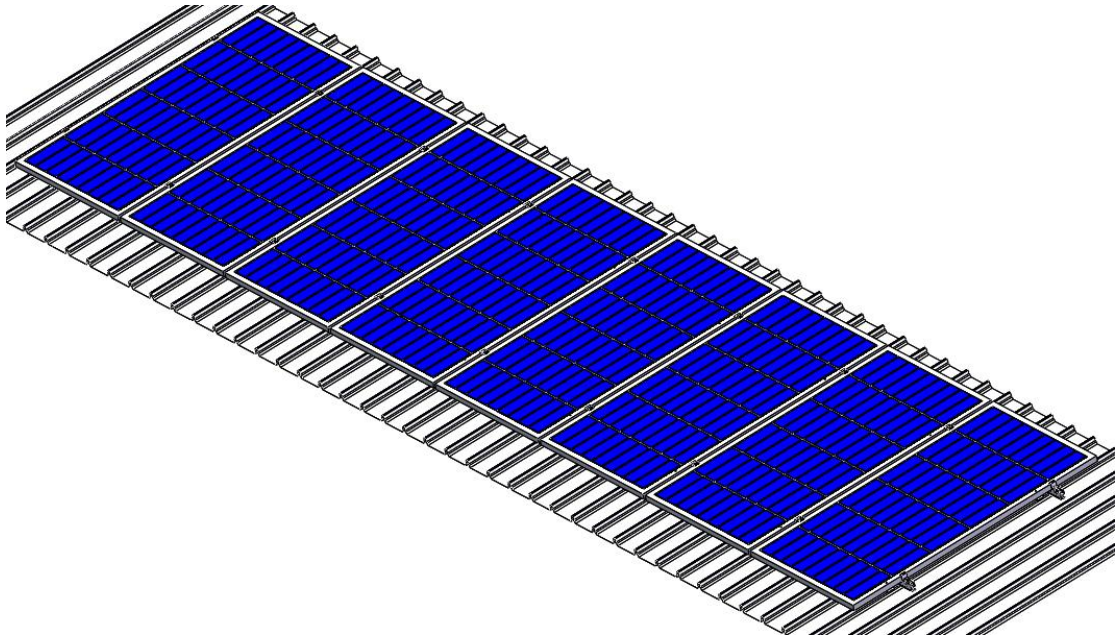


Installation Manual

Clamp system



Content

I.	Safety Precautions	3
II.	Instruction	4
III.	Tools	4
IV.	Components	5
V.	Installation introduction	5
5.1	Clamp Installation	6
5.2	Rail Installation	8
5.3	Rail Splice Installation	9
5.4	Components Installation	9
5.5	Grounding Lug Installation	12
5.6	View of the Installation	13
VI.	Notice	14
	1. Installation dimension	14
	2. Attention for stainless steel fasteners installation	14

I. Safety Precautions

- 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.

Please wear safety clothes. (Especially protective helmets, work boots and gloves)

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

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.

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

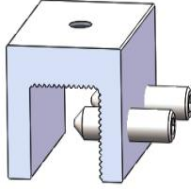


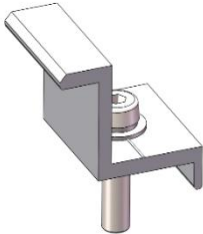
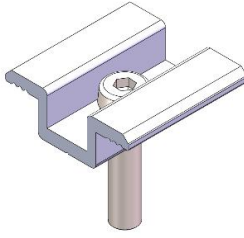


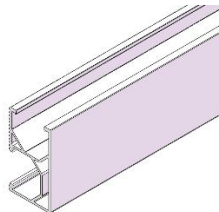
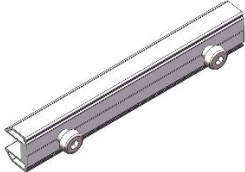

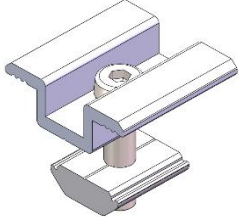

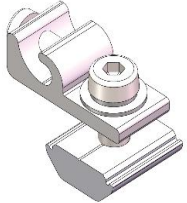
The manual including railless, rail solution manual for your reference.

Please read the installation manual carefully before installation!

III. Tools

			
6mm Inner Hexagon Spanner	Electric Drill	Tape Measure	Thin Marker
			
Torque Spanner	String	Adjustable Wrench	Rope (M8)

IV. Components

For railless			
			
KR clamp	Alu-pad	Round grounding	
			
End clamp	Mid clamp		
With Rail			
			
KR clamp	L foot	Rail	Rail splice
			
End clamp	Mid clamp	Grounding clip	Grounding lug

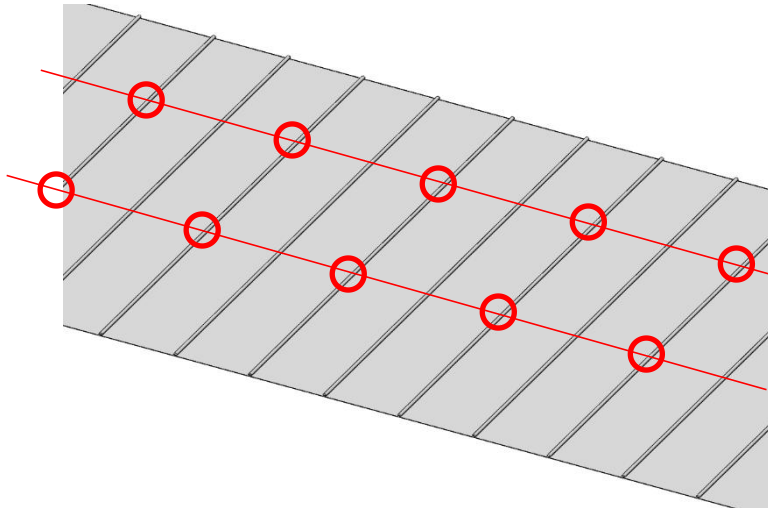
V. Installation introduction

5.1 Clamp Installation

After pre-install clamp, mark the position of clamp according to drawing. Make sure all clamps are installed on the same horizontal line. Install the clamps accordingly and fasten by bolt.

Shown as bellow:

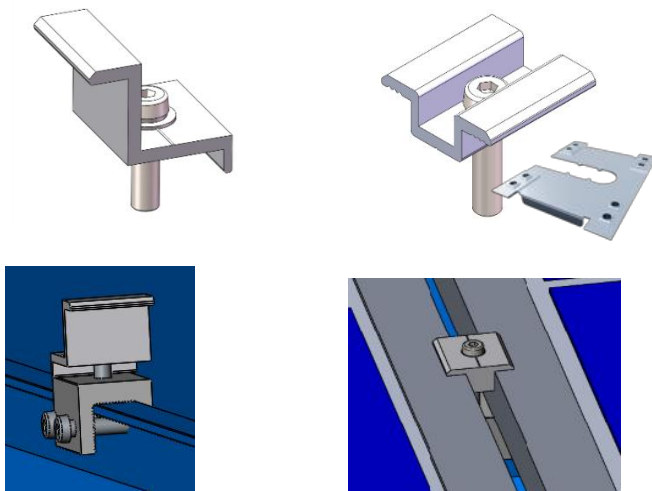
5.1.1 Mark the location of clamp on metal roof. And have them at the same the same horizontal line.



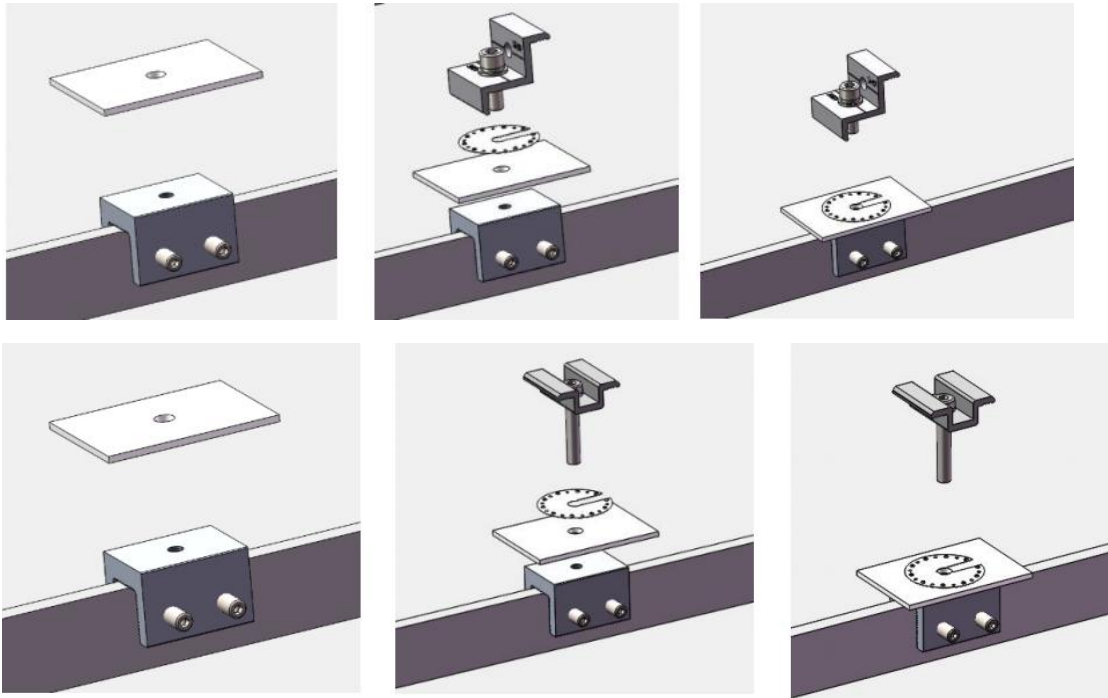
Installation of clamp: (Bolt torque value: 8~10N*M)

5.1.2 Pre-assemble the rail less solution as below with:

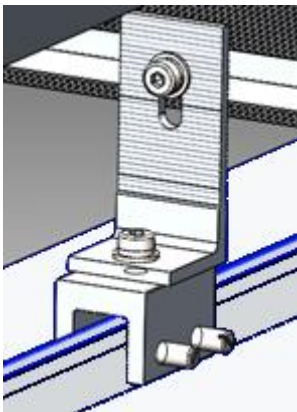
A, direct assemble kr clamp with mid or end clamp set (clamp+bolt+spring washer +flat washer), and please remember add grounding clips between mid clamp and kr clamp;



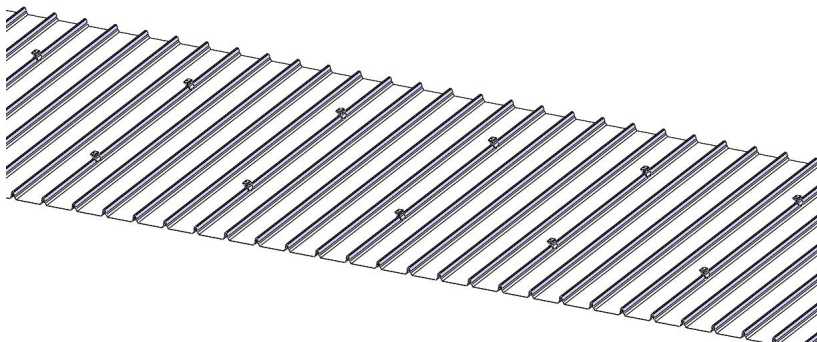
B.kr clamp+ alu-pad+mid clamp or end clamp set



5.1.3 For with rail plan, please install the clamp as below initially



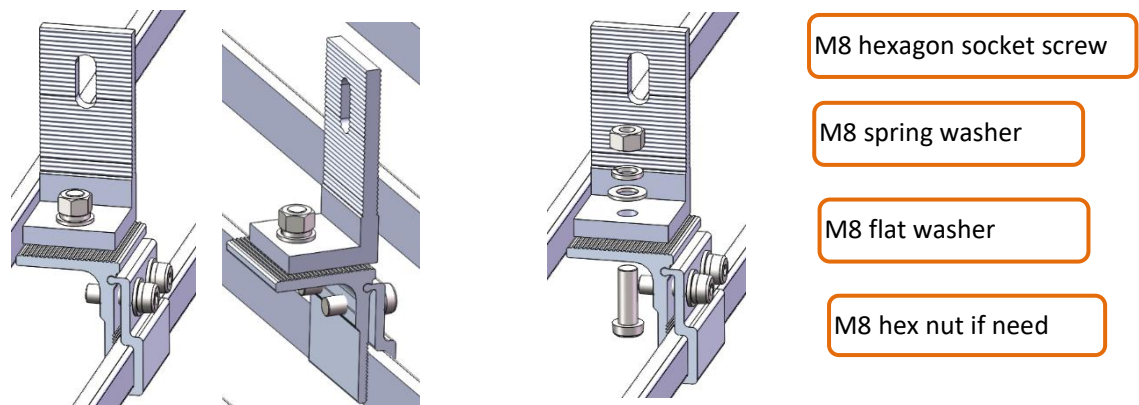
5.1.4 Install the fixture until the clamps are installed, as shown below:



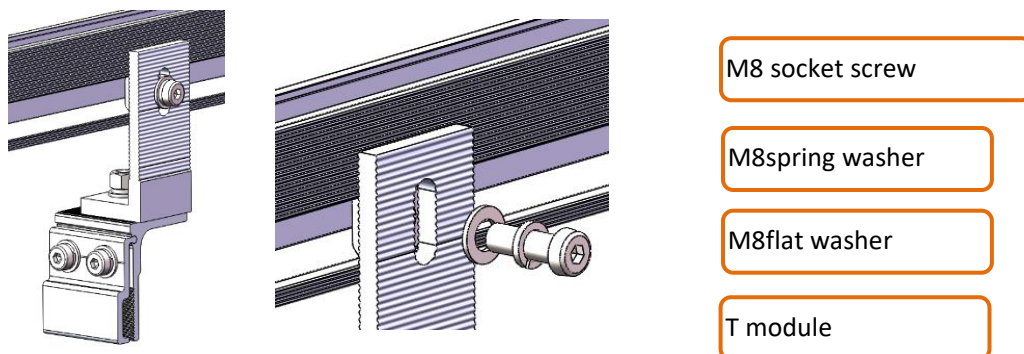
5.2 Rail Installation

Fix the L foot to the clamp first, then adjust the length and height of the guide rail and fix it to the L feet, and finally tighten the bolts.

5.2.1 Place the L feet on the clamp, pay attention to the direction of the L feet, and fix the L feet and clamp together by tighten the bolts.



5.2.2 After fixing the L feet on the clamp, adjust the height of rail, slide the guide into the T module, and lock the bolt after adjusting location. The length of guide shall be selected according to the corresponding drawing.



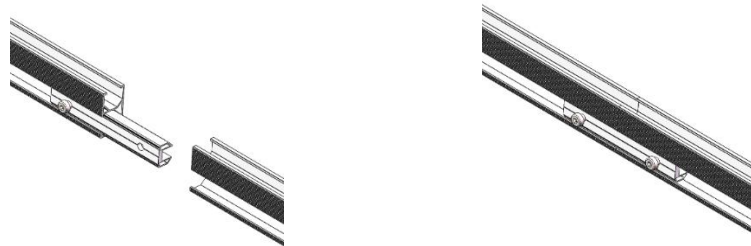
5.3 Rail Splice Installation

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

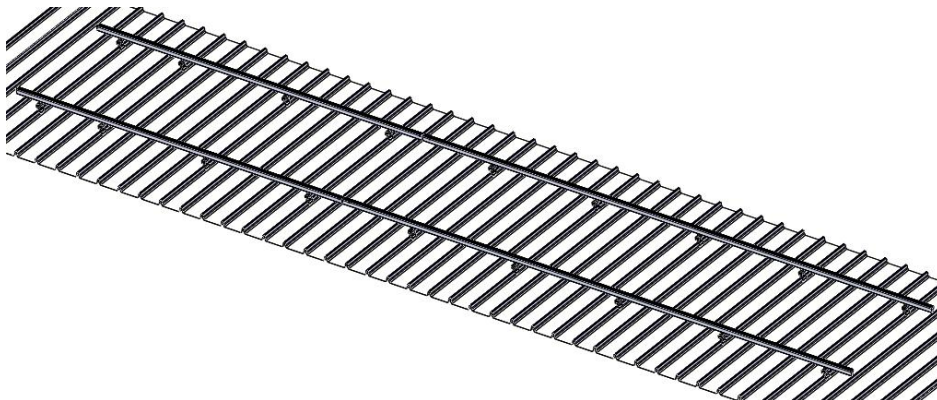
5.3.1 Slide half of the rail splice into the first rail, adjust the fixed position, and lock the bolts. Slide the second rail into this guide rail splice. After adjust the location of rail splice, lock the bolt.



(Internal lock connection)

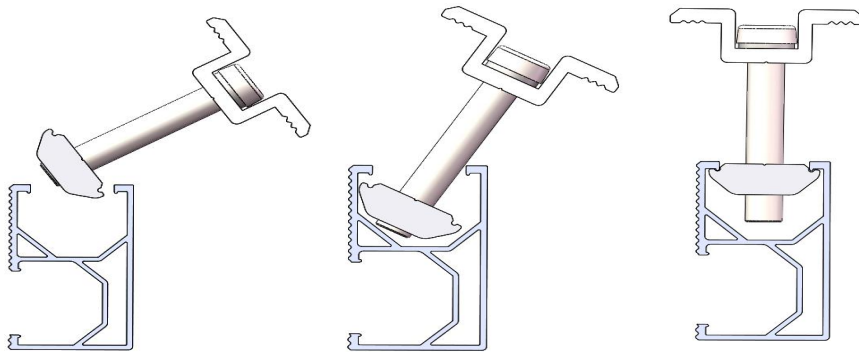


5.3.2 After installation, as shown on the right.

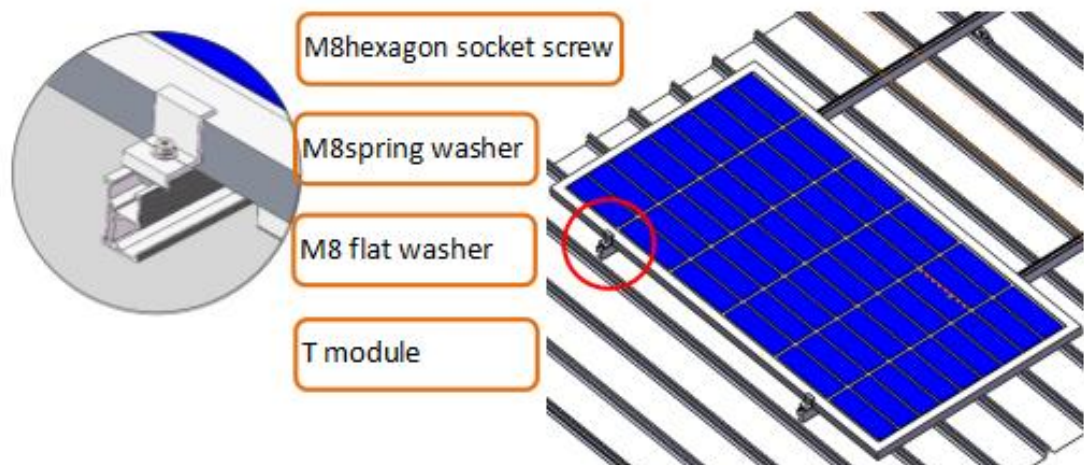


5.4 Components Installation

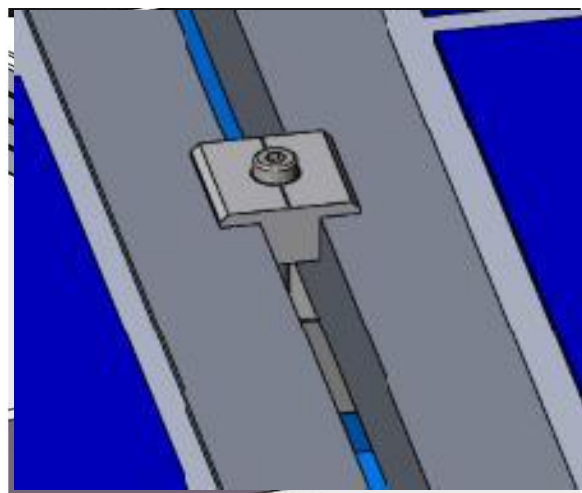
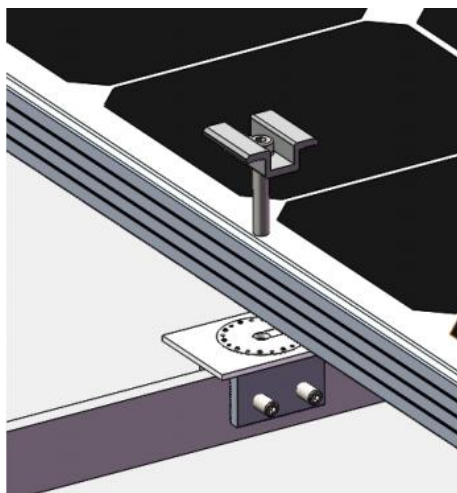
According to the installation dimensions of the drawings, place the components on the guide rails, and fix them with the end clamps and mid clamps.

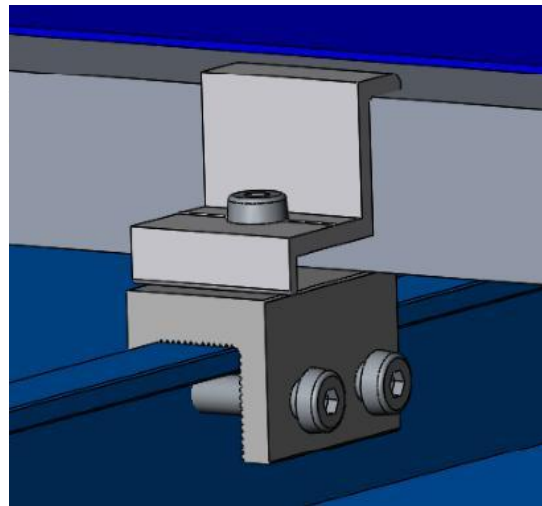
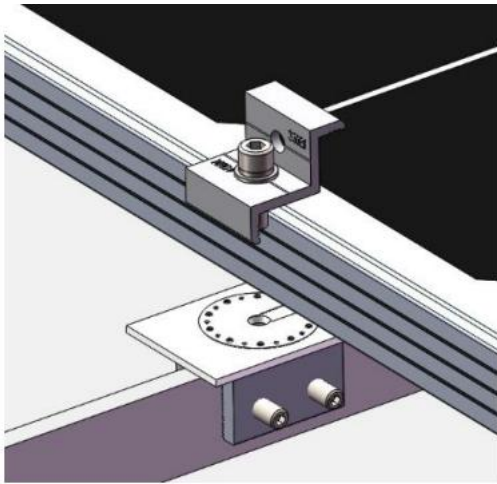


5.4.1.1 Place PV module on the rail and adjust position according to the drawing. Fix the end clamp with PV module by tightening the bolts.

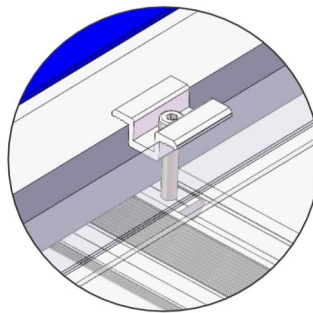
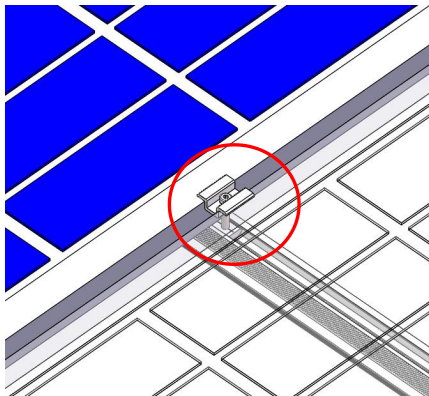


5.4.1.2 Place PV module on the clamp side, ensuring the module length angle with alu-pad's length, and screw up the clamps well for fixture.





5.4.2 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.

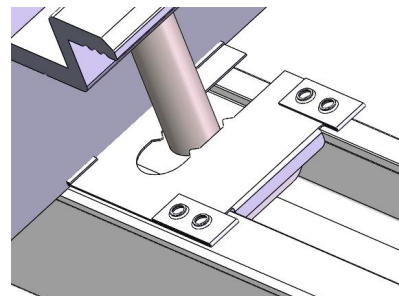
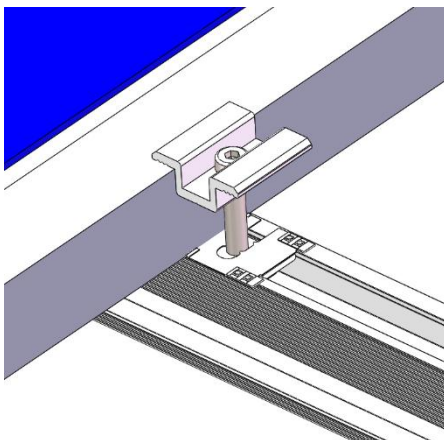


M8 spring washer

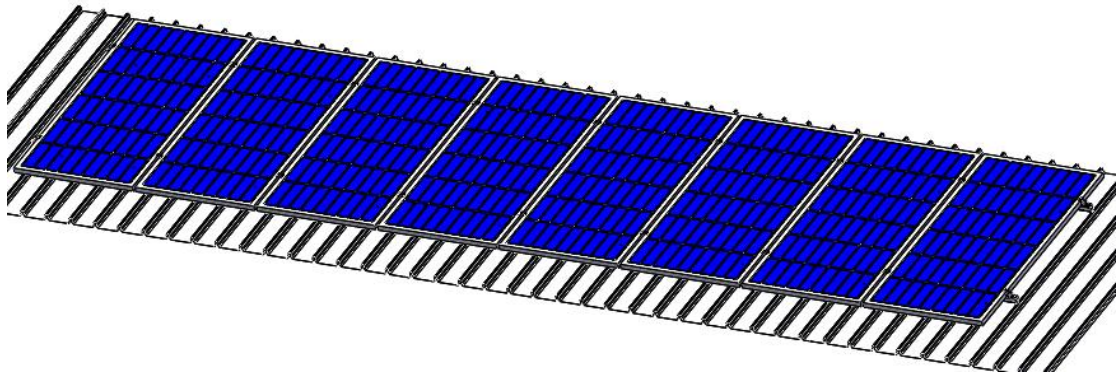
T module

M8 hexagon socket screw

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



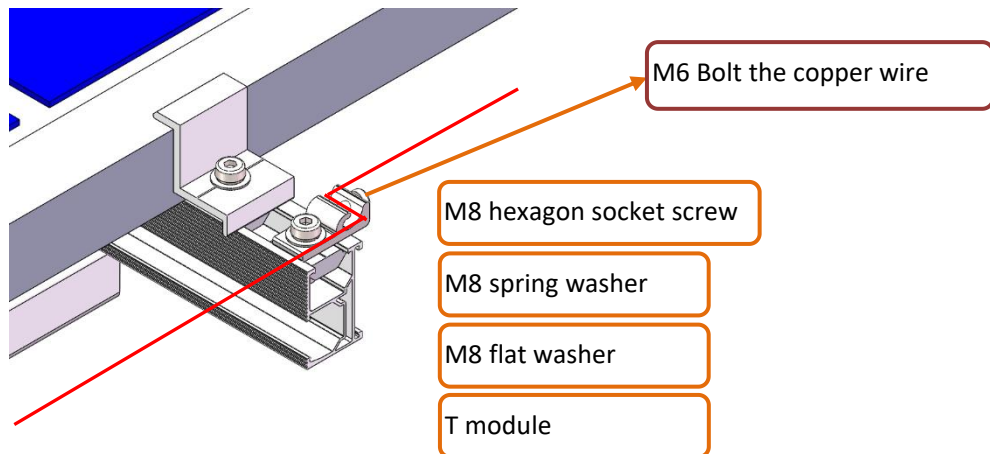
5.4.4 Install all PV modules following the above steps.



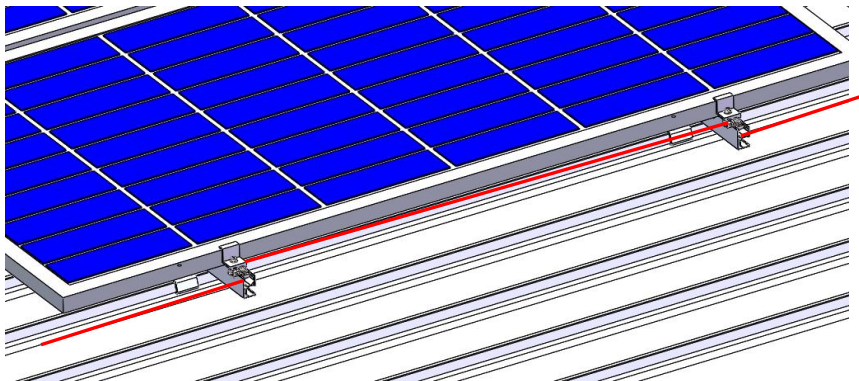
5.5 Grounding Lug Installation

(If no grounding lug is required, or for railless solution, can also skip this step.)

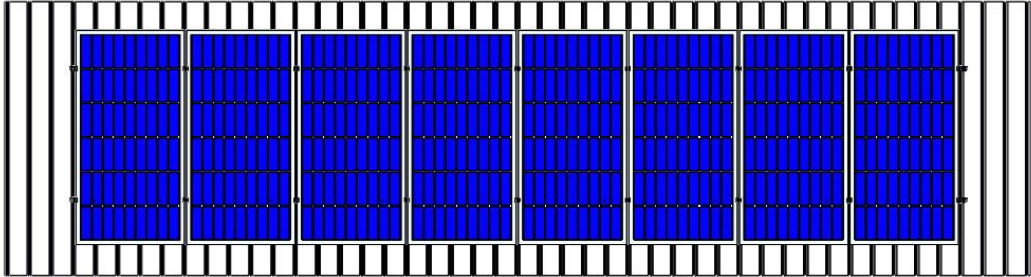
5.5.1 Put the grounding lug on the edge slot of the rail as shown below, and fix it with bolts.



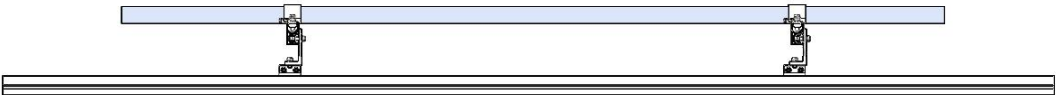
5.5.2 Connect each grounding lug at the edge with copper wires, fix the copper wires with M6 bolts, and ground the copper wires at the end.



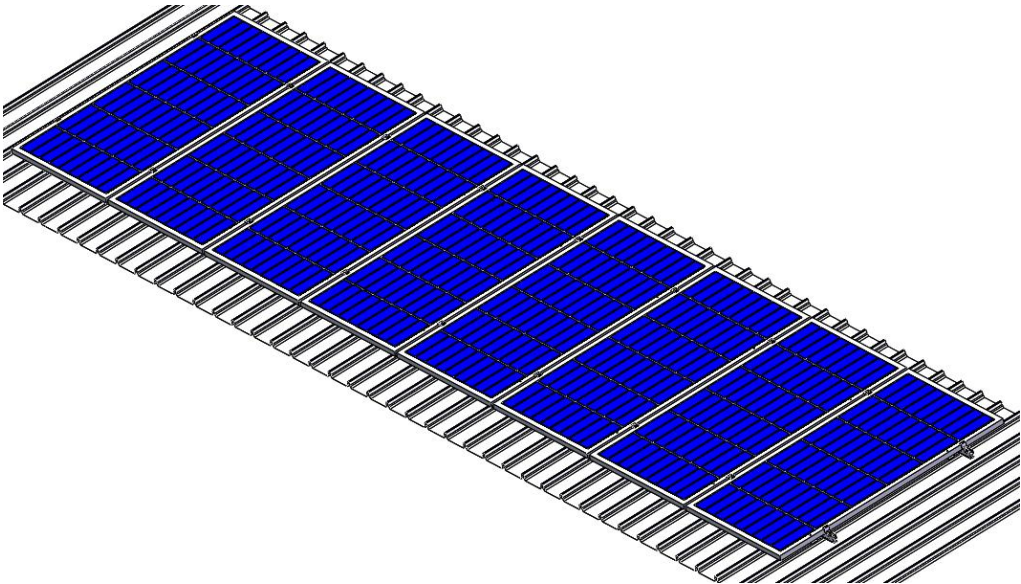
5.6 View of the Installation



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.