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Better Energy Better Life

- T series Tile Roof Mounting System
- C series Tin Roof Mounting System
- F series Flat Roof Mounting System
- G series Ground Mounting System
SAMIL POWER CO., LTD.

Mounting System

Samil Power Mounting System Division specializes in developing, manufacturing of all kinds of PV (Photovoltaic) Mounting System Solutions.

Quality Control
Before packaging, our Mounting Systems is required to pass the tests of stretching, bending, fire-resisting and salt spray to ensure its excellence, stability and durability.

Comply with many Countries Building Codes
Our mounting systems comply with many country’s building codes, such as China, UK, Germany, Italy, Australia, Greece, Sweden, Netherland, etc.

Leading-edge Technology
Samil Power’s new patent with snap-on smart design that will enable the customer using one person, one tool and one step to finish the whole assembling.

Pre-Sales Support
Samil Power provides free design service for each of your individual case.

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The main material of T-A series Tile Roof Mounting System is aluminum alloy (6063-T6). Compared with traditional steel mountings, it has light weight, easy shipment and easy installation features. The Tile Roof Mounting System is widely used in pitched tile roof photovoltaic system.

Our intelligent design will not damage the tiles. Its also has high pre-assembling design, highly compatibility features enable the possibility of quick installation.

T series Tile Roof Mounting System is further divided into 4 types, namely: T-A, T-B, T-C and T-D for your choice.

The main material of T-A series Tile Roof Mounting System is aluminum alloy (6063-T6). Compared with traditional steel mountings, it has light weight, easy shipment and easy installation features. The Tile Roof Mounting System is widely used in pitched tile roof photovoltaic system.
Height is adjustable in installation, making the whole array look neat and beautiful.
Special oval hole design making it more flexible and better universal.
With highly modular design, modular design, pre assembly and easy installation.

Features:
1. Height is adjustable in installation, making the whole array look neat and beautiful.
2. Special oval hole design making it more flexible and better universal.
3. With highly modular design, modular design, pre assembly and easy installation.

Material: SUS304

Features:
1. The hanging hook can be directly hung upon wood beams without screws. It has easy and convenient installation.
2. Thanks to the snap-on design, the whole system is installed from the top, with less installation time and labor cost.
3. The height is highly adjustable with the roof purlins, ranging from 30mm-45mm.

Material: AL 6063-T6 / SUS304

Features:
1. Thanks to the snap-on design, the whole system is installed from the top, saving the installation time up to 25%.
2. Both vertical and horizontal height is adjustable, which can match uneven roofs.

Material: AL 6063-T6 / SUS304

Features:
1. Thanks to the snap-on design, the whole system is installed from the top, which requires less installation time and saves labor cost up to 25%.
2. Stainless steel flushing excellent water proof.

Material: AL 6063-T6 / SUS304

Material: AL 6063-T6 / SUS304

Suitable for shingle roof
Optional Components

**318-72001-01 Rail A**
- Material: AL 6063-T6
- Supporting modules, suitable for a variety of installations
- Standard types: 2120mm/3140mm/3420mm
- Rail A-3140mm 318-72073-00
- Rail A-2120mm 318-72001-00
- Rail A-3420mm 318-72074-00

**318-72002-00 Rail B**
- Material: AL 6063-T6
- Supporting modules, suitable for a variety of installations
- Standard types: 2120mm/3140mm/3420mm
- Rail B-3140mm 318-72038-00
- Rail B-2120mm 318-72002-00
- Rail B-3420mm 318-72071-00

**318-72038-00 Rail B-3140mm**
- Material: AL 6063-T6
- Supporting modules, suitable for a variety of installations
- Standard types: 2120mm/3140mm/3420mm
- Rail B-3140mm 318-72038-00

**373-70052-00 Hook B**
- Material: SUS 304
- Connection of rails to wooden beams, fixed from the side
- Height adjustable

**373-70053-00 Hook C**
- Material: SUS 304
- Connection of rails to wooden beams, fixed from the side
- Height adjustable

**373-70062-00 Hook B**
- Material: SUS 304
- Connection of rails to wooden beams, fixed from the side
- Height adjustable

**373-70053-00 Hook C**
- Material: SUS 304
- Connection of rails to wooden beams, fixed from the side
- Height adjustable

**760-30080-00 Rail Connector Assembly - D01**
- Material: AL 6063-T6/SUS 304
- Connection of adjacent rails
- Screw: Hex screw M8*12mm

**760-30100-01 Hanging Hook Assembly**
- Material: AL 6063-T6/SUS 304
- Fixed to the beams without screws
- Easy and convenient installation

**373-70066-00 Hook F**
- Material: SUS 304
- Used on plate tile roof
- Horizontally adjustable
Hook is generally applicable in tile roofs. The roof top usually has a certain tilt angle. Therefore, the direction of loads is not always vertical to the plane of hook battens. The data below shows the bearing capacity of hook A & hook B in different angle.

---

**Mechanical Parameters of Hook**

Hook is generally applicable in tile roofs. The roof top usually has a certain tilt angle. Therefore, the direction of loads is not always vertical to the plane of hook battens. The data below shows the bearing capacity of hook A & hook B in different angle.

<table>
<thead>
<tr>
<th>Angle α°</th>
<th>Hook A (thickness 5mm)</th>
<th>Hook B (thickness 6mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.8</td>
<td>0.75</td>
</tr>
<tr>
<td>10</td>
<td>0.69</td>
<td>0.65</td>
</tr>
<tr>
<td>20</td>
<td>0.58</td>
<td>0.55</td>
</tr>
<tr>
<td>30</td>
<td>0.53</td>
<td>0.52</td>
</tr>
<tr>
<td>40</td>
<td>0.53</td>
<td>0.52</td>
</tr>
<tr>
<td>50</td>
<td>0.53</td>
<td>0.52</td>
</tr>
<tr>
<td>60</td>
<td>0.53</td>
<td>0.52</td>
</tr>
</tbody>
</table>

---

**Tightening Torque for Screws**

The Screw material is SUS 304 in all our mounting system, tightening torque of M8 screw is 8-12Nm.

---

**T series Mounting System Mechanical Parameters**

<table>
<thead>
<tr>
<th>Parameter Configuration</th>
<th>L1(mm)</th>
<th>L2(mm)</th>
<th>Wind Load (KN/㎡)</th>
<th>Wind Speed (m/s)</th>
<th>Snow Load (KN/㎡)</th>
<th>Installation Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail A+Hook A</td>
<td>300-500</td>
<td>≤1400</td>
<td>0.8</td>
<td>30</td>
<td>0.6</td>
<td>Any</td>
</tr>
<tr>
<td>Rail A+Hook B</td>
<td>300-500</td>
<td>≤1400</td>
<td>1.2</td>
<td>35</td>
<td>1.0</td>
<td>Any</td>
</tr>
<tr>
<td>Rail B+Hook A</td>
<td>300-500</td>
<td>≤1400</td>
<td>0.8</td>
<td>30</td>
<td>0.6</td>
<td>Any</td>
</tr>
<tr>
<td>Rail B+Hook B</td>
<td>300-500</td>
<td>≤1400</td>
<td>1.2</td>
<td>35</td>
<td>1.0</td>
<td>Any</td>
</tr>
<tr>
<td>Rail C+Hook A</td>
<td>300-500</td>
<td>≤1400</td>
<td>0.8</td>
<td>30</td>
<td>0.6</td>
<td>Any</td>
</tr>
<tr>
<td>Rail C+Hook B</td>
<td>300-500</td>
<td>≤1400</td>
<td>1.0</td>
<td>32</td>
<td>0.8</td>
<td>Any</td>
</tr>
<tr>
<td>Rail D+Hook A</td>
<td>300-500</td>
<td>≤1400</td>
<td>0.8</td>
<td>30</td>
<td>0.6</td>
<td>Any</td>
</tr>
<tr>
<td>Rail D+Hook B</td>
<td>300-500</td>
<td>≤1400</td>
<td>1.0</td>
<td>32</td>
<td>0.8</td>
<td>Any</td>
</tr>
</tbody>
</table>
The material of C series Tin Roof Mounting System is aluminum alloy (6063-T6). It has lightweight, easy transportation and easy installation features. Tin Roof Mounting System has different types and sizes, which is widely used for factories, warehouses and houses.

Samil Power offers several flexibility and solidity Tin Roof Mounting Systems to meet various photovoltaic systems requirements. Our designers can customize the best PV mounting system solution for your individual needs.

C series Tin Roof Mounting System is further divided into 5 types, namely: C-A, C-B, C-C, C-D and C-E for your choice.

Components List for C-A

1. 318-71091-00 Rail D - Material: AL 6063-T6
   - Supporting modules, suitable for a variety of installations
   - Standard types: 2120mm/3140mm/3420mm
   - Rail D-2120mm 318-71091-00
   - Rail D-3140mm 318-71091-00
   - Rail D-3420mm 318-71091-00

2. 760-30035-00 Adjustable End Clamp Assembly - A01 - Material: AL 6063-T6 / SUS304
   - Fixing modules, suitable for modules of thickness ranging from 35mm to 50mm

3. 760-30148-00 50mm Middle Clamp Assembly - A02 - Material: AL 6063-T6/sus304
   - Fixing modules, suitable for modules of thickness ranging from 35mm to 50mm

4. 760-30086-00 Rail Connector Assembly - A01 - Material: AL 6063-T6/ SUS304
   - Screw: Hex screw M8*10mm

5. 760-30200-00 L foot - A04 - Material: AL 6063-T6/ SUS304
   - Screw: Self-drilling screw ST6.3*63mm

The material of C series Tin Roof Mounting System is aluminum alloy (6063-T6). It has lightweight, easy transportation and easy installation features. Tin Roof Mounting System has different types and sizes, which is widely used for factories, warehouses and houses.

Samil Power offers several flexibility and solidity Tin Roof Mounting Systems to meet various photovoltaic systems requirements. Our designers can customize the best PV mounting system solution for your individual needs.
Features:
1. Thanks to the snap on design, the whole system is installed from the top, requiring less installation time and saves labor cost up to 25%.
2. The adjustable L-foot ranges from 0mm to 40mm. Simple, flexible and stable.
3. Dual EPDM sealing cushion ensures 100% water proof.
4. Self-drilling screw suitable for timber or steel beams, ensuring safety and stability of the whole system.

1. 760-30200-00 L foot-A04
2. 760-30197-00 L foot-A05
3. 760-30089-00 L foot-A06

Features:
1. The smart and unique construction enjoys minimum installation time and saves labour cost up to 25%. Such construction is widely used for tin roofs of factories and warehouses.
2. Dual EPDM sealing cushion ensures 100% water proof.
3. Self-drilling screws fit for wooden and metal beams. The whole PV system is safe and reliable through tight connection between tin roofs and bearing surface.

1. 760-30091-00 Dual Self-drilling Screw Clamp Assembly - C01

Features:
1. The length and location can be adjustable, fitting for various shapes and structures of tin roofs.
2. Once the convenient snap-on component is used and the top bolt is fastened, the rail could be tightly connected with the hook. High degree of pre-assembly components enables you to finish assembly quickly.
3. Hanger bolts penetrate corrugated boards and are fixed on the supporting wooden beam of roofs, ensuring a reliable construction.
4. Dual EPDM sealing cushion ensures 100% water proof

1. 760-30087-00 Metal Sheet Clamp Assembly - A02
2. 760-30088-00 Metal Sheet Clamp Assembly - A03
3. 760-30112-00 Metal Sheet Clamp Assembly - A04

Features:
1. A wide range of metal sheet clamps, suitable for different Tin Roofs.

1. 760-30089-00 Metal Sheet Clamp Assembly - A02
2. 760-30088-00 Metal Sheet Clamp Assembly - A03
3. 760-30112-00 Metal Sheet Clamp Assembly - A04

Features:
1. The length and location can be adjustable, fitting for various shapes and structures of tin roofs.
2. Once the convenient snap-on component is used and the top bolt is fastened, the rail could be tightly connected with the hook. High degree of pre-assembly components enables you to finish assembly quickly.
3. Hanger bolts penetrate corrugated boards and are fixed on the supporting wooden beam of roofs, ensuring a reliable construction.
4. Dual EPDM sealing cushion ensures 100% water proof

1. 760-30047-00 Hanger Bolt Assembly M10 - A01
2. 760-30090-00 Hanger Bolt Assembly M10 - A02
Features:
1. Suitable for tin roof.
2. Angle adjustable, ranging from 5° and 10° or 25° and 30°
3. Dual EPDM sealing cushion ensures 100% water proof.
4. Self-drilling screws fit for wooden beams. The whole PV system is safe and reliable through tight connection between tin roofs and bearing surface.

Optional Components

- Material: AL 6063-T6/SUS304
- Connection of adjacent rails
- Can be used with Rail A, Rail B, Rail D

- Material: AL 6063-T6
- Supporting modules, suitable for a variety of installations
- Standard types: 2120mm/3140mm/3420mm
  Rail A-3140mm 318-72073-00
  Rail A-2120mm 318-72001-00
  Rail A-3420mm 318-72074-00

- Material: AL 6063-T6
- Supporting modules, suitable for a variety of installations
- Standard types: 2120mm/3140mm/3420mm
  Rail B-3140mm 318-72073-00
  Rail B-2120mm 318-72002-00
  Rail B-3420mm 318-72074-00

- Material: AL 6063-T6/SUS304
- Snap-on components design enables the quick installation
- Vertical and horizontal height is adjustable
- Hanger Bolt:M10*200 - M12*200

760-30086-00 Rail Connector Assembly - A01

318-72001-01 Rail A

318-72002-00 Rail B

760-30047-00 Hanger Bolt Assembly M10 - A01

760-30098-00 AL Triangle Assembly

760-30035-00 Adjustable End Clamp Assembly - A01

760-30148-00 50mm Middle Clamp Assembly - A02
The material of Screw is SUS 304 for all our mounting system, tightening torque of M8 screw is 8-12Nm.

Load Parameters
There are different types of rails, the connection methods may be different between the mounting system and the rails. But due to the strong load capacity of rail, the load capacity of junction parts may weaker relatively. The datasheet below concerns the bearing capacity of rail A, rail B, rail C and rail D with different junction parts.

<table>
<thead>
<tr>
<th>Parameter Configuration</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>Wind Load (KN/m²)</th>
<th>Wind Speed (m/s)</th>
<th>Snow Load (KN/m²)</th>
<th>Installation Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>L foot</td>
<td>300-400</td>
<td>&lt;900</td>
<td>0.8</td>
<td>30</td>
<td>0.8</td>
<td>Any</td>
</tr>
<tr>
<td>T foot</td>
<td>300-400</td>
<td>&lt;900</td>
<td>0.8</td>
<td>30</td>
<td>1.0</td>
<td>Any</td>
</tr>
<tr>
<td>Metal Sheet Clamp</td>
<td>300-400</td>
<td>&lt;900</td>
<td>0.8</td>
<td>30</td>
<td>1.2</td>
<td>Any</td>
</tr>
<tr>
<td>Hanger Bolt (M10)</td>
<td>300-400</td>
<td>&lt;900</td>
<td>1.0</td>
<td>32</td>
<td>1.0</td>
<td>Any</td>
</tr>
<tr>
<td>Hanger Bolt (M12)</td>
<td>300-400</td>
<td>&lt;900</td>
<td>1.5</td>
<td>40</td>
<td>1.5</td>
<td>Any</td>
</tr>
</tbody>
</table>

Tightening torque for screws
The material of Screw is SUS 304 for all our mounting system, tightening torque of M8 screw is 8-12Nm.
According to aerodynamics, F-A is designed to effectively decrease the wind power impact on PV systems and reduce mounting systems’ reliance on concretes. Meanwhile, it reduces the load from PV systems. Aluminum alloy are light-weighted, which perfectly fits for PV systems on flat roofs such as commercial roofs or warehouse roofs. F-A mounting system has high flexibility of angle adjustments which makes it suitable for different commercial project demands.

F-A has easy shipment, quick installation features, which will help you to earn more by lower the cost of installation and labor costs.
The result of loading capacity according to GB 50009-2001 is as below:

<table>
<thead>
<tr>
<th>Wind Load (KN/㎡)</th>
<th>Wind Speed (m/s)</th>
<th>Snow Load (KN/㎡)</th>
<th>Installation Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>40</td>
<td>1.5</td>
<td>fixed/adjustable</td>
</tr>
</tbody>
</table>

The eddy and low pressure area effect come from wind pressure, resulting in negative pressure to modules. Therefore the whole system needs ballast to increase stability.

<table>
<thead>
<tr>
<th>Wind Speed (m/s)</th>
<th>Ballast (kg/㎡)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>35</td>
<td>65</td>
</tr>
<tr>
<td>40</td>
<td>90</td>
</tr>
</tbody>
</table>

Notes: The data above is applied for Flat A mounting system, anti-slip methods is need, when installation angle is big between back board and side board.

SUS304 or galvanized steel are raw materials of screws for connectors and clamps, etc. Dimensions are required to be calculated based on specific projects by engineers. Data of tightening torque can be referred to the table below.

<table>
<thead>
<tr>
<th>Specification of Screws</th>
<th>M8</th>
<th>M10</th>
<th>M12</th>
<th>M14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tightening Torque (Nm)</td>
<td>12-15</td>
<td>15-30</td>
<td>20-30</td>
<td>30-40</td>
</tr>
</tbody>
</table>

Optional Components

---

**Load Parameters**

**Ballast List**

**Tightening Torque for Screws**
F-B Triangle Aluminum Flat Roof Mounting System

F-B is widely used for commercial roofs and public flat roofs, which has concrete ballast design. Instead of punching roofs, F-B mounting system can enhance the water proof feature. The cross type support structure makes the whole mounting system sturdy and durable. Its super corrosion resistant function ensuring MTBF of 25 years and above. The unique folding aluminum tripod design can pre-assembly before installation, which has light weight, easy transportation and quick installation features. The installation angle can be adjustable among 25°, 30° or 35° for customers’ preferences. In addition, Samil Power provides customized design according to specific enquiries.
Components List for F-B

760-30095-01 AL Triangle Assembly
- Material: AL 6063-T6
- Can be folded
- Angle adjustable, 25°/30° or 30°/35°

318-71091-00 Rail D
- Material: AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm
- Rail D-3140mm 318-71091-00
- Rail D-2120mm 318-71092-00
- Rail D-3420mm 318-71093-00

760-30035-00 Adjustable End Clamp Assembly - A01
- Material: AL 6063-T6/SUS304
- Fixing modules, suitable for modules of thickness ranging from 35mm to 50mm

760-30148-00 50mm Middle Clamp Assembly - A01
- Material: AL 6063-T6/SUS304
- Fixing modules, suitable for modules of thickness ranging from 35mm to 50mm

760-30086-00 Rail Connector Assembly - A01
- Material: AL 6063-T6/SUS304
- Screw: Hex screw M8*10mm

760-30149-00 Earthing Middle Clamp 50mm
- Material: AL 6063-T6/sus304
- Fixing modules, suitable for modules of thickness ranging from 35mm to 50mm

760-30056-00 Rail Connector Assembly - A01
- Material: AL 6063-T6/SUS304
- Screw: Hex screw M8*10mm

Optional Components

760-30106-00 Earthing lug
- Material: AL 6063-T6/sus304

760-30101-00 Angle AL
- Material: AL 6063-T6/SUS304
- Increasing stability
F-B series Mounting System Mechanical Parameters

I. Load Parameters
The intensity, stiffness and stability have direct relation with the cross section and modules’ stress has direct connection with deformation and span. The table below is the result of loading capacity according to GB50009-2001 (building code and euro code) parameters.

1. Span 1200mm load parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Section</th>
<th>Wind Load (Kn/m²)</th>
<th>Wind Speed (M/s)</th>
<th>Snow Load (Kn/m²)</th>
<th>Installation Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle AL 40x40x4</td>
<td>0.8</td>
<td>30</td>
<td>0.8</td>
<td>adjustable</td>
<td></td>
</tr>
<tr>
<td>Angle AL 40x40x5</td>
<td>1.0</td>
<td>32</td>
<td>1.0</td>
<td>adjustable</td>
<td></td>
</tr>
</tbody>
</table>

2. Span 1500mm load parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Section</th>
<th>Wind Load (Kn/m²)</th>
<th>Wind Speed (M/s)</th>
<th>Snow Load (Kn/m²)</th>
<th>Installation Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle AL 50x50x4</td>
<td>1.0</td>
<td>32</td>
<td>1.0</td>
<td>adjustable</td>
<td></td>
</tr>
<tr>
<td>Angle AL 50x50x5</td>
<td>1.2</td>
<td>35</td>
<td>1.2</td>
<td>adjustable</td>
<td></td>
</tr>
</tbody>
</table>

II. Ballast List
Wind load has negative pressure upon front and back modules, which produces upward force upon the whole mounting system. Therefore, it demands mechanics analysis and proper configuration to achieve safety, solidity and stability. Ballast parameters are as below:

<table>
<thead>
<tr>
<th>Wind Speed (m/s)</th>
<th>Ballast (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 20</td>
<td>40</td>
</tr>
<tr>
<td>25</td>
<td>70</td>
</tr>
<tr>
<td>30</td>
<td>110</td>
</tr>
<tr>
<td>35</td>
<td>160</td>
</tr>
</tbody>
</table>

Notes: Such mounting system spans 1200mm, and kg is the unit of the ballast for each module.

III. Tightening Torque for Screws
The Screw material is SUS304 stainless steel in all our mounting system. M8 Screw is 12-15Nm, and M10 Screw is 12-20Nm.
This mounting system is widely used for large-scale PV station. It takes advantage of concrete base to fix the mounting system, which is convenient and cost-effective. The main part of the system adopts Q235B steel materials with hot dip galvanized which ensures the MTBF 25 years and above. Instead of destroying the original waterproof surface, such solution could adjust the installation angle according to the specific demands.