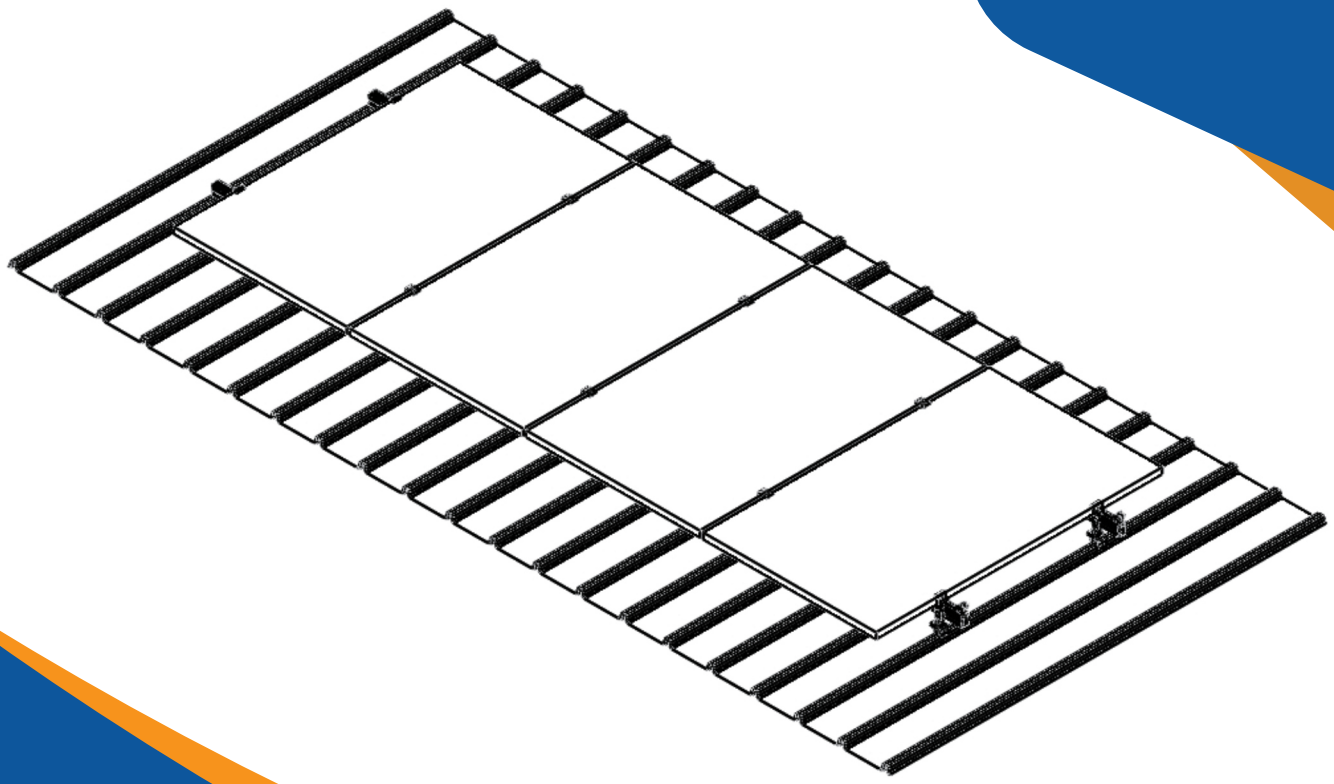
CHIKOUSA

RACKING MADE SIMPLE



Model No. : CK-Tin Roof

Tin Roof System

Installation Manual

Version No.: CHIKO-20200828-V.01

I Installation Rule

Installation of the framing shall comply with relevant local government standards, manufacturer's specifications and good building practices. The roof which the panels to be installed shall comply with the relevant local government standards.

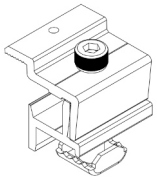
- Follow the risk management process prior to commencing work – including identify hazards, assess risks, eliminate or control them.
- Consult with those involved in the work.
- Develop safe work procedures for installing solar panels, using information from the risk management process, which would include reviewing the following information:
  - Provide appropriate information and training to those involved in performing the work.
  - Provide appropriate tools and personal protective equipment (PPE).
  - Ensure that a system is in place to prevent or arrest falls.
  - Ensure there are adequate first aid facilities.
  - Ensure all employees are aware of the emergency procedures.

II Installation Tools

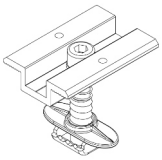
☐ Tape Measure

☐ Chalk Line

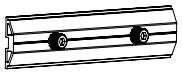
☐ Labor Protection Products



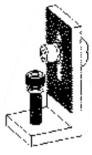
End Clamp



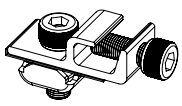
Mid Clamp



Rail Splice Kit

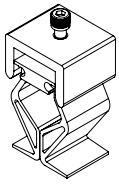


13# Hook



Grounding Lug

☐ Allen Key



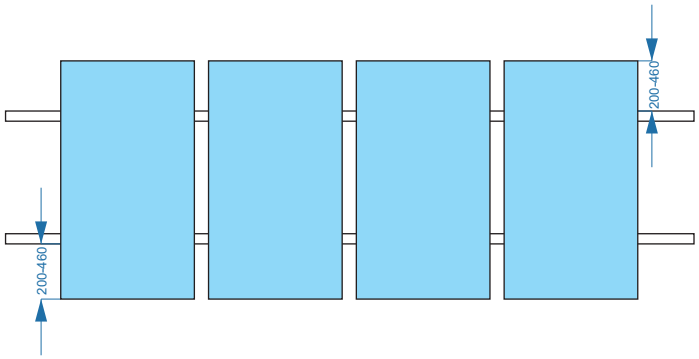
#375 Clamp

☐ Open-end Spanner

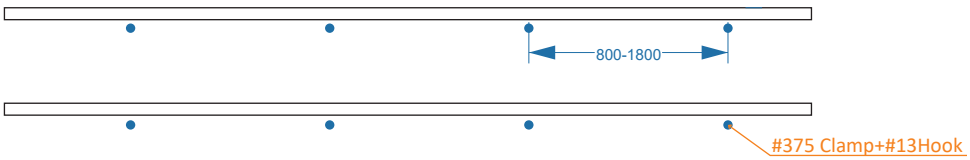
III NOTICE

This manual is for a non-integral module or panel, assembly to be mounted over a fire resistant roof covering rated for the application. Re-inspect the installation in case of loose components, loose fasteners or any corrosion, the affected components should be replaced immediately.

1. Rail spacing's are as follows:
   - When installing in portrait profile, rails should keep 200mm to 460mm from the module edge.



   - The distance between Chiko #375 Clamp+#13 hooks on tin roof could be 800-1800mm.



2. Minimum design load for Chiko Tin Roof Mounting System:
   a) Downward Pressures - 10 psf allowable load.
   b) Upward Pressure - 5 psf allowable load.
   c) Down-Slope Load - 5 psf allowable load.

3. System Fire Class Rating: A

4. Max. Rated Current: 30A

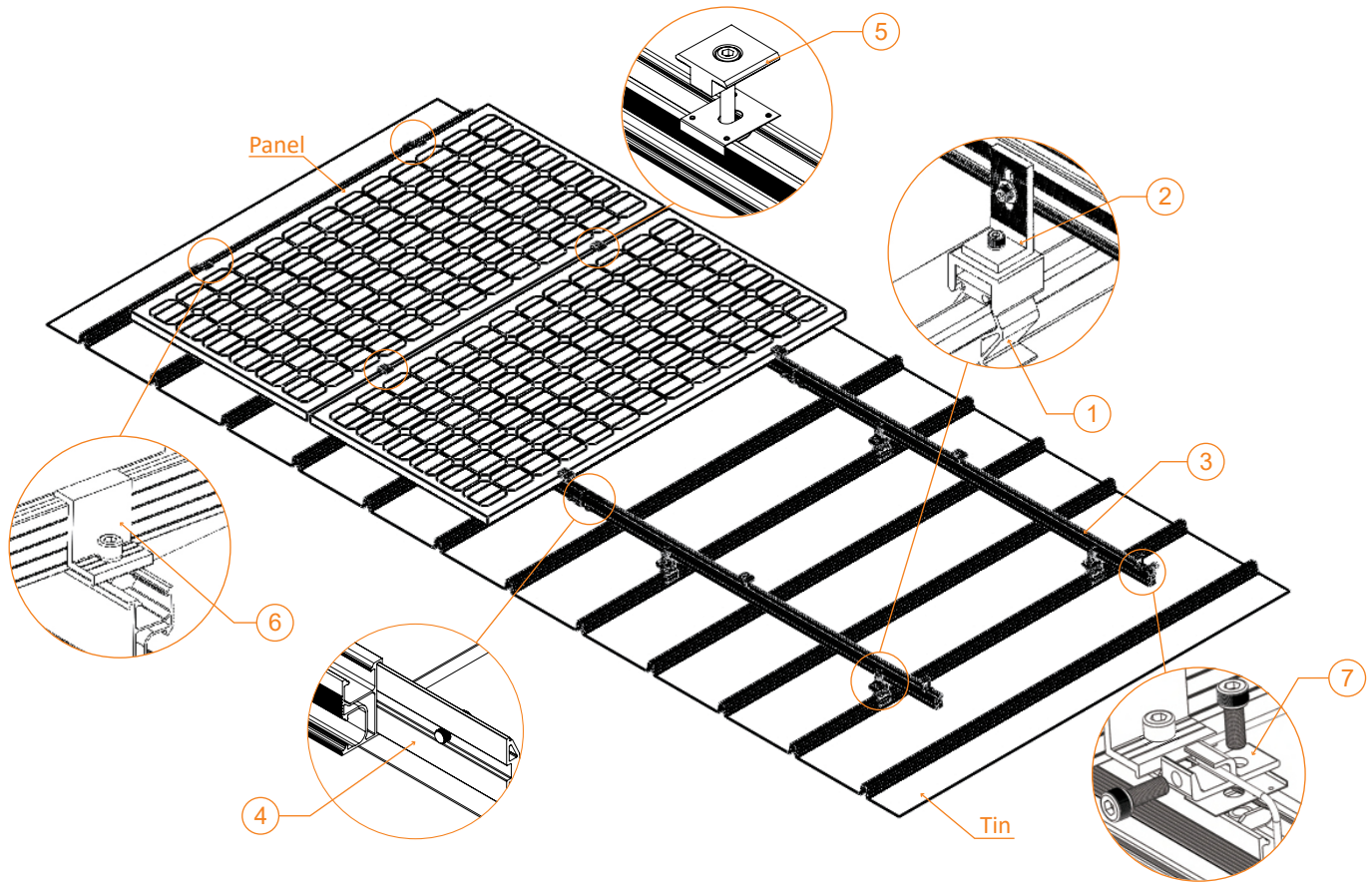
5. The test solar panel is UL Listed CHANGZHOU TRINA SOLAR ENERGY CO., LTD: TSM-290PD14, TSM 295PD14, TSM-300PD14, TSM-305PD14, TSM-310PD14, TSM-315PD14, TSM-320PD14, TSM-325PD14, TSM-330PD14, module fire performance type 1.

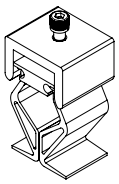
6. This racking system may be used on steep-sloped roofs with slopes greater than or equal to 2 in/ft. (167mm/m or 9.46°), and the installed PV module complying with UL 1703 only when the specific module has been evaluated for grounding or installed in compliance with the included instructions.

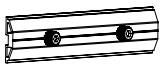
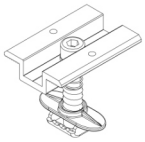
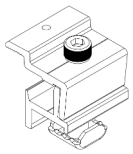
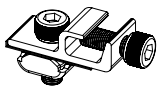
7. The Tin Roof System is intended to be mounted to a roof using the components listed in the manual.

If any component is added or changed, it may affect the UL listing or the System Fire Class rating.

IV Components



No.	Item No.	Item Name	Picture	Part No.	Part Name	Part Qty
1	CK-FTS-375	#375 Clamp		1.1	#375 Clamp Part I	1
				1.2	#375 Clamp Part II	1
				1.3	SUS304 Bolt M8*40	1
				1.4	SUS304 Spring Washer M8	1
				1.5	SUS304 Flat washer M8	1
2	CK-FTS-162R7-2	L Feet Φ9		2.1	Alu L FeetΦ9	1
				2.2	Alu 057 Nut	1
				2.3	SUS304 Inner Hex Bolts M8*25	1
				2.4	SUS304 Spring Washer M8	1
				2.5	SUS304 Antiskid gasket	1

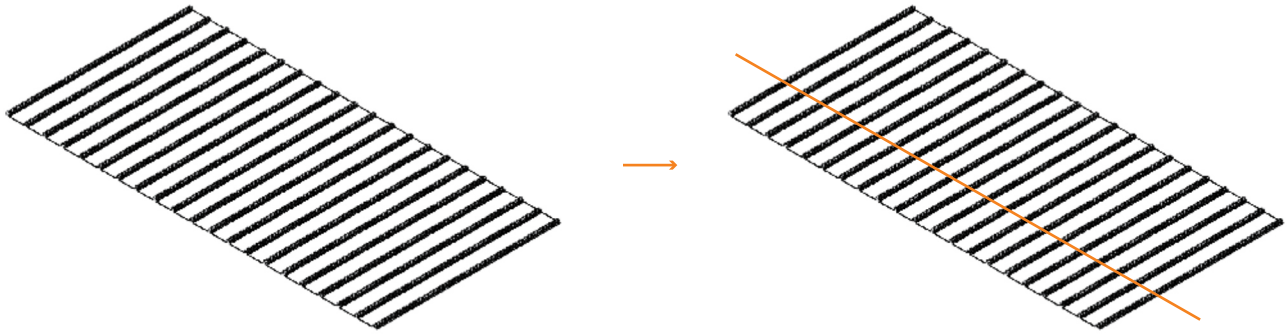
3	CK-FT-R7B1	#7 Rail			CHIKO Solar AL6005-T5 7-rail length:4200mm; 3200mm;2100mm;1200mm;1050mm	1
4	CK-590-1-200	Rail Splice Kit		4.1	Aluminium Rail Splice Kit	1
				4.2	SUS304 Inner Hexagon M8*12	2
				4.3	SUS304 Star Washer M8	2
				2.4	SUS304 Hexagon Thin Nut M8	2
5	CK-152R7 G-38/40-40	Grounding Mid Clamp		5.1	Mid Clamp	1
				5.2	SUS304 Bolt M8	1
				5.3	Alu 057 Nut	1
				5.4	Grounding Clip Closed 8.5mm	1
6	CK-103R7-40-40	End Clamp		6.1	End Clamp	1
				6.2	SUS304 Bolt M8*25	1
				6.3	SUS304 Spring Washer M8	1
				6.4	Alu 057 Nut	1
7	CK-592R7-1-120	Grounding Lug		7.1	Grounding Lug	1
				7.2	SUS304 Inner Hex Bolts M8*20	1
				7.3	SUS304 050 Nut	1
				7.4	SUS304 Star Washer	1
				7.5	SUS304 Inner Hex Bolts M8*25	1
				7.6	SUS304 Spring Washer	1
				7.7	SUS304 Square Nut M8	1

V Hook Spacing Table

No.	Item No.	Description	Hook Qty	Spacing
1	CK-FT-R7B1-4200	Chiko AL 7# rail -4200mm	3 PCS	1800mm
2	CK-FT-R7B1-3200	Chiko AL 7# rail -3200mm	3 PCS	1500mm
3	CK-FT-R7B1-2100	Chiko AL 7# rail -2100mm	2 PCS	1800mm
4	CK-FT-R7B1-1200	Chiko AL 7# rail -1200mm	2 PCS	1000mm

VI Installation Steps

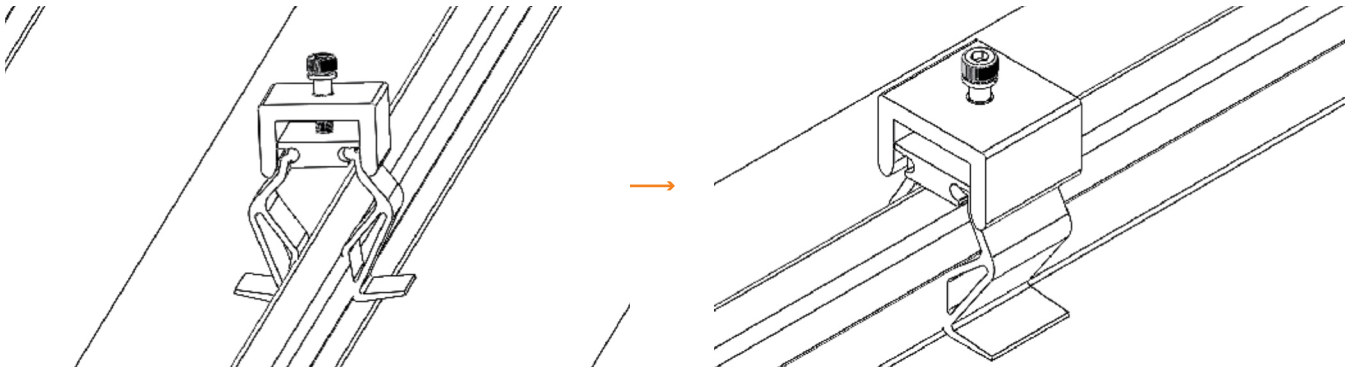
1



1.1 1.2

Determine where the roof mounts will be positioned and use a tape measure or chalk line to mark the roof.

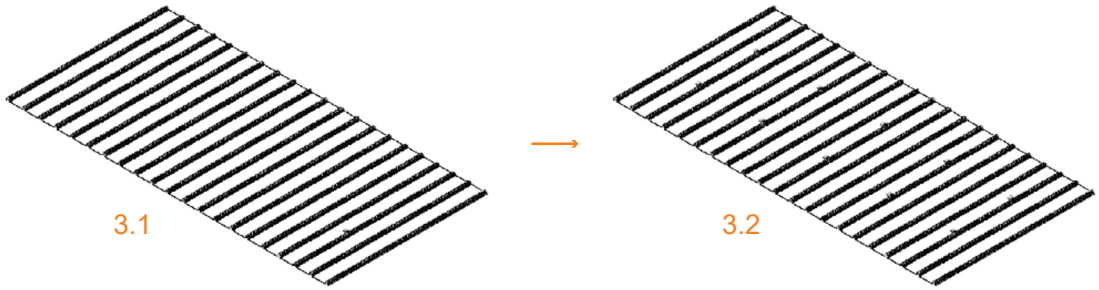
2



2.1 2.2

Determine the positions where the clamp will be attached on the roof rib and mark the positioned point. Loosen the one M8*40 inner hex bolts of the pre-assembled clamp so that the bottom opening of the clamp can become larger. Install the clamp onto the roof rib by an electric wrench or allen key. Install the clamp onto the marked point of the roof rib by an electric wrench or allen key. *M8 Torque: 15~20N·m*

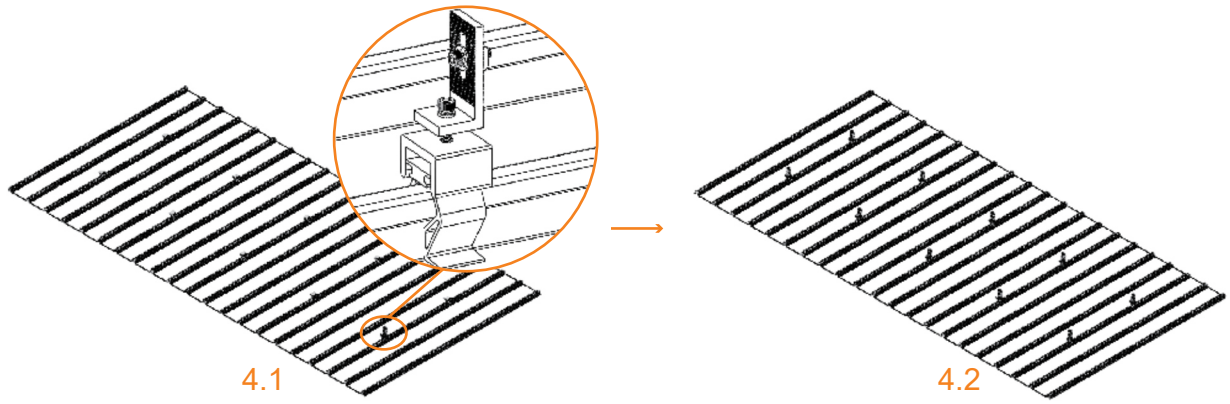
3



3.1 3.2

Install all the #375 Clamps according to step 2.

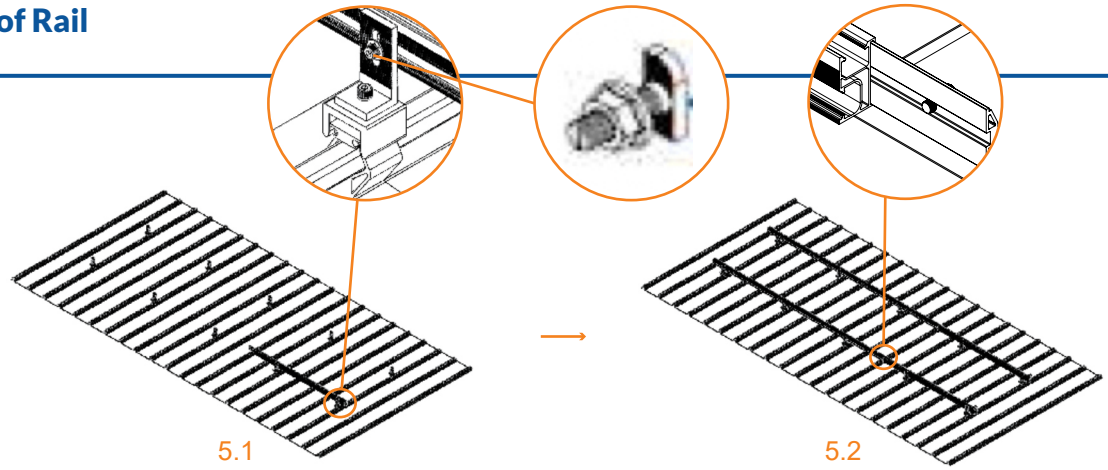
4



Have all the #13 Hooks mounted on #375 Clamps.

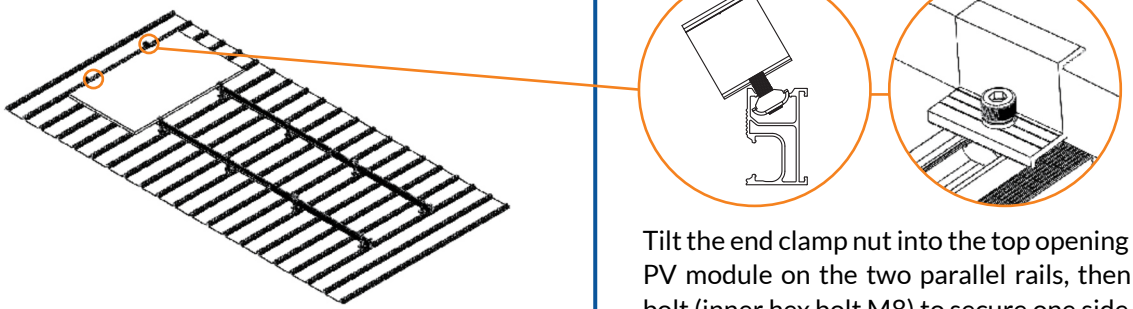
Installation of Rail

5



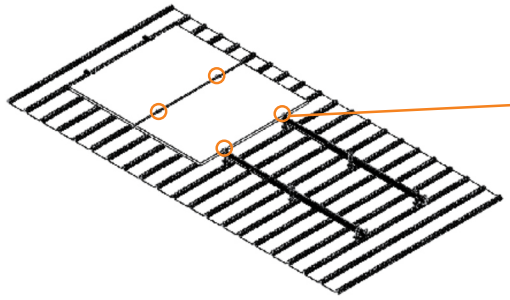
Connect the rail to the 13# hooks with the T-bolt and nut. Fasten to secure. Use the rail splice kit to connect the two rails with the two M8*12 inner hex bolts. The ripple surface of the inner hex bolt, the two bolts and the two star washers of the rail splice kits have grounding function when fastened tight. *M8 Torque: 15~20N·m*

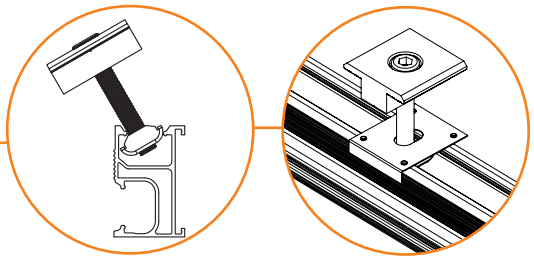
6



Tilt the end clamp nut into the top opening of the rail. Put the first PV module on the two parallel rails, then fasten the end clamp bolt (inner hex bolt M8) to secure one side of the panel.
M8 Torque: 15~20N·m

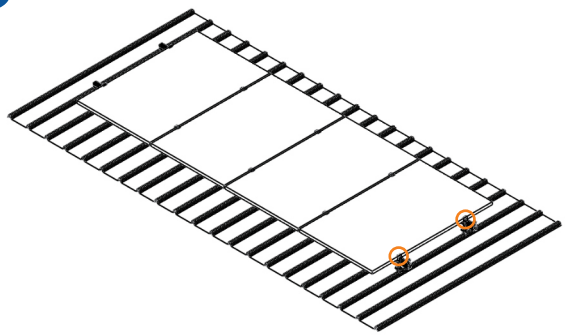
7





Insert the mid clamp nut by tilting it into the top opening of the rail, then put the second panel onto the rails. Fasten the mid clamps with inner hex bolts M8 at all locations where two panels meet. *M8 Torque: 15~20N·m*

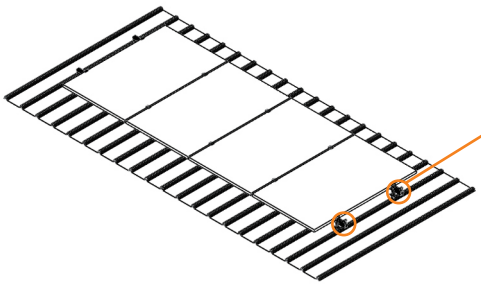
8

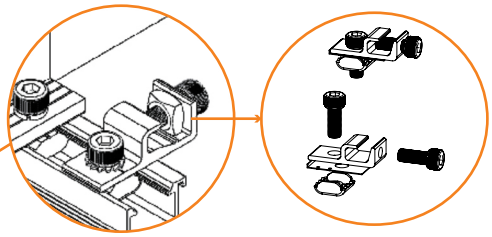


Install all the panels and fasten end clamps at the end of each array. *M8 Torque: 15~20N·m*

Installation of Grounding lug

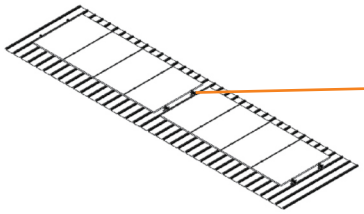
9

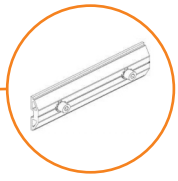




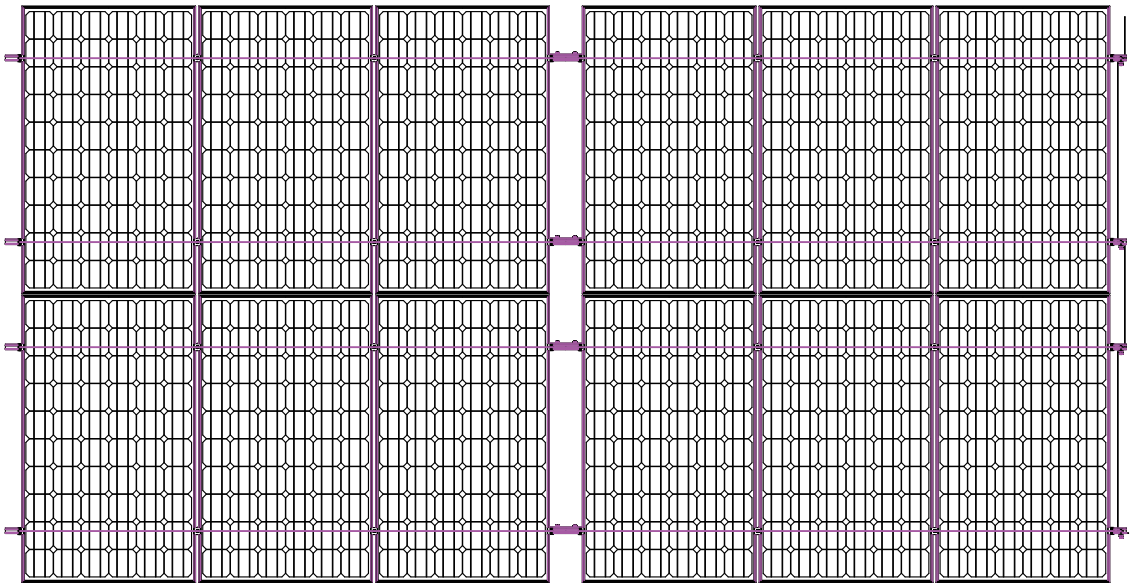
Install a grounding lug onto each rail line edge with an inner hex bolt M8*25 and a stainless steel nut, then connect 8.4mm² (greater than or equal to 8AWG) copper wire through all the grounding lugs (fixed by M8*20 inner he x bolt), finally connect a copper wireto the ground. The grounding lug has grounding function when fastened tight to the rail and copper grounding wire. *M8 Torque: 15~20N·m*

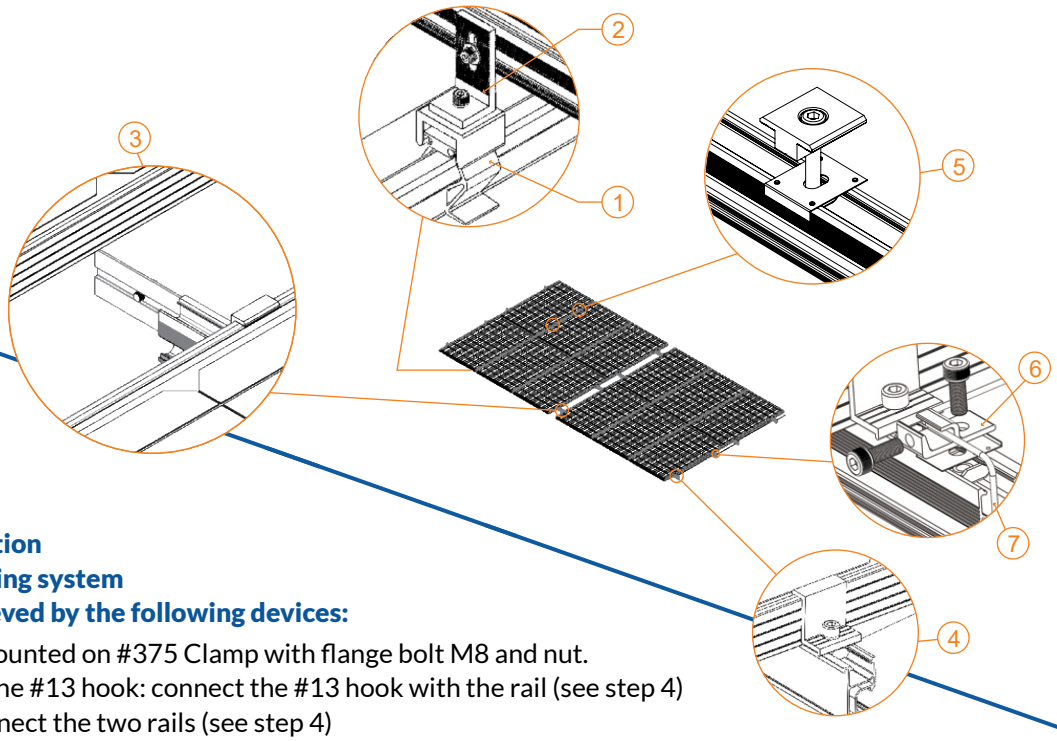
10





VII Grounding Syste



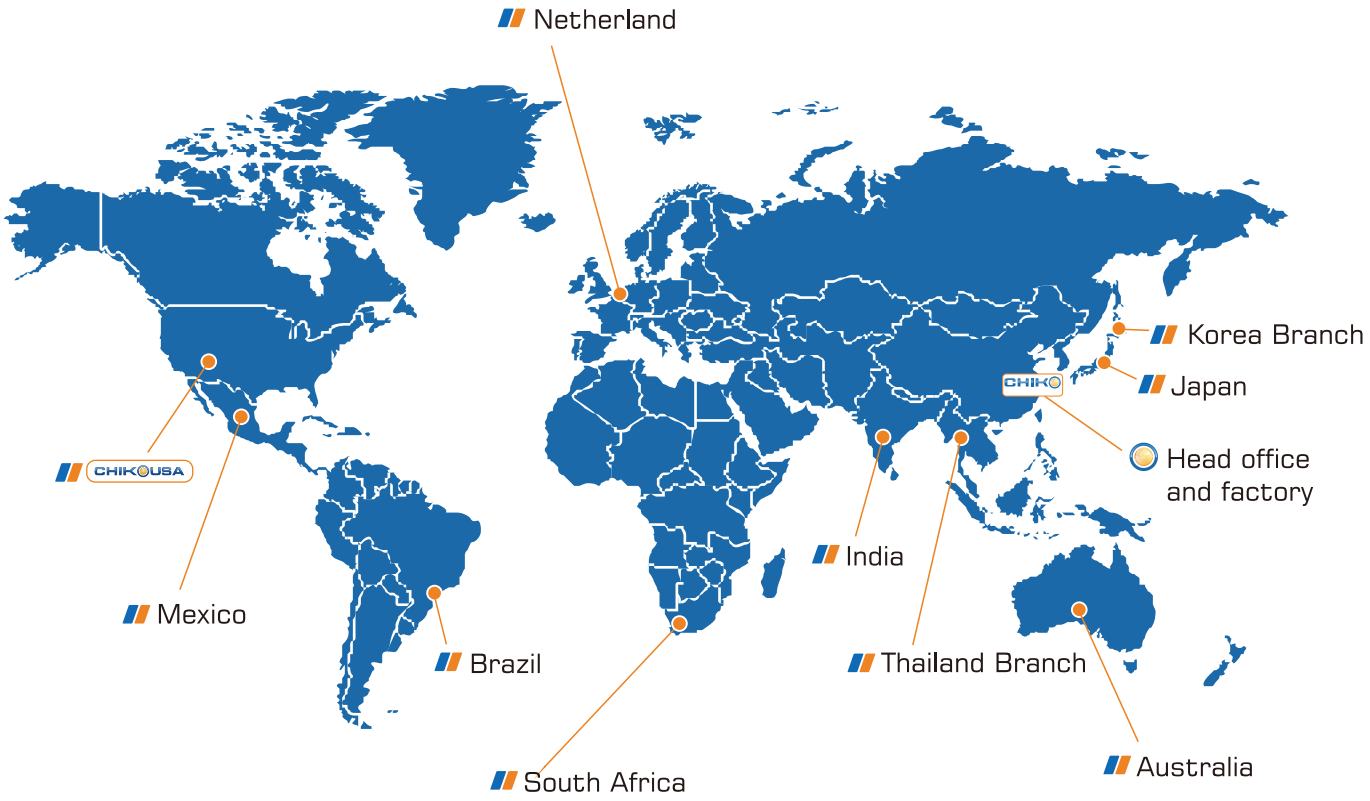


The grounding function of the whole mounting system connections is achieved by the following devices:

1. Have #13 hook mounted on #375 Clamp with flange bolt M8 and nut.
2. Inner hex bolt of the #13 hook: connect the #13 hook with the rail (see step 4)
3. Rail splice kit: connect the two rails (see step 4)
4. Grounding end clamp: connect the panel with the rail (see step 5 &7)
5. Grounding mid clamp: connect the two panels with the rail (see step 6)
6. Grounding lug: connect rail with copper wire (see step 8)
7. Copper wire: connect the mounting system to the ground (see step 8)

WORLD LEADING

MANUFACTURE



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