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NWsolar mounting systems. Always reliable

“WE SUPPORT YOUR SOLAR POWER BETTER”



## About “WE”

NWsolar is one of the largest photovoltaic mounting system providers in China. Since 2009, we have been specializing in providing solutions for installing solar photovoltaic systems. We develop and produce solid mounting systems easily fitted to all types of roof and ground. With the extensive know-how, we accomplished large scale projects in the megawatt range at international levels.

In photovoltaic installations which last over decades, in locations where wind and weather posing challenge, solid reliability is essential. Our quality, lightweight and durable mounting systems provide photo-voltaic modules with best support against the force of nature.

NWsolar is 100% subsidiary of Daoxin Industry Co., Ltd, total investment over 120 million RMB since 2006, covers an area of 70,000 square meters, including the construction area of 61,000 square meters, employees over 300.



# Our highlights

- Anti-corrosive materials, anodized aluminum, average thickness 15µm, and stainless steel 304
- Highest pre-assembly before shipment, modular design save installation time
- International standards certified and statically tested
- 10 years warranty, 25 years design life time
- Fast shipment. 85MW capacity per month, 2 weeks lead time for project under 5MW.
- Experienced engineering support team
- Excellent proven commercial reputation



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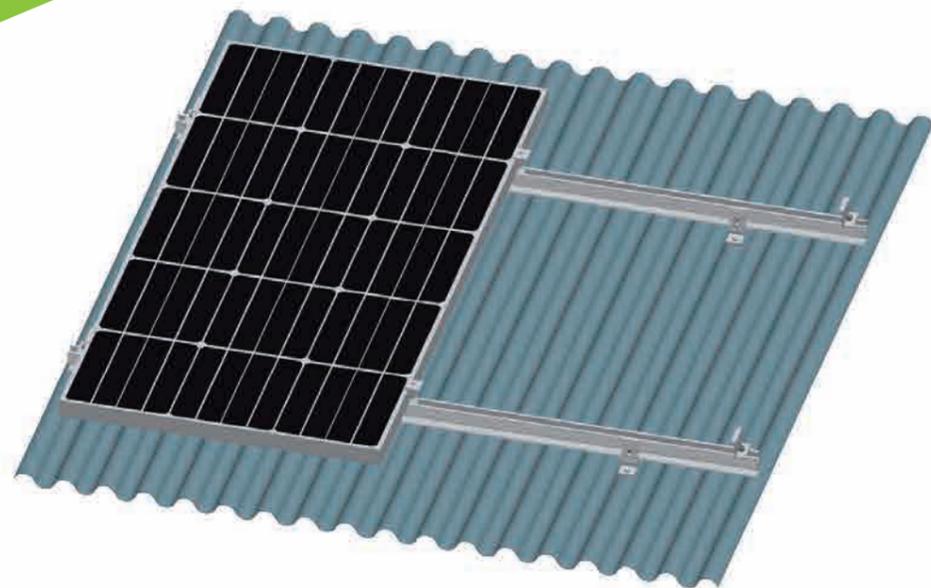
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## Pitched roof mounting system

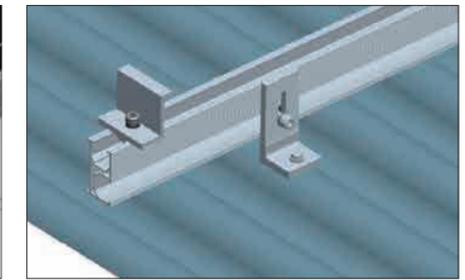
Solid, versatile for all pitched roofs

NW solar pitched roof mounting system offers perfect solution for installation on pitched roof, regardless of the roofing type and substructure of the roof. Thanks to various options of roof attachments like roof hook, L bracket, hanger bolt, shingle flashing etc.

Systems are fully compliant with the Australian and other international standards on wind & snow load, making it suitable for a wide variety of climatic zones.



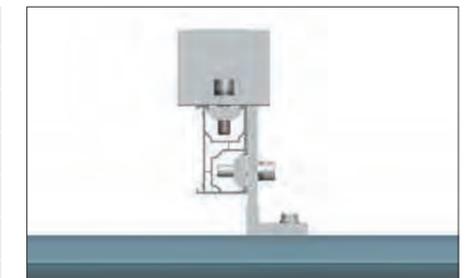
Allen key



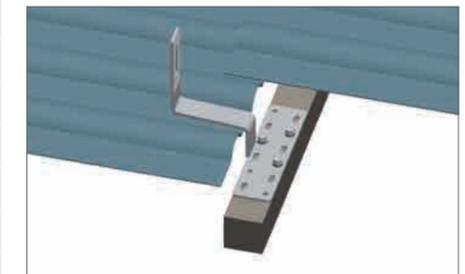
L bracket on tin roof

### Features

Installation site	Pitched roof
Roof cladding	Suitable for most types of cladding
Roof slope	Up to 45°
Building height	Up to 20m
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Supporting profile	Minimum two rails supporting each panel
Distance between rail fixings	Depending on load condition, refer to manual
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Material	Anodized aluminum 6005 T6, stainless steel 304, 410
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc



Side view



Tile hook on tile roof

• All profiles are available in various lengths or can be cut to measure.



Pitched roof



Framed module



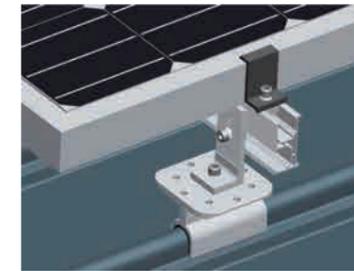
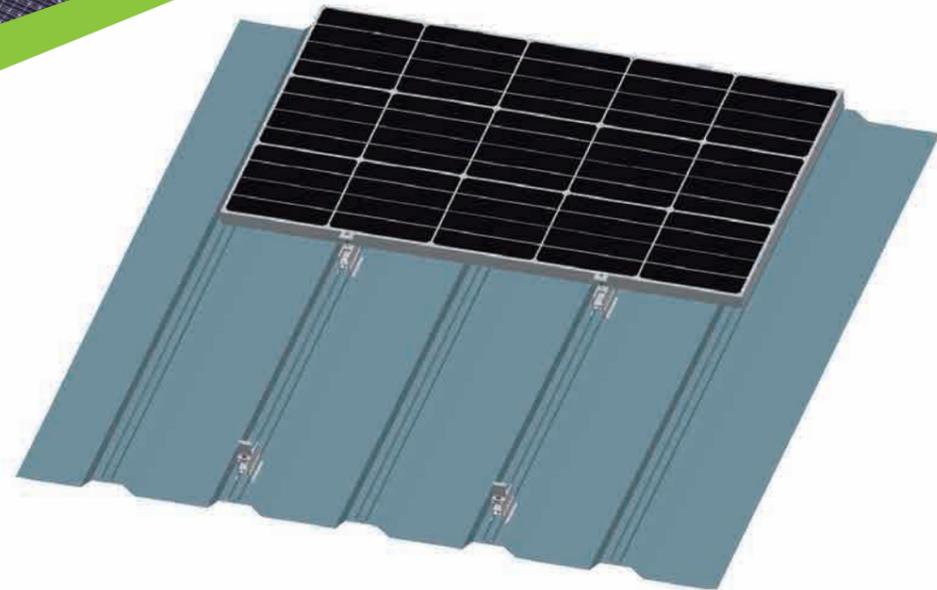
Unframed module



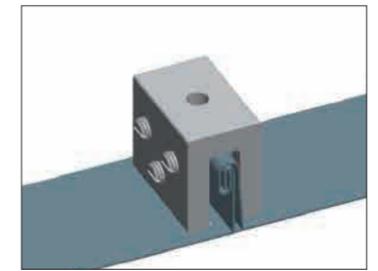
Orientation landscape



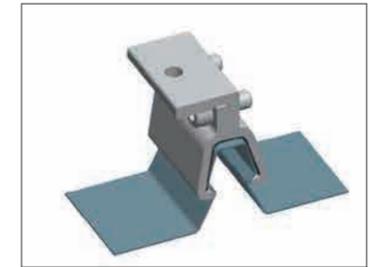
Orientation portrait



Kliplok @700 with rail



Locked Seam@



Kliplok @406



Kliplok @ 700 without rail



Kalzip@

### Features

Roof type	Suitable for Lysaght® Kliplok® @406, 700, Lysaght® Locked Seam®, Stramit® Speed Deck, Fielders® Kingkilp, Kalzip® etc, customizable
Min. sheet thickness	0.42mm minimum
Roof slope	Up to 45°
Building	Height Up to 20m
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between rail fixings	Depending on load condition, refer to manual
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Material	Anodized aluminum 6005 T6, stainless steel 304, 410
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

- Roof structure to be checked as suitable before installation.  
Clamps are to be fixed within 100mm of sheet fixing clips to purlins.

## Non penetrating standing seam roof mounting system

Headache-free mounting solution for metal roofs with standing seam design

The NWSolar standing seam roof clamps make mounting on folded seam roof particularly easy. The clamps are simply attached to the standing seams. The clamps offer a secure fastening without penetrating the roof sheets, ensuring maximum stability with minimum weight. The variety of system combinations like L-foot, fixed foot or PV module clamp directly, allows it to be connected quickly to all rail components.



Standing seam



Framed module



Unframed module



Orientation landscape



Orientation portrait



## Railless metal sheet mounting system

Light, small, cost-effective and easy mounting on trapezoidal sheet

The railless system facilitates the rapid mounting of framed PV modules on trapezoidal metal sheet roofs with minimum thickness 0.8mm, only four components are required to install the modules directly to the roof. A base mounting clip is 100mm or 140mm long, therefore easy to carry and attach to almost all trapezoidal and sandwich roofs. The EPDM sheet is in the package to seal the screw against the metal sheet.

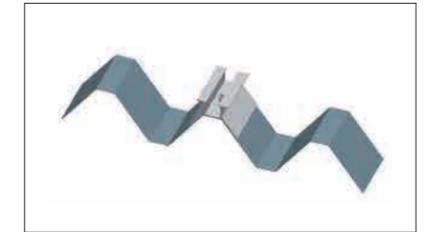
Railless mounting system allows for easy logistics, cost-effective warehousing and easy mounting.



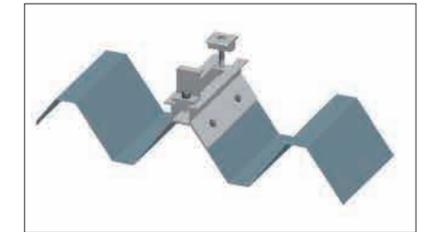
### Features

Roof type	Trapezoidal metal sheet, sandwich roofing, standing seam roofs
Min. sheet thickness	0.8mm minimum
Roof slope	Up to 12°
Building height	Up to 20m
Wind speed	Up to 60m/s (216kmh/133mph)
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between rail fixings	Depending on load condition, refer to manual
PV module	Framed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Material	Anodized aluminum 6005 T6, stainless steel 304, 410
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

- Roof structure to be checked as suitable before installation



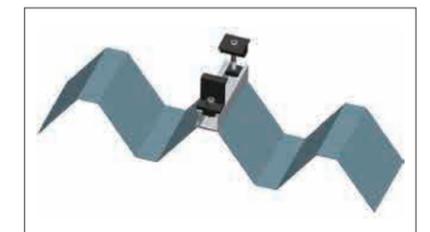
Existing bolt on top



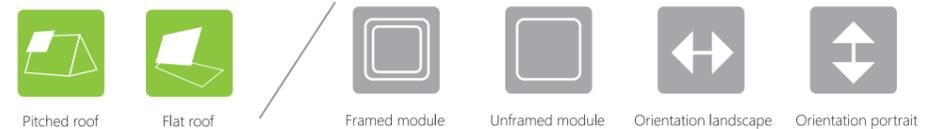
ST screw at sides



EPDM under

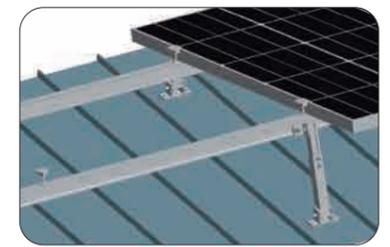


Top view





Fixed tilt triangle,  
adjustable rear leg optional



Adjustable tilt legs

## Features

Installation site	Flat roofs (trapezoidal, corrugated sheet metal, asbestos, standing seam, concrete or gravel), pitched roof, open terrain
Roof slope	Up to 45°
Building height	Up to 20m
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Tilt angle	Fixed, 10-15°, 15-30°, 30-60°
Supporting profile	Minimum two rails supporting each panel
Distance between footings	Depending on load condition, refer to manual
PV module	Framed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Material	Anodized aluminum 6005 T6, stainless steel 304
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

●Roof structure to be checked as suitable before installation

## Elevated flat roof mounting rack

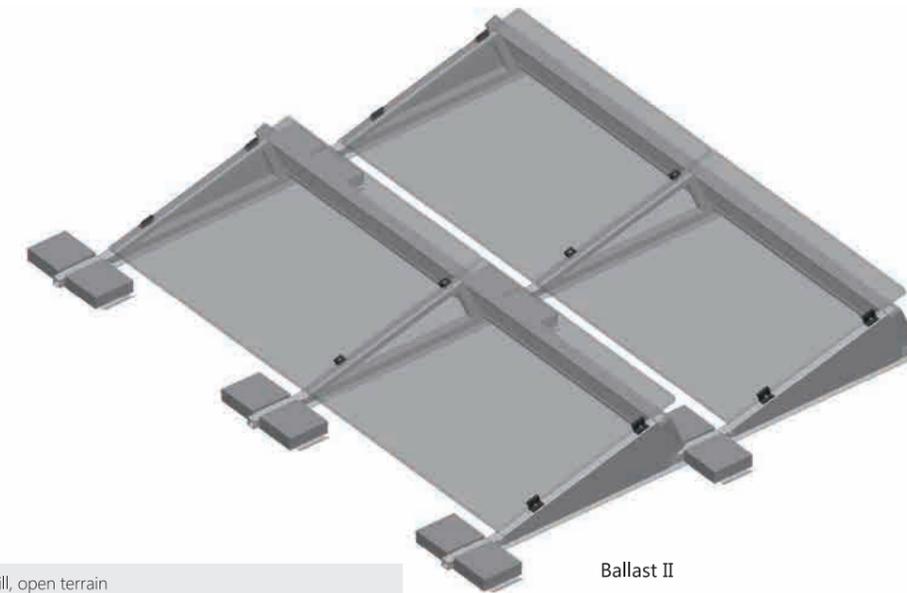
Adaptable, economical mounting on almost all flat roof coverings

NWsolar elevated flat roof mounting system will easily fit different flat roof or open terrain applications, due to its variable tilt angle and footing options for both ballasted solution and roof penetration. Elevation can be used as fixed tilt or adjustable tilt, allow project-specific adjustments and optimize solar power output. The innovative design and high pre-assembly eliminate the need for on-site cutting, welding and enable quick and easy field PV module installation.

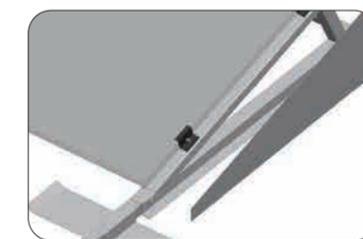




Ballast I



Ballast II



Top detail

## Features

Installation site	Flat roof, landfill, open terrain
Elevation angle	5-20° low pitch
Building height	Up to 24m
Wind speed	Up to 45 m/s (162kmh/100.7mph)
Snow load	Up to 50cm
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between footings	Depending on load condition, refer to manual
PV module	Framed, unframed
Module orientation	Landscape recommended
Size of module array	Any layout up to site condition
Material	Anodized aluminum 6005 T6, stainless steel 304
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

- Wind shield optional,  
All profiles are available in various lengths or can be cut to measure.



Flat roof



Framed module



Unframed module



Orientation landscape

## Non penetrating ballast mounting rack

Fast installation with simple modular system on commercial roof

The ballast non-penetrating system is designed for PV mounting on commercial or residential flat-roof. The low pitch allows minimum ballast with an optimum of profit, ideal solution for use on industrial buildings with low admissible additional loads. The system is delivered in compact form to save logistics cost, unfold at site saves valuable time. No need to anchor and damage the roof membrane. Also suitable for open terrain installations, especially for landfill sites, rocky surfaces and conversion sites. It utilizes high strength aluminum components and corrosion resistant hardware for long term reliability. Variable ballast weight allows for local wind rating requirements to be meet on an individual basis.





## CG Alu-terrain ground mounting system

Optimal cost-performance ratio ground mount

CG Alu-terrain is a cost optimized design based on Alu-terrain, the supporting beam is delivered with highest pre-assembly, fast and easy at site. It can be adapted to different local conditions, e.g. landfill or disposal areas. The design is carried out by experienced engineers, this is important as high loads caused by wind and snow. Depending on the projects input, the system is connected to the ground using ground screw or concrete foundations, and variable inclination and height make plant design flexible. Made of aluminum, the CG Alu-terrain is an extremely low-maintenance system during its entire life span, and fully recyclable.



### Features

Installation site	Open terrain, landfill, and disposal
Elevation angle	Up to 60°
Wind speed	Up to 60m/s (216kmh/133mph)
Snow load	Up to 50cm
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between footings	Depending on load condition, refer to manual
Clearance	Up to request
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Foundation	Concrete base or ground screw
Material	Anodized aluminum 6005 T6, stainless steel 304, hot-dipped galvanized steel Q235B
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

•All profiles are available in various lengths or can be cut to measure.



Rail



Rail Connector



Supporting Beam



Unfold at site



Open terrain



Framed module



Unframed module



Orientation landscape



Orientation portrait



## Alu-pile ground mounting system

Ideal for uneven terrain, economical for large projects

NW solar Alu-pile ground mount system is a very economical solution for large commercial and utility scale installations, it's suitable for both framed and frameless modules, especially on uneven terrain. The use of ramming posts eliminates the need for additional excavation works, and pile-driven machine reduce labor and time remarkably on site, piling finishes in less than 3 minutes, for large projects, this means high cost savings. Single post system allows for easy maintenance around and under the modules. Double post optional for larger span and bigger array.



### Features

Installation site	Open terrain
Elevation angle	Up to 60°
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Snow load	Up to 150cm
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between footings	Depending on load condition, refer to manual
Clearance	Up to request
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Foundation	Pile in or pre-cast, bored pier
Material	Anodized aluminum 6005 T6, stainless steel 304, hot-dipped galvanized steel Q235B
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc



Top detail



Top cap



Pre-assembled beam

• All profiles are available in various lengths or can be cut to measure.



Open terrain



Framed module



Unframed module



Orientation landscape



Orientation portrait



2-row arrangement

## Carport solar mounting system

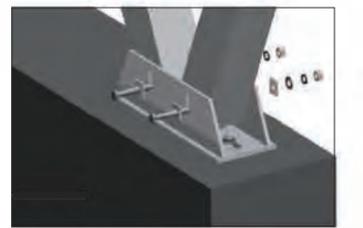
Economical multi-function structure for solar purpose

Carport solar mounting system offers simplified and economic solution providing shade for parking and solar power generation, it is designed with different options for both single and double rows of parking, tailored for most module types, orientations, and inclinations. Various foundation options include precast concrete, bored pier and ground screw. Long spans between foundations reduce cost and simplify the installation process. Solar carport is one of the fastest growing trends in photovoltaic market, effectively use existing parking space, streamlined design making it ideal choice to present environmental friendly image or for electrical vehicle charging station.



### Features

Installation site	Open terrain
Elevation angle	Recommend below 30°
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Snow load	Up to 150cm
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Distance between footings	5000mm above
Clearance	Up to request
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	Any layout up to site condition
Foundation	Pile in or pre-cast, bored pier, ground screw
Material	Anodized aluminum 6005 T6, stainless steel 304, hot-dipped galvanized steel Q235B
Color	Natural, powder coated
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc



Foot detail



Top detail



Front view

• All profiles are available in various lengths or can be cut to measure.





## Eco-pole mounting system

Sturdy for small area, off-grid PV

The pole mount is a very sturdy solution for small area solar photovoltaic needs. With its manu-adjustable angle settings, it can support installations in a wide range of locations.

The small on-grid or off-grid power station can be arranged in garden, farmland, mountain, or beside water pump, telecom tower or the outdoor electrical house. The structure is available for manu-adjustable angle according to the season changing.



### Features

Installation site	Open terrain
Adjustable angle	15-60°
Wind speed	Up to 88m/s (316.8kmh/196.9mph)
Snow load	Up to 100cm
Standard	AS/NZ1170.2:2011, JIS C 8955:2011, other international standards
Clearance	Up to request
PV module	Framed, unframed
Module orientation	Landscape, portrait
Size of module array	6panels, 8panels, 12panels
Foundation	Concrete base or ground screw
Material	Anodized aluminum 6005 T6, stainless steel 304, hot-dipped galvanized steel Q235B
Color	Natural
Module widths	Maximum 1.0m
Module lengths	Maximum 2.0m
Warranty	10 years limited warranty, refer to warranty doc

• All profiles are available in various lengths or can be cut to measure.



Pole erection



Adjustable tube with beam



Horizontal purlin



Vertical rail



Open terrain



Framed module



Unframed module



Orientation landscape



Orientation portrait

# Our accessories

## Key elements to a successful PV installation

Our full range of useful accessories diversify the portfolio of NWSolar PV mounting systems, and constantly being complemented in line with the market needs. Highly customization, flexibility, convenience to install, quality is the primary concern.

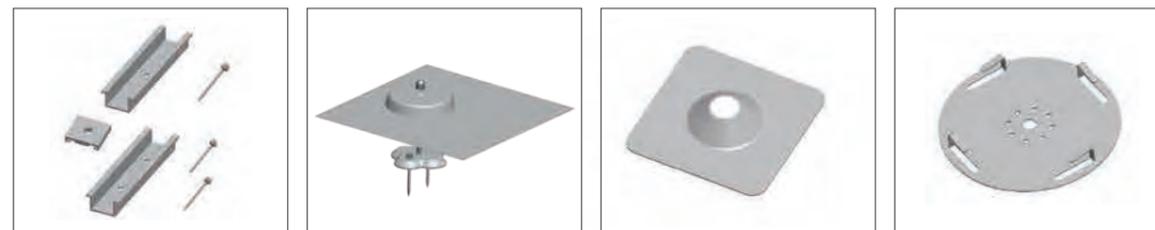
## Accessories for example



Thin film end clamp    Thin film mid clamp    Adjustable end clamp    Adjustable mid clamp



Adjustable roof hook    Roof hook    Hanger bolt    Tile roof bracket



Roof bracket    Shingle flashing    Hanger bolt flashing    Earthing and cabling plate



Isolator cover    Cable    MC4 connector    Plug and socket



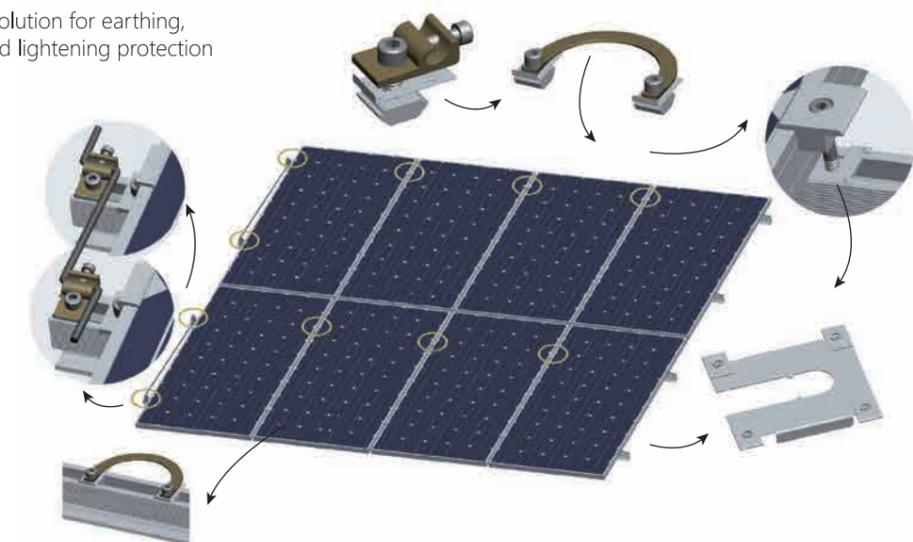
Plastic cable clip    Stainless steel cable clip    Bonding jumper    Earthing clip



Grounding lug    US grounding lug

**You can check with NWSolar sales team for more accessories or customization.**

Modern installation solution for earthing, electrical bonding and lightning protection



# Hot-dip galvanized steel ground screw

## High cost performance foundation for ground mount

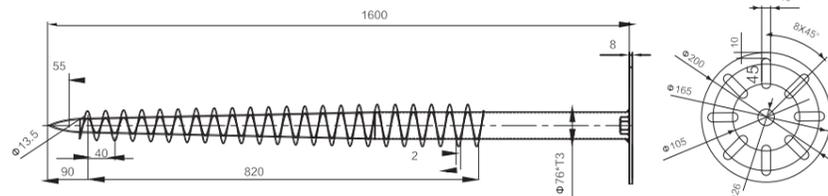
Ground screw foundation allows for a streamlined design and a very cost-effective ground mount system. Using less concrete, no excavation, especially useful for sites with restricted access or environmental sensitivity.

High adaptability can be widely used in all kinds of geological conditions, such as foreshore, desert, grassland, etc.

Average 80µm galvanization ensures highly corrosion resistant without additional treatment.

### Technological process

- Deoiling: Heating sodium hydroxide and using it to get rid of the clingage of screws, then cleaning and neutralization.
- Pickling: Using acid solution to get rid of corrosion and oxide skin, then cleaning and neutralization.
- Preheating: Heating water-soluble nitrates and using it to accelerate drying, this step is good for galvanized.
- Hot-dip galvanizing: Heating pure zinc solution to 450°, which purity is more than 98.5%, zinc combines with iron become zinc alloy.
- Cooling: Cooling screws in the water or air, then polish and put them in order.



Different options of screws can be applied to specific project condition. (Length, diameter, tube thickness, helices thickness, flange size)



### Screw in

- Manual piling machine  
Easy operation, cost effective for small size ground mount project.
- Pile driver machine  
High installation efficiency, 30-75s for one screw in, ideal for large scale project.



# Production & logistics

Fully supply chain means you are guaranteed with highest quality check through. Due to the manufacturing capacity of our factory, we can respond quickly and ensure availability of all of our regular products. Delivery of regular order within 7days, project-specific customized package acceptable, cost-efficient shipment planning.

