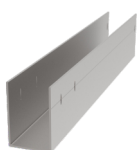


Technical Specifications

Type	Balcony Solar Mounting System
Application	Balcony
Tilt Angle	0°, 10°-30° Adjustable
Material	AL6005-T5, Steel, SUS304
Panel Layout	Landscape (Horizontal)
Max Panel width	1150mm
Design Standard	AS/NZS 1170, DIN 1055, JIS C8955, EN 1991-1, IBC 2000
Warranty	10 Years
Max wind Speed	35m/s
Max Snow Load	1.0KN/m ²
Color	Natural Silver or Black

System Components



Main Column

Length	Dimensions	Material	Other
1300mm	33.5mm*50mm*1.5mm	AL6005-T5	-





Auxiliary Column

Length	Dimensions	Material	Other
1300mm	29.5mm*39mm*1.1mm	AL6005-T5	-



Cross Brace

Length	Dimensions	Material	Other
310mm	30mm*30mm*1.5mm	AL6005-T5	-



Cross Brace

Length	Dimensions	Material	Other
290mm	26mm*25mm*1.5mm	AL6005-T5	-



Railing Horizontal Support

Length	Dimensions	Material	Other
1150mm	30mm*30mm*1.5mm	AL6005-T5	Spring Washer/Clamp Aluminum Nut



Hoop

Length	Dimensions	Material	Other
-	35mm*135mm*2.0mm	SUS304	-



Hook

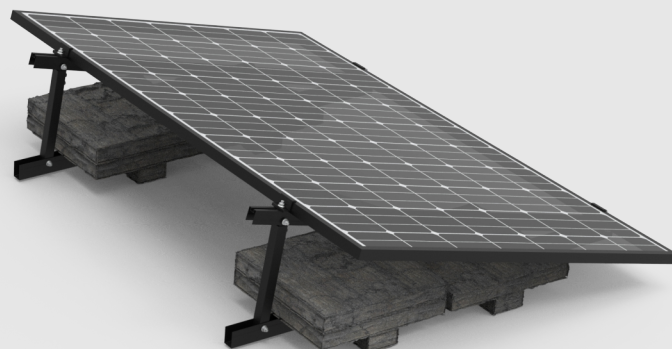
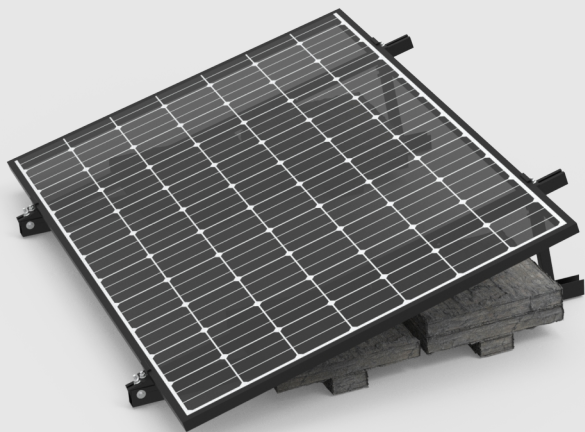
Length	Dimensions	Material	Other
-	230mm*70mm*45mm*1.5mm	SUS304	-



End Clamp

Length	Dimensions	Material	Other
50mm	33mm*34mm	AL6005-T5	-





Technical Specifications

Type	Balcony Solar Mounting System
Application	Flat Roof, IV Area (EN 1991-1-4), at 10m mounting height
Tilt Angle	15°
Material	AL6005-T5,Steel,SUS304
Panel Layout	Landscape (Horizontal)
Max Panel width	1150mm
Design Standard	AS/NZS 1170, DIN 1055,JIS C8955: 2017, EN 1991-1, IBC 2000
Warranty	10 year
Max wind Speed	30m/s
Max Snow Load	1.0KN/m ²
Color	Natural Silver or Black

System Components



Main Column

Length	Dimensions	Material
1300mm	33.5mm*50mm*1.5mm	AL6005-T5



Auxiliary Column

Length	Dimensions	Material
1300mm	29.5mm*39mm*1.1mm	AL6005-T5



Rail/PW-RA01

Length	Dimensions	Material
310mm	30mm*30mm*1.5mm	AL6005-T5



Rail/PW-RA01

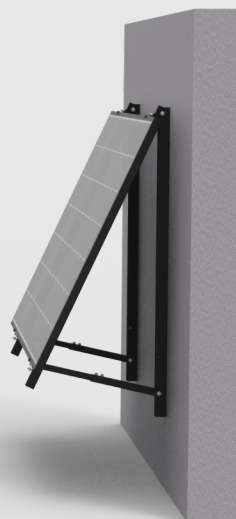
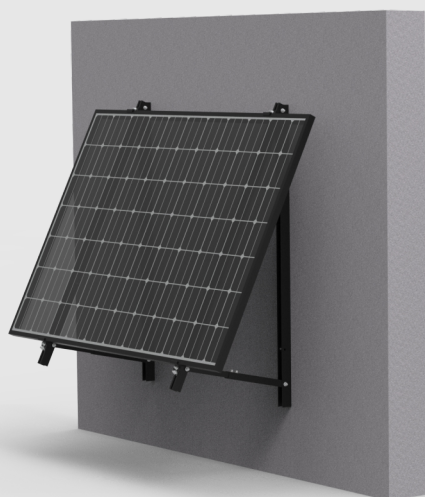
Length	Dimensions	Material
290mm	26mm*25mm*1.5mm	AL6005-T5



Rail/PW-RA01

Length	Dimensions	Material
50mm	50mm*30mm	AL6005-T5





Technical Specifications

Type	Balcony Solar Mounting System
Application	Wall
Tilt Angle	10°-30° Adjustable
Material	AL6005-T5,Steel,SUS304
Panel Layout	Landscape (Horizontal)
Max Panel width	1150mm
Design Standard	AS/NZS 1170, DIN 1055,JIS C8955: 2017, EN 1991-1, IBC 2000
Warranty	10 year
Max wind Speed	30m/s
Max Snow Load	1.0KN/m ²
Color	Natural Silver or Black

System Components



Main Column

Length	Dimensions	Material
1300mm	33.5mm*50mm*1.5mm	AL6005-T5



Auxiliary Column

Length	Dimensions	Material
1300mm	29.5mm*39mm*1.1mm	AL6005-T5



Rail/PW-RA01

Length	Dimensions	Material
310mm	30mm*30mm*1.5mm	AL6005-T5



Rail/PW-RA01

Length	Dimensions	Material
290mm	26mm*25mm*1.5mm	AL6005-T5



Rail/PW-RA01

Length	Dimensions	Material
50mm	33mm*34mm	AL6005-T5





Balcony Mounting System Flat Roof Installation

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Tel: +86 757 8259 6536
E-mail: info@pvpowerway.com
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Japan Office

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Tel: +03 3373 1155

Philippines Office

Add: Unit 36-G San Lorenzo Tower, The Residences at Greenbelt
Esperanza Street, Legaspi Village, Makati City, Metro Manila, Philippines
Tel: +63 095 6685 0593

Malaysia Office:

Add: Atwater Residence Tower 2, Jalan Profesor Diraja, Ungku Aziz, Seksyen 13,
46200 Petaling Jaya, Selangor, Malaysia
Tel: 0060 1120786287

Chile Office:

Add: Calle La Gioconda 4300, Las Condes, Santiago, Chile

Taiwan Office:

Add: No. 38, Lane 37, Xingnan Road, Nanzi District, Kaohsiung, Taiwan



Section 1 – Instructions for protection

1 Warning

Section 2 – Introduction of the mounting system

2.1 Bill of Material

2.2 Effect Drawing

Section 3 – Installation Procedures

3.1 Introduction of the mounting system

3.2 The Main post and Sub post Installation

3.3 The Telescopic Rod Installation

3.4 The Module Installation

3.5 Multiple Module Installation distance

3.6 Torque of Bolts

Section 4 – Final assembly process

4.1 Tips for bolt installation

4.2 Check after installation

1. Warning

The balcony mounting system should be far away from flammable substances. The installer shall: Prevent fire near flammable or flammable goods.

When the fire has happened, you must first ensure the safety of the aluminum parts if allowed. The subsequent should be installed after inspection by a professional.

The parts of the system have been treated superficially, so damage must be avoided during installation and transport.

During installation, ensure the correct installation sequence, position and procedure, or the damage may have happened.

The connection of components should always be kept in good condition to avoid slipping and damage.

To prevent personal injury, the installer must take preventive measures before installation.

In order to prevent problems and accidents, assembly work must follow the instructions manual.

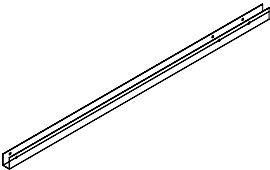
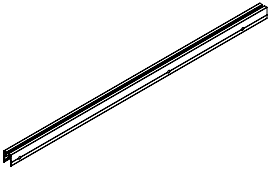
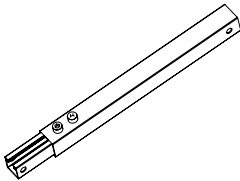
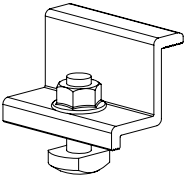
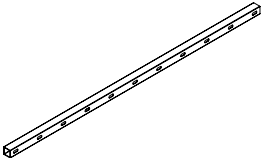
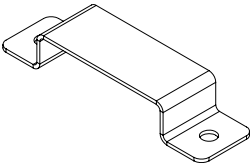
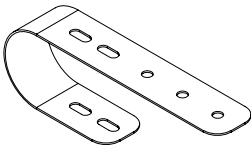
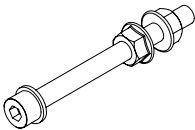
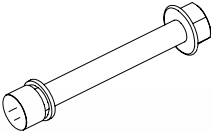
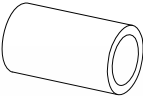
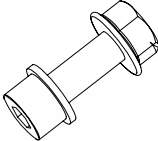
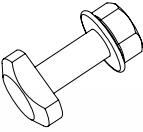
Do not install or operate the system if it is destroyed or contains too few components.

Installers should take care of their own safety during installation and troubleshooting and falling objects to avoid injury or bruising.

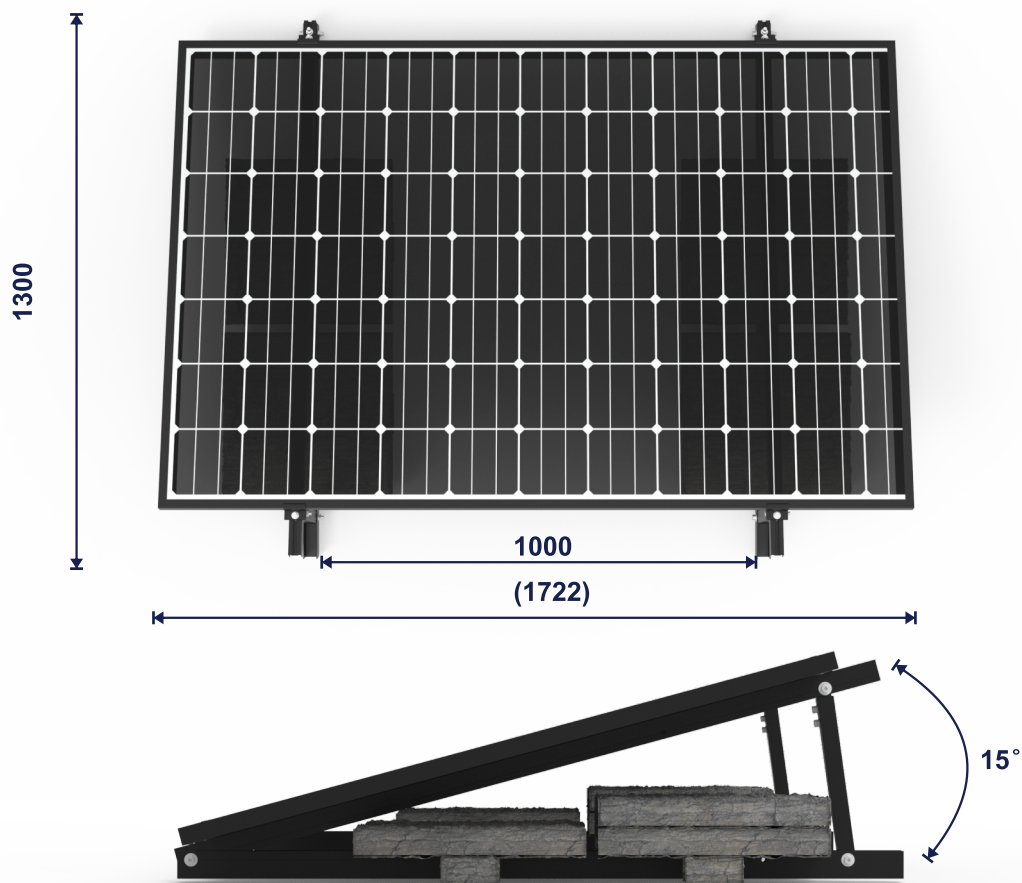
Ice, snow and dew on the surface of components should be removed before installation are disposed of on condition that their coatings are not destroyed.

The friction surface of the screws should be cleaned before installation. No dirt such as e.g. droplets, mud or greasy dirt.

2.1 Bill of Material

			
Main post×2	Sub post×2	Telescopic rod×2	Clamp×4
			
Cross arm×1 (Not use)	Hoop×2 (Not use)	Hook×2 (Not use)	Screw set 6×M8*90 (Not use)
			
Screw set 8×M8*50 (Use 6 × M8*50)	Casing pipe×2	Screw set 8×M8*20 (Use 4×M8*50)	Screw set 2×M8*25

2.2 Effect Drawing



3.1 Introduction of the mounting system

*The allowable roof inclination of the flat roof solar PV mounting system: the inclination is less than or equal to 5° is fixed with ballast; When the inclination is larger than 5°, additional fixed connection must be added between the guide rail and the building.

*Install inclination: 15° (the minimum inclination, the minimum ballast weight, Good resistance to wind loads).

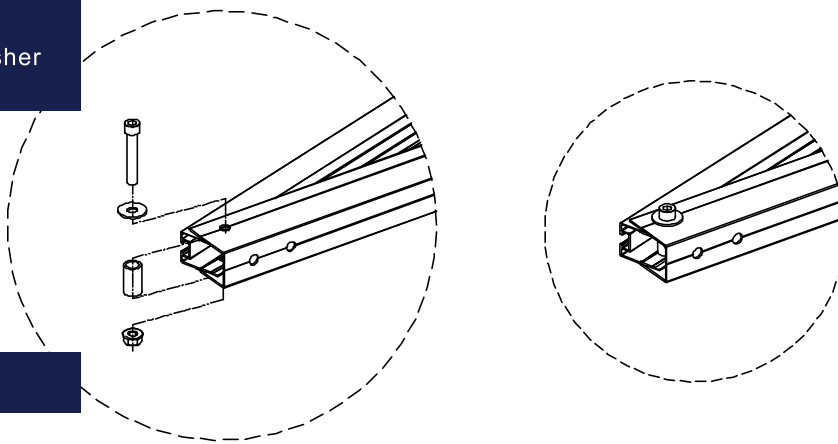
*The Powerway structural calculation only determines the carrying capacity of the Powerway mounting system and does not consider the load of the building. Before installing the mounting system, please confirm that the roof structure has sufficient residual load capacity. If there is roof insulation, we should consider the pressure to get rid of any damage of the insulation.

3.2 The Main post and Sub post Installation

At the connection between the main post and the sub post, use a set of M8 * 50 bolt through the casing pipe.

1×M8*50
1* bolt
1* large flat washer
1* nut

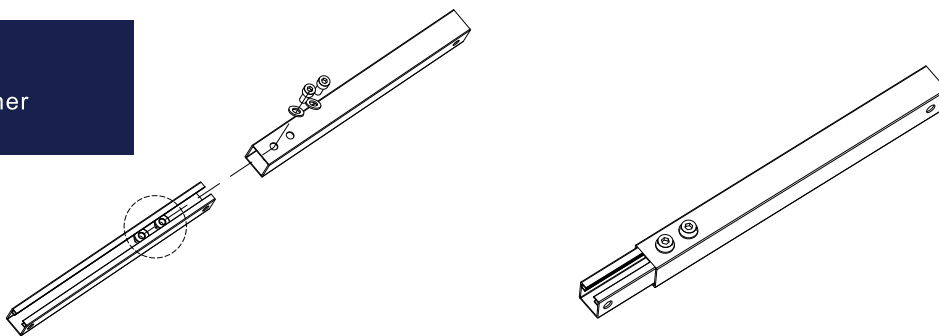
1×Casing pipe



3.3 The Telescopic Rod Installation

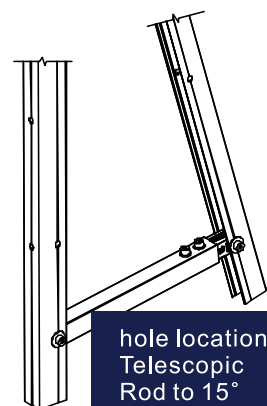
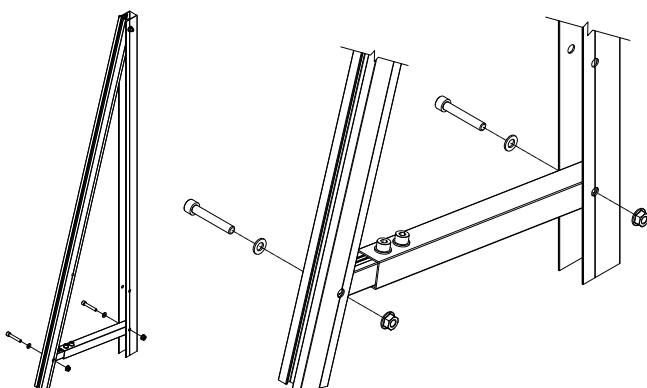
The nut can slide in the guide rail to select the appropriate length to determine the angle of the rack

2×M8*20
1* bolt
1* flat washer
1* nut



Install the telescopic rod on the main post and sub post with M8 * 50 bolt set

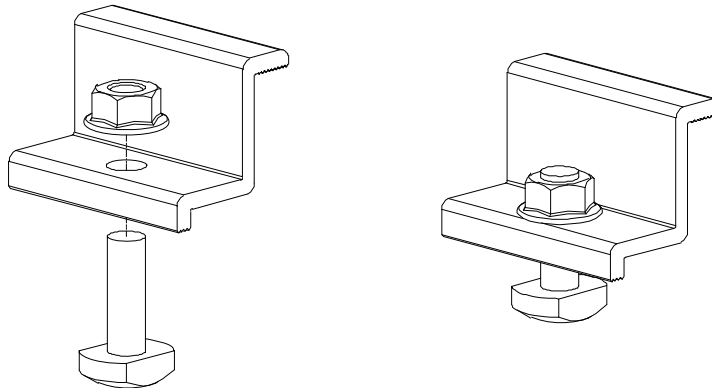
Mounting System Installation hole locations



hole locations, The
Telescopic
Rod to 15°

3.4 The Module Installation

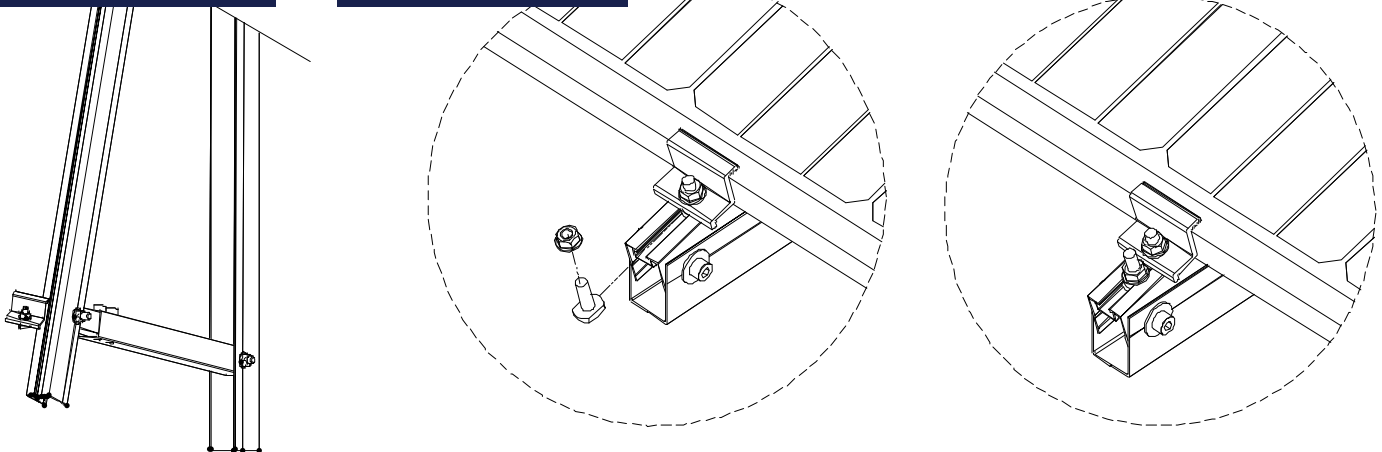
1×M8*25
1* bolt
1* nut



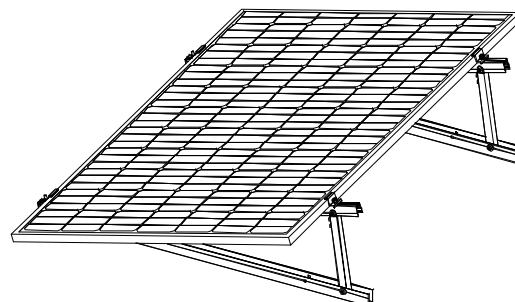
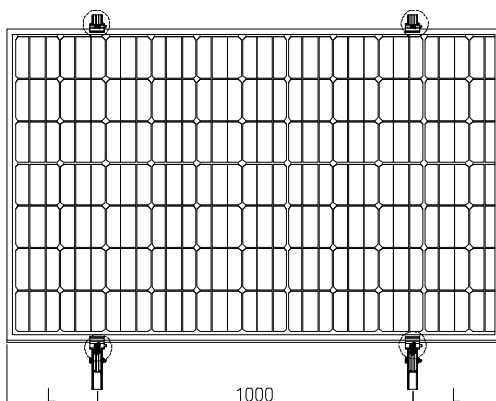
Install the clamp at the bottom of the sub post to prevent the module from sliding.
Install a group of bolts next to the lower side of the clamp to tighten the clamp to prevent slipping.

1× clamp
1* M8*25
1* bolt
1* nut

1×M8*25
1* bolt
1* nut

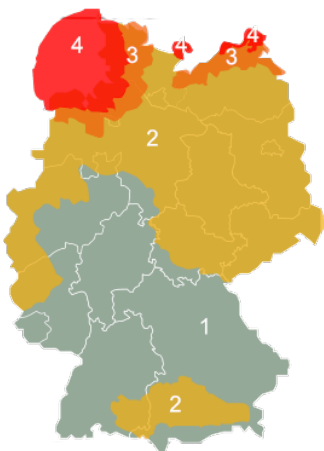


Place the module on the sub post, fix it around with clamp.
The post shall be uniformly arranged, and the position is shown in the below figure



3.5 Ballast configuration

Germany wind zone map



Windzone	V _{b,0}	q _{b,0}
WZ 1	22.5 m/s	0.32 kN/m²
WZ 2	25.0 m/s	0.39 kN/m²
WZ 3	27.5 m/s	0.47 kN/m²
WZ 4	30.0 m/s	0.56 kN/m²

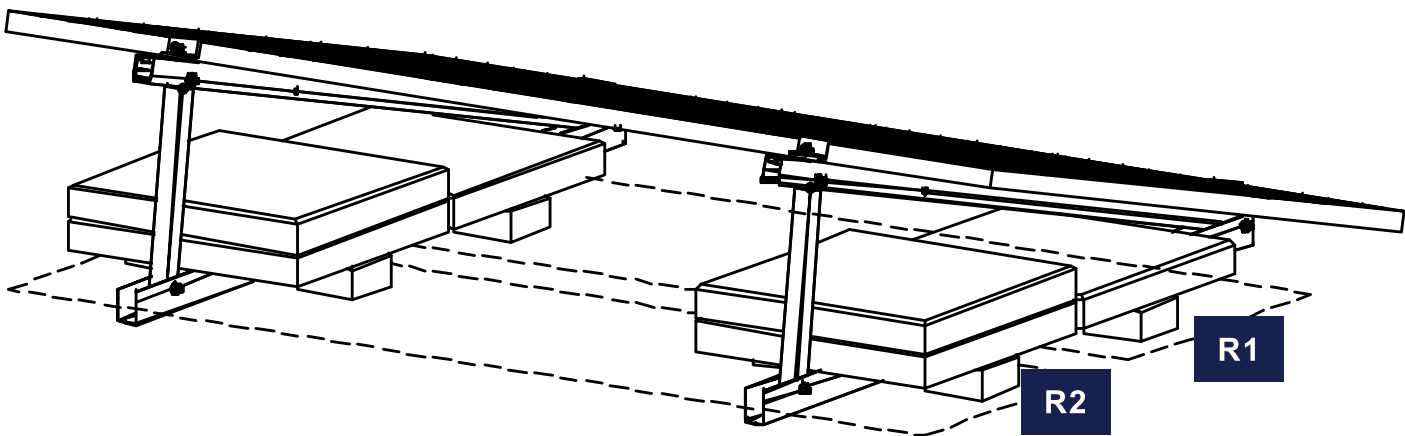
V_{b,0} = Basiswindgeschwindigkeiten
q_{b,0} = Geschwindigkeitsdricke

Terrain categories Table(EN 1991-1-4)

Terrain Category	
I	Sea or coastal area exposed to the open sea
II	Lakes or fiat and horizontal area with negligible vegetation andwithout obstacles
III	Area with low vegetation such as grass and isolated obstacles(trees, buildings) with separations of at least 20 obstacle heights
IV	Area with regular cover of vegetation or buildings or with isolatedobstacles with separations of maximum 20 obstacle heights (suchas villages suburban terrain, permanent forest)
V	Area in which at least 15 % of the surface is covered with buildingsand their average height exceeds 15 m

Design use area: V. at 10m mounting height

The configuration of the ballast.



* Each surface has different friction coefficient.

*Find the correct wind area for your location on the wind map;

*Select the required ballast for R1 and R2;

*Ballast(Not included in delivery, available in the construction market):

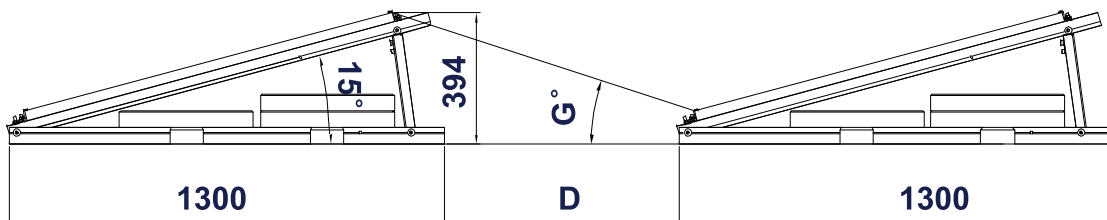
Suggested 400*400*50 mm concrete blocks (Weight: 19.2 KG)

Suggested 100*100*50 mm concrete pad blocks: 8pcs

* If you use Ballast of different sizes and thus another weight, you need to adjust the number of Ballast to get the right weight.

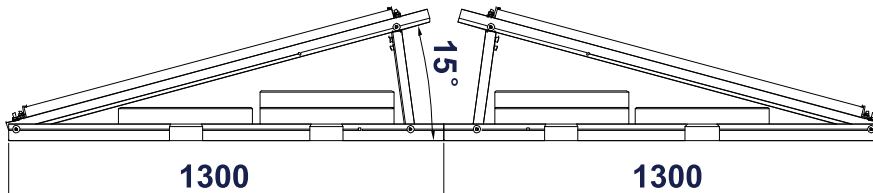
Flat Roof: Bitumen· concrete		
Wind zone	R1 Ballast	R2 Ballast
Wind zone 1(22.5m/s)	38.4kg	62kg
	2pcs	3.5pcs
Wind zone 2(25m/s)	38.4kg	86kg
	2pcs	4.5pcs
Wind zone 3(27.5m/s)	38.4kg	111kg
	2pcs	6pcs
Wind zone 4(30m/s)	38.4kg	140kg
	2pcs	7.5pcs

3.6 Multiple Module Installation distance



South-facing

*G=18° , D=700mm (Recommended value· Avoid shadow occlusion);



3.7 Torque of Bolts

Bolt	Torque(N*m)
M8*20	8-10
M8*25	8-10
M8*50	8-10
M8*90	8-10

4.1 Tips for bolt installation

Tips for bolt installation

*Precautions for technical installation dimensions.

The specific size of technical installation depends on the technical design drawings. This installation manual is only applicable to explain the installation method of the product.

* Precautions when installing stainless steel fasteners.

Reduce friction coefficient:

1. Ensure that the thread surface is clean (for example, free of sand and dirt);
2. It is recommended to apply water wax or add lubricant (e.g.butter, 40 # engine oil);

Correct operation method:

1. It must be tightened perpendicular to the thread axis Tendentious;
2. During tightening, the force must be uniform and tightened .The torque shall not exceed the specified safety torque value;
3. Use torque wrench or socket wrench as often as possible to avoid using adjustable wrench or electric wrench; If you use an electric wrench, try to slow down.
- 4.Avoid using at high temperatures, do not turn quickly when using.

4.1 Check after installation

Check after installation

It must check the condition of all components and parts after completion of assembly or fixed assembly:

- *Check for damage.
- *Check if anything is forgotten during assembly.
- *Check that all bolts are securely closed.
- *Check whether all assembled modules match.
- *Clean the construction site after assembly.

Warning: Before wiring, the structural condition of the installed system must be checked. Before construction of junction box and other electrical equipment to be installed .The fixing system must be confirmed by the technician.

Daily maintenance

In order to ensure the reliable operation of the PV support and improve the safety of the equipment, a daily registration and inspection system is established in the daily operation and maintenance work.

Daily inspection items list (example table)

Item	Content	Time	Result	
Clamp	Whether the clamps are loose		Checked exception	
			Check normal	
Connector	Whether the bolts are loose		Checked exception	
			Check normal	
Stand	Whether the stand components are deformed		Checked exception	
			Check normal	



(bolts are loose)

Warning: The mounting system is installed on the original building railing structure. In addition to the regular maintenance of the mounting structure, the user must also check and maintain the railing structure at the same time to ensure the safe operation of the whole system structure.



Balcony Mounting System Wall Installation

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Add(Chancheng): E-17 Floor, Foshan New & Hi-tech zone Technology Industrial Park,
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Tel: +86 757 8259 6536
E-mail: info@pvpowerway.com
Web: www.pvpowerway.com

Czech Republic Subsidiary

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Japan Office

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Tel: +03 3373 1155

Philippines Office

Add: Unit 36-G San Lorenzo Tower, The Residences at Greenbelt
Esperanza Street, Legaspi Village, Makati City, Metro Manila, Philippines
Tel: +63 095 6685 0593

Malaysia Office:

Add: Atwater Residence Tower 2, Jalan Profesor Diraja, Ungku Aziz, Seksyen 13,
46200 Petaling Jaya, Selangor, Malaysia
Tel: 0060 1120786287

Chile Office:

Add: Calle La Gioconda 4300, Las Condes, Santiago, Chile

Taiwan Office:

Add: No. 38, Lane 37, Xingnan Road, Nanzi District, Kaohsiung, Taiwan



Section 1 – Instructions for protection

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2.2 Tools of Material

2.3 Effect Drawing

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3.2 The Main post and Sub post Installation

3.3 The Telescopic Rod Installation

3.4 Mounting System Installation on wall

3.5 The Module Installation

3.6 Torque of Bolts

Section 4 – Final assembly process

4.1 Tips for bolt installation

4.2 Check after installation

1. Warning

The balcony mounting system should be far away from flammable substances. The installer shall: Prevent fire near flammable or flammable goods.

When the fire has happened, you must first ensure the safety of the aluminum parts if allowed. The subsequent should be installed after inspection by a professional.

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During installation, ensure the correct installation sequence, position and procedure, or the damage may have happened.

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To prevent personal injury, the installer must take preventive measures before installation.

In order to prevent problems and accidents, assembly work must follow the instructions manual.

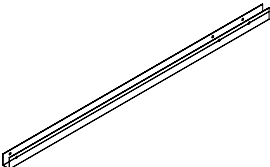
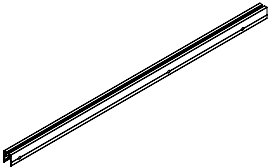
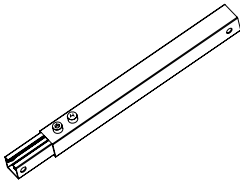
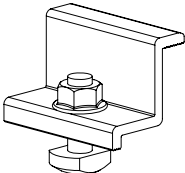
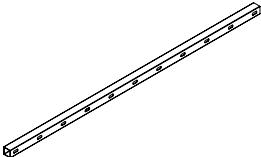
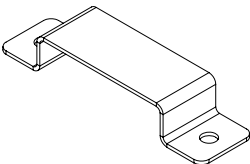
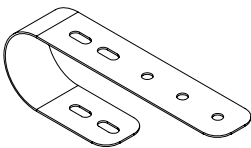
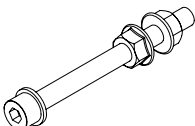
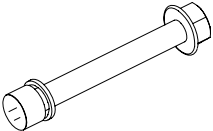
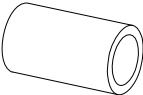
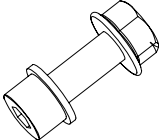
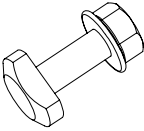
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Installers should take care of their own safety during installation and troubleshooting and falling objects to avoid injury or bruising.

Ice, snow and dew on the surface of components should be removed before installation are disposed of on condition that their coatings are not destroyed.

The friction surface of the screws should be cleaned before installation. No dirt such as e.g. droplets, mud or greasy dirt.

2.1 Bill of Material

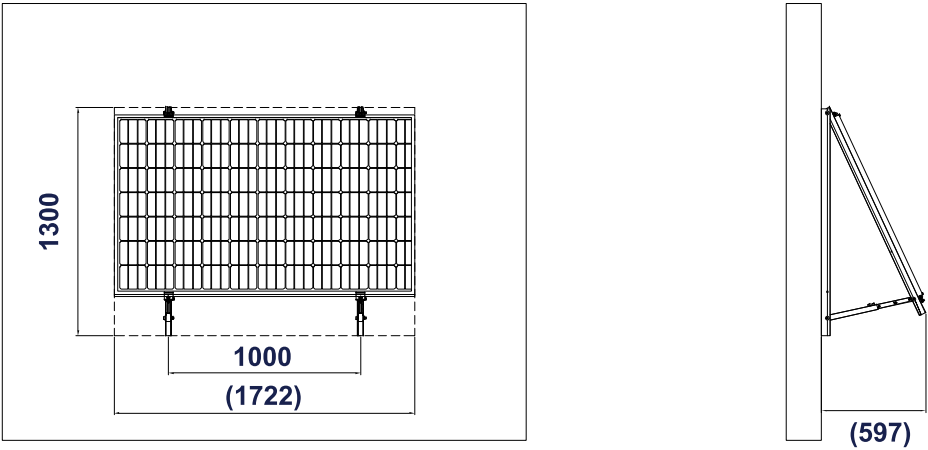
			
Main post×2	Sub post×2	Telescopic rod×2	Clamp×4
			
Cross arm×1 (Not use)	Hoop×2 (Not use)	Hook×2 (Not use)	Screw set 6×M8*90 (Not use)
			
Screw set 8×M8*50 (Use 6 × M8*50)	Casing pipe×2	Screw set 8×M8*20 (Use 4×M8*50)	Screw set 2×M8*25

2.2 Bill of Material (Not included in delivery)

			
Expansion Bolts 4× M8*70	Electric Drill	Drill(diameter 12)	Hammer

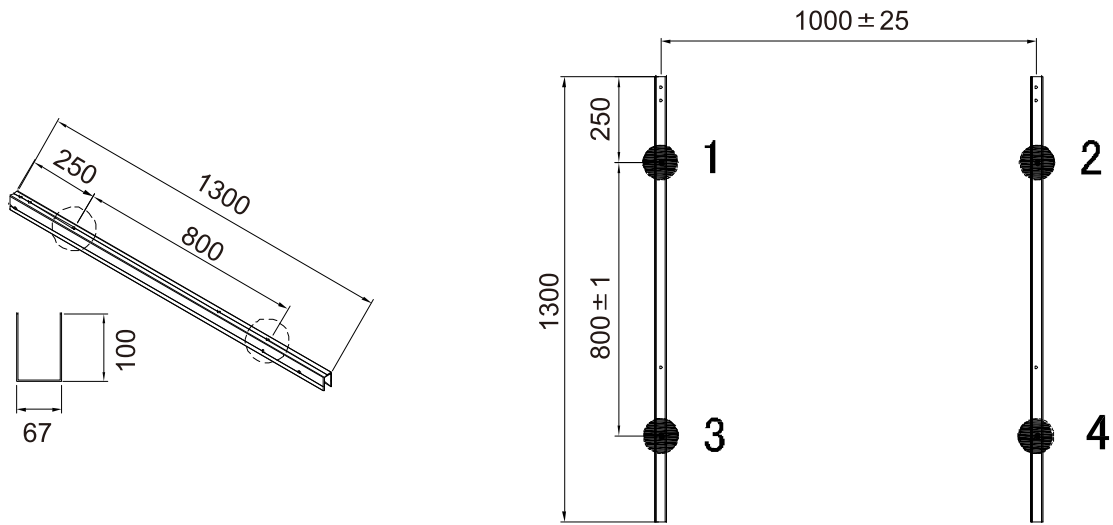
WARNING: The specifications of expansion bolts are the conventional recommended types. Users need to confirm whether the wall is suitable for fixing with expansion bolts and the load-bearing capacity meets the requirements of fixed photovoltaic systems.

2.2 Effect Drawing

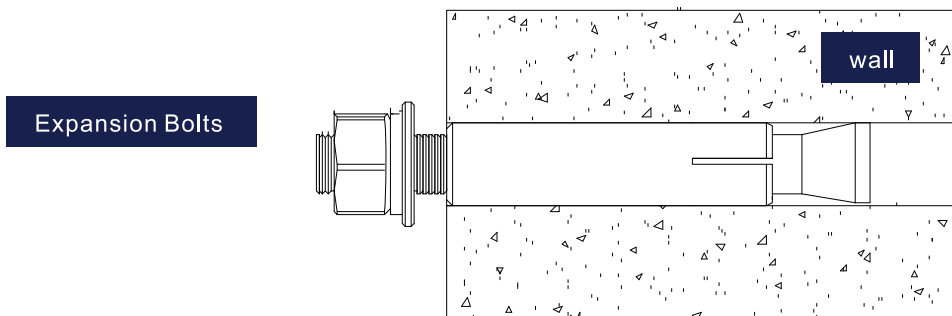


3.1 Expansion Bolts Installation

According to the location dimensions (800*1000) as shown below, use the Main post component of the bracket as an auxiliary positioning tool. Position and mark 4 holes on the wall. Select a 12mm diameter drill bit and use an electric drill to drill to a depth of 70mm (the same as the bolt length).

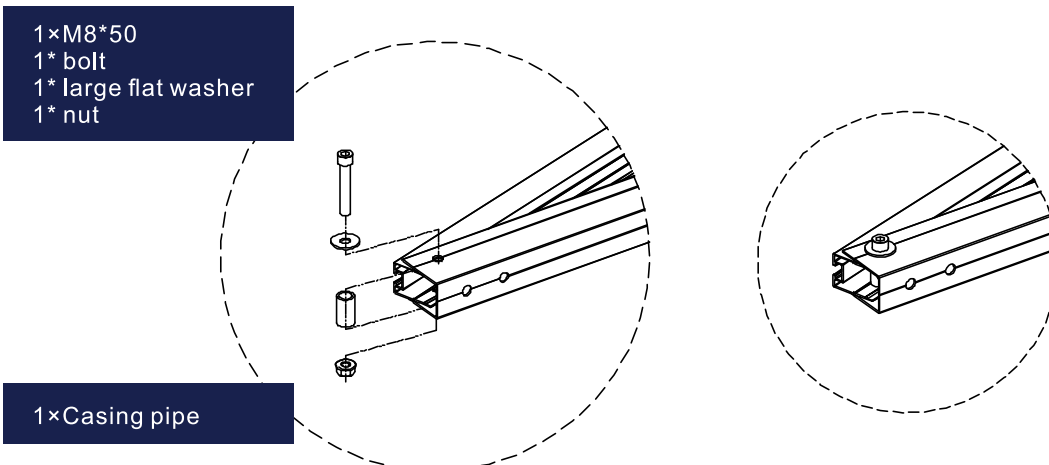


Place the expansion bolt set in the hole (do not unscrew the nut to prevent the bolt from falling into the hole and being unable to be removed due to drilling too deep), and hammer the expansion bolt to the depth as shown below.



3.2 The Main post and Sub post Installation

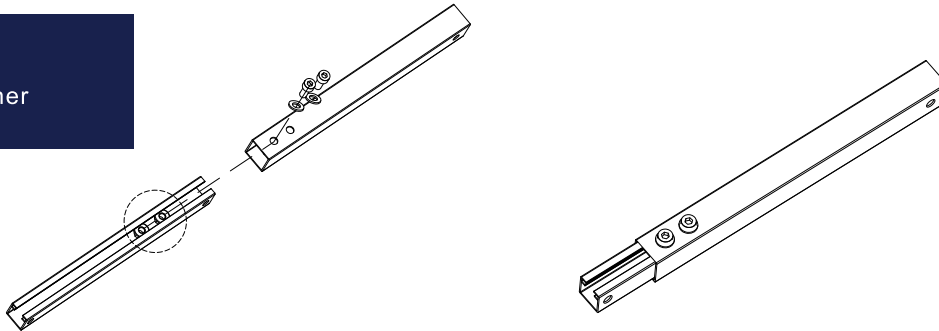
At the connection between the main post and the sub post, use a set of M8 * 50 bolt through the casing pipe.



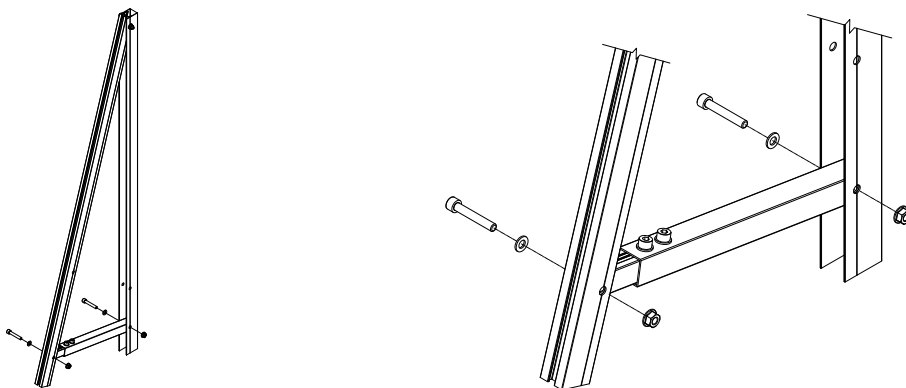
3.3 The Telescopic Rod Installation

The nut can slide in the guide rail to select the appropriate length to determine the angle of the rack

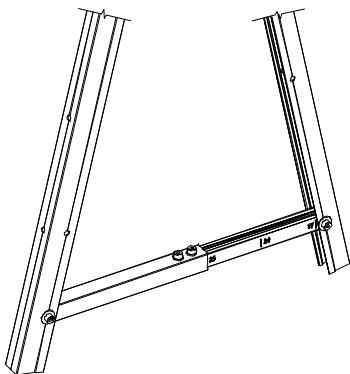
2×M8*20
1* bolt
1* flat washer
1* nut



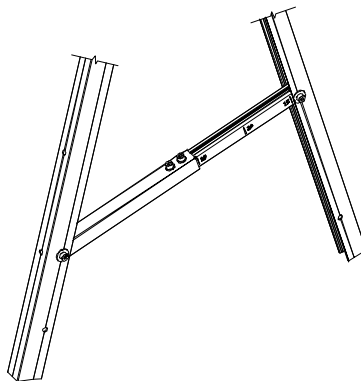
Install the telescopic rod on the main post and sub post with M8 * 50 bolt set



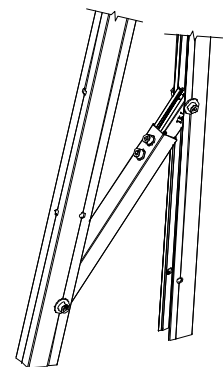
Mounting System Installation hole locations



15° -25° hole locations (normal)

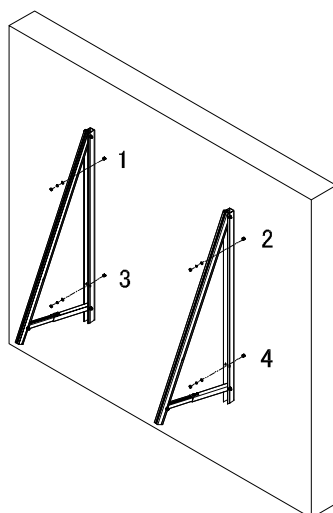


30° hole locations (optional)

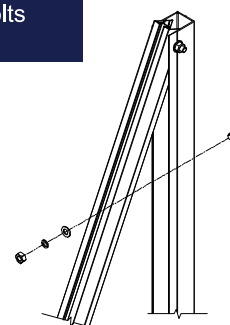


10° hole locations (optional)

3.4 Mounting System on wall Installation

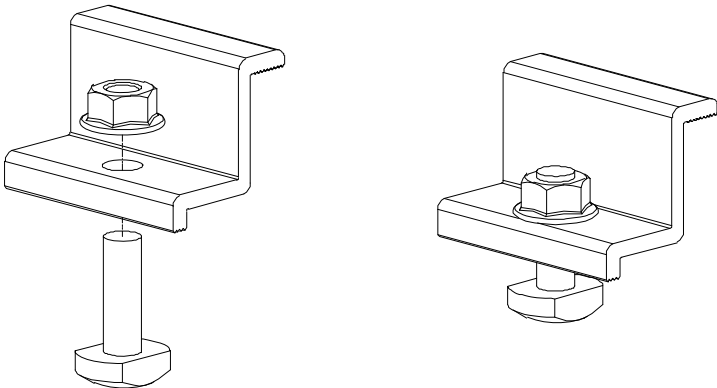


Expansion Bolts
4× M8*70



3.5 The Module Installation

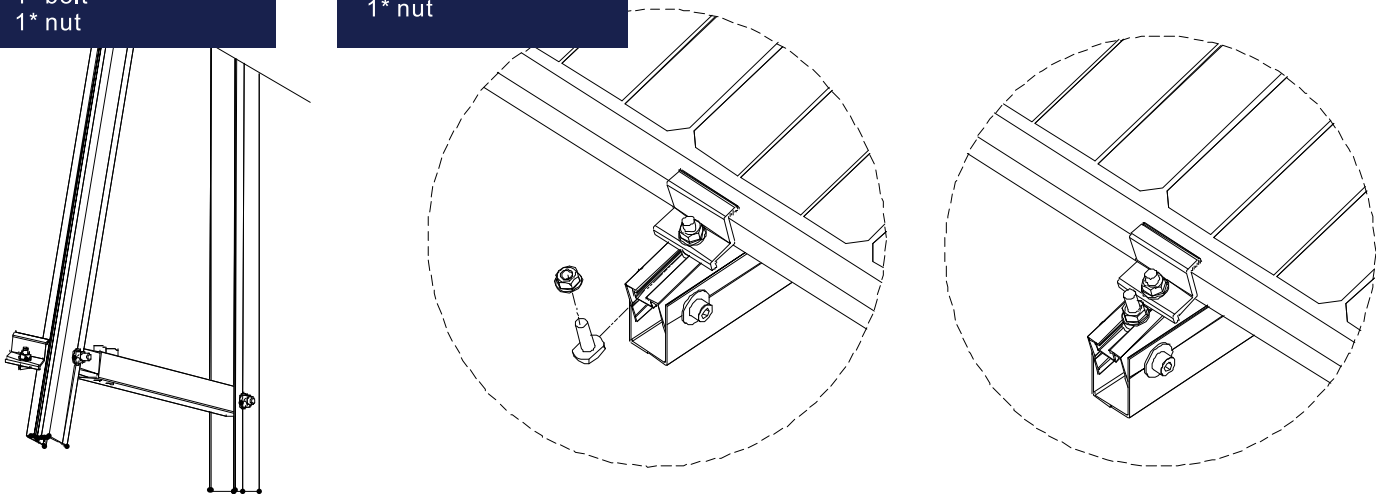
- 1×M8*25
- 1* bolt
- 1* nut



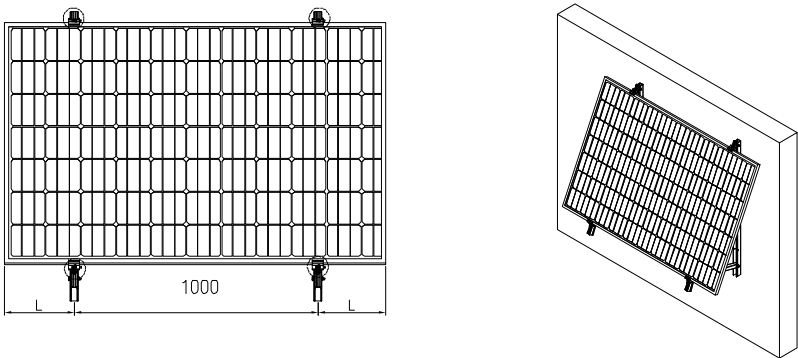
Install the clamp at the bottom of the sub post to prevent the module from sliding.
Install a group of bolts next to the lower side of the clamp to tighten the clamp to prevent slipping.

- 1× clamp
- 1* M8*25
- 1* bolt
- 1* nut

- 1×M8*25
- 1* bolt
- 1* nut



Place the module on the sub post, fix it around with clamp.
The post shall be uniformly arranged, and the position is shown in the below figure



3.6 Torque of Bolts

Bolt	Torque(N*m)
M8*20	8-10
M8*25	8-10
M8*50	8-10
M8*90	8-10

4.1 Tips for bolt installation

Tips for bolt installation

*Precautions for technical installation dimensions.

The specific size of technical installation depends on the technical design drawings. This installation manual is only applicable to explain the installation method of the product.

* Precautions when installing stainless steel fasteners.

Reduce friction coefficient:

1. Ensure that the thread surface is clean (for example, free of sand and dirt);
2. It is recommended to apply water wax or add lubricant (e.g.butter, 40 # engine oil);

Correct operation method:

1. It must be tightened perpendicular to the thread axis Tendentious;
2. During tightening, the force must be uniform and tightened .The torque shall not exceed the specified safety torque value;
3. Use torque wrench or socket wrench as often as possible to avoid using adjustable wrench or electric wrench; If you use an electric wrench, try to slow down.
- 4.Avoid using at high temperatures, do not turn quickly when using.

4.1 Check after installation

Check after installation

It must check the condition of all components and parts after completion of assembly or fixed assembly:

- *Check for damage.
- *Check if anything is forgotten during assembly.
- *Check that all bolts are securely closed.
- *Check whether all assembled modules match.
- *Clean the construction site after assembly.

Warning: Before wiring, the structural condition of the installed system must be checked. Before construction of junction box and other electrical equipment to be installed .The fixing system must be confirmed by the technician.

Daily maintenance

In order to ensure the reliable operation of the PV support and improve the safety of the equipment, a daily registration and inspection system is established in the daily operation and maintenance work.

Daily inspection items list (example table)

Item	Content	Time	Result	
Clamp	Whether the clamps are loose		Checked exception	
			Check normal	
Connector	Whether the bolts are loose		Checked exception	
			Check normal	
Stand	Whether the stand components are deformed		Checked exception	
			Check normal	



(bolts are loose)

Warning: The mounting system is installed on the original building railing structure. In addition to the regular maintenance of the mounting structure, the user must also check and maintain the railing structure at the same time to ensure the safe operation of the whole system structure.