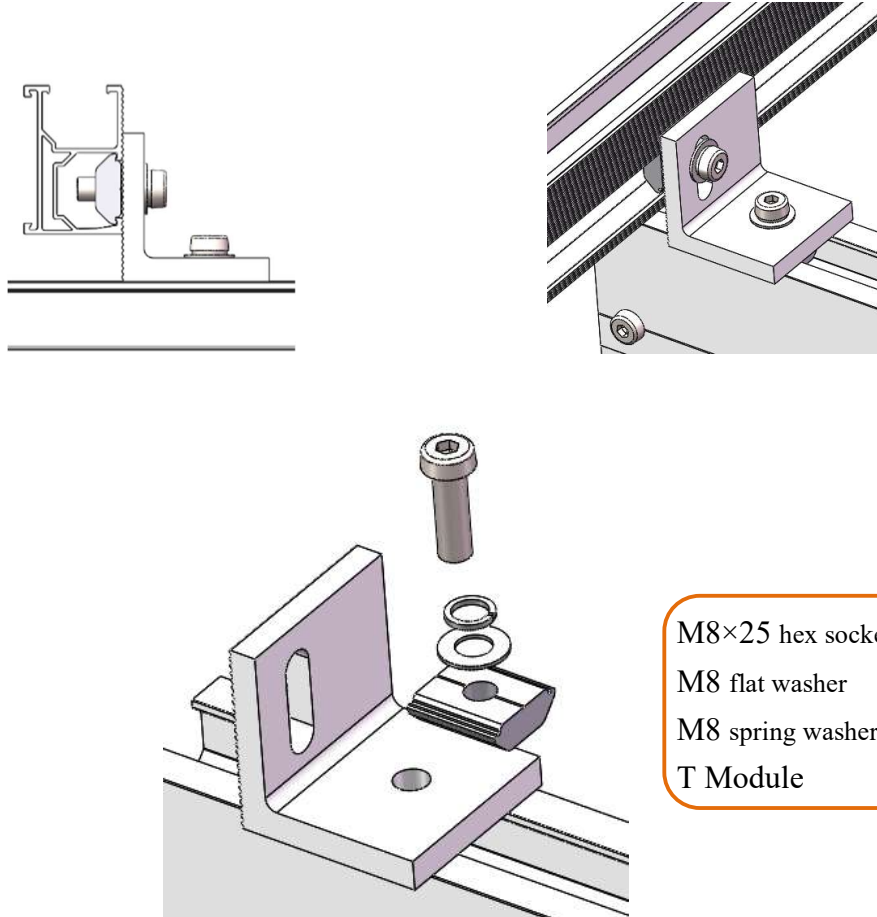
5.4 Rail Installation

Fix the L foot or clamp on incline beams firstly, then lay the rail on the inclined beam. Adjust the rail and fix it to the L feet, and finally tighten the bolts.

5.4.1 Lay the rail on the inclined beam, buckle the rail presser foot into the slot, and tighten the bolts to fix it. The length of the rail is selected according to the corresponding drawing.



5.4.2 Fix the L feet on the inclined beam, and then lock the side of the positive L foot to fix the rail. The length of the rail is selected according to the corresponding drawing.

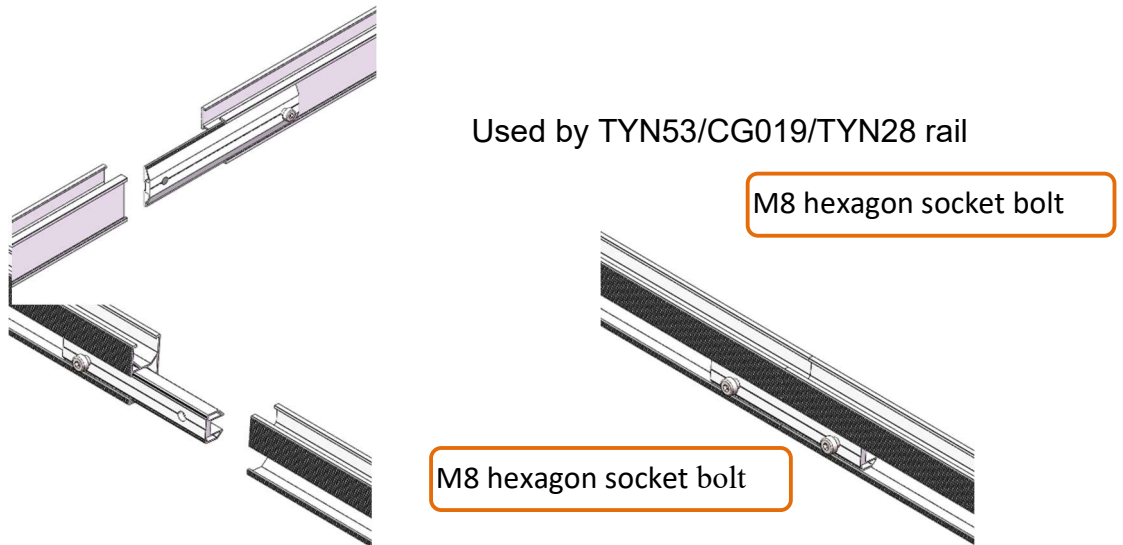


L feet installation solution

5.5 Rail Splice Installation

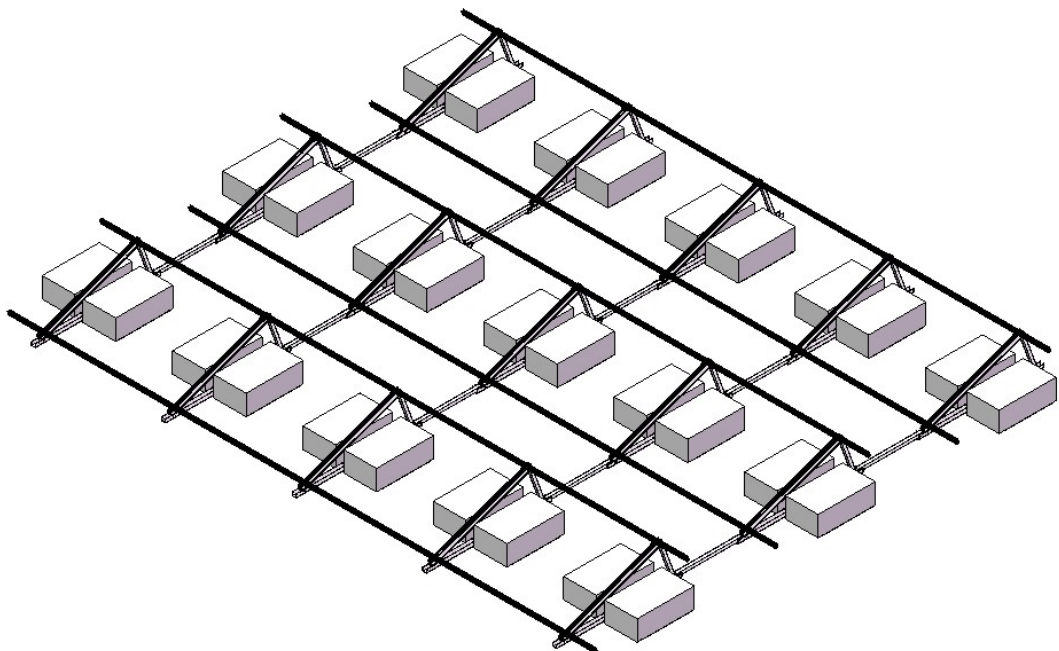
Rails should be connected by rail splice if needed, as shown below:

5.5.1 Slide half of the rail splice into the first rail, adjust the fixed position, and lock the bolts. Slide the second rail into this rail splice. After adjust the location of rail splice, lock the bolt.



Used by CG010/TYN305/TYN355 rail

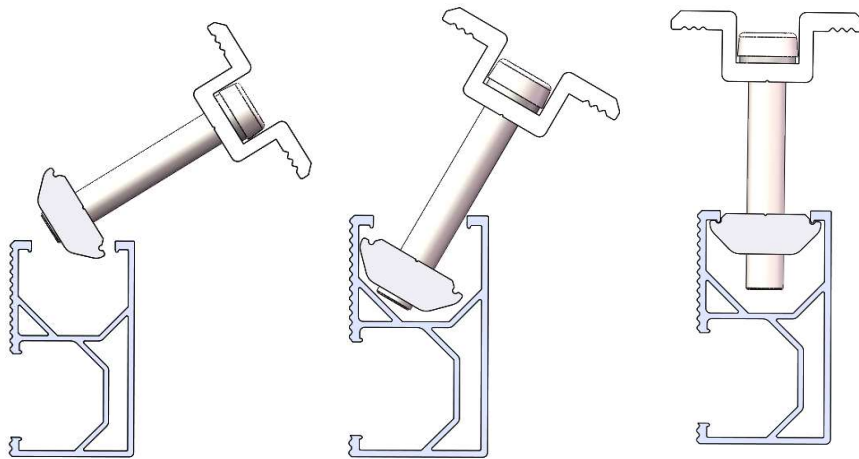
5.5.2 After installation, as shown on the right.



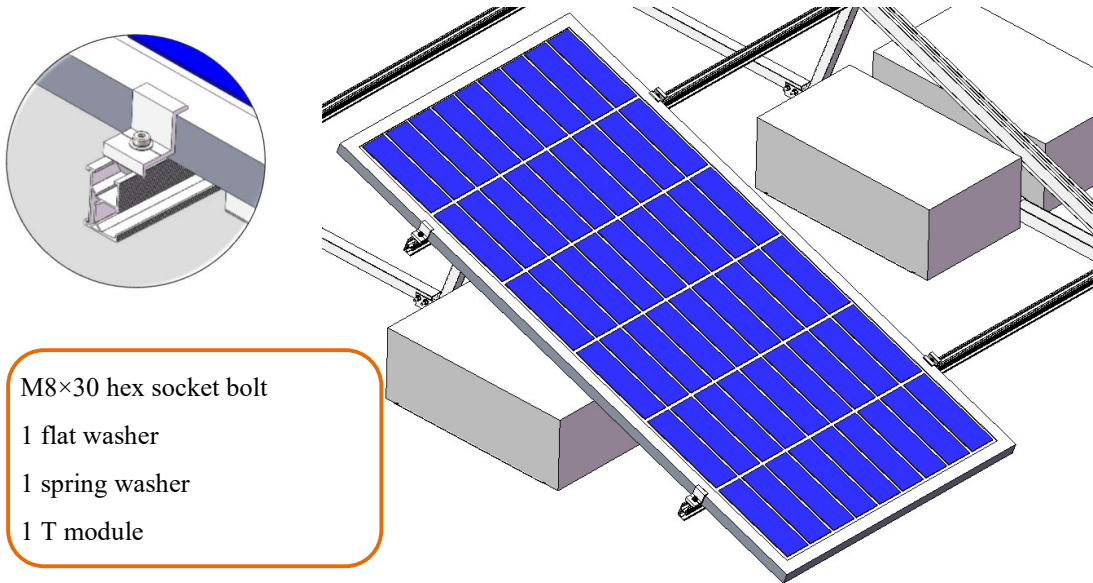
5.6 Components Installation

According to the installation dimensions of the drawings, place the components on the rails, and fix them with the end clamps and mid clamps.

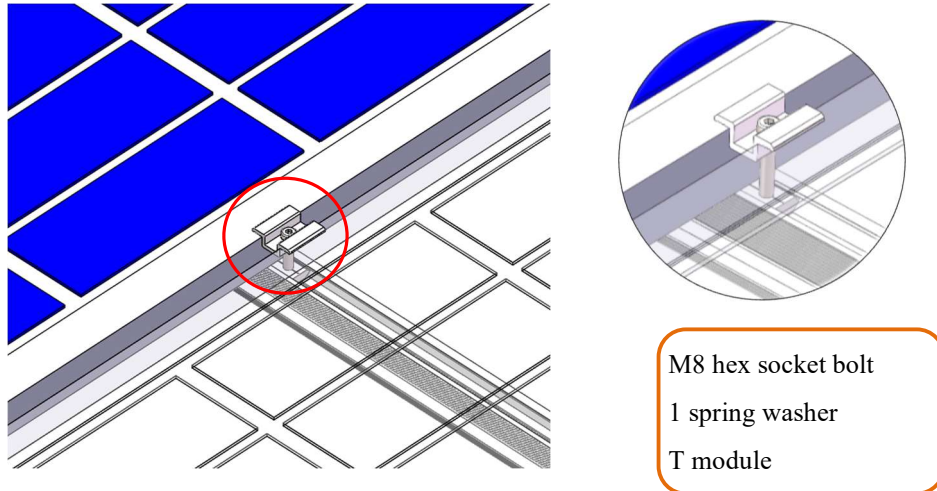
The installation way of the T module is shown in the figure below. First, pre-install the T module on the corresponding bolts, tilt the T module to the side by a certain angle, so that the T module completely enters the rail groove, and then rotate and straighten it, and finally lock and fix it.



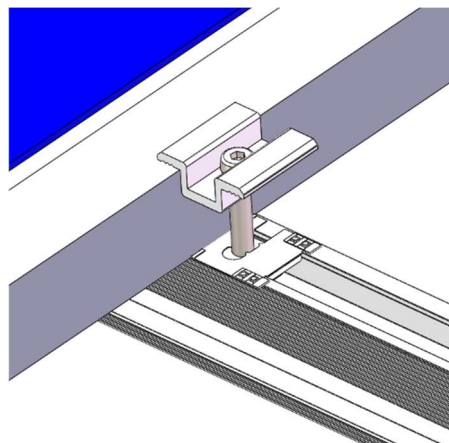
5.6.1 Place PV module on the rail and adjust position according to the drawing. Fix the end clamp with PV module by tightening the bolts.



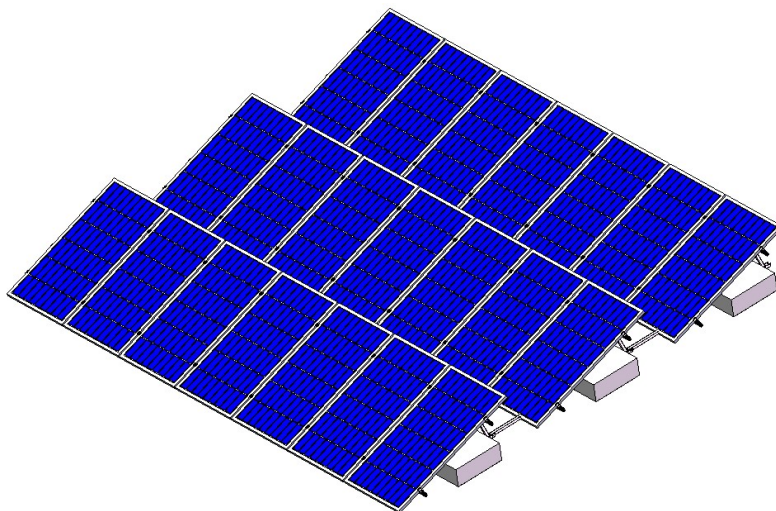
5.6.2 After first PV module installation, place the second PV module on the rail. Adjust the position and fix the first and the second module by mid clamp.



5.6.3 If there is a earthing clip, place it in the middle of the module and the rail when install mid clamp. Adjust the position and lock the bolt.



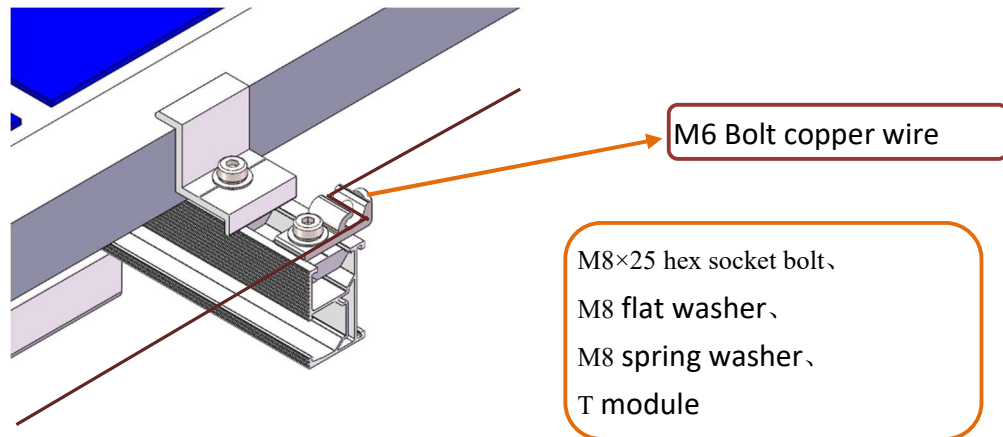
5.6.4 Install all PV modules following the above steps. The outermost part of the last component is fixed with a combination of end clamp and tightened with bolts.



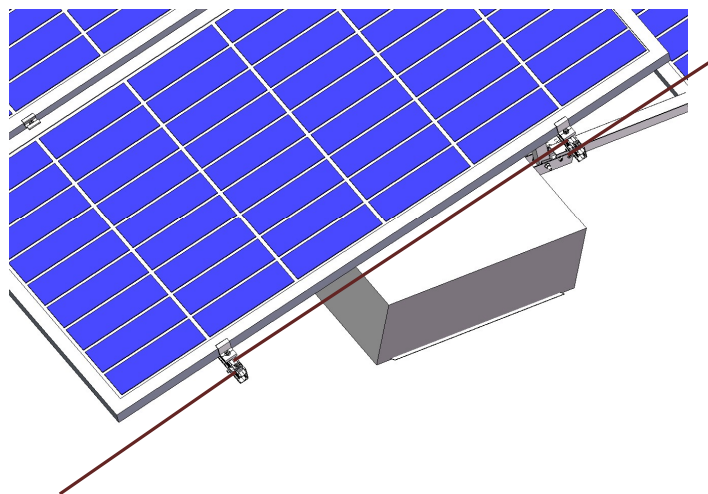
5.7 Grounding Lug Installation

(If there are no grounding lugs, skip this step)

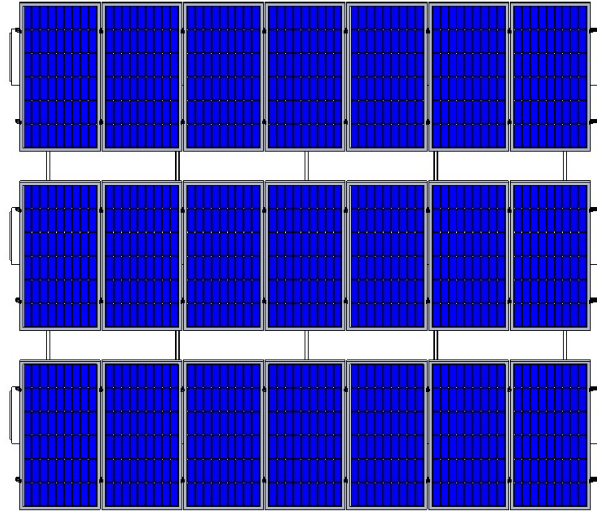
5.7.1 Put the grounding lug on the edge slot of the rail as shown below, and fix it with bolts.



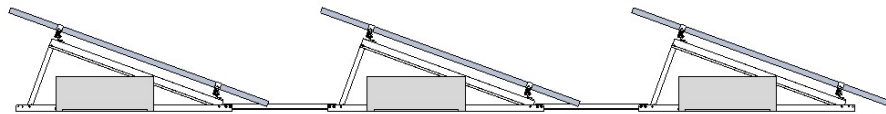
5.7.2 Connect each grounding lug at the edge with copper wires, fix the copper wires with M6 bolts, and ground the copper wires at the end.



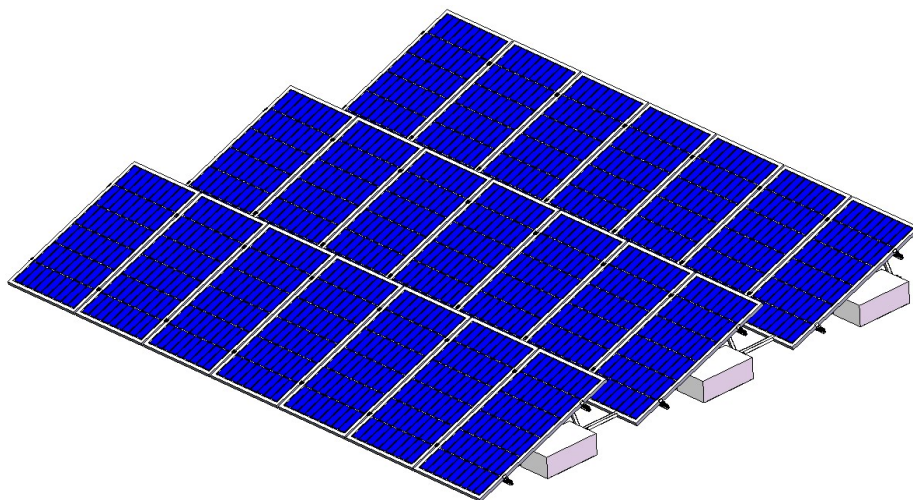
5.8 View of the Installation



Top View



Side View



Axonometric view

VI. Notice

1. Installation dimension

The specific dimensions of engineering installation shall be subject to the engineering construction drawings. This installation instruction is only for the instruction of product installation method.

2. Attention for stainless steel fasteners installation

Because of the good ductility for stainless steel, the fasteners have big difference with carbon steel one in nature. If use in improper way, it will result in bolt and nut being "locked" which commonly known as "seizure". Prevention of lock basically has the following the basic prevention ways from locked.

2.1 Reducing the friction coefficient:

- (1) Ensure that the screw thread surface is clean (no contrast, clutter);
- (2) Recommend that installation surface use water wax or add lubricant on surface during installation. (Such as butter, 40 # engine oil);

2.2 The correct method of operation:

- A. Must be perpendicular to the axis of the screw thread when screwing, can never be tilt.
- B. In the process of tightening, the strength needs to be balanced, tightening torque shall not exceed the prescribed safety torque value;
- C. Choose torque wrench or socket wrench as far as possible, avoid using adjustable wrench or electric wrench.
- D. Do not use it when the temperature is high; do not use it with high speed spin; avoid to be locked by rapid rise of temperature. (Such as electric wrench, etc.)

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