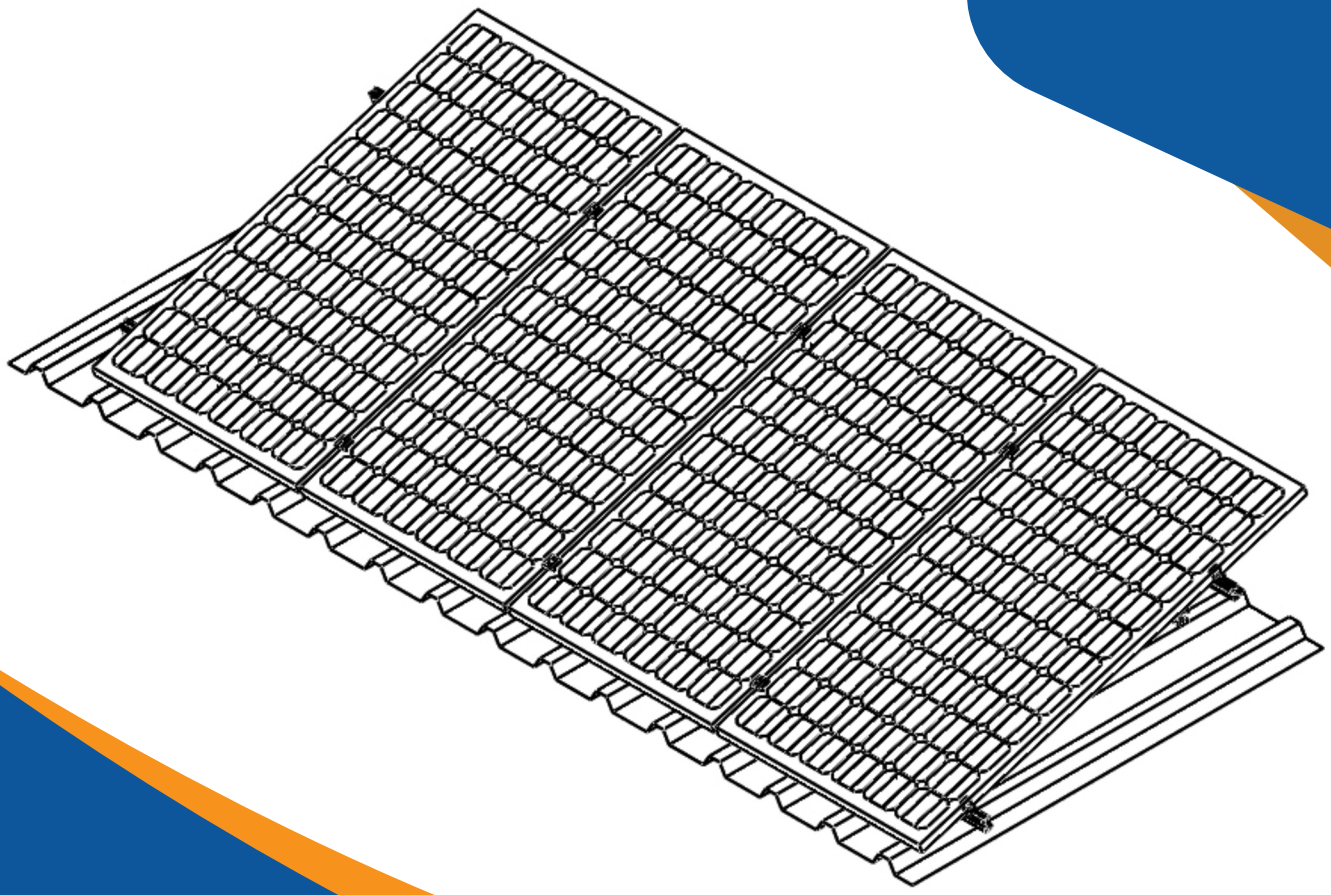
CHIKOUSA

RACKING MADE SIMPLE



Model No. : CK-TK

Tilt Kit System

Installation Manual

Version No.: CHIKO-20180822-V.02

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.

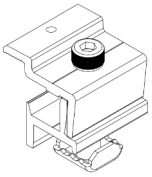
- Follow the risk management process prior to commencing work – including identify hazards, assess risks, eliminate or control them.
- Consult with those involved in the work.
- Develop safe work procedures for installing solar panels, using information from the risk management process, which would include 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

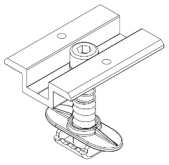
☐ Tape Measure

☐ Chalk Line

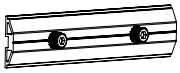
☐ Labor Protection Products



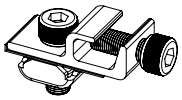
End Clamp



Mid Clamp

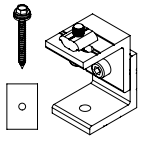


Rail Splice Kit

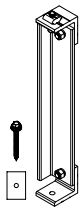


Grounding Lug

☐ Allen Key



TILT Front Leg



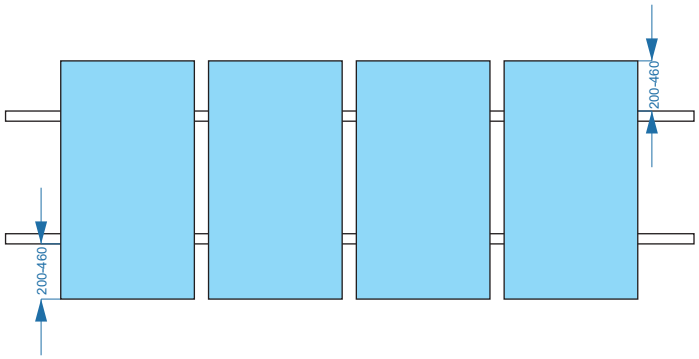
TILT Rear Leg

☐ Open-end Spanner

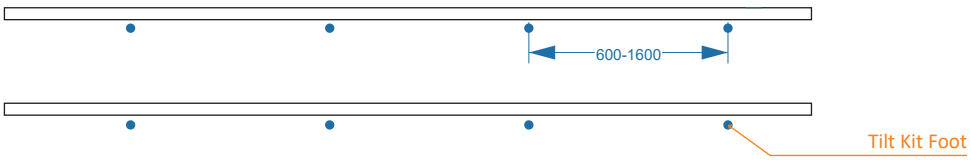
III NOTICE

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 Tilt kit foot on tile roof could be 600-1600mm.



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

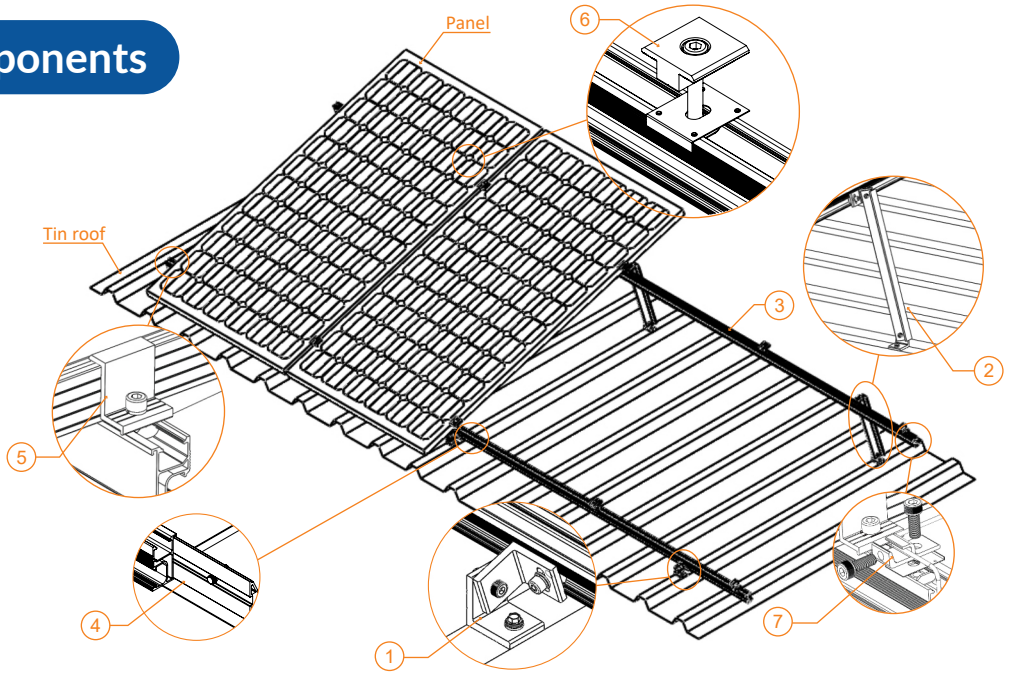
5. The test solar panel is UL Listed CHANGZHOU TRINA SOLAR ENERGY CO., LTD: TSM-290PD14, TSM 295PD14, TSM-300PD14,TSM-305PD14, TSM-310PD14, TSM-315PD14, TSM-320PD14, TSM-325PD14, TSM-330PD14, module fire performance type 1.

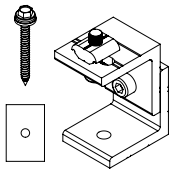
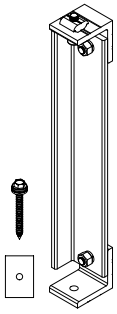
6. This racking system may be used on steep-sloped roofs with slopes greater than or equal to 2 in/ft. (167mm/m or 9.46°), and the installed PV module complying with UL 1703 only when the specific module has been evaluated for grounding or installed in compliance with the included instructions.

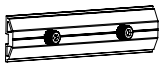
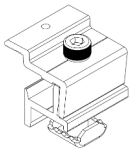
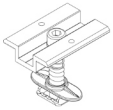
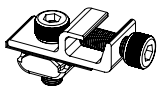
7. The CK -TR System is intended to be mounted to a roof using the components listed in the manual.

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-FTF-FL	Front Leg		1.1	Tilt kit Aluminum base	1
				1.2	Tilt kit Aluminum top transfer kit	1
				1.3	Rubber pad	1
				1.4	SUS304 Bolt M8*28	1
				1.5	SUS304 Spring washer M8	2
				1.6	SUS304 flat washer M8	1
				1.7	SUS304 Nut M8	1
				1.8	AL6005 057 nut	1
				1.9	SUS304 innex hex bolt M8*25	1
				1.10	Self-tapping screw φ6.3*100mm	1
2	CK-FTF-BL	Rear Leg		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	2
				2.6	Alu L FeetΦ9	4
				2.7	Alu 057 Nut	2
				2.8	SUS304 Inner Hex Bolts M8*25	2

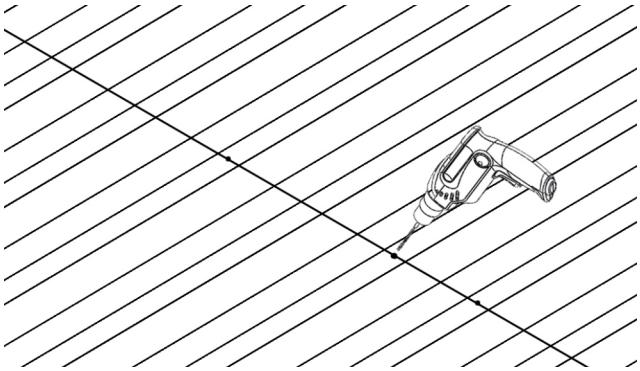
				2.9	SUS304 Spring Washer M8	1
				2.10	SUS304 Antiskid gasket	1
				2.11	SUS304 Antiskid gasket	1
3	CK-FT-R7B1	#7 Rail		CHIKO Solar AL6005-T5 7-rail length: 4200mm; 3200mm 2100mm;1200mm;1050mm		1
4	CK-590-1-200	Rail Splice Kit		4.1	Aluminium Rail Splice Kit	1
				4.2	SUS304 Inner Hexagon M8*12	2
				4.3	SUS304 Star Washer M8	2
5	CK-103R7-40-40	Grounding End Clamp		5.1	AL6005-T5 end clamp for 40mm	1
				5.2	AL6005-T5 057 nut	1
				5.3	SS304 inner hex bolt M8*25	1
				5.4	SS304 spring washer M8	1
6	CK-152R7-38/ 40-40	End Clamp		6.1	AL6005-T5 mid clamp	1
				6.2	AL6005-T5 057 nut	1
				6.3	SS304 inner hex bolt M8*50	1
7	CK-592R7-1-20	Grounding Lug		7.1	Grounding lug - lug 8.0	1
				7.2	SS304 inner hex bolt M8*20	1
				7.3	SS304 star washer	1
				7.4	SS304 050 nut	1
				7.5	SS304 inner hex bolt M8*25	1
				7.6	SS304 square nut	1

V Attachment Spacing Table

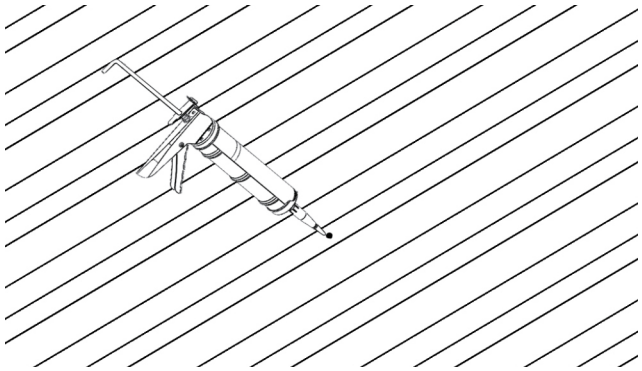
No.	Item No.	Description	Attachment Qty	Spacing
1	CK-FT-R7B1-4200	Chiko AL 7# rail -4200mm	3 PCS	1800mm
2	CK-FT-R7B1-3200	Chiko AL 7# rail -3200mm	3 PCS	1500mm
3	CK-FT-R7B1-2100	Chiko AL 7# rail -2100mm	2 PCS	1800mm
4	CK-FT-R7B1-1200	Chiko AL 7# rail -1200mm	2 PCS	1000mm

VI Installation Steps

1



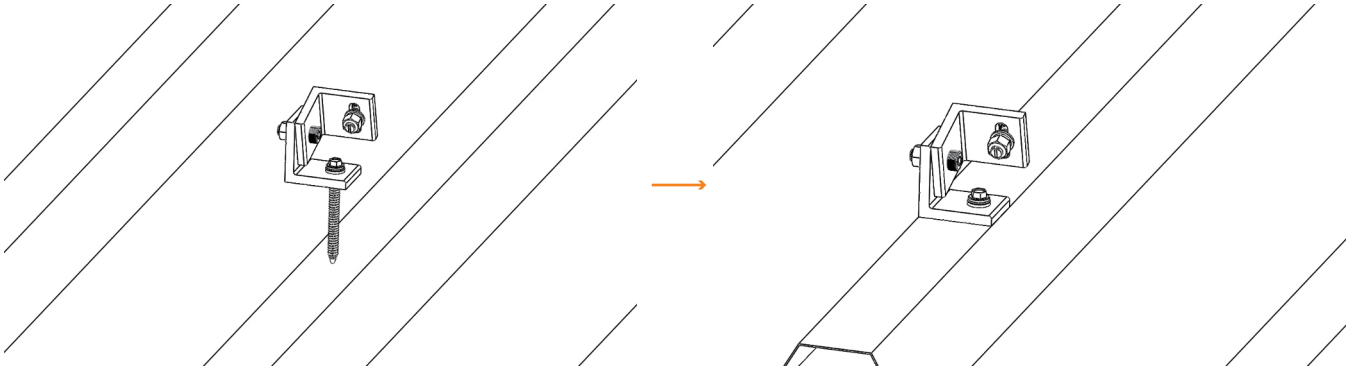
1.1



1.2

Determine where the roofs mounts will be positioned based on position of existing roof screws, and mark it with a chalk line. Determined a position where the L foot will be attached on a unused crest. Drill a single 6mm pilot hole. Backfill the pilot hole with sealant.

2

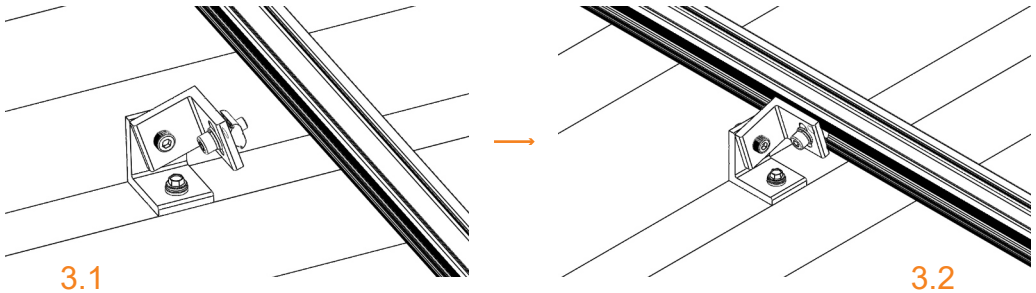


2.1

2.2

Attach the front leg onto roof by 1 X 6.3*100mm screw, high quality rubber pad is used to provide waterproof function.

3



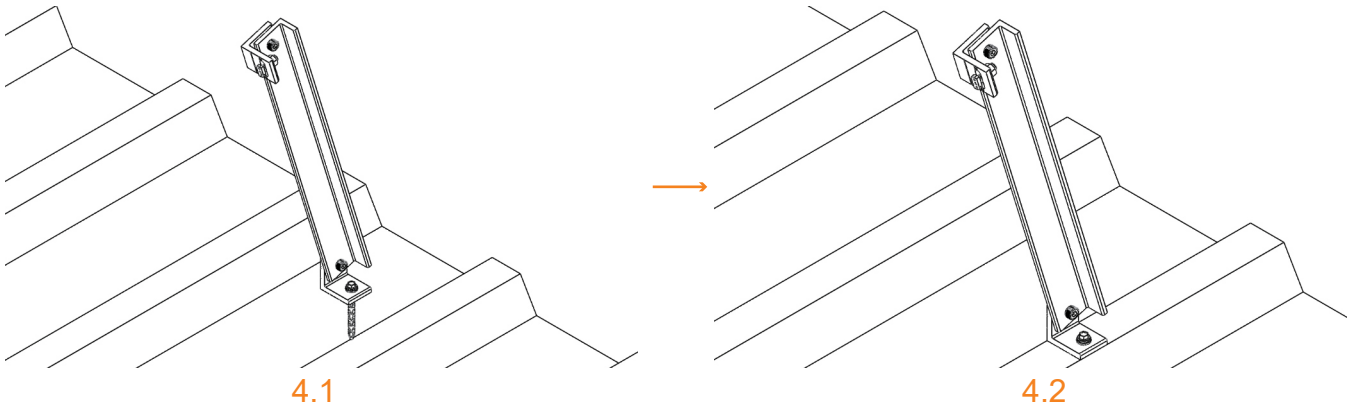
3.1

3.2

Attach the rail to the front legs by bolts M8x25 and nut 057#..

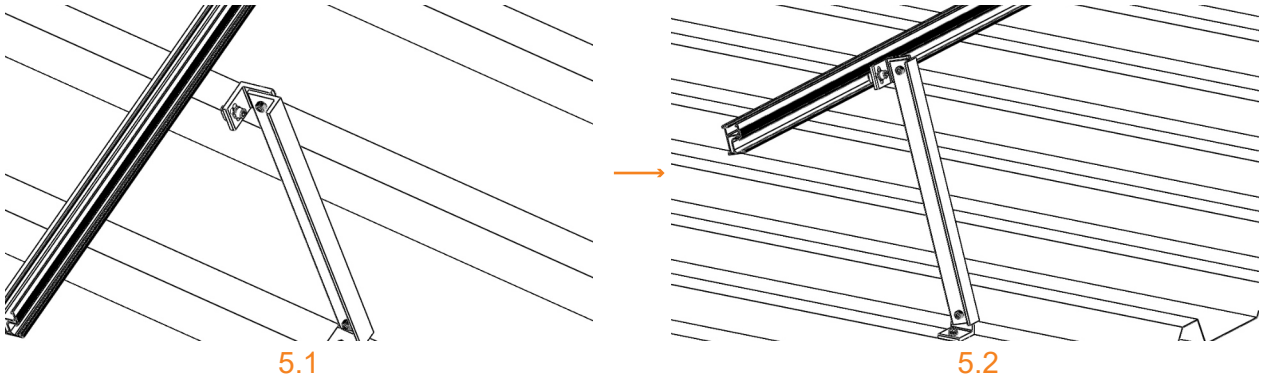
Installation of the rear leg

4



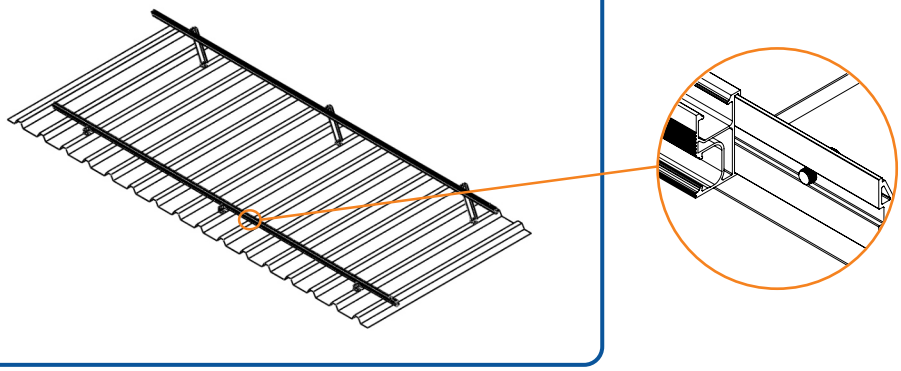
Attach the rear leg onto roof by 1 X φ6.3*100mm screws, high quality rubber pad is used to provide waterproof function.

5



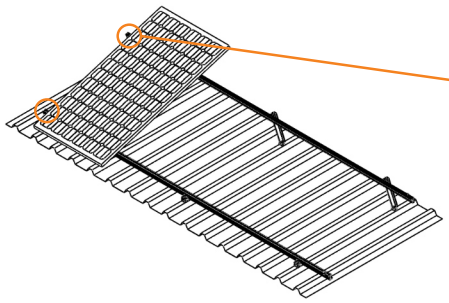
Attach the rail to the rear legs by bolts M8x25 and nut 057#.

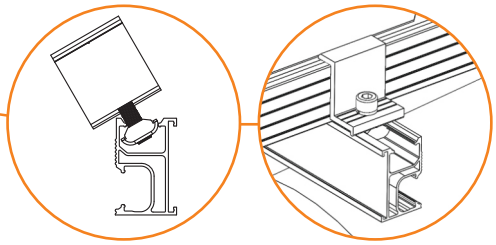
6



As the requirement of planning the array layout attach front leg & rear leg and rail on the roof. The standard length of rail is 2.1m,3.2m,4.2m, if need connect rails together, need use the rail splice kits to fix it.

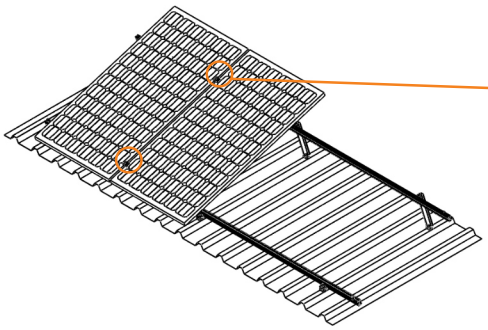
7

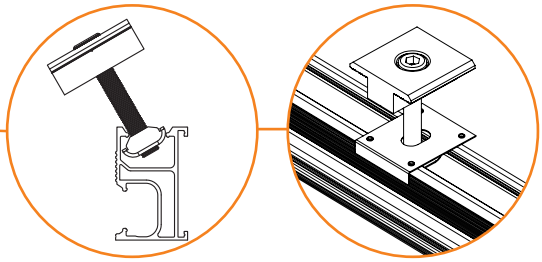




Attach the solar panel on the rail, fasten the end clamps with bolts M8 to secure one side of the panel. *M8 Torque: 15~20N·m*

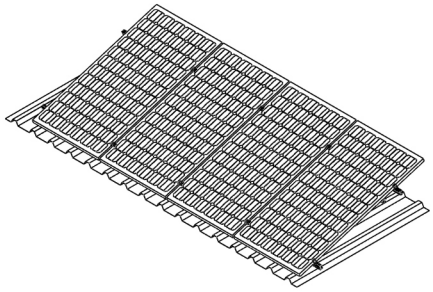
8



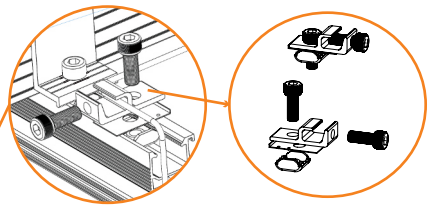


Insert the mid clamp nut by tilting it into the top opening of the rail, then put the second panel onto the rails. Fasten the mid clamps with inner hex bolts M8 at all locations where two panels meet. *M8 Torque: 15~20N·m*

9

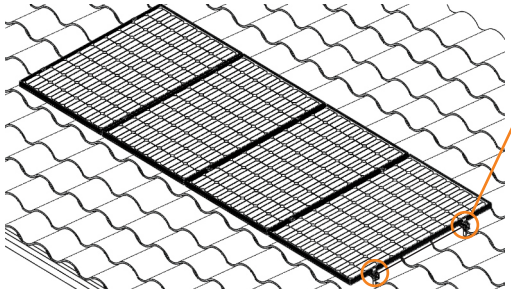


Install all the panels and fasten end clamps at the end of each array. *M8 Torque: 15~20N·m*



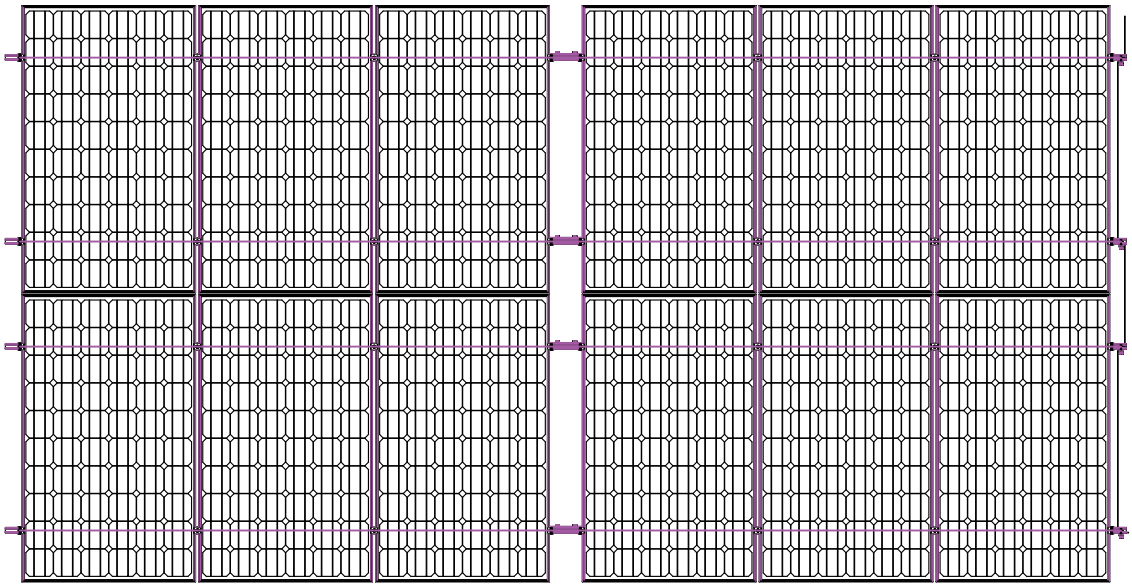
Installation of Grounding lug

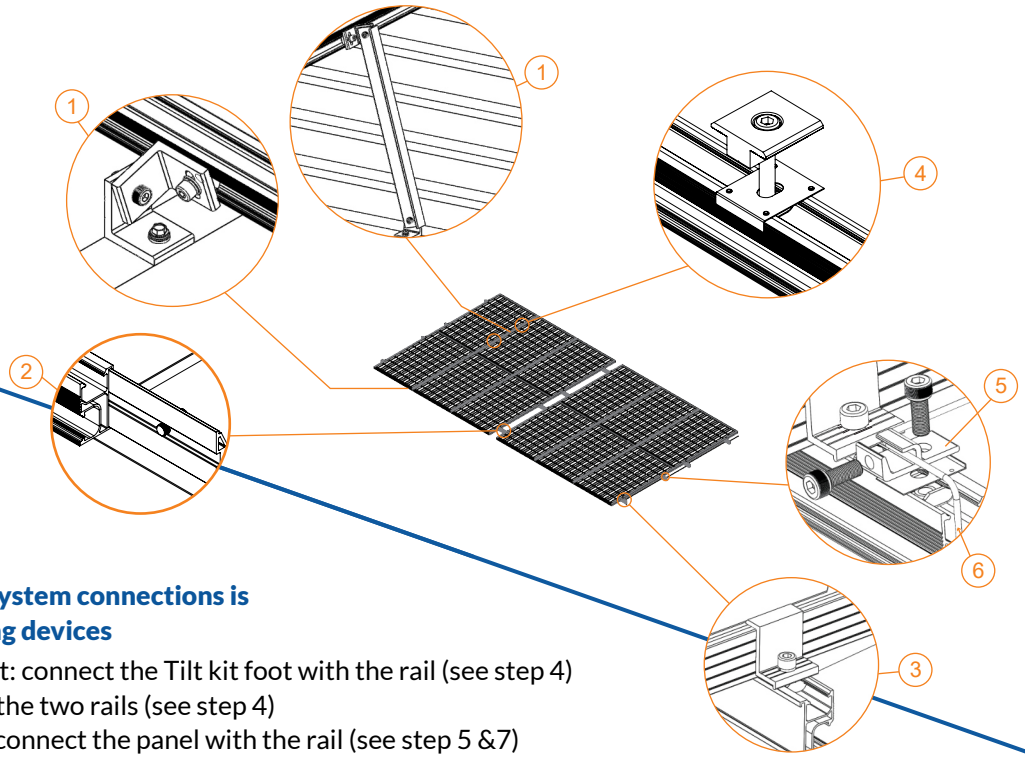
10



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*

VII Grounding System



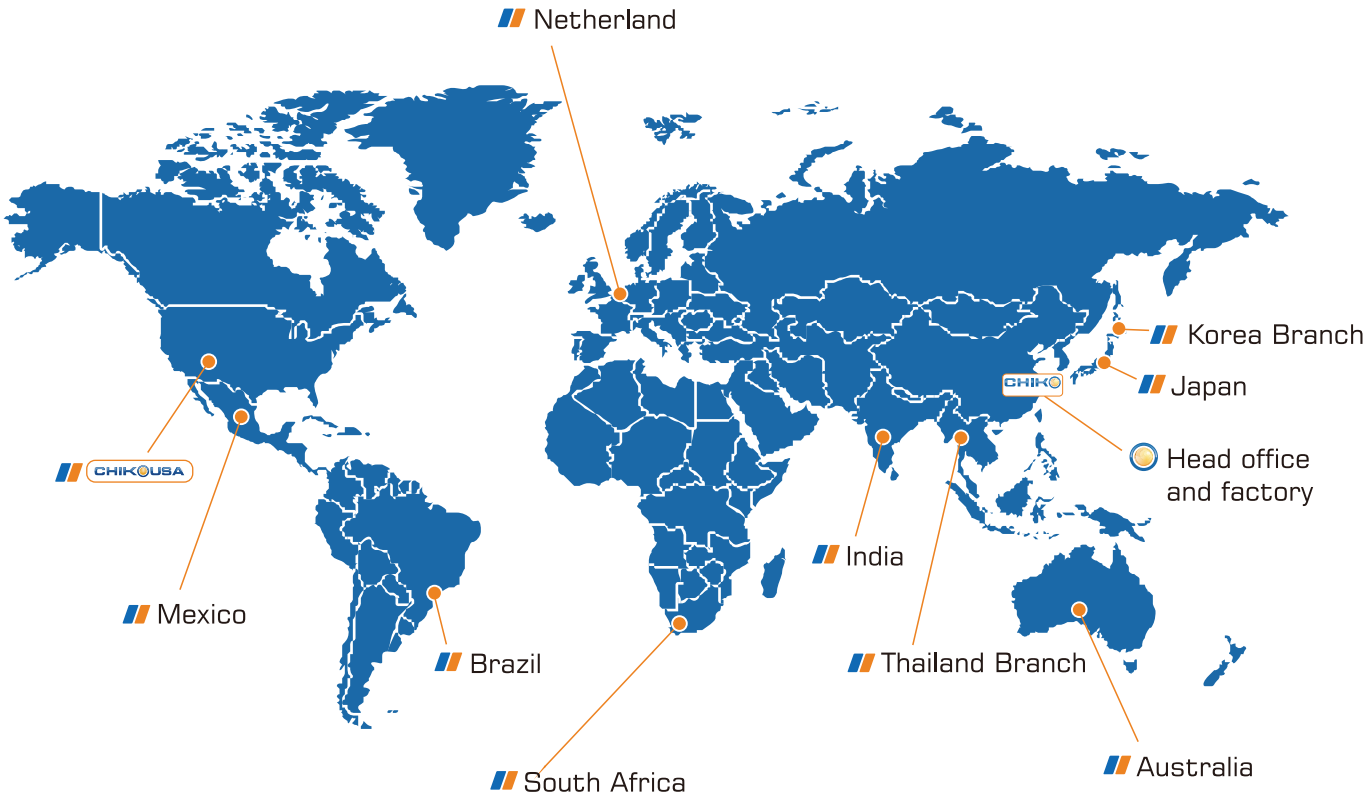


The grounding function of the whole mounting system connections is achieved by the following devices

1. T-bolt of the Tilt kit foot: connect the Tilt kit foot with the rail (see step 4)
2. Rail splice kit: connect the two rails (see step 4)
3. Grounding end clamp: connect the panel with the rail (see step 5 &7)
4. Grounding mid clamp: connect the two panels with the rail (see step 6)
5. Grounding lug: connect rail with copper wire (see step 8)
6. Copper wire: connect the mounting system to the ground (see step 8)

WORLD LEADING

MANUFACTURE



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