INSTALLATION INSTRUCTION

Hanger Bolt + L Feet + Rail







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I. Safety Precautions

Thank you for purchasing Antai solar mounting system products. Please refer to this installation instruction before installation, operation, maintenance, and inspection.

• General considerations

The installation is limited to those who have professional experience and can carry out installation according to the specified instructions.

Please abide by the local national or local building regulations and environmental protection regulations.

Please comply with the regulations on the prevention of industrial accidents and the relevant regulations of the insurance union.

Please wear safety clothes. (Especially protective helmets, work boots and gloves)

There must be at least 2 operators during installation to prevent accidents. Please always prepare at least one installation manual when installing.

When working at heights, please set up scaffolds and carry out installation after eliminating the danger of falling. Please use gloves and seat belts.

- In order to prevent accidents and failures, please do not arbitrarily change the product specifications.
- Please pay attention to the profile section and sharp parts, and avoid collision and injury during installation.
- Please pay attention to tightening the bolts, nuts, self-tapping screws, etc. of each part, and pay great attention to whether they are locked.
- When working on electrical wiring works, please pay attention not to touch the profile section, which may damage the wiring.

Please do not use damaged, faulty, or deformed products in case injury or accident happens.

Requirement

- Please use the accessories designated by Antai for construction parts, and do not arbitrarily transform and change the products.
- Please avoid hitting strongly on the profile as aluminum profile is easy to deform and scratch.
- This information is related to the installation of the system. Please consider the characteristics of the stand during the construction of the foundation, components, inverter, and electrical wiring.



II. Instruction

Antai Hanger Bolt Solar Mounting System is a roof photovoltaic support system applied to the roofs. The whole system is including just few accessories, which saves the user's installation time and costs. It is an efficient solution for large-scale metal roof projects.

Please read this installation manual carefully before installation.

		C NE NE		
8mm Inner Hexagon Spanner	Electric Drill	Tape Measure	Thin Marker	
Torque	String	Adjustable	Rope (M8)	
Spanner		Wrench		

III. Tools



IV. Components

Main components				
	0			
Rail	Rail splice	L feet	Hanger bolt	
End clamp	Mid clamp	Grounding lug		



V.Installation introduction

5.1 Hanger bolt installation

Firstly, determine the installation position of hanger bolts according to the shop drawings, and align the strings to ensure that the hanger bolts are on the same line, then mark the positions on metal roof, and install the hanger bolts according to the marks, lastly tighten them with flange nuts.

5.1.1 Positioning the roof purlins

Positioning the hanger bolts on the metal roof above purlins, align the string to line up, and mark the installation positions, then proceed the pre-drilling in the fixed positions, and fix hanger bolt to the purlins. (Steel Purlins need pre-drilling, wooden purlins do not need pre-drilling).



Installation of hanger bolt is as below:





5.1.2 The hanger bolts are installed to the metal roof as shown in below picture:



5.2 Rail Installation

Fix the L feet on the hanger bolt firstly, then adjust the length and height of the rail and fix it on the L feet, finally fasten the bolts & nuts.

5.2.1 Put the hanger bolt through the bottom hole of L feet, pay attention to the direction of the L feet, and fix the L feet to the hanger bolt by tightening the flange nut.



5.2.2 After fixing the L feet on the hanger bolt, adjust the height of the rails, slide the rail into the T module (rail nut) of L feet, and tightening the bolts after adjusting the length. Rail length shall be selected according to corresponding drawings.





5.3 Rail Installation

Rails should be connected by rail splice if needed, as shown below:

5.3.1 Slide half of the rail splice into the first rail, adjust the fixed position, and tighten the bolt of one side. Slide the second rail into the other half of rail splice and tighten the bolt after aligned.



Used by CG010、TYN305、TYN355 rails etc. (Internal lock connection)



Use by TYN53、CG019、TYN28 rails etc. (External lock connection)

5.3.2 The installation is completed as shown below.





5.4 PV panels Installation

According to the installation dimensions of the drawings, place the PV panels on rails and fix them with the end clamps and mid clamps.



5.4.1 Place PV module on the rail and adjust position according to the drawing. Fix the end clamp with PV module by tightening the bolts.

	M8 hexagon so	cket screw	
	M8 spring wash	ner .	
	M8 flat washer		
	T module		



5.4.2 After first PV module installation, place the second PV module on the rail. Adjust the position and fix the first and the second module by mid clamp.





5.4.3 If there is an earthing clip required, place it in the middle of the module and the rail when install mid clamp. Adjust the position and tighten the bolt.





5.4.4 Install all PV modules following the above steps.





5.5 Grounding Lug Installation

(If no grounding lug is required, can also skip this step.)

5.5.1 Put the grounding lug on the edge slot of the rail as shown below, and fix it with bolts.



5.5.2 Connect each grounding lug at the edge with copper wires, fix the copper wires with M6 bolts, and ground the copper wires at the end.





5.6 View of the Installation

Top view





Axonometric view



VI. Notice

1. Installation dimension

The specific dimensions of engineering installation shall be subject to the engineering construction drawings. This installation instruction is only for the instruction of product installation method.

2. Attention for stainless steel fasteners installation

Because of the good ductility for stainless steel, the fasteners have big difference with carbon steel one in nature. If use in improper way, it will result in bolt and nut being "locked" which commonly known as "seizure". Prevention of lock basically has the following the basic prevention ways from locked. 2.1Reducing the friction coefficient:

(1) Ensure that the screw thread surface is clean (no contrast, clutter);

(2) Recommend that installation surface use water wax or add lubricant on surface during installation. (Such as butter, 40 # engine oil);

2.2The correct method of operation:

- A. Must be perpendicular to the axis of the screw thread when screwing, can never be tilt.
- B. In the process of tightening, the strength needs to be balanced, tightening torque shall not exceed the prescribed safety torque value;
- C. Choose torque wrench or socket wrench as far as possible, avoid using adjustable wrench or electric wrench.
- D. Do not use it when the temperature is high; do not use it with high speed spin; avoid to be locked by rapid rise of temperature. (Such as electric wrench, etc.

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