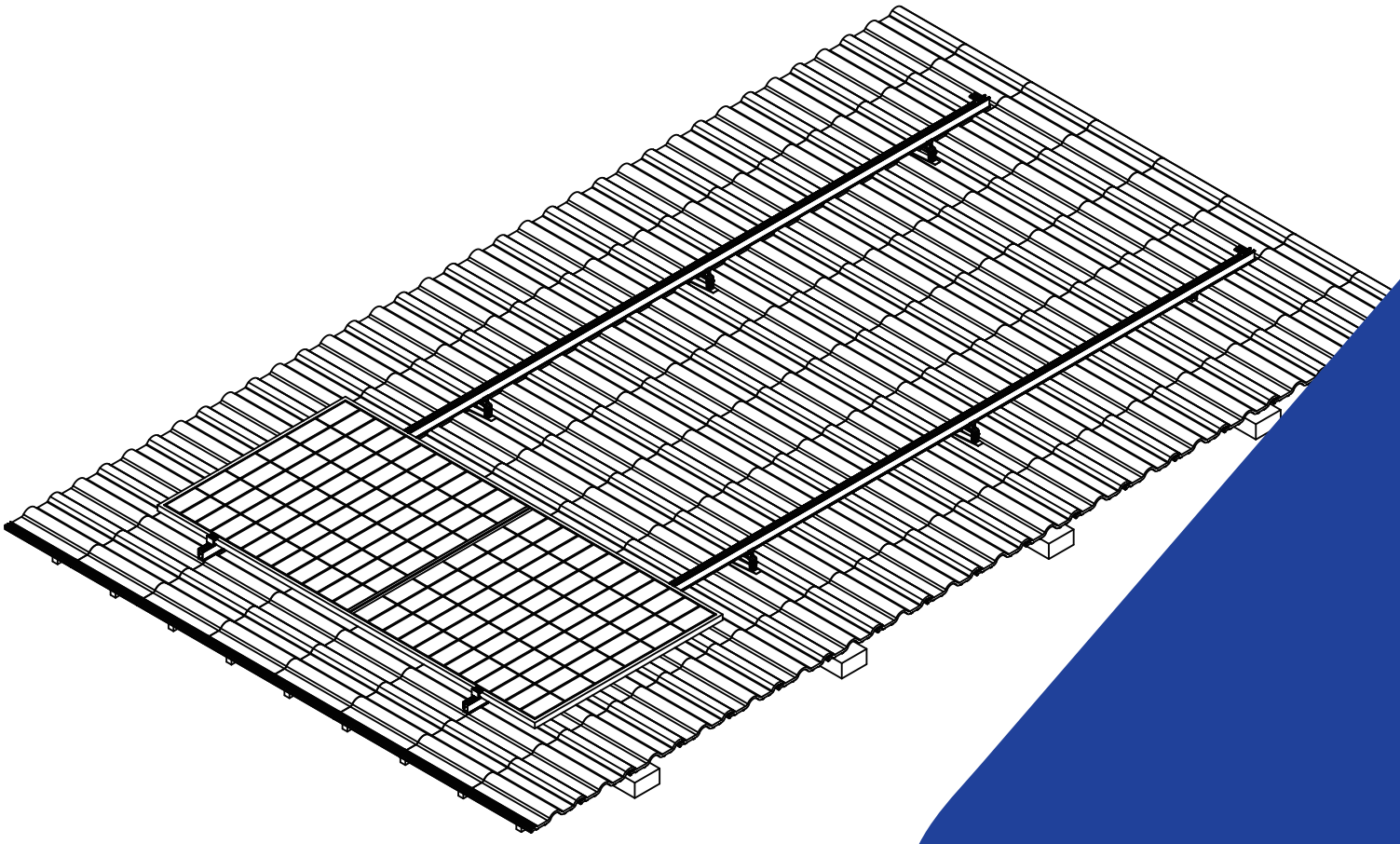
WOCHN
EASY MOUNTING SYSTEMS



INSTALLATION MANUAL

ALUMINUM HOOKS SOLAR MOUNT SYSTEM

WOCHN
EASY MOUNTING SYSTEMS

Content

Quality tested-several certifications

WOCHN Systems stands for secure connections, highest quality and precision. Our customers and business partners have known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components

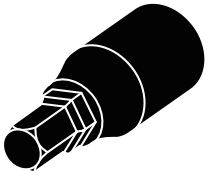
Please find our quality and product certificates under:

https://www.wochnmounting.com/

Disclaimer

This manual describes the proper installation procedures and provides minimum standard required for product reliability and warranty. This installation instruction is based on the state of the art and many years of experience in how our systems can be installed on site. Due to the many variables and requirements associated with a specific installation. Because of this, these instructions only serve as a guideline for the installation of the product described in this manual.

- The equipment may only be installed and operated by qualified and adequately trained installers.
- Prior to installation, ensure that the product complies with on-site static loading requirements
- National and local building regulations and environmental requirements must be adhered to.
- All work must comply with national, state and local installation procedures, product and safety standards.
- Compliance with health and safety regulations, accident prevention guidelines and applicable standards is required.
- Protective equipment such as safety helmet, boots and gloves must be worn.
- Validate foundation parameters prior to installation, We recommend consulting with a local engineer familiar with local regulations and build site requirements, including soil conditions, terrain and load criteria. All parameters may impact foundation requirements.
- At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- Failure to adhere to our general safety and assembly instructions and not using all system components,
- WOCHN is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitor’ s parts. Warranty is excluded in such cases.
- Dismantling of the system is performed in reverse order to the assembly
- The manual provides guidelines for installation, but it does not guarantee the quality of installation work. Please complete the installation in a responsible and professional manner.



8

10mm

NM

Torque Values

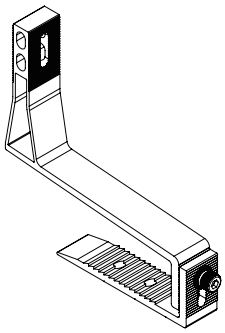
Fix the Aluminum Hook： 10N・m

Fix the Rotate TR Rail Fix Adapter: 10N・m

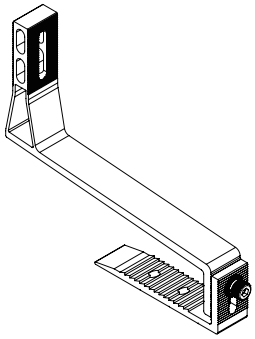
Connect the Rails with Rail Splice: 10N・m

Fix the Mid Clamp,End Clamp and Grounding Lug: 10N・m

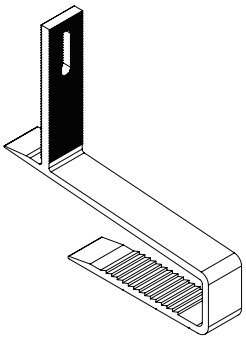
1.Side Lock Aluminum Hooks



· **WQ-AH-06**
Alu Hook 6#

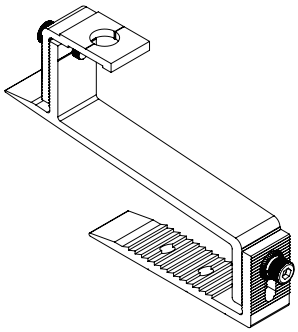


· **WQ-AH-08**
Alu Hook 8#



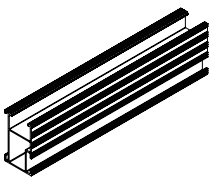
· **WQ-AH-09**
Alu Hook 9#

2.Top Lock Aluminum Hook

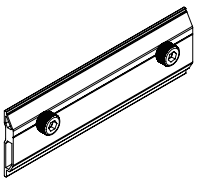


· **WQ-AH-07**
Alu Hook 7#

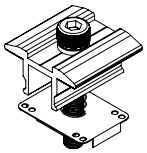
3.Universal Components



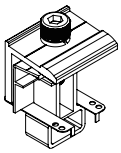
· **WQ-TR**
TR Rail



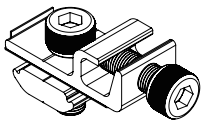
· **WQ-TR-RSK**
TR Rail Splice



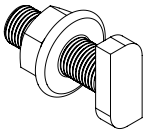
· **WQ-TRM-3035**
TR Mid Clamp



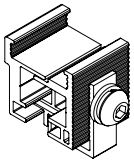
· **WQ-TRE-3035**
TR End Clamp



· **WQ-TR-GL**
TR Grounding Lug



· **WQ-TB20-0830/45**
20 Head T Bolt M8*30/45



· **WQ-TR-RA**
Rotate TR Rail Fix Adapter

Attachments Spacing Chart

Please use the following table to determine the attachments spacing for installation.

• Design code reference

The following engineering references were considered in determining the values of the wind load conditions and material properties of the aluminum rail.

- AS/NZS 1170.2:2011 Admt 3-2012
- AS 1664.1.1:1997 on aluminum structures

• Design criteria

The following parameters were considered in determining the values of the allowable span charts of the railing.

- Wind region A.B, C, D
- WIND TERRAIN Category 3
- PV modules to be flush installed on the roof
- Max building height 20m
- Max roof slope: 30 degree
- Max PV module: 2400x1200mm

Roof Angle(Φ) – Φ < 15°

	Building height H (m) Span Spacing(mm)		
	H≤10m	10<H≤15	15<H≤20
Wind zone	Internal zone	Internal zone	Internal zone
A	1570	1460	1370
B	1080	980	920
C	590	540	510
D	430	N/A	N/A

Roof Angle(Φ) –15°≤Φ≤30

	Building height H (m) Span Spacing(mm)		
	H≤10m	10<H≤15	15<H≤20
Wind zone	Internal zone	Internal zone	Internal zone
A	1730	1640	1570
B	1270	1150	1080
C	820	590	560
D	530	500	440

- IBC 2015 / CALIFORNIA BUILDING CODE 2016
- ASCE 7-10(wind loading)
- Aluminum Design: Aluminum Design Manual 2010

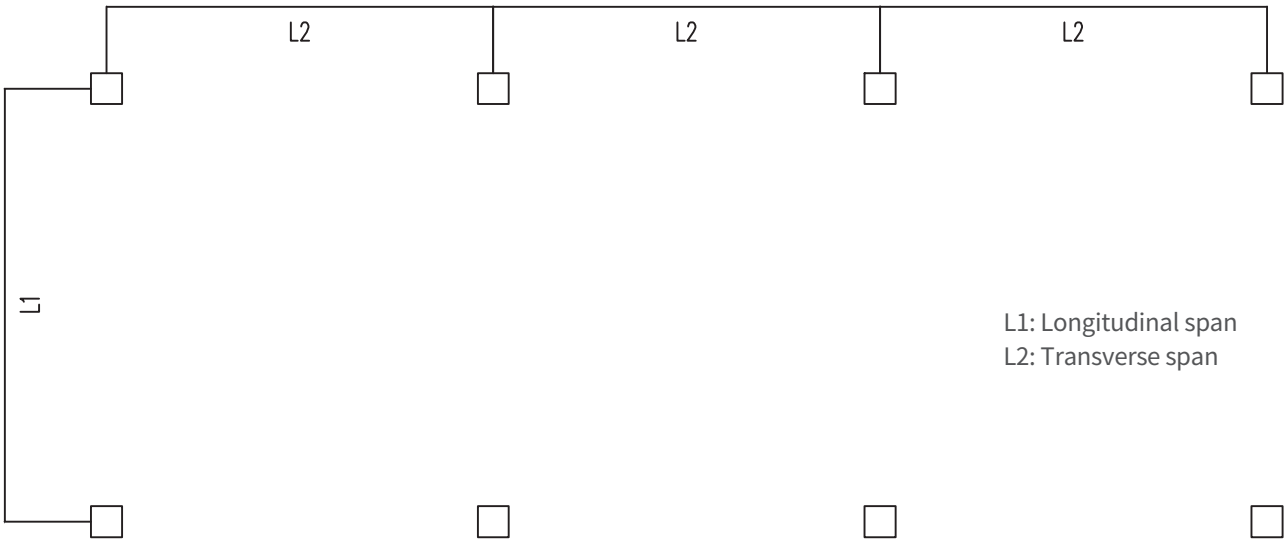
- Maximum Building Height Considered = 9m
- Exposure Categories Considered: B & C
- Wind Pressure Based on Section 30.4 (C&C Method 1)
- Gust Factor, G = 0.85
- Topography Factor, Kzt = 1.0
- Directionality Factor, Kd = 0.85
- Importance Factor, I = 1.0
- Maximum Cantilever of Railing from Anchor 12 Inches
- Tilt Angles Considered: 0 to 30 degrees

Ground Snow	Racking Max. Rail Span (mm) For Zone 2*					
	Exposure B Wind Speed (Mph)			Exposure C Wind Speed (Mph)		
Load (PSF)	110	130	150	110	130	150
0	1800	1800	1200	1800	1200	600
10	1800	1800	1200	1800	1200	600
20	1800	1800	1200	1800	1200	600
30	1800	1800	1200	1800	1200	600
40	1800	1800	1200	1800	1200	600
50	1800	1800	1200	1800	1200	600
60	1800	1800	1200	1800	1200	600
70	1200	1800	1200	1200	1200	600
80	1200	1800	1200	1200	1200	600
90	600	1800	1200	600	600	600

* Maximum Building Height Considered = 9m

1.Confirm the Aluminum Hooks Position

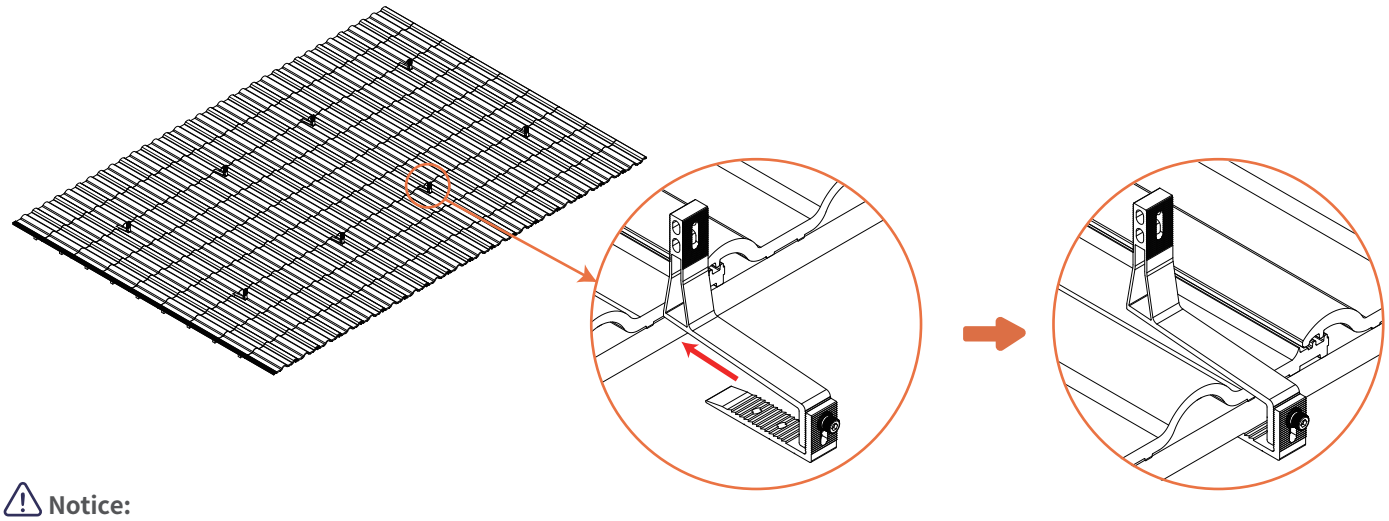
The spacing of L1 depends on the width of the Solar PV Panel.
The spacing of L2 depends on several factors including roof slope, roof height, wind speed and snow pressure. For specific location, please refer to the Spacing Chart.



L1: Longitudinal span
L2: Transverse span

2.Fix the Aluminum Hooks on the Roof

Clip the Aluminum Hook onto the roof, tighten the screw to secure the Hook to the roof.
Then repeat the above steps to install all Aluminum Hooks on the roof.



Notice:
Set the torque value to 10 N·m
Take 6# Aluminum Hook as an example, suitable for all Aluminum Hooks

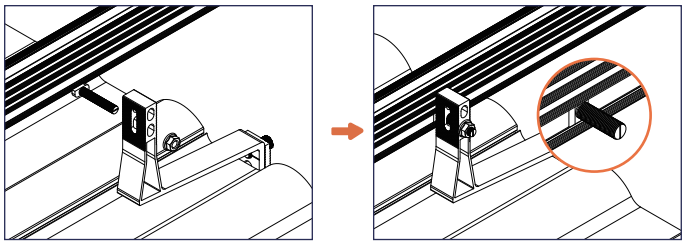
3.Install the Rails on the Aluminum Hooks

3.1 Side Lock Aluminum Hooks

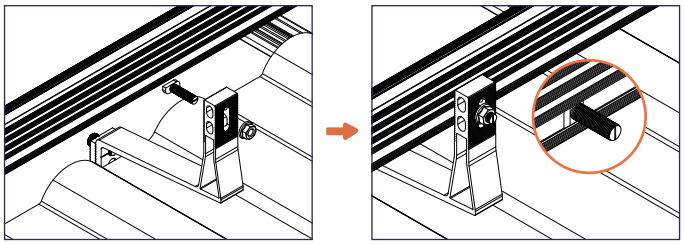
Take 6# Aluminum Hook as an example.
And the 6# and 8# Aluminum Hooks can be used for both landscape and portrait installment, while 9# Aluminum Hook can only be used for portrait installment.

Step 1: Select the correct hole position according to the layout (landscape or portrait),
and install the T Bolt on the Aluminum Hook（Don't tighten the screw）
Step 2: Insert the T Bolt horizontally into the Rail notch, and turn the T Bolt from horizontal to vertical. Then tighten the T Bolt so that the Rail is tightly fixed on the Aluminum Hook.

Landscape

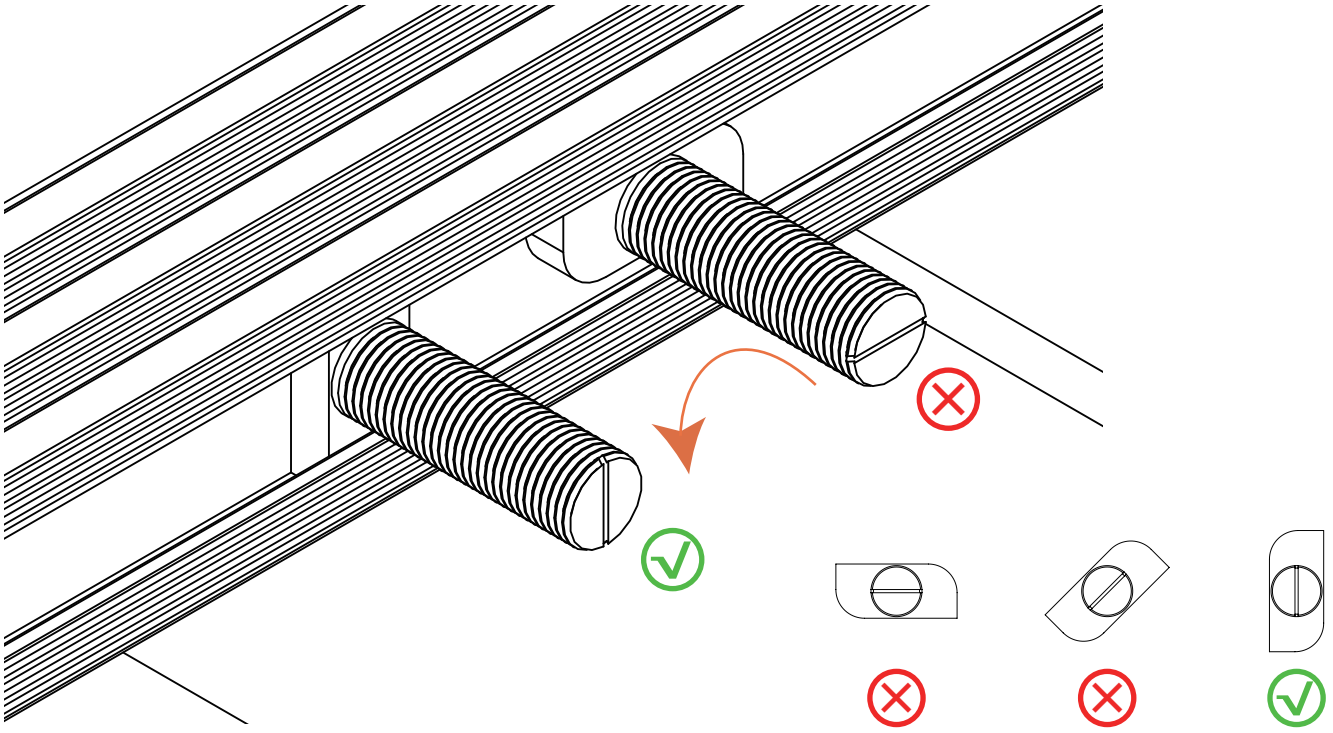


Portrait



⚠ **Notice:**

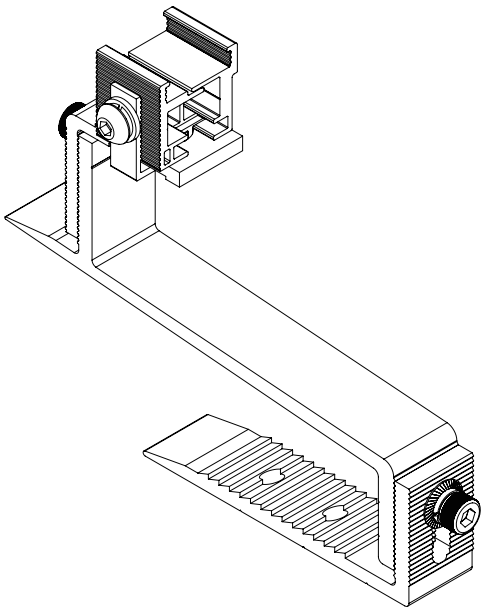
You can determine if the T Bolt is in the correct position by checking whether the mark on the top of the T Bolt is vertical.
Landscape: the size of the T Bolt is M8*45
Portrait: the size of the T Bolt is M8*30



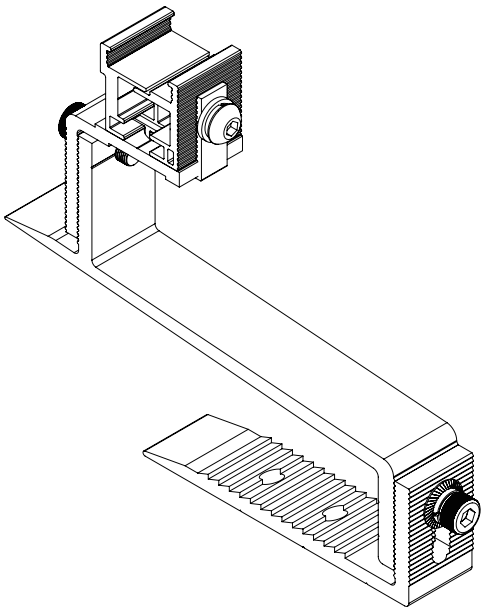
3.Install the Rails on the Aluminum Hooks

3.2 Top Lock Aluminum Hook

Step 1: Install the Rotate TR Rail Fix Adapter on the Aluminum Hook

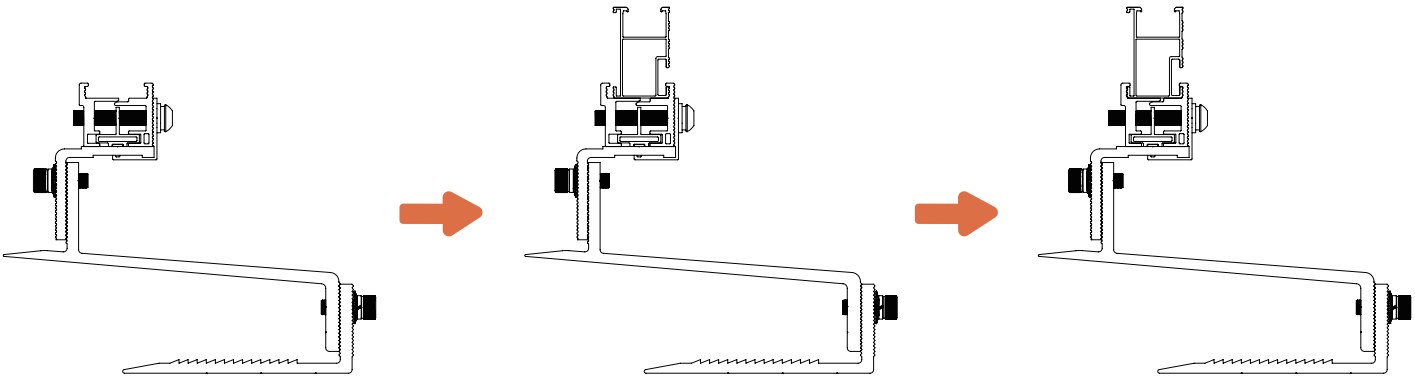


Landscape



Portrait

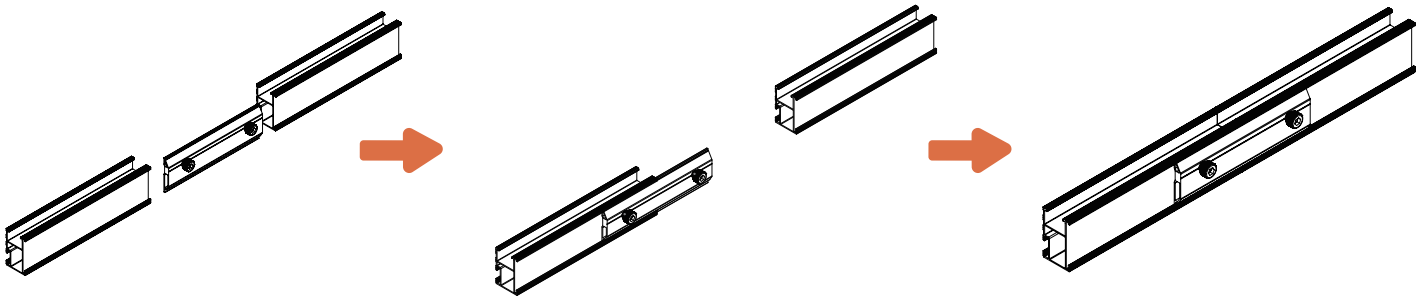
Step 2: Using the Rotate TR Rail Fix Adapter to fix the Rail
Place the Rail on the Rotate TR Rail Fix Adapter and tighten the screws to fix the Rail tightly.



3.Install the Rails on the Aluminum Hooks

3.3 Connect the Rails with Rail Splice

Place the two halves of the Rail Splice on the same side of two Rails and tighten the screws to connect the two Rails.Generally used in big arrays or when two Rails need to be connected.

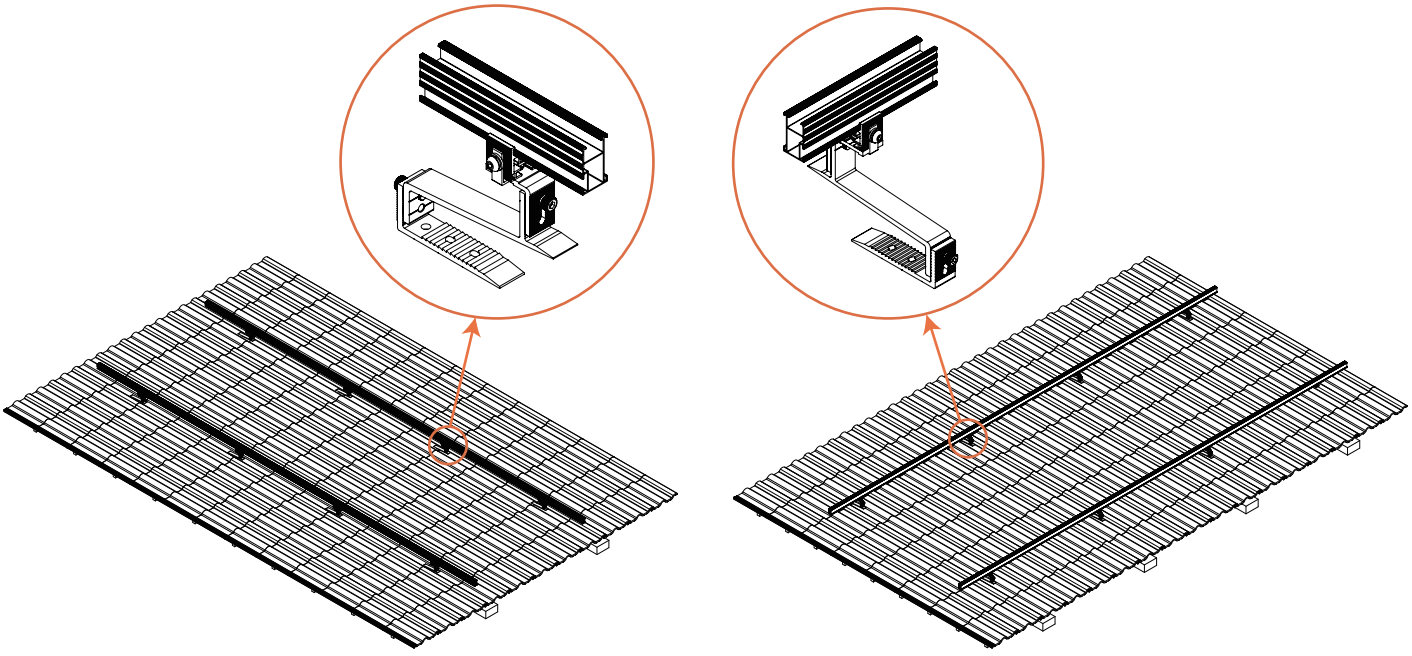


⚠ **Notice:** Set the torque value to 10 N·m

3.4 Install all Rails on the Aluminum Hooks

Select the appropriate installation method based on the Aluminum Hooks and components purchased, and repeat the above steps to install all the Rails on the Aluminum Hooks.

⚠ **Notice:** Take the 7# Aluminum Hook as an example, it is applicable to all Aluminum Hooks



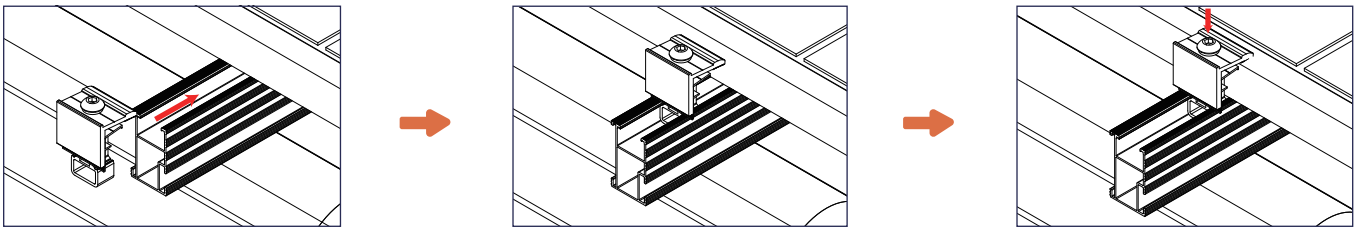
Landscape

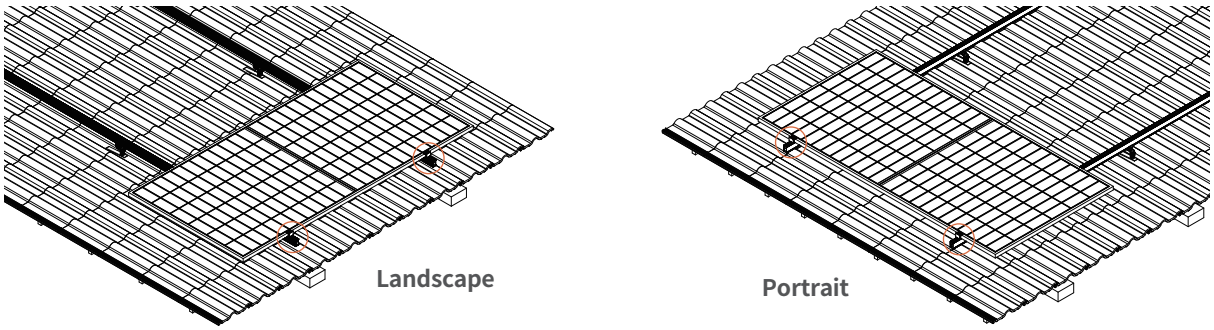
Portrait

4.Fix Solar PV Panels with End Clamps

When installing the first Solar PV Panel, first use the End Clamp to fix it.
Slide the End Clamp along the Rail notch, confirm that the Solar PV Panel is placed correctly, and then use the M8 hex wrench or electric drill to fix it.

⚠ **Notice:** Set the torque value to 10N · m



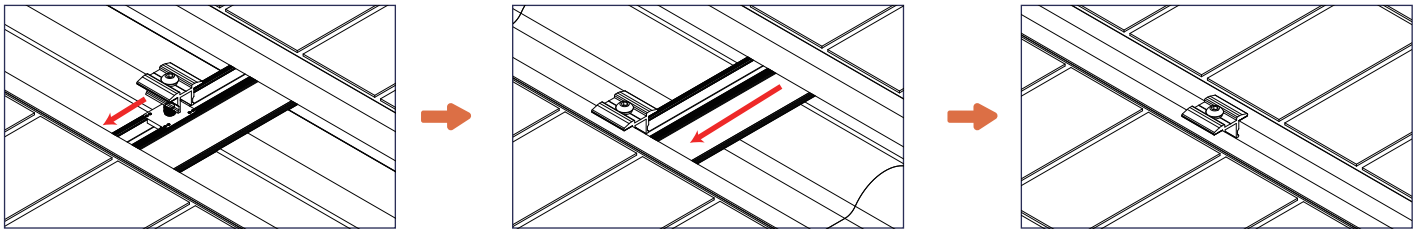


Landscape

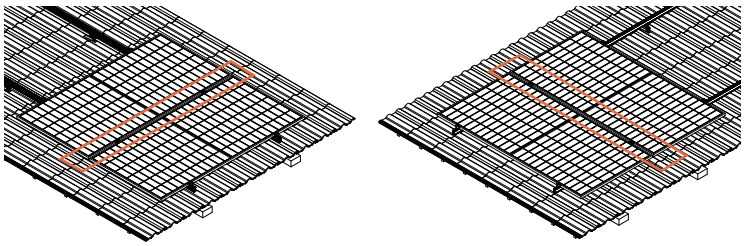
Portrait

5.Fix Solar PV Panels with Mid Clamps

Use two Mid Clamps to fix two Solar PV Panels, put the Mid Clamps into the Rail notch, confirm that the Solar PV Panels are aligned, then use M8 hex wrench or electric drill to fix them.
Repeat the above steps until the last Solar PV Panel is installed.

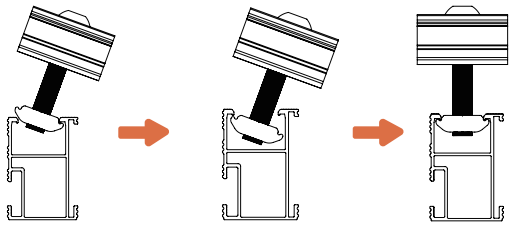


⚠ **Notice:** Set the torque value to 10N · m
How to fix the Mid Clamp



Landscape

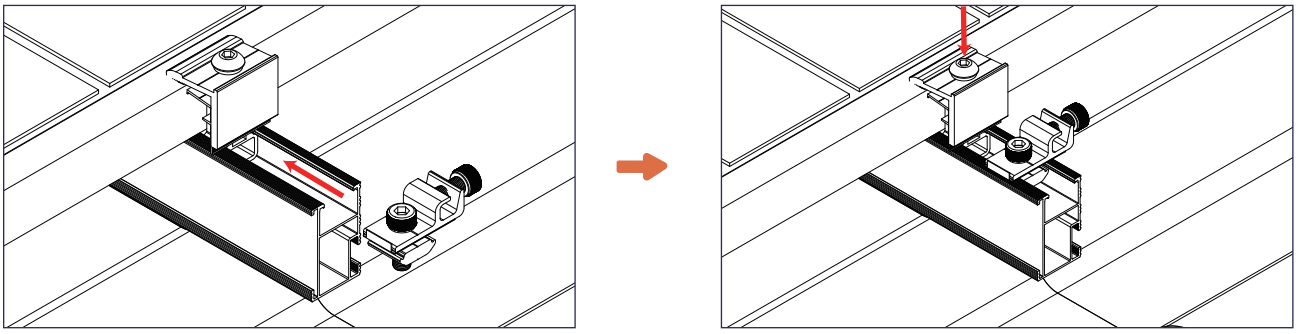
Portrait



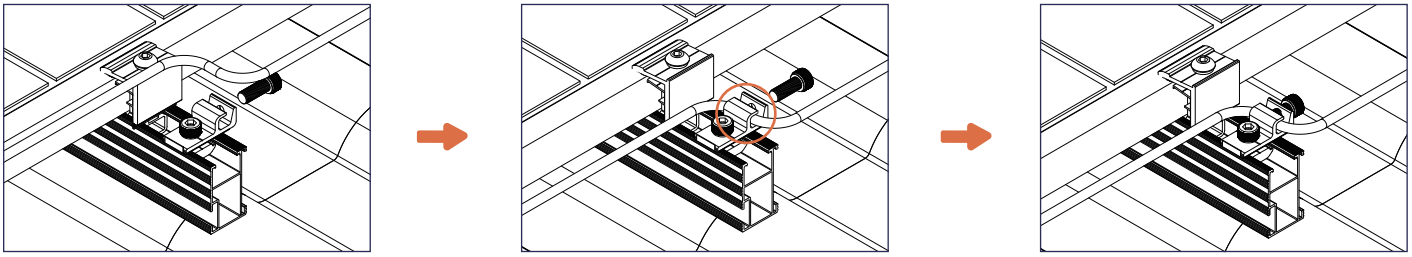
6.Install the Grounding Lugs and Cables

6.1 After the last Solar PV Panel is fixed by End Clamps, slide the Grounding Lug along the Rail notch and tighten the screw to fix it.

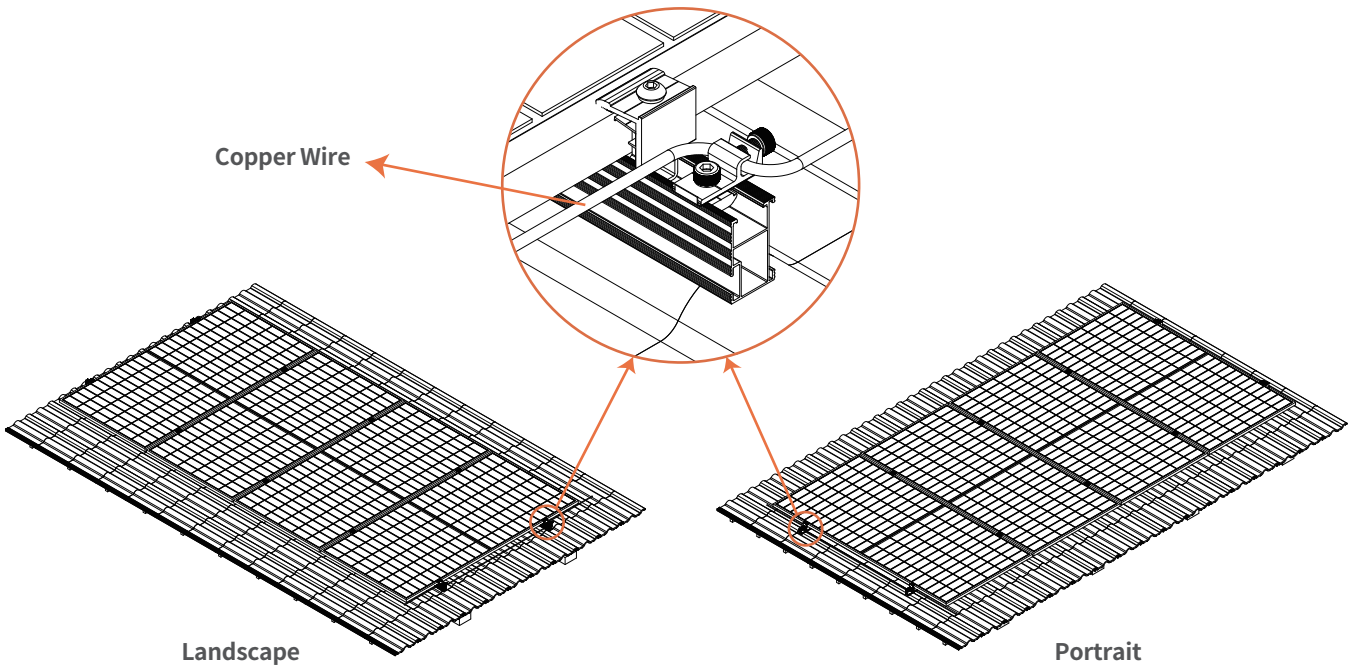
⚠ **Notice:** Set the torque value to 10 N · m



6.2 Remove the screw on the top of the Grounding Lug, place the Cable into the slot, and then tighten the screw to secure the Cable.



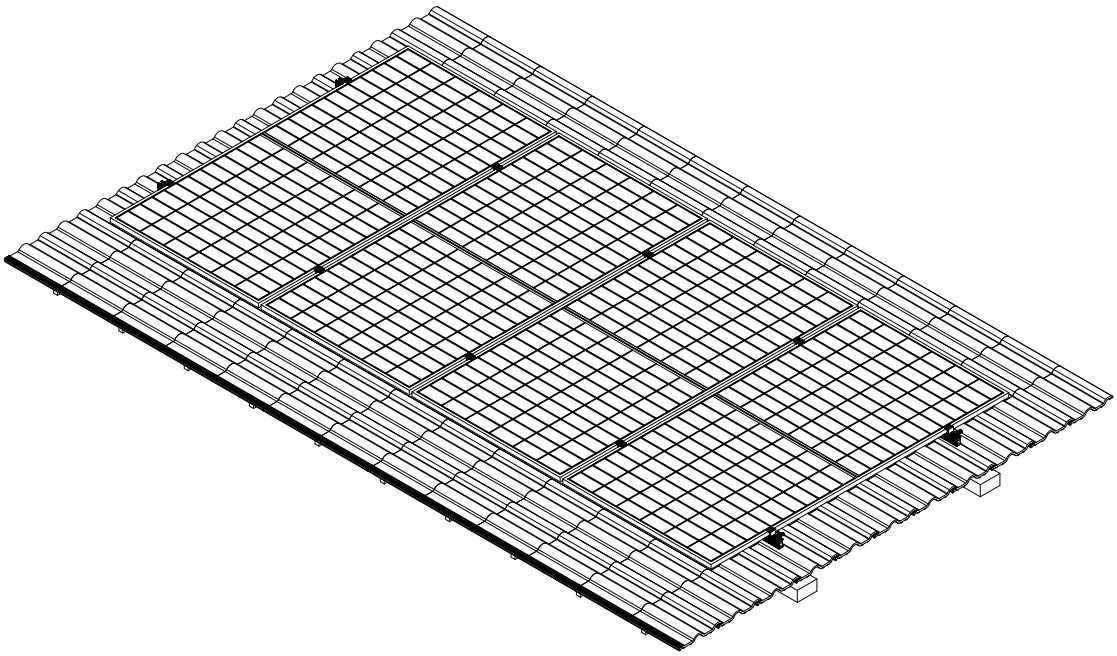
6.3 Repeat the above steps to complete all Grounding Lugs and Cables.



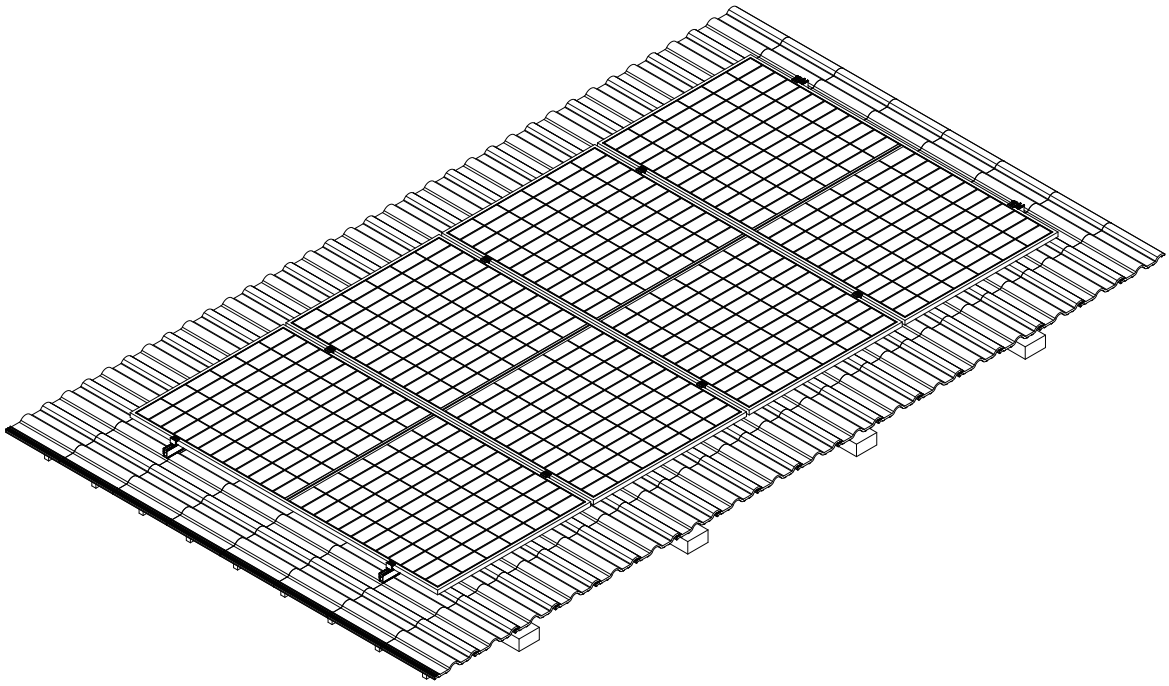
7.Final Product Display

Make sure all components are securely fastened. Verify that the Aluminum Hook System is installed correctly, reaches the required height, angle and position.

Landscape



Portrait



8.Grounding Components & Electrical Diagram