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# **TG-EP**

Trin**G**o.the **E**nergy **P**ioneer

One-stop solution expert for PV mounting system

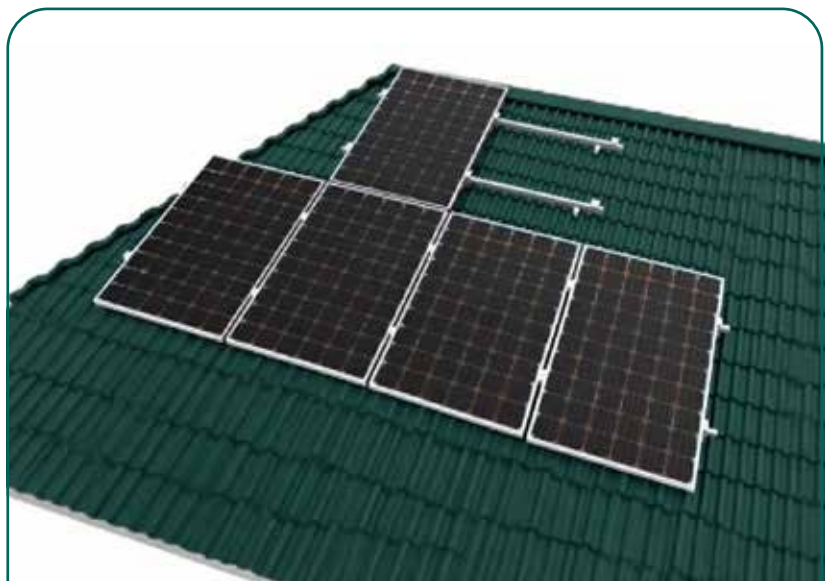
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# 1 Tile Roof Mounting System

# Tile Roof Mounting System



## Product Advantages

- Multiple hook designs compatible with various tile profiles.
- Highly adjustable bracket system for easy installation.
- All-aluminum alloy structure, lightweight, reduces roof load.
- Simple, fast installation with high adaptability.
- Sleek appearance with excellent corrosion resistance.

## Component Display



Rail



End Clamp



Mid Clamp



Rail Connector



Hook

## Installation Node Diagram



## Technical Parameters

- Installation Angle: Parallel to the roof surface
- Material: Aluminum Alloy/AL6005-T5
- Surface Treatment: Anodized Anodized (customizable thickness)
- Design Standards: GB50009-2012, IBC2009, CBC2010, AS/NZS1170, JISC8955-2017

## Hook Components Product Display-Tile Roof Mounting System



**Flat Tile Hook 1**



**Flat Tile Hook 2**



**Tile Hook 3**



**Tile Hook 4**



**Tile Hook 5**

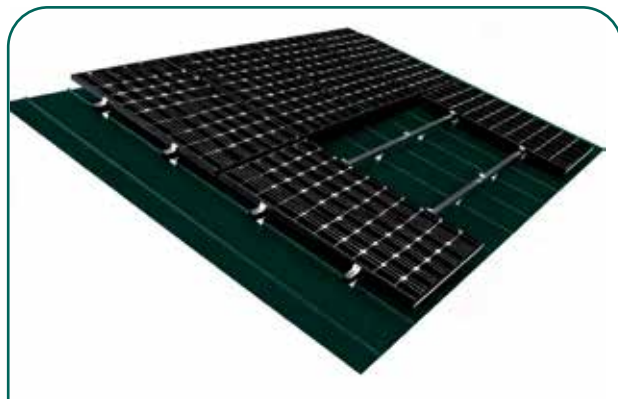


**Tile Hook 6**

Note: To ensure the safety and stability of the photovoltaic system without compromising roof waterproofing, it is essential to precisely match specialized hooks based on the specific glazed tile characteristics. Professional solutions, including wind load calculations and waterproofing design, must be provided.

# 2 Metal Roof Mounting System

# Metal Roof Mounting System



## Component Display



Rail



End Clamp



Mid Clamp



Double-Ended  
Screws



L-Angle Bracket

## Installation Node Diagram



## Product Advantages

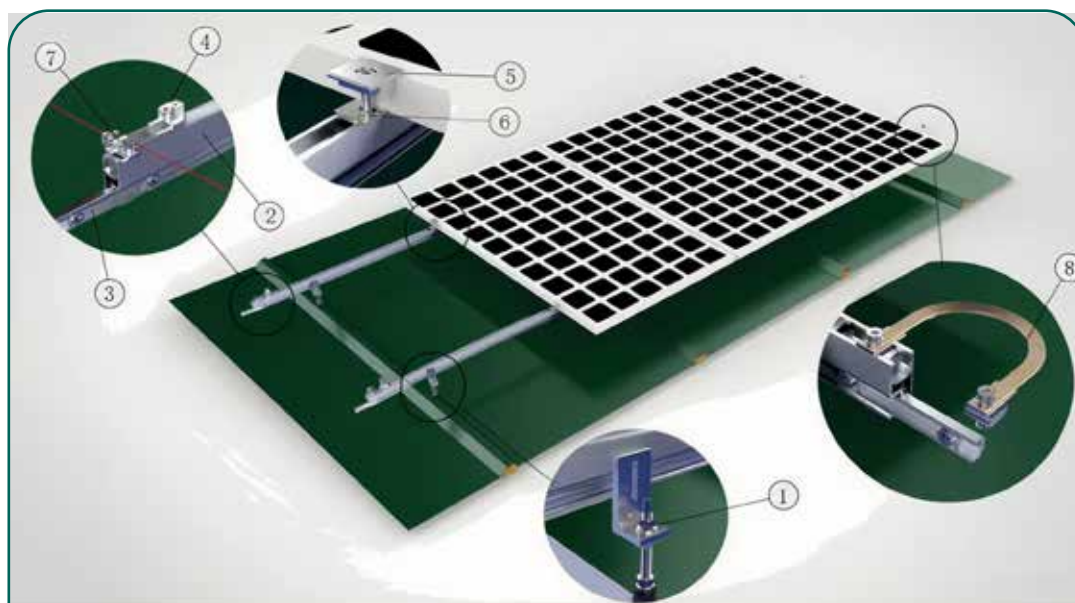
- Compatible with various metal roof profiles.
- Standardized design reduces installation cost and time.
- All-aluminum alloy structure, lightweight, reduces roof load.
- Simple and fast installation with strong adjustability.
- Preserves the integrity of the existing roof waterproofing.

## Technical Parameters

- 📐 Installation Angle: Parallel to the roof surface
- 🔧 Material: Aluminum Alloy/AL6005-T5
- 🌞 Surface Treatment: Customizable anodized surface thickness
- 📋 Design Standards: GB50009-2012, IBC2009, AS/NZS1170  
CBC2010, JISC8955-2017

# Grounding Accessories Installation Diagram & Related Product Display

## -Metal Roof Mounting System



### Accessories

- |                       |                    |
|-----------------------|--------------------|
| ① Double-Ended Screws | ② Rail             |
| ③ Rail Connector      | ④ End Clamp        |
| ⑤ Mid Clamp           | ⑥ Conductive Sheet |
| ⑦ Conductive Clips    | ⑧ Rack Connector   |

### Accessories

- Rack Connector



- Conductive Sheet



- Conductive Clips



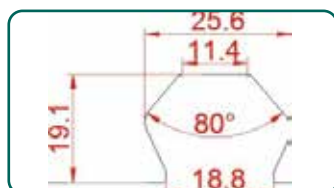
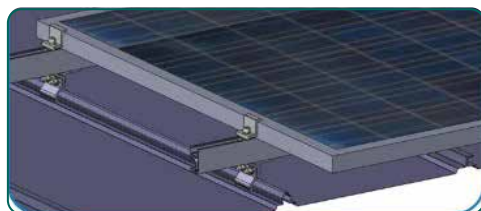
- Cord Clip



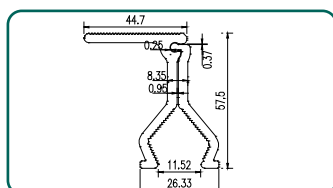


# Installation Schematics for Different Metal Roof Profiles-Metal Roof

## Installation Schematic A

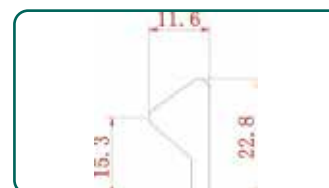
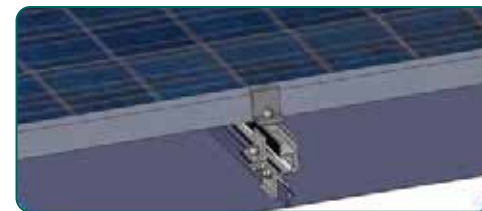


Profile A

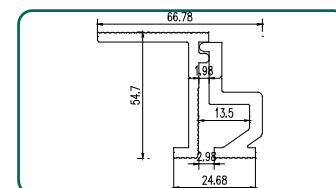


Clamp A

## Installation Schematic B

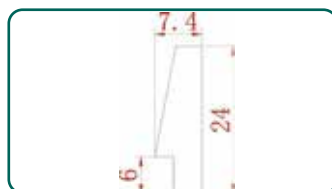
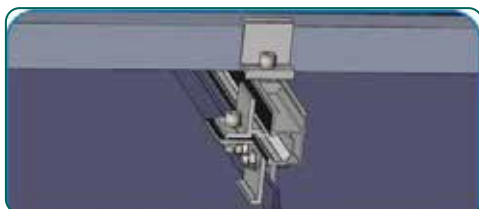


Profile B

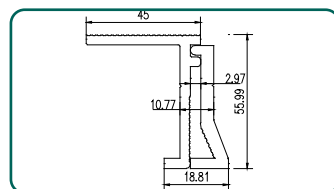


Clamp B

## Installation Schematic C



Profile C



Clamp C

## Installation Schematic D

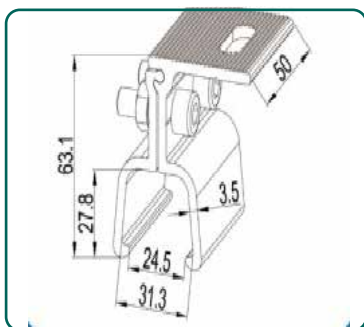


## Installation Schematic E

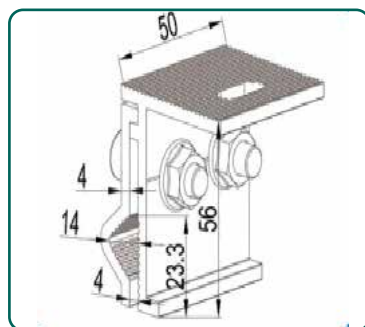


# Clamp Components Product Display-Metal Roof

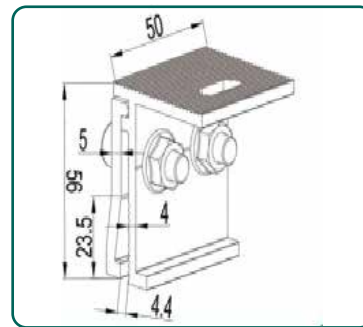
## Clamp



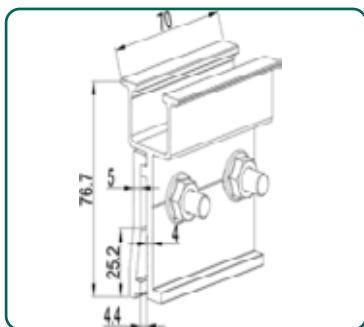
Clamp1



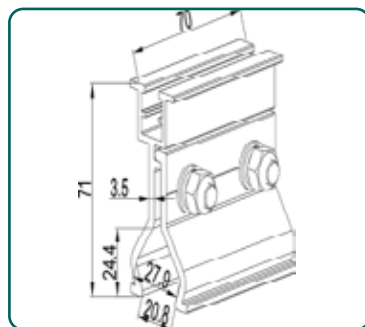
Clamp2



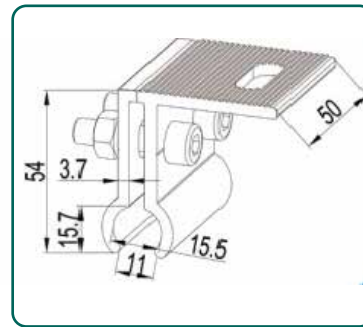
Clamp3



Clamp4



Clamp5



Clamp6

## Diagram



Diagram1



Diagram1



Diagram1

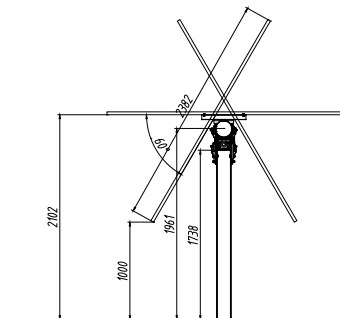
Note: To ensure the safety and stability of the photovoltaic system without compromising the roof's waterproofing integrity, it is essential to precisely match specialized clamps according to the specific profile of the Metal roofs (e.g., trapezoidal, standing seam, corrugated). Professional solutions—including wind load calculations and waterproofing design—must be provided.

# 3 PV Tracking System

# PV Tracking System



**Side View :**



## Features of PV Tracking Mounting System

- Basic Definition: A PV tracking mounting system is an intelligent support structure that drives photovoltaic modules via an electromechanical system.
- Core Function: It dynamically adjusts the angle of PV modules in real time to follow the sun's path, maximizing solar radiation exposure.
- Main Types:
  - Single-Axis Tracking: Adjusts the tilt angle of the modules.
  - Dual-Axis Tracking: Adjusts both the tilt and azimuth angles of the modules.
- Key Advantage: Significantly improves energy yield, typically yielding an energy gain of 5% to 35% compared to fixed mounting systems.
- Primary Application: Primarily used in large-scale, utility-scale ground-mounted photovoltaic power plants.
- System Composition: Consists of four main components: structural components, drive system, control system, and control algorithm.

# PV Tracking System

## TRACKER SPECIFICATIONS



- Tracking Type:Independent horizontal single-axis tracker
- Tracking Range:±60°
- Drive Type:Slew drive/Synchronous multi-point design
- Modules per Tracker: Up to 120 modules per tracker
- System Voltage:300 VDC-1000 VDC
- Foundation Options:Ramming piles/Cast-in-place concrete piles/Concrete piles or ballasts
- Structure Material:Hot-dip galvanized / Pre-galvanized / Magnesium-aluminum-zinc coated steel
- Daily Energy Consumption:Typical 0.04kWh/day
- Standard Design Wind Speed:156mph (70m/s) per ASCE7-10, higher wind load available
- Modules Supported:All commercially available modules
- Operation Temperature Range: -30°C to 60°C

# PV Tracking System

## TRACKER CONTROLLER SPECIFICATIONS



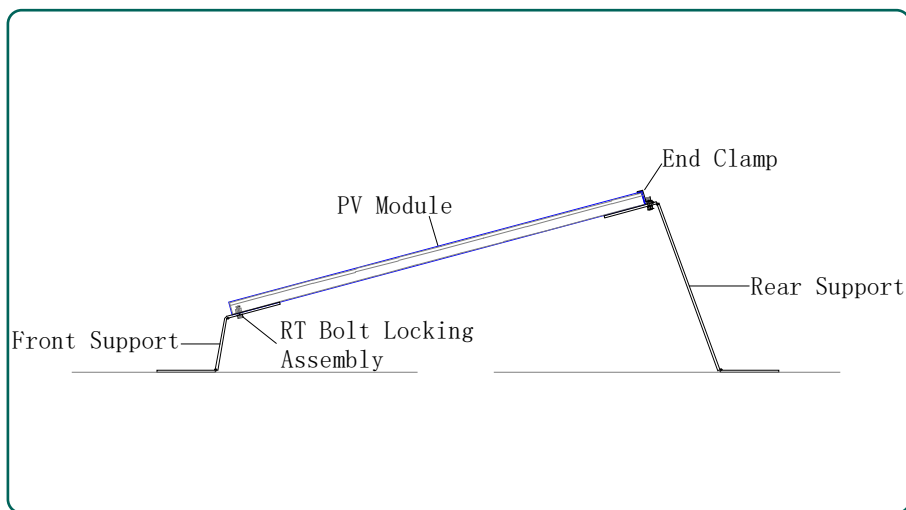
- Control Algorithm: Astronomical algorithms + Tilt sensor closed-loop control  
Tracking Accuracy:  $\leq 2^\circ$
- Low tilt stow angle: Support terrain adaptive intelligent algorithm
- Communication Options: LoRa wireless/RS-485 cable
- Other Special Modes: Windward stow, snow, flood and hail protection for customer selection
- Controller's Power supply: String powered as default, AC or self-powered as option
- Flood Mode: Tracker flat (optional)
- Snow Mode: Tracker at max tilt (optional)
- Wind Stow Mode: Low tilt stow angle

# 4 Flat Roof Ballast Mounting System

## Flat Roof Ballast Mounting System



### Installation Schematic Diagram



### Component Display



Post-Expansion  
Anchor Bolt



End Clamp



Front Support



Rear Support

### Product Advantages

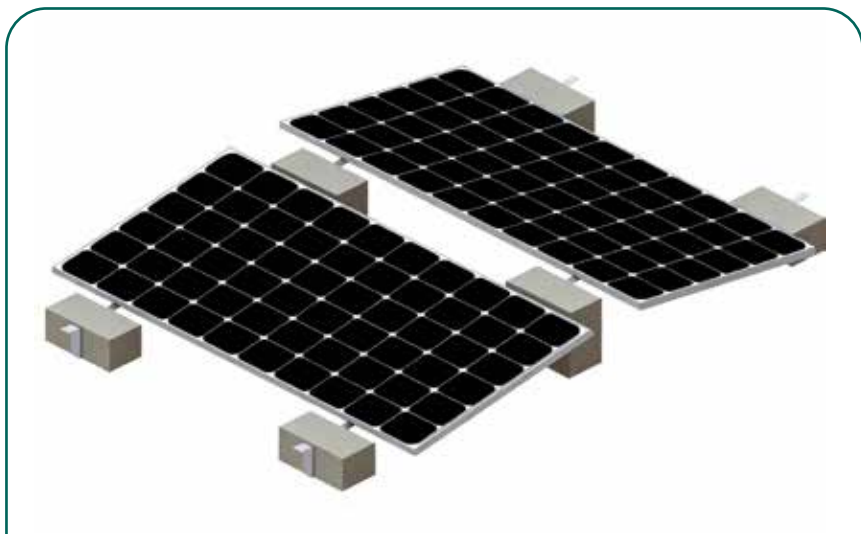
- System Type: Cost-effective flat roof mounting system.
- Primary Material: Steel.
- Key Characteristic: Simple and fast installation process.
- Applicable Regions: Excellent wind resistance. High-strength material (Q355B steel, hot-dip galvanized  $\geq 140\mu\text{m}$ ) ensures superior durability.

### Technical Parameters

- 📐 Installation Angle: Parallel to the roof surface
- 🔧 Material: Steel Q355B (customizable)
- 🌡️ Surface Treatment: Hot-dip galvanizing ( $\geq 140\mu\text{m}$ , customizable)



## Flat Roof Ballast Mounting System



### Product Advantages

- System Type: Cost-effective flat roof mounting system.
- Primary Material: Steel.
- Key Characteristic: Streamlined and efficient installation process.
- Recommended Application: Suitable for regions with low wind and snow load requirements.

### Component Display



Front Support



Middle Support



End Clamp

### Installation Examples



## Flat Roof Ballast Mounting System



### Product Advantages

- High-strength aluminum alloy material with excellent corrosion resistance.
- Bolted connection design for simple and fast installation.
- Flexible configuration, compatible with concrete foundations.
- Strong stability, capable of withstanding extreme weather conditions.
- Adjustable angle to maximize power generation efficiency.

### Component Display



Rail



End Clamp



Mid Clamp



Rail Connector



Fixed Triangular Bracket

### Technical Parameters

- 📐 Installation Angle: Parallel to the roof surface
- 🔧 Material: Aluminum Alloy/AL6005-T5
- 🔍 Surface Treatment: Customizable anodized surface thickness
- 🇬🇧 Design Standards: GB50009-2012, IBC2009, CBC2010, AS/NZS1170, JISC8955-2017

# 5 Carport Mounting System

# Carport Mounting Solution

## Partial Display of Carport Styles



Cantilever Type



Bent Frame Type

## Product Advantages

- Provides shade and rain protection for vehicles
- Utilizes prefabricated structure with modular on-site assembly to improve construction efficiency
- Suitable for multiple scenarios with diverse and aesthetically simple design options
- Steel structure designed for wind resistance, excellent fire resistance, and weather durability

## Technical Parameters

- 🏗️ Structural System: Cantilever type, bent frame type, etc.
- 🔧 Material: Steel Q235B/Q355B
- 🧪 Anti-Corrosion Treatment: Coating protection/hot-dip galvanizing
- 🔥 Flame Resistance Rating: Class A (GB 8624)

# 6 Ground Solar Racking System

# Ground-Mount Solar Solution



## Fixed Mounting System display



## Component Display



Round Steel Pipe



H-Beam



U-Steel



C-Steel



Ground screw

## Product Advantages

- Excellent environmental adaptability, designed for complex terrains such as shallow beaches, grasslands, deserts, and wetlands.
- Exceptional corrosion resistance, ensures long system service life.
- Outstanding mechanical performance and strong load-bearing capacity, effectively resisting extreme weather conditions like strong winds and heavy snow.
- Standardized and modular design with efficient connection methods, significantly improving installation speed.

## Bracket Pile Foundation Types



Ground Screw Foundation



Concrete Pile Foundation



C/H-Beam Foundation

### Technical Parameters

- 📐 Tilt Angle: Customized based on the optimal solar angle for the project location.
- 🔧 Materials: Steel Q235B/Q355B Aluminum Alloy/AL6005-T5
- 🌬️ Anti-Corrosion Treatment: Hot-dip galvanizing (steel), Anodizing (aluminum), or Protective Coating.