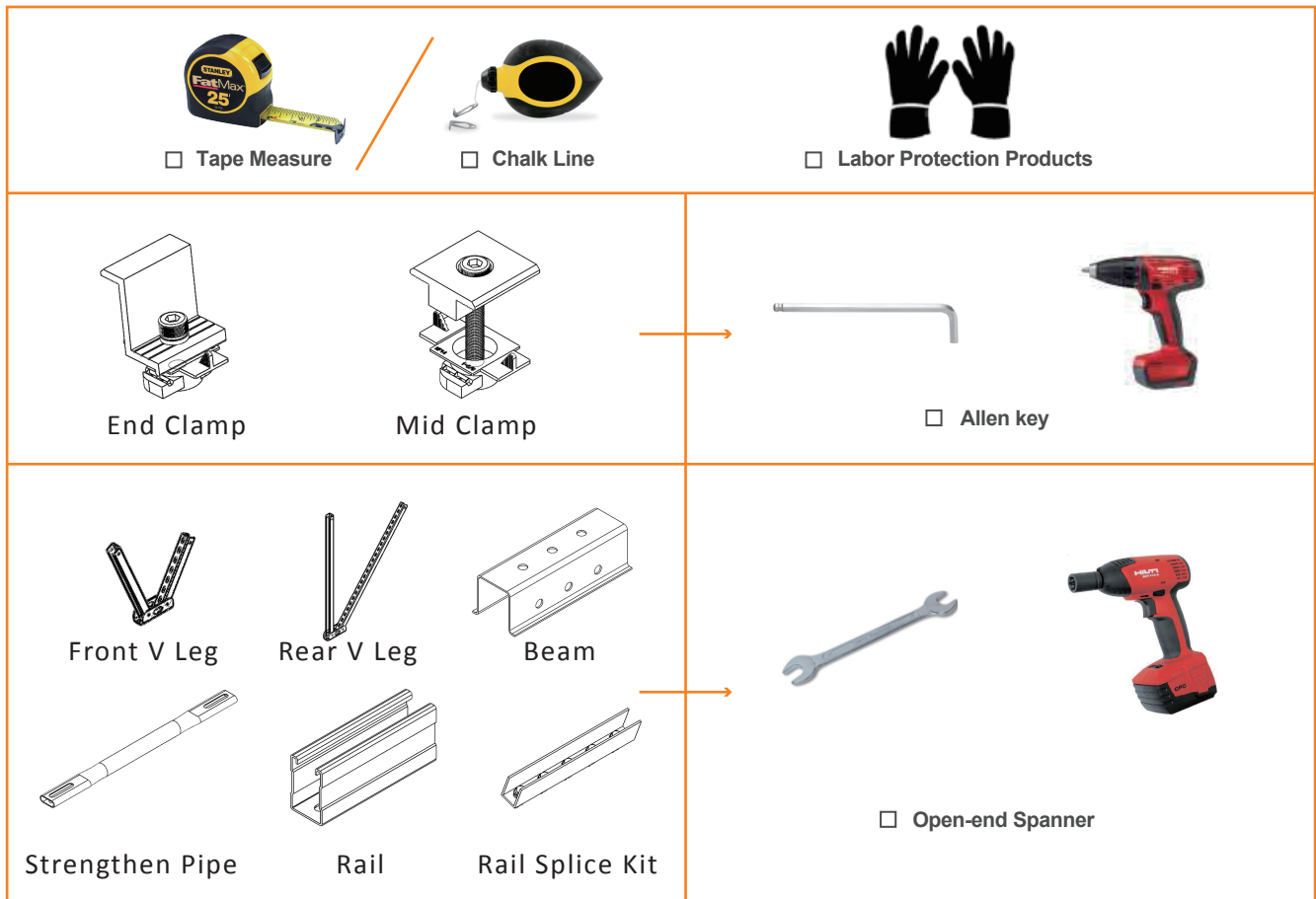


**Steel U2V Ground Mount
Installation Manual**

Steel U2V Ground Mount Installation Manual



II. Installation Tools



I. Installation Rule

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

- Follow the risk management process prior to commencing work – that is, identify all the hazards, assess their risks and 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 anyone 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.

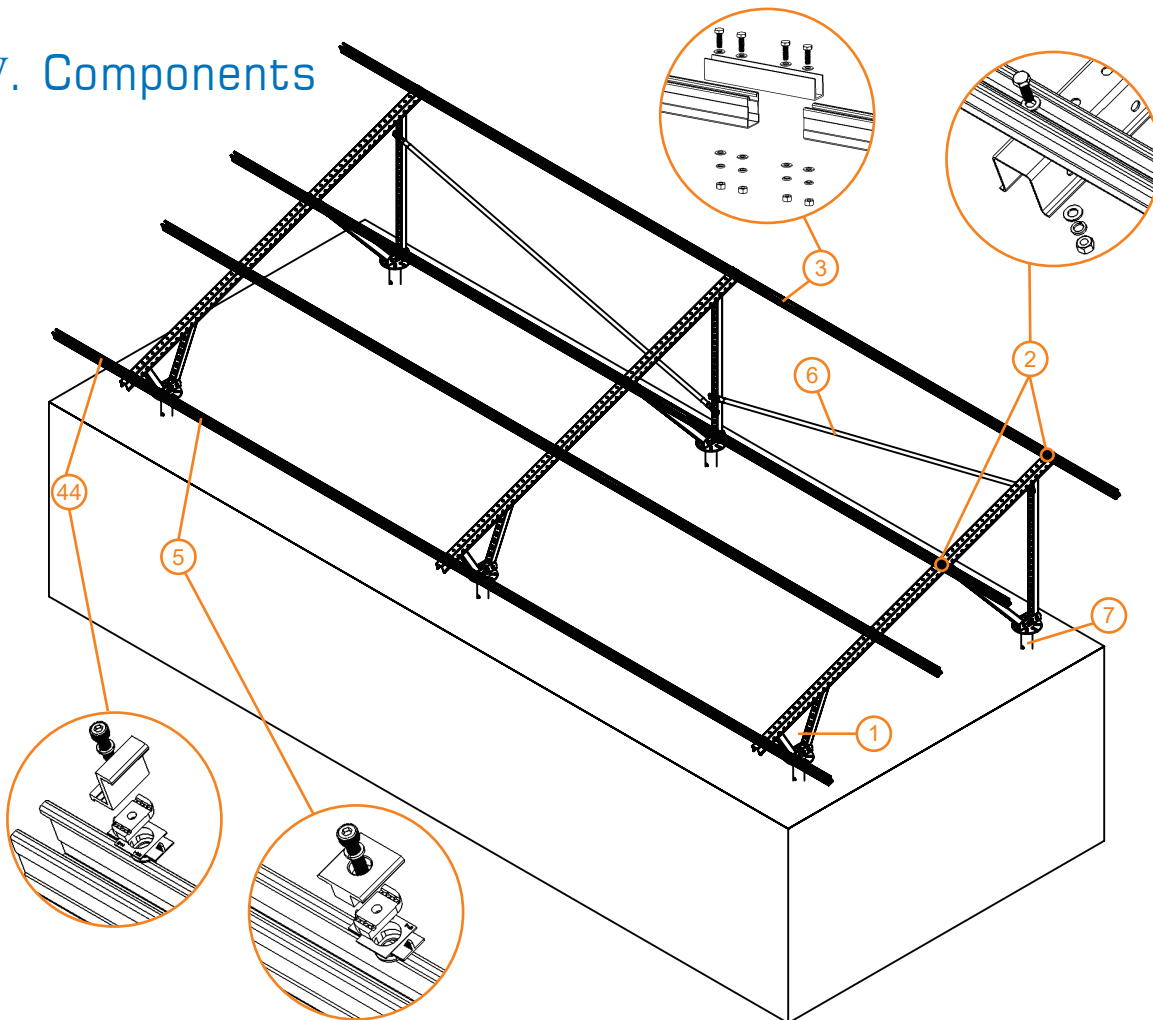
Steel U2V Ground Mount Installation Manual

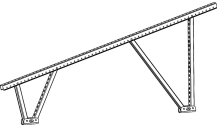
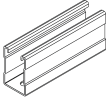

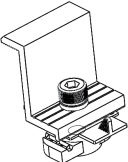
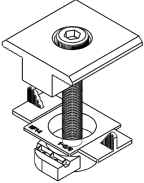
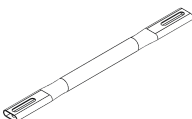




III. NOTICE

1. System Fire Class Rating: A
Tested in combination with UL listed _____
To be used with any UL1703 listed PV modules with a module fire performance rating of Type 1 or 2 for low slope and steep slope.
2. Max. Rated Current: 30A
3. Max. Spanning Distance: 2000mm
4. Minimum design load for Chiko ballast I roof mounting system:
 - a) Downward Pressures - 15 psf allowable load.
 - b) Upward Pressure - 10 psf allowable load.
 - c) Down-Slope Load - 5 psf allowable load.
5. This ground mount system is used for for in ground mounting
6. This racking system may be used to ground and/or mount a PV module complying with UL 1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.

IV. Components



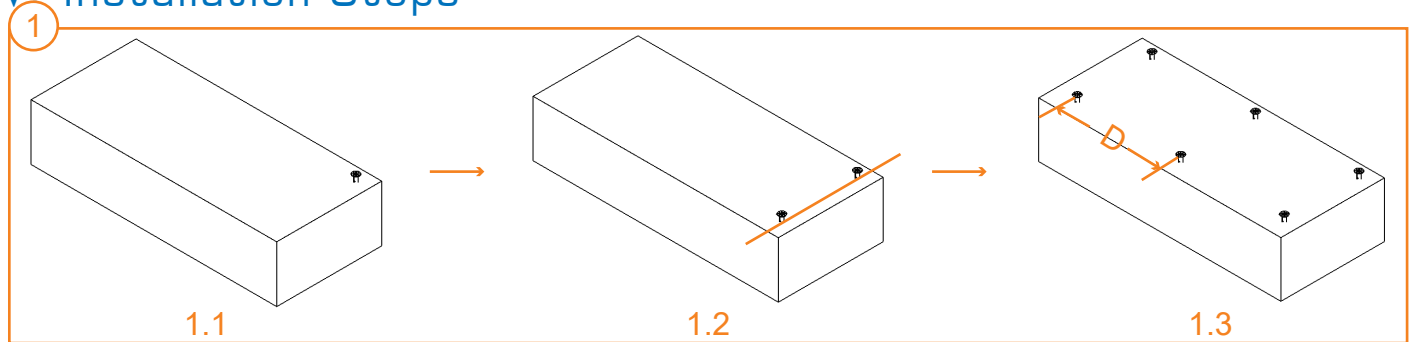
No.	Item No.	Item Name	Picture	Part No.	Part Name	Part Qty
1	CK-U2V-048(155-S138) CK-U2V-V-275/1090 CK-U2V-V-1230/1476	U2V support structure		1.1	Base	2
				1.2	U Support	4
				1.3	U Beam	1
				1.4	Hex bolt M10*80 set	4
				1.5	Half Hex bolt M10*80 set	4
				1.6	Hex bolt M10*30 set	4
2	CK-UR72-T2.5-001-MM L	U72 Rail		2	72# Rail 3200/ 3400/4150mm	1
3	CK-0221RU72-3-200	U72 Rail Splice Kit		3.1	U 72 Rail Joiner	1
				3.2	Bolt M10*30	2
4	CK-749R U-K-(30-42)	Adjustable Grounding End Clamp		4.1	End clamp	1
				4.2	Allen bolt M8 * 28	1
				4.3	Plastic steel nut	1
				4.4	Plastic sheath	1
				4.5	M8 spring washer	1
5	CK-777RU-K-(30-40)	Adjustable Grounding Mid Clamp		5.1	Mid clamp	1
				5.2	Allen bolt M8 *60	1
				5.3	Grounding clip	1
				5.4	Plastic steel nut	1
				5.5	Plastic sheath	1
				5.5	M8 spring washer	1
6	CK-JGW-Q1030-2	Strengthen Pipe +(hardware)		6.1	Stainless Steel Tube	1
				6.2	Stainless Steel M10*40 Hex Bolt	2
				6.3	M10 nut	2
				6.4	M10 Spring washer	2
				6.5	M10 Flat washer	4
7	CK-GST-N16-3.0T2(H)-500-1600	Ground screw +(hardware)		7.1	1600mm flange ground screw	1
				7.2	M12*35 hex bolt	2
				7.3	M12 nut	2
				7.4	M12 spring washer	4
8.	CK-592RU-1-20	Grounding Lug		8.1	Grounding lug - weeb lug 8.0	1
				8.2	SS304 outer hex bolt 1/4" *0.6"	1
				8.3	SS304 inner hex bolt M8*20	1
				8.4	SS304 weeb washer	2



Steel U2V Ground Mount Installation Manual



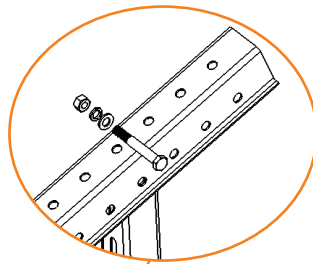
V Installation Steps



Insert ground screws into the ground according to Chiko's drawing.

Install the beam on front leg and rear leg by hex bolts M10*80 (1 flat washer, 1 spring washer, 1 nut).

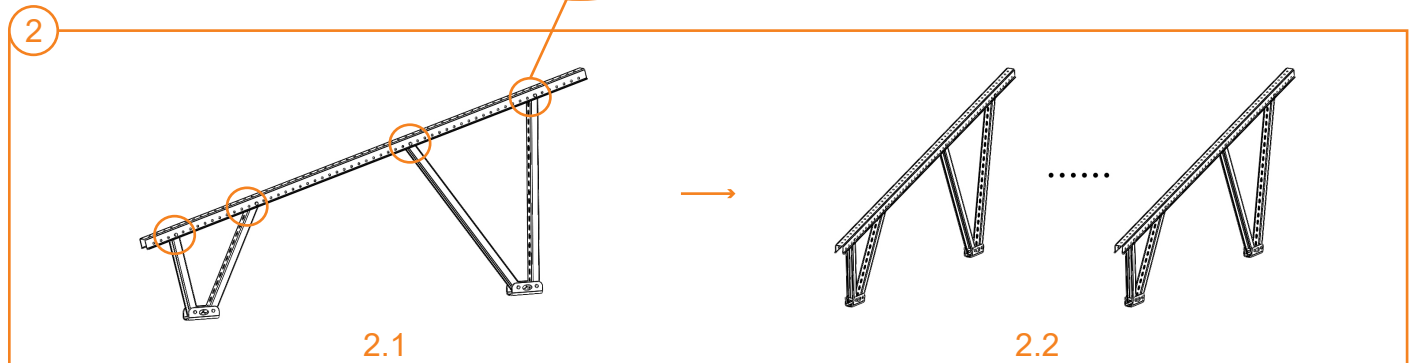
M10: tighten torque is 30N.m; safe torque is 40N.m;



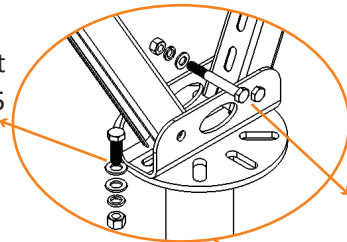
hex bolt M10*80

The front V leg and rear V leg are pre-assembled with V bases by hex bolts M10*80 (1 flat washer, 1 spring washer, 1 nut).

M10: tighten torque is 30N.m; safe torque is 40N.m;



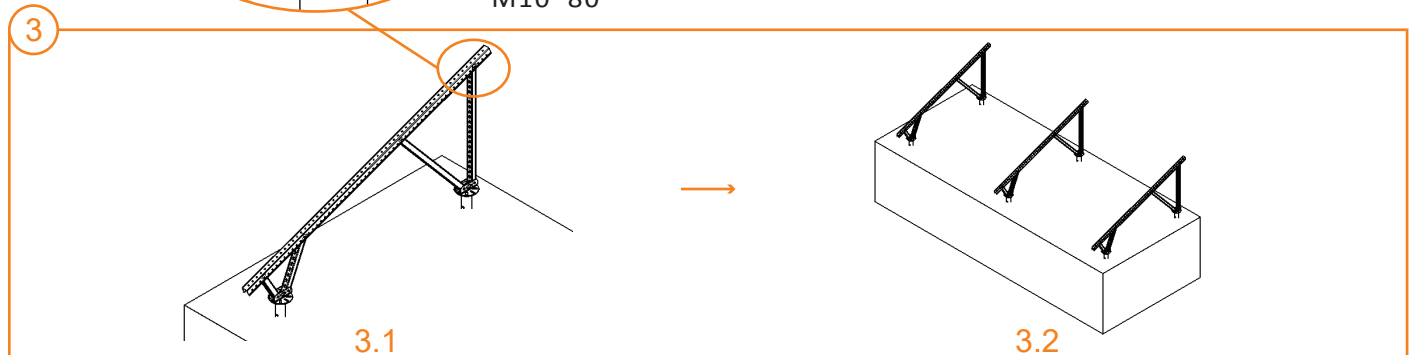
hex bolt M12*35



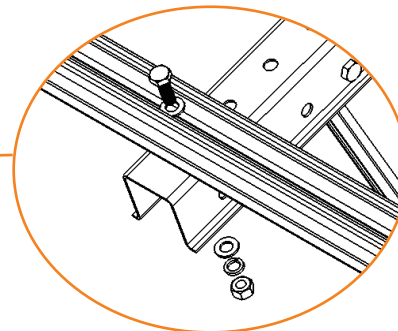
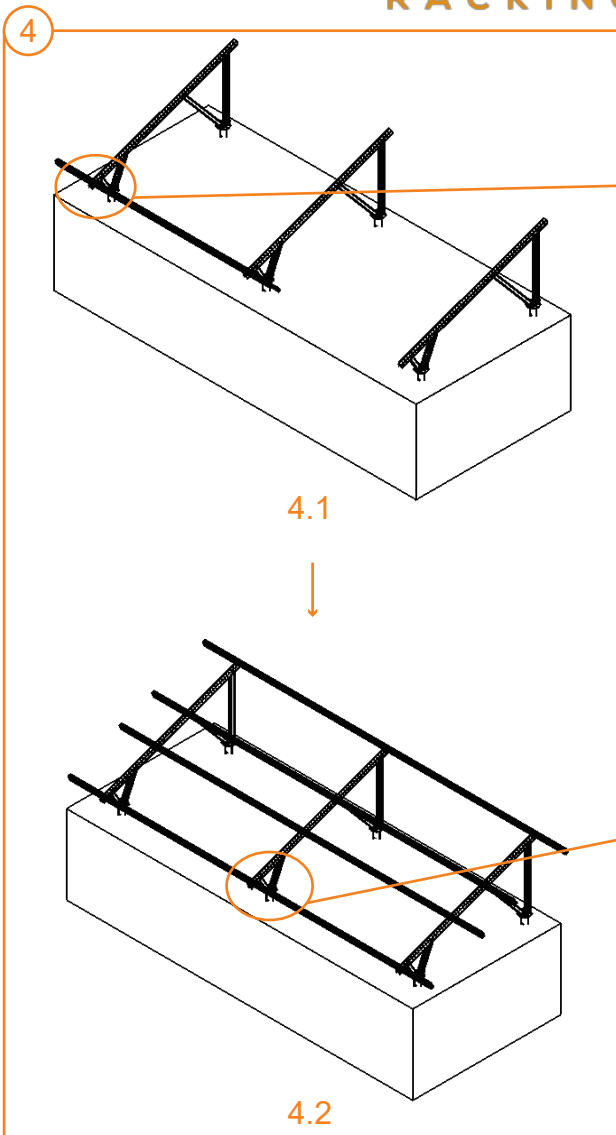
hex bolt M10*80

Connect the V leg bases to ground screws by hex bolts M12*35 (2 flat washers, 1 spring washer, 1 nut);

M12: tighten torque is 50N.m; safe torque is 55N.m;



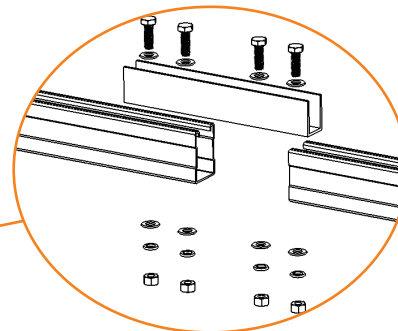
Steel U2V Ground Mount Installation Manual



hex bolt
M10*30

Connect rail to the beams by hex bolts M10*30 (1 flat washer, 1 spring washer, and 1 nut);

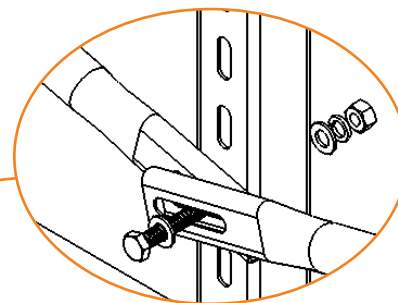
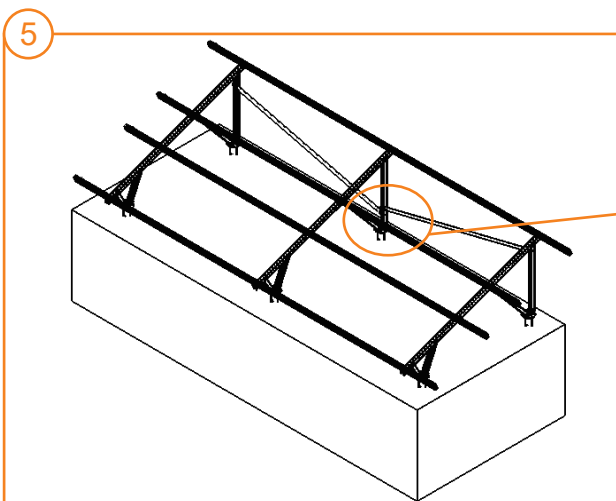
M10: tighten torque is 30N.m; safe torque is 40N.m;



hex bolt
M10*30

use rail splice kit to connect 2 rails by hex bolts M10*30 (2 flat washers, 1 spring washer, and 1 nut).

M10: tighten torque is 30N.m; safe torque is 40N.m;

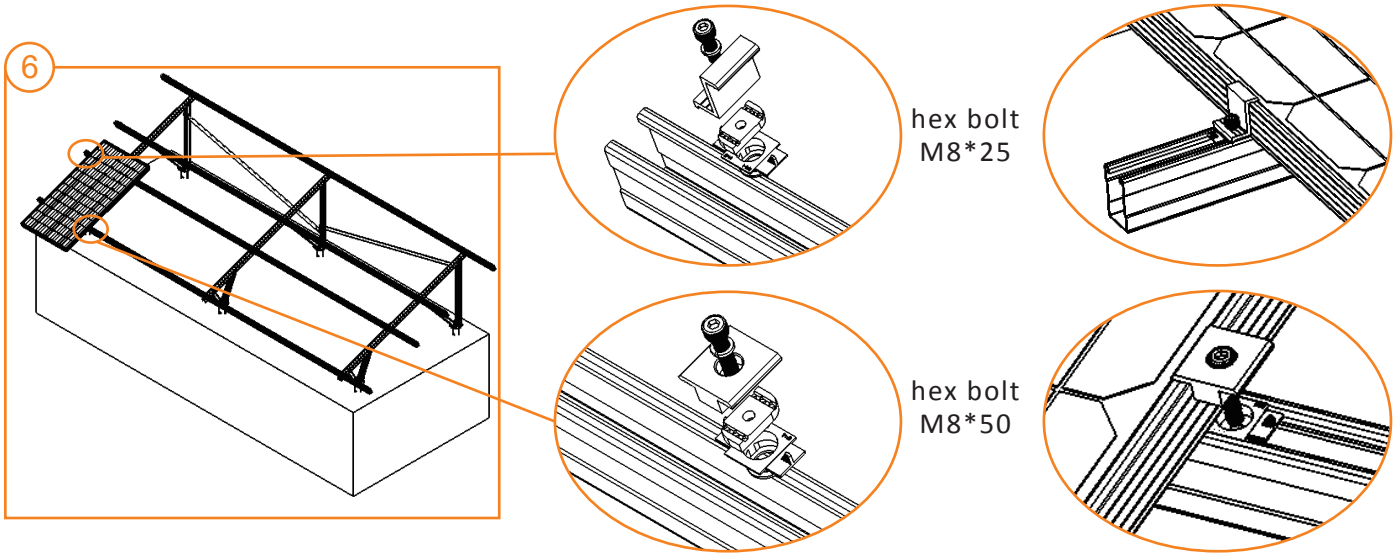


hex bolt
M10*60

Install the strengthen pipe between two rear V legs by hex bolts M10*60 (2 flat washers, 1 spring washer, and 1 nut).

M10: tighten torque is 30N.m; safe torque is 40N.m;

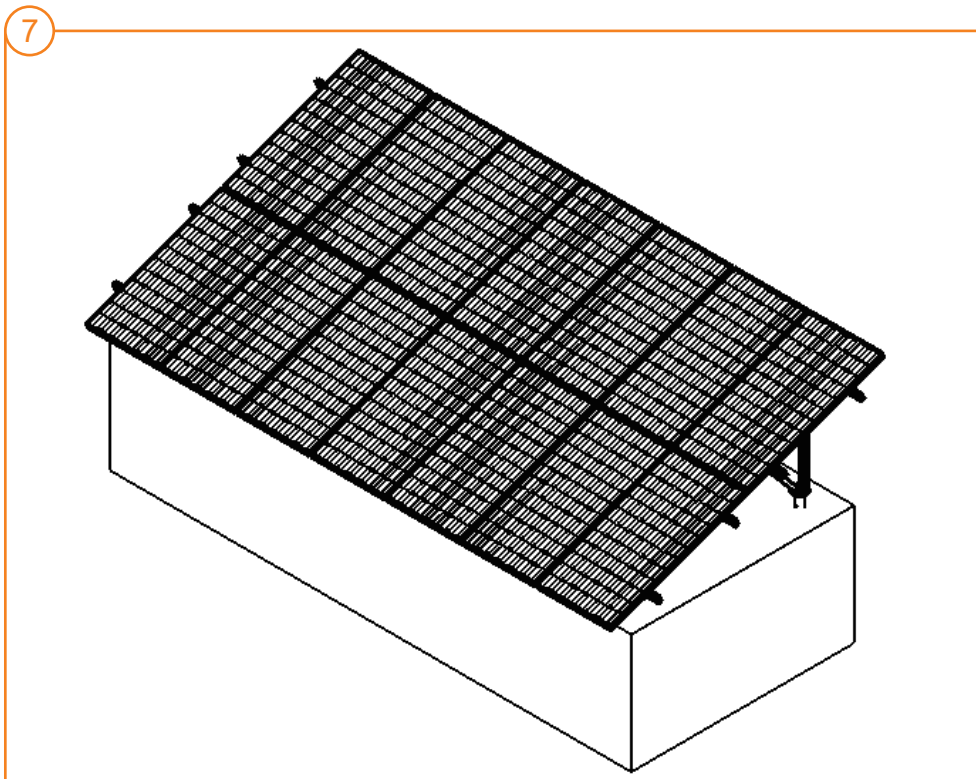
Steel U2V Ground Mount Installation Manual



Install panels onto rails by fastening mid and end clamps.

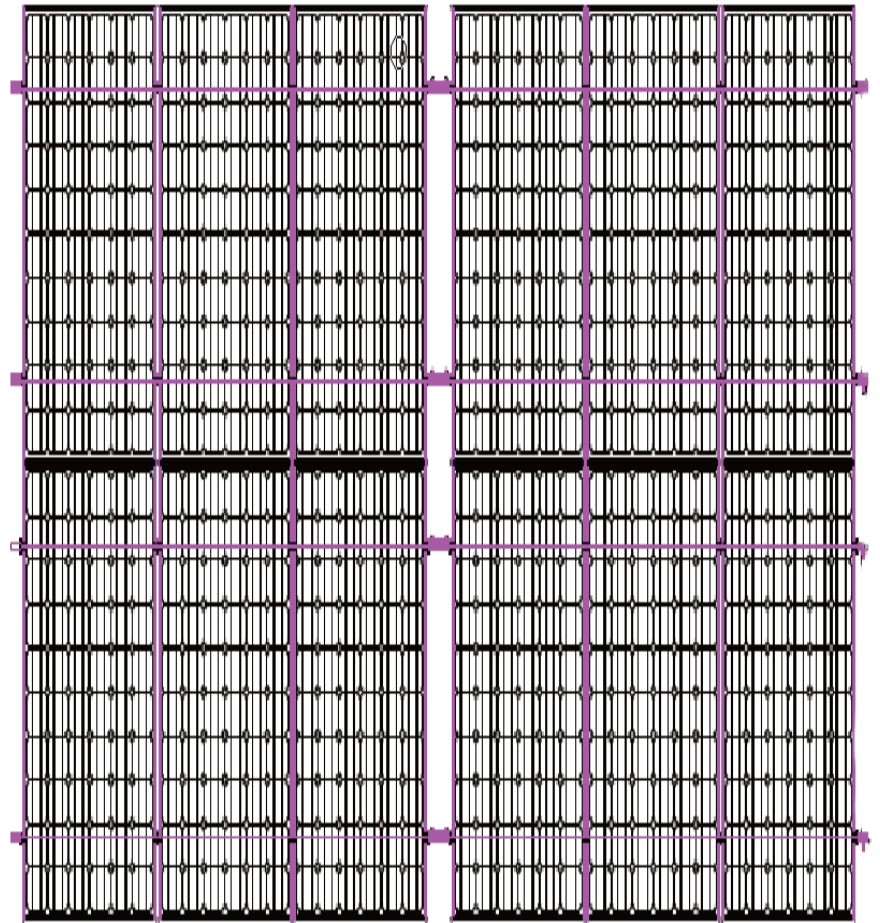
Note: End clamps by inner hex bolts M8*25 (1 spring washer, 1 plastic steel nut);
Mid clamps by inner hex bolts M8*50 (1 spring washer, 1 plastic steel nut).

M8: tighten torque is 15N.m; safe torque is 20N.m;



Double-check to make sure all bolts are fastened tight after installing all the panels.

VI. Grounding System



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

1. Grounding Mid Clamp and Grounding End Clamp:
Grounding Solar Panel

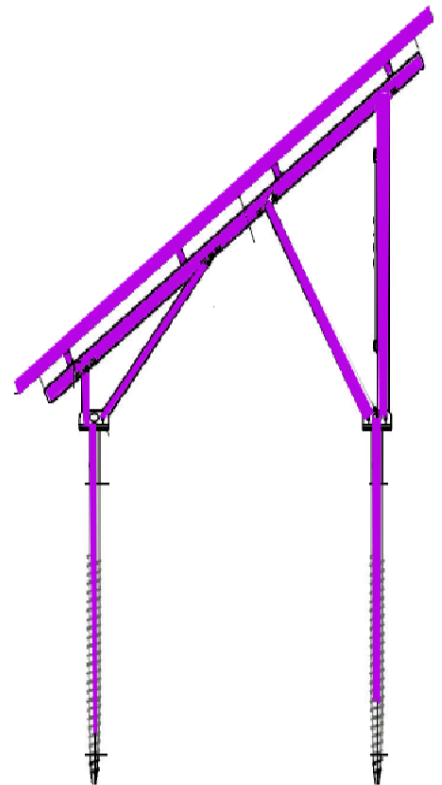
2. Rail Splice Kit: connect two rails

3. SUS Bolt and Nut: All mounting system connected

4. Ground screw: connect the mounting system to the ground

5. Grounding Lug

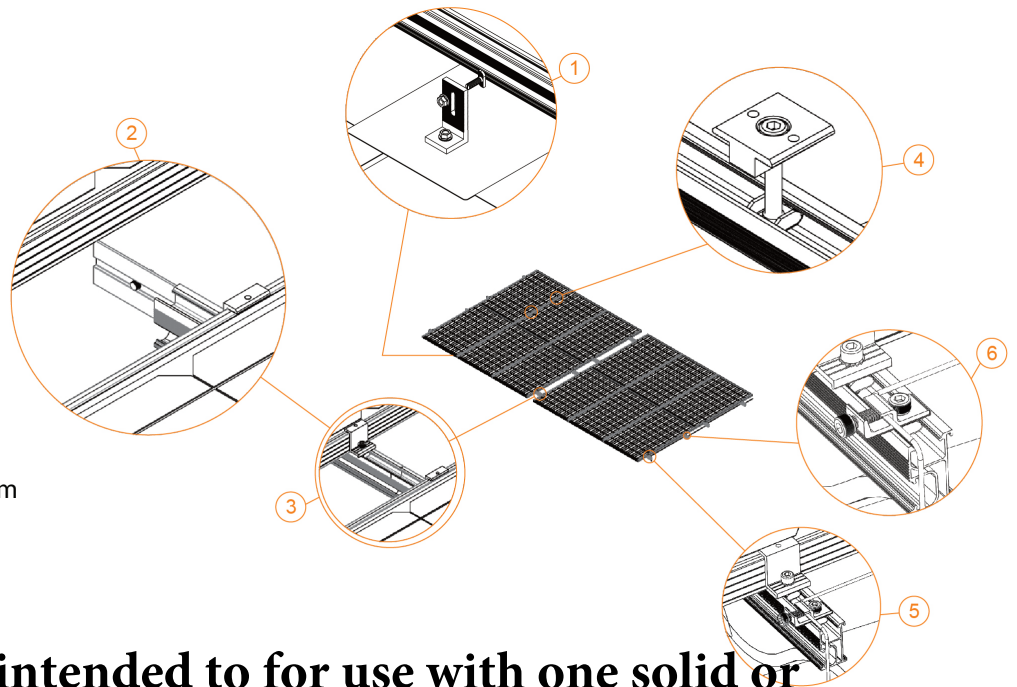
6. Copper wire (or other steel products) : connect the mounting system to the ground (if not ground screw foundation, such as concrete)



Installation herein in accordance with the National Electrical Code, ANSI/NFPA 70.

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

1. T-bolt of the 19# hook: connect 19# hook with rail (see step4)
2. Rail splice kit: connect two rails (see step4)
3. Grounding end clamp: connect panel with rail (see step5 &7)
4. Grounding mid clamp: connect two panels with rail(see step6)
5. Grounding lug: connect rail with copper wire (see step8)
6. Copper wire: connect the mounting system to the ground (see step8)



Grounding Lugs are intended to for use with one solid or stranded copper wire, conductor size 10-4 AWG.

CONTINUING MAINTENANCE

- a) 'Any loose components or fasteners shall be re-tightened in accordance with these instructions',
- b) Any components showing signs of damage that compromise safety shall be replaced immediately,'

FOR SINGLE USE ONLY

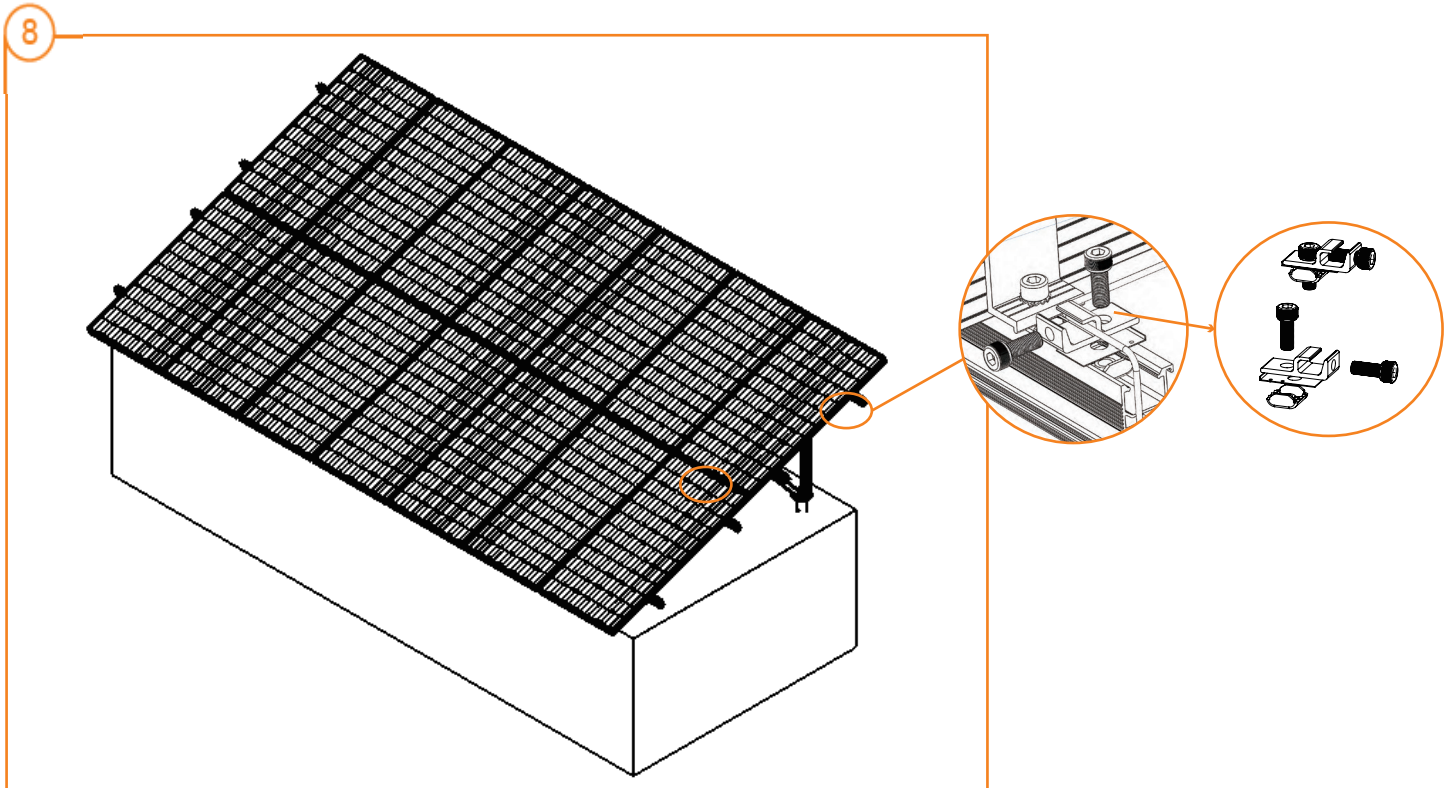
Bonding and grounding devices, are "For single-use only", NOT multiple use) Module removal may disrupt the bonding path and could introduce the risk of electric shock. To ensure that the bonding path remains intact, additional steps may be necessary; qualified persons should follow the instructions in this manual."

Scenarios that could result in a disruption of the bonding path are irregularly-shaped arrays, arrays consisting of individual rows or any other scenario where module removal could disrupt the bonding path.

Installation of Grounding Lug

Install a grounding lug (50mm from the rail end) onto each rail line edge with an inner hex bolt M8*25 and a stainless steel nut, then cross 8.4mm² (greater than or equal to 8AWG) copper wire through all the grounding lugs (fixed by M8*20 inner hex bolt), finally connect copper wire to the ground. The grounding lug has grounding function when fastened tight to connect rail and copper wire.

M8 Torque: 15~20N.m



Electrical Characteristics of AWG Copper Wire

AWG	Diameter [inches]	Diameter [mm]	Resistance [Ohms / 1000 ft.]	Resistance [Ohms / km]	Max Current [Amperes]	Max Frequency for 100% skin depth
6	0.162	4.1148	0.3951	1.295928	37	1100 Hz
7	0.1443	3.66522	0.4982	1.634096	30	1300 Hz
8	0.1285	3.2639	0.6282	2.060496	24	1650 Hz
9	0.1144	2.90576	0.7921	2.598088	19	2050 Hz
10	0.1019	2.58826	0.9989	3.276392	15	2600 Hz

Steel U2V Ground Mount Installation Manual

WORLD LEADING

M A N U F A C T U R E

