

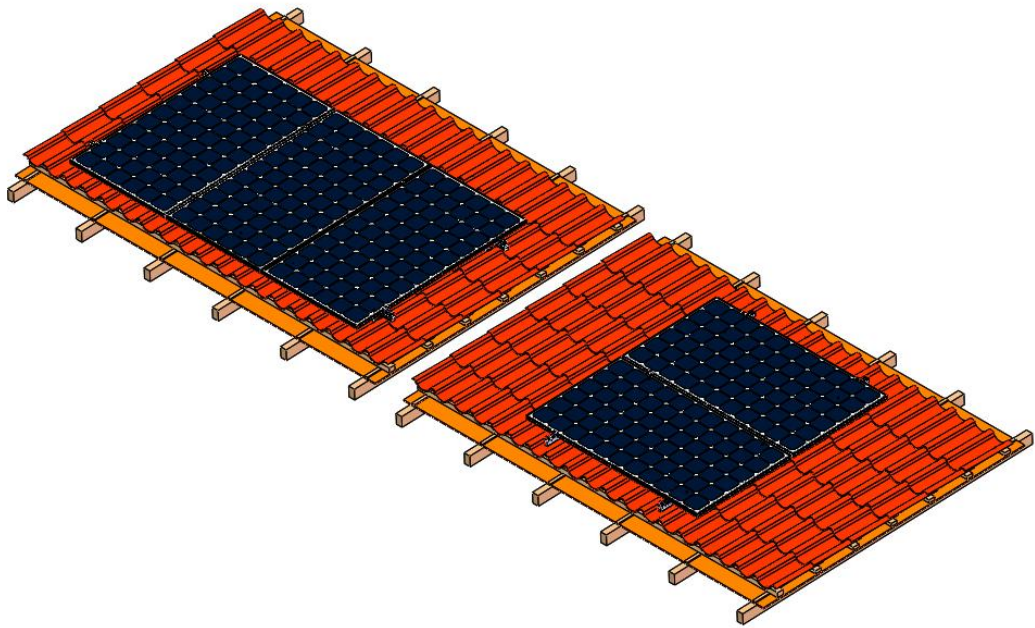
# 安装说明书

INSTALLATION  
INSTRUCTION

**Aluminum Tile Hook  
Mounting System**



**ANTAI**  
安泰新能源



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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.
- Please do not use damaged, faulty, or deformed products in case injury or accident happens. Please always prepare at least one installation work instruction when installing.

### 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. Introduction

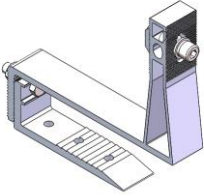
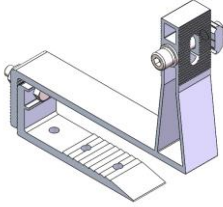
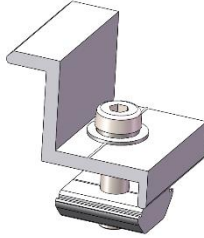
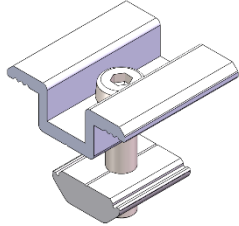
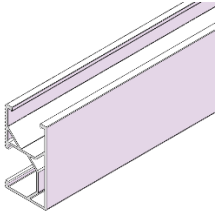
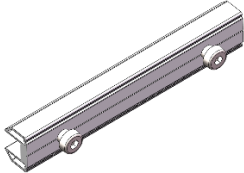
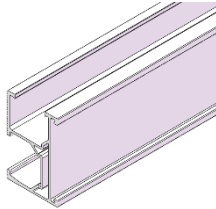
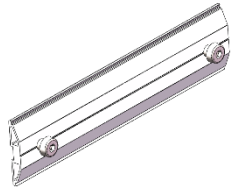
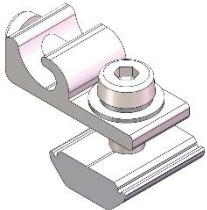
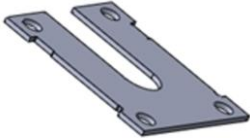
Antai aluminum tile hook mounting system is a roof photovoltaic mounting system applied to tile roofs. The hook is designed based on various types of tile roofs. It has great firmness of the connection between mounting system and roof structure. The whole system has fewer mounting accessories, which saves the users' installation time and cost. It is an efficient solution for the tile roof projects.

Please read the installation manual carefully before installation.

## III. Tools

|                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|   |   |   |   |
| 8mm Inner Hexagon Spanner                                                           | Electric Drill                                                                      | Tape Measure                                                                         | Thin Marker                                                                           |
|  |  |  |  |
| Torque Spanner                                                                      | String                                                                              | Adjustable Wrench                                                                    | Socket Spanner (M8)                                                                   |

## IV. Components

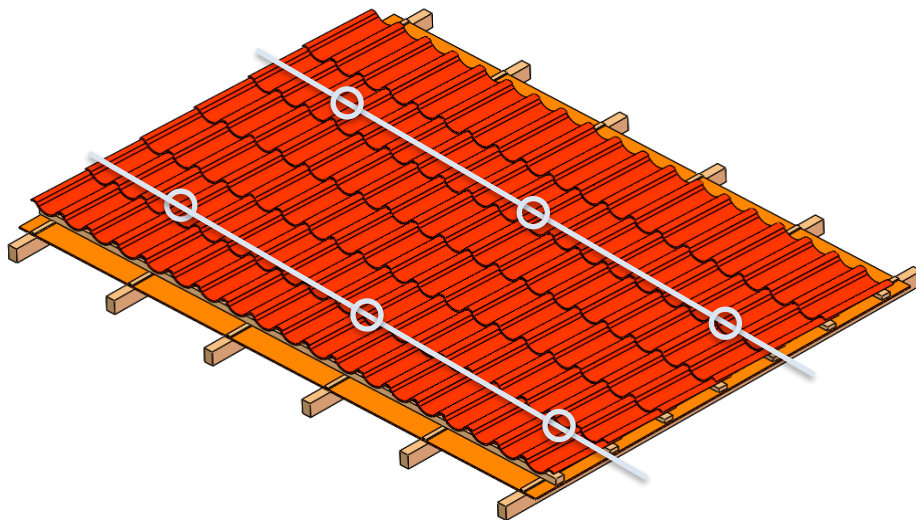
| Main Components                                                                     |                                                                                     |                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|    |    |   |   |
| Tile hook<br>Vertical<br>installation                                               | Tile hook<br>Landscape<br>installation                                              | End clamp                                                                           | Mid clamp                                                                            |
|   |   |  |  |
| Rail 1                                                                              | Rail splice 1                                                                       | Rail 2                                                                              | Rail splice 2                                                                        |
|  |  |                                                                                     |                                                                                      |
| Grounding lug                                                                       | Earthing clip                                                                       |                                                                                     |                                                                                      |

## V. Installation steps

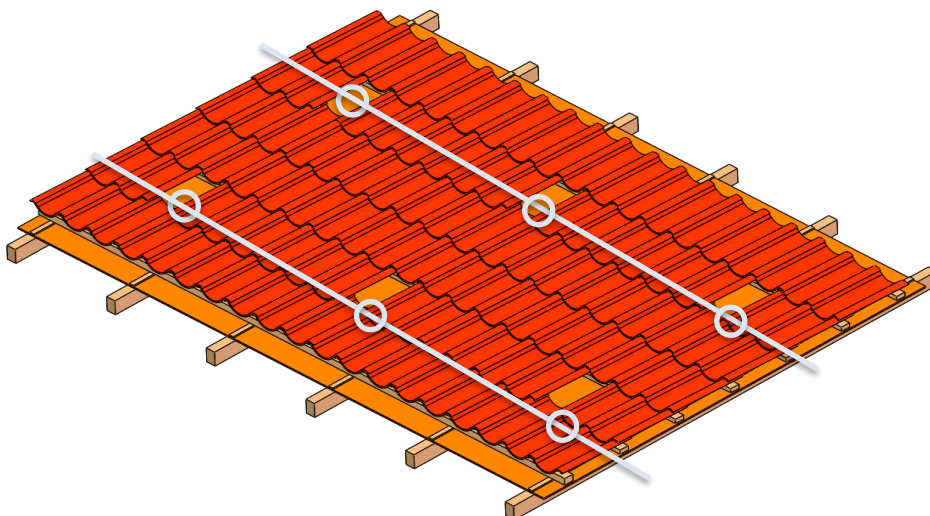
### 5.1 Installation of tile hook

Tile hooks need to be fixed on the roof purlin which under roof tiles, please mark the positions of tile hook according to drawing and make sure all tile hooks are installed on the same horizontal line. Then install the tile hooks accordingly while fixing them to the roof purlins by self-tapping screws.

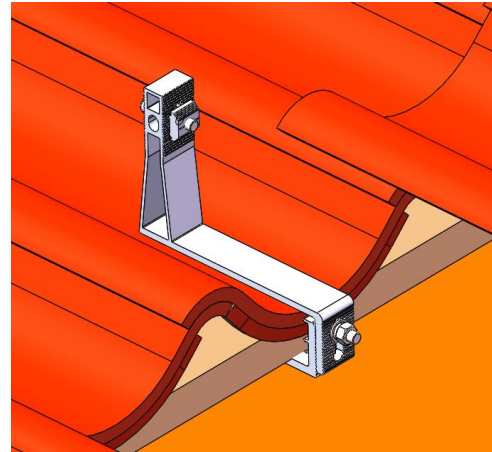
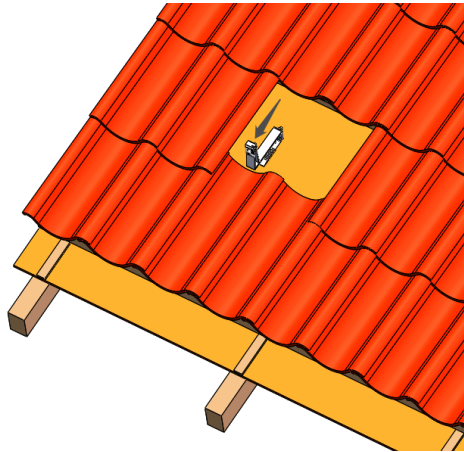
5.1.1 Mark the positions of tile hook on the roof and make sure they are on the same horizontal line.



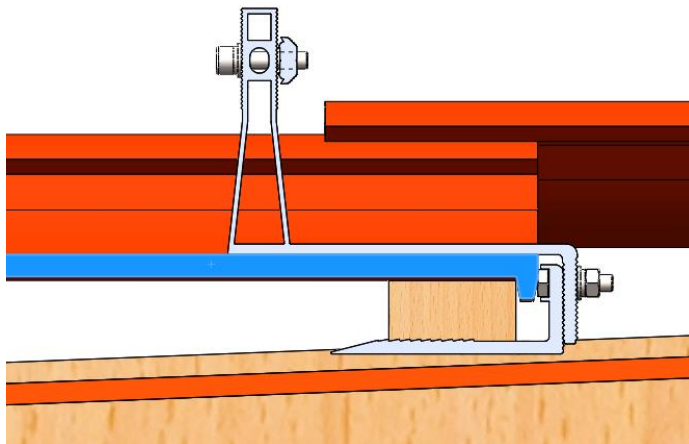
Uncover tile and mark the position.



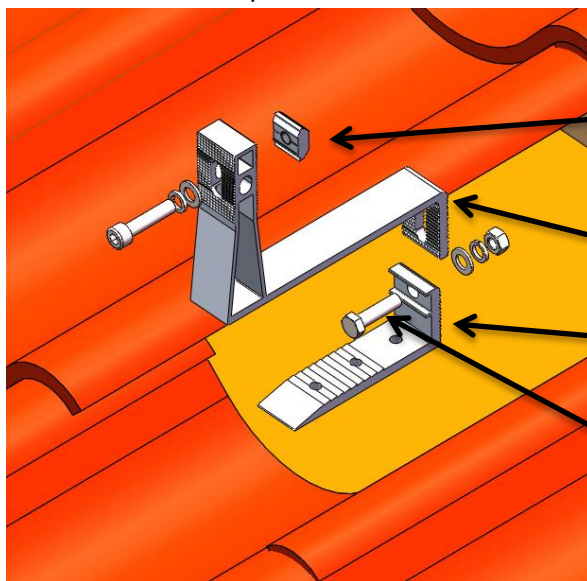
Tile hook installation diagram below:



Side installation diagram below:



Hook for vertical panel installation below:



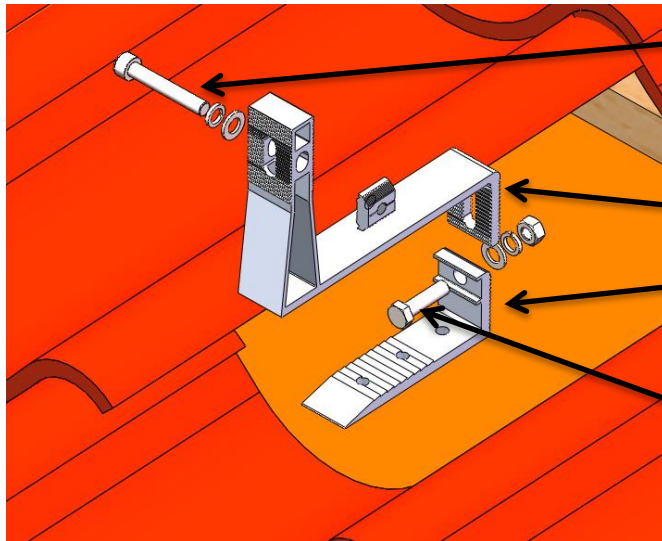
Socket hexagon bolt M8x35  
Spring washer 8  
Flat washer 8  
T nut

Upside of hook

Baseside of hook

Hexagon bolt M8x30  
Spring washer 8  
Flat washer 8  
Hexagon nut M8

Hook for landscape installation below:



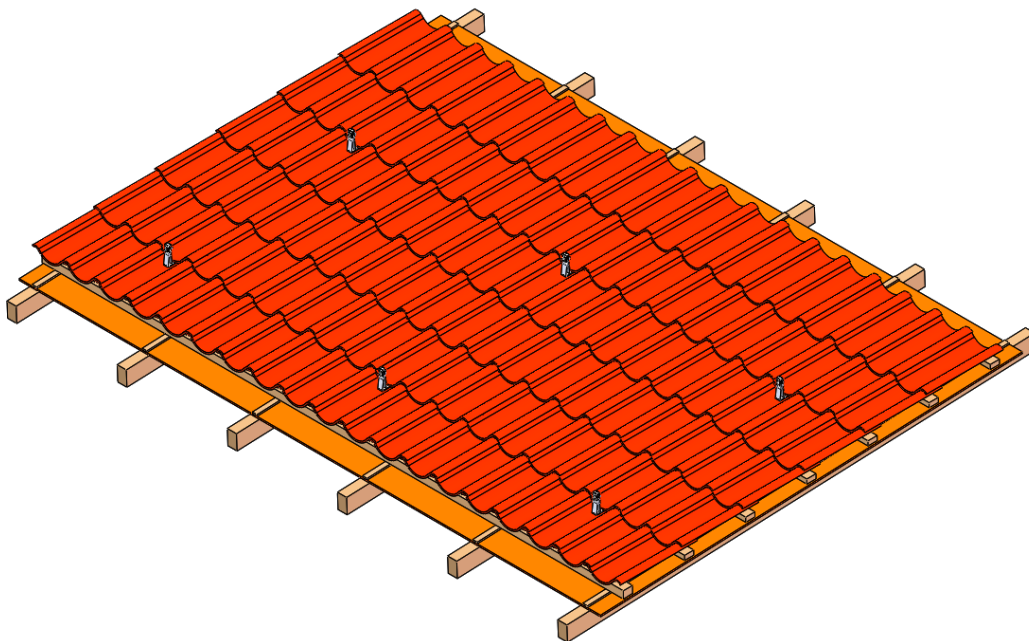
Socket hexagon bolt M8x50  
Spring washer 8  
Flat washer 8  
T nut

Upside of hook

Baseside of hook

Hexagon bolt M8x30  
Spring washer 8  
Flat washer 8  
Hexagon nut M8

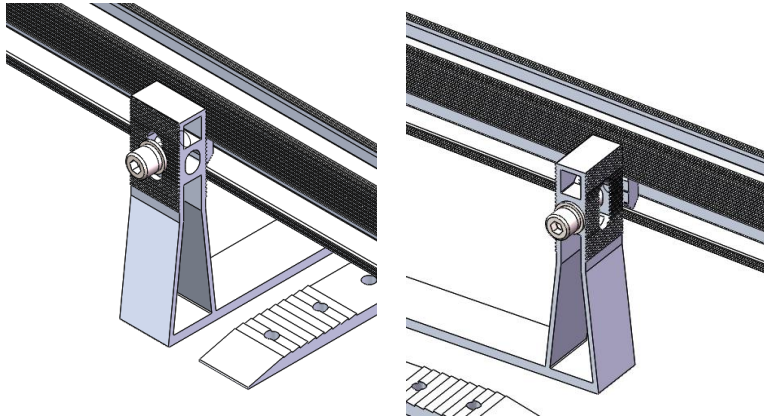
5.1. 2 Install all hooks to the tile roof.



## 5.2 Installation of Rail

Fix rails to tile hooks after adjusting the length and height and then tighten them by bolts.

5.2.1 Fix tile hook and adjust the rail position, slide T nut into specified rail (refer to drawings) and then tighten them by bolts.



M8 Socket hexagon

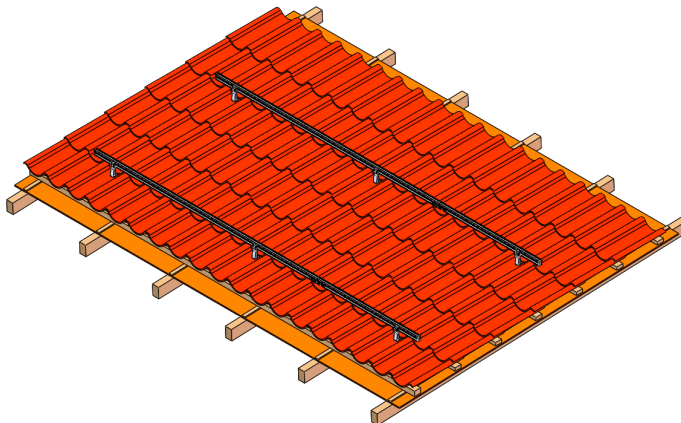
Spring washer 8

Flat washer 8

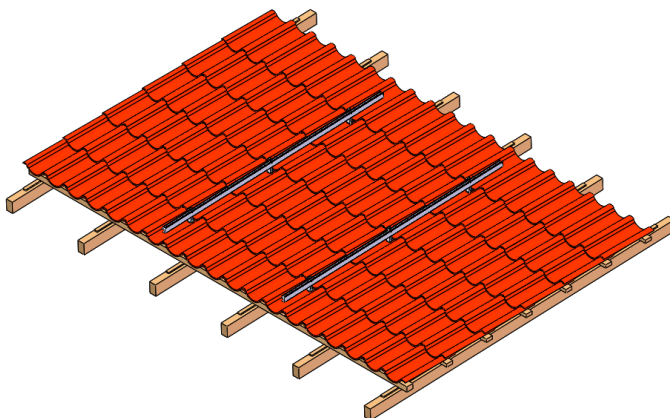
T nut

5.2.2 Install other rails accordingly.

Vertical panel installation :



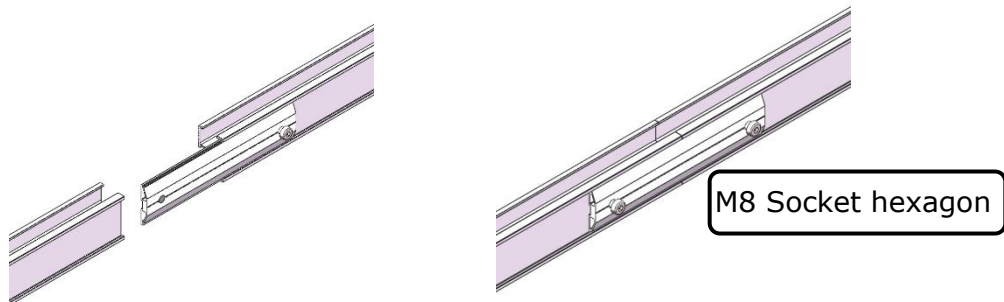
Landscape panel installation:



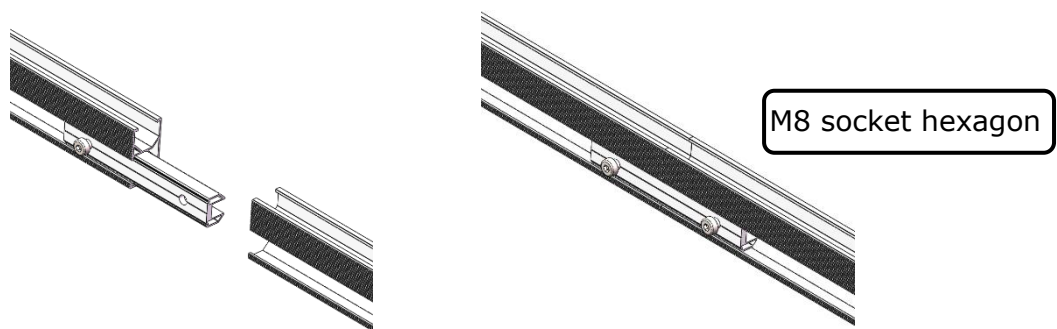
## 5.3 Installation of rail splice

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

5.3.1 Slide half of the rail splice into the first rail, adjust the fixed position, and tighten the bolts. Then Slide the second rail into the rail splice, tighten them by bolts when leveled.

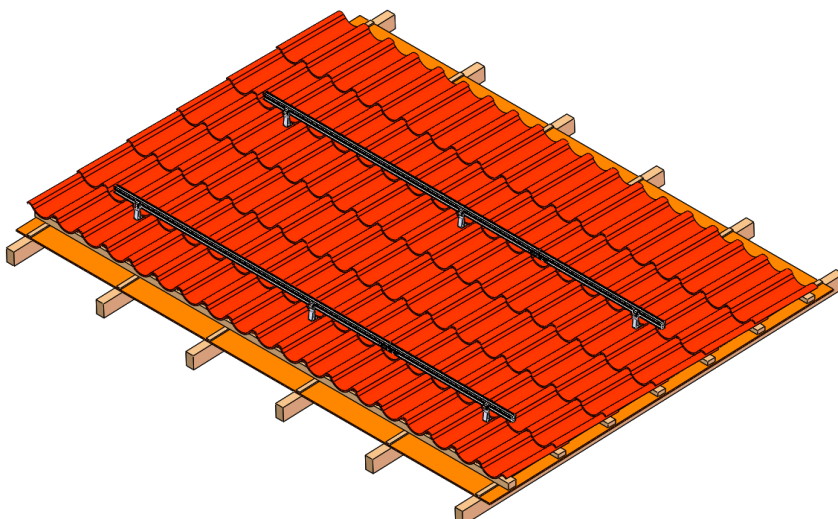


TYN53,CG019,TYN28 and others are use external rail splices.



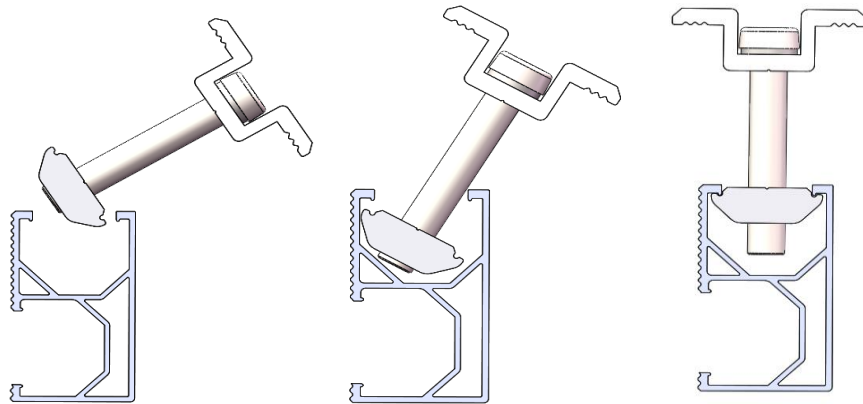
CG010,TYN305,TYN355 and others are used by internal rail splices.

5.3.2 Completed installation is as the pic shown below

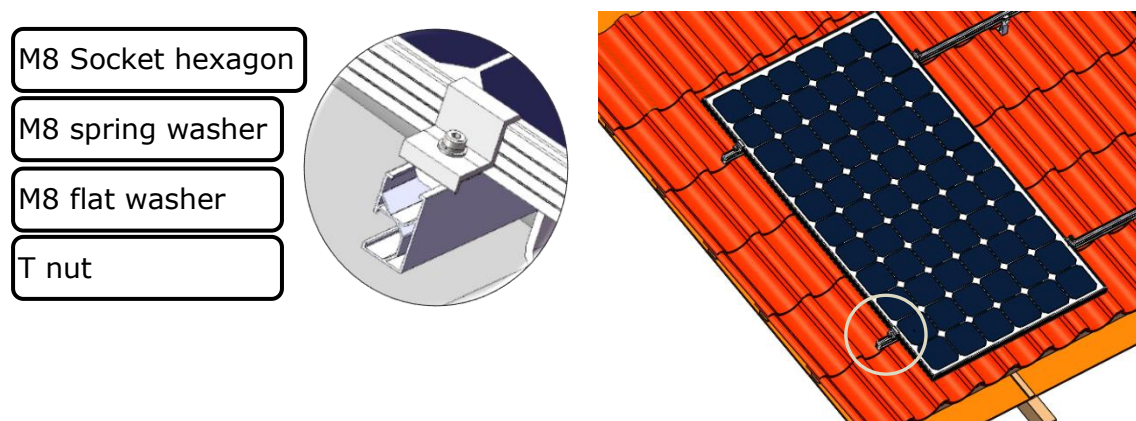


## 5.4 Installation of PV modules

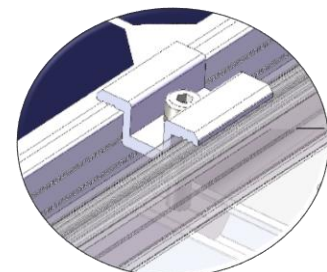
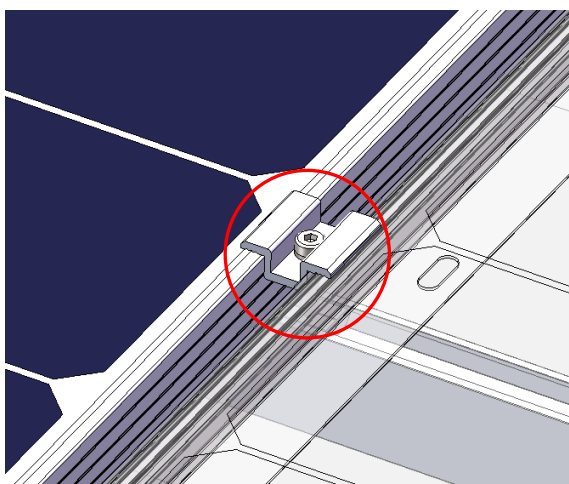
According to the installation dimensions of the drawings, place the panels on the rail, and fix them with end clamps, mid clamps.



5.4.1 Place the PV module on the rail and adjust the position according to the drawing. Then fix the end clamp into the rail channel, and tighten the bolts.



5.4.2 After fixing the end clamp of first PV module, please put the second PV module on the rail at proper position. Connecting firmly the first PV module and the second one with mid clamp and fasten the bolts.

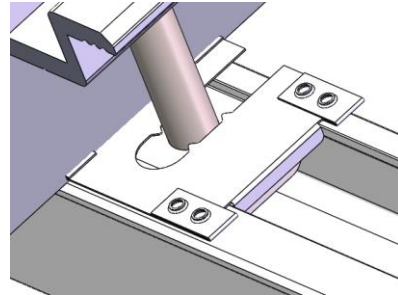
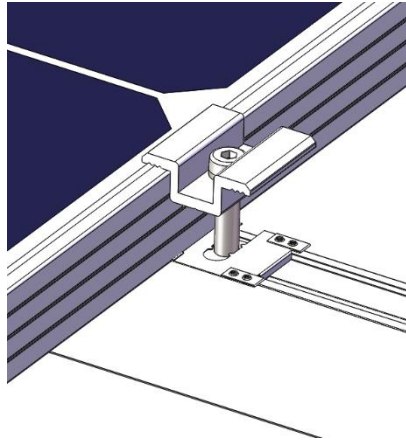


M8 Socket hexagon

M8 spring washer

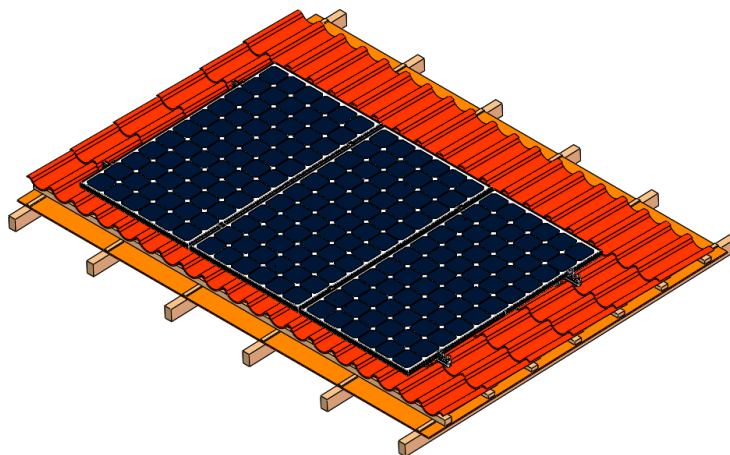
T nut

5.4.3 If there are earthing clips needed, place them between the PV modules and rails while installing the mid clamps. Adjusting the position to ensure the sharp spikes on earthing clips are pressed by both PV modules. Then tighten the mid clamps by bolts.

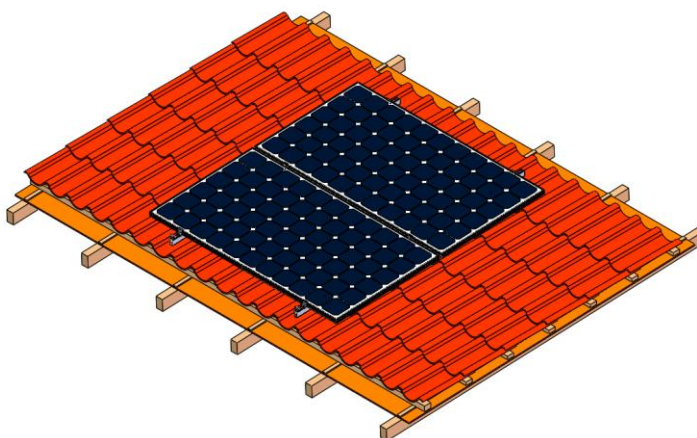


5.4.4 Repeat the steps above. When it comes to the last PV module, fix it with the end clamp and tighten with bolts.

Vertical panel installation:

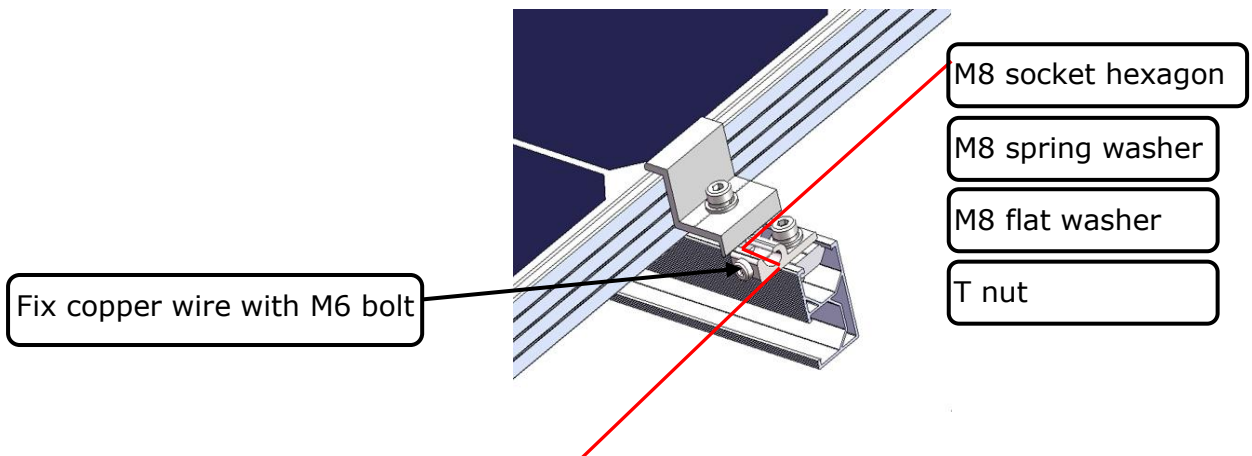


Landscape panel installation:

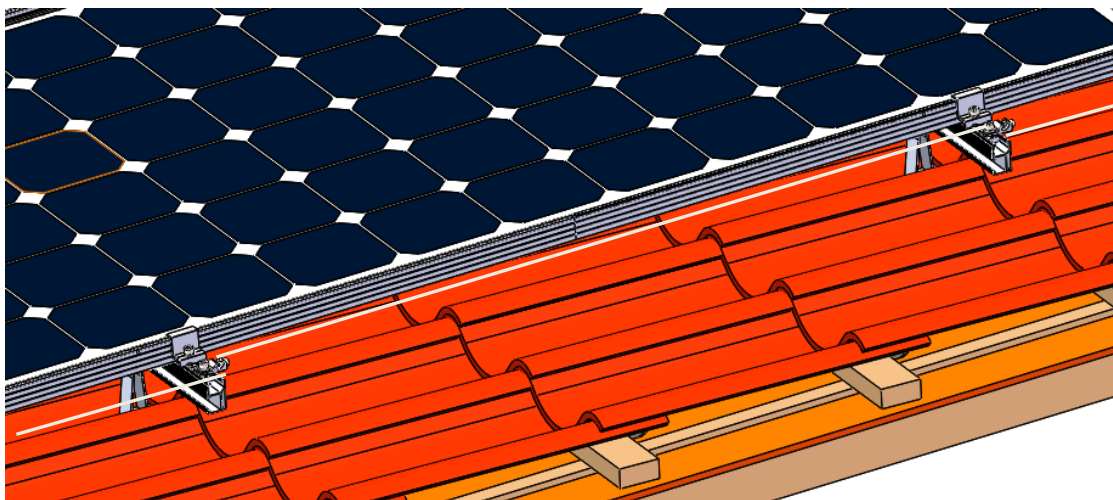


## 5.5 Installation of Grounding Lug (Skip this step if not needed)

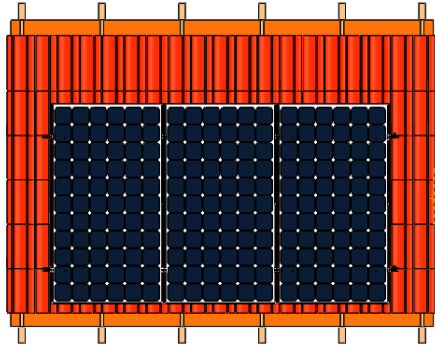
5.5.1 Install grounding lug at the end of the rail as the picture shown below and fix it with bolts.



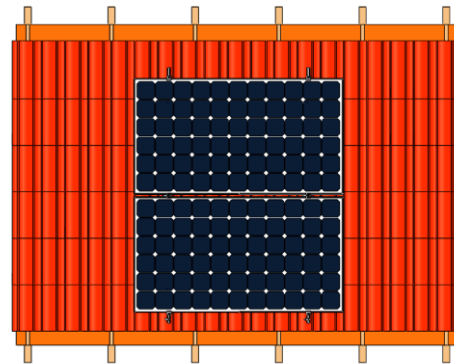
5.5.2 At the edge of the panel array, connect each grounding lug with copper wire, fix the copper wire with M6 bolts, and conduct the end of copper wire to the grounding.



## 5.6 Installation diagram

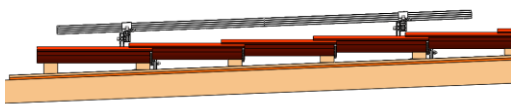


Vertical installation

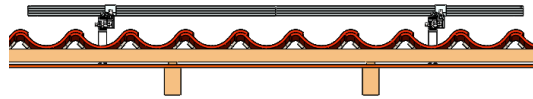


Landscape installation

Top view

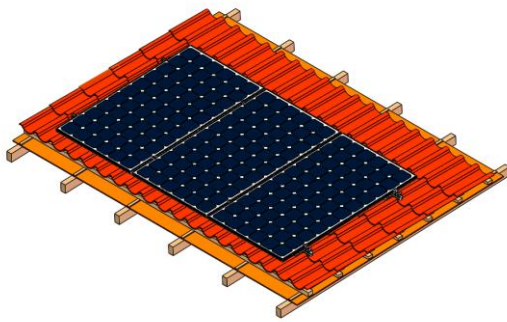


Vertical installation

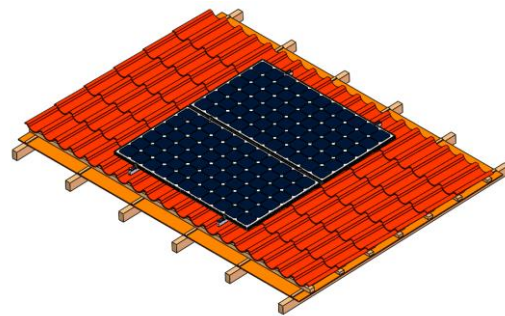


Landscape installation

Side view



Vertical installation



Landscape installation

Axonometric drawing

## **VI. Installation Precaution**

### **1. Notes for the installation dimensions**

The specific dimensions of all installations involved are subject to the construction drawings. This installation instruction is only for the description of the product installation method.

### **2. Notes for Stainless Steel Fasteners**

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 from lock basically has the following ways:

#### **2.1. Reduce the Friction Coefficient**

(1) Ensure that the bolt thread surface is clean and tidy (No dust, grit, etc.);

(2) It is recommended to use yellow wax or lubricant during installation (such as lubricating grease, 40# engine oil, which are prepared by users).

#### **2.2. Correct Operation Method**

(1) The bolt must be perpendicular to the axis of the thread, and not inclined (Do not tighten Obliquely);

(2) In the process of tightening, the strength needs to be balanced, tightening torque shall not exceed the prescribed safety torque value;

(3) Choose torque wrench or socket wrench as far as possible, avoid using adjustable wrench or electric wrench. Lower the rotating speed while have to use electric wrenches;

(4) Avoid using electric wrenches etc. under high temperature conditions, do not rotate fast when using, to avoid rapid rise in temperature and cause "seizure".