

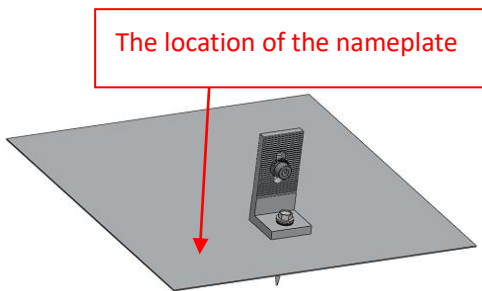


Simply Installation For Pitched Roof Mounting System

Installation Guide Version NO.: Rev 8.0

FN: GS-PR-10R

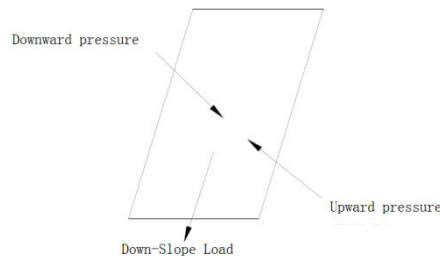
The nameplate is pasted on the front end of the rain shield, which is flush with the L feet. The material of the nameplate is made of paper, which is approved by PGJI2 or PGDQ2, and the information of the nameplate is as follows:



<p>Model N. O. :GS-FR-10R Manufacturer:  格瑞士太阳能 Downward pressure: Upward pressure: Down-Slope Load: Overcurrent protection current value: 20A System Fire Class Rating: See Installation Instructions for Installation Requirements to Achieve a Specified System Fire Class Manufacturing date:</p>

Range of Roof Angle over 2 in/ft(167mm/m);

Nominal value of mechanical load:



Downward pressure:10psf

Upward pressure: 5psf

Down-Slope Load: 5.0psf allowable load.

Value of over current protection: 20A;

Spec of Solar module: 1956x992x40, ITEM NO.: JKM340PP-72 Fire performance: Type

Manufacturer: Jinko SOLAR CO LTD

To be used only in combination with modules that include this specific rack system in their installation manual

M8 Bolt locking torque: 16N*m

This racking system may be used to ground and/or mount a PV module complying with UL1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instruction.

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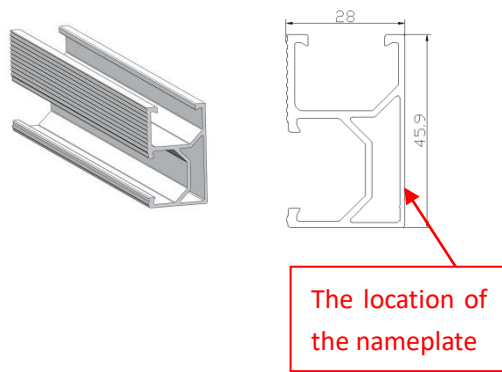
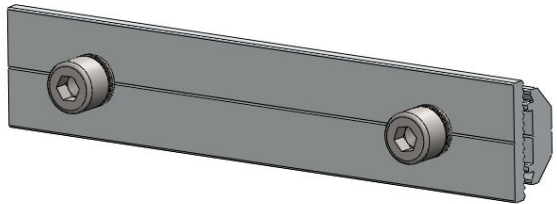
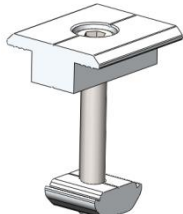
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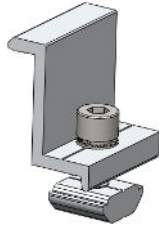


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1. components

<p>GS-10Rail (GS-10R-2100)</p> <ul style="list-style-type: none"> ✓ hold each panel row ✓ length can be customized ✓ 6005-T5 extruded aluminum ✓ FN: GS-10R-2100 Spec: 28x45.9x2100 ✓ Material: Al6005-T5 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD 	
<p style="text-align: center;">Standard Rail Length</p>	
<p style="text-align: center;">992mm wide panels</p>	
<p style="text-align: center;">2100mm</p>	
<p>10# Rail Splice Kit(GS-DR-SP)</p> <ul style="list-style-type: none"> ✓ Extend 10# Rail to any length as required by the quantity or width of the solar panels ✓ FN: GS-DR-SP Spec: 30x150x15 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD ✓ Components: ✓ Wave piece, Material: Al6005-T5, 1 pcs ✓ Clamp kit, Material: Al6005-T5, 1 pcs ✓ Hexagon socket screws M8*20, Material: SUS 304, 2 pcs ✓ 304 Stainless steel spring washers M8, Material: SUS 304, 2 pcs ✓ Disc springs M8, Outer diameter:18, Material: SUS 304, 2pcs 	
<p>Inter Clamp Kit for Framed Modules(GS-IC-F40)</p> <ul style="list-style-type: none"> ✓ Fit between two panels ✓ Fastened with a 6mm Allen key ✓ Standard pre-assembly for the usual panels with thickness 40 mm ✓ FN: GS-IC-F40 Spec: 37x40x50 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD ✓ Components: 	



<ul style="list-style-type: none"> ✓ GS Inter Clamp Kit, Material: Al6005-T5, 1pcs ✓ D- module Kit, Material: Al6005-T5, 1pcs ✓ Hexagon socket screw M8*50 Material: SUS 304, 1 pcs 	
<p>End Clamp Kit for Framed Modules(GS-EC-F40)</p> <ul style="list-style-type: none"> ✓ Hold the edge of each end panels ✓ Fastened with a 6mm Allen key ✓ Standard pre-assembly for the usual panels with thickness 40mm ✓ FN: GS-EC-F40 Spec: 37x40x43.5 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD ✓ Components: ✓ GS End Clamp Kit 40, Material: Al6005-T5 1 pcs ✓ D- module Kit, Material: Al6005-T5 1 pcs ✓ Hexagon socket screw M8*25, Material: SUS 304 1 pcs ✓ 304 Stainless steel spring washer M8, Material: SUS 304 1 pcs ✓ M8 Disc springs, Outside diameter: 13, Material: SUS 304 1 pcs 	
<p>Grounding Clip (GS-G-GC)</p> <ul style="list-style-type: none"> ✓ Install between two modules ✓ FN: GS-G-GC Spec: 30x32x6.7 ✓ Material: SUS 304 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD 	
<p>Cable Clip 3#(GS-SSCC-03)</p> <ul style="list-style-type: none"> ✓ Material is SUS 301 ✓ Cable clip, the solar panel cable, neat function ✓ FN: GS-SSCC-03 Spec: 17.2x31x7.5 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD 	
<p>Grounding Lug(GS-G-GL)</p> <ul style="list-style-type: none"> ✓ Connect with the wires ✓ Copper Wire: 12AWG, single- stranded ✓ FN: GS-S-G-GL Spec: 20x42 	

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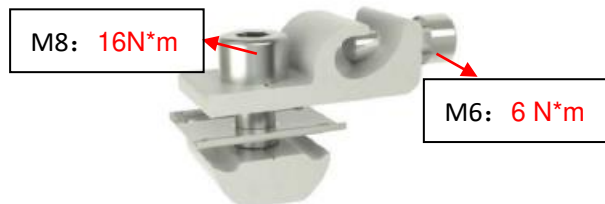
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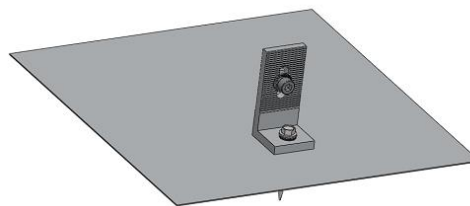
- ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD
- ✓ Components:
- ✓ Grounding lug, Material: Al6005-T5 1 pcs
- ✓ D- module Kit, Material: Al6005-T5 1 pcs
- ✓ GS Ground Clip, Material: SUS 304 1 pcs
- ✓ M6*16 Hexagon socket screw, Material: SUS 304 1 pcs
- ✓ M8*20 Hexagon socket screw, Material: SUS 304 1 pcs
- ✓ 304 Stainless steel spring washerM8, Material: SUS 304 1 pcs
- ✓ Disc springs M8, Outside diameter:13 Material: SUS 304 1 pcs



Shingle Roof Flashing hook

Shingle Roof Flashing hook 1# (GS-FK-01)

- ✓ Fix to the rafter below shingle roof
- ✓ Stainless steel screw St6.3x80
- ✓ FN: GS-FK-01 Spec: 305x305x86
- ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD
- ✓ Components:
- ✓ D- module Kit, Material: Al6005-T5 1 pcs
- ✓ GS L Feet Kit, Material: Al6005-T5 1 pcs
- ✓ Flashing board, Material: Al6005-T5 1 pcs
- ✓ Hexagon socket screw M8*25, Material: SUS 304 1 pcs
- ✓ 304 Stainless steel spring washer M8, Material: SUS 304 1 pcs
- ✓ Disc springs M8, Outside diameter:18, Material: SUS 304 1 pcs
- ✓ Waterproof rubber pad, Material: EPDM 1 pcs
- ✓ 410 Stainless steel wooden screwSt6.3x80 (Passivation), Material: 410 1 pcs



Solar Panel



<p>Solar Panel:</p> <ul style="list-style-type: none"> ✓ Item No.: JKM340PP-72 ✓ Spec: 1956*992*40 Power: 340W Polysilicon solar modules ✓ Fire performance: Type 1 ✓ Manufacturer : Jinko Solar ✓ To be used only in combination with modules that include this specific rack system in their installation manual. 	
<p>GS Bonding Jumper(with star-shape ground lug): GS-G-BJ-A</p>	
<p>GS Bonding Jumper(with star-shape ground lug):</p> <ul style="list-style-type: none"> ✓ Connect 2 10# Rails so that they can conduct electricity to each other. ✓ Composition: ✓ Hexagon socket screw M8*20, Material: SUS 304 2 pcs ✓ M8 spring washer, Material: SUS 304 2 pcs ✓ M8 Disc springs, Material: SUS 304 2 pcs ✓ Braided Copper Wire (22.4mm² , , Seating Torque 16N*M) , Material: Cu 1 pcs ✓ D- module Kit, Material: Al6005-T5 2 pcs ✓ Disc springs, Material: SUS 304 2 pcs ✓ FN: GS-G-BJ-A Spec: 16*1.4*250 ✓ Manufacturer: XIAMEN GRACE SOLAR TECHNOLOGY CO.,LTD 	 

2. Overview and Planning

2.1 Overview

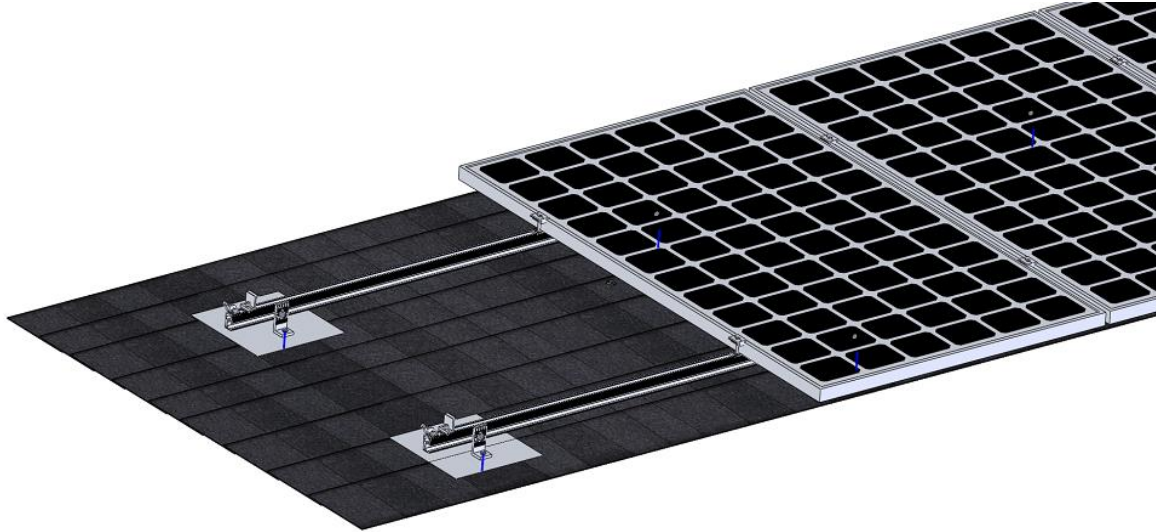
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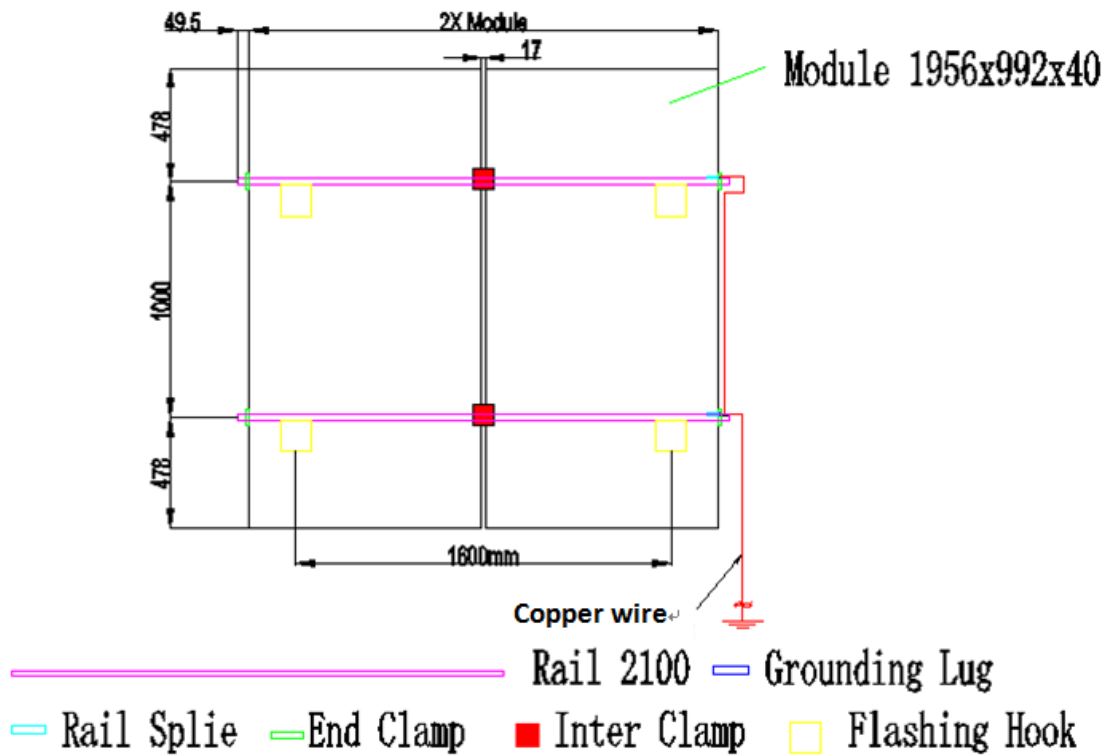
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2.2 Planning

This planning is made for the 2x module 1956x992x40. The dimension unit is mm; Diagram drawing of ground loop as below

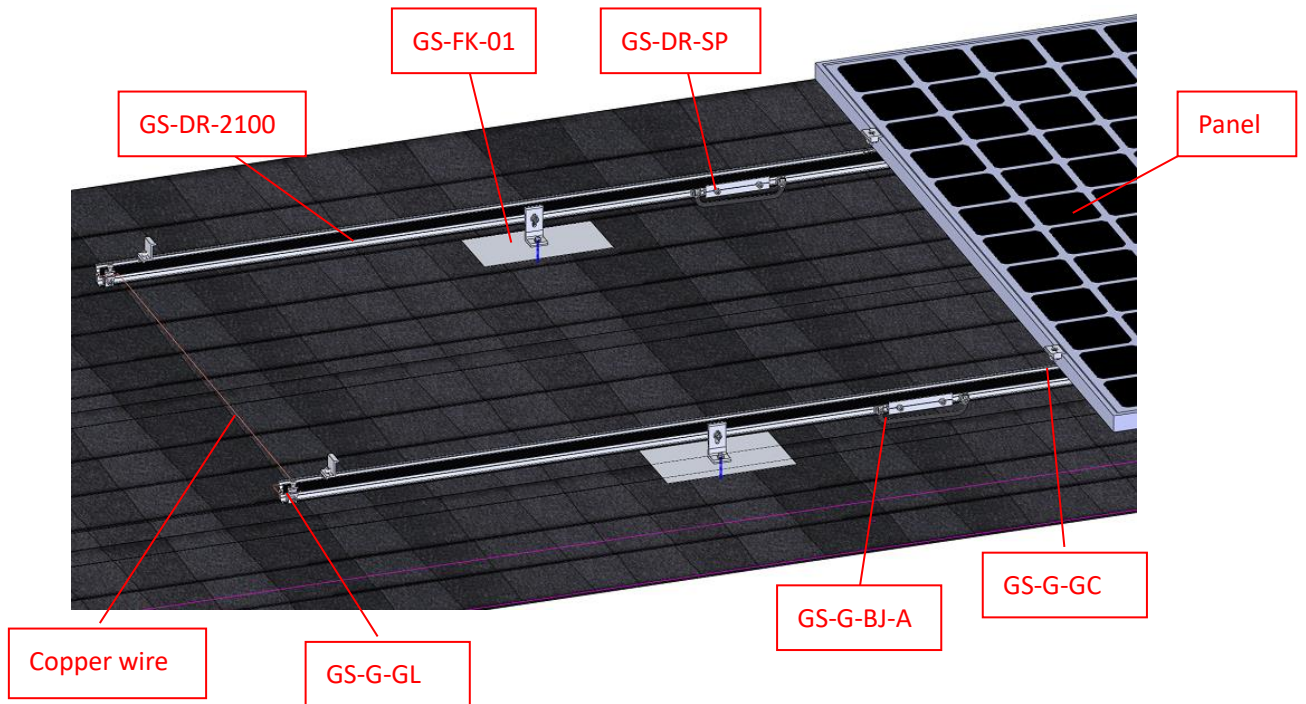




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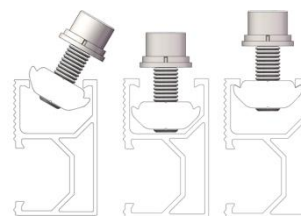


2. Installation Step

Install The GS-10Rail (GS-10R-2100)

1. D-Module quick mount.

Four steps to quick mount the Inter-Module into GS-10Rail channel.
Move the assembly to its desired final position, and fastens firmly in place by torque bolt to 10N*m.



2. Installation of Shingle Roof Flashing hook 1# (GS-FK-01)

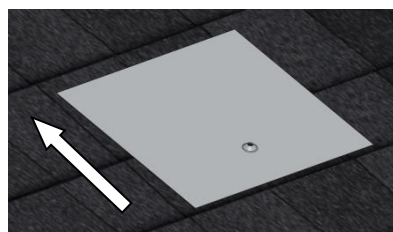
2.1 find the roof purline under the tile, then drill a hole on it
a. use horizontal and vertical line to align and mark the position of each hole at the same time
b. Drill guide hole with the dill of 6.5mm on the roof and purline. It need attention that it should vertical to the roof.
c. Use squeegee gun with roof sealant to squeeze a small amount of roof sealant into the hole.



2.2 Lift the tile. Lift the tiles with the roof flat slats. And place the bottom base underneath.

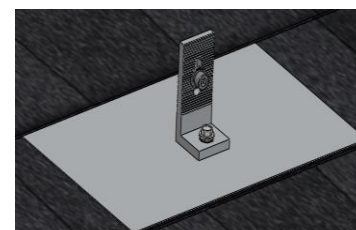
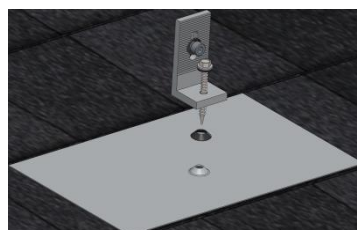


2.3 place the bottom base into the space.
Lift the tiles and place the baseboard into the space



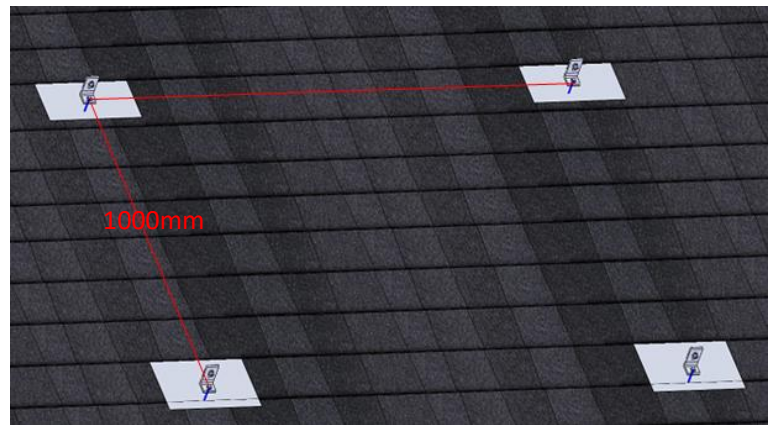
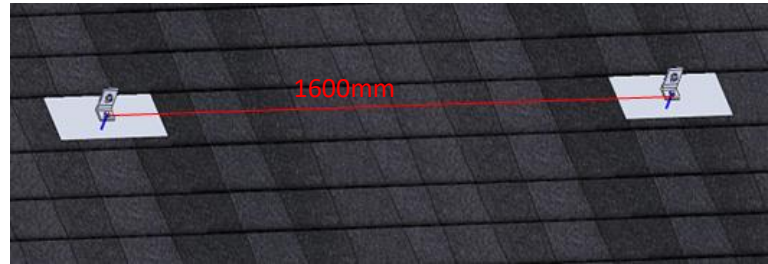
2.4 installation of L feet

Firstly fix the L feet on the bottom base, then fix up rubber pad, screw and sealing pad with gasket. Put the L feet on the bottom base, with the rubber pad, screw and sealing pad, then use





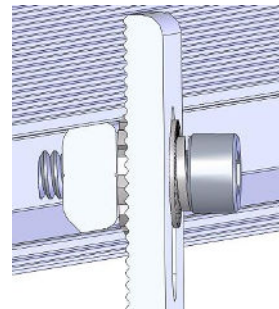
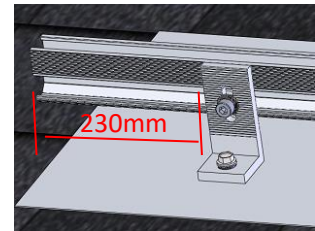
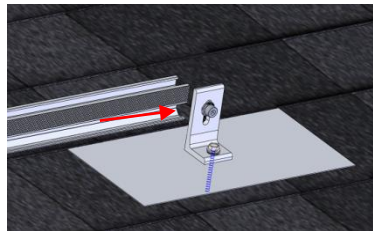
wooden screw to lock.
After installing the L feet on one side, draw a line and mark it. The distance between left and right is 1600mm and distance between front and back is 1000mm.



2.5 Install with the Rail.10#

Let and side slot of the 10 rail face to the D clamp of the L feet, and insert into to fix. Put the star washer in the rail and L feet to work as a conducting part. The L feet is 230mm away from the rail.

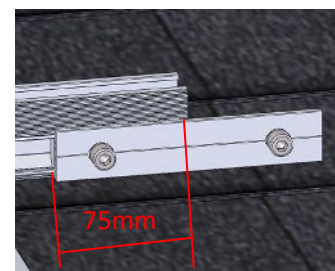
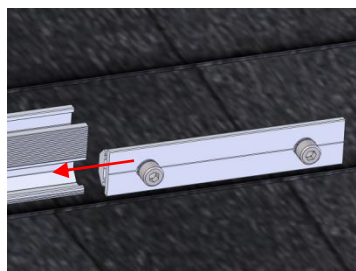
Fasten the M8*20 bolt when the height of tow side of rail, and the locking torque is 16-20N*M.(The upper edge of the L feet can't be higher than the rail when install the rail.



3. GS-10Rail connect(GS-DR-SP)

a. Put the GS 10Rail Splice into the side channel of the 10# Rail about 75mm, then fasten the M8 Bolt.

b. Put the other 10Rail into the other side of the 10Rail Splice and fasten the other M8 bolt. 16-20N*M. and the locking torque is 16-20N*M.



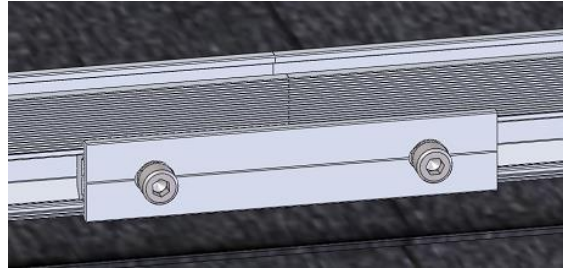
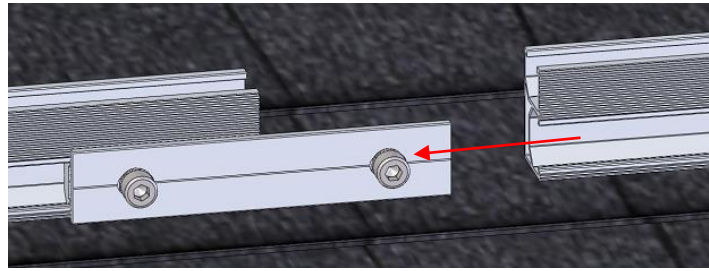
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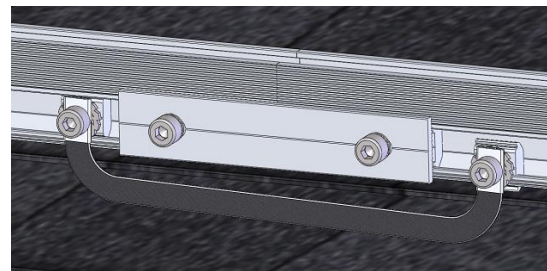
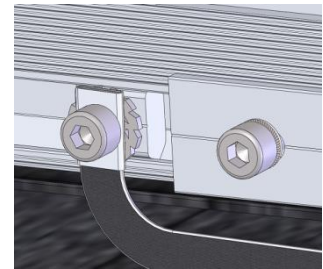
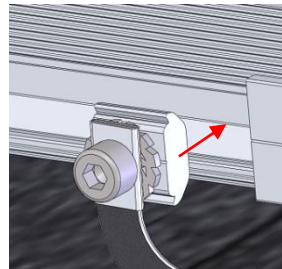
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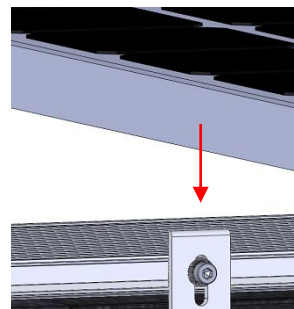
Install the Bonding Jumper (GS-G-BJ-A)

- a. Put one end of the breakpoint connector into the one end of 10# rail connector, the other side is same. Then fasten the M8 bolt, the locking torque is 16N*M
- b. Put the copper connector into the side of rail, make it on the same side with the rail connector. Then fasten the bolt. When fasten the bolt, make sure the star washer is on the center.

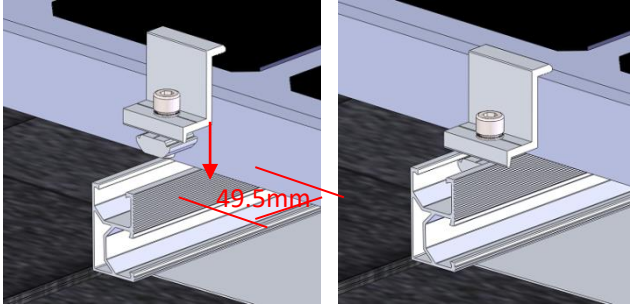
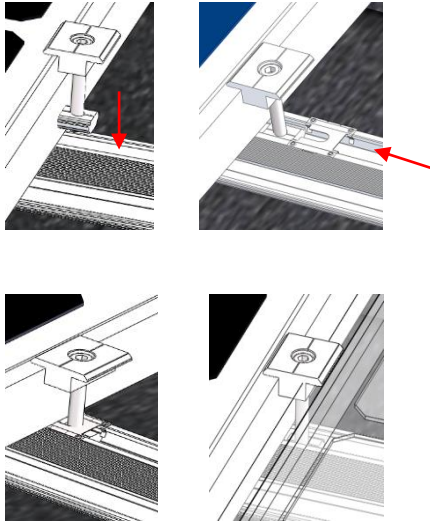



Install the module

1. Place the panel on the 10#rail. The panel is 821mm away from the rail.
2. Fixing the outer modules by End clamp.(GS-EC-F40)
 - a. Put the end clamp kit into the top channel of the GS-10Rail as the step 1.
 - b. Push the side of module to firmly against the end clamp and then fasten the bolt. And the locking torque is 16N*M.





	
<p>3. Fixing the inter modules by inter clamp.(GS-IC-F40)</p> <ol style="list-style-type: none"> Put the inter clamp kit into the top channel of theDR-10Rail as the step 9. Push the Inter-module clamp firmly against the already fixed module. Install the Ground clip.(GS-G-GC) <ol style="list-style-type: none"> Put the Ground Clip on the GS-10# Rail. Slide the Ground Clip into Inter Clamp Kit. Push the next module against the other side of the module-inter clamp. Tighten the bolt 	
<p>4. To install the other panel in the same way.</p>	

Install the Grounding System

Family with the Grounding Planning

Installation Guide



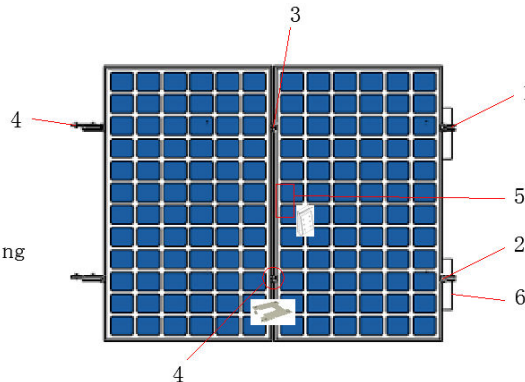
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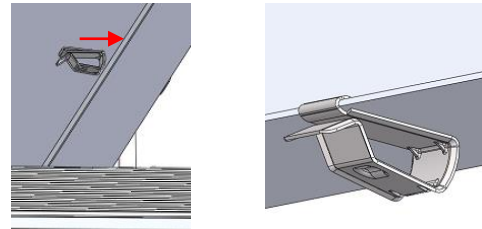


- 1. 10# Rail
- 2. End Clamp Kit
- 3. Inter Clamp Kit
- 4. Grounding Clip
- 5. Cable Clip
- 6. Shingle Roof Flashing hook 1#



Install the Cable Clip(GS-SSCC-03)

- a. Put the Cable Clip under the module.
- b. Slide the Cable Clip into the edge of solar panel.



Install the Grounding Lug(GS-G-GL)

- a) put the grounding lug to the side of rail, is 20mm away from the side. Then fasten M8*20 bolt, the locking torque is 16N*M.
- b) insert the copper which is 12AWG,single stranded. Then fasten the M6 bolt, the locking torque is 6N*M.

