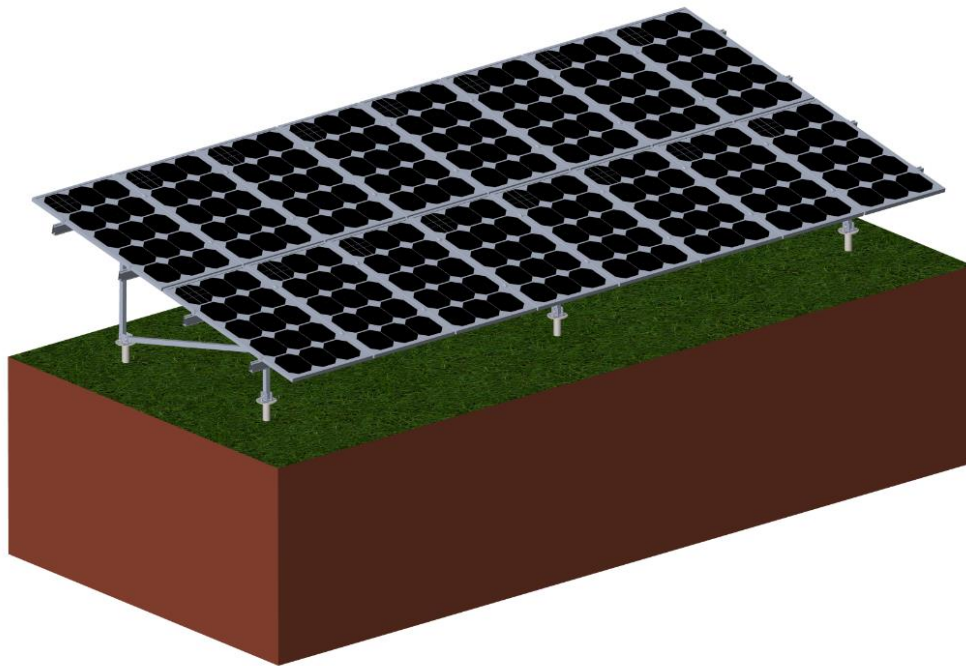


# GP-2S Ground Screw Mounting









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# 1. Introduction

GP-2S Ground Screw Mounting system is designed to provide an economical and practical mounting solution for large-scale open areas. Suitable for both framed and unframed modules. Compatible with hydraulic pile driving ram making installations on the open area easy. Please read the guide book carefully before the installation.

# 2. Installation tools and equipment

			
6mm Hex wrench	Power tools	Tape measure	Fine point marker
			
Torque wrench	String	monkey wrench	Socket spanner (M10/M12)

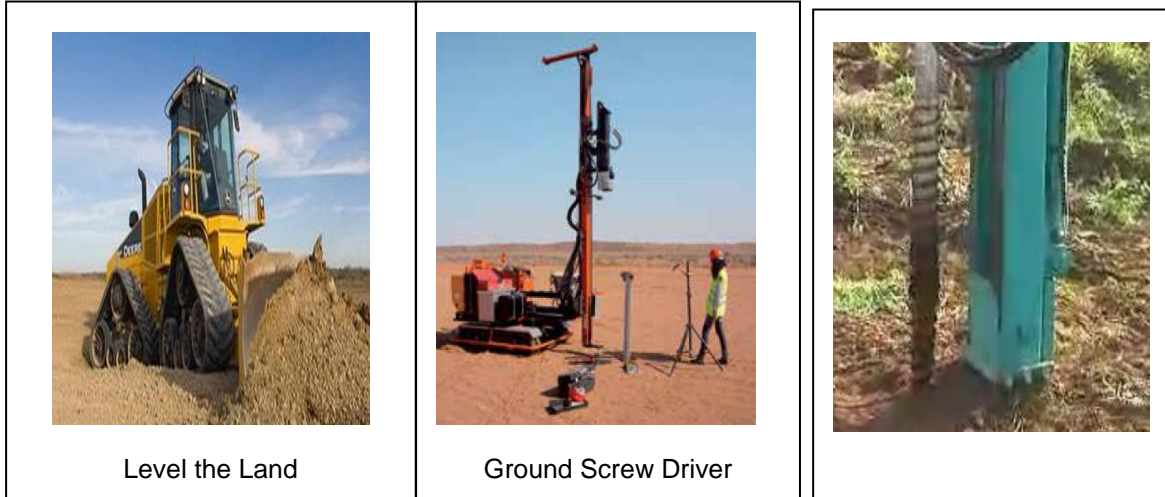
### 3. Components

Components list			
			
End clamp	Mid clamp	Leg Base 100mm	Leg Base 130mm
			
Preassembled support rack	YS-19 Rail	YS-20 Rail splice	Fixing clamp
			
YS-17 Triangle fixing component	YS-08 Diagonal Brace	Ground Screw	

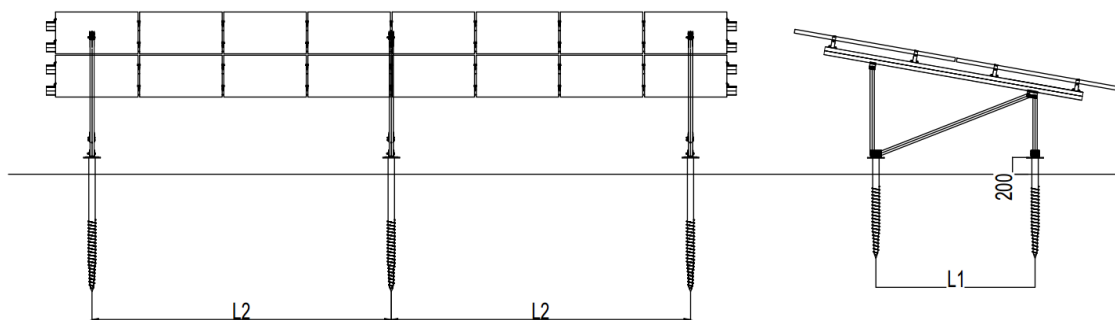
## 4. Installation

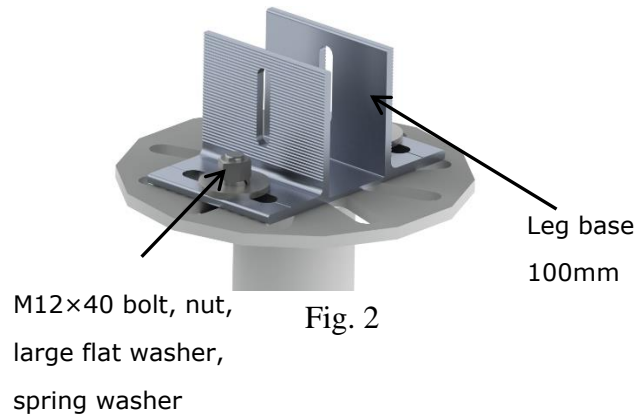
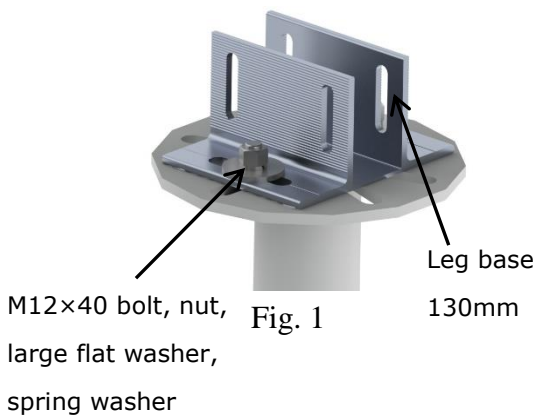
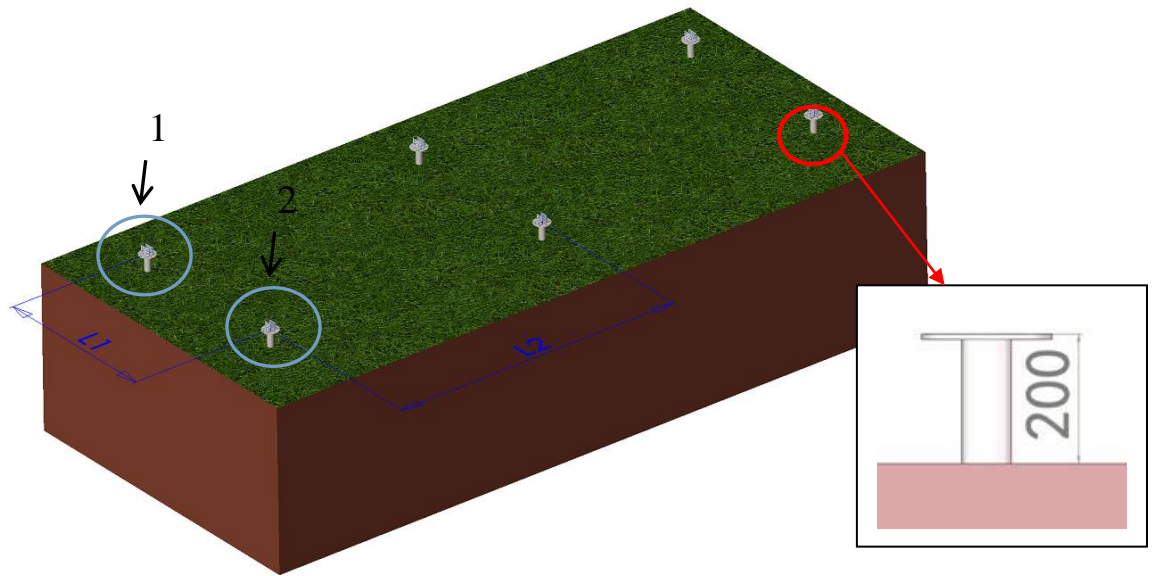
### 4.1. Install ground screw foundations

Please prepare all the needed installation tools and related products before the installation.



Mark positions of all the ground screws according to measurement L1 & L2 on the drawing. Install the ground screw by screw driver and leave 200mm height to the ground. Please make sure that all ground screws be aligned horizontally and vertically. Then fix the leg bases on flange type ground screws with M12 x 40 bolts, nuts, large flat washers and spring washers. (The horizontal adjustable range of leg base is 0~60mm and vertical adjustable range is 0~40mm)





## 4.2. Install the pre-assembled support racks and triangle fixing components

4.2.1. Stretch the preassembled support racks, fix the front/rear legs and the movable ends of support rack on leg bases with M10x80 bolts, M10 flange nuts and corrugated gaskets.

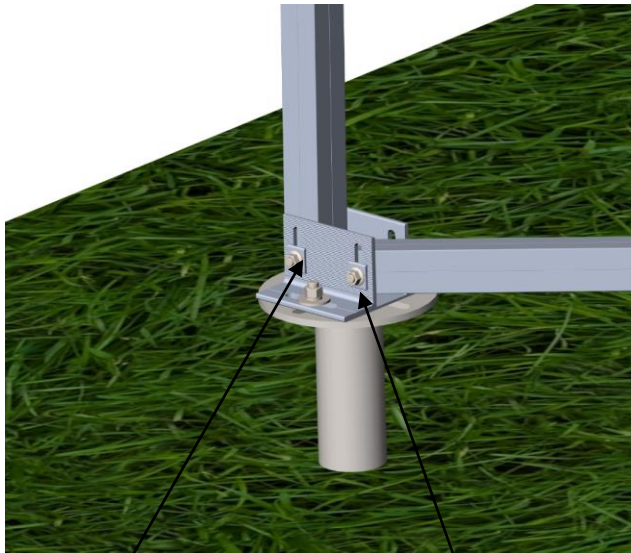
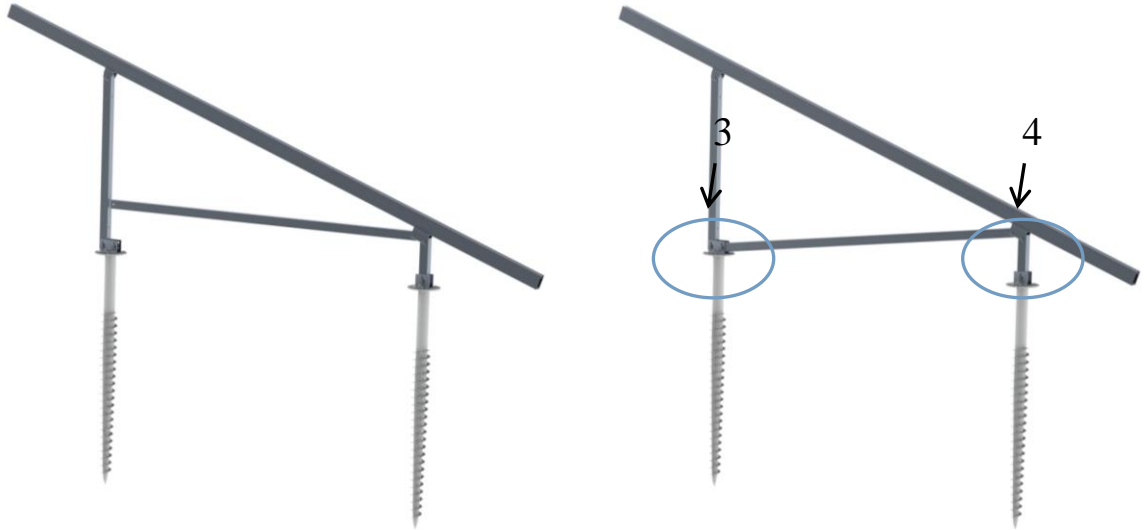


Fig. 3

Corrugated gasket

M10×80 bolt, flange nut

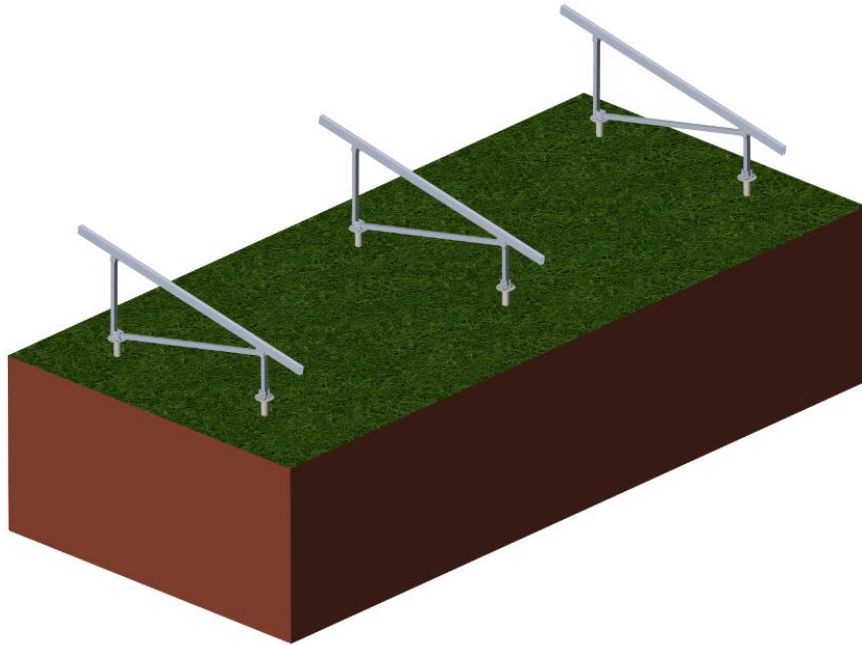


Fig.4

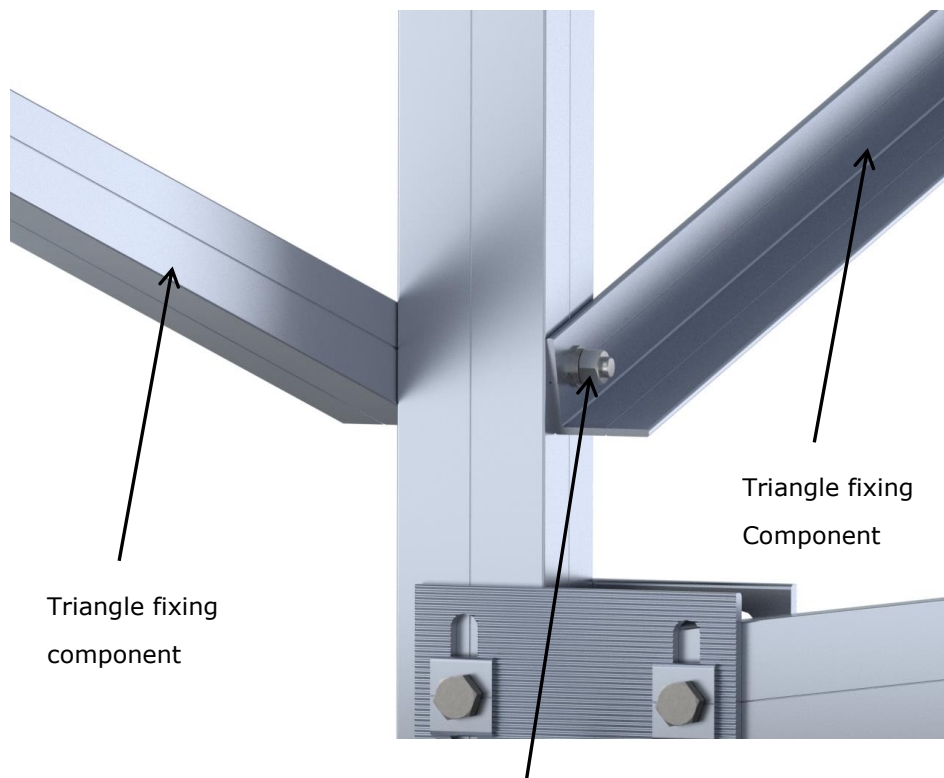
M10×75 bolt, flange nut



4.2.2. Fix the rest support rack kits respectively according to principle on 4.2.1. Adjust the rack kit according to the drawing. Make sure the height of all the support rack kits reach a complete unity and the rails can be fixed on a flat surface.



4.2.3. Connect the triangle fixing components with rear legs according to drawing, fix it with M8×80 bolts, nuts, flat washers and spring washers.



Triangle fixing component

Triangle fixing Component

M8×80 bolt, nut,  
flat washer,  
spring washer

## 4.3. Install the rails

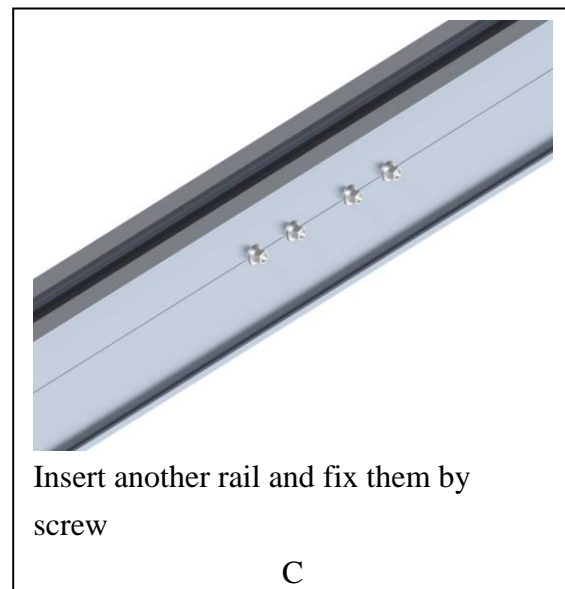
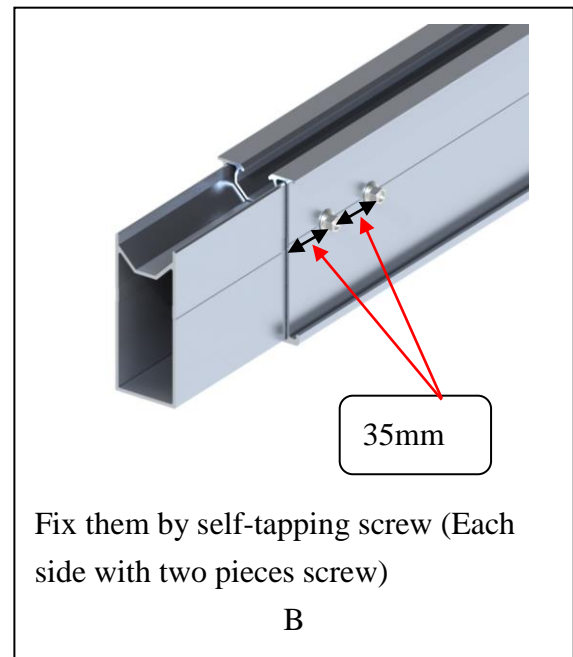
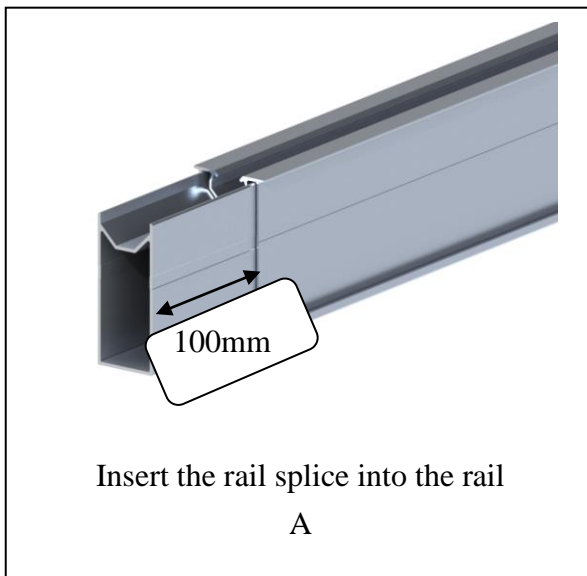
### 4.3.1. Install the rails

(Connect the rails with rail splice if the rails are not long enough, otherwise skip this step)

Insert the rail splice half into rail A and then fix it with 2 self-tapping screws on each side.

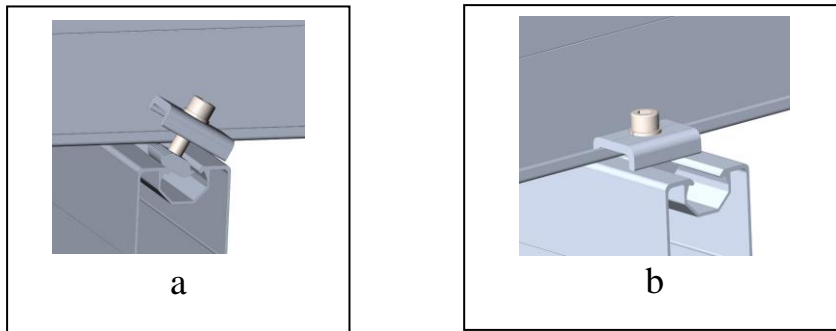
Insert the other half of rail splice into rail B, match it together and then fix it with 2 self-tapping screws on each side as well.

Then the A and B rails are connected.

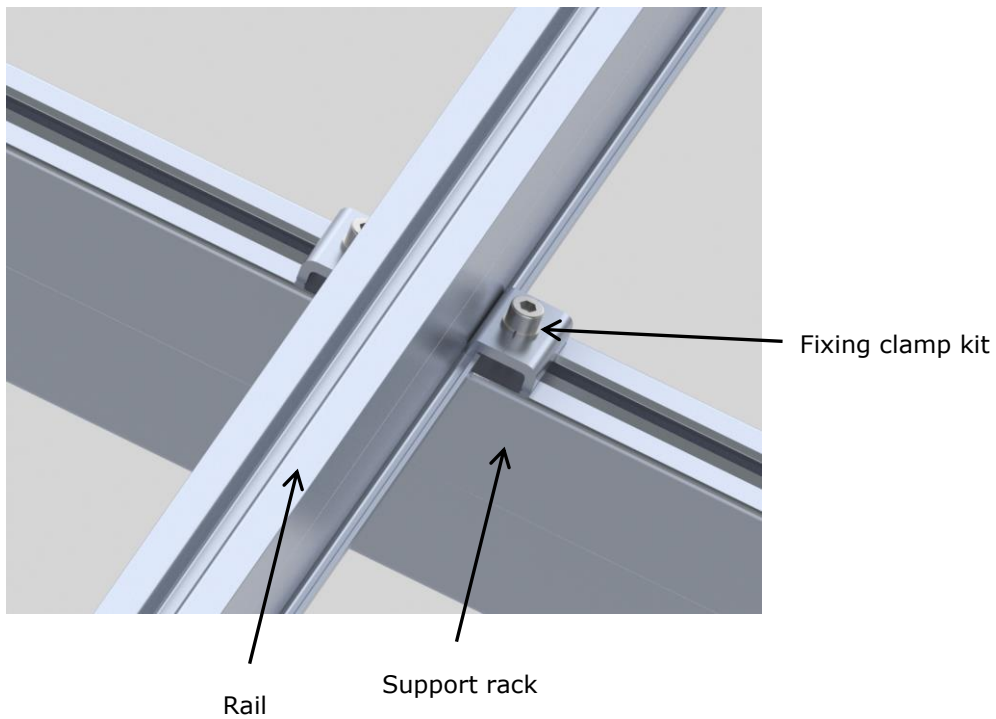




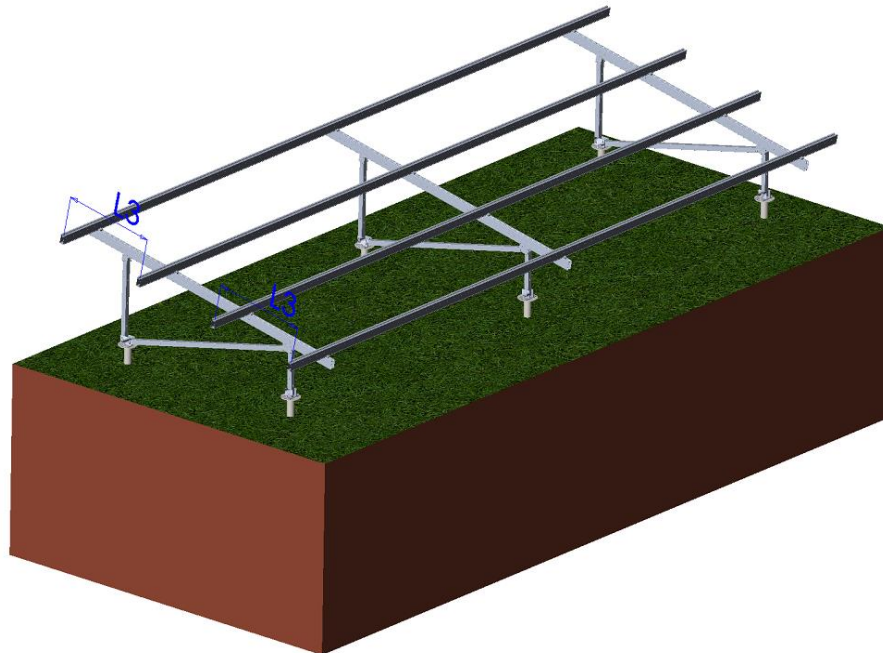
4.3.2. Fix the rail onto support rack with fixing clamps (1 clamp each side).



Fixing Clamp Kit installation figure

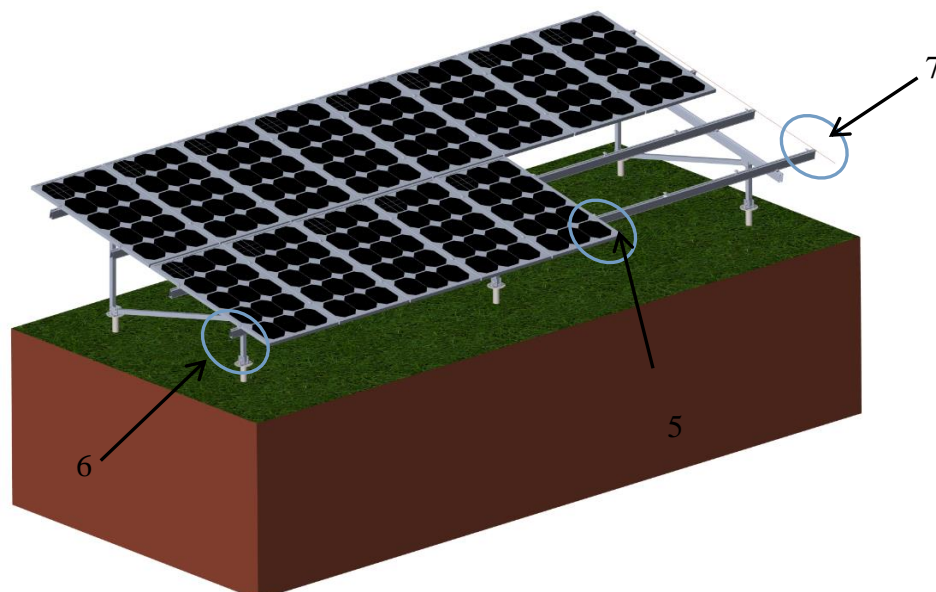


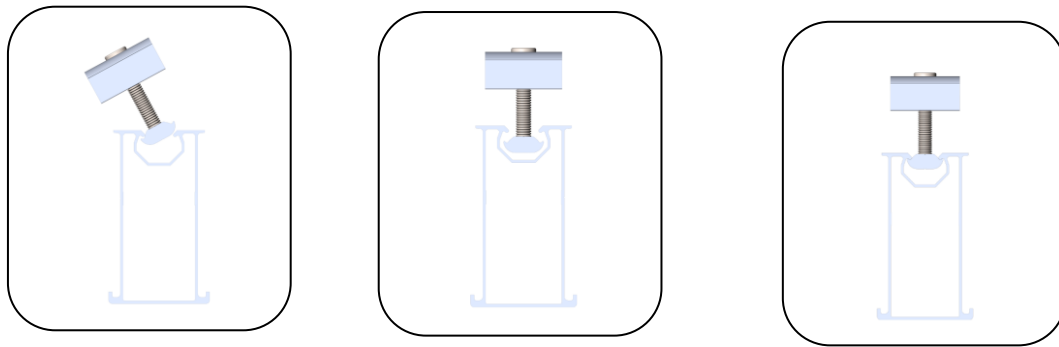
4.3.3 Fix the rest rails by above steps according to measurement L3 on the drawing (L3 equals the half length of panel). Make sure that all the bolts have been tightened up.



#### 4.4 Install the solar panels

Suggest to start the panel installation from left side of the bottom, and fix them by end clamp and mid clamp. (Each mid clamp assemble with one piece grounding washer)





Mid clamp & End clamp installation figure

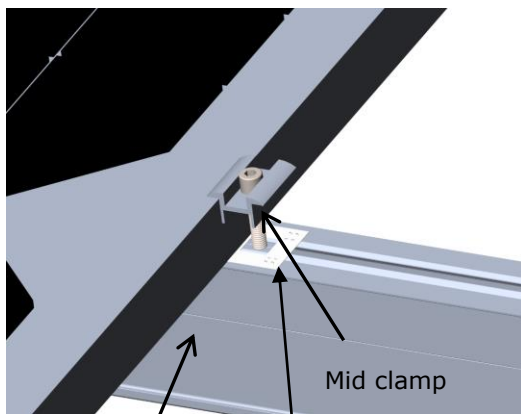


Fig. 5

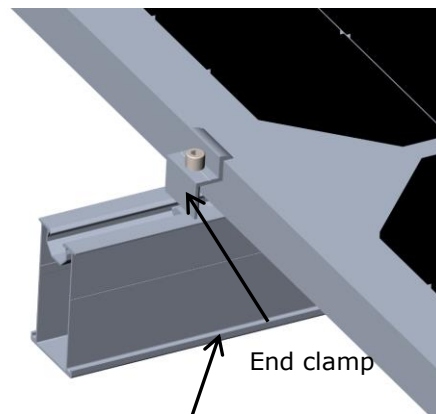


Fig. 6

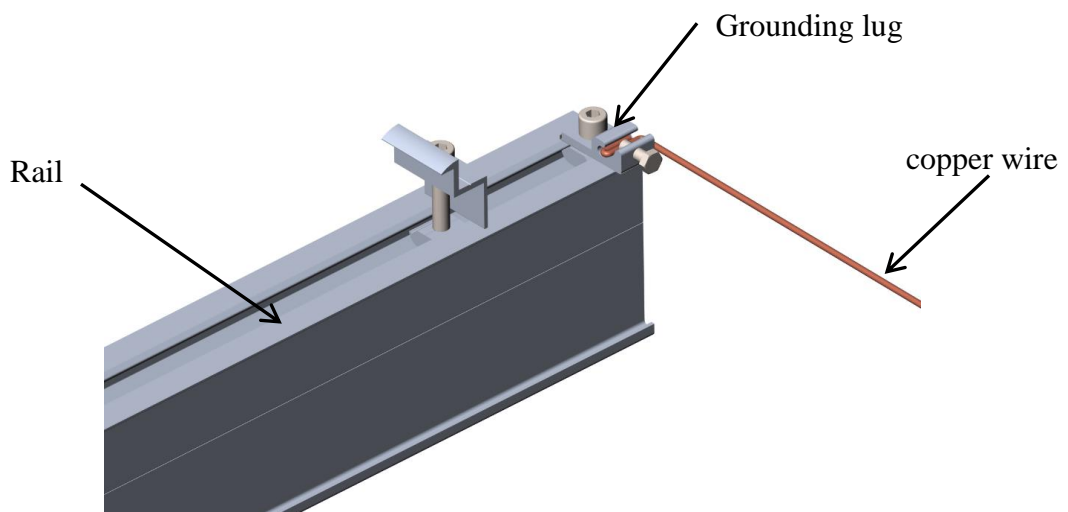


Fig. 7

## 5. Installation notes

### 5.3. Notes for dimensions

All the dimensions should be subject to the construction drawing. This guide book is for descriptive purpose of installation only.

### 5.4. Notes for stainless steel fasteners

Stainless steel material is quite different to carbon steel with its excellent ductility. It would be unable to unscrew the bolt and nut after matching in case improper use. That is "lock up", known as "dead lock". Methods to avoid lock up as below:

#### 5.2.1. Reduce the friction coefficient

- a. Make sure the surface of threads to be clean (without dusts or clutters);
- b. Suggest to apply water wax or lubricant on surface for installation (such as butter or 40# machine oil)

#### 5.2.2. Use correct operation method

- a. The bolt must be perpendicular to the axis of thread when screwing. Do not lean the bolt;
- b. Apply the force evenly when tightening and the tightening torque should not exceed the specified secure torque value;
- c. Using torque wrench or socket spanner as far as possible, avoid using monkey wrench or electric wrench; Adjust the rotational speed as low as possible when using electric wrench;
- d. Avoid high temperature; To avoid lock up which caused by sharply increasing temperature, do not rotate rapidly. (like using electric wrench)