

## 1.Introduction

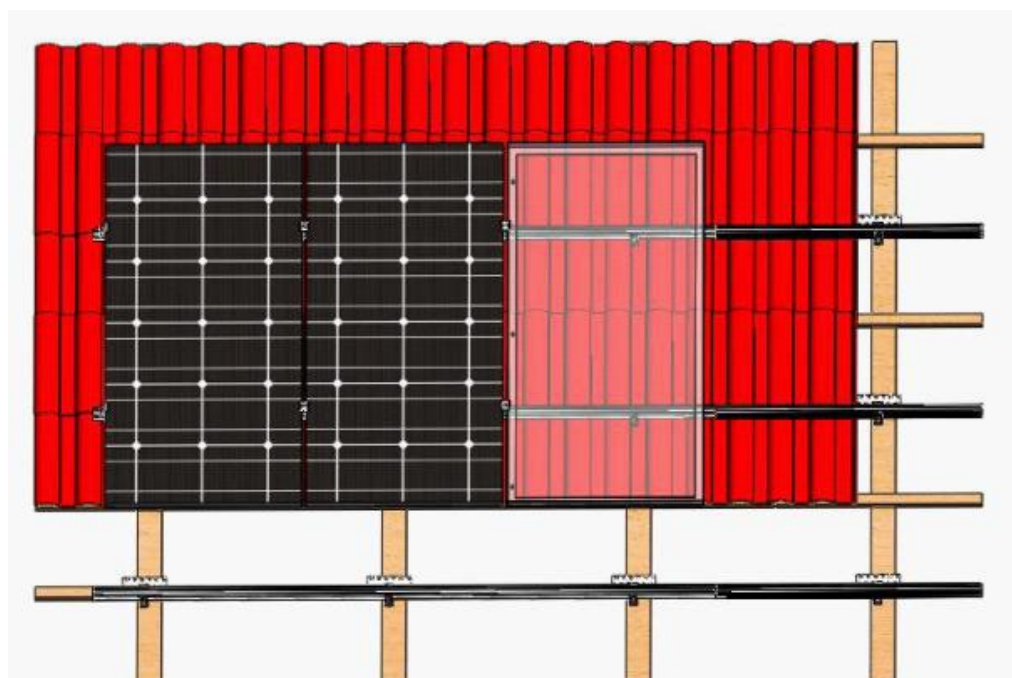
Thank you for choosing BPSolar sistem solar mounting system. Made from custom-built aluminum extrusions and components, BPSolar sistem's innovative design and improved frame strength greatly simplify solar panel installation. The easy 4 steps installation makes the Tilt-in modules able to be put into NSBP Rail in any position quickly. So, the Tilt-in modules are pre-assembled with the clamps to save your installing time.



**Tilt                      In                      Align                      Lock**  
**Four Steps, Easy Installation!**

BPSolar sistem's versatile design makes it suitable for a wide variety of building types and zones including residential, commercial and remote environments.

BPSolar sistem solar mounting system is backed by a 10-year warranty and is assessed in accordance with the Australian/New Zealand Standard on Wind Actions (AS/NZS1170.2.2011, inclusive of Amendment #2 (DECEMBER 2012)).



## **2. Safety and Installer Responsibilities**

### **2.1. Safety and Installer Responsibilities**

It is critically important that safety practices are observed when installing

**2.1.1** Do not throw or roughly handle any BPSolar sistem components.

**2.1.2** Do not bring BPSolar sistemsystem into contact with sharp or heavy objects.

**2.1.3** Do not modify BPSolar sistem components in any way. The exchange of bolts, drilling of holes, bending or any other physical changes not described in standard installation procedure will void the warranty.

**2.1.4** It is the installer's responsibility to verify the integrity of the structure to which BPSolar sistem components are fixed. Roofs or structures with rotten/rusted bearers, undersized bearers, excessively spaced bearers, or any other unsuitable substructure cannot be used with BPSolar sistem components, and installation on such structures will void the warranty, and could result in death or serious injury.

**2.1.5** It is the installer's responsibility not to overload the existing structures due to the weight and additional wind load (liplift) of installation.

### **2.2. Safety and Installer Responsibilities**

AS/NZS1170.2.2011 provides guidance on determining the wind pressures applicable to your BPSolar sistem solar mounting system install sites, taking into account the roof shapes and geographic locations. Sufficient guidance is given in this document, but you may wish to procure a copy of these standards if your company installs Australia/New Zealand wide.

**2.2.1** REMEMBER average wind speeds are higher for structure mounted closer to the roof perimeter zone (edge). Refer to 'Fixing within Roof Installation Zone' for more information).

**2.2.2** Make sure your installation complies with local and national building codes. Take into account relevant design parameters (wind speed, exposure and topographic factor) when determining the loading for the installation.

**2.2.3** If alternative fasteners are used to fix the mounting to the roof (assuming supplied fasteners are unsuitable for any reason), all screw fasteners must conform to corrosion resistance Class 4 Australian Standard AS3566 and be of equal or greater strength to those supplied with your BPSolar sistem mounting system order.

### 3. Technical Specifications

#### 3.1. Applications

3.1.1 Commercial and residential buildings

3.1.2 Marine applications and remote areas

#### 3.2. Features

3.2.1 6005-T5 Aluminum extrusion

3.2.2 Innovative design of the Tilt-in modules, which can be pre-assembled with the clamp, making the installation easy and quick.

3.2.3 Suitable for different conditions and the most solar panels at present market.

3.2.4 Significantly higher strength-to-weight ratio than other mounting products, providing improved efficiency due to greater lifespans, inherent corrosion resistance resulting in low on-going maintenance and an extended product life.

3.2.5 Assess in accordance with Australian/New Zealand Standard on Wind Actions, AS/NZS1170.2.2011(inclusive of Amendment #2 (DECEMBER 2012)).

3.2.6 Anodized finish

#### 3.3. Materials





Materials	Tensile Strength	
	Ultimate	Yield
Extruded 6005-T5 Aluminum	260MPa	240MPa
Stainless Steel 304	670MPa	300MPa

#### 3.4. Materials

Roof Slope	0°—60°
Building Height	up to 20m
Mounting Structure	Timber
Roof Types	Roman tile, Flat tile, Asphalt shingle/Slate tile, tin and irregular sheet metal,etc.
System Angles	Flushed with the roof

## 4. Instalation tools

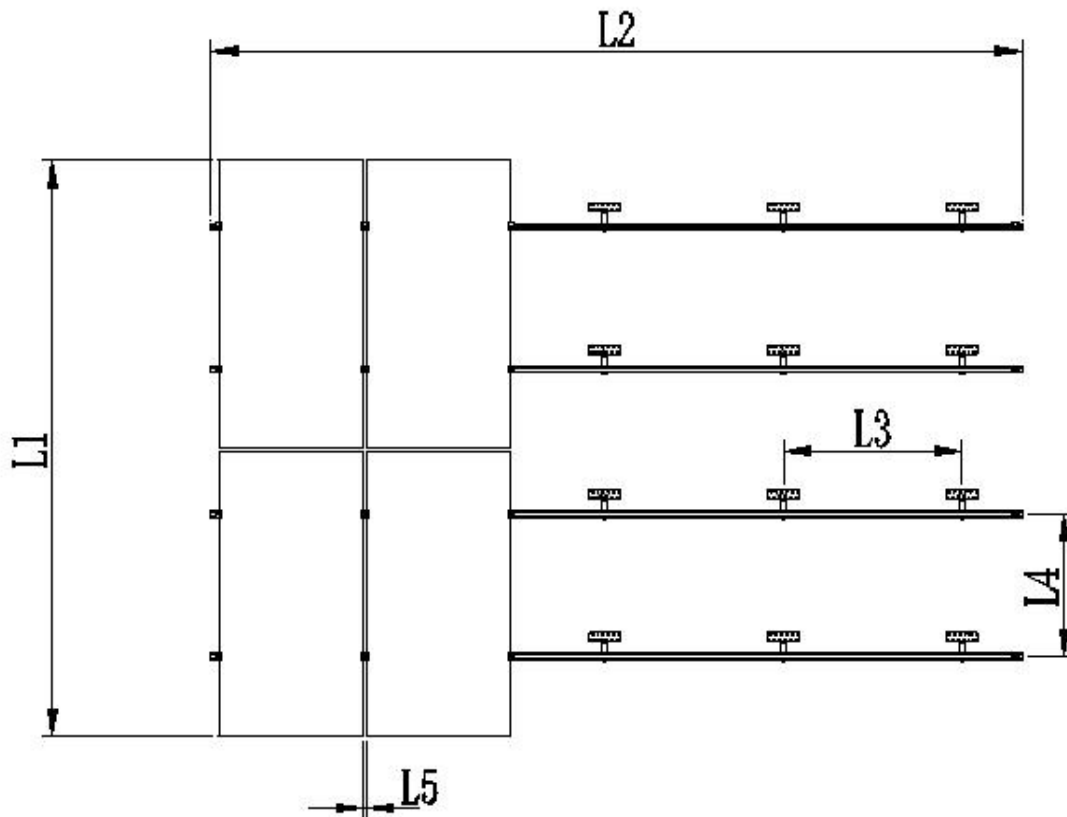
The following tools are required for installation:

No.	Tool Name	Usages/Notes	Pics
1	6 mm Allen key or hexagonal driver bit.	If using a 6mm driver bit, make sure the cordless power tool used for the driving has a hand-tight clutch setting a fine (soft) impact drive to prevent damage to the fragile glass panels and threads on the structure.	
2	Cordless drill	Drill or impact driver for driving roof material fixings,	
3	Angle grinder	For tile roof installation, and angle grinder fitted with a continuous edge diamond tipped tile cutting blade; gloves, hearing protection, a face protection mask, and a suitably rated breathing protection mask for all people in proximity of Grinding.	
4	open-end wrench	For fastening the bolts.	



## 5. System planning

Below, the distances between roof connections for a portrait installation are specified. Clamp-on roof hooks need to be installed in specific distances, depending on the distance of rafters and the tolerance of conditions.



- L1. Height of the module field: module height x number of modules vertically
- L2. Width of the module field: NO. of modules horizontally x (width of the module+18 mm)+32 mm
- L3. Distance between roof connections vertically (according to the clamping points pre-defined by the module producer): Quarter-points of the modules, about 1/2 of module height.
- L4. Distance between roof connections horizontally: Depending on the distance between rafters and on the fixing requirements.
- L5. Distance between modules: 17 mm

When positioning the modules, please take into consideration that

- the values above are
- dimensions of tiles or other roof covering and the position of the rafters define the precise actual horizontal distance between roof connections
- the clamping points of modules defines the precise actual vertical distance between roof connections.



**BPS**  
Borik PLUS Solar systems

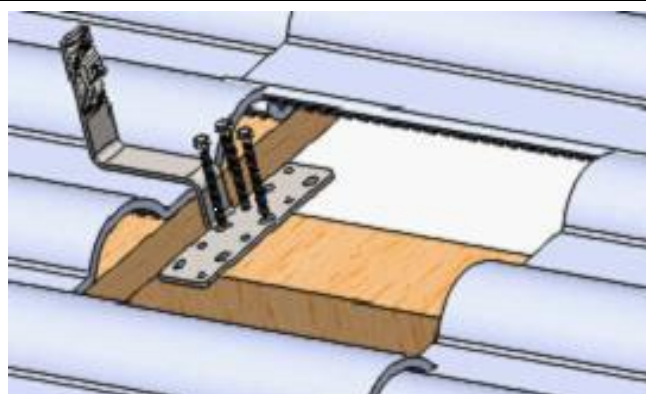
**Professional solar  
mount systems**

### Tile Roof Hook Installation:

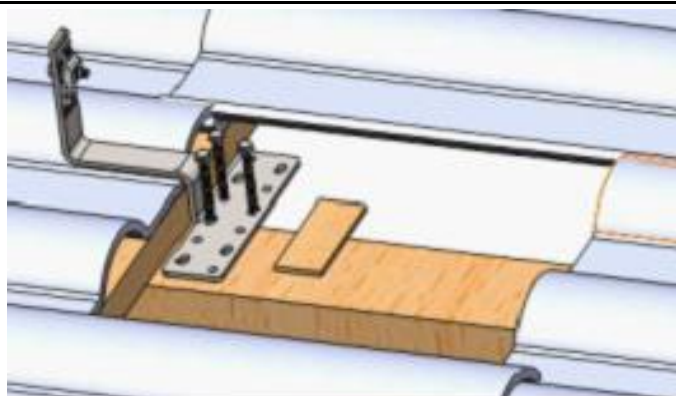
1. According to system planning, to determine the hooks installation directions and positions.  
Move away the roof tiles at the marked position or simply lift them up slightly.  
(See right pic.)



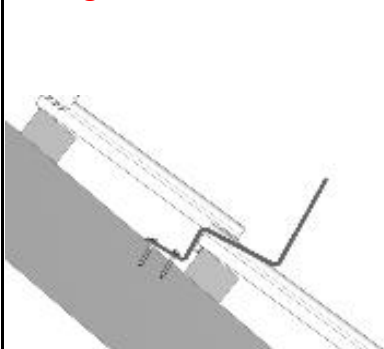
2. Input the roof hook to the marked wooden beam.  
Fix the roof hooks with 3x wood screws (St6.3\*14G\*80) by Cordless drill.  
(See right pic.)



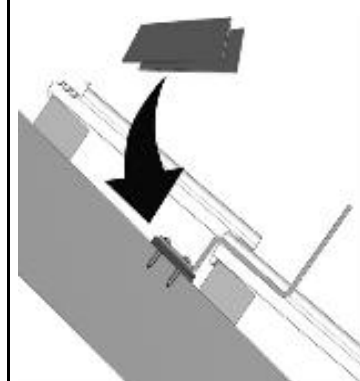
3. Where the beam which for supporting hook handle is too high for the hook to lean on, shim the roof hook with wood board till the corner of the hook handle is in same level with the tile.  
(See right pic.)



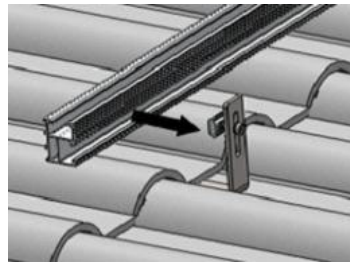
**Wrong**



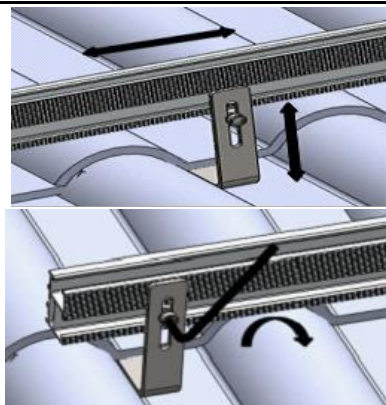
**Correct**



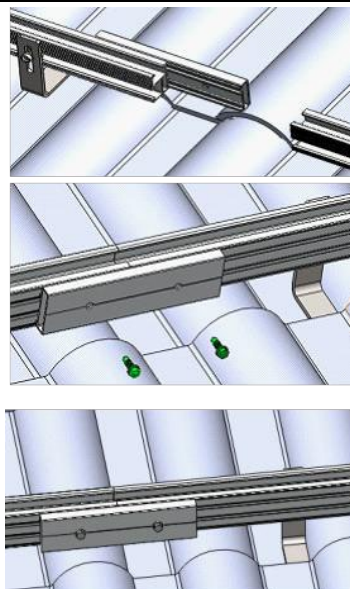
8. Always install from the shorest when the rails are not in the same lengths. Using M8X25mm hexagonal socket head bolt,locking washers,and tilt-in Module to install all rails on the hooks (Do not fasten in order to facilitate the adjustment of rails later on).(See right pic.)



9. To adjust rails position.  
Take advantage of the loose connection between long hook hole,tilt-in module and hexagonal socket head bolt to adjust the rails in horizontal and vertical directions.When the position of rails are well adjusted,fasten the hexagonal socket head bolts with hexagonal driver bit.  
(See right pic.)

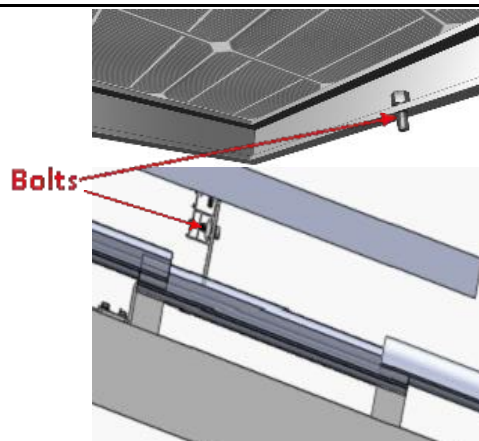


10.To install rail splice kit.  
When rails are not long enough,rail splice kit can be used to connect multiple rails together.When connecting,slide half of splice to one rear side of the pre-assembled rail,then put next rail into the other side of the splice kit. When come together,fix 2 hexagonal socket head bolts into the rail splice with cordless drill.  
(See right pic.)



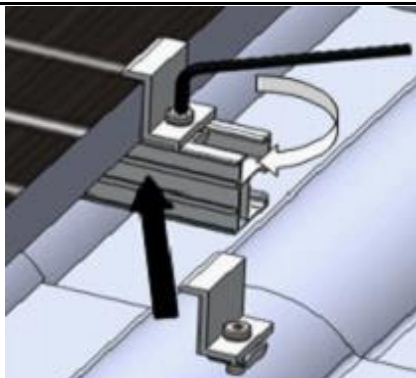
### Solar Module Installation:

11. Before the installation of solar modules, an anti-lip protection should be installed on the bottom row of modules for the security. Therefore,bolts are required to be fastened on holes near the bottom frame of the module.Such protection can prevent the modules from dropping. Refer the right picture to for the details.  
(See right pic.)

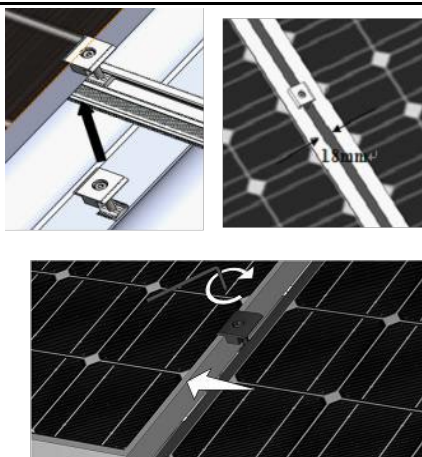




12. To install end clamp kit.  
Slide the end clamp kit, firmly stick to the side of module, then use the hexagonal driver bit to fasten the bolt.  
(Recommend torque force: 8 N·m)  
(See right pic.)



13. To install inter clamp kit.  
Slide the inter clamp kit between 2 modules into the right position, then use the hexagonal driver bit to fasten the bolt.  
(Recommend torque force: 8 N·m)  
(See right pic.)



14. Complete the installation of the whole pitched roof solar mounting system.  
(See right pic.)

